



Planning Commission Staff Report

Meeting Date: August 1, 2023

Agenda Item: 10C

MASTER PLAN AMENDMENT CASE NUMBER: WMPA23-0006/WRZA23-0006 (Learner Lemmon)

BRIEF SUMMARY OF REQUEST: Request to change the master plan designation of one 19.9-acre parcel from Rural (R) and Suburban Residential (SR) to SR; and to change the regulatory zone of the same parcel from Medium Density Suburban (MDS) and General Rural (GR) to MDS, High Density Suburban (HDS), and Open Space (OS).

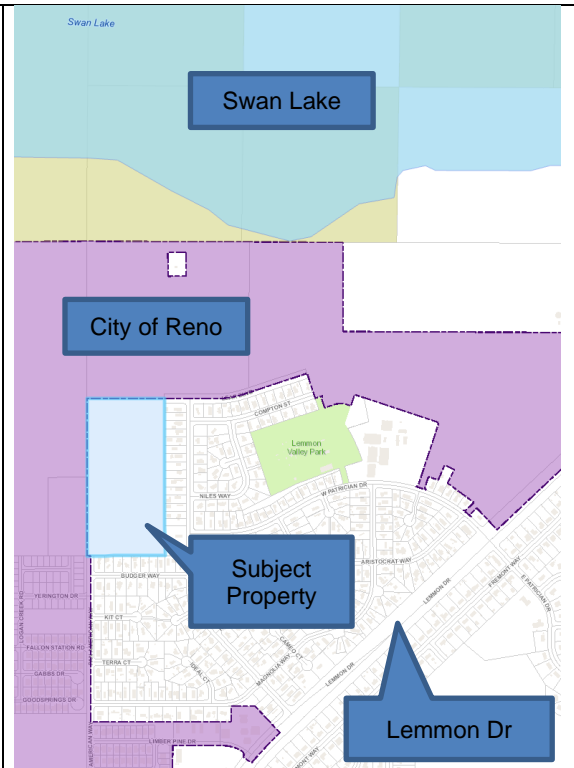
STAFF PLANNER: Kat Oakley, Planner
Phone Number: 775.328.3628
E-mail: koakley@washoecounty.gov

CASE DESCRIPTION

For hearing, discussion, and possible action to:

- (1) Approve an amendment to the North Valleys Area Plan, a component of the Washoe County Master Plan, to redesignate 8.566 acres of a 19.926-acre parcel from Rural (R) to Suburban Residential (SR); and
- (2) Recommend adoption of an amendment to the North Valleys Regulatory Zone Map, to redesignate 5 acres of a 19.926-acre parcel from Medium Density Suburban (MDS) to High Density Suburban (HDS), to redesignate 3.27 acres of the same parcel from Medium Density Suburban (MDS) to Open Space (OS), to redesignate 2.35 acres of the same parcel from General Rural (GR) to Medium Density Suburban (MDS), to redesignate 5.59 acres of the same parcel from General Rural (GR) to High Density Suburban (HDS), and to redesignate .53 acres of the same parcel from General Rural (GR) to Open Space (OS). Approximately 3.18 acres of Medium Density Suburban (MDS) will retain its current zoning. The Regulatory Zone Amendment is subject to final approval by the Board of County Commissioners of the associated Master Plan Amendment and a finding of conformance with the Truckee Meadows Regional Plan by regional planning authorities; and,
- (3) If approved, authorize the chair to sign resolutions to this effect.

Applicant: Krater Consulting Group, PC
 Property Owner: Learner, Brett H & Learner, Bryan A
 Location: 0 Pan American Dr



Vicinity Map

| | |
|---------------------------|---|
| APN: | 080-461-08 |
| Parcel Size: | 19.926 acres |
| Existing Master Plan: | Suburban Residential (SR) and Rural (R) |
| Proposed Master Plan: | Suburban Residential (SR) |
| Existing Regulatory Zone: | Medium Density Suburban (MDS) and General Rural (GR) |
| Proposed Regulatory Zone: | High Density Suburban (HDS), Medium Density Suburban (MDS), and Open Space (OS) |
| Area Plan: | North Valleys |
| Development Code: | Authorized in Article 820, Amendment of Master Plan & Article 821, Amendment of Regulatory Zone |
| Commission District: | 5 – Commissioner Herman |

STAFF RECOMMENDATION—Master Plan Amendment

APPROVE

DENY

POSSIBLE MOTION

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Washoe County Planning Commission adopt the resolution contained at Attachment A of this staff report to amend the Master Plan as set forth in Master Plan Amendment Case Number WMPA23-0006 having made at least three of the five findings set forth in Washoe County Code Section 110.820.15(d)(1)-(5), the additional finding in Section 110.820.15(d)(6), and having made three findings in accordance with North Valleys Area Plan policy NV.21.1. I further move to certify the resolution and the proposed Master Plan Amendments in WMPA23-0006 as set forth in this staff report for submission to the Washoe County Board of County Commissioners and authorize the chair to sign the resolution on behalf of the Planning Commission.

(Motion with Findings on Pages 23)

STAFF RECOMMENDATION – Regulatory Zoning Amendment

APPROVE

DENY

POSSIBLE MOTION

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Planning Commission adopt the resolution included as Exhibit B, recommending adoption of Regulatory Zone Amendment Case Number WRZA23-0006, having made all of the findings set forth in Washoe County Code Section 110.821.15(d) and having made all relevant findings of North Valleys Area Plan Policy NV.21.3. I further move to certify the resolution and the proposed Regulatory Zone Amendment in WRZA23-0006 as set forth in this staff report for submission to the Washoe County Board of Commissioners and authorize the chair to sign the resolution on behalf of the Washoe County Planning Commission.

(Motion with Findings on Page 24)

Staff Report Contents

Explanation of a Master Plan Amendment 4

Existing and Proposed Master Plan Designations 5

Explanation and Processing of a Regulatory Zone Amendment..... 5

Existing and Proposed Regulatory Zoning Designations 6

Background..... 7

Compatible Land Uses..... 8

Availability of Facilities 8

Area Plan Evaluation..... 9

Master Plan Evaluation 10

Regional Plan Evaluation 14

Reviewing Agencies..... 14

Findings—Master Plan Amendment..... 17

Findings—Regulatory Zone Amendment..... 19

Neighborhood Meeting..... 22

Public Notice 22

Master Plan Amendment Recommendation 23

Master Plan Amendment Motion 23

Regulatory Zone Amendment Recommendation..... 24

Regulatory Zone Amendment Motion..... 24

Appeal Process..... 25

Exhibit Contents

Master Plan Amendment Resolution Exhibit A

Regulatory Zone Amendment Resolution..... Exhibit B

Notice Map..... Exhibit C

Agency Comments..... Exhibit D

Neighborhood Meeting Summary..... Exhibit E

Application Exhibit F

Updated Traffic Study Exhibit G

Updated Application Materials..... Exhibit H

MPA Side-by-Side..... Exhibit I

RZA Side-by-Side Exhibit J

Explanation of a Master Plan Amendment

The purpose of a Master Plan Amendment application is to provide a method of review for requests to amend the master plan.

The Master Plan guides growth and development in the unincorporated areas of Washoe County and consists of three volumes. By establishing goals and implementing those goals through policies and action programs, the Master Plan addresses issues and concerns both countywide and within each community. Master Plan Amendments ensure that the Master Plan remains timely, dynamic, and responsive to community values. The Washoe County Master Plan can be accessed on the Washoe County Planning website at https://www.washoecounty.gov/csd/planning_and_development, and then select Master Plan & Maps - or it may be obtained at the front desk of the Washoe County Planning and Building Division.

Volume One of the Master Plan outlines six countywide priorities through the year 2025. These priorities are known as elements and each is summarized below. The Land Use and Transportation Element, in particular, plays a vital role in the analysis of a Master Plan Amendment.

- **Population Element.** Projections of population, housing characteristics, trends in employment, and income and land use information for the County.
- **Conservation Element.** Information, policies and action programs, and maps necessary for protection and utilization of cultural and scenic, land, water, air and other resources.
- **Land Use and Transportation Element.** Information, policies and action programs, and maps defining the County's vision for development and related transportation facilities needed for the forecasted growth, and protection and utilization of resources.
- **Public Services and Facilities Element.** Information, policies and action programs, and maps for provision of necessary services and facilities (i.e., water, sewer, general government and public safety facilities, libraries, parks, etc.) to serve the land use and transportation system envisioned by the County.
- **Housing Element.** Information, policies and action programs, and maps necessary to provide guidance to the County in addressing present and future housing needs.
- **Open Space and Natural Resource Management Plan Element.** Information, policies and action programs, and maps providing the necessary framework for the management of natural resources and open spaces.

Volume Two of the Master Plan consists of 13 area plans, which provide detailed policies and action programs for local communities in unincorporated Washoe County relating to conservation, land use and transportation, public services and facilities information, and maps.

Volume Three of the Master Plan houses Specific Plans, Joint Plans and Community Plans that have been adopted by the Washoe County Board of County Commissioners. These plans provide specific guiding principles for various districts throughout unincorporated Washoe County.

Requests to amend the Master Plan may affect text and/or maps within one of the six Elements, one of the 13 Area Plans, or one of the Specific Plans, Joint Plans or Community Plans. Master Plan Amendments require a change to the Master Plan and are processed in accordance with Washoe County Chapter 110 (Development Code), Article 820, *Amendment of Master Plan*.

When making a recommendation to the Washoe County Board of County Commissioners to adopt a Master Plan Amendment, the Planning Commission must make at least three of the five findings

as set forth in Washoe County Code (WCC) Section 110.820.15(d)(1)-(5). If a military installation is required to be noticed, then an additional finding of fact pursuant to WCC Section 110.820.15(d)(6) is required. If there are findings relating to Master Plan Amendments contained in the Area Plan in which the subject property is located, then the Planning Commission must also make all of those findings. A recommendation to adopt the Master Plan Amendment requires an affirmative vote of at least 2/3 of the Planning Commission’s total membership.

Existing and Proposed Master Plan Designations

The applicant is asking to amend the North Valleys Area Plan to redesignate 8.566 acres of a 19.926-acre parcel (APN 080-461-08) from Rural (R) to Suburban Residential (SR). As a result, the entire parcel would have an SR designation. See Figure 1, Existing and Proposed Master Plan Designations.

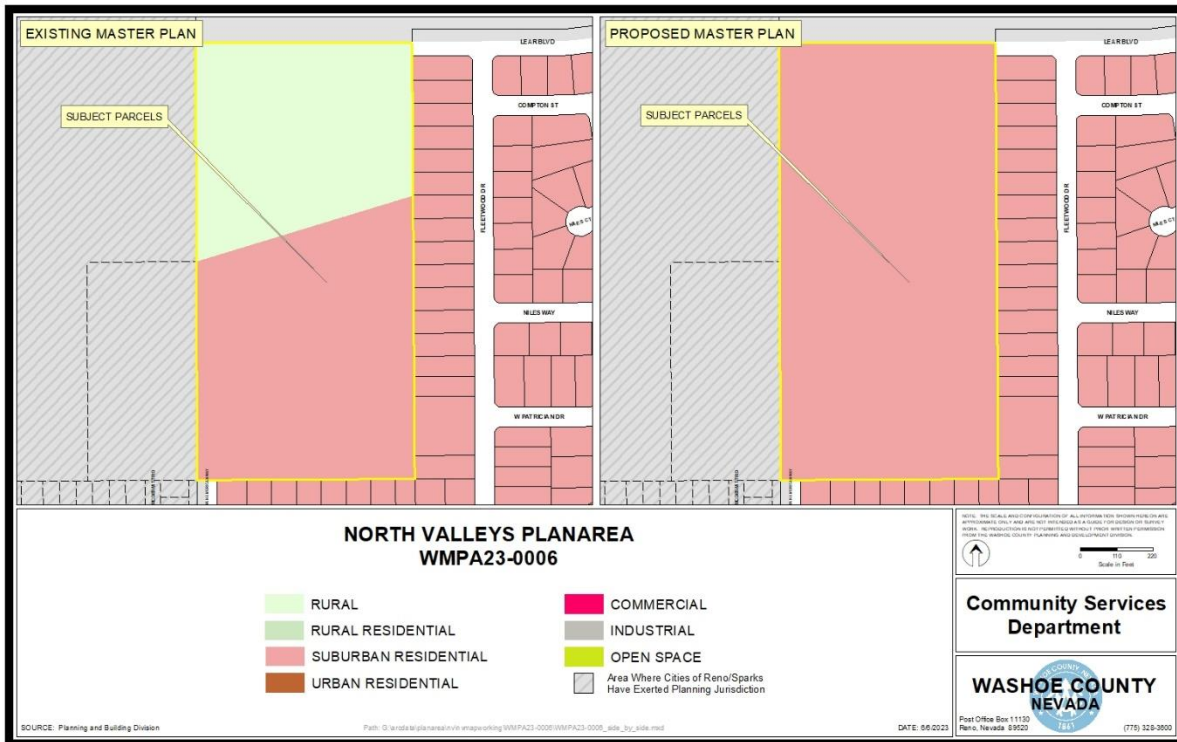


Figure 1
Existing and Proposed Master Plan Designations

Explanation and Processing of a Regulatory Zone Amendment

The purpose of a Regulatory Zone Amendment (RZA) is to provide a method for amending the regulatory zone maps of Washoe County. The regulatory zone maps depict the regulatory zones (i.e., zoning) adopted for each property within the unincorporated area of Washoe County. The regulatory zones establish the uses and development standards applied to each property.

Regulatory zones are designed to implement and be consistent with the Master Plan by ensuring that the stability and character of the community will be preserved for those who live and work in the unincorporated areas of the county. A regulatory zone cannot be changed if it conflicts with the objectives or policies of the Master Plan, including area plans that further define policies for specific communities. The Master Plan is the blueprint for development within the unincorporated

County. Pursuant to NRS Chapter 278, any action of the County relating to zoning must conform to the Washoe County Master Plan.

Evaluation of the proposed Regulatory Zone Amendment involves review for compliance with countywide policies found in Volume One of the Washoe County Master Plan and applicable area plan policies found in Volume Two of the Washoe County Master Plan. If the subject parcel(s) is within a specific plan, joint plan or community plan found in Volume Three of the Master Plan, then supplemental review shall be required to ensure compliance with the applicable plan. Additionally, the analysis includes review of the proposed amendment against the findings found in Article 821 of the Washoe County Development Code and any findings as set forth in the appropriate Area Plan.

Requests to change a regulatory zone affecting a parcel of land or a portion of a parcel are processed under Article 821, Amendment of Regulatory Zone, of the Washoe County Development Code. Rezoning or reclassification of a lot or parcel from one regulatory zone to another requires action by both the Planning Commission and the Board of County Commissioners.

The Planning Commission may deny a Regulatory Zone Amendment, or it may recommend approval or modification of an amendment to the Board of County Commissioners. Upon an affirmative recommendation by the Planning Commission, the Board of County Commissioners is required to hold a public hearing which must be noticed pursuant to Section 110.821.20 of the Washoe County Development Code. Final action is taken by the Board of County Commissioners who may adopt, adopt with modifications, or deny the proposed amendment.

Existing and Proposed Regulatory Zoning Designations

The second part of the applicant's request is to change the regulatory zone of 5 acres of a 19.926-acre parcel (APN 080-461-08) from Medium Density Suburban (MDS) (3 units/acre) to High Density Suburban (HDS) (7 units/acre), to redesignate 3.27 acres of the same parcel from Medium Density Suburban (MDS) to Open Space (OS) (0 units/acre), to redesignate 2.35 acres of the same parcel from General Rural (GR) (1 unit/40 acres) to Medium Density Suburban (MDS), to redesignate 5.59 acres of the same parcel from General Rural (GR) to High Density Suburban (HDS), and to redesignate 0.53 acres of the same parcel from General Rural (GR) to Open Space (OS) (0 units/acre). The resulting zoning configuration contains 10.59 acres of HDS, 5.53 acres of MDS, and 3.8 acres of OS, and the changes cover the majority of parcel 080-461-08 (herein referred to as "project area"), excluding 3.18 acres that will remain Medium Density Suburban (MDS). See Figure 2 - Existing and Proposed Zoning Designations.

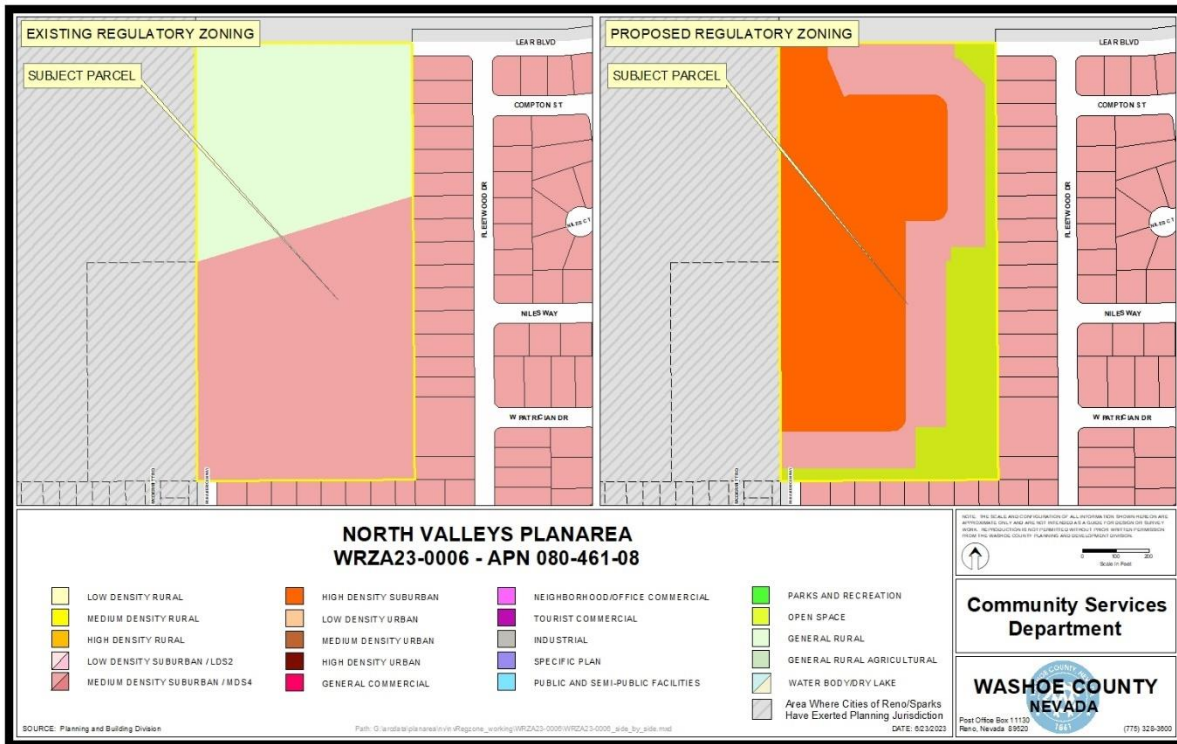


Figure 2
Existing and Proposed Zoning Designations

Background

The project area is currently vacant and sits on the border of the City of Reno and unincorporated Washoe County. Parcels to the east and south are zoned Medium Density Suburban (MDS) and are developed as single-family subdivisions. Parcels to the southwest are within the City of Reno and zoned SF-3, which allows three dwelling units per acre. Parcels to the west are within the City of Reno and zoned SF-8, which allows eight dwelling units per acre, and are currently undeveloped. Finally, the parcel to the north is in the City of Reno and zoned Open Space. The subject parcel is currently zoned 57% MDS and 43% GR. The master plan designations of Rural (R) and Suburban Residential (SR) match the regulatory zones of GR and MDS respectively.

The intent of the MPA/RZA is to allow for a future residential subdivision. If approved, the overall allowable density would increase from 34 units to 90 units, or from 1.7 units per acre to 4.5 units per acre over the entire project site, including the OS. This represents a significant intensification of land use but does not exceed densities to the west of the future subdivision. Zoning to the east, south, and southwest allow for three units per acre, and parcels to the west allow eight units per acre.

A small area of the northeast portion of the parcel is within the 100-year floodplain. However, as indicated by the application, Washoe County is currently working on a letter of map revision (LOMR) to remove that area from the floodplain. This process is intended to be initiated in late summer of 2023, which has been confirmed with the Engineering Division. There will therefore not be development constraints on the parcel once the LOMR is complete. Additionally, the currently mapped floodplain falls entirely within the proposed OS regulatory zone.

Compatible Land Uses

In determining compatibility with surrounding land uses, staff reviewed the Land Use Compatibility Matrix with the proposed Regulatory Zone Amendments. The compatibility matrix is found in the Land Use and Transportation Element in Volume One of the Washoe County Master Plan. The compatibility between the proposed and existing adjacent regulatory zones is captured in the table below. For parcels in the City of Reno, compatibility was determined by selecting the Washoe County regulatory zone with the closest density.

Compatibility Rating of Proposed Regulatory Zone with Existing Regulatory Zones on Adjacent Parcels

| Existing Regulatory Zone | Proposed Regulatory Zone | Existing Adjacent Regulatory Zone | Current Compatibility | Proposed Compatibility Rating |
|--------------------------|--------------------------|--|-----------------------|-------------------------------|
| MDS/GR | HDS/MDS/OS | <u>North</u> : Open Space (City of Reno—closest to OS) | High/High | High/High/High |
| MDS/GR | HDS/MDS/OS | <u>East</u> : MDS | High/Medium | High/Identical/High |
| MDS/GR | HDS/MDS/OS | <u>South</u> : MDS | High/Medium | High/Identical/High |
| MDS/GR | HDS/MDS/OS | <u>West</u> : SF-8 (City of Reno—closest to HDS) | High/Medium | High/High/High |

High Compatibility: Little or no screening or buffering necessary.
Medium Compatibility: Some screening and buffering necessary.
Low Compatibility: Significant screening and buffering necessary.

**Figure 3
Existing Surrounding Zoning Designations & Densities**

| Existing Adjacent Regulatory Zone | Maximum Allowed Density | Subject Property Existing Density | Subject Property Proposed Density |
|--|-------------------------|-----------------------------------|-----------------------------------|
| <u>North</u> : Open Space (City of Reno—closest to OS) | 0 units/acre | 1.7 units/acre | 4.5 units/acre |
| <u>East</u> : MDS | 3 units/acre | 1.7 units/acre | 4.5 units/acre |
| <u>South</u> : MDS | 3 units/acre | 1.7 units/acre | 4.5 units/acre |
| <u>West</u> : SF-8 (City of Reno—closest to HDS) | 8 units/acre | 1.7 units/acre | 4.5 units/acre |

Overall, this request will increase compatibility with the surrounding land uses, which are primarily suburban in nature.

Availability of Facilities

The subject property falls within the Truckee Meadows Service Area (“TMSA”) boundary and when developed, will be required to be on public water and sewer systems. Truckee Meadows Fire Station 44 is currently 5.4 miles from the project site and will be approximately 3 miles when Lear Blvd is completed. The project site is 0.6 miles from Lemmon Valley Elementary School, 4.5 miles from O’Brien Middle School, and 4.2 miles from North Valley’s High School. The Washoe

County School District did not indicate any capacity concerns at those schools and stated that they will analyze for capacity at the tentative map stage.

The applicant has indicated that the Truckee Meadows Water Authority (TMWA) will serve the project. At the time of the tentative map review, appropriate conditions will be added ensuring that adequate water rights are acquired for the project. The application included a preliminary sewer study that identified sewer facilities in unincorporated Washoe County and within the City of Reno that would serve development of the parcel. The study identified a lift station 1,400 ft. from the subject property and indicated it would have capacity to serve the proposed development. The sewage would then be conveyed to the Reno-Stead Wastewater Treatment Facility, which is managed by the City of Reno and was recently upgraded from a capacity of 2 million gallons per day to 4 million gallons per day. There is therefore sufficient treatment capacity to serve the future development of this property. The Washoe County Water Rights Manager, Nevada Division of Water Resources, and Washoe County Health District reviewed this application and did not have any concerns.

A discussion of roadway facilities can be found on pages 11-13.

Area Plan Evaluation

The subject parcel is located within the Lemmon Valley Suburban Character Management Area (LVSCMA) of the North Valleys Area Plan. The following are the pertinent policies from the Area Plan:

Relevant Area Plan Policies Reviewed

| Policy | Brief Policy Description | Complies | Staff Response |
|---------|---|----------|---|
| NV.1.2 | Total land use capacity in suburban character management areas shall not exceed 2,000 residential units through 2025. | Yes | Prior to this request, 1,169 units of capacity have been added in the North Valleys planning area since the adoption of this policy in the North Valley’s Area Plan in 2010. This proposal would add 56 units, for a cumulative total of 1,225. |
| NV.6.3 | In subdivisions in HDS, uses allowed in Neighborhood Commercial (NC) can be established in conjunction with residential uses in a mixed-use development | N/A | This policy would be applicable and could be applied in a future tentative map proposal, if this RZA is approved. |
| NV.8.1 | Development proposals must show how local transportation facilities maintain level of service (LOS) C. | Yes | Traffic Impact Study (TIS) provided shows that LOS for impacted intersections and roadways will stay within acceptable LOS of C or greater (see discussion on pages 11-13) |
| NV.8.8 | Development at MDS-intensity or greater must consider and be consistent with existing and future multi-modal opportunities, including transit services. | Yes | The Regional Transportation Commission (RTC) provided comments on this application and specified measures that would support multimodal usage. These can be conditioned upon review of a specific development proposal. The project site is near RTC Flex-Ride service area. The proposal therefore complies with this requirement. |
| NV.10.1 | Prior to MPA approval, Nevada Department of Conservation and | Yes | Staff sent the application to the State Historic Preservation Office (SHPO), |

| | | | |
|---------|--|-----|--|
| | Natural Resources (DCNR) will be contacted and archaeological investigations completed upon request. | | a part of the DCNR, for comment; they indicated that a large archaeological resource is on or adjacent to the subject property. The applicant hired an archaeologist to confirm that the mapped archaeological resource does not extend onto the project site. Should any archaeological resources or burials be found during site development, the applicable regulations would be followed as described in Exhibit H. Conditions regarding cultural resources could be applied at the tentative map stage. SHPO did not request an archaeological investigation at this stage. |
| NV.11.5 | Development proposals will be reviewed by Washoe County Parks and Open Space for trail connections. | Yes | Staff sent the application to the Parks Planner for review; indicated no concerns regarding trail connections. |
| NV.19.3 | Any development will be consistent with Swan Lake Nature Study Area Master Plan. | Yes | Staff reviewed the Swan Lake Nature Study Area Master Plan and confirmed that this development proposal is consistent with the plan. |
| NV.14.1 | Prior to approval of Master Plan Amendments, NDOW will be given the opportunity to review and comment. | Yes | Staff sent the application to NDOW for review; NDOW indicated no concerns. |
| NV.21.1 | Findings required to be made for an MPA. | Yes | Addressed on pages 18-19. |
| NV.21.3 | Findings required to be made for an RZA. | Yes | Addressed on pages 20-21. |

Master Plan Evaluation

The existing master plan designations on the subject parcel are Rural (R) and Suburban Residential (SR). Per WCC 110.106.10(a), the R designation is intended for “areas of the County that are remote, have minimal infrastructure, [and] contain significant amounts of open spaces...” The subject parcel is surrounded on three sides by residential zoning and development that allows 3-8 units per acre. It borders the open space surrounding Swan Lake. Land use patterns in the vicinity are generally suburban, and drainage improvement projects have removed floodplain areas that used to exist on the northern portion of the parcel. The R designation is therefore no longer appropriate for the parcel.

The proposed land use designation is SR over the entire parcel, which per WCC 110.106.10(c) is “intended primarily for residential uses of low to medium densities.” The surrounding parcels in county jurisdiction are designated SR, and the designation is consistent with the development pattern in the area.

Below is a discussion of the relevant policies from each element of the Master Plan.

Conservation

C.13.4(b) Protect the following areas as important recreational and wildlife areas: Swan Lake Nature Study Area.

Staff Comment: Per this policy and policy NV.19.3 in the North Valleys Area Plan, staff reviewed this proposal against the Swan Lake Nature Study Area Master Plan and confirmed that it is consistent with that plan.

Land Use and Transportation

LUT.3.6 The requirement of cooperative planning as stated in the Truckee Meadows Regional Plan shall be implemented through notice of the two cities of Master Plan Amendments within those areas of interest identified by each city no later than ten (10) working days of the anticipated action by the Washoe County Planning Commission.

Staff Comment: Notice was provided to the City of Reno, who did not have any comments or concerns.

LUT.5.2 Proposed development plans shall be required to provide the minimum service standards as described in the Land Use and Transportation Plan.

Staff Comment: The minimum LOS for roadway facilities is C. The TIS analyzed five intersections as identified in conjunction with the Washoe County Engineering Division: Fleetwood Drive and Lemmon Drive Eastbound (#1), Fleetwood Drive and Lemmon Drive Westbound (#2), Fleetwood Drive and Budget Way (#3), Fleetwood Drive and Lear Blvd (#4), Budget Way and Pan American Way (#5). See the map below for intersection locations:



As the map indicates, the identified intersections assume that traffic from the northern and southern exits of a future subdivision on the subject parcel will access Lemmon Drive by Fleetwood Drive. Trip generation estimates for the project are as follows:

| ITE Code | Description | Dwelling Units | AM Peak Hour | | | PM Peak Hour | | | Total Daily Trips |
|--------------|--------------------------------|----------------|--------------|-----|-------|--------------|-----|-------|-------------------|
| | | | In | Out | Total | In | Out | Total | |
| 210 | Single-Family Detached Housing | 87 | 15 | 46 | 61 | 52 | 30 | 82 | 820 |
| Total | | | 15 | 46 | 61 | 52 | 30 | 82 | 820 |

These estimates and their impacts on the identified intersections were added to a projected 2026 background scenario, resulting on the following LOS calculations:

| Intersection | 2023 Existing | | 2026 Background* | | 2026 Background Plus Project | |
|--|----------------------|---------------------|----------------------|---------------------|------------------------------|---------------------|
| | AM | PM | AM | PM | AM | PM |
| | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) |
| Fleetwood Drive and Lemmon Drive (#1) Two-Way Stop Control Eastbound | 9.3 (A) | 0.0 (A) | 9.3 (A) | 0.0 (A) | 9.5 (A) | 13.4 (B) |
| Fleetwood Drive and Lemmon Drive (#2) Two-Way Stop Control Eastbound Westbound | 10.0 (B) 12.2 (B) | 9.3 (A) 11.6 (B) | 10.1 (B) 12.5 (B) | 9.3 (A) 11.8 (B) | 10.7 (B) 12.5 (B) | 9.6 (A) 11.9 (B) |
| Fleetwood Drive and Budget Way (#3) Two-Way Stop Control Eastbound | 8.9 (A) | 8.8 (A) | 8.9 (A) | 8.8 (A) | 9.0 (A) | 8.9 (A) |
| Fleetwood Drive and Lear Boulevard (#4)* All-Way Stop Control | 7.0 (A) | 6.7 (A) | 7.0 (A) | 6.7 (A) | 6.7 (A) | 6.9 (A) |
| Budger Way and Pan American Way (#5) Two-Way Stop Control Westbound | 8.6 (A) | 8.6 (A) | 8.6 (A) | 8.6 (A) | 8.8 (A) | 8.8 (A) |

As shown above, impacted roadways and intersections will remain within an acceptable level of service of A or B. Though the proposed Regulatory Zone Amendment would allow for 3 additional units that weren't included in the TIS, none of the intersections are projected to have a LOS of C; therefore, staff does not believe there is any risk that the additional three units would cause the proposal to conflict with the master plan.

Lemmon Drive was not included in the TIS beyond the intersection with Fleetwood Drive. The Regional Transportation Commission (RTC) indicated that a left turn lane will need to be installed on Fleetwood Drive, which can be conditioned at the tentative map stage of this project. However, they did not indicate any other concerns regarding Lemmon Drive and stated that the roadway will be widened from two to four lanes north of Fleetwood Drive in 2025.

Open Space and Natural Resource Management

Cultural Resources and Sensitive Lands 1.1-- Designated Areas of Critical Environmental Concern (ACECs) and known cultural resources within urbanized areas will be protected through the use of buffers and other appropriate mechanisms.

Staff Comment: There are potential cultural resources in the project area; however, the SHPO has not requested an archaeological study at this time. Per information provided by the applicant, there are no mapped archaeological resources on the subject property. Public land around Swan Lake, however, does have mapped archaeological resources, as referenced by SHPO. These resources are described as including abundant flakes and at least one projectile point, with no

noted evidence of burials. When assessing a future development proposal, staff will put in place any necessary conditions regarding the potential presence of cultural resources.

Cultural Resources and Sensitive Lands 1.3 Protect cultural resources through the development review process.

Staff Comment: When assessing a future development proposal, staff will put in place any necessary conditions regarding the potential presence of cultural resources.

Regional Plan Evaluation

The Truckee Meadows Regional Planning Agency (TMRPA) provided an initial review memo identifying policies relevant to the request. The parcel is currently designated as Tier 3 in the Truckee Meadows Regional Plan. In order for this proposal to be in conformance with the Regional Plan, a Regional Plan amendment to redesignate the project area to Tier 2 will be required. Table 3.1 in the Regional Plan identifies the density requirements for each tier:

| Regional Land Designation | Minimum Density (dwelling units per acre) | Maximum Density (du/ac) | Nonresidential Standards |
|---------------------------|---|------------------------------------|---|
| Mixed Use Core | 14 du/ac | No maximum | 0.25 floor-area ratio (FAR) minimum |
| Tier 1 Land | Existing | No maximum | None |
| Tier 2 Land | No minimum | 30 du/ac | None |
| Tier 3 Land | No minimum | Existing | Existing – Commercial development to support the surrounding neighborhood may be allowed in certain instances |
| Rural Area | N/A | 1 unit per 5 acres, see policy RF6 | Dispersed nonresidential uses per Policy RF6 |

As indicated above, a tier change is necessary for any intensification of the master plan land use on the subject parcel. The regional plan amendment would need to be initiated by the Board of County Commissioners (BCC). The relevant regional policies are addressed below.

PG 4—Affordable Housing Strategies

Staff Comment: This policy directs the Washoe County Master Plan to encourage affordable housing through several different methods and goals, all of which are addressed in the housing element of the Washoe County Master Plan. A change in Master Plan designation from R to SR does not require the addition of affordable housing in future development proposals; however, it does allow for denser development within this portion of the TMSA. This potentially allows for the provision of more housing where there is appropriate infrastructure for such development. This proposal therefore conforms with policy PG 4.

RF 3—Density Requirements and Non-residential Standards

Staff Comment: The subject parcel is currently designated Tier 3 in the Regional Plan, which has a maximum density confined by the existing master plan designations. Therefore, a change from Tier 3 to Tier 2 is required to effectuate this MPA.

RF 5—Regional Land Designation Amendments

For a request to change a land use designation from Tier 3 to Tier 2, several criteria must be met. They are addressed in turn below.

a. Proximity to Tier 2 Land

Staff Comment: The subject parcel borders Tier 2 land to the north and west, with Tier 3 land to the south and east. A change to Tier 2 would therefore be consistent with the surroundings.

b. Proposed density meets the requirements and does not utilize the alternative density clause found in Policy RF3

Staff Comment: The proposed density would meet the requirements for Tier 2 designation without utilizing the alternative density clause.

c. Enhanced potential for land use diversity and a mix of housing types

Staff Comment: The MPA request is associated with an RZA that would add HDS regulatory zoning to portions of the parcel. HDS allows for mixed-use development and a diversity of housing types, including single-family, attached, and duplexes with the approval of an administrative permit. However, it does not require that those housing types be implemented. The applicant has indicated that, if this amendment is approved, they will pursue a common open space, single-family detached subdivision.

d. Potential for connectivity to existing or planned multimodal transportation opportunities (e.g., sidewalks, transit, complete streets, bike lanes, multi-use paths)

Staff Comment: RTC reviewed this application and made recommendations for infrastructure to support multimodal transportation. These recommendations can be conditioned during the future review of a development proposal. The parcel is in close proximity to the RTC Flex-Ride service area.

e. Proximity and availability of adequate infrastructure and facilities, or feasibility to construct and operate capacity improvements.

Staff Comment: The subject parcel falls within the TMSA and in close proximity to public safety facilities (see pages 8-9). The Traffic Impact Study (TIS) provided by the applicant indicates that all intersections will remain within an acceptable LOS (see pages 11-13 for further analysis).

f. An assessment of impacts to planned land uses in higher priority Regional Land Designations

Staff Comment: This proposal is adjacent to Tier 2 lands and will utilize existing infrastructure; no impacts have been identified.

RF 11—Compatibility Factors

Staff Comment: Compatibility with adjacent land uses is addressed on page 8.

PF 1—List of Facilities and Services Standards

Staff Comment: Responses to each of the facilities and services standards are below.

- *Water—Water conveyance facilities are available and adequate.*
- *Wastewater—Sewer collection and treatment facilities are available and adequate (see Exhibit A Application, Preliminary Sewer Study)*

- *Flood Control and Stormwater Drainage Management—Future development of this parcel will be required to comply with all RWMP floodplain and drainage policies.*
- *Transportation—Regional road facilities are available and adequate (see transportation discussion on pages 11-13). Multi-modal connectivity will be assessed when reviewing a future development proposal.*
- *School—School facilities are available and adequate. The subject property is 0.6 miles from Lemmon Valley Elementary School, 4.5 miles from O'Brien Middle School, and 4.2 miles from North Valley's High School. Staff sent this application to the Washoe County School District for comment; they indicated no concerns regarding the proposal or the current operational capacities of the school facilities (see Exhibit D).*

NR 3—Development Constraints Area

Staff Comment: Per the discussion on page 7 of this staff report, due to recently completed drainage improvement projects, no portion of the property will be in the 100-year floodplain with the anticipated approval of a LOMR. Furthermore, the currently mapped floodplain is proposed to fall entirely within the OS regulatory zone.

Reviewing Agencies

The following agencies/individuals received a copy of the project application for review and evaluation. Some provided comments but none recommended denial.

| Agencies | Sent to Review | Responded | Provided Conditions | Contact |
|--|----------------|-----------|---------------------|--|
| BLM - Eagle Lake Field Office | X | | | |
| NDOT (Transportation) | X | | | |
| NDOW (Wildlife) | X | | | |
| NV Water Resources | X | X | | Steve Shell, sshell@water.nv.gov |
| Washoe County Building & Safety | X | | | |
| Washoe County District Attorney, Civil Division | X | | | |
| Washoe County Parks & Open Space | X | X | | Faye-Marie Pekar, fpekar@washoecounty.gov |
| Washoe County Sewer | X | | | |
| Washoe County Traffic | X | X | | Mitch Fink, MFink@washoecounty.gov |
| Washoe County Water Resource Planning | X | | | |
| Washoe County Water Rights Manager (All Apps) | X | X | | Timber Weiss, tweiss@washoecounty.gov |
| WCSO Law Enforcement | X | X | | Brandon Zirkle, bzirkle@washoecounty.gov |
| Washoe County Engineering (Land Development) (All Apps) | X | X | | Rob Wimer, rwimer@washoecounty.gov |
| Washoe County Engineering & Capital Projects Director (All Apps) | X | | | |
| WCHD EMS | X | X | | Sabrina Brasuell, sbrasuell@washoecounty.gov |
| WCHD Environmental Health | X | X | | Jim English, jenglish@washoecounty.gov |
| TMFPD | X | X | | Dale Way, dway@tmfpd.us |
| Reno Community Development | X | | | |
| Truckee Meadows Regional Planning | X | X | | Chris Tolley, ctolley@tmrpa.org |
| Washoe County School District (All TMs) | X | X | | Kyle chisholm, kyle.chisholm@washoeschools.net |
| Regional Transportation Commission | X | X | | Marquis Williams, mwilliams@rtcwashoe.com |
| Nevada State Historic Preservation | X | X | | Rebecca Palmer, rlpalmer@shpo.nv.gov |
| Pyramid Lake Paiute Tribe | X | | | |
| Reno/Sparks Indian Colony | X | | | |
| Washoe Tribe of NV | X | | | |
| Truckee Meadows Water Authority | X | | | |

Findings-Master Plan Amendment

WCC Section 110.820.15(d) requires the Planning Commission to make at least three of the following five findings of fact in WCC 110.820.15(d)(1)-(5) to recommend approval of the amendments to the Washoe County Board of County Commissioners. The following findings and staff comments on each finding are presented for the Planning Commission's consideration:

1. Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan.

Staff Comment: The staff report provides a discussion on applicable goals and policies of the North Valleys Area Plan. The proposed amendment does not conflict with the policies and action programs of the Master Plan as outlined in the Master Plan and Area Plan analysis above.

2. Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.

Staff Comment: As identified on page 8 of this staff report, the proposed amendment will increase land use compatibility. Several agencies related to public health and safety—including the Truckee Meadows Fire Protection District, the Washoe County Health District, the Washoe County Sheriff, and the Washoe County Engineering Division—reviewed this proposal and had no concerns. The change should not adversely impact public health, safety or welfare.

3. Response to Change Conditions. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.

Staff Comment: The applicants are seeking a Master Plan Amendment in order to pursue a residential subdivision with an increased number of dwelling units than what is currently allowed. Due to drainage improvement projects, with the anticipated approval of a LOMR there will no longer be floodplain on the northern portion of the property. All areas currently designated as floodplain fall within the OS regulatory zone. This parcel is no longer surrounded by rural land uses—rather, it is surrounded by residential development and zoning on three sides that allows for densities ranging from three to eight units per acre. The proposed land use is more appropriate for the current condition of the parcel and development in the area.

4. Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed master plan designation.

Staff Comment: All needed services are near the project area, including public safety facilities. All impacted agencies received a notice of the application for the amendment and no comments in opposition were received. As described on page 9, all necessary facilities are available and adequate.

5. Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.

Staff Comment: The proposed amendment will promote the desired pattern for the orderly physical growth of the County by allowing for suburban use of the subject parcel, which is

already largely surrounded by suburban zoning and development. It takes advantage of the parcel's location within the TMSA and proximity to infrastructure and services.

6. Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

Staff Comment: The Nevada National Guard administers APN # 086-130-05 per the Swan Lake Nature Study Area Master Plan. The southeast corner of this parcel is 2,900 feet from the project area. The subject property is currently designated for residential use and will continue to be designated as such. The intensity of development proposed is comparable to development in the City of Reno that is closer to the potential military installation on APN # 086-130-05. The Nevada National Guard was noticed and did not respond with any concerns. Therefore, this proposal will not affect the location, purpose and mission of the military installation.

The North Valleys Area Plan also requires that the following findings be made for the approval of an MPA:

NV.21.1 In order for the Washoe County Planning Commission to recommend the approval of ANY amendment to the North Valleys Area Plan, the following findings must be made:

- a. The amendment will further implement and preserve the Vision and Character Statement.
- b. The amendment conforms to all applicable policies of the North Valleys Area Plan and the Washoe County Master Plan, and the Regional Water Management Plan.
- c. The amendment will not conflict with the public's health, safety or welfare.

Staff Comment: The proposed amendment will implement and preserve the Vision and Character Statement by supporting the provision of a variety of housing types and densities. The associated Regulatory Zone Amendment also provides OS regulatory zoning well suited to the development of multi-use trails. This proposal was reviewed against the Swan Lake Nature Study Area Master Plan and does not contradict that plan, consistent with the Vision Statement's stated value of Swan Lake and its associated wetlands. As described throughout this staff report, the proposal conforms with all applicable policies of the Master Plan and will not conflict with the public's health, safety, or welfare. The Washoe County Water Rights Manager and Washoe County Engineering Division reviewed this proposal and had no concerns regarding conformance with the Regional Water Management Plan.

Findings—Regulatory Zone Amendment

WCC Section 110.821.15(d) of Article 821, *Amendment of Regulatory Zone*, requires that all of the following findings be made to the satisfaction of the Washoe County Planning Commission before recommending adoption to the Board of County Commissioners. Staff has completed an analysis of the Regulatory Zone Amendment application and has determined that the proposal is in compliance with the required findings as follows.

1. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan and the Regulatory Zone Map.

Staff Comment: The staff report provides a discussion of applicable goals and policies of the North Valleys Area Plan. The proposed amendment does not conflict with the policies and action programs of the Master Plan as outlined in the Master Plan and Area Plan analysis above.

2. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.

Staff Comment: As identified on page 8 of this staff report, the proposed amendment will increase land use compatibility. Several agencies related to public health and safety—including the Truckee Meadows Fire Protection District, the Washoe County Health District, the Washoe County Sheriff, and the Washoe County Engineering Division—reviewed this proposal and had no concerns. The change should not adversely impact public health, safety or welfare.

3. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.

Staff Comment: The applicants are seeking a Regulatory Zone Amendment in order to pursue a residential subdivision. Due to drainage improvement projects, with the approval of a LOMR there will no longer be floodplain on the northern portion of the property. This parcel is no longer surrounded by rural land uses—rather, it is surrounded by residential development and zoning on three sides that allows for densities ranging from three to eight units per acre. The proposed land use is more appropriate for the current condition of the parcel and development in the area.

4. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed amendment.

Staff Comment: All needed services are near the project area, including public safety facilities. All impacted agencies received a notice of the application for the amendment and no comments in opposition were received. As described on page 9, all necessary facilities are available and adequate.

5. The proposed amendment will not adversely affect the implementation of the policies and action programs of the Washoe County Master Plan.

Staff Comment: The proposed amendment will not adversely impact the implementation of the policies and action programs of the Washoe County Master Plan, per the analysis on pages 9-11 of this staff report.

6. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.

Staff Comment: The proposed amendment will promote the desired pattern for the orderly physical growth of the County by allowing for suburban use of the subject parcel, which is already largely surrounded by suburban zoning and development. It takes advantage of the parcel's location within the TMSA and proximity to infrastructure and services.

7. Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

Staff Comment: The Nevada National Guard administers APN # 086-130-05 per the Swan Lake Nature Study Area Master Plan. The southeast corner of this parcel is 2,900 feet from the project area. The subject property is currently designated for residential use and will continue to be designated as such. The intensity of development proposed is comparable to development in the City of Reno that is closer to the potential military installation on APN # 086-130-05. The Nevada National Guard was noticed and did not respond with any concerns. Therefore, this proposal will not affect the location, purpose and mission of the military installation.

The North Valleys Area Plan also requires that the following findings be made for the approval of an RZA:

NV.21.3 In order for the Washoe County Planning Commission to recommend approval of any amendment involving a change of land use, the following findings must be made:

- a. A feasibility study has been conducted, commissioned and paid for by the applicant, relative to municipal water, sewer and storm water that clearly identifies the improvements likely to be required to support the intensification, and those improvements have been determined to be in substantial compliance with all applicable existing facilities and resource plans for North Valleys by the Department of Water Resources. The Department of Water Resources will establish and maintain the standards and methodologies for these feasibility studies.

Staff Comment: The applicant included a feasibility study related to wastewater and stormwater in their application. Water will be provided by TMWA. The Washoe County Engineering Division reviewed these studies and indicated no concerns.

- b. A traffic analysis has been conducted that clearly identifies the impact to the adopted level of service within the North Valleys planning area and the improvements likely to be required to maintain/achieve the adopted level of service. This finding may be waived by the Department of Public Works for projects that are determined to have minimal impacts. The Department of Public Works may request any information it deems necessary to make this determination.

Staff Comment: The applicant included a traffic impact study (TIS) in their application that identified that all impacted intersections and roads will maintain an acceptable LOS. RTC commented indicating that improvements will need to be made at the intersection of Lemmon Dr and Fleetwood Dr. Necessary infrastructure improvements will be required with future review of a development proposal.

- c. For amendments that propose new or intensified commercial land use, the scale of the intended use has been shown to be community serving in nature.

Staff Comment: This proposal includes no commercial land use; therefore, this finding is not applicable.

- d. For residential land use intensifications, the potential increase in residential units will not exceed Washoe County's applicable policy growth level for the North Valleys Area Plan, as established under Goal One.

Staff Comment: Per the analysis under "Area Plan Evaluation," the potential increase in residential units will not exceed the policy growth level established under Goal One.

- e. If the proposed intensification will result in a drop below the established policy level of service for transportation (as established by the Regional Transportation Commission and Washoe County) within the North Valleys planning area, the necessary improvements required to maintain the established level of service are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification. For impacts to regional roads, the Washoe County Planning Commission, upon written request from the Regional Transportation Commission, may waive this finding.

Staff Comment: The established policy LOS for transportation in the North Valleys planning area is C. Per the TIS, all impacted intersections and roadways will maintain an acceptable LOS. RTC indicated that improvements will need to be made at the intersection of Lemmon Dr. and

Fleetwood Dr. to mitigate impacts to the regional roadway system but did not indicate that this proposal will significantly impact the LOS of the roads.

- f. If roadways impacted by the proposed intensification are currently operating below adopted levels of service, the intensification will not require infrastructure improvements beyond those articulated in Washoe County and regional transportation plans AND the necessary improvements are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification.

Staff Comment: The TIS provided by the applicant indicates that all roadways and intersections are currently operating at an acceptable level of service.

- g. Washoe County will work to ensure that the long-range plans of facilities providers for transportation, water resources, schools and parks reflect the policy growth level established in Policy 1.2.

Staff Comment: There are sufficient facilities and infrastructure to support the proposed increase in density; therefore, there are no concerns regarding the long-range plans of facility providers.

- h. If the proposed intensification results in existing public school facilities exceeding design capacity and compromises the Washoe County School District's ability to implement the neighborhood school philosophy for elementary facilities, then there must be a current capital improvement plan or rezoning plan in place that would enable the District to absorb the additional enrollment. The Washoe County Planning Commission, upon request of the Washoe County School Board of Trustees, may waive this finding.

Staff Comment: The Washoe County School District received this application and indicated no concerns; therefore, this criterion is met.

- i. Any existing development in the North Valleys planning area, the Forest planning area, or the Northeast Truckee Meadows planning area which is subject to the conditions of a special use permit will not experience undue hardship in the ability to continue to comply with the conditions of the special use permit or otherwise to continue operation of its permitted activities.

Staff Comment: There are no approved special use permits on or adjacent to the subject parcel; therefore, this finding is not applicable.

Neighborhood Meeting

NRS 278.210(2) and WCC Section 110.820.20 require a neighborhood meeting for any proposed Master Plan Amendment. The neighborhood meeting was held at 255 Patrician Dr. on February 22, 2023, from 6:30 pm to 8:00 pm, with approximately 9 people in attendance. Concerns and topics discussed included access to the backyards on existing lots, the height of future houses on the subject parcel, and traffic. Topics relevant to the MPA/RZA request are addressed in this staff report. Topics relevant to the tentative map will be addressed during a future review.

Public Notice

Notice for Master Plan Amendments must be given in accordance with the provisions of Nevada Revised Statutes 278.210(1), as amended, and WCC Section 110.820.23. Notice was provided in a newspaper of general circulation within Washoe County at least 10 days before the public hearing date. A legal ad was placed with the Reno Gazette Journal.

Notice for Regulatory Zone Amendments must be given in accordance with the provisions of Nevada Revised Statutes 278.260, as amended, and WCC Section 110.821.20. Notice was

provided in a newspaper of general circulation within Washoe County at least 10 days before the public hearing date. A legal ad was placed with the Reno Gazette Journal.

Master Plan Amendment Recommendation

It is recommended that the Washoe County Planning Commission adopt the resolution contained at Attachment A of this staff report to amend the Master Plan as set forth in Master Plan Amendment Case Number WMPA23-0006. It is further recommended that the Planning Commission forward the Master Plan Amendment to the Washoe County Board of County Commissioners for their consideration of adoption. The following motion is provided for your consideration:

Master Plan Amendment Motion

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Washoe County Planning Commission adopt the resolution contained at Attachment A of this staff report to amend the Master Plan as set forth in Master Plan Amendment Case Number WMPA23-0006 having made at least three of the five findings set forth in Washoe County Code Section 110.820.15(d)(1)-(5), the additional finding in Section 110.820.15(d)(6), and having made three findings in accordance with North Valleys Area Plan Policy NV.21.1. I further move to certify the resolution and the proposed Master Plan Amendments in WMPA23-0006 as set forth in this staff report for submission to the Washoe County Board of County Commissioners and authorize the chair to sign the resolution on behalf of the Planning Commission.

1. Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan.
2. Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.
3. Response to Change Conditions. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.
4. Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed Master Plan designation.
5. Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.
6. Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

North Valleys Area Plan Findings NV.21.1

- a. The amendment will further implement and preserve the Vision and Character Statement.
- b. The amendment conforms to all applicable policies of the North Valleys Area Plan and the Washoe County Master Plan, and the Regional Water Management Plan.
- c. The amendment will not conflict with the public's health, safety or welfare.

Regulatory Zone Amendment Recommendation

After a thorough analysis and review, it is recommended that the proposed Regulatory Zone Amendment be recommended for adoption to the Board of County Commissioners. The following motion is provided for your consideration:

Regulatory Zone Amendment Motion

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Planning Commission adopt the resolution included as Exhibit B, recommending adoption of Regulatory Zone Amendment Case Number WRZA23-0006, having made all of the following findings in accordance with Washoe County Code Section 110.821.15(d) and having made all relevant findings of North Valleys Area Plan Policy NV.21.3. I further move to certify the resolution and the proposed Regulatory Zone Amendment in WRZA23-0006 as set forth in this staff report for submission to the Washoe County Board of Commissioners and authorize the chair to sign the resolution on behalf of the Washoe County Planning Commission.

1. Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan and the Regulatory Zone Map.
2. Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.
3. Response to Change Conditions; more desirable use. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.
4. Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed amendment.
5. No Adverse Effects. The proposed amendment will not adversely affect the implementation of the policies and action programs of the Washoe County Master Plan.
6. Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.
7. Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

North Valleys Area Plan Findings NV.21.3

- a. A feasibility study has been conducted, commissioned and paid for by the applicant, relative to municipal water, sewer and storm water that clearly identifies the improvements likely to be required to support the intensification, and those improvements have been determined to be in substantial compliance with all applicable existing facilities and resource plans for North Valleys by the Department of Water Resources. The Department of Water Resources will establish and maintain the standards and methodologies for these feasibility studies.
- b. A traffic analysis has been conducted that clearly identifies the impact to the adopted level of service within the North Valleys planning area and the improvements likely to be required to maintain/achieve the adopted level of service. This finding may be waived by

the Department of Public Works for projects that are determined to have minimal impacts. The Department of Public Works may request any information it deems necessary to make this determination.

- c. For amendments that propose new or intensified commercial land use, the scale of the intended use has been shown to be community serving in nature.
- d. For residential land use intensifications, the potential increase in residential units will not exceed Washoe County's applicable policy growth level for the North Valleys Area Plan, as established under Goal One.
- e. If the proposed intensification will result in a drop below the established policy level of service for transportation (as established by the Regional Transportation Commission and Washoe County) within the North Valleys planning area, the necessary improvements required to maintain the established level of service are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification. For impacts to regional roads, the Washoe County Planning Commission, upon written request from the Regional Transportation Commission, may waive this finding.
- f. If roadways impacted by the proposed intensification are currently operating below adopted levels of service, the intensification will not require infrastructure improvements beyond those articulated in Washoe County and regional transportation plans AND the necessary improvements are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification.
- g. Washoe County will work to ensure that the long-range plans of facilities providers for transportation, water resources, schools and parks reflect the policy growth level established in Policy 1.2.
- h. If the proposed intensification results in existing public school facilities exceeding design capacity and compromises the Washoe County School District's ability to implement the neighborhood school philosophy for elementary facilities, then there must be a current capital improvement plan or rezoning plan in place that would enable the District to absorb the additional enrollment. The Washoe County Planning Commission, upon request of the Washoe County School Board of Trustees, may waive this finding.
- i. Any existing development in the North Valleys planning area, the Forest planning area, or the Northeast Truckee Meadows planning area which is subject to the conditions of a special use permit will not experience undue hardship in the ability to continue to comply with the conditions of the special use permit or otherwise to continue operation of its permitted activities.

Appeal Process

Planning Commission action will be effective 10 calendar days after the written decision is filed with the Secretary to the Planning Commission and mailed to the original applicant, unless the action is appealed to the Washoe County Board of County Commissioners, in which case the outcome of the appeal shall be determined by the Washoe County Board of County Commissioners. Any appeal must be filed in writing with the Planning and Building Division within 10 calendar days from the date the written decision is filed with the Secretary to the Planning Commission and mailed to the original applicant.

Applicant: Karter Consulting Group, PC, ken@kraterconsultinggroup.com

Property Owner: Learner, Brett H & Learner, Bryan A

Representatives: LC Learner, LLC, jholbrook@landcapip.com



RESOLUTION OF THE WASHOE COUNTY PLANNING COMMISSION

ADOPTING AMENDMENTS TO THE WASHOE COUNTY MASTER PLAN, NORTH VALLEYS AREA PLAN, MASTER PLAN MAP (WMPA23-0006) TO REDESIGNATE 8.566 ACRES OF A 19.926 ACRE PARCEL FROM RURAL (R) TO SUBURBAN RESIDENTIAL (SR), AND RECOMMENDING ADOPTION OF THESE AMENDMENTS TO THE BOARD OF COUNTY COMMISSIONERS (PORTIONS OF APN 080-461-08)

Resolution 23-12

Whereas, Master Plan Amendment Case Number WMPA23-0006 came before the Washoe County Planning Commission for a duly noticed public hearing on August 1, 2023; and

Whereas, the Washoe County Planning Commission heard public comment and input from both staff and the public regarding the proposed master plan amendments; and

Whereas, the Washoe County Planning Commission gave reasoned consideration to the information it received regarding the proposed master plan amendments;

Whereas, the Washoe County Planning Commission has made the following findings necessary to support adoption of the proposed Master Plan Amendment Case Number WMPA23-0006, as set forth in NRS Chapter 278 and Washoe County Code Chapter 110 (Development Code), Article 820:

Washoe County Code Section 110.820.15 (d) Master Plan Amendment Findings

1. Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan.
2. Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.
3. Response to Change Conditions. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.
4. Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed Master Plan designation.
5. Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.
6. Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

North Valleys Area Plan Required Findings

Policy SV.21.1:

- a. The amendment will further implement and preserve the Vision and Character Statement.
- b. The amendment conforms to all applicable policies of the North Valleys Area Plan and the Washoe County Master Plan, and the Regional Water Management Plan.
- c. The amendment will not conflict with the public's health, safety or welfare.

Now, therefore, be it resolved that pursuant to NRS 278.210(3):

- (1) Subject to approval by the Washoe County Board of County Commissioners, approval of a regional plan amendment to the Truckee Meadows Regional Plan, and a finding of conformance with the Truckee Meadows Regional Plan, the Washoe County Planning Commission does hereby adopt Master Plan Amendment Case Number WMPA23-0006, comprised of the map as included at Exhibit A to this resolution, descriptive matter and other matter intended to constitute the amendments as submitted at the public hearing noted above; and
- (2) To the extent allowed by law, this approval is subject to the conditions adopted by the Planning Commission at the public hearing noted above.

A certified copy of this resolution shall be submitted to the Board of County Commissioners and any appropriate reviewing agencies in accordance with NRS 278.220.

ADOPTED on August 1, 2023

WASHOE COUNTY PLANNING COMMISSION

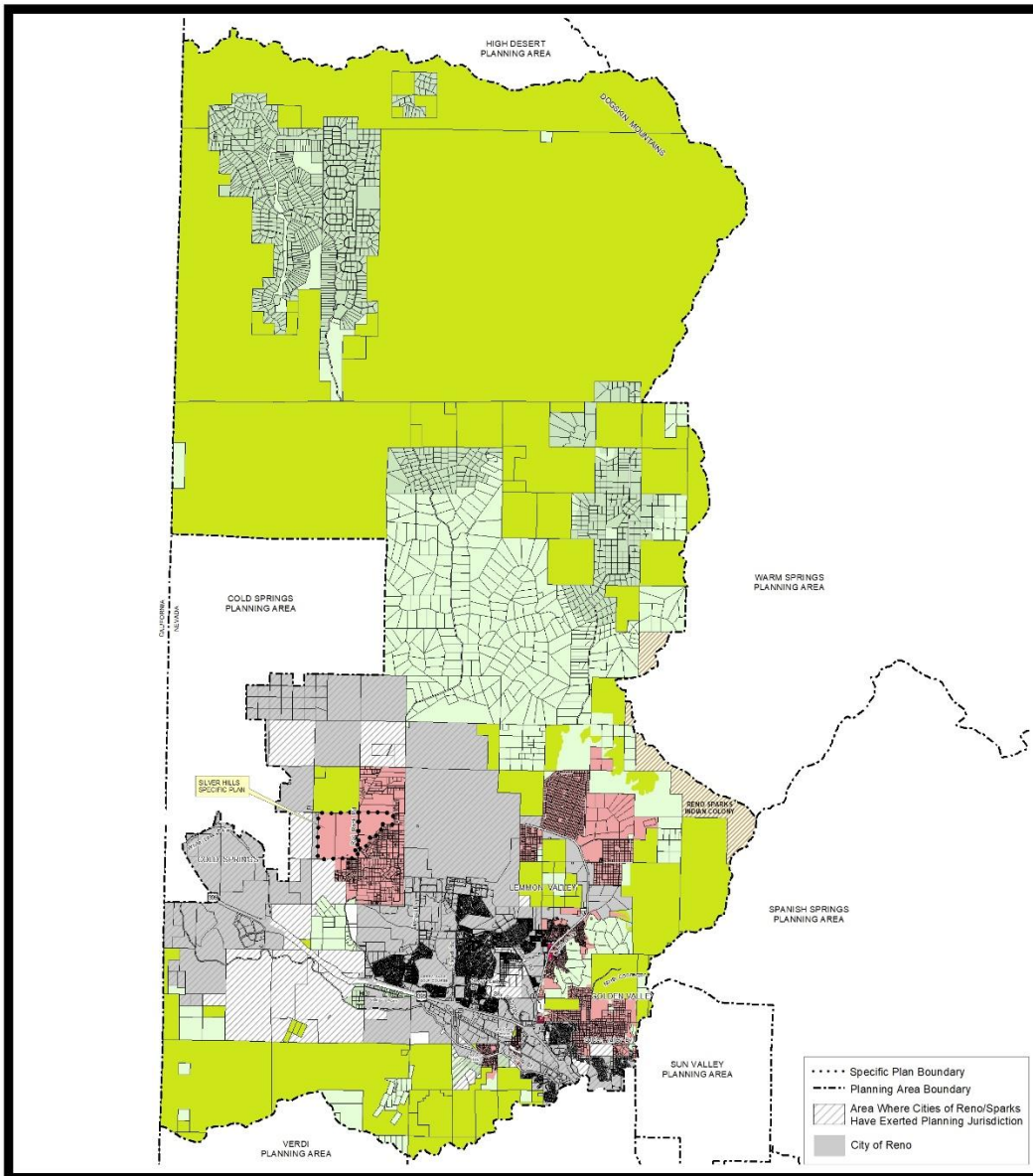
ATTEST:

Trevor Lloyd, Secretary

Rob Pierce, Chair

Attachment: Exhibit A – North Valleys Master Plan Map

Exhibit A, WMPA23-0006



NORTH VALLEYS MASTER PLAN MAP

- RURAL
- RURAL RESIDENTIAL
- SUBURBAN RESIDENTIAL
- URBAN RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- OPEN SPACE

Planning and Building Division

NOTE: THE SCALE AND CONFIGURATION OF ALL INFORMATION SHOWN HEREON ARE APPROXIMATE ONLY AND ARE NOT INTENDED AS A GUIDE FOR DESIGN OR SURVEY WORK. REPRODUCTION IS NOT PERMITTED WITHOUT PRIOR WRITTEN PERMISSION FROM THE WASHOE COUNTY PLANNING AND BUILDING DIVISION.

0 250 500 750 1000

CERTIFICATION:
THIS DOCUMENT HAS BEEN REVIEWED AND APPROVED AS AN ACCURATE REPRESENTATION OF THE ADOPTED MASTER PLAN MAPS OF WASHOE COUNTY, NEVADA, BY THE WASHOE COUNTY PLANNING AND BUILDING DIVISION.

DATE: _____ DIRECTOR: _____

**Community Services
Department**

**WASHOE COUNTY
NEVADA**

1001 E. Ninth St.
Reno, Nevada 89512

775-328-3600

PC Date: August 1, 2023
BCC Date: _____
B/C Address: 1302



RESOLUTION OF THE WASHOE COUNTY PLANNING COMMISSION

RECOMMENDING ADOPTION OF REGULATORY ZONE AMENDMENT CASE NUMBER WRZA23-0006 WHICH AMENDS THE NORTH VALLEYS AREA PLAN REGULATORY ZONE MAP TO REDESIGNATE 5 ACRES OF A 19.926-ACRE PARCEL FROM MEDIUM DENSITY SUBURBAN (MDS) TO HIGH DENSITY SUBURBAN (HDS), TO REDESIGNATE 3.27 ACRES OF THE SAME PARCEL FROM MEDIUM DENSITY SUBURBAN (MDS) TO OPEN SPACE (OS), TO REDESIGNATE 2.35 ACRES OF THE SAME PARCEL FROM GENERAL RURAL (GR) TO MEDIUM DENSITY SUBURBAN (MDS), TO REDESIGNATE 5.59 ACRES OF THE SAME PARCEL FROM GENERAL RURAL (GR) TO HIGH DENSITY SUBURBAN (HDS), AND TO REDESIGNATE .53 ACRES OF THE SAME PARCEL FROM GENERAL RURAL (GR) TO OPEN SPACE (OS) (APN 080-461-08)

Resolution 23-13

Whereas Regulatory Zone Amendment Case Number WRZA23-0006, came before the Washoe County Planning Commission for a duly noticed public hearing on August 1, 2023; and

Whereas the Washoe County Planning Commission heard public comment and input from staff regarding the proposed regulatory zone amendment; and

Whereas, the Washoe County Planning Commission has given reasoned consideration to the information it has received regarding the proposed regulatory zone amendment; and

Whereas, the Washoe County Planning Commission has made the findings necessary to support adoption of this proposed regulatory zone amendment as set forth in NRS Chapter 278 and Washoe County Code Chapter 110, Article 821, Amendment of Regulatory Zone;

Whereas the proposed regulatory zone amendment shall be recommended for adoption pending adoption of the accompanying proposed Master Plan Amendment (WMPA23-0006) by the Washoe County Board of County Commissioners and a finding of conformance by the Truckee Meadows Regional Planning Commission; and

Whereas, pursuant to Washoe County Code Section 110.821.15(d), in making this recommendation, the Washoe County Planning Commission finds that this proposed regulatory zone amendment meets the following requirements:

1. Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan;

2. Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare;
3. Response to Change Conditions; more desirable use. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land;
4. Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed amendment;
5. No Adverse Effects. The proposed amendment will not adversely affect the implementation of the policies and action programs of the Washoe County Master Plan,
6. Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services; and
7. Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

North Valleys Area Plan Required Findings

Policy SV.21.3:

- a. A feasibility study has been conducted, commissioned and paid for by the applicant, relative to municipal water, sewer and storm water that clearly identifies the improvements likely to be required to support the intensification, and those improvements have been determined to be in substantial compliance with all applicable existing facilities and resource plans for North Valleys by the Department of Water Resources. The Department of Water Resources will establish and maintain the standards and methodologies for these feasibility studies.
- b. A traffic analysis has been conducted that clearly identifies the impact to the adopted level of service within the North Valleys planning area and the improvements likely to be required to maintain/achieve the adopted level of service. This finding may be waived by the Department of Public Works for projects that are determined to have minimal impacts. The Department of Public Works may request any information it deems necessary to make this determination.
- c. For amendments that propose new or intensified commercial land use, the scale of the intended use has been shown to be community serving in nature.
- d. For residential land use intensifications, the potential increase in residential units will not exceed Washoe County's applicable policy growth level for the North Valleys Area Plan, as established under Goal One.
- e. If the proposed intensification will result in a drop below the established policy level of service for transportation (as established by the Regional Transportation Commission and Washoe County) within the North Valleys planning area, the necessary improvements

required to maintain the established level of service are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification. For impacts to regional roads, the Washoe County Planning Commission, upon written request from the Regional Transportation Commission, may waive this finding.

- f. If roadways impacted by the proposed intensification are currently operating below adopted levels of service, the intensification will not require infrastructure improvements beyond those articulated in Washoe County and regional transportation plans AND the necessary improvements are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification.
- g. Washoe County will work to ensure that the long range plans of facilities providers for transportation, water resources, schools and parks reflect the policy growth level established in Policy 1.2.
- h. If the proposed intensification results in existing public school facilities exceeding design capacity and compromises the Washoe County School District's ability to implement the neighborhood school philosophy for elementary facilities, then there must be a current capital improvement plan or rezoning plan in place that would enable the District to absorb the additional enrollment. The Washoe County Planning Commission, upon request of the Washoe County School Board of Trustees, may waive this finding.
- i. Any existing development in the North Valleys planning area, the Forest planning area, or the Northeast Truckee Meadows planning area which is subject to the conditions of a special use permit will not experience undue hardship in the ability to continue to comply with the conditions of the special use permit or otherwise to continue operation of its permitted activities.

Now, therefore, be it resolved that the Washoe County Planning Commission does hereby recommend adoption of Regulatory Zone Amendment Case Number WRZA23-0006 and the amended North Valleys Area Plan Regulatory Zone Map included as Exhibit A to this resolution to the Washoe County Board of County Commissioners.

ADOPTED on August 1, 2023.

WASHOE COUNTY PLANNING COMMISSION

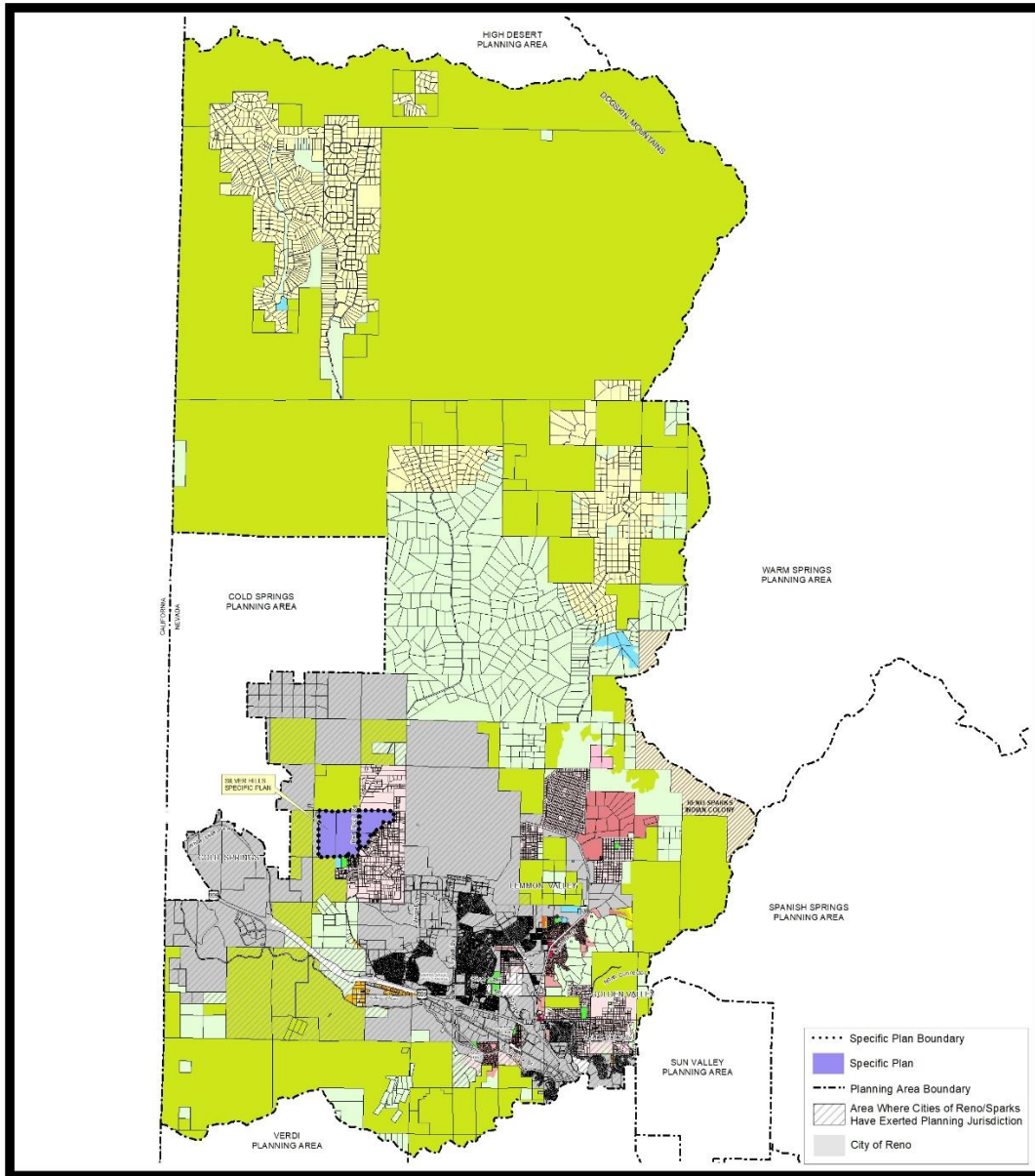
ATTEST:

Trevor Lloyd, Secretary

Rob Pierce, Chair

Attachment: Exhibit A – North Valleys Area Plan Regulatory Zone Map

Exhibit A – WRZA23-0006



NORTH VALLEYS REGULATORY ZONE MAP

| | | |
|--|---|--|
| <ul style="list-style-type: none"> LOW DENSITY RURAL MEDIUM DENSITY RURAL HIGH DENSITY RURAL LOW DENSITY SUBURBAN LOW DENSITY SUBURBAN 2 MEDIUM DENSITY SUBURBAN MEDIUM DENSITY SUBURBAN 4 | <ul style="list-style-type: none"> HIGH DENSITY SUBURBAN LOW DENSITY URBAN MEDIUM DENSITY URBAN HIGH DENSITY URBAN GENERAL COMMERCIAL NEIGHBORHOOD COMMERCIAL/OFFICE TOURIST COMMERCIAL | <ul style="list-style-type: none"> INDUSTRIAL PUBLIC AND SEMI-PUBLIC FACILITIES PARKS AND RECREATION OPEN SPACE GENERAL RURAL GENERAL RURAL AGRICULTURAL DRY LAKE/WATER BODY |
|--|---|--|

Planning and Building Division

NOTE: THE SCALE AND CONTINUATION OF ALL INFORMATION SHOWN HEREON ARE APPROXIMATE ONLY AND ARE NOT INTENDED AS A GUIDE FOR DESIGN OR SURVEY WORK. REPRODUCTION IS NOT PERMITTED WITHOUT PRIOR WRITTEN PERMISSION FROM THE WASHOE COUNTY PLANNING AND BUILDING DIVISION.

DATE: _____ DIRECTOR: _____

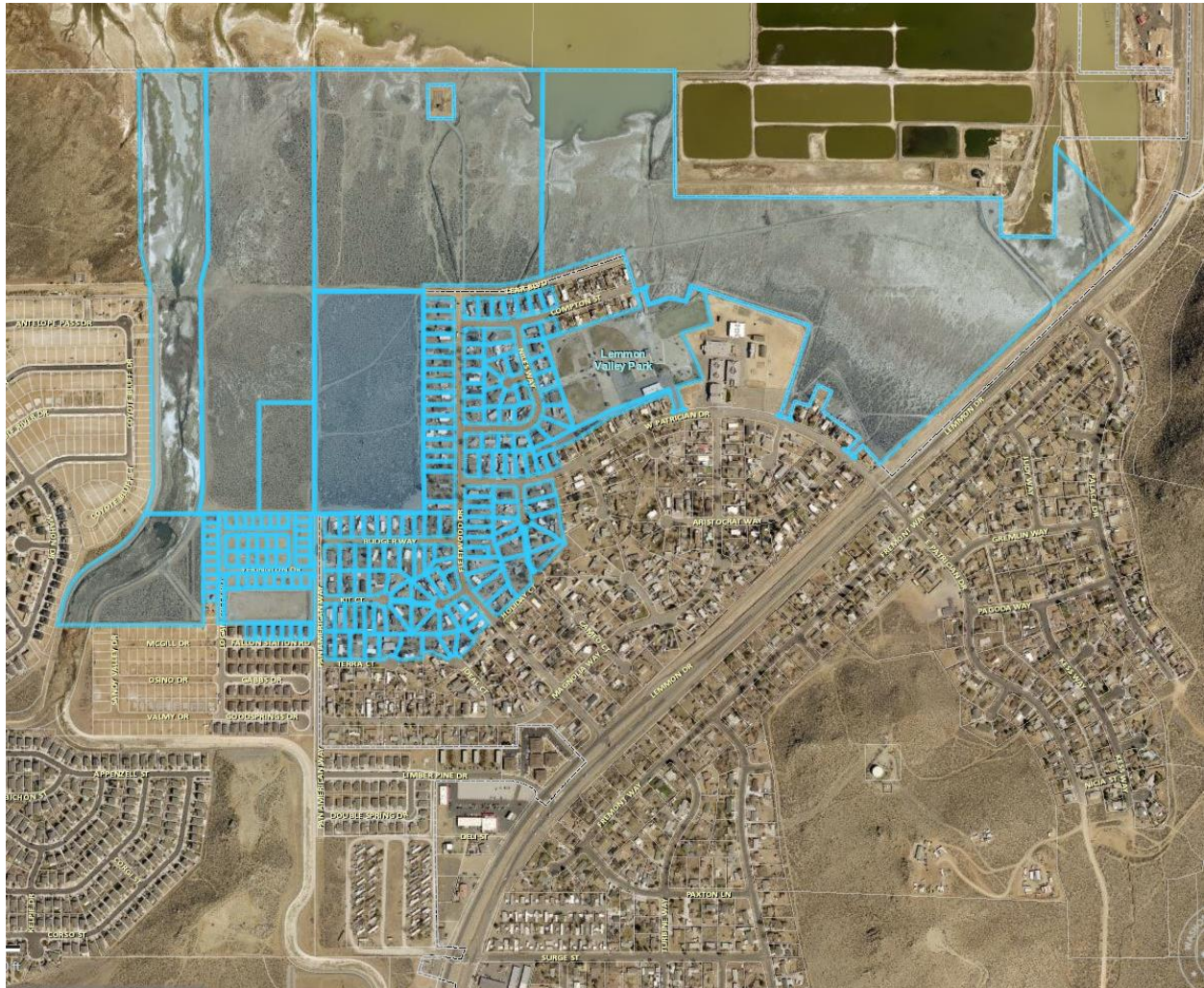
Community Services Department

WASHOE COUNTY NEVADA

1001 E. Ninth St.
Reno, Nevada 89512 (775) 328-3500

Public Notice

Washoe County Code requires that public notification for a special use permit must be mailed to a minimum of 30 separate property owners within a minimum 750-foot radius of the subject property a minimum of 10 days prior to the public hearing date. A notice setting forth the time, place, purpose of hearing, a description of the request and the land involved was sent within a 750-foot radius of the subject property. A notice was also sent to the Nevada National Guard for a potential military installation on APN #086-130-05. A total of 191 separate property owners were noticed a minimum of 10 days prior to the public hearing date.



Public Notice Map

Case Number WMP23-0006/WRZA23-0006 Learner Lemmon

WASHOE COUNTY HEALTH DISTRICT

ENHANCING QUALITY OF LIFE

May 19, 2023

Kat Oakley
Planner
Washoe County Community Services Department
Planning and Building Division
1001 E. 9th Street
Reno, NV 89512

Dear Ms. Oakley,

The EMS Oversight Program received the May Agency Memo II, requesting our review of the Master Plan Amendment Case Number WMPA23-0006 and WRZA23-0006 (Learner Lemmon).

Based on the documentation provided, there may be traffic impacts that create an impact on emergency medical services response time in the area of the proposed 87 lot development. However, should you need a complete Environmental Impact Assessment, please contact the Washoe County Health District's Division of Environment Health Services at (775) 328-2434. This letter does not constitute a complete Environment Impact Assessment.

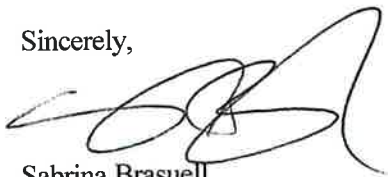
Advanced Life Support (ALS) fire and EMS services are provided by Truckee Meadows Fire Protection District and ALS ambulance services are provided by REMSA and Truckee Meadows Fire Protection District through a Franchise agreement with the Washoe County Health District. For the proposed site of the Learner Lemmon development, REMSA's Franchise response requirement for life-threatening calls is 8 minutes and 59 seconds for 90 percent of calls.

The closest hospital to the proposed site of the Learner Lemmon development, should residents require such services, is Saint Mary's Regional Medical Center which is 10.7 miles away. There are also several other acute care hospitals and healthcare resources available in Washoe County.

It is recommended that the address numbers are clearly marked on the structures so the residents can be quickly located by public safety agencies. Additionally, please ensure that all dwellings will meet ADA requirements, as appropriate.

Please feel free to contact me if you have any questions at emsprogram@washoecounty.gov.

Sincerely,



Sabrina Brasuell
EMS Coordinator
Washoe County Health District EMS Oversight Program
sbrasuell@washoecounty.gov
(775) 326-6043

EPIDEMIOLOGY AND PUBLIC HEALTH PREPAREDNESS
1001 East Ninth Street | P.O. Box 11130 | Reno, Nevada 89520
EPHP Office: 775-326-6055 | Fax: 775-325-8130 | washoecounty.us/health
Serving Reno, Sparks and all of Washoe County, Nevada. Washoe County is an Equal Opportunity Employer.



Public Health

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT D**

Oakley, Katherine

From: Program, EMS
Sent: Wednesday, June 21, 2023 1:27 PM
To: Oakley, Katherine
Cc: Program, EMS
Subject: FW: May Agency Review Memo II - Master Plan Amendment Case Number WMPA23-0006 and WRZA23-0006 (Learner Lemmon)
Attachments: May Agency Review Memo II.pdf; Learner Lemmon Letter_signed.pdf

Good afternoon,

For clarification purposes, I wanted to send a follow up to the letter/email previously sent.

The letter attached mentions this communication not constituting an Environment Impact Assessment. This letter template is used for partners outside of the Washoe County agency. This sentence is a reminder of the role of the EMS Oversight Program and our span of review and participation. There are no concerns about the proposed Master Plan Amendment Case Number WMPA23-0006 and WRZA23-0006 (Learner Lemmon) from the EMS Oversight Program.

Thank you,

Sabrina.

Sabrina Brasuell

Pronouns: she/her

Office hours: 7:00AM – 3:30PM Remote on Mondays

EMS Coordinator | Epidemiology and Public Health Preparedness

Washoe County Health District

sbrasuell@washoecounty.gov | Cell: (775) 830-7118 | Office: (775) 326-6043

1001 E. Ninth St., Bldg. B. Reno, NV 89512



Please take our customer satisfaction survey by clicking [here](#)

From: Program, EMS <EMSProgram@washoecounty.gov>
Sent: Friday, May 19, 2023 9:15 AM
To: Oakley, Katherine <KOakley@washoecounty.gov>
Cc: Program, EMS <EMSProgram@washoecounty.gov>
Subject: FW: May Agency Review Memo II - Master Plan Amendment Case Number WMPA23-0006 and WRZA23-0006 (Learner Lemmon)

Hello,

The EMS Program has reviewed the May Agency Review Memo II - Master Plan Amendment Case Number WMPA23-0006 and WRZA23-0006 (Learner Lemmon) - and an attached letter provides a detailed response from the Program.

Thank you,

Sabrina.

Date: May 25, 2023

To: Kat Oakley, Planner

From: Robert Wimer, P.E., Licensed Engineer

Re: Learner Lemmon

Master Plan Amendment WMPA23-0006; Regulatory Zone Amendment WRZA23-0006

APN: 080-461-08

Washoe County Engineering staff has reviewed the above referenced application. The Engineering and Capital Projects Division recommends approval.

Oakley, Katherine

From: Way, Dale
Sent: Tuesday, May 16, 2023 12:22 PM
To: Oakley, Katherine
Cc: Lemon, Brittany
Subject: WMPA23-0006 (Learner Lemmon) - Conditions of Approval

Kat,

“This project shall meet and comply with all requirements of currently adopted TMFPD fire codes, ordinances, and standards at the time of construction to include infrastructure for fire apparatus access roads and water supply.”

<https://tmfpd.us/fire-code/>.

This parcel is located in Moderate Hazard WUI Zone.

Thank you.

Dale Way

Deputy Fire Chief – Fire Prevention | Truckee Meadows Fire & Rescue

dway@tmfpd.us | Office: 775.326.6000

3663 Barron Wy, Reno, NV 89511



“Committed to excellence, service, and the protection of life and property in our community”

**WASHOE COUNTY
HEALTH DISTRICT**
ENHANCING QUALITY OF LIFE

May 30, 2023

Washoe County Community Services
Planning and Development Division

RE: Learner Lemmon; 080-461-08
Master Plan and Regulatory Zone Amendment; WMPA23-0006 & WRZA23-0006

Dear Washoe County Staff:

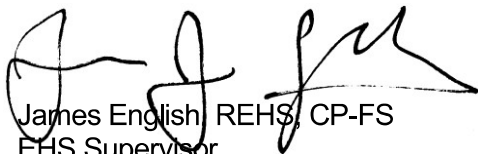
The following conditions are requirements of the Washoe County Health District, Environmental Health Services Division, (WCHD), which shall be responsible for determining compliance with these conditions.

Contact Name – James English - jenglish@washoecounty.us

- a) Condition #1: The WCHD has reviewed the above referenced application and has no issues with the proposed application.
- b) Condition #2: If the project is approved as submitted, all future plans and development of the parcel must be reviewed and approved by the WCHD.

If you have any questions or would like clarification regarding the foregoing, please contact James English, EHS Supervisor at jenglish@washoecounty.us regarding all Health District comments.

Sincerely,



James English, REHS, CP-FS
EHS Supervisor
Environmental Health Services
Washoe County Health District



Oakley, Katherine

From: Pekar, Faye-Marie L.
Sent: Friday, June 9, 2023 3:20 PM
To: Oakley, Katherine
Subject: RE: May Agency Reviews II WMPA23-0006 and WRZA23-0006 (Learner Lemmon)

Hi Kat,

Thank you for the additional information. Based on my review on behalf of Parks, I do not have any comments for I WMPA23-0006 and WRZA23-0006 (Learner Lemmon).

Sincerely,



Faye-Marie L. Pekar, MPA

Park Planner, Planning & Building Division | Community Services Department

fpekar@washoecounty.gov |

Visit us first online: www.washoecounty.gov/csd

Planning Division: 775.328.6100 | Planning@washoecounty.gov

CSD Office Hours: Monday-Friday 8:00am to 4:00pm

1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience? Submit a nomination for a Washoe Star by clicking this link: [**WASHOE STAR**](#)

From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Tuesday, June 6, 2023 6:44 PM
To: Pekar, Faye-Marie L. <FPekar@washoecounty.gov>
Subject: RE: May Agency Reviews II WMPA23-0006 and WRZA23-0006 (Learner Lemmon)

Hi,

I attached their zoning map. Let me know if you have any additional comments!

Best,



Kat Oakley

Planner, Planning & Building Division | Community Services Department

koakley@washoecounty.gov | Direct Line: 775.328.3628

My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd

Planning Division: 775.328.6100 | Planning@washoecounty.gov

CSD Office Hours: Monday-Friday 8:00am to 4:00pm

1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?
[Submit a Nomination](#)

From: Pekar, Faye-Marie L. <FPekar@washoecounty.gov>
Sent: Thursday, June 1, 2023 11:59 AM
To: Oakley, Katherine <KOakley@washoecounty.gov>
Subject: May Agency Reviews II WMPA23-0006 and WRZA23-0006 (Learner Lemmon)

Good Morning Kat,

I spoke with Joanne about the WMPA23-0006 and WRZA23-0006 (Learner Lemmon) case. From her look at WRMS and her recollection of the area, the adjacent parcels that are City of Reno annexed are under development currently and are not Reno Open Space. Knowing this, Parks does not have comments for this case. However, I would still like to double check with you if City of Reno has submitted comments for this case before stating Parks is completely in the clear.

Also, let me know when you receive the updated maps from the applicant for this project, I would like to review them.

Thank you,



Faye-Marie L. Pekar, MPA
Park Planner, Planning & Building Division | Community Services Department
fpekar@washoecounty.gov |

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Planning Division: 775.328.6100 | Planning@washoecounty.gov
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1001 East Ninth Street, Reno, NV 89512



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INITIAL REVIEW MEMORANDUM

TO: Kat Oakley, Washoe County

FROM: Chris Tolley, TMRPA

DATE: May 25, 2023

SUBJECT: **TMRPA initial review of Washoe County case WMPA23-0006 (Learner Lemmon)**

This memorandum provides the Truckee Meadows Regional Planning Agency's (TMRPA) initial review comments regarding the subject case (WMPA23-0006), as stated in the 2019 Truckee Meadows Regional Plan (Policy RC 5).

The following constitutes an initial review based on the limited information available at the time of this memorandum. TMRPA recognizes that the proposal may change through the jurisdictional review of the case. Should the case be approved through Washoe County, the proposal will need to be formally submitted to TMRPA for a review of conformance with the 2019 Truckee Meadows Regional Plan in its entirety.

The request, as identified by Washoe County, is the following:

- (1) **Approve an amendment to the North Valleys Area Plan, a component of the Washoe County Master Plan, to redesignate 8.566 acres of a 19.926-acre parcel from Rural (R) to Suburban Residential (SR); and,**
- (2) Recommend adoption of an amendment to the North Valleys Regulatory Zone Map, to redesignate 11.11 acres of a 19.926-acre parcel from Medium Density Suburban (MDS) to High Density Suburban (HDS), to redesignate 3.292 acres of the same parcel from General Rural (GR) to Medium Density Suburban (MDS), and to redesignate 5.27 acres of the same parcel from General Rural (GR) to Open Space (OS)

[TMRPA notes: **bolded text** identifies the portion of the request that is subject to review under the Regional Plan]

Potential conformance issues

The subject site is located within the Tier 3 Regional Land Designation, and per Policy RF 3 – *Density Requirements and Nonresidential Standards*, the maximum density for lands within this tier is the currently existing maximum. For the subject site, the maximum density is established by the existing Suburban Residential and Rural land uses.

In order to intensify the subject site, a Regional Plan amendment to change the Regional Land Designation to a higher priority Tier (e.g., from Tier 3 to Tier 2) is required. Please review Regional Plan Policy *RF 5* for additional information.

For reference, the Tier 2 Regional Land Designation begins immediately west and south of the subject site.

Finally, the Regional Plan amendment will need to be sponsored by the Washoe County Commission per Nevada Revised States (NRS) section 278.0272(7) and the Regional Planning Governing Board's Regulations on Procedure section II.2. Please contact Regional Planning staff for any assistance with this specific process.

Related Regional Plan policies

Please review the list of policies provided in this section, as the requirements of each should be addressed (or connected to the implementing policy in the Washoe County Master Plan) in the analysis presented for the subject case:

PG 4 – Affordable Housing Strategies

RF 3 – Density Requirements and Nonresidential Standards

RF 5 – Regional Land Designation Amendments

RF 11 – Compatibility Factors

PF 1 – List of Facilities and Service Standards

NR 3 – Development Constraints Area

Data and information related to Regional Plan implementation

Regional Land Designation: Tier 3

Request for comment from other local government and/or affected entities

None at this time

Other information for review

None at this time

Please do not hesitate to contact TMRPA staff at 775-321-8385 if you have any questions or comments on this initial review memorandum. For more information, you can access the [2019 Truckee Meadows Regional Plan](#) and the [Regional Data Viewer](#) at www.tmrpa.org.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

June 9, 2023

Kat Oakley
Community Services Department
County of Washoe
1001 East Ninth Street
Reno, NV 89512

RE: Learner Lemmon Residential Subdivision – Application for a Master Plan & Regulatory Zone Amendment - RTC Comment Letter

Dear Ms. Oakley

RTC appreciates the opportunity to comment on the proposed Learner Lemmon Residential Subdivision project located at 0 Pan American Drive in Washoe County. RTC is committed to working with County staff, developers, and other stakeholders across Washoe County on transit-supportive developments that grow ridership, reduce driving, and promote walkable neighborhoods.

The purpose of this letter is to provide recommendations based on the project's proximity to any RTC existing or upcoming roadway improvements.

Traffic Impact Study

The traffic study indicates that traffic generated by the proposed development will access the project area from the regional road network via Fleetwood Drive at Lemmon Drive. Lemmon Drive is designated as an Arterial by the 2050 Regional Transportation Plan (RTP).

There is currently no left turn lane from Lemmon Drive at this location. The background plus project volumes for the left turn movement from northbound Lemmon Drive onto Fleetwood Drive exceed safe volume thresholds for left turn movements directly from an uncontrolled arterial. The RTC recommends the applicant construct a left turn lane with length appropriate to accommodate vehicle deceleration from Lemmon Drive and storage of queuing vehicles as described by the AASHTO Policy on Geometric Design of Highways and Streets.

The applicant should also be aware that RTC is scheduled to begin construction on the Lemmon Drive Segment 2 Project in 2025, which will widen Lemmon Drive from two lanes to four lanes north of Fleetwood Drive.

Active Transportation & Transit Orientation

The RTP emphasizes community revitalization projects that encourage walking and bicycling. In order to enhance walkability, and bikeability, the County should consider requiring installation of wide sidewalks, pedestrian lighting, ADA-compliant curb ramps, and easily accessible bike racks as a condition of project approval.

Additionally, RTC encourages the incorporation of pedestrian-oriented building design strategies such as placing of building facades along the sidewalk, locating surface-level parking in alleys and away from walkways when possible, and strategically including entrances and windows facing the street for convenient pedestrian access.

RTC looks forward to reviewing any further documents related to this project. If you have any questions regarding this response, please contact Marquis Williams by phone at 775-332-0174, by email at MWilliams@rtcwashoe.com, or by mail at the following address:

RTC Development Review
1105 Terminal Way, Suite 211
Reno, NV 89502

Sincerely,

A handwritten signature in black ink, appearing to read "Marquis Williams". The signature is fluid and cursive, with the first name "Marquis" written in a larger, more prominent script than the last name "Williams".

Marquis Williams
Senior Technical Planner

From: [Chisholm, Kyle W](#)
To: [Oakley, Katherine](#); [Rodela, Brett A](#)
Subject: RE: [EXTERNAL] WMPA23-0006/WRZA23-0006
Date: Tuesday, June 20, 2023 7:40:19 AM
Attachments: [image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)
[image011.png](#)

[NOTICE: This message originated outside of Washoe County -- **DO NOT CLICK** on links or open attachments unless you are sure the content is safe.]

Yes, same goes for the RPA.

Kyle Chisholm

School Property Planning Manager
Washoe County School District, Capital Projects
Office: (775) 789-3810
Email: Kyle.Chisholm@WashoeSchools.Net



From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Friday, June 16, 2023 2:18 PM
To: Chisholm, Kyle W <Kyle.Chisholm@WashoeSchools.net>; Rodela, Brett A <Brett.Rodela@WashoeSchools.net>
Subject: RE: [EXTERNAL] WMPA23-0006/WRZA23-0006

Okay, that makes sense, thank you. This particular request will require a Regional Plan Amendment to change the parcel from Tier 3 to Tier 2; do you have any comments on it from that perspective, or would you still reserve any comments for an actual development proposal? I ask particularly because an analysis of available facilities, including schools, is part of the assessment of that request.

Appreciate your time, and have a good long weekend!

Best,



Kat Oakley
Planner, Planning & Building Division | Community Services Department
koakley@washoecounty.gov | Direct Line: 775.328.3628
My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd
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CSD Office Hours: Monday-Friday 8:00am to 4:00pm
1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?
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From: Chisholm, Kyle W <Kyle.Chisholm@WashoeSchools.net>
Sent: Thursday, June 15, 2023 3:57 PM
To: Oakley, Katherine <KOakley@washoecounty.gov>; Rodela, Brett A <Brett.Rodela@WashoeSchools.net>
Subject: RE: [EXTERNAL] WMPA23-0006/WRZA23-0006

[NOTICE: This message originated outside of Washoe County -- DO NOT CLICK on links or open attachments unless you are sure the content is safe.]

Hi Kat,

WCSD doesn't project enrollments based on zoning applications because as you know, there is no "actual" development occurring yet. Therefore, we will comment on any future tentative map if there are enrollment concerns or needs for school capital facilities at the time actual density is planned & submitted to the County. We also track building permits in coordination with the University of Nevada and plan for projected enrollment growth based on what is actually being constructed.

Regards,

Kyle Chisholm

School Property Planning Manager
Washoe County School District, Capital Projects
Office: (775) 789-3810
Email: Kyle.Chisholm@WashoeSchools.Net



From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Thursday, June 15, 2023 3:47 PM
To: Rodela, Brett A <Brett.Rodela@WashoeSchools.net>; Chisholm, Kyle W <Kyle.Chisholm@WashoeSchools.net>
Subject: [EXTERNAL] WMPA23-0006/WRZA23-0006
Importance: High

Hello,

Hope you are well. I am following up on a request for agency comments that was sent about a month ago for this application (you can view it online [here](#)). The request would increase the maximum residential density on 080-461-08 from about 34 units to 88 units. Do you have any concerns about this? Are the schools serving this area currently operating at capacity, or is there still capacity left? Let me know any thoughts you have. If you're able to get back to me soon, I would appreciate it, as I am about to finalize my staff report on this item.

Best,



Kat Oakley
Planner, Planning & Building Division | Community Services Department
koakley@washoecounty.gov | Direct Line: 775.328.3628
My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd
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1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?
[Submit a Nomination](#)

Oakley, Katherine

From: Zirkle, Brandon
Sent: Tuesday, May 16, 2023 9:29 AM
To: Roman, Brandon; Green, Jim D.; Giesinger, Chad; Handrock, Wayne; Philumalee, Matthew; Pekar, Faye-Marie L.; Mayorga, Alexander R.; Crump, Eric S; Fink, Mitchell; WRWC; Beard, Blaine; Rosa, Genine; Restori, Joshua; Program, EMS; English, James; Rubio, Wesley S; Kelly, David A
Cc: Emerson, Kathy; Albarran, Adriana; Lloyd, Trevor; Mullin, Kelly D.; Smith, Dwayne E.; Gustafson, Jennifer; Hein, Stephen; EHS Plan Review; West, Walt; Thomas, Janelle K.; Oakley, Katherine; Weiche, Courtney; Olander, Julee; Wimer, Robert; Weiss, Timber A.; Solferino, Corey
Subject: RE: May Agency Review Memo II

Good Morning,

Only note on these projects is flood mitigation on the Pan American project. That is on the border of an area that has had significant flooding issues in the past few years. What are the mitigation efforts and what is the calculations for the displaced run off from the high density housing. We have had complaints of flooding as recent as yesterday.

Thanks,

Captain Brandon Zirkle
Washoe County Sheriff's Office
Valley Patrol Command
Office (775) 328-3354
Cell (775) 232-9477



From: Roman, Brandon <BRoman@washoecounty.gov>
Sent: Monday, May 15, 2023 3:25 PM
To: Green, Jim D. <JDGreen@washoecounty.gov>; Giesinger, Chad <CGiesinger@washoecounty.gov>; Handrock, Wayne <WHandrock@washoecounty.gov>; Philumalee, Matthew <MPhilumalee@washoecounty.gov>; Pekar, Faye-Marie L. <FPekar@washoecounty.gov>; Mayorga, Alexander R. <AMayorga@washoecounty.gov>; Crump, Eric S <ECrump@washoecounty.gov>; Fink, Mitchell <MFink@washoecounty.gov>; WRWC <WRWC@washoecounty.gov>; Zirkle, Brandon <BZirkle@washoecounty.gov>; Beard, Blaine <BBeard@washoecounty.gov>; Rosa, Genine <GRosa@washoecounty.gov>; Restori, Joshua <JRestori@washoecounty.gov>; Program, EMS <EMSProgram@washoecounty.gov>; English, James <JEnglish@washoecounty.gov>; Rubio, Wesley S <WRubio@washoecounty.gov>; Kelly, David A <DAKelly@washoecounty.gov>
Cc: Emerson, Kathy <KEmerson@washoecounty.gov>; Albarran, Adriana <AAlbarran@washoecounty.gov>; Lloyd, Trevor

Oakley, Katherine

From: Rebecca Palmer <rlpalmer@shpo.nv.gov>
Sent: Thursday, June 8, 2023 11:31 AM
To: Oakley, Katherine
Cc: Robin Reed
Subject: RE: WMPA23-0006/WRZA23-0006 Learner Lemmon MPA/RZA

[NOTICE: This message originated outside of Washoe County -- DO NOT CLICK on links or open attachments unless you are sure the content is safe.]

Good morning, Kat:

Thank you for reaching out to me concerning this proposed development on APN 080-461-08). There is a large archaeological resource either on the parcel or immediately adjacent to it (26WA2179). The record for this site dates to the 1970's and has not been updated since that recording. It is possible that this development may uncover Native American burials related to the pre-contact use of this area as a winter occupation zone.

I strongly recommend that any proposal to grade or otherwise disturb this parcel include a stipulation for notification to my office as is required by state law (NRS 383.170.1(a)). Additionally, it might be useful to include a link to this page of our website: <https://shpo.nv.gov/burials>

Please note that the SHPO did not review this project for federal agency compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. If this is a federal action (e.g., requires a federal permit, federal funding), federal agency consultation with this office is required for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Best Regards,

Rebecca Lynn Palmer

Administrator/State Historic Preservation Officer
Nevada State Historic Preservation Office
(O): 775-684-3443
rlpalmer@shpo.nv.gov

From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Thursday, June 8, 2023 8:40 AM
To: Rebecca Palmer <rlpalmer@shpo.nv.gov>
Subject: WMPA23-0006/WRZA23-0006 Learner Lemmon MPA/RZA

WARNING - This email originated from outside the State of Nevada. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hello,

I am a planner at Washoe County reviewing a project south of Swan Lake (APN 080-461-08). The proposal is for an intensification of land use that would allow for an 88 parcel subdivision. We sent this to you about a month ago for comment, and I just wanted to reach out and make sure you don't have any concerns about the request. Our Master Plan maps identify this area as low importance in terms of cultural resources, but the Swan Lake Master Plan references some cultural resource inventories conducted by the National Guard in the 1990's that indicated a pre-historic use of the area during winter. Let me know if you have any questions or comments about the project, or if you'd like to discuss it.

Thank you,



Kat Oakley

Planner, Planning & Building Division | Community Services Department

koakley@washoecounty.gov | Direct Line: 775.328.3628

My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd

Planning Division: 775.328.6100 | Planning@washoecounty.gov

CSD Office Hours: Monday-Friday 8:00am to 4:00pm

1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?

[Submit a Nomination](#)

Oakley, Katherine

From: Steve Shell <sshell@water.nv.gov>
Sent: Thursday, May 18, 2023 9:25 AM
To: Oakley, Katherine
Subject: WMPA23-0006

[NOTICE: This message originated outside of Washoe County -- **DO NOT CLICK** on links or open **attachments** unless you are sure the content is safe.]

The Division of Water Resources has no comment.

As of June 1, 2021, the Office of the State Engineer is open to the public. Please call 684-2800 upon arrival and a representative will come down to escort you to our office.

Steve Shell

Water Rights Specialist II
Department of Conservation and Natural Resources
Nevada Division of Water Resources
901 S. Stewart St., Suite 2002
Carson City, NV 89701
sshell@water.nv.gov
(O) 775-684-2836 | (F) 775-684-2811



NEVADA DIVISION
OF WATER RESOURCES



Nevada Department of
**CONSERVATION &
NATURAL RESOURCES**

Connect with us:   

Oakley, Katherine

From: Fink, Mitchell
Sent: Monday, June 5, 2023 9:18 AM
To: Oakley, Katherine
Subject: RE: WMPA23-0006/WRZA23-0006 Learner-Lemmon

For local residential streets we would use the Washoe County LOS requirements found in Section 11.436.20a Level of Service. This is LOS C or as otherwise provided by the RTC which would allow for LOS D on regional roads. The North Valley Area Plan may also have some language regarding LOS requirements.

Thanks,



Mitchell Fink, P.E. | Licensed Engineer

Community Services Department | Engineering & Capital Projects Division

mfink@washoecounty.gov | Office: 775.328.2050

1001 E. 9th Street, Reno, NV 89512

For additional information, email engineering@washoecounty.gov or call 775.328.2040



**Have some kudos to share about a Community Services Department employee or experience? Email allstars@washoecounty.gov*

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From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Friday, June 2, 2023 1:24 PM
To: Fink, Mitchell <MFink@washoecounty.gov>
Subject: RE: WMPA23-0006/WRZA23-0006 Learner-Lemmon

Hi Mitch,

Just following up on this. Is there a Washoe County plan that establishes minimum acceptable LOS for local roads?

Thanks,



Kat Oakley

Planner, Planning & Building Division | Community Services Department

koakley@washoecounty.gov | Direct Line: 775.328.3628

My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd

Planning Division: 775.328.6100 | Planning@washoecounty.gov

CSD Office Hours: Monday-Friday 8:00am to 4:00pm

1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?

From: Oakley, Katherine
Sent: Tuesday, May 30, 2023 5:20 PM
To: Fink, Mitchell <MFink@washoecounty.gov>
Subject: RE: WMPA23-0006/WRZA23-0006 Learner-Lemmon

Thank you. The traffic impact study wasn't originally uploaded with the application, but it should be online now if you want to look at it [here](#). They say everything is within an acceptable level of service, so I guess that's all good. Generally speaking, which plan should I go to to look for level of service designations? Is that the regional transportation plan, or one of our plans? Thank you for your help.

Best,



Kat Oakley
Planner, Planning & Building Division | Community Services Department
koakley@washoecounty.gov | Direct Line: 775.328.3628

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Planning Division: 775.328.6100 | Planning@washoecounty.gov
CSD Office Hours: Monday-Friday 8:00am to 4:00pm
1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?
[Submit a Nomination](#)

From: Fink, Mitchell <MFink@washoecounty.gov>
Sent: Tuesday, May 30, 2023 3:26 PM
To: Oakley, Katherine <KOakley@washoecounty.gov>
Subject: RE: WMPA23-0006/WRZA23-0006 Learner-Lemmon

Hi Kat,

The Learner-Lemmon development should be doing a traffic impact report for the project, and this will take into account the concerns below. If the Level of Service (LOS) drops below the requirements the report will have proposed mitigations to address this, or we will request mitigations upon review. There may have already been a traffic impact report completed but I don't remember seeing.

I hope this answers your questions.



Mitchell Fink, P.E. | Licensed Engineer
Community Services Department | Engineering & Capital Projects Division
mfink@washoecounty.gov | Office: 775.328.2050
1001 E. 9th Street, Reno, NV 89512
For additional information, email engineering@washoecounty.gov or call 775.328.2040



**Have some kudos to share about a Community Services Department employee or experience? Email allstars@washoecounty.gov*

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From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Tuesday, May 30, 2023 2:34 PM
To: Fink, Mitchell <MFink@washoecounty.gov>
Subject: WMPA23-0006/WRZA23-0006 Learner-Lemmon

Hi Mitch,

Hope you had a good long weekend. I'm reaching out about the above application because I know that traffic is going to be a main point of contention. I'm wondering if there are any plans/intentions to connect Lear Blvd, and if so what the timeline is for that. Also, there are a couple of findings relating to traffic I'll need to make that have to do with level of service. I've copied them below:

NV.21.3

b. A traffic analysis has been conducted that clearly identifies the impact to the adopted level of service within the North Valleys planning area and the improvements likely to be required to maintain/achieve the adopted level of service. This finding may be waived by the Department of Public Works for projects that are determined to have minimal impacts. The Department of Public Works may request any information it deems necessary to make this determination.

e. If the proposed intensification will result in a drop below the established policy level of service for transportation (as established by the Regional Transportation Commission and Washoe County) within the North Valleys planning area, the necessary improvements required to maintain the established level of service are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification. For impacts to regional roads, the Washoe County Planning Commission, upon written request from the Regional Transportation Commission, may waive this finding.

f. If roadways impacted by the proposed intensification are currently operating below adopted levels of service, the intensification will not require infrastructure improvements beyond those articulated in Washoe County and regional transportation plans AND the necessary improvements are scheduled in either the Washoe County Capital Improvements Program or Regional Transportation Improvement Program within three years of approval of the intensification.

Are you able to provide any insights on these points? I'm also happy to call to discuss.

Thank you!



Kat Oakley

Planner, Planning & Building Division | Community Services Department

koakley@washoecounty.gov | Direct Line: 775.328.3628

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1001 East Ninth Street, Reno, NV 89512



Have some kudos to share about a Community Services Department employee or experience?



WASHOE COUNTY
COMMUNITY SERVICES
INTEGRITY COMMUNICATION SERVICE

1001 E. 9th St.
Reno, NV 89503
Phone: (775) 328-3600
Fax: (775) 328-3699

May 24, 2023

TO: Kat Oakley, Planner, CSD, Planning & Development Division

FROM: Timber Weiss, Licensed Engineer, CSD

SUBJECT: Master Plan Amendment Case Number WMPA23-0006 and WRZA23-0006
(Learner Lemmon)

Project description:

The applicant is proposing to:

- (1) Approve an amendment to the North Valleys Area Plan, a component of the Washoe County Master Plan, to redesignate 8.566 acres of a 19.926-acre parcel from Rural (R) to Suburban Residential (SR); and,
- (2) Recommend adoption of an amendment to the North Valleys Regulatory Zone Map, to redesignate 11.11 acres of a 19.926-acre parcel from Medium Density Suburban (MDS) to High Density Suburban (HDS), to redesignate 3.292 acres of the same parcel from General Rural (GR) to Medium Density Suburban (MDS), and to redesignate 5.27 acres of the same parcel from General Rural (GR) to Open Space (OS); and,
- (3) If approved, authorize the chair to sign resolutions to this effect.

Location: 0 Pan American Dr • Assessor's Parcel Number(s): 080-461-08

The Community Services Department (CSD) recommends approval of this project with the following Water Rights conditions:

The parcel is shown to be within TMWA service area. Also, the application states that necessary water rights will be acquired from TMWA/Vidler at the time of project construction.

Recommend approval with the condition that the subsequent subdivision map must include TMWA note and approval.

Oakley, Katherine

From: Behmaram, Vahid
Sent: Wednesday, May 17, 2023 10:30 AM
To: Oakley, Katherine; Weiss, Timber A.
Subject: RE: WMPA23-0006/WRZA23-0006 Learner Lemmon

Hi Kat: this is a prime example of how outdated our Arae Plans, and development code is. Department of water resources was dissolved in 2015 and no longer exists, neither does our ability to make such conformance findings.

Consequently, we have relied on TMWA as the succeeding water purveyor for such findings. You will find an acknowledgment from TMWA dated May 2, 2023 signed by Tim Simpson in the applicants submittal package which provide W. Co. with the necessary findings to approve as related to the highlighted section below.



Vahid Behmaram
Water Rights & Water Resources Consultant (Temporary Contractor)
vbehmaram@washoecounty.gov Office: (775)954-4647; Fax (775) 328-6133
Washoe County Community Services Dept.
1001 E. 9th, St., Reno, NV 89512

From: Oakley, Katherine <KOakley@washoecounty.gov>
Sent: Wednesday, May 17, 2023 9:37 AM
To: Weiss, Timber A. <TWeiss@washoecounty.gov>
Cc: Behmaram, Vahid <VBehmaram@washoecounty.gov>
Subject: WMPA23-0006/WRZA23-0006 Learner Lemmon

Hi both,

The latest round of agency review requests included the above MPA/RZA request. Per the North Valleys Area Plan, I will need to make the following finding related to water resources:

NV.21.3 (a) A feasibility study has been conducted, commissioned and paid for by the applicant, relative to municipal water, sewer and storm water that clearly identifies the improvements likely to be required to support the intensification, and those improvements have been determined to be in substantial compliance with all applicable existing facilities and resource plans for North Valleys by the Department of Water Resources. The Department of Water Resources will establish and maintain the standards and methodologies for these feasibility studies.

Is this a finding you would be able to assess, and if so, could you include that in your comments? Thank you, and let me know if you have any questions.

Best,



Kat Oakley

Planner, Planning & Building Division | Community Services Department

koakley@washoecounty.gov | Direct Line: 775.328.3628

My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd

Planning Division: 775.328.6100 | Planning@washoecounty.gov

CSD Office Hours: Monday-Friday 8:00am to 4:00pm

1001 East Ninth Street, Reno, NV 89512



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XVI.

Community Outreach Meeting Summary

Meeting Location: 255 Patrician Dr. Reno NV 89506

Meeting Date/Time: February 22nd 2023, 6:30pm PST

Meeting lead by: Kenneth Krater

Number of attendees: Nine (See attached Sign in sheet)

The meeting started with an introduction of the project and the required notification to the adjacent property owners. Attendees brought up traffic concerns about the new interchange at the freeway at Lemmon Drive and the Freeway. It was noted that timing adjustments may be needed at the interchange.

Next discussed was the property location and location of the the FEMA 100 year flood contour line. The next topic of discussion led into potential building footprints, common area buffers to the east and south adjoining existing homes on Fleetwood and Budger, and associated setbacks from these adjacent properties. The attendees mentioned concern of existing gates in their backyards and access. The retention basin was explained to the attendees and how it is required by code.

A few additional topics that come up after the formal presentation was sewer relocation, traffic in their neighborhoods/school, public use of parks within development and new fence along east and south adjacent properties.

An audio tape of the meeting is included as an attachment in the Neighborhood Meeting portal. Note that due to issues downloading files, there are a total of eight audio files in the portal to capture the entire meeting.

**MASTER PLAN & REGULATORY ZONE
AMENDMENTS & A TENTATIVE MAP
FOR
LEARNER LEMMON RESIDENTIAL
SUBDIVISION**



**PHOTO OF SITE LOOKING NORTH FROM
PAN AMERICAN DRIVE NEAR THE SW PROPERTY CORNER**

**TO BE SUBMITTED TO WASHOE COUNTY PLANNING
MAY 8, 2023**

Application for a Master Plan & Regulatory Zone Amendment plus a Tentative Map

For

Learner Lemmon

Prepared For:
LC Learner, LLC
325 Harbour Cove Dr. Suite 219
Sparks, NV 89434

Prepared By:
KRATER CONSULTING Group, PC
A Nevada professional corporation
1165 Mount Rose Street
Reno, Nevada 89509
(775) 815-9561

May 8, 2023

Table of Contents

- I. Washoe County Development Application Form
- II. Property Owner Affidavit
- III. MPA – Supplemental Information
- IV. MPA – Findings
- V. MPA – Application Submittal Requirements
- VI. Compliance with the North Valley’s Area Plan
 - A. Plan Maintenance Section
- VII. RZA – Supplemental Information
- VIII. Project of Regional Significance Information
- IX. RZA – Findings
- X. RZA – Application Submittal Requirements
- XI. SITE PLAN
- XII. Tentative Map – Supplemental Information
- XIII. Tentative Map – Findings
- XIV. Tentative Map – Application Submittal Requirements
- XV. Opportunities & Constraints Analysis in Support of WC Code 110.408.30
- XVI. Summary of Neighborhood Meeting
- XVII. Stamped/Sealed Legal Descriptions
 - A. Property Deed for Learner
- XVIII. Assessor’s Parcel Map (080-461-08)
- XIX. Proof of Property Tax Payments
- XX. Title Report (Original Application Packet Only)
- XXI. “Acknowledgment of Water Service” letter
- XXII. Preliminary Sewer Study
- XXIII. Preliminary Drainage Report
- XXIV. Traffic Impact Study
- XXV. Geotechnical Report
- XXVI. Map Pocket
 - A. Tentative Map, 24X36
 - B. Preliminary Landscape Plan
 - C. Opportunities & Constraints Map

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

| | | | |
|---|-----------------|---------------------------------------|-----------------|
| Project Information | | Staff Assigned Case No.: _____ | |
| Project Name: | | | |
| Project Description: | | | |
| Project Address: | | | |
| Project Area (acres or square feet): | | | |
| Project Location (with point of reference to major cross streets AND area locator): | | | |
| Assessor's Parcel No.(s): | Parcel Acreage: | Assessor's Parcel No.(s): | Parcel Acreage: |
| | | | |
| Indicate any previous Washoe County approvals associated with this application: Case No.(s). | | | |
| Applicant Information (attach additional sheets if necessary) | | | |
| Property Owner: | | Professional Consultant: | |
| Name: | | Name: | |
| Address: | | Address: | |
| Zip: | | Zip: | |
| Phone: | | Phone: | |
| Fax: | | Fax: | |
| Email: | | Email: | |
| Cell: | | Cell: | |
| Other: | | Other: | |
| Contact Person: | | Contact Person: | |
| Applicant/Developer: | | Other Persons to be Contacted: | |
| Name: | | Name: | |
| Address: | | Address: | |
| Zip: | | Zip: | |
| Phone: | | Phone: | |
| Fax: | | Fax: | |
| Email: | | Email: | |
| Cell: | | Cell: | |
| Other: | | Other: | |
| Contact Person: | | Contact Person: | |
| For Office Use Only | | | |
| Date Received: | | Initial: | |
| County Commission District: | | Planning Area: | |
| CAB(s): | | Master Plan Designation(s): | |
| | | Regulatory Zoning(s): | |

III. Master Plan Amendment Supplemental Information

(All required information may be separately attached)

The Washoe County Master Plan describes how the physical character of the County exists today and is planned for the future. The plan is adopted by the community and contains information, policies and a series of land use maps. The Master Plan provides the essential framework for creating a healthy community system and helps guide decisions about growth and development in the County. The following are general types of requests the County receives to amend the Master Plan. Please identify which type of amendment you are requesting:

| |
|---|
| <input type="checkbox"/> A request to change a master plan designation(s) from the adopted master plan and/or area plan maps |
| <input type="checkbox"/> A request to add, amend, modify or delete any of the adopted policies found in the elements of the Master Plan |
| <input type="checkbox"/> A request to add, amend, modify or delete any of the adopted policies in the area plans and/or specific language found in the area plans |
| <input type="checkbox"/> Other (please identify): |

Please complete this questionnaire to ensure consistent review of your request to amend the Washoe County Master Plan. Staff will review the application to determine if the amendment request is in conformance with the policies and language within the elements and area plans of the Master Plan or if the information provided supports a change to the plan. Please provide an explanation to all questions; attach additional sheets if necessary.

1. What is the Master Plan amendment being requested at this time?

| |
|---|
| Master Plan and Regulatory amendments are requested to account for the fact that no development constrained areas exist in this area, Tier 2 land per the Truckee Meadows Regional Planning Agency adjoins the property to the north and west, public services are available for the area, and public utilities adjoin the site appropriate for the planned project and densities |
|---|

2. What conditions have changed and/or new studies have occurred since the adoption of the Washoe County Master Plan that supports the need for the amendment request?

| |
|--|
| A Conditional Letter of Map Revision including a technical amendment are under way that will clarify the fact that the entire property is outside the 100 year flood plain. Detailed geotechnical testing that included perk tests show that the intended project is suitable for development. |
|--|

3. Please provide the following specific information:

a. What is the location (address or distance and direction from the nearest intersection of the subject property)? Attach, for map amendments, a legal description. For all other amendments, what is the area subject to the request?

| |
|--|
| 0 Pan American Drive, SE corner of Pan American Drive and the future Lear Boulevard. See the attached legal description from the Deed. |
|--|

b. Please list the following proposed changes (attach additional sheet if necessary):

| Assessor's Parcel Number | Master Plan Designation | Existing Acres | Proposed Master Plan Designation | Proposed Acres |
|--------------------------|-------------------------|----------------|----------------------------------|----------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

c. What are the adopted land use designations of adjacent parcels?

| | |
|-------|--|
| North | |
| South | |
| East | |
| West | |

4. Describe the existing conditions and uses located at the site or in the vicinity (i.e. vacant land, roadways, buildings, etc.).

5. Describe the natural resources associated with the site under consideration. Your description should include resource characteristics such as water bodies, vegetation, topography, minerals, soils and wildlife habitat.

6. Describe whether any of the following natural resources or systems are related to the proposed amendment:

a. Is property located in the 100-year floodplain? (If yes, attach documentation of the extent of the floodplain and any proposed floodplain map revisions in compliance with Washoe County Development Code, Article 416, Flood Hazards, and consultation with the Washoe County Engineering & Capital Projects Division.)

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

Explanation:

b. Does property contain wetlands? (If yes, attach a preliminary delineation map and describe the impact the proposal will have on the wetlands. Impacts to the wetlands may require a permit issued from the U.S. Army Corps of Engineers.)

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

Explanation:

- c. Does the property contain slopes or hillsides in excess of 15 percent and/or significant ridgelines? (If yes, submit the slope analysis requirements as contained in Article 424, Hillside Development of the Washoe County Development Code.)

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

Explanation:

- d. Does the property contain geologic hazards such as active faults, hillside, or mountainous areas? Is it subject to avalanches, landslides, or flash floods? Near a stream or riparian area such as the Truckee River, and/or an area of groundwater recharge? If the answer is yes to any of the above, check yes and provide an explanation.

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

Explanation:

- e. Does the property contain prime farmland, within a wildfire hazard area, geothermal or mining area, and/or wildlife mitigation route? If the answer is yes to any of the above, check yes and provide an explanation.

| | |
|---|-----------------------------|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
|---|-----------------------------|

Explanation:

7. Are any archaeological, historic, cultural, or scenic resources in the vicinity or associated with the proposed amendment? If the answer is yes to any of the above, check yes and provide an explanation.

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

Explanation:

8. Do you own sufficient water rights to accommodate the proposed amendment? (Amendment requests in some groundwater hydrographic basins [e.g. Cold Springs, Warm Springs, etc.] require proof of water rights be submitted with applications. Provide copies of all water rights documents, including chain of title to the original water right holder.)

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No (Available for Purchase from Vidler/TMWA) |
|------------------------------|--|

If yes, please identify the following quantities and documentation numbers relative to the water rights. Please attach a copy(s) of the water rights title (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

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

- a. If the proposed amendment involves an intensification of land use, please identify how sufficient water rights will be available to serve the additional development.

9. Please describe the source and timing of the water facilities necessary to serve the amendment.

- a. System Type:

| | | |
|---|-----------|--|
| <input type="checkbox"/> Individual wells | | |
| <input type="checkbox"/> Private water | Provider: | |
| <input type="checkbox"/> Public water | Provider: | |

- b. Available:

| | | | |
|---|------------------------------------|------------------------------------|-----------------------------------|
| <input checked="" type="checkbox"/> Now | <input type="checkbox"/> 1-3 years | <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 5+ years |
|---|------------------------------------|------------------------------------|-----------------------------------|

- c. If a public facility is proposed and is currently not available, please describe the funding mechanism for ensuring availability of water service.

10. What is the nature and timing of sewer services necessary to accommodate the proposed amendment?

- a. System Type:

| | | |
|--|-----------|--|
| <input type="checkbox"/> Individual septic | | |
| <input type="checkbox"/> Public system | Provider: | |

- b. Available:

| | | | |
|---|------------------------------------|------------------------------------|-----------------------------------|
| <input checked="" type="checkbox"/> Now | <input type="checkbox"/> 1-3 years | <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 5+ years |
|---|------------------------------------|------------------------------------|-----------------------------------|

- c. If a public facility is proposed and is currently not available, please describe the funding mechanism for ensuring availability of sewer service. If a private system is proposed, please describe the system and the recommended location(s) for the proposed facility.

11. Please identify the street names and highways near the proposed amendment that will carry traffic to the regional freeway system.

12. Will the proposed amendment impact existing or planned transportation systems? (If yes, a traffic report will be required.)

| | |
|---|-----------------------------|
| <input checked="" type="checkbox"/> Yes (Minimal Impact, see traffic study) | <input type="checkbox"/> No |
|---|-----------------------------|

13. Community Services (provided and nearest facility):

| | |
|-------------------------|--|
| a. Fire Station | |
| b. Health Care Facility | |
| c. Elementary School | |
| d. Middle School | |
| e. High School | |
| f. Parks | |
| g. Library | |
| h. Citifare Bus Stop | |

14. Describe how the proposed amendment fosters, promotes, or complies with the policies of the adopted area plans and elements of the Washoe County Master Plan.

a. Population Element:

| |
|--|
| The project fits with Goal Three: Plan for a balanced development pattern that includes employment and housing opportunities, public services and open spaces. |
|--|

b. Conservation Element:

| |
|---|
| Negligible impacts to the County's cultural and scenic, land, water, air and related resources. |
|---|

c. Housing Element:

| |
|---|
| Provides much needed housing that area citizens can afford with close proximity to services & employment. Will promote homeownership opportunities. |
|---|

d. Land Use and Transportation Element:

| |
|--|
| Takes advantage of existing transportation infrastructure with close proximity to services & employment. |
|--|

e. Public Services and Facilities Element:

| |
|---|
| Takes advantage of existing services and facilities in close proximity. |
|---|

f. Adopted area plan(s):

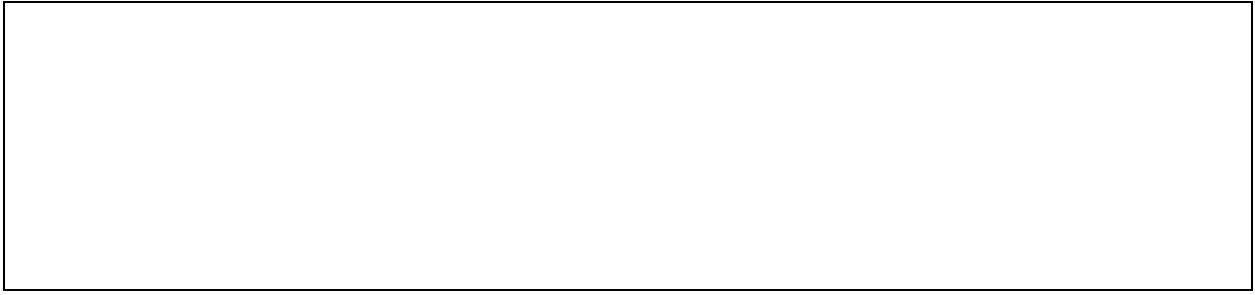
| |
|--|
| |
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15. If the area plan includes a Plan Maintenance component, address all policies and attach all studies and analysis required by the Plan Maintenance criteria.

| |
|--|
| |
|--|

Applicant Comments

This page can be used by the applicant to support the master plan amendment request and should address, at a minimum, how one or more of the findings for an amendment is satisfied. (Please refer to Article 820 of the Washoe County Development Code for the list of Findings.)



IV. MASTER PLAN AMENDMENT FINDINGS

- (1) Consistency with Master Plan. *The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan. – Response: The site is characterized with minimal topographical relief (Slopes < 5%) and upland vegetation such as sagebrush, rabbitbrush and other native shrubs and grasses. The current Rural Land Use Designation being 8.568 acres has no development constraints as indicated by both the Truckee Meadows Regional Plan and North Valleys Area Plan. SEE FIGURES 1 AND 2.*

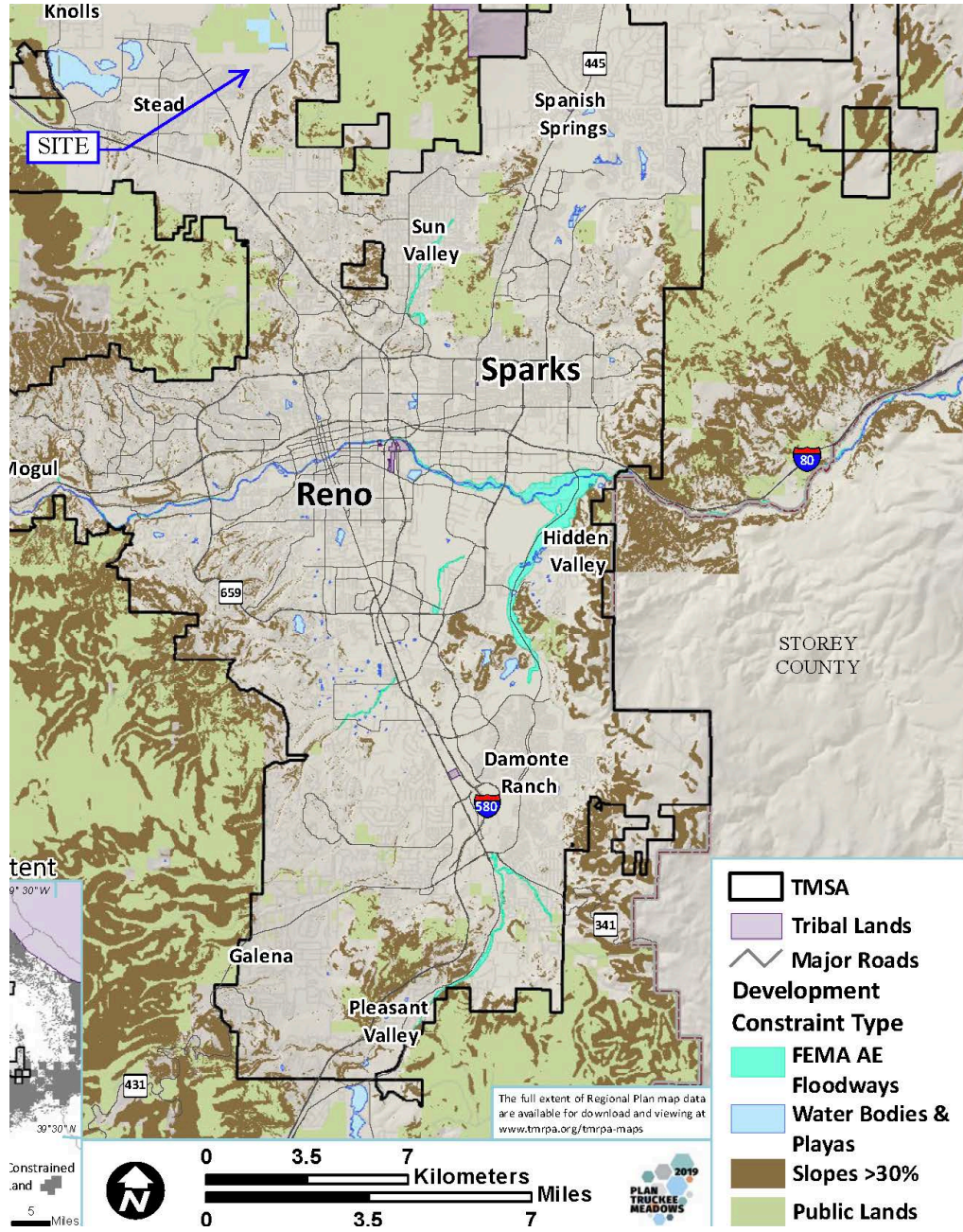
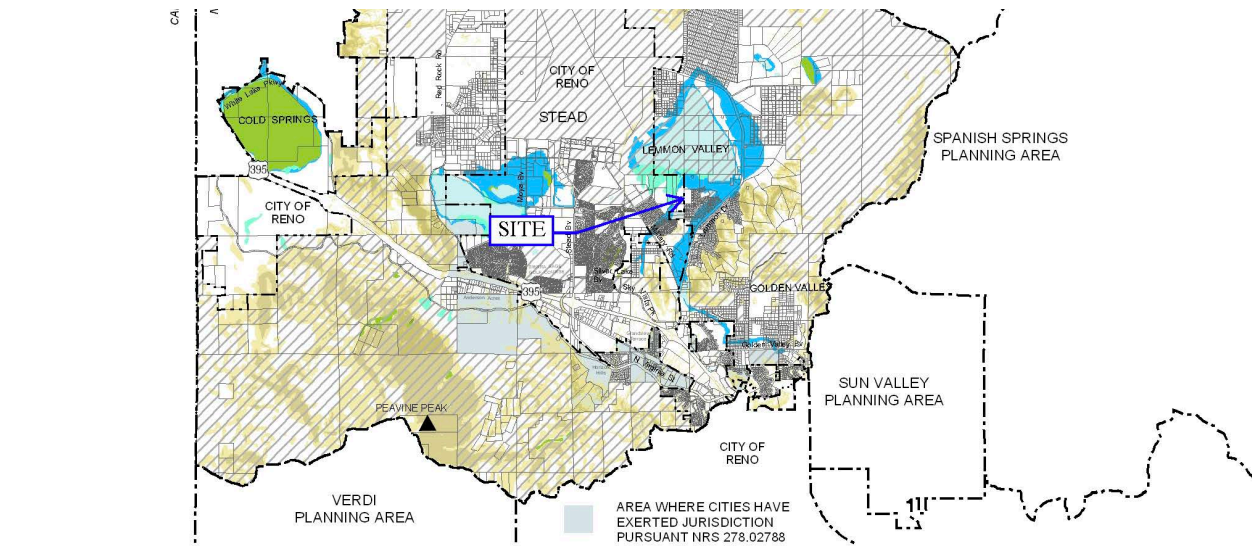


FIGURE 1: TRUCKEE MEADOWS REGIONAL PLAN – DEVELOPMENT CONSTRAINTS



NORTH VALLEYS DEVELOPMENT SUITABILITY

- | | |
|-----------------------------|--|
| RIDGE LINES TO BE PROTECTED | POTENTIAL WETLANDS |
| SLOPES GREATER THAN 15% | BOTH POTENTIAL FLOOD HAZARD AND POTENTIAL WETLANDS |
| SLOPES GREATER THAN 30% | PUBLIC LAND |
| FLOODWAY AREA | MOST SUITABLE |
| 100-YEAR FLOOD HAZARD | WATER BODIES |
| | DITCHES |

NOTE: THE SCALE AND CONFIGURATION OF ALL INFORMATION SHOWN HEREON ARE APPROXIMATE ONLY AND ARE NOT INTENDED AS A GUIDE FOR DESIGN OR SURVEY WORK. REPRODUCTION IS NOT PERMITTED WITHOUT PRIOR WRITTEN PERMISSION FROM THE WASHOE COUNTY COMMUNITY DEVELOPMENT DEPARTMENT.

@lancidist@planners.org
@washoe-county-nv@100.1116.mxd

0 2000 4000 6000 Feet

**Department of
Community Development**

**WASHOE COUNTY
NEVADA**

**FIGURE 2: NORTH VALLEYS AREA PLAN – DEVELOPMENT SUITABILITY
(SHOWN AS MOST SUITABLE)**

A few years ago, a major drainage improvement was completed west of the site to channel storm waters into a major drainage channel as flood waters flow to Lemmon (Swan) Lake. A letter of map revision (LOMR) was completed upon city and county acceptance of the improvements. Prior to the LOMR being completed, the far northeast corner of the site was depicted as being in a Zone A flood zone. (FIGURE 3, FEMA FLOOD INSURANCE RATE MAP (FIRM)). Upon completion of the drainage channel improvements and FEMA approval of the LOMR, a significant portion of the Lemmon Valley area was removed from the flood zone area and hence, homeowners can now choose whether to purchase flood insurance. (FIGURE 4)

With the recent flooding in 2017-2019, we understand Washoe County is working with other agencies to complete a new Conditional Letter of Map Revision (CLOMR) and ultimately a LOMR to raise the flood elevation level 0.7 feet as indicated by a comprehensive hydrology study completed since the flood years. With this study, it was found that the contours used in the prior FEMA mapping were in error and an administrative amendment is being completed simultaneously to implement accurate

topographical mapping. As a result, the flood zone upon FEMA approval of the applications will result in the flood zone being several hundred feet north of the site. In summary, the Truckee Meadows Regional Plan Development Constraints Map and North Valleys Area Plan Development Suitability Map are both correct in terms of showing no site related development constraints in regard to flooding. FIGURE 5 shows current Washoe County contours. The current flood elevation level of 4,924' is highlighted. We understand the proposed new flood elevation level will be 4,924.7'.

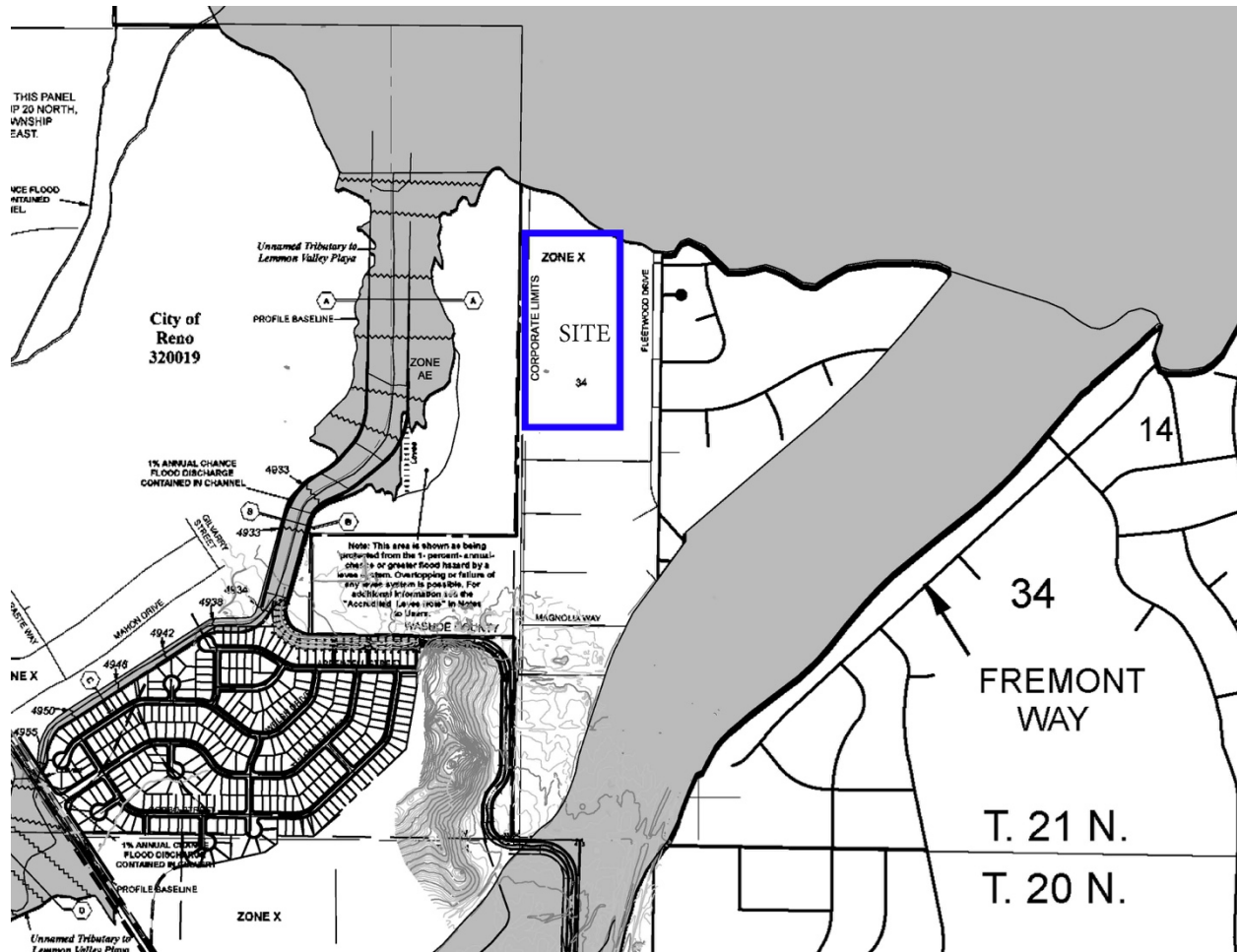


FIGURE 3: FEMA FIRM MAP PRIOR TO COMPLETION OF MAJOR DRAINAGEWAY IMPROVEMENTS.

Finally, the geotechnical report shows that the site is entirely suitable for the proposed development. Detailed percolation tests and groundwater studies were completed to ensure that the planned infiltration basin will perform as intended to fully prevent Lemmon Lake from increasing in height during flood events as a result of development.

As described in the Section of the Application entitled, “Compliance with the North Valleys Area Plan”, the project is fully in compliance with the Plan and hence, the

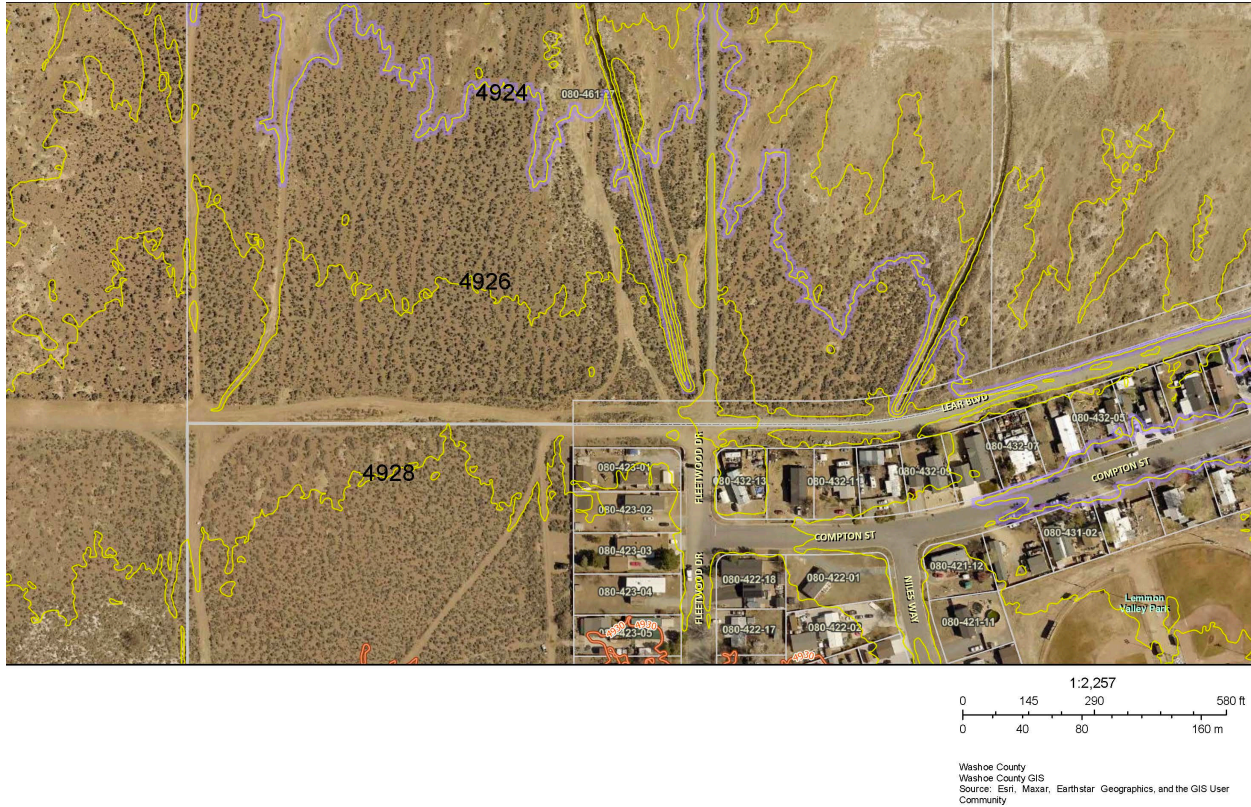


FIGURE 4 – CURRENT WASHOE COUNTY CONTOURS

- (2) Compatible Land Uses. *The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare. – Response: The existing single family homes located east and south of the site (SEE FIGURE 6) also have a land use designation of Suburban Residential with a zoning designation of Medium Density Suburban. The proposed zoning includes a mix of Medium Density Suburban, High Density Suburban, and Open Space that will allow a maximum density of 4.5 dwelling units per acre via the three zoning designations, negating the need for a development agreement. City of Reno land lies to the west with a zoning designation of SF8 or a maximum density of 8 dwelling units per acre.*

The site is bordered to the east and south by 10,000 sq. ft. minimum size lots with an overall project density of 3.37 dwelling units per acre. To compensate for the smaller lots and slightly higher density of just under 4.5 dwelling units per acre, a 30' to 35' wide buffer area is provided that will encompass a trail connecting to Lear Boulevard and Pan American Drive. Trees will be planted strategically in this area to minimize view-visual impacts to adjoining neighbors but to help screen the new homes. In summary, the proposed amendment will provide for land uses compatible with adjacent land uses, and will not adversely impact the public health, safety or welfare.

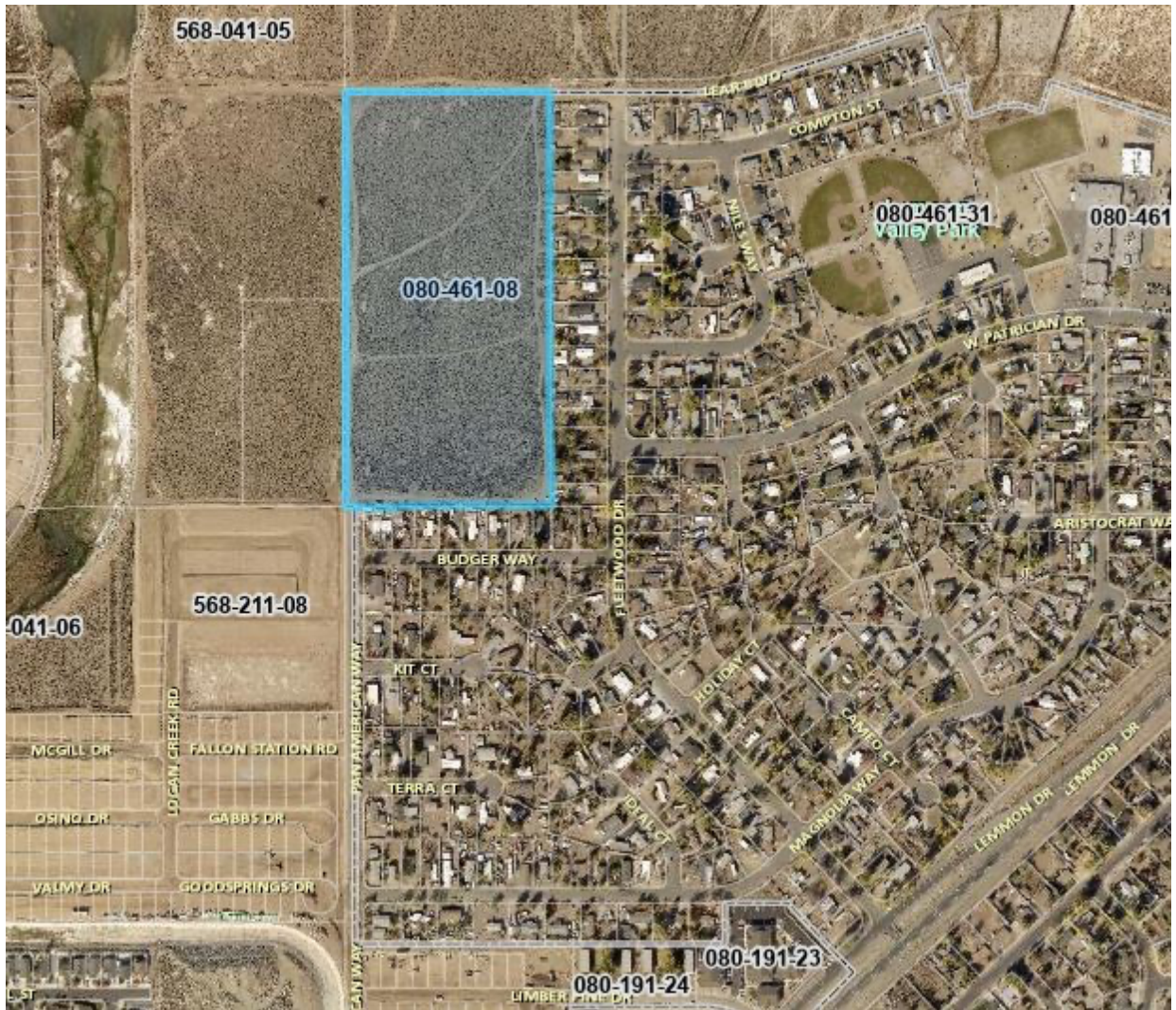


FIGURE 6 – AERIAL PHOTO (SITE IS HIGHLIGHTED)

(3) Response to Changed Conditions; more desirable use. *The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land. Response: As discussed in this application, no development constraints exist on this parcel and recent action by FEMA and the county now clearly demonstrate that no portion of the property lies within a flood zone. In fact, the actual Zone A Flood Zone lies several hundred feet north of the property via a current administrative amendment being filed with FEMA to provide correct contour information. Overall, the proposed amendments will allow for a more desirable utilization of the land by further promoting housing opportunities and compatibility with surrounding land uses.*

(4) Availability of Facilities. *There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed Master Plan designation. – Response: As discussed in the application, all needed services are in close proximity to this project that falls within the Lemmon Valley Suburban Character Management Area including public safety facilities. The property lies in a Moderate Fire Rating category.*

(5) Desired Pattern of Growth. *The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services. – Response: The proposed amendment will promote a desired pattern for the orderly physical growth of the County with a better allocation of the land for single family residential home development that takes into account open space and outdoor recreational opportunities, access and traffic concerns, desire for public trails, and respect for the scenic and rural heritage of the area.*

(6) Effect on a Military Installation When a Military Installation is Required to be Noticed. *The proposed amendment will not affect the location, purpose and mission of the military installation. – Response: There is no military installation in the vicinity of the project.*

Notes on Truckee Meadows Regional Plan Conformance:

The project lies within the Truckee Meadows Service Area and has a Tier 3 Land Designation within the Truckee Meadows Regional Plan:

Tier 3 Land

Area that is generally on the periphery of the TMSA and contains low density development, is undeveloped, or contains significant development constraints. Development in this area is lowest on the priority hierarchy for lands within the TMSA. Public facility or service provision is generally not available or planned for.

This property lies fully within the TMSA (Truckee Meadows Service Area), has no development constraints, and has full access to public and private utilities and public services including an elementary school within walking distance. Soils are fully compatible with the proposed development and percolation rates and groundwater levels are fully supportive of the proposed infiltration basin. This Tier 3 area that extends to Lemmon Drive is no longer contained within a Zone A Flood Zone as discussed in this application. Note that the land lying to the north and west lies within a Tier 2 Land Designation:

Tier 2 Land

Area within the TMSA where there is generally less dense development occurring at suburban levels, with some higher density nodes, and third in the priority hierarchy for development. A variety of residential and non-residential uses exist in this area. Public facility and service provision is currently in place or is planned. There is a desire to have connectivity to Tier 1 Lands and Mixed Use Core area through multi-modal means.

Table 3.1 – Regional Land Designation Requirements

| Regional Land Designation | Minimum Density (du/acre) | Maximum Density (du/acre) | Nonresidential Standards |
|----------------------------------|----------------------------------|----------------------------------|---------------------------------|
| Tier 2 Land | No minimum | 30 du/ac | None |

We envision 87 lots for the development to be entitled with the Tentative Map. For the 19.926 acre parcel, this would equate to a density of 4.37 dwelling units per acre. These densities fit well within the Tier 2 Regional Land Designation Requirements. Thus, we feel that the proposed amendment fully complies with the Truckee Meadows Regional Plan.

Per Page 90 of the Truckee Meadows Regional Plan:

Alternative densities or alternative nonresidential standards may be utilized in certain circumstances, where the requirements are determined to not be appropriate. TMRPA will track and review the usage of these alternatives to ensure that they are not impacting desired Regional Form.

A Tier 3 designation is clearly not appropriate for the site. Tier 2 is the appropriate Land Designation. We reached out to the Truckee Meadows Regional Planning Agency on this issue and learned that the Tier 2 designation can be applied to the site at the time of the Master Plan Conformance Review process.

Master Plan Amendment

Washoe County Code (WCC) Chapter 110, Article 820, Amendment of the Master Plan, provides the method for amending the Master Plan, including requests to change a master plan designation affecting a parcel of land or a portion of a parcel. A Master Plan Amendment may be initiated by the Board of County Commissioners, by the Director of Planning and Building, or an owner of real property or the property owner's authorized agent may initiate an amendment by submitting an application. See WCC 110.820, for further information.

Development Application Submittal Requirements

Applications are accepted on the 8th of January, May, and September. If the 8th falls on a non-business day, applications will be accepted on the next business day.

If you are submitting your application online, you may do so at [OneNV.us](https://www.onenv.us)

-
- XX 1. **Fees:** See Master Fee Schedule. **Most payments can be made directly through the OneNV.us portal.** If you would like to pay by check, please make the check payable to Washoe County and bring your application and payment to the Community Services Department (CSD).
 - XX 2. **Development Application:** A completed Washoe County Development Application form.
 - XX 3. **Owner Affidavit:** The Owner Affidavit must be signed and notarized by all owners of the property subject to the application request.
 - XX 4. **Proof of Property Tax Payment:** The applicant must provide a written statement from the Washoe County Treasurer's Office indicating all property taxes for the current quarter of the fiscal year on the land have been paid.
 - XX 5. **Neighborhood Meeting:** This project may require a Neighborhood Meeting to be held prior to application submittal. Please contact Washoe County Planning at Planning@washoecounty.gov or by phone at 775-328-6100 to discuss requirements.
 - XX 6. **Application Materials:** The completed Master Plan Amendment Application materials.
 - XX 7. **Traffic Impact Report:** Traffic impact reports are required whenever the proposed amendment will create the potential to generate 80 or more weekday peak hour trips as determined using the latest edition of the Institute of Transportation Engineers (ITE) trip generation rates or other such sources, as may be acceptable by Washoe County Engineering. Projects with less than 200 peak hour trips may not need to perform an impact analysis for future years. Traffic consultants are encouraged to contact Engineering staff prior to preparing a traffic impact report.
 - XX 8. **Application Map Specifications:** If this request involves a change to a map within the Master Plan, provide a map to be drawn using standard engineering scales (e.g. scale 1" = 100', 1" = 200', or 1" = 500') clearly depicting the area subject to the request, in relationship to the exterior property lines. All dimensions and area values shall be clearly labeled and appropriate symbols and/or line types shall be included in the map legend to depict the map intent.
 - XX 9. **Compliance with Planning Area Special Requirements:** Several planning areas (e.g. North Valleys, South Valleys, etc.) have additional submittal requirements, especially related to proof of sufficient water rights to serve the proposed master plan amendment. Please consult the Master Plan and the Washoe County Development Code, Division Two, for the planning area(s) to be impacted prior to submitting a Master Plan Amendment Application.
 - XX 10. **Digital File:** If this request involves a change to a map within the Master Plan, the applicant must provide an electronic file representing the scale, location, and size (in acres) of the proposed Master Plan changes. The file shall match any exhibits and/or acreage information contained within the original paper application. Preferred file format will be compatible with ESRI Geographic Information System (GIS) software technology (AutoCAD files are acceptable but should only include the polygon

layer information necessary to determine the location and size of the proposed land use change request). The data provided will be used by staff to create a “side-by-side” comparison map of existing and proposed land use and will also be the basis for official changes to the Washoe County land use database should the request be approved. The data may also be used for three dimensional (3D) modeling of the request during the permit review and public hearing process.

- XX 11. **Submission Packets:** One (1) packet and a flash drive. Any digital documents need to have a resolution of 300 dpi. If materials are unreadable, you will be asked to provide a higher quality copy. The packet shall include one (1) 8.5” x 11” reduction of any applicable site plan, development plan, and/or application map. Labeling on these reproductions should be no smaller than 8 point on the 8.5” x 11” display. Large format sheets should be included in a slide pocket(s). Any specialized reports identified above shall be included as attachments or appendices and be annotated as such.

Notes:

- XX. (i) Application and map submittals must comply with all specific criteria as established in the Washoe County Development Code and/or the Nevada Revised Statutes.
- XX. (ii) Appropriate map engineering and building architectural scales are subject to the approval of the Planning and Building and/or Engineering and Capital Projects.
- XX. (iii) All oversized maps and plans must be folded to a 9” x 12” size.
- XX. (iv) Based on the specific nature of the development request, Washoe County reserves the right to specify additional submittal packets, additional information and/or specialized studies that clarify the potential impacts and potential conditions of development in order to minimize or mitigate impacts resulting from the project. No application shall be processed until the information necessary to review and evaluate the proposed project is deemed complete by the Director of Planning and Building.
- N/A (v) **Labels:** If the assigned planner determines the abandonment will affect the access to a mobile home park, the applicant will be required to submit a list of mailing addresses for every tenant residing in the mobile home park.
- N/A (vi) **Master Plan Amendments that propose a change to the Vision or Character Statement or any of their associated goals and/or policies of an Area Plan may require a series of community visioning workshops with the applicable Citizen Advisory Board(s). Please see the Plan Maintenance section of the subject Area Plan for more information.**

Compliance with the North Valleys Area Plan

Learner Lemmon, a 19.926 acre site has been designed with 87 lots at a density of less than 4.5 dwelling unit per acre to fully comply with the goals and policies of the North Valleys Area Plan and Plan Maintenance sections. The significant amount of open space (>25%) both within the site and along the street frontages of Pan American and Lear, a looped trail system, pocket park, and larger canopy trees throughout the site ensure that the scenic and rural heritage of the North Valleys area is preserved. Upon approval and development, this well thought out project will provide much needed market rate housing, provide additional open space and recreational opportunities, be in scale and in character with the surrounding community, and will take advantage of available roadway capacity, public and private utilities, and nearby public services. In summary, the project complies with the vision and character statements of the North Valleys Area Plan and in particular, the Lemmon Valley Community.

Common development standards are achieved with use of rolled curb and gutter, use of native vegetation within common areas including revegetation to control noxious weeds (to include ongoing maintenance by a homeowner's association) and provision of buffers and trail access to benefit adjoining neighbors. Streets were designed to calm traffic without the need for speed bumps or other physical devices with short tangent lengths and two points of access to Pan American Drive. No homes front on Pan American Drive and a 10 foot wide landscape strip is provided to allow for planting of Class 4 canopy trees. We will work with Washoe County during final design to limit the use of streetlights, only placing lights where needed for safety and to be in compliance with dark sky and shielding requirements.

A traffic study was completed in accordance with county guidelines and in consultation with county staff to ensure approval of the study scope. The traffic study shows that impacts from the development will be minimal and not overly burden existing residents while maintaining level of service standards. New electrical service will be placed underground. The site is level and hillside development standards do not apply. The larger 50' wide lots will allow for single story homes in locations desired by the builder. The common area landscape buffer and infiltration basin ensure compliance with policies addressing separation from adjoining single family homes.

Flooding is a large concern in the North Valleys Community and Lemmon Valley in particular after the significant flooding issues with Lemmon Lake in 2017 to 2019. Thus, we performed a substantial amount of both percolation tests and groundwater elevation studies to make sure that our proposed infiltration site was properly placed and will provide decades of service.

We also worked with engineering staff to develop the best possible sewer service for the project. Knowing that the county plant will be decommissioned, we came up with a plan to sewer the site to the Reno-Stead Wastewater Treatment facility that is undergoing significant expansion. We were also able to gravity flow the site to the plant and avoid a costly lift station and eliminate the need for ongoing maintenance.

Plan Maintenance

The only modification required to the North Valley Area Plan is to change the land use designation of the northern 43% of the site from Rural to Suburban Residential, consistent with existing development patterns in the neighborhood for land with no development constraints. Furthermore, as described above, the project was designed to be compatible with the vision and character statements of the plan and not conflict with the public's health, safety or welfare. Use of native landscaping including revegetation along with required low flow plumbing fixtures will minimize water usage and ensure compliance with the Regional Water Management Plan.

Coupled with the extensive sewer, storm drain, and traffic studies and the discovery underway with the Truckee Meadows Water Authority, this project will comply with the Plan Maintenance sections of the North Valleys Area Plan. Again, the traffic study clearly demonstrates that adopted roadway levels of service will be maintained along with Washoe County traffic requirements for local streets.

The provision of the pocket park, open space, trails system, nearby elementary school within walking distance and availability of all public services and utilities for this infill parcel ensures compliance with the Plan Maintenance sections of the North Valleys Area Plan.

VII. Regulatory Zone Amendment Supplemental Information

(All required information may be separately attached)

Please complete the following supplemental information to ensure consistent review of your request to amend the Washoe County Zoning Map. Please provide a brief explanation to all questions answered in the affirmative.

1. List the Following information regarding the property subject to the Regulatory Zone Amendment.
 - a. What is the location (address, distance and direction from nearest intersection)?

0 Pan American Drive, SE corner of Pan American Drive and the future Lear Boulevard. See the attached legal description from the Deed.

- b. Please list the following proposed changes (attach additional sheet if necessary).

| APN of Parcel | Master Plan Designation | Current Zoning | Existing Acres | Proposed Zoning | Proposed Acres |
|---------------|-------------------------|----------------|----------------|-----------------|----------------|
| | | | | | |
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| | | | | | |
| | | | | | |

- c. What are the regulatory zone designations of adjacent parcels?

| | Zoning | Use (residential, vacant, commercial, etc.) |
|-------|--------|---|
| North | | |
| South | | |
| East | | |
| West | | |

3. Describe the existing conditions and uses located on the site (i.e. vacant land, roadways, easements, buildings, etc.).

4. Describe the natural resources associated with the site under consideration. Your description should include resource characteristics such as water bodies, vegetation, topography, minerals, soils, and wildlife habitat.

Upland with Sagebrush, Rabbitbrush and similar Native Vegetation

5. Does the property contain development constraints such as floodplain or floodways, wetlands, slopes, or hillsides in excess of 15%, geologic hazards such as active faults, significant hydrologic resources, or major drainages or prime farmland?

| | |
|---|--|
| <input type="checkbox"/> Yes, provide map identifying locations | <input checked="" type="checkbox"/> No |
|---|--|

6. Is the site located in an area where there is potentially an archeological, historic, or scenic resource?

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

Explanation:

| |
|--|
| |
|--|

7. Are there sufficient water rights to accommodate the proposed amendment? Please provide copies of all water rights documents, including chain of title to the original water right holder.)

| | |
|--|-----------------------------|
| <input checked="" type="checkbox"/> Yes (To be purchased from Vidler/TMWA) | <input type="checkbox"/> No |
|--|-----------------------------|

If yes, please identify the following quantities and documentation numbers relative to the water rights:

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

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

| |
|--|
| |
|--|

- b. If the proposed amendment involves an intensification of land use, please identify how sufficient water rights will be available to serve the additional development.

| |
|--|
| |
|--|

8. Please describe the source and timing of the water facilities necessary to serve the amendment.

- a. System Type:

| | | |
|--|-----------|--|
| <input type="checkbox"/> Individual wells | | |
| <input type="checkbox"/> Private water | Provider: | |
| <input checked="" type="checkbox"/> Public water | Provider: | |

- b. Available:

| | | | |
|---|------------------------------------|------------------------------------|-----------------------------------|
| <input checked="" type="checkbox"/> Now | <input type="checkbox"/> 1-3 years | <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 5+ years |
|---|------------------------------------|------------------------------------|-----------------------------------|

- c. Is this part of a Washoe County Capital Improvements Program project? N/A

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

- d. If a public facility is proposed and is currently not listed in the Washoe County Capital Improvements Program or not available, please describe the funding mechanism for ensuring availability of water service.

| |
|--|
| |
|--|

9. What is the nature and timing of sewer services necessary to accommodate the proposed amendment?

- a. System Type:

| | | |
|---|-----------|--|
| <input type="checkbox"/> Individual septic | | |
| <input checked="" type="checkbox"/> Public system | Provider: | |

- b. Available:

| | | | |
|---|------------------------------------|------------------------------------|-----------------------------------|
| <input checked="" type="checkbox"/> Now | <input type="checkbox"/> 1-3 years | <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 5+ years |
|---|------------------------------------|------------------------------------|-----------------------------------|

- c. Is this part of a Washoe County Capital Improvements Program project? N/A

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

- d. If a public facility is proposed and is currently not listed in the Washoe County Capital Improvements Program or not available, please describe the funding mechanism for ensuring availability of sewer service. If a private system is proposed, please describe the system and the recommended location(s) for the proposed facility.

| |
|--|
| |
|--|

10. Please identify the street names and highways near the proposed amendment that will carry traffic to the regional freeway system.

| |
|---|
| Pan American Drive to Fleetwood Drive to Lemmon Drive |
|---|

11. Will the proposed amendment impact existing or planned transportation systems? (If yes, a traffic report is required.)

| | |
|---|-----------------------------|
| <input checked="" type="checkbox"/> Yes (Minimal Impact, see traffic study) | <input type="checkbox"/> No |
|---|-----------------------------|

12. Community Services (provided name, address and distance to nearest facility).

| | |
|-------------------------|--|
| a. Fire Station | |
| b. Health Care Facility | |
| c. Elementary School | |
| d. Middle School | |
| e. High School | |
| f. Parks | |
| g. Library | |
| h. Citifare Bus Stop | |

Projects of Regional Significance Information For Regulatory Zone Amendments

Nevada Revised Statutes 278.026 defines "Projects of Regional Significance". Regulatory Zone amendment requests for properties within the jurisdiction of the Truckee Meadows Regional Planning Commission (TMRPC) must respond to the following questions. A "Yes" answer to any of the following questions may result in the application being referred first to the Truckee Meadows Regional Planning Agency (TMRPA) for submission as a project of regional significance. Applicants should consult with County or Regional Planning staff if uncertain about the meaning or applicability of these questions.

1. Will the full development potential of the Regulatory Zone amendment increase employment by not less than 938 employees?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

2. Will the full development potential of the Regulatory Zone amendment increase housing by 625 or more units?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

3. Will the full development potential of the Regulatory Zone amendment increase hotel accommodations by 625 or more rooms?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

4. Will the full development potential of the Regulatory Zone amendment increase sewage by 187,500 gallons or more per day?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

5. Will the full development potential of the Regulatory Zone amendment increase water usage by 625 acre-feet or more per year?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

6. Will the full development potential of the Regulatory Zone amendment increase traffic by 6,250 or more average daily trips?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

7. Will the full development potential of the Regulatory Zone amendment increase the student population from kindergarten to 12th grade by 325 students or more?

| | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

IX. REGULATORY ZONE AMENDMENT FINDINGS

((1) Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan. – **Response: See Master Plan Amendment Finding No. 1. The proposed changes are Consistent with the Master Plan.**

(2) Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare. – **Response: See Master Plan Amendment Finding No. 2. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.**

(3) Response to Change Conditions; more desirable use. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land. – **Response: See Master Plan Amendment Finding No. 3. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.**

(4) Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed amendment. – **Response: See Master Plan Amendment Finding No. 4. There are or are planned to be adequate transportation, recreation, utility, school, and other facilities to accommodate the uses and densities permitted by the proposed amendment.**

(5) No Adverse Effects. The proposed amendment will not adversely affect the implementation of the policies and action programs of the Washoe County Master Plan. – **Response: The proposed amendment will positively affect the implementation of the policies and action programs of the Washoe County Master Plan. Pertinent goals and Policies are Achieved with the Proposed Amendments.**

(6) Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services. – **Response: See Master Plan Amendment Finding No. 5. The proposed amendment will promote the desired pattern for the orderly physical growth of the County with a better allocation of the land for development vs. undeveloped land that takes into account topography, access, desire for public trails, and sensitivity to traffic issues in the area.**

(7) Effect on a Military Installation When a Military Installation is Required to be Noticed. The proposed amendment will not affect the location, purpose and mission of a military installation. – **Response: There is no military installation in the vicinity of the project.**

Regulatory Zone Amendment

Washoe County Code (WCC) Chapter 110, Article 821, Amendment of Regulatory Zone, provides for the method for amending the Regulatory Zone map, including requests to change a Regulatory Zone affecting a parcel of land or a portion of a parcel. A Regulatory Zone Amendment may be initiated by the Board of County Commissioners, by the Director of Planning and Building, or an owner of real property or the property owner's authorized agent may initiate an amendment by submitting an application. See WCC 110.821 for further information.

Development Application Submittal Requirements

Applications are accepted on the 8th of each month. If the 8th falls on a non-business day, applications will be accepted on the next business day.

If you are submitting your application online, you may do so at [OneNV.us](https://www.onenv.us)

- XX 1. **Fees:** See Master Fee Schedule. **Most payments can be made directly through the OneNV.us portal.** If you would like to pay by check, please make the check payable to Washoe County and bring your application and payment to the Community Services Department (CSD).
- XX 2. **Development Application:** A completed Washoe County Development Application form.
- XX 3. **Owner Affidavit:** The Owner Affidavit must be signed and notarized by all owners of the property subject to the application request.
- XX 4. **Proof of Property Tax Payment:** The applicant must provide a written statement from the Washoe County Treasurer's Office indicating all property taxes for the current quarter of the fiscal year on the land have been paid.
- XX 5. **Neighborhood Meeting:** This project may require a Neighborhood Meeting to be held prior to application submittal. Please contact Washoe County Planning at Planning@washoecounty.gov or by phone at 775-328-6100 to discuss requirements.
- XX 6. **Application Materials:** The completed Regulatory Zone Amendment Application materials.
- XX 7. **Application Map Specifications:** Map to be drawn using standard engineering scales (e.g. scale 1" = 100', 1" = 200', or 1" = 500') clearly depicting the area subject to the request, in relationship to the exterior property lines. All dimensions and area values shall be clearly labeled, and appropriate symbols and/or line types shall be included in the map legend to depict the map intent.
- XX 8. **Compliance with Planning Area Special Requirements:** Several planning areas (e.g. North Valleys, South Valleys, etc.) have additional submittal requirements, especially related to proof of sufficient water rights to serve the proposed land use. Please consult the Master Plan and the Washoe County Development Code, Division Two, for the planning area(s) to be impacted prior to submitting a Regulatory Zone Amendment Application.
- XX 9. **Submission Packets:** One (1) packet and a flash drive. Any digital documents need to have a resolution of 300 dpi. If materials are unreadable, you will be asked to provide a higher quality copy. The packet shall include one (1) 8.5" x 11" reduction of any applicable site plan, development plan, and/or application map. Labeling on these reproductions should be no smaller than 8 point on the 8.5" x 11" display. Large format sheets should be included in a slide pocket(s). Any specialized reports identified above shall be included as attachments or appendices and be annotated as such.

Notes:

- XX (i) Application and map submittals must comply with all specific criteria as established in the Washoe County Development Code and/or the Nevada Revised Statutes.

- XX (ii) Appropriate map engineering and building architectural scales are subject to the approval of the Planning and Building and/or Engineering and Capital Projects.
- XX (iii) All oversized maps and plans must be folded to a 9" x 12" size.
- XX (iv) Based on the specific nature of the development request, Washoe County reserves the right to specify additional submittal packets, additional information and/or specialized studies that clarify the potential impacts and potential conditions of development in order to minimize or mitigate impacts resulting from the project. No application shall be processed until the information necessary to review and evaluate the proposed project is deemed complete by the Director of Planning and Building.
- N/A (v) **Labels:** If the assigned planner determines the abandonment will affect the access to a mobile home park, the applicant will be required to submit a list of mailing addresses for every tenant residing in the mobile home park.

d. Proposed yard setbacks if different from standard:

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

f. Identify all proposed non-residential uses:

g. Improvements proposed for the common open space:

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

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

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

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

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

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?

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

| | |
|---|-----------------------------|
| <input checked="" type="checkbox"/> Yes (Washoe County) | <input type="checkbox"/> No |
|---|-----------------------------|

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

| | | |
|------------------------------|--|---------------------------|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | If yes, within what city? |
|------------------------------|--|---------------------------|

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

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

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

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

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

12. Is the subject property in an area identified by Planning and Building 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:

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

14. 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?

Water, sewer, storm water, and noxious weeds are all addressed in this application

15. 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 110.404.25 Common Open Space Development allows for modification to include a reduction in minimum lot sizes and lot standards as long as the overall density is not increased beyond that permitted in a specific regulatory zone. See the section on opportunities & constraints.

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

17. 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.

18. 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:

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

[Empty text box for answer to question 19]

20. 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?

Estimated Import of 26,500 cu. yds. Per neighborhood input, we plan to pursue the potential to bring fill in from Lear Boulevard via Military Road via a temporary crossing over the major drainage way. We believe that the import number can be reduced below 20,000 cu. yds. with final design.

21. 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?

[Empty text box for answer to question 21]

22. 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?

[Empty text box for answer to question 22]

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

[Empty text box for answer to question 23]

24. 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?

[Empty text box for answer to question 24]

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

No trees exist on site

26. 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?

See the preliminary landscape plans for details on revegetation and the seed mix planned for the site.

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

No temporary irrigation is planned to avoid erosion issues. A proper seed mix and planting techniques will be used along with fall planting to take advantage of winter moisture to facilitate seed germination and rooting.

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

TENTATIVE MAP FINDINGS

Section 110.608.25 Findings. Prior to approving an application for a tentative map, the Planning Commission shall find that all of the following are true:

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

RESPONSE – This Tentative Map is consistent with the supplemental information, findings, and compliance information contained within the attached Master Plan Amendment Application and thus consistent with the Master Plan including 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;

RESPONSE – This Tentative Map and the subdivision design are consistent with the supplemental information, findings, and compliance information contained within the attached Master Plan Amendment Application and consistent with the Washoe County Master Plan including the North Valleys Area Plan.

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

RESPONSE – This project is ideally situated on the property with significant buffer areas adjoining the existing single family residential homes to the east and south, a pocket park, trail system, and significant open space to help preserve the character of the area. Planned access to Pan American Drive will limit traffic on Fleetwood Drive between Lear and Budger and traffic volumes on the residential portion of Fleetwood will remain below 2,000 ADT with development of the project. Lemmon Valley Elementary School and Lemmon Valley Park are within walking distance for the children and families that are expected to live in the new homes.

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

RESPONSE – Per the following table, this project has sufficient and adequate access to the Public Facilities Management System.

| | |
|-------------------------|--|
| a. Fire Station | TRUCKEE MEADOWS FIRE STATION 44, 5.4 miles (+/-3 miles upon completion of Lear Blvd) |
| b. Health Care Facility | Numerous Health Care/Urgent Care Facilities near Lemmon Dr. & US 395 |
| c. Elementary School | Lemmon Valley Elementary School, 0.6 Miles |
| d. Middle School | O'Brien Middle School, 4.5 Miles |
| e. High School | North Valley's High School, 4.2 Miles |
| f. Parks | Lemmon Valley Park (0.5 Miles) & North Valley's Regional Park (3.5 Miles) |
| g. Library | North Valley's Library, 3.5 Miles |
| h. Citifare Bus Stop | Adjoins RTC Flex Ride Service area (See attached) |

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

RESPONSE – No endangered plant, wildlife, or associated habitats exists on this site. 5.27 acres of open space will be preserved, and native vegetation will be used where practical. A trail system will traverse said open space to the benefit the public and wildlife.

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

RESPONSE – There are no Public Health Issues associated with this project. Public sewer and water lines will serve the project, adequate traffic facilities exist to accommodate the project and adopted levels of service will be maintained, and all necessary public facilities are within close proximity to the project.

(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;

RESPONSE – There are no easements affected by this project. Planned trails and pocket parks will benefit the public.

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

RESPONSE – Per the attached traffic study, the two proposed three leg intersections on Pan American Drive will provide safe and adequate primary and emergency access to the project. The traffic study shows that the project will not unduly burden area roadways, further supports this finding.

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

RESPONSE – The local streets that are proposed to be dedicated to Washoe County as Public Roadways will comply with all applicable county standards and be in compliance with the Master Plan

(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.

RESPONSE – The level topography and layout of the site with southern and western orientation of the homes and large setbacks from existing homes will allow for significant natural solar heating of the vast majority of homes on the site.

Tentative Subdivision Map

Washoe County Code (WCC) Chapter 110, Article 608, Tentative Subdivision Map, prescribes the rules and procedures for the regulation and approval of tentative subdivision maps. The Planning Commission shall approve, conditionally approve, or deny the tentative parcel map within sixty (60) days of the date that the application is determined to be complete. See WCC 110.608, for further information.

Development Application Submittal Requirements

Applications are accepted on the 8th of each month. If the 8th falls on a non-business day, applications will be accepted on the next business day.

If you are submitting your application online, you may do so at [OneNV.us](https://www.onenv.us)

-
- XX 1. **Fees:** See Master Fee Schedule. **Most payments can be made directly through the OneNV.us portal.** If you would like to pay by check, please make the check payable to Washoe County and bring your application and payment to the Community Services Department (CSD). The following fees will also need to be paid:
- A fee to the Engineering Department for Technical Plan Check.
 - A separate check made payable to the Nevada Division of Environmental Protection (\$100 base fee plus \$1 per lot) is required upon submittal.
 - A separate check made payable to the Nevada Division of Water Resources (\$150 base fee plus \$1 per lot) is required upon submittal.
- XX 2. **Development Application:** A completed Washoe County Development Application form.
- XX 3. **Owner Affidavit:** The Owner Affidavit must be signed and notarized by all owners of the property subject to the application request.
- XX 4. **Proof of Property Tax Payment:** The applicant must provide a written statement from the Washoe County Treasurer's Office indicating all property taxes for the current quarter of the fiscal year on the land have been paid.
- XX 5. **Neighborhood Meeting:** This project may require a Neighborhood Meeting to be held prior to application submittal. Please contact Washoe County Planning at Planning@washoecounty.gov or by phone at 775-328-6100 to discuss requirements.
- XX 6. **Application Materials:** The completed Tentative Subdivision Map Application materials.
- XX 7. **Title Report:** A preliminary title report, with an effective date of no more than one hundred twenty (120) days of the submittal date, by a title company which provides the following information:
- Name and address of property owners.
 - Legal description of property.
 - Description of all easements and/or deed restrictions.
 - Description of all liens against property.
 - Any covenants, conditions and restrictions (CC&Rs) that apply.
- XX 8. **Traffic Impact Report:** Traffic impact reports are required whenever the proposed development will create the potential to generate 80 or more weekday peak hour trips as determined using the latest edition of the Institute of Transportation Engineers (ITE) trip generation rates or other such sources as may be accepted by Washoe County Engineering. Projects with less than 200 peak hour trips may not need to perform an impact analysis for future years. Traffic consultants are encouraged to contact Washoe County Engineering staff prior to preparing a traffic impact report.
- XX 9. **Development Plan Specifications:**
- a. Vicinity map showing the proposed development in relation to the surrounding area with distance to primary and secondary access/egress and in relationship to Interstate 80, Highway 395, I-580, or other major arterials.

- b. Date, north arrow, standard engineering scale (e.g. scale 1" = 100', 1" = 200', or 1" = 500') and index with number of each sheet in relation to the total number of sheets.
- c. Name of subdivision, applicant, property owner and engineer.
- d. General notes as required.
- e. Land use data (number of lots, total area, common area, gross density, average lot size, largest and smallest lot at a minimum).
- f. Engineer's statement with wet stamp including a note by the project engineer or design professional indicating compliance with all applicable provisions of the Washoe County Development Code.

XX 10. **Map Series (the following at a minimum must be shown):**

- a. Lot size with dimensions showing all streets and ingress/egress to the property.
- b. Property boundary lines, distances and bearings.
- c. Show the location of all existing buildings that will remain (with distances from the property lines and from each other), all existing buildings that will be removed, and site improvements on a base map with existing and proposed topography expressed in intervals of no more than five (5) feet.
- d. Show the location and configuration of all existing and proposed wells, septic systems and leach fields, overhead utilities, and water and sewer lines.
- e. Show locations of parking, landscaping, signage and lighting (if applicable).
- f. Contours (labeled) at five (5) foot intervals or two (2) foot intervals where, in the opinion of the County Engineer, topography is a major factor in the development.
- g. Indication of prominent landmarks, areas of unique natural beauty, rock outcroppings, vistas and natural foliage which will be deciding considerations in the design of the development.
- h. The cross sections of all right-of-ways, streets, alleys or private access ways within the proposed development, proposed name and approximate grade of each, and approximate radius of all curves and diameter of each cul-de-sac. Plans to mitigate visual impacts of all cuts and fills over five (5) feet in height.
- i. The width and approximate location of all existing or proposed easements, whether public or private, for roads, drainage, sewers, irrigation, or public utility purposes.
- j. Location and size of any land to be reserved or dedicated for parks, recreation areas, common open space areas, schools, or other public uses.
- k. If any portion of the land within the boundary of the development is subject to inundation or storm water overflow, as shown on the adopted Federal Emergency Management Agency's Flood Boundary and Floodway Maps, that fact and the land so affected shall be clearly shown on the map by a prominent note on each sheet, as well as width and direction of flow of each water course within the boundaries of the development.
- l. Existing roads, trails, or rights-of-way within the development shall be designated on the map. Topography and existing developments within three hundred (300) feet must also be shown on the map.
- m. Location of snow storage areas sufficient to handle snow removed from public and private streets, if applicable.
- n. All known areas of potential hazard including, but not limited to, earth slide areas, avalanche areas, or otherwise hazardous slopes, shall be clearly designated on the map. Additionally, active fault lines (post-Holocene) shall be delineated on the map together with lines delineating required building setbacks.
- o. Boundary of any wetland areas and the location of any springs within the project site.
- p. Emergency access roadway.
- q. Building envelopes if a hillside development is proposed and areas that may be fenced and type of fencing to be allowed.

- r. Significant Hydrologic Resources. Indicate the critical and sensitive buffer zones according to Article 418 of the Washoe County Development Code.
 - s. Preliminary landscape plan for all cuts and fill slopes, utility trenches not contained within roadways, entrances, buffer zones and all arterial roadway treatment.
 - t. Easements over trail systems, if required.
 - u. Traffic Impact Report (if needed) : Traffic impact reports are required whenever the proposed development project will generate 80 or more weekday peak hour trips as determined using the latest edition of the Institute of Transportation Engineers (ITE) trip generation rates or other such sources as may be accepted by Washoe County Engineering and Capital Projects. Projects with less than 200 peak hour trips may not need to perform an impact analysis for future years. Traffic consultants are encouraged to contact Engineering and Capital Projects staff prior to preparing a traffic impact report.
- XX 11. **Grading Plan (in addition to requirements above, if needed):**
- a. Location and limits of all work to be done.
 - b. Existing contours and proposed contours.
 - c. Existing drainage (natural and man-made) and proposed drainage patterns.
 - d. Quantities of excavation, fill, and disturbed surface area shall be calculated and shown on the site plan.
 - e. Quantities of material proposed to be removed from the site must be shown. The proposed disposal area and the disposition of fill must be noted on the site plan.
 - f. Limiting dimensions of cut and fill.
 - g. Proposed BMP's (Best Management Practices) for controlling water and wind erosion if a disturbed area is left undeveloped for over thirty (30) days.
 - h. Walls and terraces with proposed height.
 - i. A minimum of two (2) cross sections of the project site depicting the major grading as proposed and the relationship of the project site to existing development within two hundred (200) feet.
- N/A 12. **Hillside Ordinance:** Applications on properties containing slopes in excess of fifteen (15) percent or greater on twenty (20) percent or more of the site must submit all requirements of Article 424, Hillside Development. The Site Analysis Map, Developable Area Map, Constraint and Mitigation Analysis, and Detailed Contour Analysis are required. Building envelopes, disturbed areas, and areas to remain undisturbed for each created lot shall be shown on the tentative and final map.
- XX 13. **Street Names:** A completed "Request to Reserve New Street Name" form (included in application packet). Please print all street names on the tentative map. Note whether they are existing or proposed.
- XX 14. **Washoe County Assessor's Office Map:** A site map (labeled Assessor's Site Map) utilizing the Assessor's parcel page(s) as a base, must be submitted showing the development to scale. (The Assessor's pages may be combined and the scale utilized by the Assessor may be altered to show the development in the most graphic method. If so, please note the scale and label accordingly on the submitted site plan.)
- XX 15. **Washoe County Health District:** An "Acknowledgment of Water Service" letter from the water purveyor shall be submitted with the tentative subdivision map application. Washoe County Health District will consider the application incomplete without compliance with NAC 445A.666.
- XX 16. **Submission Packets:** Three (3) packets and a flash drive. One (1) packet must be labeled "Original" and contain a signed and notarized Owner Affidavit. Any digital documents need to have a resolution of 300 dpi. If materials are unreadable, you will be asked to provide a higher quality copy. The packet shall include one (1) 8.5" x 11" reduction of any applicable site plan, development plan, and/or application map. Labeling on these reproductions should be no smaller than 8 point on the 8.5" x 11" display. Large format sheets should be included in a slide pocket(s). Any specialized reports identified above shall be included as attachments or appendices and be annotated as such.
- XX 17. **Special Packets:** In addition to the three (3) packets, the following information in the number specified shall be included with the project submittal:

- XX a. **Geotechnical Report:** Three (3) copies of a preliminary geotechnical report prepared by a Nevada registered civil engineer, including soils characteristics sufficient for use in tentative structural design (i.e. street sections, building pads, etc.) and potential geologic hazards.
- XX b. **Preliminary Grading, Drainage and Erosion Control Plan:** Three (3) copies of a preliminary grading, drainage, and erosion control plan for the entire project, prepared by a Nevada registered civil engineer, showing existing contours at maximum five (5) foot intervals, approximate street grades, proposed surface drainage, approximate extent of cut and fill slopes, approximate building envelopes and all pad elevations sufficient to convey the impact of grading.
- XX c. **Hydrological Report:** Three (3) copies of a hydrological report including such conditions as ground water or seepage conditions, and location of wells and springs, to be prepared by a qualified civil engineer registered with the State of Nevada.
- N/A d. **Tree Preservation and Protection Plan:** Three (3) copies of a tree preservation and protection plan, where applicable, shall be made a part of the tentative plat with indication thereon of those trees proposed to be removed, those to remain, and where new trees are to be planted.
- XX e. **Preliminary Landscape Plan:** If the subject property is adjacent to an arterial roadway, submit three (3) copies of a preliminary landscape plan for the area along the roadway. The plans shall comply with the provisions of Article 412 of the Development Code. **(Not required but included)**

Notes:

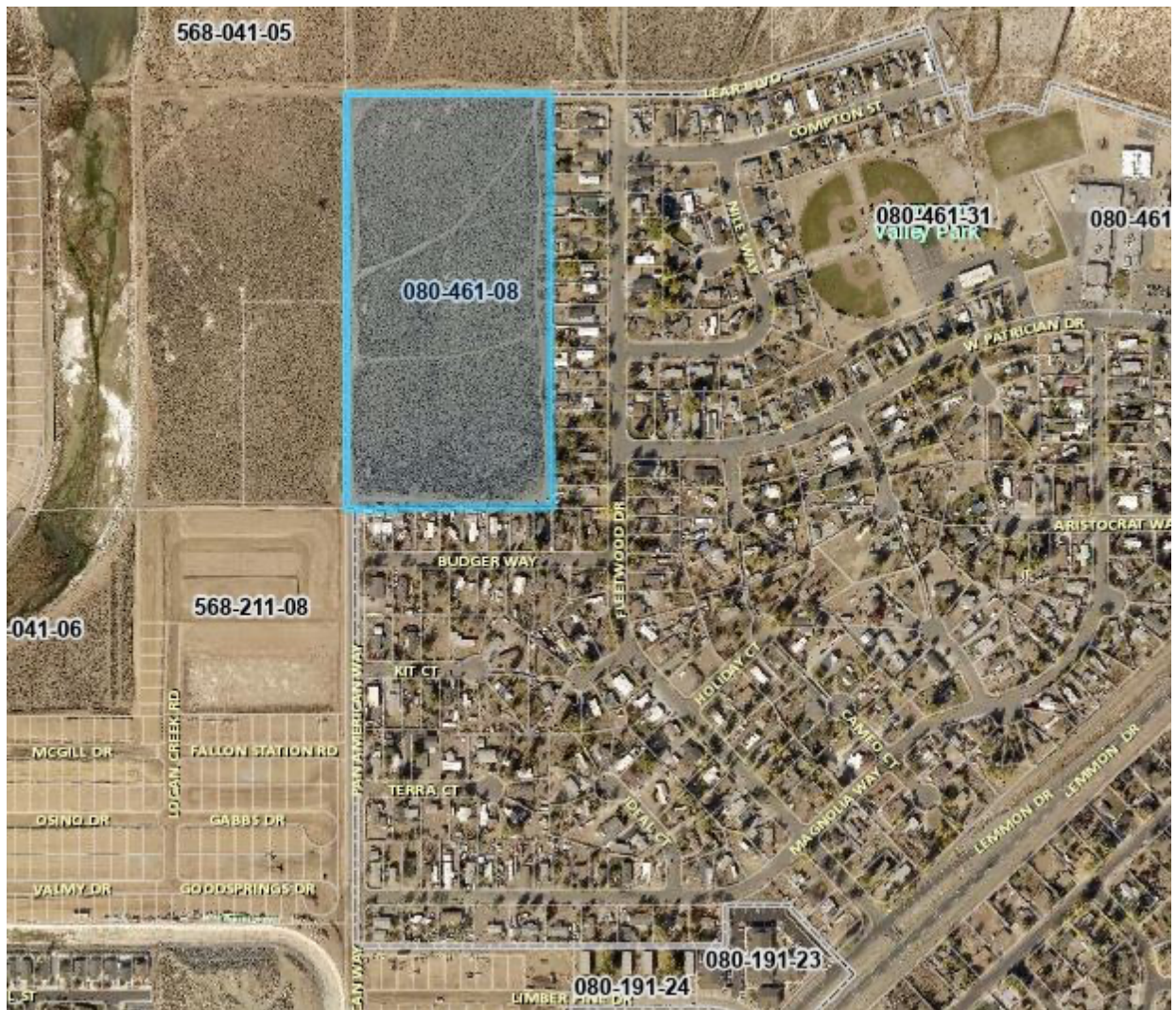
- (i) Application and map submittals must comply with all specific criteria as established in the Washoe County Development Code and/or the Nevada Revised Statutes.
- (ii) Appropriate map engineering and building architectural scales are subject to the approval of the Planning and Building and/or Engineering and Capital Projects.
- (iii) All oversized maps and plans must be folded to a 9" x 12" size.
- (iv) Based on the specific nature of the development request, Washoe County reserves the right to specify additional submittal packets, additional information and/or specialized studies that clarify the potential impacts and potential conditions of development in order to minimize or mitigate impacts resulting from the project. No application shall be processed until the information necessary to review and evaluate the proposed project is deemed complete by the Director of Planning and Building.
- (v) The Title Report should only be included in the one (1) original packet.
- (vi) **Labels:** The applicant is required to submit a list of mailing addresses for every tenant residing in a mobile home park that is within five hundred (500) feet of the proposed project (or within seven hundred fifty (750) feet of the proposed project if the proposed project is a project of regional significance).

XV. Opportunities and Constraints Analysis

Section 110.408.30 Site Analysis to Determine Common Open Space and Lot Size Variations. A site analysis showing development opportunities and constraints shall be prepared as a key consideration, along with the project design objectives, to determine the total area covered by lots and roads, lot areas, and the total area to be designated as common open space. The site analysis shall include information and maps, including a site opportunities and constraints map, describing all significant physical and contextual features or factors which may affect the development of the property. The elements of the site analysis shall include, as a minimum, the following information:

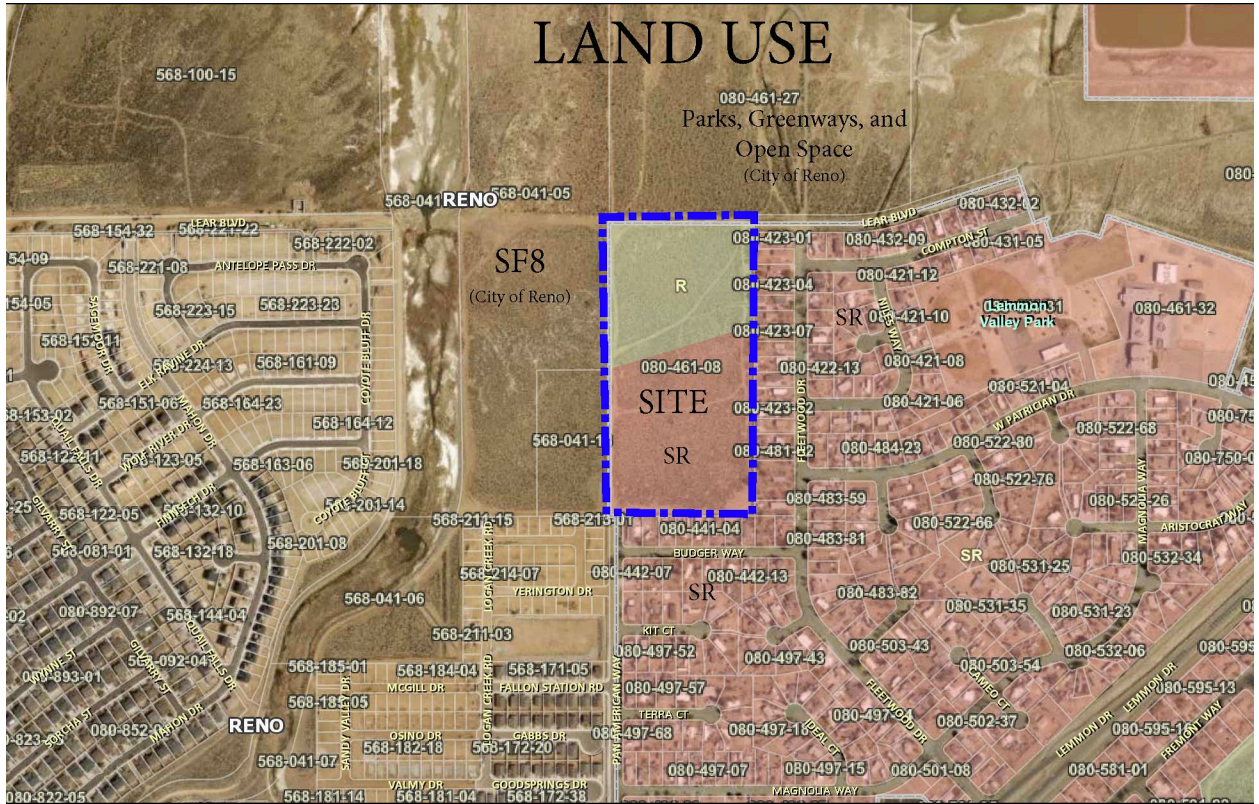
(a) Location Map. A general location map providing the context of location and vicinity of the site.

RESPONSE – See the Highlighted Area Below. The site lies within a built up area.

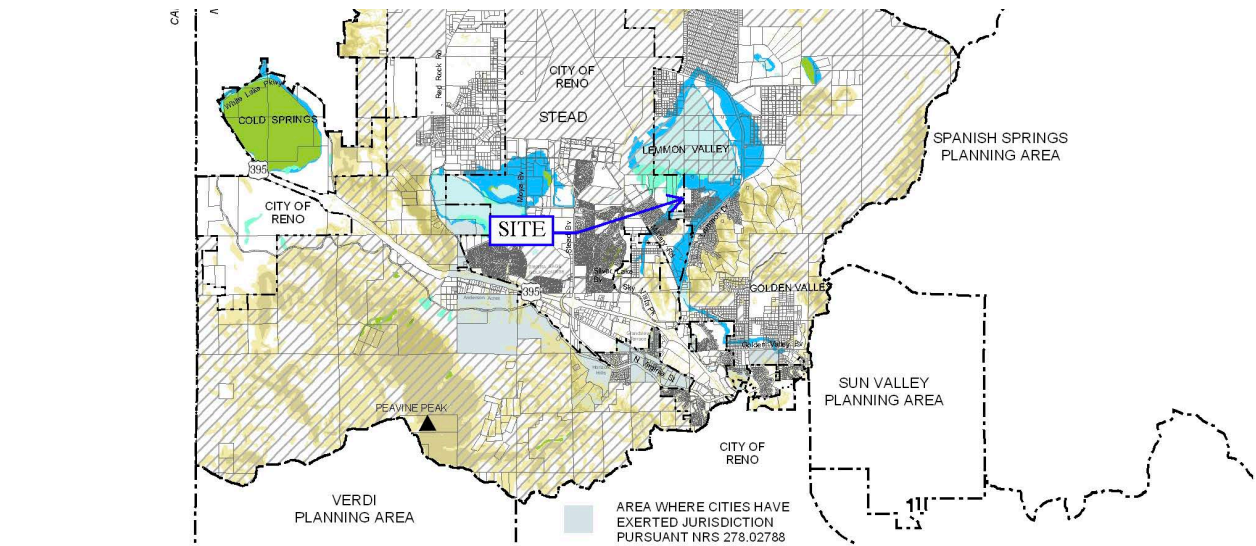


LOCATION MAP

(b) Land Use. Current and planned land use on the site and adjacent current, planned and approved, but unbuilt land uses. **RESPONSE – The following exhibits show the current land use designations for the site. The only requested land use change is to amend the North Valleys Area Plan to change the rural designation on the northern 8.568 acres of the site to Suburban Residential, consistent with adjoining land use designations and the fact that no development constraints exist on the site.**



SITE & SURROUNDING LAND USE



**NORTH VALLEYS
DEVELOPMENT SUITABILITY**

| | |
|-----------------------------|--|
| RIDGE LINES TO BE PROTECTED | POTENTIAL WETLANDS |
| SLOPES GREATER THAN 15% | BOTH POTENTIAL FLOOD HAZARD AND POTENTIAL WETLANDS |
| SLOPES GREATER THAN 30% | PUBLIC LAND |
| FLOODWAY AREA | MOST SUITABLE |
| 100-YEAR FLOOD HAZARD | WATER BODIES |
| | DITCHES |

NOTE: THE SCALE AND CONFIGURATION OF ALL INFORMATION SHOWN HEREON ARE APPROXIMATE ONLY AND ARE NOT INTENDED AS A GUIDE FOR DESIGN OR SURVEY WORK. REPRODUCTION IS NOT PERMITTED WITHOUT PRIOR WRITTEN PERMISSION FROM THE WASHOE COUNTY COMMUNITY DEVELOPMENT DEPARTMENT.

**Department of
Community Development**

**WASHOE COUNTY
NEVADA**

DEVELOPMENT SUITABILITY EXHIBIT FROM THE NORTH VALLEYS AREA PLAN

(c) Existing Structures. A description of the location, physical characteristics, condition and proposed use of any existing structures. **RESPONSE – There are no structures on the site.**

(d) Existing Vegetation. A description of existing vegetation, including limits of coverage, and major tree sizes and types. In the instance of heavily wooded sites, typical tree sizes, types and limits of tree coverage may be substituted. **RESPONSE – The site is characterized as Chaparral Shrubland with no Trees.**

(e) Prevailing Winds. An analysis of prevailing winds. **RESPONSE – Prevailing winds are from the West. The site will be buffered from West Winds with the addition of a 12’ landscape strip along Pan American Drive to allow Class 4 Large Canopy Trees to be Planted 50’ on center.**

(f) Topography. An analysis of slopes on the site using a contour interval of five (5) feet, or at a contour interval appropriate for the site and agreed to by the Director of Community Development. **RESPONSE –**

See the Tentative Map, Grading Plan, with one foot contour intervals. This is a level site with only 10' of fall across the site draining from south to north for an approximately 1% grade.

(g) Soil. An analysis of the soil characteristics of the site using Soil Conservation Service (SCS) information. **RESPONSE – Per the Geotechnical Report, the site is mapped in an area of Alluvium of Military Road (Qm). This geologic unit is described as poorly sorted sand to muddy sand derived from the alluvial fan deposits of Peavine Mountain. The soils units encountered in our explorations typically consisted of poorly sorted and interbedded layers and zones of silty sand and silty, clayey sand overlying low to medium plasticity clayey sand and sandy lean clay.**

(h) Natural Drainageways. Identification of natural drainageways on and adjacent to the site. **RESPONSE – No natural drainage ways or man-made drainage ways exist on the site. A major drainage channel does lie $\pm 800'$ west of the site. Lemmon Lake (Swan Lake) lies $\pm 1,500$ feet north of the site.**

(i) Wetlands and Water Bodies. Identification of existing or potential wetlands and water bodies on the site. **RESPONSE – Lemmon Lake (Swan Lake) lies $\pm 1,500$ feet north of the site.**

(j) Flood Hazards. Identification of existing and potential flood hazards using Federal Emergency Management Agency (FEMA) information. **RESPONSE – N/A, the site lies in an unshaded Zone X, outside the 100 year and 500-year FEMA flood zones.**

(k) Seismic Hazards. Identification of seismic hazards on or near the site, including location of any Holocene faults. **RESPONSE – Per the Geotechnical Report, the property lies within an area where faulting can occur, but the nearest fault is sufficiently distant that offsets or additional considerations have not been recommended. Surface rupture is considered unlikely.**

(l) Avalanche Hazards. An analysis of avalanche and other landslide hazards. **RESPONSE – N/A**

(m) Sensitive Habitat and Migration Routes. An analysis of sensitive habitat areas and migration routes. **RESPONSE – N/A**

(n) Significant Views. A description and analysis of all on and off-site significant views. **RESPONSE – There are no significant view associated with this level site but at least one neighbor has commented that they can see the hills and mountains that lie several miles to the west of the site.**

(o) Easements. A description of the type and location of any easements on the site. **RESPONSE – Minimal easements/no significant easements exist on the site. See the attached title report.**

(p) Utilities. A description of existing or available utilities, and an analysis of appropriate locations for water, power, sanitary sewer and storm water sewer facilities. **RESPONSE – Overhead power and communication lines lie on the southeast portion of the site that serve the adjoining homes. Electric lines exist where Fleetwood terminates into Lear Boulevard. Gas line exist where Fleetwood terminates into Lear Boulevard and where Budger Way terminates into Pan American Drive. Public water lines exist where Fleetwood terminates into Lear Boulevard and where Budger Way terminates into Pan American Drive.**

A public sewer line exists in Lear Boulevard just west of the site within the major drainageway. We plan to tie into this manhole. Extensive geotechnical testing including percolation testing and groundwater elevation identification was completed and as a result, an infiltration basin will be

located within the southeast portion of the site. Storm water will meter out of the basin and drain through the site to an outlet located at Pan American Drive and Lear Boulevard, back into a natural drainageway.

(q) Appropriate Access Points. An analysis of appropriate access points based upon existing and proposed streets and highways and site opportunities and constraints. ***RESPONSE – See the attached traffic study. The two “T” intersections on Pan American will direct traffic to the south and provide safe and adequate vehicle and pedestrian access to the site.***

(r) Other Information. All other information deemed appropriate and necessary by the Director of Community Development. ***RESPONSE – The project as proposed complies with all aspects of the Washoe County Master Plan, North Valleys Area Plan and Washoe county Development Code. See the attached Opportunities and Constraints Map.***

XVI.

Community Outreach Meeting Summary

Meeting Location: 255 Patrician Dr. Reno NV 89506

Meeting Date/Time: February 22nd 2023, 6:30pm PST

Meeting lead by: Kenneth Krater

Number of attendees: Nine (See attached Sign in sheet)

The meeting started with an introduction of the project and the required notification to the adjacent property owners. Attendees brought up traffic concerns about the new interchange at the freeway at Lemmon Drive and the Freeway. It was noted that timing adjustments may be needed at the interchange.

Next discussed was the property location and location of the the FEMA 100 year flood contour line. The next topic of discussion led into potential building footprints, common area buffers to the east and south adjoining existing homes on Fleetwood and Budger, and associated setbacks from these adjacent properties. The attendees mentioned concern of existing gates in their backyards and access. The retention basin was explained to the attendees and how it is required by code.

A few additional topics that come up after the formal presentation was sewer relocation, traffic in their neighborhoods/school, public use of parks within development and new fence along east and south adjacent properties.

An audio tape of the meeting is included as an attachment in the Neighborhood Meeting portal. Note that due to issues downloading files, there are a total of eight audio files in the portal to capture the entire meeting.

4.25.2023

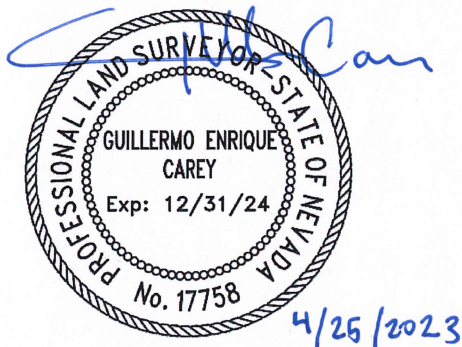
EXHIBIT 'A'

All that certain parcel of land lying solely within the West Half of the Southwest Quarter of Section 34, Township 21 North, Range 19 East, M.D.B. & M., being more particularly described as follows:

Beginning at the West Quarter corner of Section 34, Township 21 North, Range 19 East, M.D.B. & M., said point being further described as the Northwest corner of Valley Village Subdivision No. 1 and 2, as shown on the official plat thereof recorded under Document No. 385697, Official Records of Washoe County; thence along the Northerly boundary of said Valley Village Subdivision South 89° 22' 00" East 658.30 feet; thence North 00° 38' 38" East 369.98 feet to an angle point on the Northerly boundary of said Subdivision; thence leaving said Subdivision and continuing North 00° 38' 38" East 949.71 feet; thence North 89° 10' 30" West 656.00 feet to a point on the Westerly line of said Section 34; thence Southerly along said Westerly Section line South 00° 44' 37" West 1,321.89 feet to the point of beginning.

The above legal description was taken from prior Document No. 4874776.

APN: 080-461-08



LEGAL DESCRIPTION PREPARED BY:
Guillermo Enrique Carey, PLS 17758
MAPCA SURVEYS, INC.
580 Mount Rose Street
Reno, NV 89509

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT F**

RPTT: 0

APN: 080-461-08

After recording, mail Deed and
all future tax statements to:
Bryan A. Learner
1540 Roma Court
Reno, NV 89523



GRANT, BARGAIN, AND SALE DEED

Gerald J. Echevarria and Donald L. Muckel, as Co-Trustees of The Brett H. Learner Trust created under The Joseph J. Morrey Grandchildren's Trust Agreement dated December 31, 1996 and The Bryan A. Learner Trust created under The Joseph J. Morrey Grandchildren's Trust Agreement dated December 31, 1996, hereby grant, bargain, and sell an undivided one-half interest (1/2) to Brett H. Learner, a married man, as his sole and separate property, and an undivided one-half interest (1/2) to Bryan A. Learner, a married man, as his sole and separate property, as tenants in common, all that real property located at 0 Pan American Way, Lemmon Valley, Washoe County, Nevada, described as follows:

All that certain parcel of land lying solely within the West Half of the Southwest Quarter of the Northwest Quarter of Section 34, Township 21 North, Range 19 East, M.D.B.&M., being more particularly described as follows:

Beginning at the West Quarter corner of Section 34, Township 21 North, Range 19 East, M.D.B.&M., said point being further described as the Northwest corner of Valley Village Subdivision No. 1 and No. 2, as shown on the official plat thereof recorded under Document No. 385967, Official Records of Washoe County; thence along the Northerly boundary of said Valley Village Subdivision South 89°22'00" East 658.30 feet; thence North 00°38'38" East 369.98 feet to an angle point on the Northerly boundary of said Subdivision; thence leaving said Subdivision and continuing North 00°38'38" East 949.71 feet; thence North 89°10'30" West 656.00 feet to a point on the Westerly line of said Section 34; thence Southerly along said Westerly Section line South 00°44'37" West 1321.89 feet to the point of beginning.

NOTE: THE ABOVE METES AND BOUNDS DESCRIPTION APPEARED PREVIOUSLY IN THAT CERTAIN INSTRUMENT, RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF WASHOE COUNTY, NEVADA ON MAY 13, 1999 AS DOCUMENT NO. 2339106 OF OFFICIAL RECORDS.

This conveyance is subject to the following liens and encumbrances:

1. All monetary liens and encumbrances of record, if any.
2. General, special, and any supplemental county taxes and assessments not delinquent.
3. Covenants, conditions, restrictions, reservations, easements, and rights-of-way of record, if any.

Together with all tenements, hereditaments, appurtenances, and water rights, if any, thereunto belonging or appertaining, and any reversions, remainders, rents, issues or profits thereof.

Dated this 10th of December, 2018.

The Brett H. Learner Trust
The Bryan A. Learner Trust

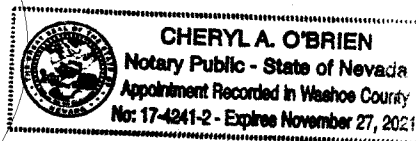
By: Gerald J. Echevarria
Gerald J. Echevarria, Co-Trustee

By: Donald L. Muckel
Donald L. Muckel, Co-Trustee

STATE OF NEVADA
COUNTY OF WASHOE

This Grant, Bargain, and Sale Deed was acknowledged before me on December 10, 2018, by Gerald J. Echevarria in his capacity as a Co-Trustee.

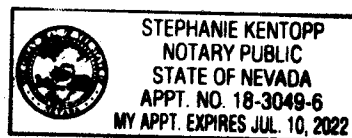
Cheryl A. O'Brien
Notary Public



STATE OF NEVADA
COUNTY OF ELKO

This Grant, Bargain, and Sale Deed was acknowledged before me on December 10, 2018, by Donald L. Muckel in his capacity as a Co-Trustee.

Stephanie Kentopp
Notary Public

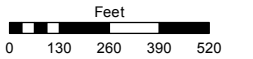


PORTION OF THE N 1/2 SECTION 34
T21N - R19E

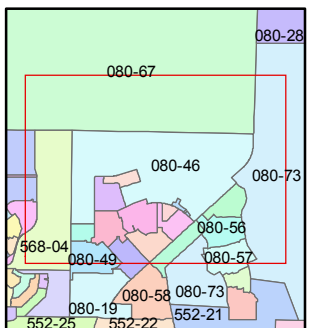
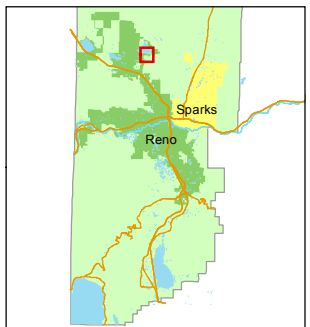
**DIVISION OF
LAND MAP #79**

STATE OF NEVADA
WASHOE COUNTY
ASSESSOR'S OFFICE
Michael E. Clark, Assessor

1001 East Ninth Street
Building D
Reno, Nevada 89512
(775) 328-2231



1 inch = 500 feet



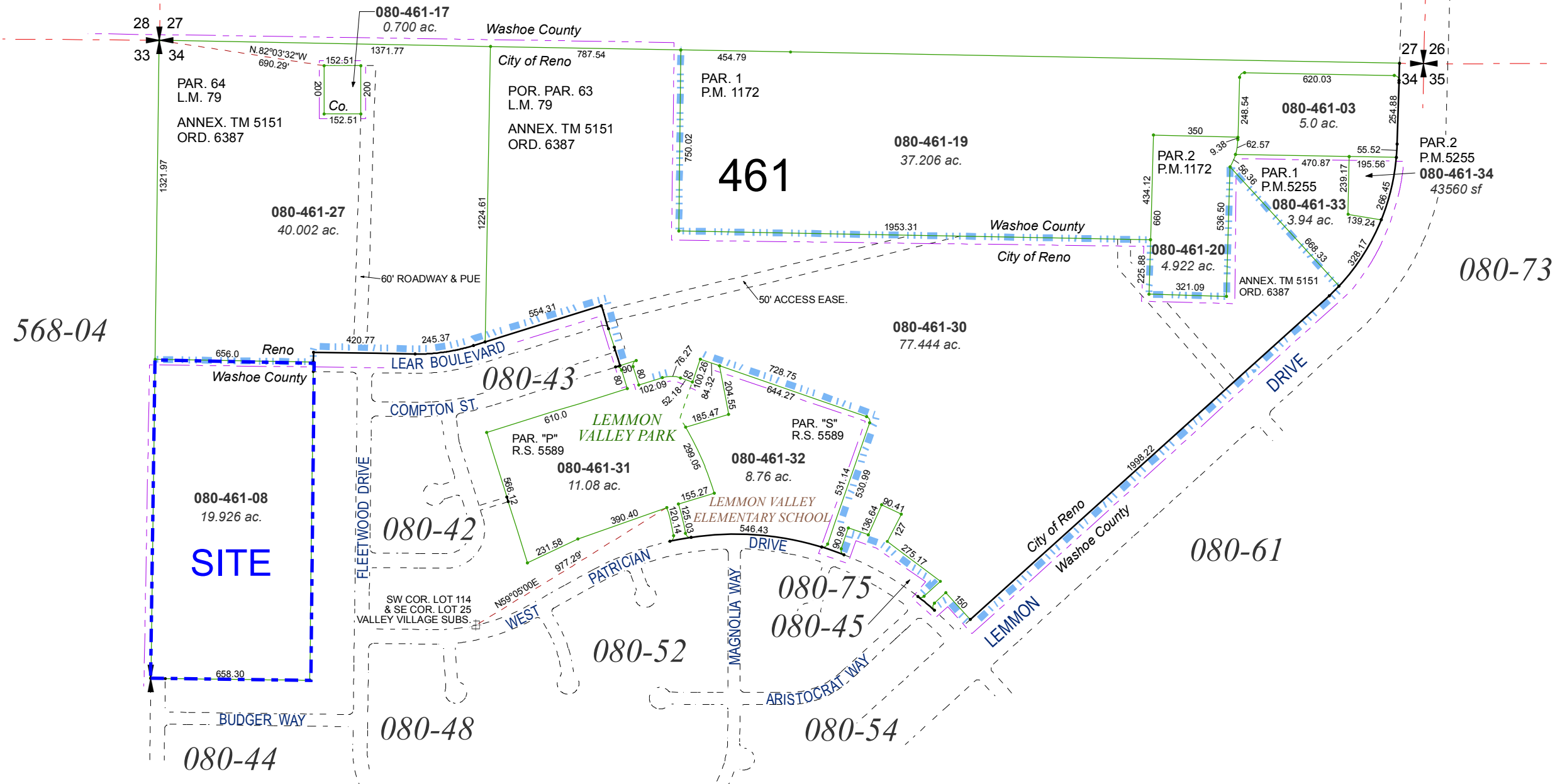
created by: EMG 10/09/2014

last updated: KSB 4/15/16 JMO 10/19/16

area previously shown on map(s)

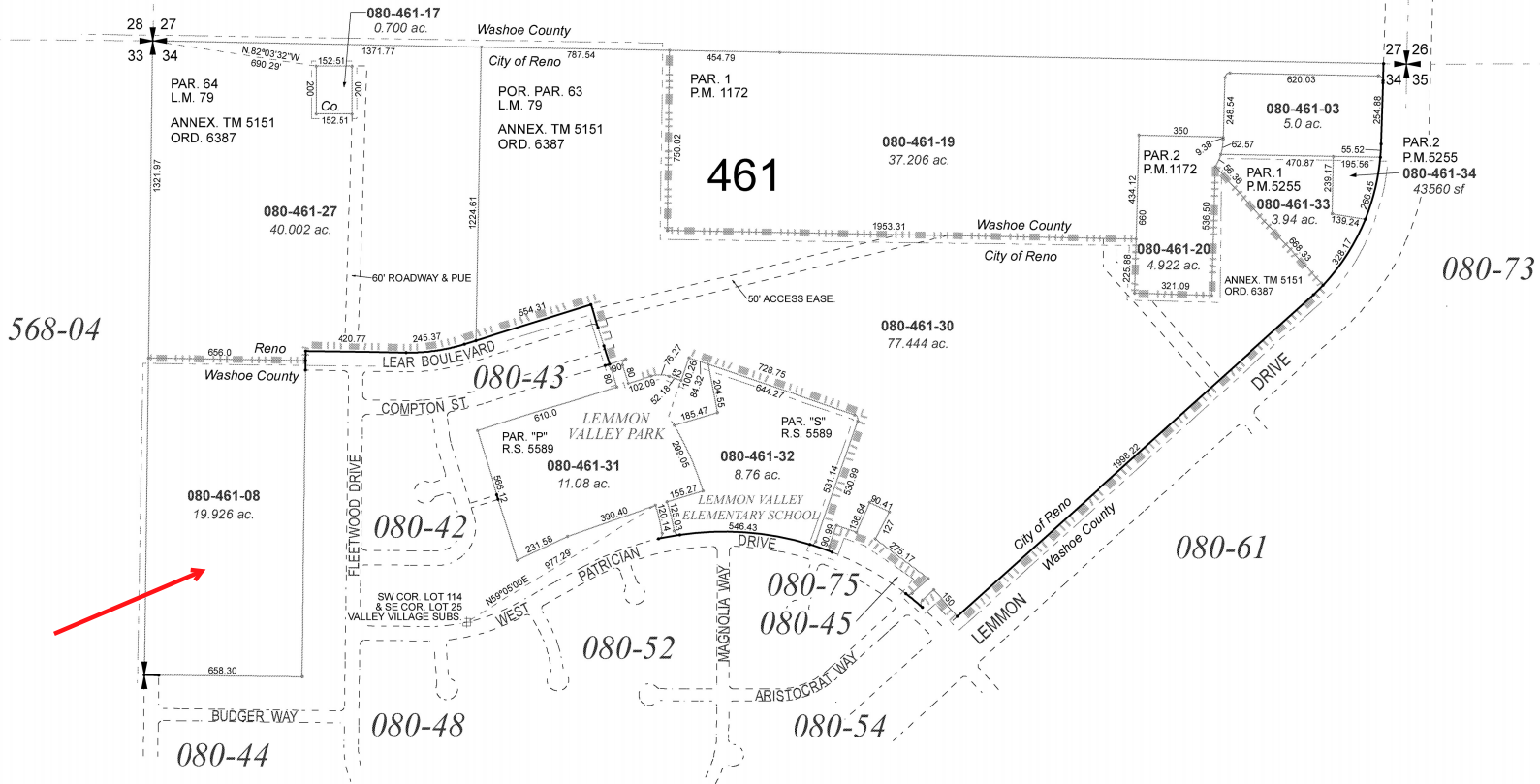
NOTE: This map was prepared for the use of the Washoe County Assessor for assessment and illustrative purposes only. It does not represent a survey of the premises. No liability is assumed as to the sufficiency or accuracy of the data delineated hereon.

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT F**



PORTION OF THE N 1/2 SECTION 34
T21N - R19E

**DIVISION OF
LAND MAP #79**

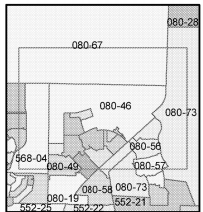
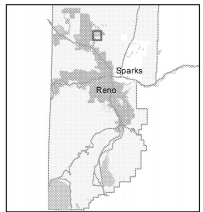
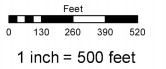


Assessor's Map Number

080-46

STATE OF NEVADA
WASHOE COUNTY
ASSESSOR'S OFFICE
Michael E. Clark, Assessor

1001 East Ninth Street
Building D
Reno, Nevada 89512
(775) 328-2231



created by: **EMG 10/09/2014**
last updated: **KSB 4/15/16 JMO 10/19/16**
area previously shown on map(s)

NOTE: This map was prepared for the use of the Washoe County Assessor for assessment and illustrative purposes only. It does not represent a survey of the premises. No liability is assumed as to the sufficiency or accuracy of the data delineated hereon.

XXI.



May 2, 2023

Brett H. Learner et al
1540 Roma Ct
Reno, NV 89523

RE: **Lerner Lemmon**
Acknowledgement of Water Service
TMWA Work Order 23-9140

I have reviewed the preliminary plans for the above referenced development (Project) as submitted to the Truckee Meadows Water Authority (TMWA) and have determined that the Project is within TMWA's retail water service area. This letter constitutes an Acknowledgment of Water Service pursuant to NAC 445A.6666, and TMWA hereby acknowledges that TMWA is agreeable to supplying water service to the Project, subject to applicant satisfying certain conditions precedent, including, without limitation, the dedication of water resources, approval of the water supply plan by the local health authority, the execution of a Water Service Agreement, payment of fees, and the construction and dedication of infrastructure in accordance with TMWA's rules and tariffs. This Acknowledgement does not constitute a legal obligation by TMWA to supply water service to the Project and is made subject to all applicable TMWA Rules.

Review of conceptual site plans or tentative maps by TMWA does not constitute an application for service, nor implies a commitment by TMWA for planning, design or construction of the water facilities necessary for service. The extent of required off-site and on-site water infrastructure improvements will be determined upon TMWA receiving a specific development proposal or complete application for service and upon review and approval of a water facilities plan. After submittal of a complete Application for Service, the required facilities, the cost of these facilities, which could be significant, and associated fees will be estimated and will be included as part of the Water Service Agreement for the project. All applicable fees must be paid to TMWA prior to water being delivered to the project.

Sincerely,
Truckee Meadows Water Authority

Timothy Simpson, P.E.
Sr Planning Engineer

Preliminary Sewer Study

For

Learner – Lemmon Property

Prepared for:

LC Learner, LLC
27132 B Paseo Espanda, Suite 1226
San Juan Capistrano, CA 92675

Prepared by:



May, 2023

Introduction:

This report presents the preliminary sanitary sewer plan for the Learner – Lemmon Property. It includes expected flow analysis, proposed sewer facilities to serve the development and existing sewer facilities surrounding the project site.

The Learner project site (APN: 080-461-08) is located along Pan American Way and is situated within the West half of the Southwest quarter of the Northwest Quarter of Section 34, Township 21 North, Range 19 East, Mount Diablo Meridian. Reference the attached Vicinity Map.

The proposed project is a Tentative map for 87 Single Family residential lots with public street and utility improvements. Reference the attached site plan.

PROPOSED PROJECT/ONSITE SEWER SYSTEM

Reference the attached sewer display for the proposed sewer system that will serve the development.

The Learner – Lemmon project will create 87 Single family residential lots in Lemmon Valley, within Washoe County. The proposed 87 lots will be supported by roadway and public utility improvements.

Proposed lots within the Learner – Lemmon subdivision will be served by an 8” public sewer main system. The on-site system will convey waste to a proposed 8” off-site system within Lear Blvd. Ultimately, the waste will be conveyed through the 8” offsite system west to an existing sanitary sewer lift station located along Lear Blvd near Foxhurst Drive.

The proposed offsite gravity sewer main may be temporary, existing sewer improvements provide for gravity sewer from the lift station location eastward within Lear Boulevard to some future connection point. This project may, at some time in the future connect to this gravity sewer flowing east within Lear Boulevard.

The expected sewer peak flow contribution (per the Washoe County CSD Gravity Sewer Collection Design Standards) is as follows:

Flow Determination: **270 gals/day/lot**

Lot Count: **87 Lots**

Peaking Factor: **3**

Expected peak flow: (270 gal/day/lot) x (87 Lots) x (3) = **70,470 gal/day**

Please reference the table below for the preliminary pipe analysis.

| Preliminary Sanitary Sewer Pipe Calculations | | | | | |
|--|-----------|-----------------|------------|-------------------------|--------------------------|
| Pipe Segment | Slope (%) | Peak Flow (GPD) | Depth (Ft) | Expected Velocity (fps) | Half Full Velocity (fps) |
| MH #1 - MH #2 | 0.70 | 25,110 | 0.10 | 1.18 | 2.72 |
| MH #2 - MH #6 | 0.70 | 31,590 | 0.11 | 1.29 | 2.72 |
| MH #1 - MH #3 | 0.50 | 14,580 | 0.08 | 0.93 | 2.30 |
| MH #3 - MH #6 | 0.50 | 38,880 | 0.13 | 1.24 | 2.30 |
| MH #4 - MH #3 | 1.00 | 1,620 | 0.03 | 0.36 | 3.25 |
| MH #5 - MH #2 | 1.00 | 4,860 | 0.04 | 0.81 | 3.25 |
| MH #6 - MH #7 | 0.70 | 70,470 | 0.16 | 1.67 | 2.72 |
| MH #7 - MH #8 | 0.30 | 70,470 | 0.20 | 1.23 | 1.78 |

EXISTING SEWER SYSTEM

There are no existing sewer improvements within or around the project site. The nearest sewer facility to the site is a sanitary sewer lift station located approximately 1,400 feet to the west of the project.

Proposed with the Learner – Lemmon project is a connection to the existing sanitary sewer lift station with an 8" main conveying waste from the project site. Off-site improvements will be required to connect the site to the existing lift station.

The existing sanitary sewer lift station currently serves 146 single family residential lots from the Stonefield Subdivision and has a capacity of 300,300 gal/day. The existing peak sewer flow (per the Washoe County CSD Gravity Sewer Collection Design Standards) is as follows:

Flow Determination: **270 gals/day/lot**

Lot Count: **146 Lots**

Peaking Factor: **3**

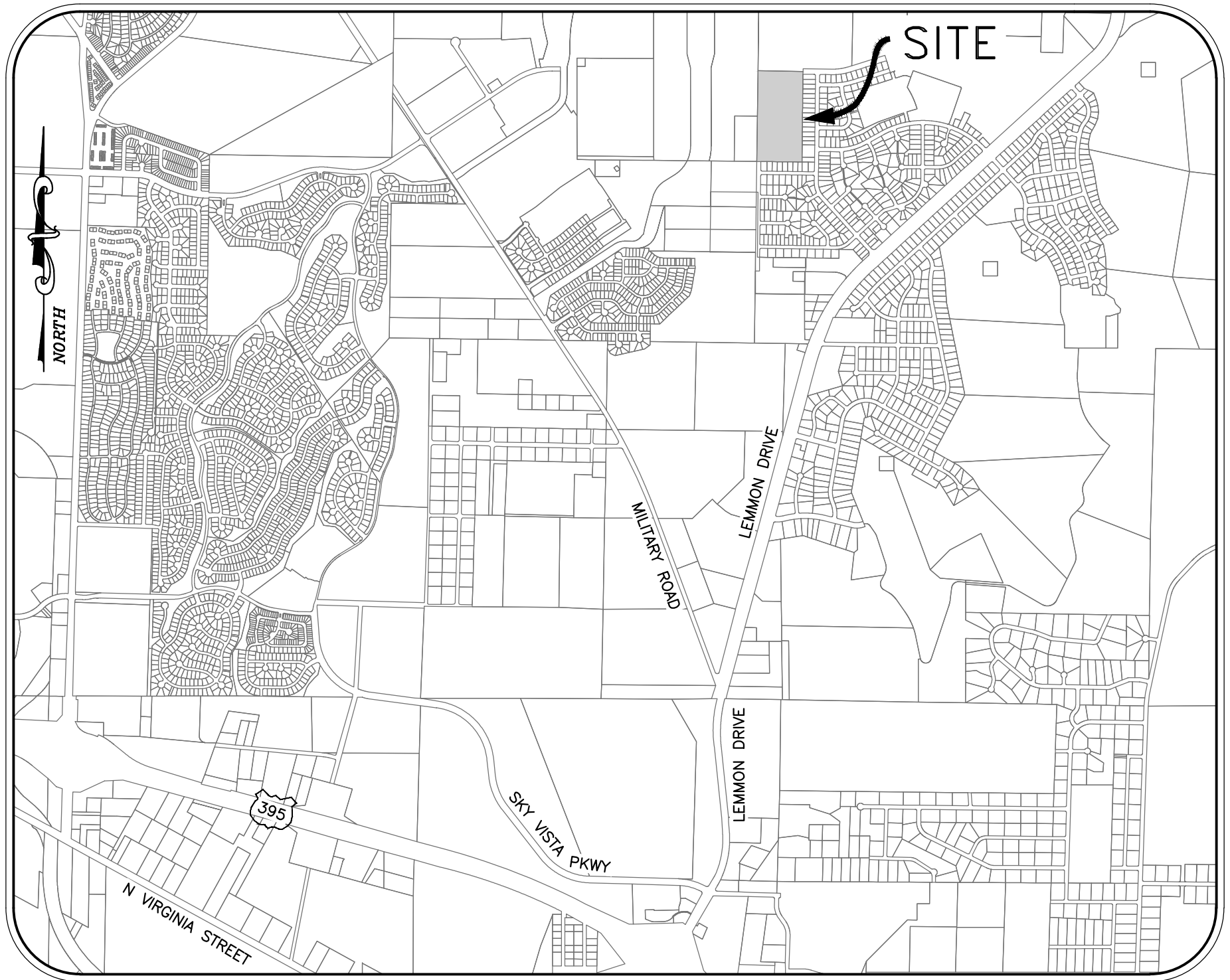
Existing peak flow: $(270 \text{ gal/day/lot}) \times (146 \text{ Lots}) \times (3) = \mathbf{118,260 \text{ gal/day}}$

It is expected that the existing lift station will have adequate capacity to handle the proposed development. In the event that the lift station will not handle the proposed development as it is, upgrades to the system will be implemented to handle the additional flow.

Conclusion

This report identifies the preliminary finding for the Learner – Lemmon project. The proposed preliminary analysis has been performed in conformance with the City of Reno and Washoe County design standards and the findings show that the sewer will operate within the design standards of the City of Reno and Washoe County.

Vicinity Map



VICINITY MAP

Sewer Display

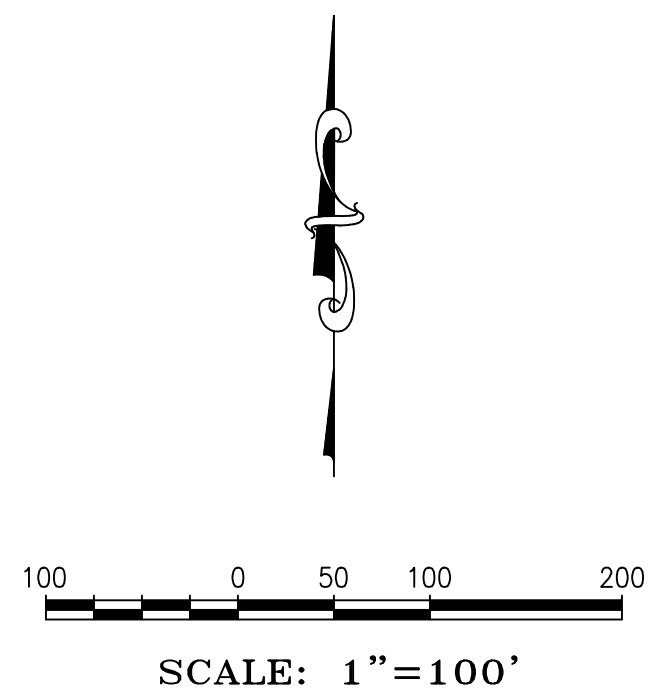
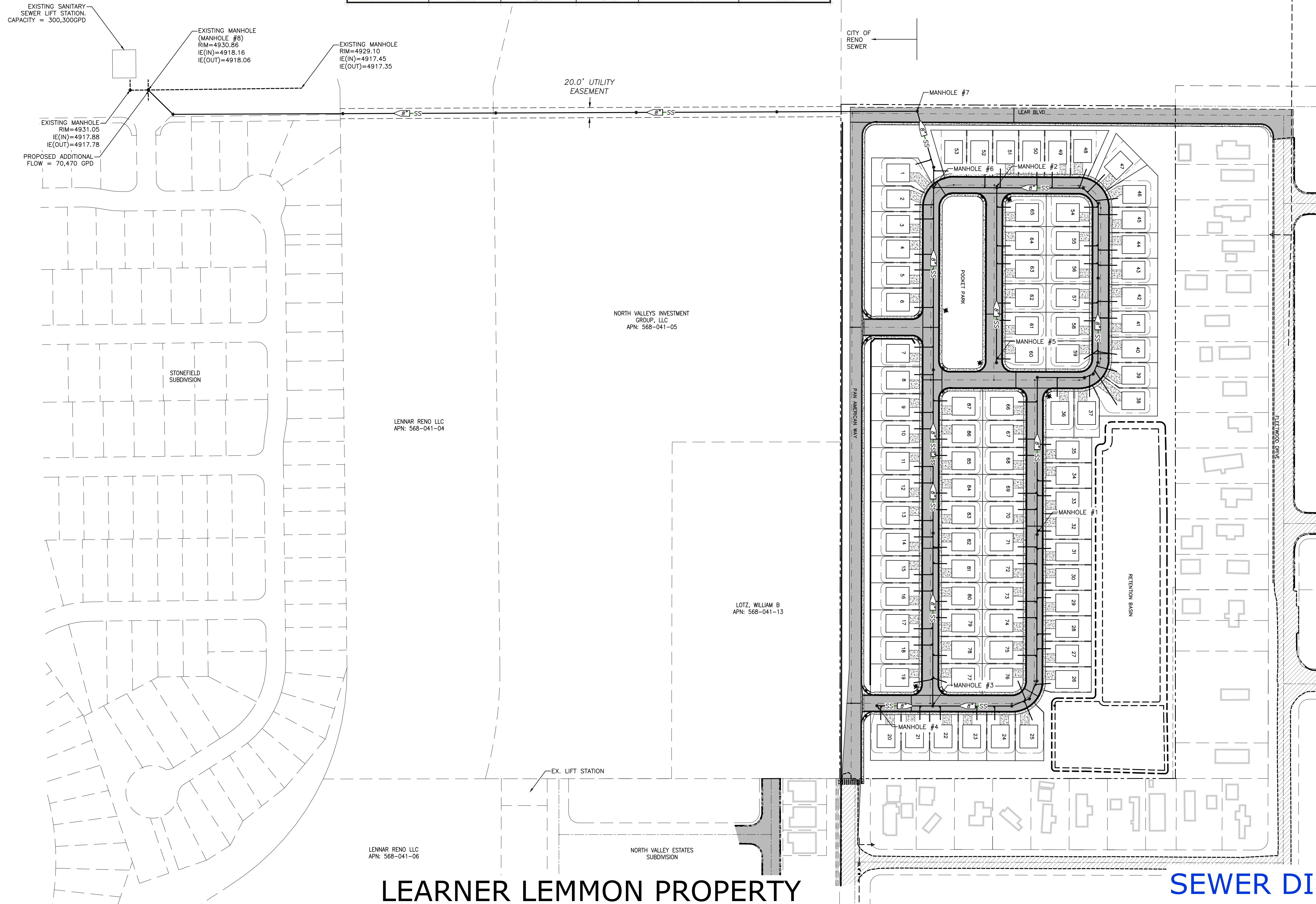
EXISTING SANITARY SEWER LIFT STATION:

EXISTING CAPACITY = 300,300GPD
 EXISTING LOTS SERVED = 146 LOTS
 EXISTING PEAK FLOW = (270 GAL/DAY/LOT) x (146 LOTS) x (3 PEAK FACTOR) = 118,260 GAL/DAY
 PROPOSED LOTS SERVED = 87 LOTS
 PROPOSED PEAK FLOW = (270 GAL/DAY/LOT) x (87 LOTS) x (3 PEAK FACTOR) = 70,470 GAL/DAY
 EXPECTED PEAK FLOW @ LIFT STATION = (118,260 GAL/DAY) + (70,470 GAL/DAY) = 188,730 GAL/DAY

| Preliminary Sanitary Sewer Pipe Calculations | | | | | |
|--|-----------|-----------------|------------|-------------------------|--------------------------|
| Pipe Segment | Slope (%) | Peak Flow (GPD) | Depth (Ft) | Expected Velocity (fps) | Half Full Velocity (fps) |
| MH #1 - MH #2 | 0.70 | 25,110 | 0.10 | 1.18 | 2.72 |
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| MH #6 - MH #7 | 0.70 | 70,470 | 0.16 | 1.67 | 2.72 |
| MH #7 - MH #8 | 0.30 | 70,470 | 0.20 | 1.23 | 1.78 |

NOTE: PAN AMERICAN WAY, LEAR BOULEVARD, AND INTERNAL STREETS TO BE OFFERED FOR DEDICATION AS PUBLIC RIGHT OF WAY

LANSING-ARCUS LLC
 APN: 080-461-27



Axion ENGINEERING
 Civil Engineering • Land Development
 683 EDISON WAY - RENO, NEVADA 89502
 PH 775-771-5554 / FX 775-357-8421

LEARNER LEMMON PROPERTY

SEWER DISPLAY C-6

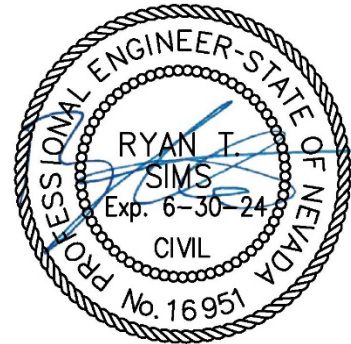
Preliminary Drainage Report

For

Learner – Lemmon Property

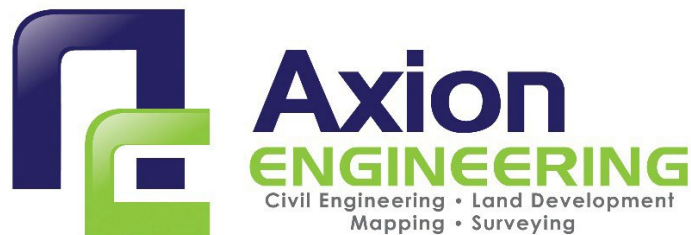
Prepared for:

LC Learner, LLC
27132 B Paseo Espada, Suite 1226
San Juan Capistrano, CA 92675



Prepared by:

05-04-23



May, 2023

Introduction:

This report shall serve as the preliminary drainage study for the Learner – Lemmon property. The Learner project site (APN: 080-461-08) is located along Pan American Way and is situated within the West half of the Southwest quarter of the Northwest Quarter of Section 34, Township 21 North, Range 19 East, Mount Diablo Meridian. Reference the attached Vicinity Map.

The proposed project is a Tentative map for 87 Single Family residential lots with public street and utility improvements. Reference the attached site plan.

The site lies within FEMA FIRM Panel 32031C2838G effective 3/16/2009. The site is located within FEMA Flood Zone "X" (unshaded), an area of minimal flood hazard outside the 0.2% (500-year) annual chance floodplain.

Previous Studies:

No previous studies have been prepared for the project site.

Existing Conditions:

The project site is undeveloped with native vegetation (grasses and sagebrush) covering much of the site with some undeveloped dirt roads crossing the site. Existing grade generally slopes towards the northern end of the site.

To the North of the project site is currently undeveloped land. With the completion of this project the Northern side will be bordered by partially completed Lear Blvd. On the East and South Sides of the project are existing Single-Family homes and to the West is currently undeveloped City of Reno land. The proposed project will extend Pan American Way on the Western side of the project.

Methodology:

The onsite runoff was determined using the Rational Method ($Q=CiA$). The time of concentration used in all areas for rainfall intensities was $T_c=10$ minutes, the minimum time of concentration used in the TMRDM. Rational C coefficients were chosen from the TMRDM based on the site conditions. Please Reference the attached table showing runoff calculations.

On-site retention volumes were calculated using the TR-55 method. Existing and proposed site runoffs were analyzed and compared to determine the increase in runoff volume. The on-site retention basin was sized using the increase in volume from the post developed site. Per the Swan Lake Terminal Basin policy, the retention basin volume used is 1.3 times the calculated volume for a factor of safety.

Existing Hydrology:

There is currently no storm drain infrastructure within the project site. The existing storm run off is conveyed across the site generally by sheet flow with some small alluvial-type drainage ways being present. The existing site grade is sloped from the southern end to the northern end with slopes less than 5%.

Proposed Hydrology:

The post developed hydrology has been analyzed by subdividing the project site into 22 sub-basins based on proposed site grading and catch basin locations. Catch basin and underground storm drain infrastructure is designed to capture the entire 5-year storm event with no runoff exceeding half of the adjacent travel lane per City of Reno Design Manual. 100-year flows are not expected to reach the allowable street flow capacity at the right of way line at any point.

Runoff captured in catch basins will be conveyed through the site in an underground storm drain system. The underground storm drain system is designed to handle the entire 5-year storm event with the hydraulic grade line of the 100-year storm not exceeding 1 foot below final grade per the Truckee Meadows Regional Drainage Manual. Finally, the captured runoff will be released either to the proposed retention basin (South portion) or released to the north (North portion).

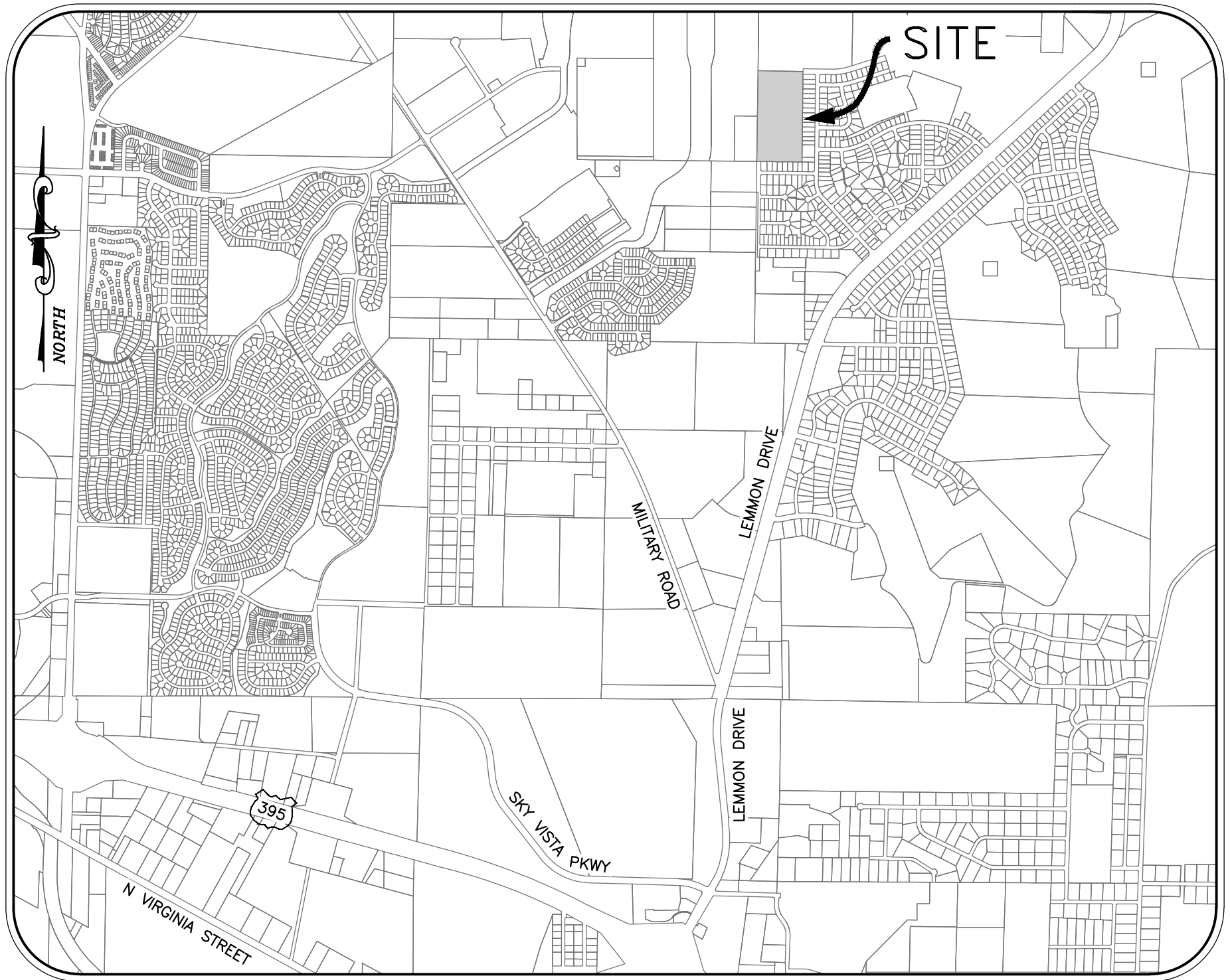
Retention:

The proposed retention basin has been designed by using the TR-55 method, by analyzing the existing and proposed 100-year, 10-day storm runoff volumes. Reference the attached TR-55 calculations within this report. The volume of the pre-developed 100-year, 10day storm was found to be 7.85 Ac-ft and 14.37 Ac-ft in the post-developed storm. Taking the difference of the proposed and existing storms multiplied by a factor of 1.3 determined the size of the proposed retention basin. Although only half of the proposed site will be drained to the retention basin, the entire 19.92 Ac site was accounted for when calculating the volumes ensuring the retention basin is adequately sized. Site grading will establish the conveyance of the post-developed flows, ensuring only the southern portion of the proposed site will be drained to the basin. The location and elevation of the basin have been based on percolation testing and the Truckee Meadows Regional Design Manual. Per the Truckee Meadows Regional Drainage Manual, the bottom of the basin must be 5' above the seasonal ground water elevation. Based on these parameters, the Eastern portion of the site has been chosen as the appropriate location for the basin. Reference the attached percolation testing report.

Conclusion:

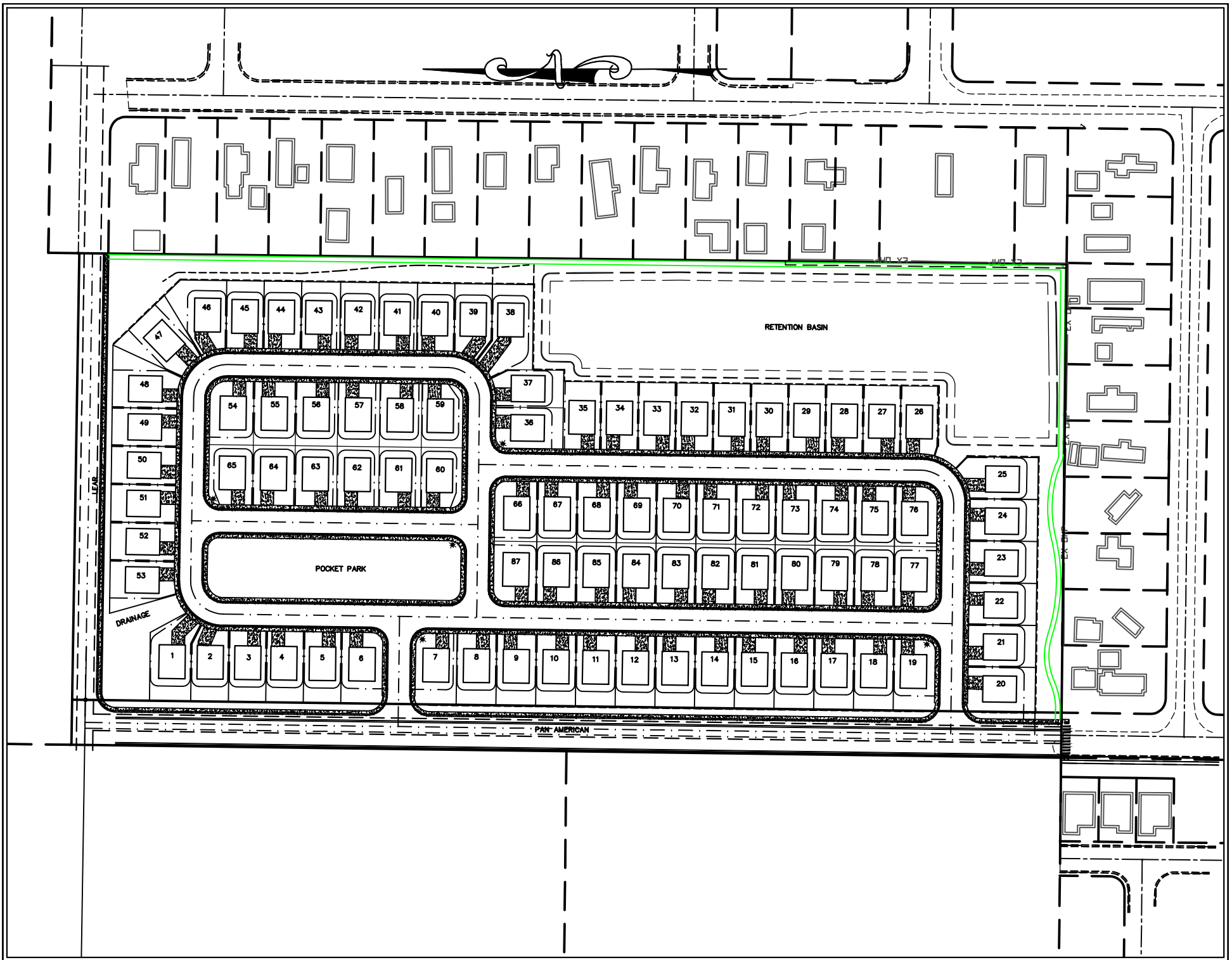
Overall, the 5-year and 100-year peak flow leaving the site will be reduced or remain at the existing flow rates. The Retention basin will retain both the 5-year and 100-year flow increases. Therefore, the effects of the development on all adjacent and downstream properties and drainageways will be reduced. The project and associated drainage improvements will be in compliance with the current edition of the Truckee Meadows Regional Drainage Manual.

Vicinity Map



VICINITY MAP

Site Plan



SITE

WMPA23-0006 AND
WRZA23-0006
EXHIBIT F

N.T.S.

NOAA Rainfall Data



NOAA Atlas 14, Volume 1, Version 5
Location name: Reno, Nevada, USA*
Latitude: 39.6446°, Longitude: -119.8458°
Elevation: 4930.59 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

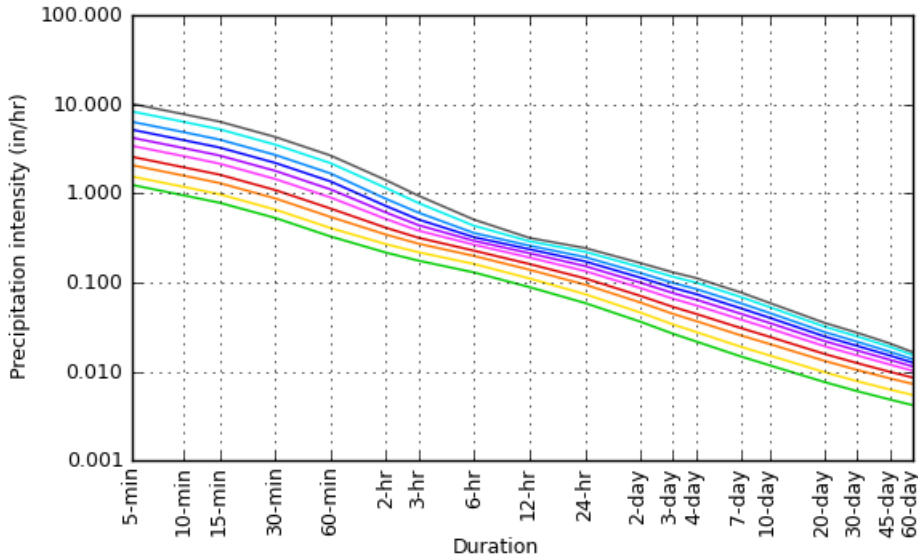
| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹ | | | | | | | | | | |
|---|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Duration | Average recurrence interval (years) | | | | | | | | | |
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 1.25 (0.104-1.44) | 1.55 (1.30-1.81) | 2.08 (1.74-2.45) | 2.58 (2.17-3.06) | 3.42 (2.83-4.13) | 4.22 (3.41-5.17) | 5.20 (4.07-6.47) | 6.37 (4.81-8.11) | 8.32 (5.96-10.9) | 10.1 (6.97-13.6) |
| 10-min | 0.948 (0.798-1.09) | 1.18 (0.990-1.37) | 1.58 (1.33-1.86) | 1.96 (1.65-2.33) | 2.61 (2.15-3.14) | 3.22 (2.59-3.94) | 3.95 (3.10-4.92) | 4.85 (3.67-6.17) | 6.34 (4.54-8.33) | 7.72 (5.30-10.4) |
| 15-min | 0.784 (0.660-0.904) | 0.976 (0.816-1.14) | 1.30 (1.10-1.54) | 1.62 (1.37-1.92) | 2.15 (1.78-2.60) | 2.66 (2.14-3.26) | 3.26 (2.56-4.07) | 4.01 (3.03-5.10) | 5.23 (3.75-6.88) | 6.38 (4.38-8.58) |
| 30-min | 0.530 (0.444-0.610) | 0.658 (0.550-0.766) | 0.878 (0.740-1.04) | 1.09 (0.920-1.29) | 1.45 (1.20-1.75) | 1.79 (1.44-2.19) | 2.20 (1.72-2.74) | 2.70 (2.04-3.44) | 3.52 (2.53-4.64) | 4.29 (2.95-5.78) |
| 60-min | 0.328 (0.275-0.377) | 0.408 (0.341-0.475) | 0.543 (0.458-0.641) | 0.675 (0.569-0.801) | 0.898 (0.742-1.08) | 1.11 (0.893-1.36) | 1.36 (1.07-1.70) | 1.67 (1.26-2.13) | 2.18 (1.56-2.87) | 2.66 (1.83-3.58) |
| 2-hr | 0.216 (0.192-0.248) | 0.268 (0.238-0.309) | 0.344 (0.302-0.396) | 0.410 (0.356-0.473) | 0.514 (0.436-0.597) | 0.609 (0.504-0.714) | 0.720 (0.581-0.855) | 0.866 (0.678-1.07) | 1.15 (0.849-1.45) | 1.40 (1.00-1.81) |
| 3-hr | 0.175 (0.158-0.198) | 0.218 (0.196-0.248) | 0.272 (0.244-0.309) | 0.317 (0.281-0.361) | 0.381 (0.334-0.436) | 0.439 (0.378-0.507) | 0.508 (0.429-0.594) | 0.606 (0.500-0.719) | 0.778 (0.623-0.975) | 0.939 (0.734-1.21) |
| 6-hr | 0.129 (0.117-0.145) | 0.161 (0.145-0.181) | 0.198 (0.178-0.223) | 0.227 (0.203-0.256) | 0.265 (0.234-0.300) | 0.293 (0.256-0.333) | 0.322 (0.278-0.370) | 0.359 (0.305-0.416) | 0.433 (0.360-0.509) | 0.507 (0.416-0.615) |
| 12-hr | 0.089 (0.080-0.099) | 0.111 (0.100-0.124) | 0.139 (0.125-0.155) | 0.161 (0.144-0.180) | 0.190 (0.168-0.214) | 0.213 (0.186-0.241) | 0.236 (0.203-0.270) | 0.259 (0.220-0.300) | 0.290 (0.240-0.342) | 0.316 (0.257-0.379) |
| 24-hr | 0.059 (0.053-0.066) | 0.074 (0.066-0.083) | 0.095 (0.085-0.106) | 0.111 (0.099-0.125) | 0.134 (0.119-0.151) | 0.153 (0.134-0.173) | 0.172 (0.150-0.196) | 0.193 (0.165-0.221) | 0.221 (0.186-0.256) | 0.243 (0.202-0.285) |
| 2-day | 0.036 (0.032-0.041) | 0.046 (0.041-0.052) | 0.059 (0.052-0.068) | 0.071 (0.062-0.081) | 0.086 (0.075-0.099) | 0.099 (0.085-0.114) | 0.113 (0.096-0.131) | 0.128 (0.107-0.150) | 0.148 (0.122-0.177) | 0.165 (0.133-0.200) |
| 3-day | 0.027 (0.023-0.030) | 0.034 (0.030-0.039) | 0.044 (0.039-0.051) | 0.053 (0.047-0.061) | 0.066 (0.057-0.075) | 0.076 (0.065-0.088) | 0.087 (0.074-0.101) | 0.099 (0.082-0.116) | 0.116 (0.094-0.138) | 0.130 (0.104-0.157) |
| 4-day | 0.022 (0.019-0.025) | 0.028 (0.024-0.032) | 0.037 (0.032-0.042) | 0.044 (0.039-0.051) | 0.055 (0.048-0.064) | 0.064 (0.055-0.074) | 0.074 (0.062-0.086) | 0.084 (0.070-0.099) | 0.100 (0.081-0.119) | 0.112 (0.089-0.135) |
| 7-day | 0.015 (0.013-0.017) | 0.019 (0.017-0.022) | 0.025 (0.022-0.030) | 0.031 (0.027-0.036) | 0.038 (0.033-0.045) | 0.045 (0.038-0.052) | 0.051 (0.043-0.061) | 0.058 (0.048-0.070) | 0.069 (0.055-0.083) | 0.077 (0.061-0.095) |
| 10-day | 0.012 (0.010-0.014) | 0.015 (0.013-0.018) | 0.020 (0.018-0.024) | 0.025 (0.021-0.028) | 0.030 (0.026-0.035) | 0.035 (0.030-0.041) | 0.040 (0.034-0.047) | 0.046 (0.038-0.054) | 0.053 (0.043-0.064) | 0.059 (0.047-0.072) |
| 20-day | 0.008 (0.007-0.009) | 0.010 (0.009-0.011) | 0.013 (0.011-0.015) | 0.016 (0.014-0.018) | 0.019 (0.017-0.022) | 0.022 (0.019-0.025) | 0.025 (0.021-0.029) | 0.028 (0.023-0.033) | 0.032 (0.026-0.038) | 0.035 (0.029-0.042) |
| 30-day | 0.006 (0.005-0.007) | 0.008 (0.007-0.009) | 0.010 (0.009-0.012) | 0.012 (0.011-0.014) | 0.015 (0.013-0.017) | 0.017 (0.015-0.020) | 0.019 (0.016-0.023) | 0.022 (0.018-0.025) | 0.025 (0.021-0.029) | 0.027 (0.022-0.033) |
| 45-day | 0.005 (0.004-0.006) | 0.006 (0.005-0.007) | 0.008 (0.007-0.010) | 0.010 (0.009-0.011) | 0.012 (0.010-0.014) | 0.014 (0.012-0.015) | 0.015 (0.013-0.017) | 0.017 (0.014-0.019) | 0.019 (0.016-0.022) | 0.021 (0.017-0.024) |
| 60-day | 0.004 (0.004-0.005) | 0.005 (0.005-0.006) | 0.007 (0.006-0.008) | 0.009 (0.007-0.010) | 0.010 (0.009-0.012) | 0.011 (0.010-0.013) | 0.013 (0.011-0.014) | 0.014 (0.012-0.016) | 0.015 (0.013-0.018) | 0.016 (0.014-0.019) |

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

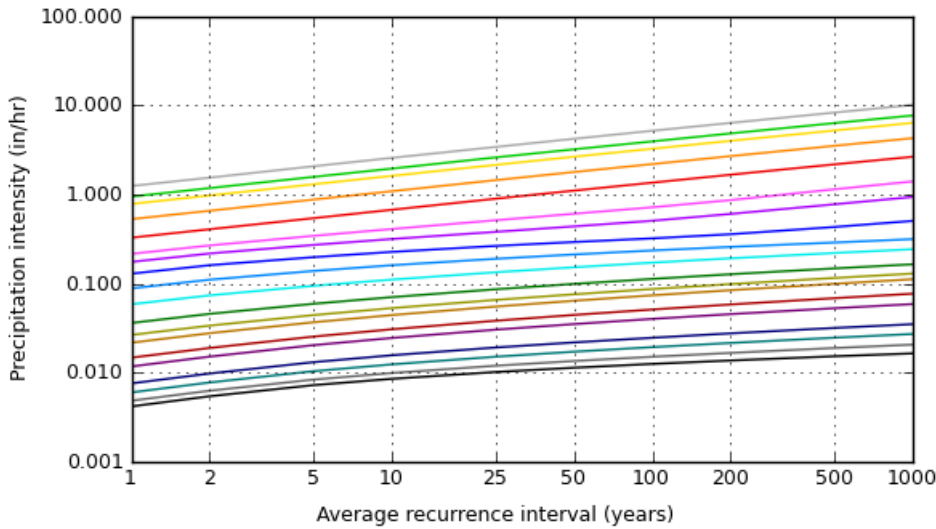
[Back to Top](#)

PF graphical

PDS-based intensity-duration-frequency (IDF) curves
 Latitude: 39.6446°, Longitude: -119.8458°



| Average recurrence interval (years) |
|-------------------------------------|
| 1 |
| 2 |
| 5 |
| 10 |
| 25 |
| 50 |
| 100 |
| 200 |
| 500 |
| 1000 |



| Duration |
|----------|
| 5-min |
| 10-min |
| 15-min |
| 30-min |
| 60-min |
| 2-hr |
| 3-hr |
| 6-hr |
| 12-hr |
| 24-hr |
| 2-day |
| 3-day |
| 4-day |
| 7-day |
| 10-day |
| 20-day |
| 30-day |
| 45-day |
| 60-day |

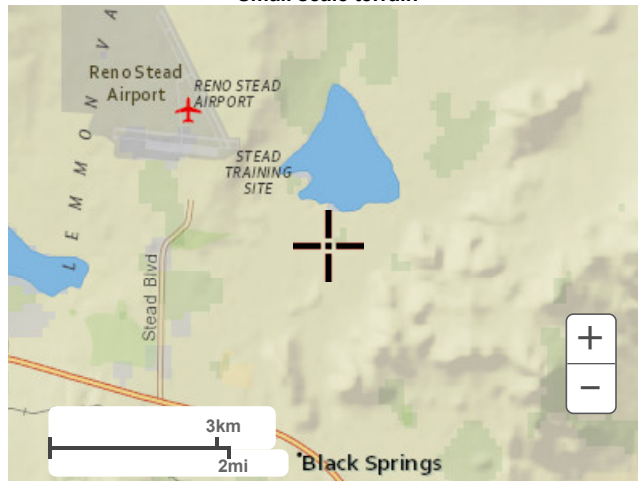
NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Thu Jan 5 18:38:32 2023

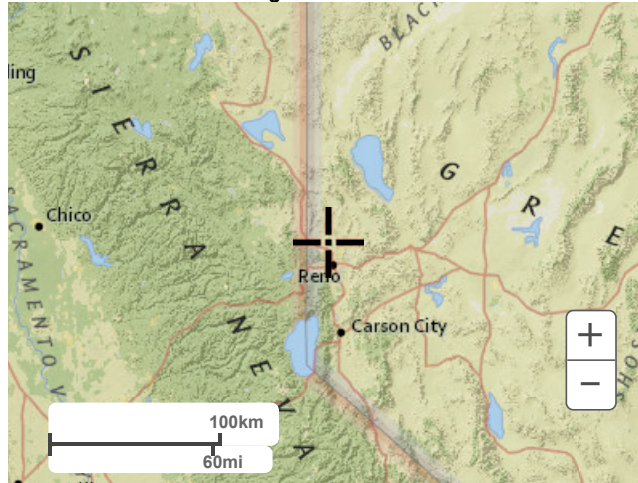
[Back to Top](#)

Maps & aerials

Small scale terrain



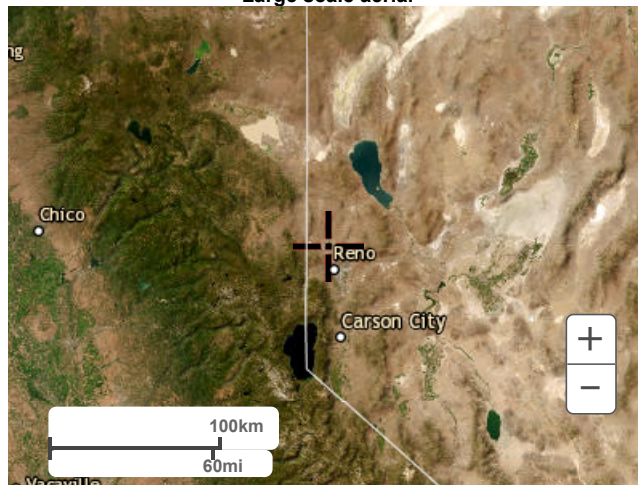
Large scale terrain



Large scale map



Large scale aerial

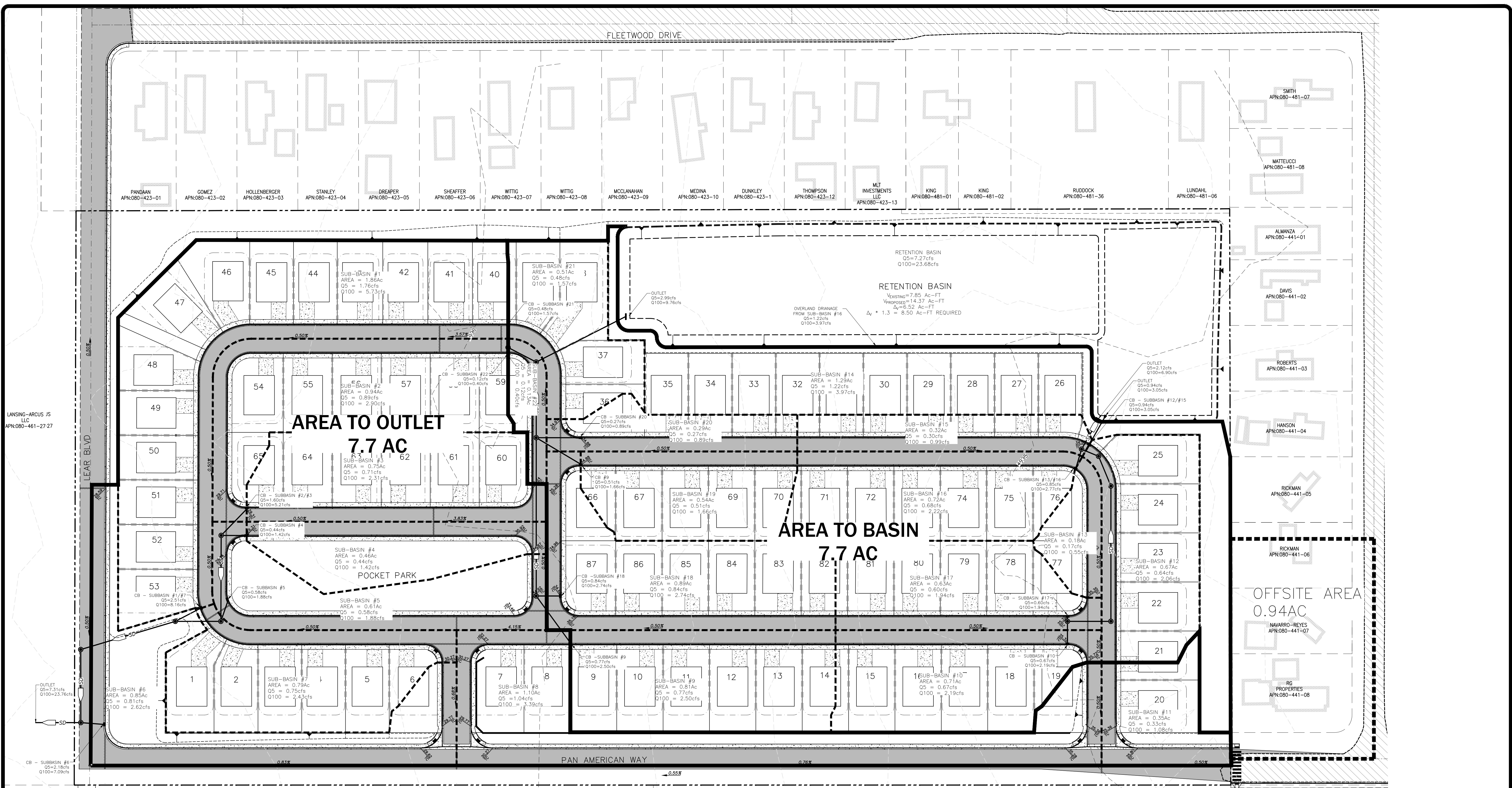


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Hydrology Display

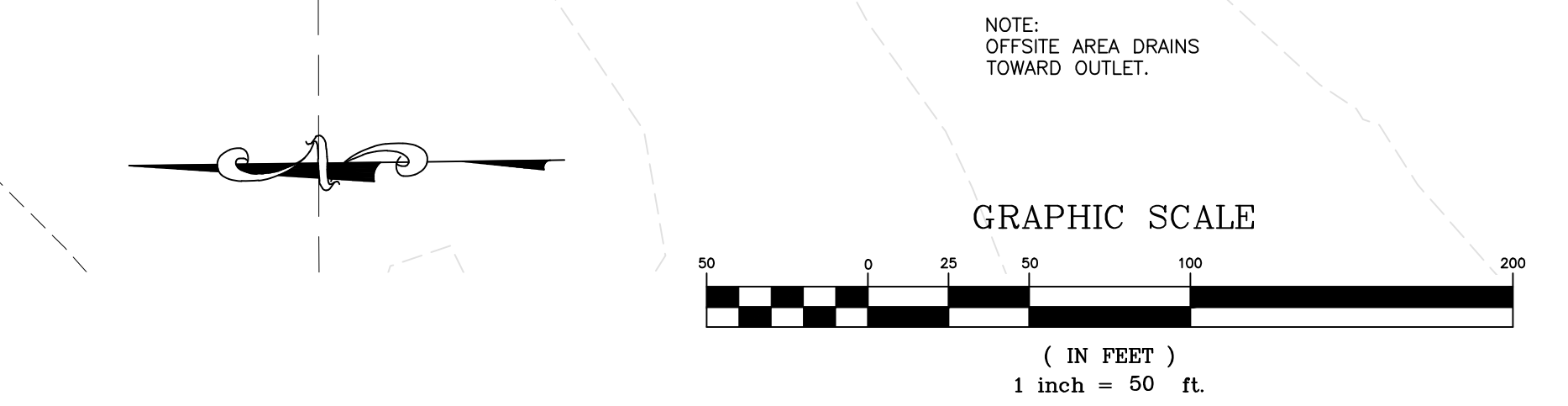


EXISTING RATIONAL METHOD CALCULATIONS

| DRAINAGE SUB-AREA (acres) | AREA (acres) | RUNOFF COEFFICIENT | Tc (min) | INTENSITY (in/hr) | PEAK RUNOFF (cfs) | | | |
|---------------------------|--------------|--------------------|----------|-------------------|-------------------|--------------|------|------|
| 5-YR | 100-YR | 5-YR | 100-YR | 5-YR | 100-YR | | | |
| 1 | 1.86 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.59 | 3.67 |
| 2 | 0.94 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.30 | 1.86 |
| 3 | 0.75 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.24 | 1.48 |
| 4 | 0.46 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.15 | 0.91 |
| 5 | 0.61 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.19 | 1.20 |
| 6 | 0.85 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.27 | 1.68 |
| 7 | 0.79 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.25 | 1.56 |
| 8 | 1.1 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.35 | 2.17 |
| 9 | 0.81 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.26 | 1.60 |
| 10 | 0.71 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.22 | 1.40 |
| 11 | 0.35 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.11 | 0.69 |
| 12 | 0.67 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.21 | 1.32 |
| 13 | 0.18 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.06 | 0.36 |
| 14 | 1.29 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.41 | 2.55 |
| 15 | 0.32 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.10 | 0.63 |
| 16 | 0.72 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.23 | 1.42 |
| 17 | 0.63 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.20 | 1.24 |
| 18 | 0.89 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.28 | 1.76 |
| 19 | 0.54 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.17 | 1.07 |
| 20 | 0.29 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.09 | 0.57 |
| 21 | 0.51 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.16 | 1.01 |
| 22 | 0.13 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.04 | 0.26 |
| TOTAL | | | | | 4.87 | 30.42 | | |

PROPOSED RATIONAL METHOD CALCULATIONS

| DRAINAGE SUB-AREA (acres) | AREA (acres) | RUNOFF COEFFICIENT | Tc (min) | INTENSITY (in/hr) | PEAK RUNOFF (cfs) | | | |
|---------------------------|--------------|--------------------|----------|-------------------|-------------------|--------------|------|------|
| 5-YR | 100-YR | 5-YR | 100-YR | 5-YR | 100-YR | | | |
| 1 | 1.86 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 1.76 | 5.73 |
| 2 | 0.94 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.89 | 2.90 |
| 3 | 0.75 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.71 | 2.31 |
| 4 | 0.46 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.44 | 1.42 |
| 5 | 0.61 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.67 | 2.19 |
| 6 | 0.85 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.81 | 2.62 |
| 7 | 0.79 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.75 | 2.43 |
| 8 | 1.1 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 1.04 | 3.39 |
| 9 | 0.81 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.77 | 2.50 |
| 10 | 0.71 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.67 | 2.19 |
| 11 | 0.35 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.33 | 1.08 |
| 12 | 0.67 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.64 | 2.06 |
| 13 | 0.18 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.17 | 0.55 |
| 14 | 1.29 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 1.22 | 3.97 |
| 15 | 0.32 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.30 | 0.99 |
| 16 | 0.72 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.68 | 2.22 |
| 17 | 0.63 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.60 | 1.94 |
| 18 | 0.89 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.84 | 2.74 |
| 19 | 0.54 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.51 | 1.66 |
| 20 | 0.29 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.27 | 0.89 |
| 21 | 0.51 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.48 | 1.57 |
| 22 | 0.13 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.12 | 0.40 |
| TOTAL | | | | | 14.60 | 47.45 | | |



LEARNER LEMMON PROPERTY

NOTE: OFFSITE AREA DRAINS TOWARD OUTLET.

Axion ENGINEERING
Civil Engineering • Land Development
683 EDISON WAY - RENO, NEVADA 89502
PH 775-771-5554 / FX 775-357-8421

HYDROLOGY DISPLAY

Rational Method Calculations

Weighted values of the runoff coefficient “C” may be required where land use is most accurately described as a mixture of the land uses listed above or where it is a mixture of impervious and pervious areas and not well represented by a single entry in the preceding list.

Sub-areas which include an LID feature will typically require special consideration and weighting of the runoff coefficient “C”. See Chapter X for specific guidance on post construction storm water quality design considerations.

Included below for reference is Table 202 from both the TMRDM and the Truckee Meadows Structural Controls Manual.

**TABLE 202 ADDITIONAL RUNOFF COEFFICIENTS
"C" FOR REFERENCE**

Runoff coefficients for the Rational Method from the Washoe County Hydrologic Criteria and Drainage Design Manual (a.k.a., the TMRDM) and the City of Sparks (1998 and 1996, respectively), and as per the Truckee Meadows Structural Controls Design Manual.

| Land Use or Surface Characteristics | Aver. % Impervious Area | Runoff Coefficients | |
|--|-------------------------|--------------------------|------------------------------|
| | | 5-Year (C ₅) | 100-Year (C ₁₀₀) |
| <u>Business/Commercial:</u> | | | |
| Downtown Areas | 85 | .82 | .85 |
| Neighborhood Areas | 70 | .65 | .80 |
| <u>Residential:</u> (Average Lot Size) | | | |
| 1/8 Acre or Less (Multi-Unit) | 65 | .60 | .78 |
| 1/4 Acre | 38 | .50 | .65 |
| 1/2 Acre | 30 | .45 | .60 |
| 1/2 Acre | 25 | .40 | .55 |
| 1 Acre | 20 | .35 | .50 |
| <u>Industrial:</u> | 72 | .68 | .82 |
| <u>Open Space:</u> (Lawns, Parks, Golf Courses) | | | |
| | 5 | .05 | .30 |
| <u>Undeveloped Areas:</u> | | | |
| Range | 0 | .20 | .50 |
| Forest | 0 | .05 | .30 |
| <u>Streets/Roads:</u> | | | |
| Paved | 100 | .88 | .93 |
| Gravel | 20 | .25 | .50 |
| <u>Drives/Walks:</u> | 95 | .87 | .90 |
| <u>Roofs:</u> | 90 | .85 | .87 |
| Notes: | | | |

1. Composite runoff coefficients shown for Residential, Industrial, and Business/Commercial Areas assume irrigated grass landscaping for all previous areas. For development with landscaping other than irrigated grass, the designer must develop project specific composite runoff coefficients from the surface characteristics presented in this table.

| EXISTING RATIONAL METHOD CALCULATIONS | | | | | | | | |
|---------------------------------------|---------|--------------------|--------|-------|-------------------|--------|-------------------|--------|
| DRAINAGE | AREA | RUNOFF COEFFICIENT | | Tc | INTENSITY (in/hr) | | PEAK RUNOFF (cfs) | |
| SUB-AREA | (acres) | 5-YR | 100-YR | (min) | 5-YR | 100-YR | 5-YR | 100-YR |
| 1 | 1.86 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.59 | 3.67 |
| 2 | 0.94 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.30 | 1.86 |
| 3 | 0.75 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.24 | 1.48 |
| 4 | 0.46 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.15 | 0.91 |
| 5 | 0.61 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.19 | 1.20 |
| 6 | 0.85 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.27 | 1.68 |
| 7 | 0.79 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.25 | 1.56 |
| 8 | 1.1 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.35 | 2.17 |
| 9 | 0.81 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.26 | 1.60 |
| 10 | 0.71 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.22 | 1.40 |
| 11 | 0.35 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.11 | 0.69 |
| 12 | 0.67 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.21 | 1.32 |
| 13 | 0.18 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.06 | 0.36 |
| 14 | 1.29 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.41 | 2.55 |
| 15 | 0.32 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.10 | 0.63 |
| 16 | 0.72 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.23 | 1.42 |
| 17 | 0.63 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.20 | 1.24 |
| 18 | 0.89 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.28 | 1.76 |
| 19 | 0.54 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.17 | 1.07 |
| 20 | 0.29 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.09 | 0.57 |
| 21 | 0.51 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.16 | 1.01 |
| 22 | 0.13 | 0.2 | 0.5 | 10 | 1.58 | 3.95 | 0.04 | 0.26 |
| TOTAL | | | | | | | 4.87 | 30.42 |

| PROPOSED RATIONAL METHOD CALCULATIONS | | | | | | | | |
|---------------------------------------|---------|--------------------|--------|-------|-------------------|--------|-------------------|--------|
| DRAINAGE | AREA | RUNOFF COEFFICIENT | | Tc | INTENSITY (in/hr) | | PEAK RUNOFF (cfs) | |
| SUB-AREA | (acres) | 5-YR | 100-YR | (min) | 5-YR | 100-YR | 5-YR | 100-YR |
| 1 | 1.86 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 1.76 | 5.73 |
| 2 | 0.94 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.89 | 2.90 |
| 3 | 0.75 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.71 | 2.31 |
| 4 | 0.46 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.44 | 1.42 |
| 5 | 0.61 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.58 | 1.88 |
| 6 | 0.85 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.81 | 2.62 |
| 7 | 0.79 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.75 | 2.43 |
| 8 | 1.1 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 1.04 | 3.39 |
| 9 | 0.81 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.77 | 2.50 |
| 10 | 0.71 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.67 | 2.19 |
| 11 | 0.35 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.33 | 1.08 |
| 12 | 0.67 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.64 | 2.06 |
| 13 | 0.18 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.17 | 0.55 |
| 14 | 1.29 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 1.22 | 3.97 |
| 15 | 0.32 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.30 | 0.99 |
| 16 | 0.72 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.68 | 2.22 |
| 17 | 0.63 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.60 | 1.94 |
| 18 | 0.89 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.84 | 2.74 |
| 19 | 0.54 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.51 | 1.66 |
| 20 | 0.29 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.27 | 0.89 |
| 21 | 0.51 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.48 | 1.57 |
| 22 | 0.13 | 0.6 | 0.78 | 10 | 1.58 | 3.95 | 0.12 | 0.40 |
| TOTAL | | | | | | | 14.60 | 47.45 |

Retention Basin TR-55 Calculations

Worksheet 2: Runoff curve number and runoff

| | | |
|---|---------|------|
| Project <i>Learner Lemmon existing</i> | By | Date |
| Location | Checked | Date |

Check one: Present Developed

1. Runoff curve number

| Soil name and hydrologic group (appendix A) | Cover description <small>(cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)</small> | CN ^{1/} | | | Area <input type="checkbox"/> acres <input type="checkbox"/> mi ² <input checked="" type="checkbox"/> % | Product of CN x area |
|--|--|------------------|------------|------------|---|----------------------|
| | | Table 2-2 | Figure 2-3 | Figure 2-4 | | |
| <i>Haybarn loamy sand (A)</i> | | <i>51</i> | | | <i>13.6</i> | <i>694</i> |
| <i>Orf variant gravelly sandy loam (C)</i> | | <i>63</i> | | | <i>66.4</i> | <i>5443</i> |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

^{1/} Use only one CN source per line

Totals ➡

6137

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{6137}{100} = 61.37$;

Use CN ➡

61

2. Runoff

| | Storm #1 | Storm #2 | Storm #3 |
|---|-------------|----------|----------|
| Frequency yr | <i>100</i> | | |
| Rainfall, P (<i>10-day</i> 24-hour) in | <i>9.66</i> | | |
| Runoff, Q in | <i>4.75</i> | | |

(Use P and CN with table 2-1, figure 2-1, or equations 2-3 and 2-4)

$Q = \frac{(P-0.25)^2}{(P+0.85)}$ $S = \frac{1000}{CN} - 10$

S = 6.40

Worksheet 3: Time of Concentration (T_C) or travel time (T_t)

| | | |
|----------|---------|------|
| Project | By | Date |
| Location | Checked | Date |

Check one: Present Developed

Check one: T_C T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_C only)

| | | | |
|--|------------|---|---|
| | Segment ID | | |
| 1. Surface description (table 3-1) | Range | | |
| 2. Manning's roughness coefficient, n (table 3-1) | 0.13 | | |
| 3. Flow length, L (total L \uparrow 300 ft) ft | 300 | | |
| 4. Two-year 24-hour rainfall, P_2 in | 1.77 | | |
| 5. Land slope, s ft/ft | 0.007 | | |
| 6. $T_t = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$ Compute T_t hr | 0.72 | + | = <input style="width: 40px;" type="text"/> |

Shallow concentrated flow

| | | | |
|---|------------|---|---|
| | Segment ID | | |
| 7. Surface description (paved or unpaved) | Unpaved | | |
| 8. Flow length, Lft | 129 | | |
| 9. Watercourse slope, s ft/ft | 0.007 | | |
| 10. Average velocity, V (figure 3-1) ft/s | 1.4 | | |
| 11. $T_t = \frac{L}{3600 V}$ Compute T_t hr | 0.22 | + | = <input style="width: 40px;" type="text"/> |
| Total = 0.94hr | | | |

Channel flow

| | | | |
|---|------------|---|---|
| | Segment ID | | |
| 12. Cross sectional flow area, a ft ² | | | |
| 13. Wetted perimeter, p_w ft | | | |
| 14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ft | | | |
| 15. Channel slope, s ft/ft | | | |
| 16. Manning's roughness coefficient, n | | | |
| 17. $V = \frac{1.49 r^{2/3} s^{1/2}}{n}$ Compute Vft/s | | | |
| 18. Flow length, L ft | | | |
| 19. $T_t = \frac{L}{3600 V}$ Compute T_t hr | | + | = <input style="width: 40px;" type="text"/> |
| 20. Watershed or subarea T_C or T_t (add T_t in steps 6, 11, and 19) Hr | | | = <input style="width: 40px;" type="text"/> |

Worksheet 4: Graphical Peak Discharge method

| | | |
|----------|---------|------|
| Project | By | Date |
| Location | Checked | Date |

Check one: Present Developed

1. Data

Drainage area $A_m = 0.031$ mi² (acres/640)

Runoff curve number $CN = 61$ (From worksheet 2)

Time of concentration $T_c = 0.94$ hr (From worksheet 3)

Rainfall distribution = II (I, IA, II III)

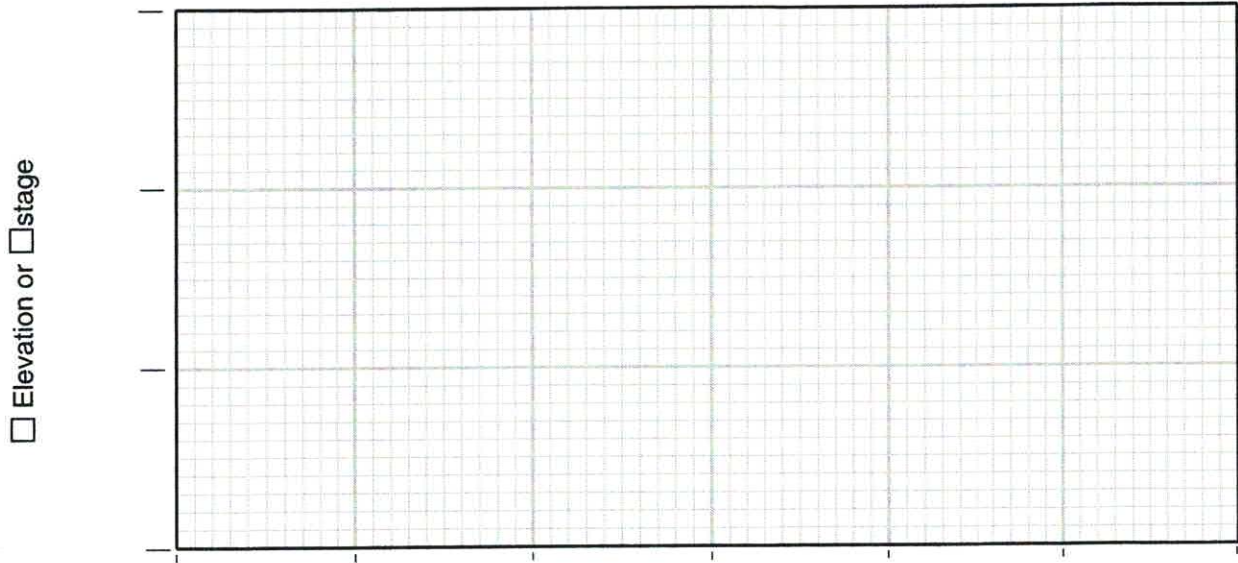
Pond and swamp areas sprea throughout watershed = _____ percent of A_m (_____ acres or mi² covered)

| | Storm #1 | Storm #2 | Storm #3 |
|---|----------|----------|----------|
| 2. Frequency yr | 100 | | |
| 3. Rainfall, P ^{10-day} (24-hour) in | 9.66 | | |
| 4. Initial abstraction, I_a in (Use CN with table 4-1) | 1.279 | | |
| 5. Compute I_a/P | 0.13 | | |
| 6. Unit peak discharge, q_u csm/in (Use T_c and I_a/P with exhibit 4- _____) | 360 | | |
| 7. Runoff, Q in (From worksheet 2) Figure 2-6 | 4.75 | | |
| 8. Pond and swamp adjustment factor, F_p (Use percent pond and swamp area with table 4-2. Factor is 1.0 for zero percent pond ans swamp area.) | | | |
| 9. Peak discharge, q_p ft ³ /s (Where $q_p = q_u A_m QF_p$) | 53.01 | | |

Worksheet 6a: Detention basin storage, peak outflow discharge (q_o) known

| | | |
|----------|---------|------|
| Project | By | Date |
| Location | Checked | Date |

Check one: Present Developed



Detention basin storage (acre feet)

1. Data:

Drainage area $A_m = 0.031$ mi²
 Rainfall distribution type (I, IA, II, III) = _____

| | |
|-----------|-----------|
| 1st Stage | 2nd Stage |
|-----------|-----------|

2. Frequency yr 100

3. Peak inflow discharge q_i ft³/s

(from worksheet 4 or 5b)

4. Peak outflow discharge q_u ft³/s

^{1/}

5. Compute $\frac{q_o}{q_i}$

6. $\frac{V_s}{V_r}$

(Use $\frac{q_o}{q_i}$ with figure 6-1)

7. Runoff, Q in 4.75

(From worksheet 2)

8. Runoff volume V_r ac ft 7.45

($V_r = QA_m$ 53.33)

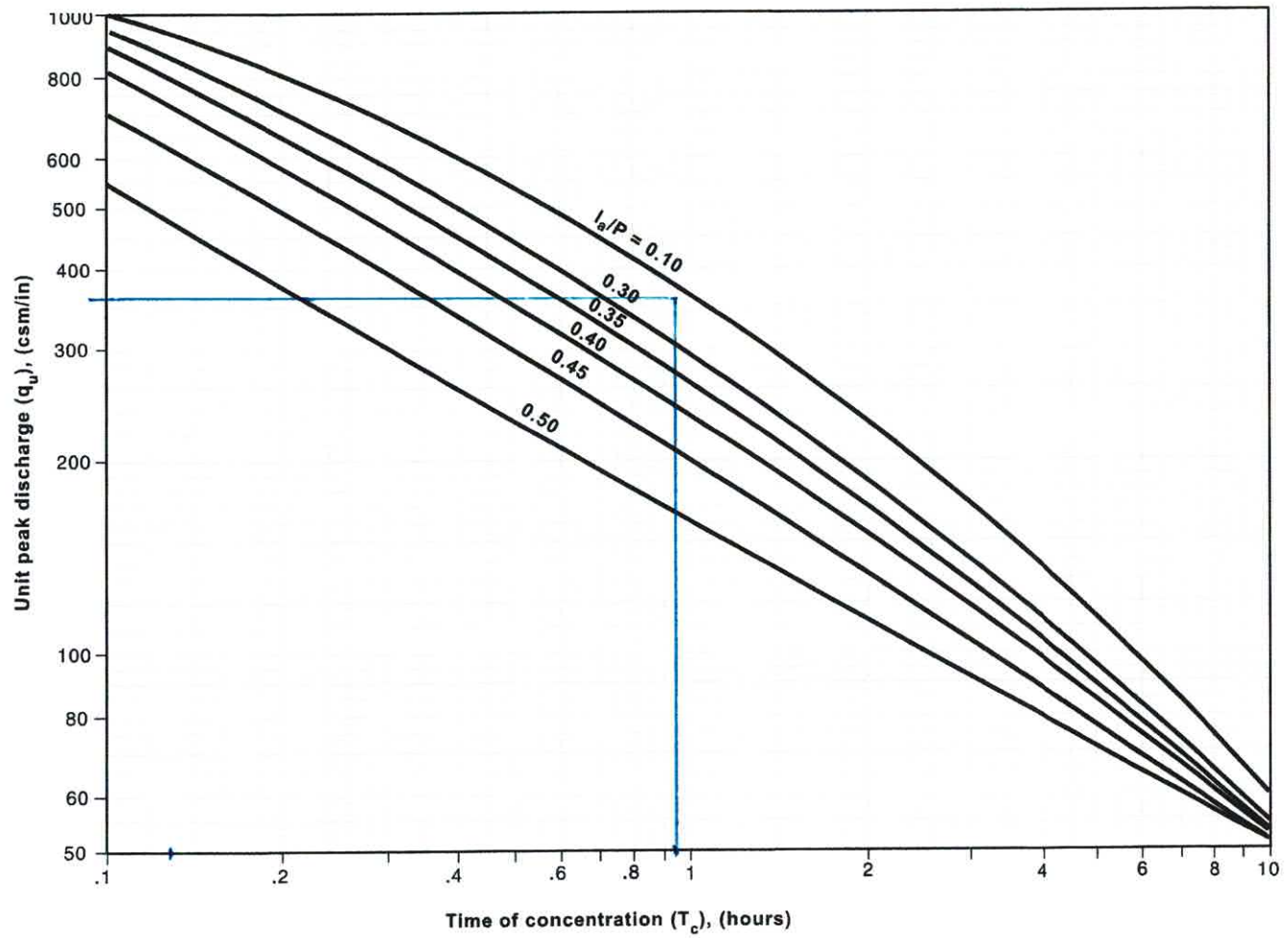
9. Storage volume, V_s ac-ft

($V_s = V_r (\frac{V_s}{V_r})$)

10. Maximum storage E_{max} (from plot)

^{1/} 2nd stage q_o includes 1st stage q_o .

Exhibit 4-II Unit peak discharge (q_u) for NRCS (SCS) type II rainfall distribution



Worksheet 2: Runoff curve number and runoff

| | | |
|---|---------|------|
| Project <i>Learner Lemmon Proposed</i> | By | Date |
| Location | Checked | Date |

Check one: Present Developed

1. Runoff curve number

| Soil name and hydrologic group (appendix A) | Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio) | CN ^{1/} | | | Area <input type="checkbox"/> acres <input type="checkbox"/> mi ² <input checked="" type="checkbox"/> % | Product of CN x area |
|--|---|------------------|------------|------------|---|----------------------|
| | | Table 2-2 | Figure 2-3 | Figure 2-4 | | |
| <i>Impervious</i> | <i>Pavement / Buildings</i> | <i>98</i> | | | <i>67</i> | <i>6,566</i> |
| <i>Landscaping</i> | | <i>79</i> | | | <i>33</i> | <i>2,607</i> |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

^{1/} Use only one CN source per line

Totals ➡

9,173

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{9,173}{100} = 91.73$;

Use CN ➡

92

2. Runoff

| | Storm #1 | Storm #2 | Storm #3 |
|--|-------------|----------|----------|
| Frequency yr | <i>100</i> | | |
| Rainfall, P (^{<i>10-day</i>} 24-hour) in | <i>9.66</i> | | |
| Runoff, Q in | <i>8.69</i> | | |

(Use P and CN with table 2-1, figure 2-1, or equations 2-3 and 2-4)

$Q = \frac{(P-0.25)^2}{(P+0.65)}$
 $S = \frac{1000}{CN} - 10$
 $S = 0.87$

Worksheet 3: Time of Concentration (T_C) or travel time (T_t)

| | | |
|----------|---------|------|
| Project | By | Date |
| Location | Checked | Date |

Check one: Present Developed

Check one: T_C T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_C only)

| | Segment ID | | |
|--|------------|---|---|
| 1. Surface description (table 3-1) | Smooth | | |
| 2. Manning's roughness coefficient, n (table 3-1) | 0.011 | | |
| 3. Flow length, L (total L \uparrow 300 ft) ft | 300 | | |
| 4. Two-year 24-hour rainfall, P_2 in | 1.77 | | |
| 5. Land slope, s ft/ft | 0.0067 | | |
| 6. $T_t = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$ Compute T_t hr | 0.10 | + | = <input style="width: 40px;" type="text"/> |

Shallow concentrated flow

| | Segment ID | | |
|---|------------|---|---|
| 7. Surface description (paved or unpaved) | paved | | |
| 8. Flow length, Lft | 1,690 | | |
| 9. Watercourse slope, s ft/ft | 0.004 | | |
| 10. Average velocity, V (figure 3-1) ft/s | 1.42 | | |
| 11. $T_t = \frac{L}{3600 V}$ Compute T_t hr | 0.37 | + | = <input style="width: 40px;" type="text"/> |
| Total = 0.47hr | | | |

Channel flow

| | Segment ID | | |
|---|------------|---|---|
| 12. Cross sectional flow area, a ft ² | | | |
| 13. Wetted perimeter, p_w ft | | | |
| 14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ft | | | |
| 15. Channel slope, s ft/ft | | | |
| 16. Manning's roughness coefficient, n | | | |
| 17. $V = \frac{1.49 r^{2/3} s^{1/2}}{n}$ Compute Vft/s | | | |
| 18. Flow length, L ft | | | |
| 19. $T_t = \frac{L}{3600 V}$ Compute T_t hr | | + | = <input style="width: 40px;" type="text"/> |
| 20. Watershed or subarea T_C or T_t (add T_t in steps 6, 11, and 19) Hr | | | = <input style="width: 40px;" type="text"/> |

Worksheet 4: Graphical Peak Discharge method

| | | |
|----------|---------|------|
| Project | By | Date |
| Location | Checked | Date |

Check one: Present Developed

1. Data

Drainage area $A_m = 0.031$ mi² (acres/640)

Runoff curve number $CN = 92$ (From worksheet 2)

Time of concentration $T_c = 0.47$ hr (From worksheet 3)

Rainfall distribution = II (I, IA, II III)

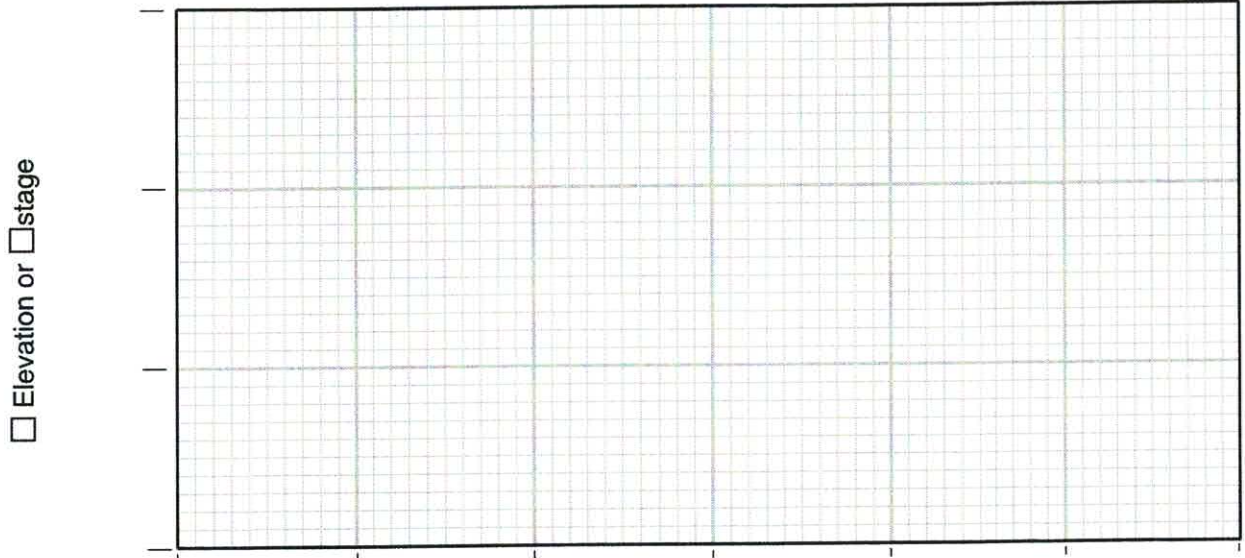
Pond and swamp areas sprea throughout watershed = _____ percent of A_m (_____ acres or mi² covered)

| | Storm #1 | Storm #2 | Storm #3 |
|---|----------|----------|----------|
| 2. Frequency yr | 100 | | |
| 3. Rainfall, P (^{10-day} 24-hour) in | 9.66 | | |
| 4. Initial abstraction, I_a in (Use CN with table 4-1) | 0.174 | | |
| 5. Compute I_a/P | 0.02 | | |
| 6. Unit peak discharge, q_u csm/in (Use T_c and I_a/P with exhibit 4- _____) | 550 | | |
| 7. Runoff, Q in (From worksheet 2) Figure 2-6 | 8.69 | | |
| 8. Pond and swamp adjustment factor, F_p (Use percent pond and swamp area with table 4-2. Factor is 1.0 for zero percent pond ans swamp area.) | | | |
| 9. Peak discharge, q_p ft ³ /s (Where $q_p = q_u A_m QF_p$) | 146.16 | | |

Worksheet 6a: Detention basin storage, peak outflow discharge (q_o) known

| | | |
|----------|---------|------|
| Project | By | Date |
| Location | Checked | Date |

Check one: Present Developed

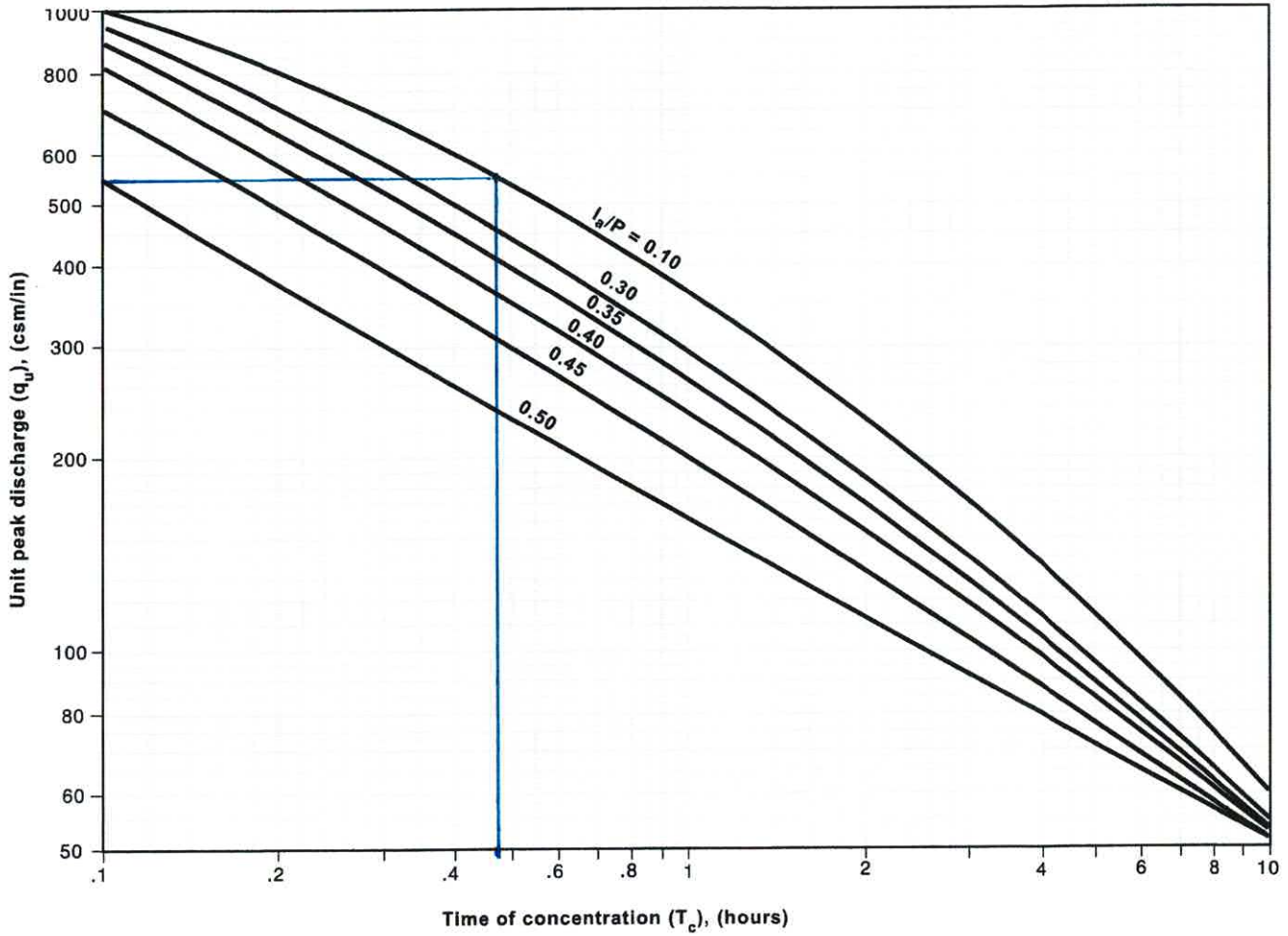


Detention basin storage (acre feet)

1. Data:
 Drainage area $A_m = 0.031$ mi²
 Rainfall distribution type (I, IA, II, III) = _____
2. Frequency yr 100
3. Peak inflow discharge q_i ft³/s
 (from worksheet 4 or 5b)
4. Peak outflow discharge q_u ft³/s
^{1/}
5. Compute $\frac{q_o}{q_i}$
6. $\frac{V_s}{V_r}$
 (Use $\frac{q_o}{q_i}$ with figure 6-1)
7. Runoff, Q in
 (From worksheet 2)
8. Runoff volume V_r ac ft 14.37
 ($V_r = QA_m$ 53.33)
9. Storage volume, V_s ac-ft
 ($V_s = V_r (\frac{V_s}{V_r})$)
10. Maximum storage E_{max} (from plot)

^{1/} 2nd stage q_o includes 1st stage q_o .

Exhibit 4-II Unit peak discharge (q_u) for NRCS (SCS) type II rainfall distribution



Percolation Testing Report



WOOD RODGERS

January 9, 2023
Project No. 4092003

LC LEARNER, LLC
c/o Jeffrey Holbrook
27132 B Paseo Espada, Suite 1226
San Juan Capistrano, CA 92675

RE: Percolation Testing Investigation
Learner Lemmon – Infiltration Basin
Washoe County, Nevada

REF: Truckee Meadows Regional Drainage Manual
April 30, 2009

Washoe County Health District
Sewage, Wastewater, and Sanitation
May 23, 2013

Geotechnical Investigation
Learner Lemmon
Washoe County, Nevada
Wood Rodgers Project No. 4092001
September 2021

Infiltration Basin Limits
Axion Engineering
November 2022

Dear Jeffrey:

Wood Rodgers is pleased to present this summary letter transmitting the compilation of percolation test results for the Learner Lemmon project located in Washoe County, Nevada.

Approximate exploration locations and limits of the infiltration basin are presented on Figure 1 - Site Plan and Approximate Exploration Locations which is attached to this letter. Logs of explorations and percolation test summaries are attached to this letter.

ESTIMATED SEASONAL HIGH GROUND WATER LEVEL

Locating and designing an infiltration basin was investigated over a series of 3-exploration programs. Based on our explorations, it has been determined that the estimated seasonal high ground water level (ESHGWL) within the most recent basin layout (Axion Engineering, November 2022) is at or below elevation 4926-feet. As required in the Truckee Meadows Regional Drainage Manual, the proposed current basin bottom elevation of 4931-feet provides a 5-foot separation to ESHGWL. The following paragraphs summarize the investigation history for the infiltration basin.

Geotechnical Investigation Report (September 2021)

Within this preliminary investigation, no specific infiltration area was identified for investigation and no specific geomorphologic markers were identified within any of the test pit profiles. Variations in soil moisture content with depth indicated the ground water wetting front could approach an elevation of

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT F**

Corporate Office: 3301 C Street, Bldg. 100-B • Sacramento, CA 95816 • 916.341.7760 • Fax: 916.341.7767
Reno Office: 1361 Corporate Boulevard., Reno, NV 89502 • 775.823.4068 • Fax: 775.823.4066

www.woodrogers.com

4921.5-feet (based on calculated degree of saturation and consideration of capillary rise) in the northern area of the site (TP-1 and TP-2) and elevation 4924.5 in the eastern area of the site (TP-3). Groundwater was encountered in TP-3 at a depth of 9.5 feet (elevation of 4922.5-feet). Elevations were determined based on Washoe County contour mapping. Project development was tabled until 2022.

Logs of the September 2021 explorations are included as part of this letter (TP-1 thru TP-10).

Percolation Testing and ESHGWL Investigation (October 2022)

As the project was reactivated additional test pits and percolation testing were performed in the proposed infiltration area now located along the southern portion of the property. Free water was noted at elevations ranging between elevations 4920 and 4925-feet. Elevated moisture contents indicated the wetting front could approach elevation 4929 within the southwest corner of the property. Therefore, the infiltration basin was reoriented to extend along the eastern property boundary and extend approximately halfway across the development toward the north (Figure 1).

It should be noted that evidence of a confining layer was present near the southeast property corner and excavations below elevation 4923-feet (8-feet below design bottom of basin) could result in the development of an elevated free water surface.

Logs of the October 2022 explorations are included as part of this letter (TP-A thru TP-F).

Verification Percolation Testing (December 2022)

Logs of the December 2022 explorations are included as part of this letter (TP-G thru TP-L). Table 1 summarizes percolation test results from each investigation along with relevant elevations. Explorations indicated in gray are no longer within the infiltration basin footprint.

Table 1: Summary of Percolation Testing Results

| Test Pit and Depth (ft) | Percolation Rate (min/in) | Existing Ground Elevation ¹ (ft) | Percolation Test Elevation ¹ (ft) | Free Water Elevation ¹ (ft) | Elevation of Wetting Front (ESHGWL) |
|-------------------------|---------------------------|---|--|--|-------------------------------------|
| TP-1 @ 3.5 | 480 | 4928 | 4924.5 | NE | 4921.5 |
| TP-1 @ 5.5 | 480 | 4928 | 4922.5 | NE | 4921.5 |
| TP-2 @ 3 | 480 | 4928 | 4925 | 4916.5 | 4921.5 |

Table 1: Summary of Percolation Testing Results

| Test Pit and Depth (ft) | Percolation Rate (min/in) | Existing Ground Elevation ¹ (ft) | Percolation Test Elevation ¹ (ft) | Free Water Elevation ¹ (ft) | Elevation of Wetting Front (ESHGWL) |
|-------------------------|---------------------------|---|--|--|-------------------------------------|
| TP-2 @ 6 | 480 | 4928 | 4922 | 4916.5 | 4921.5 |
| TP-3 @ 3.5 | 24 | 4932 | 3928.5 | 4922.5 | 4924.5 |
| TP-3 @ 5 | 2.1 | 4932 | 4927 | 4922.5 | 4924.5 |
| TP-A @ 4.5 | Slower than 480 | 4936 | 4931.5 | 4923 | 4929 |
| TP-A @ 8 | Slower than 480 | 4936 | 4928 | 4923 | |
| TP-B @ 6 | 240 | 4937 | 4931 | 4924 | 4925 |
| TP-B @ 9 | 240 | 4937 | 4928 | 4924 | |
| TP-C @ 8 | 480 | 4936 | 4928 | 4925 | 4927 |
| TP-D @ 5 | 48 | 4936 | 4931 | 4923 | 4925 |
| TP-D @ 8 | 14 | 4936 | 4928 | 4923 | |
| ³ TP-E @ 2 | 11 | 4933 | 4931 | 4922 | 4926 |
| TP-F | --- | 4934 | --- | 4920 | 4924 |
| ² TP-G @ 2 | 4 | 4932 | 4930 | --- | ² 4922.5 |
| ² TP-H @ 3.5 | 37 | 4933 | 4929.5 | --- | ² 4922.5 |
| ² TP-I @ 3.5 | 20 | 4934 | 4930.5 | --- | ² 4922.5 |
| ² TP-J @ 3 | 21 | 4933 | 4930 | --- | ² 4922.5 |

Table 1: Summary of Percolation Testing Results

| Test Pit and Depth (ft) | Percolation Rate (min/in) | Existing Ground Elevation ¹ (ft) | Percolation Test Elevation ¹ (ft) | Free Water Elevation ¹ (ft) | Elevation of Wetting Front (ESHGWL) |
|-------------------------|---------------------------|---|--|--|-------------------------------------|
| ² TP-K @ 4 | 2 | 4933 | 4929 | --- | ² 4922.5 |
| ² TP-L @ 4 | 3 | 4935 | 4931 | --- | ² 4922.5 |

¹Elevations are based on the Washoe County 6ft DEM. (Washoe County, reference date checked)

²Test pits 3, 6, 7 and 4 from the 2021 investigation were relied upon to establish a free water surface below elevation 4926-feet for the 12/2022 investigation.

³Confining layer noted at elevation 4923-feet.

Summary

We appreciate the opportunity to provide these services for the benefit of LC Learner, LLC and their duly assigned agents. Please contact our office should you have any related questions or comments.

Sincerely,

WOOD RODGERS, INCORPORATED

Justin M. McDougal, PE
 Senior Engineer
 PE Number: 24474
 Expires: 12/31/2023






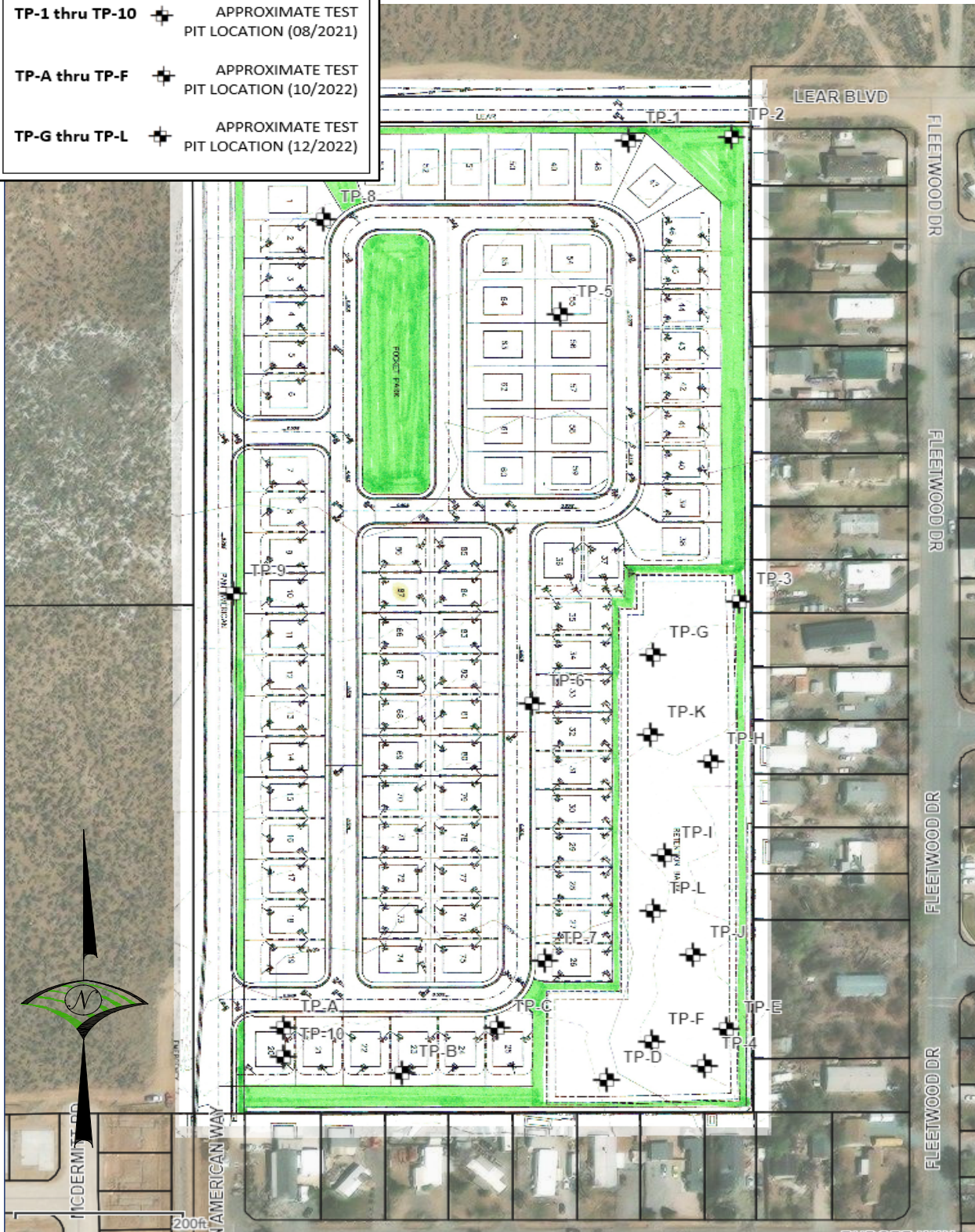
Jackson Beadell, EI
 Technical Professional

Enclosures:

Figure 1 - Site Plan and Approximate Exploration Locations
 Logs of Explorations and Percolation Tests

LEGEND

| | | |
|------------------------|---|---|
| TP-1 thru TP-10 |  | APPROXIMATE TEST PIT LOCATION (08/2021) |
| TP-A thru TP-F |  | APPROXIMATE TEST PIT LOCATION (10/2022) |
| TP-G thru TP-L |  | APPROXIMATE TEST PIT LOCATION (12/2022) |



LEARNER LEMMON

SITE PLAN AND APPROXIMATE EXPLORATION LOCATIONS

FIGURE 1



Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-1

GEO TECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/23/21 14:25 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\4092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4928 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | TOPSOIL, (SM) | GB 1A | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | GB 1B | | | | | 7.7 | 22 | 18 | 4 | 47.5 |
| | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 1C | | | | | 9.6 | 31 | 15 | 16 | 64.9 |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, moist, dark brown, medium plasticity, white specs/veins | GB 1D | | | | | | | | | |
| | | SANDY LEAN CLAY, (CL) very stiff, moist to very moist, brown, medium plasticity, white specs/veins | GB 1E | | | | | | | | | |
| 10 | | LEAN CLAY, (CL) very stiff, very moist, gray brown, medium plasticity | | | | | | | | | | |

Bottom of Test Pit at 12.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 10:22 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:33
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021
 Hole # : PH-A Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:12 | 8:42 | 6" | 6 3/16" | 30 | 3/16" |
| 2 | 8:43 | 9:13 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 9:14 | 9:44 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch

Tested by: J. Beadell
Checked by: J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 5.5'
 2. Time of 1st saturation to 12" 10:22 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:32
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021
 Hole # : PH-B Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:22 | 8:52 | 6" | 6" | 30 | 0" |
| 2 | 8:53 | 9:23 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 9:24 | 9:54 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch

Tested by: J. Beadell
Checked by: J. McDougal



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Reno NV 89521
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TEST PIT NUMBER TP-3

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4932 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION ---
AT END OF EXCAVATION ---
24hrs AFTER EXCAVATION 9.50 ft / Elev 4922.50 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, slightly plastic | GB 3A | | | | | | | | | |
| | | CLAYEY SAND, (SC) very dense, moist, brown, low plasticity | GB 3B | | | | | | | | | |
| | | | GB 3C | | | | | | | | | |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, moist to very moist, gray brown, medium plasticity, white specs | GB 3D | | | | | | | | | |
| 10 | | | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
2. Time of 1st saturation to 12" : 12:02 Date : 8/4/2021
If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation : 12:12
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-E Diameter : 8" Depth : 12" Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|----------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:14 | 9:44 | 6" | 7 12/16" | 30 | 1 12/16" |
| 2 | 9:46 | 10:16 | 6" | 7 6/16" | 30 | 1 6/16" |
| 3 | 10:16 | 10:46 | 6" | 7 7/16" | 30 | 1 7/16" |
| 4 | 10:46 | 11:16 | 6" | 7 5/16" | 30 | 1 5/16" |
| 5 | 11:16 | 11:46 | 6" | 7 4/16" | 30 | 1 4/16" |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 24 Min/inch

Tested by: S. Barton
Checked by: J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 5'
2. Time of 1st saturation to 12" : 12:02 Date : 8/4/2021
If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation : 12:12
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-F Diameter : 8" Depth : 12" Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|----------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:28 | 9:33 | 6" | 9 10/16" | 5 | 3 10/16" |
| 2 | 9:35 | 9:40 | 6" | 9 6/16" | 5 | 3 6/16" |
| 3 | 9:43 | 9:47 | 6" | 9 1/16" | 5 | 3 1/16" |
| 4 | 9:48 | 9:53 | 6" | 8 9/16" | 5 | 2 9/16" |
| 5 | 9:55 | 10:00 | 6" | 8 8/16" | 5 | 2 8/16" |
| 6 | 10:01 | 10:06 | 6" | 8 7/16" | 5 | 2 7/16" |
| 7 | 10:06 | 10:11 | 6" | 8 6/16" | 5 | 2 6/16" |

Stabilized Rate : 2.1 Min/inch

Tested by: S. Barton
Checked by: J. McDougal

GEO TECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/23/21 14:25 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092 LEARNING_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\LEARNING_LEMMON.GPJ



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TEST PIT NUMBER TP-4

PAGE 1 OF 1

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4934 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) | GB 4A | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, slightly plastic | GB 4B | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) medium dense, slightly moist, brown, low plasticity | GB 4C | | | | | | | | | |
| | | CLAYEY SAND, (SC) slightly moist to moist, low plasticity | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | GB 4D | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.0 | | SANDY LEAN CLAY, (CL) very stiff, very moist, gray brown, medium plasticity | GB 4E | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-5

PAGE 1 OF 1

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4930 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic, slightly cemented | GB 5A | | | | | | | | | |
| | | CLAYEY SAND, (SC) very dense, slightly moist, brown and white, low to medium plasticity | | | | | | | | | | |
| 2.5 | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 5B | | | | | | | | | |
| | | LEAN CLAY WITH SAND, (CL) very stiff, very moist, gray brown, medium plasticity | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 5C | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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TEST PIT NUMBER TP-6

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CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4932 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | GB 6A | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) very dense, moist, brown, low plasticity | GB 6B | | | | | | | | | |
| 5.0 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray brown white, medium plasticity | GB 6C | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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TEST PIT NUMBER TP-7

PAGE 1 OF 1

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_GAIGEO\TECH\H04_GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4936 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY SAND, (SM) medium dense, dry, brown, nonplastic | GB 7A | | | | | 2.4 | | | | |
| 2.5 | | CLAYEY SAND, (SC) very dense, slightly moist to moist, brown, low plasticity, white specs | SH 7B | | | | | 6.5 | | | | |
| 7.5 | | | GB 7C | | | | | 9.1 | 25 | 17 | 8 | 48.5 |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-8

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CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4928 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 8B | | | | | | | | | |
| | | CLAYEY SAND, (SC) medium dense, slightly moist, brown, medium plasticity | GB 8A GB 8C | | | | | | | | | |
| 2.5 | | LEAN CLAY WITH SAND, (CL) very stiff, very moist, gray white, medium plasticity | GB 8D | | | | 91.5 | | | | | |
| | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 8E | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | GB 8F | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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TEST PIT NUMBER TP-9

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4931 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | CLAYEY SAND, (SC) medium dense, slightly moist, light brown, low plasticity | GB 9B | | | | | | | | | |
| | | SILTY SAND, (SM) very dense, light brown, slightly plastic | GB 9A GB 9C | | | | | 10.3 | 22 | 21 | 1 | 26.0 |
| 7.5 | | LEAN CLAY WITH SAND, (CL) very stiff, moist to very moist, gray white, medium plasticity | GB 9D | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-10

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4936 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown | GB 10A | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) medium dense to very dense, slightly moist, brown white, low plasticity | | | | | | | | | | |
| 7.5 | | | GB 10B | | | | | | | | | |
| 10.0 | | Moist | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GEO\TECH\04_GINT\10_2022\LEARNER_LEMMON_PERC_TESTING



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TEST PIT NUMBER TP-A

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 10/6/22 **COMPLETED** 10/6/22 **GROUND ELEVATION** 4935.7 ft **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD Komatsu 290 **▽ AT TIME OF EXCAVATION** 15.0 ft
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **▼ AT END OF EXCAVATION** 15.0 ft
NOTES: Elevations: Washoe County 6ft DEM **▼ 24hrs AFTER EXCAVATION** 13.00 ft / Elev 4922.70 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) loose to medium dense, dry, light brown, nonplastic | GB 1A | | | | | | | | | |
| 5 | | CLAYEY SAND, (SC) very dense, dry to slightly moist, medium brown, low plasticity | GB 2A GB 3A | | | | | 6.4 | | | | 28.9 |
| 10 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist to moist, light brown, medium plasticity | GB 4A | | | | | | | | | |
| 15 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray, medium to high plasticity | GB 5A GB 6A | | | | | | | | | |

Bottom of Test Pit at 15.5 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 4.5'
 2. Time of 1st saturation to 12" 10:47 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:57 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : A1 Diameter : 9 Depth : 12 Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:36 AM | 9:06 AM | 6 | 6 | 30 | 0 |
| 2 | 9:06 AM | 9:36 AM | 6 | 6 | 30 | 0 |
| 3 | 9:36 AM | 10:06 AM | 6 | 6 | 30 | 0 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : SLOWER THAN 480 min/in Tested by: J. Beadell
 Checked by: J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 8'
 2. Time of 1st saturation to 12" 10:47 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:57 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : A2 Diameter : 7 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:39 AM | 9:09 AM | 6 | 6 | 30 | 0 |
| 2 | 9:09 AM | 9:39 AM | 6 | 6 | 30 | 0 |
| 3 | 9:39 AM | 10:09 AM | 6 | 6 | 30 | 0 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : SLOWER THAN 480 min/in Tested by: J. Beadell
 Checked by: J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092 LEARNER LEMMON\LEARNING LEMMON_OA\GEO\TECH\GEO\TECH\04 GINT\10.2022\LEARNER LEMMON PERC TESTING



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 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-B

PAGE 1 OF 1

CLIENT LC Learner, LLC
PROJECT NUMBER 4092003
DATE STARTED 10/6/22 **COMPLETED** 10/6/22
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD Komatsu 290
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County 6ft DEM

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4937.2 ft **TEST PIT SIZE** 48 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION ---
AT END OF EXCAVATION ---
24hrs AFTER EXCAVATION 13.50 ft / Elev 4923.70 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, nonplastic | | | | | | | | | | |
| 5 | | SILTY, CLAYEY SAND, (SC-SM) very dense, dry to slightly moist, medium brown, slightly plastic | GB 1B GB 2B | | | | | 7.0 | 23 | 18 | 5 | 27.8 |
| 10 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist, medium brown with white, low to medium plasticity | GB 3B GB 4B | | | | | | | | | |
| 15 | | LEAN CLAY, (CL) very stiff, slightly moist to moist, gray with white, medium to high plasticity | GB 5B GB 6B | | | | | | | | | |

Bottom of Test Pit at 15.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 6'
 2. Time of 1st saturation to 12" 11:52 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : B1 Diameter : 7 Depth : 12 Soil Type : SC-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:48 AM | 9:18 AM | 6 | 6 3/16 | 30 | 3/16 |
| 2 | 9:19 AM | 9:49 AM | 6 | 6 3/16 | 30 | 3/16 |
| 3 | 9:50 AM | 10:20 AM | 6 | 6 2/16 | 30 | 2/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 240.0 Min/inch
 Tested by: J. Beadell
 Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 9'
 2. Time of 1st saturation to 12" 11:52 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : B2 Diameter : 8 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:51 AM | 9:21 AM | 6 | 6 2/16 | 30 | 2/16 |
| 2 | 9:22 AM | 9:52 AM | 6 | 6 2/16 | 30 | 2/16 |
| 3 | 9:52 AM | 10:22 AM | 6 | 6 2/16 | 30 | 2/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 240.0 Min/inch
 Tested by: J. Beadell
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GEO\TECH\04_GINT\10_2022\LEARNER_LEMMON_PERC_TESTING



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 10/6/22 **COMPLETED** 10/6/22 **GROUND ELEVATION** 4936.2 ft **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD Komatsu 290 **AT TIME OF EXCAVATION** ---
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** ---
NOTES: Elevations: Washoe County 6ft DEM **24hrs AFTER EXCAVATION** 11.00 ft / Elev 4925.20 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) loose to medium dense, dry, light brown, nonplastic | GB 1C | | | | | | | | | |
| 5 | | CLAYEY SAND, (SC) very dense, dry to slightly moist, medium brown, low plasticity | GB 2C | | | | | | | | | |
| 10 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist, light brown, medium plasticity | GB 3C | | | | | | | | | |
| 15 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray, medium to high plasticity | GB 4C | | | | | | | | | |
| | | | GB 5C | | | | | | | | | |

Bottom of Test Pit at 15.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 8'
 2. Time of 1st saturation to 12" 12:47 PM Date : 6-Oct
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct

Hole # : C Diameter : 8 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:05 AM | 9:35 AM | 6 | 6 1/16 | 30 | 1/16 |
| 2 | 9:35 AM | 10:05 AM | 6 | 6 1/16 | 30 | 1/16 |
| 3 | 10:05 AM | 10:35 AM | 6 | 6 1/16 | 30 | 1/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480.0 Min/inch

Tested by: S. Barton
 Checked by: J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - /1/3/20 11:16 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092 LEARNER LEMMON\LEARNING LEMMON_OA\GEO\TECH\GEO\TECH\04 GINT\10.2022\LEARNER LEMMON PERC TESTING



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TEST PIT NUMBER TP-D

PAGE 1 OF 1

CLIENT LC Learner, LLC
PROJECT NUMBER 4092003
DATE STARTED 10/6/22 **COMPLETED** 10/6/22
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD Komatsu 290
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County 6ft DEM

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4936.1 ft **TEST PIT SIZE** 48 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION ---
AT END OF EXCAVATION ---
24hrs AFTER EXCAVATION 13.00 ft / Elev 4923.10 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, nonplastic | | | | | | | | | | |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, dry to slightly moist, medium brown, low to medium plasticity | GB 1D GB 2D | | | | | 11.8 | 28 | 15 | 13 | 52.7 |
| 10 | | CLAYEY SAND, (SC) very dense, slightly moist, medium brown with white, low plasticity | GB 3D | | | | | 11.3 | 25 | 17 | 8 | 44.2 |
| 15 | | LEAN CLAY, (CL) very stiff, slightly moist to moist, gray with white, medium to high plasticity | GB 4D | | | | | | | | | |

Bottom of Test Pit at 17.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 5'
 2. Time of 1st saturation to 12" 1:47 PM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 1:57 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : D1 Diameter : 8 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:57 AM | 9:27 AM | 6 | 6 12/16 | 30 | 12/16 |
| 2 | 9:27 AM | 9:57 AM | 6 | 6 11/16 | 30 | 11/16 |
| 3 | 9:57 AM | 10:27 AM | 6 | 6 10/16 | 30 | 10/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 48.0 Min/inch
 Tested by : S. Barton
 Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 8'
 2. Time of 1st saturation to 12" 2:00 PM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 2:10 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : D2 Diameter : 8 Depth : 12 Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:01 AM | 9:31 AM | 6 | 8 8/16 | 30 | 2 8/16 |
| 2 | 9:31 AM | 10:01 AM | 6 | 8 4/16 | 30 | 2 4/16 |
| 3 | 10:01 AM | 10:31 AM | 6 | 8 3/16 | 30 | 2 3/16 |
| 4 | 10:31 AM | 11:01 AM | 6 | 8 2/16 | 30 | 2 2/16 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 14.1 Min/inch
 Tested by : S. Barton
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\10.2022\LEARNER_LEMMON PERC TESTING



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-E

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 10/6/22 **COMPLETED** 10/6/22 **GROUND ELEVATION** 4933.2 ft **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD Komatsu 290 **▽ AT TIME OF EXCAVATION** 11.0 ft
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **▽ AT END OF EXCAVATION** 11.0 ft
NOTES: Elevations: Washoe County 6ft DEM **▽ 24hrs AFTER EXCAVATION** 5.00 ft / Elev 4928.20 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | | | | | | | | | | |
| 5 | ▽ | CLAYEY SAND TO SANDY LEAN CLAY, (SC-CL) very dense to very stiff, moist, medium brown, low to medium plasticity | GB 1E | | | | | 4.7 | 19 | 17 | 2 | 28.6 |
| | | | GB 2E | | | | | 10.4 | | | | |
| | | | GB 3E | | | | | 14.3 | | | | |
| 10 | ▽ | LEAN CLAY, (CL) stiff, very moist, gray, medium to high plasticity | GB 4E | | | | | | | | | |
| 15 | | | GB 5E | | | | | | | | | |

Bottom of Test Pit at 15.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 2'
 2. Time of 1st saturation to 12" 2:15 PM Date : 6-Oct
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 2:25 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : E1 Diameter : 8 Depth : 12 Soil Type : SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 10:48 AM | 11:18 AM | 6 | 8 15/16 | 30 | 2 15/16 |
| 2 | 11:18 AM | 11:48 AM | 6 | 8 14/16 | 30 | 2 14/16 |
| 3 | 11:48 AM | 12:18 PM | 6 | 8 13/16 | 30 | 2 13/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 10.7 Min/inch Tested by: S. Barton
Checked by: J. McDougal

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Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-F

PAGE 1 OF 1

CLIENT LC Learner, LLC
PROJECT NUMBER 4092003
DATE STARTED 10/7/22 **COMPLETED** 10/7/22
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD Komatsu 290
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County 6ft DEM

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4934.1 ft **TEST PIT SIZE** 48 inches
GROUND WATER LEVELS:
 ▽ **AT TIME OF EXCAVATION** 14.5 ft
 ▽ **AT END OF EXCAVATION** ---
 ▽ **0.5hrs AFTER EXCAVATION** 14.00 ft / Elev 4920.10 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | | | | | | | | | | | |
| 0 - 5 | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, nonplastic SILTY, CLAYEY SAND, (SC-SM) very dense, dry to slightly moist, medium brown, slightly plastic | GB 1F | | | | | 14.7 | 26 | 21 | 5 | 48.4 |
| 5 - 10 | | CLAYEY SAND, (SC) very dense, slightly moist, light brown, low plasticity | GB 2F | | | | | 16.8 | 25 | 17 | 8 | 36.2 |
| 10 - 15 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray, medium to high plasticity | GB 3F | | | | | | | | | |
| 15 - 17 | | | GB 4F | | | | | | | | | |

Bottom of Test Pit at 17.0 Feet.

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\12.2022\LEARNER_LEMMON\DECEMBER 22



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 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4932.2 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | GB G1 | | | | | | | | | |

Bottom of Test Pit at 2.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 2'
 2. Time of 1st saturation to 12" 10:05 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:15 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec
 Hole # : G Diameter : 8 Depth : 12 Soil Type : SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 10:38 AM | 10:48 AM | 6 | 8 7/16 | 10 | 2 7/16 |
| 2 | 10:49 AM | 10:59 AM | 6 | 8 6/16 | 10 | 2 6/16 |
| 3 | 10:59 AM | 11:09 AM | 6 | 8 5/16 | 10 | 2 5/16 |
| 4 | 11:09 AM | 11:19 AM | 6 | 8 4/16 | 10 | 2 4/16 |
| 5 | 11:20 AM | 11:30 AM | 6 | 8 7/16 | 10 | 2 7/16 |
| 6 | 11:31 AM | 11:41 AM | 6 | 8 7/16 | 10 | 2 7/16 |
| 7 | 11:42 AM | 11:52 AM | 6 | 8 6/16 | 10 | 2 6/16 |

Stabilized Rate : 4.2 Min/inch **Tested by:** J. Beadell
Checked by: J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\12.2022\LEARNER_LEMMON DECEMBER 22



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 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-H

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4933.1 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| 2.5 | | SILTY, CLAYEY SAND, (SC-SM) dense, slightly moist, tan brown, low plasticity, 0/60/40 | GB H1 | | | | | | | | | |

Bottom of Test Pit at 3.5 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 10:56 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec

Hole # : H Diameter : 7 Depth : 12 Soil Type : SC-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:01 AM | 8:31 AM | 6 | 6 14/16 | 30 | 14/16 |
| 2 | 8:32 AM | 9:02 AM | 6 | 6 14/16 | 30 | 14/16 |
| 3 | 9:03 AM | 9:33 AM | 6 | 6 13/16 | 30 | 13/16 |
| 4 | 9:34 AM | 10:04 AM | 6 | 6 13/16 | 30 | 13/16 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 36.9 Min/inch

Tested by: J. Beadell
 Checked by: J. McDougal

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 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4933.8 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| | | FAT CLAY, (CH) stiff, moist, dark brown, medium to high plasticity | GB I1 | | | | | | | | | |
| | | CLAYEY SAND TO SANDY LEAN CLAY, (SC-CL) dense to very stiff, slightly moist, tan brown, low plasticity | GB I2 | | | | | | | | | |
| 2.5 | | | | | | | | | | | | |

Bottom of Test Pit at 3.5 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 11:24 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec
 Hole # : I Diameter : 7 Depth : 12 Soil Type : SC-CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:19 AM | 8:49 AM | 6 | 8 1/16 | 30 | 2 1/16 |
| 2 | 8:50 AM | 9:20 AM | 6 | 7 10/16 | 30 | 1 10/16 |
| 3 | 9:21 AM | 9:51 AM | 6 | 7 9/16 | 30 | 1 9/16 |
| 4 | 9:52 AM | 10:22 AM | 6 | 7 8/16 | 30 | 1 8/16 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 20.0 Min/inch Tested by: J. Beadell
 Checked by: J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\12.2022\LEARNER_LEMMON\DECEMBER 22



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-K

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4933.2 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| 2.5 | | POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) dense, slightly moist, tan, nonplastic, lense of sandy lean clay in corner of test pit | GB K1 | | | | | | | | | |

Bottom of Test Pit at 4.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 4'
 2. Time of 1st saturation to 12" 10:30 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:40 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec

Hole # : K Diameter : 8 Depth : 12 Soil Type : SP-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 10:43 AM | 10:49 AM | 6 | 2 | 6 | 4 |
| 2 | 10:49 AM | 10:55 AM | 6 | 2 7/16 | 6 | 3 9/16 |
| 3 | 10:56 AM | 11:02 AM | 6 | 2 8/16 | 6 | 3 8/16 |
| 4 | 11:04 AM | 11:10 AM | 6 | 2 10/16 | 6 | 3 6/16 |
| 5 | 11:12 AM | 11:18 AM | 6 | 2 12/16 | 6 | 3 4/16 |
| 6 | 11:19 AM | 11:25 AM | 6 | 2 12/16 | 6 | 3 4/16 |
| 7 | 11:26 AM | 11:32 AM | 6 | 2 13/16 | 6 | 3 3/16 |

Stabilized Rate : 1.9 Min/inch

Tested by: B. LaBarr
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\12.2022\LEARNER_LEMMON DECEMBER 22



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-L

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4934.5 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| | | CLAYEY SAND, (SC) dense, moist, light brown, low plasticity | | | | | | | | | | |
| 2.5 | | POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) dense, slightly moist, light brown, nonplastic | | | | | | | | | | |
| | | | GB L1 | | | | | | | | | |

Bottom of Test Pit at 4.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 4'
 2. Time of 1st saturation to 12" 11:55 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 12:03 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec

Hole #: L Diameter : 8 Depth : 12 Soil Type : SP-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 12:03 PM | 12:13 PM | 6 | 10 2/16 | 10 | 4 2/16 |
| 2 | 12:14 PM | 12:24 PM | 6 | 9 9/16 | 10 | 3 9/16 |
| 3 | 12:25 PM | 12:35 PM | 6 | 9 10/16 | 10 | 3 10/16 |
| 4 | 12:37 PM | 12:47 PM | 6 | 9 8/16 | 10 | 3 8/16 |
| 5 | 12:48 PM | 12:58 PM | 6 | 9 8/16 | 10 | 3 8/16 |
| 6 | 12:59 PM | 1:09 PM | 6 | 9 8/16 | 10 | 3 8/16 |
| 7 | 1:10 PM | 1:20 PM | 6 | 9 8/16 | 10 | 3 8/16 |

Stabilized Rate : 2.9 Min/inch

Tested by: J. Beadell
 Checked by: J. McDougal

LEARNER-LEMMON SINGLE-FAMILY

RENO, NV

APN: 080-461-08

Prepared for:
LC Learner, LLC.
27132B Paseo Espada, Suite 1226
San Juan Capistrano, CA 92675

Prepared by:
Kimley»»Horn

March 2023
192349000
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TRAFFIC IMPACT STUDY

FOR

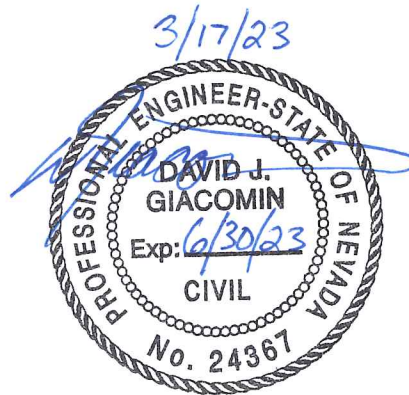
LEARNER-LEMMON SINGLE-FAMILY

Prepared for:

LC Learner, LLC

27132B Paseo Espada, Suite 1226

San Juan Capistrano, CA 92675



Prepared by:

Kimley-Horn and Associates, Inc.

7900 Rancharrah Parkway

Suite 100

Reno, Nevada 89511

(775) 787-7552

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192349000

EXECUTIVE SUMMARY

The purpose of this traffic impact study is to identify traffic generation characteristics of a proposed single-family housing development, identify potential traffic related impacts on the surrounding street network, and develop mitigation measures required for identified impacts

The proposed single-family residential development is to be generally located at the Southeast corner of Pan American Way and the future Lear Boulevard on approximately 19.93 Acres within APN 080-461-08 in Reno, Nevada. Upon completion, the buildout of the proposed development is anticipated to consist of 87 detached single-family residential buildings.

Regional access to the residential development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way.

The Washoe County scope of study dated January 27, 2023, identified four (4) intersections for full analysis:

- Fleetwood Drive and Lemmon Drive (two-stage intersection)
- Fleetwood Drive and Budger Way
- Budger Way and Pan American Way
- Fleetwood Drive and Lear Boulevard

The scope from Washoe County is included in **Appendix A**. The study area intersections and project access drives are shown in **Figure E-1**.

Full buildout of the development is anticipated to generate approximately 61 AM peak hour trips and approximately 84 PM peak hour trips to the surrounding street network.

The proposed development traffic is anticipated to generate traffic volumes resulting in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for the egressing access drives onto Pan American Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.

Figure E-1 – Project Access Drives and Study Area Intersections



Source: NearMap

TABLE OF CONTENTS

| | |
|--|-----------|
| EXECUTIVE SUMMARY | I |
| 1. INTRODUCTION | 1 |
| 2. EXISTING CONDITIONS | 3 |
| 2.1. Study Area Intersections | 3 |
| 2.2. Existing Lane Configurations and Control | 3 |
| 2.3. Existing Turning Movements | 3 |
| 3. FUTURE CONDITIONS | 6 |
| 3.1. 2026 Background Lane Configuration and Control | 6 |
| 3.2. 2026 Buildout Background Traffic | 6 |
| 3.3. Project Trip Generation | 8 |
| 3.4. Project Trip Distribution | 8 |
| 3.5. Traffic Assignment | 8 |
| 3.6. 2026 Background Plus Project Traffic Volumes | 9 |
| 4. TRAFFIC IMPACT ANALYSIS | 14 |
| 4.1. Analysis Methodology | 14 |
| 4.2. Key Intersection Operational Analysis | 14 |
| 5. CRASH DATA SUMMARY | 16 |
| 6. CONCLUSIONS/RECOMMENDATIONS | 17 |

LIST OF FIGURES

Figure E-1 – Project Access Drives and Study Area Intersections..... ii

Figure 1 – Vicinity Map2

Figure 2 – Existing Lane Configurations and Traffic Control.....4

Figure 3 – 2023 Existing Peak Hour Traffic Volumes5

Figure 4 – 2026 Background Peak Hour Traffic Volumes.....7

Figure 5 – 2026 Background Plus Project Lane Configuration and Traffic Control10

Figure 6 – Project Trip Distribution.....11

Figure 7 – Project Traffic Assignment12

Figure 8 – 2026 Background Plus Project Peak Hour Traffic Volumes.....13

LIST OF TABLES

Table 1 – Peak Hour Turning Movement Count Dates3

Table 2 – Trip Generation8

Table 3 – Level of Service Definitions14

Table 4 – Key Intersection Peak Hour LOS Analysis.....15

Table 5 – Crash Data Summary.....16

LIST OF APPENDICES

- Appendix A Scope of Study
- Appendix B Count Data
- Appendix C Trip Generation Calculations
- Appendix D Key Intersection Peak Hour LOS Calculations
- Appendix E Site Plan

1. INTRODUCTION

Kimley-Horn and Associates, Inc. has been retained by LC Learner, LLC to prepare a traffic impact study for a single-family residential development. The purpose of this traffic impact study is to identify traffic generation characteristics of the proposed development, identify potential traffic related impacts on the local street system, and develop mitigation measures required for the identified impacts.

The proposed single-family residential development is to be generally located along Budger Way and Pan American Way on approximately 19.93 Acres within APN 080-461-08 in Reno, Nevada. Upon completion, the buildout of the proposed development is anticipated to consist of 87 detached single-family residential buildings. A site plan for the proposed development is located in **Appendix G**. The location of the project site with respect to the City of Reno is shown on **Figure 1**.

Regional access to the development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way.

Figure 1 – Vicinity Map



Source: Esri

2. EXISTING CONDITIONS

This section of the report details existing conditions near the project site.

2.1. Study Area Intersections

The Washoe County scope dated January 27, 2023, identified four (4) intersections for full analysis:

- Fleetwood Drive and Lemmon Drive (two-stage intersection)
- Fleetwood Drive and Budger Way
- Budger Way and Pan American Way
- Fleetwood Drive and Lear Boulevard

The location for the single-family residential project is currently undeveloped. The area surrounding the project site is composed primarily of residential and commercial uses. The location of the project site, study area intersections and existing land uses are shown on **Figure E-1**.

2.2. Existing Lane Configurations and Control

Regional access to the development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way. Existing speed limits, lane configuration, and traffic control at the time of this study are illustrated in **Figure 2**.

2.3. Existing Turning Movements

AM and PM peak hour turning movement data was field counted on February 2, 2023, as summarized in **Table 1**, for the study area intersections identified in **Section 2.1**. Count data sheets are provided in **Appendix B**.

Table 1 – Peak Hour Turning Movement Count Dates

| Intersection | Count Date |
|---|----------------------------|
| Fleetwood Drive and Lemmon Drive (#1, #2) | Thursday, February 2, 2023 |
| Fleetwood Drive and Budger Way (#3) | Thursday, February 2, 2023 |
| Budger Way and Pan American Way (#4) | Thursday, February 2, 2023 |
| Fleetwood Drive and Lear Boulevard (#5) | Thursday, February 2, 2023 |

Figure 3 illustrates the 2022 existing peak hour traffic volumes.



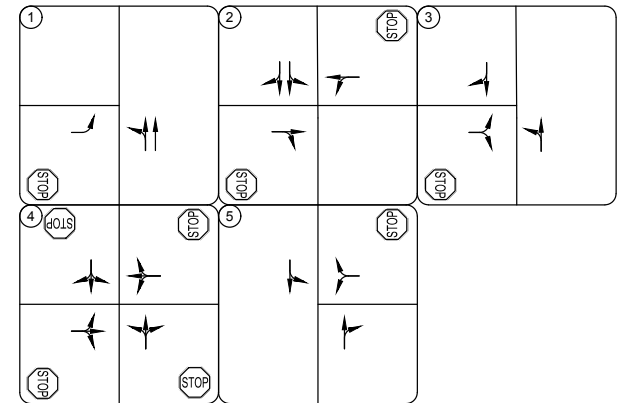
**Lemmon Learner Single Family
Study Area, 2023 Existing Lane Configuration and Traffic Control**

Study Area Intersections

1. Fleetwood Drive and Lemmon Drive Northbound
2. Fleetwood Drive and Lemmon Drive Southbound
3. Fleetwood Drive and Budger Way
4. Fleetwood Drive and Lear Boulevard
5. Budger Way and Pan American Way



2023 Existing Lane Configuration and Control



Legend

- 1 Study Area Key Intersection
- Existing Approach
- Stop Controlled Intersection
- Roadway Speed Limit
- Signal Controlled Intersection

Figure 2





**Lemmon Learner Single Family
2023 Existing Peak Hour Traffic Volumes**

2023 Existing Peak Hour Traffic Volumes

| | | | | | | | | | |
|---|------------------------|------------------------------|---|---------------------------|------------------------|-----------------|--------------------------|------------------------|--------------------------|
| ① | ↗ 2(0) ↘ | ↗ 33(60) 109(445) ↘ | ② | ↖ 1(0) ↗ 35(219) | ← 33(89) | ③ | ↖ 4(6) ↗ 37(27) | ↗ 7(7) ↘ 3(4) | ↗ 0(6) ↘ 20(37) |
| ④ | ↖ 1(0) ↗ 0(1) | ↖ 0(2) ↗ 1(0) | ⑤ | ↖ 1(1) ↗ 0(3) | ↖ 0(3) ↗ 5(8) | ↖ 10(9) ↗ | | | |

Legend

① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

Figure 3



3. FUTURE CONDITIONS

This section of the report details the conditions that are expected in the future at the time the proposed project is anticipated to be completed.

3.1. 2026 Background Lane Configuration and Control

Regional access to the development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way. Expected speed limits, lane configuration, and traffic control in 2026 are expected remain the same as the 2023 existing speed limits, lane configuration and traffic control illustrated in **Figure 2** with the exception of the project access drives which are illustrated in **Figure 5**.

3.2. 2026 Buildout Background Traffic

To accurately determine the impact of project traffic, it is necessary to establish future baseline traffic volumes along roadways in the vicinity of the proposed development site. The closest Nevada Department of Transportation (NDOT) count station (0310926) has recently shown negative growth. To provide a conservative analysis, existing year (2023) peak hour traffic volumes were grown for three (3) years at a 2 percent (2%) annual growth rate to obtain future background traffic volumes in 2026 when the proposed development is anticipated to be fully completed. The 2026 background peak hour traffic volumes at the key intersections are illustrated in **Figure 4**.



**Learner Lemmon Single Family
2024 Background Peak Hours Traffic Volumes**

2026 Background Peak Hour Traffic Volumes

| | | | |
|------------------|------------------------|----------------------|--------------------|
| ① | | ② | ③ |
| 2(0) → | 35(65) → 116(472) → | 1(0) ↓ 379(232) ↓ | ← 35(94) |
| | | 2(0) ↓ 73(53) ↓ | 4(6) ↓ 39(29) ↓ |
| | | | 0(6) → 21(39) → |
| ④ | | ⑤ | |
| 1(0) ↓ 0(1) ↓ | 0(2) ↓ | 1(0) ↑ | |
| | | 1(1) ↓ 0(3) ↓ | 0(3) ↓ 5(8) ↓ |
| | | | 11(10) ↓ |

| Legend | |
|---------|----------------------------------|
| ① | Study Area Key Intersection |
| A | Project Access Drive |
| ←XX(XX) | AM(PM) Peak Hour Traffic Volumes |

Figure 4



3.3. Project Trip Generation

For purposes of estimating the number of new trips that are anticipated to be generated by the proposed residential development, the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition (ITE Land Use Codes 210 – Single-Family Detached Housing) was used. The ITE Trip Generation Manual informational report is a standard reference used by jurisdictions throughout the country and is based on actual trip generation studies performed at numerous locations in areas of various populations.

The project is expected to consist of 87 single-family residential lots. **Table 2** summarizes the estimated project trips. The proposed development is anticipated to generate 242 AM and 256 PM peak hour trips. Calculations are provided in **Appendix D**.

Table 2 – Trip Generation

| ITE Code | Description | Dwelling Units | AM Peak Hour | | | PM Peak Hour | | | Total Daily Trips |
|--------------|--------------------------------|----------------|--------------|-----------|-----------|--------------|-----------|-----------|-------------------|
| | | | In | Out | Total | In | Out | Total | |
| 210 | Single-Family Detached Housing | 87 | 15 | 46 | 61 | 52 | 30 | 82 | 820 |
| Total | | | 15 | 46 | 61 | 52 | 30 | 82 | 820 |

Source: ITE Trip Generation Manual, 11th Edition

3.4. Project Trip Distribution

The study area street network characteristics, including the existing traffic patterns, expected street network, and access to regional facilities were used to determine the distribution of site generated traffic. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site in the same or different direction. **Figure 6** shows the project trip distribution at the study area intersections and the project access drive.

3.5. Traffic Assignment

Assignment of project traffic was obtained by applying the developed trip distribution in **Figure 6** to the estimated traffic generation in **Table 2**. Project lane configuration and control are illustrated in **Figure 5**. Project traffic assignment is illustrated in **Figure 7** for the study area intersections and the project access drive.

The entering and exiting trips at the project access drive are rounded to the nearest whole number when assigned. Therefore, the number of trips assigned to the project driveway may differ slightly from the total trip generation.

3.6. 2026 Background Plus Project Traffic Volumes

The project generated traffic volumes in **Figure 7** were added to the 2026 background traffic volumes in **Figure 4** to represent estimated traffic conditions for full project development in 2026. The 2026 background plus project peak hour traffic volumes for the study area intersections and the project access drive are illustrated in **Figure 8**. Assuming that traffic on Fleetwood Drive is generated exclusively by single-family residential traffic, based on peak hour turning movement counts it is estimated that with the inclusion of this project the ADT on Fleetwood Drive will not exceed 2,000 immediately south of Budger Way.

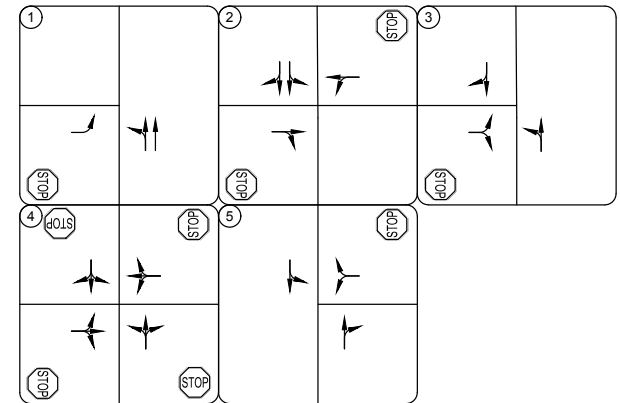


Study Area Intersections

1. Fleetwood Drive and Lemmon Drive Northbound
2. Fleetwood Drive and Lemmon Drive Southbound
3. Fleetwood Drive and Budger Way
4. Fleetwood Drive and Lear Boulevard
5. Budger Way and Pan American Way



2026 Background Lane Configuration and Control



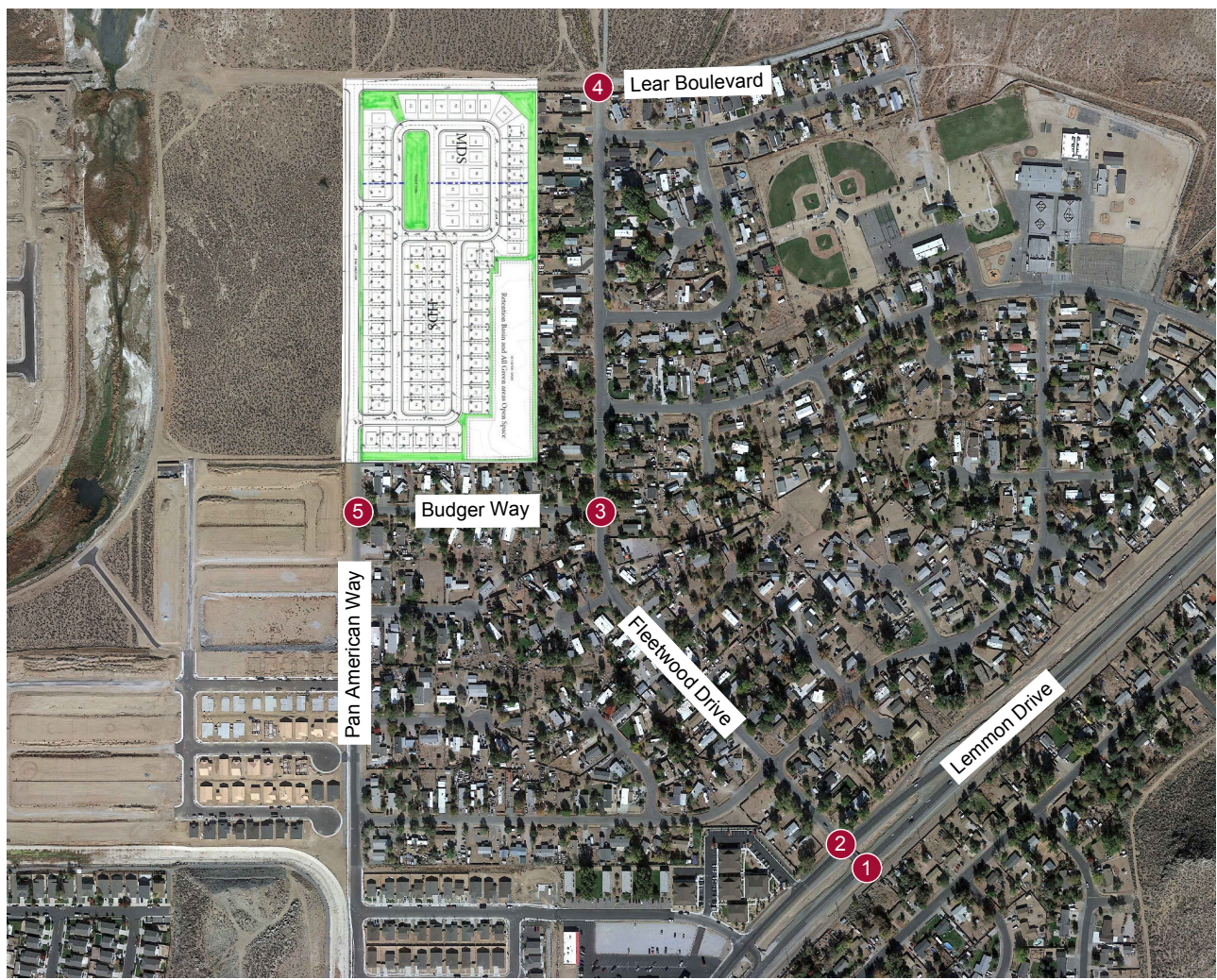
Legend

- 1 Study Area Key Intersection
- Existing Approach
- Stop Controlled Intersection
- Roadway Speed Limit

**Learner Lemmon Single Family
2026 Background Plus Project Lane Configuration and Traffic Control**

Figure 5





Project Trip Distribution

| | | | |
|-----------|-----------|------------------------|-------------------------------------|
| 1 | | 2 | 3 |
| 0%(10%) → | 90%(0%) → | 10%(0%) ↓ | 0%(15%) ↓ |
| | | 0%(10%) → 0%(90%) ↓ | 0%(85%) → 85%(0%) ↑ 15%(0%) ↑ |
| 4 | | 5 | |
| 0%(15%) → | 15%(0%) → | 0%(85%) ← | 85%(0%) ← |

Legend

- 1 Study Area Key Intersection
- ←XX%(XX%) In(Out) Peak Hour Trip Distribution
- ←XX%→ Global Peak Hour Trip Distribution

Learner Lemmon Single Family Project Trip Distribution

Figure 6





Learner Lemmon Single Family Project Traffic Assignment

Project Traffic Assignment

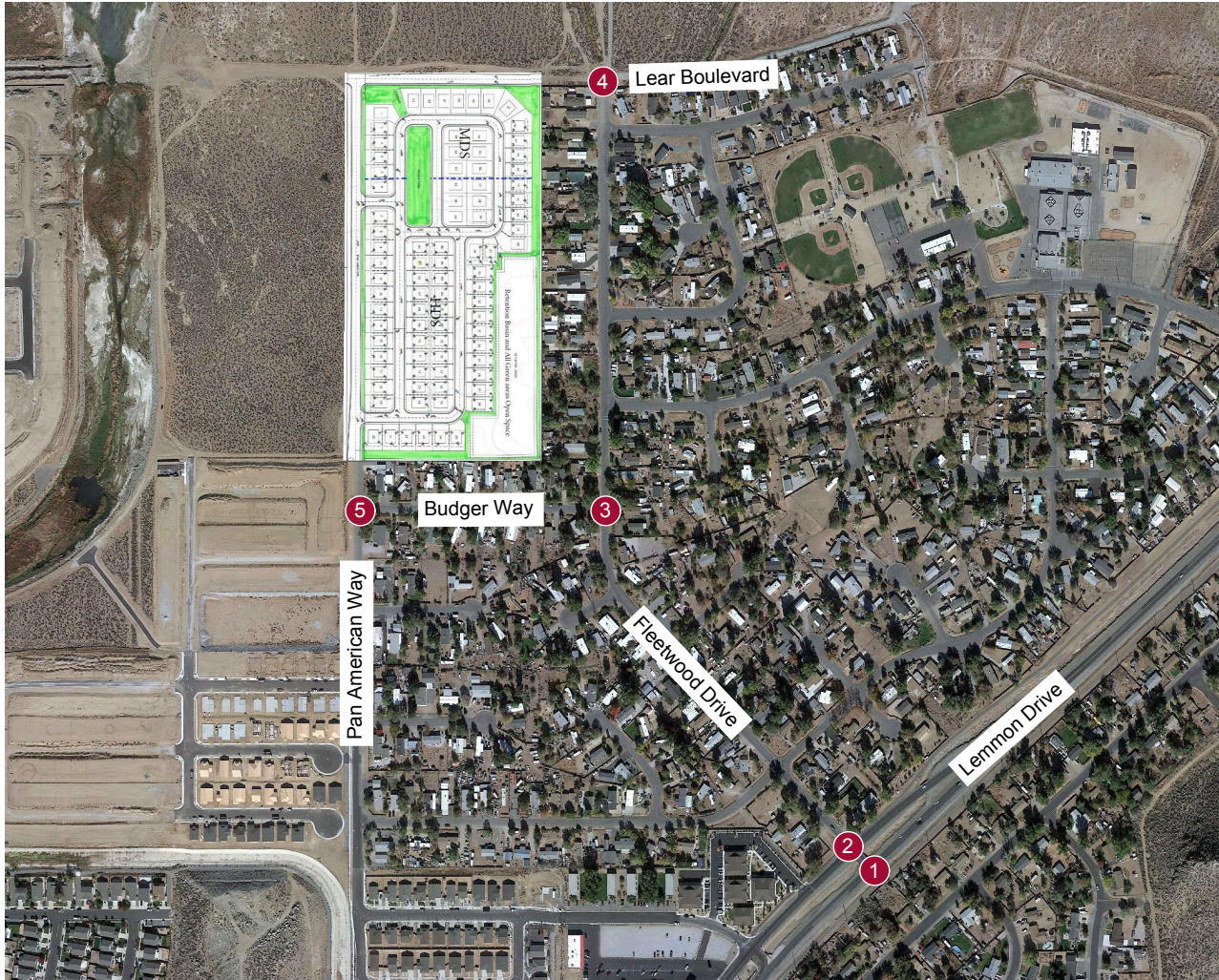
| | | | |
|------------------------------|------------------------|--|--|
| ① | | ② | ③ |
| 2(0) → | 33(60) → 109(445) → | ↓ 1(0) ← 357(219) ↓ 2(0) → ↓ 69(50) ↓ | ← 33(89) ↓ 4(6) ↓ 37(27) ↓ 7(7) → ↓ 3(4) → ↓ 0(6) → ↓ 20(37) → |
| ④ | | ⑤ | |
| ↓ 1(0) ↓ 0(1) ↓ 0(2) → | ↑ 1(0) | ↓ 1(1) ↓ 0(3) ↓ 0(3) ↓ 5(8) | ↓ 10(9) |

Legend

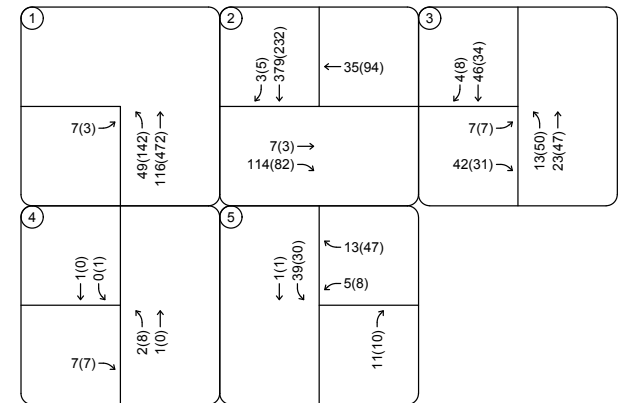
- ① Study Area Key Intersection
- A Project Access Drive
- ←XX(X) AM(PM) Peak Hour Traffic Volumes

Figure 7





2026 Background Plus Project Peak Hour Volumes



Legend

- ① Study Area Key Intersection
- A Project Access Drive
- ←XX(X) AM(PM) Peak Hour Traffic Volumes

**Learner Lemmon Single Family
2026 Background Plus Project Peak Hour Volumes**

Figure 8



4. TRAFFIC IMPACT ANALYSIS

Traffic analyses for 2023 existing, 2026 background, and 2026 background plus project scenarios were conducted at the identified key intersections to determine possible existing and/or future deficiencies in the street network.

4.1. Analysis Methodology

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections presented in the Transportation Research Board’s “Highway Capacity Manual” 6th Edition (HCM 6). Under the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for a signalized or four-way stop controlled intersection is defined for the intersection as a whole. **Table 3** shows the definition of LOS for intersections.

Table 3 – Level of Service Definitions

| Level of Service | Signalized Intersection Average Total Delay (sec/veh) | Unsignalized Intersection Average Total Delay (sec/veh) |
|------------------|--|--|
| A | ≤10 | 10 |
| B | >10 and ≤20 | >10 and ≤15 |
| C | >20 and ≤35 | >15 and ≤25 |
| D | >35 and ≤55 | >25 and ≤35 |
| E | >55 and ≤80 | >35 and ≤50 |
| F | >80 | >50 |

Definitions provided from the Highway Capacity Manual, 6th Edition, Transportation Research Board.

Synchro 11 was used to analyze the study area intersections and driveways for LOS. Synchro is an interactive computer program that enables planners and engineers to forecast the traffic impacts of new developments; conduct area-wide traffic forecasting studies; test different mitigation measures and compare different traffic scenarios. Synchro 11 utilizes HCM 6 methodology to analyze intersection delay and LOS.

4.2. Key Intersection Operational Analysis

Calculations for the LOS at the key intersections are provided in **Appendix E**. The 2022 existing analysis is based on the lane geometry and intersection control shown in **Figure 3**. The 2025 background and 2025 background plus project analyses are based on the lane geometry and intersection control shown in **Figure 5**. It should be noted that signalized intersections were analyzed using optimized cycle lengths and splits. The results of the Key Intersection LOS Analysis for existing and horizon year conditions are summarized in **Table 4**.

Table 4 – Key Intersection Peak Hour LOS Analysis

| Intersection | 2023 Existing | | 2026 Background* | | 2026 Background Plus Project | |
|--|----------------------|---------------------|----------------------|---------------------|------------------------------|---------------------|
| | AM | PM | AM | PM | AM | PM |
| | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) |
| Fleetwood Drive and Lemmon Drive (#1) Two-Way Stop Control Eastbound | 9.3 (A) | 0.0 (A) | 9.3 (A) | 0.0 (A) | 9.5 (A) | 13.4 (B) |
| Fleetwood Drive and Lemmon Drive (#2) Two-Way Stop Control Eastbound Westbound | 10.0 (B) 12.2 (B) | 9.3 (A) 11.6 (B) | 10.1 (B) 12.5 (B) | 9.3 (A) 11.8 (B) | 10.7 (B) 12.5 (B) | 9.6 (A) 11.9 (B) |
| Fleetwood Drive and Budget Way (#3) Two-Way Stop Control Eastbound | 8.9 (A) | 8.8 (A) | 8.9 (A) | 8.8 (A) | 9.0 (A) | 8.9 (A) |
| Fleetwood Drive and Lear Boulevard (#4)* All-Way Stop Control | 7.0 (A) | 6.7 (A) | 7.0 (A) | 6.7 (A) | 6.7 (A) | 6.9 (A) |
| Budger Way and Pan American Way (#5) Two-Way Stop Control Westbound | 8.6 (A) | 8.6 (A) | 8.6 (A) | 8.6 (A) | 8.8 (A) | 8.8 (A) |

The key intersections are expected to operate at acceptable LOS (as defined by Washoe County) under 2023 existing, 2026 background, and 2026 background plus project scenarios.

5. CRASH DATA SUMMARY

Crash data was requested for the four (4) existing study intersections from the NDOT Safety Engineering Division for the most recent four-year period (January 1, 2016 – January 1, 2020). The crash data for the study intersections is summarized in **Table 5**. The intersection crashes include those crashes on both the major and minor streets of the key intersections during the three-year analysis period.

Table 5 – Crash Data Summary

| Int. Num. | Intersection Name | Total Crashes | Property Damage Only | Injury | Fatal |
|--------------|------------------------------------|---------------|----------------------|---------------|---------------|
| 1 & 2 | Fleetwood Drive and Lemmon Drive | 2 | 2 (100%) | 0 (0%) | 0 (0%) |
| 3 | Fleetwood Drive and Budger Way | 0 | 0 (0%) | 0 (0%) | 0 (0%) |
| 4 | Fleetwood Drive and Lear Boulevard | 0 | 0 (0%) | 0 (0%) | 0 (0%) |
| 5 | Budger Way and Pan American Way | 0 | 0 (0%) | 0 (0%) | 0 (0%) |
| Total | | 2 | 2 (100%) | 0 (0%) | 0 (0%) |

A total of two (2) crashes were recorded at the four (4) intersections in the most recent four-year period. Those two crashes resulted in two (2) property damage only crashes (100%), zero injury crashes (0%), and zero (0) fatal crashes. Less than five (5) crashes occurred at every study intersection and no additional study is warranted.

6. CONCLUSIONS/RECOMMENDATIONS

The proposed development is anticipated to generate traffic volumes resulting in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for the egressing access drives onto Pan American Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.

APPENDIX A
SCOPE OF STUDY

Tang, Alex

From: Giacomini, David
Sent: Monday, January 30, 2023 2:51 PM
To: Fink, Mitchell
Subject: RE: Traffic Study Scope Request

Mitch,

I have confirmed that the project will connect Lear to Fleetwood. As such here is the final list of off-site intersections (in addition to project access drives) that we will include in analysis and collect turning movement counts at:

- Budger Way and Pan American Way
- Budger Way and Fleetwood Drive
- Lemmon Drive and Fleetwood Drive
- Fleetwood Drive and Lear Boulevard

Thank you,

David J Giacomini, P.E., PTOE, RSP₁
Kimley-Horn | 7900 Rancharrah Parkway, Suite 100, Reno, NV 89511
Direct: 775 200 1981 | Mobile: 651 497 8220

From: Fink, Mitchell <MFink@washoecounty.gov>
Sent: Friday, January 27, 2023 2:56 PM
To: Giacomini, David <david.giacomini@kimley-horn.com>
Subject: RE: Traffic Study Scope Request

Hi David,

Your proposed intersection evaluations below for the traffic study for the Learner Lemmon Project are acceptable. Please incorporate the project ingress/egress locations onto Pan American as well. I don't recall if Lear Blvd. is going to be developed to Fleetwood Dr. as part of this project. If it is please add the intersection at Lear Blvd. and Fleetwood Dr. to be evaluated.

- Budger Way and Pan American Way
- Budger Way and Fleetwood Drive
- Lemmon Drive and Fleetwood Drive

Thank you.



Mitchell Fink, P.E. | Licensed Engineer
Community Services Department | Engineering & Capital Projects Division
mfink@washoecounty.gov | Office: 775.328.2050
1001 E. 9th Street, Reno, NV 89512
For additional information, email engineering@washoecounty.gov or call 775.328.2040



**Have some kudos to share about a Community Services Department employee or experience? Email allstars@washoecounty.gov*

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From: Giacomini, David <david.giacomini@kimley-horn.com>
Sent: Thursday, January 26, 2023 2:41 PM
To: Fink, Mitchell <MFink@washoecounty.gov>
Subject: Traffic Study Scope Request

[NOTICE: This message originated outside of Washoe County -- DO NOT CLICK on links or open attachments unless you are sure the content is safe.]

Hey Mitch,

I have another traffic scope request for you.

We are working on a proposed residential development located north of Budger Way with access along a proposed extension of Pan American Court. The project is located within APN 080-461-08. Full buildout of the development is anticipated to consist of 87 single-family detached houses. According to the ITE Trip Generation Manual, 11th Edition (ITE Land Use Code 210 – Single-Family Detached Housing) the proposed development is anticipated to generate 820 daily trips, 61 AM peak hour trips, and 82 PM peak hour trips. A preliminary subdivision map (and associated assessor map) is attached for your reference.

Per Section 110.340.50 of the Washoe County Development Code, a traffic report is required if the proposed use will generate 80 or more peak hour trips (per ITE).

Can you please confirm the following intersections to be studied (7-9AM, 4-6PM):

- Budger Way and Pan American Court
- Budger Way and Fleetwood Drive
- Lemmon Drive and Fleetwood Drive

Thank you,

David J Giacomini, P.E., PTOE, RSP₁
Kimley-Horn | 7900 Rancharra Parkway, Suite 100, Reno, NV 89511
Direct: 775 200 1981 | Mobile: 651 497 8220
Connect with us: [Twitter](#) | [LinkedIn](#) | [Facebook](#) | [YouTube](#)

APPENDIX B
COUNT DATA

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Lemmon Drive Northbound | | | | Lemmon Drive Southbound | | | | Fleetwood Drive Eastbound | | | | Int |
|---------------------------------------|-------------------------|-------|------|-------|-------------------------|-------|----|-------|---------------------------|------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 7:00AM | 17 | 9 | 0 | 26 | 0 | 95 | 0 | 95 | 25 | 0 | 0 | 25 | 146 |
| 7:15AM | 22 | 4 | 0 | 26 | 0 | 97 | 0 | 97 | 18 | 0 | 0 | 18 | 141 |
| 7:30AM | 35 | 11 | 0 | 46 | 1 | 97 | 0 | 98 | 13 | 1 | 0 | 14 | 158 |
| 7:45AM | 35 | 9 | 0 | 44 | 0 | 68 | 0 | 68 | 13 | 1 | 0 | 14 | 126 |
| Hourly Total | 109 | 33 | 0 | 142 | 1 | 357 | 0 | 358 | 69 | 2 | 0 | 71 | 571 |
| 8:00AM | 30 | 7 | 0 | 37 | 1 | 56 | 0 | 57 | 17 | 1 | 0 | 18 | 112 |
| 8:15AM | 32 | 6 | 0 | 38 | 0 | 70 | 0 | 70 | 12 | 0 | 0 | 12 | 120 |
| 8:30AM | 47 | 7 | 0 | 54 | 0 | 60 | 0 | 60 | 17 | 1 | 0 | 18 | 132 |
| 8:45AM | 76 | 19 | 0 | 95 | 3 | 61 | 0 | 64 | 15 | 1 | 0 | 16 | 175 |
| Hourly Total | 185 | 39 | 0 | 224 | 4 | 247 | 0 | 251 | 61 | 3 | 0 | 64 | 539 |
| 9:00AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hourly Total | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:00PM | 111 | 18 | 0 | 129 | 0 | 43 | 0 | 43 | 8 | 0 | 0 | 8 | 180 |
| 4:15PM | 136 | 37 | 0 | 173 | 0 | 48 | 0 | 48 | 11 | 0 | 0 | 11 | 232 |
| 4:30PM | 106 | 18 | 0 | 124 | 0 | 59 | 0 | 59 | 13 | 0 | 0 | 13 | 196 |
| 4:45PM | 92 | 16 | 1 | 109 | 0 | 69 | 0 | 69 | 18 | 0 | 0 | 18 | 196 |
| Hourly Total | 445 | 89 | 1 | 535 | 0 | 219 | 0 | 219 | 50 | 0 | 0 | 50 | 804 |
| 5:00PM | 94 | 18 | 2 | 114 | 1 | 43 | 0 | 44 | 18 | 0 | 0 | 18 | 176 |
| 5:15PM | 95 | 15 | 0 | 110 | 0 | 53 | 0 | 53 | 18 | 2 | 0 | 20 | 183 |
| 5:30PM | 112 | 26 | 1 | 139 | 0 | 55 | 0 | 55 | 9 | 0 | 0 | 9 | 203 |
| 5:45PM | 84 | 24 | 1 | 109 | 0 | 51 | 0 | 51 | 13 | 0 | 0 | 13 | 173 |
| Hourly Total | 385 | 83 | 4 | 472 | 1 | 202 | 0 | 203 | 58 | 2 | 0 | 60 | 735 |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1124 | 245 | 5 | 1374 | 6 | 1025 | 0 | 1031 | 238 | 7 | 0 | 245 | 2650 |
| % Approach | 81.8% | 17.8% | 0.4% | - | 0.6% | 99.4% | 0% | - | 97.1% | 2.9% | 0% | - | - |
| % Total | 42.4% | 9.2% | 0.2% | 51.8% | 0.2% | 38.7% | 0% | 38.9% | 9.0% | 0.3% | 0% | 9.2% | - |
| Lights | 1107 | 241 | 5 | 1353 | 5 | 1006 | 0 | 1011 | 234 | 7 | 0 | 241 | 2605 |
| % Lights | 98.5% | 98.4% | 100% | 98.5% | 83.3% | 98.1% | 0% | 98.1% | 98.3% | 100% | 0% | 98.4% | 98.3% |
| Articulated Trucks | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| % Articulated Trucks | 0.2% | 0% | 0% | 0.1% | 0% | 0.1% | 0% | 0.1% | 0% | 0% | 0% | 0% | 0.1% |
| Buses and Single-Unit Trucks | 15 | 4 | 0 | 19 | 1 | 18 | 0 | 19 | 4 | 0 | 0 | 4 | 42 |
| % Buses and Single-Unit Trucks | 1.3% | 1.6% | 0% | 1.4% | 16.7% | 1.8% | 0% | 1.8% | 1.7% | 0% | 0% | 1.6% | 1.6% |

*L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

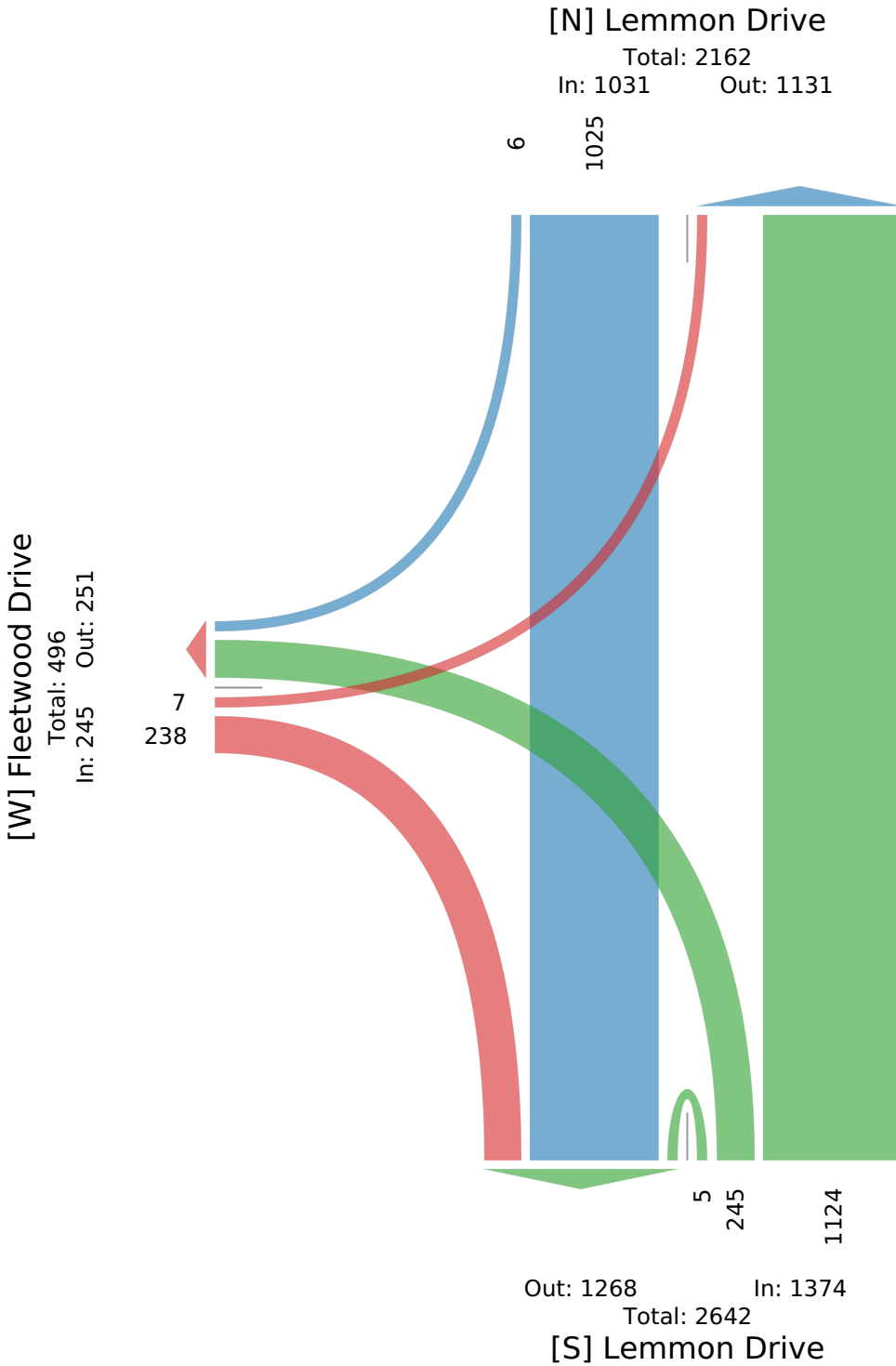
Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Lemmon Drive - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Thu Feb 2, 2023

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

| Leg Direction | Lemmon Drive Northbound | | | | Lemmon Drive Southbound | | | | Fleetwood Drive Eastbound | | | | Int |
|---------------------------------------|-------------------------|-------|----|-------|-------------------------|-------|----|-------|---------------------------|-------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 7:00AM | 17 | 9 | 0 | 26 | 0 | 95 | 0 | 95 | 25 | 0 | 0 | 25 | 146 |
| 7:15AM | 22 | 4 | 0 | 26 | 0 | 97 | 0 | 97 | 18 | 0 | 0 | 18 | 141 |
| 7:30AM | 35 | 11 | 0 | 46 | 1 | 97 | 0 | 98 | 13 | 1 | 0 | 14 | 158 |
| 7:45AM | 35 | 9 | 0 | 44 | 0 | 68 | 0 | 68 | 13 | 1 | 0 | 14 | 126 |
| Total | 109 | 33 | 0 | 142 | 1 | 357 | 0 | 358 | 69 | 2 | 0 | 71 | 571 |
| % Approach | 76.8% | 23.2% | 0% | - | 0.3% | 99.7% | 0% | - | 97.2% | 2.8% | 0% | - | - |
| % Total | 19.1% | 5.8% | 0% | 24.9% | 0.2% | 62.5% | 0% | 62.7% | 12.1% | 0.4% | 0% | 12.4% | - |
| PHF | 0.779 | 0.750 | - | 0.772 | 0.250 | 0.920 | - | 0.913 | 0.690 | 0.500 | - | 0.710 | 0.903 |
| Lights | 101 | 31 | 0 | 132 | 1 | 354 | 0 | 355 | 67 | 2 | 0 | 69 | 556 |
| % Lights | 92.7% | 93.9% | 0% | 93.0% | 100% | 99.2% | 0% | 99.2% | 97.1% | 100% | 0% | 97.2% | 97.4% |
| Articulated Trucks | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Articulated Trucks | 1.8% | 0% | 0% | 1.4% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0.4% |
| Buses and Single-Unit Trucks | 6 | 2 | 0 | 8 | 0 | 3 | 0 | 3 | 2 | 0 | 0 | 2 | 13 |
| % Buses and Single-Unit Trucks | 5.5% | 6.1% | 0% | 5.6% | 0% | 0.8% | 0% | 0.8% | 2.9% | 0% | 0% | 2.8% | 2.3% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

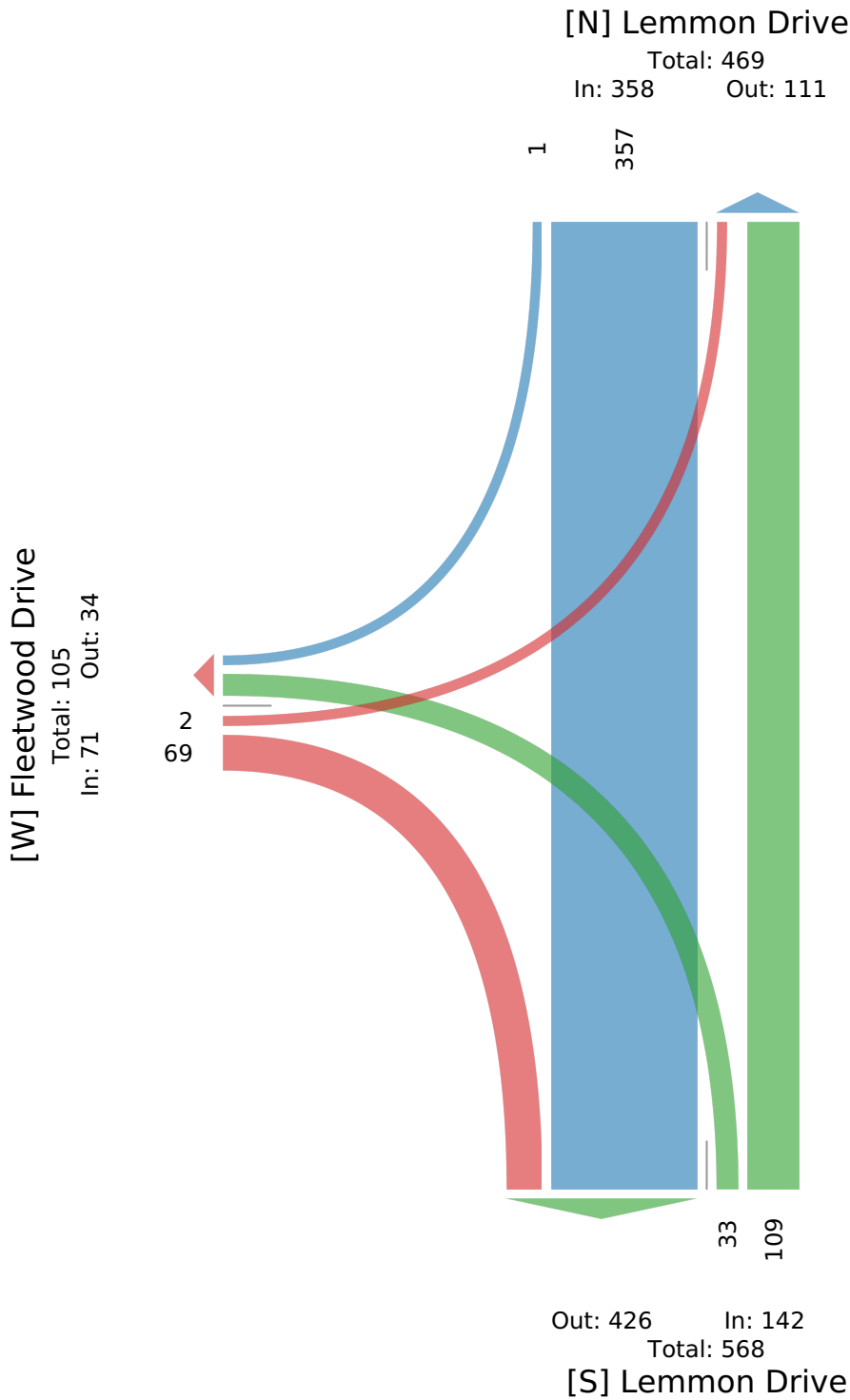
AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Lemmon Drive Northbound | | | | Lemmon Drive Southbound | | | | Fleetwood Drive Eastbound | | | | Int |
|---------------------------------------|----------------------------|-------|-------|-------|----------------------------|-------|----|-------|------------------------------|----|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 4:00PM | 111 | 18 | 0 | 129 | 0 | 43 | 0 | 43 | 8 | 0 | 0 | 8 | 180 |
| 4:15PM | 136 | 37 | 0 | 173 | 0 | 48 | 0 | 48 | 11 | 0 | 0 | 11 | 232 |
| 4:30PM | 106 | 18 | 0 | 124 | 0 | 59 | 0 | 59 | 13 | 0 | 0 | 13 | 196 |
| 4:45PM | 92 | 16 | 1 | 109 | 0 | 69 | 0 | 69 | 18 | 0 | 0 | 18 | 196 |
| Total | 445 | 89 | 1 | 535 | 0 | 219 | 0 | 219 | 50 | 0 | 0 | 50 | 804 |
| % Approach | 83.2% | 16.6% | 0.2% | - | 0% | 100% | 0% | - | 100% | 0% | 0% | - | - |
| % Total | 55.3% | 11.1% | 0.1% | 66.5% | 0% | 27.2% | 0% | 27.2% | 6.2% | 0% | 0% | 6.2% | - |
| PHF | 0.818 | 0.601 | 0.250 | 0.773 | - | 0.793 | - | 0.793 | 0.694 | - | - | 0.694 | 0.866 |
| Lights | 442 | 87 | 1 | 530 | 0 | 215 | 0 | 215 | 49 | 0 | 0 | 49 | 794 |
| % Lights | 99.3% | 97.8% | 100% | 99.1% | 0% | 98.2% | 0% | 98.2% | 98.0% | 0% | 0% | 98.0% | 98.8% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 3 | 2 | 0 | 5 | 0 | 4 | 0 | 4 | 1 | 0 | 0 | 1 | 10 |
| % Buses and Single-Unit Trucks | 0.7% | 2.2% | 0% | 0.9% | 0% | 1.8% | 0% | 1.8% | 2.0% | 0% | 0% | 2.0% | 1.2% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Lemmon Drive

Total: 664
In: 219 Out: 445

219

[W] Fleetwood Drive

Total: 139
In: 50 Out: 89

50



Out: 270 In: 535
Total: 805

[S] Lemmon Drive

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
 767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | Fleetwood Drive Southbound | | | | Budger Way Eastbound | | | | Int |
|---------------------------------------|----------------------------|-------|----|-------|----------------------------|-------|----|-------|----------------------|-------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 7:00AM | 6 | 0 | 0 | 6 | 0 | 12 | 0 | 12 | 1 | 2 | 0 | 3 | 21 |
| 7:15AM | 5 | 0 | 0 | 5 | 3 | 13 | 0 | 16 | 2 | 3 | 0 | 5 | 26 |
| 7:30AM | 4 | 0 | 0 | 4 | 1 | 6 | 0 | 7 | 0 | 2 | 0 | 2 | 13 |
| 7:45AM | 5 | 0 | 0 | 5 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 11 |
| Hourly Total | 20 | 0 | 0 | 20 | 4 | 37 | 0 | 41 | 3 | 7 | 0 | 10 | 71 |
| 8:00AM | 3 | 1 | 0 | 4 | 0 | 6 | 0 | 6 | 0 | 4 | 0 | 4 | 14 |
| 8:15AM | 3 | 0 | 0 | 3 | 1 | 3 | 0 | 4 | 2 | 1 | 0 | 3 | 10 |
| 8:30AM | 2 | 0 | 0 | 2 | 0 | 7 | 0 | 7 | 2 | 0 | 0 | 2 | 11 |
| 8:45AM | 14 | 1 | 0 | 15 | 1 | 7 | 0 | 8 | 0 | 4 | 0 | 4 | 27 |
| Hourly Total | 22 | 2 | 0 | 24 | 2 | 23 | 0 | 25 | 4 | 9 | 0 | 13 | 62 |
| 9:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00PM | 7 | 1 | 0 | 8 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 13 |
| 4:15PM | 14 | 2 | 0 | 16 | 1 | 5 | 0 | 6 | 4 | 1 | 0 | 5 | 27 |
| 4:30PM | 5 | 1 | 0 | 6 | 1 | 8 | 0 | 9 | 0 | 2 | 0 | 2 | 17 |
| 4:45PM | 8 | 1 | 0 | 9 | 5 | 6 | 0 | 11 | 1 | 3 | 0 | 4 | 24 |
| Hourly Total | 34 | 5 | 0 | 39 | 7 | 24 | 0 | 31 | 5 | 6 | 0 | 11 | 81 |
| 5:00PM | 8 | 2 | 0 | 10 | 0 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 17 |
| 5:15PM | 8 | 1 | 0 | 9 | 0 | 10 | 0 | 10 | 1 | 4 | 0 | 5 | 24 |
| 5:30PM | 13 | 2 | 0 | 15 | 3 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 24 |
| 5:45PM | 15 | 0 | 0 | 15 | 1 | 4 | 0 | 5 | 2 | 2 | 0 | 4 | 24 |
| Hourly Total | 44 | 5 | 0 | 49 | 4 | 25 | 0 | 29 | 5 | 6 | 0 | 11 | 89 |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 120 | 12 | 0 | 132 | 17 | 109 | 0 | 126 | 17 | 28 | 0 | 45 | 303 |
| % Approach | 90.9% | 9.1% | 0% | - | 13.5% | 86.5% | 0% | - | 37.8% | 62.2% | 0% | - | - |
| % Total | 39.6% | 4.0% | 0% | 43.6% | 5.6% | 36.0% | 0% | 41.6% | 5.6% | 9.2% | 0% | 14.9% | - |
| Lights | 120 | 11 | 0 | 131 | 17 | 106 | 0 | 123 | 17 | 27 | 0 | 44 | 298 |
| % Lights | 100% | 91.7% | 0% | 99.2% | 100% | 97.2% | 0% | 97.6% | 100% | 96.4% | 0% | 97.8% | 98.3% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 1 | 5 |
| % Buses and Single-Unit Trucks | 0% | 8.3% | 0% | 0.8% | 0% | 2.8% | 0% | 2.4% | 0% | 3.6% | 0% | 2.2% | 1.7% |

*L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

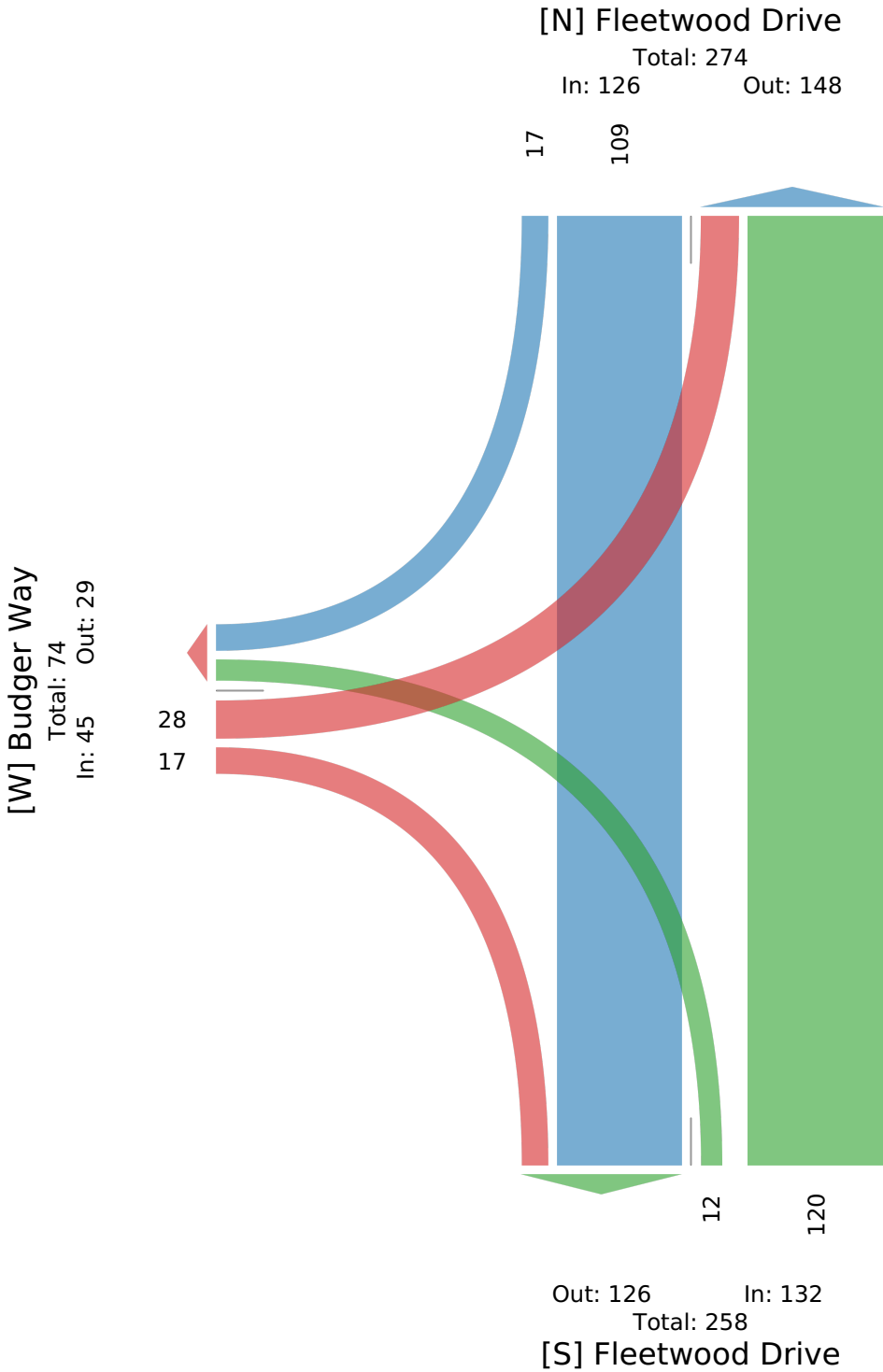
Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | Fleetwood Drive Southbound | | | | Budger Way Eastbound | | | | |
|---------------------------------------|----------------------------|----|----|-------|----------------------------|-------|----|-------|----------------------|-------|----|-------|-------|
| Time | T | L | U | App | R | T | U | App | R | L | U | App | Int |
| 2023-02-02 7:00AM | 6 | 0 | 0 | 6 | 0 | 12 | 0 | 12 | 1 | 2 | 0 | 3 | 21 |
| 7:15AM | 5 | 0 | 0 | 5 | 3 | 13 | 0 | 16 | 2 | 3 | 0 | 5 | 26 |
| 7:30AM | 4 | 0 | 0 | 4 | 1 | 6 | 0 | 7 | 0 | 2 | 0 | 2 | 13 |
| 7:45AM | 5 | 0 | 0 | 5 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 11 |
| Total | 20 | 0 | 0 | 20 | 4 | 37 | 0 | 41 | 3 | 7 | 0 | 10 | 71 |
| % Approach | 100% | 0% | 0% | - | 9.8% | 90.2% | 0% | - | 30.0% | 70.0% | 0% | - | - |
| % Total | 28.2% | 0% | 0% | 28.2% | 5.6% | 52.1% | 0% | 57.7% | 4.2% | 9.9% | 0% | 14.1% | - |
| PHF | 0.833 | - | - | 0.833 | 0.333 | 0.712 | - | 0.641 | 0.375 | 0.583 | - | 0.500 | 0.683 |
| Lights | 20 | 0 | 0 | 20 | 4 | 36 | 0 | 40 | 3 | 7 | 0 | 10 | 70 |
| % Lights | 100% | 0% | 0% | 100% | 100% | 97.3% | 0% | 97.6% | 100% | 100% | 0% | 100% | 98.6% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 2.7% | 0% | 2.4% | 0% | 0% | 0% | 0% | 1.4% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

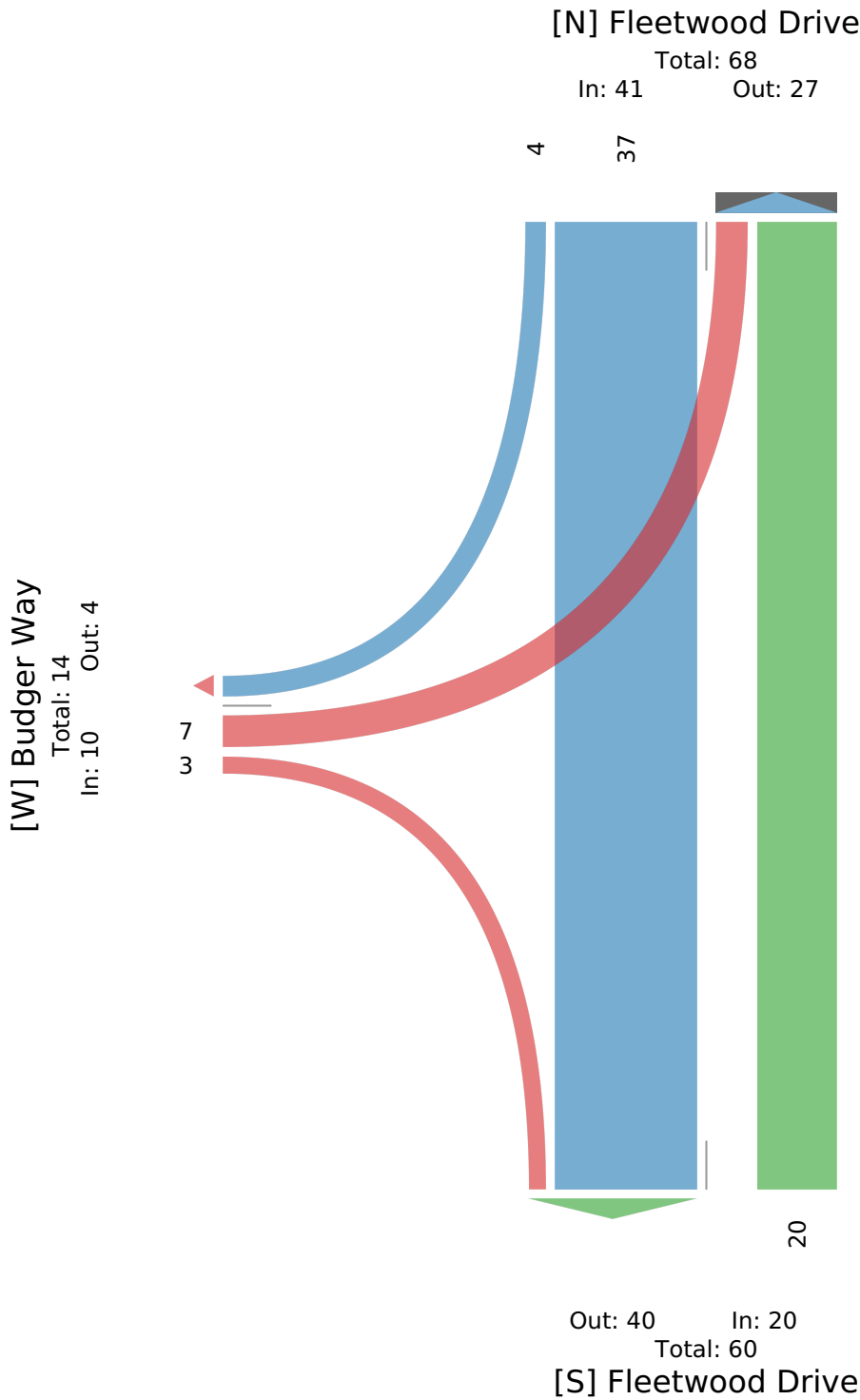
AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | Fleetwood Drive Southbound | | | | Budger Way Eastbound | | | | Int |
|---------------------------------------|-------------------------------|-------|----|-------|-------------------------------|-------|----|-------|-------------------------|-------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 4:45PM | 8 | 1 | 0 | 9 | 5 | 6 | 0 | 11 | 1 | 3 | 0 | 4 | 24 |
| 5:00PM | 8 | 2 | 0 | 10 | 0 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 17 |
| 5:15PM | 8 | 1 | 0 | 9 | 0 | 10 | 0 | 10 | 1 | 4 | 0 | 5 | 24 |
| 5:30PM | 13 | 2 | 0 | 15 | 3 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 24 |
| Total | 37 | 6 | 0 | 43 | 8 | 27 | 0 | 35 | 4 | 7 | 0 | 11 | 89 |
| % Approach | 86.0% | 14.0% | 0% | - | 22.9% | 77.1% | 0% | - | 36.4% | 63.6% | 0% | - | - |
| % Total | 41.6% | 6.7% | 0% | 48.3% | 9.0% | 30.3% | 0% | 39.3% | 4.5% | 7.9% | 0% | 12.4% | - |
| PHF | 0.712 | 0.750 | - | 0.717 | 0.400 | 0.675 | - | 0.795 | 0.500 | 0.438 | - | 0.550 | 0.927 |
| Lights | 37 | 6 | 0 | 43 | 8 | 27 | 0 | 35 | 4 | 7 | 0 | 11 | 89 |
| % Lights | 100% | 100% | 0% | 100% | 100% | 100% | 0% | 100% | 100% | 100% | 0% | 100% | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

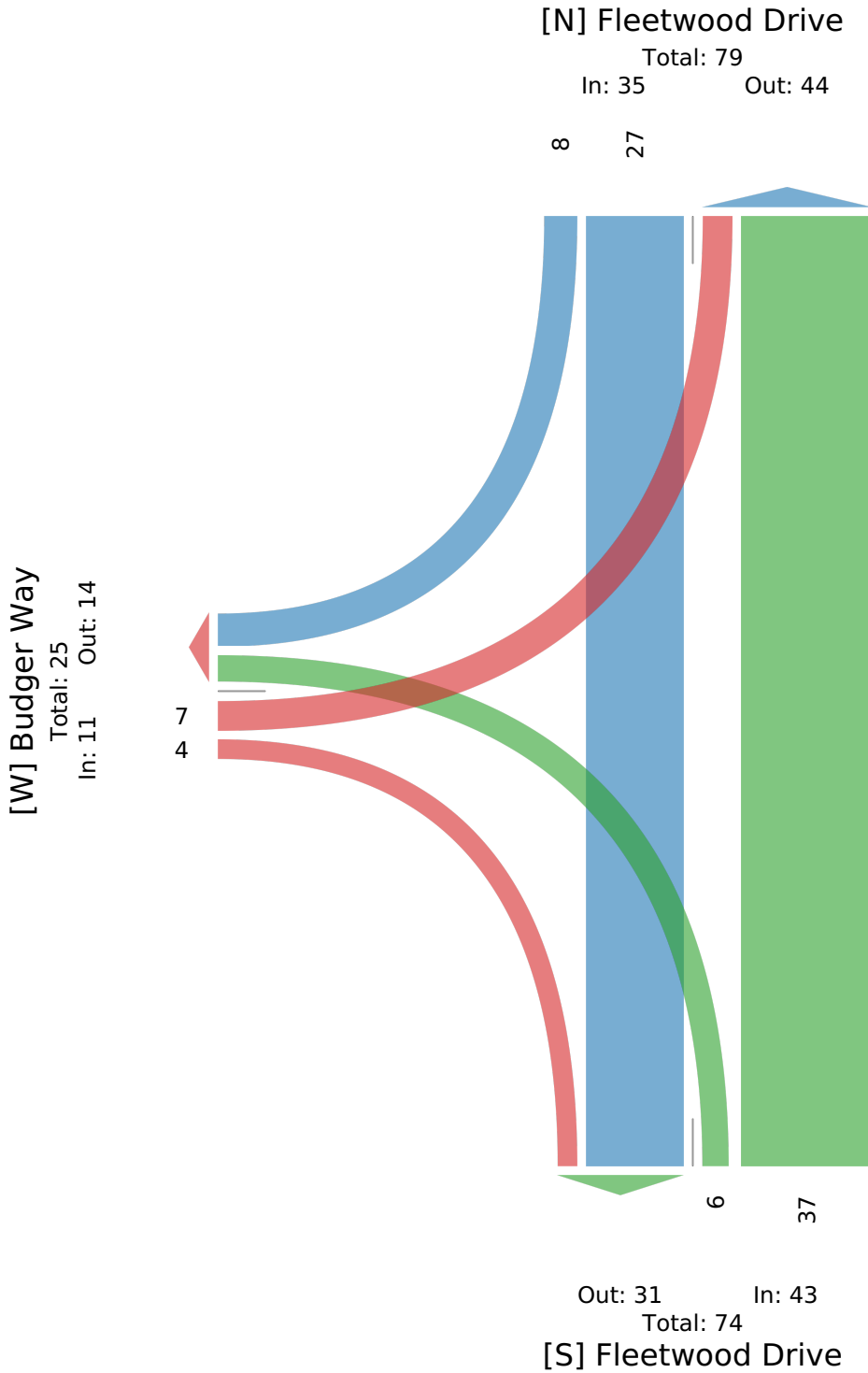
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

Full Length (4 PM-6 PM, 7 AM-9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Pan American Drive Northbound | | | | Pan American Drive Southbound | | | | Budger Way Westbound | | | | Int | |
|---------------------------------------|-------------------------------|----------|----------|--------------|-------------------------------|----------|----------|--------------|----------------------|-----------|----------|--------------|-----------|----|
| | R | T | U | App | T | L | U | App | R | L | U | App | | |
| 2023-02-02 7:00AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 7:15AM | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 7 |
| 7:30AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Hourly Total | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 12 |
| 8:00AM | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 6 |
| 8:15AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| 8:30AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45AM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 5 |
| Hourly Total | 11 | 0 | 0 | 11 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 16 |
| 9:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00PM | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 1 | 5 | |
| 4:15PM | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 6 | |
| 4:30PM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | |
| 4:45PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 7 | 9 | |
| Hourly Total | 9 | 0 | 0 | 9 | 1 | 1 | 2 | 4 | 3 | 8 | 0 | 11 | 24 | |
| 5:00PM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 5:15PM | 4 | 1 | 0 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | |
| 5:30PM | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | |
| 5:45PM | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 6 | |
| Hourly Total | 9 | 2 | 0 | 11 | 1 | 1 | 0 | 2 | 0 | 4 | 0 | 4 | 17 | |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total | 36 | 2 | 0 | 38 | 3 | 2 | 2 | 7 | 3 | 21 | 0 | 24 | 69 | |
| % Approach | 94.7% | 5.3% | 0% | - | 42.9% | 28.6% | 28.6% | - | 12.5% | 87.5% | 0% | - | - | |
| % Total | 52.2% | 2.9% | 0% | 55.1% | 4.3% | 2.9% | 2.9% | 10.1% | 4.3% | 30.4% | 0% | 34.8% | - | |
| Lights | 35 | 2 | 0 | 37 | 3 | 2 | 2 | 7 | 3 | 20 | 0 | 23 | 67 | |
| % Lights | 97.2% | 100% | 0% | 97.4% | 100% | 100% | 100% | 100% | 100% | 95.2% | 0% | 95.8% | 97.1% | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| Buses and Single-Unit Trucks | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | |
| % Buses and Single-Unit Trucks | 2.8% | 0% | 0% | 2.6% | 0% | 0% | 0% | 0% | 0% | 4.8% | 0% | 4.2% | 2.9% | |

*L: Left, R: Right, T: Thru, U: U-Turn

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

Full Length (4 PM-6 PM, 7 AM-9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Pan American Drive

Total: 14
In: 7 Out: 7

3 22



3
21
3
Out: 38 In: 24
Total: 62
[E] Budger Way

Out: 24 In: 38
Total: 62

[S] Pan American Drive

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Pan American Drive Northbound | | | | Pan American Drive Southbound | | | | Budger Way Westbound | | | | Int |
|---------------------------------------|----------------------------------|----|----|-------|----------------------------------|----|----|-------|-------------------------|-------|----|-------|-------|
| | R | T | U | App | T | L | U | App | R | L | U | App | |
| 2023-02-02 7:15AM | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 7 |
| 7:30AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 8:00AM | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 6 |
| Total | 10 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 5 | 16 |
| % Approach | 100% | 0% | 0% | - | 100% | 0% | 0% | - | 0% | 100% | 0% | - | - |
| % Total | 62.5% | 0% | 0% | 62.5% | 6.3% | 0% | 0% | 6.3% | 0% | 31.3% | 0% | 31.3% | - |
| PHF | 0.625 | - | - | 0.625 | 0.250 | - | - | 0.250 | - | 0.417 | - | 0.417 | 0.571 |
| Lights | 10 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 5 | 16 |
| % Lights | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 100% | 0% | 100% | 0% | 100% | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Pan American Drive

Total: 1
In: 1 Out: 0

1



10

Out: 6 In: 10
Total: 16

[S] Pan American Drive

5

Out: 10 In: 5
Total: 15

[E] Budger Way

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Pan American Drive Northbound | | | | Pan American Drive Southbound | | | | Budger Way Westbound | | | | Int |
|---------------------------------------|----------------------------------|----|----|-------|----------------------------------|-------|-------|-------|-------------------------|-------|----|-------|-------|
| | R | T | U | App | T | L | U | App | R | L | U | App | |
| 2023-02-02 4:00PM | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 1 | 5 |
| 4:15PM | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 6 |
| 4:30PM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| 4:45PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 7 | 9 |
| Total | 9 | 0 | 0 | 9 | 1 | 1 | 2 | 4 | 3 | 8 | 0 | 11 | 24 |
| % Approach | 100% | 0% | 0% | - | 25.0% | 25.0% | 50.0% | - | 27.3% | 72.7% | 0% | - | - |
| % Total | 37.5% | 0% | 0% | 37.5% | 4.2% | 4.2% | 8.3% | 16.7% | 12.5% | 33.3% | 0% | 45.8% | - |
| PHF | 0.750 | - | - | 0.750 | 0.250 | 0.250 | 0.250 | 0.333 | 0.750 | 0.333 | - | 0.393 | 0.667 |
| Lights | 9 | 0 | 0 | 9 | 1 | 1 | 2 | 4 | 3 | 8 | 0 | 11 | 24 |
| % Lights | 100% | 0% | 0% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 0% | 100% | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

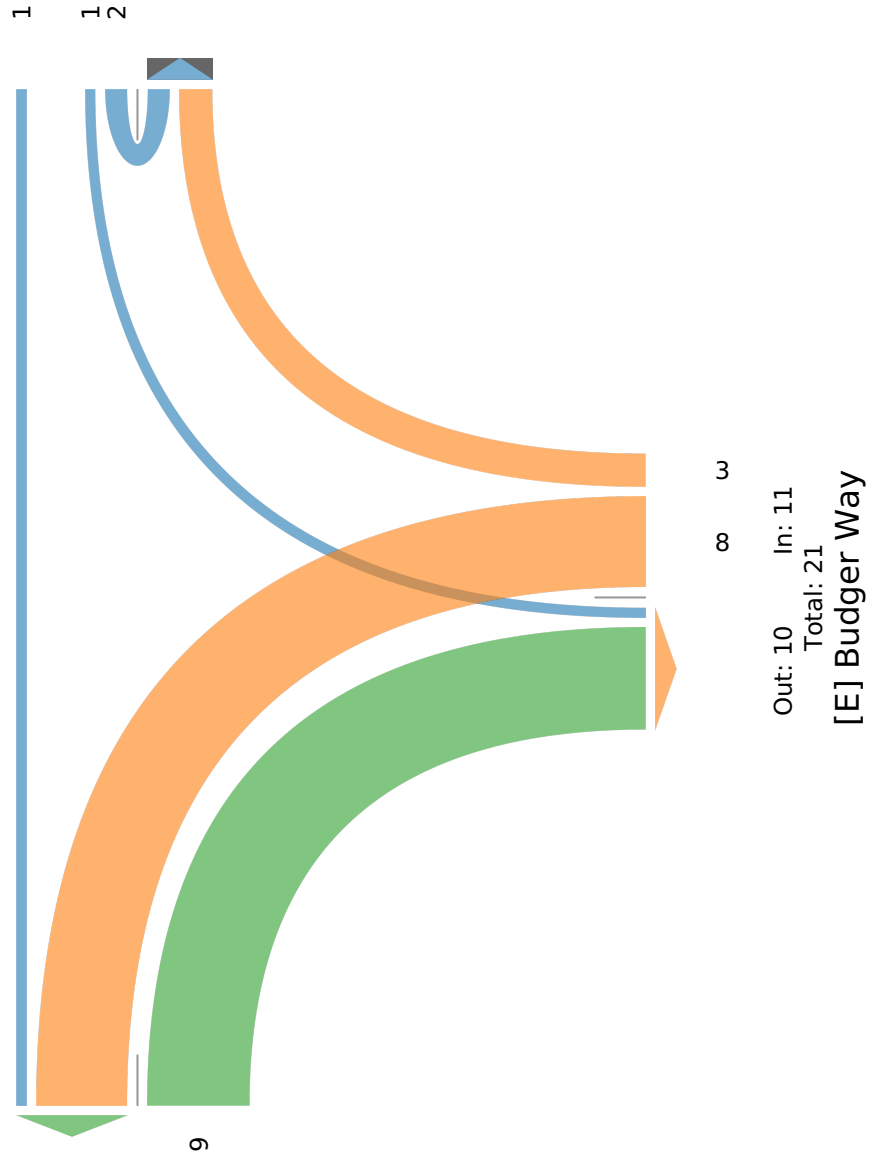
All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Pan American Drive

Total: 9
In: 4 Out: 5



Out: 9 In: 9
Total: 18
[S] Pan American Drive

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | | Fleetwood Drive Southbound | | | | | Lear Boulevard Eastbound | | | | | Lear Boulevard Westbound | | | | | Int | | | | | |
|---------------------------------------|----------------------------|-------|----|----|-------|----------------------------|-------|----|----|-------|--------------------------|----|----|----|-------|--------------------------|----|----|----|-----|-----|----|----|----|----|------|
| | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | | | | | | |
| 2023-02-02 7:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 9:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Approach | 0% | 100% | 0% | 0% | - | 0% | 100% | 0% | 0% | - | 100% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | - | - | - | - | - | - |
| % Total | 0% | 20.0% | 0% | 0% | 20.0% | 0% | 40.0% | 0% | 0% | 40.0% | 40.0% | 0% | 0% | 0% | 40.0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - |
| Lights | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Lights | 0% | 100% | 0% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | - | - | - | - | - | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | - | - | - | - | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | - | - | - | - | 0% |

*L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

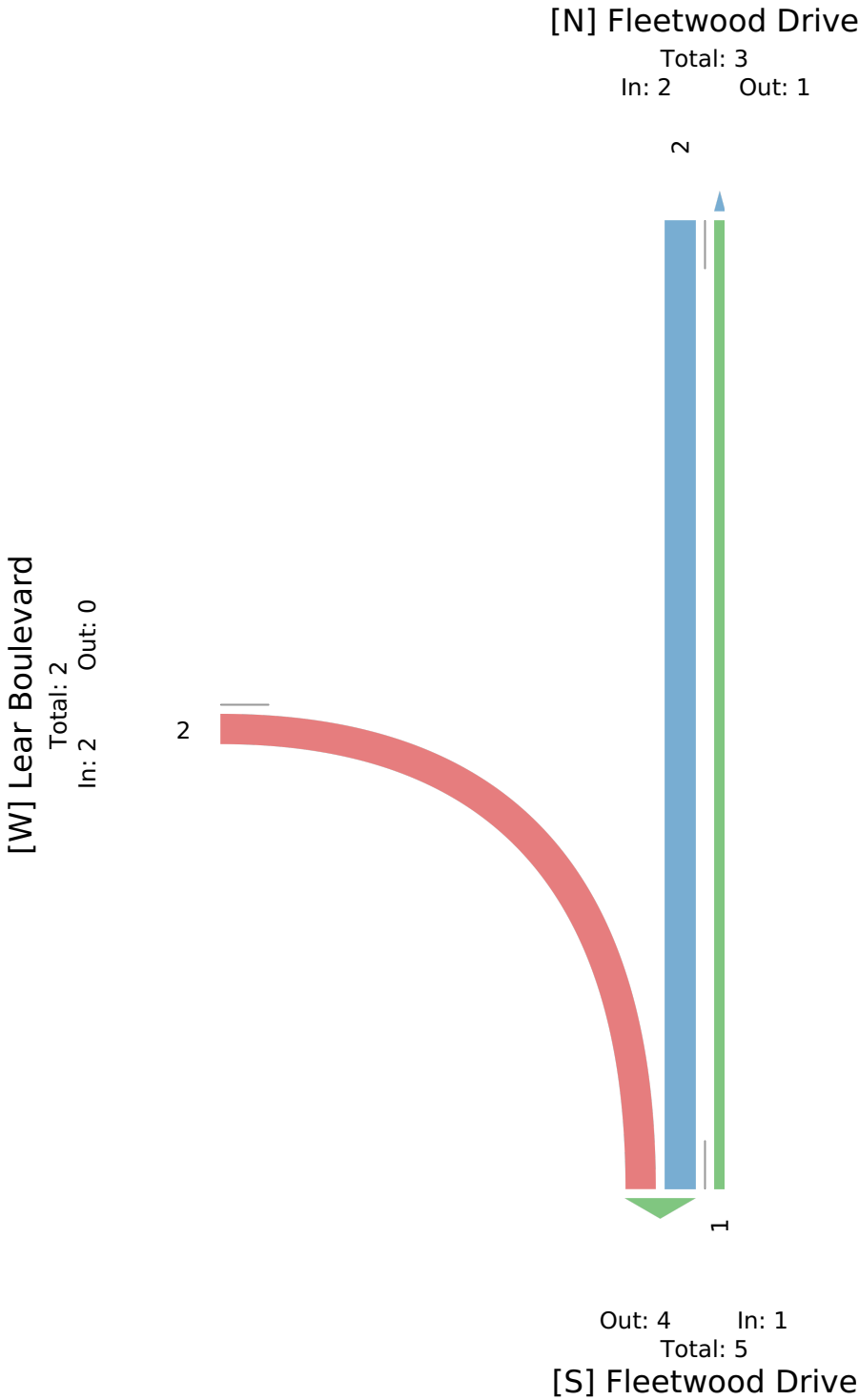
Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Lear Boulevard - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Thu Feb 2, 2023

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

| Leg Direction | Fleetwood Drive Northbound | | | | | Fleetwood Drive Southbound | | | | | Lear Boulevard Eastbound | | | | | Lear Boulevard Westbound | | | | | Int |
|---------------------------------------|----------------------------|-------|----|----|-------|----------------------------|-------|----|----|-------|--------------------------|----|----|----|-----|--------------------------|----|----|----|-----|-------|
| | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | |
| 2023-02-02 8:00AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Approach | 0% | 100% | 0% | 0% | - | 0% | 100% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | - |
| % Total | 0% | 50.0% | 0% | 0% | 50.0% | 0% | 50.0% | 0% | 0% | 50.0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - |
| PHF | - | 0.250 | - | - | 0.250 | - | 0.250 | - | - | 0.250 | - | - | - | - | - | - | - | - | - | - | 0.250 |
| Lights | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Lights | 0% | 100% | 0% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Fleetwood Drive

Total: 2

In: 1 Out: 1



Out: 1 In: 1

Total: 2

[S] Fleetwood Drive

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | | Fleetwood Drive Southbound | | | | | Lear Boulevard Eastbound | | | | | Lear Boulevard Westbound | | | | | Int |
|---------------------------------------|----------------------------|----|----|----|-----|----------------------------|-------|----|----|-------|--------------------------|----|----|----|-------|--------------------------|----|----|----|-----|-------|
| | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | |
| 2023-02-02 4:15PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| % Approach | 0% | 0% | 0% | 0% | - | 0% | 100% | 0% | 0% | - | 100% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | - |
| % Total | 0% | 0% | 0% | 0% | 0% | 0% | 33.3% | 0% | 0% | 33.3% | 66.7% | 0% | 0% | 0% | 66.7% | 0% | 0% | 0% | 0% | 0% | - |
| PHF | - | - | - | - | - | - | 0.250 | - | - | 0.250 | 0.250 | - | - | - | 0.250 | - | - | - | - | - | 0.375 |
| Lights | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| % Lights | 0% | 0% | 0% | 0% | - | 0% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | - | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Fleetwood Drive

Total: 1
In: 1 Out: 0

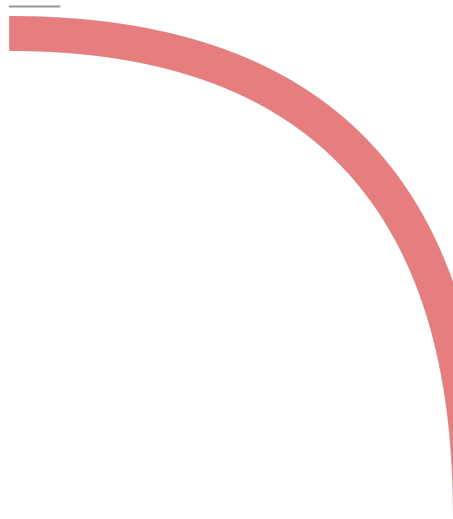
1



[W] Lear Boulevard

Total: 2
In: 2 Out: 0

2



Out: 3 In: 0
Total: 3

[S] Fleetwood Drive

APPENDIX C
TRIP GENERATION CALCULATIONS

Project: Learner Lemmon Single-Family
 Subject: NDOT Growth Rate Calculations
 Designed By: AKT

Project Number: 192349000
 Date: 2/16/2023
 Page: 1 of 1

Existing Growth Rate Calculations

Ref: Nevada Department of Transportation - Annual Traffic Report 2021

Number of Count Stations Analyzed = 3

Average Annual Growth Rate in the Vicinity of the Proposed Project = 4.79%

| | | |
|---------------------|----------------------|--|
| NDOT COUNT STATION: | 0310926 | |
| ROADWAY: | Patrician Dr | |
| LOCATION: | 150ft W of Lemmon Dr | |

| Year | AADT | Annual Growth Rate |
|---------|------|--------------------|
| 2019 | 690 | 6.35% |
| 2021 | 830 | |
| YEARS = | 3 | |

| PROJECTED TRAFFIC VOLUMES | |
|---------------------------|------|
| Year | AADT |
| 2022 | 883 |
| 2023 | 939 |
| 2024 | 998 |

| | | |
|---------------------|-------------------------|--|
| NDOT COUNT STATION: | 0310944 | |
| ROADWAY: | Lemmon Dr | |
| LOCATION: | 290ft S of Hydraulic St | |

| Year | AADT | Annual Growth Rate |
|---------|------|--------------------|
| 2019 | 9450 | 0.00% |
| 2021 | 9450 | |
| YEARS = | 3 | |

| PROJECTED TRAFFIC VOLUMES | |
|---------------------------|------|
| Year | AADT |
| 2022 | 9450 |
| 2023 | 9450 |
| 2024 | 9450 |

| | | |
|---------------------|------------------------|--|
| NDOT COUNT STATION: | 0311145 | |
| ROADWAY: | Lemmon Dr | |
| LOCATION: | 660ft S of Military Rd | |

| Year | AADT | Annual Growth Rate |
|---------|-------|--------------------|
| 2019 | 19600 | 8.01% |
| 2021 | 24700 | |
| YEARS = | 3 | |

| PROJECTED TRAFFIC VOLUMES | |
|---------------------------|-------|
| Year | AADT |
| 2022 | 26269 |
| 2023 | 27937 |
| 2024 | 29712 |

APPENDIX D

KEY INTERSECTION PEAK HOUR LOS CALCULATIONS

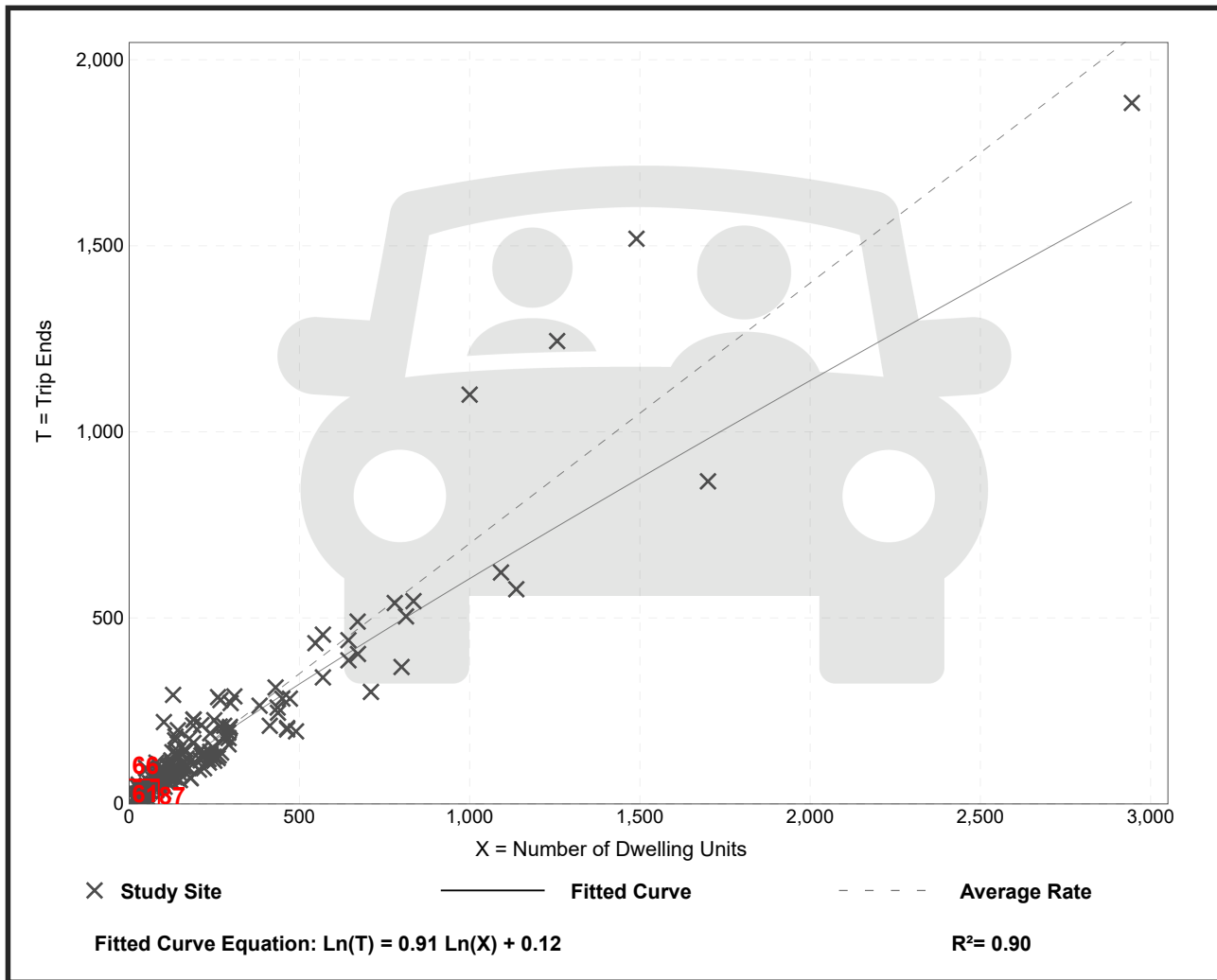
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 192
 Avg. Num. of Dwelling Units: 226
 Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.70 | 0.27 - 2.27 | 0.24 |

Data Plot and Equation



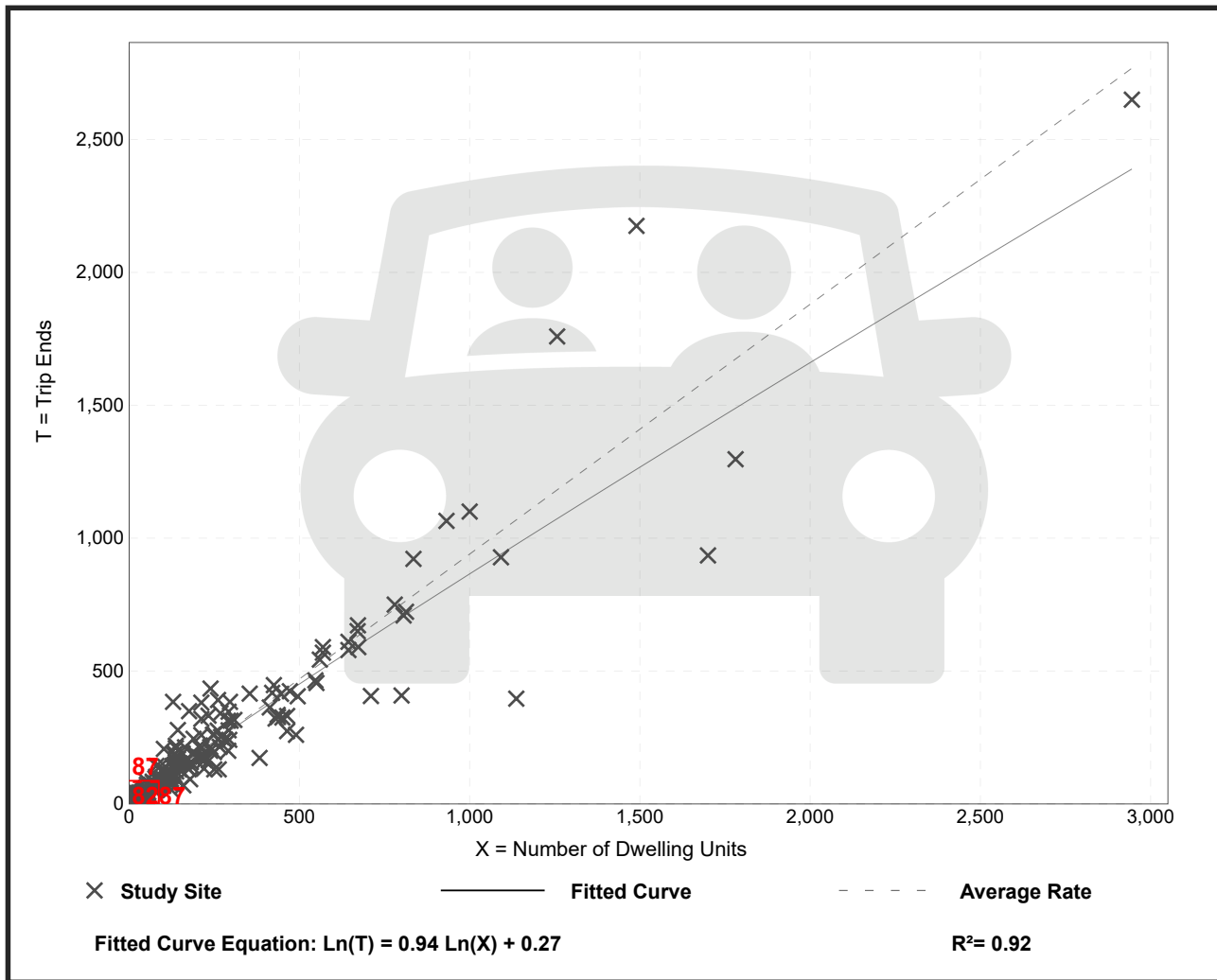
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 208
 Avg. Num. of Dwelling Units: 248
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.94 | 0.35 - 2.98 | 0.31 |

Data Plot and Equation



Single-Family Detached Housing (210)

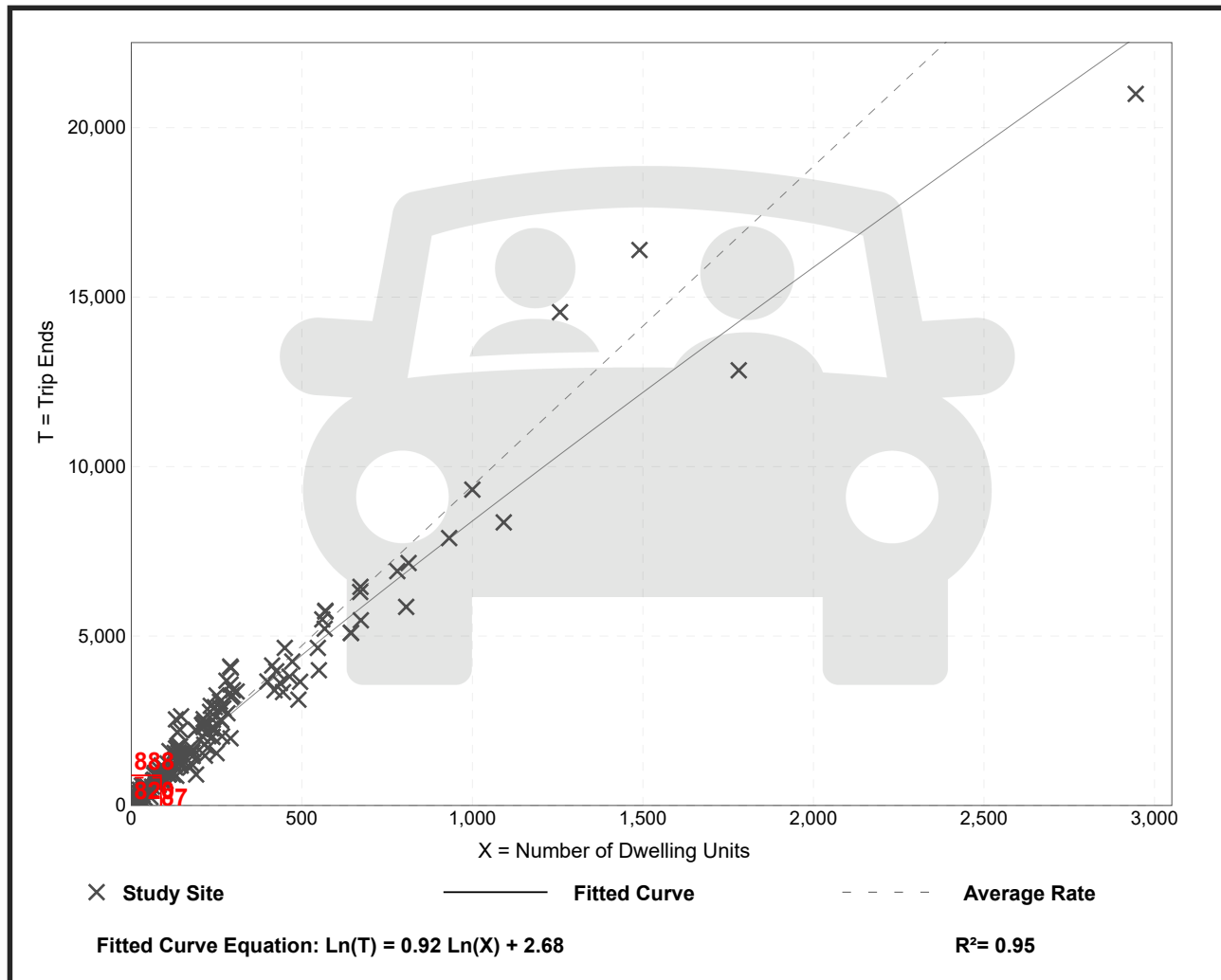
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

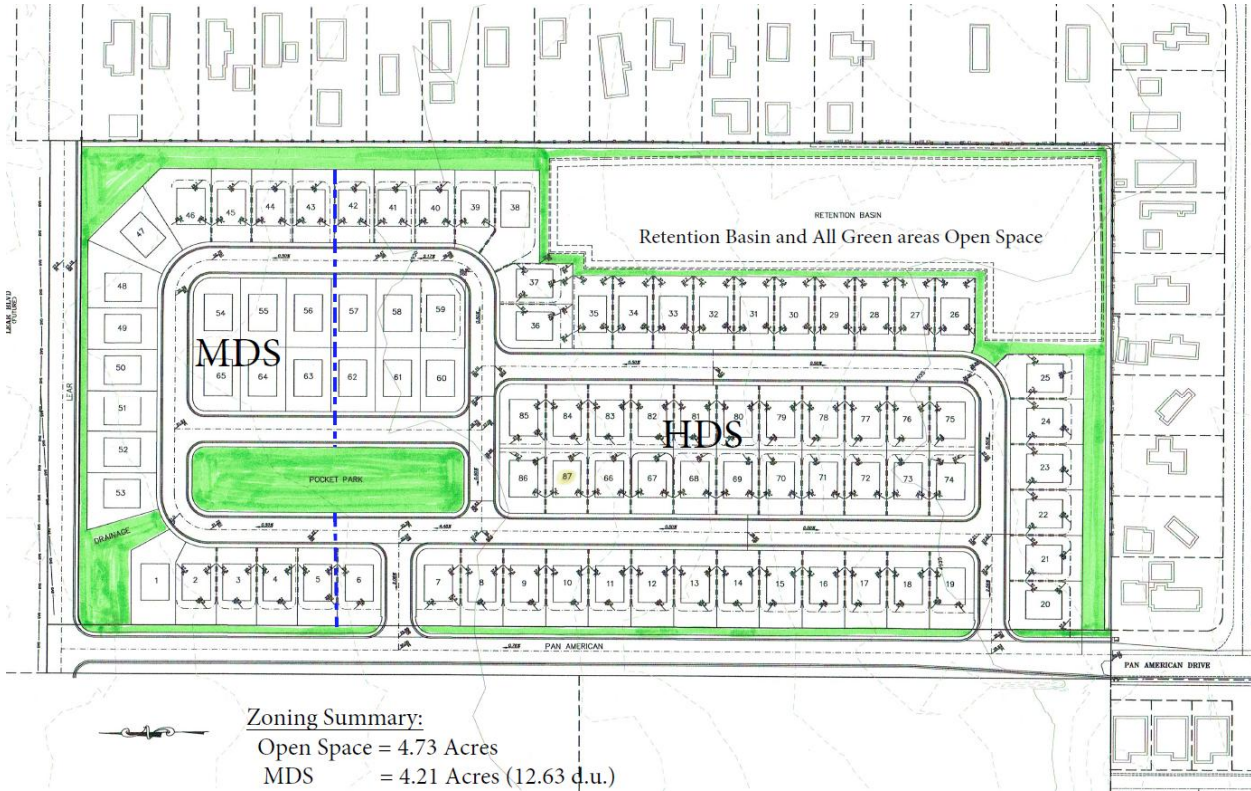
| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 9.43 | 4.45 - 22.61 | 2.13 |

Data Plot and Equation



APPENDIX E
SITE PLAN

Exhibit "A"



GEOTECHNICAL INVESTIGATION

Learner Lemmon

Washoe County, Nevada

Submitted To

Mr. Ted Brown

D.R. Horton

5588 Longely Lane

Reno, NV 89511

Project No.

4092001

September 2021



Justin M. McDougal, PE
PE Number -24474 (NV)



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



TABLE OF CONTENTS

EXECUTIVE SUMMARY iii

1.0 INTRODUCTION 1

2.0 PROJECT DESCRIPTION 2

3.0 SITE CONDITIONS 2

4.0 EXPLORATION 2

5.0 LABORATORY TESTING 3

6.0 GEOLOGIC AND GENERAL SOIL AND GROUNDWATER CONDITIONS 4

7.0 SEISMIC HAZARDS 4

 7.1 Surface Rupture 4

 7.2 Liquefaction 5

 7.3 Slope Instability..... 5

8.0 DISCUSSION AND RECOMMENDATIONS 5

 8.1 General Information..... 5

 8.2 Soil Profile Type Amplification Factors..... 7

 8.3 Site Preparation 7

 8.4 Grading and Filling 8

 8.5 Testing and Observation..... 9

 8.6 Trenching and Excavation..... 10

 8.7 Foundations 10

 8.7.1 Standard Spread Foundations..... 10

 8.7.2 Structural Slab-on-Grade Foundations..... 11

 8.8 Retaining Walls 14

 8.9 Infiltration Basin..... 14

 8.10 Erosion Control 15

 8.11 Site Drainage..... 15

 8.12 Corrosion Potential 16

 8.13 Concrete and Concrete Slabs-On Grade..... 17

 8.14 Structural Pavement Sections..... 18

 8.15 Asphalt Concrete Design Life 18

9.0 CONSTRUCTION OBSERVATION AND TESTING SERVICES..... 19

10.0 EXPECTATION OF PERFORMANCE 19

11.0 STANDARD LIMITATION CLAUSE 20

12.0 REFERENCES 22

TABLES

- Table 1 – Summary of Physical/Mechanical Test Data
- Table 2 – Guideline Specification for Imported Structural Fill
- Table 3 – Allowable Foundation Bearing Pressures
- Table 4 – Structural Slab-on-Grade Design Recommendations
- Table 5 – Coefficient of Friction, μ , for 5-inch Slabs
- Table 6 – Lateral Earth Pressures
- Table 7 – Soil Moisture Profile (TP-2)
- Table 8 – Summary of Infiltration Basin Percolation Testing
- Table 9 – Structural Pavement Sections

FIGURES

- Figure 1 – Project Development Area
- Figure 2 – Reno NE Quadrangle Geologic Map

APPENDICES

- Appendix A – Geotechnical Plates
 - A-1a – Vicinity Map
 - A-1b – Site Map and Approximate Exploration Locations
 - A-2 – Logs of Test Pits
 - A-3 – Unified Soil Classification and Key to Soil Descriptions
 - A-4 – Laboratory Testing Results
 - A-5 – ReMi Results

- Appendix B – ASCE 7 Hazards Report

EXECUTIVE SUMMARY

The overall site, located in Washoe County, Nevada, encompasses an area of approximately 19.9 acres, and based on representative latitude and longitude, is located at 39.6451°N and -119.8459°E, respectively. The site is bordered by undeveloped land to the west and north, and residences to the east and south. Frontage roads extend along the parcel perimeter. Overall, the site slopes downward to the north at an approximate gradient of one percent. Vegetation is light to moderate and typically consists of grasses and brush. Several dirt roads cross the property.

The project consists of developing a single-family residential subdivision. Homes will be one to two-stories, wood-framed construction, supported on standard spread foundations with slab-on-grade flooring or post-tensioned slab-on-grade foundations. Foundation loads are anticipated to be light. An infiltration basin is currently planned for the development to collect and discharge precipitation runoff; preliminary infiltration sites are within the northeast corner of the project and within the east central portion of the project. Public improvements will be designed to Washoe County standards. The development will be phased for a balance of cut and fills with cuts and fills anticipated to approach maximums of 4-feet.

The soils encountered in our explorations typically consisted of silty sand and silty, clayey sand over low to medium plasticity clayey sand and sandy lean clay. Percolation rates within the underlying clay soils (TP-1 and TP -2) were significantly slower than 240 min/in; percolation tests performed within the surficial clayey sands (TP-3) presented rates ranging from 2 to 24 min/in. Within the eastern portion of the project, evidence of groundwater was encountered as shallow as 9.5 feet below the existing ground surface. Seasonal high groundwater was estimated to reach 6.5 feet below ground surface (TP-2). Excavations for utility trenches that approach free water, or that extend to within the zone of influence of free water, will have a greater tendency to slough or cave and must be adequately considered and planned for by the contractor. Wet trench conditions should be adequately planned for.

Public improvements will be designed and constructed in accordance with Washoe County Standards.

Sulfate testing on the native soils resulted in sulfate levels in both the negligible and severe ranges (< 0.01 and 1.3% by weight, respectively). Special concrete provisions are addressed in Section 8.12 of this report.

With incorporation of the site preparation and grading recommendations as presented in this report, it is our opinion the site should adequately support the planned improvements.

1.0 INTRODUCTION

Presented herein are the results of Wood Rodgers' geotechnical exploration, laboratory testing, and associated geotechnical design recommendations for the proposed residential development to be in Washoe County, Nevada. The assessments and recommendations presented in this geotechnical report have been determined, in part, around the surface and subsurface conditions identified by our exploration program which was developed to be consistent with locally accepted industry practices regarding exploratory means and methods for geotechnical investigations of similar projects. The proposed structural elements, topography, grading design, soils, and geology are all unique; therefore, the engineering judgment employed by those in responsible charge of geotechnical design considerations, as defined by the State of Nevada, is considered the established and accepted standard of care for our evaluations and analyses associated with this report.

This report has been prepared in consideration of the applicable provisions set forth in the International Residential Code (IRC, 2018), ASCE 7, and the amendments and modifications adopted by Washoe County. These documents establish the minimum requirements to safeguard the public health, safety and general welfare of the occupants as well as the minimum level of structural integrity, life safety, fire safety and livability for inhabitants of new and existing structures. Geotechnical considerations for public improvements have been formulated around the requirements of the Standard Specifications for Public Works Construction. Performance standards around which our primary recommendations have been framed are based upon the requirements of the referenced documents. Any expectations of performance inconsistent with, outside the purview of, or exceeding the requirements of the referenced documents are subjective and therefore, a function of materials, design, workmanship, and ownership. Unless these expectations of performance are specifically stipulated or quantified herein, they are considered in excess to the scope and design standards of this report.

The objectives of this study were to:

1. Explore, test, and assess general soil, geology, and ground water conditions pertaining to design and construction considerations for the proposed development.
2. Provide recommendations associated with the design and construction of the project, as related to the identified geotechnical conditions and the stipulated design levels and performance standards established herein.

The area covered by this report is shown in Figure 1 and on Plate A-1b (Site Map and Approximate Exploration Locations) in Appendix A. Our study included field exploration, laboratory testing, and engineering analyses to identify the physical and mechanical properties of the various on-site materials. Results of our field exploration and testing programs are included in this report; in consideration of the stated design levels and performance standards, these results form the basis for our conclusions and recommendations.

2.0 PROJECT DESCRIPTION

The project consists of developing a single-family residential subdivision. Homes will be one to two-stories, wood-framed, built on standard spread foundations with slab-on-grade flooring or post-tensioned foundations. Foundation loads are anticipated to be light.

The development will be phased for a balance of cut and fills. Approximately 8-feet of grade differential exists across the site. Therefore, cuts and fills are anticipated to be on the order of 4-feet. An infiltration basin is planned for the development to collect runoff and provide a source for limited regional groundwater recharge.

All street improvements will be designed to Washoe County standards and dedicated to the County. Underground utilities will be provided by a variety of public and private companies.

3.0 SITE CONDITIONS

The overall site, located in Washoe County, Nevada, encompasses an area of approximately 19.9 acres, and based on representative latitude and longitude, is located at 39.6451°N and -119.8459°E, respectively. As shown in Figure 1, the site is bordered by undeveloped land to the west and north, and residences to the east and south. Frontage roads extend along the parcel perimeter.

Overall, the site slopes downward to the north at an average gradient of one percent. Vegetation is light to moderate and typically consists of grasses and brush. Several dirt roads cross the property.

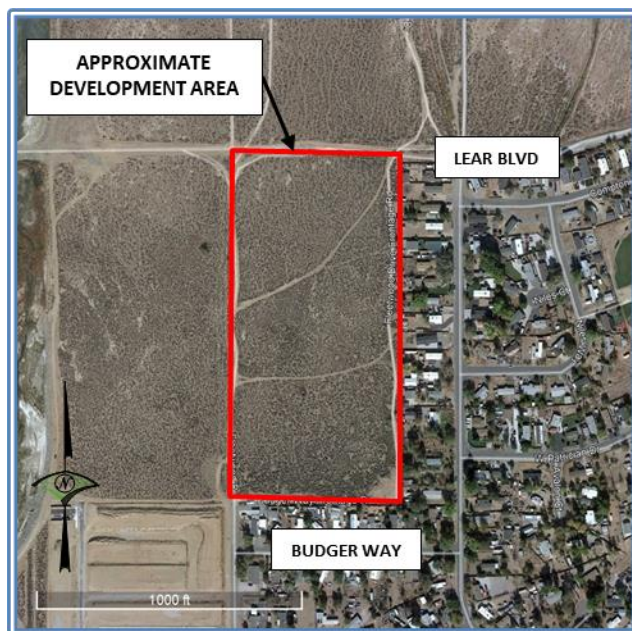


FIGURE 1 - PROJECT DEVELOPMENT AREA

4.0 EXPLORATION

The project was explored in August 2021 by excavating a series of 10 test pits using a Cat 420F backhoe and performing a geophysical Refraction Micro-tremor (ReMi) survey. The approximate locations of the test pits and ReMi geophysical lines are shown in Appendix A on Plate A-1b – Site Map and Approximate Exploration Locations. Maximum depth of test pit advance extended to 12 feet below the existing ground surface. Bulk samples for index testing were collected from representative depths within the soil horizon.

Wood Rodgers' personnel examined and classified soils in the field in general accordance with ASTM D2488 (Description and Identification of Soils). During exploration, representative bulk samples were placed in sealed plastic bags and subsequently returned to our Reno, Nevada laboratory for testing.

Additional soil classifications, as well as verification of the field classifications, were performed in accordance with ASTM D2487 (Unified Soil Classification System [USCS]) upon completion of laboratory testing as described below in the Laboratory Testing section. Logs of the test pits are presented as Plate A-2. A Unified Soil Classification System (USCS) explanatory chart of soil unit symbols and related descriptions has been included as Plate A-3 - Unified Soil Classification and Key to Soil Descriptions.

Shear wave velocity measurements have been relied upon for the development of geotechnical design characterization of soil stiffness. This information also aids in the determination of an appropriate Site Class (IBC, ASCE 7). A $V_{s100} = 733$ fps was measured; Plate A-5 presents the geophysical profile.

5.0 LABORATORY TESTING

Soil testing performed in the Wood Rodgers' laboratory was conducted in general accordance with the standards and methods described in Volume 4.08 (Soil and Rock; Dimension Stone; Geosynthetics) of the ASTM Standards. Samples of significant soil types were analyzed to determine in-situ moisture contents (ASTM D2216), grain size distributions (ASTM D6913), plasticity indices (ASTM D4318), and R-Value (ASTM D2844). Results of the testing is presented in Appendix A on Plates A-4a through A-4d. Table 1 also presents a summary of test data. Test results were used to classify the soils according the USCS (ASTM D2487) and to verify the field logs which were then updated.

Table 1 - Summary of Physical/Mechanical Test Data

| Test Hole | Depth (Ft.) | Moisture (%) | %Gravel (+ #4)* | % Sand (#4-#200) | %Fines (-#200) | Liquid Limit | Plastic Index | R-Value | USCS |
|---------------|-------------|--------------|-----------------|------------------|----------------|--------------|---------------|---------|-------|
| ASTM Standard | | D2216 | D6913 | | | D4318 | | D2844 | D2487 |
| TP-1 | 1.5-3 | 7.7 | 0.4 | 52.1 | 47.5 | 22 | 4 | --- | SC-SM |
| TP-1 | 3-5 | 9.6 | --- | 35.1 | 74.9 | 31 | 16 | --- | CL |
| TP-4 | 0-3 | --- | --- | --- | --- | --- | --- | 42 | SM/SC |
| TP-7 | 6-7 | 9.1 | 1.1 | 50.5 | 48.5 | 25 | 8 | --- | SC |
| TP-8 | 0.5-3.5 | --- | --- | --- | --- | --- | --- | 14 | SC |
| TP-9 | 1.5-4 | 10.3 | 3.5 | 70.5 | 26.0 | 22 | 1 | --- | SM |

Additional testing included soil water characteristic curves for desorption (ASTM D6836) to aid in structural slab design; summary of this data is presented on Plate A-4e. As presented on Plate A-4f, chemical testing was performed to indicate the potential for corrosion to concrete and steel elements.

6.0 GEOLOGIC AND GENERAL SOIL AND GROUNDWATER CONDITIONS

Based on the Reno NE quadrangle Geologic Map (Cordy, 1985), shown in Figure 2, the site is mapped in an area of Alluvium of Military Road (Qm). This geologic unit is described as poorly sorted sand to muddy sand derived from the alluvial fan deposits of Peavine Mountain. The soils units encountered in our explorations typically consisted of poorly sorted and interbedded layers and zones of silty sand and silty, clayey sand overlying low to medium plasticity clayey sand and sandy lean clay.

During our exploration program, free water was evident in TP-1 and TP-3 and was observed as shallow as 9.5 feet below the ground surface in TP-3. Seasonal high groundwater was estimated to reach 6.5 feet below ground surface in the northeast corner of the site.

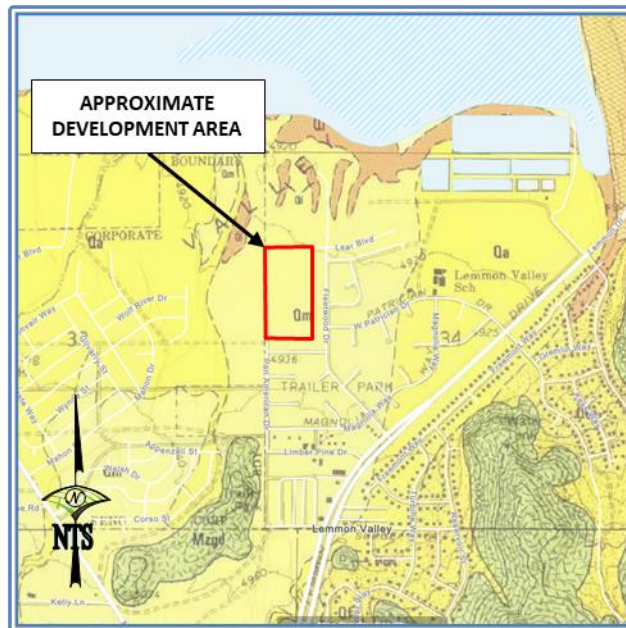


FIGURE 2 - RENO NE QUADRANGLE GEOLOGIC MAP
(NBMG, CORDY, 1985)

7.0 SEISMIC HAZARDS

Lemmon Valley lies along the western margin of the Basin and Range physiographic province located between the Virginia Range and the Pah Rah Range to the east and the Carson Range to the west. The Basin and Range province is characterized by a series of valleys bounded by north/south trending mountain ranges, byproducts of the seismically active zones of the Wasatch Front in Utah and the Sierra Nevada Mountains along the California/Nevada border. Faulting and seismic activity are integral to the formation of this series of alternating valleys and mountain ranges. Therefore, the presence of faults, active and inactive, are common in western Nevada.

7.1 Surface Rupture

Criterion for evaluating earthquake faults have been formulated by a professional committee for the State of Nevada Earthquake Safety Council. The guidelines present recommendations that faults with evidence of movement within the past 10,000 years (Holocene time) are considered Holocene active. The United States Geological Survey (USGS) describes faults with evidence of displacement within the last 15,000 years to be considered Latest Quaternary active, faults with movement in the last 130,000 years are considered Late Quaternary active and faults with movement within the last 1.6 million years are considered Undifferentiated Quaternary active. The guidelines recommend that active Holocene faults be offset by occupied structures a minimum of 50 feet. In addition, the guidelines specify that no "critical facilities" shall be placed over a Late Quaternary active fault.

The USGS U.S. Quaternary Faults Map was accessed to review the proximity of any active faults as previously characterized. The closest mapped fault is located approximately 1-mile to the west of the site and is aged as Undifferentiated Quaternary active. The fault is part of the Fred's Mountain fault and is sufficiently distant that offsets or additional considerations have not been recommended. Surface rupture is considered unlikely.

7.2 Liquefaction

Chapter 11 of ASCE 7 presents Seismic Design Criteria for structures; Chapter C11 presents clarifications and detailed requirements for analyzing and designing structures based on the requirements and considerations of Chapter C11. Within Section C11.1.2 Scope, detached wood-frame dwellings, not exceeding two stories above grade plane, and constructed in accordance with the prescriptive provisions of the IRC, are deemed capable of resisting anticipated seismic forces. Exemption 1 further states that detached one- and two-story wood-frame dwellings have performed well even in regions of higher seismicity. Therefore, Chapter C11 stipulates that the IRC adequately provides the level of safety required for buildings. Due to the seismic performance levels reported for single family residences in Chapter C11, liquefaction assessments are not required by the IRC. However, given the geophysical profile (S-wave) measured at the site, final design grades, depth to groundwater, and anticipated general soil profile based on local and regional geology, it is our opinion liquefaction induced settlements would be limited and would occur at a depth where bearing capacity degradation would not occur.

A site-specific liquefaction assessment, including a boring to 50-feet below the existing ground surface, would be required to assess the potential for liquefaction and the resulting potential settlements.

7.3 Slope Instability

The site and surrounding low-lying topography are such that the potential for slope instability at the site due to gravitational or seismic activity is considered low.

8.0 DISCUSSION AND RECOMMENDATIONS

8.1 General Information

The following definitions characterize terms utilized in this report:

- ◆ Fine-grained soil possesses more than 40 percent by weight passing the number 200 sieve and exhibits a plasticity index lower than 15.
- ◆ Clay soil possesses more than 30 percent passing the number 200 sieve and exhibits a plasticity index greater than 15.
- ◆ Granular soil does not meet the above criteria and has a maximum particle size less than 6-inches.

It should be noted these definitions have been formulated around anticipated soil behavior and may not coincide with classifications provided by the Unified Soil Classification System.

The recommendations provided herein, particularly under Site Preparation, Grading and Filling, Foundations, Site Drainage, and Construction Observations and Testing Services are intended to reduce risks of structural distress related to consolidation or expansion of native soils and/or structural fills. These recommendations, along with proper design and construction of the planned structure(s) and associated improvements, work together as a system to improve overall performance. If any aspect of this system is ignored or poorly implemented, the performance of the project will suffer. Any evaluation of the site for the presence of surface or subsurface hazardous substances is beyond the scope of this study. When suspected hazardous substances are encountered during routine geotechnical investigations, they are noted in the exploration logs and reported to the client. No such substances were identified during our exploration.

Recommendations for paved improvements in right-of-way will be consistent with Washoe County standards. Underground utilities will be provided by a variety of public and private companies; trenching and backfill recommendations addressed herein are consistent with OSHA and Washoe County requirements, respectively.

The test pits were advanced at the approximate locations shown on the site map. Each test pit was backfilled upon completion of the field portion of our study, and the backfill was compacted to the extent possible with the equipment on hand. However, the backfill was not compacted to the requirements presented herein under Grading and Filling. If structures, concrete flatwork, pavement, utilities or other improvements are to be located in the vicinity of any of the test pits, the backfill should be removed and re-compacted in accordance with the requirements contained in the soils report. Failure to properly compact backfill could result in excessive settlement of improvements located over test pits.

The site-specific Stormwater Pollution Prevention Plan (SWPPP), as required by the State of Nevada, will be the responsibility of the general contractor and/or owner. Recommendations presented herein regarding moisture conditioning are for the benefit of creating a targeted fill behavior. Moisture conditioning recommendations are not intended to direct the contractor in their means and methods for dust and SWPPP control.

Structural areas referred to in this report include all areas of buildings, concrete slabs, asphalt pavements, as well as pads for any minor structures, fencing or retaining walls. Retained zones and slopes behind retaining structures are considered structural zones. In addition, structural zone shall be considered to extend at a 1:1 (H:V) slope out from the edge of the structural footprint. All compaction requirements presented in this report are relative to ASTM D 1557¹.

¹ • Relative compaction refers to the ratio (percentage of the in-place density of a soil divided by the same soil's maximum dry density) as determined by the ASTM D 1557 laboratory test procedure. Optimum moisture content is the corresponding moisture content of the same soil at its maximum dry density.

8.2 Soil Profile Type Amplification Factors

In accordance with ASCE 7-16 and the Northern Nevada Amendments of the 2012 IRC, Site Class D and Seismic Design Category D2 have been assigned to the project. Seismic design values were determined based on a representative latitude and longitude of 39.6451°N and -119.8459°E, respectively. Per ASCE 7-16, the site's modified Peak Ground Acceleration (PGA_M) to be used for engineering analyses is equal to 0.695g. The ASCE 7 Hazards Report is presented in Appendix B.

8.3 Site Preparation

All vegetation and topsoil are to be cleared and grubbed from structural areas. A minimum stripping depth of 0.3 to 0.5 feet is anticipated. Localized deeper areas may be required in areas where larger brush is encountered.

Vegetation and organic debris should be disposed of offsite or placed in designated non-structural areas (Section 8.1, General Information). If on-site disposal is approved, vegetation could be blended with soil (at a maximum ratio of 1:10 vegetation to soil, by mass) prior to placement in fill areas. Larger organics shall be broken up by the use of a large sheep's foot roller prior to blending with the soil mass. Vegetation shall be thoroughly blended with the soil; concentration of the vegetation must be avoided. Placing large, concentrated layers or zones of vegetation could lead to excessive settlement and subsequent surface depressions.

Based on our explorations, the soils at the site consist of 2 to 9 feet of granular and fine-grained soils overlying low-plasticity clays. These soils when adequately blended, processed, moisture conditioned and compacted will provide adequate foundation support for the proposed improvements. Therefore, no overexcavation and replacement is recommended at this time. However, because the grading plans have not yet been finalized, we request the opportunity to review the final design so that our recommendations can be modified as appropriate.

Prior to receiving structural fill or structural loading, subgrade soils should be moisture conditioned to within 3-percent of optimum moisture content and compacted to not less than 90-percent of the soil's maximum dry density (ASTM D1557) for a minimum depth of 12-inches.

The near surface fine-grained soils encountered on site may pump and or destabilize with moisture contents exceeding optimum. Due care must be exercised by the contractor to assure inclement weather and/or construction water during moisture conditioning or dust control do not result in an excessively wet subgrade. Where encountered, pumping soils may be scarified and allowed to dry or removed and replaced with a layer of compacted structural fill. Depending on extent and severity, other methods of subgrade stabilization are available. For more extensive stabilization measures, the contractor should propose a stabilization protocol that is consistent with their readily available means and methods, and this proposal presented for review, by the owner, the general contractor, and grading inspector. Subgrade

stabilization is a trial-and-error process, and it is recommended that a test section of suitable depth and length be conducted prior to deciding a stabilization course.

For the design considerations presented in this report, subgrade stabilization is considered adequate if the subgrade is firm and relatively unyielding (as approved by the engineer) when proof-rolled with a fully loaded water truck. Subgrade stabilization may not be required for walkways or private improvements subject solely to foot traffic providing the required compaction levels are achieved; however, if/where walkways or private improvements are structurally connected to the building, subgrade stabilization is required.

8.4 Grading and Filling

Granular and fine-grained soil substantially free of vegetation, organic matter and other deleterious material may be used as structural fill. Import structural fill should be substantially free of organic matter, deleterious material, and meet the requirements of Table 2 for on-site use.

Table 2 - Guideline Specification for Import Structural Fill

| Sieve Size (ASTM D6913) | Percent by Weight Passing | |
|---|---------------------------|--------|
| 6 Inch | 100 | |
| 4 Inch | 90 - 100 | |
| ¾ Inch | 70 - 100 | |
| No. 40 | 15 - 70 | |
| No. 200 | 5 - 30 | 5 - 50 |
| Maximum Liquid Limit (ASTM D4318) | 40 | 40 |
| Maximum Plasticity Index | 15 | 12 |
| Soluble Sulfate Level (ACI 318, Table 4.3.1) | Negligible | |
| R-Value within 2-feet of roadbed grade (ASTM D2844) | 30 Min. | |

Adjustments to the recommended limits presented in Table 2 may be approved upon request on a case-by-case basis to allow the use of other granular, non-expansive material, including rock fill. Any such adjustments must be made and approved by the Geotechnical Engineer, in writing, prior to importing structural fill to the site.

Structural fill to be used in public right of way areas shall meet the requirements of the Standard Specifications for Public Works unless approved and accepted for use by Washoe County. A minimum subgrade R-value (ASTM D2844) of 30 is required for dedicated roadways. Near surface soils presented R-Values ranging from 14 to 42. Therefore, we recommend at least two verification R-Values be performed on the roadbed subgrade prior to placement of the base course.

Mass-graded fills and localized structural fills shall be moisture conditioned to near optimum moisture content, placed in 12-inch maximum loose lifts, and compacted to not less than 90-percent of the soil's maximum dry density (ASTM D1557). If fills are greater than five feet in thickness, the minimum compaction requirement shall be increased to 95 percent. Fill supporting fencing is considered structural fill and the requirements for fill quality and placement shall be observed.

Perimeter landscaping fills (and fills blended with vegetation) shall be limited to nonstructural areas, moisture conditioned, placed in 12-inch maximum loose lifts and compacted to not less than 85-percent of the soil's maximum dry density.

The exterior face of embankments should be constructed with an inclination no steeper than 2H:1V. The surface of the slope should be compacted to the same percent compaction as the body of the fill. This may be accomplished by compacting the surface of the embankment as it is constructed or by overbuilding the fill and cutting back to its compacted core. The cut away material should then be placed and compacted in designated fill areas rather than left at the base of the slope. Minor variations in slope gradient due to sculpting or landscaping of the slope face should not be considered inconsistent with the recommendations of this report or adverse to the ultimate performance of the global stability of the overall slope.

8.5 Testing and Observation

Verification of fills should be performed by a firm that is AMRL accredited in ASTM E329. Special inspection of fill soils is required during mass grading of the development; the Special Inspector should be ICC certified in soils or NAQTC certified in Sampling and Density disciplines. The special inspector shall verify and document that placement of rockfill (if any) is consistent with the grading and placement requirements indicated in the Grading and Filling section of this report.

Density testing of fills should be in accordance with ASTM D6938 (Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods) or ASTM D1556 (Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method) unless rock fill is approved which will then be subject to performance based full time field observation. Subgrade, structural fill, nonstructural fill, bedding and backfill shall be density tested by the appropriate means and methods.

For soils meeting ASTM gradations that allow for density testing by nuclear methods, testing frequency shall be as prescribed herein. Subgrade should be density tested approximately every 500 square yards. Fill should be density tested once for every 1,000 square yards per lift of material placed during mass grading and one test per 300 feet of footing trenches or overexcavation of footings. Bedding and backfill should be density tested per foot of thickness, the more restrictive of one test between manholes or valves, or one test every 500 lineal feet, including laterals. One density test should be performed for each 500 square yards or per each lift for smaller, localized fill zones. Full time construction observation is required for mass graded fills and for any rock fill placement. The testing frequency should be increased

if the contractor is having difficulty achieving and maintaining the required moisture levels. Nonstructural fills should be density tested for every 2,000 yards or for every 2-feet of fill for smaller, localized fill zones.

8.6 Trenching and Excavation

Regulations amended in Part 1926, Volume 54, Number 209 of the Federal Register (Table B-1, October 31, 1989) require that the temporary sidewall slopes be limited to maintain trench stability. Minimum sidewall slopes and acceptable trench configurations are also presented in the referenced register. Based on the results of our exploration program, it is our opinion that the bulk of the native site soils appear to be predominately Type C, although variations exist. All fills should be considered Type C unless directed otherwise by the contractor's person of knowledge trained in OSHA requirements and trench safety. All trenching should be performed and stabilized in accordance with local, state, and OSHA standards. Bank stability is the responsibility of the contractor or contractor's qualified representative who is present at the site, able to observe changes in ground conditions, and has control over personnel and equipment.

Trench bedding and backfill shall be consistent with the requirements of the Standard Specifications for Public Works and the requirements of the private utilities. Based on our testing program, the on-site soils tested do not meet the requirements of Class E backfill; importing Class E material or use of an alternative material, approved by Washoe County, will be required.

Seepage was encountered in two explorations as shallow as 9.5 feet, with seasonal groundwater anticipated to encroach as shallow as 6.5 feet below ground surface. Excavations for utility trenches that approach free water, or that extend to within the zone of influence of free water, will have a greater tendency to slough or cave and must be adequately considered and planned for by the contractor. Wet trench conditions should be adequately planned for.

8.7 Foundations

8.7.1 Standard Spread Foundations

Provided the foundation soils have been prepared in accordance with the recommendations of this report, the bearing values presented in Table 3 may be used for design.

Table 3 - Allowable Foundation Bearing Pressures

| Loading Condition | Maximum Net Allowable Bearing Pressure (PSF) ¹ |
|---|---|
| Dead Load Plus Full Time Live Load | 2,500 |
| Dead Load Plus Live Loads, Plus Transient Wind or Seismic Loads | 3,325 |

¹ Net allowable bearing pressure is that pressure at the base of the footing in excess of the adjacent overburden pressure.

For frost protection, footings should be founded at least two feet below adjacent outside or unheated interior finish grades. Interior footings not located within frost prone areas should be founded at least 12 inches below surrounding ground or slab level for confinement. Regardless of loading, individual pad foundations and continuous spread foundations should be at least 18 and 12 inches wide, respectively, or as required by code. The minimum footing sizes recommended are based on the ability to develop bearing capacity.

Lateral loads, such as wind or seismic, may be resisted by passive soil pressure and friction on the bottom of the footing. Coefficients of base friction of 0.40 are typical to structural fills. Design values for active and passive equivalent fluid pressures of 37 and 350 pounds per square foot per foot of depth, respectively, can be utilized. However, in designing for passive pressure, the upper one foot of the soil profile should not be included unless confined by a concrete slab or pavement. These design values are based on spread footings bearing on native granular soils, native fine-grained soils, or structural fill and backfilled with structural fill.

If loose, soft, wet, or disturbed soils are encountered at the foundation subgrade, these soils should be removed to expose suitable foundation soils, and the resulting over-excavation backfilled with compacted structural fill. The base of all excavations should be near optimum moisture and free of loose or disturbed materials at the time of concrete placement.

Total settlement for the residences is anticipated to be on the order of ¾-inch, or less. Differential settlement between foundations with similar loads and sizes is anticipated to be half of the total settlement experienced over 40-feet.

8.7.2 Structural Slab-on-Grade Foundations

The design values presented in Table 4 have been developed for use when considering design of structural foundations. The design profile relied upon to develop the values in Table 4 have been based on our August 2021 exploration and anticipated grading. Ground water was modeled at or near 6 ½ feet.

Table 4 - Structural Slab-on-Grade Design Recommendations

| Design Values | Condition | Center Lift | Edge Lift |
|---|--|-------------|-----------|
| Post-Tensioning Institute (PTI) (Turn Down ≤ 2-feet) | Edge Moisture Variation - e_m (ft.) | 9.0 | 4.9 |
| | Differential Soil Movement - y_m (in.) | -0.65 | 0.80 |

Post-construction settlement of the slab foundation, not including the contributions due to edge and center lifts is modeled to approach ¼ to ½-inch. If significant time passes between preparing this geotechnical report and constructing foundations, or if fill is imported to the site that is not considered structural, it is important that additional analysis be performed to verify the design values.

Soil chlorides shall be mitigated per Section 4.3.2.2 – Soil Chlorides from the referenced PTI manual. Test results obtained during our investigation have been attached with this report in Appendix A.

Per the requirements of the Northern Nevada Amendments to the IRC, turn downs for structural slabs must extend to a minimum depth of 2-feet below finished adjacent exterior grade or be designed to resist the effects of frost-heave (such as insulation as presented in ASCE 32). It should be pointed out, however, that potential movement due to frost-heave would be in addition to edge-lift caused by clay activity and, therefore, the design edge-lift value should consider the cumulative effects of the two influences. In addition, the 2018 Northern Nevada Code Amendments require that deflection calculations “*would need to show that the maximum combined frost and expansive soil heaving, as localized at slab edges, with resultant non-uniformly distributed deflections, as well as whole slab deflections would not result in super structure racking or excessive truss, roof, or wall frame movement.*” Minimum slab thickness and recommended turndowns should be established by the Structural Engineer.

An allowable bearing value of 1,500 pounds per square foot may be utilized for design. This value may be increased by a factor of 1.33 when considering wind or seismic loading. An uncorrected k-value of 120 pci may be used for design.

Some floor coverings, such as tile or linoleum, are sensitive to moisture that can be transmitted through slabs. Floor coverings should be installed in accordance with the manufacturer’s recommendations including restrictions related to maximum vapor transmission rates. The preferred slab profile has been selected to consist of a 15-mil moisture vapor retarder such as Stego Wrap covered by a minimum two-inch Type 2 Class B aggregate base course placed near optimum moisture content and compacted by at least three complete passes with a vibroplate. A sand layer or size No. 67 concrete aggregate is not recommended for direct slab support.

Per Figure R6.2 (PTI DC10.5-12), Table 5 presents recommended coefficients of friction, μ , for first and average subsequent movements based on the design slab support profile. If location of the polyethylene sheeting significantly impacts the design or tensioning protocol, we recommend placement of the vapor retarder be indicated as a special inspection item.

Table 5 - Coefficient of Friction, μ , for 5-inch Slabs

| Material | First Movement | Average Subsequent Movements |
|------------------------------------|----------------|------------------------------|
| Aggregate Base | 1.95 | 1.37 |
| Structural Fill | 1.72 | 0.88 |
| Polyethylene Sheeting ¹ | 0.88 | 0.55 |

¹For normal construction practice, $\mu = 0.75$

Post-tensioned foundations, when compared to conventionally reinforced slabs, are expected to deform. The flexibility of the slab distributes localized soil movement to a more uniform slab shape; however, it is important that other consultants be cognizant of this behavior so that their products and design can be made compatible with a flexible foundation system. Typically, roof trusses, load concentrations, architectural features spanning between the active and non-active zones, non-flexible exterior siding, brittle floor coverings, areas that slope to drain, and utility connections warrant closer scrutiny.

Post-construction practices must be incorporated to help ensure the successful performance of the structural slabs. To help minimize movements in soils due to post-construction factors, not climate related, the following maintenance procedures are required:

- Uniform landscaping should be provided adjacent to the perimeter of the foundation, and excellent drainage provided and maintained away from the residence. It is strongly recommended that only drip irrigation, if any, be installed within five feet of foundations. Never allow water to pond adjacent to the structure.
- Recommended positive drainage is a minimum of six inches of fall in ten feet (5%), and impervious surfaces within ten feet of the building foundation should be sloped a minimum of two percent away from the foundation.
- Water should be applied in a uniform, systematic manner as equally as possible on all sides of the residence to keep the soil moist. Areas without ground cover may require more moisture due to the potential for increased evaporation.
- Soaker hoses, if used, should be placed a minimum of five feet away from foundation edges. Sprinklers should not be allowed to spray directly on building foundations.
- Trees should not be planted within 10 feet of the structure.
- Check gutters and downspouts to be sure they are clear, and water discharges a minimum of five feet from foundation.
- The foundation perimeter should be observed during extreme hot and dry periods to help ensure that adequate watering is being provided to prevent the soil from separating from the foundation.

It is strongly recommended that a yearly survey of foundations is conducted and any maintenance necessary to improve drainage and prevent ponding of water adjacent to these structures is performed. This is especially important during the first ten years after construction because that is usually when the most severe adjustment between the new foundation and supporting soil occurs. Following the above listed procedures should help limit detrimental foundation movement caused by expansive soils. These recommendations should be provided to homeowners and any landscape contractors to prevent adverse grading, watering or planting to occur. It is further recommended that Landscape contracts contain specific language regarding the necessity of maintaining code grading requirements as well as planting and watering conditions presented herein.

8.8 Retaining Walls

Recommended lateral earth pressures for consideration in the design of retaining structures, supporting level grade and less than 6-feet of granular or fine-grained insitu soils or fill are presented in Table 6. The values presented in Table 6 do not consider hydrostatic pressures or surcharge loading. Traffic loading should be modeled by increasing the wall backfill load by an additional height of two feet. Unless confined by slab or pavement, the surface foot of soil should be ignored when considering passive resistance. If retaining walls retain sloping backfill or more than six feet of soil, the values presented in Table 6 will need to be revisited.

Table 6 - Lateral Earth Pressures

| Condition | Active (psf/f) | Passive (psf/f) | At Rest (psf) |
|----------------|----------------|-----------------|---------------|
| Level Backfill | 37 | 350 | 55 |

Excessive retaining wall pressures can be developed due to heavy compaction equipment proximate to the wall during backfill placement. Large vibratory compaction should be avoided for retaining wall backfill placed within ten feet of the back face of wall. Small vibratory trench compactors will be suitable for compaction directly behind the wall. Backfill behind retaining structures should be compacted to not less than 90 percent of the soils' maximum dry density. French drains, encased in a drainage gravel backfill layer wrapped in geotextile such as Mirafi 140 N, or a pre-manufactured drain system such as Tensar[®] DC1200 should be utilized if buildup of hydrostatic pressure is possible. Soil preparation for retaining wall foundations and allowable bearing capacities shall be consistent with the Site Preparation, Grading and Filling, and Standard Spread Foundations sections of this report.

8.9 Infiltration Basin

During our exploration program, estimated seasonal high groundwater elevation was investigated. No specific geomorphologic markers were identified within the soil profile; however, variations in moisture content with depth offered insights. Table 7 presents a summary of soil moisture test data determined from TP-2. Knowing that soil moisture at or below where groundwater manifested would be near saturation, the degree of saturation was calculated based on moisture contents from the soil profile. Degree of saturation was graphed vs. depth and groundwater was approximated to be 8.0-feet (based on an 80% saturation level). Height of capillary rise was calculated to be on the order of 1.5-feet, which would place the near saturated wetting front at a depth of 6.5-feet (Elevation 4921.5 feet).

Table 7 – Soil Moisture Profile (TP-2)

| Sample | Depth | %m | %S |
|------------|-------|------|-------|
| 0.25 - 1 | 0.5 | 1.24 | 2.9 |
| 1 - 2.75 | 1.9 | 9.2 | 21.7 |
| 3 - 5 | 4 | 9.6 | 22.6 |
| 6 - 7.5 | 6.75 | 22.8 | 53.7 |
| 9.5 - 11.0 | 9.75 | 41.6 | 97.9 |
| 8 - 12 | 10 | 42.3 | 100.0 |

Two locations were identified for percolation testing: the northeast corner (TP-1 & TP-2) and eastside-central (TP-3). Percolation testing was performed to aid in the vetting of an infiltration basin location and to provide an assessment of potential infiltration rates. Table 8 presents a summary of percolation test results.

Table 8 - Summary of Infiltration Basin Percolation Testing

| Location | ¹ Depth to Test (Ft) | USCS | ² Depth to Observed Free Water (Ft) | Percolation Rate (min/in) |
|----------|---------------------------------|------|--|---------------------------|
| TP-1 | 3.5 | CL | NE | 480 |
| TP-1 | 5.5 | CL | NE | 480 |
| TP-2 | 3 | CL | 11.5 | 480 |
| TP-2 | 6 | CL | 11.5 | 480 |
| TP-3 | 3.5 | SC | 9.5 | 24 |
| TP-3 | 5 | SC | 9.5 | 2.1 |

¹ Depth to Test references the bottom of the percolation hole.

² TP-2 and TP-3 remained open overnight. TP-1 was backfilled below percolation testing depths after logging.

8.10 Erosion Control

Erosion potential is dependent on numerous factors involving grain size distribution, cohesion, moisture content, slope angle and the velocity of the water or wind on the ground surface. Erosion protection should be in accordance with the City of Reno Public Works Design Manual. Revegetation of disturbed areas subject to sheet flows or concentrated flows less than five feet per second is recommended. Areas that have concentrated flows with velocities greater than five feet per second should incorporate riprap or other mechanical stabilization.

Temporary (during construction) and permanent (after construction) erosion control will be required for all disturbed areas. In compliance with all applicable city, county, state and federal regulations the contractor shall prevent dust from being generated during construction, and the contractor shall submit an acceptable dust control plan prior to starting site preparation or earthwork. The project specifications should include an indemnification of the Owner and Engineer by the Contractor for any dust generation during the construction period. The owner will be responsible for mitigation of dust after acceptance of the project.

8.11 Site Drainage

Adequate surface drainage must be constructed and maintained away from the structures. The permanent finish slopes away from structures should be constructed to allow water to drain away quickly from and prevent any ponding of water adjacent to the structure per code requirements. Runoff

should be collected within permanent drainage paths that can convey water off the property or to designated collection facilities. A system of roof gutters and downspouts are recommended to collect roof drainage and direct it away from foundations.

Foundation and stem wall backfill should be densified to at least 90 percent relative compaction in accordance with the requirements given in the Grading and Filling Section. Compacting the backfill material decreases permeability and reduces the amount of irrigation and storm water available to enter under floor areas.

8.12 Corrosion Potential

Sulfate testing on the native soils resulted in sulfate levels in both the negligible and severe ranges (< 0.01 and 1.3% by weight, respectively). Because the site will be mass graded, sulfate concentrations will be mixed and blended resulting in a buffering of sulfate concentrations. However, because sulfates are soluble, over the life of the development they can go into solution during irrigation and precipitation and concentrate and redeposit in evaporative zones. Therefore, we recommend concrete for the project (flatwork, curbs, ditches and structures) be designed to offer resistance for a severe sulfate exposure potential. For severe exposure potential the Standard Specifications for Public Works Construction (SSPWC, 2016) recommends concrete that meets the requirements of Section 337.10.01.03 Freeze-Thaw Cycles, Salt and Sulfates:

- Type II cement with at least 25% fly ash,
- A specified minimum 28-day compressive strength of 4,000 psi,
- Air entrainment (6%)
- A maximum water to cementitious ratio of 0.45.

It should be noted, locally, this mix of Section 337.10.01.03 is also considered adequate for mitigating the effects of concrete exposed to external sources of chlorides (Exposure Class C2).

ACI also presents recommendations for concrete in contact with sulfate laden soils. However, ACI recommends the use of Type V cement for severe exposure levels. Type V cement is not always readily available in the project area. If the design team decides to rely on ACI when specifying sulfate resistant concrete, the option to use Type II cement with at least 25% fly ash should be considered.

Chloride levels varied from < 5mg/Kg to 100 mg/Kg (EPA 9056). The requirements of ACI 318-11, Table 4.2.1 regarding corrosion potential due to the presence of chlorides are more stringent than those requirements of SSPWC. We recommend following the requirements of ACI for more critical flatwork such as post-tensioned slabs.

Test report summaries presenting chloride and sulfate concentration levels may be reviewed in Appendix A (Plate A-4f).

8.13 Concrete and Concrete Slabs-On Grade

A 4-inch minimum compacted aggregate base course (Type 2, Class B, Standard Specifications for Public Works Construction) compacted to 95-percent relative compaction is recommended beneath interior or exterior concrete slabs-on-grade subject solely to foot traffic. The recommended base course section should be increased to 6-inches where vehicle traffic is anticipated. Dedicated and public easement improvements shall be constructed in accordance with Washoe County standards and the Standard Specifications for Public Works Construction.

Proper curing, finishing, control joints and reinforcing should be provided to minimize any damage resulting from shrinkage including cracks and slab curling. Western Nevada is a region with absorptive aggregates and exceptionally low relative humidity. As a consequence, concrete flatwork will shrink and curl in a manner which is not typical of many other US regions. Proper site preparation and placement of reinforcement are imperative to the performance of slab-on-grade improvements. Joint spacing, locally, is typically on 10-to-12-foot centers for large slabs and no more than five feet for sidewalks. Cracking that occurs within the slab-on-grade floors will often reflect through overlying improvements even if adequate substrate preparation has occurred. Special considerations, as specified in ACI 318, should be given to concrete placed and cured during windy, low humidity, hot or cold (including freezing) weather conditions.

Wood Rodgers does not practice in the field of moisture vapor transmission evaluation/mitigation. Therefore, if a vapor retarder system more rigorous than the requirements of the IRC is desired, we recommend that a qualified person/firm be engaged/consulted with to evaluate the general and specific moisture vapor transmission paths and any impact on the proposed construction. This person/firm should provide recommendations for mitigation of potential adverse impact of moisture vapor transmission on various components of the structure as deemed appropriate. If special conditions do not exist, Wood Rodgers typically recommends a moisture vapor retarder, consisting of Stego Wrap (15 mil), or equal, to be placed beneath the aggregate base course as part of the moisture vapor system.

Conventional concrete slab-on-grade recommendations presented herein are intended to reduce the potential for cracking of slabs as a result of differential movement and reducing slab curling. However, even with the incorporation of the recommendations presented herein, slabs-on-grade will still exhibit some cracking and curling. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics. Their occurrence may be reduced and/or controlled by limiting the amount of water within the mix (water cement ratio of 0.45 or less), the incorporation of crack control joints and proper concrete placing and curing practices including ACI 318 provisions for areas subject to freeze thaw conditions. The use of mid-range plasticizers should be considered to reduce the need to add water by the contractor.

8.14 Structural Pavement Sections

Table 9 presents the recommended minimum structural pavement sections for the development based on planned use. Our structural pavement sections were based on a minimum R-Value of 30. If necessary, structural pavement sections may be re-evaluated by the geotechnical engineer based on final grading and measured subgrade R-Values. In no instance will the specified section be less than the County minimum. Aggregate base used to support pedestrian and flexible or concrete pavements should be compacted to a minimum of 95% relative compaction.

Table 9 - Structural Pavement Sections

| Condition | Pavement Thickness (In.) | Pavement Type ¹ | Type II Class B Base Course Thickness (In.) ² |
|-----------------------|--------------------------|---------------------------------|--|
| Dedicated Local Roads | 4 | 2" Type 3 + Lime / 2" Type 2 | 6 |

¹ Per the Standard Specifications for Public Works Construction

Roadway construction shall be in accordance with the approved plans, the Standard Specifications for Public Works Construction. Roadway subgrade shall be prepared in accordance with the requirements of this report. The Contractor should submit a pavement mix design to the Owner or Engineer, for approval, at least five working days prior to paving. When pavement is placed directly adjacent to concrete flatwork, the finish compacted grade of the pavement should be at least ½ of an inch higher than the edge of adjacent concrete surface to allow adequate compaction of the pavement without damaging the concrete.

8.15 Asphalt Concrete Design Life

Maintenance is mandatory to ensure long-term pavement performance and to meet or exceed the assumed 20-year design life. Maintenance refers to any activity performed on the pavement that is intended to preserve its original service life or load-carrying capacity. Examples of maintenance activities include patching, crack or joint sealing, and seal coats. If these maintenance activities are ignored or deferred, premature failure of the pavement will occur.

Premature failure of asphaltic concrete frequently occurs adjacent to poorly graded ponding areas and/or landscape areas. Failures may occur due to excessive precipitation, irrigation and landscaping water infiltrating into the subgrade soils causing subgrade failure. As such, in areas where saturation of the subgrade soils beneath asphaltic pavement may occur, we strongly recommend the owner/project manager include provisions by design for a subdrain system to eliminate the potential for saturation of subgrade soils. The subdrain system should discharge into a permanent drainage area that will not impede drainage flow to cause the system to back-up and/or clog. Appropriate maintenance procedures should be implemented to ensure the subdrain system does not plug and allow for proper drainage of surface and subsurface water beneath paved areas. Subdrain location and configuration should be evaluated once final grading and landscaping plans have been prepared. If the ultimate traffic exceeds the anticipated levels, it may be necessary to reevaluate and overlay the pavement at some time in the future.

It is recommended that the use of PG 64-28 NV (polymerized asphalt oil) be considered by the owner as we have found that it substantially reduces cracking due to thermal stresses prevalent in the freeze thaw environment. The savings in long term maintenance of the pavement including crack sealing is in our opinion worth the extra expense. However, this asphalt oil recommendation should be considered optional in that it is relative to frequency of maintenance only and does not affect structural calculations.

The cost associated with proper maintenance is generally much less than the cost for reconstruction due to the premature failure of the pavement. Therefore, since pavement quality is an integral consideration in the formulation of our design recommendations, we strongly recommend the owner/project manager implement a pavement management program.

9.0 CONSTRUCTION OBSERVATION AND TESTING SERVICES

The recommendations presented in this report are based on the assumption that the contractors perform their work as required by the project documents and that owner/project manager provides sufficient field-testing and construction review during each phase of construction. Prior to construction, the owner/project manager should schedule a pre-construction conference including, but not limited to representatives of the owner, architect, civil engineer, the general contractor, earthwork and materials subcontractors, building official, and geotechnical engineer. It is the owner's/project manager responsibility to set-up this meeting and contact all responsible parties. The conference will allow parties to review the project plans, specifications, scheduling and recommendations presented in this report, and discuss applicable material quality and mix design requirements. Quality control reports should be submitted to the owner/project manager for review and distributed to the appropriate parties. It is essential that any changes or revisions to project plans be provided to Wood Rodgers in a timely fashion to ensure contractor compliance and avoid construction delays or the need to remove completed work.

During construction, Wood Rodgers Incorporated should have the opportunity to provide sufficient on-site observation of site preparation and grading, over-excavation, fill placement, foundation installation, and paving. These observations would allow us to document the geotechnical conditions are in fact just as anticipated and that the contractor's work meets with the criteria in the approved plans and specifications. Verification of horizontal and vertical control must be provided by whoever was responsible for establishing those boundaries and constructing associated improvements.

10.0 EXPECTATION OF PERFORMANCE

The planned structures will incorporate a standard slab on grade foundation with perimeter footings extending to a minimum depth of 24 inches below finished exterior grade or a post-tensioned structural slab-on-grade foundation. The site will be mass graded, cut to fill, with on-site soils. Therefore, the potential exists that soils within various building pads may fall outside the specified limits of Import Structural Fill (Table 2). This deviation should not be considered a failure to adhere to construction documents but should be considered a limitation to mass-grading when a natural, virgin material is used

for a fill source. These inherent variations should not be considered to comprise a non-conformity with the project specifications unless the Weighted Plasticity (% -#200 x PI) exceeds 6.5 for 80-percent of the fill profile.

Western Nevada is a region with absorptive aggregates and exceptionally low relative humidity. As a consequence, concrete flatwork will shrink and curl in a manner which is not typical of other US regions. Proper sub-grade preparation and placement of reinforcement are imperative. Typical joint spacing, regionally, is on 10-to-12-foot centers. Cracking that occurs within the slab on grade will often reflect through overlying improvements even if adequate substrate preparation has occurred.

Single family residential construction results in a complex composite of steel, concrete, lumber, and earth. Each element responds differently to loading and as a consequence cracking and distortion occur. Occurrence of cracking or distortion is not in and of itself evidence of the structure failing to meet a reasonable standard or level of performance. Repair of unsightly, non-structural, cracks should be considered part of the homeowner maintenance program. Cracks that continue to reappear or widen or propagate may be indicative of extenuating issues that require redress. Our design protocols and recommended construction testing procedures rely upon ASTM Standards and Guidelines; therefore, any subsequent studies to evaluate completed product or construction practices shall be in accordance with ASTM E 141 AND shall employ the same testing means and methods available at the time of construction. Where access or testing limits do not allow continuity in testing methods, a correlation program must be performed that establishes that the testing and evaluation methods employed by the reviewing agency present results consistent with and comparable to the test methods prescribed by this report and employed during construction. Failure to follow these prescribed protocols would result in test data being compromised when compared to ASTM standards and requirements. In addition, failure to follow the referenced statistical and sampling ASTM assessment protocols would result in a forensic assessment program rife with inconsistencies and variations which would result in the forensic investigation failing to meet the level of precision necessary to accurately evaluate the site conditions.

11.0 STANDARD LIMITATION CLAUSE

This report has been prepared in accordance with generally accepted local geotechnical practices. The analyses and recommendations submitted are based upon field exploration performed at the specific locations identified and the conditions encountered, as discussed in our report. No guarantee or warranty as to the continuity of soil conditions between exploration points is implied or intended. Therefore, this report does not reflect soil variations that may become evident during the construction period, at which time re-evaluation of the recommendations may be necessary. Final plans and specifications should be reviewed by the design engineer responsible for this geotechnical report to determine if they have been prepared in accordance with the recommendations contained in this report prior to submitting to the building department for review. It is the owner's/project manager responsibility to provide the plans and specifications to the engineer. We recommend our firm be retained to perform construction observation in all phases of the project related to geotechnical factors to document compliance with our

recommendations. The owner/project manager is responsible for distribution of this geotechnical report to all designers and contractors whose work is related to geotechnical factors.

It is the contractor's responsibility for the grading and construction of the designed improvements. This responsibility includes the means, methods, techniques, sequence, and procedures of construction and safety of construction at the site. All construction shall conform to the requirements of the most recently adopted version of the Standard Specifications for Public Works Construction and the requirements of Washoe County, Nevada. Failure to inspect the work shall not relieve the contractor from his obligation to perform sound and reliable work as described herein and as described in the Standard Specifications for Public Works Construction.

This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

In the event of changes in the design, location, or ownership of the project after presentation of this report, our recommendations should be reviewed and possibly modified by the Geotechnical Engineer. If the Geotechnical Engineer is not accorded the privilege of making this recommended review, we can assume no responsibility for misinterpretation or misapplication of our recommendations or their validity in the event changes have been made in the original design concept without our prior review. The engineer makes no other warranties, either expressed or implied, as to the professional advice provided under the terms of this agreement and included in this report.

This report was prepared by Wood Rodgers, Inc. for the benefit of D.R. Horton and their duly assigned agents or other responsible parties. The material in it reflects Wood Rodgers' best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Wood Rodgers accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made by third parties or actions based on this report without consultation with Wood Rodgers and written approval for such actions.

12.0 REFERENCES

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APPENDIX A
GEOTECHNICAL PLATES

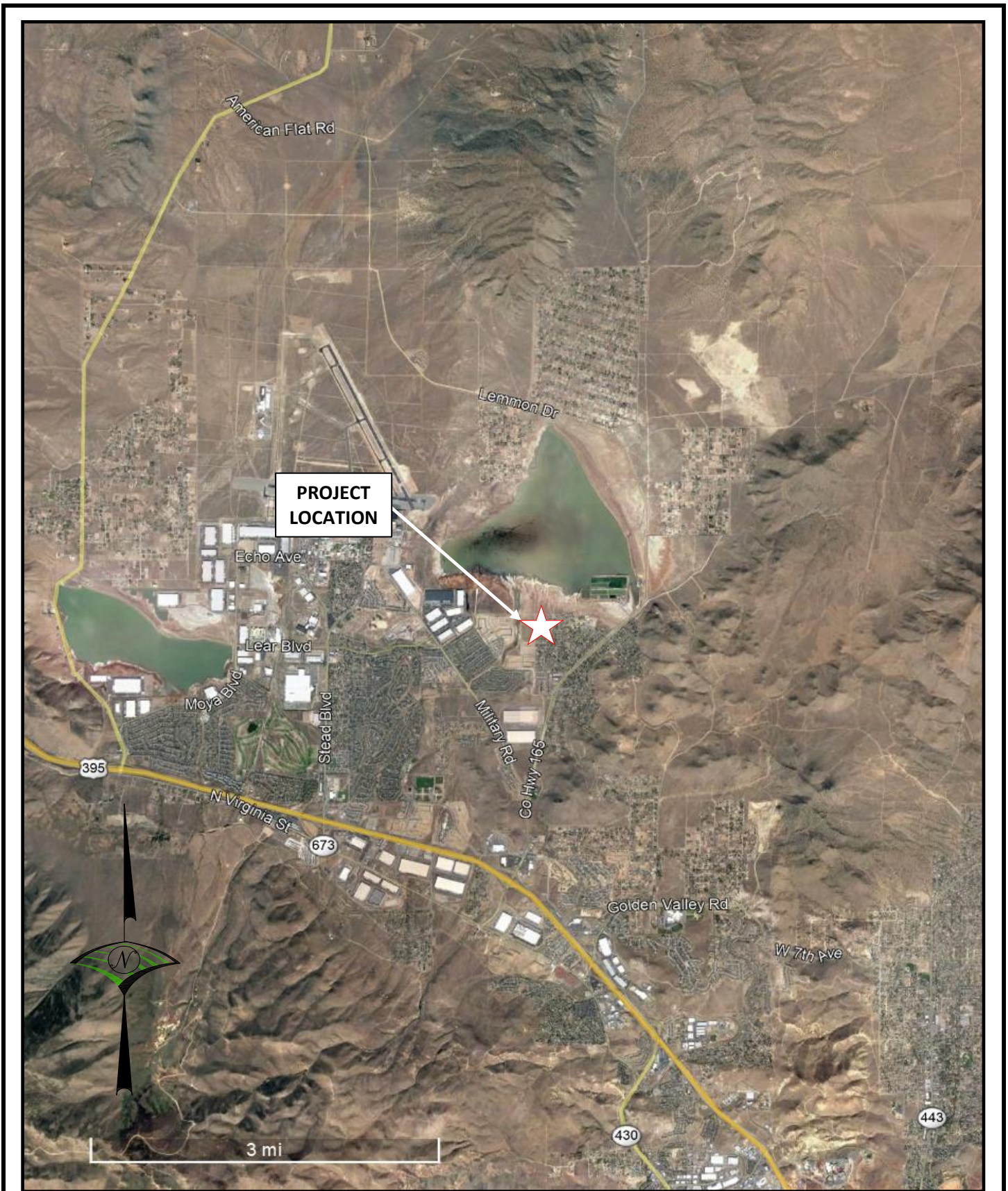



Image Reference: Google Earth, Imagery Date: 10/23/2020, Accessed 8/13/2021

| | | |
|---|----------------------------|--|
|  <p>WOOD RODGERS 1361 Corporate Boulevard, Reno, NV 89502 Phone 775.823.4068 Fax 775.823.4066</p> | <p>VICINITY MAP</p> | <p>Geotechnical Investigation</p> |
| | | <p style="text-align: center;">LEARNER LEMMON D.R. HORTON WASHOE COUNTY, NV</p> <p>Project No.: 4092001 Date: 08/12/21</p> <div style="border: 1px solid black; padding: 5px; text-align: center; width: fit-content; margin: auto;"> <p>PLATE A-1a</p> </div> |

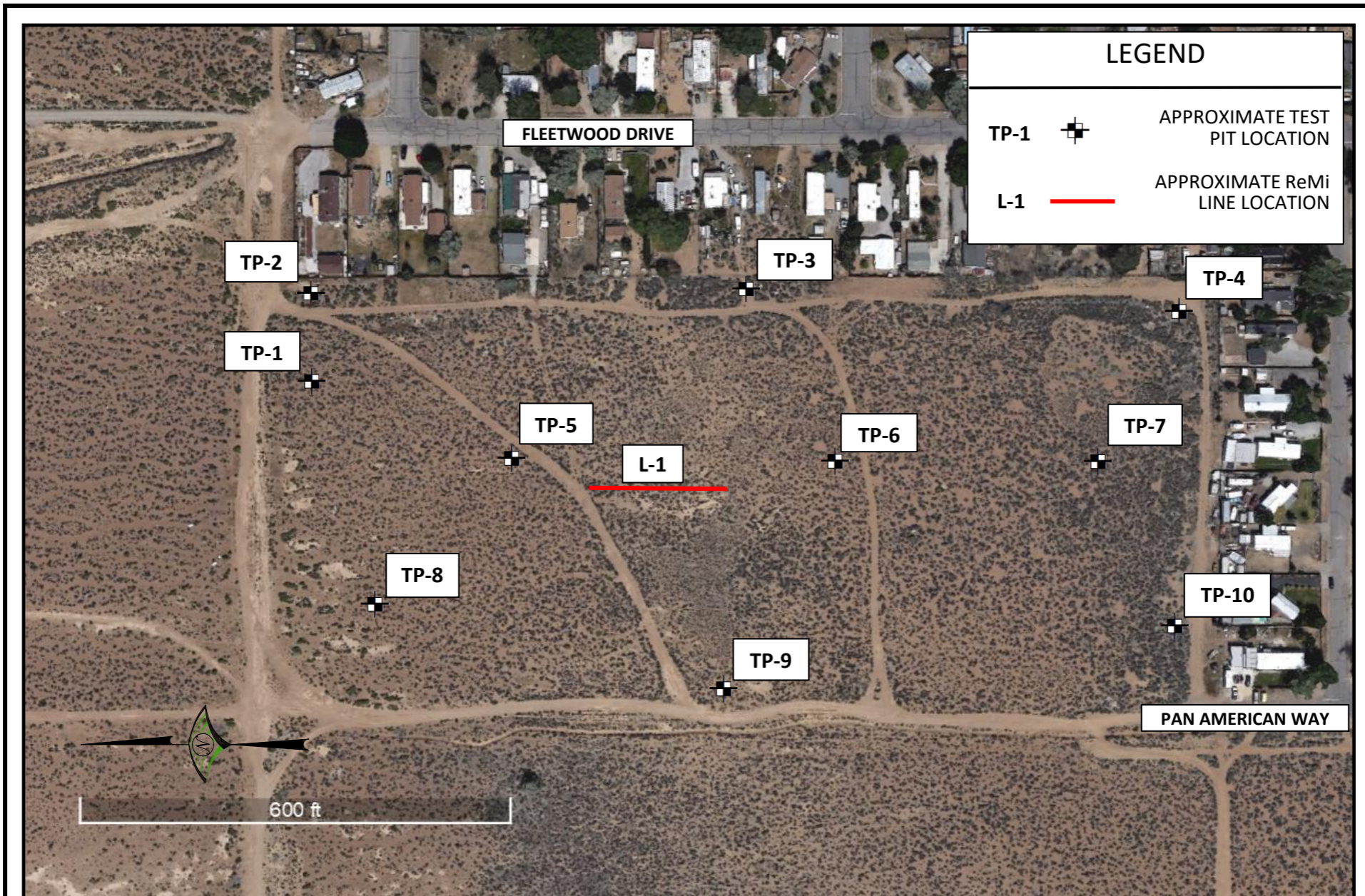


Image Reference: Google Earth, Imagery Date: 10/23/2020, Accessed 8/12/2021

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|---|---|--|
|  WOOD RODGERS 1361 Corporate Boulevard, Reno, NV 89502 Phone 775.823.4068 Fax 775.823.4066 | SITE MAP AND APPROXIMATE EXPLORATION LOCATIONS | <i>Geotechnical Investigation</i> |
| | | LEARNER LEMMON D.R. HORTON WASHOE COUNTY, NV Project No.: 4092001 Date: 08/12/21 <div style="border: 1px solid black; padding: 2px; display: inline-block;">Plate A-1b</div> |



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-1

GEO TECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/23/21 14:25 - \\WOODRODGERS.LOC\PRODUCT\DATA\JOBS-RENO\JOBS\4092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4928 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | TOPSOIL, (SM) | GB 1A | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | GB 1B | | | | | 7.7 | 22 | 18 | 4 | 47.5 |
| | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 1C | | | | | 9.6 | 31 | 15 | 16 | 64.9 |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, moist, dark brown, medium plasticity, white specs/veins | GB 1D | | | | | | | | | |
| | | SANDY LEAN CLAY, (CL) very stiff, moist to very moist, brown, medium plasticity, white specs/veins | GB 1E | | | | | | | | | |
| 10 | | LEAN CLAY, (CL) very stiff, very moist, gray brown, medium plasticity | | | | | | | | | | |

Bottom of Test Pit at 12.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 10:22 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:33
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021
 Hole # : PH-A Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:12 | 8:42 | 6" | 6 3/16" | 30 | 3/16" |
| 2 | 8:43 | 9:13 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 9:14 | 9:44 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch Tested by: J. Beadell
Checked by: J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 5.5'
 2. Time of 1st saturation to 12" 10:22 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:32
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-B Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed | Water |
|---------|-------|--------|-------------|---------|----------|-----------|
| | Start | Finish | Start | Finish | Time min | Fall (in) |
| 1 | 8:22 | 8:52 | 6" | 6" | 30 | 0" |
| 2 | 8:53 | 9:23 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 9:24 | 9:54 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch

Tested by: J. Beadell
 Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 6'
 2. Time of 1st saturation to 12" 11:22 Date : 8/4/2021
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 11:32
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-D Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed | Water |
|---------|-------|--------|-------------|---------|----------|-----------|
| | Start | Finish | Start | Finish | Time min | Fall (in) |
| 1 | 10:12 | 10:42 | 6" | 6" | 30 | 0" |
| 2 | 10:43 | 11:13 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 11:14 | 11:44 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch

Tested by: J. Beadell
Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 5'
 2. Time of 1st saturation to 12" 12:02 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 12:12
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-F Diameter : 8" Depth : 12" Soil Type : SC

| Reading | Time | | Water Level | | Elapsed | Water |
|---------|-------|--------|-------------|----------|----------|-----------|
| | Start | Finish | Start | Finish | Time min | Fall (in) |
| 1 | 9:28 | 9:33 | 6" | 9 10/16" | 5 | 3 10/16" |
| 2 | 9:35 | 9:40 | 6" | 9 6/16" | 5 | 3 6/16" |
| 3 | 9:43 | 9:47 | 6" | 9 1/16" | 5 | 3 1/16" |
| 4 | 9:48 | 9:53 | 6" | 8 9/16" | 5 | 2 9/16" |
| 5 | 9:55 | 10:00 | 6" | 8 8/16" | 5 | 2 8/16" |
| 6 | 10:01 | 10:06 | 6" | 8 7/16" | 5 | 2 7/16" |
| 7 | 10:06 | 10:11 | 6" | 8 6/16" | 5 | 2 6/16" |

Stabilized Rate : 2.1 Min/inch

Tested by: S. Barton
 Checked by : J. McDougal



Wood Rodgers, Inc.
 1361 Corporate Blvd
 Reno, NV 89502
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-4

PAGE 1 OF 1

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CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4934 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) | GB 4A | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, slightly plastic | GB 4B | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) medium dense, slightly moist, brown, low plasticity | GB 4C | | | | | | | | | |
| | | CLAYEY SAND, (SC) slightly moist to moist, low plasticity | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | GB 4D | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.0 | | SANDY LEAN CLAY, (CL) very stiff, very moist, gray brown, medium plasticity | GB 4E | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



Wood Rodgers, Inc.
 1361 Corporate Blvd
 Reno, NV 89502
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-5

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4930 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic, slightly cemented | GB 5A | | | | | | | | | |
| | | CLAYEY SAND, (SC) very dense, slightly moist, brown and white, low to medium plasticity | | | | | | | | | | |
| 2.5 | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 5B | | | | | | | | | |
| | | LEAN CLAY WITH SAND, (CL) very stiff, very moist, gray brown, medium plasticity | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 5C | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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 Reno, NV 89502
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 Fax: 775-823-4066

TEST PIT NUMBER TP-6

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4932 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | GB 6A | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) very dense, moist, brown, low plasticity | GB 6B | | | | | | | | | |
| 5.0 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray brown white, medium plasticity | GB 6C | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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TEST PIT NUMBER TP-7

PAGE 1 OF 1

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4936 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, brown, nonplastic | GB 7A | | | | | 2.4 | | | | |
| 2.5 | | CLAYEY SAND, (SC) very dense, slightly moist to moist, brown, low plasticity, white specs | SH 7B | | | | | 6.5 | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | GB 7C | | | | | 9.1 | 25 | 17 | 8 | 48.5 |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-8

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4928 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 8B | | | | | | | | | |
| | | CLAYEY SAND, (SC) medium dense, slightly moist, brown, medium plasticity | GB 8A GB 8C | | | | | | | | | |
| 2.5 | | LEAN CLAY WITH SAND, (CL) very stiff, very moist, gray white, medium plasticity | GB 8D | | | | 91.5 | | | | | |
| 5.0 | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 8E | | | | | | | | | |
| 7.5 | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 8F | | | | | | | | | |
| 10.0 | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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 1361 Corporate Blvd
 Reno, NV 89502
 Telephone: 775-823-4068
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TEST PIT NUMBER TP-9

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4931 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | CLAYEY SAND, (SC) medium dense, slightly moist, light brown, low plasticity | GB 9B | | | | | | | | | |
| | | SILTY SAND, (SM) very dense, light brown, slightly plastic | GB 9A GB 9C | | | | | 10.3 | 22 | 21 | 1 | 26.0 |
| 2.5 | | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | LEAN CLAY WITH SAND, (CL) very stiff, moist to very moist, gray white, medium plasticity | GB 9D | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-10

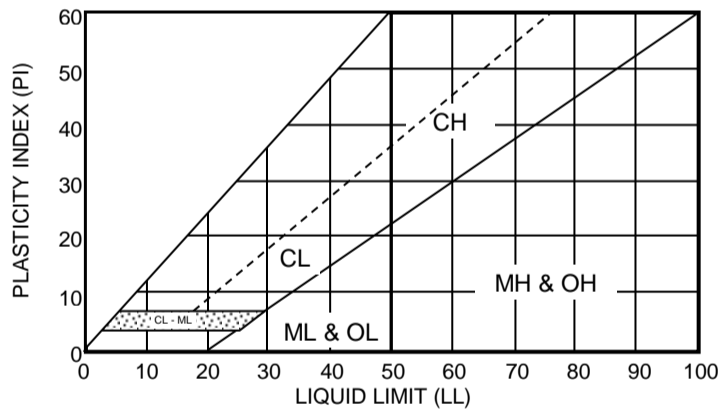
GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4936 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown | GB 10A | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) medium dense to very dense, slightly moist, brown white, low plasticity | | | | | | | | | | |
| 7.5 | | Moist | GB 10B | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.

| MAJOR DIVISION | | | | | TYPICAL NAMES | |
|---|---|--|-------------------------------------|-------------------------------------|---|---|
| COARSED-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE | GRAVEL MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE | CLEAN SANDS WITH LITTLE OR NO FINES | | GW | WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES | |
| | | GRAVELS WITH OVER 12% FINES | | GP | POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES | |
| | | SAND MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE | CLEAN SANDS WITH LITTLE OR NO FINES | | SW | WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES |
| | | | SANDS WITH OVER 12% FINES | | SP | POORLY GRADED SAND WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES |
| | FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE | SILT AND CLAY LIQUID LIMIT 50% OR LESS | | ML | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS | |
| | | | | CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS | |
| | | | | OL | ORGANIC SILTS OR CLAYS OF LOW PLASTICITY | |
| | | SILT AND CLAY LIQUID LIMIT GREATER THAN 50% | | MH | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOLID, ELASTIC SILTS | |
| CH | INORGANIC CLAYS OR HIGH PLASTICITY, FAT CLAYS | | | | | |
| OH | ORGANIC SILTS OR CLAYS MEDIUM TO HIGH PLASTICITY | | | | | |
| HIGHLY ORGANIC SOILS | | | Pt | PEAT AND OTHER HIGHLY ORGANIC SOILS | | |



| CONSISTENCY | | RELATIVE DENSITY | |
|---------------|----------------------|------------------|----------------------|
| SILTS & CLAYS | SPT BLOW* COUNTS (N) | SANDS & GRAVELS | SPT BLOW* COUNTS (N) |
| VERY SOFT | 0 - 2 | VERY LOOSE | 0 - 4 |
| SOFT | 3 - 4 | LOOSE | 5 - 10 |
| MEDIUM STIFF | 5 - 8 | MEDIUM DENSE | 11 - 30 |
| STIFF | 9 - 15 | DENSE | 31 - 50 |
| VERY STIFF | 16 - 30 | VERY DENSE | 50 + |
| HARD | 30 + | | |

* The Standard Penetration Resistance (N) In blows per foot is obtained by the ASTM D1585 procedure using 2" O.D., 1 3/8" I.D. samplers.

| DESCRIPTION OF ESTIMATED PERCENTAGES OF GRAVEL, SAND, AND FINES | |
|---|-------------------------------------|
| TRACE | Particles are present but est. < 5% |
| FEW | 5% - 10% |
| LITTLE | 15% - 20% |
| SOME | 30% - 45% |
| MOSTLY | 50% - 100% |

NOTE: Percentages are presented within soil description for soil horizon with laboratory tested soil samples.

| DEFINITIONS OF SOIL FRACTIONS | |
|-------------------------------|------------------------|
| SOIL COMPONENT | PARTICLE SIZE RANGE |
| COBBLES | ABOVE 3 INCHES |
| GRAVEL | 3 IN. TO NO. 4 SIEVE |
| COARSE GRAVEL | 3 IN. TO 3/4 IN. |
| FINE GRAVEL | 3/4 IN. TO NO. 4 SIEVE |
| SAND | NO. 4 TO NO. 200 |
| COARSE SAND | NO. 4 TO NO. 10 |
| MEDIUM SAND | NO. 10 TO NO. 40 |
| FINE SAND | NO. 40 TO NO. 200 |
| FINES (SILT OR CLAY) | MINUS NO. 200 SIEVE |


WOOD RODGERS
 1361 Corporate Boulevard, Reno, NV 89502
 Phone 775.823.4068 Fax 775.823.4066

UNIFIED SOIL CLASSIFICATION AND KEY TO SOIL DESCRIPTIONS

Geotechnical Investigation
LEARNER LEMMON
D.R. HORTON
WASHOE COUNTY, NV
 Project No.: 4092001
 Date: 08/12/21

PLATE A-3



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

GRAIN SIZE DISTRIBUTION

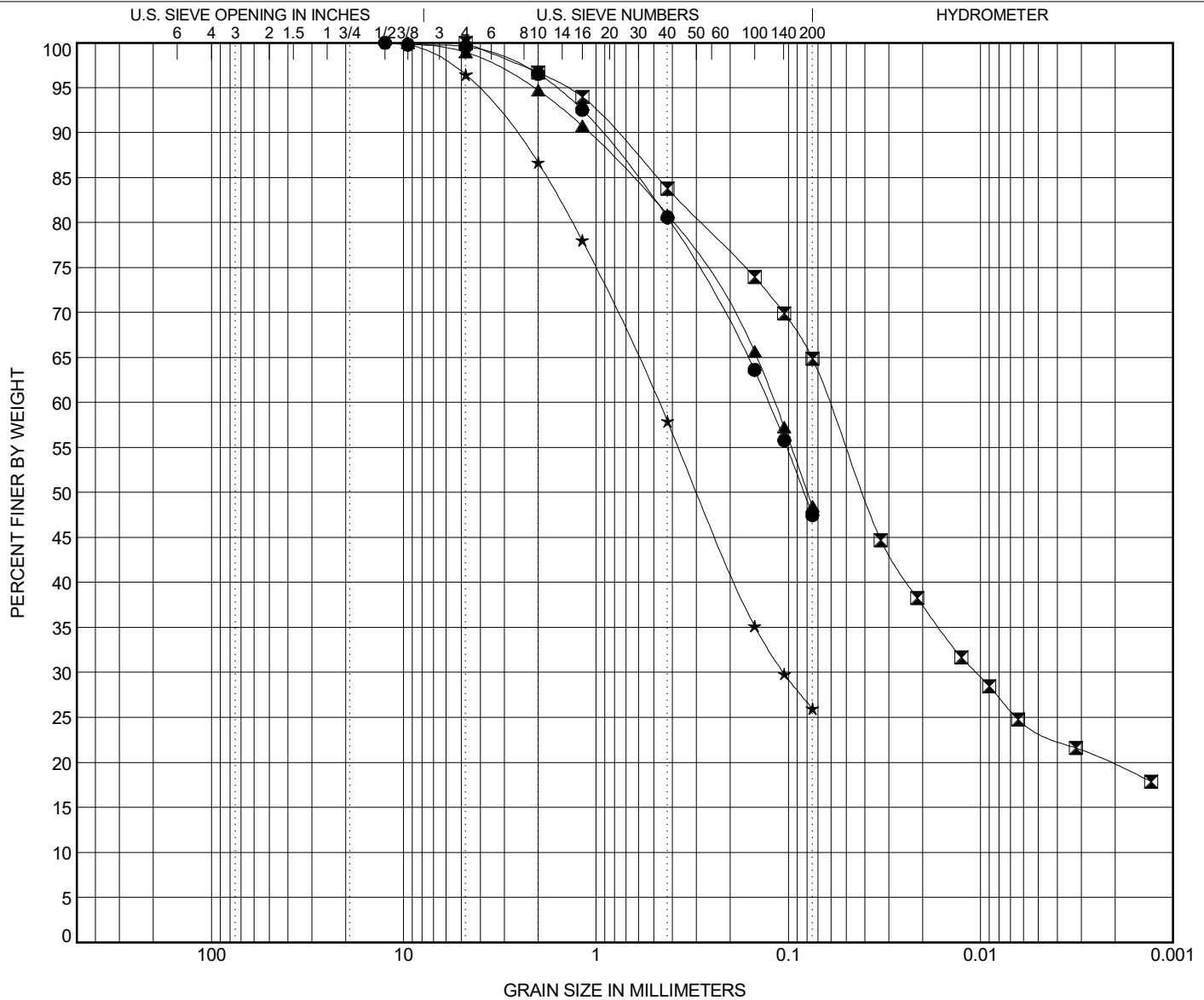
CLIENT D.R. Horton

PROJECT NAME Learner Lemmon

PROJECT NUMBER 4092001

PROJECT LOCATION Washoe County, Nevada

GRAIN SIZE - GINT STD US LAB.GDT - 9/23/21 14:50 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\LEARNING_LEMMON.GPJ



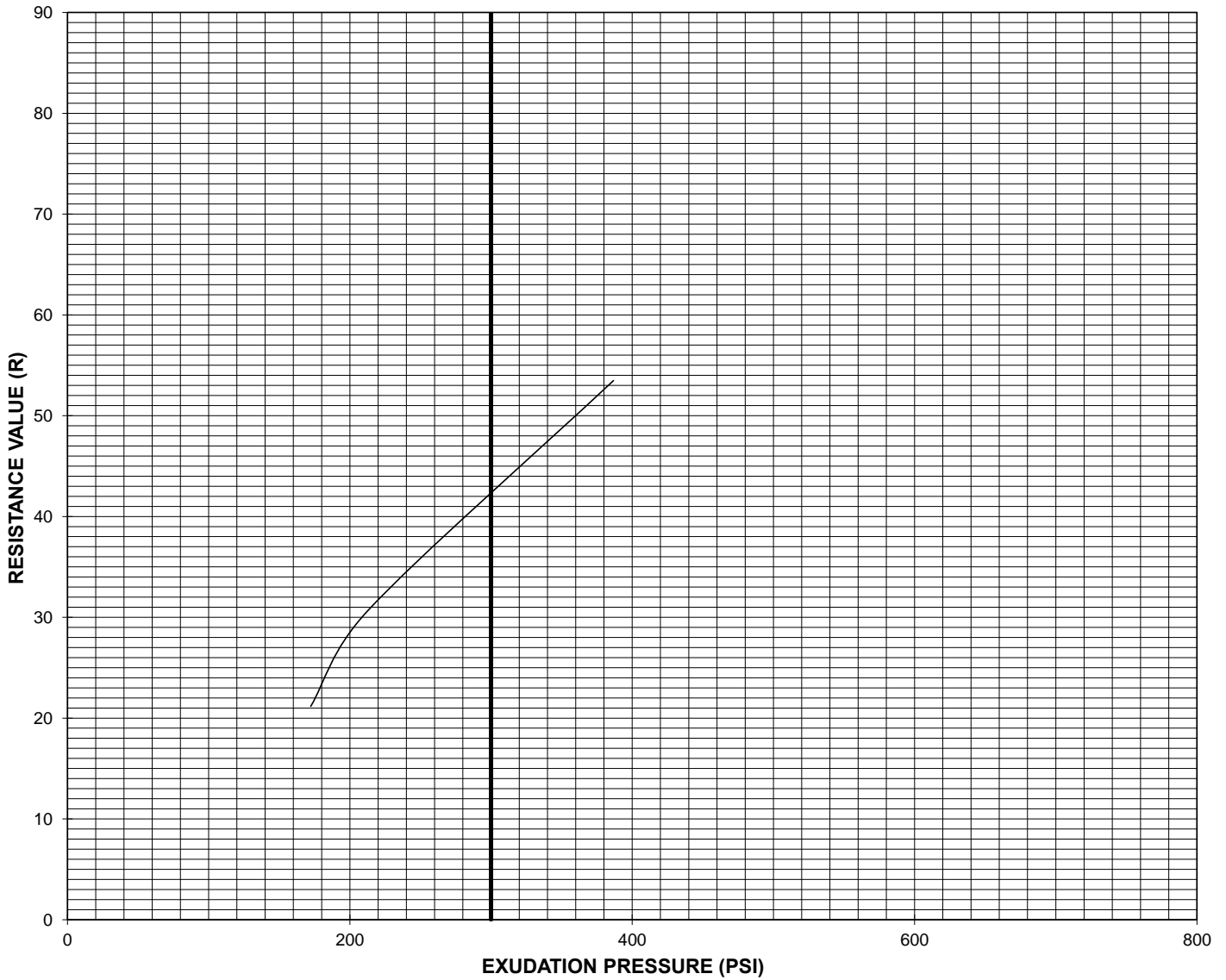
| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY |
|---------|--------|------|--------|--------|------|--------------|
| | coarse | fine | coarse | medium | fine | |

| TEST PIT | MID-DEPTH | Classification | LL | PL | PI | Cc | Cu |
|----------|-----------|----------------------------------|----|----|----|----|----|
| ● TP-1 | 1.5 | SILTY, CLAYEY SAND(SC-SM) | 22 | 18 | 4 | | |
| ▣ TP-1 | 3.0 | SANDY LEAN CLAY(CL) | 31 | 15 | 16 | | |
| ▲ TP-7 | 6.0 | CLAYEY SAND(SC) | 25 | 17 | 8 | | |
| ★ TP-9 | 1.5 | SILTY SAND(SM) | 22 | 21 | 1 | | |

| TEST PIT | MID-DEPTH | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|----------|-----------|------|-------|-------|-----|---------|-------|-------|-------|
| ● TP-1 | 1.5 | 12.5 | 0.127 | | | 0.4 | 52.1 | 47.5 | |
| ▣ TP-1 | 3.0 | 4.75 | 0.061 | 0.011 | | | 35.1 | 41.3 | 23.6 |
| ▲ TP-7 | 6.0 | 9.5 | 0.118 | | | 1.1 | 50.5 | 48.5 | |
| ★ TP-9 | 1.5 | 12.5 | 0.472 | 0.106 | | 3.5 | 70.5 | 26.0 | |

**WMPA23-0006 AND
 WRZA23-0006
 EXHIBIT F**

R-Value and Expansion Pressure of Compacted Soils AASHTO T190 / ASTM D2844



| Lab Log # | Sample Source | Material | Expansion Pressure (psf) @ 300 (psi) | R-Value @ 300 (psi) |
|-----------|------------------|----------------------------|--------------------------------------|---------------------|
| 6027 | TP - 4 @ 0' - 3' | Silty, Clayey Sand (SC-SM) | 0 | 42 |

| POINT # | WATER CONTENT (%) | DRY DENSITY (PCF) | EXUDATION PRESS. (PSI) | EXPANSION PRESS. (PSF) | RESISTANCE VALUE (R) |
|---------|-------------------|-------------------|------------------------|------------------------|----------------------|
| 1 | 15.7 | 115.8 | 172 | 0 | 21 |
| 2 | 14.8 | 116.1 | 213 | 0 | 31 |
| 3 | 14.2 | 116.4 | 387 | 0 | 53 |
| 4 | | | | | |
| 5 | | | | | |



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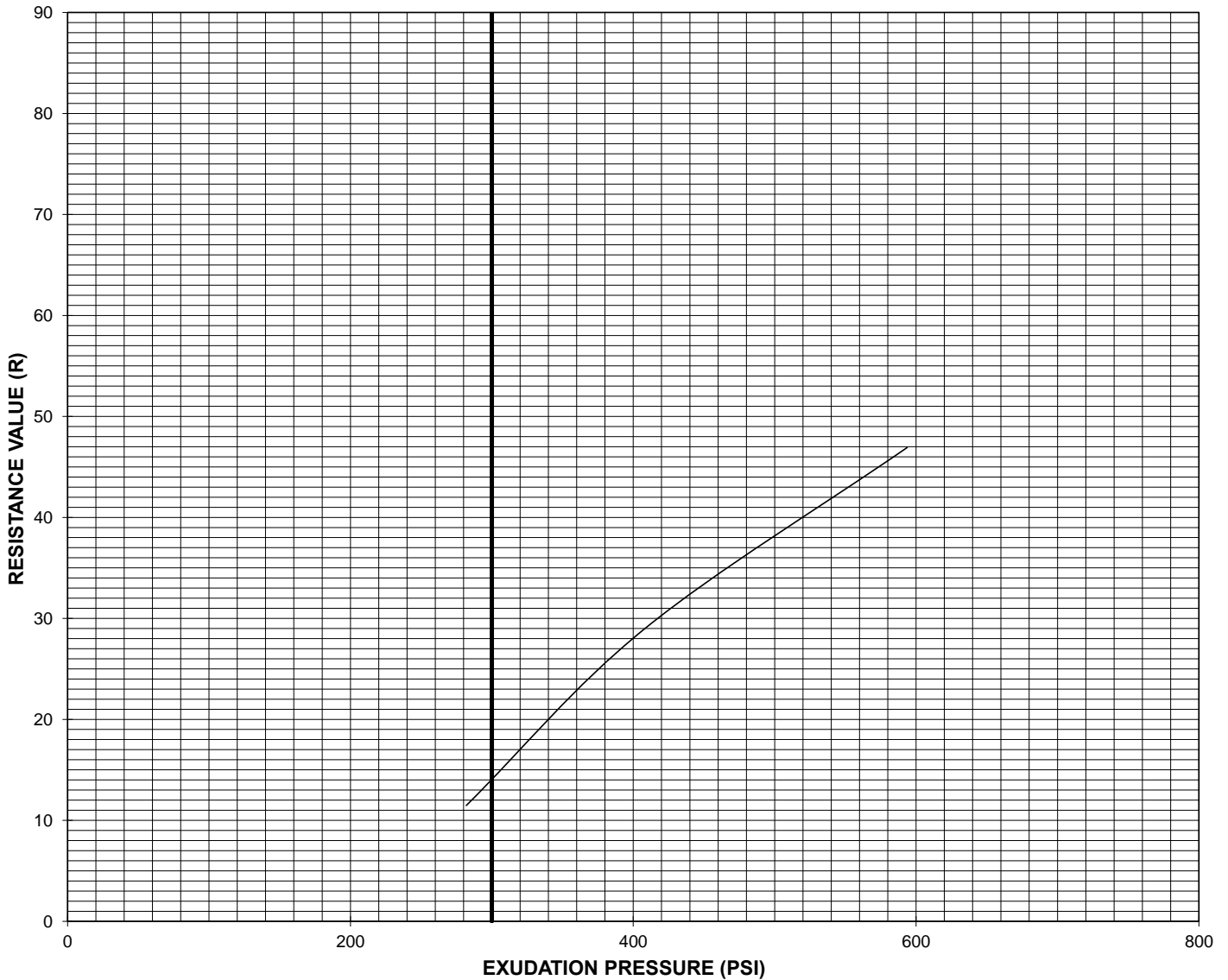
Learner Lemmon



| TESTED BY | JOB NUMBER | APPROVED | DATE | REVISED | DATE |
|-----------|------------|----------|-----------|---------|------|
| BL | 4092001 | | 8/18/2021 | | |

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT F**

R-Value and Expansion Pressure of Compacted Soils AASHTO T190 / ASTM D2844



| Lab Log # | Sample Source | Material | Expansion Pressure (psf) @ 300 (psi) | R-Value @ 300 (psi) |
|-----------|----------------------|------------------|--------------------------------------|---------------------|
| 6027 | TP - 8 @ 0.5' - 3.5' | Clayey Sand (SC) | 0 | 14 |

| POINT # | WATER CONTENT (%) | DRY DENSITY (PCF) | EXUDATION PRESS. (PSI) | EXPANSION PRESS. (PSF) | RESISTANCE VALUE (R) |
|---------|-------------------|-------------------|------------------------|------------------------|----------------------|
| 1 | 13.5 | 119.1 | 594 | 0 | 47 |
| 2 | 14.7 | 117.7 | 408 | 0 | 29 |
| 3 | 15.4 | 116.0 | 282 | 0 | 11 |
| 4 | | | | | |
| 5 | | | | | |



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Learner Lemmon



| TESTED BY | JOB NUMBER | APPROVED | DATE | REVISED | DATE |
|-----------|------------|----------|-----------|---------|------|
| BL | 4092001 | | 8/18/2021 | | |



Daniel B. Stephens & Associates, Inc.

Summary of Water Potential

| Sample Number | Moisture Content (%, g/g) | Water Potential (-cm water) | Water Potential (pF) |
|----------------------|------------------------------|--------------------------------|-------------------------|
| TP-1 @ 3'-5' (4.9%) | 4.85 | 261,069 | 5.42 |
| TP-1 @ 3'-5' (12.8%) | 12.79 | 23,149 | 4.36 |
| TP-1 @ 3'-5' (20.9%) | 20.86 | 12,849 | 4.11 |

WMPA23-0006 AND
WRZA23-0006
EXHIBIT F



WOOD RODGERS

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Phone 775.823.4068 Fax 775.823.4066

WATER
POTENTIAL
TESTING
RESULTS

Geotechnical Investigation

LEARNER LEMMON

D.R. HORTON

WASHOE COUNTY, NV

Project No.: 4092001

Date: 08/12/21

PLATE
A-4e

Client: Wood Rodgers
Project Name: Learner Lemmon Prj# 4092001 / TP-7 @ 2-4'
PO #: LAB 3961

Sampled By: Client

Laboratory Accreditation Number: NV015/CA2990

| | | | |
|----------------------|-------------------------|--------------------------|----------------------|
| Laboratory ID | Client Sample ID | Date/Time Sampled | Date Received |
| 21080478-01 | TP-7 @ 2-4' | 08/09/2021 12:00 | 8/10/2021 |

| Parameter | Method | Result | Units | PQL | Analyst | Date/Time Analyzed | Data Flag |
|---|--------------------------|----------|----------|------|---------|--------------------|-----------|
| Chloride | EPA 9056 | < 5 | mg/Kg | 5 | CW | 08/16/2021 23:54 | |
| Oxidation-Reduction Potential | SM 2580B | 472 | mV | | AC | 08/20/2021 12:33 | |
| pH | SW-846 9045D | 7.72 | pH Units | | AC | 08/18/2021 14:29 | |
| pH Temperature | SW-846 9045D | 21.0 | °C | | AC | 08/18/2021 14:29 | |
| Resistivity | AASHTO T288 | 2300 | Ohms-cm | | SR | 08/17/2021 11:12 | |
| Sodium | ASTM D2791 | < 0.01 | % | 0.01 | AC | 08/20/2021 8:37 | |
| Sodium Sulfate as Na ₂ SO ₄ | Calculation | < 0.01 | % | 0.01 | AC | 08/20/2021 10:21 | |
| Sulfate | SM4500 SO ₄ E | < 0.01 | % | 0.01 | AC | 08/23/2021 9:07 | |
| Sulfide | AWWA C105 | Negative | POS/NEG | | AC | 08/17/2021 16:00 | |

Laboratory Accreditation Number: NV015/CA2990

| | | | |
|----------------------|-------------------------|--------------------------|----------------------|
| Laboratory ID | Client Sample ID | Date/Time Sampled | Date Received |
| 21080478-02 | TP-5 @ 1-2.5' | 08/09/2021 12:00 | 8/10/2021 |

| Parameter | Method | Result | Units | PQL | Analyst | Date/Time Analyzed | Data Flag |
|---|--------------------------|----------|----------|------|---------|--------------------|-----------|
| Chloride | EPA 9056 | 100 | mg/Kg | 50 | CW | 08/17/2021 0:22 | |
| Oxidation-Reduction Potential | SM 2580B | 488 | mV | | AC | 08/20/2021 12:33 | |
| pH | SW-846 9045D | 7.37 | pH Units | | AC | 08/18/2021 14:29 | |
| pH Temperature | SW-846 9045D | 21.0 | °C | | AC | 08/18/2021 14:29 | |
| Resistivity | AASHTO T288 | 280 | Ohms-cm | | SR | 08/17/2021 11:12 | |
| Sodium | ASTM D2791 | < 0.01 | % | 0.01 | AC | 08/20/2021 8:37 | |
| Sodium Sulfate as Na ₂ SO ₄ | Calculation | < 0.01 | % | 0.01 | AC | 08/20/2021 10:21 | |
| Sulfate | SM4500 SO ₄ E | 1.3 | % | 0.01 | AC | 08/23/2021 9:07 | |
| Sulfide | AWWA C105 | Negative | POS/NEG | | AC | 08/17/2021 16:00 | |

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT F**

Geotechnical Investigation

LEARNER LEMMON

D.R. HORTON

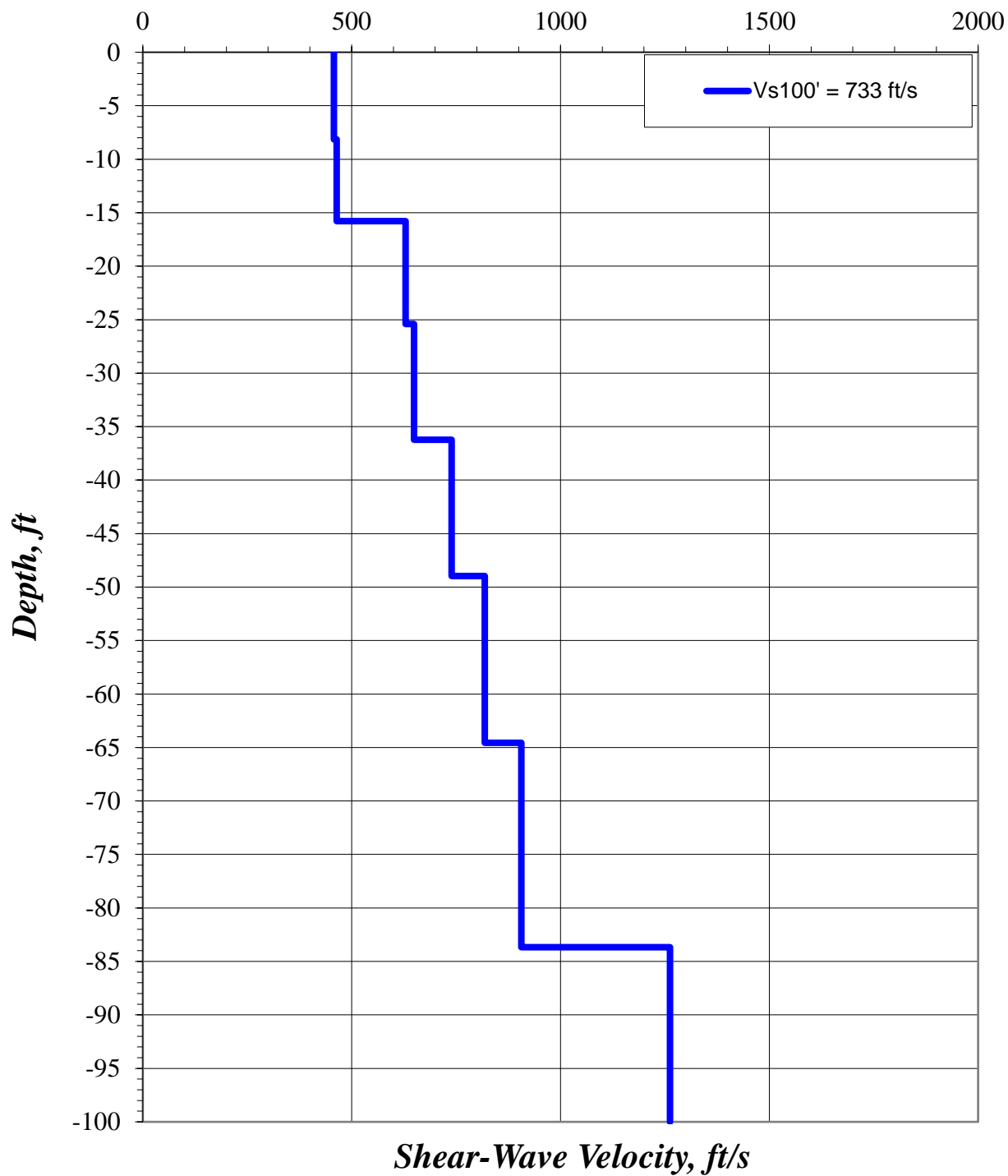
WASHOE COUNTY, NV

Project No.: 4092001

Date: 08/12/21

**PLATE
A-4f**

Learner Lemmon, 165': Vs Model




WOOD RODGERS
 1361 Corporate Boulevard, Reno, NV 89502
 Phone 775.823.4068 Fax 775.823.4066

**L1 - S-WAVE
 ReMi
 RESULTS**

Geotechnical Investigation

**LEARNER LEMMON
 D.R. HORTON
 WASHOE COUNTY, NV**

Project No.: 4092001
 Date: 08/12/21

**PLATE
 A-5**



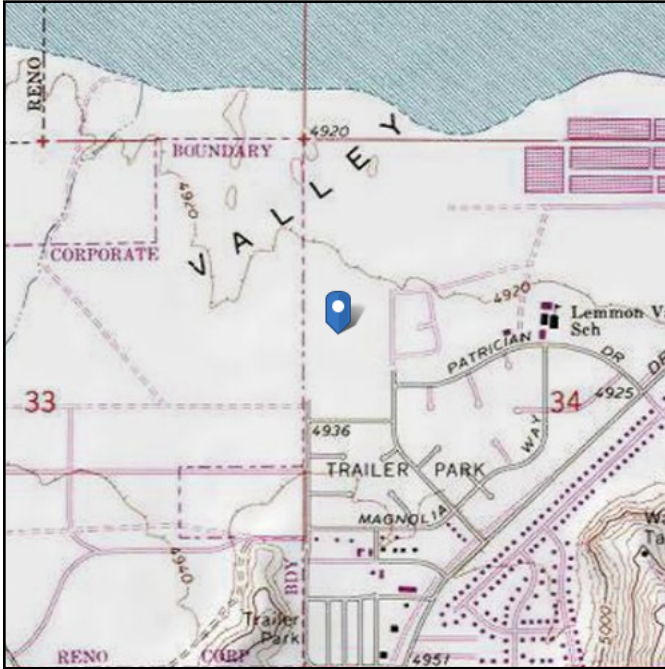
APPENDIX B
ASCE 7 HAZARDS REPORT

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 4928.89 ft (NAVD 88)
Latitude: 39.6451
Longitude: -119.8459



Site Soil Class: D - Stiff Soil

Results:

| | | | |
|------------|-------|--------------------|-------|
| S_s : | 1.484 | S_{D1} : | N/A |
| S_1 : | 0.503 | T_L : | 6 |
| F_a : | 1 | PGA : | 0.632 |
| F_v : | N/A | PGA _M : | 0.695 |
| S_{MS} : | 1.484 | F_{PGA} : | 1.1 |
| S_{M1} : | N/A | I_e : | 1 |
| S_{DS} : | 0.989 | C_v : | 1.397 |

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Tue Aug 17 2021

Date Source: [USGS Seismic Design Maps](#)

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



WOOD RODGERS

January 9, 2023
Project No. 4092003

LC LEARNER, LLC
c/o Jeffrey Holbrook
27132 B Paseo Espada, Suite 1226
San Juan Capistrano, CA 92675

RE: Percolation Testing Investigation
Learner Lemmon – Infiltration Basin
Washoe County, Nevada

REF: Truckee Meadows Regional Drainage Manual
April 30, 2009

Washoe County Health District
Sewage, Wastewater, and Sanitation
May 23, 2013

Geotechnical Investigation
Learner Lemmon
Washoe County, Nevada
Wood Rodgers Project No. 4092001
September 2021

Infiltration Basin Limits
Axion Engineering
November 2022

Dear Jeffrey:

Wood Rodgers is pleased to present this summary letter transmitting the compilation of percolation test results for the Learner Lemmon project located in Washoe County, Nevada.

Approximate exploration locations and limits of the infiltration basin are presented on Figure 1 - Site Plan and Approximate Exploration Locations which is attached to this letter. Logs of explorations and percolation test summaries are attached to this letter.

ESTIMATED SEASONAL HIGH GROUND WATER LEVEL

Locating and designing an infiltration basin was investigated over a series of 3-exploration programs. Based on our explorations, it has been determined that the estimated seasonal high ground water level (ESHGWL) within the most recent basin layout (Axion Engineering, November 2022) is at or below elevation 4926-feet. As required in the Truckee Meadows Regional Drainage Manual, the proposed current basin bottom elevation of 4931-feet provides a 5-foot separation to ESHGWL. The following paragraphs summarize the investigation history for the infiltration basin.

**WMPA23-0006 AND
WRZA23-0006
EXHIBIT F**

Geotechnical Investigation Report (September 2021)

Within this preliminary investigation, no specific infiltration area was identified for investigation and no specific geomorphologic markers were identified within any of the test pit profiles. Variations in soil moisture content with depth indicated the ground water wetting front could approach an elevation of

4921.5-feet (based on calculated degree of saturation and consideration of capillary rise) in the northern area of the site (TP-1 and TP-2) and elevation 4924.5 in the eastern area of the site (TP-3). Groundwater was encountered in TP-3 at a depth of 9.5 feet (elevation of 4922.5-feet). Elevations were determined based on Washoe County contour mapping. Project development was tabled until 2022.

Logs of the September 2021 explorations are included as part of this letter (TP-1 thru TP-10).

Percolation Testing and ESHGWL Investigation (October 2022)

As the project was reactivated additional test pits and percolation testing were performed in the proposed infiltration area now located along the southern portion of the property. Free water was noted at elevations ranging between elevations 4920 and 4925-feet. Elevated moisture contents indicated the wetting front could approach elevation 4929 within the southwest corner of the property. Therefore, the infiltration basin was reoriented to extend along the eastern property boundary and extend approximately halfway across the development toward the north (Figure 1).

It should be noted that evidence of a confining layer was present near the southeast property corner and excavations below elevation 4923-feet (8-feet below design bottom of basin) could result in the development of an elevated free water surface.

Logs of the October 2022 explorations are included as part of this letter (TP-A thru TP-F).

Verification Percolation Testing (December 2022)

Logs of the December 2022 explorations are included as part of this letter (TP-G thru TP-L). Table 1 summarizes percolation test results from each investigation along with relevant elevations. Explorations indicated in gray are no longer within the infiltration basin footprint.

Table 1: Summary of Percolation Testing Results

| Test Pit and Depth (ft) | Percolation Rate (min/in) | Existing Ground Elevation ¹ (ft) | Percolation Test Elevation ¹ (ft) | Free Water Elevation ¹ (ft) | Elevation of Wetting Front (ESHGWL) |
|-------------------------|---------------------------|---|--|--|-------------------------------------|
| TP-1 @ 3.5 | 480 | 4928 | 4924.5 | NE | 4921.5 |
| TP-1 @ 5.5 | 480 | 4928 | 4922.5 | NE | 4921.5 |
| TP-2 @ 3 | 480 | 4928 | 4925 | 4916.5 | 4921.5 |

Table 1: Summary of Percolation Testing Results

| Test Pit and Depth (ft) | Percolation Rate (min/in) | Existing Ground Elevation ¹ (ft) | Percolation Test Elevation ¹ (ft) | Free Water Elevation ¹ (ft) | Elevation of Wetting Front (ESHGWL) |
|-------------------------|---------------------------|---|--|--|-------------------------------------|
| TP-2 @ 6 | 480 | 4928 | 4922 | 4916.5 | 4921.5 |
| TP-3 @ 3.5 | 24 | 4932 | 3928.5 | 4922.5 | 4924.5 |
| TP-3 @ 5 | 2.1 | 4932 | 4927 | 4922.5 | 4924.5 |
| TP-A @ 4.5 | Slower than 480 | 4936 | 4931.5 | 4923 | 4929 |
| TP-A @ 8 | Slower than 480 | 4936 | 4928 | 4923 | |
| TP-B @ 6 | 240 | 4937 | 4931 | 4924 | 4925 |
| TP-B @ 9 | 240 | 4937 | 4928 | 4924 | |
| TP-C @ 8 | 480 | 4936 | 4928 | 4925 | 4927 |
| TP-D @ 5 | 48 | 4936 | 4931 | 4923 | 4925 |
| TP-D @ 8 | 14 | 4936 | 4928 | 4923 | |
| ³ TP-E @ 2 | 11 | 4933 | 4931 | 4922 | 4926 |
| TP-F | --- | 4934 | --- | 4920 | 4924 |
| ² TP-G @ 2 | 4 | 4932 | 4930 | --- | ² 4922.5 |
| ² TP-H @ 3.5 | 37 | 4933 | 4929.5 | --- | ² 4922.5 |
| ² TP-I @ 3.5 | 20 | 4934 | 4930.5 | --- | ² 4922.5 |
| ² TP-J @ 3 | 21 | 4933 | 4930 | --- | ² 4922.5 |

Table 1: Summary of Percolation Testing Results

| Test Pit and Depth (ft) | Percolation Rate (min/in) | Existing Ground Elevation ¹ (ft) | Percolation Test Elevation ¹ (ft) | Free Water Elevation ¹ (ft) | Elevation of Wetting Front (ESHGWL) |
|-------------------------|---------------------------|---|--|--|-------------------------------------|
| ² TP-K @ 4 | 2 | 4933 | 4929 | --- | ² 4922.5 |
| ² TP-L @ 4 | 3 | 4935 | 4931 | --- | ² 4922.5 |

¹Elevations are based on the Washoe County 6ft DEM. (Washoe County, reference date checked)

²Test pits 3, 6, 7 and 4 from the 2021 investigation were relied upon to establish a free water surface below elevation 4926-feet for the 12/2022 investigation.

³Confining layer noted at elevation 4923-feet.

Summary

We appreciate the opportunity to provide these services for the benefit of LC Learner, LLC and their duly assigned agents. Please contact our office should you have any related questions or comments.

Sincerely,

WOOD RODGERS, INCORPORATED

Justin M. McDougal, PE
 Senior Engineer
 PE Number: 24474
 Expires: 12/31/2023

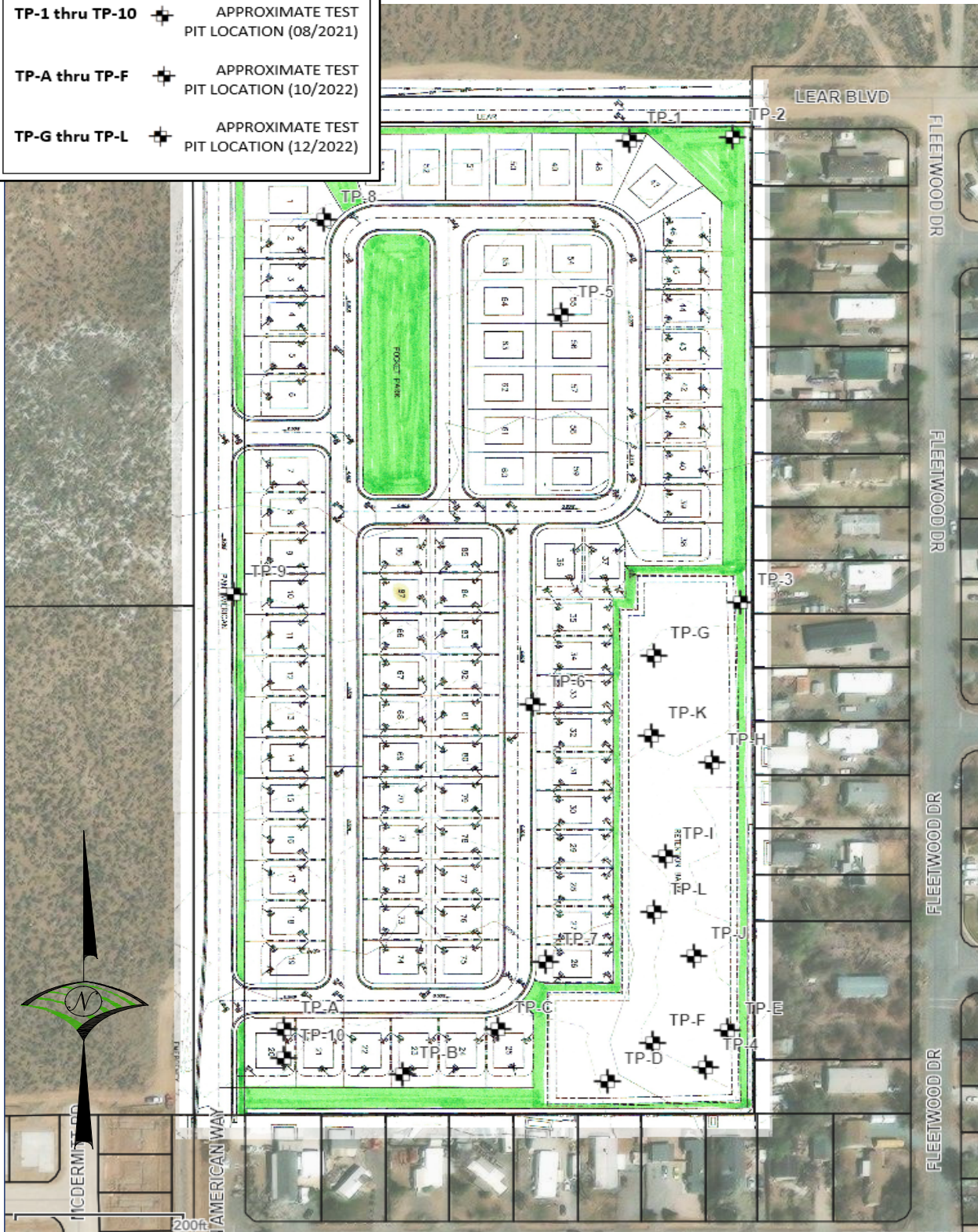


Jackson Beadell, EI
 Technical Professional

Enclosures:

Figure 1 - Site Plan and Approximate Exploration Locations
 Logs of Explorations and Percolation Tests

| LEGEND | |
|-----------------|---|
| TP-1 thru TP-10 | APPROXIMATE TEST PIT LOCATION (08/2021) |
| TP-A thru TP-F | APPROXIMATE TEST PIT LOCATION (10/2022) |
| TP-G thru TP-L | APPROXIMATE TEST PIT LOCATION (12/2022) |



| | | |
|----------------|---|----------|
| LEARNER LEMMON | SITE PLAN AND APPROXIMATE EXPLORATION LOCATIONS | FIGURE 1 |
|----------------|---|----------|



Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-1

GEO TECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/23/21 14:25 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092_LEARNING_LEMMON\LEARNING_GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4928 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | TOPSOIL, (SM) | GB 1A | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | GB 1B | | | | | 7.7 | 22 | 18 | 4 | 47.5 |
| | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 1C | | | | | 9.6 | 31 | 15 | 16 | 64.9 |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, moist, dark brown, medium plasticity, white specs/veins | GB 1D | | | | | | | | | |
| | | SANDY LEAN CLAY, (CL) very stiff, moist to very moist, brown, medium plasticity, white specs/veins | GB 1E | | | | | | | | | |
| 10 | | LEAN CLAY, (CL) very stiff, very moist, gray brown, medium plasticity | | | | | | | | | | |

Bottom of Test Pit at 12.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 10:22 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:33
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021
 Hole # : PH-A Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:12 | 8:42 | 6" | 6 3/16" | 30 | 3/16" |
| 2 | 8:43 | 9:13 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 9:14 | 9:44 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch

Tested by: J. Beadell
Checked by: J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 5.5'
 2. Time of 1st saturation to 12" 10:22 Date : 8/4/2021
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:32
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021
 Hole # : PH-B Diameter : 8" Depth : 12" Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:22 | 8:52 | 6" | 6" | 30 | 0" |
| 2 | 8:53 | 9:23 | 6" | 6 1/16" | 30 | 1/16" |
| 3 | 9:24 | 9:54 | 6" | 6 1/16" | 30 | 1/16" |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480 Min/inch

Tested by: J. Beadell
Checked by: J. McDougal



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-3

PAGE 1 OF 1

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4932 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION ---
AT END OF EXCAVATION ---
24hrs AFTER EXCAVATION 9.50 ft / Elev 4922.50 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, slightly plastic | GB 3A | | | | | | | | | |
| | | CLAYEY SAND, (SC) very dense, moist, brown, low plasticity | GB 3B | | | | | | | | | |
| | | | GB 3C | | | | | | | | | |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, moist to very moist, gray brown, medium plasticity, white specs | GB 3D | | | | | | | | | |
| 10 | | | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
2. Time of 1st saturation to 12" : 12:02 Date : 8/4/2021
If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation : 12:12
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-E Diameter : 8" Depth : 12" Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|----------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:14 | 9:44 | 6" | 7 12/16" | 30 | 1 12/16" |
| 2 | 9:46 | 10:16 | 6" | 7 6/16" | 30 | 1 6/16" |
| 3 | 10:16 | 10:46 | 6" | 7 7/16" | 30 | 1 7/16" |
| 4 | 10:46 | 11:16 | 6" | 7 5/16" | 30 | 1 5/16" |
| 5 | 11:16 | 11:46 | 6" | 7 4/16" | 30 | 1 4/16" |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 24 Min/inch

Tested by: S. Barton
 Checked by: J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 5'
2. Time of 1st saturation to 12" : 12:02 Date : 8/4/2021
If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation : 12:12
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
Return between 16 - 24 hrs to start test.

Date of percolation test : 8/5/2021

Hole # : PH-F Diameter : 8" Depth : 12" Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|-------|--------|-------------|----------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:28 | 9:33 | 6" | 9 10/16" | 5 | 3 10/16" |
| 2 | 9:35 | 9:40 | 6" | 9 6/16" | 5 | 3 6/16" |
| 3 | 9:43 | 9:47 | 6" | 9 1/16" | 5 | 3 1/16" |
| 4 | 9:48 | 9:53 | 6" | 8 9/16" | 5 | 2 9/16" |
| 5 | 9:55 | 10:00 | 6" | 8 8/16" | 5 | 2 8/16" |
| 6 | 10:01 | 10:06 | 6" | 8 7/16" | 5 | 2 7/16" |
| 7 | 10:06 | 10:11 | 6" | 8 6/16" | 5 | 2 6/16" |

Stabilized Rate : 2.1 Min/inch

Tested by: S. Barton
 Checked by: J. McDougal

GEO TECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/23/21 14:25 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092 LEARNING_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\LEARNING_LEMMON.GPJ



Wood Rodgers, Inc.
 1361 Corporate Blvd
 Reno, NV 89502
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-4

PAGE 1 OF 1

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4934 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) | GB 4A | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, slightly plastic | GB 4B | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) medium dense, slightly moist, brown, low plasticity | GB 4C | | | | | | | | | |
| | | CLAYEY SAND, (SC) slightly moist to moist, low plasticity | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | GB 4D | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.0 | | SANDY LEAN CLAY, (CL) very stiff, very moist, gray brown, medium plasticity | GB 4E | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



Wood Rodgers, Inc.
 1361 Corporate Blvd
 Reno, NV 89502
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-5

PAGE 1 OF 1

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\LEARNING_LEMMON.GPJ

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4930 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic, slightly cemented | GB 5A | | | | | | | | | |
| | | CLAYEY SAND, (SC) very dense, slightly moist, brown and white, low to medium plasticity | | | | | | | | | | |
| 2.5 | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 5B | | | | | | | | | |
| | | LEAN CLAY WITH SAND, (CL) very stiff, very moist, gray brown, medium plasticity | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 5C | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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TEST PIT NUMBER TP-6

PAGE 1 OF 1

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4932 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | GB 6A | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) very dense, moist, brown, low plasticity | GB 6B | | | | | | | | | |
| 5.0 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray brown white, medium plasticity | GB 6C | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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TEST PIT NUMBER TP-7

PAGE 1 OF 1

CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4936 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) SILTY SAND, (SM) medium dense, dry, brown, nonplastic | GB 7A | | | | | 2.4 | | | | |
| 2.5 | | CLAYEY SAND, (SC) very dense, slightly moist to moist, brown, low plasticity, white specs | SH 7B | | | | | 6.5 | | | | |
| 7.5 | | | GB 7C | | | | | 9.1 | 25 | 17 | 8 | 48.5 |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-8

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CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4928 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) very dense, slightly moist, brown, slightly plastic | GB 8B | | | | | | | | | |
| | | CLAYEY SAND, (SC) medium dense, slightly moist, brown, medium plasticity | GB 8A GB 8C | | | | | | | | | |
| 2.5 | | LEAN CLAY WITH SAND, (CL) very stiff, very moist, gray white, medium plasticity | GB 8D | | | | 91.5 | | | | | |
| | | LEAN CLAY, (CL) very stiff, very moist, gray white, medium plasticity | GB 8E | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | GB 8F | | | | | | | | | |

Bottom of Test Pit at 11.0 Feet.



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 Reno, NV 89502
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TEST PIT NUMBER TP-9

CLIENT D.R. Horton
PROJECT NUMBER 4092001
DATE STARTED 8/4/21 **COMPLETED** 8/4/21
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD CAT 420F Backhoe
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County Regional Mapping System

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4931 ft **TEST PIT SIZE** 24 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 9/28/21 10:27 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS\M092_LEARNING_LEMMON\LEARNING_LEMMON\LEARNING_LEMMON_OA\GEOTECH\GINT\LEARNING_LEMMON.GPJ

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | | | | | | | | | | |
| | | CLAYEY SAND, (SC) medium dense, slightly moist, light brown, low plasticity | GB 9B | | | | | | | | | |
| | | SILTY SAND, (SM) very dense, light brown, slightly plastic | GB 9A GB 9C | | | | | 10.3 | 22 | 21 | 1 | 26.0 |
| 2.5 | | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | LEAN CLAY WITH SAND, (CL) very stiff, moist to very moist, gray white, medium plasticity | GB 9D | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.



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TEST PIT NUMBER TP-10

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CLIENT D.R. Horton **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092001 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 8/4/21 **COMPLETED** 8/4/21 **GROUND ELEVATION** 4936 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County Regional Mapping System **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | TOPSOIL, (SM) | GB 10A | | | | | | | | | |
| | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown | | | | | | | | | | |
| 2.5 | | CLAYEY SAND, (SC) medium dense to very dense, slightly moist, brown white, low plasticity | GB 10B | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | Moist | | | | | | | | | | |

Bottom of Test Pit at 10.0 Feet.

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS-4092 - LEARNER - LEMMON\LEARNING - LEMMON - O\GEO\TECH\GEO\TECH\04 GINT\10.2022\LEARNER LEMMON PERC TESTING



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TEST PIT NUMBER TP-A

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 10/6/22 **COMPLETED** 10/6/22 **GROUND ELEVATION** 4935.7 ft **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD Komatsu 290 **▽ AT TIME OF EXCAVATION** 15.0 ft
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **▼ AT END OF EXCAVATION** 15.0 ft
NOTES: Elevations: Washoe County 6ft DEM **▼ 24hrs AFTER EXCAVATION** 13.00 ft / Elev 4922.70 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) loose to medium dense, dry, light brown, nonplastic | GB 1A | | | | | | | | | |
| 5 | | CLAYEY SAND, (SC) very dense, dry to slightly moist, medium brown, low plasticity | GB 2A GB 3A | | | | | 6.4 | | | | 28.9 |
| 10 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist to moist, light brown, medium plasticity | GB 4A | | | | | | | | | |
| 15 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray, medium to high plasticity | GB 5A GB 6A | | | | | | | | | |

Bottom of Test Pit at 15.5 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 4.5'
 2. Time of 1st saturation to 12" 10:47 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:57 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct

Hole # : A1 Diameter : 9 Depth : 12 Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:36 AM | 9:06 AM | 6 | 6 | 30 | 0 |
| 2 | 9:06 AM | 9:36 AM | 6 | 6 | 30 | 0 |
| 3 | 9:36 AM | 10:06 AM | 6 | 6 | 30 | 0 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : SLOWER THAN 480 min/in Tested by: J. Beadell
 Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 8'
 2. Time of 1st saturation to 12" 10:47 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:57 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct

Hole # : A2 Diameter : 7 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:39 AM | 9:09 AM | 6 | 6 | 30 | 0 |
| 2 | 9:09 AM | 9:39 AM | 6 | 6 | 30 | 0 |
| 3 | 9:39 AM | 10:09 AM | 6 | 6 | 30 | 0 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : SLOWER THAN 480 min/in Tested by: J. Beadell
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092 LEARNER LEMMON\LEARNING LEMMON_OA\GEO\TECH\GEO\TECH\04 GINT\10.2022\LEARNER LEMMON PERC TESTING



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 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-B

PAGE 1 OF 1

CLIENT LC Learner, LLC
PROJECT NUMBER 4092003
DATE STARTED 10/6/22 **COMPLETED** 10/6/22
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD Komatsu 290
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County 6ft DEM

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4937.2 ft **TEST PIT SIZE** 48 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION ---
AT END OF EXCAVATION ---
24hrs AFTER EXCAVATION 13.50 ft / Elev 4923.70 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, nonplastic | | | | | | | | | | |
| 5 | | SILTY, CLAYEY SAND, (SC-SM) very dense, dry to slightly moist, medium brown, slightly plastic | GB 1B GB 2B | | | | | 7.0 | 23 | 18 | 5 | 27.8 |
| 10 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist, medium brown with white, low to medium plasticity | GB 3B GB 4B | | | | | | | | | |
| 15 | | LEAN CLAY, (CL) very stiff, slightly moist to moist, gray with white, medium to high plasticity | GB 5B GB 6B | | | | | | | | | |

Bottom of Test Pit at 15.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 6'
 2. Time of 1st saturation to 12" 11:52 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : B1 Diameter : 7 Depth : 12 Soil Type : SC-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:48 AM | 9:18 AM | 6 | 6 3/16 | 30 | 3/16 |
| 2 | 9:19 AM | 9:49 AM | 6 | 6 3/16 | 30 | 3/16 |
| 3 | 9:50 AM | 10:20 AM | 6 | 6 2/16 | 30 | 2/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 240.0 Min/inch
 Tested by: J. Beadell
 Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 9'
 2. Time of 1st saturation to 12" 11:52 AM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : B2 Diameter : 8 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:51 AM | 9:21 AM | 6 | 6 2/16 | 30 | 2/16 |
| 2 | 9:22 AM | 9:52 AM | 6 | 6 2/16 | 30 | 2/16 |
| 3 | 9:52 AM | 10:22 AM | 6 | 6 2/16 | 30 | 2/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 240.0 Min/inch
 Tested by: J. Beadell
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GEO\TECH\04_GINT\10_2022\LEARNER_LEMMON_PERC_TESTING



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 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 10/6/22 **COMPLETED** 10/6/22 **GROUND ELEVATION** 4936.2 ft **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD Komatsu 290 **AT TIME OF EXCAVATION** ---
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** ---
NOTES: Elevations: Washoe County 6ft DEM **24hrs AFTER EXCAVATION** 11.00 ft / Elev 4925.20 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) loose to medium dense, dry, light brown, nonplastic | GB 1C | | | | | | | | | |
| 5 | | CLAYEY SAND, (SC) very dense, dry to slightly moist, medium brown, low plasticity | GB 2C | | | | | | | | | |
| 10 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist, light brown, medium plasticity | GB 3C | | | | | | | | | |
| 15 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray, medium to high plasticity | GB 4C | | | | | | | | | |
| | | | GB 5C | | | | | | | | | |

Bottom of Test Pit at 15.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 8'
 2. Time of 1st saturation to 12" 12:47 PM Date : 6-Oct
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct

Hole # : C Diameter : 8 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:05 AM | 9:35 AM | 6 | 6 1/16 | 30 | 1/16 |
| 2 | 9:35 AM | 10:05 AM | 6 | 6 1/16 | 30 | 1/16 |
| 3 | 10:05 AM | 10:35 AM | 6 | 6 1/16 | 30 | 1/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 480.0 Min/inch

Tested by: S. Barton
 Checked by: J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - /1/3/20 11:16 - \\WOODRODGERS.LOC\PRODUCT\DATA\JOBS-RENO\JOBS4092 LEARNER LEMMON\LEARNING LEMMON_OA\GEO\TECH\GEO\TECH\04 GINT\10.2022\LEARNER LEMMON PERC TESTING



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-D

PAGE 1 OF 1

CLIENT LC Learner, LLC
PROJECT NUMBER 4092003
DATE STARTED 10/6/22 **COMPLETED** 10/6/22
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD Komatsu 290
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County 6ft DEM

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4936.1 ft **TEST PIT SIZE** 48 inches
GROUND WATER LEVELS:
AT TIME OF EXCAVATION ---
AT END OF EXCAVATION ---
24hrs AFTER EXCAVATION 13.00 ft / Elev 4923.10 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, nonplastic | | | | | | | | | | |
| 5 | | SANDY LEAN CLAY, (CL) very stiff, dry to slightly moist, medium brown, low to medium plasticity | GB 1D GB 2D | | | | | 11.8 | 28 | 15 | 13 | 52.7 |
| 10 | | CLAYEY SAND, (SC) very dense, slightly moist, medium brown with white, low plasticity | GB 3D | | | | | 11.3 | 25 | 17 | 8 | 44.2 |
| 15 | | LEAN CLAY, (CL) very stiff, slightly moist to moist, gray with white, medium to high plasticity | GB 4D | | | | | | | | | |

Bottom of Test Pit at 17.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 5'
 2. Time of 1st saturation to 12" 1:47 PM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 1:57 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : D1 Diameter : 8 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:57 AM | 9:27 AM | 6 | 6 12/16 | 30 | 12/16 |
| 2 | 9:27 AM | 9:57 AM | 6 | 6 11/16 | 30 | 11/16 |
| 3 | 9:57 AM | 10:27 AM | 6 | 6 10/16 | 30 | 10/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 48.0 Min/inch
 Tested by : S. Barton
 Checked by : J. McDougal

Soil Percolation Recorded Measurements

1. Depth to test : 8'
 2. Time of 1st saturation to 12" 2:00 PM Date : 6-Oct
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 2:10 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
 Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct
 Hole # : D2 Diameter : 8 Depth : 12 Soil Type : SC

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 9:01 AM | 9:31 AM | 6 | 8 8/16 | 30 | 2 8/16 |
| 2 | 9:31 AM | 10:01 AM | 6 | 8 4/16 | 30 | 2 4/16 |
| 3 | 10:01 AM | 10:31 AM | 6 | 8 3/16 | 30 | 2 3/16 |
| 4 | 10:31 AM | 11:01 AM | 6 | 8 2/16 | 30 | 2 2/16 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 14.1 Min/inch
 Tested by : S. Barton
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - /1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCT\DATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\10.2022\LEARNER_LEMMON PERC TESTING



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TEST PIT NUMBER TP-E

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 10/6/22 **COMPLETED** 10/6/22 **GROUND ELEVATION** 4933.2 ft **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD Komatsu 290 **AT TIME OF EXCAVATION** 11.0 ft
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** 11.0 ft
NOTES: Elevations: Washoe County 6ft DEM **24hrs AFTER EXCAVATION** 5.00 ft / Elev 4928.20 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | SILTY SAND, (SM) medium dense, dry, light brown, nonplastic | | | | | | | | | | |
| 5 | ▼ | CLAYEY SAND TO SANDY LEAN CLAY, (SC-CL) very dense to very stiff, moist, medium brown, low to medium plasticity | GB 1E | | | | | 4.7 | 19 | 17 | 2 | 28.6 |
| | | | GB 2E | | | | | 10.4 | | | | |
| | | | GB 3E | | | | | 14.3 | | | | |
| 10 | ▼ | LEAN CLAY, (CL) stiff, very moist, gray, medium to high plasticity | GB 4E | | | | | | | | | |
| 15 | | | GB 5E | | | | | | | | | |

Bottom of Test Pit at 15.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 2'
 2. Time of 1st saturation to 12" 2:15 PM Date : 6-Oct
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 2:25 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 7-Oct

Hole # : E1 Diameter : 8 Depth : 12 Soil Type : SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 10:48 AM | 11:18 AM | 6 | 8 15/16 | 30 | 2 15/16 |
| 2 | 11:18 AM | 11:48 AM | 6 | 8 14/16 | 30 | 2 14/16 |
| 3 | 11:48 AM | 12:18 PM | 6 | 8 13/16 | 30 | 2 13/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 10.7 Min/inch

Tested by: S. Barton
 Checked by: J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 11:16 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092 LEARNER LEMMON\LEARNING LEMMON_OA\GEO\TECH\GEO\TECH\04 GINT\10.2022\LEARNER LEMMON PERC TESTING



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TEST PIT NUMBER TP-F

CLIENT LC Learner, LLC
PROJECT NUMBER 4092003
DATE STARTED 10/7/22 **COMPLETED** 10/7/22
EXCAVATION CONTRACTOR Joy Engineering
EXCAVATION METHOD Komatsu 290
LOGGED BY Seth Barton **CHECKED BY** Justin McDougal
NOTES: Elevations: Washoe County 6ft DEM

PROJECT NAME Learner Lemmon
PROJECT LOCATION Washoe County, Nevada
GROUND ELEVATION 4934.1 ft **TEST PIT SIZE** 48 inches
GROUND WATER LEVELS:
 ▽ **AT TIME OF EXCAVATION** 14.5 ft
 ▽ **AT END OF EXCAVATION** ---
 ▽ **0.5hrs AFTER EXCAVATION** 14.00 ft / Elev 4920.10 ft

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0 | | | | | | | | | | | | |
| 0 - 5 | | SILTY, CLAYEY SAND, (SC-SM) medium dense, dry, light brown, nonplastic | GB 1F | | | | | 14.7 | 26 | 21 | 5 | 48.4 |
| 5 - 10 | | SILTY, CLAYEY SAND, (SC-SM) very dense, dry to slightly moist, medium brown, slightly plastic | GB 2F | | | | | 16.8 | 25 | 17 | 8 | 36.2 |
| 10 - 15 | | CLAYEY SAND, (SC) very dense, slightly moist, light brown, low plasticity | GB 3F | | | | | | | | | |
| 15 - 17 | | LEAN CLAY, (CL) very stiff, moist to very moist, gray, medium to high plasticity | GB 4F | | | | | | | | | |

Bottom of Test Pit at 17.0 Feet.

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTION\DATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\12.2022\LEARNER_LEMMON\DECEMBER 22



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CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4932.2 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | GB G1 | | | | | | | | | |

Bottom of Test Pit at 2.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 2'
 2. Time of 1st saturation to 12" 10:05 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:15 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec
 Hole # : G Diameter : 8 Depth : 12 Soil Type : SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|--------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 10:38 AM | 10:48 AM | 6 | 8 7/16 | 10 | 2 7/16 |
| 2 | 10:49 AM | 10:59 AM | 6 | 8 6/16 | 10 | 2 6/16 |
| 3 | 10:59 AM | 11:09 AM | 6 | 8 5/16 | 10 | 2 5/16 |
| 4 | 11:09 AM | 11:19 AM | 6 | 8 4/16 | 10 | 2 4/16 |
| 5 | 11:20 AM | 11:30 AM | 6 | 8 7/16 | 10 | 2 7/16 |
| 6 | 11:31 AM | 11:41 AM | 6 | 8 7/16 | 10 | 2 7/16 |
| 7 | 11:42 AM | 11:52 AM | 6 | 8 6/16 | 10 | 2 6/16 |

Stabilized Rate : 4.2 Min/inch Tested by: J. Beadell
 Checked by: J. McDougal

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 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4933.1 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| 2.5 | | SILTY, CLAYEY SAND, (SC-SM) dense, slightly moist, tan brown, low plasticity, 0/60/40 | GB H1 | | | | | | | | | |

Bottom of Test Pit at 3.5 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 10:56 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec
 Hole # : H Diameter : 7 Depth : 12 Soil Type : SC-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:01 AM | 8:31 AM | 6 | 6 14/16 | 30 | 14/16 |
| 2 | 8:32 AM | 9:02 AM | 6 | 6 14/16 | 30 | 14/16 |
| 3 | 9:03 AM | 9:33 AM | 6 | 6 13/16 | 30 | 13/16 |
| 4 | 9:34 AM | 10:04 AM | 6 | 6 13/16 | 30 | 13/16 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 36.9 Min/inch **Tested by:** J. Beadell
Checked by: J. McDougal

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TEST PIT NUMBER TP-1
 PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4933.8 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|--------------------|--|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| | [Hatched Pattern] | FAT CLAY, (CH) stiff, moist, dark brown, medium to high plasticity | [Hand Icon] GB I1 | | | | | | | | | |
| | [Diagonal Pattern] | CLAYEY SAND TO SANDY LEAN CLAY, (SC-CL) dense to very stiff, slightly moist, tan brown, low plasticity | [Hand Icon] GB I2 | | | | | | | | | |
| 2.5 | | | | | | | | | | | | |

Bottom of Test Pit at 3.5 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3.5'
 2. Time of 1st saturation to 12" 11:24 AM Date : 22-Dec
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec
 Hole # : I Diameter : 7 Depth : 12 Soil Type : SC-CL

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|---------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 8:19 AM | 8:49 AM | 6 | 8 1/16 | 30 | 2 1/16 |
| 2 | 8:50 AM | 9:20 AM | 6 | 7 10/16 | 30 | 1 10/16 |
| 3 | 9:21 AM | 9:51 AM | 6 | 7 9/16 | 30 | 1 9/16 |
| 4 | 9:52 AM | 10:22 AM | 6 | 7 8/16 | 30 | 1 8/16 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 20.0 Min/inch Tested by: J. Beadell
 Checked by: J. McDougal

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 Fax: 775-823-4066

TEST PIT NUMBER TP-J

PAGE 1 OF 1

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4932.9 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| 2.5 | | SANDY LEAN CLAY, (CL) very stiff, slightly moist, light tan, low to medium plasticity | GB J1 | | | | | | | | | |

Bottom of Test Pit at 3.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 3'
 2. Time of 1st saturation to 12" 12:22 PM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : N/A
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec

Hole # : J Diameter : 7 Depth : 12 Soil Type : CL

| Reading | Time | | Water Level | | Elapsed | Water |
|---------|---------|----------|-------------|--------|----------|-----------|
| | Start | Finish | Start | Finish | Time min | Fall (in) |
| 1 | 8:44 AM | 9:14 AM | 6 | 4 8/16 | 30 | 1 8/16 |
| 2 | 9:15 AM | 9:45 AM | 6 | 4 8/16 | 30 | 1 8/16 |
| 3 | 9:46 AM | 10:16 AM | 6 | 4 9/16 | 30 | 1 7/16 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Stabilized Rate : 20.9 Min/inch

Tested by : B. LaBarr
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092 - LEARNER - LEMMON\LEARNING - LEMMON - O\AGEOTECH\GEO\TECH\04 GINT\12.2022\LEARNER LEMMON DECEMBER 22



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 Telephone: 775-823-4068
 Fax: 775-823-4066

| | |
|---|---|
| CLIENT <u>LC Learner, LLC</u> PROJECT NUMBER <u>4092003</u> DATE STARTED <u>12/22/22</u> COMPLETED <u>12/22/22</u> EXCAVATION CONTRACTOR <u>Joy Engineering</u> EXCAVATION METHOD <u>CAT 420F Backhoe</u> LOGGED BY <u>Jackson Beadell</u> CHECKED BY <u>Justin McDougal</u> NOTES: <u>Elevations: Washoe County 6ft DEM</u> | PROJECT NAME <u>Learner Lemmon</u> PROJECT LOCATION <u>Washoe County, Nevada</u> GROUND ELEVATION <u>4933.2 ft</u> TEST PIT SIZE <u>24 inches</u> GROUND WATER LEVELS: AT TIME OF EXCAVATION <u>--- NO FREE WATER ENCOUNTERED</u> AT END OF EXCAVATION <u>--- NO FREE WATER ENCOUNTERED</u> AFTER EXCAVATION <u>--- NO FREE WATER ENCOUNTERED</u> |
|---|---|

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| 2.5 | | POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) dense, slightly moist, tan, nonplastic, lense of sandy lean clay in corner of test pit | GB K1 | | | | | | | | | |

Bottom of Test Pit at 4.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 4'
 2. Time of 1st saturation to 12" 10:30 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 10:40 AM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec

Hole # : K Diameter : 8 Depth : 12 Soil Type : SP-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 10:43 AM | 10:49 AM | 6 | 2 | 6 | 4 |
| 2 | 10:49 AM | 10:55 AM | 6 | 2 7/16 | 6 | 3 9/16 |
| 3 | 10:56 AM | 11:02 AM | 6 | 2 8/16 | 6 | 3 8/16 |
| 4 | 11:04 AM | 11:10 AM | 6 | 2 10/16 | 6 | 3 6/16 |
| 5 | 11:12 AM | 11:18 AM | 6 | 2 12/16 | 6 | 3 4/16 |
| 6 | 11:19 AM | 11:25 AM | 6 | 2 12/16 | 6 | 3 4/16 |
| 7 | 11:26 AM | 11:32 AM | 6 | 2 13/16 | 6 | 3 3/16 |

Stabilized Rate : 1.9 Min/inch

Tested by: B. LaBarr
 Checked by : J. McDougal

GEOTECH BH COLUMNS PLATE - GINT STD US LAB.GDT - 1/3/23 10:29 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS4092_LEARNER_LEMMON\LEARNING_LEMMON_OA\GEO\TECH\GINT\12.2022\LEARNER_LEMMON DECEMBER 22



Wood Rodgers Inc.
 1361 Corporate Blvd
 Reno NV 89521
 Telephone: 775-823-4068
 Fax: 775-823-4066

TEST PIT NUMBER TP-L

CLIENT LC Learner, LLC **PROJECT NAME** Learner Lemmon
PROJECT NUMBER 4092003 **PROJECT LOCATION** Washoe County, Nevada
DATE STARTED 12/22/22 **COMPLETED** 12/22/22 **GROUND ELEVATION** 4934.5 ft **TEST PIT SIZE** 24 inches
EXCAVATION CONTRACTOR Joy Engineering **GROUND WATER LEVELS:**
EXCAVATION METHOD CAT 420F Backhoe **AT TIME OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Justin McDougal **AT END OF EXCAVATION** --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Washoe County 6ft DEM **AFTER EXCAVATION** --- NO FREE WATER ENCOUNTERED

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | R-VALUE | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS | | | FINES CONTENT (%) |
|------------|-------------|---|--------------------|------------------|-----------------------|---------|--------------------|----------------------|------------------|---------------|------------------|-------------------|
| | | | | | | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | |
| 0.0 | | SILTY SAND, (SM) medium dense, moist, dark brown, nonplastic | | | | | | | | | | |
| | | CLAYEY SAND, (SC) dense, moist, light brown, low plasticity | | | | | | | | | | |
| 2.5 | | POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) dense, slightly moist, light brown, nonplastic | GB L1 | | | | | | | | | |

Bottom of Test Pit at 4.0 Feet.

Soil Percolation Recorded Measurements

1. Depth to test : 4'
 2. Time of 1st saturation to 12" 11:55 AM Date : 22-Dec
If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 12:03 PM
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 23-Dec

Hole #: L Diameter : 8 Depth : 12 Soil Type : SP-SM

| Reading | Time | | Water Level | | Elapsed Time min | Water Fall (in) |
|---------|----------|----------|-------------|---------|------------------|-----------------|
| | Start | Finish | Start | Finish | | |
| 1 | 12:03 PM | 12:13 PM | 6 | 10 2/16 | 10 | 4 2/16 |
| 2 | 12:14 PM | 12:24 PM | 6 | 9 9/16 | 10 | 3 9/16 |
| 3 | 12:25 PM | 12:35 PM | 6 | 9 10/16 | 10 | 3 10/16 |
| 4 | 12:37 PM | 12:47 PM | 6 | 9 8/16 | 10 | 3 8/16 |
| 5 | 12:48 PM | 12:58 PM | 6 | 9 8/16 | 10 | 3 8/16 |
| 6 | 12:59 PM | 1:09 PM | 6 | 9 8/16 | 10 | 3 8/16 |
| 7 | 1:10 PM | 1:20 PM | 6 | 9 8/16 | 10 | 3 8/16 |

Stabilized Rate : 2.9 Min/inch

Tested by: J. Beadell
 Checked by: J. McDougal

TENTATIVE MAP APPLICATION LEARNER - LEMMON PROPERTY

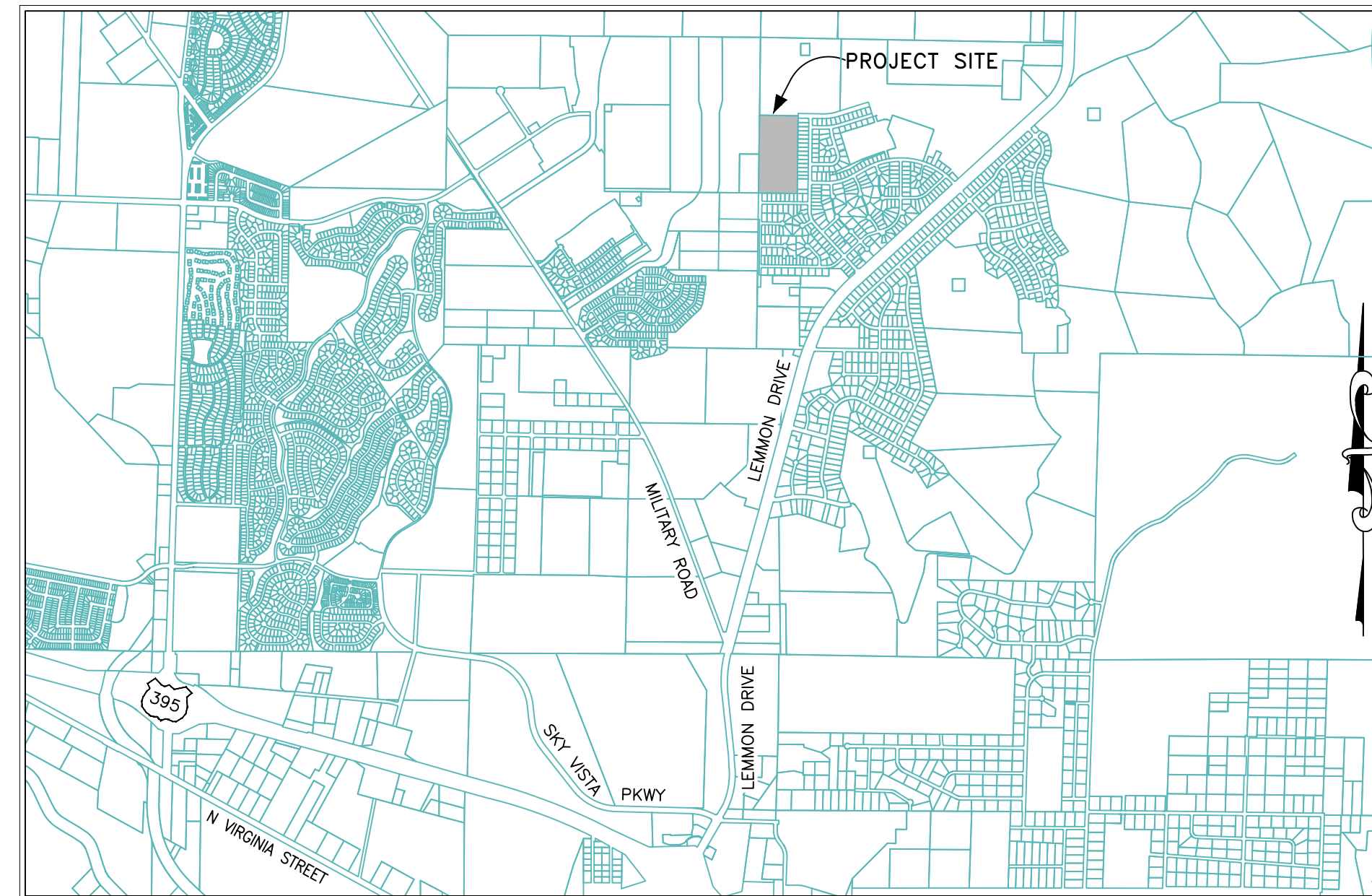
WASHOE COUNTY, NEVADA

OWNER/DEVELOPER

LC LEARNER, LLC
27132 B PASEO ESPADA, SUITE 1226
SAN JUAN CAPISTRANO, CA 92675
ATTN: JEFF HOLBROOK

PUBLIC SERVICES

GAS & ELECTRICAL SERVICE: NV ENERGY
WATER SERVICE: TRUCKEE MEADOWS WATER AUTHORITY
SEWER SERVICE: CITY OF RENO
TELEPHONE: AT&T
CABLE TV: SPECTRUM
FIRE PROTECTION: TRUCKEE MEADOWS FIRE RESCUE
POLICE PROTECTION: WASHOE COUNTY SHERIFF



VICINITY MAP

N.T.S.

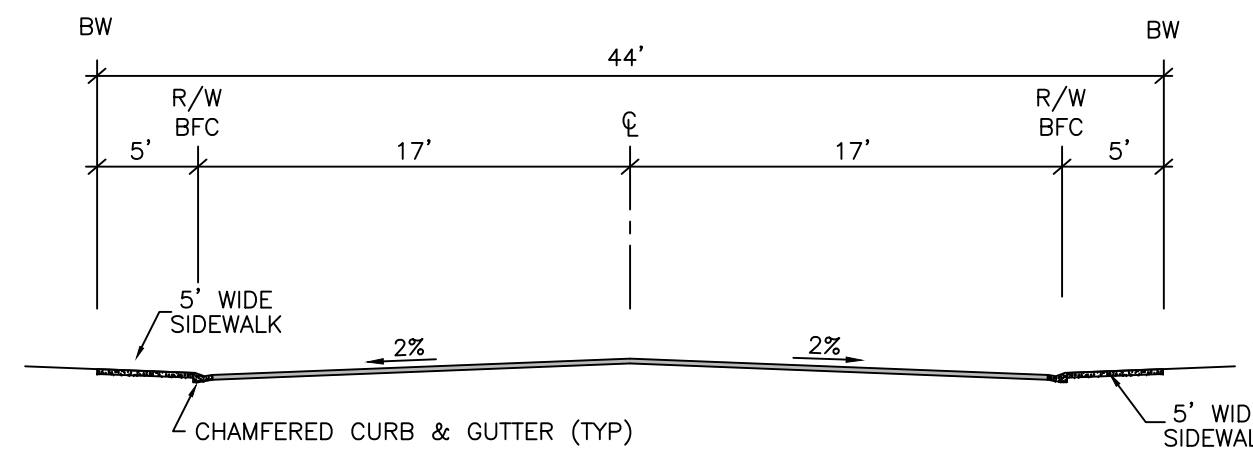
ENGINEER



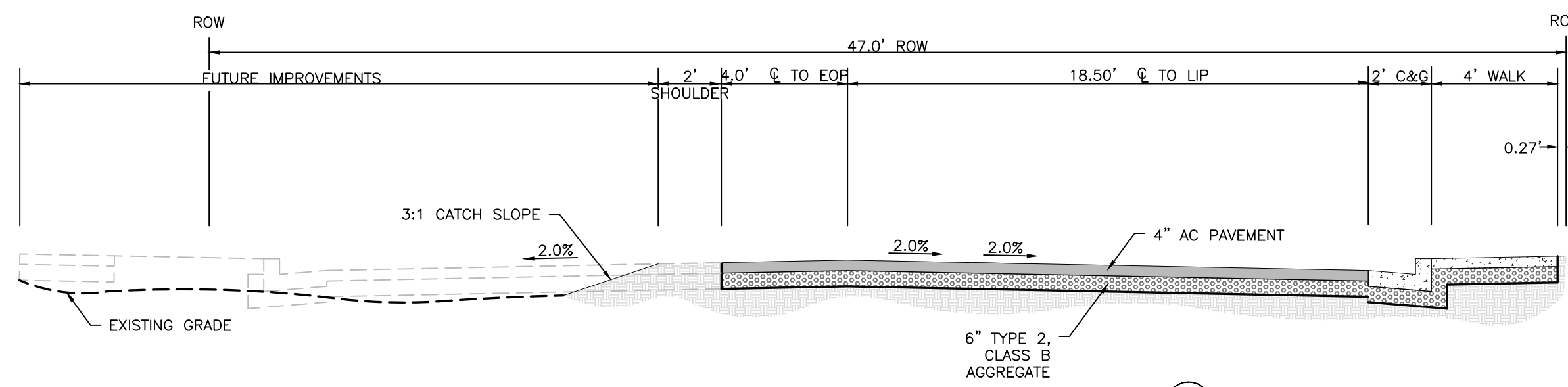
683 EDISON WAY - RENO, NEVADA 89502
PH 775-771-5554 / FX 775-357-8421

SHEET INDEX

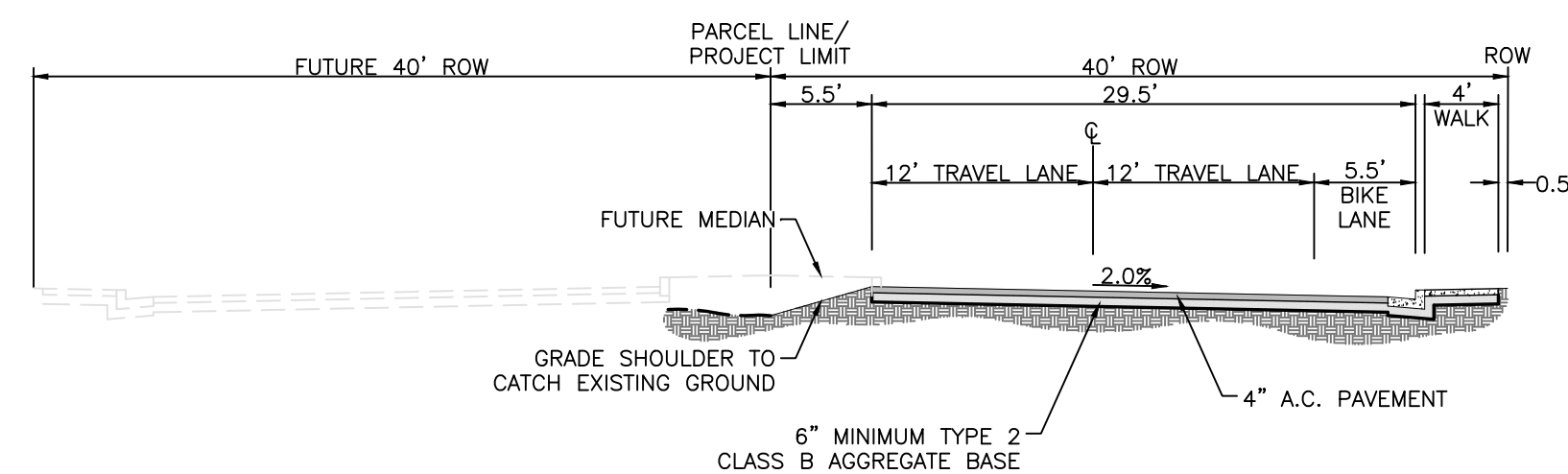
- C1TITLE SHEET
- C2SITE PLAN
- C3GRADING PLAN
- C4UTILITY PLAN
- C5X-SECTIONS
- C6SEWER DISPLAY
- L1LANDSCAPE PLAN



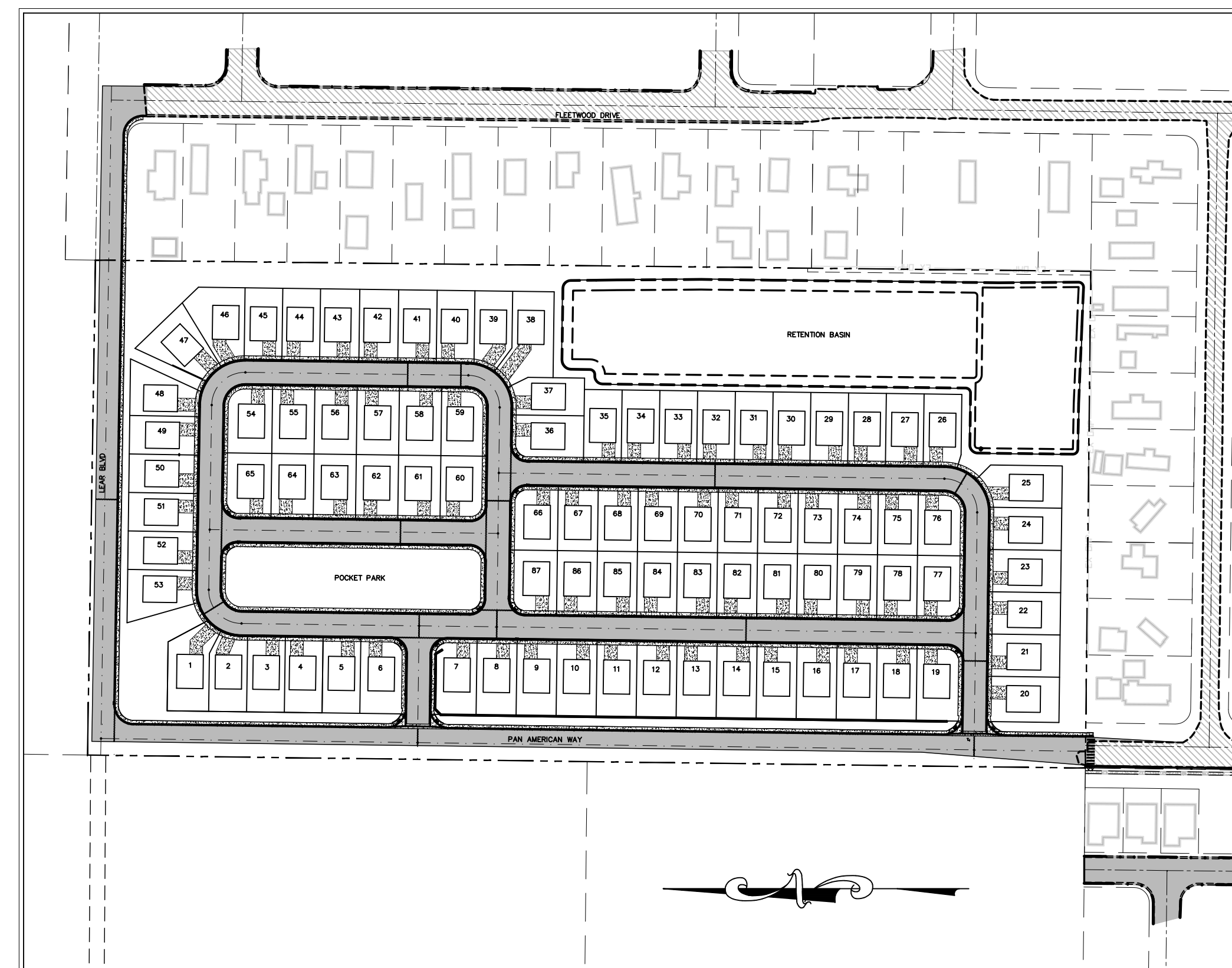
RESIDENTIAL STREET SECTION 1



PAN AMERICAN DRIVE 2



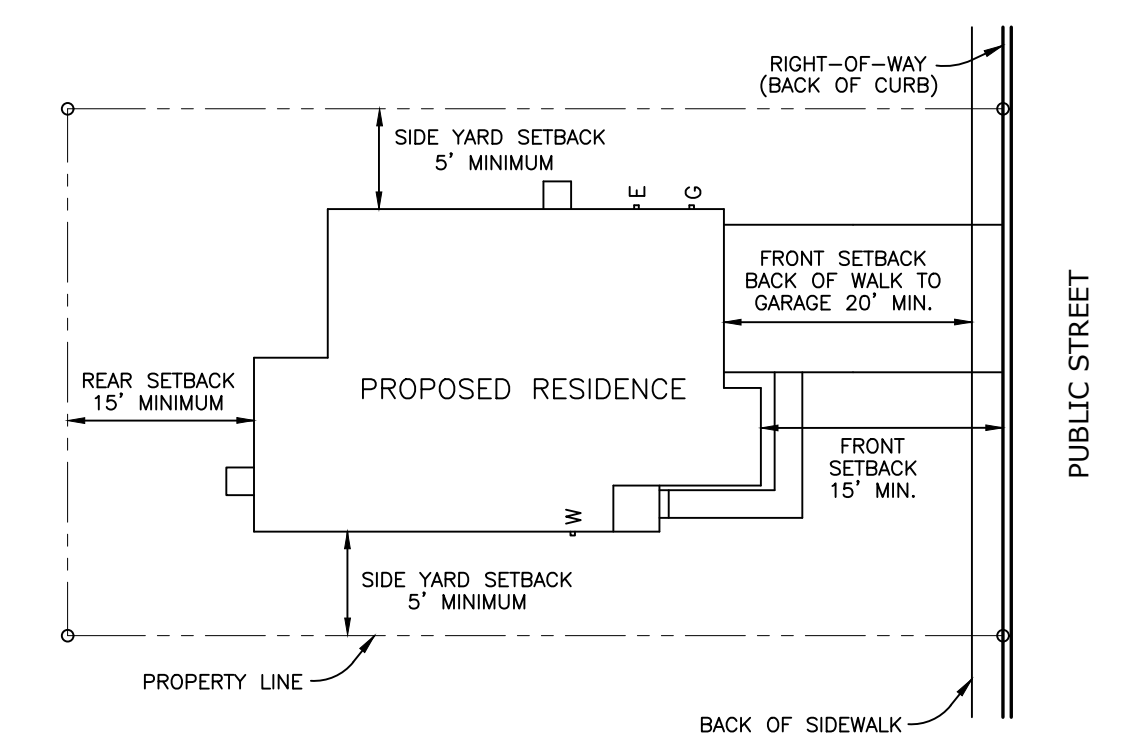
LEAR BOULEVARD 3



SITE

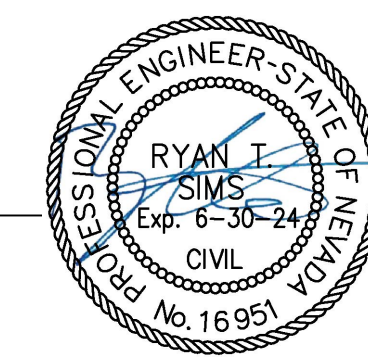
N.T.S.

MINIMUM SETBACKS



ENGINEERS STATEMENT

I, RYAN T. SIMS, DO HEREBY CERTIFY THAT THIS MAP HAS BEEN PREPARED BY ME, OR UNDER MY SUPERVISION AND WAS COMPLETED ON THIS 14th DAY OF APRIL, 2023.



RYAN T. SIMS

P.E. #16951

5-4-23

LEARNER LEMMON PROPERTY

TITLE SHEET C1

PANDIAN APN:080-423-01 GOMEZ APN:080-423-02 HOLLENBERGER APN:080-423-03 STANLEY APN:080-423-04 DREAPER APN:080-423-05 SHEAFFER APN:080-423-06 WITIG APN:080-423-07 WITIG APN:080-423-08 MCCLANAHAN APN:080-423-09 MEDINA APN:080-423-10 DUNKLEY APN:080-423-11 THOMPSON APN:080-423-12 MIT INVESTMENTS LLC APN:080-423-13 KING APN:080-481-01 KING APN:080-481-02 RUDDOCK APN:080-481-36 LUNDAHL APN:080-481-06

MATELUCCI APN:080-481-08

ALMANZA APN:080-441-01

DAVIS APN:080-441-02

ROBERTS APN:080-441-03

HANSON APN:080-441-04

RICKMAN APN:080-441-05

RICKMAN APN:080-441-06

NAVARRO-REYES APN:080-441-07

RG PROPERTIES APN:080-441-08



LANISING-ARCUS LLC APN:080-461-27

NORTH VALLEYS INVESTMENT GROUP LLC APN:568-041-05

LOT 2 APN:568-041-13

PROJECT AREA SUMMARY:

PARCEL AREA: 19.92 Ac
 LOT AREA (87 LOTS): 10,000 Ac
 RIGHT OF WAY AREA: 4.65 Ac
 OPEN SPACE/LANDSCAPE: 4.56 Ac
 PARK AREA: 0.71 Ac

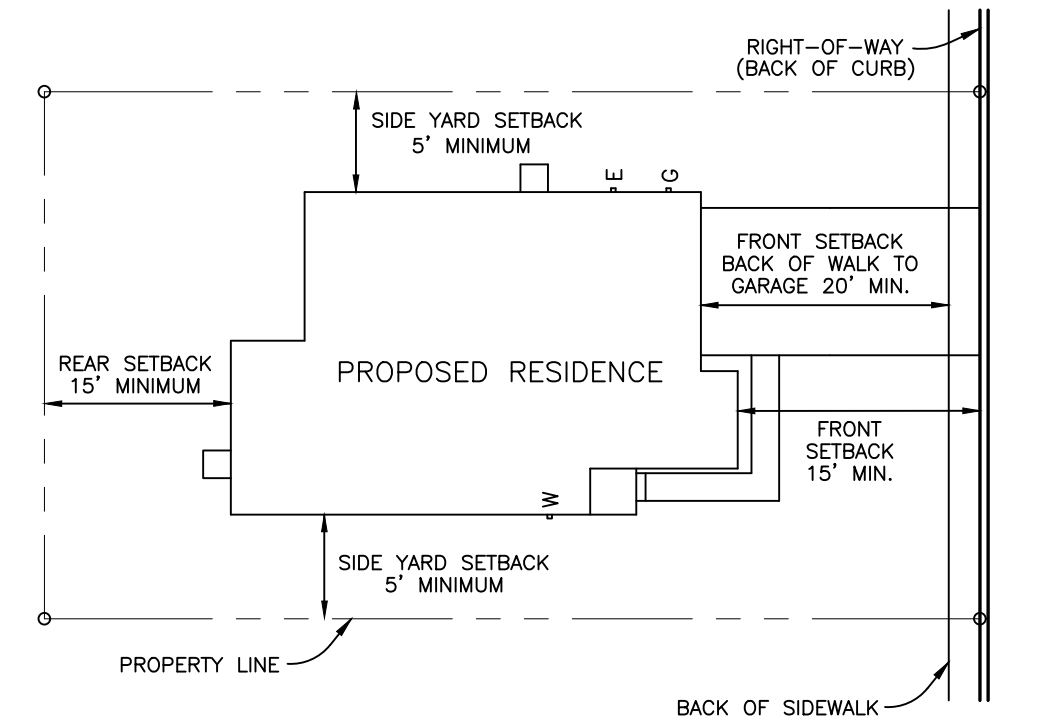
PROPOSED LOT STANDARDS:

MINIMUM LOT AREA: 4,000 SF
 MINIMUM LOT WIDTH: 50 FEET
 SETBACKS:
 FRONT: 15' (20' TO GARAGE)
 SIDE: 5'
 REAR: 15'
 DENSITY: 4.37 UNITS/AC GROSS
 8.7 UNITS/AC NET

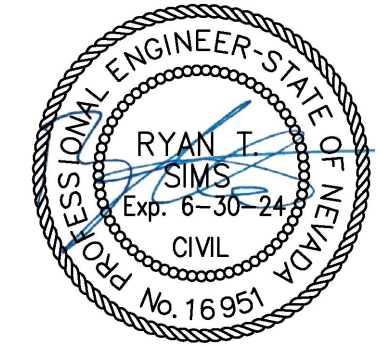
PARCEL INFORMATION:

APN 080-461-08 0 PAN AMERICAN WAY
 867,976 SF, 19.926 AC
 CURRENT MASTER PLAN DESIGNATION: SUBURBAN RESIDENTIAL
 BASE ZONING: MEDIUM DENSITY SUBURBAN (11.36Ac, 57%), GENERAL RURAL (8.57Ac, 43%)
 GROSS DENSITY: 4.37 UNITS/ACRE
 CURRENT ZONING:
 MDS: 11.36Ac - 34 LOTS
 GR: 8.57Ac - 0.2 LOTS
 PROPOSED ZONING:
 HDS (ORANGE): 11.11 AC
 MDS (YELLOW): 3.54 AC
 OS (GREEN): 5.27 AC
 PARKING REQUIRED: 2 PER UNIT
 PARKING PROVIDED:
 EACH UNIT: 2 GARAGE + 2 DRIVEWAY 4 SPACES
 PROPOSED ACCESS AND STREET WILL BE COUNTY OWNED AND MAINTAINED
 WATER SERVICE: TMMA (PUBLIC WATER MAINS)
 SEWER SERVICE: CITY OF RENO
 FIRE: TRUCKEE MEADOWS FIRE DEPARTMENT
 POLICE: WASHOE COUNTY SHERIFFS OFFICE
 WILDFIRE:
 PARCEL FIRE RISK RATING: MODERATE
 REQUIRED DEFENSIBLE SPACE: 30'

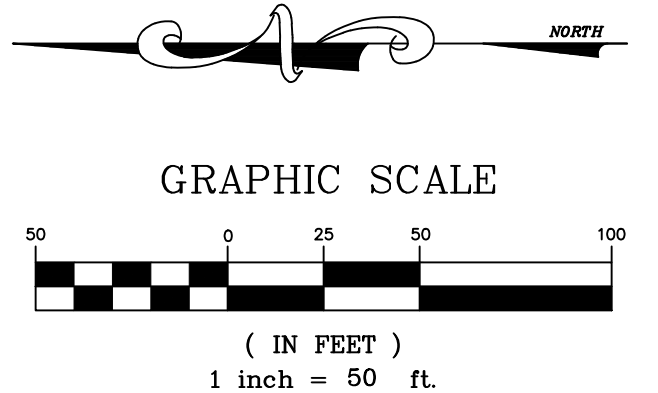
NUMBER OF LOTS: 87
 MINIMUM LOT SIZE: 4,250 SF
 MAXIMUM LOT SIZE: 6,985 SF
 AVERAGE LOT SIZE: 4,990 SF
 COMMON AREAS:
 CA1: 4.35AC
 CA2: 0.21AC
 CA3(POCKET PARK): 0.71AC



TYPICAL LOT

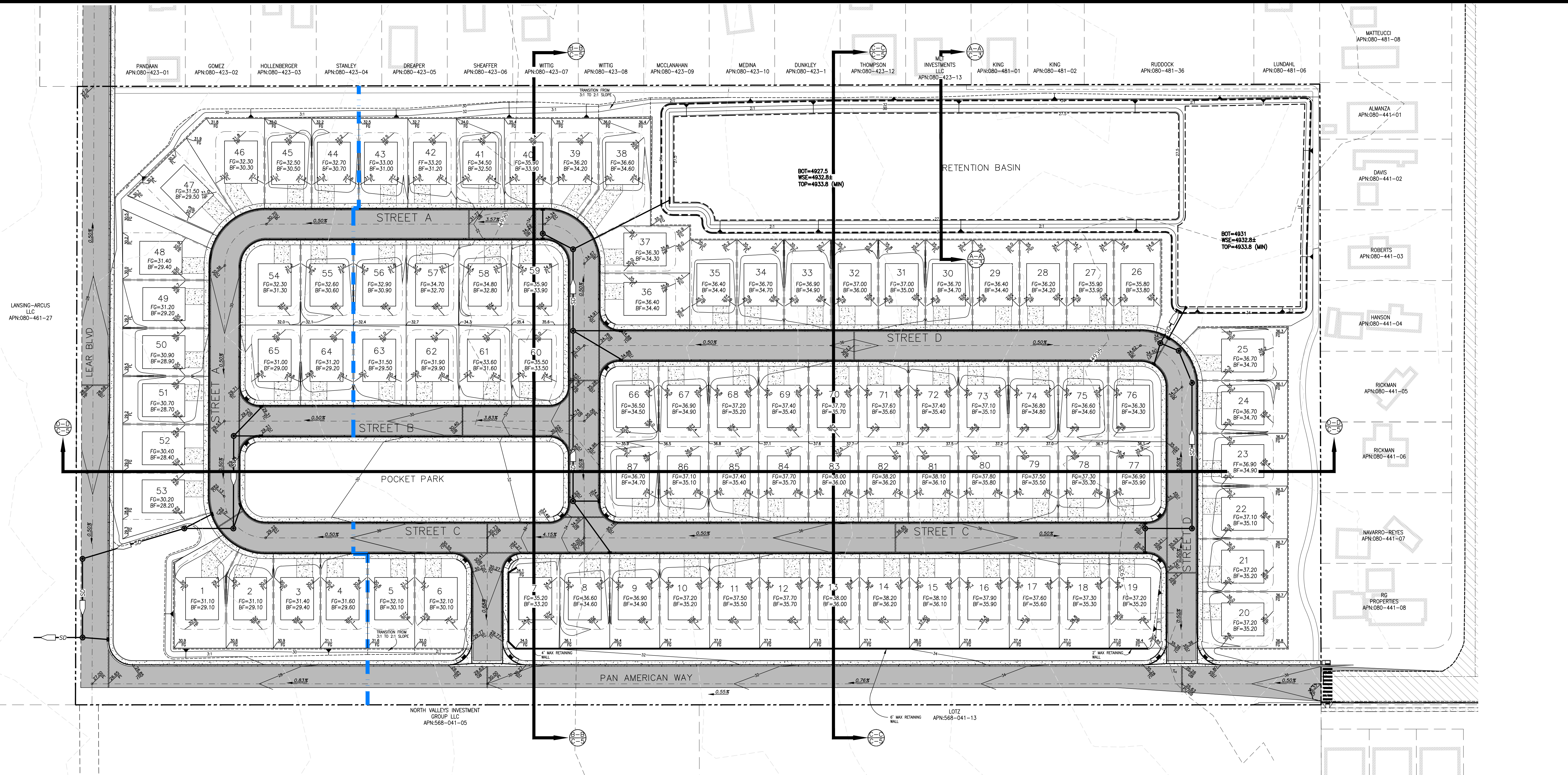


5-4-23



SITE PLAN C-2

LEARNER LEMMON PROPERTY

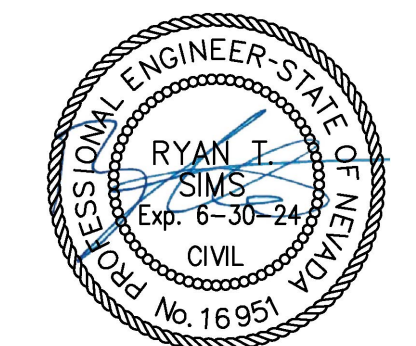
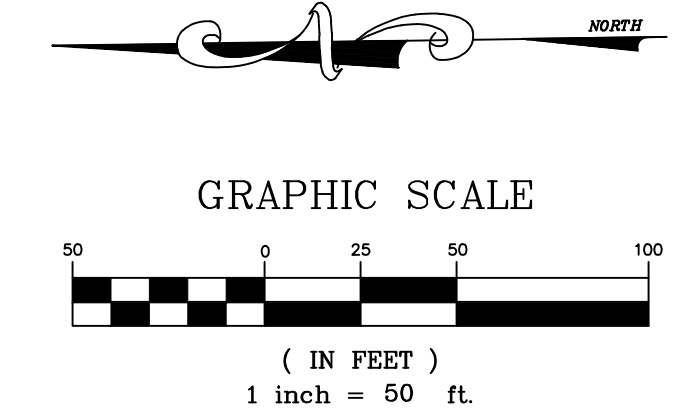
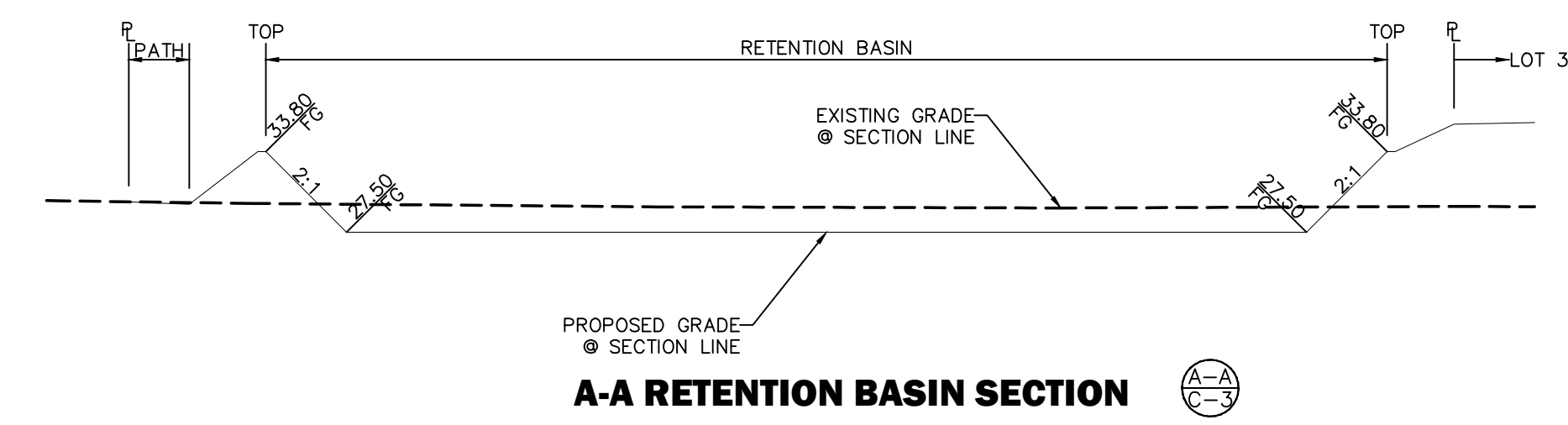


LEGEND

| | |
|-------|--------------------------|
| | GRADE BREAK |
| 64 | LOT NUMBER |
| | EXISTING CONTOUR LINE |
| 70.00 | FINISHED GRADE ELEVATION |
| 72.57 | TOP OF CURB ELEVATION |
| 99.20 | FLOW LINE ELEVATION |
| 5% | SLOPE IN PERCENT |
| (E) | EXISTING |

- GRADING NOTES:**
1. ALL CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS, AND THE LATEST STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION 2012 ADDITION (AND ANY APPURTENANT SUPPLEMENTS) SPONSORED BY RENO, SPARKS, AND WASHOE COUNTY, AND THE PROJECT GEOTECHNICAL INVESTIGATION.
 2. ADD 4900 FEET TO ALL TRUNCATED ELEVATIONS.
 3. THE NATURAL VEGETATION AND EXISTING LANDSCAPING SHALL BE PRESERVED AS MUCH AS PRACTICAL DURING SITE IMPROVEMENTS CONSTRUCTION.
 4. SLOPES STEEPER THAN 3:1 SHALL BE MECHANICALLY STABILIZED WITH ROCK-RIP.

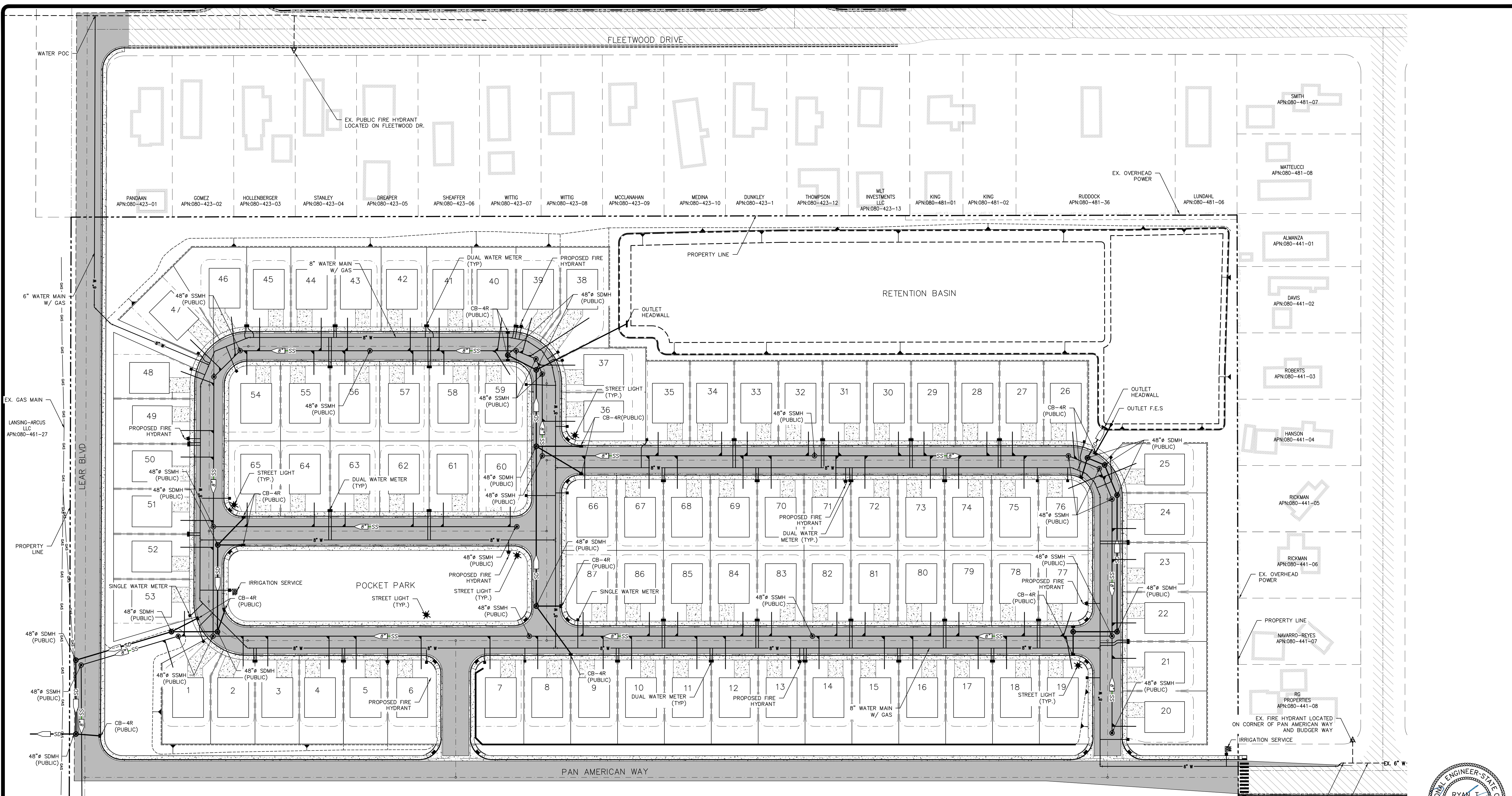
FEMA FLOOD HAZARD NOTE:
 PER FEMA dFIRM PANELS 32031C2836G, EFFECTIVE 3/16/2009, THIS PROJECT LIES PARTIALLY WITHIN AN AREA DESIGNATED AS ZONE X (SHADED) AND ZONE X (UNSHADED)



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 PH 775-771-5554 / FX 775-357-8421

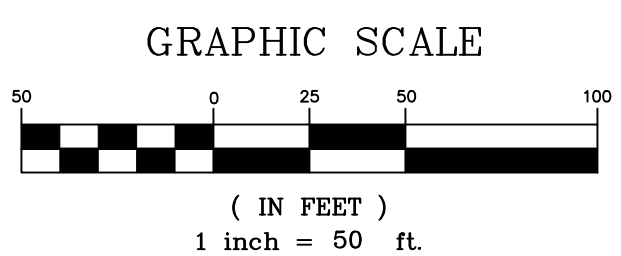
LEARNER LEMMON PROPERTY

GRADING PLAN C-3



LEGEND:

- MANHOLE (DASHED IF EXISTING)
- SD-18" STORM DRAIN MAIN (DASHED IF EXISTING)
- SS-8" SANITARY SEWER MAIN (DASHED IF EXISTING)
- 8"W WATER MAIN
- SANITARY SEWER LATERAL
- SINGLE WATER METER
- DUAL WATER METER
- FIRE HYDRANT



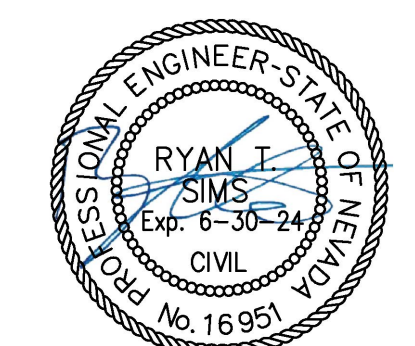
PUBLIC SEWER SYSTEM:

EACH LOT WILL BE SERVICED BY A SEWER LATERAL THAT WILL CONNECT TO A PUBLIC GRAVITY SEWER MAIN.
 SINGLE RESIDENTIAL UNIT: 270 GAL/DAY
 PEAKING FACTOR: 3
 87 RESIDENTIAL UNITS : 70,470 GAL/DAY PEAK FLOW

UTILITY OWNERSHIP:

STORM DRAIN: WASHOE COUNTY
 SANITARY SEWER: COUNTY AND CITY OWNED AND MAINTAINED
 WATER: TMWA
 GAS: NV ENERGY
 ELECTRIC: NV ENERGY MAINS IN EASEMENT
 COMMUNICATIONS: AT&T/CHARTER FACILITIES IN EASEMENT

LEARNER LEMMON PROPERTY

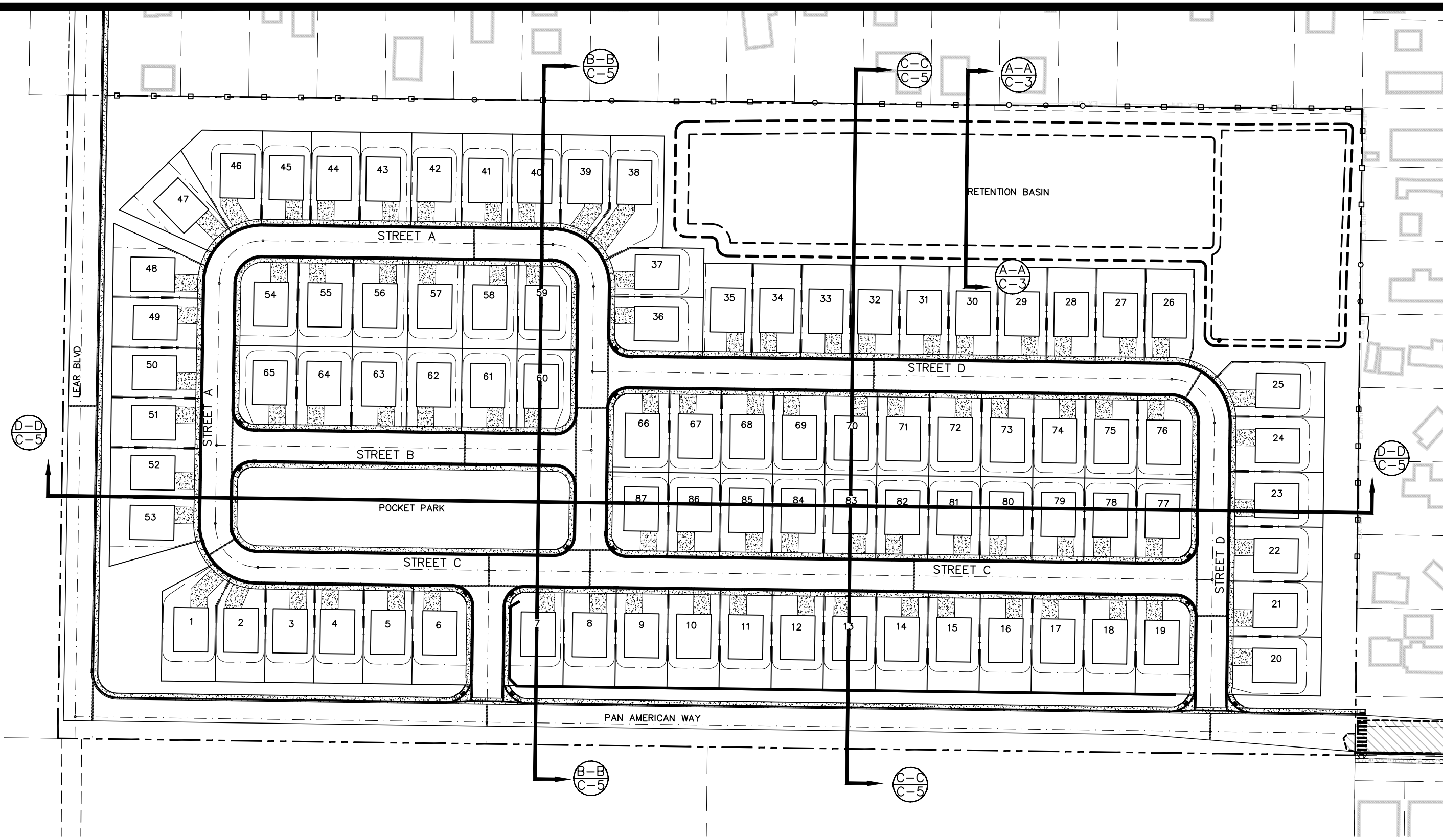


5-4-23



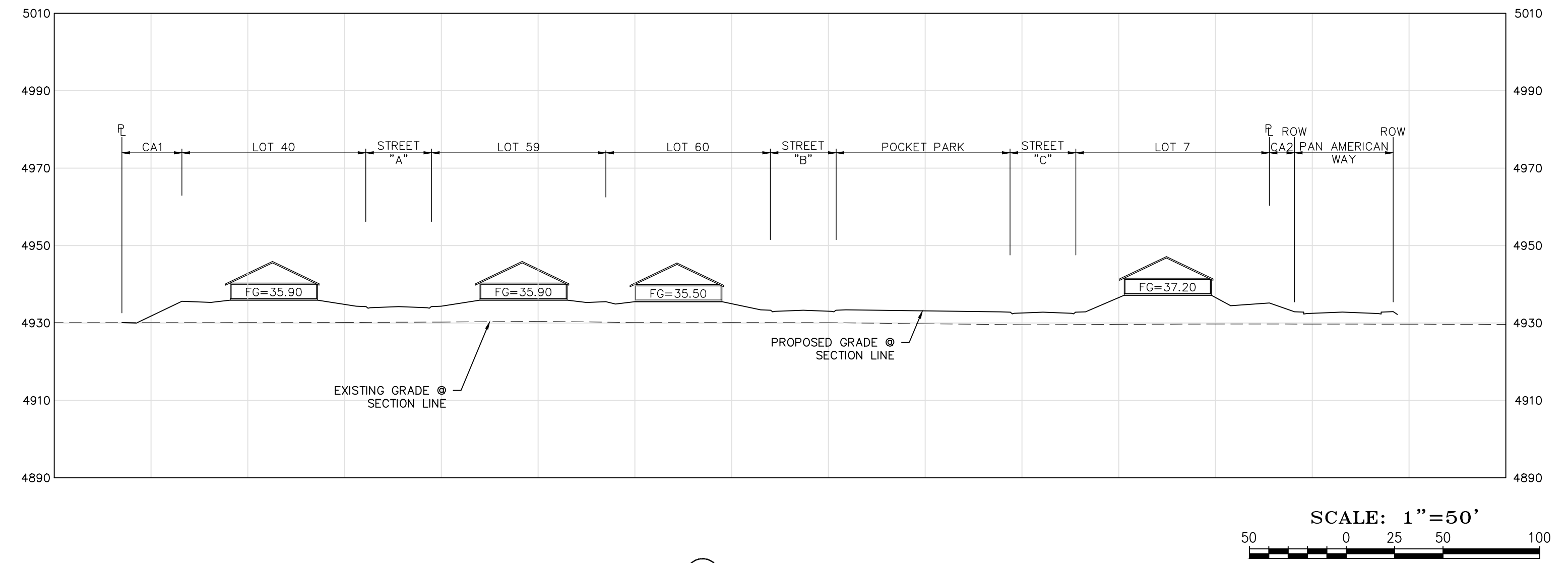
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UTILITY PLAN C-4



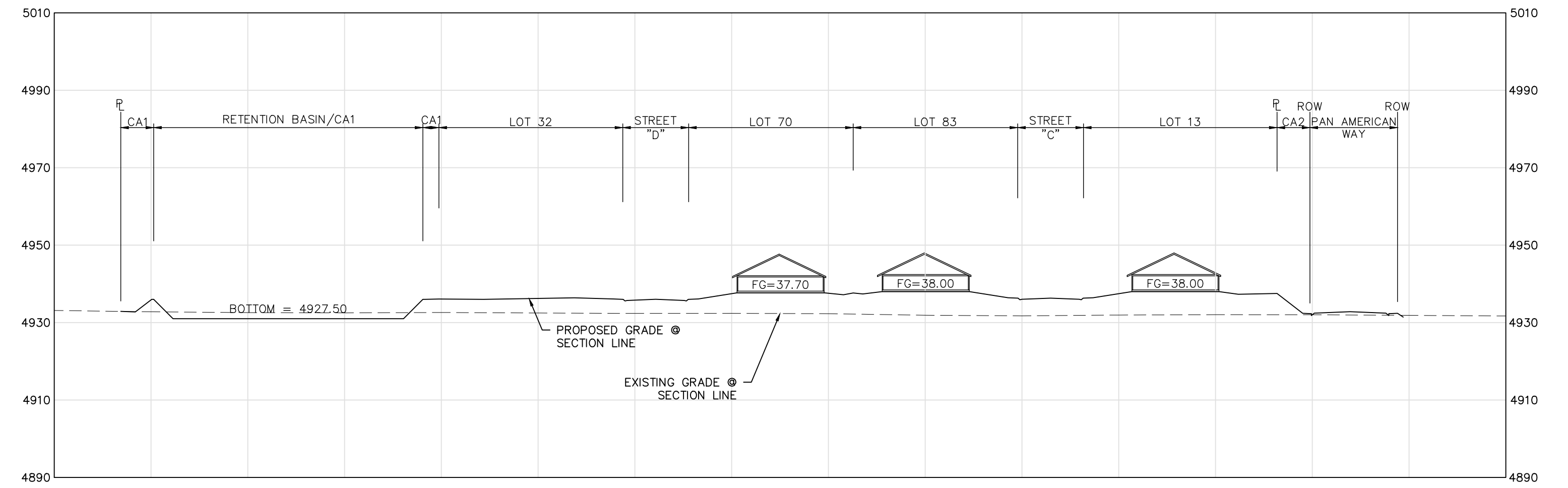
SITEPLAN

SCALE: 1"=100'
 100 0 50 100 200



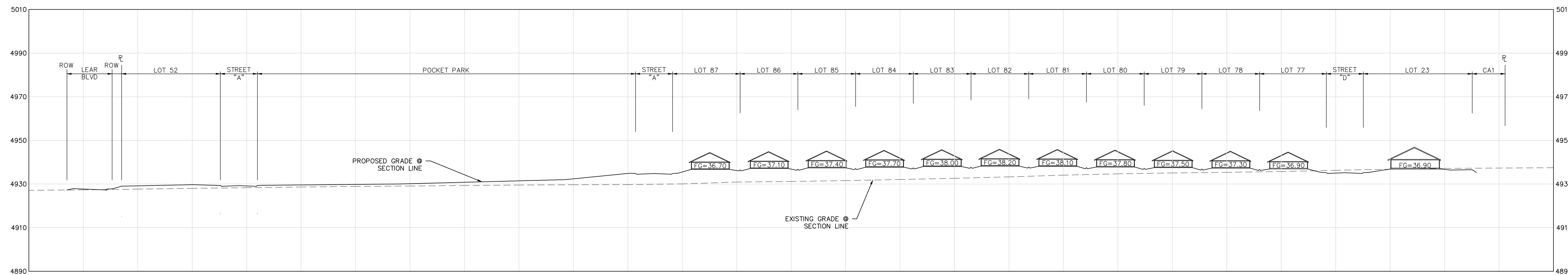
SECTION B-B

SCALE: 1"=50'
 50 0 25 50 100



SECTION C-C

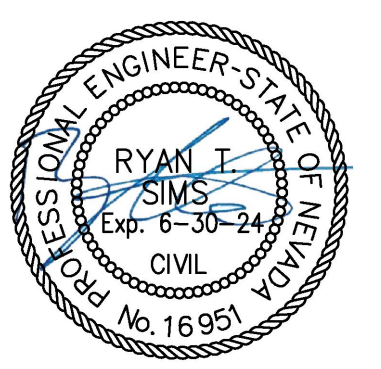
SCALE: 1"=50'
 50 0 25 50 100



SECTION D-D

SCALE: 1"=50'
 50 0 25 50 100

LEARNER LEMMON PROPERTY



5-4-23

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X-SECTIONS C-5

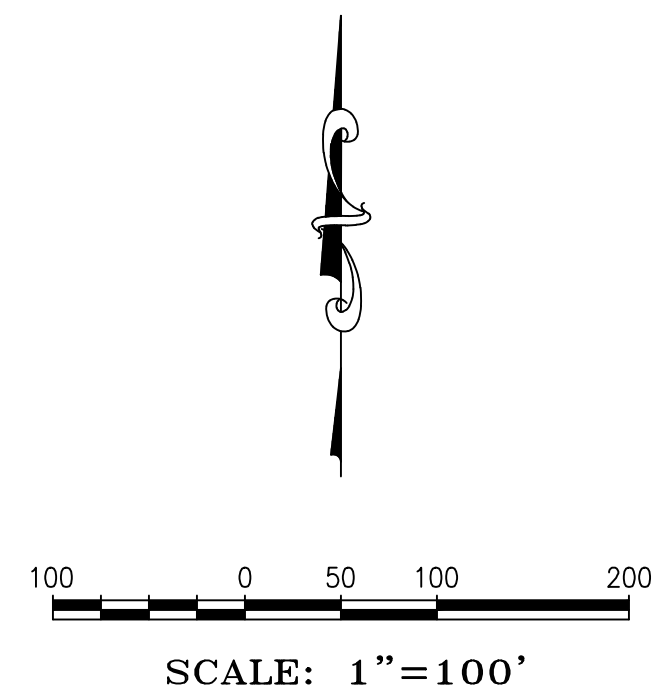
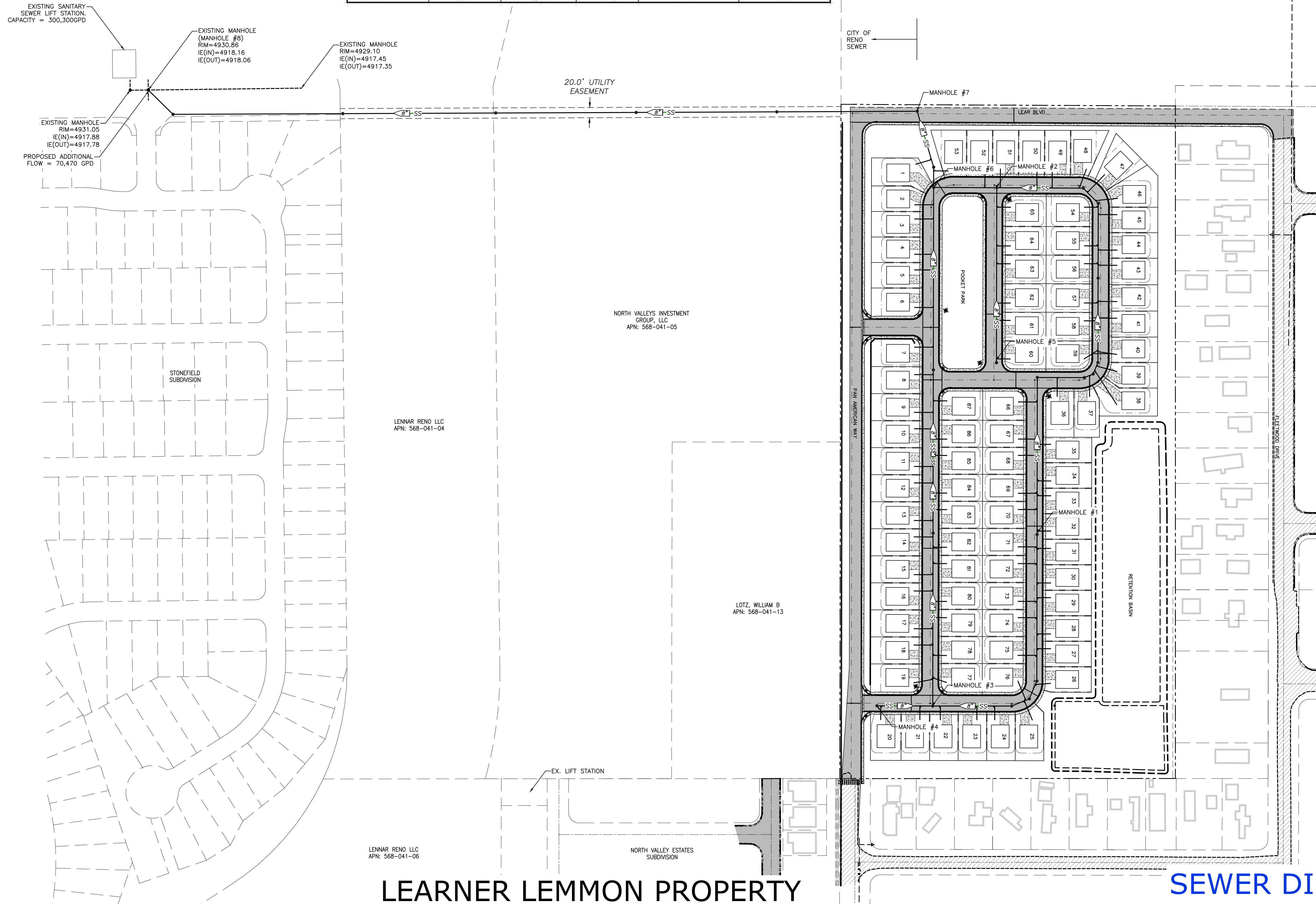
EXISTING SANITARY SEWER LIFT STATION:

EXISTING CAPACITY = 300,300GPD
 EXISTING LOTS SERVED = 146 LOTS
 EXISTING PEAK FLOW = (270 GAL/DAY/LOT) x (146 LOTS) x (3 PEAK FACTOR) = 118,260 GAL/DAY
 PROPOSED LOTS SERVED = 87 LOTS
 PROPOSED PEAK FLOW = (270 GAL/DAY/LOT) x (87 LOTS) x (3 PEAK FACTOR) = 70,470 GAL/DAY
 EXPECTED PEAK FLOW @ LIFT STATION = (118,260 GAL/DAY) + (70,470 GAL/DAY) = 188,730 GAL/DAY

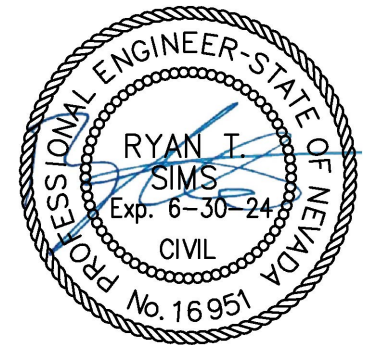
| Preliminary Sanitary Sewer Pipe Calculations | | | | | |
|--|-----------|-----------------|------------|-------------------------|--------------------------|
| Pipe Segment | Slope (%) | Peak Flow (GPD) | Depth (Ft) | Expected Velocity (fps) | Half Full Velocity (fps) |
| MH #1 - MH #2 | 0.70 | 25,110 | 0.10 | 1.18 | 2.72 |
| MH #2 - MH #6 | 0.70 | 31,590 | 0.11 | 1.29 | 2.72 |
| MH #1 - MH #3 | 0.50 | 14,580 | 0.08 | 0.93 | 2.30 |
| MH #3 - MH #6 | 0.50 | 38,880 | 0.13 | 1.24 | 2.30 |
| MH #4 - MH #3 | 1.00 | 1,620 | 0.03 | 0.36 | 3.25 |
| MH #5 - MH #2 | 1.00 | 4,860 | 0.04 | 0.81 | 3.25 |
| MH #6 - MH #7 | 0.70 | 70,470 | 0.16 | 1.67 | 2.72 |
| MH #7 - MH #8 | 0.30 | 70,470 | 0.20 | 1.23 | 1.78 |

NOTE: PAN AMERICAN WAY, LEAR BOULEVARD, AND INTERNAL STREETS TO BE OFFERED FOR DEDICATION AS PUBLIC RIGHT OF WAY

LANSING-ARCUS LLC
 APN: 080-461-27



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5-4-23

LEARNER LEMMON PROPERTY

SEWER DISPLAY C-6



LEGEND

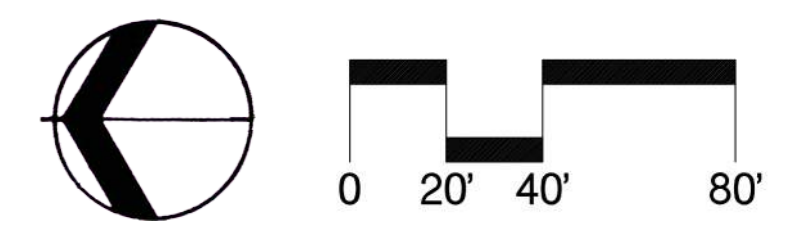
- REVEGETATION LANDSCAPE AREA (63,300 SF)
GRASS, SHRUB, & WILDFLOWER BLEND
- STREETSCAPE LANDSCAPE AREA (15,200 SF)
TREES REQUIRED: (1,170 LF/50 LF)= 24 TREES
TREES PROVIDED: 24
SHRUBS REQUIRED: (15,200 SF/300 SF)*6= 304 SHRUBS

- COMMON LANDSCAPE AREA (20,500 SF)
TREES REQUIRED: (20,500 SF/300 SF)= 69 TREES
TREES PROVIDED: 74 TREES
SHRUBS REQUIRED: (20,500 SF/300 SF)*6= 410 SHRUBS
- RETENTION BASIN (108,300 SF)

- ACCENT TREES (18)
- EVERGREEN TREES (20)
- DECIDUOUS TREES (13)
"CLASS 1 OR 2" SMALLER CALIPER TREES
- DECIDUOUS TREES (47)
"CLASS 3 OR 4" LARGER CALIPER TREES
- XX SINGLE FAMILY HOUSE
- 6' WIDE DG TRAIL (1,890 LF)

LEARNER LEMMON PRELIMINARY LANDSCAPE PLAN
Washoe County, Nevada
CALLANDER PROJECT NUMBER: 23019 | DATE: 05.01.2023 | CALLANDER ASSOCIATES

L1



POCKET PARK W/
CHILDREN'S PLAY AREA

FENCE

STREET LIGHT, TYP.

EVERGREEN TREE, TYP.

TURF

SHRUB, TYP.

SHADE SHELTER

ACCENT TREE, TYP.

PICNIC AREA

BIKE PARKING

PLANTING AREA, TYP.

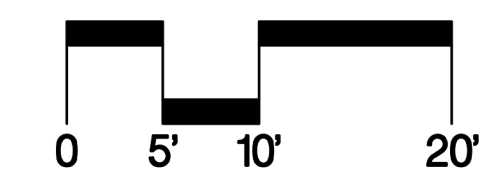
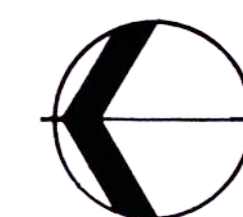
SHADE TREE, TYP.

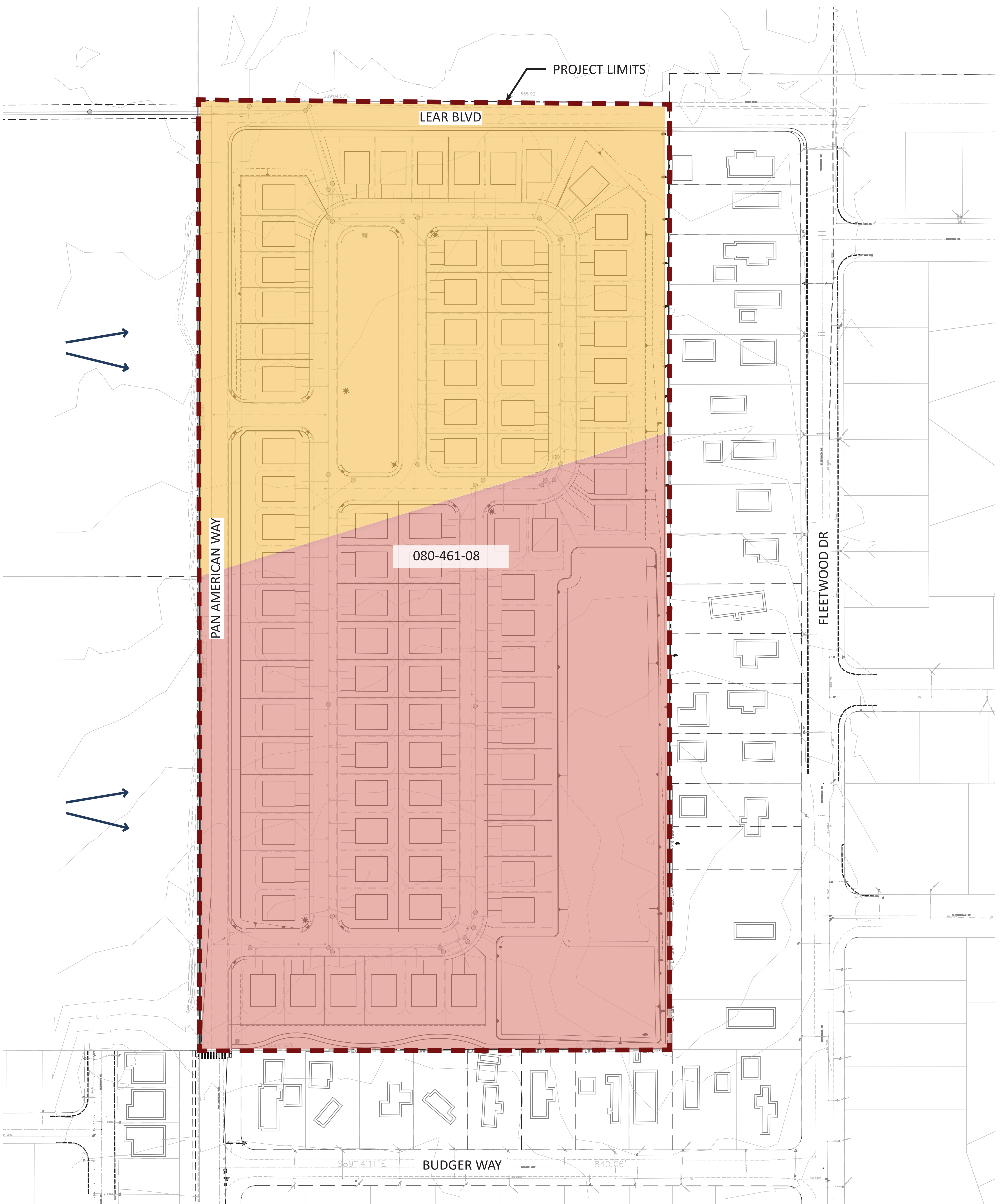
LEARNER LEMMON POCKET PARK PRELIMINARY PLAN

Washoe County, Nevada

CALLANDER PROJECT NUMBER: 23019 | DATE: 05.01.2023 | CALLANDER ASSOCIATES

L2



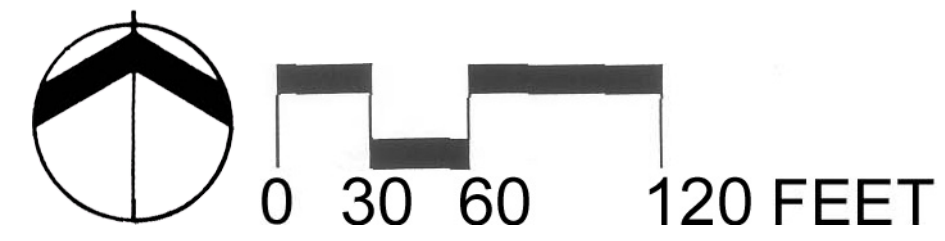


NOTES
EXISTING VEGETATION: CHAPARRAL SHRUBLAND, NO TREES.
TOPOGRAPHY: LEVEL SITE WITH 10' OF FALL ACROSS SITE DRIANING FROM SOUTH TO NORTH
SIGNIFICANT VIEWS: NONE
EASEMENT: MINIMAL/ NO SIGNIFICANT EASEMENTS
ACCESS POINT: OFF OF PAN AMERICAN DRIVE

*The project as proposed complies with all aspects of the Washoe County Master Plan, North Valleys Area Plan, and Washoe County Development Code.

LEGEND

- EXISTING LAND USE: RURAL DESIGNATION
- EXISTING LAND USE: SUBURBAN RESIDENTIAL
- PREVAILING WINDS FROM WEST



LEARNER LEMMON OPPORTUNITY AND CONSTRAINTS MAP
 Washoe County, Nevada
 CALLANDER PROJECT NUMBER: 23019 | DATE: 05.04.2023 | CALLANDER ASSOCIATES

LEARNER-LEMMON SINGLE-FAMILY

RENO, NV

APN: 080-461-08

Prepared for:
LC Learner, LLC.
27132B Paseo Espada, Suite 1226
San Juan Capistrano, CA 92675

Prepared by:
Kimley»»Horn

March 2023 (Revised June 2023)
192349000
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TRAFFIC IMPACT STUDY

FOR

LEARNER-LEMMON SINGLE-FAMILY

Prepared for:
LC Learner, LLC
27132B Paseo Espada, Suite 1226
San Juan Capistrano, CA 92675



Prepared by:
Kimley-Horn and Associates, Inc.
7900 Rancharrah Parkway
Suite 100
Reno, Nevada 89511
(775) 787-7552

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© March 2023 (Revised June 2023)
192349000

EXECUTIVE SUMMARY

The purpose of this traffic impact study is to identify traffic generation characteristics of a proposed single-family housing development, identify potential traffic related impacts on the surrounding street network, and develop mitigation measures required for identified impacts.

The proposed single-family residential development is to be generally located at the southeast corner of Pan American Way and the future Lear Boulevard on approximately 19.93 Acres within APN 080-461-08 in Reno, Nevada. Upon completion, the buildout of the proposed development is anticipated to consist of 87 detached single-family residential buildings.

Regional access to the residential development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way.

The Washoe County scope of study dated January 27, 2023, identified four (4) intersections for full analysis:

- Fleetwood Drive and Lemmon Drive (two-stage intersection)
- Fleetwood Drive and Budger Way
- Budger Way and Pan American Way
- Fleetwood Drive and Lear Boulevard

The scope from Washoe County is included in **Appendix A**. The study area intersections and project access drives are shown in **Figure E-1**.

Full buildout of the development is anticipated to generate approximately 61 AM peak hour trips and approximately 84 PM peak hour trips to the surrounding street network.

The proposed development traffic is anticipated to generate traffic volumes resulting in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for the egressing access drives onto Pan American Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.

Figure E-1 – Project Access Drives and Study Area Intersections



Source: NearMap

TABLE OF CONTENTS

| | |
|--|-----------|
| EXECUTIVE SUMMARY | I |
| 1. INTRODUCTION | 1 |
| 2. EXISTING CONDITIONS | 3 |
| 2.1. Study Area Intersections | 3 |
| 2.2. Existing Lane Configurations and Control | 3 |
| 2.3. Existing Turning Movements | 3 |
| 3. FUTURE CONDITIONS | 6 |
| 3.1. 2026 Background Lane Configuration and Control | 6 |
| 3.2. 2026 Buildout Background Traffic | 6 |
| 3.3. Project Trip Generation | 8 |
| 3.4. Project Trip Distribution | 8 |
| 3.5. Traffic Assignment | 8 |
| 3.6. 2026 Background Plus Project Traffic Volumes | 9 |
| 4. TRAFFIC IMPACT ANALYSIS | 14 |
| 4.1. Analysis Methodology | 14 |
| 4.2. Key Intersection Operational Analysis | 14 |
| 5. CRASH DATA SUMMARY | 16 |
| 6. CONCLUSIONS/RECOMMENDATIONS | 17 |

LIST OF FIGURES

Figure E-1 – Project Access Drives and Study Area Intersections..... ii
 Figure 1 – Vicinity Map2
 Figure 2 – Existing Lane Configurations and Traffic Control.....4
 Figure 3 – 2023 Existing Peak Hour Traffic Volumes5
 Figure 4 – 2026 Background Peak Hour Traffic Volumes.....7
 Figure 5 – 2026 Background Plus Project Lane Configuration and Traffic Control10
 Figure 6 – Project Trip Distribution.....11
 Figure 7 – Project Traffic Assignment12
 Figure 8 – 2026 Background Plus Project Peak Hour Traffic Volumes.....13

LIST OF TABLES

Table 1 – Peak Hour Turning Movement Count Dates3
 Table 2 – Trip Generation8
 Table 3 – Level of Service Definitions14
 Table 4 – Key Intersection Peak Hour LOS Analysis.....15
 Table 5 – Crash Data Summary.....16

LIST OF APPENDICES

- Appendix A Scope of Study
- Appendix B Count Data
- Appendix C Trip Generation Calculations
- Appendix D Key Intersection Peak Hour LOS Calculations
- Appendix E Site Plan

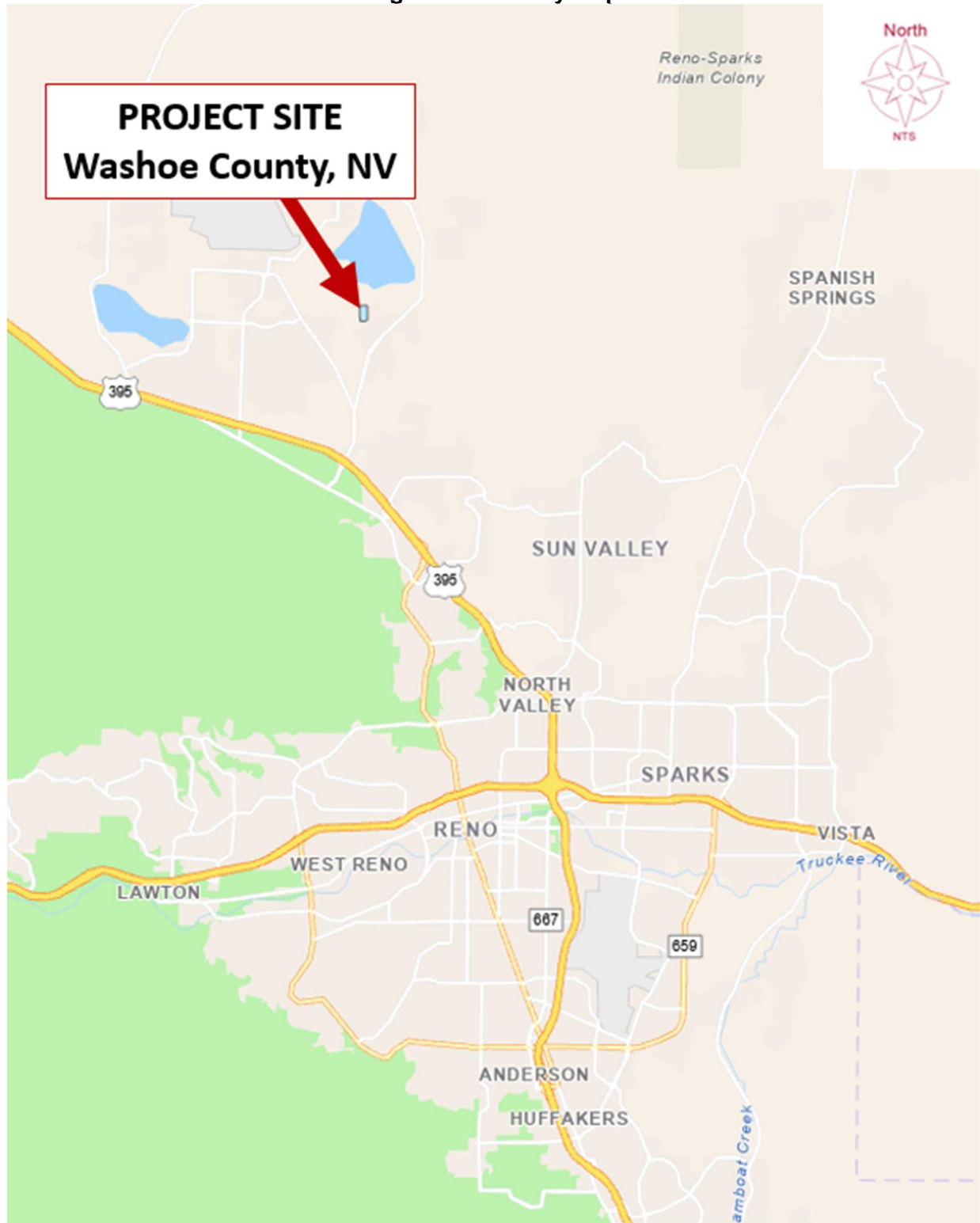
1. INTRODUCTION

Kimley-Horn and Associates, Inc. has been retained by LC Learner, LLC to prepare a traffic impact study for a single-family residential development. The purpose of this traffic impact study is to identify traffic generation characteristics of the proposed development, identify potential traffic related impacts on the local street system, and develop mitigation measures required for the identified impacts.

The proposed single-family residential development is to be generally located at the southeast corner of Pan American Way and the future Lear Boulevard on approximately 19.93 Acres within APN 080-461-08 in Reno, Nevada. Upon completion, the buildout of the proposed development is anticipated to consist of 87 detached single-family residential buildings. A site plan for the proposed development is located in **Appendix G**. The location of the project site with respect to the City of Reno is shown on **Figure 1**.

Regional access to the development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way.

Figure 1 – Vicinity Map



Source: Esri

2. EXISTING CONDITIONS

This section of the report details existing conditions near the project site.

2.1. Study Area Intersections

The Washoe County scope dated January 27, 2023, identified four (4) intersections for full analysis:

- Fleetwood Drive and Lemmon Drive (two-stage intersection)
- Fleetwood Drive and Budger Way
- Budger Way and Pan American Way
- Fleetwood Drive and Lear Boulevard

The location for the single-family residential project is currently undeveloped. The area surrounding the project site is composed primarily of residential and commercial uses. The location of the project site, study area intersections and existing land uses are shown on **Figure E-1**.

2.2. Existing Lane Configurations and Control

Regional access to the development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way. Existing speed limits, lane configuration, and traffic control at the time of this study are illustrated in **Figure 2**.

2.3. Existing Turning Movements

AM and PM peak hour turning movement data was field counted on February 2, 2023, as summarized in **Table 1**, for the study area intersections identified in **Section 2.1**. Count data sheets are provided in **Appendix B**.

Table 1 – Peak Hour Turning Movement Count Dates

| Intersection | Count Date |
|---|----------------------------|
| Fleetwood Drive and Lemmon Drive (#1, #2) | Thursday, February 2, 2023 |
| Fleetwood Drive and Budger Way (#3) | Thursday, February 2, 2023 |
| Budger Way and Pan American Way (#4) | Thursday, February 2, 2023 |
| Fleetwood Drive and Lear Boulevard (#5) | Thursday, February 2, 2023 |

Figure 3 illustrates the 2022 existing peak hour traffic volumes.

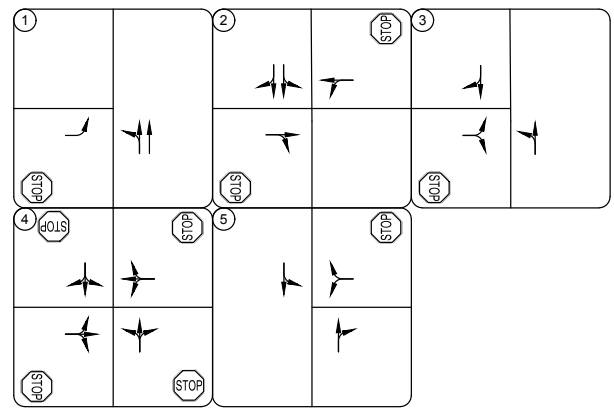


Study Area Intersections

1. Fleetwood Drive and Lemmon Drive Northbound
2. Fleetwood Drive and Lemmon Drive Southbound
3. Fleetwood Drive and Budger Way
4. Fleetwood Drive and Lear Boulevard
5. Budger Way and Pan American Way



2023 Existing Lane Configuration and Control



Legend

- 1 Study Area Key Intersection
- Existing Approach
- Stop Controlled Intersection
- Roadway Speed Limit
- Signal Controlled Intersection

Lemmon Learner Single Family Study Area, 2023 Existing Lane Configuration and Traffic Control

Figure 2





**Lemmon Learner Single Family
2023 Existing Peak Hour Traffic Volumes**

2023 Existing Peak Hour Traffic Volumes

| | | | | | | | | |
|---|------------------------|------------------------------|---|--|------------------------|--------------------------|------------------------|--------------------------|
| ① | ↗ 2(0) ↘ | ↗ 33(60) 109(445) ↘ | ② | ↖ 1(0) ↗ 35(72)① ↖ ← 33(89) | ③ | ↖ 4(6) ↗ 37(27) | ↗ 7(7) ↘ 3(4) | ↗ 0(6) ↘ 20(37) |
| ④ | ↖ 1(0) ↗ 0(1) | ↖ 0(2) ↗ 1(0) | ⑤ | ↖ 1(1) ↗ 0(3) | ↖ 0(3) ↗ 5(8) | ↖ 10(9) | | |

Legend

① Study Area Key Intersection

←XX(X) AM(PM) Peak Hour Traffic Volumes

Figure 3



3. FUTURE CONDITIONS

This section of the report details the conditions that are expected in the future at the time the proposed project is anticipated to be completed.

3.1. 2026 Background Lane Configuration and Control

Regional access to the development is expected to be provided via US-395. Primary access to the project site is anticipated to be from Lemmon Drive. Direct access to the site is planned to be provided by two (2) full access drives located on Pan American Way. Expected speed limits, lane configuration, and traffic control in 2026 are expected remain the same as the 2023 existing speed limits, lane configuration and traffic control illustrated in **Figure 2** with the exception of the project access drives which are illustrated in **Figure 5**.

3.2. 2026 Buildout Background Traffic

To accurately determine the impact of project traffic, it is necessary to establish future baseline traffic volumes along roadways in the vicinity of the proposed development site. The closest Nevada Department of Transportation (NDOT) count station (0310926) has recently shown negative growth. To provide a conservative analysis, existing year (2023) peak hour traffic volumes were grown for three (3) years at a 2 percent (2%) annual growth rate to obtain future background traffic volumes in 2026 when the proposed development is anticipated to be fully completed. The 2026 background peak hour traffic volumes at the key intersections are illustrated in **Figure 4**.



**Learner Lemmon Single Family
2024 Background Peak Hours Traffic Volumes**

2026 Background Peak Hour Traffic Volumes

| | | |
|------------------------|----------------------|--------------------|
| ① | ② | ③ |
| 2(0) → | ← 35(94) | 4(8) ↓ 39(29) ↓ |
| 35(95) → 116(472) → | 1(0) ↓ 379(232) ↓ | 7(7) → 3(4) ↓ |
| ④ | ⑤ | ⑥ |
| 1(0) ↓ 0(1) ↓ | 1(0) ↑ | 0(3) ↓ 5(8) ↓ |
| 0(2) ↓ | 1(0) ↑ | 11(10) ↓ |

Legend

- ① Study Area Key Intersection
- A Project Access Drive
- ←XX(X) AM(PM) Peak Hour Traffic Volumes

Figure 4



3.3. Project Trip Generation

For purposes of estimating the number of new trips that are anticipated to be generated by the proposed residential development, the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition (ITE Land Use Codes 210 – Single-Family Detached Housing) was used. The ITE Trip Generation Manual informational report is a standard reference used by jurisdictions throughout the country and is based on actual trip generation studies performed at numerous locations in areas of various populations.

The project is expected to consist of 87 single-family residential lots. **Table 2** summarizes the estimated project trips. The proposed development is anticipated to generate 242 AM and 256 PM peak hour trips. Calculations are provided in **Appendix D**.

Table 2 – Trip Generation

| ITE Code | Description | Dwelling Units | AM Peak Hour | | | PM Peak Hour | | | Total Daily Trips |
|--------------|--------------------------------|----------------|--------------|-----------|-----------|--------------|-----------|-----------|-------------------|
| | | | In | Out | Total | In | Out | Total | |
| 210 | Single-Family Detached Housing | 87 | 15 | 46 | 61 | 52 | 30 | 82 | 820 |
| Total | | | 15 | 46 | 61 | 52 | 30 | 82 | 820 |

Source: ITE Trip Generation Manual, 11th Edition

3.4. Project Trip Distribution

The study area street network characteristics, including the existing traffic patterns, expected street network, and access to regional facilities were used to determine the distribution of site generated traffic. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site in the same or different direction. **Figure 6** shows the project trip distribution at the study area intersections and the project access drive.

3.5. Traffic Assignment

Assignment of project traffic was obtained by applying the developed trip distribution in **Figure 6** to the estimated traffic generation in **Table 2**. Project lane configuration and control are illustrated in **Figure 5**. Project traffic assignment is illustrated in **Figure 7** for the study area intersections and the project access drive.

The entering and exiting trips at the project access drive are rounded to the nearest whole number when assigned. Therefore, the number of trips assigned to the project driveway may differ slightly from the total trip generation.

3.6. 2026 Background Plus Project Traffic Volumes

The project generated traffic volumes in **Figure 7** were added to the 2026 background traffic volumes in **Figure 4** to represent estimated traffic conditions for full project development in 2026. The 2026 background plus project peak hour traffic volumes for the study area intersections and the project access drive are illustrated in **Figure 8**. Assuming that traffic on Fleetwood Drive is generated exclusively by single-family residential traffic, based on peak hour turning movement counts it is estimated that with the inclusion of this project the ADT on Fleetwood Drive will not exceed 2,000 immediately south of Budger Way.



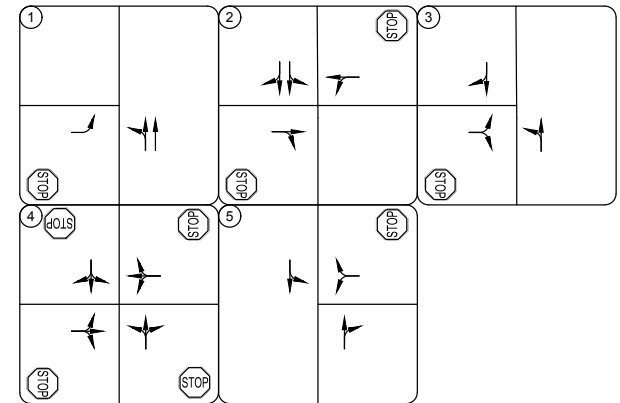
**Learner Lemmon Single Family
2026 Background Plus Project Lane Configuration and Traffic Control**

Study Area Intersections

1. Fleetwood Drive and Lemmon Drive Northbound
2. Fleetwood Drive and Lemmon Drive Southbound
3. Fleetwood Drive and Budger Way
4. Fleetwood Drive and Lear Boulevard
5. Budger Way and Pan American Way



2026 Background Lane Configuration and Control



Legend

- 1 Study Area Key Intersection
- Existing Approach
- Stop Controlled Intersection
- Roadway Speed Limit

Figure 5





Project Trip Distribution

| | | | |
|-----------|-----------|------------------------|-------------------------------------|
| 1 | | 2 | 3 |
| 0%(10%) → | 90%(0%) → | 10%(0%) ↓ | 0%(15%) ↓ |
| | | 0%(10%) → 0%(90%) ↓ | 0%(85%) → 85%(0%) ↑ 15%(0%) ↑ |
| 4 | | 5 | |
| 0%(15%) → | 15%(0%) → | 0%(85%) ← | 85%(0%) ← |

Legend

- 1 Study Area Key Intersection
- ←XX%(XX%) In(Out) Peak Hour Trip Distribution
- ←XX%→ Global Peak Hour Trip Distribution

Learner Lemmon Single Family Project Trip Distribution

Figure 6





Learner Lemmon Single Family Project Traffic Assignment

Project Traffic Assignment

| | | | |
|---|----------------------------------|----------------------------------|--|
| ① | | ② | ③ |
| | 2(0) → 33(60) → 109(445) → | ↓ 1(0) ↓ 35(72) ← ← 33(89) | ↓ 4(6) ↓ 37(27) |
| | | 2(0) → 69(50) ↓ | 7(7) → 3(4) → 0(6) → 20(37) → |
| ④ | | ⑤ | |
| | ↓ 1(0) ↓ 0(1) | ↓ 1(1) ↓ 0(3) | 0(3) 5(8) |
| | 0(2) → 1(0) → | | 10(9) → |

Legend

- ① Study Area Key Intersection
- A Project Access Drive
- ←XX(X) AM(PM) Peak Hour Traffic Volumes

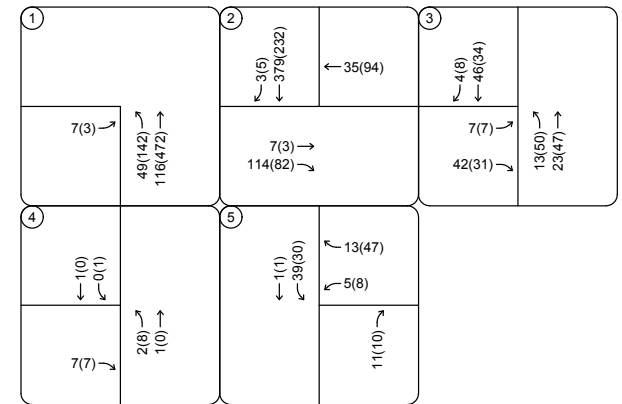
Figure 7





**Learner Lemmon Single Family
2026 Background Plus Project Peak Hour Volumes**

2026 Background Plus Project Peak Hour Volumes



Legend

- ① Study Area Key Intersection
- A Project Access Drive
- ←XX(X) AM(PM) Peak Hour Traffic Volumes

Figure 8



4. TRAFFIC IMPACT ANALYSIS

Traffic analyses for 2023 existing, 2026 background, and 2026 background plus project scenarios were conducted at the identified key intersections to determine possible existing and/or future deficiencies in the street network.

4.1. Analysis Methodology

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections presented in the Transportation Research Board’s “Highway Capacity Manual” 6th Edition (HCM 6). Under the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for a signalized or four-way stop controlled intersection is defined for the intersection as a whole. **Table 3** shows the definition of LOS for intersections.

Table 3 – Level of Service Definitions

| Level of Service | Signalized Intersection Average Total Delay (sec/veh) | Unsignalized Intersection Average Total Delay (sec/veh) |
|------------------|--|--|
| A | ≤10 | 10 |
| B | >10 and ≤20 | >10 and ≤15 |
| C | >20 and ≤35 | >15 and ≤25 |
| D | >35 and ≤55 | >25 and ≤35 |
| E | >55 and ≤80 | >35 and ≤50 |
| F | >80 | >50 |

Definitions provided from the Highway Capacity Manual, 6th Edition, Transportation Research Board.

Synchro 11 was used to analyze the study area intersections and driveways for LOS. Synchro is an interactive computer program that enables planners and engineers to forecast the traffic impacts of new developments; conduct area-wide traffic forecasting studies; test different mitigation measures and compare different traffic scenarios. Synchro 11 utilizes HCM 6 methodology to analyze intersection delay and LOS.

4.2. Key Intersection Operational Analysis

Calculations for the LOS at the key intersections are provided in **Appendix E**. The 2022 existing analysis is based on the lane geometry and intersection control shown in **Figure 3**. The 2025 background and 2025 background plus project analyses are based on the lane geometry and intersection control shown in **Figure 5**. It should be noted that signalized intersections were analyzed using optimized cycle lengths and splits. The results of the Key Intersection LOS Analysis for existing and horizon year conditions are summarized in **Table 4**.

Table 4 – Key Intersection Peak Hour LOS Analysis

| Intersection | 2023 Existing | | 2026 Background* | | 2026 Background Plus Project | |
|--|----------------------|---------------------|----------------------|---------------------|------------------------------|---------------------|
| | AM | PM | AM | PM | AM | PM |
| | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) | Delay (LOS) |
| Fleetwood Drive and Lemmon Drive (#1) Two-Way Stop Control Eastbound | 9.3 (A) | 0.0 (A) | 9.3 (A) | 0.0 (A) | 9.5 (A) | 13.4 (B) |
| Fleetwood Drive and Lemmon Drive (#2) Two-Way Stop Control Eastbound Westbound | 10.0 (B) 12.2 (B) | 9.3 (A) 11.6 (B) | 10.1 (B) 12.5 (B) | 9.3 (A) 11.8 (B) | 10.7 (B) 12.5 (B) | 9.6 (A) 11.9 (B) |
| Fleetwood Drive and Budget Way (#3) Two-Way Stop Control Eastbound | 8.9 (A) | 8.8 (A) | 8.9 (A) | 8.8 (A) | 9.0 (A) | 8.9 (A) |
| Fleetwood Drive and Lear Boulevard (#4)* All-Way Stop Control | 7.0 (A) | 6.7 (A) | 7.0 (A) | 6.7 (A) | 6.7 (A) | 6.9 (A) |
| Budger Way and Pan American Way (#5) Two-Way Stop Control Westbound | 8.6 (A) | 8.6 (A) | 8.6 (A) | 8.6 (A) | 8.8 (A) | 8.8 (A) |

The key intersections are expected to operate at acceptable LOS (as defined by Washoe County) under 2023 existing, 2026 background, and 2026 background plus project scenarios. Additionally, all roadway segments between the study area intersections are expected to operate at acceptable LOS (LOS values as adopted by Washoe County). This includes the following roadways:

1. Fleetwood Drive between Lemmon Drive and Lear Boulevard
2. Budger Way between Pan American Court and Fleetwood Drive

5. CRASH DATA SUMMARY

Crash data was requested for the four (4) existing study intersections from the NDOT Safety Engineering Division for the most recent four-year period (January 1, 2016 – January 1, 2020). The crash data for the study intersections is summarized in **Table 5**. The intersection crashes include those crashes on both the major and minor streets of the key intersections during the three-year analysis period.

Table 5 – Crash Data Summary

| Int. Num. | Intersection Name | Total Crashes | Property Damage Only | Injury | Fatal |
|--------------|------------------------------------|---------------|----------------------|---------------|---------------|
| 1 & 2 | Fleetwood Drive and Lemmon Drive | 2 | 2 (100%) | 0 (0%) | 0 (0%) |
| 3 | Fleetwood Drive and Budger Way | 0 | 0 (0%) | 0 (0%) | 0 (0%) |
| 4 | Fleetwood Drive and Lear Boulevard | 0 | 0 (0%) | 0 (0%) | 0 (0%) |
| 5 | Budger Way and Pan American Way | 0 | 0 (0%) | 0 (0%) | 0 (0%) |
| Total | | 2 | 2 (100%) | 0 (0%) | 0 (0%) |

A total of two (2) crashes were recorded at the four (4) intersections in the most recent four-year period. Those two crashes resulted in two (2) property damage only crashes (100%), zero injury crashes (0%), and zero (0) fatal crashes. Less than five (5) crashes occurred at every study intersection and no additional study is warranted.

6. CONCLUSIONS/RECOMMENDATIONS

The proposed development is anticipated to generate traffic volumes resulting in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for the egressing access drives onto Pan American Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.

APPENDIX A
SCOPE OF STUDY

Tang, Alex

From: Giacomini, David
Sent: Monday, January 30, 2023 2:51 PM
To: Fink, Mitchell
Subject: RE: Traffic Study Scope Request

Mitch,

I have confirmed that the project will connect Lear to Fleetwood. As such here is the final list of off-site intersections (in addition to project access drives) that we will include in analysis and collect turning movement counts at:

- Budger Way and Pan American Way
- Budger Way and Fleetwood Drive
- Lemmon Drive and Fleetwood Drive
- Fleetwood Drive and Lear Boulevard

Thank you,

David J Giacomini, P.E., PTOE, RSP₁
Kimley-Horn | 7900 Rancharra Parkway, Suite 100, Reno, NV 89511
Direct: 775 200 1981 | Mobile: 651 497 8220

From: Fink, Mitchell <MFink@washoecounty.gov>
Sent: Friday, January 27, 2023 2:56 PM
To: Giacomini, David <david.giacomini@kimley-horn.com>
Subject: RE: Traffic Study Scope Request

Hi David,

Your proposed intersection evaluations below for the traffic study for the Learner Lemmon Project are acceptable. Please incorporate the project ingress/egress locations onto Pan American as well. I don't recall if Lear Blvd. is going to be developed to Fleetwood Dr. as part of this project. If it is please add the intersection at Lear Blvd. and Fleetwood Dr. to be evaluated.

- Budger Way and Pan American Way
- Budger Way and Fleetwood Drive
- Lemmon Drive and Fleetwood Drive

Thank you.



Mitchell Fink, P.E. | Licensed Engineer
Community Services Department | Engineering & Capital Projects Division
mfink@washoecounty.gov | Office: 775.328.2050
1001 E. 9th Street, Reno, NV 89512
For additional information, email engineering@washoecounty.gov or call 775.328.2040



**Have some kudos to share about a Community Services Department employee or experience? Email allstars@washoecounty.gov*

The content of this email is the confidential property of Washoe County and should not be copied, modified, retransmitted, or used for any purpose except with written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

From: Giacomini, David <david.giacomin@kimley-horn.com>
Sent: Thursday, January 26, 2023 2:41 PM
To: Fink, Mitchell <MFink@washoecounty.gov>
Subject: Traffic Study Scope Request

[NOTICE: This message originated outside of Washoe County -- DO NOT CLICK on links or open attachments unless you are sure the content is safe.]

Hey Mitch,

I have another traffic scope request for you.

We are working on a proposed residential development located north of Budger Way with access along a proposed extension of Pan American Court. The project is located within APN 080-461-08. Full buildout of the development is anticipated to consist of 87 single-family detached houses. According to the ITE Trip Generation Manual, 11th Edition (ITE Land Use Code 210 – Single-Family Detached Housing) the proposed development is anticipated to generate 820 daily trips, 61 AM peak hour trips, and 82 PM peak hour trips. A preliminary subdivision map (and associated assessor map) is attached for your reference.

Per Section 110.340.50 of the Washoe County Development Code, a traffic report is required if the proposed use will generate 80 or more peak hour trips (per ITE).

Can you please confirm the following intersections to be studied (7-9AM, 4-6PM):

- Budger Way and Pan American Court
- Budger Way and Fleetwood Drive
- Lemmon Drive and Fleetwood Drive

Thank you,

David J Giacomini, P.E., PTOE, RSP₁
Kimley-Horn | 7900 Rancharrah Parkway, Suite 100, Reno, NV 89511
Direct: 775 200 1981 | Mobile: 651 497 8220
Connect with us: [Twitter](#) | [LinkedIn](#) | [Facebook](#) | [YouTube](#)

APPENDIX B
COUNT DATA

Fleetwood Drive and Lemmon Drive - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

| Leg Direction | Lemmon Drive Northbound | | | | Lemmon Drive Southbound | | | | Fleetwood Drive Eastbound | | | | Int |
|---------------------------------------|-------------------------|-------|------|-------|-------------------------|-------|----|-------|---------------------------|------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 7:00AM | 17 | 9 | 0 | 26 | 0 | 95 | 0 | 95 | 25 | 0 | 0 | 25 | 146 |
| 7:15AM | 22 | 4 | 0 | 26 | 0 | 97 | 0 | 97 | 18 | 0 | 0 | 18 | 141 |
| 7:30AM | 35 | 11 | 0 | 46 | 1 | 97 | 0 | 98 | 13 | 1 | 0 | 14 | 158 |
| 7:45AM | 35 | 9 | 0 | 44 | 0 | 68 | 0 | 68 | 13 | 1 | 0 | 14 | 126 |
| Hourly Total | 109 | 33 | 0 | 142 | 1 | 357 | 0 | 358 | 69 | 2 | 0 | 71 | 571 |
| 8:00AM | 30 | 7 | 0 | 37 | 1 | 56 | 0 | 57 | 17 | 1 | 0 | 18 | 112 |
| 8:15AM | 32 | 6 | 0 | 38 | 0 | 70 | 0 | 70 | 12 | 0 | 0 | 12 | 120 |
| 8:30AM | 47 | 7 | 0 | 54 | 0 | 60 | 0 | 60 | 17 | 1 | 0 | 18 | 132 |
| 8:45AM | 76 | 19 | 0 | 95 | 3 | 61 | 0 | 64 | 15 | 1 | 0 | 16 | 175 |
| Hourly Total | 185 | 39 | 0 | 224 | 4 | 247 | 0 | 251 | 61 | 3 | 0 | 64 | 539 |
| 9:00AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hourly Total | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:00PM | 111 | 18 | 0 | 129 | 0 | 43 | 0 | 43 | 8 | 0 | 0 | 8 | 180 |
| 4:15PM | 136 | 37 | 0 | 173 | 0 | 48 | 0 | 48 | 11 | 0 | 0 | 11 | 232 |
| 4:30PM | 106 | 18 | 0 | 124 | 0 | 59 | 0 | 59 | 13 | 0 | 0 | 13 | 196 |
| 4:45PM | 92 | 16 | 1 | 109 | 0 | 69 | 0 | 69 | 18 | 0 | 0 | 18 | 196 |
| Hourly Total | 445 | 89 | 1 | 535 | 0 | 219 | 0 | 219 | 50 | 0 | 0 | 50 | 804 |
| 5:00PM | 94 | 18 | 2 | 114 | 1 | 43 | 0 | 44 | 18 | 0 | 0 | 18 | 176 |
| 5:15PM | 95 | 15 | 0 | 110 | 0 | 53 | 0 | 53 | 18 | 2 | 0 | 20 | 183 |
| 5:30PM | 112 | 26 | 1 | 139 | 0 | 55 | 0 | 55 | 9 | 0 | 0 | 9 | 203 |
| 5:45PM | 84 | 24 | 1 | 109 | 0 | 51 | 0 | 51 | 13 | 0 | 0 | 13 | 173 |
| Hourly Total | 385 | 83 | 4 | 472 | 1 | 202 | 0 | 203 | 58 | 2 | 0 | 60 | 735 |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1124 | 245 | 5 | 1374 | 6 | 1025 | 0 | 1031 | 238 | 7 | 0 | 245 | 2650 |
| % Approach | 81.8% | 17.8% | 0.4% | - | 0.6% | 99.4% | 0% | - | 97.1% | 2.9% | 0% | - | - |
| % Total | 42.4% | 9.2% | 0.2% | 51.8% | 0.2% | 38.7% | 0% | 38.9% | 9.0% | 0.3% | 0% | 9.2% | - |
| Lights | 1107 | 241 | 5 | 1353 | 5 | 1006 | 0 | 1011 | 234 | 7 | 0 | 241 | 2605 |
| % Lights | 98.5% | 98.4% | 100% | 98.5% | 83.3% | 98.1% | 0% | 98.1% | 98.3% | 100% | 0% | 98.4% | 98.3% |
| Articulated Trucks | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| % Articulated Trucks | 0.2% | 0% | 0% | 0.1% | 0% | 0.1% | 0% | 0.1% | 0% | 0% | 0% | 0% | 0.1% |
| Buses and Single-Unit Trucks | 15 | 4 | 0 | 19 | 1 | 18 | 0 | 19 | 4 | 0 | 0 | 4 | 42 |
| % Buses and Single-Unit Trucks | 1.3% | 1.6% | 0% | 1.4% | 16.7% | 1.8% | 0% | 1.8% | 1.7% | 0% | 0% | 1.6% | 1.6% |

*L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

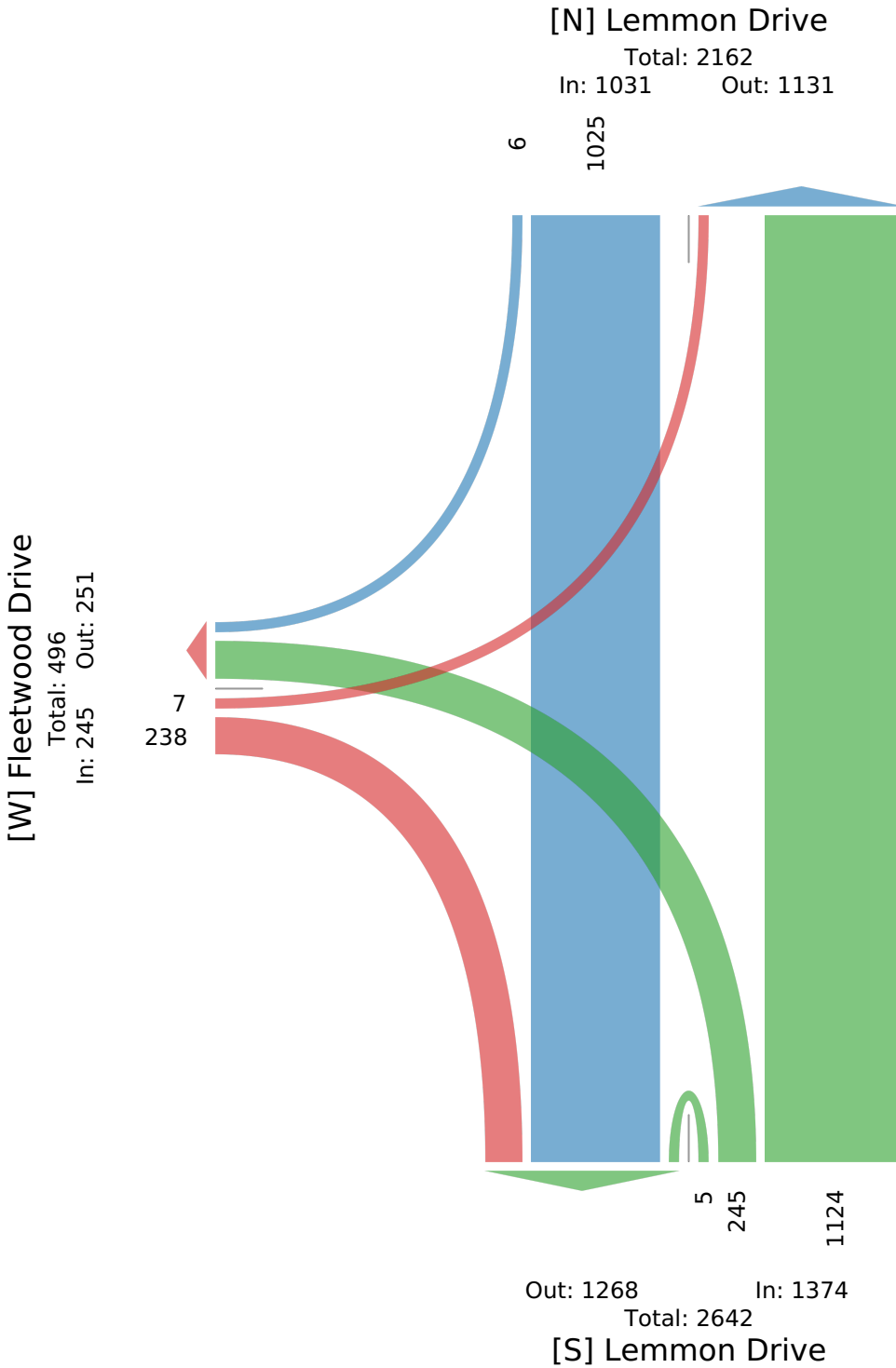
Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Lemmon Drive - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Thu Feb 2, 2023

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

| Leg Direction | Lemmon Drive Northbound | | | | Lemmon Drive Southbound | | | | Fleetwood Drive Eastbound | | | | Int |
|---------------------------------------|----------------------------|-------|----|-------|----------------------------|-------|----|-------|------------------------------|-------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 7:00AM | 17 | 9 | 0 | 26 | 0 | 95 | 0 | 95 | 25 | 0 | 0 | 25 | 146 |
| 7:15AM | 22 | 4 | 0 | 26 | 0 | 97 | 0 | 97 | 18 | 0 | 0 | 18 | 141 |
| 7:30AM | 35 | 11 | 0 | 46 | 1 | 97 | 0 | 98 | 13 | 1 | 0 | 14 | 158 |
| 7:45AM | 35 | 9 | 0 | 44 | 0 | 68 | 0 | 68 | 13 | 1 | 0 | 14 | 126 |
| Total | 109 | 33 | 0 | 142 | 1 | 357 | 0 | 358 | 69 | 2 | 0 | 71 | 571 |
| % Approach | 76.8% | 23.2% | 0% | - | 0.3% | 99.7% | 0% | - | 97.2% | 2.8% | 0% | - | - |
| % Total | 19.1% | 5.8% | 0% | 24.9% | 0.2% | 62.5% | 0% | 62.7% | 12.1% | 0.4% | 0% | 12.4% | - |
| PHF | 0.779 | 0.750 | - | 0.772 | 0.250 | 0.920 | - | 0.913 | 0.690 | 0.500 | - | 0.710 | 0.903 |
| Lights | 101 | 31 | 0 | 132 | 1 | 354 | 0 | 355 | 67 | 2 | 0 | 69 | 556 |
| % Lights | 92.7% | 93.9% | 0% | 93.0% | 100% | 99.2% | 0% | 99.2% | 97.1% | 100% | 0% | 97.2% | 97.4% |
| Articulated Trucks | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Articulated Trucks | 1.8% | 0% | 0% | 1.4% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0.4% |
| Buses and Single-Unit Trucks | 6 | 2 | 0 | 8 | 0 | 3 | 0 | 3 | 2 | 0 | 0 | 2 | 13 |
| % Buses and Single-Unit Trucks | 5.5% | 6.1% | 0% | 5.6% | 0% | 0.8% | 0% | 0.8% | 2.9% | 0% | 0% | 2.8% | 2.3% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

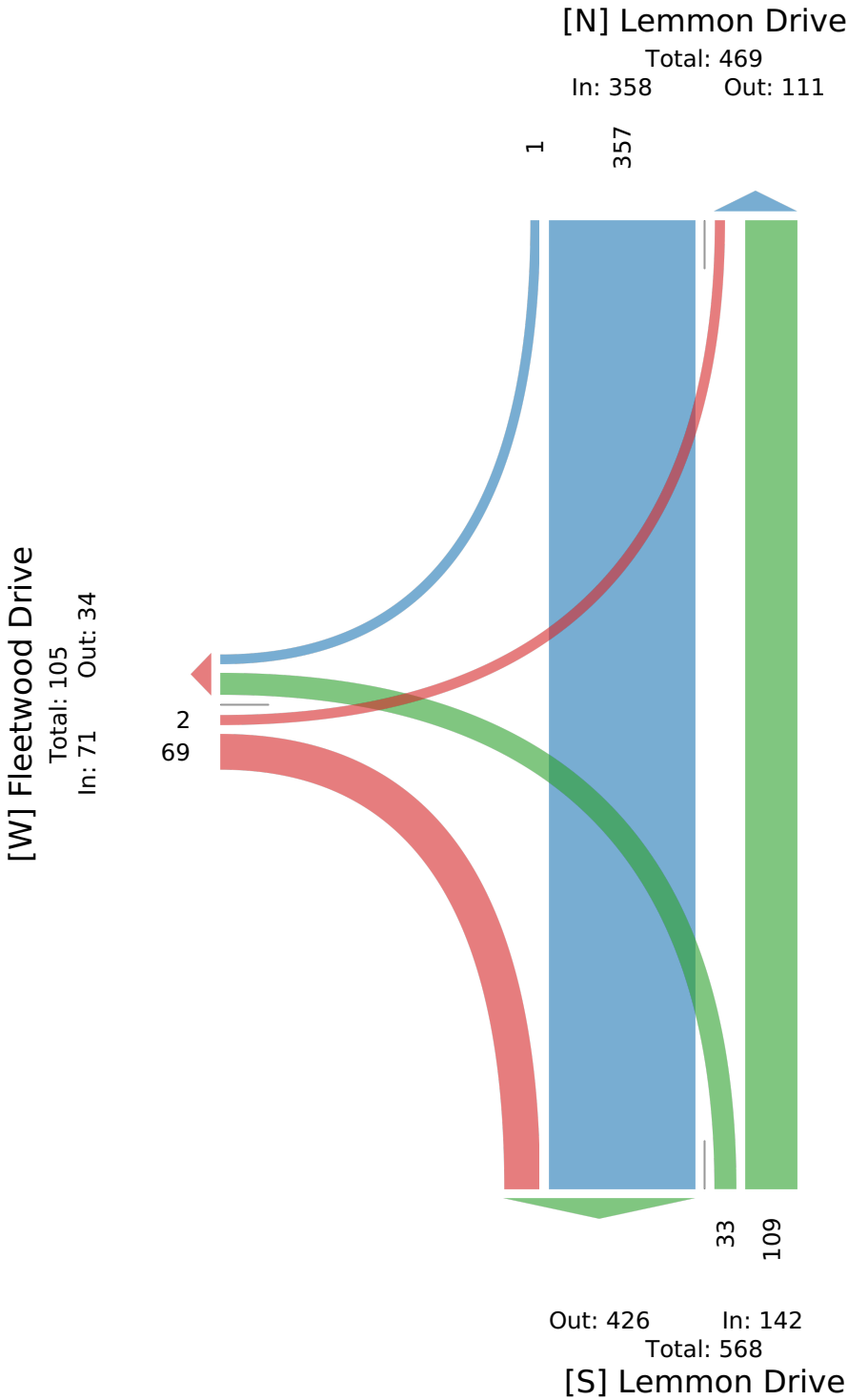
AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Lemmon Drive Northbound | | | | Lemmon Drive Southbound | | | | Fleetwood Drive Eastbound | | | | Int |
|---------------------------------------|----------------------------|-------|-------|-------|----------------------------|-------|----|-------|------------------------------|----|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 4:00PM | 111 | 18 | 0 | 129 | 0 | 43 | 0 | 43 | 8 | 0 | 0 | 8 | 180 |
| 4:15PM | 136 | 37 | 0 | 173 | 0 | 48 | 0 | 48 | 11 | 0 | 0 | 11 | 232 |
| 4:30PM | 106 | 18 | 0 | 124 | 0 | 59 | 0 | 59 | 13 | 0 | 0 | 13 | 196 |
| 4:45PM | 92 | 16 | 1 | 109 | 0 | 69 | 0 | 69 | 18 | 0 | 0 | 18 | 196 |
| Total | 445 | 89 | 1 | 535 | 0 | 219 | 0 | 219 | 50 | 0 | 0 | 50 | 804 |
| % Approach | 83.2% | 16.6% | 0.2% | - | 0% | 100% | 0% | - | 100% | 0% | 0% | - | - |
| % Total | 55.3% | 11.1% | 0.1% | 66.5% | 0% | 27.2% | 0% | 27.2% | 6.2% | 0% | 0% | 6.2% | - |
| PHF | 0.818 | 0.601 | 0.250 | 0.773 | - | 0.793 | - | 0.793 | 0.694 | - | - | 0.694 | 0.866 |
| Lights | 442 | 87 | 1 | 530 | 0 | 215 | 0 | 215 | 49 | 0 | 0 | 49 | 794 |
| % Lights | 99.3% | 97.8% | 100% | 99.1% | 0% | 98.2% | 0% | 98.2% | 98.0% | 0% | 0% | 98.0% | 98.8% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 3 | 2 | 0 | 5 | 0 | 4 | 0 | 4 | 1 | 0 | 0 | 1 | 10 |
| % Buses and Single-Unit Trucks | 0.7% | 2.2% | 0% | 0.9% | 0% | 1.8% | 0% | 1.8% | 2.0% | 0% | 0% | 2.0% | 1.2% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lemmon Drive - TMC

Thu Feb 2, 2023

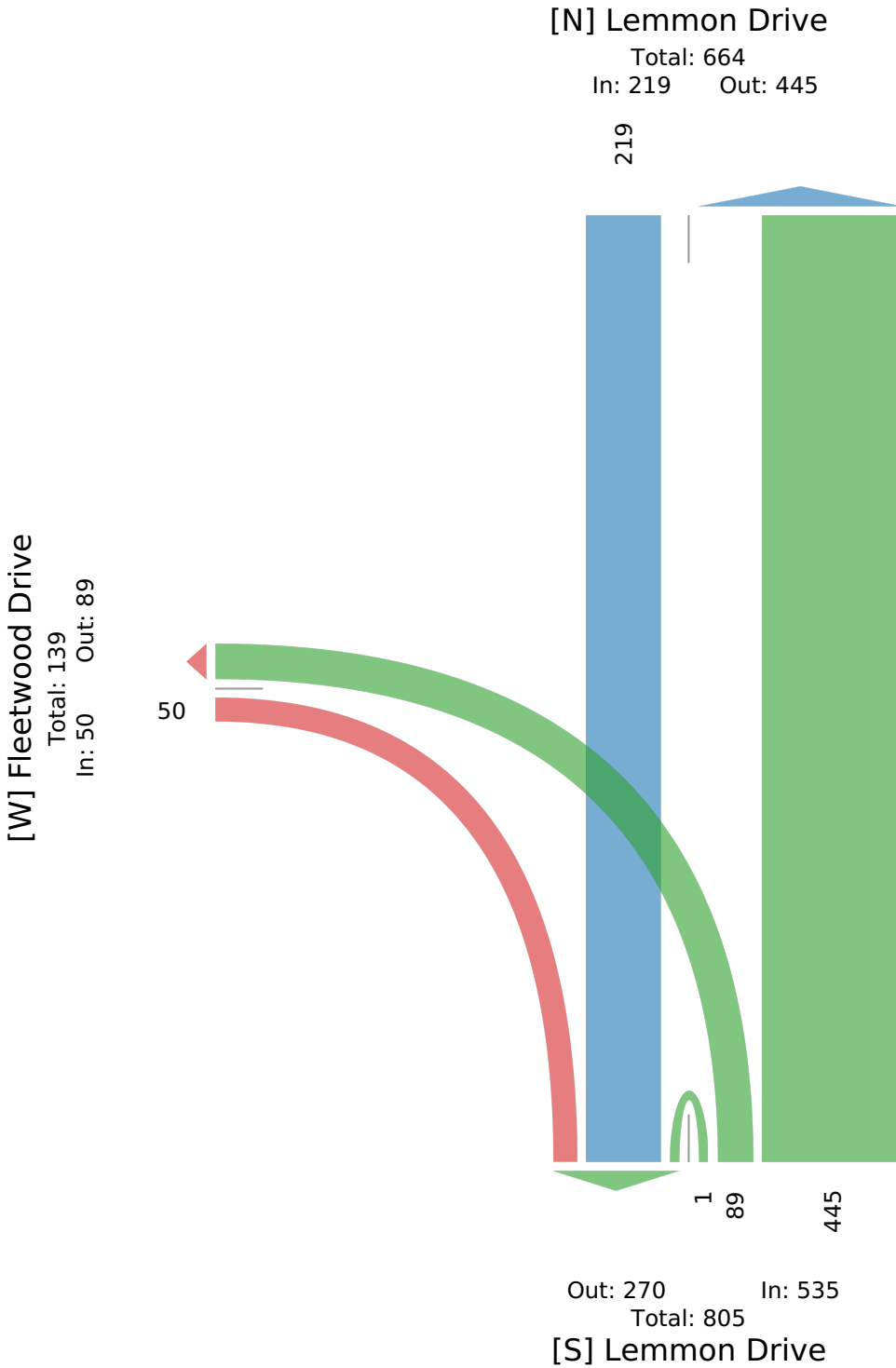
PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035399, Location: 39.639458, -119.840831

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
 767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | Fleetwood Drive Southbound | | | | Budger Way Eastbound | | | | Int |
|---------------------------------------|-------------------------------|-------|----|-------|-------------------------------|-------|----|-------|-------------------------|-------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 7:00AM | 6 | 0 | 0 | 6 | 0 | 12 | 0 | 12 | 1 | 2 | 0 | 3 | 21 |
| 7:15AM | 5 | 0 | 0 | 5 | 3 | 13 | 0 | 16 | 2 | 3 | 0 | 5 | 26 |
| 7:30AM | 4 | 0 | 0 | 4 | 1 | 6 | 0 | 7 | 0 | 2 | 0 | 2 | 13 |
| 7:45AM | 5 | 0 | 0 | 5 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 11 |
| Hourly Total | 20 | 0 | 0 | 20 | 4 | 37 | 0 | 41 | 3 | 7 | 0 | 10 | 71 |
| 8:00AM | 3 | 1 | 0 | 4 | 0 | 6 | 0 | 6 | 0 | 4 | 0 | 4 | 14 |
| 8:15AM | 3 | 0 | 0 | 3 | 1 | 3 | 0 | 4 | 2 | 1 | 0 | 3 | 10 |
| 8:30AM | 2 | 0 | 0 | 2 | 0 | 7 | 0 | 7 | 2 | 0 | 0 | 2 | 11 |
| 8:45AM | 14 | 1 | 0 | 15 | 1 | 7 | 0 | 8 | 0 | 4 | 0 | 4 | 27 |
| Hourly Total | 22 | 2 | 0 | 24 | 2 | 23 | 0 | 25 | 4 | 9 | 0 | 13 | 62 |
| 9:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00PM | 7 | 1 | 0 | 8 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 13 |
| 4:15PM | 14 | 2 | 0 | 16 | 1 | 5 | 0 | 6 | 4 | 1 | 0 | 5 | 27 |
| 4:30PM | 5 | 1 | 0 | 6 | 1 | 8 | 0 | 9 | 0 | 2 | 0 | 2 | 17 |
| 4:45PM | 8 | 1 | 0 | 9 | 5 | 6 | 0 | 11 | 1 | 3 | 0 | 4 | 24 |
| Hourly Total | 34 | 5 | 0 | 39 | 7 | 24 | 0 | 31 | 5 | 6 | 0 | 11 | 81 |
| 5:00PM | 8 | 2 | 0 | 10 | 0 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 17 |
| 5:15PM | 8 | 1 | 0 | 9 | 0 | 10 | 0 | 10 | 1 | 4 | 0 | 5 | 24 |
| 5:30PM | 13 | 2 | 0 | 15 | 3 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 24 |
| 5:45PM | 15 | 0 | 0 | 15 | 1 | 4 | 0 | 5 | 2 | 2 | 0 | 4 | 24 |
| Hourly Total | 44 | 5 | 0 | 49 | 4 | 25 | 0 | 29 | 5 | 6 | 0 | 11 | 89 |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 120 | 12 | 0 | 132 | 17 | 109 | 0 | 126 | 17 | 28 | 0 | 45 | 303 |
| % Approach | 90.9% | 9.1% | 0% | - | 13.5% | 86.5% | 0% | - | 37.8% | 62.2% | 0% | - | - |
| % Total | 39.6% | 4.0% | 0% | 43.6% | 5.6% | 36.0% | 0% | 41.6% | 5.6% | 9.2% | 0% | 14.9% | - |
| Lights | 120 | 11 | 0 | 131 | 17 | 106 | 0 | 123 | 17 | 27 | 0 | 44 | 298 |
| % Lights | 100% | 91.7% | 0% | 99.2% | 100% | 97.2% | 0% | 97.6% | 100% | 96.4% | 0% | 97.8% | 98.3% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 1 | 5 |
| % Buses and Single-Unit Trucks | 0% | 8.3% | 0% | 0.8% | 0% | 2.8% | 0% | 2.4% | 0% | 3.6% | 0% | 2.2% | 1.7% |

*L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

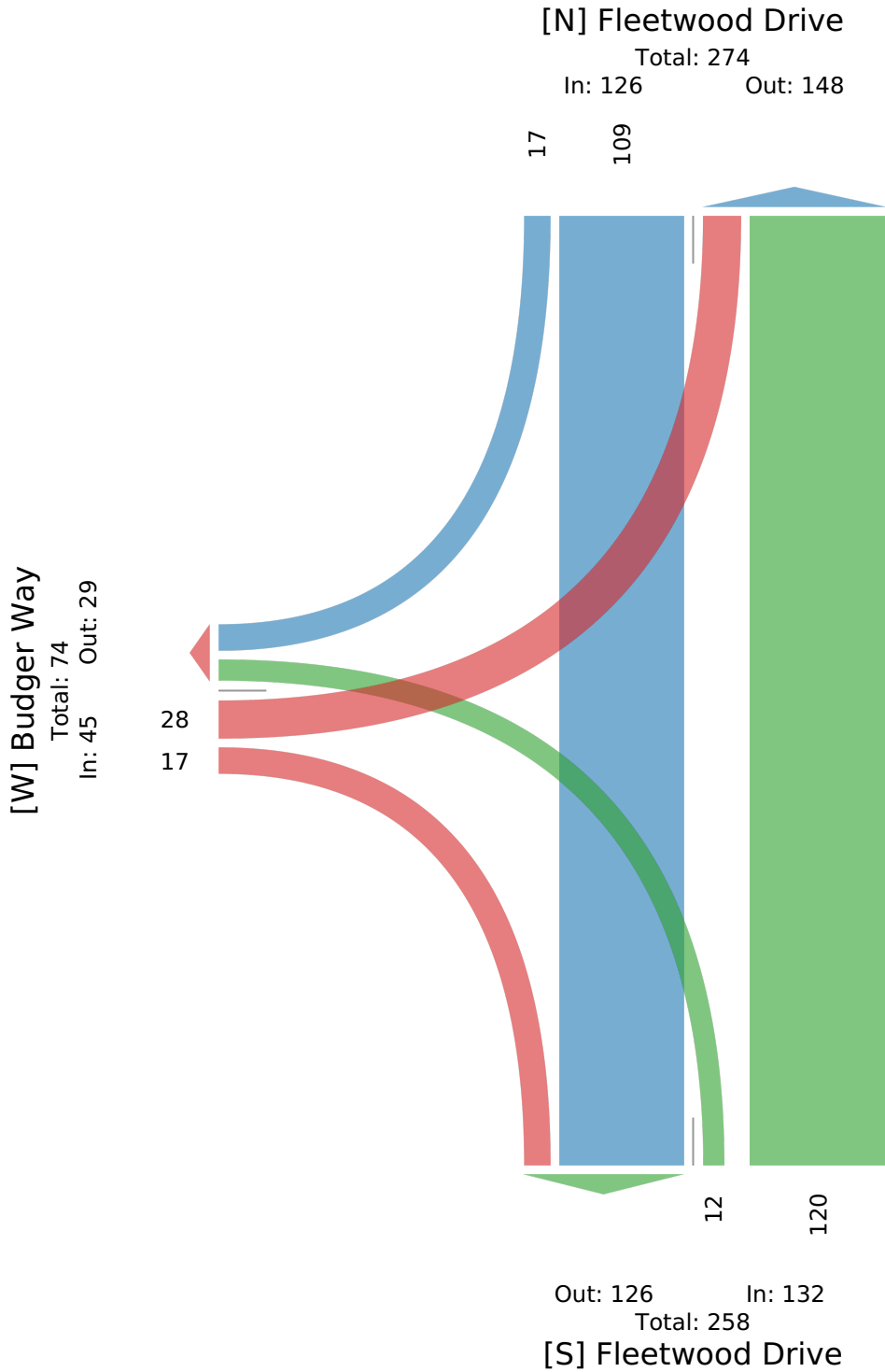
Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | Fleetwood Drive Southbound | | | | Budger Way Eastbound | | | | |
|---------------------------------------|----------------------------|----|----|-------|----------------------------|-------|----|-------|----------------------|-------|----|-------|-------|
| Time | T | L | U | App | R | T | U | App | R | L | U | App | Int |
| 2023-02-02 7:00AM | 6 | 0 | 0 | 6 | 0 | 12 | 0 | 12 | 1 | 2 | 0 | 3 | 21 |
| 7:15AM | 5 | 0 | 0 | 5 | 3 | 13 | 0 | 16 | 2 | 3 | 0 | 5 | 26 |
| 7:30AM | 4 | 0 | 0 | 4 | 1 | 6 | 0 | 7 | 0 | 2 | 0 | 2 | 13 |
| 7:45AM | 5 | 0 | 0 | 5 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 11 |
| Total | 20 | 0 | 0 | 20 | 4 | 37 | 0 | 41 | 3 | 7 | 0 | 10 | 71 |
| % Approach | 100% | 0% | 0% | - | 9.8% | 90.2% | 0% | - | 30.0% | 70.0% | 0% | - | - |
| % Total | 28.2% | 0% | 0% | 28.2% | 5.6% | 52.1% | 0% | 57.7% | 4.2% | 9.9% | 0% | 14.1% | - |
| PHF | 0.833 | - | - | 0.833 | 0.333 | 0.712 | - | 0.641 | 0.375 | 0.583 | - | 0.500 | 0.683 |
| Lights | 20 | 0 | 0 | 20 | 4 | 36 | 0 | 40 | 3 | 7 | 0 | 10 | 70 |
| % Lights | 100% | 0% | 0% | 100% | 100% | 97.3% | 0% | 97.6% | 100% | 100% | 0% | 100% | 98.6% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 2.7% | 0% | 2.4% | 0% | 0% | 0% | 0% | 1.4% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

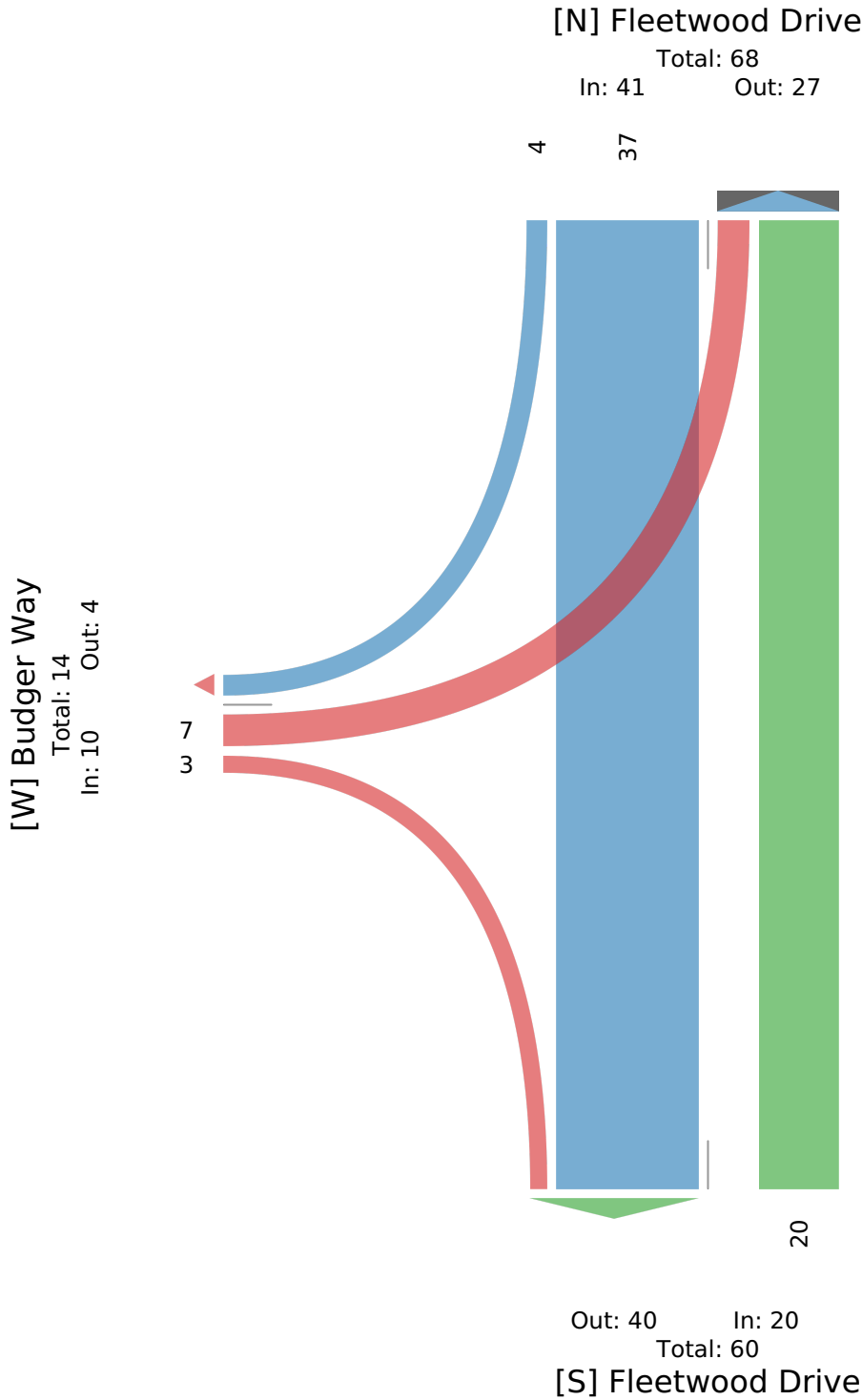
AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | Fleetwood Drive Southbound | | | | Budger Way Eastbound | | | | Int |
|---------------------------------------|-------------------------------|-------|----|-------|-------------------------------|-------|----|-------|-------------------------|-------|----|-------|-------|
| | T | L | U | App | R | T | U | App | R | L | U | App | |
| 2023-02-02 4:45PM | 8 | 1 | 0 | 9 | 5 | 6 | 0 | 11 | 1 | 3 | 0 | 4 | 24 |
| 5:00PM | 8 | 2 | 0 | 10 | 0 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 17 |
| 5:15PM | 8 | 1 | 0 | 9 | 0 | 10 | 0 | 10 | 1 | 4 | 0 | 5 | 24 |
| 5:30PM | 13 | 2 | 0 | 15 | 3 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 24 |
| Total | 37 | 6 | 0 | 43 | 8 | 27 | 0 | 35 | 4 | 7 | 0 | 11 | 89 |
| % Approach | 86.0% | 14.0% | 0% | - | 22.9% | 77.1% | 0% | - | 36.4% | 63.6% | 0% | - | - |
| % Total | 41.6% | 6.7% | 0% | 48.3% | 9.0% | 30.3% | 0% | 39.3% | 4.5% | 7.9% | 0% | 12.4% | - |
| PHF | 0.712 | 0.750 | - | 0.717 | 0.400 | 0.675 | - | 0.795 | 0.500 | 0.438 | - | 0.550 | 0.927 |
| Lights | 37 | 6 | 0 | 43 | 8 | 27 | 0 | 35 | 4 | 7 | 0 | 11 | 89 |
| % Lights | 100% | 100% | 0% | 100% | 100% | 100% | 0% | 100% | 100% | 100% | 0% | 100% | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Budger Way - TMC

Thu Feb 2, 2023

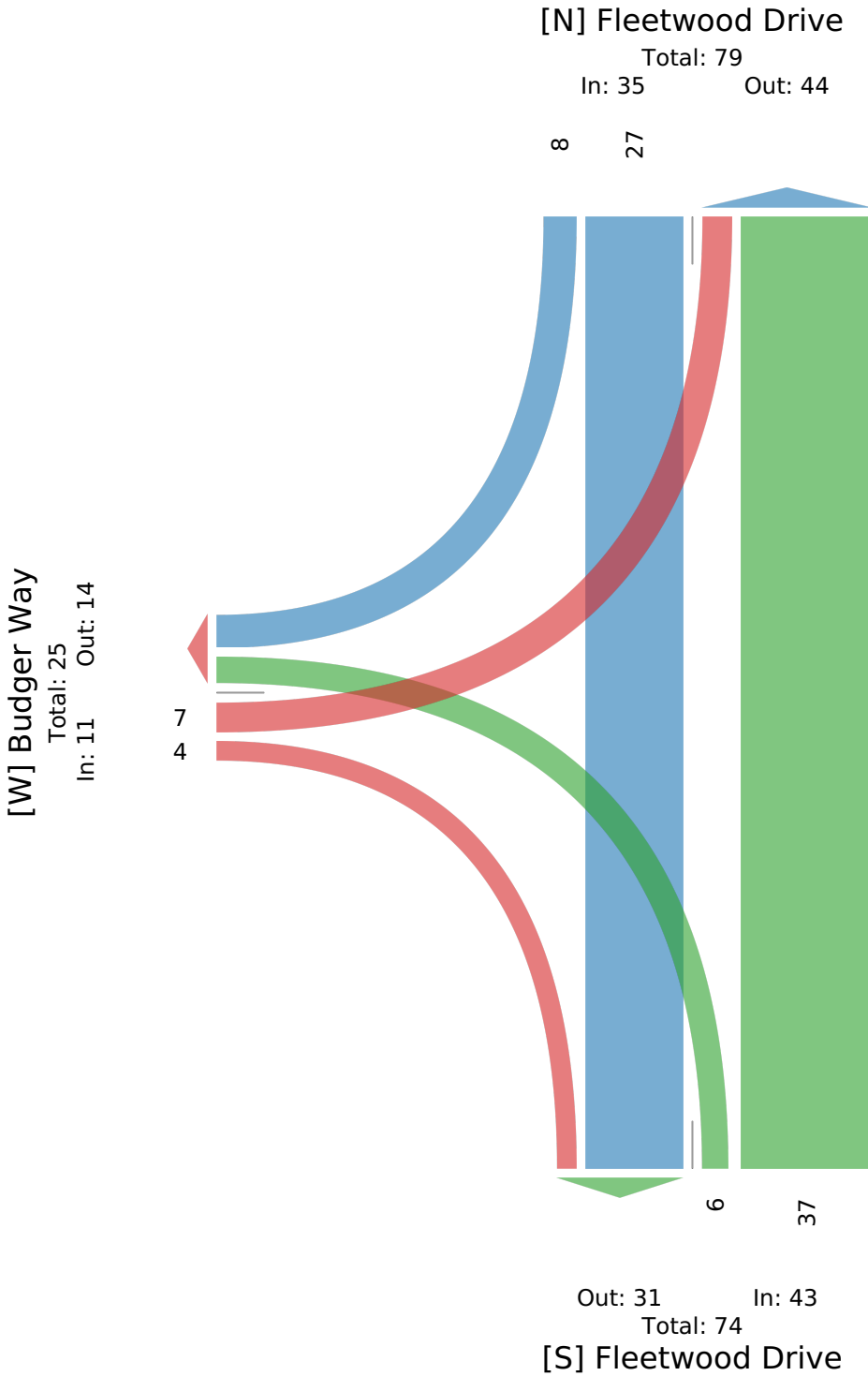
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035397, Location: 39.642744, -119.843968

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

Full Length (4 PM-6 PM, 7 AM-9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Pan American Drive Northbound | | | | Pan American Drive Southbound | | | | Budger Way Westbound | | | | Int | |
|---------------------------------------|-------------------------------|------|----|-------|-------------------------------|-------|-------|-------|----------------------|-------|----|-------|-------|----|
| | R | T | U | App | T | L | U | App | R | L | U | App | | |
| 2023-02-02 7:00AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 7:15AM | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 7 |
| 7:30AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Hourly Total | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 12 |
| 8:00AM | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 6 |
| 8:15AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| 8:30AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45AM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 5 |
| Hourly Total | 11 | 0 | 0 | 11 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 16 |
| 9:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00PM | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 1 | 1 | 5 |
| 4:15PM | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 2 | 6 |
| 4:30PM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 4 |
| 4:45PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 7 | 9 | |
| Hourly Total | 9 | 0 | 0 | 9 | 1 | 1 | 2 | 4 | 3 | 8 | 0 | 11 | 24 | |
| 5:00PM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15PM | 4 | 1 | 0 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5:30PM | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | |
| 5:45PM | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 6 | |
| Hourly Total | 9 | 2 | 0 | 11 | 1 | 1 | 0 | 2 | 0 | 4 | 0 | 4 | 17 | |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 36 | 2 | 0 | 38 | 3 | 2 | 2 | 7 | 3 | 21 | 0 | 24 | 69 | |
| % Approach | 94.7% | 5.3% | 0% | - | 42.9% | 28.6% | 28.6% | - | 12.5% | 87.5% | 0% | - | - | |
| % Total | 52.2% | 2.9% | 0% | 55.1% | 4.3% | 2.9% | 2.9% | 10.1% | 4.3% | 30.4% | 0% | 34.8% | - | |
| Lights | 35 | 2 | 0 | 37 | 3 | 2 | 2 | 7 | 3 | 20 | 0 | 23 | 67 | |
| % Lights | 97.2% | 100% | 0% | 97.4% | 100% | 100% | 100% | 100% | 100% | 95.2% | 0% | 95.8% | 97.1% | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| Buses and Single-Unit Trucks | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | |
| % Buses and Single-Unit Trucks | 2.8% | 0% | 0% | 2.6% | 0% | 0% | 0% | 0% | 0% | 4.8% | 0% | 4.2% | 2.9% | |

*L: Left, R: Right, T: Thru, U: U-Turn

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

Full Length (4 PM-6 PM, 7 AM-9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Pan American Drive

Total: 14
In: 7 Out: 7

3 22



3
21
Out: 38 In: 24
Total: 62
[E] Budger Way

Out: 24 In: 38
Total: 62

[S] Pan American Drive

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Pan American Drive Northbound | | | | Pan American Drive Southbound | | | | Budger Way Westbound | | | | Int |
|---------------------------------------|----------------------------------|----|----|-------|----------------------------------|----|----|-------|-------------------------|-------|----|-------|-------|
| | R | T | U | App | T | L | U | App | R | L | U | App | |
| 2023-02-02 7:15AM | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 7 |
| 7:30AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 8:00AM | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 6 |
| Total | 10 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 5 | 16 |
| % Approach | 100% | 0% | 0% | - | 100% | 0% | 0% | - | 0% | 100% | 0% | - | - |
| % Total | 62.5% | 0% | 0% | 62.5% | 6.3% | 0% | 0% | 6.3% | 0% | 31.3% | 0% | 31.3% | - |
| PHF | 0.625 | - | - | 0.625 | 0.250 | - | - | 0.250 | - | 0.417 | - | 0.417 | 0.571 |
| Lights | 10 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 5 | 16 |
| % Lights | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 100% | 0% | 100% | 0% | 100% | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Pan American Drive

Total: 1
In: 1 Out: 0

1



10

Out: 6 In: 10
Total: 16

[S] Pan American Drive

5

Out: 10 In: 5
Total: 15

[E] Budger Way

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Pan American Drive Northbound | | | | Pan American Drive Southbound | | | | Budger Way Westbound | | | | Int |
|---------------------------------------|-------------------------------|----|----|-------|-------------------------------|-------|-------|-------|----------------------|-------|----|-------|-------|
| | R | T | U | App | T | L | U | App | R | L | U | App | |
| 2023-02-02 4:00PM | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 1 | 5 |
| 4:15PM | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 6 |
| 4:30PM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| 4:45PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 7 | 9 |
| Total | 9 | 0 | 0 | 9 | 1 | 1 | 2 | 4 | 3 | 8 | 0 | 11 | 24 |
| % Approach | 100% | 0% | 0% | - | 25.0% | 25.0% | 50.0% | - | 27.3% | 72.7% | 0% | - | - |
| % Total | 37.5% | 0% | 0% | 37.5% | 4.2% | 4.2% | 8.3% | 16.7% | 12.5% | 33.3% | 0% | 45.8% | - |
| PHF | 0.750 | - | - | 0.750 | 0.250 | 0.250 | 0.250 | 0.333 | 0.750 | 0.333 | - | 0.393 | 0.667 |
| Lights | 9 | 0 | 0 | 9 | 1 | 1 | 2 | 4 | 3 | 8 | 0 | 11 | 24 |
| % Lights | 100% | 0% | 0% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 0% | 100% | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Budger Way and Pan American Way - TMC

Thu Feb 2, 2023

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035396, Location: 39.642752, -119.846954

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Pan American Drive

Total: 9
In: 4 Out: 5

1 1 2



3
8
Out: 10 In: 11
Total: 21
[E] Budger Way

Out: 9 In: 9
Total: 18

[S] Pan American Drive

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

| Leg Direction | Fleetwood Drive Northbound | | | | | Fleetwood Drive Southbound | | | | | Lear Boulevard Eastbound | | | | | Lear Boulevard Westbound | | | | | Int | | | | | |
|---------------------------------------|----------------------------|-------|----|----|-------|----------------------------|-------|----|----|-------|--------------------------|----|----|----|-------|--------------------------|----|----|----|-----|-----|----|----|----|----|------|
| | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | | | | | | |
| 2023-02-02 7:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 9:00AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Approach | 0% | 100% | 0% | 0% | - | 0% | 100% | 0% | 0% | - | 100% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | - | - | - | - | - | - |
| % Total | 0% | 20.0% | 0% | 0% | 20.0% | 0% | 40.0% | 0% | 0% | 40.0% | 40.0% | 0% | 0% | 0% | 40.0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - |
| Lights | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Lights | 0% | 100% | 0% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | - | - | - | - | - | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | - | - | - | - | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | - | - | - | - | 0% |

*L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

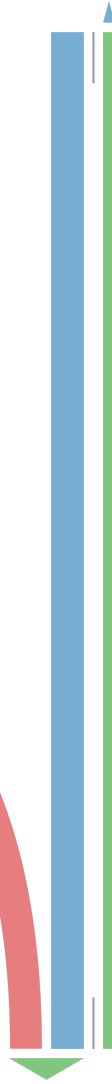
ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Fleetwood Drive

Total: 3
In: 2 Out: 1

2



[W] Lear Boulevard

Total: 2
In: 2 Out: 0

2

Out: 4 In: 1
Total: 5

[S] Fleetwood Drive

Fleetwood Drive and Lear Boulevard - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Thu Feb 2, 2023

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

| Leg Direction | Fleetwood Drive Northbound | | | | | Fleetwood Drive Southbound | | | | | Lear Boulevard Eastbound | | | | | Lear Boulevard Westbound | | | | | Int |
|---------------------------------------|----------------------------|-------|----|----|-------|----------------------------|-------|----|----|-------|--------------------------|----|----|----|-----|--------------------------|----|----|----|-----|-------|
| | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | |
| 2023-02-02 8:00AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Approach | 0% | 100% | 0% | 0% | - | 0% | 100% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | - |
| % Total | 0% | 50.0% | 0% | 0% | 50.0% | 0% | 50.0% | 0% | 0% | 50.0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - |
| PHF | - | 0.250 | - | - | 0.250 | - | 0.250 | - | - | 0.250 | - | - | - | - | - | - | - | - | - | - | 0.250 |
| Lights | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Lights | 0% | 100% | 0% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Fleetwood Drive

Total: 2

In: 1 Out: 1

↑



Out: 1 In: 1

Total: 2

[S] Fleetwood Drive

Fleetwood Drive and Lear Boulevard - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Thu Feb 2, 2023

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

| Leg Direction | Fleetwood Drive Northbound | | | | | Fleetwood Drive Southbound | | | | | Lear Boulevard Eastbound | | | | | Lear Boulevard Westbound | | | | | Int |
|---------------------------------------|----------------------------|----|----|----|-----------|----------------------------|-------|----|----|--------------|--------------------------|----|----|----|--------------|--------------------------|----|----|----|-----------|-------|
| | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | R | T | L | U | App | |
| 2023-02-02 4:15PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| % Approach | 0% | 0% | 0% | 0% | - | 0% | 100% | 0% | 0% | - | 100% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | - | - |
| % Total | 0% | 0% | 0% | 0% | 0% | 0% | 33.3% | 0% | 0% | 33.3% | 66.7% | 0% | 0% | 0% | 66.7% | 0% | 0% | 0% | 0% | 0% | - |
| PHF | - | - | - | - | - | - | 0.250 | - | - | 0.250 | 0.250 | - | - | - | 0.250 | - | - | - | - | - | 0.375 |
| Lights | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| % Lights | 0% | 0% | 0% | 0% | - | 0% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | - | 100% |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Articulated Trucks | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% |
| Buses and Single-Unit Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses and Single-Unit Trucks | 0% | 0% | 0% | 0% | - | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% |

* L: Left, R: Right, T: Thru, U: U-Turn

Fleetwood Drive and Lear Boulevard - TMC

Thu Feb 2, 2023

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1035398, Location: 39.646782, -119.843895

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

[N] Fleetwood Drive

Total: 1
In: 1 Out: 0

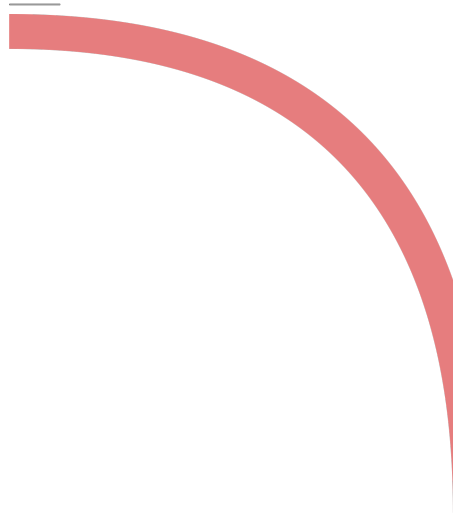
1



[W] Lear Boulevard

Total: 2
In: 2 Out: 0

2



Out: 3 In: 0
Total: 3

[S] Fleetwood Drive



APPENDIX C
TRIP GENERATION CALCULATIONS

Project: Learner Lemmon Single-Family
 Subject: NDOT Growth Rate Calculations
 Designed By: AKT

Project Number: 192349000
 Date: 2/16/2023
 Page: 1 of 1

Existing Growth Rate Calculations

Ref: Nevada Department of Transportation - Annual Traffic Report 2021

Number of Count Stations Analyzed = 3

Average Annual Growth Rate in the Vicinity of the Proposed Project = 4.79%

| | | |
|---------------------------|----------------------|--------------------|
| NDOT COUNT STATION: | 0310926 | |
| ROADWAY: | Patrician Dr | |
| LOCATION: | 150ft W of Lemmon Dr | |
| Year | AADT | Annual Growth Rate |
| 2019 | 690 | 6.35% |
| 2021 | 830 | |
| YEARS = | 3 | |
| PROJECTED TRAFFIC VOLUMES | | |
| Year | AADT | |
| 2022 | 883 | |
| 2023 | 939 | |
| 2024 | 998 | |

| | | |
|---------------------------|-------------------------|--------------------|
| NDOT COUNT STATION: | 0310944 | |
| ROADWAY: | Lemmon Dr | |
| LOCATION: | 290ft S of Hydraulic St | |
| Year | AADT | Annual Growth Rate |
| 2019 | 9450 | 0.00% |
| 2021 | 9450 | |
| YEARS = | 3 | |
| PROJECTED TRAFFIC VOLUMES | | |
| Year | AADT | |
| 2022 | 9450 | |
| 2023 | 9450 | |
| 2024 | 9450 | |

| | | |
|---------------------------|------------------------|--------------------|
| NDOT COUNT STATION: | 0311145 | |
| ROADWAY: | Lemmon Dr | |
| LOCATION: | 660ft S of Military Rd | |
| Year | AADT | Annual Growth Rate |
| 2019 | 19600 | 8.01% |
| 2021 | 24700 | |
| YEARS = | 3 | |
| PROJECTED TRAFFIC VOLUMES | | |
| Year | AADT | |
| 2022 | 26269 | |
| 2023 | 27937 | |
| 2024 | 29712 | |

APPENDIX D
KEY INTERSECTION PEAK HOUR LOS CALCULATIONS

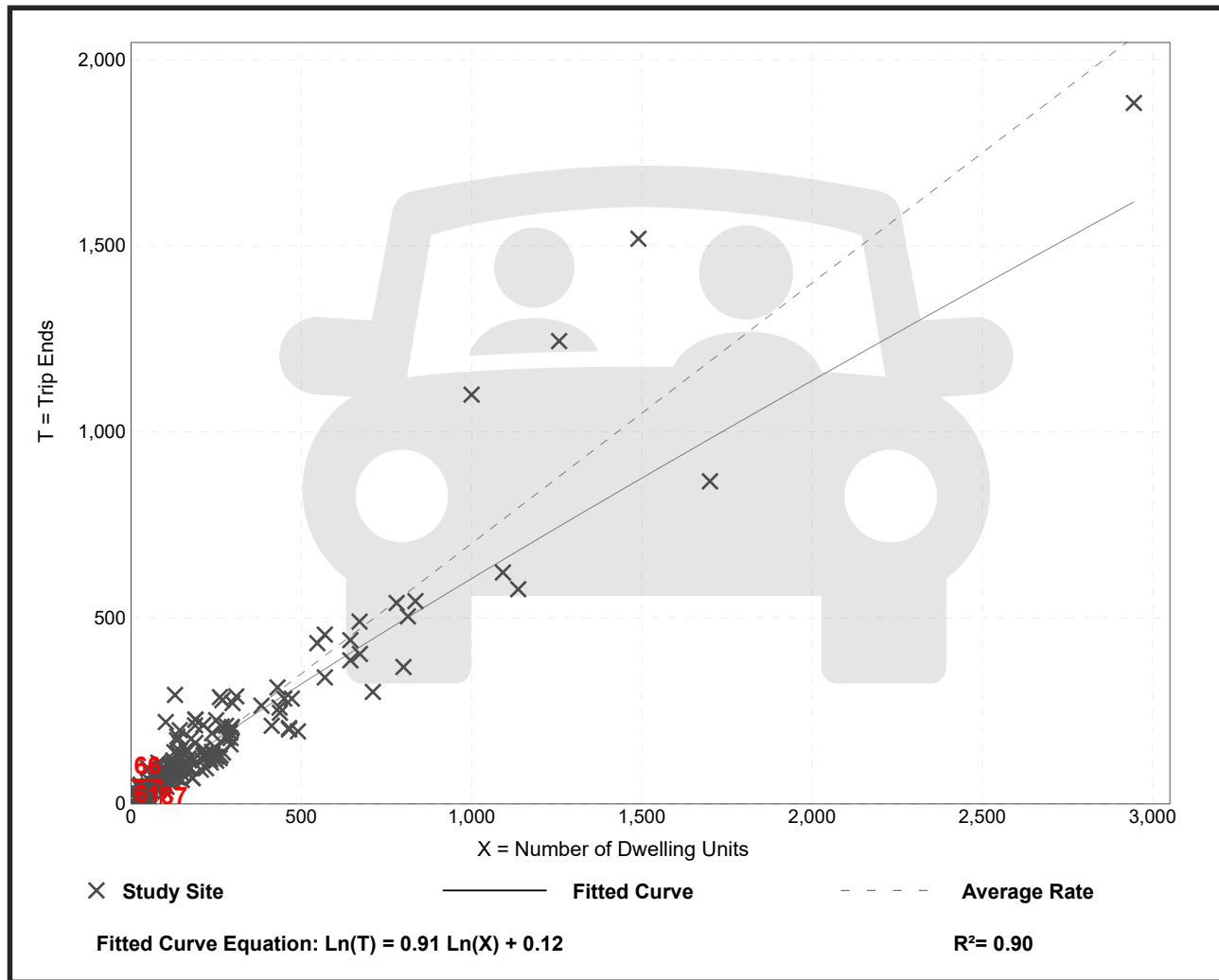
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 192
 Avg. Num. of Dwelling Units: 226
 Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.70 | 0.27 - 2.27 | 0.24 |

Data Plot and Equation



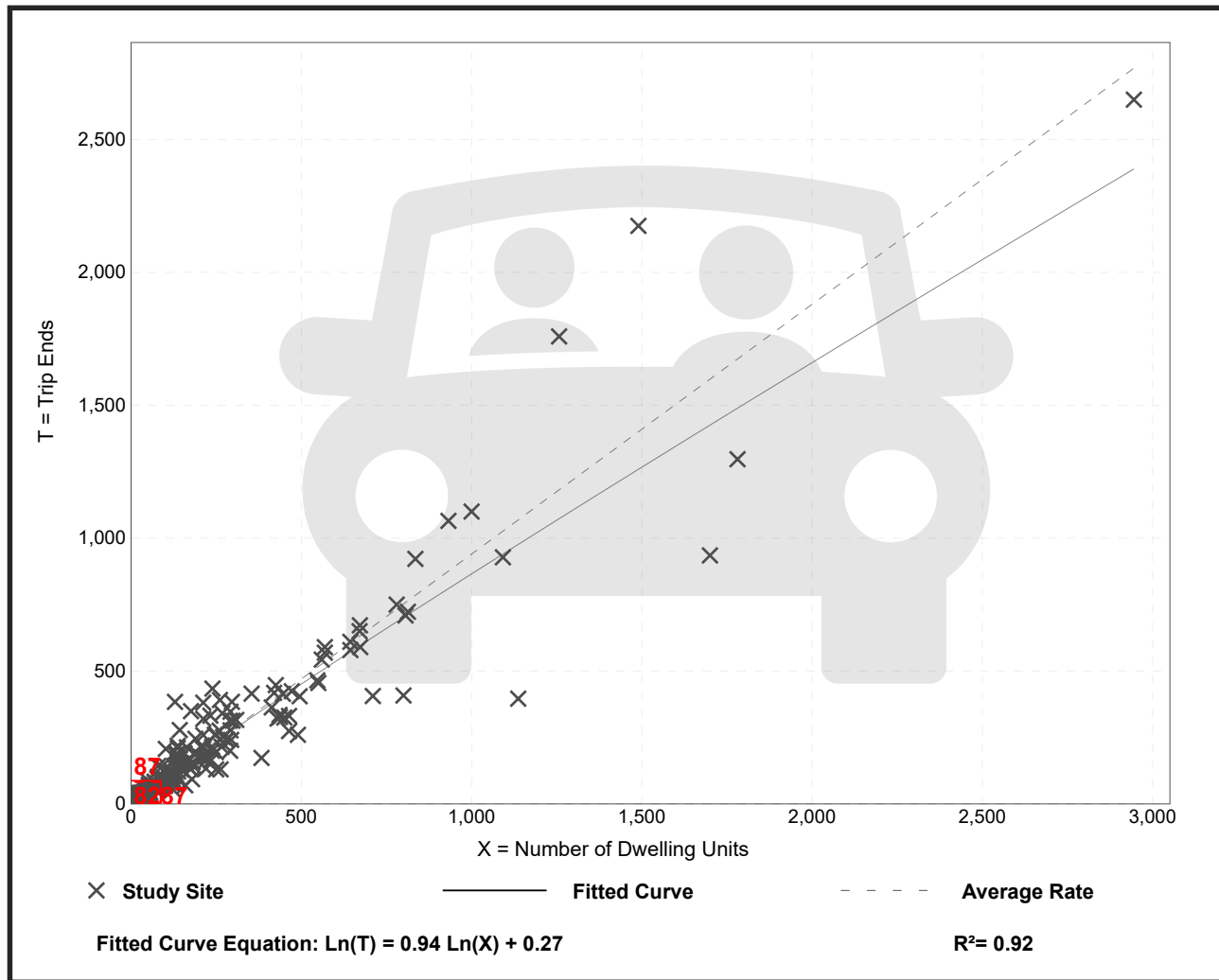
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 208
 Avg. Num. of Dwelling Units: 248
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.94 | 0.35 - 2.98 | 0.31 |

Data Plot and Equation



Single-Family Detached Housing (210)

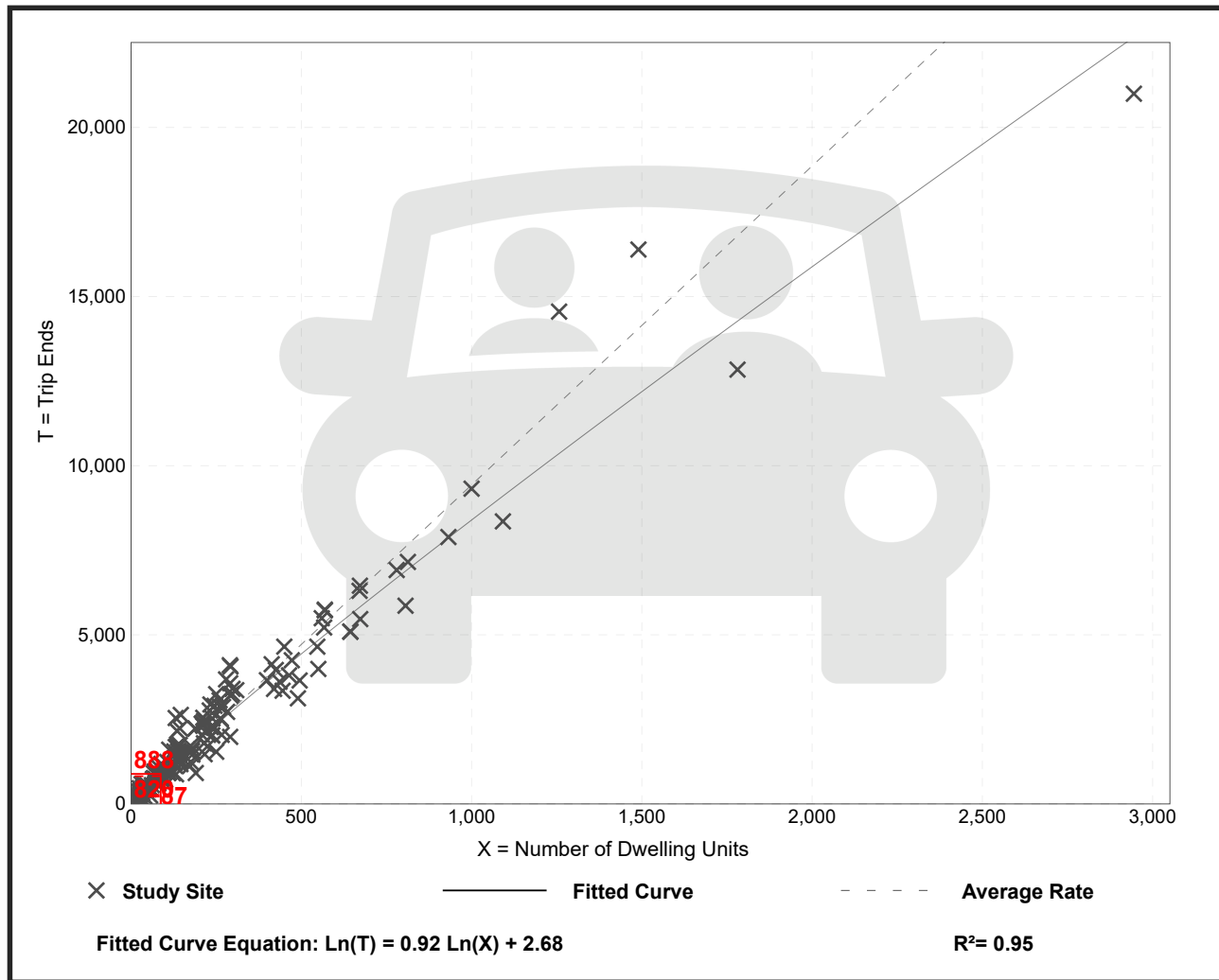
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

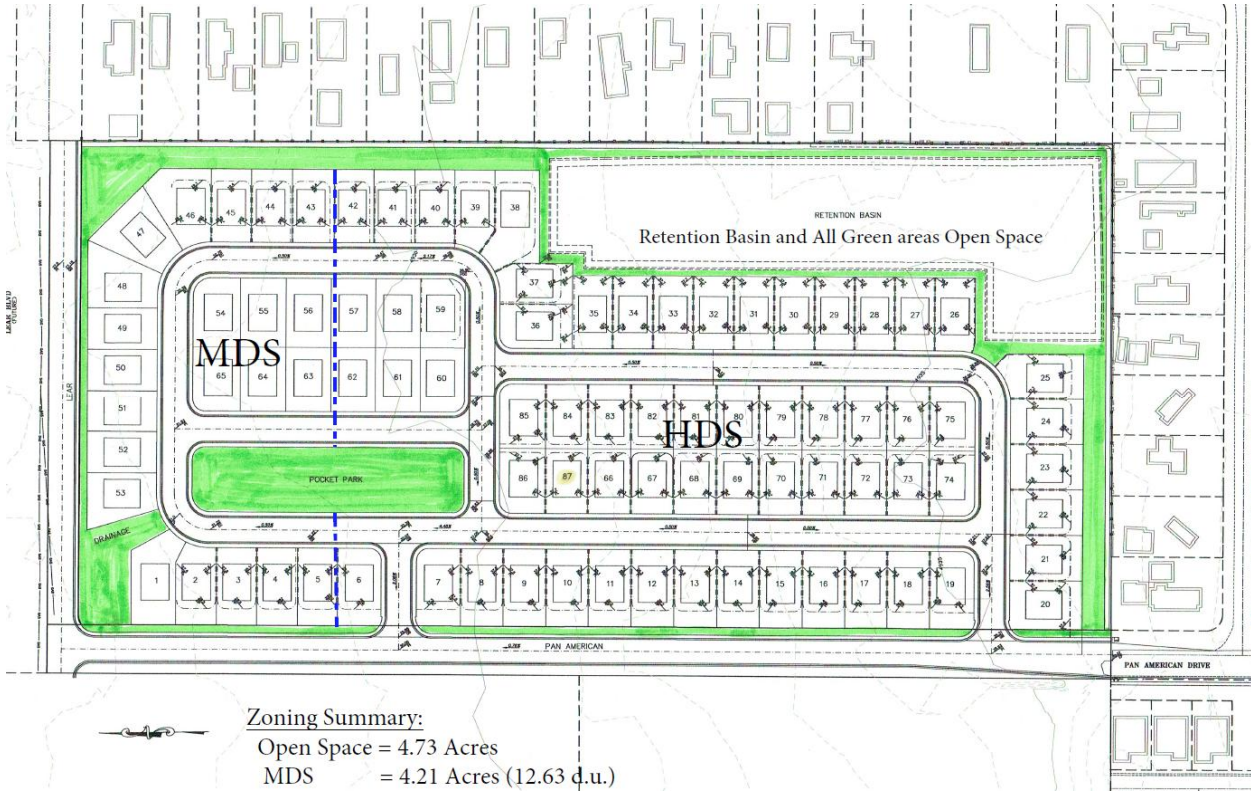
| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 9.43 | 4.45 - 22.61 | 2.13 |

Data Plot and Equation



APPENDIX E
SITE PLAN

Exhibit "A"



Oakley, Katherine

From: Kenneth Krater <ken@kcgnev.com>
Sent: Thursday, July 6, 2023 10:34 AM
To: Oakley, Katherine
Cc: Jeffrey Holbrook
Subject: Re: Tentative Map Checks

[NOTICE: This message originated outside of Washoe County -- **DO NOT CLICK** on links or open **attachments** unless you are sure the content is safe.]

I believe the recently proposed change complies with my original application/write up and intent to buffer our site from the existing homes to the east and south. The proposed change still provides a proper transition from the MDS zoning to the east and south from our HDS zoning along Pan American with a combination of open space and MDS in between our parcel and the existing homes. The change limits the maximum number of units to 90 d.u. or 4.52 d.u. per acre compared to the 88 previously allowed units or maximum density of 4.42 d.u. per acre, a negligible +2% change. I feel that the new proposed zoning boundaries provide a far better buffer and transition than what was originally proposed. Finally, this does not affect our tentative map submittal that calls for 87 dwelling units. But as you suggested, the change does provide for more design flexibility for our tentative map when we do our final engineering for the final map to help ensure our street and utility patterns function properly.

Thanks Kat,

Ken

*Kenneth Krater, P.E., MSCE, President
Krater Consulting Group, PC
1165 Mount Rose Street
Reno, NV 89509
Cell - (775) 815-9561*

Note: New Email – “ken@kcgnev.com”

From: Oakley, Katherine <KOakley@washoecounty.gov>
Date: Thursday, July 6, 2023 at 9:45 AM
To: Kenneth Krater <ken@kcgnev.com>
Subject: RE: Tentative Map Checks

Thanks Ken. One other thing: did you want to provide anything written to go with the new maps? You don't have to, and I can include some of our email correspondence for explanation of the change, but I thought I'd ask.

Best,



Kat Oakley

Planner, Planning & Building Division | Community Services Department

koakley@washoecounty.gov | Direct Line: 775.328.3628

My working hours: Monday-Friday 8:00am to 5:00pm

Visit us first online: www.washoecounty.gov/csd

Planning Division: 775.328.6100 | Planning@washoecounty.gov

CSD Office Hours: Monday-Friday 8:00am to 4:00pm

LEARNER LEMMON

| APN of Parcel | Master Plan Designation | Current Zoning | Existing Acres | Proposed Zoning | Proposed Acres |
|---------------|-------------------------|----------------|----------------|-----------------|----------------|
| 080-461-08 | Suburban Res (57%) | MDS | 11.45 | MDS | 3.18 |
| 080-461-08 | Suburban Res | MDS | | HDS | 5.00 |
| 080-461-08 | Suburban Res | MDS | | OS | 3.27 |
| 080-461-08 | Rural (43%) | GR | 8.47 | MDS | 2.35 |
| 080-461-08 | Rural | GR | | HDS | 5.59 |
| 080-461-08 | Rural | GR | | OS | 0.53 |

19.92

19.92

| ZONING | ACREAGE | LOTS |
|--------------------------|---------|-----------|
| OS | 3.80 | - |
| MDS | 5.53 | 16.6 |
| HDS | 10.59 | 74.1 |
| | 19.92 | 90.7 |
| MAX ALLOWED UNITS | | 90 |

Oakley, Katherine

From: Kenneth Krater <ken@kcgnev.com>
Sent: Thursday, July 6, 2023 3:10 PM
To: Oakley, Katherine; Ryan Sims
Cc: Jeffrey Holbrook; Jeff Hinckley
Subject: Re: WMPA23-0006/WRZA23-0006 Learner-Lemmon

[NOTICE: This message originated outside of Washoe County -- DO NOT CLICK on links or open attachments unless you are sure the content is safe.]

The local system within the development will be maintained by Washoe County but sewer will flow offsite from the site to Lear Boulevard and then west to the Reno-Stead Wastewater Treatment Facility that was just significantly upgraded.

Per the City of Reno website,

The Utility Services Department owns and operates the Reno Stead Water Reclamation Facility (RSWRF), which treats up to 2 million gallons per day of sewage/wastewater. The RSWRF is a state-of-the-art wastewater treatment and water reclamation facility, meeting the latest design standards, instrumentation and process control technology, and energy and manpower efficiency to treat up to 2 million gallons per day of raw sewage, in compliance with stringent public health and water quality discharge standards.

The RSWRF is undergoing a major construction project to expand the plants' treatment capacity from approximately 2 million gallons per day to 4 million gallons per day. This construction project will be complete in approximately Feb 2023.

Let me know if you need any more information.

Ken

*Kenneth Krater, P.E., MSCE, President
Krater Consulting Group, PC
1165 Mount Rose Street
Reno, NV 89509
Cell - (775) 815-9561*

Note: New Email – ["ken@kcgnev.com"](mailto:ken@kcgnev.com)

From: Oakley, Katherine <KOakley@washoecounty.gov>
Date: Thursday, July 6, 2023 at 2:32 PM
To: Ryan Sims <ryan@axionengineering.net>, Kenneth Krater <ken@kcgnev.com>
Cc: Jeffrey Holbrook <jholbrook@landcapip.com>, Jeff Hinckley <jhinckley@landcapip.com>
Subject: RE: WMPA23-0006/WRZA23-0006 Learner-Lemmon

Hi all,

One more question (I'm finalizing the staff report and all the little things are coming up): which sewer treatment facility would the development be served by? I know we've discussed this before, but it's not in the preliminary sewer report.



June 19, 2023

Jeff Holbrook, Manager
LC Learner, LLC
31103 Rancho Viejo Road, Suite D3099
San Jaun Capistrano, CA 92675

RE: Assessment of Cultural Concerns for the Learner Lemmon Development, Washoe County, Nevada

Mr. Holbrook:

LC Learner, LLC, is proposing a development on a private parcel in the North Valleys of Reno, Nevada, and during recent permitting discussions with Washoe County, it was mentioned by County staff that an archaeological site, 26WA2179, is located in the vicinity of the parcel where the proposed development would occur. Developers may be required to consider impacts to archaeological sites under either Federal law or Nevada State law, and therefore, LC Learner engaged with Kautz Environmental to conduct research regarding its responsibilities to archaeological resources.

Cultural resources are addressed under Section 106 of the National Historic Preservation Act when a Federal Undertaking may result in effects to these resources. Federal Undertakings include projects that would occur on Federal (public) lands, require a Federal permit, or utilize Federal funding. The Learner Lemmon development is located on private lands, and would be constructed without the need for Federal permits or Federal funding. Therefore, cultural resource requirements under Federal Section 106 law do not apply to this project.

Cultural resources are addressed under the Nevada Revised Statutes (NRS) for projects that would occur on State lands, and in only limited capacity for projects that would occur on privately owned lands. Per NRS 381.196 *Permit to Excavate Prehistoric Indian Burial Site on Private Lands*:

1. A person shall not excavate a site on private lands located within this State that the person knows is a prehistoric Indian burial site unless the person first obtains a permit issued by the Museum Director.
2. A person is not required to obtain a permit pursuant to subsection 1 to engage in a lawful activity on private lands, including, without limitation, construction, mining, mineral exploration, logging, farming, ranching or a federally authorized activity conducted in compliance with the National Historic Preservation Act, 54 U.S.C. §§ 300101 et seq., if that activity is engaged in exclusively for purposes other than the excavation of a prehistoric Indian burial site and the activity occurs only on a portion of the private lands that does not contain the known prehistoric Indian burial site.

The conditions set forth above only apply on private lands if a known Indian burial is located in the area where construction would occur. I have reviewed data available for site 26WA2179 through the online NVCRIS (Nevada Cultural Resource Information System), through the Nevada State Museum, and through the Bureau of Land Management Carson City Office. These repositories have no evidence of Indian burials at archaeological site 26WA2179, or within the boundaries of the private parcel where the Learner Lemmon development would occur. Additionally, the Nevada State Historic Preservation Office (SHPO) does not maintain a file of known Indian burials on private lands in the State of Nevada. Therefore, it is my recommendation to LC Learner, LLC, that the conditions of NRS 381.196 do not apply, and a permit for construction does not need to be obtained from the Museum Director, and no additional cultural resource considerations are necessary prior to initiating construction.

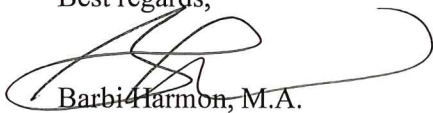
It is possible that previously unknown Indian burials, graves, or funerary items may be encountered by LC Learner's personnel or the personnel of their subcontractors during construction for Learner Lemmon. In that instance, the conditions of NRS 383.170 *Protection of Indian Burial Sites* would apply:

1. (a) A person who disturbs the cairn or grave of a native Indian through inadvertence while engaged in a lawful activity such as construction, mining, logging or farming or any other person who discovers the cairn or grave of a native Indian that has not been previously reported to the Office shall immediately report the discovery and the location of the Indian burial site to the Office.
- (b) Upon receiving a report pursuant to paragraph (a), the Office shall immediately notify, in writing, and initiate consultation with any Indian tribe:
 - (1) Who is or is likely to be culturally affiliated with the Indian burial site;
 - (2) On whose aboriginal lands the Indian burial site was discovered; or
 - (3) Who is reasonably known to have a direct cultural relationship to the Indian burial site.
- (c) The written notice must include a proposed time and place for the consultation with the Office.
- (d) Except as otherwise provided in paragraph (e), within 10 days after the notice is given by the Office, the landowner shall consult with the Indian tribe which has the closest cultural affiliation to the Indian burial site, as determined by the Office, concerning the treatment and disposition of the site and all artifacts and human remains associated with the site. The Indian tribe may, with the permission of the landowner, inspect the site. Within 10 days after the inspection, if any, the Indian tribe may recommend an appropriate means for the treatment and disposition of the site and all artifacts and human remains associated with the site. Those recommendations may include, without limitation, that any human remains or artifacts associated with the site are:
 - (1) Preserved in place;
 - (2) Reinterred at another location that is determined in consultation with the Indian tribe which has the closest cultural affiliation to the human remains or artifacts associated with the site; or
 - (3) Returned to the closest culturally affiliated Indian tribe, in accordance with the repatriation process adopted pursuant to [NRS 383.440](#), if a request for repatriation is made. Within 10 days after receiving the recommendations, if any, for the treatment and disposition of the site and all artifacts and human remains associated with the site, the landowner may appeal the recommendations to the Office.
- (e) Failure of an Indian tribe to respond within 10 days after notice has been given to the Indian tribe pursuant to paragraph (b) shall be deemed a waiver of the requirement for consultation with the Indian tribe.
- (f) If the Indian burial site is located on private land and:
 - (1) The Office fails to identify the closest culturally affiliated Indian tribe or consultation with the closest culturally affiliated Indian tribe is waived pursuant to paragraph (e); or
 - (2) The landowner rejects the recommendation made pursuant to paragraph (d) and mediation conducted pursuant to [NRS 383.160](#) fails to provide measures acceptable to the landowner the landowner shall, at his or her own expense, reinter with appropriate dignity all artifacts and human remains associated with the site in a location not subject to further disturbance.

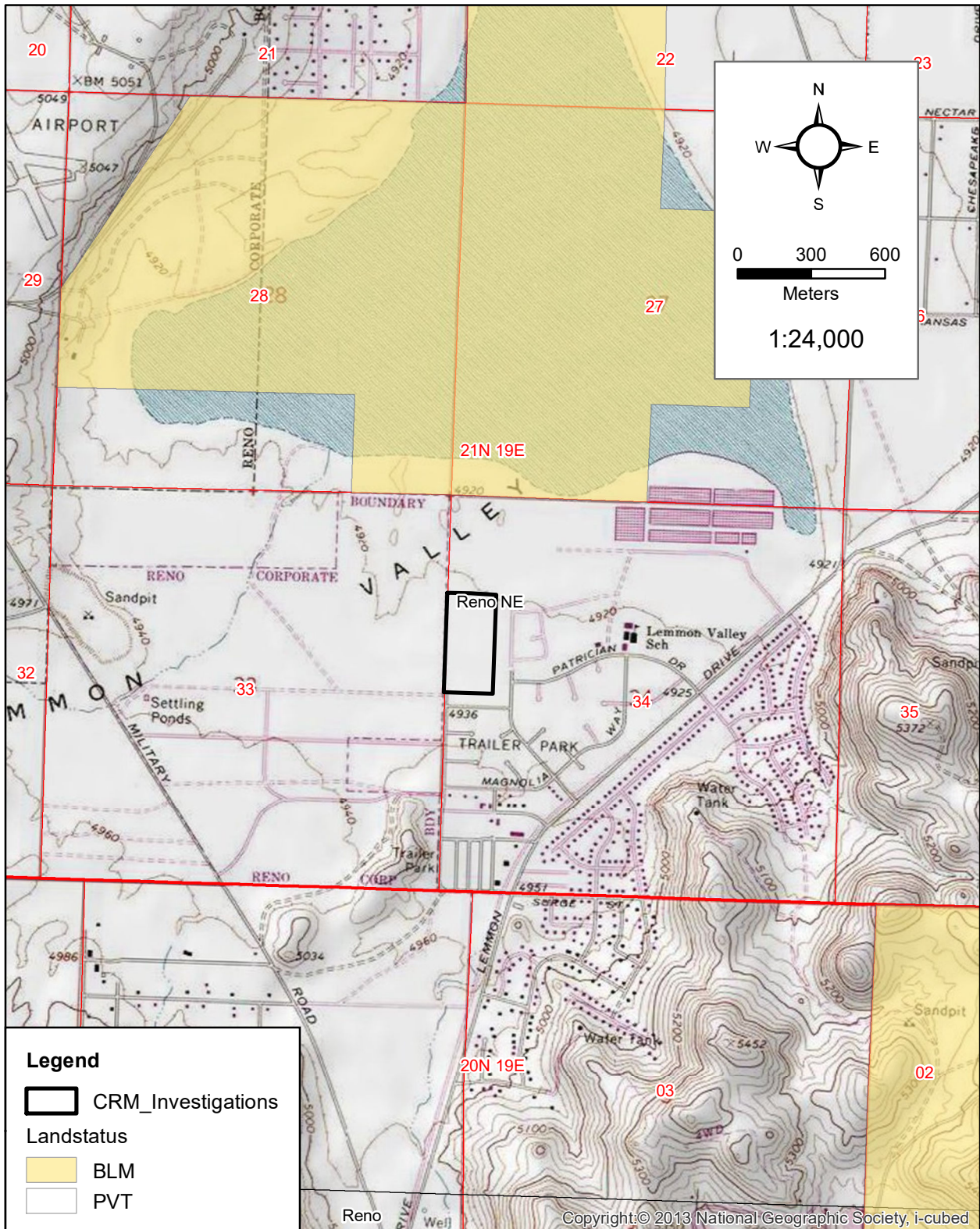
Should LC Learner or its subcontractors discover humans remains during construction activities for Learner Lemmon, our firm can assist in consultation with the Office (SHPO) and local tribal entities, if needed.

Thank you for the opportunity to provide this recommendation to LC Learner. If you have any additional questions, please do not hesitate to reach out.




Best regards,



Barbi Harmon, M.A.
Director



Legend

-  CRM_Investigations
- Landstatus
-  BLM
-  PVT

Project Area Map

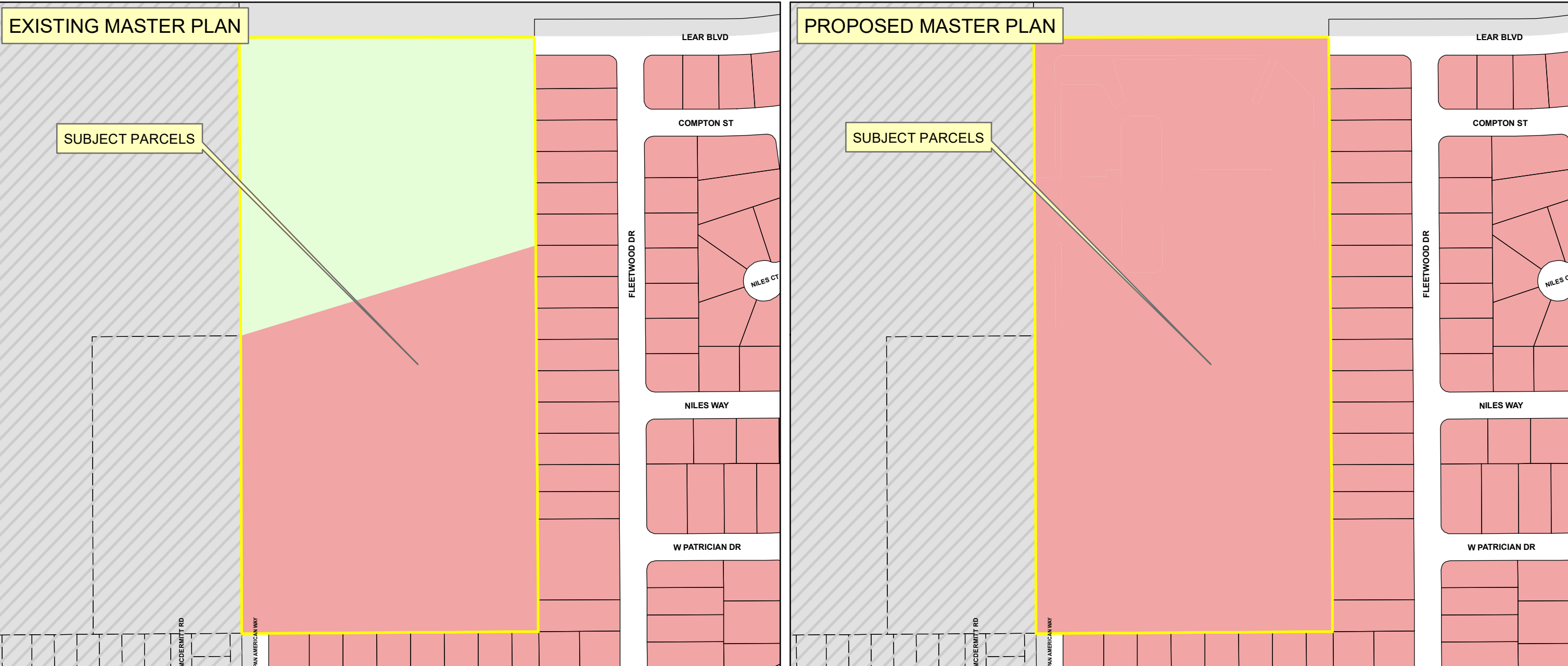
Base Map: USGS 7.5' Reno NE, Nev., 1982. T.21N., R.19E., Section 34, Datum (NAD 83, meters)
 Project: xxxx (KEC-1403)

kautz









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**NORTH VALLEYS PLANAREA
WMPA23-0006 - APN 080-461-08**

- | | |
|--|---|
|  RURAL |  COMMERCIAL |
|  RURAL RESIDENTIAL |  INDUSTRIAL |
|  SUBURBAN RESIDENTIAL |  OPEN SPACE |
|  URBAN RESIDENTIAL |  Area Where Cities of Reno/Sparks Have Exerted Planning Jurisdiction |

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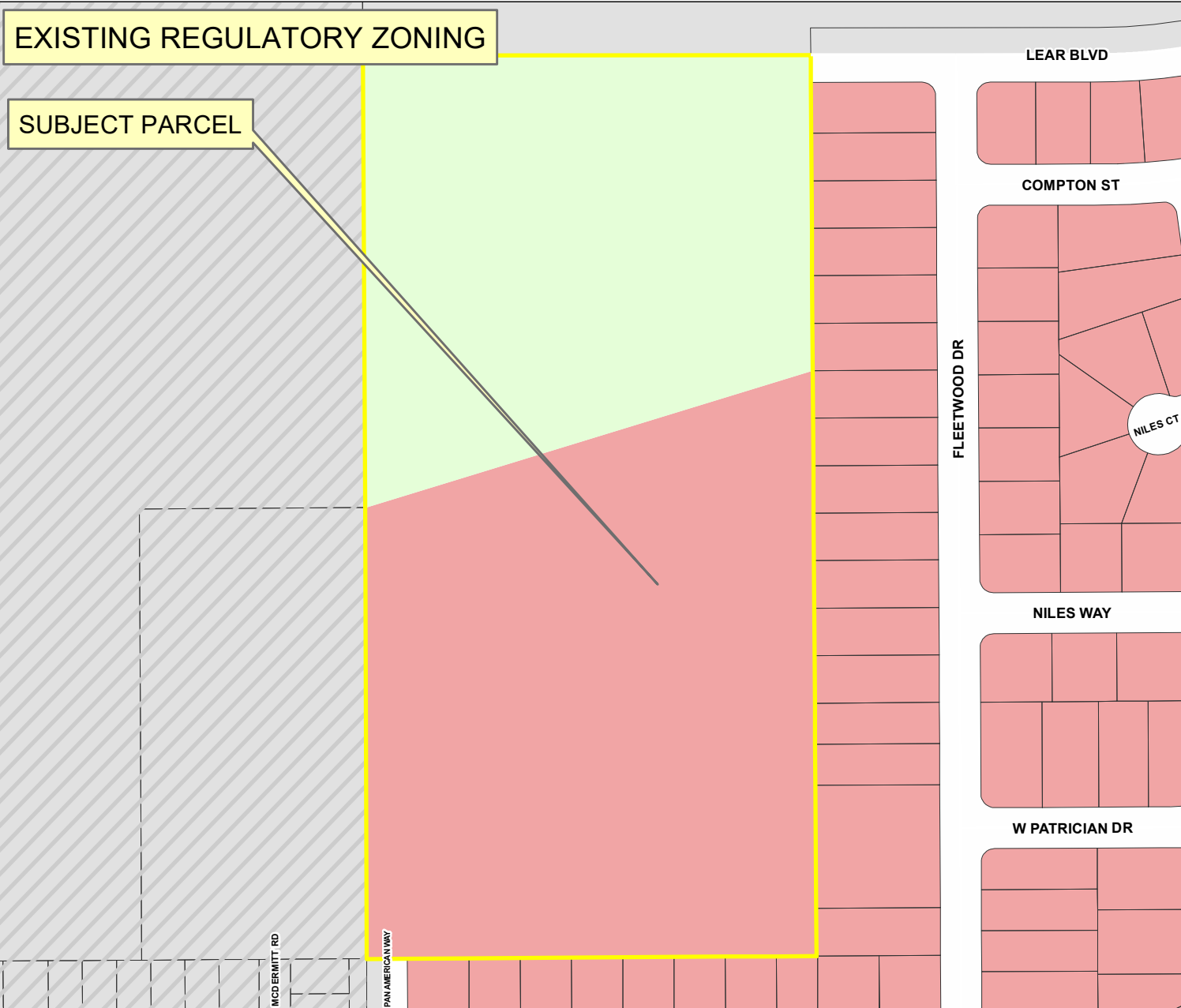
**Community Services
Department**

**WASHOE COUNTY
NEVADA**

Post Office Box 11130
Reno, Nevada 89520 (775) 328-3600

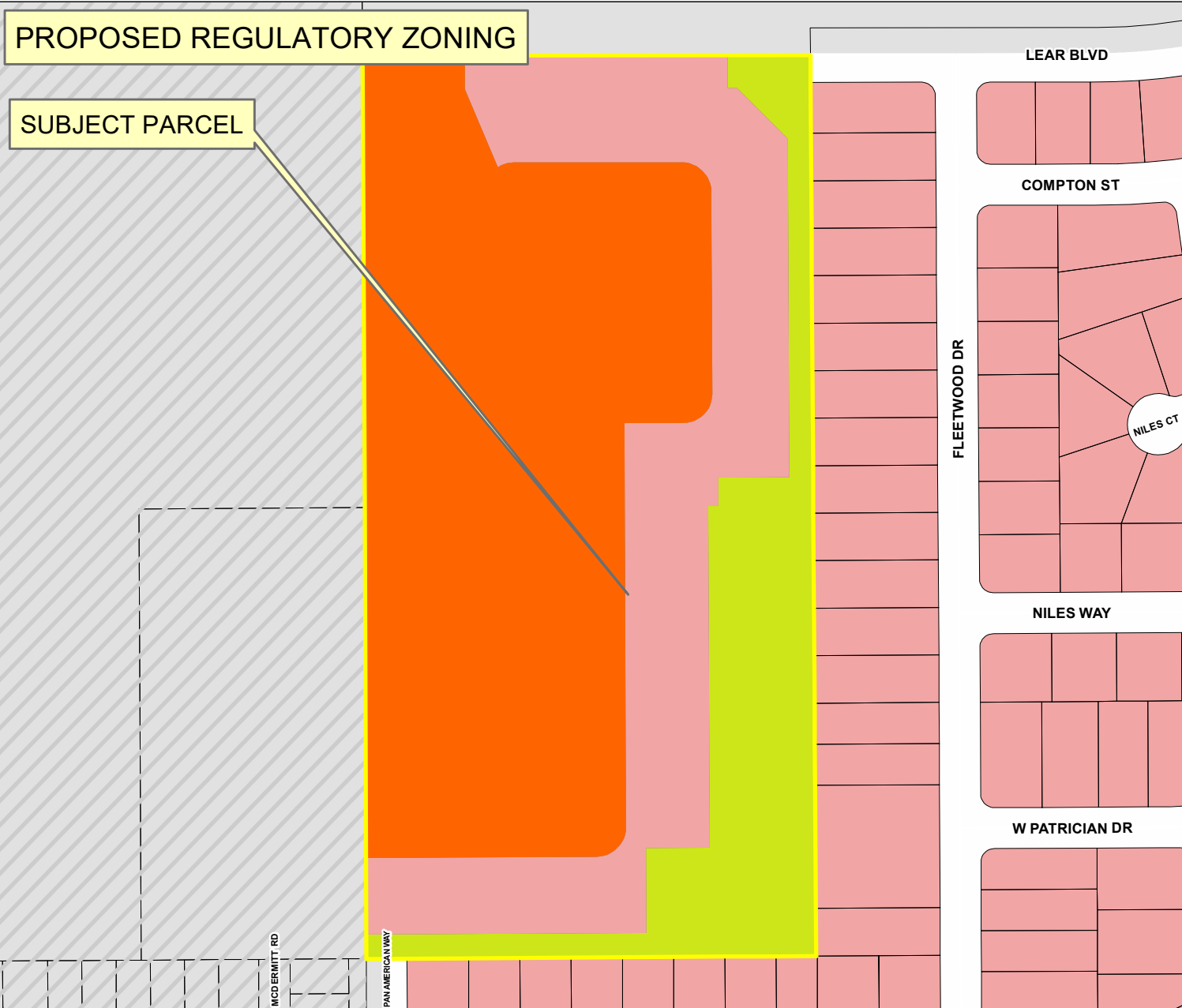
EXISTING REGULATORY ZONING

SUBJECT PARCEL
























PROPOSED REGULATORY ZONING

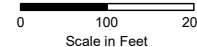
SUBJECT PARCEL



**NORTH VALLEYS PLANAREA
WRZA23-0006 - APN 080-461-08**

- | | | | |
|--|---|---|---|
|  LOW DENSITY RURAL |  HIGH DENSITY SUBURBAN |  NEIGHBORHOOD/OFFICE COMMERCIAL |  PARKS AND RECREATION |
|  MEDIUM DENSITY RURAL |  LOW DENSITY URBAN |  TOURIST COMMERCIAL |  OPEN SPACE |
|  HIGH DENSITY RURAL |  MEDIUM DENSITY URBAN |  INDUSTRIAL |  GENERAL RURAL |
|  LOW DENSITY SUBURBAN / LDS2 |  HIGH DENSITY URBAN |  SPECIFIC PLAN |  GENERAL RURAL AGRICULTURAL |
|  MEDIUM DENSITY SUBURBAN / MDS4 |  GENERAL COMMERCIAL |  PUBLIC AND SEMI-PUBLIC FACILITIES |  WATER BODY/DRY LAKE |
| | | |  Area Where Cities of Reno/Sparks Have Exerted Planning Jurisdiction |

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**Community Services
Department**



Post Office Box 11130
Reno, Nevada 89520

(775) 328-3600

SOURCE: Planning and Building Division

Path: G:\arcdata\planarea\inv\invRegzone_working\WRZA23-0006\WRZA23-0006_side_by_side.mxd

DATE: 6/23/2023