



N E V A D A

AGENDA
Regular Meeting
Planning Commission

Wednesday, April 13, 2022 • 5:00 PM

Members

Barry Williams Sr. - Chairman
Cody Wagner - Vice Chair
Jan Hodges - Commissioner
Humayoon Lodhi - Commissioner
Angela Lewis - Commissioner
Shellie Severa - Commissioner
Jenni McCullar - Commissioner

Fernley City Council Chambers, 595 Silver Lace Boulevard, Fernley, NV 89408

Zoom information:

Please click the following link to join the webinar: <https://us02web.zoom.us/j/84173368638>, or one tap_mobile: 12532158782, Dial: 669 900 9128, Webinar ID: 841 7336 8638

Public Notice: This agenda has been physically posted in compliance with 241.020 at Fernley City Hall, 595 Silver Lace Blvd. In addition, this agenda has been electronically posted in compliance with NRS 241.020(3) at www.cityoffernley.org and NRS 232.2175 at <https://notice.nv.gov/> To obtain further documentation regarding posting, please contact the City Clerk's Office at (775) 784-9830 or cityclerk@cityoffernley.org

Public Comment: Those wishing to address the Planning Commission may submit public comment through the online public comment form found at <https://www.cityoffernley.org/forms>, or by sending an email to cityclerk@cityoffernley.org. Comments received prior to 4:00 pm the day of the meeting will be provided to the Planning Commission and added to the record but will not be read during the live meeting. Public comments received after 4 pm the day of the meeting will be included in the record but may not reach commissioners before action is taken. Public comment, whether on action items or public comment, is limited to three (3) minutes per person. Unused time may not be reserved by the speaker, nor allocated to another speaker. The public may comment on any matter that is not specifically included on an agenda as an action item or comment on a specific agenda item. Items not included on the agenda cannot be acted upon other than to place them on a future agenda. Additionally, if you wish you can comment in person at the meeting or use the Raise your Hand feature in Zoom (*9 if you are participating via phone).

Accommodations: Planning Commission and staff will make reasonable efforts to assist and accommodate individuals with disabilities desiring to attend the meeting. Please contact the City Clerk's Office at (775) 784-9830 in advance so that arrangements can be made.

Supporting Material: Staff reports and supporting material for the meeting are available at the City Clerk's Office, and on the City's website at www.cityoffernley.org Pursuant to NRS 241.020(6), supporting material is made available to the general public at the same time it is provided to the Planning Commission.

Order of Business: The presiding officer shall determine the order of the agenda. The Fernley Planning Commission may combine two or more agenda items for consideration; remove an item from the agenda; or delay discussion relating to an item on the agenda at any time. All items are action items unless otherwise noted. Items scheduled to be heard at a specific time will be heard no earlier than the stated time but may be heard later.

1. INTRODUCTORY ITEMS

1.1. Roll Call

1.2. Public Forum

1.3. (For Possible Action) Approval of Agenda

1.4. (For Possible Action) Approval of Minutes from March 9th and March 23rd.

2. GENERAL BUSINESS

3. PUBLIC HEARINGS

3.1. (For possible action) Public Hearing - ZMA22004 & TSM22003

Consideration and possible action on a Zoning Map Amendment and Tentative Subdivision Map request on a site consisting of one (1) parcel of land approximately 30.15 acres in size, located at 900 Vonnie Lane, Fernley, NV (021-471-05):

1. A Zoning Map Amendment request associated with ZMA22004, to change the zoning on a single parcel of land from SF20 (Single Family, 20,000 sq. ft. minimum lot size) to SF6 (Single Family, 6,000 sq. ft. minimum lot size).
2. A Tentative Subdivision Map request associated with TSM22003, to allow for the development of a 79-lot residential subdivision, located within the SF6 (Single Family, 6,000 sq. ft. minimum lot size zoning district).

4. CHAIR AND COMMISSION ITEMS

5. PLANNING DIRECTOR ITEMS

6. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

7. PUBLIC FORUM

8. ADJOURNMENT

Next Meeting: May 11, 2022 @ 5 PM

**MINUTES OF THE
FERNLEY PLANNING COMMISSION MEETING
MARCH 9, 2022**

The meeting was called to order by Vice-Chair Commissioner

1. INTRODUCTORY ITEMS

1.1. Roll Call

Present: Vice-Chair Wagner, Commissioner McCullar, Commissioner Lewis

Absent: Planning Commissioner Chairman Williams, Commissioner Hodges, Commissioner Severa, Commissioner Lodhi

1.2. Public Forum

There was none.

Tim Thompson stated that due to not having a quorum the items on the agenda cannot be voted on. The City of Fernley will be scheduling a Planning Commission meeting for March 23, 2022 to discuss the items on tonight's agenda.

1.3. (For Possible Action) Approval of Agenda

1.4. (For Possible Action) Approval of Minutes

2. GENERAL BUSINESS

2.1. Discussion and election of City of Fernley Planning Commission Officers for 2022. (FOR POSSIBLE ACTION)

3. PUBLIC HEARINGS

3.1. Public Hearing, Zoning Map Amendment – ZMA22002 & Tentative Subdivision Map – TSM22001 (FOR POSSIBLE ACTION)

Consideration and possible action on a Zoning Map Amendment and Tentative Subdivision Map requests for a site consisting of two parcels totaling ±28.42 acres in size, located at 590 & 600 W. Main Street, Fernley, NV (APN's: 021-071-02 and 021-071-03).

1. A Zoning Map Amendment request associated with ZMA22002, to change the zoning on two parcels of land from C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (Mixed Use).
2. A Tentative Subdivision Map request associated with TSM22001, to allow for the development of a 9-lot mixed-use subdivision.

3.2. Public Hearing, Comprehensive Master Plan Amendment (MPA22001) & Zoning Map Amendment (ZMA22001) – (FOR POSSIBLE ACTION)

Consideration and possible action on a Master Plan Amendment and Zoning Map Amendment request on a vacant parcel of land approximately 27.83 acres in size, generally located south of Interstate-80, north of the Union Pacific Railroad, and directly west at the current terminus of Pilot Road. (APN: 021-061-32).

1. Consideration and Possible action on Resolution 22-009, a Master Plan Amendment Request to change the Land use Designation from Commercial to Industrial.
2. Consideration and possible action on a Zoning Map Amendment request to change the zoning from C2 (General Commercial) to I (Industrial).

3.3. Public Hearing, ZMA22003 (FOR POSSIBLE ACTION)

Consideration and possible action on a Zoning Map Amendment request from the City of Fernley to change the zoning of a ±3.94 acre parcel of land from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multifamily, 10-21 dwelling units per acre). The parcel is located at 1170 Newlands Drive and is the site of the old Lyon County Senior Center (APN: 020-320-01).

3.4. Tentative Parcel Map, TPM22001 (FOR POSSIBLE ACTION)

Consideration and possible action on a Tentative Parcel Map request from Goudy Investments LLC to subdivide a ±11.94 acre parcel located within the C2 (General Commercial) zoning district into 4 separate parcels. The project site is generally located south of Highway 50A, and east of Nevada Pacific Parkway (APN: 021-201-47).

4. CHAIR AND COMMISSION ITEMS

5. PLANNING DIRECTOR ITEMS

6. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

7. PUBLIC FORUM

There was none.

8. ADJOURNMENT

The meeting adjourned at 5:05 PM.

The next meeting will be held on March 23, 2022 at 5:00 PM.

**MINUTES OF THE
FERNLEY PLANNING COMMISSION MEETING
MARCH 23, 2022**

Planning Commission Chair Barry Williams called the meeting to order at 5:00 PM.

1. INTRODUCTORY ITEMS

1.1. Roll Call

Present: Commissioner Lewis, Planning Commission Chairman Williams, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, Commissioner Hodges, Commissioner McCullar, Planning Director Tim Thompson, Assistant Planner Nikil Manayathara, Assistant Planner Shay League, City Attorney Brani Jensen, Deputy City Clerk Brenda Gosser, Administrative Assistant Bailie Scott

Absent: Commissioner Severa

1.2. Public Forum

Chair Barry Williams opened a public forum. Nobody spoke during this item.

1.3. (For Possible Action) Approval of Agenda

Motion: MOVE TO APPROVE THE MARCH 23, 2022 AGENDA. **Action:** Approve, **Moved by** Planning Commission Vice-Chair Cody Wagner, **Seconded by** Commissioner Jenni McCullar. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None **Absent:** Shellie Severa.

1.4. (For Possible Action) Approval of Minutes

Motion: MOVE TO APPROVE DECEMBER 8, 2021 PLANNING COMMISSION MINUTES. **Action:** Approve, **Moved by** Commissioner Angela Lewis, **Seconded by** Commissioner Humayoon Lodhi. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 0. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None **Absent:** Shellie Severa.

2. GENERAL BUSINESS

2.1. Discussion and election of City of Fernley Planning Commission Officers for 2022. (FOR POSSIBLE ACTION)

Tim Thompson stated this item is to elect the Planning Commission Officers for calendar year 2022.

Vice-Chair Cody Wagner nominated Barry Williams to be Planning Commission Chair.

Commissioner Jenni McCullar nominated Cody Wagner to be Planning Commission Vice-Chair.

Motion: MOVE TO ELECT BARRY WILLIAMS AS CHAIR OF THE PLANNING COMMISSION AND CODY WAGNER AS VICE-CHAIR OF THE PLANNING COMMISSION. **Action:** Approve, **Moved by** Commissioner Jan Hodges, **Seconded by** Commissioner Humayoon Lodhi. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar,

Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi,
No: None, **Abstain:** None, **Absent:** Shellie Severa.

3. PUBLIC HEARINGS

3.1. Public Hearing, Zoning Map Amendment – ZMA22002 & Tentative Subdivision Map – TSM22001 (FOR POSSIBLE ACTION), *continued from March 9, 2022*

Consideration and possible action on a Zoning Map Amendment and Tentative Subdivision Map requests for a site consisting of two parcels totaling ±28.42 acres in size, located at 590 & 600 W. Main Street, Fernley, NV (APN's: 021-071-02 and 021-071-03).

1. A Zoning Map Amendment request associated with ZMA22002, to change the zoning on two parcels of land from C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (Mixed Use).
2. A Tentative Subdivision Map request associated with TSM22001, to allow for the development of a 9-lot mixed-use subdivision.

Planning Director Tim Thompson provided an overview of ZMA2202. He stated that the property currently has mixed zoning. ZMA22002 will change the zoning district so it matches the master plan.

Director Thompson stated the second part is for a tentative subdivision map which will be submitted at a later date should the zoning be approved. He noted that staff will be looking at infrastructure needs such as sewer, water, storm drain improvements, flood plain, street improvements and how the infrastructure would extend to the project's site.

The applicant's representative, Lydia Altec with Phelps Engineering, presented an overview of the project. The presentation included goals that would be touched on in the master plan. She stated that Phelps Engineering has been working with the Redhawk project to make sure the infrastructure plans align.

Chair Barry Williams opened up a public forum. No comments were provided during the public forum.

Motion: MOVE TO FORWARD A RECOMMENDATION OF APPROVAL TO THE CITY COUNCIL FOR THE ZONING MAP AMENDMENT ASSOCIATED WITH ZMA 22002 BASED ON FINDINGS Z1 THROUGH Z3 AND SUBJECT TO THE FACTS SUPPORTING THOSE FINDINGS AS SET FORTH IN THE STAFF REPORT. **Action:** Approve, **Moved by** Commissioner Angela Lewis, **Seconded by** Commissioner Humayoon Lodhi. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None, **Absent:** Shellie Severa.

Motion: MOVE TO APPROVE A RECOMMENDATION OF APPROVAL TO THE CITY COUNCIL FOR THE TENTATIVE SUBDIVISION MAP ASSOCIATED WITH TSM22001 BASED ON FINDINGS TM1 THROUGH TM11 AND THE FACTS SUPPORTING THE APPROVAL CRITERIA AS SET FORTH IN THE STAFF REPORT. **Action:** Approve, **Moved by** Planning Commission Vice-Chair Wagner, **Seconded by** Commissioner Lewis. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams,

Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None **Absent:** Shellie Severa.

3.2. Public Hearing, Comprehensive Master Plan Amendment (MPA22001) & Zoning Map Amendment (ZMA22001) - (FOR POSSIBLE ACTION), continued from March 9, 2022

Consideration and possible action on a Master Plan Amendment and Zoning Map Amendment request on a vacant parcel of land approximately 27.83 acres in size, generally located south of Interstate-80, north of the Union Pacific Railroad, and directly west at the current terminus of Pilot Road. (APN: 021-061-32).

- 1. Consideration and Possible action on Resolution 22-009, a Master Plan Amendment Request to change the Land use Designation from Commercial to Industrial.**
- 2. Consideration and possible action on a Zoning Map Amendment request to change the zoning from C2 (General Commercial) to I (Industrial).**

Planning Director Tim Thompson presented the project to the Planning Commission. The applicant would like to change the zoning and land from commercial to industrial. He stated that any hazardous use would need a conditional use permit.

The owner's representative, Justin Farley, with Reno Engineering, stated that they are aware of the concern for traffic and the client would like to install a traffic light if it is warranted by NDOT.

Chair Barry Williams opened a public forum. No comments were provided during the public forum.

Motion: MOVE TO APPROVE COMPREHENSIVE MASTER PLAN AMENDMENT RESOLUTION 22-009 AND FORWARD A REQUEST FOR CERTIFICATION TO THE CITY COUNCIL FOR THE COMPREHENSIVE MASTER PLAN AMENDMENT ASSOCIATED WITH MPA22001, BASED ON FINDING MP1 TO MP3 AND THE FACTS SUPPORTING THOSE FINDINGS AS SET FORTH IN THE STAFF REPORT. **Action:** Approve, **Moved by** Planning Commission Vice-Chair Cody Wagner, **Seconded by** Commissioner Jenni McCullar. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None, **Absent:** Shellie Severa.

Motion: MOVE TO FORWARD A RECOMMENDATION OF APPROVAL TO THE CITY COUNCIL FOR THE ZONING MAP AMENDMENT ASSOCIATED WITH ZMA 22001, BASED ON FINDINGS Z1 TO Z3 AND THE FACTS SUPPORTING THOSE FINDINGS AS SET FORTH IN THE STAFF REPORT. **Action:** Approve, **Moved by** Commissioner Lewis, **Seconded by** Commissioner Hodges. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None, **Absent:** Shellie Severa.

3.3. Public Hearing, ZMA22003 (FOR POSSIBLE ACTION), continued from March 9, 2022

Consideration and possible action on a Zoning Map Amendment request from the City of Fernley to change the zoning of a ±3.94 acre parcel of land from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multifamily, 10-21 dwelling units per acre). The parcel is located at 1170

Newlands Drive and is the site of the old Lyon County Senior Center (APN: 020-320-01).

Nikil Manayathara presented ZMA22003 to the Planning Commission.

Vice-Chair Wagner disclosed that he has been heavily involved with this process. He has no individual financial interest in the property and is helping with the project as a volunteer. Vice-Chair Wagner will be voting but wanted to disclose that information.

Chair Barry Williams opened up a public forum. No comments were provided during the public forum.

Motion: MOVE TO FORWARD A RECOMMENDATION OF APPROVAL TO THE CITY COUNCIL FOR THE ZONING MAP AMENDMENT ASSOCIATED WITH ZMA 22003 BASED ON FINDINGS Z1 THROUGH Z3 AND THE FACTS SUPPORTING THOSE FINDINGS AS SET FORTH IN THE STAFF REPORT. **Action:** Approve, **Moved by** Planning Commission Vice-Chair Cody Wagner, **Seconded by** Commissioner Humayoon Lodhi. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None, **Absent:** Shellie Severa.

3.4. Tentative Parcel Map, TPM22001 (FOR POSSIBLE ACTION), *continued from March 9, 2022*
Consideration and possible action on a Tentative Parcel Map request from Goudy Investments LLC to subdivide a ±11.94 acre parcel located within the C2 (General Commercial) zoning district into 4 separate parcels. The project site is generally located south of Highway 50A, and east of Nevada Pacific Parkway (APN: 021-201-47).

Nikil Manayathara presented project TPM22001 to the Planning Commission.

Chair Barry Williams opened a public forum. No comments were provided during the public forum.

Motion: MOVE TO APPROVE THE TENTATIVE PARCEL MAP REQUEST ASSOCIATED WITH TPM22001, ADOPTING FINDINGS TPM1 THROUGH TPM5, AND THE FACTS SUPPORTING THESE FINDINGS AS SET FORTH IN THE STAFF REPORT AND SUBJECT TO THE CONDITIONS OF APPROVAL 1 THROUGH 22 AS LISTED IN THE STAFF REPORT. **Action:** Approve, **Moved by** Commissioner Jenni McCullar, **Seconded by** Commissioner Angela Lewis. **Vote:** Passed, **summary:** Yes 6, No 0, Abstained 0, Absent 1. **Yes:** Planning Commission Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Lodhi, **No:** None, **Abstain:** None, **Absent:** Shellie Severa.

4. CHAIR AND COMMISSION ITEMS

The Chair and Commissioners did not have any items to report on.

5. PLANNING DIRECTOR ITEMS

Planning Director, Tim Thompson introduced Shay League, Assistant Planner.

6. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

City Attorney Brandi Jensen encouraged the Commissioners to attend a training session that will be held at 4:00 PM, on April 20th before the City Council meeting. The training session will be in regards to land use and legal standards that apply to planning.

7. PUBLIC FORUM

There were none.

8. ADJOURNMENT

The meeting was adjourned at 6:20 PM

The next Planning Commission meeting will be held on April 13, 2022 at 5:00 PM

Approved by the Fernley Planning Commission on April 13, 2022, by a vote of:

AYES _____ NAYS: _____ ABSTENTIONS: _____ ABSENT: _____

Planning Commission Chairman Barry Williams

ATTEST:



CITY OF FERNLEY

PLANNING COMMISSION

AGENDA REPORT

Meeting Date: April 13, 2022

REPORT TO: Planning Commission
REPORT BY: Nikil Manayathara, Assistant Planner
REVIEWED BY: Tim Thompson, Planning Director

FINANCIAL IMPACT:

☐ YES ☒ NO

CURRENTLY BUDGETED:

☐ YES ☒ NO ☐ N/A

FUND/ACCOUNT:

ACTION REQUESTED:

☐ Consent

☒ Motion

☐ Ordinance

☐ Presentation

☐ Receive/File

☐ Resolution

AGENDA ITEM: (For possible action) Public Hearing - ZMA22004 & TSM22003

Consideration and possible action on a Zoning Map Amendment and Tentative Subdivision Map request on a site consisting of one (1) parcel of land approximately 30.15 acres in size, located at 900 Vonnie Lane, Fernley, NV (021-471-05):

1. A Zoning Map Amendment request associated with ZMA22004, to change the zoning on a single parcel of land from SF20 (Single Family, 20,000 sq. ft. minimum lot size) to SF6 (Single Family, 6,000 sq. ft. minimum lot size).
2. A Tentative Subdivision Map request associated with TSM22003, to allow for the development of a 79-lot residential subdivision, located within the SF6 (Single Family, 6,000 sq. ft. minimum lot size zoning district).

AGENDA ITEM BRIEF:

The proposed project will be located on a single parcel of vacant land, and the application will consist of a Zoning Map Amendment (**ZMA22004**) and Tentative Subdivision Map (**TSM22003**). The project site consists of (1) parcel of land approximately 30.15 acres in size, located at 900 Vonnie Lane, Fernley, NV (APN: 021-471-05). The project will generally consist of a 79-lot residential subdivision with lot sizes ranging from 6,000 square feet to 15,000 square feet.

RECOMMENDED MOTION:

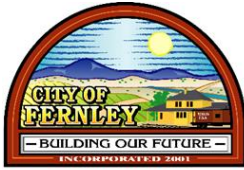
Zoning Map Amendment

Motion to Approve:

"I move to forward a recommendation of approval to the City Council for the Zoning Map Amendment associated with ZMA22004 based on Findings Z1 through Z3 and subject to the facts supporting those findings as set forth in the Staff Report."

Motion to Deny:

"Based on information received in written materials and at the public hearings on this matter, I move to forward a recommendation of denial to the City Council for the Zoning Map Amendment associated with ZMA22004 because I have determined the proposed changes are detrimental to the public's health, safety, and general welfare and am unable to make the following required Zoning Map Amendment Findings: I am unable to make the Finding(s) _____ as it relates to _____. Therefore, I cannot approve the Zoning Map Amendment."



CITY OF FERNLEY

PLANNING COMMISSION

AGENDA REPORT

Tentative Subdivision Map

Motion the Approve:

"I move to forward a recommendation of approval to the City Council for the Tentative Subdivision Map associated with TSM22003 based on Findings TM1 through TM11 and the facts supporting the approval criteria as set forth in the Staff Report and subject to the Conditions of Approval 1 through 36 as listed in the Staff Report."

Motion to Deny:

"Based on information received in written materials and at the public hearings on this matter, I move to forward a recommendation of denial to the City Council for the Tentative Subdivision Map associated with TSM22003 because I have determined the proposed changes are detrimental to the public's health, safety, and general welfare and am unable to make the following required Zoning Map Amendment Findings: I am unable to make the Finding(s) _____ as it relates to _____. Therefore, I cannot approve the Tentative Subdivision Map."

Business Impact (per NRS Chapter 237):

- ☐ A Business Impact Statement is Attached.
- A Business Impact Statement is not required because this is not a rule (term excludes vehicles by which legislative powers are exercised under NRS Chapters 271, 278, 278A, or 278B).
- ☒

See Attached Report for Background/Analysis/Findings

PROJECT SUMMARY

CASE NUMBER(S):	• ZMA22004 and TSM22003
REQUESTED ACTION(S):	• Zoning Map Amendment & Tentative Subdivision Map
PROJECT DESCRIPTION:	• The proposed project consists of a 79-lot residential subdivision, located within the SF6 (Single Family, 6,000 sq. ft. minimum lot size zoning district). This applicant intends to rezone the project area from SF20 (Single Family, 20,000 sq. ft. minimum lot size) to the aforementioned SF6 zoning to increase the overall site density, and potentially provide a greater variety of housing options to the Fernley area. Lot sizes within this development are expected to vary in size, from 6,000 square feet to 15,000 square feet in size.
PROPERTY OWNER(s):	• Eureka Land Development, LLC
APPLICANT:	• Phelps Engineering Services
LOCATION:	• 900 Vonnie Lane, Fernley, NV
SITE SIZE:	• ±30.15 acres
EXISTING ZONING:	• SF20 (Single Family, 20,000 Sq. Ft. minimum lot size)
PROPOSED ZONING	• SF6 (Single Family, 6,000 Sq. Ft. minimum lot size)
EXISTING LAND USE:	• SFR – Single Family Residential
WARD INFORMATION:	• Ward 5 – Councilwoman McKay

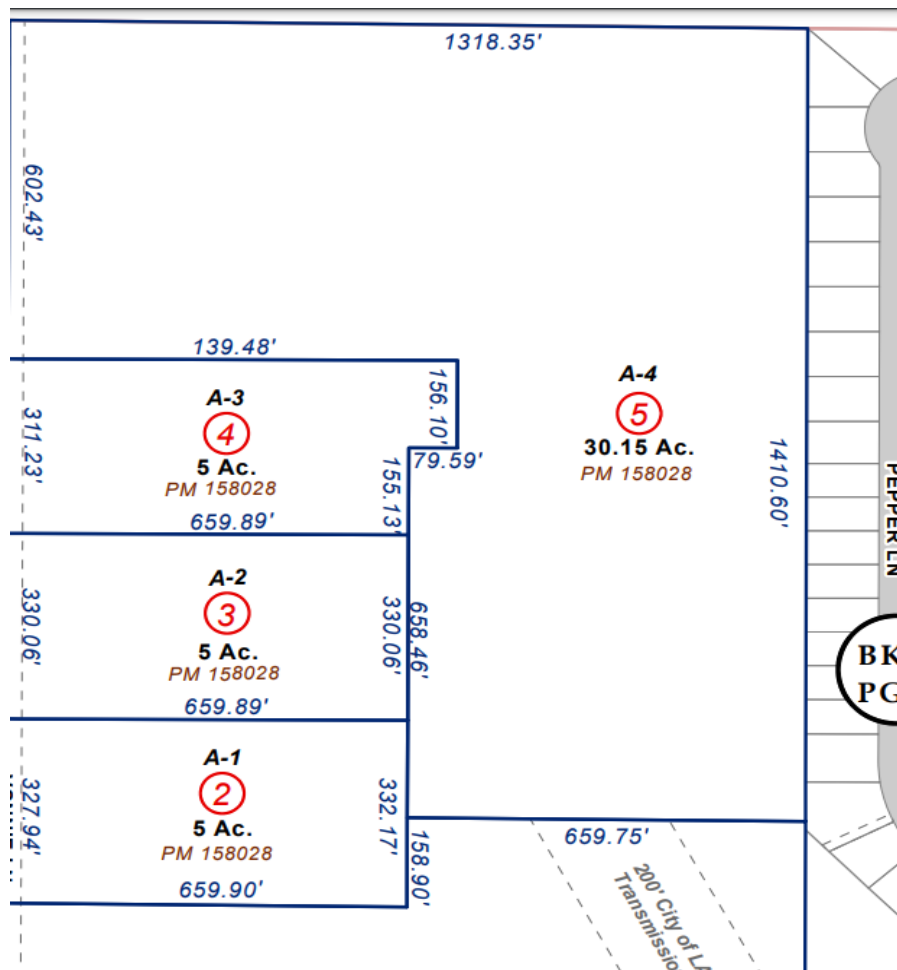
***A PUBLIC HEARING IS REQUIRED**

POLICY REFERENCE

<i>Nevada Statutes:</i>	<i>NRS 278</i>
<i>Fernley Municipal Code:</i>	<i>Title 32</i>
<i>Policies & Procedure Manual:</i>	<i>N/A</i>
<i>Community Assessment:</i>	<i>N/A</i>
<i>City of Fernley Development Code:</i>	<u>§32.03.040(e) (Zoning Map Amendments)</u> <u>§32.03.060(f) (Subdivision Maps)</u> <u>§32.06.070 (Residential – Single Family)</u> <u>§32.09.090 (Landscaping and Screening)</u> <u>§32.09.035 (Dedication of Water)</u> <u>§30.09.140 (Streets (roadways))</u> <u>§32.09.150 (Utilities)</u> <u>§32.09.030 (Adjacency Standards)</u> <u>§32.12.010 (Adequate Public Facilities)</u>

BACKGROUND

The project site has been under the ownership of Eureka Land Development LLC since February 2018 (Lyon County Records – Document #: 576146). Throughout this time, the property has remained vacant, with no fixed development or personal property being located on the parcel. A Greenbelt had been approved on the project site in March of 1985, with a primary agricultural use of Cultivation and Grazing. A parcel map from January of 1993 then split the parcel into its current configuration. No additional record of Land division or entitlement exists from that point onwards, according to the data present on the Lyon County Assessor's website. The following Plat Map highlights the project site (**A-4**), along with the surrounding parcels:

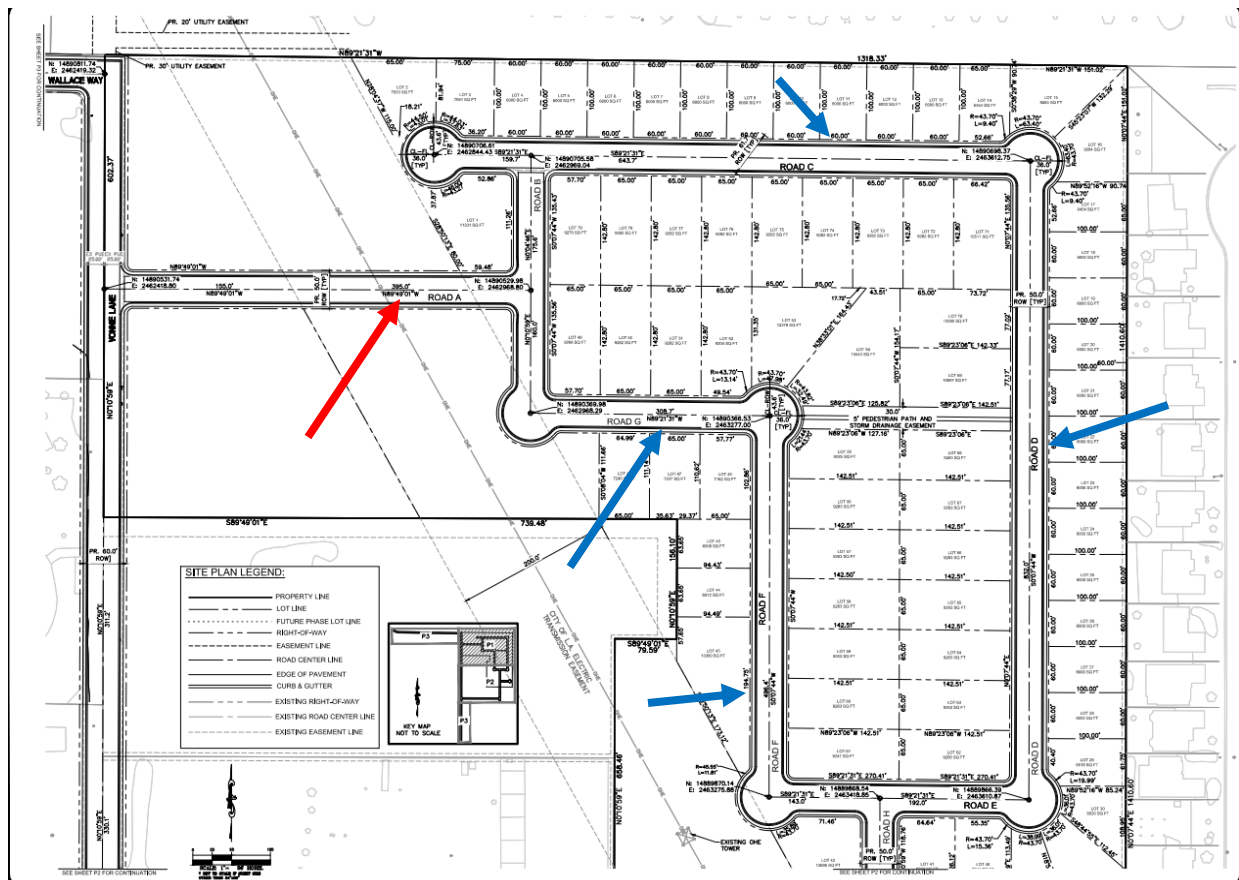


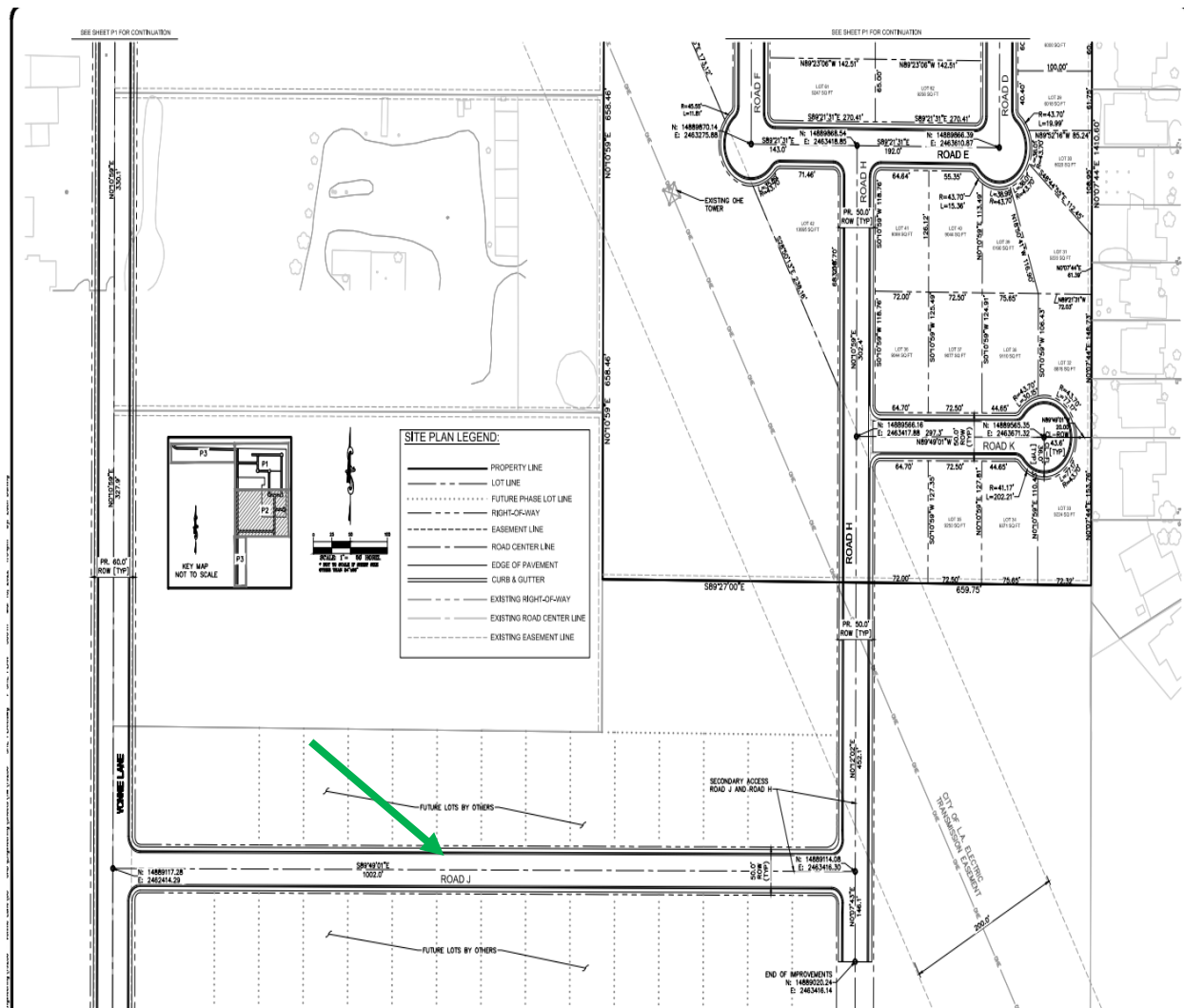
The project site itself consists of a single parcel of vacant land (APN: 021-471-05) and an approximate total area of 30.15 acres. The project site is generally surrounded by similar land uses, with the surrounding parcels to the north, south, east, and west, containing existing residential development of varying density. Furthermore, the parcels to the West, East, and South all share the same Master Plan Land Use Designation as the project site – Single Family Residential. The project area is located adjacent to an existing housing subdivision directly to the east – the Desert Lakes Golf Course, and the high-density Desert Rose RV park is situated directly north of the project site.

ANALYSIS

The project site has a current land use designation of SFR (Single Family Residential) and is currently located within the SF20 (Single Family, 20,000 sq. ft. minimum lot size) zoning district. The project's current zoning is in conformance with the existing land use designation, but the applicant does believe that by rezoning the parcel to SF6 (Single Family, 6,000 sq. ft. minimum lot size), the goals and policies outlined within the 2018 Comprehensive Master Plan can be reached. The proposed SF6 zoning is an equivalent zoning district within the SFR (Single Family Residential) land use designation, and allows for appropriate low to medium density, single family detached homes with varied lot sizes. The parcels of land to the west and south of the project site are zoned RR5 (Residential Rural, 5-acre minimum lot size), and GR20 (General Rural, 20-acre minimum lot size), indicating a lower overall density than the parcels to the north and east of the project site.

The project site is generally located north of Farm District Road, east of Vonnie Lane, and south of Highway 50 Alternate. The majority of Vonnie Lane currently exists as a private easement, with a small section of the roadway adjacent to Farm District Road being dedicated right-of-way. The City of Fernley Development Code stipulates that both Vonnie Lane and Wallace Way will be required to be improved to City Standards, with the addition of curb and gutter sidewalks, and an increase of right-of-way width, to 50 or 60 feet. Primary access into the project site will be off of Vonnie Lane via **Road A**, which then forms part of the project's **internal roadway network**, circulating throughout the project site providing access to each proposed lot. The project's secondary access will be provided via **Road J** (Next Page), which also provides access directly off of Vonnie Lane. The secondary access will travel northeast through the project site, eventually connecting to the internal circulation roadway. The roadway network for the project is shown through the 2 diagrams attached below:





As mentioned previously, the individual residential lots within the project will vary in size from 6,000 square feet to approximately 15,000 square feet. The purpose of this variation in lot size is to provide more diverse housing types, and strategically position lots adjacent to the Transmission Line that bisects the project area. The presence of the Los Angeles Department of Water and Power Transmission Line Easement prevents uniform lot sizes along the south/southeastern project boundary, as the Department of Water and Power does not permit residential buildings or structures to be located directly underneath the Power Line. As such, the developer has proposed that the project areas' drainage facilities and roadway network will be located here instead. The strategic placement of the drainage facility additionally does provide buffering between the rural-residential lots west of the project site, while at the same time creating a natural space of walking trails, and the project's retention basin. Ultimately, some lots within the project are adjacent to the larger, more rural parcels, and as such they will be subject to the adjacency standards outlined within the City of Fernley's Development Code, prior to the approval of any Final Map. The image on the following page shows the proposed layout of drainage facilities adjacent to the transmission easement:



Sewer and Water discoveries were made by the applicant during the development process, and the development will connect to existing municipal sewer and water utilities as is required by the City's Development Code. The Water Study provided by the applicant identified that the City's existing municipal services can be extended to serve the project site, and the City's water treatment plant does have sufficient capacity to satisfy the expected water demand of the new development. The proposed development is expected to connect to the 18-inch water main within Farm District Road and be routed north through Vonnie Lane as well as the project site, before connecting to the 8-inch main located within the Desert Rose RV park. The diameter of the water line running through Vonnie Lane is expected to be 8-inches and will serve the project area by running underneath the project roadways and providing water service to each individual residential lot. The provided Sewer Discovery Report additionally indicated that sufficient capacity does exist within the City's existing infrastructure to serve the Vonnie Lane project. A 680 Linear Foot gravity main will be extended to serve the project site, and this is expected to connect to the existing 12-inch sewer main located along the northern property line of the Desert Rose RV Park. The project is expected to utilize an 8-inch sewer main, which will likely be routed underneath the project's

interior roadway and serve each individual residential lot. Sewage generated by the development will flow north to the Highway 50 Lift Station, and from there it will go on to the City's Wastewater Treatment plant further north of the City. As mentioned earlier, there is existing capacity to serve the Vonnie lane project, and any offsite improvements will require utility easements as well as approval by the City Engineer and Public Works Director.

A preliminary drainage report was also provided by the applicant to ensure that excess runoff could be maintained by the proposed development. The study identified that the project site slopes gently to the north, with an approximate 3-5% gradient. The project site also has two existing drainageways that carry runoff through the site, north towards Highway 50 Alternate. As the project site is developed, storm drainage piping is expected to be constructed underneath the project's internal roadway and collect runoff and drainage. This storm drain system, in conjunction with a gutter system will then redirect drainage and collected runoff into one of 7 proposed retention basins, scattered throughout the project area. The 7 retention ponds have been developed and sized to accommodate the 100-year storm/flood event. Furthermore, the retention basins will be developed and constructed in compliance with any standards or conditions outlined by the City of Fernley Engineering and Public Works Departments. The associated FEMA Flood Insurance Rate Map for the project site indicates that the proposed development is within Flood Zone X. This indicates that the proposed development is located within an area of minimal flood hazard, and as such, no significant floodplain impacts are expected.

A Traffic Study was also provided with the application, as it was expected that the proposed development would generate in excess of 100 peak hour trips. The Traffic Study determined that the development would generate an additional 802 daily trips per weekday, with an estimated 60 additional AM peak hour trips, and an additional 80 PM peak hour trips. The City of Fernley Engineering Department and the Nevada Department of Transportation (NDOT) identify Level of Service (LOS) D as the minimum service threshold for which traffic and roadway improvements will need to be made. Level of Service D is generally defined as:

"Approaching unstable flow. Speeds slightly decrease as traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160 ft(50m) or 8 car lengths. Minor incidents are expected to create delays. Examples are a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require prohibitive cost and societal impact in bypass roads and lane additions."

This means that any roadway intersection equal to or higher than LOS D (D, C, B, A) will not require any significant infrastructure improvements, while those below LOS D (E, F) will require improvements. The Traffic Study found that the project would not have a significant impact on major roadway intersections around the project site and therefore would not lead to a long-term reduction in Level of Service below level D. Existing traffic conditions plus project conditions are expected to reduce the overall Level of Service in the long run, but not significantly. This can be seen in the long-term project impact table as shown below.

Table 8: Long-Term Project Impact on Intersection Operations

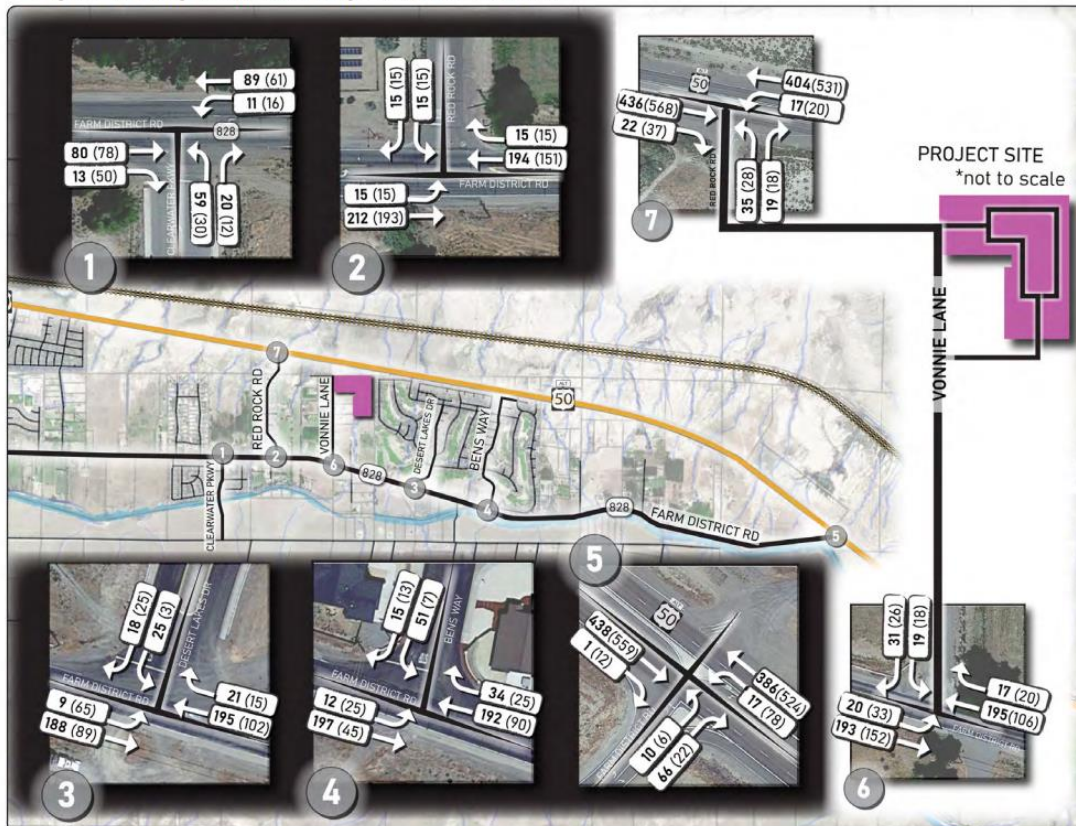
	Without Project		With Project	
	AM	PM	AM	PM
1: Clearwater Parkway at SR 828	A 9.6 (NB)	A 9.5 (NB)	B 10.0 (NB)	A 9.6 (NB)
2: Red Rock Road at SR 828	A 7.7 (SB)	B 10.2 (SB)	B 10.8 (SB)	B 10.4 (SB)
3: Desert Lakes Drive at SR 828	B 11.0 (SB)	A 9.2 (SB)	B 11.0 (SB)	A 9.2 (SB)
4: Bens Way at SR 828	B 11.9 (SB)	A 9.2 (SB)	B 11.9 (SB)	A 9.3 (SB)
5: US-50A at SR 828	B 12.9 (EB)	C 15.9 (EB)	B 13.0 (EB)	C 16.1 (EB)
6: Vonnie Lane at SR 828	B 10.8 (SB)	A 9.9 (SB)	B 10.8 (SB)	B 10.1 (SB)
7: Red Rock Road at US-50A	B 11.5 (NB)	B 12.7 (NB)	B 12.3 (NB)	B 13.5 (NB)

Source: Trafficware, Synchro 11

Source: Transportation Research Board, *Highway Capacity Manual*, 6th Edition

According to the above table, all intersections would continue to operate acceptably, even while accounting for the long term project conditions. As such, the project will not be expected to have any significant or adverse impacts to the surrounding area, from a traffic standpoint. The Traffic Study did provide some general recommendations however, which includes the improvement of the Vonnie Lane & S.R. 828 (Farm District Road) intersection to NDOT Standards, with dedicated left & right turn lanes. Further recommendations include frontage and site improvements along Vonnie Lane, which will be developed in compliance with the City of Fernley Engineering & Public Works Design Standards. The following image shows 7 general intersections that this project is expected to have an impact on.

Figure 11: Long-Term Plus Project Traffic Volumes



The proposed development will utilize the Lyon County School District facilities, and the School District generally does calculate roughly 0.5 children per new residential household. Using this figure, it is expected that the project will contribute approximately 40 new students to the area. The schools expected to serve the Vonnie Lane project are East Valley Elementary, Fernley Intermediate School, Silverland Middle School, and Fernley High School. According to data and comments from the Lyon County School District, both East Valley Elementary School and Fernley High School are expected to exceed their capacity within the coming years and will require sufficient funding from housing developments to allow for expansion and accommodate families moving into the Fernley area. The School District data indicates that approximately \$1.37 million in capital construction costs would be required to accommodate the expected influx of students from the Vonnie Lane project. This is ultimately due to a combination of factors: The lack of funding from district bonding capabilities, increased construction costs, and the rapid growth within the Fernley area.

Should the Planning Commission determine the project, as submitted and conditioned, is consistent with the development code, will not have a significant adverse impact on the existing surrounding uses, promotes the public health, safety, and general welfare, and can make the applicable Findings, the Planning Commission can forward a recommendation for approval to the City Council.

If the Planning Commission cannot make some or all the applicable Findings and determines the project, as submitted and conditioned, is not consistent with the development, will have a significant adverse impact on the existing uses, and/or does not promote the public health, safety and general welfare, the Planning Commission can deny the application. The motion to deny should be based on information received in written materials and at the public hearings on this matter and the Planning Commission's inability to make any Finding(s) should be explicitly described.

FINDINGS

Zoning Map Amendment

Z1: Consistency with the City's Master Plan and otherwise consistent with State & Federal Law.

Relationship to Master Plan

1. SF6 (Single Family, 6,000 sq. ft. minimum lot size)

The proposed development is located within an area designated as SFR (Single Family Residential) within the City of Fernley's Comprehensive Master Plan. The description of the Single Family Residential land use states that the equivalent zoning districts are SF20 (Single Family, 20,000 sq. ft. minimum lot size), SF12 (Single Family, 12,000 sq. ft. minimum lot size), SF9 (Single Family, 9,000 sq. ft. minimum lot size), and SF6 (Single Family, 6,000 sq. ft. minimum lot size). Per the Comprehensive Master Plan document, the Single Family Residential land use generally consists of detached, single family residential lots, with additional uses such as parks, open space, and occasional religious institutions. Residential lots may often contain accessory uses such as Urban Agriculture facilities or Home Occupations.

The Comprehensive Master Plan additionally states that municipal services such as sewer and water connections are required in Single Family Residential designated areas and that they be located on smaller, local streets, appropriately sited and distanced from more major arterial roadways. This provides privacy from nearby uses to property owners, while at the same time ensuring that adjacent uses are relatively easily accessible via the roadway network. The Single Family Residential designation additionally offers more flexibility in terms of housing type and design, in that there are no specific architectural requirements for Single Family Residential subdivisions. However, the general design of houses within an individual development are required to complement one another. The general density range for the Single Family Land use is 2-7 dwelling units per acre, and the proposed project has an overall density of 2.63 dwelling units per acre. For this reason and through the analysis of the project materials, the Zoning Map Amendment is consistent with the City's Comprehensive Master Plan.

2. The Land Use Plan Goals and Action Strategies in the 2018 Comprehensive Master Plan that are relevant to this proposal include:

Population, Housing & Employment

HP.1.1 Enhance Fernley's vitality as a community by providing a variety of housing types, density and costs that accommodate the needs, desires and financial abilities of the current and future households.

HP.1.1.4 Encourage the efficient use of land and existing infrastructure by focusing on achieving good design in new housing or redeveloped housing on either vacant land, infill parcels and/or under-developed parcels.

HP.1.2 Encourage housing that supports sustainable development patterns by promoting the efficient use of land, conservation of natural resources, easy access to services and public facilities such as parks, and resource efficient design and construction.

HP.1.2.1 Foster flexibility in the division of land and the siting of buildings and other improvements to reduce new development's impact on environmentally sensitive areas.

HP.1.8 Coordinate population growth with the availability of water, sanitary sewer, streets and highways and other public facilities and services.

HP.1.8.1 The City of Fernley Department of Community Development staff will document the demands for public services and facilities relative to existing and planned population in staff reports prepared in conjunction with applications to amend the Comprehensive Master Plan.

Land Use

LU.1.1 Encourage and plan for new development in areas where adequate public services and facilities can be provided efficiently.

LU.1.1.1 Require new development to provide its proportionate share of improvements to avoid a degradation of services for existing residents. This requirement will be applied regardless of project size in order to avoid incremental erosion of services and facilities.

- LU.1.1.2 Encourage development of vacant or underutilized lands within the community core where adequate infrastructure and facilities currently exists.
- LU.1.1.3 Require new development to provide certified, stamped studies demonstrating the impact proposed development will have on existing infrastructure and to provide improvements and/or funding in lieu of improvements in proportion to the impacts of the proposed projects on the city's roadway, sewer and water systems.
- LU.1.2 Encourage new development to be in accordance with the Comprehensive Master Plan land use category, and other land use controls to accomplish community principles.**
 - LU.1.2.1 Consistently monitor development applications that intend to utilize the underlying zoning. Modify the Fernley Development Code as necessary to ensure compatible development that reflects the community goals envisioned in the Comprehensive Master Plan.
- LU.1.3 Provide a balanced distribution of employment and population.**
 - LU.1.3.1 Encourage land uses and development, which maintain a balance of population, housing, and employment.
 - LU.1.3.2 Maintain adequate supplies of developable land for both residential and commercial land use.
- LU.1.4 Ensure existing and future land uses are compatible.**
 - LU.1.4.2 Projects shall be evaluated with intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
 - LU.1.4.3 Prevent future suburban or urban subdivisions from locating residences next to principal arterials, freeways, or 300 feet from railroads. Effective shielding and buffering will be required to provide noise abatement with health and safety precautions.
 - LU.1.4.5 Require development plans to address conditions unique to the developing area and minimize impacts to adjacent properties.
 - LU.1.4.6 Review all projects in relation to their geographic location, impacts to adjacent communities, fiscal impact and mitigation measures to protect natural and cultural resources. Apply specific conditions of approval tailored for each development proposal.
- LU.1.5 Promote infill development.**
 - LU.1.5.3 Development on the perimeter of Fernley is appropriate only where orderly extension of existing public services and facilities can occur.
 - LU.1.5.4 Adopt development regulations that recognize the relationship between land use timing and the provision of services and facilities.
- LU.1.6 Create a growth pattern that assures flexible, feasible, and efficient projects.**
 - LU.1.6.1 Support for developmental approval of projects that provide an appropriate balance of population.

- LU.1.6.2 The land use designations include minimum service standards that shall apply to proposed developments and land use changes.
- LU.1.8 Ensure that future growth is sensitive to the existing agricultural/farming uses.**
 - LU.1.8.1 Encourage flexibility in development proposals in the Farm District Road to vary lot sizes, cluster dwelling units and use innovative approaches to site planning.
- LU.1.12 It is the intent of the City of Fernley to provide timely, orderly, and efficient arrangement of adequate public facilities and infrastructure that support existing and planned land use patterns and densities. .**
 - LU.1.12.1 Subdivision or intensification of land without adequate public facilities available to serve the new development as it occurs shall not be allowed.
 - LU.1.12.2 Any land use entitlement applications for subdivision or intensification of land shall also be required to submit a fiscal impact analysis to the approval of the city manager or their designee.
 - LU.1.12.3 the City of Fernley should explore the implementation of impact fees associated with the subdivision or intensification of land.

Transportation

- T.1.1 Require that roadway facilities be maintained and constructed as needed to ensure high quality and safe travel on major streets and at major intersections.**
 - T.1.1.1 The minimum Level of Service on all city maintained roadways shall be LOS D. The City will work with representatives from NDOT to ensure timely improvements are planned when NDOT roadways are forecast fall below LOS D.
 - T.1.1.6 Require all new development to be consistent with the access right-of-way dedication and improvement standards as specified in the Public Works Design Manual and pursuant to the functional classification as defined in this chapter.
- T.1.3 Implement street design and access standards to provide safe and efficient movement of goods and people.**
 - T.1.3.1 Assure that access to all new individual residential lots and/or units is provided only from collectors or local streets.
 - T.1.3.4 Require proposed new development that intends to connect with an NDOT roadway to incorporate the NDOT Access Management System and Standards into the project design. These standards regulate access onto the roadway network in order to protect health, safety and welfare of the public, maintain the rights-of-way, and to preserve the functional classification level of the roadway network while meeting the needs of the motoring public.

Public Services & Facilities

- PSF.1.1 To provide and maintain a reliable and adequate water supply and delivery system.**
 - PSF.1.1.4 Areas planned for urban or suburban development (residential densities of one or more dwelling units per acre or comparable non-residential development will

be served by a community water supply system consistent with adopted policies in the Land Use Chapter of the Fernley Comprehensive Master Plan.

PSF.2.1 Insure an efficient, adequate, and self-supporting wastewater collection treatment and disposal system that will meet the needs of the public and comply with federal, state, and local clean water requirements.

PSF.2.1.1 All new development withing the City limits with lot sizes equal to or smaller than 1.0 acre shall be required to connect to the municipal sewer system. New development with residential densities lower than one dwelling unit per acre shall be allowed to utilize individual septic systems with acceptable sub-surface disposal if sewer is not available.

PSF.2.1.2 Final maps and building permits will be approved only when adequate sewer capacity is secured and applicable service and connections fees have been paid.

PSF.2.1.3 Sewer costs directly attributable to the new development shall be paid for by the new development. The cost of providing service shall include the cost of extending service lines or other necessary facilities to the individual project site.

Z2. Consistency with the surrounding land uses.

The Zoning Map Amendment request conforms with the underlying Master Plan designation and is compatible with the character of the adjacent area. The project site is located directly east of the Desert Lakes subdivision, and just south of the Desert Rose R.V. park. Much of the property north of Farm District Road is also designated for Single Family Development, with the parcels directly south, west, and east of the project site sharing the Single Family land use designation. The proposed zoning does differ from the two parcels directly south of the project site, but it is understood that significant buffering between the two parcels will occur prior to the recordation of any Final Map. Given that adequate buffering and adjacency standards allow for the single family development to be located adjacent to residential rural lots, the proposed zone change to SF6 (Single Family, 6,000 sq. ft. minimum lot size) would be consistent would the surrounding land uses.

Z3. Public Notice was given, and a public hearing has been scheduled per the requirements of the Development Code and Nevada Revised Statutes.

Public notice was given and a public hearing was scheduled per the provisions outlined in the City's Municipal Code and Nevada Revised Statutes.

Tentative Subdivision Map

TM1: Compliance with environmental and health laws and regulations concerning water and air pollution, solid waste disposal, water supply facilities, community or public sewage disposal, and where applicable, individual systems for sewer disposal.

The developer shall comply with all standards, codes, and requirements regarding connection to the City's sanitary sewer and potable water systems, including but not limited to, associated fees, easements, design

standards, system looping, development code requirements, and state requirements. Prior to the recordation of a final map for the project, the developer shall provide the City with a utility plan for water and sanitary sewer that is in conformance with the City of Fernley's Municipal Code and Public Works Design Manual to the approval of the City Engineer, Public Works Director, and Administrator. The Map must be reviewed and approved by the Nevada Department of Environmental Protection prior to construction.

TM2: Availability of water that meets the applicable health standards and is sufficient for the reasonably foreseeable needs of the subdivision.

The developer shall comply with all City of Fernley municipal codes regarding the dedication of water rights, including associated fees, for the connection to the city's municipal water system in the amount that is required prior to the issuance of a building permit for the project. The developer shall pay all fees and provide all the information necessary to complete water and sewer modeling of the project. Modeling will be performed by the City of Fernley's consultant and any additional infrastructure or capacity identified by the modeling shall be included in the improvement plans and constructed by the developer.

TM3: Availability and accessibility of utilities

The applicant proposes to utilize City Water and sewer infrastructure located within the immediate surrounding area. Through the Water Discovery Report provided by the applicant, it has been determined that sufficient water capacity exists to allow for connection to the City's Municipal Water system. The project will utilize an 8-inch water main that is expected to be connected to the 18-inch water main on Farm District Road from one side and connected to an 8-inch main that serves the Desert Rose RV Park from the other side. The project's 8-inch main will be routed underneath Vonnie Lane between the Farm District & Desert Rose water lines, and will travel underneath the project's internal roadway, to serve each individual residential lot within the project. The project is expected to utilize an 8-inch sewer main that will connect to the 12-inch main located north of the project site, adjacent to the Desert Rose RV Park. Each of the 79 lots will be served by the City Sewer system, and there is sufficient capacity within the City's infrastructure network to serve this proposed project. The developer will be required to dedicate a sufficient amount of water rights to serve the project prior to the approval and recordation of a Final Map. A series of retention basins and storm drainage piping system have been proposed as a part of this development, both of which will address storm water and drainage concerns. Gas and power will be provided by Southwest Gas and NV Energy respectively.

TM4: : Availability and accessibility of public services such as schools, police, and fire protection, transportation, recreation facilities, and parks

Schools:

The proposed Single Family project will contain 79 residential lots. As a result, it is expected that the project will contribute roughly 40 additional students to the surrounding area. This development will be served by East Valley Elementary School, Fernley Intermediate School, Silverland Middle School, and Fernley High School. According to data provided by the Lyon County School District, the majority of Fernley's Schools are expected to exceed 100% capacity by 2025 or sooner. For this proposed development, It is expected that East Valley Elementary School will substantially exceed it's 100% capacity and will require significant funding to accommodate students residing within the Vonnie Lane subdivision. The Lyon County School District believes that an additional \$1.37 million in Capital Construction costs will

be required to build additional classrooms for the students that the Vonnie Lane project will bring to the area (approximately 1.5 additional classrooms). This information will also be provided as an attachment to this Staff Report.

Parks

The project site is located approximately 0.75 miles from The Golf Club at Fernley, which falls within the nearby Desert Lakes residential subdivision. Furthermore, Autumn Winds Park is located southwest of the project site alongside Farm District Road, approximately 1.17 miles away. Ponderosa Park also serves the project area, being located southwest of the project site, approximately 2.95 miles away. .

Police & Fire

The Lyon County Sherriff's office provides police protection and the North Lyon County Fire Protection District provides fire protection. The proposed development is located approximately 5.7 miles from the Lyon County Sherriff's office, and roughly 0.79 miles from the North Lyon County Fire Protection Station 62 .on Red Rock Road.

Transportation:

The project is expected to have two points of access off of Vonnie Lane, one of which will serve as the Main Access and another which will serve as the project's Secondary Access. Both accessways as well as Vonnie Lane will be required to be developed and improved to the City of Fernley's Public Works and Engineering design standards. Furthermore, Wallace way will also be improved to City of Fernley Standards and is tentatively expected to connect to the existing Red Rock Road, further west.

TM5: Consistency with the zoning district regulations

The proposed zoning for this development is SF6 (Single Family, 6,000 sq. ft. minimum lot size). The SF6 zoning allows for a maximum density of 7.26 dwelling units per acre. The proposed development will generally consist of 79 single family lots on a ±30.15 acre parcel of vacant land. Furthermore, the development will utilize varying lot sizes, ranging from 6,000 square feet to roughly 15,000 square feet, and sections of the project area are set aside for drainage areas and walking trails. This provides an overall project density of 2.62 dwelling units per acre, which is significantly within the density limit for the SF6 zoning. The proposed development is also required to comply with all City of Fernley Development Code requirements, including but not limited to dimensional standards, (§[32.06.070](#)), design standards, (§[32.06.070](#)) and development standards (§[32.09](#)).

TM6: Conformity with the Master Streets & Highways Plan

Any roadway construction additions or improvements required to serve the project will conform to the Master Streets & Highways Plan, and be approved by the City Engineer, Administrator, and Public Works Director. The Main Arterial Road that will serve this development is State Route 828 (Farm District Road). Farm District Road currently operates at LOS (Level of Service) A, but it is expected that by 2040, the Level of Service will drop down to LOS C. Given that Farm District Road will be an important residential corridor as Fernley grows over the next 20 years, the Master Plan highlights the importance of maintaining the roadway width and adding improvements to cross streets such as turn lanes and stops signs as development occurs. For the Vonnie Lane project, some of these policies will be implemented as improvements to Vonnie Lane are expected to occur, with the addition of dedicated left and right turn lanes to help accommodate safe access onto Farm District Road.

TM7: Effect of the proposed subdivision on existing public streets, and the need for new streets or highways to serve the subdivision.

Any roadway construction additions or improvements required to serve the project will conform to the Master Streets & Highways Plan, and be approved by the City Engineer, Administrator, and Public Works Director. Based on the Traffic Study provided by the applicant, the proposed development is expected to generate an additional 802 average weekday trips – 60 during AM Peak Hours, and 80 during PM Peak Hours. The project is not expected to have a major traffic impact on the surrounding area, and as a result, the recommended improvements are relatively straightforward. Vonnie Lane and Wallace Way will both be improved to City of Fernley standards, along with the interior roadway that is expected to serve the project subdivision. Furthermore, Wallace Way is expected to connect to the existing Red Rock Road further east. Lastly, it is also expected that the Vonnie Lane/Farm District Road intersection will utilize dedicated turn lanes and appropriate signage/stripping as may be necessary to improve access to and from each roadway.

TM8: Physical land characteristics, such as floodplain, slope, soil, and elevation differentials with abutting properties.

The project site has a relatively gentle slope of around 3 – 5 % towards the north and falls within Flood Zone area X as depicted in the Flood Insurance Rate Map (FIRM) number 32019C0110E. This essentially means that there is less than 0.2% that the project area will flood each year, and as a result is an area of minimal flood hazard. The current vacant project site does contain two existing drainageways that carry runoff north towards Highway 50. These will be replaced by a series of storm drains, culverts, and gutters that will help carry runoff to one of 7 proposed retention basins located throughout the site. These plans are generally in compliance with City of Fernley standards and will be finalized to comply with all Engineering & Public Works Design Standards prior to the approval and recordation of a Final Map.

TM9: Recommendations and Comments of review bodies

The application was distributed to the City's Public Works Department, City Engineer, and several outside agencies for comment. Comments were received and provided to the applicant, and any final approval will be conditioned such that all comments and recommendations of reviewing bodies will be addressed prior to any Final Map approval or recordation. One of the major comments regarding this project was from the Lyon County School District and concerns they might have for accommodating the influx of students this project would potentially bring.

TM10: Conformity to the Master Sewer and Water Utility Plan

The Developer shall comply with all standards, codes, and requirements regarding connection to the City's sanitary sewer and potable water systems, including but not limited to: associated fees, easements, design standards, system looping, development code requirements, and state requirements. Prior to the recordation of a Final Map, for the project, the developer shall provide the City with a utility plan for water and sanitary sewer that is in conformance with the City of Fernley's Municipal Code and Public Works Design Manual to the approval of the City Engineer, Public Works Director, and Zoning Administrator. The project must also be reviewed and approved by the Nevada Department of Environmental Protection prior to construction.

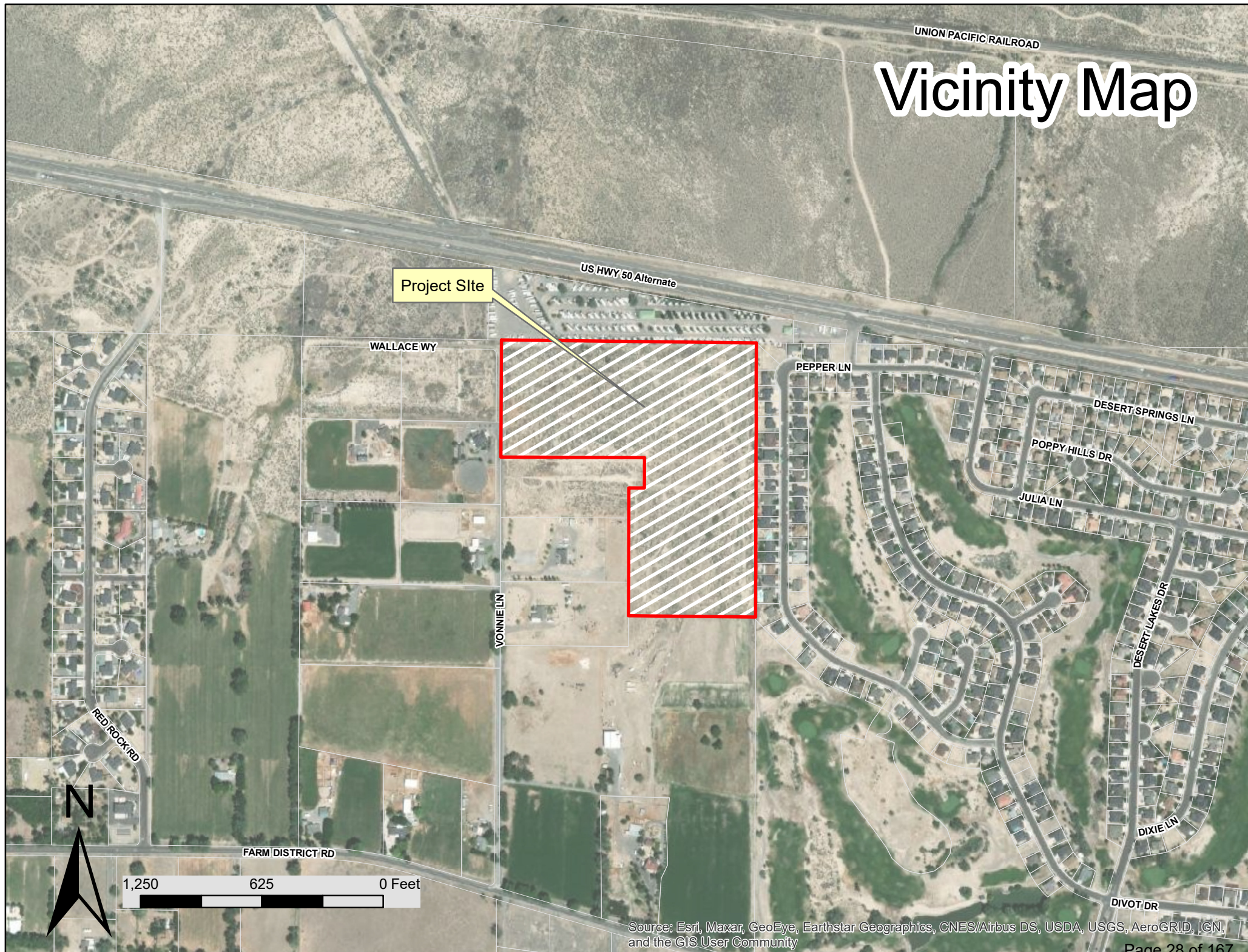
TM11: Compliance with this code and all other applicable regulations

The developer shall comply with the design standards and regulations as set forth in the City of Fernley's Development Code and Public Works Design Manual unless in conflict with the local, state, or federal regulations, in which case the more stringent regulation will take precedence. The developer shall comply with all Engineering requirements within the City's Municipal Code Title 32, including but not limited to: Compliance with site development standards, Floodplain Management, Undergrounding of Utilities, and Water/Wastewater facilities to the approval of the Zoning Administrator, City Engineer, and Public Works Director, prior to the recordation of a Final Map for the project.

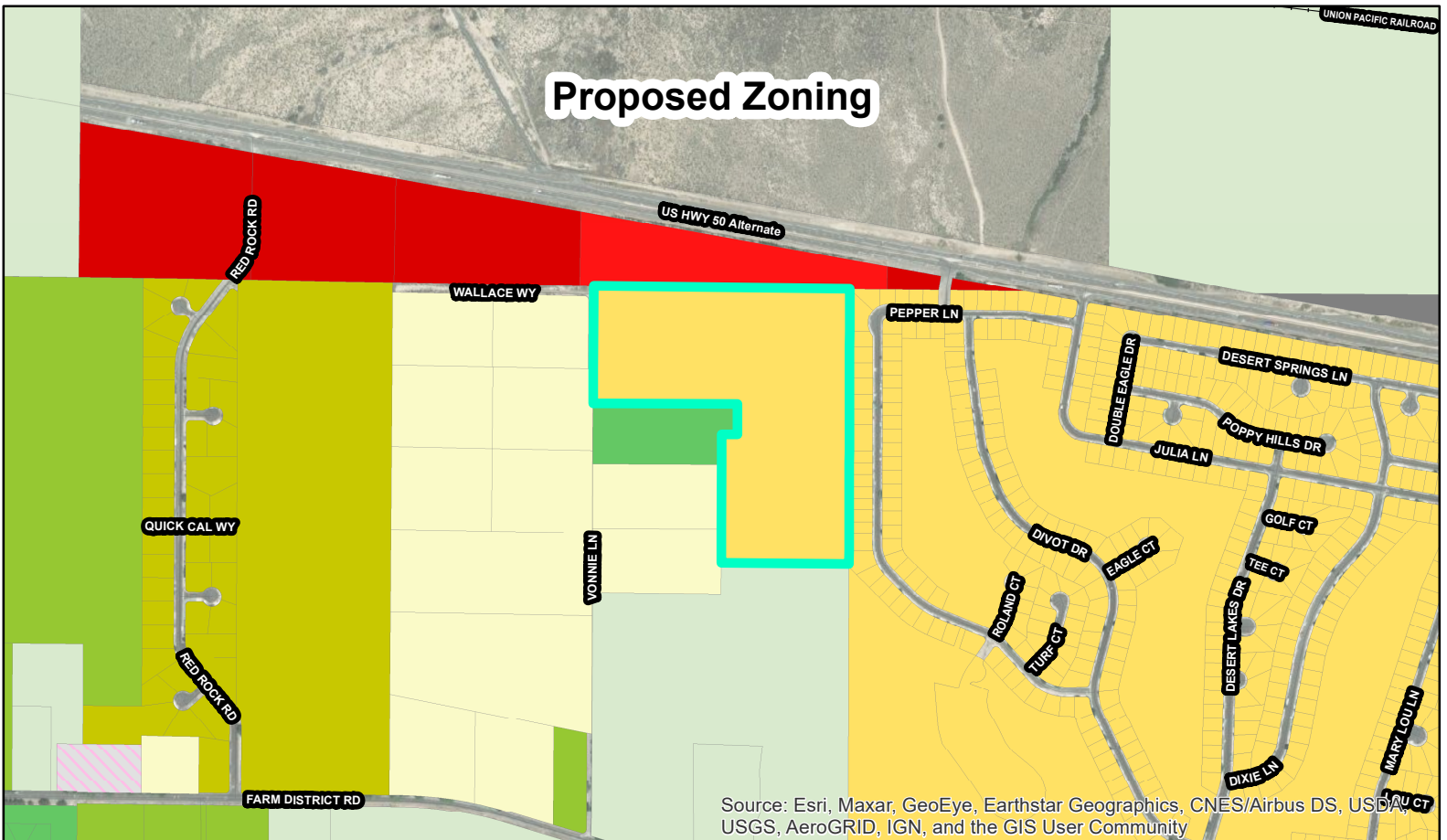
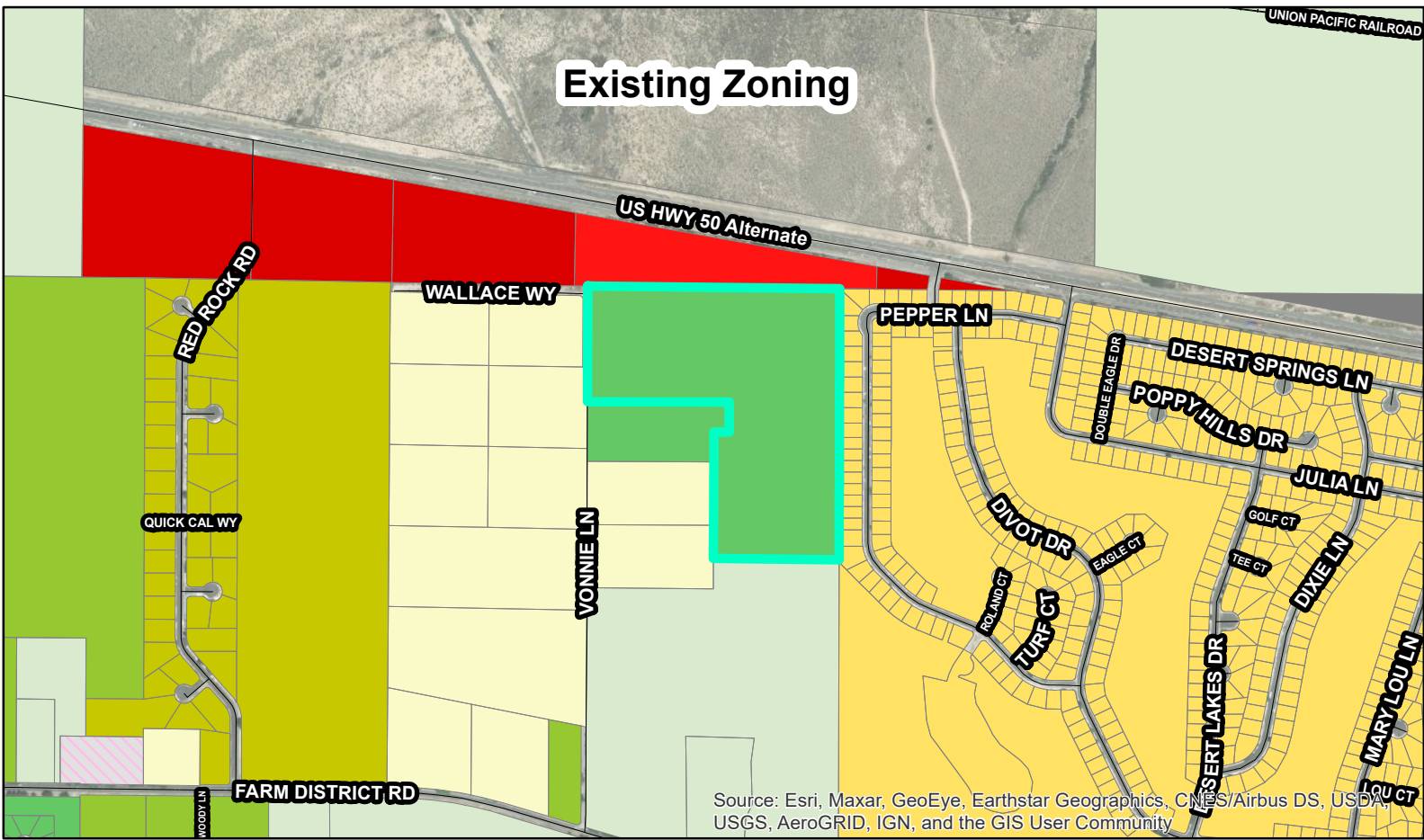
ATTACHMENTS

1. Vicinity Map
2. Existing & Proposed Zoning Exhibit
3. Lyon County School District Comment Letter
4. Legal Description + Boundary Map
5. Tentative Map Plan Set
6. Preliminary Landscaping Plan
7. Traffic Study
8. Conditions of Approval – TSM22003

Vicinity Map



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



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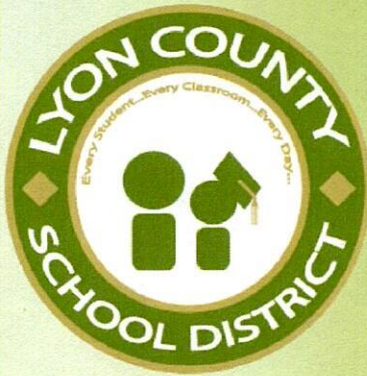


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1:250

 Vonnie_Lane

GR20	RR½	SF9	MF21	C1	EC	PF
RR5	SF20	SF6	MF30	C2	I	OSP
RR1	SF12	MDR14	MU	TC		

Legend



Superintendent
Wayne Workman

Deputy Superintendent
Tim Logan

Board of Trustees

President Holly Villines
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Barbara Jones
Neal McIntyre
Sherry Parsons
Bridget Peterson

Lyon County School District
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www.lyoncsd.org

March 16, 2022

Mr. Tim Thompson
City of Fernley Planning Director
595 Silver Lance Blvd.
Fernley NV, 89408

RE: Proposed Vonnie Lane Project

Dear Mr. Thompson,

Eureka Land Development LLC, which proposes 86 new single family residential homes, will impact Lyon County School District (LCSD) facilities. This project is currently zoned for the following schools:

East Valley Elementary School
Fernley Intermediate School
Silverland Middle School
Fernley High School

Traditionally, LCSD has been able to count on approximately .5 children for every new home built in Lyon County. Therefore, LCSD is predicting 43 new students with this proposed Vonnie Lane Project. Increasing capacity throughout LCSD is an immediate need but unfortunately current property tax abatements and caps prevent the collection of enough revenue to meet the increasing facility needs.

MGT Master Plan study in 2016 predicted enrollment and utilization at East Valley Elementary, Silverland Middle, Fernley Intermediate, and Fernley High to be inadequate or approaching inadequate levels by 2025. All four schools realized inadequate or approaching inadequate utilization levels 4-5 years sooner than MGT predicted.

LYON COUNTY SCHOOL DISTRICT
CURRENT AND PROJECTED UTILIZATION RATES

UTILIZATION	DESCRIPTION
> 110	Inadequate
100-109.9	Approaching Inadequate
85 - 99.9	Adequate
70 - 84.99	Approaching Inefficient
< 70	Inefficient

LCSD Enrollment/Capacity as of October 1, 2021							
School	Enrollment April 1, 2019	Enrollment February 1, 2020	Enrollment October 1, 2021	Capacity Please see below	2015 Utilization	2025 Utilization	Current Utilization
East Valley ES	530	534	504	669*	97%	115%	75%
Fernley IS	658	656	620	680	81%	96%	93%
Silverland MS	651	680	649	759	73%	86%	86%
Fernley HS	1067	1183	1236	1346**	92%	106%	92%
Capacity Formula: = # rooms x 25 (K-6) or x 30 (7-12) x scheduling factor (high 75%, middle 85%, elementary 95%) (Please see page 44 of the LCSD Master Facility Plan for an example on estimating capacity)							
* Includes new addition completed Summer 2021, increasing capacity by 200							
** Includes two new modular buildings (for a total of 4 on campus) increasing capacity by 120							

The most recent project LCSD completed to increase capacity was at East Valley Elementary School. This project netted 8 new classrooms at total project cost of \$7.35 million or \$918,750 per classroom. Vonnie Lane Project projects 43 new students which would require approximately 1.5 new classrooms or \$1,378,125 (\$918,750 x 1.5) in construction only capital. LCSD has relied on Bond Funding to build new schools and additions. Unfortunately, given the district current bonding capacity and nationwide increased construction costs, it's not possible for the district to have sufficient capital to build anything alleviating student capacity concerns.

LCSD recognizes that growth is an inevitable product of living in a great community and will always strive to provide world class educational opportunities to our students. However, as long as new, young families move into our community, LCSD will be tasked with the challenges associated with growth. Facility needs will always lag new growth, increasing the stress and strain on a local education agency.

LCSD appreciates the opportunity to provide input and is grateful for the relationships we have with the city and district leaders. As our communities grow with new developments, we hope school district leadership will continue to be engaged. Given our challenges to raise capital funds in the necessary amounts to build new schools LCSD advocates for a school-friendly allowance or creative solutions that may be possible from a developer of each new residential plan in Lyon County.

Thanks again for the opportunity to provide this input.



Wayne Workman
Lyon County School District Superintendent

EXHIBIT "A"
900 VONNIE LANE, CITY OF FERNLEY, LYON COUNTY, NV

A PART OF THE WEST HALF (W½) OF THE EAST HALF (E½) OF SECTION 22, TOWNSHIP 20 NORTH, RANGE 25 EAST, MOUNT DIABLO MERIDIAN, SITUATE IN THE CITY OF FERNLEY, LYON COUNTY, NEVADA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PARCEL "A-4" OF THAT CERTAIN PARCEL MAP FOR WILLIAM F. & IDA M. MITCHELL, FOUND IN DOCUMENT NO. 158028, PUBLIC RECORDS OF LYON COUNTY, NEVADA.

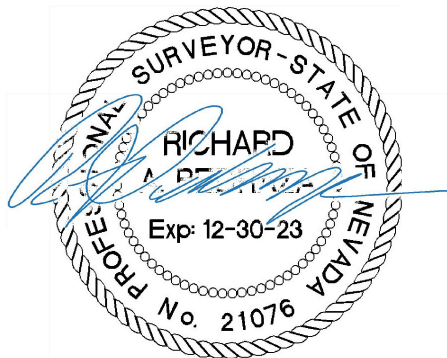
CONTAINING 30.15 ACRES, MORE OR LESS.

BEARING BASE: THE NORTH LINE OF THE WEST HALF (W½) OF THE EAST HALF (E½) OF SAID SECTION 22 IS ASSUMED TO BEAR SOUTH 89°40'11" EAST AND ALL BEARINGS CITED ON SAID PARCEL MAP ARE RELATIVE THERETO.

For the firm, by:
Richard A. Pedraza
PLS #21076
State of Nevada



155 Country Estates Circle
Reno, NV 89511

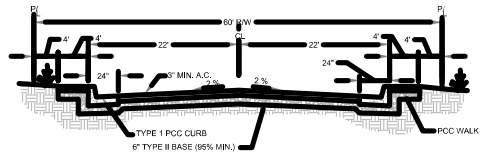


3-15-22

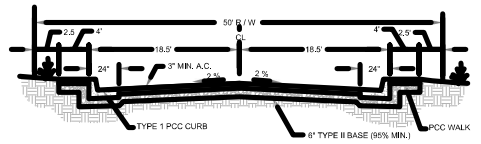
VONNIE LANE SUBDIVISION TENTATIVE MAP

A.P.N. 021-471-05

CITY OF FERNLEY, LYON COUNTY, NEVADA



TYPICAL ROADWAY SECTION - 60' R.O.W.



TYPICAL ROADWAY SECTION - 50' R.O.W.



VICINITY MAP
SCALE: 1" = 6,000'

CITY DEVELOPMENT STANDARDS AND NOTES

1. MINIMUM LOT SIZE.....3000 SF
2. MINIMUM AVERAGE LOT WIDTH.....45 FT. (FRONTAGE: 35 FT MIN.)
3. SETBACKS.....FRONT: 15 FT , 20 GARAGE
SIDE (CORNER): 10 FT
SIDE (INTERIOR): 7.5 FT (0 FT ON SHARED LOT LINE)
REAR: 10 FT.
4. THIS DEVELOPMENT IS IN ZONE "X" ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL 32019C0105E (EFFECTIVE JANUARY 16, 2009) ZONE "X" IS IDENTIFIED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN.
5. HISTORICALLY, THE PROJECT SITE WAS USED FOR AGRICULTURAL PURPOSES, AN IRRIGATED FIELD
6. DOMESTIC WATER SUPPLIED FROM COMMUNITY WATER SYSTEM.
7. DOMESTIC SEWAGE DISPOSAL BY COMMUNITY SEWER SYSTEM, ESTIMATED AMOUNT OF SEWAGE CONTRIBUTED IS 130 GAL/DAY/DU (MULTI-FAMILY); 200 GAL/DAY/DU (SINGLE FAMILY ATTACHED).
8. ALL UTILITIES TO BE PLACED UNDERGROUND
9. ALL STREET AND UTILITY IMPROVEMENTS WILL BE CONSTRUCTED TO CITY STANDARDS
10. STORM DRAINAGE WILL BE RETAINED ON SITE
11. WATER RIGHT SHALL BE IN ACCORDANCE WITH CITY ORDINANCE #714 BILL 696 PASSED 12-21-04
12. THE DISTANCE FROM THE SUBDIVISION TO THE COMMUNITY SEWAGE SYSTEM IS APPROXIMATELY 100 FEET.

UTILITIES:

CHARTER COMMUNICATIONS 9335 PROTOTYPE DRIVE RENO, NV. 89511 (775) 850-7243

SOUTHWEST GAS CORPORATION 400 EAGLE STATION LANE CARSON CITY, NV. 89702 (775) 887-2720

FERNLEY PUBLIC WORKS DEPT. 595 SILVER LACE LANE FERNLEY, NV. 89408 (775) 575-2307

SBC NEVADA BELL 645 E. PLUMB LANE P.O. BOX 11010 RENO, NV. 89520 (775) 333-4363

NV ERERGY P.O. BOX 10100 RENO, NV 89520 (775) 473-6998

BASIS OF BEARINGS

PENDING BOUNDARY SURVEY

DATUM STATEMENT:

THE BASIS OF BEARING FOR THIS MAP IS IN THE NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83/94 OBTAINED BY GPS OBSERVATIONS. COMBINED SCALE FACTOR 1.000269496

THE BASIS OF ELEVATIONS FOR THIS SURVEY ARE NAVD88 BASED ON CITY OF FERNLEY CONTROL POINT MATT ELEVATION = 4153.93

Sheet List Table

Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL NOTES
3	PHASING PLAN
4	EXISTING CONDITIONS - NORTH
5	EXISTING CONDITIONS - SOUTH
6	SITE PLAN - NORTH
7	SITE PLAN - SOUTH
8	SITE PLAN - OFFSITE IMPROVEMENTS
9	GRADING PLAN - NORTH
10	GRADING PLAN - SOUTH
11	UTILITY PLAN
12	UTILITY PLAN
13	UTILITY PLAN
14	UTILITY PLAN
15	UTILITY PLAN
16	UTILITY PLAN
17	UTILITY PLAN

LAND DATA

APN 021-471-05

30.15 AC

PROJECT INFORMATION

TOTAL LOTS: 79
DENSITY: T.B.D.
ZONING: SF20
COMPREHENSIVE PLAN: RESIDENTIAL SINGLE FAMILY
LINEAL FEET OF NEW STREETS: 10,388.4 LF (INCLUDING PHASE 1A)

EARTHWORK QUANTITIES

CUT= 70,308.24 CU YDS
FILL= 33,035.87 CU YDS W/ 7.0% COMPACTION
NET= 37,272.37 CU YDS (EXPORT)
*CUT/FILL INCLUDES 1A OFFSITE IMPROVEMENTS
*CUT/FILL WAS GENERATED USING GIS SURFACE, NOT SURVEYED DATA.

LEGAL DESCRIPTION:

ALL THAT CERTAIN REAL PROPERTY BEING A PORTION OF WEST 1/2 OF THE EAST 1/2 OF SECTION 22, T 20 N, R 25 E, M.D.B.&M., AND A PORTION OF PARCEL A OF LYON COUNTY MAP 133366, LYON COUNTY, NEVADA, DESCRIBED AS FOLLOWS:

PARCEL A-4, AS SHOWN ON THE PARCEL MAP FOR WILLIAM F. & IDA M. MITCHELL, RECORDED IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA ON JANUARY 4, 1993, AS DOCUMENT NO. 158028, ASSESSOR'S PARCEL NUMBER(S): 021-471-05

PROJECT CONTACTS:

OWNER/DEVELOPER

REGHETTI INVESTMENTS LLC
1991 MORNING GROVE CT
RENO, NV 89523
(775) 250-4002

ENGINEER

PHELPS ENGINEERING SERVICES, LLC
155 COUNTRY ESTATES CIRCLE
SUITE 300
RENO, NV. 89511
(775) 399-2200

SURVEYOR

MST SURVEYING
15506 QUICKSILVER DR.
RENO, NV. 89511
(775) 677-9166

"I HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS FOR THE VONNIE LANE SUBDIVISION WERE PREPARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE CITY OF FERNLEY AND STATE OF NEVADA STANDARDS AND STATUES, RESPECTIVELY; AND THAT I AM FULLY RESPONSIBLE FOR ALL DESIGN AND REVISIONS TO SAID PLANS".

LONNY E. PHELPS
REGISTERED PROFESSIONAL ENGINEER
STATE OF NEVADA NO. 25230
PHELPS ENGINEERING

DATE

PHELPS ENGINEERING ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

CITY APPROVAL:

APPROVED BY THE PLANNING COMMISSION OF THE CITY OF FERNLEY THIS _____, DAY OF _____, 20__.

PUBLIC WORKS

COMMUNITY DEVELOPMENT

CITY ENGINEER

NORTH LYON COUNTY FIRE PREVENTION DISTRICT

TRUCKEE-CARSON IRRIGATION DISTRICT

ATTEST: CITY CLERK



SCALE: AS SHOWN
DESIGNED BY: NRW
DRAWN BY: NRW
CHECKED BY: LEP

COVER SHEET

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

DATE:
3/15/2022
PROJECT NO.
19286

1

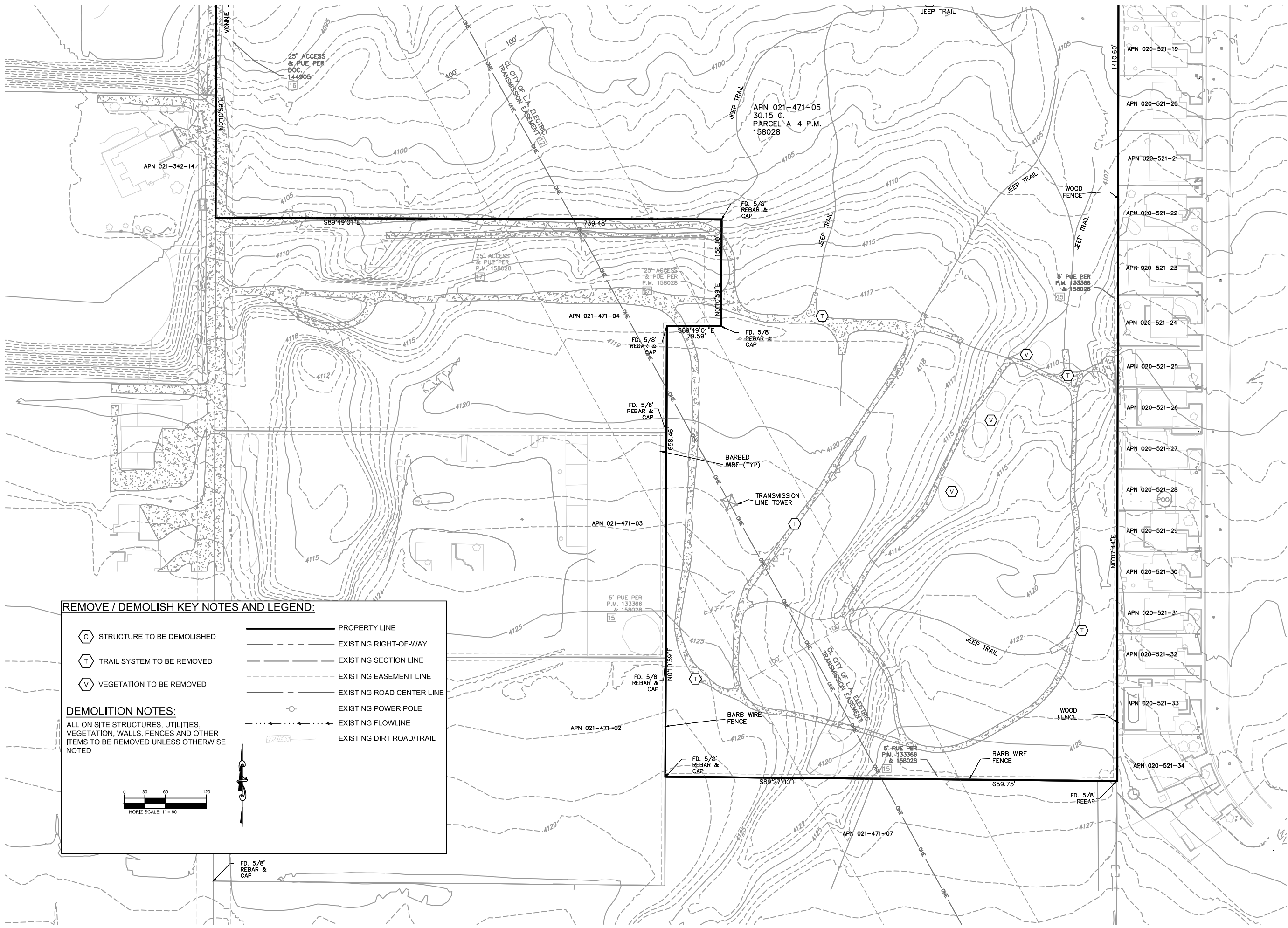


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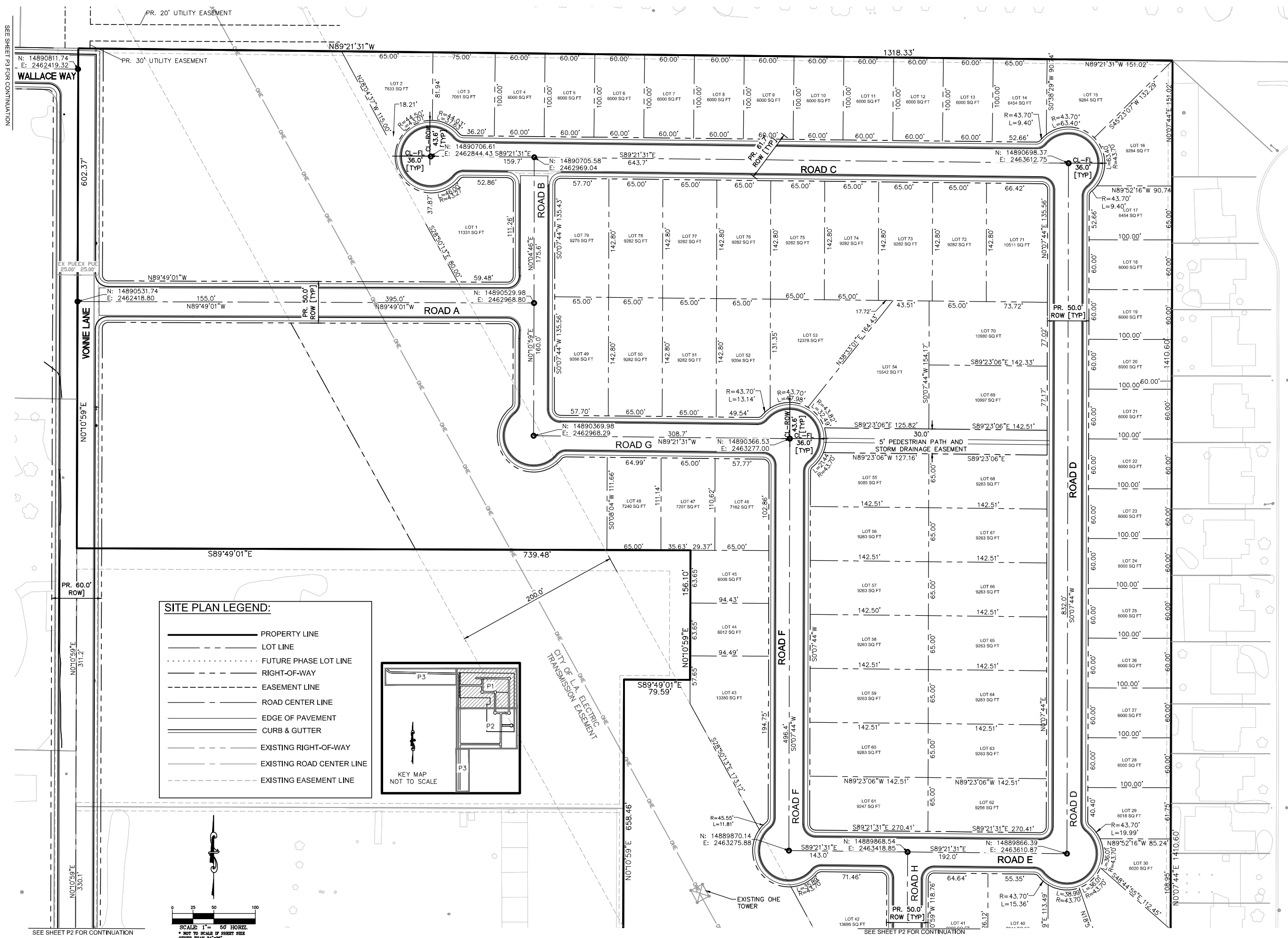
	VONNIE LANE SUBDIVISION
	OFFSITE IMPROVEMENTS
	SECONDARY ACCESS

TENTATIVE MAP VONNIE LANE SUBDIVISION FERNLEY, NEVADA		PHASING PLAN		SCALE: AS SHOWN DESIGNED BY: NRW DRAWN BY: NRW CHECKED BY: LEP		PHELPS ENGINEERING 155 Country Estates Circle, Suite 300 Reno, NV, 89511 (775) 395-7200 www.pphelpsengineering.net		No. REVISIONS DATE BY	
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Drawing name: S:\Entitlement_Engineering\19286 - Vonnie Lane\08 - CAD\Engineering\Sheets\19286 - EXISTING CONDITIONS.dwg 5 EXISTING CONDITIONS - SOUTH Mar 15, 2022 1:54pm by: Zach Darling

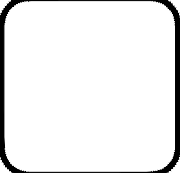


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DRAWN BY: NRW	
CHECKED BY: LEP	
EXISTING CONDITIONS SOUTH	
TENTATIVE MAP VONNIE LANE SUBDIVISION FERNLEY, NEVADA	
DATE: 3/15/2022 PROJECT NO. 19286	
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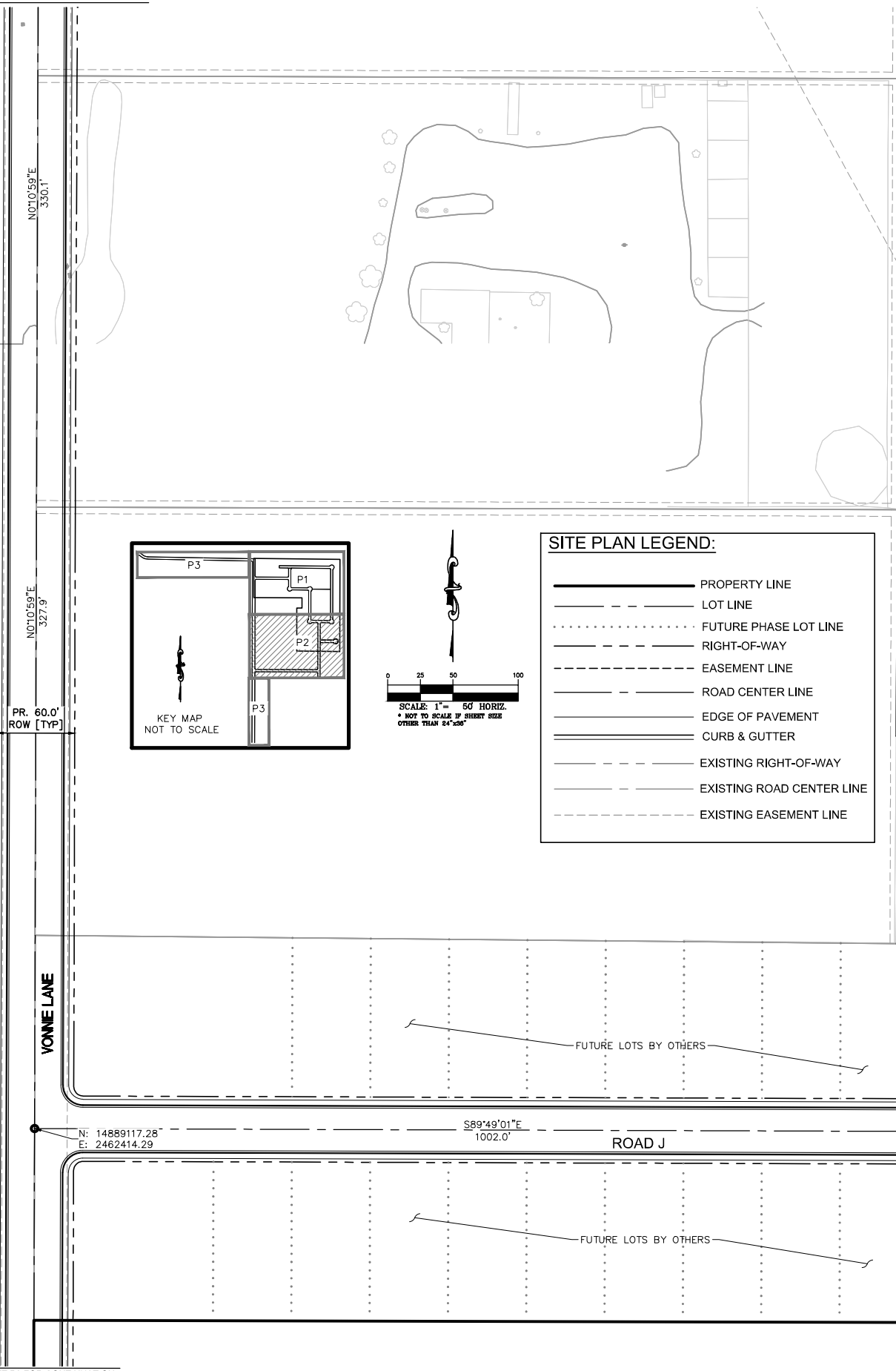
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SITE PLAN
NORTH

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

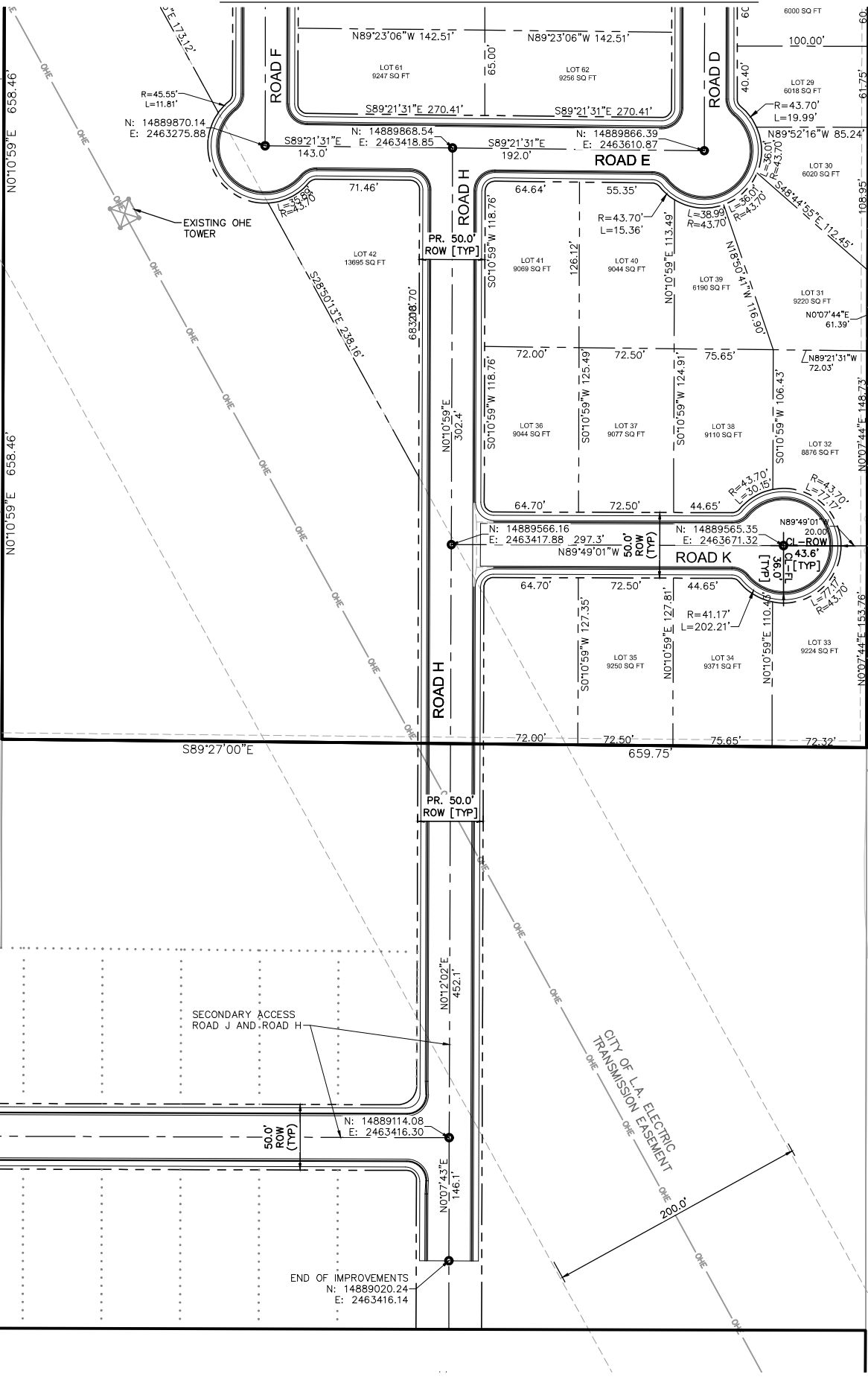
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PROJECT NO. 19286

SEE SHEET P1 FOR CONTINUATION



SEE SHEET P3 FOR CONTINUATION

SEE SHEET P1 FOR CONTINUATION

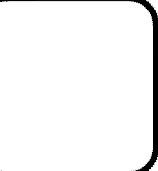


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No.	DESCRIPTION		
1	ISSUED FOR PERMIT		LEP

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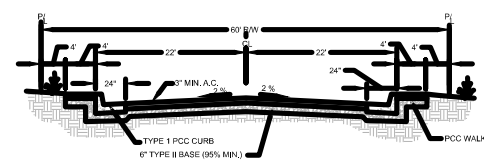
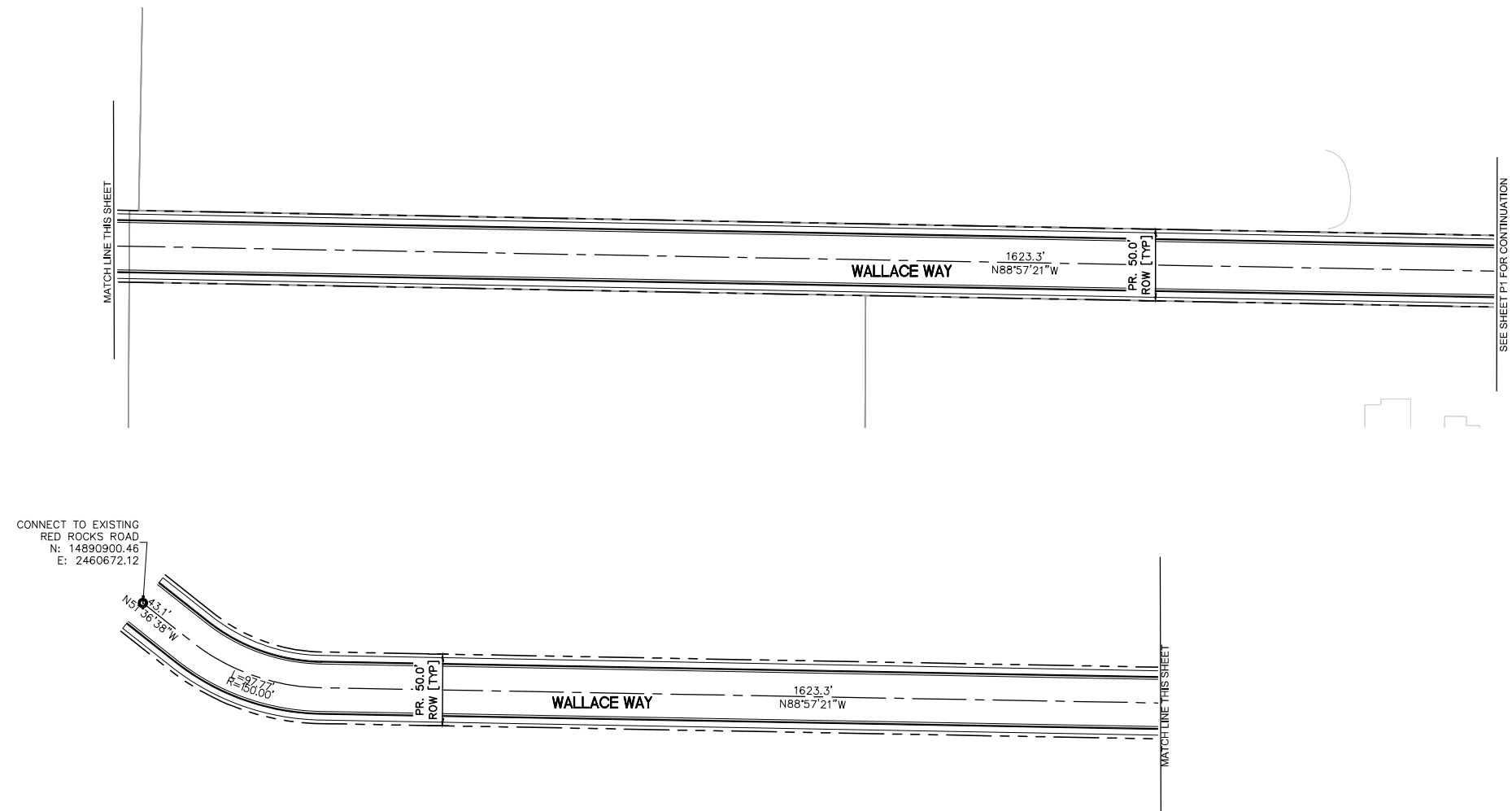


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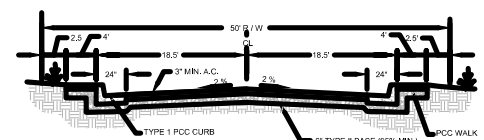
SITE PLAN
SOUTH

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

DATE: 3/15/2022
PROJECT NO. 19286



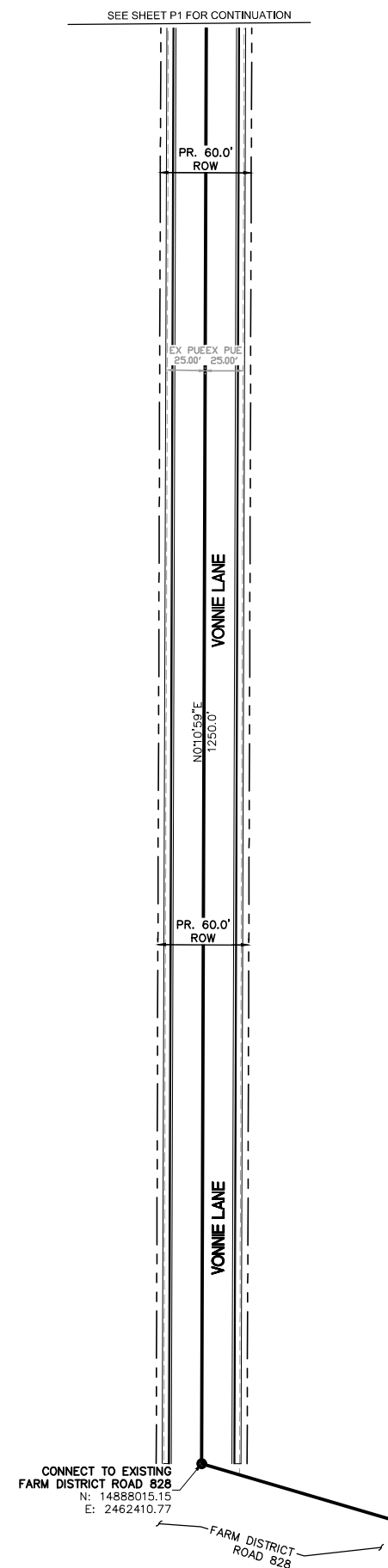
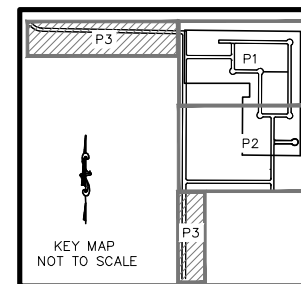
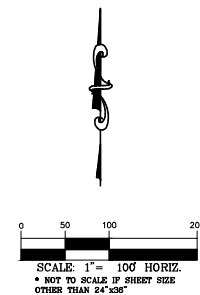
VONNIE LANE ROADWAY SECTION - 60' R.O.W.



WALLACE WAY ROADWAY SECTION - 50' R.O.W.

SITE PLAN LEGEND:

- | | |
|--|---------------------------|
| | PROPERTY LINE |
| | LOT LINE |
| | FUTURE PHASE LOT LINE |
| | RIGHT-OF-WAY |
| | EASEMENT LINE |
| | ROAD CENTER LINE |
| | EDGE OF PAVEMENT |
| | CURB & GUTTER |
| | EXISTING RIGHT-OF-WAY |
| | EXISTING ROAD CENTER LINE |
| | EXISTING EASEMENT LINE |

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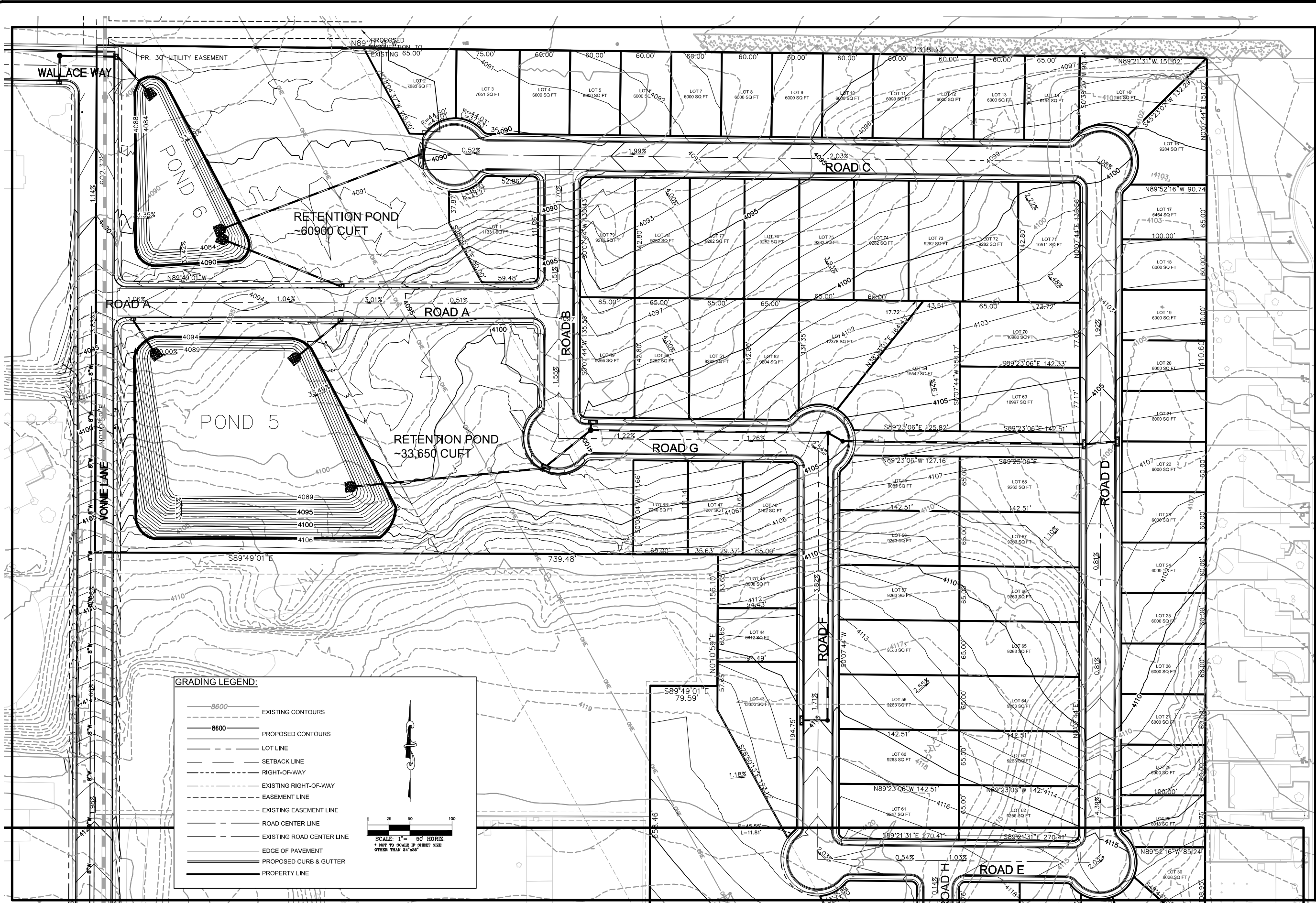
OFFSITE IMPROVEMENTS

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

DATE:
3/15/2022

PROJECT NO.
19286

Drawing name: S:\Entitlement Engineering\19286 - Vonnie Lane\08 - CAD\Engineering Sheets\19286 - GRADING PLAN.dwg 9 GRADING PLAN - NORTH Mar 15, 2022 1:55pm by Zach Darling



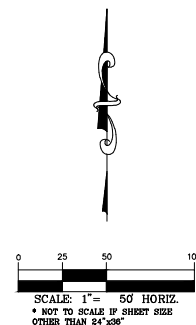
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FERNLEY, NEVADA	
DATE:	3/15/2022
PROJECT NO.	19286
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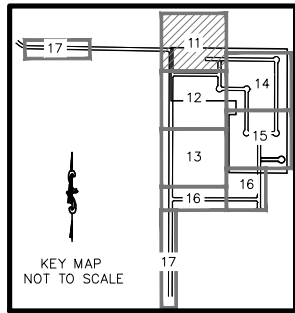
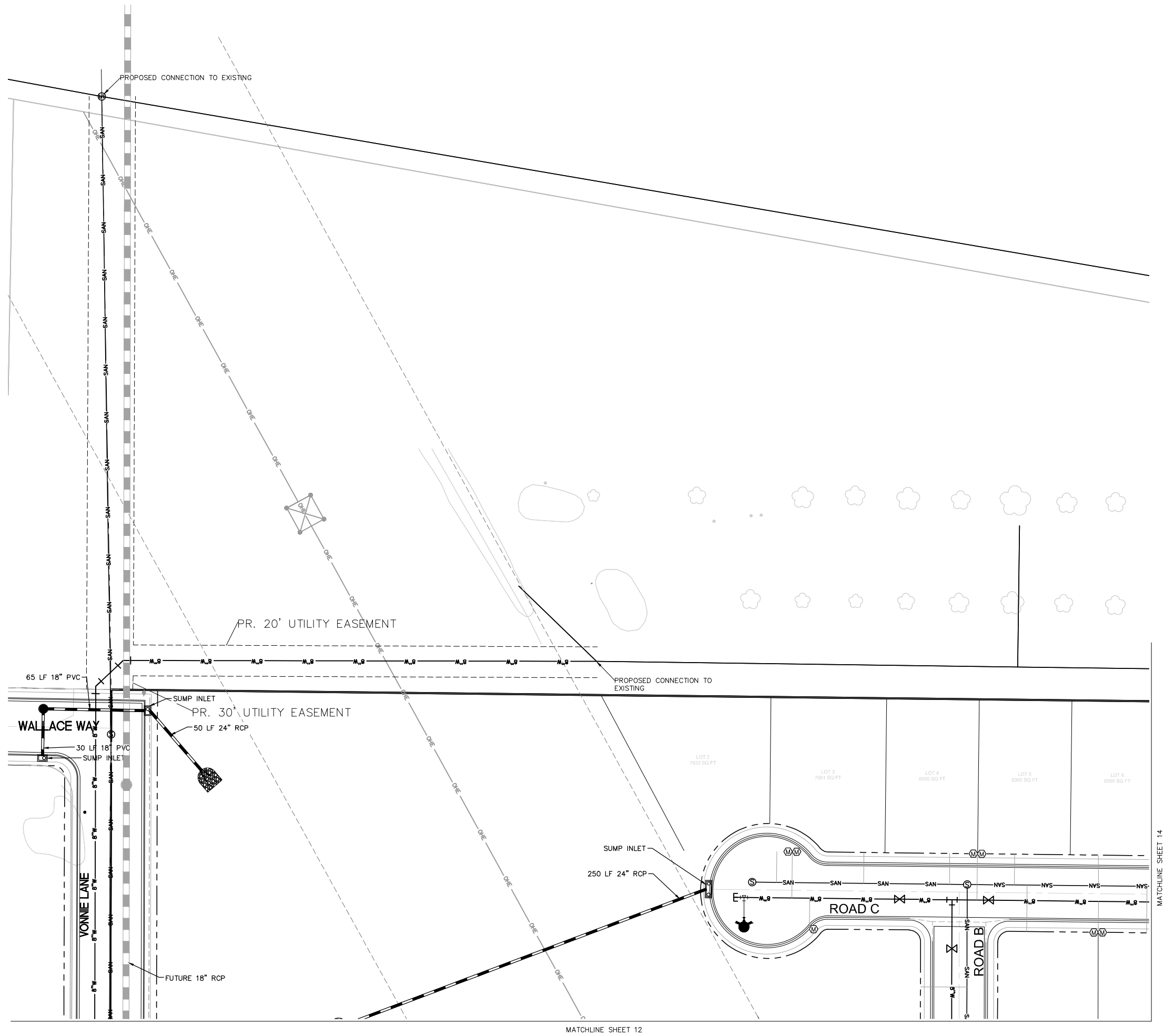
GRADING PLAN - NORTH	
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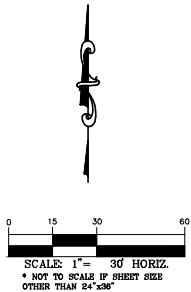
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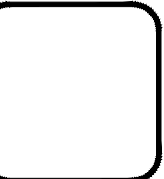


- UTILITY LEGEND:**
- 8"W POTABLE WATER LINE WITH SIZE
 - SAN SANITARY SEWER WITH MANHOLE
 - SERVICE LINE
 - W EXISTING WATER LINE
 - SAN EXISTING SANITARY SEWER LINE
 - PROPERTY LINE
 - LOT LINE
 - FUTURE PHASE LOT LINE
 - RIGHT-OF-WAY
 - EASEMENT LINE
 - ROAD CENTER LINE
 - EDGE OF PAVEMENT
 - CURB & GUTTER
 - EXISTING RIGHT-OF-WAY
 - EXISTING ROAD CENTER LINE
 - EXISTING EASEMENT LINE
 - Fire Hydrant Assembly
 - Water Service Meter
 - Storm Sewer



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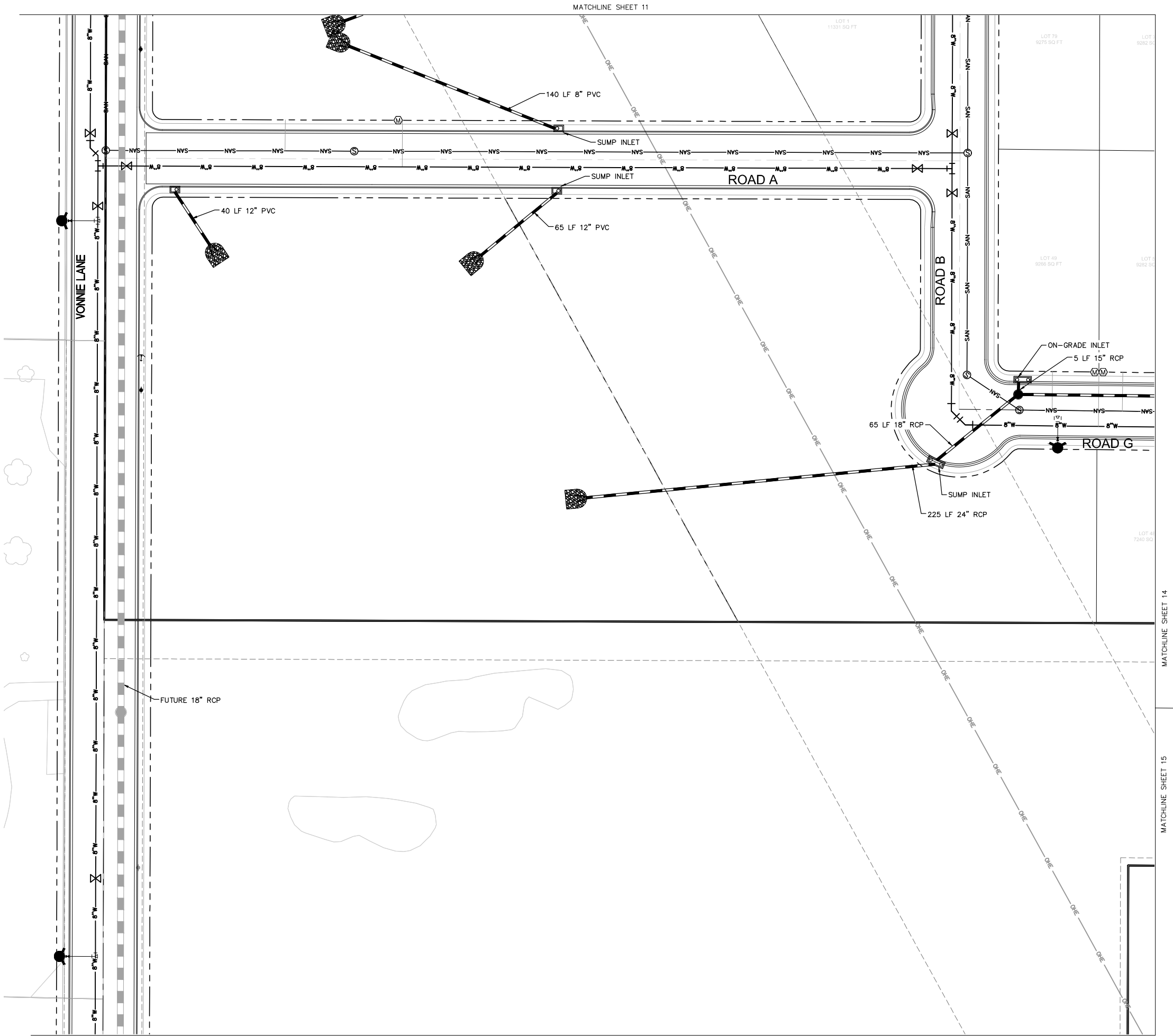
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UTILITY PLAN

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

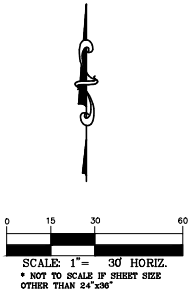
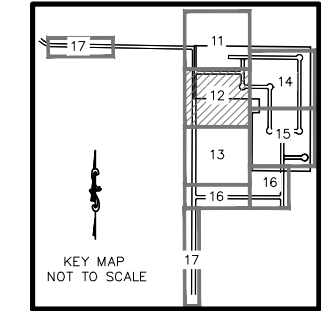
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PROJECT NO.
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UTILITY LEGEND:

- 8" W POTABLE WATER LINE WITH SIZE
- SAN SANITARY SEWER WITH MANHOLE
- W EXISTING WATER LINE
- SAN EXISTING SANITARY SEWER LINE
- PROPERTY LINE
- LOT LINE
- FUTURE PHASE LOT LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- ROAD CENTER LINE
- EDGE OF PAVEMENT
- CURB & GUTTER
- EXISTING RIGHT-OF-WAY
- EXISTING ROAD CENTER LINE
- EXISTING EASEMENT LINE
- FIRE HYDRANT ASSEMBLY
- WATER SERVICE METER
- STORM SEWER



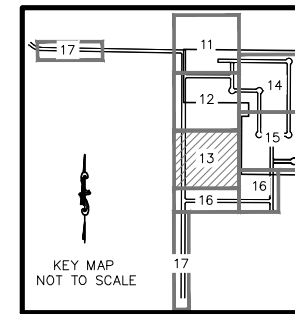
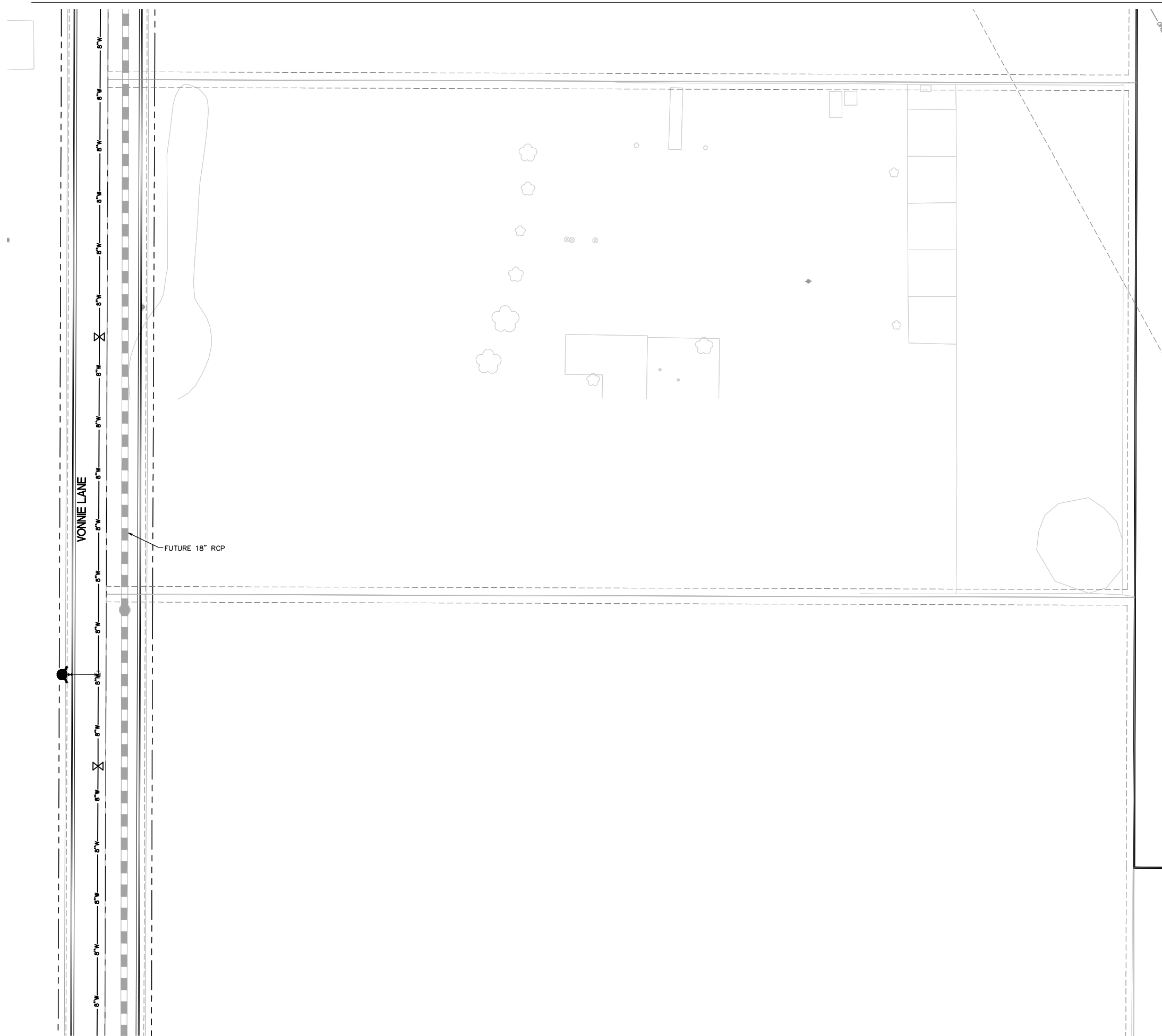
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SCALE: AS SHOWN
DESIGNED BY: NRW
DRAWN BY: NRW
CHECKED BY: LEP

UTILITY PLAN

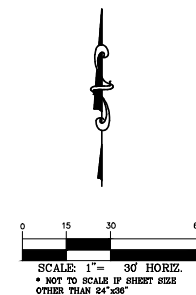
TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

DATE: 3/15/2022
PROJECT NO. 19286



UTILITY LEGEND:

	POTABLE WATER LINE WITH SIZE
	SANITARY SEWER WITH MANHOLE
	SERVICE LINE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	PROPERTY LINE
	LOT LINE
	FUTURE PHASE LOT LINE
	RIGHT-OF-WAY
	EASEMENT LINE
	ROAD CENTER LINE
	EDGE OF PAVEMENT
	CURB & GUTTER
	EXISTING RIGHT-OF-WAY
	EXISTING ROAD CENTER LINE
	EXISTING EASEMENT LINE
	FIRE HYDRANT ASSEMBLY
	WATER SERVICE METER
	STORM SEWER

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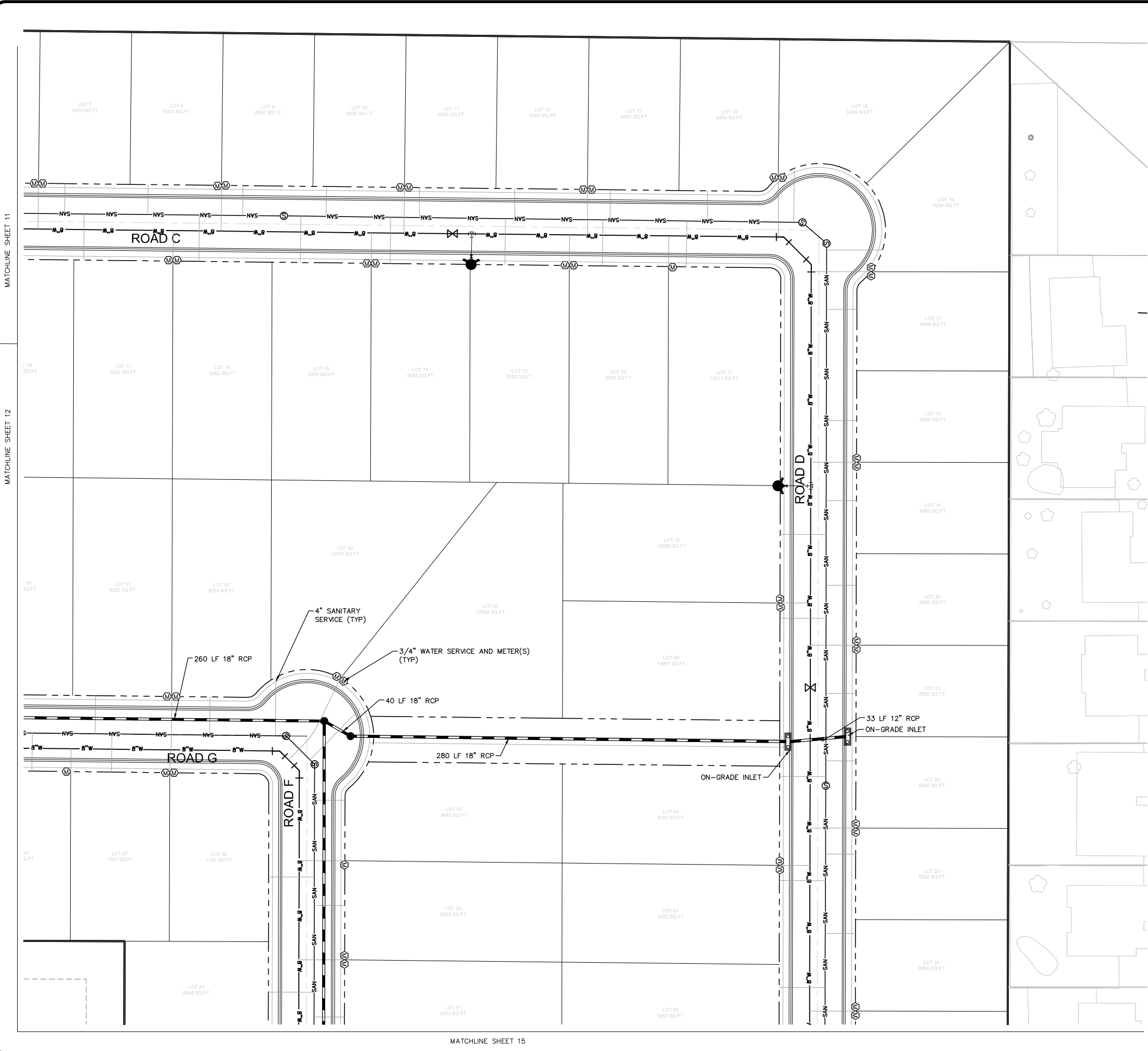
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UTILITY PLAN

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

DATE:
3/15/2022

PROJECT NO.
19286



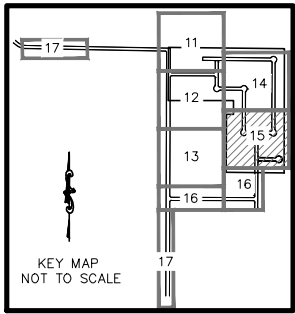
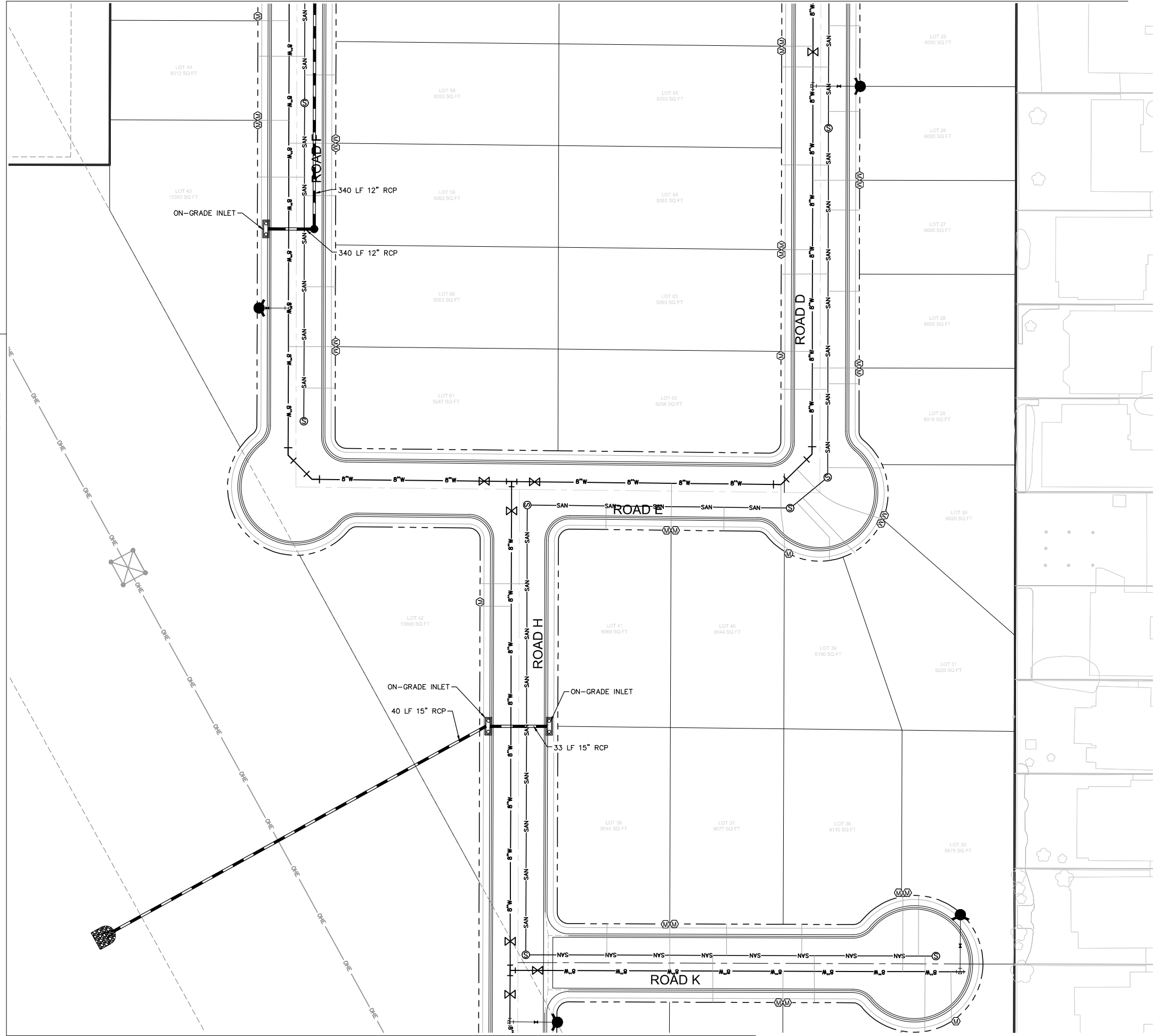
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MATCHLINE SHEET 12

MATCHLINE SHEET 13

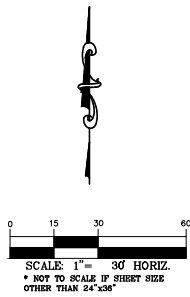
MATCHLINE SHEET 14

MATCHLINE SHEET 16



UTILITY LEGEND:

- 8" W POTABLE WATER LINE WITH SIZE
- SAN SANITARY SEWER WITH MANHOLE
- SERVICE LINE
- W EXISTING WATER LINE
- SAN EXISTING SANITARY SEWER LINE
- PROPERTY LINE
- LOT LINE
- FUTURE PHASE LOT LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- ROAD CENTER LINE
- EDGE OF PAVEMENT
- CURB & GUTTER
- EXISTING RIGHT-OF-WAY
- EXISTING ROAD CENTER LINE
- EXISTING EASEMENT LINE
- FIRE HYDRANT ASSEMBLY
- WATER SERVICE METER
- STORM SEWER



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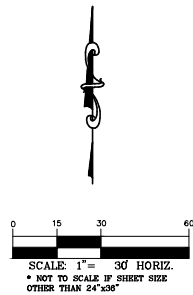
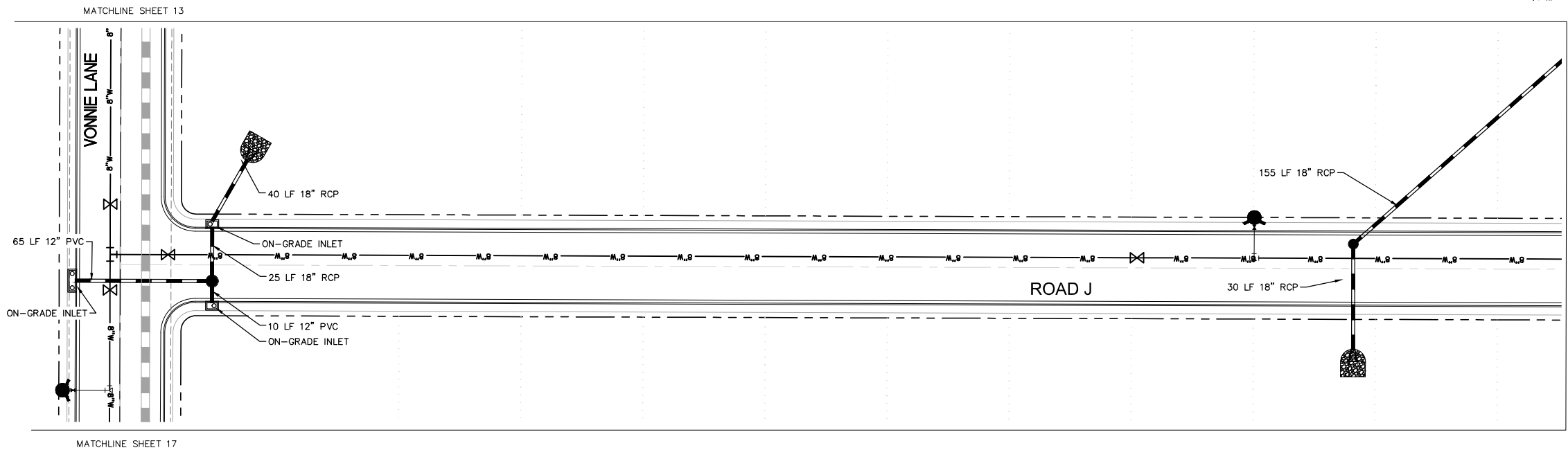
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UTILITY PLAN

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

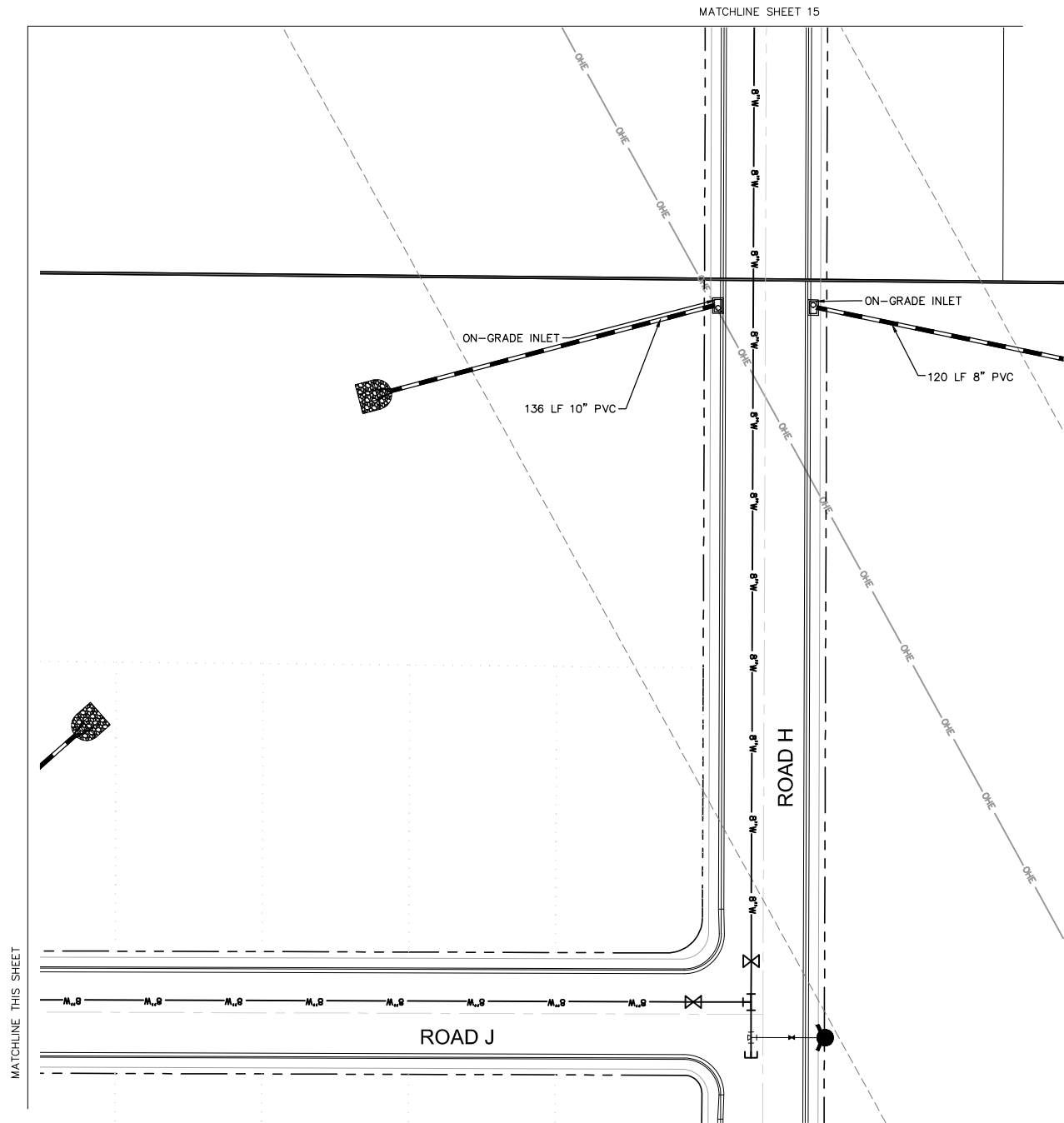
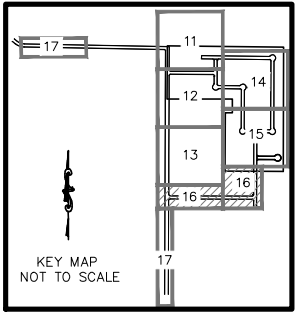
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UTILITY LEGEND:

8" W	POTABLE WATER LINE WITH SIZE
SAN	SANITARY SEWER WITH MANHOLE
	SERVICE LINE
W	EXISTING WATER LINE
SAN	EXISTING SANITARY SEWER LINE
	PROPERTY LINE
	LOT LINE
	FUTURE PHASE LOT LINE
	RIGHT-OF-WAY
	EASEMENT LINE
	ROAD CENTER LINE
	EDGE OF PAVEMENT
	CURB & GUTTER
	EXISTING RIGHT-OF-WAY
	EXISTING ROAD CENTER LINE
	EXISTING EASEMENT LINE
	FIRE HYDRANT ASSEMBLY
	WATER SERVICE METER
	STORM SEWER



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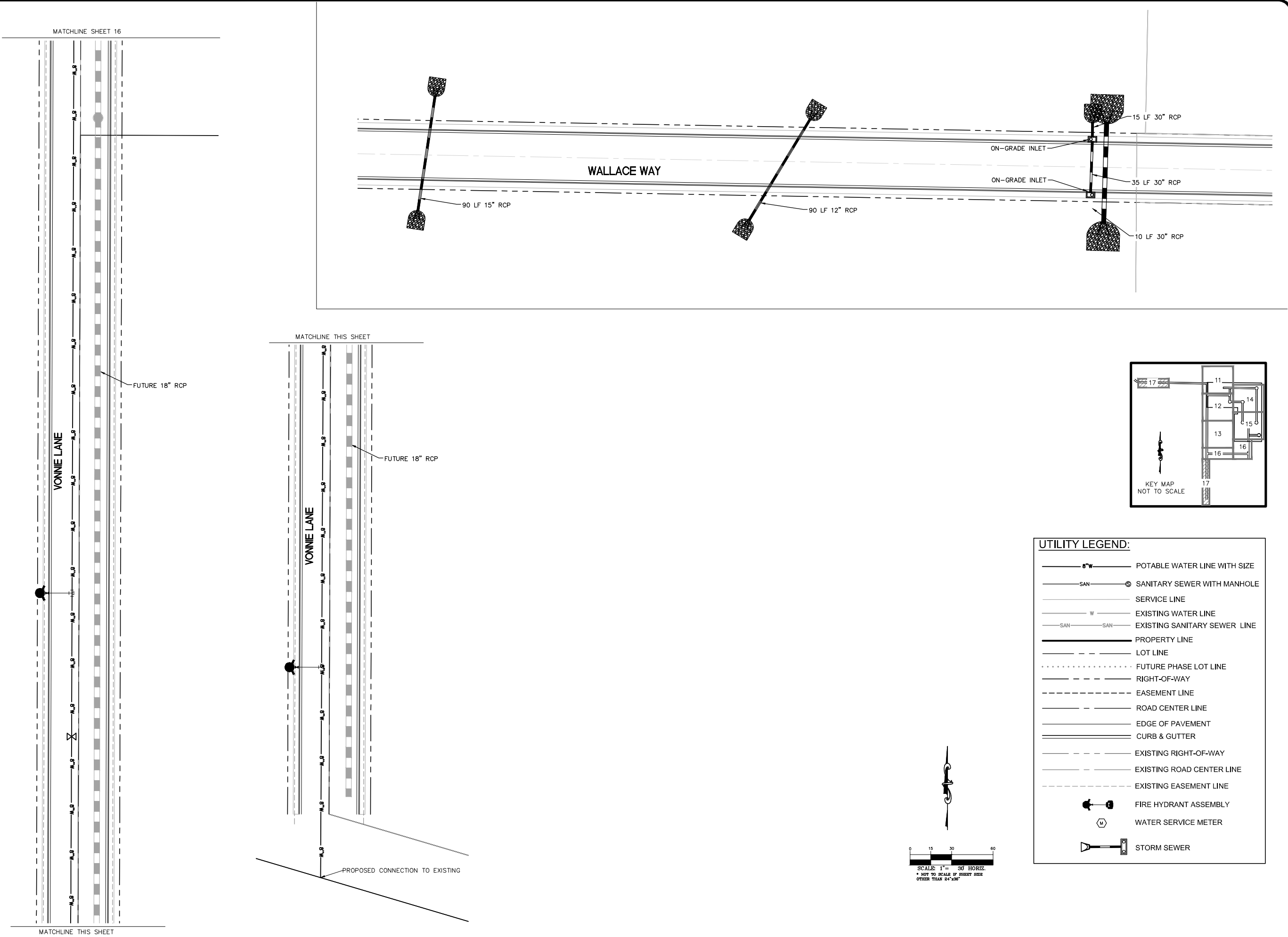
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UTILITY PLAN

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

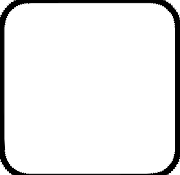
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UTILITY PLAN

TENTATIVE MAP
VONNIE LANE SUBDIVISION
FERNLEY, NEVADA

DATE: 3/15/2022
PROJECT NO. 19286

MAP KEY

= UTILITY EASEMENT

= 9000 FT² LOT

= 6000 FT² LOT

LAND USE TABLE				
	LOTS	AREA (FT²)	ACRES	% TOTAL
6000 FT² SF	35	223,000	5.1	17%
9000 FT² SF	44	421,000	9.7	32%
R.O.W.	n/a	267,334	6.1	20%
OPEN SPACE	n/a	402,000	9.2	31%
TOTAL	79	1,313,334	30.1	100%
DU/AC= 2.63				

LANDSCAPE REQUIREMENTS AND SITE INFORMATION

SITE AREA: 30.15 ACRES (1,313,334 SF)

ZONING: SINGLE FAMILY RESIDENTIAL (SF20)

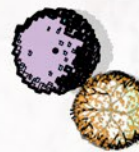
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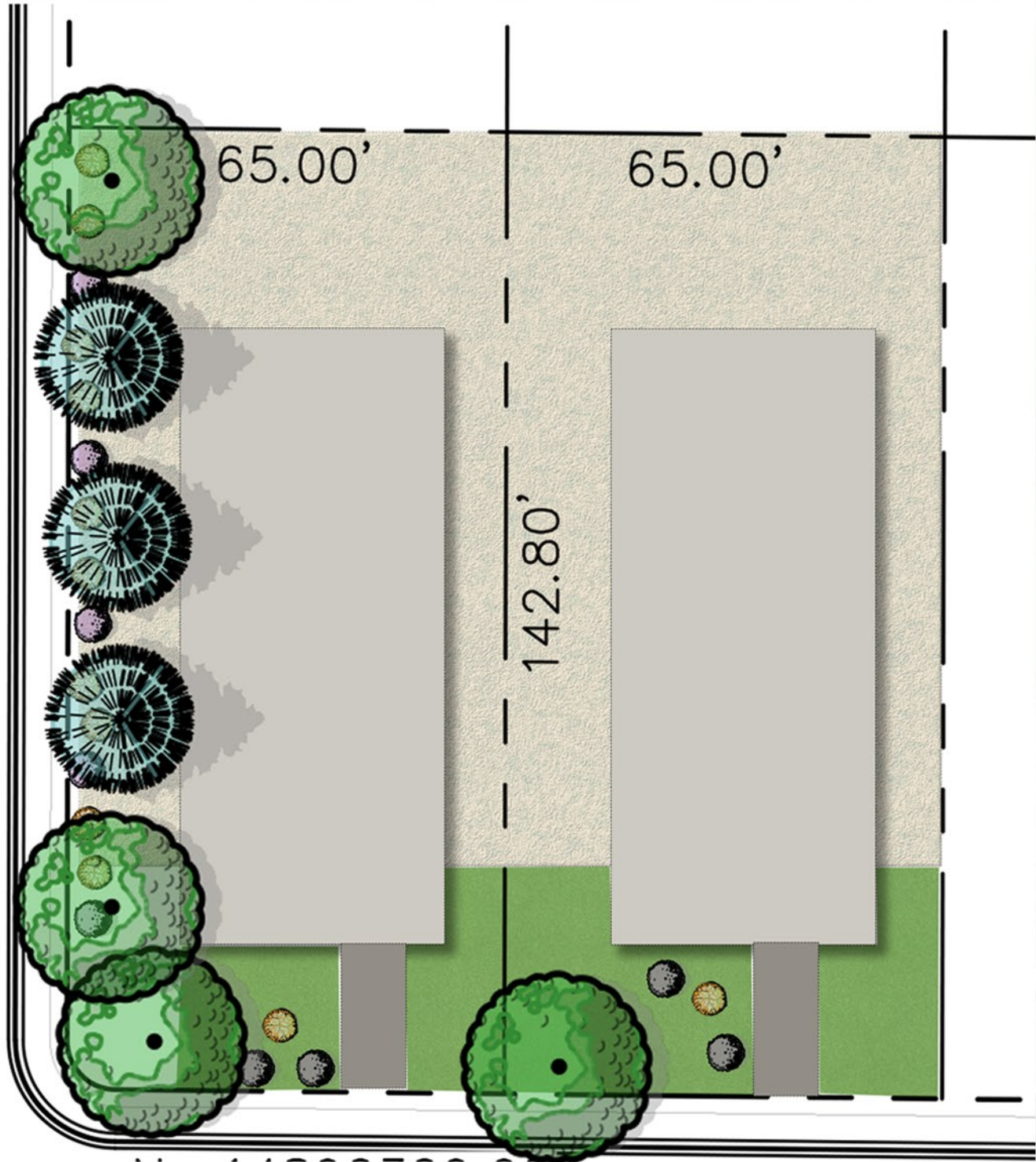
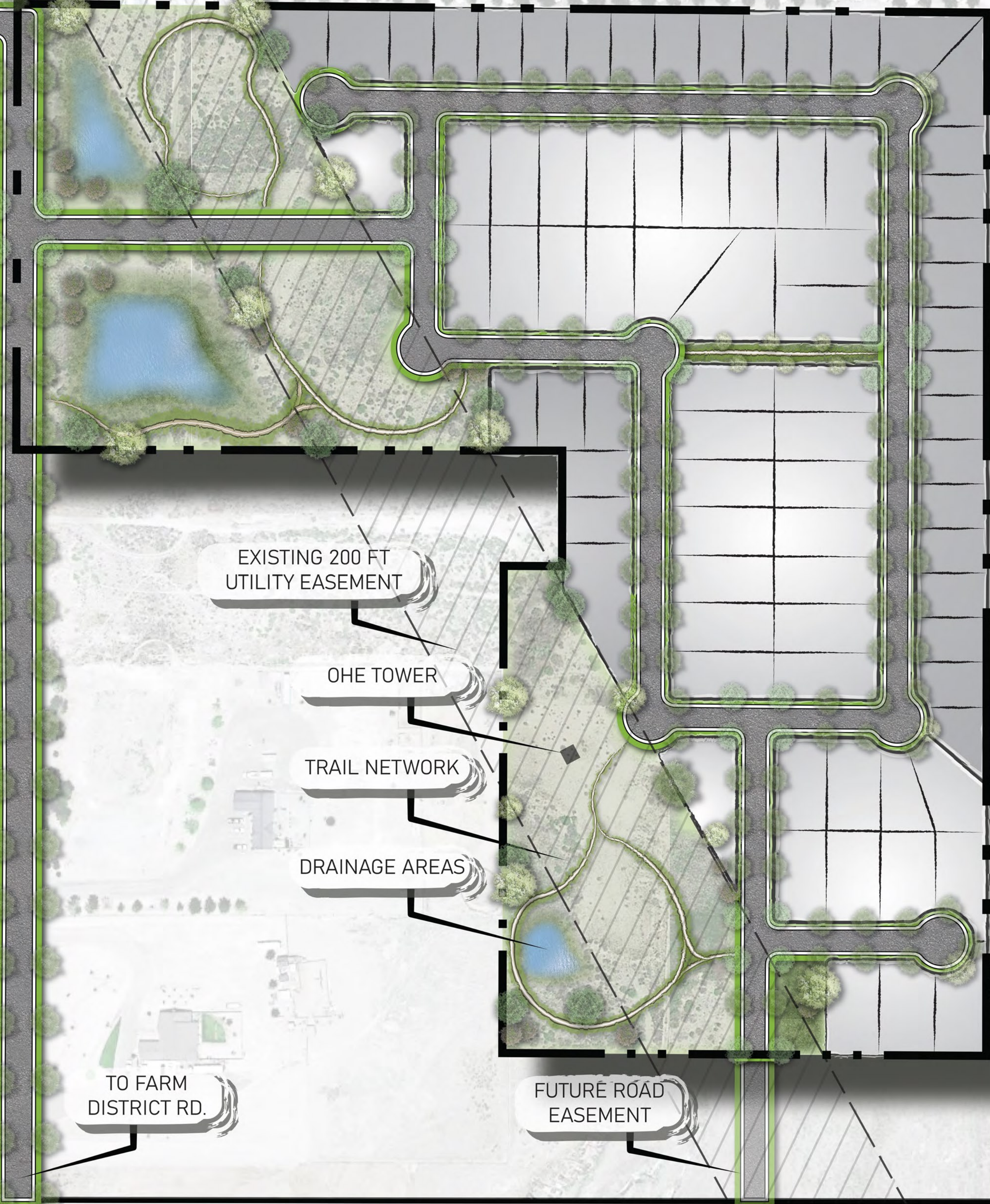
REQUIRED LANDSCAPE AREA: FRONT YARDS

PLANT LEGEND

DECIDUOUS TREE
MIN. 1" CAL.

EVERGREEN TREE
MIN. 6' HEIGHT

SHRUBS
50% MIN. 5 GAL

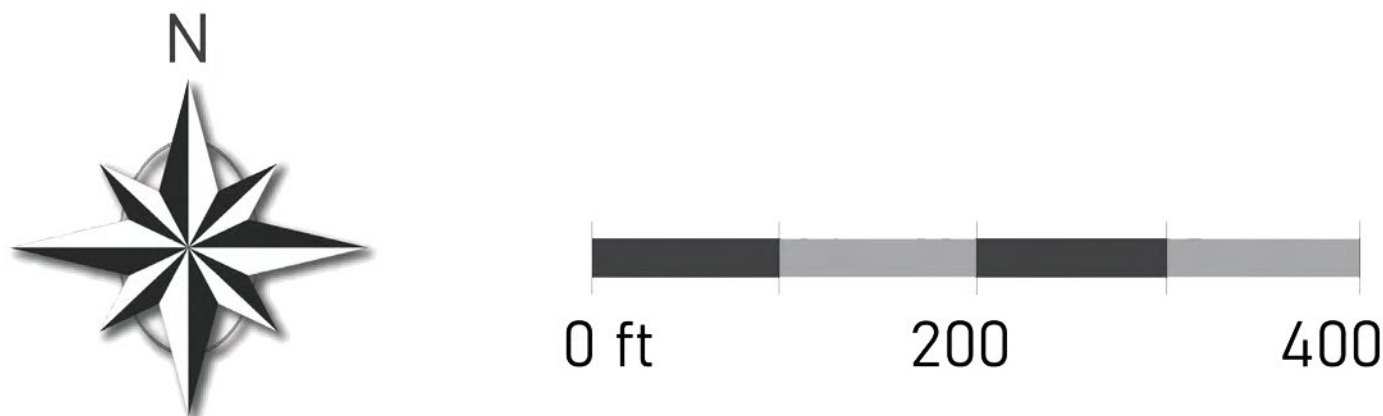


TYPICAL FRONT YARD LANDSCAPE

AT A MINIMUM, EACH INDIVIDUAL FRONT YARD SHALL INCLUDE:

- 1 TREE PER LOT FRONTAGE
- CORNER LOTS - 1 SIDE YARD TREE PER 30 LINEAL FEET OF STREET FRONTAGE
- 3 SHRUBS PER TREE
- TURF (OPTIONAL BY OWNER)
- USE A MINIMUM OF TWO MULCH TYPES PER FRONT YARD
- DECOMPOSED GRANITE
- 4" MINUS RIVER ROCK
- 1-1/2" RIVER ROCK

TYPICAL FRONT YARD LANDSCAPE SHOWN IS SCHEMATIC ONLY. LANDSCAPE LAYOUT MAY BE MODIFIED AS NEEDED TO FIT INDIVIDUAL LOT & TO AVOID CONFLICTS WITH UTILITIES



GENERAL NOTES:

1. ALL PLANTING AND IRRIGATION SHALL BE INSTALLED PER LOCAL GOVERNING CODES.
2. TREES
 - A. SECTION 32.09.030, D.5 "EVERGREEN TREES SHALL BE AT LEAST 6 FEET IN HEIGHT AT TIME OF PLANTING. FIFTY PERCENT (50%) OF DECIDUOUS TREES SHALL BE A MINIMUM CALIPER OF ONE INCH AND 50% SHALL BE A MINIMUM CALIPER OF TWO INCHES AT TIME OF PLANTING"
 - B. ADDITIONAL TREES, BEYOND THOSE REQUIRED BY CODE, MAY BE REDUCED IN SIZE AT INSTALLATION.
3. FINAL PLANT SELECTION AND LAYOUT WILL BE FINALIZED BY DEVELOPER AND BASED ON SOUND HORTICULTURAL PRACTICES REALTING TO MICRO-CLIMATE, SOIL AND WATER REGIMES. ALL TREES WILL BE STAKED SO AS TO REMAIN UPRIGHT AND PLUMB FOLLOWING INSTALLATION. PLANT SIZE AND QUALITY AT TIME OF PLANTING WILL BE PER THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-1990).
4. ALL SHRUB BEDS WILL RECEIVE 4" DEPTH MULCH WITH WEED CONTROL
5. ALL LANDSCAPING WILL BE AUTOMATICALLY IRRIGATED. CONTAINER PLANTINGS WILL BE DRIP IRRIGATED BASED ON THE SPECIFIC HORTICULTURAL REQUIREMENTS OF EACH SPECIES. A REDUCED-PRESSURE-TYPE BACKFLOW PRECENTOR WILL BE PROVIDED ON THE IRRIGATION SYSTEM AS REQUIRED PER CODE.
6. PLAN IS CONCEPTUAL. PLANT QUANTITIES INDICATED ARE PER CITY OF FERNLEY CODE REQUIREMENTS. PLANT LOCATION, FINAL SPECIES SELECTION AND SIZE AT PLANTING SHALL BE DETERMINED DURING DEVELOPMENT OF THE FINAL CONSTRUCTION DOCUMENTS.

REVISED DRAINAGE AREAS & LAND USE TABLE

3/15/22

DATE

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PRELIMINARY
LANDSCAPE PLAN

VONNIE LANE SUBDIVISION
FERNLEY, NV

PROJECT NO.: 19286

L1



19286

**Vonnie Lane Residential Development
Fernley, NV**

**Traffic Impact Report
February 15, 2022**

PLANNERS

3522 South Emerson Street
Englewood, Colorado 80113
(303) 298-1644 (o)

ENGINEERS

ANALYSTS

155 Country Estates Circle
Suite 300
Reno, NV 89511

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1.0 Introduction

Reggetti Investment, LLC proposes development of the Vonnie Lane Residential Development project on the north side of State Route 828 (Farm District Road) just east of Vonnie Lane in the City of Fernley, Nevada.

The project consists of 85 single-family detached housing units. The development would consist of a single access connection to Vonnie Lane to the west. The study uses the Single-Family Detached Land Use (Institute of Transportation Engineers *Trip Generation* Land Use Code 210) to project the Trip Generation during the average weekday, AM peak hour, and PM peak hour timeframes.

1.1 Purpose and Scope of this Report

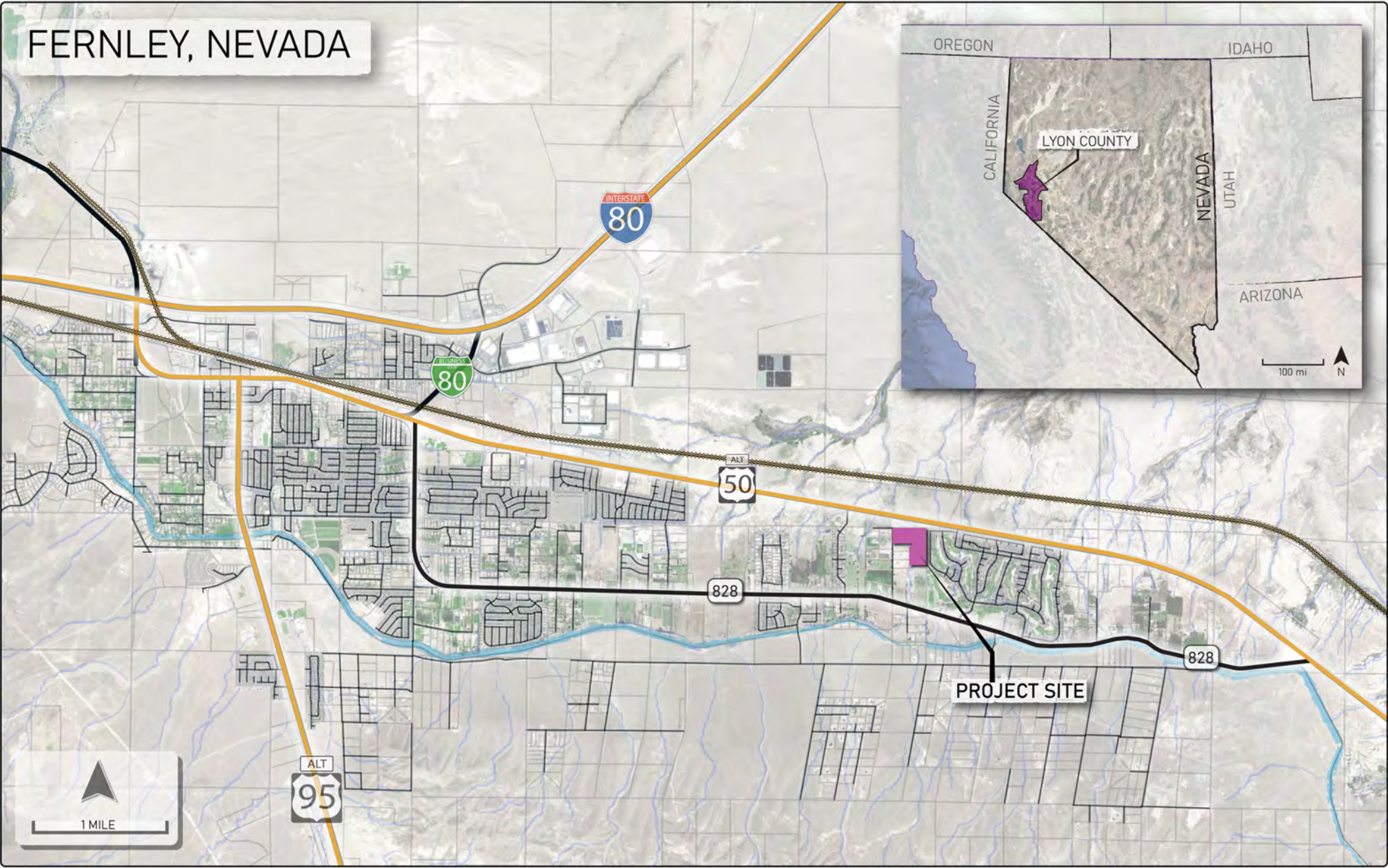
The purpose of this *Traffic Impact Report* is to communicate to the City of Fernley and the Nevada Department of Transportation (NDOT) the near-term and long-term impacts of the project on the analysis intersections. Operational analyses were conducted using Synchro Version 11 based on *Highway Capacity Manual Sixth Edition (2016)* methodologies. These are the latest software and manual editions available at the time of this study.

The scope of this report includes a discussion of the regional setting, the site plan and land use composition, the existing site in the context of the *City of Fernley Comprehensive Master Plan*, the traffic study parameters including analysis intersections and study scenarios, the methodology, the existing setting, the projected trip generation, the near-term project impacts, the long-term project impacts, and key findings and recommendations. A preliminary vehicle miles traveled (VMT) analysis is provided at the end of this report to reflect the incorporation of this new VMT metric that took effect on July 1, 2020, in a neighboring state. A brochure with satellite imagery of existing conditions provided in **Appendix A**. The numeric analysis including the trip generation, distribution, and assignment calculations are included in **Appendix B** along with the crash, turn lane, and signal warrant analyses. The Level of Service (LOS) worksheets are included in **Appendix C**.

1.2 Regional Setting

Figure 1: Regional and Vicinity Maps identify the project's location within the State of Nevada and the City of Fernley. The project is located approximately 38 miles northeast of Reno within the geographic boundaries of Lyon County. The nearest freeway interchange is Business Route 80 at Interstate 80. Business Route 80 transitions to State Route 828 south of the Roundabout with East Main Street and US Highway 50A (Lincoln Highway). State Route 828 continues to the south, and then makes a 90-degree turn to the east where it continues for approximately 3 miles and rejoins US-50A to the east.

FIGURE 1: REGIONAL AND VICINITY MAPS



1.3 Site Plan and Land Use Composition

Figure 2: Site Plan shows the layout of the proposed development including the relative locations of the residential and open space elements. Site access is proposed via two accesses to Vonnie Lane to the west. During the near-term, all project-generated traffic was assumed to proceed south on Vonnie Lane to State Route 828 (Farm District Road). The easement to the west to Red Rock Road was assumed to come online by the timeframe of the long-term analysis. Red Rock Road would provide access to US-50A to the north.

1.4 Existing Site and Proposed Zoning Amendment

The existing site within the East Development Area of the City of Fernley is low-density residential. The Desert Rose RV Park off US-50A borders to the north. Farm District Road (SR 828) borders to the south. Single-family residential units on the west side of Pepper Lane and a golf course border to the east, and Vonnie Lane borders to the west.

The *City of Fernley Comprehensive Master Plan* Figure 3-1 (Comprehensive Land Use Map) dated August 2018 identifies the proposed land use designation within this study area east of the East Development Area as Single-Family Residential (SFR), which is bordered to the east by a combination of SFR and Open Space and Parks (OSP).

The *Housing Needs Assessment – Churchill County, Nevada* dated September 11, 2021, underscores the severe housing shortage in nearby Churchill County escalated by a lack of new residential construction over the past decade, thereby underscoring the need to aggressively remove the barriers to residential construction. Implementation of the proposed Vonnie Lane Residential Development would help reverse this dwindling housing construction trend that is evident on a national scale.

1.5 Scope of the Traffic Impact Study

The scope of the traffic impact study entails assessing the multi-modal (vehicle, bicycle, pedestrian, equestrian, transit, etc.) transportation impacts of the proposed Vonnie Lane Residential Development on the analysis intersections identified in Table 1 during the study scenarios identified in Table 2 for both the AM (7:00 to 9:00) and PM (4:00 to 6:00) peak hours. The peak hours are defined as the busiest four-consecutive 15-minute intervals during these respective timeframes based on actual turning movement counts collected in the field.

FIGURE 2: SITE PLAN

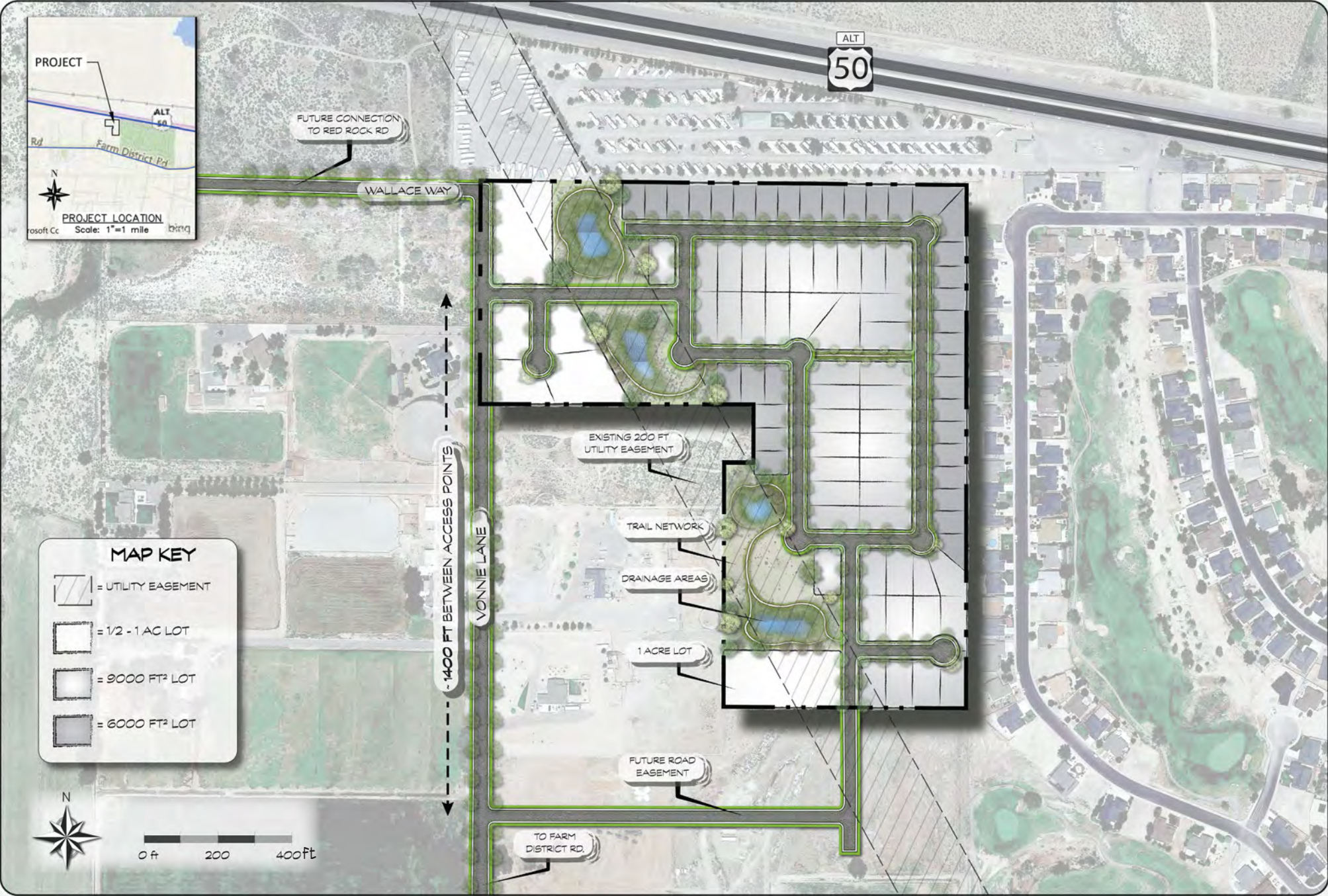


Table 1 identifies the analysis intersections.

Table 1: Analysis Intersections

No	North-South Roadway	East-West Roadway
1	Clearwater Parkway	SR 828
2	Red Rock Road	SR 828
3	Desert Lakes Drive	SR 828
4	Bens Way	SR 828
5	US-50A	SR 828
6	Vonnie Lane (Project and Long-Term Only)	SR 828
7	Red Rock Road (Long-Term Only)	US-50A

As noted during the High-Level Field Investigation (A Review of Satellite Imagery on Google Earth) conducted on Tuesday, November 30, 2021, and Low-Level Field Investigation (A Review from the Ground) conducted on Sunday, January 16, 2022, all intersections are un-signalized stop-controlled intersections with the stop-control applied to the north-south roadway, except for Intersection No. 5 (US-50A at SR 828) where the stop-control is applied to the east-west roadway of SR 828.

A dedicated westbound left turn lane (WBL) is provided at Intersection No. 1.

A dedicated eastbound left turn lane (EBL) is provided at intersection No. 2.

Dedicated northbound left (NBL), southbound right (SBR), eastbound left (EBL), and eastbound right (EBR) turn lanes are provided at Intersection No. 5. This intersection also includes raised islands, median storage for the eastbound left turn (EBL) movement, and a channelized eastbound right turn (EBR) movement with a “pork-chop-shaped” island.

While Vonnie Lane (Intersection No. 6) was observed as a gravel roadway during the High-Level Field Investigation, full paving of Vonnie Lane is assumed to take place in connection with the Vonnie Lane Residential Development project during the near-term.

Full paving of the easement and Red Rock Road north to US-50A is assumed to take place by the long-term timeframe.

During the Level of Service (LOS) analysis, the merits and drawbacks of turn lane channelization and signalization were evaluated for those intersections that fall at or below the City of Fernley and the Nevada Department of Transportation (NDOT) LOS Standard of D or better.

Table 2 identifies the study scenarios based on a 20-year planning horizon.

Table 2: Study Scenarios

No	Description
A	Near-Term
B	Near-Term Plus Project
C	Long-Term
D	Long-Term Plus Project

Appendix B shows the progressive volume analysis consisting of the generation, distribution, and assignment of the development trips during both the near-term and long-term timeframes.

2.0 Methodology

The scope entailed conducting capacity evaluations at multiple study intersections using Level of Service (LOS) based on *Highway Capacity Manual 6th Edition* methodologies. Level of Service is a qualitative measure describing operating conditions at intersections and their perception by intersection users.

Table 3 defines the intersection capacity evaluation criteria at un-signalized intersections by LOS designation as a function of delay along with a narrative description of each designation.

Table 3: Capacity at Un-Signalized Intersections

Designation	Delay (Seconds per Vehicle)	Description
A	0-10	Long, frequent gaps
B	10-15	Shorter, less frequent gaps, no more than 1 vehicle in queue
C	15-25	Less frequent gaps, 2 vehicles in queue
D	25-35	Less frequent gaps, 3 vehicles in queue
E	35-50	Less frequent gaps, 3 or more vehicles in queue
F	50+	Excessive delays waiting for suitable gaps, longer queues

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition*

Table 4 defines the intersection capacity evaluation criteria at signalized intersections by LOS designation as a function of delay along with a narrative description of each designation.

Table 4: Capacity at Signalized Intersections

Designation	Delay (Seconds per Vehicle)	Description
A	0-10	Some slowing on green, but most vehicles do not stop
B	10-20	Some vehicles stop, but most do not
C	20-35	More vehicles stop, but many still pass through without stopping
D	35-55	Most vehicles stop
E	55-80	Almost all vehicles stop, but can clear the intersection within one cycle
F	80+	All vehicles stop, and some may not be able to clear the intersection within one cycle

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition*

According to the City of Fernley and the Nevada Department of Transportation, the Level of Service Standard is "D" or better. When operational analyses were conducted showing results falling below this standard, measures were recommended to elevate operations to an acceptable level.

3.0 Existing Setting

The existing transportation system and topographical conditions were evaluated by studying satellite imagery and conducting a field investigation of the site and the study area on Tuesday, November 30, 2021. This was followed by a low-level field investigation conducted on Sunday, January 16, 2022.

Figure 3: Existing Setting defines the existing roadways, lane configurations, and intersection geometrics.

Table 5 describes the key roadways within the existing setting.

Table 5: Existing Setting: Key Roadways

Roadway	Divided or Un-Divided	Lanes	Posted Speed	Functional Classification
US-50A	Divided	4	65	Principal Arterial
State Route 828	Un-Divided	2	55	Minor Arterial
Clearwater Parkway	Divided	2	45	Minor Arterial
Desert Lakes Drive	Divided	2	35	Rural Minor Collector
Bens Way	Un-Divided	2	35	Rural Minor Collector
Wedge Lane	Un-Divided	2	35	Rural Minor Collector
Vonnies Lane	Un-Divided	2	25	Local Road
Red Rock Road	Un-Divided	2	25	Local Road

Source: City of Fernley Comprehensive Master Plan (August 2018)

Source: Nevada DOT Annual Traffic Report

US-50A connects I-80 to the west and the City of Fallon to the east and intersects with US-50 just west of Fallon. US-50 connects to Carson City to the southwest. US-50A includes paved shoulders, street lighting, and median storage within the study area.

State Route 828 includes paved shoulders throughout the study area along with dedicated left and right turn lanes and median storage in select locations.

Clearwater Parkway includes curb and gutter.

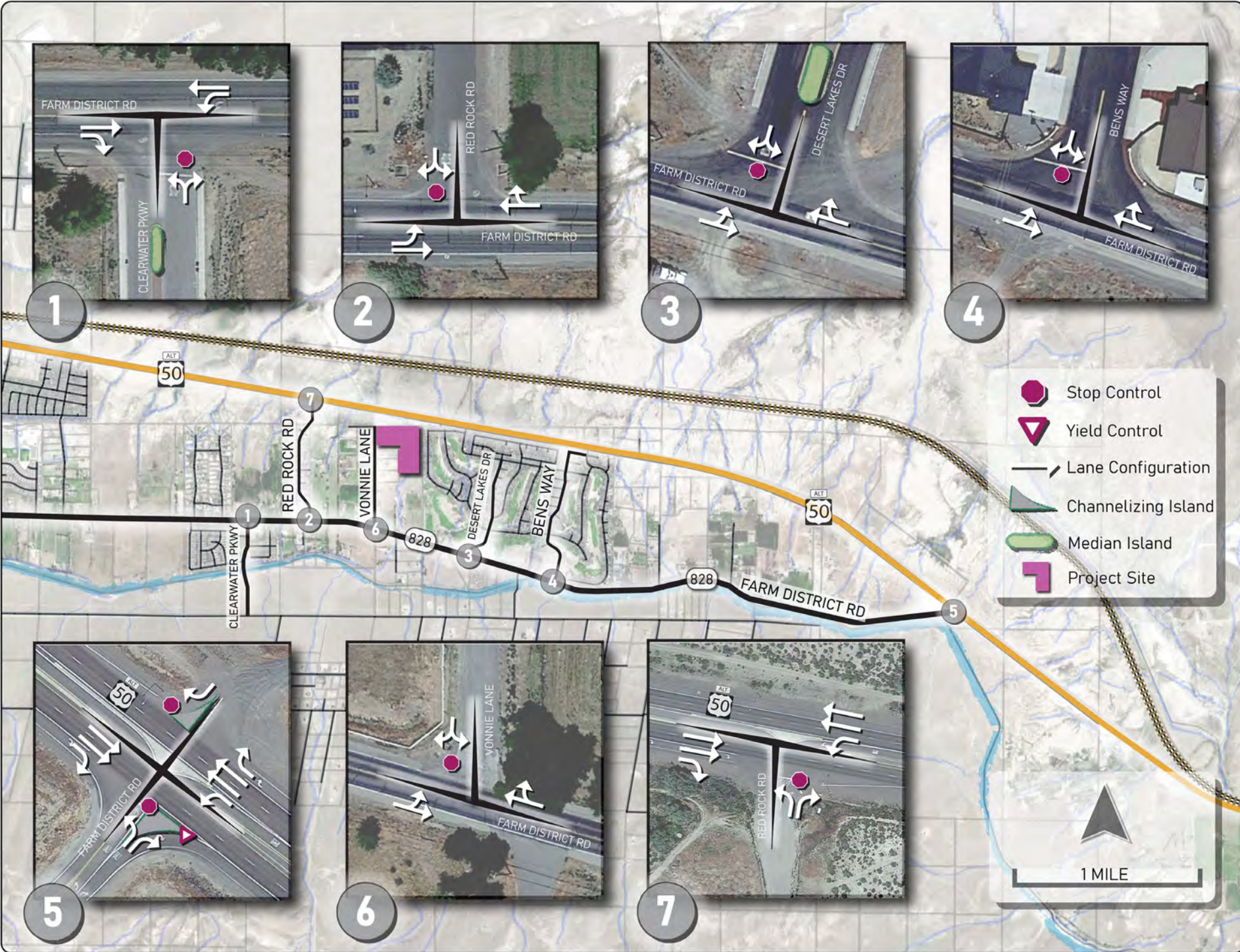
Desert Lakes Drive includes curb/gutter/sidewalk and a raised median.

Bens Way includes curb/gutter/sidewalk and intersects Wedge Lane just north of SR 828.

Vonnies Lane was observed as a gravel roadway. Full paving is assumed in connection with the proposed Vonnies Lane Residential Development. An easement between Vonnies Lane and Red Rock Road would come online by the long-term timeframe.

Red Rock Road was observed as a paved roadway at SR 828 to the south transitioning to a gravel roadway approaching US-50A to the north where it does not function as a usable paved roadway during the near-term.

FIGURE 3: EXISTING SETTING



4.0 Near-Term Impact Analysis

The Near-Term Impact Analysis was conducted to assess the impact of the project relative to existing conditions by adding the project volumes to the existing volumes (volumes without project) for each of the study intersections, calculating the Level of Service (LOS) for with and without-project conditions based on the methodology described in Section 2, and conducting a side-by-side comparison of intersection operations. Calculating the project volumes entailed determining the number of vehicle trips generated by the project (trip generation), evaluating how the trips would disperse throughout the study area (trip distribution), and assigning the trips to individual turning movements at each of the study intersections (trip assignment).

4.1 Volumes without Project

Figure 4: Near-Term Volumes shows the AM (7:00 to 9:00) and PM (4:00 to 6:00) peak hour traffic volumes based on the busiest four consecutive fifteen-minute intervals during these timeframes. Manual peak hour turning movement counts were obtained on Wednesday, January 5, 2022, by National Data and Surveying (NDS) at Intersections 1 (Clearwater Parkway), 3 (Desert Lakes Drive), 4 (Bens Way), and 5 (US-50A). Due to the presence of dirt roadways at the remaining three study intersections, through volumes were calculated from the adjacent intersections and turning volumes of 10 vehicles per hour were assigned to each of the four turning movements at these three intersections to ensure a conservative analysis.

Crash data was requested by the Nevada Department of Transportation (NDOT). Such data was provided at Intersection 1 (Clearwater Parkway) at State Route 828 for Calendar Years 2017, 2018, and 2019. Severity, Type, and Cause Analyses were conducted, and rates were calculated based on Million Entering Vehicles per year (MEV). One injury crash was reported at this intersection. The crash type was Rear-End. The cause was Following Too Closely. The calculated crash rate was 0.273 indicating satisfactory operations.

4.2 Trip Generation

A vehicle trip is defined as a trip whose primary purpose is to visit the site. Such trips include resident, guest, service, and delivery, among other types.

Trip generation was calculated based on rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition (2021)*. Specifically, the number of trips was projected by multiplying the rates by an individual independent variable quantity. For example, calculating the total weekday trips for the Single-Family Detached Housing Land Use (ITE Land Use Code 210) based on 85 Dwelling Units entails multiplying the independent variable quantity of 85 Dwelling Units by the rate of 9.43 Trips per Dwelling Unit to yield 802 Weekday Trips.

Figure 4: Near-Term Traffic Volumes

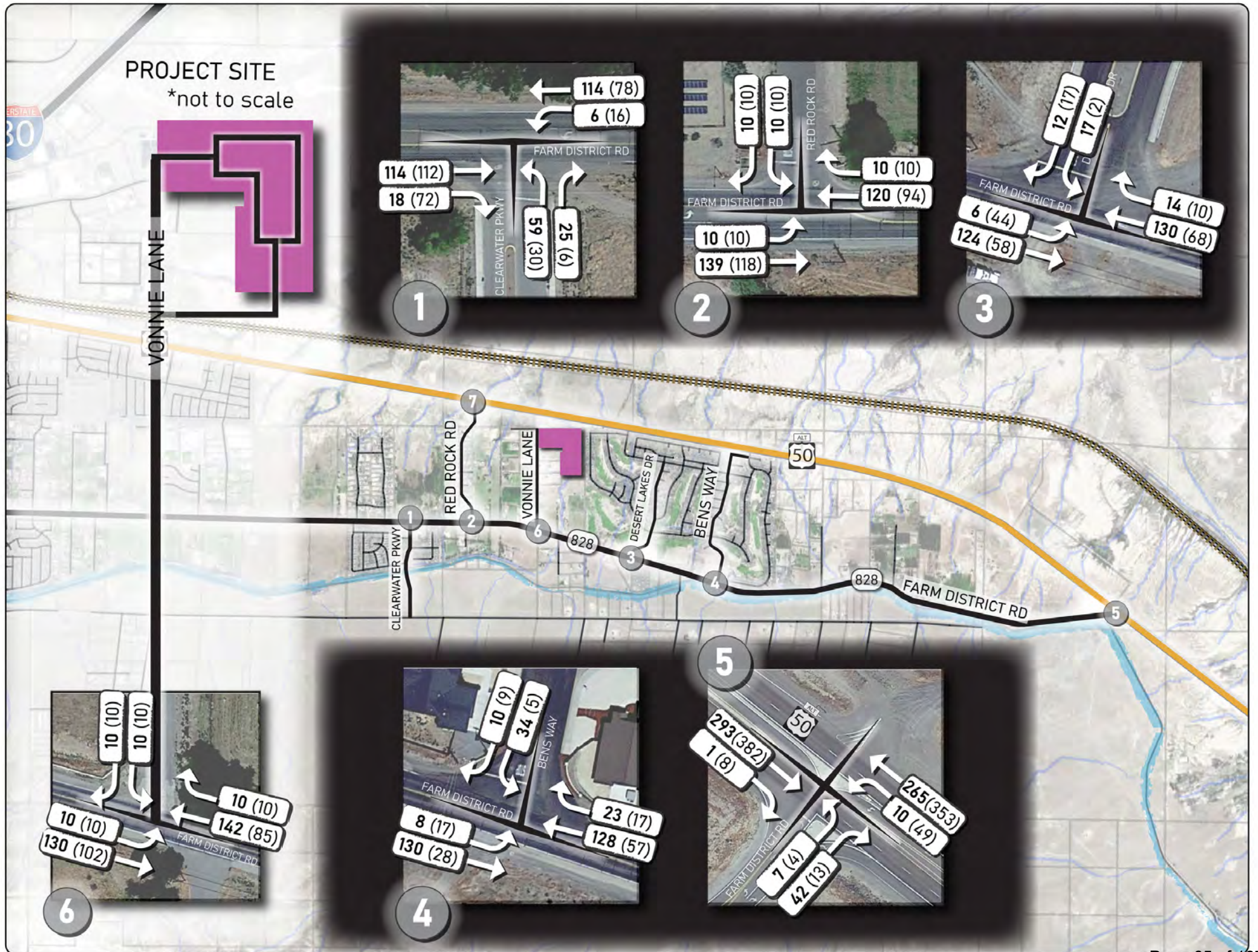


Table 6 shows the results of the trip generation analysis based on the Single-Family Detached Housing Land Use. Rates and trips are shown in more detail in **Appendix B**.

Table 6: Trip Generation

Description	Weekday		AM Peak Hour		PM Peak Hour		
	Total	Enter	Exit	Total	Enter	Exit	Total
Single-Family Detached Housing (210) based on 85 Dwelling Units							
Rates	9.43	0.18	0.52	0.70	0.59	0.35	0.94
Trips	802	16	44	60	50	30	80

Source: Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition (2021)

According to **Table 6**, the project would generate 802 vehicle trips during an average weekday, 60 vehicle trips during the AM peak hour, and 80 vehicle trips during the PM peak hour.

4.3 Trip Distribution

Two trip distribution analyses were conducted to evaluate how the trips would disperse throughout the study area between the project and the gates (points of entry to or exit from the study network). The first was a near-term analysis based on the existing roadway network plus improvements projected to come online in connection with the initial opening of the Vonnie Lane Residential Development. The second was a long-term analysis (covered in Section 5.3) based on the implementation of 5-year, 10-year, and 20-year improvements/additions to the transportation network as indicated in the *Draft Transportation Management Plan* presented to the Fernley City Council on June 3, 2020. The near-term and long-term trip distribution analyses use the same trip generation values identified in **Table 4** above.

The near-term trip distribution percentages were determined based on the following assumptions:

1. The trips would be characteristic of residential trips in general, namely strong familiarity with the local transportation network and attracted to local services. Such services would include, but are not limited to, shopping centers, grocery stores, schools, employment, parks, and recreation amenities.
2. Primary retail opportunities are located to the northwest within downtown, along Main Street, and near the interchanges with I-80 with the most preferred routes branching off Farm District Road to the southwest of the project and US-50A northwest of the project.
3. Primary educational opportunities are located near SR 828 at Cottonwood to the northwest, US-95A to the southwest, and the junction of US-50A and Farm District Road to the east.
4. Primary employment opportunities are located within downtown, within the hospitality and industrial developments along Main Street and the I-80 corridor

through town, and along I-80 to the west including the Greater Reno/Sparks population center.

5. Primary recreation opportunities include the parks to the northwest and the Pyramid Lake Recreation Area to the northwest.

Study area specific assumptions for the near-term analysis are as follows:

1. No traffic was assigned to Red Rock Road in the near-term trip distribution analysis based on the assumption that the implementation of the easement to Vonnie Lane to the east would not come online until long-term.
2. Desert Lakes Drive accesses the golf course and residential development to the east of the proposed Vonnie Lane Residential Development, with no existing or projected connections to Vonnie Lane. While Julia Lane was observed to connect with Desert Lakes Drive and US-50A, the intersection of Julia Lane at US-50A was observed as right-in/right-out. Therefore, no traffic was assigned to Desert Lakes Drive or Julia Lane in the near-term trip distribution/assignment analysis for traffic destined to locations on US-50A to the west.
3. Bens Way intersects Wedge Lane just north of State Route 828. Wedge Lane intersects US-50A to the north with full unrestricted access, raised medians, and median storage. Therefore, traffic was assigned to the intersection of Bens Way at SR 828 in the near-term trip distribution/assignment analysis for traffic destined to locations on US-50A to the west.

Figure 5: Near-Term Trip Distribution shows the near-term trip distribution percentages for each of the gates.

4.4 Trip Assignment

Trip assignment is calculated by multiplying the trip generation values from Table 6 by the trip distribution percentages described above. For analysis purposes, the trips were proportioned among each of the gates and then assigned to individual turning movements at each of the analysis intersections.

Figure 6: Near-Term Trip Assignment shows the trip assignment values for individual turning movements at each of the analysis intersections.

These values are shown in tabular form in **Appendix B**.

4.5 Volumes with Project

Figure 7: Near-Term Plus Project Volumes shows the with-project traffic volumes at each of the study intersections by adding the Figure 5 trip assignment volumes to the Figure 4 existing traffic volumes.

FIGURE 5: NEAR-TERM TRIP DISTRIBUTION

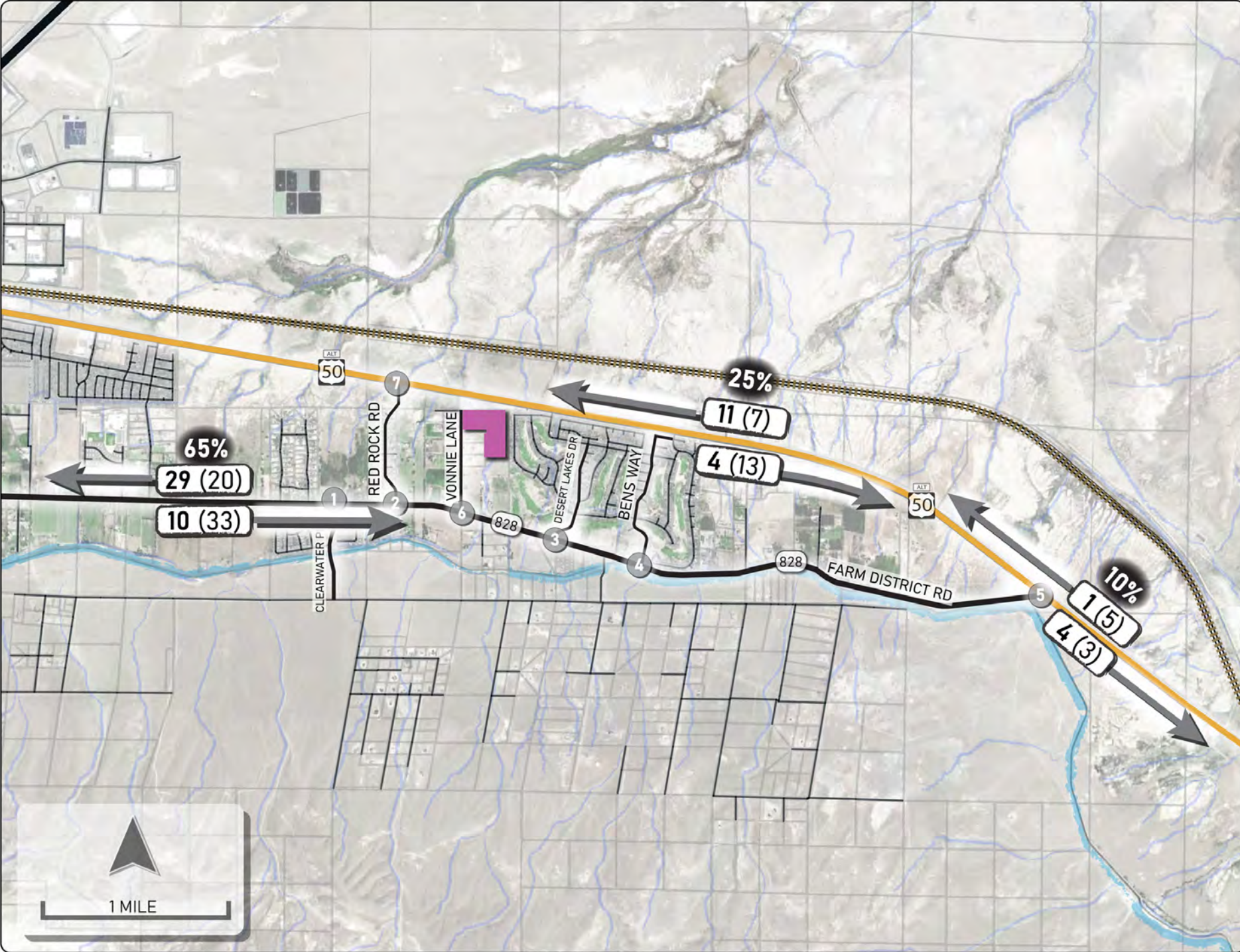


FIGURE 6: NEAR-TERM TRIP ASSIGNMENT

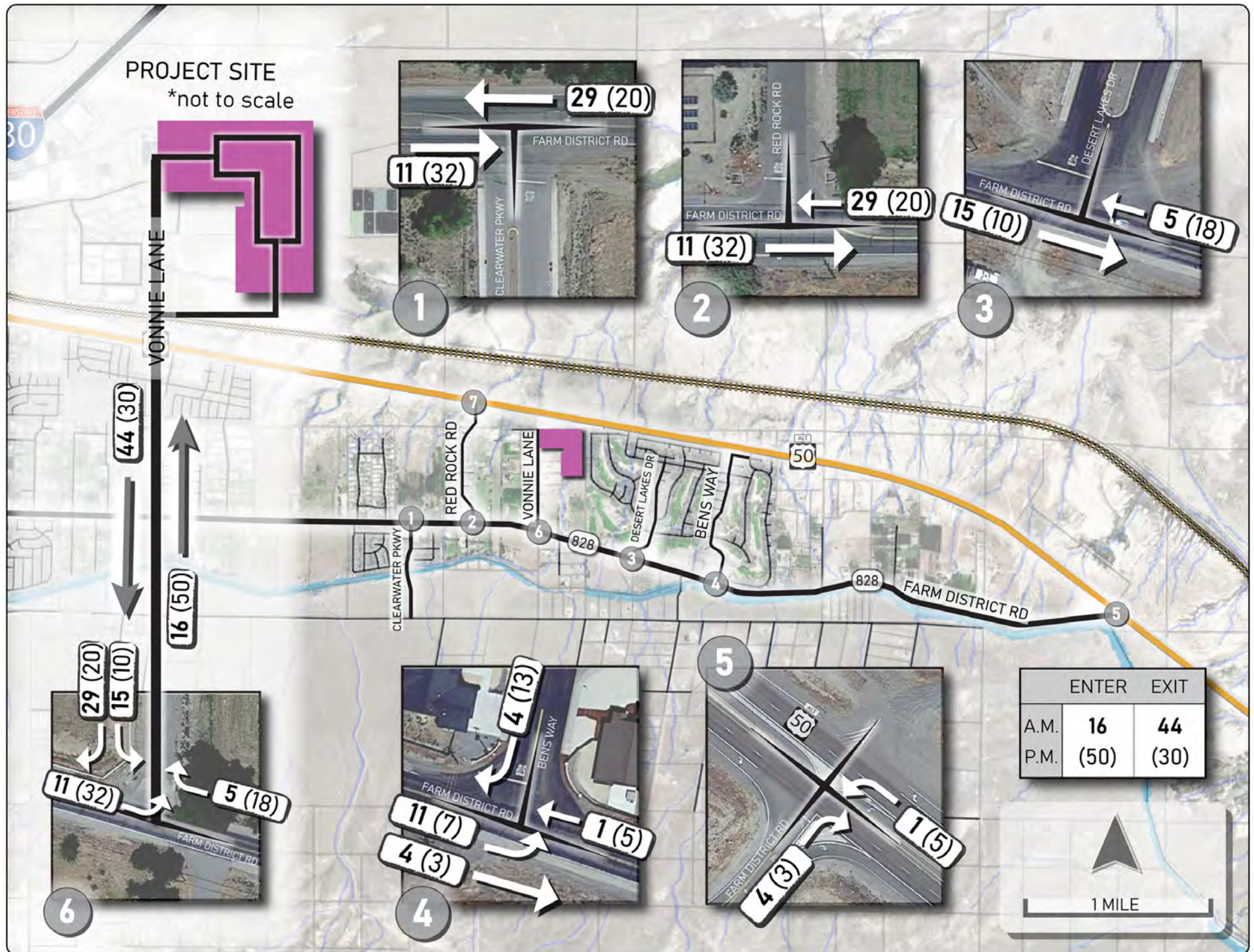
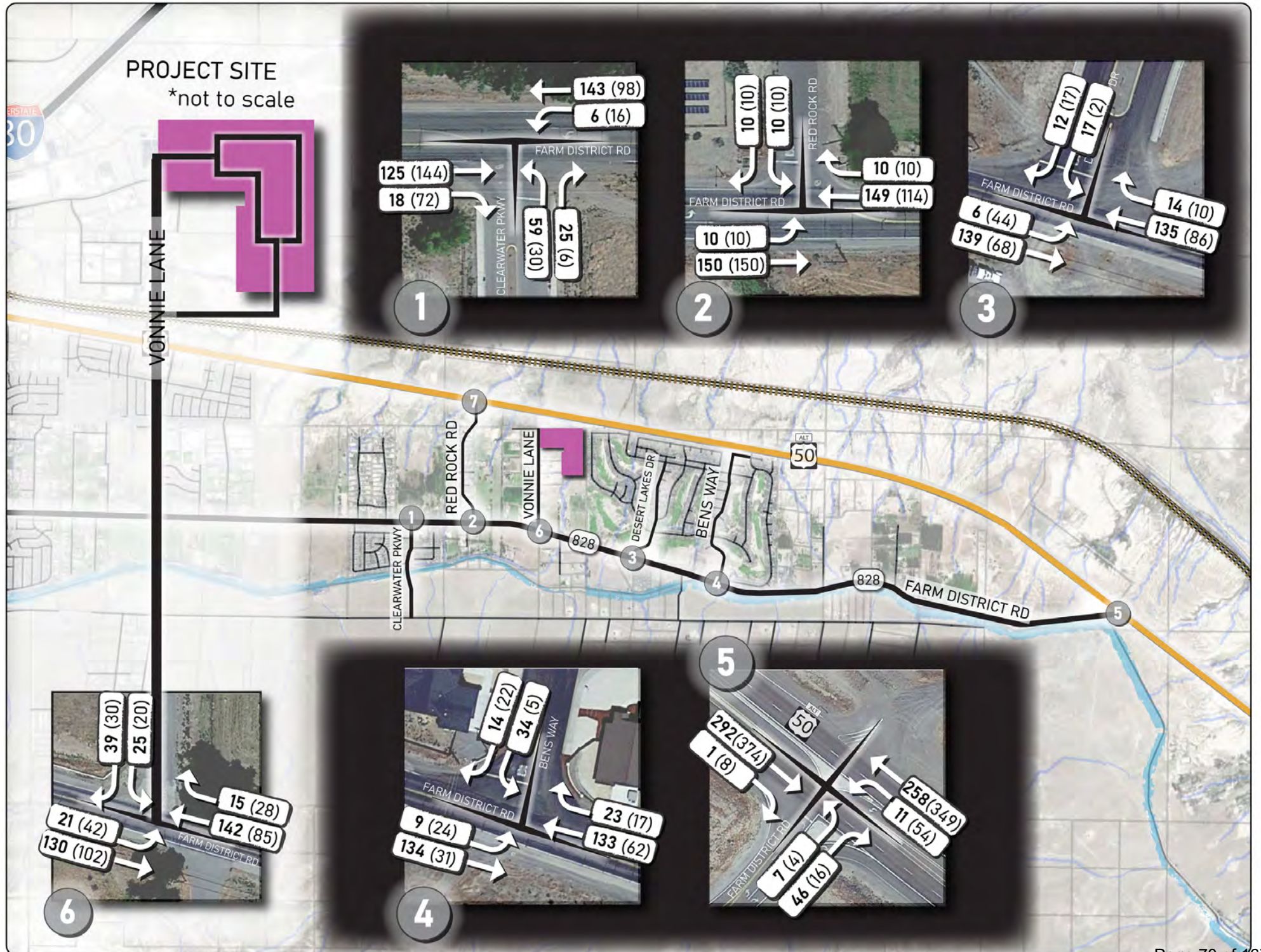


Figure 7: Near-Term Plus Project Traffic Volumes



The need for turn lanes was elevated at intersection of Vonnies Lane and SR 828 under near-term conditions. The need for left-turn (Table 4-12) and right-turn (Table 4-16) lanes was evaluated based on the respective tables in the NDOT Access Management System and Standards dated 2017. According to the analysis, a left-turn lane is warranted at the intersection under near-term conditions and is therefore recommended. For more information on the turn-lane warrant analysis, see Appendix B.

The need for signalization was evaluated at the intersection of Vonnies Lane and SR 828 under near-term conditions based on the Peak Hour Warrant in the Manual on Uniform Traffic Control Devices (MUTCD) Figure 4C-4. According to the analysis, a signal is not warranted at this intersection. Therefore, signalization is not projected to be needed under near-term conditions. For more information on the signal warrant analysis, see Appendix B.

4.6 Near-Term Impacts

Appendices C-1 (AM) and C-2 (PM) contain the calculation reports for near-term intersection operations without the project. **Appendices C-3 (AM) and C-4 (PM)** contain the calculation reports for near-term intersection operations with the project. These calculations are based on the *Highway Capacity Manual* methodology described in Section 2.

Peak Hour Factors are based on the actual intersection counts.

Table 7 shows the near-term impact of the project on the study intersections.

Table 7: Near-Term Project Impact on Intersection Operations

	Without Project		With Project	
	AM	PM	AM	PM
1: Clearwater Parkway at SR 828	B 11.2 (NB)	A 9.9 (NB)	B 11.6 (NB)	B 10.2 (NB)
2: Red Rock Road at SR 828	A 9.7 (SB)	A 9.5 (SB)	B 10.0 (SB)	A 9.8 (SB)
3: Desert Lakes Drive at SR 828	B 12.0 (SB)	A 8.9 (SB)	B 12.4 (SB)	A 9.0 (SB)
4: Bens Way at SR 828	B 14.1 (SB)	A 9.0 (SB)	C 15.2 (SB)	A 9.0 (SB)
5: US-50A at SR 828	B 11.3 (EB)	B 12.6 (EB)	B 11.3 (EB)	B 12.7 (EB)
6: Vonnies Lane at SR 828	A 9.8 (SB)	A 9.4 (SB)	B 10.1 (SB)	A 9.7 (SB)

Source: Trafficware, *Synchro 11*

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition*

According to Table 7, all intersections would operate acceptably under both without and with project conditions; and the project would not have a significant adverse impact on any elements of the study area.

5.0 Long-Term Impact Analysis

The Long-Term Impact Analysis was conducted to assess the project's impact on the study intersections at the end of a 20-year planning horizon using the same methodology as described in Section 4 for the Near-Term Impact Analysis, except that a compounded annual growth rate was applied to the near-term without-project traffic volumes to obtain the long-term without project volumes.

5.1 Volumes without Project

Diagram 4-2 of the *City of Fernley Comprehensive Master Plan* identifies NDOT portable traffic count stations in the City of Fernley. Station No. 35, located on SR 828, a quarter mile west of US-50A, is located within the study area. Table 4-3 of this *Master Plan* shows 2017, 2030, and 2040 traffic volumes at Count Station No. 35 in vehicles per day (vpd). According to Table 4-3, the 2017 volume is 540 vpd, the projected 2030 volume is 699 vpd, and the projected 2040 volume is 852 vehicles per day. All volumes correlate to a Level of Service (LOS) of A, and a compounded annual growth rate of 2 percent. Therefore, a 2 percent compounded annual growth rate were used for projecting the long-term traffic volumes for Intersections 2 to 7. A 30 percent reduction was applied to Intersection 1 to account for the addition of the Wadsworth Bypass to the west and the extension of the Nevada Pacific Parkway southward to US-50A to the north, both called for in the City of Fernley Transportation Master Plan.

Figure 8: Long-Term Volumes shows the future without project traffic volumes obtained by applying a compounded annual growth rate of 2.0 percent to the near-term without project volumes for Intersections 2 to 6, and a 30 percent reduction to Intersection 1.

5.2 Trip Generation

For analysis purposes, the same trip generation values calculated in Section 4 were applied to the long-term impact analysis to assess the long-term impacts of the project.

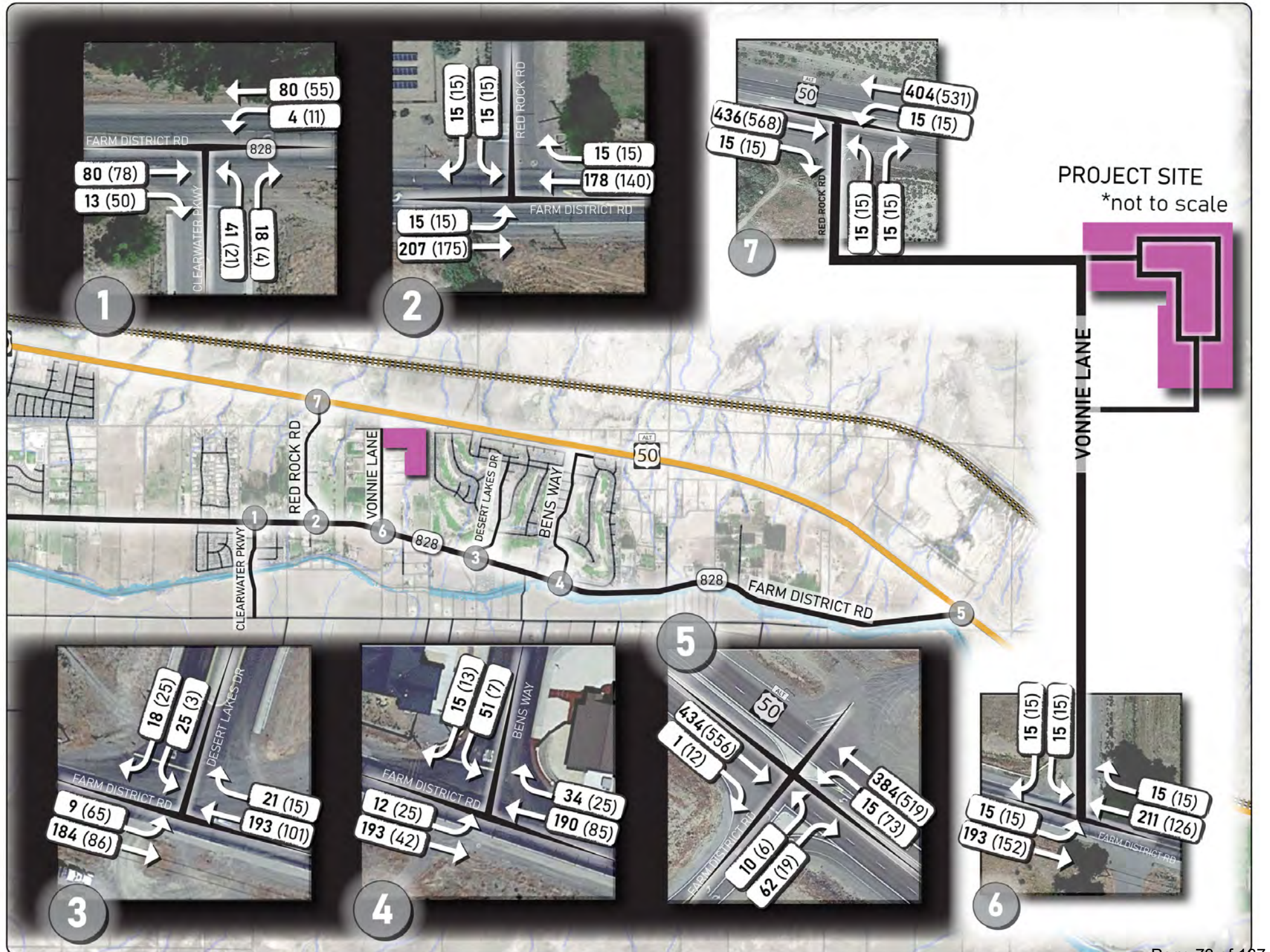
5.3 Trip Distribution

For the long-term with-project analysis, the long-term trip distribution percentages are based on the same assumptions as in the near-term analysis except with the inclusion of the 5-year, 10-year, and 20-year improvements and additions to the transportation network as indicated in the *Draft Transportation Management Plan* presented to the Fernley City Council on June 3, 2020.

Five-year improvements/additions are as follows:

1. Spot improvement at the Main/I-80 Interchange
2. Spot improvements in the vicinity of US-95A at Cottonwood

Figure 8: Long-Term Traffic Volumes



3. Corridor improvements along Business Route 80 between Main and I-80
4. Spot improvement at the Roundabout at Business Route 80 and East Main Street
5. Spot improvements at US-95A and US-50A
6. The extension of Nevada Pacific Parkway across the railroad tracks and south to US-50A, thereby boosting the desirability of US-50A west of Red Rock Road for trips generated by the Vonnie Lane Residential Development project
7. Corridor improvements to SR 828 west of US-50A

Ten-year improvements/additions are as follows:

1. A bridge on Clearwater Parkway across the Truckee-Carson Irrigation Canal providing a full connection between SR 828 and Desert Shadows Lane
2. Corridor improvements to US-95A between Sage Street and Main Street across the Truckee-Carson Irrigation Canal
3. The addition of Desert Shadows Lane between US-95A and US-50A
4. Corridor improvements to SR 427 between the Washoe/Lyon County Line and US-95A

Twenty-year improvements/additions are as follows:

1. The addition of the North Fernley Roadway between SR 427 and the Nevada Pacific Parkway/I-80 Interchange
2. The addition of the Western Bypass between I-80 and US-95A/Desert Shadows Lane, thereby boosting the desirability of Desert Shadows Lane to trips generated by the Vonnie Lane Residential Development project
3. Corridor improvements to Cottonwood Lane between US-95A and SR 828
4. Corridor improvements to SR 828 between the Roundabout at East Main Street/US-50A and Red Rock Road (connecting north to US-50A)
5. The addition of the I-11 Interchange with I-80 to the east with a connection to US-50A to the east, thereby boosting the desirability of US-50A to trips generated by the Vonnie Lane Residential Development project
6. Spot Improvement at Vine St/I-80

Study area specific assumptions for the long-term analysis are as follows:

1. Traffic was assigned to Red Rock Road in the long-term trip distribution analysis based on the assumption that the implementation of the easement to Vonnie Lane to the east would be online by then, and that Red Rock Road would form a full unrestricted intersection with US-50A to the north, complete with median storage.
2. Clearwater Parkway would be extended to the south across the Truckee Carson Irrigation District Canal to offer a fully paved connection between SR 828 to the north and Desert Shadows Lane to the south. An upgraded Desert Shadows Lane would provide access to the Western Bypass between US-95A and I-80.

Figure 9: Long-Term Trip Distribution shows the long-term trip distribution percentages for each of the gates.

Appendix B provides further elaboration on the trip distribution analysis including the gate (points of entry to or exit from the study network) percentages for the near-term and long-term analyses.

5.4 Trip Assignment

Trip assignment is calculated by multiplying the trip generation values from Table 4 by the trip distribution percentages described above.

Figure 10: Long-Term Trip Assignment shows the trip assignment values for individual turning movements at each of the analysis intersections.

These values are shown in tabular form in **Appendix B**.

5.5 Volumes with Project

Figure 11: Long-Term Plus Project Traffic Volumes shows the with-project traffic volumes obtained by adding the project-generated traffic volumes to the long-term without-project traffic volumes.

The need for turn lanes was evaluated at Vonnie Lane and SR 828 under long-term conditions. Specifically, the need for left-turn (Table 4-12) and right-turn (Table 4-16) lanes was evaluated based on the respective tables in the NDOT Access Management System and Standards dated 2017. According to this analysis, left-turn and right-turn lanes are warranted at the intersection, and are therefore recommended. For more information on the turn-lane warrant analysis, see Appendix B.

The need for signalization was evaluated at Vonnie Lane and SR 828 under long-term conditions based on the Peak Hour Warrant in the Manual on Uniform Traffic Control Devices (MUTCD) Figure 4C-4. According to the analysis, a signal is not warranted at this intersection. Therefore, signalization is not projected to be needed under long-term conditions. For more information on the signal warrant analysis, see Appendix B.

FIGURE 9: LONG-TERM TRIP DISTRIBUTION

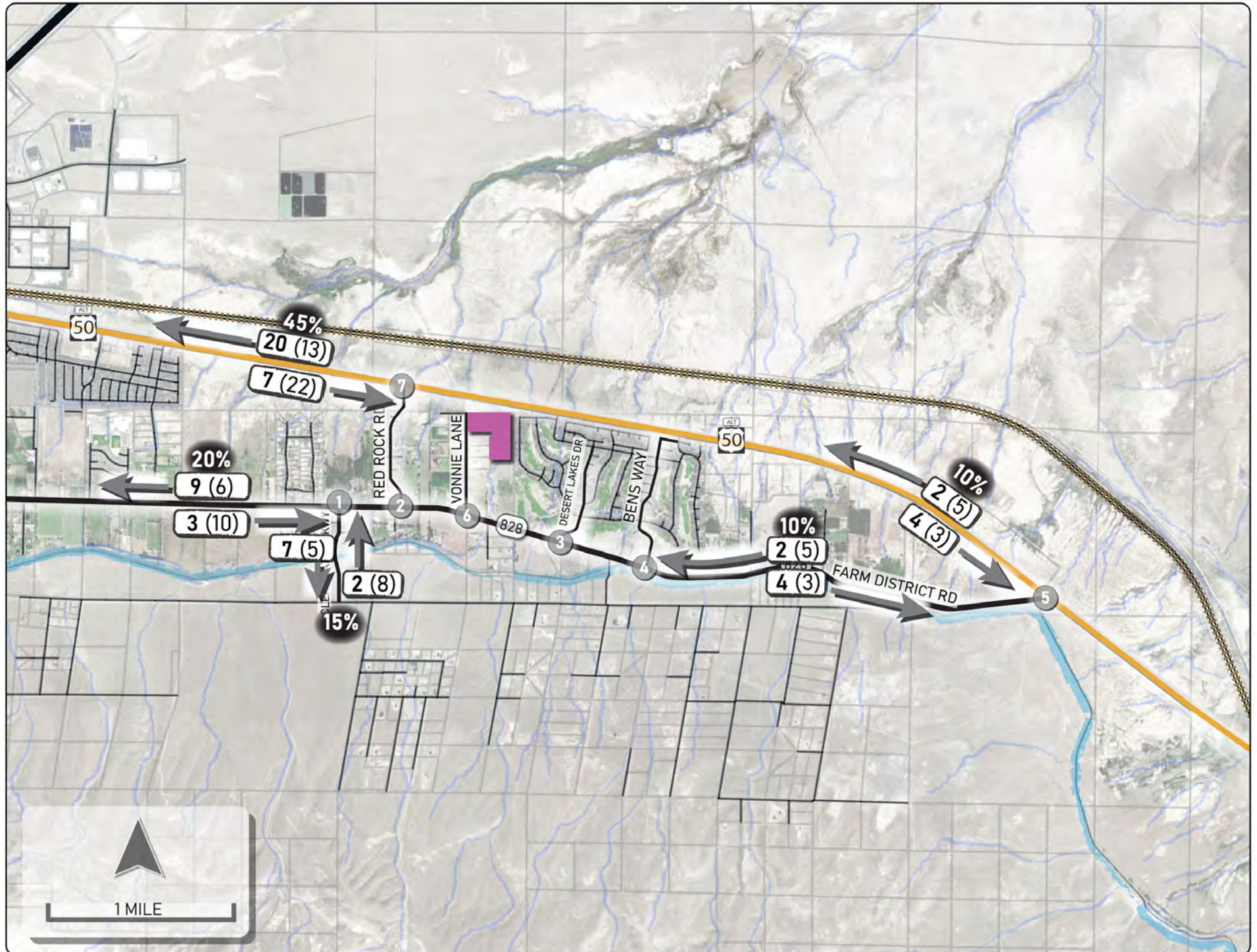


FIGURE 10: LONG-TERM TRIP ASSIGNMENT

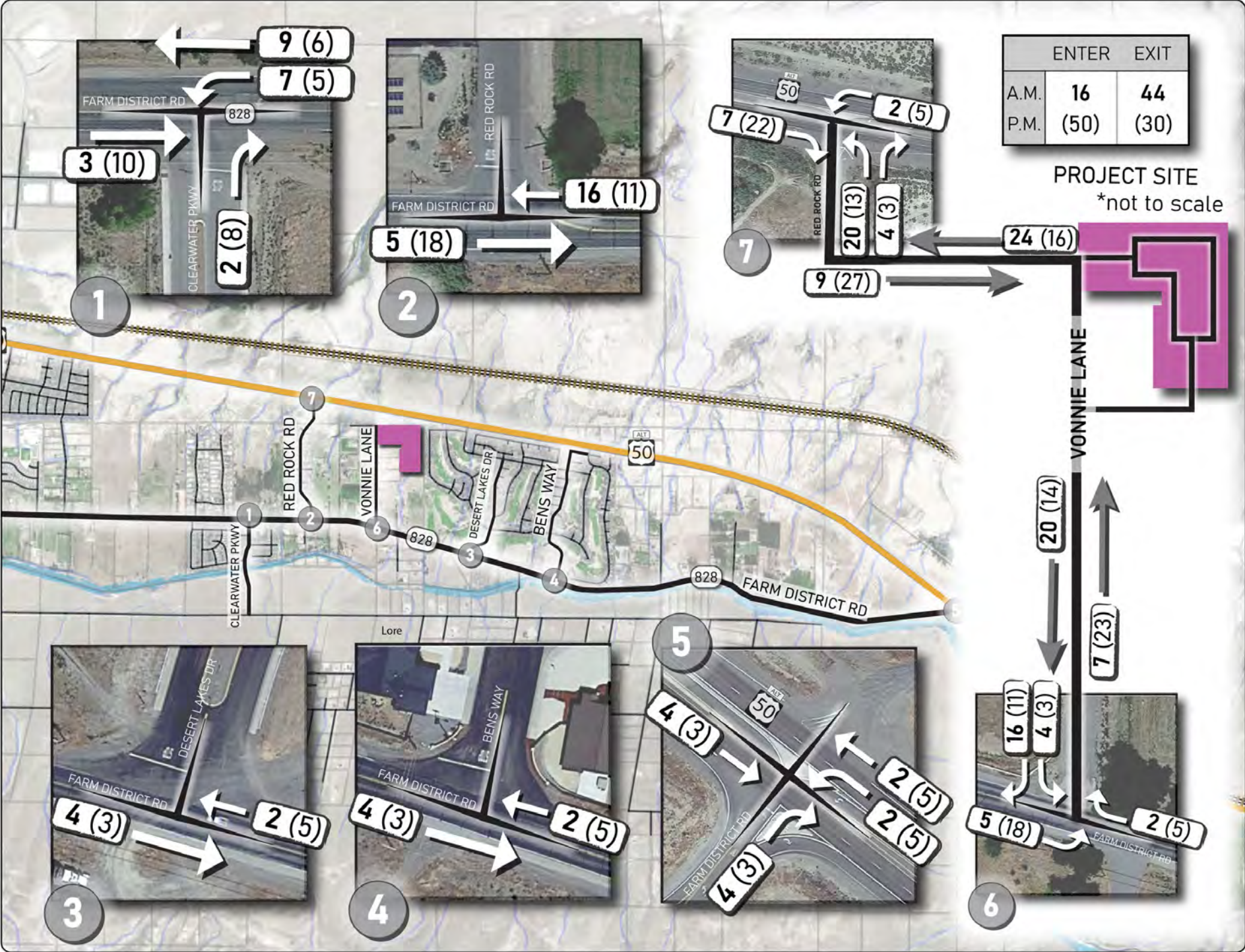
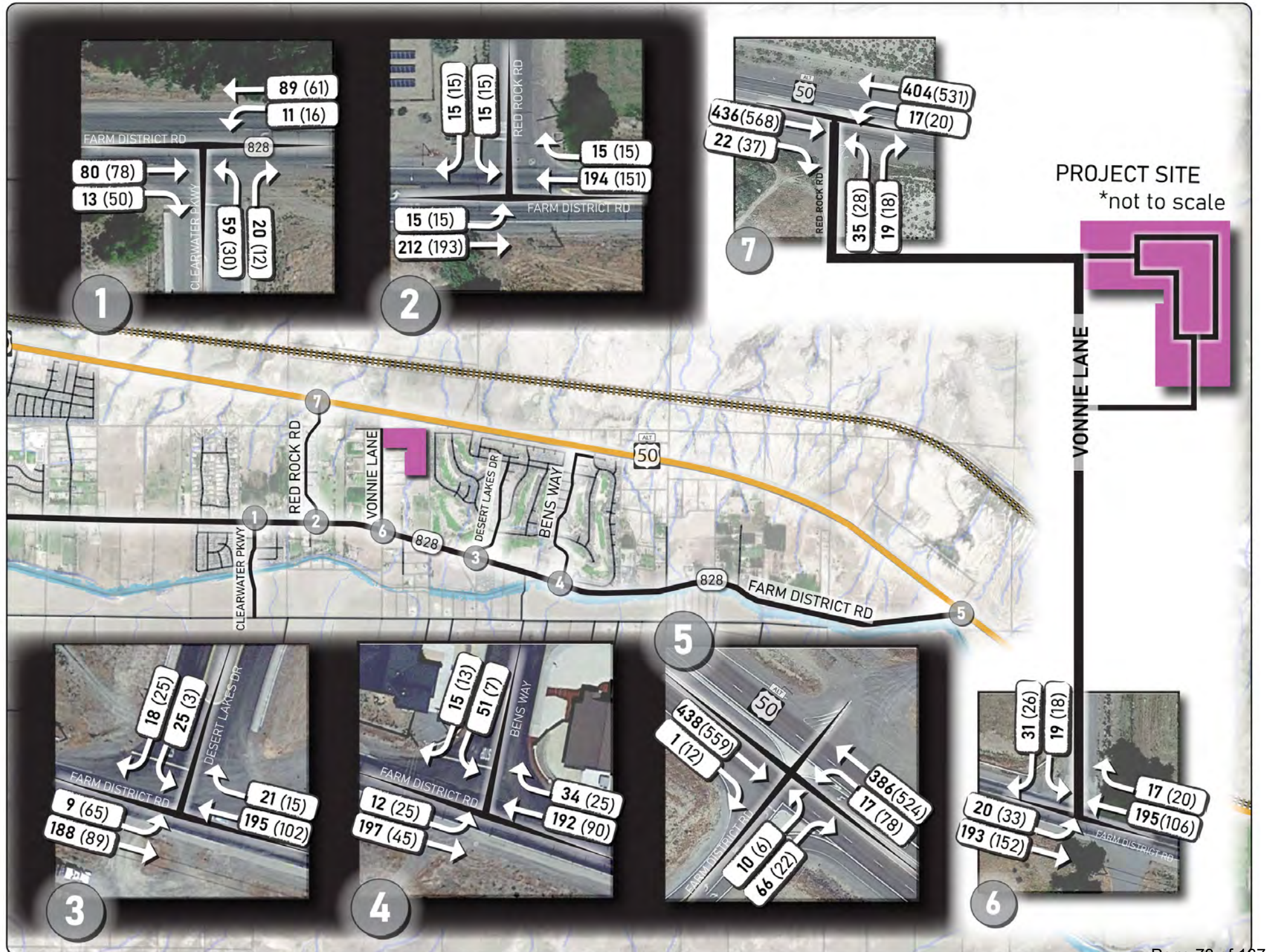


Figure 11: Long-Term Plus Project Traffic Volumes



5.6 Long-Term Impacts

Appendices C-5 (AM) and C-6 (PM) contain the calculation reports for long-term intersection operations without the project. **Appendices B-7 (AM) and B-8 (PM)** contain the calculation reports for long-term intersection operations with the project. These calculations are based on the Highway Capacity Manual methodology described in Section 2 just like in the existing impact analysis, except that the Peak Hour Factor is the default value of 0.92.

Table 8 shows the long-term impact of the project on the study intersections.

Table 8: Long-Term Project Impact on Intersection Operations

	Without Project		With Project	
	AM	PM	AM	PM
1: Clearwater Parkway at SR 828	A 9.6 (NB)	A 9.5 (NB)	B 10.0 (NB)	A 9.6 (NB)
2: Red Rock Road at SR 828	A 7.7 (SB)	B 10.2 (SB)	B 10.8 (SB)	B 10.4 (SB)
3: Desert Lakes Drive at SR 828	B 11.0 (SB)	A 9.2 (SB)	B 11.0 (SB)	A 9.2 (SB)
4: Bens Way at SR 828	B 11.9 (SB)	A 9.2 (SB)	B 11.9 (SB)	A 9.3 (SB)
5: US-50A at SR 828	B 12.9 (EB)	C 15.9 (EB)	B 13.0 (EB)	C 16.1 (EB)
6: Vonnies Lane at SR 828	B 10.8 (SB)	A 9.9 (SB)	B 10.8 (SB)	B 10.1 (SB)
7: Red Rock Road at US-50A	B 11.5 (NB)	B 12.7 (NB)	B 12.3 (NB)	B 13.5 (NB)

Source: Trafficware, *Synchro 11*

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition*

According to Table 8, all intersections would continue to operate acceptably under without and with project conditions; and the project would not have a significant adverse impact on any elements of the study area.

6.0 Findings and Recommendations

6.1 Findings

Findings from the near-term impact analysis are as follows:

1. All approaches to the study intersections would operate acceptably.
2. The project would not have a significant adverse impact on the surrounding transportation network.

Findings from the long-term impact analysis are as follows:

1. All approaches to the study intersections would continue to operate acceptably.
2. The project would not have a significant adverse impact on the surrounding transportation network.

6.2 Recommendations

Recommendations are as follows:

1. Upgrade the intersection of Vonnie Lane at SR 828 to NDOT Standards with dedicated left and right turn lanes and to accommodate applicable master planned improvements for SR 828.
2. Construct the site access to Vonnie Lane and site frontage improvements along Vonnie Lane to City of Fernley Standards.

7.0 Preliminary Vehicle Miles Traveled Analysis

7.1 Regulatory Context

On July 1, 2020, the new Vehicle Miles Traveled (VMT) metric took effect in California and replaced the traditional Level of Service (LOS) metric that had been in effect the past half century. Many additional states are incorporating elements of the new VMT metric to encourage urban infill, reduce vehicle trip lengths, encourage active transportation (walking, bicycling, transit riding, etc.), encourage more compact development, and boost the sustainability of mitigation measures. Specifically, this new VMT metric is intended to address these nine limitations associated with the traditional LOS metric:

1. “Punishing” last-in development projects, discouraging infill development, and encouraging a “sprawling” development pattern;
2. Creating regional congestion at the expense of solving local congestion issues;
3. Discouraging transit use;
4. Discouraging active transportation (walking, bicycling, transit riding, etc.);
5. Poorly measuring access to developments within the network;
6. Posing limitations on optimizing roadway networks;
7. Creating more roadway construction than jurisdictions can afford to maintain;
8. Posing calculation challenges and inaccuracies; and
9. Creating costly unhelpful solutions.

Specifically, the traditional LOS metric has served as a barrier to residential development through the imposition of costly transportation impact mitigation measures when the objective is to encourage residential development to address the housing crisis while boosting the sustainability of such measures.

Therefore, a preliminary VMT analysis was conducted in connection with this scoping report. VMT is generally calculated by multiplying the trip generation by the trip length on a per capita basis. A VMT impact is typically considered significant when it exceeds 85 percent of the average per capita VMT for a given area.

7.2 Potential VMT Reduction Measures

The Vonnie Lane study area was examined through a VMT context. While the *City of Fernley Comprehensive Master Plan* does not identify the study area as being capacity constrained relative to the more urbanized portions of the City, potential VMT reduction

measures could still be considered. Such measures are as follows:

1. Pedestrian pathways to US-50A to the north and SR 828 to the south to encourage increased transit use;
2. Inclusion of additional bicycle paths and lanes along SR 828 to encourage increased bicycle use; and
3. Provision of nearby employment centers, grocery stores, and shopping centers as development progresses further east, should the Community Development and Planning Departments be open to amendments to the City of Fernley Comprehensive Plan to accommodate such uses.

Appendix A: Brochure of Existing Geometric Conditions

Existing Geometric Conditions



Along SR 828 (Farm District Rd)

- Upper Right: Clearwater Pkwy: EBRT = 175 ft; WBLT = 100 ft + Center Turn Lane
- Lower Left: Red Rock Rd: EBLT = 100 ft + Center Turn Lane to the West
- Vonnie Lane: Gravel Roadway, No Turn Lanes on SR 828

(Photo Credits: Google Earth)

Along US-50A



SR 828 (Farm District Rd): Upper Left
EBLT = 100 ft; EBRT = 150 ft + 215 ft Accel;
NBLT = 500 ft; NBRT = 425 ft; SBRT = 425 ft
(Photo Credit: Google Earth)

Wedge Lane: Middle Right
EBRT = 425 ft; WBLT = 500 ft;
NBLT = 150 ft + 500 ft Accel;
NBRT = 200 ft + 215 ft Accel
(Photo Credit: Google Earth)



Red Rock Rd: Lower Left
EBRT = 375 ft
WBLT = 500 ft
NBLT = 50 ft + 500 ft Accel
NBRT = 50 ft + 135 ft Taper
(Photo Credit: Google Earth)

Appendix B: Numeric Analysis

Vonnie Lane Traffic Study (without Forster)

A1_Trip_Generation

Table A1.1: Inputs

Code	Land Use	Units	Quantity	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
210	Single-Family Detached Housing	Dwelling Units	85	4.71	4.72	9.43	0.18	0.52	0.70	0.59	0.35	0.94

Table A1.2: Values

Code	Land Use	Units	Quantity	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
210	Single-Family Detached Housing	Dwelling Units	85	401	401	802	16	44	60	50	30	80
Total				401	401	802	16	44	60	50	30	80

Table A1.3: Summary

	Land Use			Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
	Residential Only			401	401	802	16	44	60	50	30	80

Vonnie Lane Traffic Study (Without Forster)

A2_Trip Distribution

Table A2.1: Near-Term Analysis

No	Description	Percent	Weekday			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
1	Farm District w/o Clearwater	65.0%	260.7	260.7	521.3	10.4	28.6	39.0	32.5	19.5	52.0
2	US-50A w/o Wedge Lane	25.0%	100.3	100.3	200.5	4.0	11.0	15.0	12.5	7.5	20.0
3	US-50A e/o SR 828	10.0%	40.1	40.1	80.2	1.6	4.4	6.0	5.0	3.0	8.0
	Total	100.0%	401	401	802	16	44	60	50	30	80

Table A2.2: Long-Term Analysis

No	Description	Percent	Weekday			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
1	Farm District w/o Clearwater	20.0%	80.2	80.2	160.4	3.2	8.8	12.0	10.0	6.0	16.0
2	Clearwater s/o Farm District	15.0%	60.2	60.2	120.3	2.4	6.6	9.0	7.5	4.5	12.0
3	US-50A w/o Red Rock	45.0%	180.5	180.5	360.9	7.2	19.8	27.0	22.5	13.5	36.0
4	US-50A e/o Red Rock	10.0%	40.1	40.1	80.2	1.6	4.4	6.0	5.0	3.0	8.0
5	US-50A e/o Red Rock via SR 828	10.0%	40.1	40.1	80.2	1.6	4.4	6.0	5.0	3.0	8.0
	Total	100.0%	401	401	802	16	44	60	50	30	80

Vonnie Lane Traffic Study (Without Forster)

A3_Trip Assignment

Table A3.1: Intersection AM: Near-Term

No	Description	Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	Clearwater/SR 828		11			29							
2	Red Rock Rd/SR 828		11			29							
3	Desert Lakes/SR 828		15			5							
4	Bens Way/SR 828	11	4			1							4
5	US-50A/SR 828			4				1					
6	Vonnie Ln/SR 828	11					5				15		29

Table A3.2: Intersection PM: Near-Term

No	Description	Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	Clearwater/SR 828		32			20							
2	Red Rock Rd/SR 828		32			20							
3	Desert Lakes/SR 828		10			18							
4	Bens Way/SR 828	7	3			5							13
5	US-50A/SR 828			3				5					
6	Vonnie Ln/SR 828	32					18				10		20

Table A3.3: Intersection AM: Long-Term

No	Description	Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	Clearwater/SR 828		3		7	9				2			
2	Red Rock Rd/SR 828		5			16							
3	Desert Lakes/SR 828		4			2							
4	Bens Way/SR 828		4			2							
5	US-50A/SR 828			4				2	2			4	
6	Vonnie Ln/SR 828	5					2				4		16
7	Red Rock Rd/US-50A			7	2			20		4			

Table A3.4: Intersection PM: Long-Term

No	Description	Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	Clearwater/SR 828		10		5	6				8			
2	Red Rock Rd/SR 828		18			11							
3	Desert Lakes/SR 828		3			5							
4	Bens Way/SR 828		3			5							
5	US-50A/SR 828			3				5	5			3	
6	Vonnie Ln/SR 828	18					5				3		11
7	Red Rock Rd/US-50A			22	5			13		3			

Vonnie Lane Traffic Study

Table B1: Clearwater Parkway at SR 828

	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Near-Term AM												
Near-Term			114	18	6	114		59		25		
Project			11			29						
NT w/Project			125	18	6	143		59		25		
Near-Term PM												
Near-Term			112	72	16	78		30		6		
Project			32			20						
NT w/Project			144	72	16	98		30		6		
Long-Term AM												
Long-Term			80	13	4	80		41		18		
Project			3		7	9				2		
LT w/Project			83	13	11	89		59		20		
Long-Term PM												
Long-Term			78	50	11	55		21		4		
Project			10		5	6				8		
LT w/Project			88	50	16	61		30		12		

Reduction

Factor 0.7

Wadsworth Bypass

Nevada Pacific Pkwy

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table B2: Red Rock Road at SR 828

	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Near-Term AM												
Near-Term	10	139			120	10				10		10
Project		11			29							
NT w/Project	10	150			149	10				10		10
Near-Term PM												
Near-Term	10	118			94	10				10		10
Project		32			20							
NT w/Project	10	150			114	10				10		10
Long-Term AM												
Long-Term	15	207			178	15				15		15
Project		5			16							
LT w/Project	15	212			194	15				15		15
Long-Term PM												
Long-Term	15	175			140	15				15		15
Project		18			11							
LT w/Project	15	193			151	15				15		15
Projection												
Year 2017	540											
Year 2040	852											
Growth Rate	2.0%											

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table B3: Desert Lakes Drive at SR 828

	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	Near-Term AM											
Near-Term	6	124			130	14				17		12
Project		15			5							
NT w/Project	6	139			135	14				17		12
Near-Term PM												
Near-Term	44	58			68	10				2		17
Project		10			18							
NT w/Project	44	68			86	10				2		17
Long-Term AM												
Long-Term	9	184			193	21				25		18
Project		4			2							
LT w/Project	9	188			195	21				25		18
Long-Term PM												
Long-Term	65	86			101	15				3		25
Project		3			5							
LT w/Project	65	89			106	15				3		25

Projection

Year 2017	540
Year 2040	852
Growth Rate	2.0%

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table B4: Bens Way at SR 828

	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Near-Term AM												
Near-Term	8	130			128	23				34		10
Project	11	4			5							4
NT w/Project	19	134			133	23				34		14
Near-Term PM												
Near-Term	17	28			57	17				5		9
Project	7	3			5							13
NT w/Project	24	31			62	17				5		22
Long-Term AM												
Long-Term	12	193			190	34				51		15
Project		4			2							
LT w/Project	12	197			192	34				51		15
Long-Term PM												
Long-Term	25	42			85	25				7		13
Project		3			5							
LT w/Project	25	45			90	25				7		13

Projection

Year 2017	540
Year 2040	852
Growth Rate	2.0%

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table B5: US-50A at SR 828

	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Near-Term AM												
Near-Term	7		42				10	258			292	1
Project			4				1					
NT w/Project	7		46				11	258			292	1
Near-Term PM												
Near-Term	4		13				49	349			374	8
Project			3				5					
NT w/Project	4		16				54	349			374	8
Long-Term AM												
Long-Term	10		62				15	384			434	1
Project			4				2	2			4	
LT w/Project	10		66				17	386			438	1
Long-Term PM												
Long-Term	6		19				73	519			556	12
Project			3				5	5			3	
LT w/Project	6		22				78	524			559	12

Projection

Year 2017	540
Year 2040	852
Growth Rate	2.0%

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table B6: Vonnie Lane at SR 828

	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Near-Term AM												
Near-Term	10	130			142	10				10		10
Project	11					5				15		29
NT w/Project	21	130			142	15				25		39
Near-Term PM												
Near-Term	10	102			85	10				10		10
Project	32					18				10		20
NT w/Project	42	102			85	28				20		30
Long-Term AM												
Long-Term	15	193			211	15				15		15
Project	5					2				4		16
LT w/Project	20	193			211	17				19		31
Long-Term PM												
Long-Term	15	152			126	15				15		15
Project	18					5				3		11
LT w/Project	33	152			126	20				18		26
Projection												
Year 2017	540											
Year 2040	852											
Growth Rate	2.0%											

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table B7: Red Rock Road at US-50A

Eastbound			Westbound			Northbound			Southbound			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Near-Term AM												
Near-Term		293	10	10	272		10		10			
Project			0	0			0		0			
NT w/Project			10				10					
Near-Term PM												
Near-Term		382	10	10	357		10		10			
Project			0	0			0		0			
NT w/Project			10				10					
Long-Term AM												
Long-Term		436	15	15	404		15		15			
Project			7	2			20		4			
LT w/Project		436	22	17	404		35		19			
Long-Term PM												
Long-Term		568	15	15	531		15		15			
Project			22	5			13		3			
LT w/Project		568	37	20	531		28		18			
Projection												
Year 2017	540											
Year 2040	852											
Growth Rate	2.0%											

Source: Nevada DOT Annual Traffic Report Count Station No. 35

Vonnie Lane Traffic Study

Table C1: PM Peak Hour Turning Movements

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Vol
1: Clearwater Parkway at SR 828	0	112	72	16	78	0	30	0	26	0	0	0	334
2: Red Rock Road at SR 828	10	118	0	0	94	10	0	0	0	10	0	10	252
3: Desert Lakes Drive at SR 828	44	58	0	0	68	10	0	0	0	2	0	17	199
4: Bens Way at SR 828	17	28	0	0	57	17	0	0	0	5	0	9	133
5: US-50A at SR 828	4	0	13	0	0	0	49	349	0	0	0	0	415
6: Vonnie Lane at SR 828	10	102	0	0	85	10	0	0	0	10	0	10	227

Remarks

Per Data Collected by National Data and Surveying Services on Tuesday, January 4, 2022

Table C2: Severity Analysis

Intersection	FAT		INJ		PDO		TOT
	No	%	No	%	No	%	
1: Clearwater Parkway at SR 828	0	0	1	100%	0	0	1

Remarks

FAT: Fatalities

INJ: Injuries

PDO: Property Damage Only

TOT: Total

Table C3: Type Analysis

Intersection	Type 1		Type 2		Type 3		Other		TOT
	No	%	No	%	No	%	No	%	
1: Clearwater Parkway at SR 828	1	100%	0	0	0	0	0	0	1

Remarks

Type 1: Most Common Type: Rear-End

Type 2: Second Most Common Type

Type 3: Third Most Common Type

Other: Other Types not within the Top 3 Ranks

TOT: Total

Vonnie Lane Traffic Study

Table C4: Cause Analysis

Intersection	Cause 1		Cause 2		Cause 3		Other		TOT
	No	%	No	%	No	%	No	%	
1: Clearwater Parkway at SR 828	1	100%	0	0	0	0	0	0	1

Remarks

Type 1: Most Common Cause: Following Too Closely

Type 2: Second Most Common Cause

Type 3: Third Most Common Cause

Other: Other Causes not within the Top 3 Ranks

TOT: Total

Table C5: Rate Analysis

Intersection	TOT	YR	Vol	K	Days	Rate
1: Clearwater Parkway at SR 828	1	3	334	10	365	0.273

Remarks

TOT: Total Collisions

YR: Number of Years of Data

Vol: Volume Entering Intersection during PM Peak Hour

K: K-Factor: (Weekday Volume)/(PM Peak Hour Volume)

Days: Number of Days in Year

Rate: Per Million Entering Vehicles Per Year = $((TOT) * (1E6)) / ((YR) * (Vol) * (K) * (Days))$

Vonnie Lane Traffic Study: Turn Lane Warrant Analysis

Table D1: Peak Hour Turning Movements at Vonnie Lane at SR 828

Scenario	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	WBR	WBTR	EBL	EBTL
NT+P AM	21	130	0	0	142	15	0	0	0	25	0	39	15	157	21	151
NT+P PM	42	102	0	0	85	28	0	0	0	20	0	30	28	113	42	144
LT+P AM	20	193	0	0	211	17	0	0	0	19	0	31	17	228	20	213
LT+P PM	33	152	0	0	126	20	0	0	0	18	0	26	20	146	33	185

Remarks for Table D1:

Source: Nevada DOT Access Management System and Standards (2017 Edition)

NT+P: Near-Term Plus Project per Figure 7 of the Vonnie Lane Traffic Study

LT+P: Long-Term Plus Project per Figure 11 of the Vonnie Lane Traffic Study

AM: AM Peak Hour (4 Highest Consecutive 15-minute intervals between 7:00 and 9:00)

PM: PM Peak Hour (4 Highest Consecutive 15-minute intervals between 4:00 and 6:00)

WBR: Turning Volume per Table 4-16 (Two-Lane Roadways in Urban Areas)

WBTR: Directional Volume in Through Lane (Right + Through) per Table 4-16 (Two-Lane Roadways in Urban Areas)

EBL: Turning Volume per Table 4-12 (Two-Lane Roadways in Urban Areas)

EBTL: Directional Volume in Through Lane (Left + Through) per Table 4-12 (Two-Lane Roadways in Urban Areas)

Table D2: Turn Lane Warrant Analysis

Vonnie Lane at SR 828 (Left and Right)										
Scenario	EBL		EBTL		Left Lane?	WBR		WBTR		Right Lane?
	Act	Min	Act	Min		Act	Min	Act	Min	
NT+P	42	30	144	0	Yes	28	28	113	114	No
LT+P	33	30	185	0	Yes	20	20	146	140	Yes

Remarks for Table D2:

Act: Actual from Parts 1 and 2 and Higher of AM or PM

Min: Minimum to Trigger Satisfaction of Turn Lane Warrant

Right Lane?: Right Turn Lane Warrant Satisfied? Yes or No per Table 4-16

Left Lane?: Left Turn Lane Warrant Satisfied? Yes or No per Table 4-12

SR 828 Posted Speed Limit: 55 MPH

SR 828 Functional Classification: Minor Arterial

Vonnie Lane at SR 828 Progressive Signal Warrant Analysis

Table E1: Peak Hour Turning Movements

Scenario	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Major St	Minor St
NT+P AM	21	130	0	0	142	15	0	0	0	25	0	39	308	64
NT+P PM	42	102	0	0	85	28	0	0	0	20	0	30	257	50
LT+P AM	20	193	0	0	211	17	0	0	0	19	0	31	441	50
LT+P PM	33	152	0	0	126	20	0	0	0	18	0	26	331	44

Remarks for Table E1:

NT+P: Near-Term Plus Project per Figure 5 of the 600 West Main Street Traffic Study

LT+P: Long-Term Plus Project per Figure 7 of the 600 West Main Street Traffic Study

AM: AM Peak Hour (4 Highest Consecutive 15-minute intervals between 7:00 and 9:00)

PM: PM Peak Hour (4 Highest Consecutive 15-minute intervals between 4:00 and 6:00)

Major St: Total of both major street (eastbound and westbound) approaches per MUTCD Figure 4C-4

Minor St: Higher minor street (northbound or southbound) approach per MUTCD Figure 4C-4

MUTCD: Manual on Uniform Traffic Control Devices

Table E2: Peak Hour Warrant Analysis

	Major St		Minor St		Sig?	SB
Scenario	Act	Min	Act	Min		Deficient?
NT+P	308	1300	64	320	No	256
LT+P	441	1300	50	240	No	190

Remarks for Table E2:

Act: Actual from Part 1 and Higher of AM or PM

Min: Minimum to Trigger Satisfaction of Signal Warrant

Sig?: Peak Hour Signal Warrant Satisfied? Yes or No (Based on 1 Thru Lane Major and 1 Thru Lane Minor)

SB Deficient? Amount of Additional Southbound Traffic to Satisfy Peak Hour Warrant

Appendix C: Level of Service Analysis

Appendix C-1: Near-Term AM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	114	18	6	114	59	25
Future Vol, veh/h	114	18	6	114	59	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	181	29	10	181	94	40
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	210	0	382	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	201	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1361	-	620	862
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	833	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1361	-	616	862
Mov Cap-2 Maneuver	-	-	-	-	664	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	827	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		11.2	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	713	-	-	1361	-	
HCM Lane V/C Ratio	0.187	-	-	0.007	-	
HCM Control Delay (s)	11.2	-	-	7.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.7	-	-	0	-	

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	130	120	10	10	10
Future Vol, veh/h	10	130	120	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	141	130	11	11	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	141	0	0 299 136
Stage 1	-	-	- 136 -
Stage 2	-	-	- 163 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1442	-	- 692 913
Stage 1	-	-	- 890 -
Stage 2	-	-	- 866 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1442	-	- 686 913
Mov Cap-2 Maneuver	-	-	- 686 -
Stage 1	-	-	- 883 -
Stage 2	-	-	- 866 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1442	-	-	-	783
HCM Lane V/C Ratio	0.008	-	-	-	0.028
HCM Control Delay (s)	7.5	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	124	130	14	17	12
Future Vol, veh/h	6	124	130	14	17	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	253	265	29	35	24
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	294	0	-	0	557	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	277	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1268	-	-	-	491	759
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1268	-	-	-	486	759
Mov Cap-2 Maneuver	-	-	-	-	486	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	770	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		12		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1268	-	-	-	571	
HCM Lane V/C Ratio	0.01	-	-	-	0.104	
HCM Control Delay (s)	7.9	0	-	-	12	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	130	128	23	34	10
Future Vol, veh/h	8	130	128	23	34	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	46	46	46	46	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	283	278	50	74	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	328	0	0 620 303
Stage 1	-	-	- 303 -
Stage 2	-	-	- 317 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1232	-	- 452 737
Stage 1	-	-	- 749 -
Stage 2	-	-	- 738 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1232	-	- 445 737
Mov Cap-2 Maneuver	-	-	- 445 -
Stage 1	-	-	- 737 -
Stage 2	-	-	- 738 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1232	-	-	-	489
HCM Lane V/C Ratio	0.014	-	-	-	0.196
HCM Control Delay (s)	8	0	-	-	14.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	7	42	292	1	10	258
Future Vol, veh/h	7	42	292	1	10	258
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	45	314	1	11	277
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	475	-	0	0	314	0
Stage 1	314	-	-	-	-	-
Stage 2	161	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	519	0	-	-	1243	-
Stage 1	714	0	-	-	-	-
Stage 2	851	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	514	-	-	-	1243	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	11.3	0	0.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	1243	-	583	-	-	-
HCM Lane V/C Ratio	0.009	-	0.013	-	-	-
HCM Control Delay (s)	7.9	-	11.3	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	130	142	10	10	10
Future Vol, veh/h	10	130	142	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	141	154	11	11	11
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	165	0	-	0	317	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1413	-	-	-	676	892
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	671	892
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	866	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		9.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1413	-	-	-	766	
HCM Lane V/C Ratio	0.008	-	-	-	0.028	
HCM Control Delay (s)	7.6	-	-	-	9.8	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Appendix C-2: Near-Term PM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	112	72	16	78	30	6
Future Vol, veh/h	112	72	16	78	30	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	80	18	87	33	7
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	204	0	247	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1368	-	741	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1368	-	731	927
Mov Cap-2 Maneuver	-	-	-	-	742	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	890	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.3		9.9	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	768	-	-	1368	-	
HCM Lane V/C Ratio	0.052	-	-	0.013	-	
HCM Control Delay (s)	9.9	-	-	7.7	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	118	94	10	10	10
Future Vol, veh/h	10	118	94	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	128	102	11	11	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	113	0	0 258 108
Stage 1	-	-	- 108 -
Stage 2	-	-	- 150 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1476	-	- 731 946
Stage 1	-	-	- 916 -
Stage 2	-	-	- 878 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1476	-	- 726 946
Mov Cap-2 Maneuver	-	-	- 726 -
Stage 1	-	-	- 910 -
Stage 2	-	-	- 878 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1476	-	-	-	822
HCM Lane V/C Ratio	0.007	-	-	-	0.026
HCM Control Delay (s)	7.5	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	58	68	10	2	17
Future Vol, veh/h	44	58	68	10	2	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	61	72	11	2	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	83	0	-	0	231	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	153	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1514	-	-	-	757	983
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	875	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	734	983
Mov Cap-2 Maneuver	-	-	-	-	734	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	875	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.2	0		8.9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1514	-	-	-	949	
HCM Lane V/C Ratio	0.031	-	-	-	0.021	
HCM Control Delay (s)	7.5	0	-	-	8.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	28	57	17	5	9
Future Vol, veh/h	17	28	57	17	5	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	33	67	20	6	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	87	0	0 150 77
Stage 1	-	-	- 77 -
Stage 2	-	-	- 73 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1509	-	- 842 984
Stage 1	-	-	- 946 -
Stage 2	-	-	- 950 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1509	-	- 830 984
Mov Cap-2 Maneuver	-	-	- 830 -
Stage 1	-	-	- 933 -
Stage 2	-	-	- 950 -

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	923
HCM Lane V/C Ratio	0.013	-	-	-	0.018
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	4	13	374	8	49	349
Future Vol, veh/h	4	13	374	8	49	349
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	14	394	8	52	367
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	682	-	0	0	394	0
Stage 1	394	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	384	0	-	-	1161	-
Stage 1	650	0	-	-	-	-
Stage 2	735	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	367	-	-	-	1161	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	12.6	0	1			
HCM LOS	B					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	1161	-	475	-	-	-
HCM Lane V/C Ratio	0.044	-	0.009	-	-	-
HCM Control Delay (s)	8.2	-	12.6	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	102	85	10	10	10
Future Vol, veh/h	10	102	85	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	111	92	11	11	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	103	0	-	0	225	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	133	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1489	-	-	-	763	965
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	893	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1489	-	-	-	758	965
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	893	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1489	-	-	-	849	
HCM Lane V/C Ratio	0.007	-	-	-	0.026	
HCM Control Delay (s)	7.4	-	-	-	9.4	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Appendix C-3: Near-Term Plus Project AM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘↗	
Traffic Vol, veh/h	125	18	6	143	59	25
Future Vol, veh/h	125	18	6	143	59	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	198	29	10	227	94	40
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	227	0	445	198
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1341	-	571	843
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1341	-	567	843
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	788	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		11.6	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	680		-	-	1341	-
HCM Lane V/C Ratio	0.196		-	-	0.007	-
HCM Control Delay (s)	11.6		-	-	7.7	-
HCM Lane LOS	B		-	-	A	-
HCM 95th %tile Q(veh)	0.7		-	-	0	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	150	149	10	10	10
Future Vol, veh/h	10	150	149	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	163	162	11	11	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	173	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1404	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1404	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1404	-	-	-	740
HCM Lane V/C Ratio	0.008	-	-	-	0.029
HCM Control Delay (s)	7.6	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	139	135	14	17	12
Future Vol, veh/h	6	139	135	14	17	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	284	276	29	35	24
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	305	0	-	0	599	291
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1256	-	-	-	465	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1256	-	-	-	460	748
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	745	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		12.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1256	-	-	-	547	
HCM Lane V/C Ratio	0.01	-	-	-	0.108	
HCM Control Delay (s)	7.9	0	-	-	12.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	134	133	23	34	14
Future Vol, veh/h	19	134	133	23	34	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	46	46	46	46	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	291	289	50	74	30
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	339	0	-	0	687	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1220	-	-	-	413	726
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1220	-	-	-	396	726
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	696	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		15.2		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1220	-	-	-	457	
HCM Lane V/C Ratio	0.034	-	-	-	0.228	
HCM Control Delay (s)	8.1	0	-	-	15.2	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	7	46	292	1	11	258
Future Vol, veh/h	7	46	292	1	11	258
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	49	314	1	12	277
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	477	-	0	0	314	0
Stage 1	314	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	517	0	-	-	1243	-
Stage 1	714	0	-	-	-	-
Stage 2	849	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	512	-	-	-	1243	-
Mov Cap-2 Maneuver	582	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	11.3	0	0.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	1243	-	582	-	-	-
HCM Lane V/C Ratio	0.01	-	0.013	-	-	-
HCM Control Delay (s)	7.9	-	11.3	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-	-

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	130	142	15	25	39
Future Vol, veh/h	21	130	142	15	25	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	141	154	16	27	42
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	170	0	-	0	341	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1407	-	-	-	655	892
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	845	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1407	-	-	-	645	892
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	845	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		10.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1407	-	-	-	776	
HCM Lane V/C Ratio	0.016	-	-	-	0.09	
HCM Control Delay (s)	7.6	-	-	-	10.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

Appendix C-4: Near-Term Plus Project PM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	144	72	16	98	30	6
Future Vol, veh/h	144	72	16	98	30	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	80	18	109	33	7

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	240
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1327
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1327
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	731	-	-	1327	-
HCM Lane V/C Ratio	0.055	-	-	0.013	-
HCM Control Delay (s)	10.2	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	150	114	10	10	10
Future Vol, veh/h	10	150	114	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	163	124	11	11	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	135	0	-	0	315	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1449	-	-	-	678	920
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	847	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1449	-	-	-	673	920
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	847	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		9.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1449	-	-	-	777	
HCM Lane V/C Ratio	0.008	-	-	-	0.028	
HCM Control Delay (s)	7.5	-	-	-	9.8	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	68	86	10	2	17
Future Vol, veh/h	44	68	86	10	2	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	72	91	11	2	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	102	0	-	0	261	97
Stage 1	-	-	-	-	97	-
Stage 2	-	-	-	-	164	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1490	-	-	-	728	959
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1490	-	-	-	705	959
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	865	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.9	0		9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1490	-	-	-	924	
HCM Lane V/C Ratio	0.031	-	-	-	0.022	
HCM Control Delay (s)	7.5	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	31	62	17	5	22
Future Vol, veh/h	24	31	62	17	5	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	36	73	20	6	26

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	93	0	0 175 83
Stage 1	-	-	- 83 -
Stage 2	-	-	- 92 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1501	-	- 815 976
Stage 1	-	-	- 940 -
Stage 2	-	-	- 932 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1501	-	- 800 976
Mov Cap-2 Maneuver	-	-	- 800 -
Stage 1	-	-	- 922 -
Stage 2	-	-	- 932 -

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1501	-	-	-	938
HCM Lane V/C Ratio	0.019	-	-	-	0.034
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	4	16	374	8	54	349
Future Vol, veh/h	4	16	374	8	54	349
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	17	394	8	57	367
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	692	-	0	0	394	0
Stage 1	394	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	378	0	-	-	1161	-
Stage 1	650	0	-	-	-	-
Stage 2	727	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	359	-	-	-	1161	-
Mov Cap-2 Maneuver	469	-	-	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	12.7	0	1.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	1161	-	469	-	-	-
HCM Lane V/C Ratio	0.049	-	0.009	-	-	-
HCM Control Delay (s)	8.3	-	12.7	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-	-

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	102	85	28	20	30
Future Vol, veh/h	42	102	85	28	20	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	111	92	30	22	33
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	122	0	-	0	295	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	203	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1465	-	-	-	696	965
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	831	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1465	-	-	-	674	965
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	831	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.2	0		9.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1465	-	-	-	823	
HCM Lane V/C Ratio	0.031	-	-	-	0.066	
HCM Control Delay (s)	7.5	-	-	-	9.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Appendix C-5: Long-Term AM

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	80	13	4	80	41	18
Future Vol, veh/h	80	13	4	80	41	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	14	4	87	45	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	101	0	182	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1491	-	807	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1491	-	805	971
Mov Cap-2 Maneuver	-	-	-	-	792	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	926	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		9.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	839		-	-	1491	-
HCM Lane V/C Ratio	0.076		-	-	0.003	-
HCM Control Delay (s)	9.6		-	-	7.4	-
HCM Lane LOS	A		-	-	A	-
HCM 95th %tile Q(veh)	0.2		-	-	0	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	207	178	15	15	15
Future Vol, veh/h	15	207	178	15	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	225	193	16	16	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	209	0	-	0	458	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	257	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1362	-	-	-	561	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1362	-	-	-	554	840
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	786	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		10.7		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1362	-	-	-	668	
HCM Lane V/C Ratio	0.012	-	-	-	0.049	
HCM Control Delay (s)	7.7	-	-	-	10.7	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	184	193	21	25	18
Future Vol, veh/h	9	184	193	21	25	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	200	210	23	27	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	233	0	-	0	442	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1335	-	-	-	573	818
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1335	-	-	-	568	818
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	817	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		11		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1335	-	-	-	651	
HCM Lane V/C Ratio	0.007	-	-	-	0.072	
HCM Control Delay (s)	7.7	0	-	-	11	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	193	190	34	51	15
Future Vol, veh/h	12	193	190	34	51	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	210	207	37	55	16

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	244	0	0 462 226
Stage 1	-	-	- 226 -
Stage 2	-	-	- 236 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1322	-	- 558 813
Stage 1	-	-	- 812 -
Stage 2	-	-	- 803 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1322	-	- 552 813
Mov Cap-2 Maneuver	-	-	- 552 -
Stage 1	-	-	- 803 -
Stage 2	-	-	- 803 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1322	-	-	-	595
HCM Lane V/C Ratio	0.01	-	-	-	0.121
HCM Control Delay (s)	7.8	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	10	62	434	1	15	384
Future Vol, veh/h	10	62	434	1	15	384
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	67	472	1	16	417
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	713	-	0	0	472	0
Stage 1	472	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	366	0	-	-	1086	-
Stage 1	594	0	-	-	-	-
Stage 2	776	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	361	-	-	-	1086	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	12.9	0	0.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	1086	-	464	-	-	-
HCM Lane V/C Ratio	0.015	-	0.023	-	-	-
HCM Control Delay (s)	8.4	-	12.9	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	193	211	15	15	15
Future Vol, veh/h	15	193	211	15	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	210	229	16	16	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	245	0	-	0	471	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	242	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1321	-	-	-	551	810
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1321	-	-	-	544	810
Mov Cap-2 Maneuver	-	-	-	-	544	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	798	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		10.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1321	-	-	-	651	
HCM Lane V/C Ratio	0.012	-	-	-	0.05	
HCM Control Delay (s)	7.8	-	-	-	10.8	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	436	15	15	404	15	15
Future Vol, veh/h	436	15	15	404	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	375	500	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	474	16	16	439	16	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	490	0	726	237
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1070	-	360	764
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	767	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1070	-	355	764
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	755	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		11.5	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	460	764	-	-	1070	-
HCM Lane V/C Ratio	0.035	0.021	-	-	0.015	-
HCM Control Delay (s)	13.1	9.8	-	-	8.4	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

Appendix C-6: Long-Term PM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection

Int Delay, s/veh 1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	78	50	11	55	21	4
Future Vol, veh/h	78	50	11	55	21	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	56	12	61	23	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	143
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1440
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1440
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	-	-	1440	-
HCM Lane V/C Ratio	0.034	-	-	0.008	-
HCM Control Delay (s)	9.5	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	175	140	15	15	15
Future Vol, veh/h	15	175	140	15	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	190	152	16	16	16

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	168	0	0 382 160
Stage 1	-	-	- 160 -
Stage 2	-	-	- 222 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1410	-	- 620 885
Stage 1	-	-	- 869 -
Stage 2	-	-	- 815 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1410	-	- 613 885
Mov Cap-2 Maneuver	-	-	- 613 -
Stage 1	-	-	- 859 -
Stage 2	-	-	- 815 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1410	-	-	-	724
HCM Lane V/C Ratio	0.012	-	-	-	0.045
HCM Control Delay (s)	7.6	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	86	101	15	3	25
Future Vol, veh/h	65	86	101	15	3	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	93	110	16	3	27
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	126	0	-	0	353	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	235	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1460	-	-	-	645	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1460	-	-	-	612	934
Mov Cap-2 Maneuver	-	-	-	-	612	-
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	804	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.3	0		9.2		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1460	-	-	-	884	
HCM Lane V/C Ratio	0.048	-	-	-	0.034	
HCM Control Delay (s)	7.6	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	42	85	25	7	13
Future Vol, veh/h	25	42	85	25	7	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	46	92	27	8	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	119	0	-	0	206	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	100	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1469	-	-	-	782	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1469	-	-	-	767	948
Mov Cap-2 Maneuver	-	-	-	-	767	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	924	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.8	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1469	-	-	-	876	
HCM Lane V/C Ratio	0.018	-	-	-	0.025	
HCM Control Delay (s)	7.5	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	6	19	556	12	73	519
Future Vol, veh/h	6	19	556	12	73	519
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	21	604	13	79	564
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1044	-	0	0	604	0
Stage 1	604	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	225	0	-	-	970	-
Stage 1	508	0	-	-	-	-
Stage 2	616	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	207	-	-	-	970	-
Mov Cap-2 Maneuver	338	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	15.9	0	1.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	970	-	338	-	-	-
HCM Lane V/C Ratio	0.082	-	0.019	-	-	-
HCM Control Delay (s)	9	-	15.9	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	152	126	15	15	15
Future Vol, veh/h	15	152	126	15	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	165	137	16	16	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	153	0	-	0	334	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1428	-	-	-	661	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1428	-	-	-	654	911
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	836	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1428	-	-	-	761	
HCM Lane V/C Ratio	0.011	-	-	-	0.043	
HCM Control Delay (s)	7.5	-	-	-	9.9	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	568	15	15	531	15	15
Future Vol, veh/h	568	15	15	531	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	375	500	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	617	16	16	577	16	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	633	0	938	309
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	321	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	946	-	263	687
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	708	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	946	-	259	687
Mov Cap-2 Maneuver	-	-	-	-	379	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	696	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		12.7	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	379	687	-	-	946	-
HCM Lane V/C Ratio	0.043	0.024	-	-	0.017	-
HCM Control Delay (s)	14.9	10.4	-	-	8.9	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Appendix C-7: Long-Term Plus Project AM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘↗	
Traffic Vol, veh/h	83	13	11	89	59	20
Future Vol, veh/h	83	13	11	89	59	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	14	12	97	64	22
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	104	0	211	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1488	-	777	968
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1488	-	771	968
Mov Cap-2 Maneuver	-	-	-	-	769	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	897	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.8		10	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	811	-	-	1488	-	
HCM Lane V/C Ratio	0.106	-	-	0.008	-	
HCM Control Delay (s)	10	-	-	7.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	212	194	15	15	15
Future Vol, veh/h	15	212	194	15	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	230	211	16	16	16

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	227	0	0 481 219
Stage 1	-	-	- 219 -
Stage 2	-	-	- 262 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1341	-	- 544 821
Stage 1	-	-	- 817 -
Stage 2	-	-	- 782 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1341	-	- 537 821
Mov Cap-2 Maneuver	-	-	- 537 -
Stage 1	-	-	- 807 -
Stage 2	-	-	- 782 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	649
HCM Lane V/C Ratio	0.012	-	-	-	0.05
HCM Control Delay (s)	7.7	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	188	195	21	25	18
Future Vol, veh/h	9	188	195	21	25	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	204	212	23	27	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	235	0	-	0	448	224
Stage 1	-	-	-	-	224	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1332	-	-	-	568	815
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1332	-	-	-	563	815
Mov Cap-2 Maneuver	-	-	-	-	563	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	813	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		11		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1332	-	-	-	-	647
HCM Lane V/C Ratio	0.007	-	-	-	-	0.072
HCM Control Delay (s)	7.7	0	-	-	-	11
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.2

HCM 6th TWSC
4: SR 828 & Bens Way

02/09/2022

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	197	192	34	51	15
Future Vol, veh/h	12	197	192	34	51	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	214	209	37	55	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	246	0	-	0	468	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1320	-	-	-	553	811
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1320	-	-	-	547	811
Mov Cap-2 Maneuver	-	-	-	-	547	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	800	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		11.9		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1320	-	-	-	591	
HCM Lane V/C Ratio	0.01	-	-	-	0.121	
HCM Control Delay (s)	7.8	0	-	-	11.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	10	66	438	1	17	386
Future Vol, veh/h	10	66	438	1	17	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	72	476	1	18	420
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	722	-	0	0	476	0
Stage 1	476	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	362	0	-	-	1082	-
Stage 1	591	0	-	-	-	-
Stage 2	772	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	356	-	-	-	1082	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	13	0	0.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	1082	-	460	-	-	-
HCM Lane V/C Ratio	0.017	-	0.024	-	-	-
HCM Control Delay (s)	8.4	-	13	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	193	211	17	19	31
Future Vol, veh/h	20	193	211	17	19	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	210	229	18	21	34
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	247	0	-	0	483	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	254	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1319	-	-	-	542	810
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1319	-	-	-	533	810
Mov Cap-2 Maneuver	-	-	-	-	533	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	788	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		10.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1319	-	-	-	676	
HCM Lane V/C Ratio	0.016	-	-	-	0.08	
HCM Control Delay (s)	7.8	-	-	-	10.8	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	436	22	17	404	35	19
Future Vol, veh/h	436	22	17	404	35	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	375	500	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	474	24	18	439	38	21
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	498	0	730	237
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	256	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1062	-	357	764
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1062	-	351	764
Mov Cap-2 Maneuver	-	-	-	-	458	-
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	750	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		12.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	458	764	-	-	1062	-
HCM Lane V/C Ratio	0.083	0.027	-	-	0.017	-
HCM Control Delay (s)	13.6	9.8	-	-	8.4	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-

Appendix C-8: Long-Term Plus Project PM

HCM 6th TWSC
1: Clearwater Pkwy & SR 828

02/09/2022

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	88	50	16	61	30	12
Future Vol, veh/h	88	50	16	61	30	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	54	17	66	33	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	150
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1431
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1431
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	822	-	-	1431	-
HCM Lane V/C Ratio	0.056	-	-	0.012	-
HCM Control Delay (s)	9.6	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	193	151	15	15	15
Future Vol, veh/h	15	193	151	15	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	210	164	16	16	16

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	180	0	414
Stage 1	-	-	172
Stage 2	-	-	242
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1396	-	595
Stage 1	-	-	858
Stage 2	-	-	798
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1396	-	588
Mov Cap-2 Maneuver	-	-	588
Stage 1	-	-	849
Stage 2	-	-	798

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1396	-	-	-	702
HCM Lane V/C Ratio	0.012	-	-	-	0.046
HCM Control Delay (s)	7.6	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	89	106	15	3	25
Future Vol, veh/h	65	89	106	15	3	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	97	115	16	3	27
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	131	0	-	0	362	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	239	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1454	-	-	-	637	928
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1454	-	-	-	604	928
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	801	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.2	0		9.2		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1454	-	-	-	878	
HCM Lane V/C Ratio	0.049	-	-	-	0.035	
HCM Control Delay (s)	7.6	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	45	90	25	7	13
Future Vol, veh/h	25	45	90	25	7	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	49	98	27	8	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	125	0	-	0	215	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1462	-	-	-	773	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	921	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	758	941
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	921	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.7	0		9.3		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1462	-	-	-	868	
HCM Lane V/C Ratio	0.019	-	-	-	0.025	
HCM Control Delay (s)	7.5	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	6	22	559	12	78	524
Future Vol, veh/h	6	22	559	12	78	524
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Yield	-	None
Storage Length	100	-	-	425	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	24	608	13	85	570
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1063	-	0	0	608	0
Stage 1	608	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Critical Hdwy	6.84	-	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	2.22	-
Pot Cap-1 Maneuver	218	0	-	-	966	-
Stage 1	506	0	-	-	-	-
Stage 2	606	0	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	199	-	-	-	966	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	506	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Approach	EB	SE	NW			
HCM Control Delay, s	16.1	0	1.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	EBLn2	SET	SER
Capacity (veh/h)	966	-	332	-	-	-
HCM Lane V/C Ratio	0.088	-	0.02	-	-	-
HCM Control Delay (s)	9.1	-	16.1	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	152	126	20	18	26
Future Vol, veh/h	33	152	126	20	18	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	165	137	22	20	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	159	0	-	0	374	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1420	-	-	-	627	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1420	-	-	-	611	911
Mov Cap-2 Maneuver	-	-	-	-	611	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	802	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		10.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1420	-	-	-	759	
HCM Lane V/C Ratio	0.025	-	-	-	0.063	
HCM Control Delay (s)	7.6	-	-	-	10.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	568	37	20	531	28	18
Future Vol, veh/h	568	37	20	531	28	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	375	500	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	617	40	22	577	30	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	657
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	926
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	926
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	13.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	374	687	-	-	926	-
HCM Lane V/C Ratio	0.081	0.028	-	-	0.023	-
HCM Control Delay (s)	15.5	10.4	-	-	9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-

Conditions of Approval for TSM22003

Tentative Subdivision Map

1. APPROVAL:

THE PROJECT IS APPROVED AS SUBMITTED AND CONDITIONED. ANY SUBSTANTIVE CHANGE SHALL REQUIRE REVIEW AND APPROVAL BY THE PLANNING COMMISSION AND CITY COUNCIL AS AN AMENDMENT TO THIS TENTATIVE SUBDIVISION MAP.

2. PROJECT DESCRIPTION:

THE PROJECT APPROVAL IS LIMITED TO SINGLE-FAMILY RESIDENTIAL DEVELOPMENT WITH A MAXIMUM OF 79 SINGLE FAMILY RESIDENTIAL LOTS ON ±30.15 ACRES.

3. EXPIRATION DATE:

THE TENTATIVE SUBDIVISION MAP SHALL EXPIRE WITHIN FOUR (4) YEARS OF THE DATE OF THE CITY COUNCIL APPROVAL UNLESS THE FINAL MAP HAS BEEN RECORDED IN ACCORDANCE WITH NEVADA REVISED STATUTES (N.R.S.) 278.360.

4. PROJECT CONTACT:

THE DEVELOPER SHALL DESIGNATE TO THE CITY A PROJECT CONTACT PERSON RESPONSIBLE/AUTHORIZED TO CORRECT PROBLEMS REGARDING THE PROJECT ON A 24-HOUR/7-DAYS A WEEK BASIS. THE DEVELOPER SHALL DESIGNATE THE PROJECT CONTACT PERSON TO THE CITY PRIOR TO ISSUANCE OF A BUILDING PERMIT FOR THE PROJECT.

5. WATER RIGHTS:

THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING THE DEDICATION OF WATER RIGHTS AND ALL ASSOCIATED FEES FOR THE CONNECTION TO THE CITY'S MUNICIPAL WATER SYSTEM IN THE AMOUNT THAT IS REQUIRED PRIOR TO THE RECORDATION OF A FINAL MAP.

6. WATER REPORT:

THE DEVELOPER SHALL PROVIDE A WATER REPORT DEMONSTRATING THAT THE DEVELOPMENT CAN BE SERVED BY THE CITY'S MUNICIPAL WATER SYSTEM. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY IMPROVEMENTS DEEMED NECESSARY TO SERVE THE PROJECT TO THE APPROVAL OF THE CITY ENGINEER. THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING WATER INFRASTRUCTURE, INCLUDING ASSOCIATED FEES FOR THE CONNECTION TO THE CITY'S WATER SYSTEM IN THE AMOUNT THAT IS REQUIRED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR THE PUBLIC IMPROVEMENTS FOR THE PROJECT.

7. SANITARY SEWER REPORT:

THE DEVELOPER SHALL PROVIDE A SEWER REPORT DEMONSTRATING THE DEVELOPMENT CAN BE SERVED BY THE CITY'S SANITARY SEWER SYSTEM. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY IMPROVEMENTS DEEMED NECESSARY TO SERVE THE PROJECT TO THE APPROVAL OF THE CITY ENGINEER. THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING THE SANITARY SEWER SYSTEM, INCLUDING ASSOCIATED FEES, FOR THE CONNECTION TO THE CITY'S SANITARY SEWER SYSTEM IN THE AMOUNT THAT IS REQUIRED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR THE PUBLIC IMPROVEMENTS FOR THE PROJECT.

Conditions of Approval for TSM22003

Tentative Subdivision Map

8. WATER AND SEWER MODELING:

THE DEVELOPER SHALL PAY ALL FEES AND PROVIDE ALL THE INFORMATION NECESSARY TO COMPLETE WATER AND SEWER MODELING OF THE PROJECT. MODELING WILL BE PERFORMED BY THE CITY OF FERNLEY'S CONSULTANT, AND ANY ADDITIONAL INFRASTRUCTURE OR CAPACITY IDENTIFIED BY THE MODELING SHALL BE INCLUDED IN THE IMPROVEMENT PLANS AND CONSTRUCTED BY THE DEVELOPER.

9. WATER AND SEWER MAINS AND SERVICES:

THE DEVELOPER SHALL COMPLY WITH ALL STANDARDS, CODES, AND REQUIREMENTS REGARDING CONNECTION TO THE CITY'S SANITARY SEWER AND POTABLE WATER SYSTEMS, INCLUDING BUT NOT LIMITED TO, ASSOCIATED FEES, EASEMENTS, DESIGN STANDARDS, SYSTEM LOOPING, DEVELOPMENT CODE REQUIREMENTS, AND STATE REQUIREMENTS. PRIOR TO THE RECORDATION OF A FINAL MAP FOR ANY PHASE OF THE PROJECT, THE DEVELOPER SHALL PROVIDE THE CITY WITH A UTILITY PLAN FOR WATER AND SANITARY SEWER THAT IS IN CONFORMANCE WITH THE CITY OF FERNLEY'S MUNICIPAL CODE AND PUBLIC WORKS DESIGN MANUAL TO THE APPROVAL OF THE CITY ENGINEER, PUBLIC WORKS DIRECTOR, AND ADMINISTRATOR. EACH PHASE MUST ALSO BE REVIEWED AND APPROVED BY THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION PRIOR TO CONSTRUCTION.

10. UTILITY EASEMENTS:

THE DEVELOPER SHALL PROVIDE EASEMENTS TO THE CITY OF FERNLEY FOR THE MAINTENANCE OF THE PUBLIC INFRASTRUCTURE BEING INSTALLED ON PRIVATE PROPERTY. THE EASEMENTS SHALL INCLUDE THE CITY OF FERNLEY'S STANDARD EASEMENT LANGUAGE AND SHALL BE RECORDED ALONG WITH THE FINAL MAP.

11. DESIGN STANDARDS:

THE DEVELOPER SHALL COMPLY WITH THE DESIGN STANDARDS AND REGULATIONS AS SET FORTH IN THE CITY OF FERNLEY'S DEVELOPMENT CODE AND PUBLIC WORKS DESIGN MANUAL UNLESS IN CONFLICT WITH THE LOCAL, STATE, OR FEDERAL REGULATIONS, IN WHICH CASE THE MORE STRINGENT REGULATION WILL TAKE PRECEDENCE.

12. ENGINEERING DIVISION:

THE DEVELOPER SHALL COMPLY WITH ALL ENGINEERING REQUIREMENTS WITHIN THE FERNLEY MUNICIPAL CODE TITLE 32, INCLUDING BUT NOT LIMITED TO, COMPLIANCE WITH SITE DEVELOPMENT STANDARDS, FLOODPLAIN MANAGEMENT, ROADWAYS, UNDERGROUNDING OF UTILITIES, AND WATER AND WASTEWATER FACILITIES TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THE PROJECT.

13. STREETS:

THE DEVELOPER SHALL CONSTRUCT ANY ROADWAY IMPROVEMENTS NECESSARY TO SERVE THE PROJECT TO THE APPROVAL OF THE CITY ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

Conditions of Approval for TSM22003

Tentative Subdivision Map

14. VONNIE LANE IMPROVEMENTS:

PRIOR TO THE SUBMITTAL OF ANY FINAL MAP APPLICATION, THE DEVELOPER SHALL PROCESS A DEDICATION MAP WHICH OFFERS FOR DEDICATION ALL NECESSARY RIGHT-OF-WAY FOR VONNIE LANE ALONG THE PROJECT SITE SOUTH TO FARM DISTRICT ROAD. THE DEDICATION MAP SHALL BE RECORDED PRIOR TO THE APPROVAL AND RECORDATION OF ANY FINAL MAP TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND CITY ENGINEER.

PRIOR TO THE APPROVAL AND RECORDATION OF THE FIRST FINAL MAP, THE DEVELOPER SHALL SUBMIT IMPROVEMENT PLANS FOR THE CONSTRUCTION OF THE VONNIE LANE IMPROVEMENTS. ALL NECESSARY IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY'S MUNICIPAL CODE AND PUBLIC WORKS DESIGN MANUAL PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY FOR ANY SINGLE-FAMILY RESIDENCE TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND CITY ENGINEER.

15. WALLACE WAY IMPROVEMENTS:

PRIOR TO THE SUBMITTAL OF A FINAL MAP APPLICATION WHICH INCLUDES THE LAST RESIDENTIAL LOT, THE DEVELOPER SHALL PROCESS A DEDICATION MAP WHICH OFFERS FOR DEDICATION ALL NECESSARY RIGHT-OF-WAY FOR WALLACE WAY FROM THE PROJECT SITE WEST TO RED ROCK ROAD. THE DEDICATION MAP SHALL BE RECORDED PRIOR TO THE APPROVAL AND RECORDATION OF ANY FINAL MAP TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND CITY ENGINEER.

PRIOR TO THE APPROVAL AND RECORDATION OF THE FINAL MAP WHICH INCLUDES THE LAST RESIDENTIAL LOT, THE DEVELOPER SHALL SUBMIT IMPROVEMENT PLANS FOR THE CONSTRUCTION OF THE WALLACE WAY IMPROVEMENTS. ALL NECESSARY IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY'S MUNICIPAL CODE AND PUBLIC WORKS DESIGN MANUAL PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY FOR THE LAST SINGLE-FAMILY RESIDENCE TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND CITY ENGINEER.

16. SECONDARY ACCESS

PRIOR TO THE APPROVAL AND RECORDATION OF ANY FINAL MAP WHICH INCLUDES THE CREATION OF THE 31ST RESIDENTIAL LOT, THE DEVELOPER SHALL DEMONSTRATE THAT SECONDARY EMERGENCY ACCESS HAS BEEN PROVIDED IN ACCORDANCE WITH THE ADOPTED BUILDING AND FIRE CODES TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, CITY ENGINEER, AND THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT.

17. NORTH LYON COUNTY FIRE PROTECTION DISTRICT:

THE DEVELOPER SHALL COMPLY WITH ALL REGULATIONS OUTLINED BY THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT TO THE APPROVAL OF THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT, ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND CITY ENGINEER.

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Tentative Subdivision Map

18. COMBUSTIBLES ON-SITE:

NO COMBUSTIBLES SHALL BE BROUGHT ON-SITE PRIOR TO THE INSTALLATION AND ACCEPTANCE OF AN ALL-WEATHER SURFACE AND INSTALLATION/OPERATION OF FIRE HYDRANTS TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT.

19. DRAINAGE AND GRADING:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE FERNLEY MUNICIPAL CODE CHAPTER 32 (DRAINAGE AND GRADING) AND CHAPTER 10 OF THE CITY OF FERNLEY'S PUBLIC WORKS DESIGN MANUAL TO THE APPROVAL OF ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

THE DEVELOPER SHALL PROVIDE A DRAINAGE REPORT FOR THE PROJECT IN CONFORMANCE WITH THE CITY'S DEVELOPMENT CODE, MUNICIPAL CODE, AND THE PUBLIC WORKS DESIGN MANUAL FOR REVIEW AND APPROVAL BY THE CITY ENGINEER. EACH SUCCESSIVE PHASE OF THE PROJECT SHALL SUBMIT AN UPDATED DRAINAGE REPORT FOR REVIEW AND APPROVAL BY THE CITY ENGINEER SHOWING THE CUMULATIVE EFFECT OF THE DEVELOPED PORTION OF THE PROJECT ALONG WITH THE PROPOSED PHASE'S EFFECT ON THE TOTAL DISCHARGE INTO THE DRAINAGE SYSTEM.

THE DRAINAGE BASIN SHALL BE DEDICATED TO THE CITY OF FERNLEY UPON COMPLETION OF THE PROJECT IN ORDER FOR THE CITY TO MAINTAIN THE STORM DRAIN SYSTEM FOR THE SUBDIVISION.

20. GRADING PERMIT:

THE DEVELOPER SHALL SUBMIT A GRADING PLAN FOR ANY PHASE OF THE PROJECT TO THE APPROVAL OF THE CITY ENGINEER. PRIOR TO THE ISSUANCE OF A GRADING PERMIT FOR THE DEVELOPMENT, THE DEVELOPER SHALL POST A SURETY BOND FOR REGRADING AND RECLAMATION OF THE SITE.

THE DEVELOPER SHALL PROVIDE A STAMPED ENGINEER'S ESTIMATE FOR REGRADING AND RECLAMATION OF THE SITE. THE DEVELOPER SHALL COMPLY WITH ALL GRADING REQUIREMENTS SET FORTH IN THE CITY OF FERNLEY'S DEVELOPMENT CODE AS WELL AS ALL STATE AND FEDERAL REGULATIONS. THE DEVELOPER OR THEIR DESIGNEE SHALL BE RESPONSIBLE FOR OBTAINING AND MAINTAINING A STORM WATER POLLUTION PREVENTION PERMIT WITH THE STATE OF NEVADA AS WELL AS A SURFACE AREA DISTURBANCE.

21. GEOTECHNICAL REPORT:

THE DEVELOPER SHALL PROVIDE A FINAL GEOTECHNICAL REPORT FOR THE PROJECT IN CONFORMANCE WITH THE DEVELOPMENT CODE FOR REVIEW AND APPROVAL BY THE ADMINISTRATOR, CITY ENGINEER, PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF A FINAL MAP FOR ANY PORTION OF THE PROJECT.

22. IMPROVEMENT PLANS:

WITH THE SUBMITTAL OF ANY FINAL MAP APPLICATION, THE DEVELOPER SHALL SUBMIT THE ASSOCIATED IMPROVEMENT PLANS FOR REVIEW AND APPROVAL. THE IMPROVEMENT PLANS SHALL BE APPROVED PRIOR TO THE RECORDATION OF THE FINAL MAP. THE UTILITIES AND INFRASTRUCTURE FOR EACH PHASE MUST OPERATE INDEPENDENTLY OF FUTURE PHASES YET TO BE CONSTRUCTED.

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Tentative Subdivision Map

PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP FOR THE PROJECT, THE DEVELOPER SHALL CONSTRUCT ALL REQUIRED PUBLIC IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, PUBLIC UTILITY AND ROADWAY INFRASTRUCTURE ASSOCIATED WITH THE PROJECT OR PROVIDE A SURETY BOND IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN FERNLEY MUNICIPAL CODE CHAPTER 32.13 (IMPROVEMENTS AND AGREEMENTS) OF THE FERNLEY MUNICIPAL CODE.

23. SUBDIVISION IMPROVEMENT AGREEMENT:

THE DEVELOPER SHALL EXECUTE A SUBDIVISION IMPROVEMENT AGREEMENT WITH THE CITY OF FERNLEY PRIOR TO APPLYING FOR ANY BUILDING PERMITS FOR NEW HOME CONSTRUCTION WHILE THE PUBLIC IMPROVEMENTS ARE STILL NOT CONSTRUCTED. THE AGREEMENT SHALL BE DRAFTED BY THE CITY OF FERNLEY AND PROVIDED TO THE DEVELOPER FOR REVIEW AND EXECUTION. THE AGREEMENT SHALL BE RECORDED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. NO HOMES SHALL RECEIVE A FINAL CERTIFICATE OF OCCUPANCY UNTIL THE PUBLIC IMPROVEMENTS ARE COMPLETE AND ACCEPTED BY THE CITY OF FERNLEY.

24. RESIDENTIAL CONSTRUCTION TAX:

THE DEVELOPER IS SUBJECT TO THE PROVISIONS OF FERNLEY MUNICIPAL CODE RELATED TO RESIDENTIAL CONSTRUCTION TAX. THE RESIDENTIAL CONSTRUCTION TAX FEE SHALL BE PAID PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR EACH SINGLE-FAMILY RESIDENCE.

25. ADDRESSING AND STREET NAMES:

ALL ADDRESSING OF LOTS SHALL BE COMPLETED BY THE CITY. STREET NAMES SHALL BE APPROVED BY THE CITY PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP FOR THE PROJECT.

26. LOS ANGELES DEPARTMENT OF WATER AND POWER:

THE DEVELOPER SHALL COMPLY WITH THE REQUIREMENTS OF THE LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) RELATED TO ANY FACILITY OR EASEMENT WITHIN THE PROJECT BOUNDARY, TO THE APPROVAL OF THE ADMINISTRATOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

IF APPLICABLE, ALL ABANDONMENTS AND/OR REALIGNMENTS OF THE LADWP EASEMENTS SHALL BE FINALIZED AND ACCEPTED BY THE LADWP PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THE PROJECT.

27. NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION- BUREAU OF SAFE DRINKING WATER AND BUREAU OF WATER POLLUTION CONTROL FOR THE WATER AND SEWER INFRASTRUCTURE DESIGN AND CONSTRUCTION TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER AND PUBLIC WORKS DIRECTOR.

28. FENCING:

INCLUDED WITH THE SUBMISSION OF CIVIL IMPROVEMENT PLANS, THE DEVELOPER SHALL SUBMIT A FENCING PLAN IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE CITY'S MUNICIPAL CODE TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

Conditions of Approval for TSM22003

Tentative Subdivision Map

29. WASTE MANAGEMENT:

THE DEVELOPER SHALL PROVIDE A WILL SERVE FROM WASTE MANAGEMENT TO THE APPROVAL OF THE ADMINISTRATOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

30. UNITED STATES POSTAL SERVICE:

IF NECESSARY, THE DEVELOPER SHALL PROVIDE AN EASEMENT FOR ANY NEW CLUSTER MAILBOX LOCATION TO THE APPROVAL OF THE ADMINISTRATOR AND LOCAL POSTAL INSPECTOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

31. EASEMENTS:

ALL ABANDONMENTS AND/OR REALIGNMENTS OF ANY EASEMENT SHALL BE FINALIZED AND ACCEPTED PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THE PROJECT.

32. ADJACENCY STANDARDS:

THE DEVELOPER SHALL COMPLY WITH THE ADJACENCY STANDARDS OF THE CITY OF FERNLEY DEVELOPMENT CODE SECTION 32.09.030 TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF ANY FINAL MAP.

33. FINAL MAP PHASING:

EACH PHASE SUBMITTED MUST BE DESIGNED TO MEET THE PUBLIC FACILITIES AND IMPROVEMENT STANDARDS AND BE ABLE TO OPERATE INDEPENDENTLY AND AS PART OF THE OVERALL DESIGN. CHANGES TO THE PHASING PLAN WILL REQUIRE REVIEW AND APPROVAL BY THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO BEING IMPLEMENTED.

34. NEVADA DEPARTMENT OF TRANSPORTATION:

THE DEVELOPER SHALL OBTAIN APPROVAL FROM THE NEVADA DEPARTMENT OF TRANSPORTATION PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THE PROJECT.

35. COVENANTS, CONDITIONS, AND RESTRICTIONS (CC&R'S):

IF APPLICABLE, THE APPLICANT SHALL PROVIDE COVENANTS, CONDITIONS, AND RESTRICTIONS. (CC&R'S) WITH THE FIRST FINAL MAP AND SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ADMINISTRATOR AND THE CITY ATTORNEY. CC&R'S SHALL BE RECORDED CONCURRENTLY WITH THE FINAL SUBDIVISION MAP. THE APPLICANT SHALL INCLUDE IN THE CC&R'S PROVISIONS OUTLINING MAINTENANCE RESPONSIBILITIES OF COMMON AREAS, SHARED ROADWAYS, LANDSCAPED MEDIANS, OR OTHER COMMON ELEMENTS TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

36. LYON COUNTY SCHOOL DISTRICT:

THE DEVELOPER SHALL WORK TOGETHER WITH THE LYON COUNTY SCHOOL DISTRICT TO ENSURE THAT THE PROPOSED DEVELOPMENT CAN BE SERVED BY SCHOOL DISTRICT FACILITIES.