



N E V A D A

AGENDA
Regular Meeting
Planning Commission

Wednesday, March 9, 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 City Council 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 City Council 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 council members 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: City Council 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 City Council.

Order of Business: The presiding officer shall determine the order of the agenda. The Fernley City Council 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

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

8. ADJOURNMENT

Next Meeting: April 13, 2022 @ 5 PM

Fernley Planning Commission

Meeting Minutes

December 8, 2021

Chairman Barry Williams Sr. called the meeting to order at 5:00 p.m. at Fernley City Hall, 595 Silver Lace Blvd, Fernley, NV.

Chairman Barry Williams Sr. explained this meeting was in person and broadcasted via Zoom. He explained how to access Zoom and how to ask questions during the appropriate time.

1. INTRODUCTORY ITEMS

1.1. Roll Call

Present: Chairman Barry Williams Sr., Commissioner Cody Wagner, Commissioner Angela Lewis, Commissioner Jenni McCullar, Commissioner Jan Hodges, Commissioner Shellie Severa, Commissioner Humayonn Lodhi, Planning Director Tim Thompson, Assistant Planner Nikil Manayathara, City Clerk Kim Swanson, Deputy City Clerk Brenda Gosser, City Clerk Administrative Specialist Bailie Scott, Special Attorney Chris Molina.

1.2. Public Forum

There were none.

1.3. (For Possible Action) Approval of The Agenda

Motion: MOVE TO APPROVE THE AGENDA. **Action:** Approve, **Moved by** Commissioner Angela Lewis, **Seconded by** Commissioner Humayoon Lodhi, **Vote:** Motion carried by vote (**summary:** Yes = 7). **Yes:** Commissioner Jennie McCullar, Chairman Jan Hodges, Commissioner Humayoon Lodhi, Chairman Barry Williams Sr., Commissioner Angela Lewis, Commissioner Shellie Severa, Commissioner Cody Wagner.

1.4. (For Possible Action) APPROVAL OF MINUTES FROM November 10, 2021

Motion: MOVE TO APPROVE MINUTES FOR NOVEMBER 10, 2021, FROM THE FERNLEY CITY PLANNING COMMISSION. **Action:** Approve, **Moved by** Commissioner Jan Hodges, **Seconded by** Commissioner Jennie McCullar, **Vote:** Motion carried by vote (**summary:** Yes = 6; Abstain = 1). **Yes:** Commissioner Jennie McCullar, Chairman Jan Hodges, Commissioner Humayonn Lodhi, Chairman Barry Williams Sr., Commissioner Angela Lewis, Commissioner Shellie Severa. **Abstain:** Commissioner Cody Wagner

2. PUBLIC HEARINGS

a. Discussion with City Council & Staff

b. Public Input

c. Additional Discussion with City Council & Staff

d. Council Action or Direction to Staff

2.1. Public Hearing, Comprehensive Master Plan Amendment (MPA21001) & Zoning Map Amendment (ZMA21003). Consideration and possible action on a Master Plan Amendment and Zoning Map Amendment request on a site consisting of two parcels of land totaling ±78.86 acres in size generally located north of Interstate-80 and west of the current terminus of Commerce Center Drive, at 850 & 855 Commerce Center Drive. (APN's: 021-061-29, 021-061-30).

- 1. Consideration and possible action on Resolution 21-012, 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) and GR20 (General Rural, 20 acre minimum) to I (Industrial).**

Nikil Manayathara Assistant Planner explained the applicant is looking to change the zoning from commercial to industrial. The property was designed to support a warehouse and or distribution center. The parcels are currently vacant and have been since the 70's. Roughly half of the parcels around the area are vacant as well. Changing the land use would coincide with the Master Plan. The property has availability of City Sewer and Water. The applicant provided a traffic study which showed no significant changes would occur.

Commissioner Cody Wagner inquired if there any plans to store toxic chemicals on this area.

Planning Director Thompson stated the Master plan doesn't necessarily entail hazardous materials storage for industrial zoning, but they would be allowed should they submit a conditional use permit for the storage. Therefore, the Planning Commission would be made aware of any businesses planning to store hazardous material.

Kaitlynn Moore Development Project Manager for developer Buzz Oates stated the company has been doing this for the last 75 years and are vertically integrated. The company invests in projects and properties for the long hall. The proposed project requires the zoning change from commercial to industrial. The land is vacant and undeveloped which is planned to develop into 4 buildings simultaneously.

Motion: MOVE TO APPROVE COMPREHENSIVE MASTER PLAN AMENDMENT RESOLUTION 21-012 AND FORWARD A REQUEST OF CERTIFICATION TO THE CITY COUNCIL FOR THE COMPREHENSIVE MASTER PLAN AMENDMENT ASSOCIATED WITH MPA21001, BASED ON FINDINGS MP1 TO MP3 AND THE FACTS SUPPORTING THOSE FINDINGS AS SET FORTH IN THE STAFF REPORT

Action: Approval, **Moved by** Commissioner Wagner, **Seconded by** Commissioner Lodhi, **Vote:** Motion carried by vote (**summary:** Yes = 7).

Motion: MOVE TO FORWARD A RECOMMENDATION OF APPROVAL TO THE CITY COUNCIL FOR THE ZONING MAP AMENDMENT ASSOCIATED WITH ZMA21003 BASED ON THE FINDINGS Z1 TO Z3 AND FACTS SUPPORTING THOSE FINDINGS SET FORTH IN THE STAFF REPORT. **Action:** Approval, **Moved by** Commissioner Lodhi, **Seconded by** Commissioner Wagner, **Vote:** Motion carried by vote (**summary:** Yes = 7).

The items will now go before the City Council for consideration.

2.2. (FOR POSSIBLE ACTION) Public Hearing, Conditional Use Permit – CUP21006. Consideration and possible action on a Conditional Use Permit request to allow for the storage/processing of hazardous materials and for the construction of an industrial building on a site ±11.55 acres in size generally located south of Interstate 80 and west of state route 427 (Main Street) at 390 Logan Lane, Fernley, NV (APN: 021-071-32).

Tim Thompson Planning Director explained this is a conditional use permit request from American Battery. You may recall the Planning Commission considered the lithium

battery recycling facility on Logan Lane. That was approved, and this facility will be located directly north across Logan Lane from the Pilot facility. It is the feed stock storage facility so this will be where batteries are stored until they can be processed across the street. There is concern over the hazardous nature of storing batteries which prompts the need for the conditional use permit by the Planning Commission. The current parcel was formed in 1989 with a boundary line adjustment in 2004. It has always been vacant and is surrounded by industrial zoned properties. The applicant will be required to construct Logan Lane and associate improvements for a better sidewalk. The vehicles will enter the site with access around the perimeter for emergency access. The applicant will be required to construct an all-weather surface road to the approval of the city and the fire district because of the nature of the site, and to ensure emergency access. Should you choose to reject the application we ask that the Planning Commission site the findings that cannot be met and the reasons for them.

Chuck Leber Construction Manager for American Battery Technology Company stated they knew we were not allowed to store batteries on the same site as the recycling plant, so this land was purchased across the street even though they are separated by a private easement, it still qualifies as separated from the plant facility. Mr. Leber stated they are working on as many safety features as possible to prevent problems for Lithium battery storage.

Chairman Williams called for public input.

William Shattuck stated he has a parcel on East Street close to where they will develop these properties. He felt they will be a good neighbor.

Commissioner Hodges inquired what the proper abatement was for a lithium fire. Is the Fernley Fire Department equipped to hand such a fire?

Tim Thompson Planning Director stated there was no representation from the Fire Department but recalled for the pilot facility there were conditions for the applicant to work with the Fire district to develop mitigations.

Planning Director Thompson reported there was one letter received from Kevin Stanley in opposition of this project.

Motion: MOVE TO APPROVE THE CONDITIONAL USE PERMIT ASSOCIATED WITH CUP21006 ADOPTING FINDINGS C1 THROUGH C6 AND THE FACTS SUPPORTING THESE FINDINGS AS SET FORTH IN THE STAFF REPORT AND SUBJECT TO THE CONDITIONS OF APPROVAL 1 THROUGH 31 AS LISTED IN THE STAFF REPORT.

Action: Approval, **Moved by** Commissioner Cody Wagner **Seconded by** Commissioner Angela Lewis, **Vote:** Motion carried by vote (**summary:** Yes = 7). Commissioner McCullar, Chairman Hodges, Commissioner Lodhi, Chairman Williams Sr., Commissioner Lewis, Commissioner Severa, Commissioner Wagner

3. STAFF REPORTS

3.1. Staff Report, Tentative Subdivision Map – TSM21004 (FOR POSSIBLE ACTION) Consideration and possible action on a Tentative Subdivision Map Request from Red Hawk Ranch LLC Series A & B to allow for the development of a 282-lot single family residential subdivision on a site approximately 129.9 acres in size located within the SF6 (Single Family, 6,000 sq. ft. minimum lot size) & MDR14 (Medium Density Residential, 7-14 Dwelling units/Acre) zoning districts, generally located east of Stock Lane, and south of Truckee Lane, Fernley, NV (APN's: 021-041-07, 021-041-08, & 021-041-10).

Tim Thompson Planning Director stated this is a request for a subdivision map from Red Hawk Ranch for 282 lot single family subdivision. The amendment requests and development agreement were considered by the planning commission and city council then were ultimately approved to change the zoning on these 3 parcels to MDR 14. The development agreement kept adjacency standards upheld throughout development. A Multi-use path will be incorporated in the landscaping for the subdivision development. There will be a landscape buffer to the south with drainage improvements. Thus far the project does comply with the development agreement.

Commissioner Wagner disclosed that Mr. Perdue and Mr. Evangelatos made small donations to the non-profit he runs for the Fernley Community Foundation. He does not stand to benefit financially from that project as an individual.

Planning Director Thompson answered questions from the Planning Commission.

Derrick Kirkland with Wood Rogers stated a neighborhood meeting was held to get feedback to help evolve the project. Mr. Kirkland stated they have complied with all the buffering standards and agreements made. Improvements will be made to Stock Lane

and the wood fence will be maintained by the HOA. Taxes from this project will go towards roads, schools, and parks in the city.

PUBLIC INPUT

Mike Calagy small business owner in Fernley said this project is a win-win for the city.. He was in favor of the project.

Dana Uhlhorn from 1st Option Realty in Fernley expressed that this project is a good representation of ideal growth for Fernley.

William Shattack, Fernley resident pointed out that this project will impact traffic on Main Street, however, he acknowledged that any new project would require plans to adapt to the changing traffic as the city grows. He supported the project.

Kelly Brye, Fernley resident noted that this project had evolved tremendously over the last two years with great community involvement in the planning process. He thought the applicant has made a lot of concessions to accommodate the community which allows it to contribute to the beautification of the city.

Joe Reismour, Licensed Nevada relator in Fernley thought this project is the best use for that currently unused property.

Motion: MOVE TO ADD APPROVAL #33 TO BE CRAFTED BY STAFF TO INCLUDE THE SPECIFIC FAIR SHARE CONTRIBUTIONS OUTLINED IN THE DEVELOPER'S PROPOSAL, AND A CONSIDERATION OF MILLER LANE AND THE SCHOOL DISTRICT TO RECEIVE \$200.00 PER HOUSE EQUALING 56,000 TO BOTH MILLER LANE AND THE SCHOOL DISTRICT FOR EXPANDED SCHOOL CAPACITY.

Motion amended: MOVE TO EDIT CONDITION 31 TO INCLUDE PERIMETER FENCING IN PARAGRAPH 2, AND TO ADD CONDITION 33, FAIR SHARE CONTRIBUTION, WORK WITH STAFF TO MAKE SURE THAT THE PRO RATA CONTRIBUTIONS MENTIONED BY THE DEVELOPERS DURING THEIR PRESENTATION ARE PUT INTO THE APPROVALS AND SUGGEST A \$200.00 PER HOUSE CONTRIBUTION TO BE HELD BY THE CITY TO GO TO THE SCHOOL DISTRICT FOR INCREASING SCHOOL CAPACITY AND A \$200.00 PER HOME CONTRIBUTION TO BE HELD BY THE CITY FOR THE IMPROVEMENT OF MILLER

LANE. **Moved by** Commissioner Cody Wagner **Seconded by** Commissioner Angela Lewis,

Break at 6:59pm to 7:08PM

Commissioner Wagner stated that he would like to amend the motion. He did not feel comfortable with the legality his motion considering legal staff was not present. He added that the developer was open to the comments and willing to listen and create a solution.

Motion amended: MOVE TO EDIT CONDITION 31 TO INCLUDE PERIMETER FENCING IN PARAGRAPH 2, REMOVING CONDITION 33 WITH THE EXPECTATION THAT THE DEVELOPER WILL WORK WITH BOTH STAFF AND LYON COUNTY SCHOOL DISTRICT TO CREATE A CONTRIBUTION TO BOTH THE SCHOOL DISTRICT AND TO MILLER LANE **Moved by** Commissioner Cody Wagner, **Seconded by** Commissioner Lewis,

Special Attorney Chris Molina spoke regarding the motion.

Vote: Motion carried by vote (**summary:** Yes = 7). Commissioner McCullar, Chairman Hodges, Commissioner Humayoon Lodhi, Chairman Williams Sr., Commissioner Lewis, Commissioner Severa. **Action:** Approval,

Motion: MOVE TO FORWARD A RECOMMENDATION OF APPROVAL TO CITY COUNCIL FOR THE TENTATIVE SUBDIVISION MAP ASSOCIATED WITH TSM21004 BASED ON FINDINGS TM1 THROUGH TM11 AND THE FACTS SUPPORTING THE APPROVAL CRITERIA AS SET FORTH IN THE STAFF REPORT IN SUBJECT TO THE CONDITIONS OF APPROVAL 1 THROUGH 32 AS LISTED IN THE STAFF REPORT WITH THE EXCEPTION OF APPROVAL 31 WHICH WE JUST AMENDED. **Action:** Approval, **Moved by** Commissioner Cody Wagner **Seconded by** Commissioner Humayoon Lodhi, **Vote:** Motion carried by vote (**summary:** Yes = 7). Commissioner McCullar, Chairman Hodges, Commissioner Humayoon Lodhi, Chairman Williams Sr., Commissioner Lewis, Commissioner Severa.

4. CHAIR AND COMMISSION ITEMS:

Commissioner Wagner would like to see more coordination with NDOT and future projects regarding transportation issues arising.

Commissioner Hodges reported Wreaths across America will be held at 9am at the Fernley cemetery on Saturday, December 18th. There is a goal to unload 8,000 plus wreaths.

5. PLANNING DIRECTOR ITEMS:

Planning Director Thompson addressed Commissioner Wagner's concern to coordinate with NDOT and mentioned the next city council agenda has an item to hire a consultant for an impact fee feasibility study which will help the city understand what information is needed to create the program and if it is feasible.

6. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS:

There were no requests.

7. PUBLIC FORUM

There was none.

There being no further business to come before it, the Fernley Planning Commission meeting adjourned at 7:19 pm.

Approved by the Fernley Planning Commission on March 9, by a vote of:

AYES: _____ NAYS: _____ ABSTENTIONS: _____ ABSENT: _____

Chairman Barry Williams Sr.

ATTEST:



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: March 9, 2022

REPORT TO: Planning Commission

REPORT THRU: Tim Thompson, Planning Director

REPORT FROM: Tim Thompson, Planning Director

FINANCIAL IMPACT:

Yes: N/A

CURRENTLY BUDGETED:

Yes: No: N/A

FUND/ACCOUNT:

N/A

ACTION REQUESTED: Motion

AGENDA ITEM: (For Possible Action):

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

AGENDA ITEM BRIEF:

Discussion and election for City of Fernley Planning Commission Officers for 2021.

RECOMMENDED MOTION:

"I move to nominate _____ to serve as the Planning Commission Chair for 2022."

"I move to nominate _____ to serve as the Planning Commission Vice Chair for 2022."

BUSINESS IMPACT (per NRS Chapter 237):

N/A

See attached report for background, analysis, alternatives.

ALTERNATIVES:

N/A

BACKGROUND:

In accordance with the Planning Commission's Rules of Procedure, the Planning Commission elects a Chair and Vice Chair to serve in that capacity for the calendar year.

LEGAL IMPLICATIONS:

N/A

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

None



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: March 9, 2022

REPORT TO: Planning Commission

REPORT THRU: Tim Thompson, Planning Director

REPORT FROM: Nikil Manayathara

FINANCIAL IMPACT:	CURRENTLY BUDGETED:	FUND/ACCOUNT:
Yes: No: N/A	Yes: No: N/A	N/A

ACTION REQUESTED: Motion

AGENDA ITEM: (For Possible Action):

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.

AGENDA ITEM BRIEF:

The proposed project is located on two parcels of vacant land, at 590 & 600 W. W. Main Street (APN's 021-071-02, and 021-071-03). The applicant has filed a Zoning Map Amendment (**ZMA22002**) and Tentative Subdivision Map (**TSM22001**) request for a 9-lot Mixed Use Commercial/Residential project. The applicant is also proposing a rezone of the two aforementioned parcels. This will change the zoning on parcel 021-071-02 from C2 (General Commercial) to MU (Mixed Use) and change the zoning on parcel 021-071-03 from its existing split-zoned C2 and SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (mixed Use).

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 ZMA22002 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 ZMA22002 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."

Tentative Subdivision MapMotion to Approve:

"I move to forward 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 and subject to the Conditions of Approval 1 through 26 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 TSM22001 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 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, alternatives.

ALTERNATIVES:**BACKGROUND:**

See Attached Report for Background/Analysis/Alternatives.

LEGAL IMPLICATIONS:

N/A

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. Planning Commission Staff Report - ZMA22002 & TSM22001
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Ex_Pro_Zoning Exhibit
4. Attachment 3 - Legal Description + Boundary Map
5. Attachment 4 - Tentative Map Plan Set
6. Attachment 5 - Preliminary Landscaping Plan
7. Attachment 6 - Traffic Study
8. Attachment 7 - TSM22001 Conditions of Approval

PROJECT SUMMARY

CASE NUMBER(S):	• ZMA22002 & TSM22001
REQUESTED ACTION(S):	• Zoning Map Amendment and Tentative Subdivision Map
PROJECT DESCRIPTION:	• The proposed development will consist of a 9-lot subdivision located within the Mixed Use Zoning district, on an approximately 28.42 acre project site. The project is expected to contain both Residential and Commercial uses. The Zoning Map Amendment aims to bring the project site's zoning into conformance with the Master Plan Land Use designation of SMU (Suburban Mixed Use), whereas the Subdivision Map aims to divide the project site into individual lots, based on the proposed land uses.
PROPERTY OWNER(s):	• Betty Jackson Trust
APPLICANT:	• Phelps Engineering Services
LOCATION:	• 590 & 600 West W. Main Street
SITE SIZE:	• ±28.42 Acres
EXISTING ZONING:	• Split Zoned - C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size)
PROPOSED ZONING	• MU (Mixed Use)
EXISTING LAND USE:	• SMU (Suburban Mixed Use)
WARD INFORMATION:	• Ward 1 – Councilman Lacy

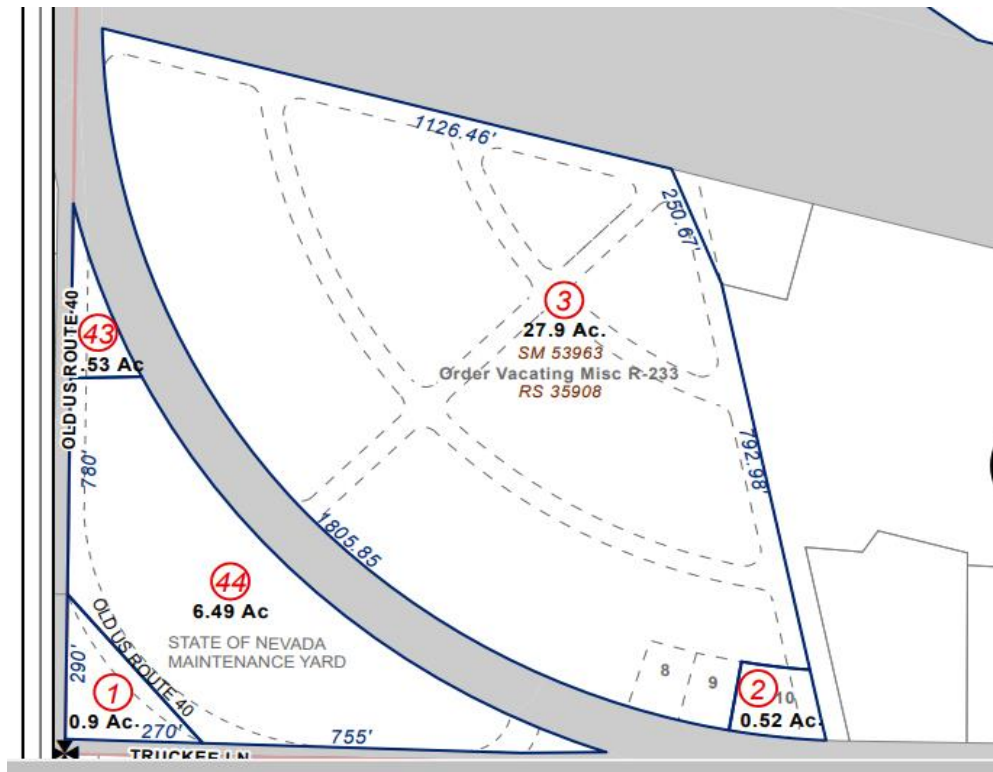
***A PUBLIC HEARING IS REQUIRED**

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>§32.06.090 (MU -Mixed Use)</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>

BACKGROUND

The project site has been under the ownership of the Betty Jackson Trust since the early 1950's (Lyon County Records – Document 37-141). Throughout this time period, the property has generally remained vacant, with no fixed development or registered personal property located on either of the project parcels. A Greenbelt had been approved on the parcels in May of 1999 and records do indicate that the property was utilized for herding livestock. The current project site shows no evidence of agricultural usage. Although no official record of subdividing the property exists on the County Assessor's website, the official Plat Map indicates that the land may have been proposed to be subdivided at one point for housing development, as shown by the dotted lines on the project parcels below:



The project site itself consists of two parcels (APN's 021-071-02, 021-071-03) and a combined project area of approximately 28.42 acres. The project site is generally surrounded by similar land uses, with every parcel one (1) mile east of the project site sharing the same land use designation (SMU – Suburban Mixed Use). There is additionally future residential development directly south of the project site on the other side of W. Main Street, which is designated for medium to higher density MR (Mixed Residential) and SF (Single Family) development. Additionally, the project area lies directly north/east of S.R. 427 (W. Main Street) and directly south of the Union Pacific Railroad Right-of-Way.

It is important to note that the majority of the project area is currently split-zoned. While the smaller ±0.52 acre parcel (APN: 021-071-02) is currently zoned C2 (General Commercial), the larger ±27.9 acre parcel (APN: 021-071-03) is currently split-zoned C2 and SF6 (Single Family, 6,000 sq. ft. minimum lot size). The split zoning very likely occurred due to a parcel map or reversion to acreage map that may have taken place in the past and gave the new parcel properties of both zoning codes. The proposed Zone change will

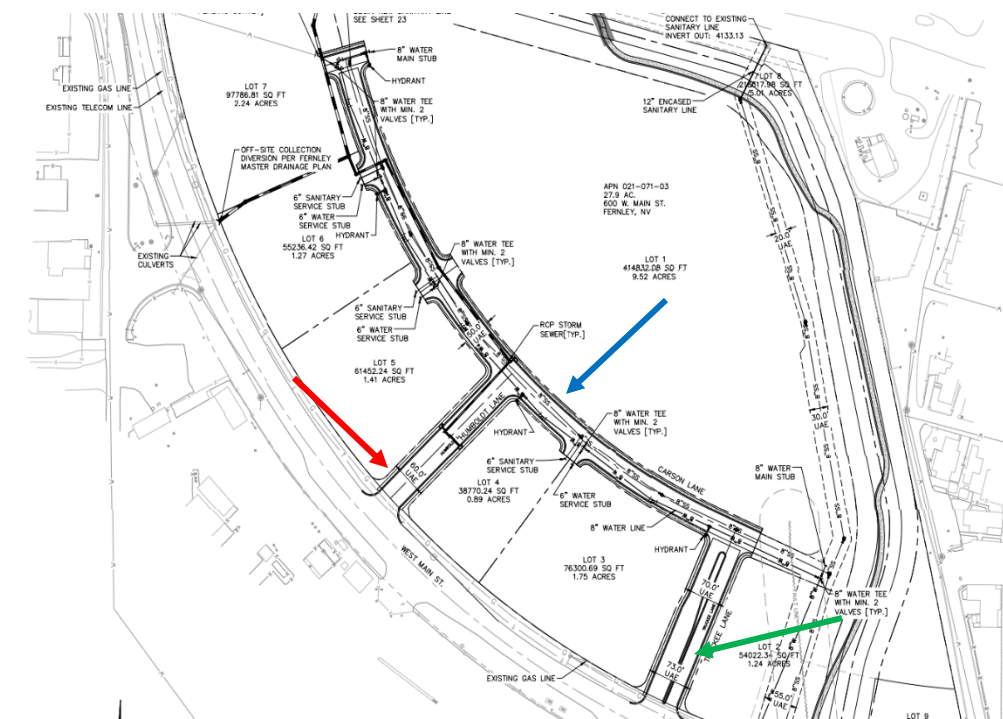
Planning Commission Meeting March 9, 2022

Zoning Map Amendment (ZMA22002) & Tentative Subdivision Map (TSM22001)

ANALYSIS

The project site currently has a Land Use designation of SMU (Suburban Mixed Use), and a split zoning of SF6 (Single Family, 6,000 sq. ft. lot size) and C2 (General Commercial). To bring this project into compliance with the goals and policies of the 2018 Comprehensive Master Plan, the applicant has filed a Zoning Map Amendment request to change the existing Split Zoning of C2 and SF6 to MU (Mixed Use). The MU zoning is an equivalent zoning code classification within the SMU land use designated areas and allows for appropriate medium to high density development along the W. Main Street corridor. Currently, the parcels of land directly surrounding the project site are zoned either C2 or SF6, with a high density manufactured home park located directly east of the project site. A residential development is proposed south of the project site, although W. Main Street will act as a buffer between the two developments, creating some degree of separation between the projects.

The project site is located northwest of the Intersection of (S.R. 427) W. Main Street and Marie Drive and is directly southeast of the W. Main Street Railroad bridge. Marie Drive is currently a private easement under the ownership of the nearby manufactured home facility (APN: 020-113-10). W. Main Street will provide ingress and egress to the project site, via two proposed driveways – **Humboldt Lane** and an **extension of Truckee Lane**. The developer is required to work with the City Engineer and the Nevada Department of Transportation on the final location of the driveways to meet access management standards. The Truckee Lane extension will serve as the main access way into the project site, with Humboldt Lane serving secondary and emergency access, as a right-in/right-out only driveway. A separate internal roadway, **Carson Lane**, will circulate traffic throughout the project site, providing access to the individual lots. This can be seen in the Site Plan below:



Planning Commission Meeting March 9, 2022
Zoning Map Amendment (ZMA22002) & Tentative Subdivision Map (TSM22001)

Lots 2, 3, 4, 5, 6, 7, and 9 are proposed to contain a variety of commercial/mixed use spaces, and Lot 1 is expected to accommodate a multi-family residential development. Lot 8 serves as the main irrigation and drainage for the project site and will run along the northern and eastern project boundaries. At this time, the proposed roadways are not expected to be dedicated to the city and will likely be maintained by a property owners association within the development. Any roadway development will comply with the City of Fernley Development standards, along with any regulations identified by the City's Engineering Department, Public Works Department, and the Nevada Department of Transportation.

Sewer and Water discoveries were made by the applicant during the development process. Given that the project is proposed to be rezoned to the MU (Mixed Use) district, connecting to City water and sewer services are required, as is stated within the City of Fernley Development code. The development will utilize the existing 12" diameter sewer main located along the north property line, adjacent to the Union Pacific Railroad right-of-way. It is understood that this Sewer Line has existing capacity to serve the development, though future upgrades and improvements may be required in the near future. Sewage collected from the project site will flow east, first to the West Lift Station, and ultimately to the East Wastewater Treatment Plant. An 8-inch sanitary sewer main is proposed to connect to the 12-inch main at the northern property line and run down the eastern property boundary, adjacent to the irrigation/drainage ditch. From there, the 8-inch sewer line will be undergrounded through the project's interior roadway and branch out into each individual lot. Both 6-inch and 4-inch sewer laterals will serve each individual lot, with sewer line diameter depending on the specific land use and occupancy for each lot. Water connections will also be utilized through an existing water main. An 8-inch main will connect to the 12-inch water line located underneath W. Main Street and will then be routed northwards to the projects' interior roadway, whereby it will travel east-west through the project site, and branch out at various lot entryways, to serve each lot. The proposed water line will be 'looped', ensuring that the branched line reconnects to back on to W. Main Street, to the 20-inch main further west. The specific diameter of each water line within the lots will be dependent on the specific land use and occupancy of the parcel.

Given that the project area is located within Flood Zone level AE, a drainage and hydrology report was provided by the applicant as well. Drainage and retention for the project site will generally be handled via the aforementioned drainage channel that will run along the northern and eastern project boundaries. The project area has a gentle slope, with an approximate gradient of 0.5% to the west-northwest of the site. Flows and runoff collected by the channel will flow to the northwestern site of the project, where a retention pond will be constructed to hold runoff, as well as allow infiltration of runoff into the soil. The proposed retention pond will be approximately 57,350 cubic feet in volume and will be constructed according to the City of Fernley Public Works Design Standards. It is estimated that infiltration will occur at an approximate rate of 8.0 inches per hour. Given the large size of the project area, Storm Drains and additional piping will also be constructed to provide additional runoff for the project area. These additions will tie into some of the goals and strategies outlined within the City of Fernley's Storm Drain Master Plan.

A Traffic Study was provided by the applicant as it was expected that the proposed development would generate greater than 100 peak hour trips. The project is expected to generate an additional 322 AM peak hour trips, and 584 additional PM peak hour trips. These values were generated according to the ITE (Institute of Transportation Engineers) 2018 Land Use standards, and it was found that an additional 6,623 Average Daily Trips would be generated as a result of this project. Both the City of Fernley as well as the Nevada Department of Transportation identify LOS (Level of Service) D as the minimum service threshold for which traffic and roadway improvements 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. While some of the intersections around W. Main Street are not anticipated to be overly impacted by the project, the 2 new access driveways (Truckee Lane extension and Humboldt Lane) are expected to create significant traffic conditions at the point where they intersect with W. Main Street. The traffic study identified that the project would require some level of infrastructure improvements, related to signage, striping, and traffic control improvements. The full recommendations of the provided traffic study for the 600 W. Main Street development are stated below:

“ - Traffic generated by the 600 W. W. Main Street Development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.”

- “It is recommended that any required signage, striping, or traffic control improvements comply with the Nevada Department of Transportation and City of Fernley Requirements.”

- “It is recommended that the West Main/Truckee Lane East Driveway intersection be designed to include a minimum of one left turn lane and one shared through-right turn lane at both the north driveway and south Truckee Lane approaches and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach. It is recommended that a traffic signal be installed at the West W. Main Street/Truckee Lane -East Driveway intersection when warranted.”

- “It is recommended that the West W. Main Street/West Driveway (Humboldt Lane) intersection be designed to operate with limited left-in/right-in/right-out movements and contain stop sign control at the driveway approach and an exclusive right turn lane with a minimum of 215 feet to deceleration length at the east approach.”

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 the Master Plan

1. MU (Mixed Use)

The proposed development is located within an area designated SMU (Suburban Mixed Use) in the City of Fernley's Comprehensive Master Plan. The description of the Suburban Mixed Use land use states that the equivalent zoning districts are MDR14 (Medium-density residential, 7-14 dwelling units per acre), MF30 (Multi-family residential, 21-30 dwelling units per acre), MU (Mixed Use, 30 max. dwelling units per acre), and C1 (Neighborhood Commercial, 10-21 dwelling units per acre). Per the Comprehensive Master Plan document, the Suburban Mixed Use land use consists of mixed commercial and residential areas in close proximity to one another, with general medium to high density residential development (7-30 dwelling units per acre).

The Comprehensive Master plan additionally states that Municipal services are required in Suburban Mixed Use designations, and that they are located in/around larger arterial or collector streets, such as Main Street. The vertical and horizontal mixing of uses is also encouraged to create a distinct sense of location or 'place'. Land uses within the SMU generally consist of Commercial development such as General Retail, Food & Beverage Sales, Small-Scale Personal Services, and Office space. Residential developments such as Condominiums, Townhomes, and Apartment buildings are also common land uses within the SMU designation. The maximum density associated with the Mixed Use zoning district is 30 dwelling units per acre.

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

Population , Housing, and 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.1.1.1 Encourage higher densities in the downtown core and as part of master planned communities that also provide a mixture of job-generating and commercial land uses within the overall development.
- HP.1.1.2 Encourage large-scale housing development that incorporates efficient land use techniques and creates a distinct sense of place and neighborhood diversity.
- 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.1.4 Provide opportunities for high-density residential development near the downtown core and elsewhere in the community where appropriate.

HP.1.4.1 Multi-family land use should be dispersed throughout the community near employment centers and transportation corridors rather than concentrated in a few 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 Monitor development applications that intend to utilize the underlying zoning. Modify the Development Code as necessary to ensure 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 maintains a balance of population, housing, and employment.

LU.1.3.2 Maintain adequate supplies of developable land for both residential and commercial

land uses.

LU.1.4 Ensure existing and future land uses are compatible.

- LU.1.4.1 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
- 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.1.5.1 Encourage the intensification of land use in the existing community core.
- 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.1.12 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.

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 to 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 for 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.1.3.2 Require stub streets in developments adjacent to undeveloped parcels that are

planned for development to ensure street connectivity between projects.

- 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.
- T.1.3.5 Neighborhood streets should be designed to incorporate traffic calming techniques to discourage through traffic and minimize excessive speed.

Public Services and Facilities

PSF.1.1 To provide and maintain a reliable and adequate water supply and delivery system.

PSF.1.1.3 Final maps and building permits will only be approved when adequate water rights have been dedicated to the City of Fernley, and the applicable service and connection fees have been paid.

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.1.2 To the maximum extent possible, the costs of improvement, extension and construction of public facilities should be borne by those whose land development and redevelopment actions made such improvement, extension and construction necessary. A procedure is to be established that defines the responsibility for improvements of individual projects.

PSF.1.4 Reduce water demand through xeriscape project landscaping, reclamation and reuse of treated wastewater for golf courses, medians, parkways and other appropriate application uses.

PSF.1.4.1 The Department of Community Development will include provisions for reclamation of water resources and appropriate uses for wastewater application in the City of Fernley Development Code.

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 within 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 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.
- PSF.2.1.4 The City will maintain and improve the existing sanitary sewer system through preventive maintenance and on-going appraisal.
- PSF.2.1.5 The City shall establish sewer use fees as required to support operations.

PSF.3.3 Ensure appropriate levels of public services and facilities are continually provided.

- PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.
- PSF.3.3.2 Consider the financial impacts in all growth management decisions.

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 just off of Main Street, a major Commercial thoroughfare within the city of Fernley. The properties adjacent to the project site include a Recreational vehicle/Manufactured home park, a recreation and commercial center further east along W. Main Street, and a proposed medium – high density residential development on the other side of Main Street, directly south of the project site. The properties directly east of the project site have a Master Plan Land Use Designation of Suburban Mixed Use. Furthermore, all of the properties adjacent to W. Main Street near Highway 95A are within the SMU land use designation. Given that the Mixed Use zoning district is compatible with the SMU land use, the proposed zone change would be consistent with 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 regulation 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 via an existing water line located within W. Main Street. The water connection shall be looped to ensure that the connection does not end up in a stub or dead end. The developer is required to dedicate a sufficient amount of water rights to serve the project prior to approval and the recordation of a final map. A retention basin 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 are provided by Southwest Gas and NV Energy respectively.

The project proposes a connection to the City's existing sewer infrastructure located at the northern boundary of the project site, adjacent to the Union Pacific Railroad. An 8-inch main will then be connected and routed south through the projects' interior roadway, and a series of 4 and 6-inch mains will serve each individual lot. Sewage that has been collected is transferred east out of the project area, through the West Lift Station and finally on to the Wastewater Treatment Plant.

The utilities necessary to serve this project currently exist adjacent to the project site. These existing utilities currently have the capacity to serve the project site, and no significant off-site improvements are required at this time.

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

Schools:

The proposed multifamily project within this development is expected to contain 276 units and will be processed through a separate Conditional Use Permit application, CUP 22001. The multifamily complex will be the only residential portion of the project and is expected to contribute a significant number of students to the existing schools within the Fernley area. The development will be served by Fernley Elementary School, Fernley Intermediate School, Silverland Middle School, and Fernley High School. According to the 2016 LCSD (Lyon County School District) Master Facilities Plan, the most recent data available for the Lyon County School District, most of Fernley's Schools are expected to reach or exceed 95-100% capacity by 2025. For this development however, the Fernley High School will be the only school that is expected to exceed 100% capacity by 2025, with a projected utilization rate of 106%. The other three schools that are expected to serve this project, Fernley Elementary, Fernley Intermediate, and Silverland Middle School are expected to have 2025 utilization rates of 91%, 96%, and 86% respectively.

Parks:

The tentative plan for the project highlights parcel 9, in the southeastern corner of the project site, as a potential dog park. Additionally, the In-Town Skate Park is located towards the east, roughly 0.6 miles from the project site.

Police & Fire:

The Lyon County Sheriff's office provides police protection and the North Lyon County Fire Protection District provides fire protection. The proposed development is located approximately 0.6 miles from the North Lyon County Fire Protection station and approximately 1.0 mile from the Lyon County sheriff's Office. The development is additionally proposed to have three (3) fire hydrants located along the backbone roadway for easy access.

Transportation:

The project will have two access points off of West Main Street, one of which will serve as the main access (Truckee Lane extension), and another that serves as the project's secondary access (Humboldt Lane). Both accessways will incorporate the necessary improvements outlined within the provided Traffic Study, including but not limited to signage, striping, signaling, and specific turn lanes for access as may be necessary.

TM5: Consistency with the zoning district regulations

The proposed zoning for this development is MU (Mixed Use). This zoning allows for a maximum density of 30 dwelling units per acre. The proposed multifamily residential building (**To be approved via a separate Conditional Use Permit Application**) will have ±276 units and will be located on an approximately 9.52 acre parcel. This provides an overall density of ±28.99 dwelling units per acre, which is less than the 30 du/acre specified for the MU zoning district. The proposed development is also required to comply with all development code requirements including but not limited to dimensional standards (§32.06.070), design standards (§32.06.070), and development standards (Chapter 32.09).

TM6: Conformity with the Master Streets & Highways Plan.

Any roadway construction additions or improvements required to serve the project conform to the Master Streets and Highways Plan, and be approved by the City Engineer, Administrator, and Public Works Director. The main arterial or collector road that will serve this development is State Route 427, or W. Main Street. It is expected that the W. Main Street corridor will exceed its capacity by 2040, as development occurs within the Downtown Fernley area. Any improvements made to the Main Street Right of Way by the developer will need to ensure adequate capacity on the Main Street corridor for future development in the surrounding area.

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 conform to the Master Streets and 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 create an additional 6,623 additional daily trips – 322 during peak AM hours, and 584 during peak PM hours. The traffic study additionally provided a series of recommendations for improvements to be made,

regarding road signage, turn lanes, striping, and signaling, which would benefit the proposed development.

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

The project site is surrounded by Commercial-Residential development directly east (Fernley RV Park), future residential development directly south (Red Hawk Ranch), commercial property to the west (Fernley Self Storage), and both commercial + industrial properties to the north (Vacant commercial property, + Valley Joist LLC warehouse). The residential properties directly south and west of the project site are also buffered by the Main Street Right of way, which provides some degree of separation between the project area and the surrounding uses. The Union Pacific Railroad right-of-way additionally provides an approximately 360 foot wide buffer between the project site and the commercial/industrial properties to the north.

The project site has a very gentle slope of approximately 0.5% to west-northwest. The project area does lie within Flood Zone area AE, as depicted in the Flood Insurance Rate Map (FIRM) number 32019C0082E. This essentially means that there is a 1% chance that the site could flood each year. The developer has addressed this issue via a drainage and hydrology report, which proposes the development of a drainage channel and retention basin along the northern and southern property boundaries to control runoff into the project site. Additional storm drain piping has also been proposed as a means of controlling runoff in multiple areas of the project site. These measures will ideally allow for the Tentative Map to go through the CLOMR (Conditional Letter of Map Revision) process with FEMA to remove the proposed lots from the Flood Zone area.

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. The application has been conditioned such that all comments and recommendations of reviewing bodies shall be addressed prior to Final Map Approval.

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:

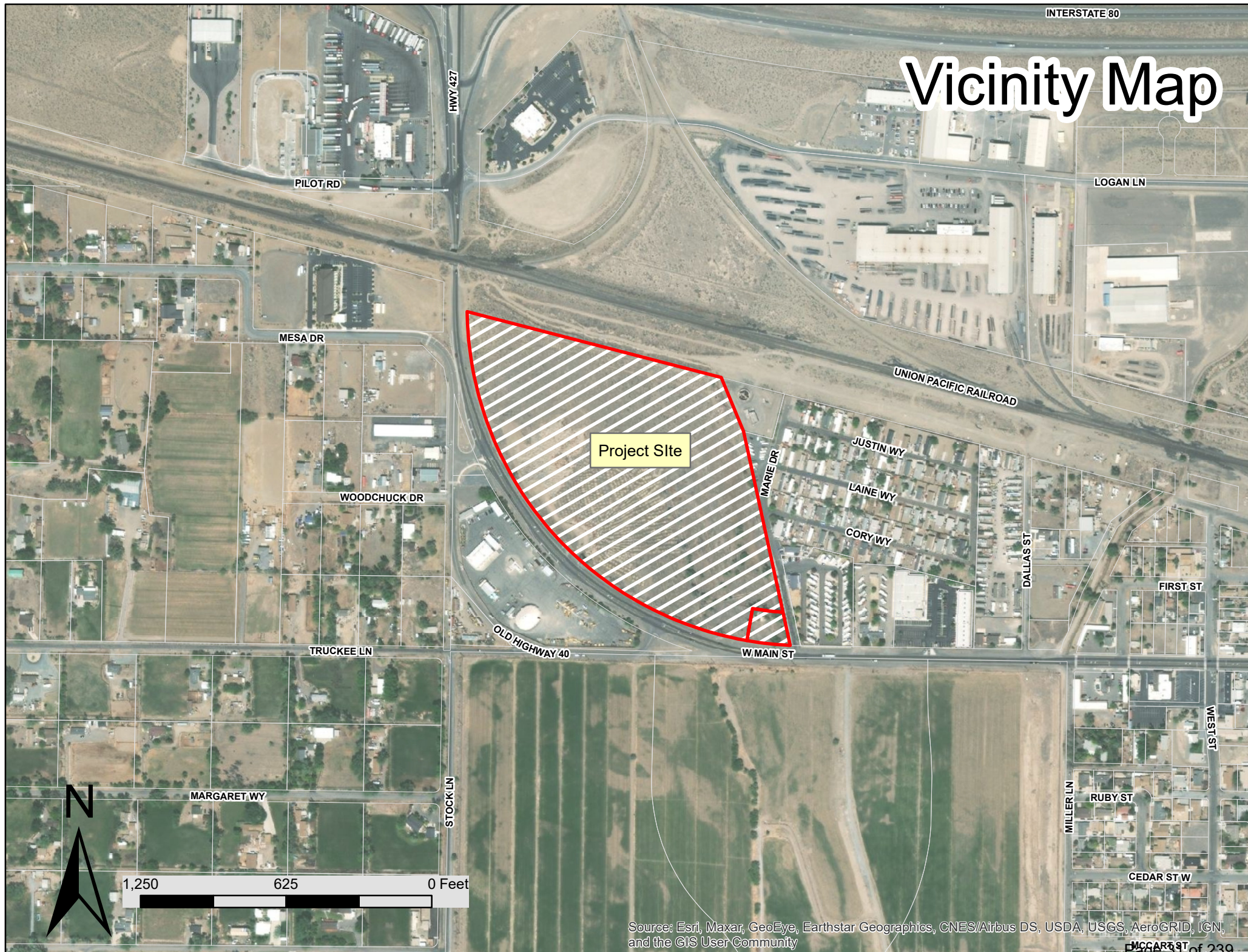
Planning Commission Meeting March 9, 2022
Zoning Map Amendment (ZMA22002) & Tentative Subdivision Map (TSM22001)

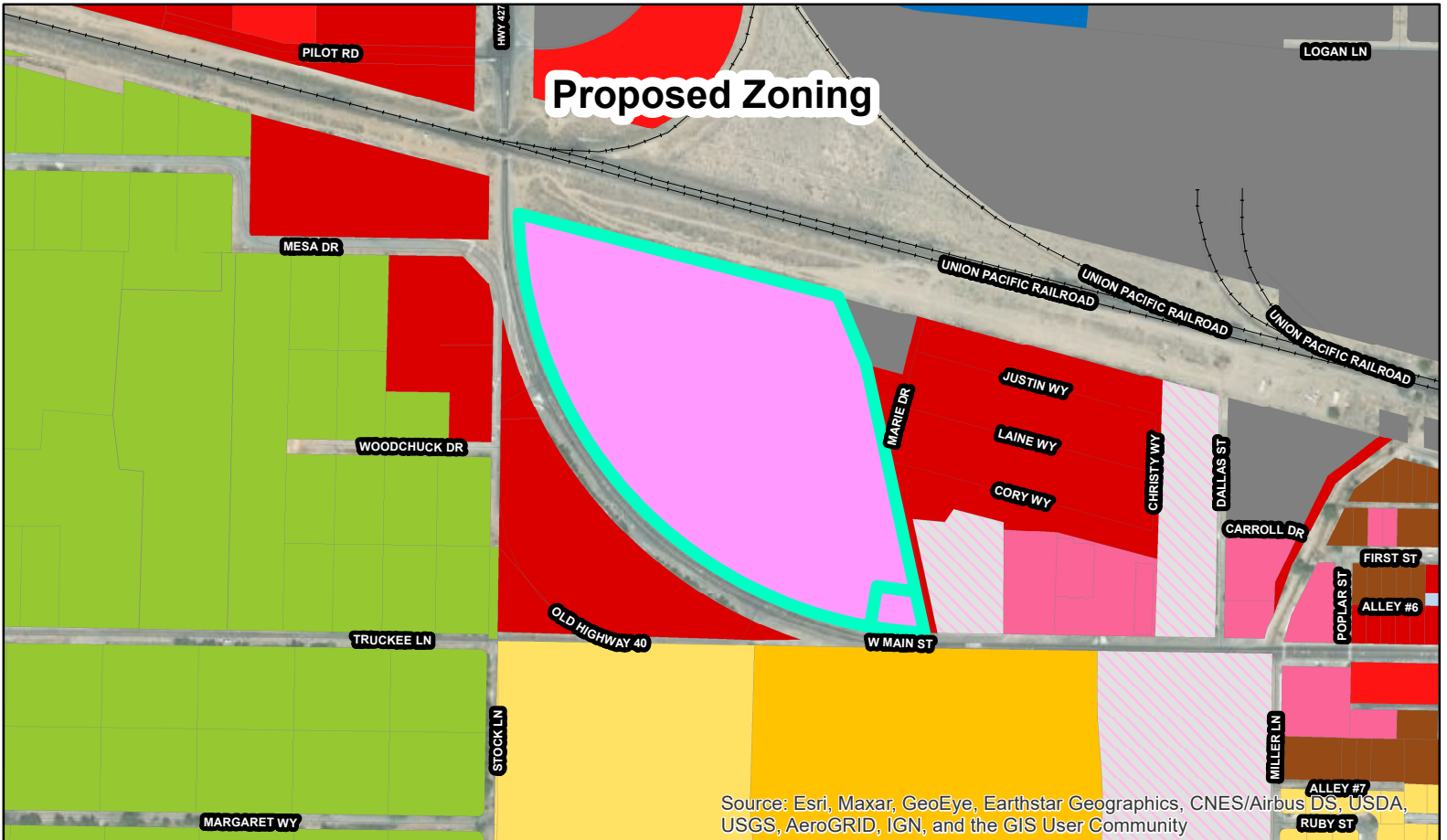
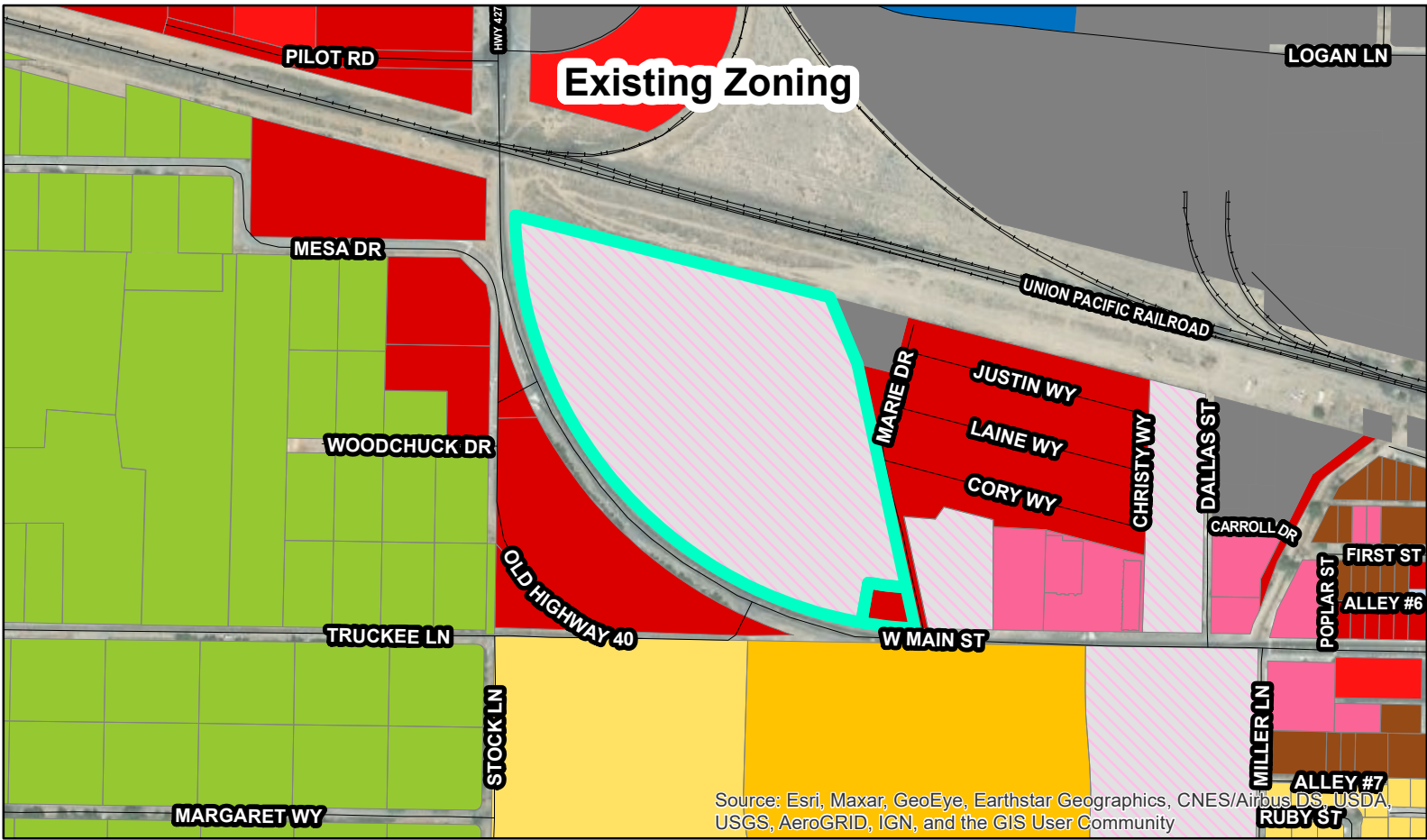
Compliance with Site Development Standards, Floodplain Management, Roadways, Undergrounding of Utilities, and Water & Wastewater Facilities to the approval of the Zoning Administrator, City Engineer, and Public Works Director, prior to the recordation of a Final Map for the project.

ATTACHMENTS

1. Vicinity Map
2. Existing & Proposed Zoning Exhibit
3. Legal Description + Boundary Map
4. Tentative Map Plan Set
5. Preliminary Landscaping Plan
6. Traffic Study
7. Conditions of Approval – TSM22001

Vicinity Map





NOTE: The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley



	600_Main		GR20		RR5		RR1		RR1/2		SF9		SF6		MF21		C1		EC		PF
	MU		SF20		SF12		MDR14		RR5		SF6		MF30		C2		TC		I		OSP

Legend

EXHIBIT "A"
600 WEST MAIN

A PART OF THE SOUTHWEST QUARTER (SW¼) OF SECTION 11, TOWNSHIP 20 NORTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, SITUATE IN THE CITY OF FERNLEY, LYON COUNTY, NEVADA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

ALL OF THAT SUBDIVISION KNOWN AS "**HARTSOCK SUBDIVISION**" FOUND IN DOCUMENT NO. 53963M, PUBLIC RECORDS OF LYON COUNTY, NEVADA, TOGETHER WITH BILLINGSLEY AVENUE, CENTRAL AVENUE, HARTSOCK AVENUE, HURSH AVENUE, AND MAIN STREET AS SHOWN ON SAID SUBDIVISION.

LESS THAT PORTION SHOWN ON THE RECORD OF SURVEY FOR "**FERNLEY UTILITIES**" FOUND IN DOCUMENT NO. 153335, PUBLIC RECORDS OF LYON COUNTY, NEVADA.

CONTAINING 28.42 ACRES, MORE OR LESS.

BEARING BASE: THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW¼) OF SAID SECTION 11 IS ASSUMED TO BEAR NORTH 89°10'30" WEST AND ALL BEARINGS CITED IN SAID SUBDIVISION MAP ARE RELATIVE THERETO.

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



155 Country Estates Circle
Reno, NV 89511

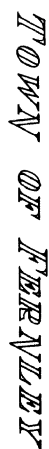
SCALE 1"=250'

#53963 9/16/46
OFFICIAL PLAT

9/16/46 #2

HARTSOCK SUBDIVISION

FERNLEY, NEVADA



N°	ANGLE	RADIUS	LENGTH	INCIDENT
R 1	38°53'.08"	1450.54	988.62	512.95
R 2	1 08°04'.50"	30.00	58.58	51.25
R 3	5 68°44'.80"	30.00	58.58	51.25
R 4	9 52°49'.50"	30.00	59.60	44.05
R 5	13 42°54'.50"	30.00	30.29	19.80
R 6	17 28°55'.30"	30.00	65.55	63.80
R 7	9 01°12'.40"	30.00	47.75	30.64
R 8	6 88°53'.20"	30.00	46.35	23.27
R 9	3 91°54'.30"	30.00	47.55	50.63
R 10	8 87°59'.30"	30.00	46.07	28.56
R 11	11 92°17'.30"	30.00	44.53	31.23
R 12	13 93°56'.25"	1510.74	513.70	486.30
R 13	15 95°01'.55"	1160.74	703.70	376.30
R 14	18 32°41'.30"	1180.74	641.45	323.97
R 15	33°10'.15"	970.74	562.00	239.06
R 16	24°53'.25"	880.74	572.46	181.76
R 17	19°51'.55"	820.74	527.98	137.39
R 18	12°41'.55"	30.00	63.77	53.89
R 19	32°43'.30"	30.00	44.61	31.61
R 20	38°04'.50"	1310.74	812.68	453.53
R 21	55°10'.30"	30.00	49.76	31.89
R 22	30°13'.55"	970.74	517.78	235.85
R 23	34°51'.50"	30.00	44.65	27.63
R 24	35 35°52'.00"	30.00	49.93	32.94
R 25	35 35°52'.00"	1160.74	668.65	343.77
R 26	27 30°13'.05"	1180.74	513.55	305.72
R 27	27 25°13'.05"	780.74	222.77	112.16
R 28	16°20'.30"	30.00	55.82	41.67
R 29	30 10°48'.30"	30.00	35.47	20.14
R 30	1 6°44'.40"	30.00	35.47	42.58
R 31	1 6°44'.40"	30.00	35.47	42.58
R 32	1 6°44'.40"	30.00	35.47	42.58
R 33	34 12°53'.20"	30.00	30.36	16.62
R 34	34 12°53'.20"	30.00	65.45	60.07
R 35	37°17'.15"	1400.74	944.13	493.64
R 36	12°12'.45"	30.00	63.58	53.44

PRESENT TOWN L.
1/4 Section Line ✓



PHELPS
ENGINEERING

ENGINEERS - PLANNERS - SURVEYORS - ANALYSTS

155 COUNTRY ESTATES CIRCLE
SUITE 300, RENO, NEVADA 89511

(775) 399-7200 - phelpsenineering.net
info@phelpsenineering.net

GENERAL NOTE FOR ALL DETAILS

1. ALL MATERIALS FURNISHED AND WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS" CONSTRUCTION (SSPWC OR ORANGE BOOK).

GENERAL NOTES FOR WATER SERVICE

1. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA AND CHAPTER 618 OF NRS, IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE COMPLETION OF THIS PROJECT.

2. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK ACCORDING TO GENERALLY ACCEPTED CONSTRUCTION PRACTICES.

3. ALL UNDERGROUND VALVES LARGER THAN 2", TEES, ETC., SHALL BE COATED IN MASTIC.

4. NOTIFY CITY OF FERNLEY 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

5. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS; MIN 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45; AIR ENTRAINMENT 5% ± 1.5%; SLUMP AT 1 TO 4 INCHES; ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURERS RECOMMENDATIONS.

6. NO OTHER UTILITIES MAY BE PLACED IN A WATER OR SEWER TRENCH.

7. BACKFLOW PREVENTION IS REQUIRED PER DETAILS # 31 THRU # 40. RESIDENTIAL SUBDIVISIONS DO NOT TYPICALLY REQUIRE DETAILS # 31 THRU # 40. CITY OF FERNLEY WILL NOTIFY WHEN THESE SHEETS ARE REQUIRED.

8. CONTRACTORS SHALL COMPLY WITH HOST EMPLOYER (CITY OF FERNLEY) SAFETY PROGRAM

9. CONTRACTOR IS RESPONSIBLE FOR REVIEWING HOST EMPLOYER'S SAFETY PROGRAM. CONTRACTOR AT PRE-BID SHALL FURNISH CITY OF FERNLEY SAFETY RECORDS FROM THE LAST THREE YEAR PERIOD AND A COPY OF ITS OWN COMPANY SAFETY PROGRAM.

10. ALL VALVE BOXES, MANHOLE STRUCTURES, AND CLEANOUTS SHALL BE MARKED AND ACCESSIBLE AT ALL TIMES.

11.FOR DETAILS NOT SHOWN, CONTACT CITY OF FERNLEY @ 775-784-9910, FAX 775-784-9966.

12. THE OWNER IS RESPONSIBLE FOR FURNISHING QUALIFIED SITE INSPECTIONS DURING CONSTRUCTION OF PUBLIC IMPROVEMENTS.

13.CITY OF FERNLEY SHALL APPROVE OF THE INSPECTOR & TESTING FIRM PRIOR TO CONSTRUCTION.

14. THE INSPECTOR SHALL INVENTORY ALL CONSTRUCTION MATERIALS TO ENSURE QUALITY CONTROL. REJECTION OF DEFECTIVE MATERIALS MUST BE COORDINATED WITH CITY OF FERNLEY.

15.PERFORM PLASTIC PIPE BALL AND MANDREL TESTS ON NEWLY INSTALLED SEWER PIPE IN ACCORDANCE WITH SECTION 336.03.09 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

16.PERFORM AIR PRESSURE TESTING ON NEWLY INSTALLED SEWER PIPE IN ACCORDANCE WITH SECTION 336.03.07.04 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

17. ALL NEW PUBLIC WATER MAINS SHALL BE 8" OR LARGER.

18. CONTRACTOR IS RESPONSIBLE TO MAKE FIELD MEASUREMENTS TO LOCATE AND SIZE EXISTING FACILITIES OR UNDERGROUND UTILITIES.

19.PLACE CHLORINE TABLETS IN WATER LINES AS FOLLOWS:
3 TABLETS PER 6" DIAMETER OF LINE;
4 TABLETS PER 8" DIAMETER LENGTH OF LINE;
5 TABLETS PER 10" DIAMETER LENGTH OF LINE;
6 TABLETS PER 12" OR GREATER DIAMETER LENGTH OF LINE;
TABLETS MUST BE GLUED AT EQUALLY SPACED INTERVALS TO INSIDE OF PIPE USING APPROVED ADHESIVE. DISINFECTION SHALL MEET AWWA STANDARD C651.

20.CONTRACTOR SHALL SUBMIT CUT SHEETS & SHOP DRAWINGS FOR REVIEW TO THE PROJECT ENGINEER, AND/OR THE UTILITY ENGINEER PRIOR TO ORDERING CONSTRUCTION MATERIALS. A SIGNED SET OF DRAWINGS MUST ALWAYS BE AVAILABLE ONSITE DURING CONSTRUCTION.

21.PER THE CITY OF FERNLEY RULES AND REGULATIONS, SECTION 1.04.054, A BOND MUST BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.

Detail No.

1

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES

Detail No.

2

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES FOR SANITARY SEWER

1. SEWER LINE CLEANING SHALL BE PERFORMED WITH HYDRAULICALLY PROPELLED, HIGH-VELOCITY JET, MECHANICALLY POWERED EQUIPMENT, OR OTHER PUBLIC WORKS APPROVED DEVICES. THE CLEANING SHALL RESTORE THE SEWER LINES TO A MINIMUM OF 95% OF THE LINES ORIGINAL CARRYING CAPACITY. FINAL ACCEPTANCE SHALL BE MADE AFTER SUCCESSFUL INSPECTION TO THE PUBLIC WORKS INSPECTORS SATISFACTION THAT THE CONDITIONS ABOVE HAVE BEEN MET.

2. SEWER GRADES SHALL BE VERIFIED AT EACH MANHOLE. INSPECTOR SHALL VERIFY PROPER OPERATION OF LEVELING EQUIPMENT AND PROCEDURE.

3. ALL NEW PUBLIC COLLECTOR SEWERS SHALL BE 8 INCHES OR LARGER.

GENERAL NOTES FOR E-ONE SEWER

1. MINIMUM BURY DEPTH IS 30 INCHES.

2. ALL LOW PRESSURE FORCE MAIN PIPING SHALL BE SDR 21 PVC FOR 2" AND 3" MAINS AND C900 PVC FOR 4" AND LARGER MAINS.

3. INSTALL AIR-RELEASE VALVES AT SYSTEM HIGH POINTS OR EVERY 2000 FT OF PIPE RUN.

4. INSTALL FLUSHING STATIONS AND ISOLATION VALVES AT EVERY 1500 FT OF PIPE RUN AND WHENEVER TWO OR MORE MAINS COME TOGETHER.

5. "LOOPED" SYSTEMS ARE NOT ALLOWED.

6. SIZE SEWER MAINS IN ACCORDANCE WITH TABLES 4 AND 7 (MAXIMUM NUMBER OF GRINDER PUMP CORES OPERATING DAILY AND SCH 40 PVC PIPE FLUID DYNAMICS) FROM THE ENVIRONMENT-ONE CATALOG.

7. USE OF ENVIRONMENT-ONE SYSTEM COMPONENTS HAS BEEN AUTHORIZED BY THE UTILITY. ALTERNATE SYSTEM WILL BE REVIEWED ON A CASE-BY CASE BASIS.

8. "FLAPPER" TYPE STOP-CHECK VALVES SHALL BE INSTALLED AS CLOSE TO THE MAIN LINE AS FEASIBLE.

GEOTECHNICAL NOTE:

1. BACKFILL OF L.P. SEWER TRENCHES SHALL BE IN ACCORDANCE WITH THE DETAIL ON PAGE ONE OF THESE CITY OF FERNLEY STANDARDS. THE REQUIREMENT FOR CLASS 'A' BEDDING SAND MAY BE WAIVED IF THE TRENCH IS IN A NON-STRUCTURAL LOCATION AND THE NATIVE MATERIAL HAS A PLASTICITY INDEX OF LESS THAN 20.

SYSTEM TESTING:

1. THE CITY OF FERNLEY OR IT'S AUTHORIZED INSPECTOR SHALL INSPECT ALL SYSTEMS PRIOR TO BURIAL.

2. COMPACTION TESTING (~90% ASTM D1557A) IS REQUIRED IN ALL STRUCTURAL AREAS.

3. HYDROSTATIC ALLY TEST THE LINE TO 150% OF DEAD HEAD PRESSURE (90 psi) FOR 2 HOURS. SYSTEM SHALL NOT LOSE MORE THAN 5 psi WITHIN THIS TESTING PERIOD.

Detail No.

4

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES

Detail No.

5

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

WATER MAIN PRESSURE & BACTERIA TESTING

1. CONTRACTOR SHALL MAINTAIN TEST PRESSURE WITHIN 5 PSI FOR A PERIOD OF 2 HOURS. TEST PRESSURE SHALL BE 150 AND 200 PSI, PER PRESSURE ZONE, AS INDICATED ON PLANS.

2. ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING:
$$\text{ALLOWABLE LEAKAGE (GALLONS PER HOUR)} = \frac{SD \sqrt{P}}{133,200}$$
WHERE S = LENGTH OF PIPE IN TEST SECTION (FEET)
D = PIPE DIAMETER (INCHES)
P = TEST PRESSURE (PSIG)

3. LEAKAGE SHALL BE MEASURED BY THE VOLUME OF WATER REQUIRED TO MAINTAIN THE TEST PRESSURE WITHIN 5 PSI FOR THE TEST PERIOD, NOT THE DROP IN PRESSURE.

4. INSPECTOR IS RESPONSIBLE FOR OBTAINING AND DELIVERING TESTING LAB SAMPLE BOTTLES AND COLLECTING SAMPLES FOR BACTERIA TESTING. INSPECTOR SHALL PRESENT TEST RESULTS TO THE UTILITY.

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RP):

1. THE RP SHALL ALWAYS BE INSTALLED ABOVE GRADE AND WILL NOT BE ALLOWED IN BASEMENTS.

2. A DRAIN SHALL BE INSTALLED IN THE BOX FOR OUTDOOR INSTALLATIONS AND A DAYLIGHT DRAIN AND A FLOOR DRAIN SHALL BE INSTALLED FOR INDOOR INSTALLATIONS. REFER TO **TABLE A** FOR MINIMUM REQUIRED DRAIN SIZES.

3. AN AIR GAP (VERTICAL PHYSICAL SEPARATION) OF AT LEAST 2 TIMES THE DIAMETER OF THE RELIEF VALVE OPENING, WITH A MINIMUM OF 1", SHALL BE MAINTAINED BETWEEN THE WATER DISCHARGE POINT ON THE RELIEF VALVE AND THE DRAIN OR 1" ABOVE THE MINIMUM FLOOD LEVEL, WHICHEVER IS HIGHEST.

DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY (DC):

1. BELOW GROUND VAULTS SHALL REMAIN DRY THROUGHOUT THE YEAR.

PRESSURE VACUUM BREAKER (PVB) SPILL RESISTANT PRESSURE VACUUM BREAKER (SVB) BACKFLOW PREVENTION ASSEMBLY:

1. THE PVB SHALL NOT BE SUBJECT TO ANY BACK PRESSURE FROM: ELEVATED DOWNSTREAM PIPING, INJECTION SYSTEMS, COMPRESSED AIR, PUMPS, OR OTHER MEANS. IF BACK PRESSURE EXISTS, AN RP MUST BE INSTALLED.

DC, RP, AND PVB/SVB ASSEMBLIES:

1. SUPPORTS SHALL BE PROVIDED AS NECESSARY.

2. ELECTRIC SUPPLY SOCKETS SHALL BE AWAY FROM RELIEF VALVE & TESTCOCK.

3. FREEZE PROOF INSULATION BOX AND 1 TYPE OF HEAT ARE REQUIRED. 2 TYPES ARE STRONGLY RECOMMENDED.

4. PLACE WATERTIGHT, FLEXIBLE SEALANT AT PIPE PENETRATIONS.

5. INSULATED BOX SHALL EITHER SWING CLEAR OF ASSEMBLY OR BE SIZED TO PROVIDE CLEARANCES SHOWN IN THE DETAILS.

6. SPRING LOADED LID IS REQUIRED ON LARGE BOXES.

7. EITHER VALVE BOXES OR PIPE RISERS MAY BE USED FOR THE SHUT OFF VALVES.

8. MANUAL SHUTOFF VALVES SHALL BE BRASS GLOBE OR CURB VALVE SIZED THE SAME AS SERVICE LINE.

9. DRAIN CONFIGURATION SHALL BE AN INLINE TEE TO BRASS SHUTOFF VALVE WITH A RUBBER SEAT & SCHEDULE 80 1/2" 90° ELBOW WITH FEMALE THREADS. ADD 1/2" RED FREEZE KING DRAIN.

10. USE 2 FULL TURNS OF TEFLON TAPE ON ALL THREADED JOINTS.

11. NO STOP AND WASTE VALVES.

12. ADEQUATE CLEARANCE MUST BE PROVIDED FOR OPERATION OF VALVES AND REPAIR AND TESTING OF THE ASSEMBLIES.

13. NO OUTLET, TEE, OR AN CONNECTION MAY BE MADE TO THE SERVICE LINE BETWEEN THE METER AND THE ASSEMBLY.

14. ALL ASSEMBLIES MUST BE INSTALLED IN THE HORIZONTAL ORIENTATION UNLESS USC APPROVED IN A DIFFERENT ORIENTATION.

15. ASSEMBLIES MUST BE INSTALLED AS CLOSELY AS PRACTICAL TO THE WATER METER.

16. CITY OF FERNLEY RECOMMENDS PROTECTING THE ASSEMBLIES FROM VANDALISM IN SUSCEPTIBLE AREAS. REQUIRED CLEARANCES MUST STILL BE MET AND UTILITY ACCESS MUST BE PROVIDED.

17. ASSEMBLIES LESS THAN 2" REQUIRE 1 CU. FT OF CLEAN GRAVEL AND ASSEMBLIES GREATER THAN OR EQUAL TO 2" REQUIRE 8 CU. FT OF CLEAN GRAVEL FOR ALL DRAINS.

Detail No.

2

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES

Detail No.

2

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES FOR ROADWAY GEOMETRICS

1. THE ENGINEER SHALL SUBMIT A TRAFFIC REPORT AND PAVEMENT SECTION DESIGN WITH THE IMPROVEMENT PLANS, UNLESS APPROVED OTHERWISE BY THE CITY ENGINEER.

2. THE ENGINEER OF RECORD SHALL SUBMIT THE PAVEMENT MIX DESIGN TWO (2) WEEKS PRIOR TO PAVING TO THE CITY OF FERNLEY PUBLIC WORKS DEPARTMENT FOR REVIEW.

3. DESIGN OF THE STRUCTURAL SECTION FOR ASPHALT CONCRETE PAVEMENT FOR BOTH PUBLIC AND PRIVATE STREETS SHALL CONFORM TO THE PROCEDURES AS SET FORTH IN THE CURRENT ASPHALT INSTITUTE MANUAL SERIES NO. 1 (MS-1) OR AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (ASHTO) DESIGN GUIDE, BASED ON SUBGRADE STRENGTH VALUES DETERMINED BY RESILIENT MODULUS (MR) VALUE, RESISTANCE (R) VALUE OR CALIFORNIA BEARING RATIO (CBR), AND TRAFFIC DATA PROVIDED IN APPROVED TRAFFIC STUDY FOR THE PROJECT. SUFFICIENT TESTS SHALL BE MADE TO FULLY EVALUATE EACH DIFFERENT SOIL TYPE IN THE PROJECT. MAJOR ARTERIAL, MINOR ARTERIAL, INDUSTRIAL AND COMMERCIAL STREETS SHALL BE A TYPE 2 AC-20P ASPHALT CONCRETE (AC) PAVEMENT MIX DESIGN WITH HYDRATED LIME (MINERAL FILLER) ADDED AT ONE AND ONE-HALF PERCENT OF THE WEIGHT OF THE DRY AGGREGATES. THE MINIMUM DESIGN LIFE OF THE STRUCTURAL SECTION SHALL BE 20 YEARS. MINIMUM STREET STRUCTURAL SECTIONS FOR BOTH PUBLIC AND PRIVATE STREETS SHALL BE 3" AC ON 6" OF TYPE 2, CLASS B AGGREGATE BASE FOR LOCAL/RESIDENTIAL STREETS, 3" AC ON 6" TYPE 2, CLASS B AGGREGATE BASE FOR MINOR ARTERIAL, INDUSTRIAL, COMMERCIAL AND COLLECTOR STREETS, AND 4" AC ON 6" TYPE 2, CLASS B AGGREGATE BASE FOR EXPRESSEWAYS AND MAJOR ARTERIAL STREETS. ALL STREETS, BOTH PUBLIC AND PRIVATE, WHICH ARE TO BE UTILIZED BY CONSTRUCTION VEHICLES DURING DEVELOPMENT, SHALL BE DESIGNED TO CARRY THE MAXIMUM ANTICIPATED LOADS. CONCRETE STREETS MAY BE PERMITTED UPON APPROVAL OF STRUCTURAL DESIGNS BY PUBLIC WORK.

STRIPING AND SIGNAGE

1. PAVEMENT STRIPING SHALL BE NDOT TYPE II WATERBORNE PAINT WITH A MINIMUM FILM THICKNESS OF 25 MILS APPLIED IN TWO COATS. DROP ON GLASS BEADS SHALL BE APPLIED ON SECOND COAT. SEE SECTION 632 OF THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (SILVER BOOK).

2. PAVEMENT SYMBOL MARKINGS, YIELD LINES, AND STOP BARS SHALL BE REFLECTIVE THERMOPLASTIC MATERIAL MEETING THE CURRENT SPECIFICATIONS FROM SECTION 634 OF THE SILVER BOOK.

3. THE DESIGN AND INSTALLATION OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.

TRENCHING AND PATCHING

1. THE DESIGN AND INSTALLATION OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.

Detail No.

5

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES

Detail No.

5

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

AIR GAP SEPARATION

1. THE TANK AND PUMP SHALL BE DESIGNED TO SUIT CUSTOMER'S NEEDS.

2. AN AIR GAP (THE DISTANCE BETWEEN THE LOWEST POINT OF THE SUPPLY LINE AND/OVERFLOW ELEVATION OF THE RECEIVING TANK) MUST BE AT LEAST 2 TIMES THE DIAMETER OF THE SUPPLY LINE, WITH A MINIMUM AIR GAP OF 1'.

3. FREEZE PROTECTION SHALL BE PROVIDED FOR THE SUPPLY PIPE AND THE RECEIVING TANK WHERE NECESSARY.

4. THE WATER METER SHALL BE LOCATED UPSTREAM OF THE AIR GAP.

5. AIR GAP BYPASSES MUST BE AUTHORIZED BY THE UTILITY.

TYPICAL LOCATIONS WHERE RP ASSEMBLIES ARE REQUIRED
(THIS LIST IS ACCORDING TO NAC 445A.67195, CITY OF FERNLEY MAY REQUIRE AN RP FOR APPLICATIONS NOT LISTED HERE)

A BUILDING THAT:

CONTAINS A HOTEL, MOTEL, CASINO, CONDOMINIUM OR TOWNHOUSE, OR ANY APARTMENTS;

IS USED FOR UNIDENTIFIED COMMERCIAL PURPOSES;

UTILIZES ANY SEWAGE PUMPS OR EJECTORS;

UTILIZES A HYDRONIC HEATING SYSTEM WITH A CHEMICAL ADDITIVE;

HAS A BAPTISMAL FONT;

UTILIZES A BOTTLING SYSTEM;

IS A BREWERY, CANNERY, PACKING HOUSE, DAIRY PROCESSING FACILITY, RESTAURANT, OR OTHER FACILITY WHERE FOOD IS PROCESSED OR SERVED, DENTAL CLINIC, MEDICAL FACILITY, HOSPITAL, CONVALESCENT HOME, SANITARIUM, MORGUE, MORTUARY, FACILITY FOR CONDUCTING AUTOPSIES, LABORATORY, SCHOOL, COLLEGE, UNIVERSITY, PUBLISHING OR PRINTING FACILITY, VETERINARY CLINIC, PET SHOP, PET GROOMING FACILITY, LAUNDRY OR DRY CLEANING FACILITY, DYING FACILITY, ANY ELECTROCHEMICAL, PLATING FACILITY, FACILITY THAT HAS A POOL OR SPA, A PARK FOR MOBILE HOMES OR RECREATIONAL VEHICLES, FACILITY FOR PRODUCTION OF POWER, FACILITY THAT HANDLES, PROCESSES OR STORES RADIOACTIVE MATERIALS, FACILITY THAT PROCESSES SAND OR GRAVEL, FACILITY THAT MANUFACTURES OR UTILIZES CHEMICALS, FACILITY FOR THE MANUFACTURING, REPAIR, OR WASHING OF MOTOR VEHICLES, FACILITY FOR MANUF. OR PROCESSING OF FILM, FACILITY FOR MANUFACTURING OF ICE, A FACILITY FOR MANUF., PROCESSING OR CLEANING OF METAL, FACILITY FOR MANUF. OF ANY RUBBER, FACILITY FOR MANUF. OF ANY PAPER, ANY FACILITY FOR MANUF., PROCESSING OR FABRICATION, CLASS 4, CLASS 5, OR CLASS 6 FIRE SPRINKLER SYSTEMS, IRRIGATION SYSTEMS WHERE CHEMICALS ARE INJECTED OR BOOSTER PUMPS ARE ADDED.

TYPICAL LOCATIONS WHERE DC OR PVB/SVB ASSEMBLIES OR AIR GAPS ARE REQUIRED
(THIS LIST IS ACCORDING TO NAC 445A.67195, CITY OF FERNLEY MAY REQUIRE A DC, PVB/SVB OR AG FOR APPLICATIONS NOT LISTED HERE)

A DC IS REQUIRED FOR A BUILDING WITH CLASS 1, CLASS 2, OR CLASS 3 FIRE SPRINKLER SYSTEMS, A SITE WITH AN AUXILIARY WATER SUPPLY, AND A SITE WITH TWO METERS. A PVB/SVB IS REQUIRED FOR IRRIGATION SYSTEMS WITH NO PUMPS OR CHEMICAL INJECTION SYSTEMS. AN AIR GAP IS REQUIRED FOR STORM DRAINAGE SYSTEMS, SEWAGE COLLECTION, DISTRIBUTION, OR TREATMENT SYSTEMS, AND FILL LOCATIONS FOR PORTABLE SPRAYING OR CLEANING EQUIPMENT.

CITY OF FERNLEY CROSS-CONNECTION CONTROL PROGRAM REQUIREMENTS

1. ALL BACKFLOW PREVENTION ASSEMBLIES MUST BE INSPECTED BY A UTILITY REPRESENTATIVE AND A TEST FORM (COMPLETED BY A HEALTH DISTRICT CERTIFIED TESTER) MUST BE SUBMITTED TO CITY OF FERNLEY BEFORE SERVICE IS ACTIVATED.

2. THE TEST FORM MUST BE SUBMITTED TO CITY OF FERNLEY ANNUALLY WITHIN 30 DAYS OF THE ASSEMBLY INSTALLATION ANNIVERSARY DATE.

3. CITY OF FERNLEY MAY TEST THE ASSEMBLY AT ANY TIME AT ITS OWN EXPENSE.

4. THE CUSTOMER IS RESPONSIBLE TO PROTECT HIS/HER SYSTEM FROM THERMAL EXPANSION BY INSTALLING EITHER AN EXPANSION TANK OR PRESSURE RELIEF VALVE IN THE FEED LINE TO THE WATER HEATER (NO PROTECTION COULD RESULT IN SERIOUS DAMAGE AND/OR INJURY).

5. ALL ASSEMBLIES MUST BE USC APPROVED.

6. ALL WATER USED DURING CONSTRUCTION SHALL BE METERED AND SHALL FLOW THROUGH AN APPROVED BACKFLOW PREVENTION ASSEMBLY. UNAUTHORIZED FIRE HYDRANT USAGE SHALL RESULT IN COLLECTION OF REVENUES, FINES, POSSIBLE LEGAL ACTION, AND INVOLVEMENT OF STATE/LOCAL LICENSING BOARDS.

7. IF A CONTINUOUS WATER SUPPLY IS CRITICAL TO A PREMISE, PARALLEL ASSEMBLIES SHOULD BE INSTALLED.

8. IT IS THE CUSTOMER'S RESPONSIBILITY TO ACCOUNT FOR PRESSURE LOSSES FROM THE ASSEMBLY.

9. BACKFLOW PREVENTION SHALL NOT BE RELOCATED, REMOVED, OR REPLACED WITHOUT PRIOR APPROVAL FROM CITY OF FERNLEY.

10. PLEASE NOTE THAT THE REQUIRED ASSEMBLIES PROTECT THE PUBLIC WATER SYSTEM ONLY.

11. ENGINEER TO PROVIDE DOCUMENTATION THAT THE ASSEMBLIES ARE USC APPROVED.

Detail No.

3

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES

Detail No.

3

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES FOR CONCRETE WORK

1. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.

2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS; MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45; AIR ENTRAINMENT 5% ± 1.5%; SLUMP AT 1 TO 4 INCHES; ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURERS RECOMMENDATIONS.

3. COMMERCIAL DRIVEWAYS SHALL HAVE #4 BARS AT 18" ON-CENTER LONGITUDINAL AND TRANSVERSE EXTENDING INTO GUTTER PAN AND DRIVEWAY WINGS. MINIMUM 2" CONCRETE COVER FOR ALL REINFORCING BARS.

4. IF EXPANSION JOINT EXISTS WITHIN 4 FEET OF DRIVEWAY, REMOVE SIDEWALK AND CURB AND GUTTER TO THAT JOINT.

5. CONCRETE REMOVAL SHALL BE TO NEAT SAWCUT LINES

6. REMOVE CONCRETE WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXIST

7. DEPRESSED CURB LENGTH TO MATCH DRIVEWAY WIDTH

8. WEAKENED PLAIN JOINTS AT 5'-0" O.C. WITH EXPANSION JOINT IF NECESSARY

Detail No.

6

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES

Detail No.

6

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103

2 of 23

811

Know what's below.
Call 811 before you dig.

NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP
DRAWN BY: JJP
CHECKED BY: LEP

PHHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 969-7200
www.phelpsengeering.net

GENERAL NOTES

DATE

REVISIONS

No.

Page 36 of 239



EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EXISTING EASEMENT LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- CURB & GUTTER
- PARKING/TRAFFIC SIGN
- DRAINAGE FLOWLINE
- EXISTING STORM SEWER
- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- EXISTING RAW WATER LINE
- EXISTING TELEPHONE
- EXISTING COMMUNICATION LINE
- EXISTING TRANSFORMER
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING FENCE
- EXISTING UNPAVED ROAD
- EXISTING VEGETATION TO REMAIN

KEY NOTES:

- EXISTING DITCH TO REMAIN
- EXISTING DITCH TO BE REGRADED
- STRUCTURE TO BE DEMOLISHED
- TRAIL SYSTEM TO BE REMOVED
- EXISTING STORM SEWER INLET TO BE REMOVED
- EXISTING 18" STORM PIPE TO BE REMOVED
- REMOVE EXISTING PAVEMENT AND CURB AND GUTTER
- EXISTING FENCE TO BE DEMOLISHED
- EXISTING VEGETATION TO BE REMOVED

DEMOLITION NOTES:

ALL ON SITE STRUCTURES, UTILITIES, VEGETATION, WALLS, FENCES AND OTHER ITEMS TO BE REMOVED UNLESS OTHERWISE NOTED .

EXISTING DIRT PILES TO BE UTILIZED FOR ON-SITE GRADING

811

Know what's below.
Call 811 before you dig.

NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

EXISTING CONDITIONS
(OVERALL MAP)

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

3 of 23

PHelps
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 969-7200
www.phelpsengineering.net

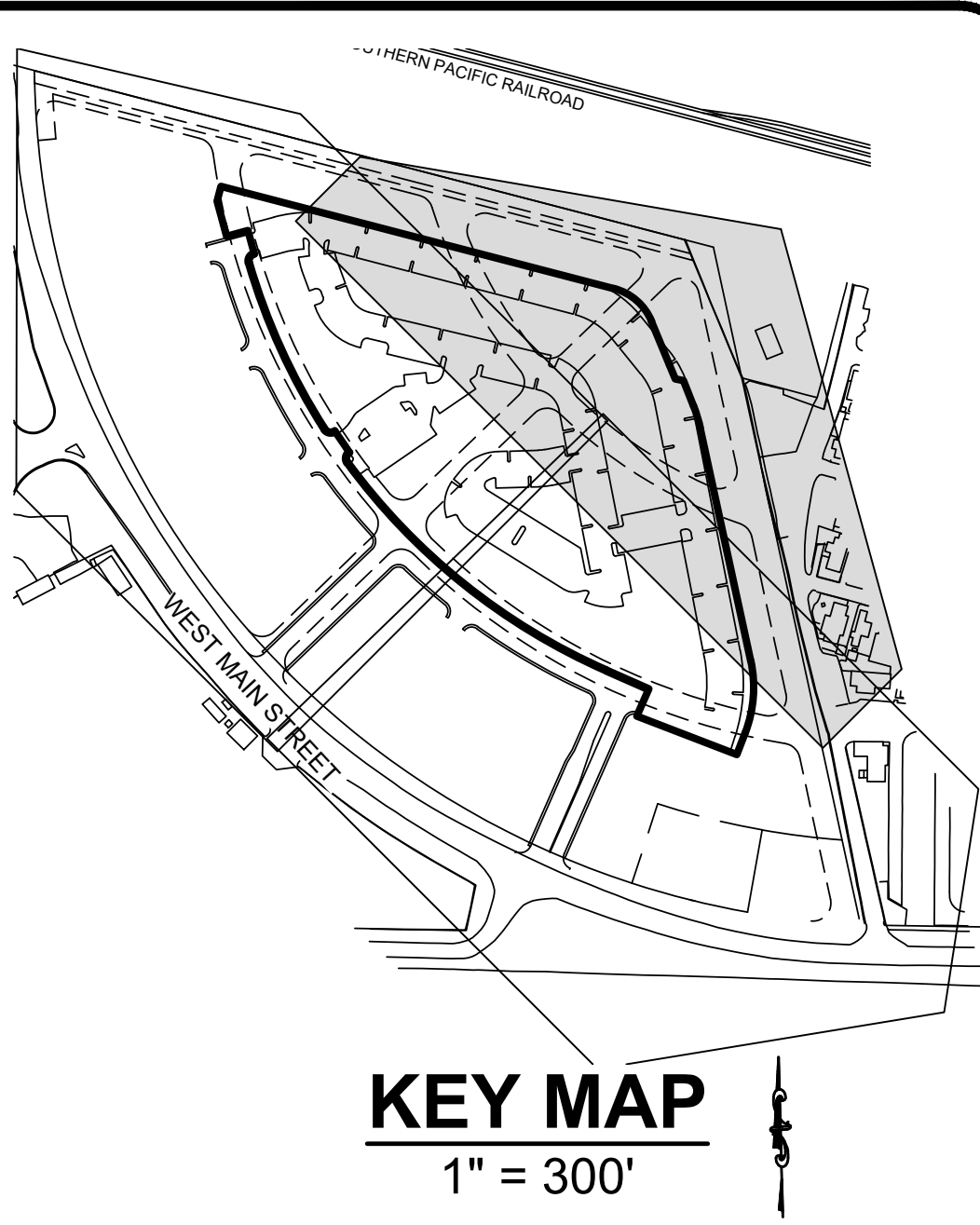
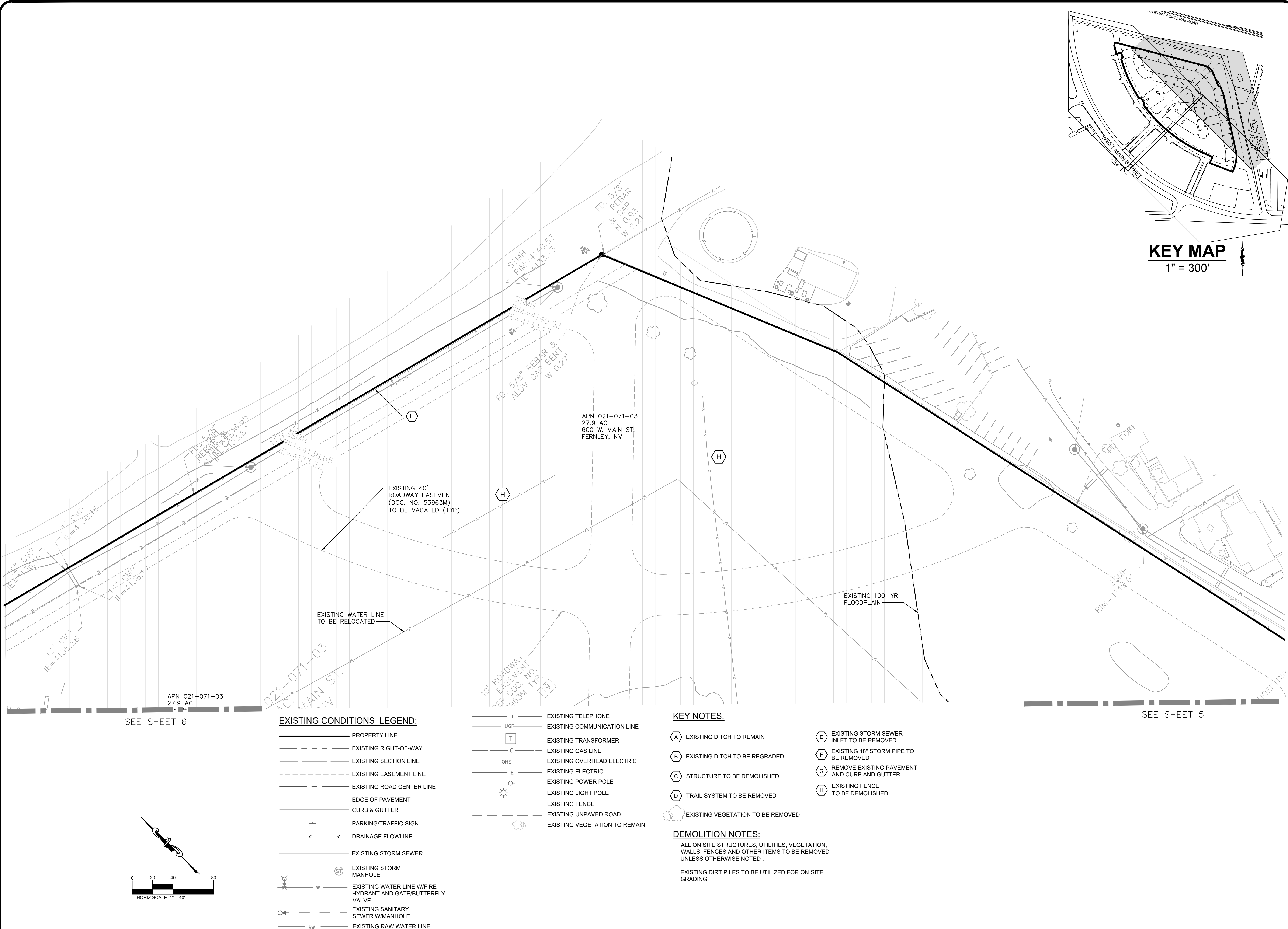
REVISIONS

DATE

BY

No.

Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - EX COND.dwg 4. EXISTING CONDITIONS & DEMO PLAN Jan 10, 2022 3:14pm by: JPucillo



811

Know what's below.
Call 811 before you dig.

NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

EXISTING CONDITIONS &
DEMO PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

4 of 23

PHelps

ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 399-7200
www.phelpsengineering.net

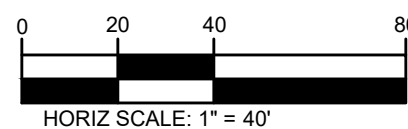
No.

REVISIONS

DATE

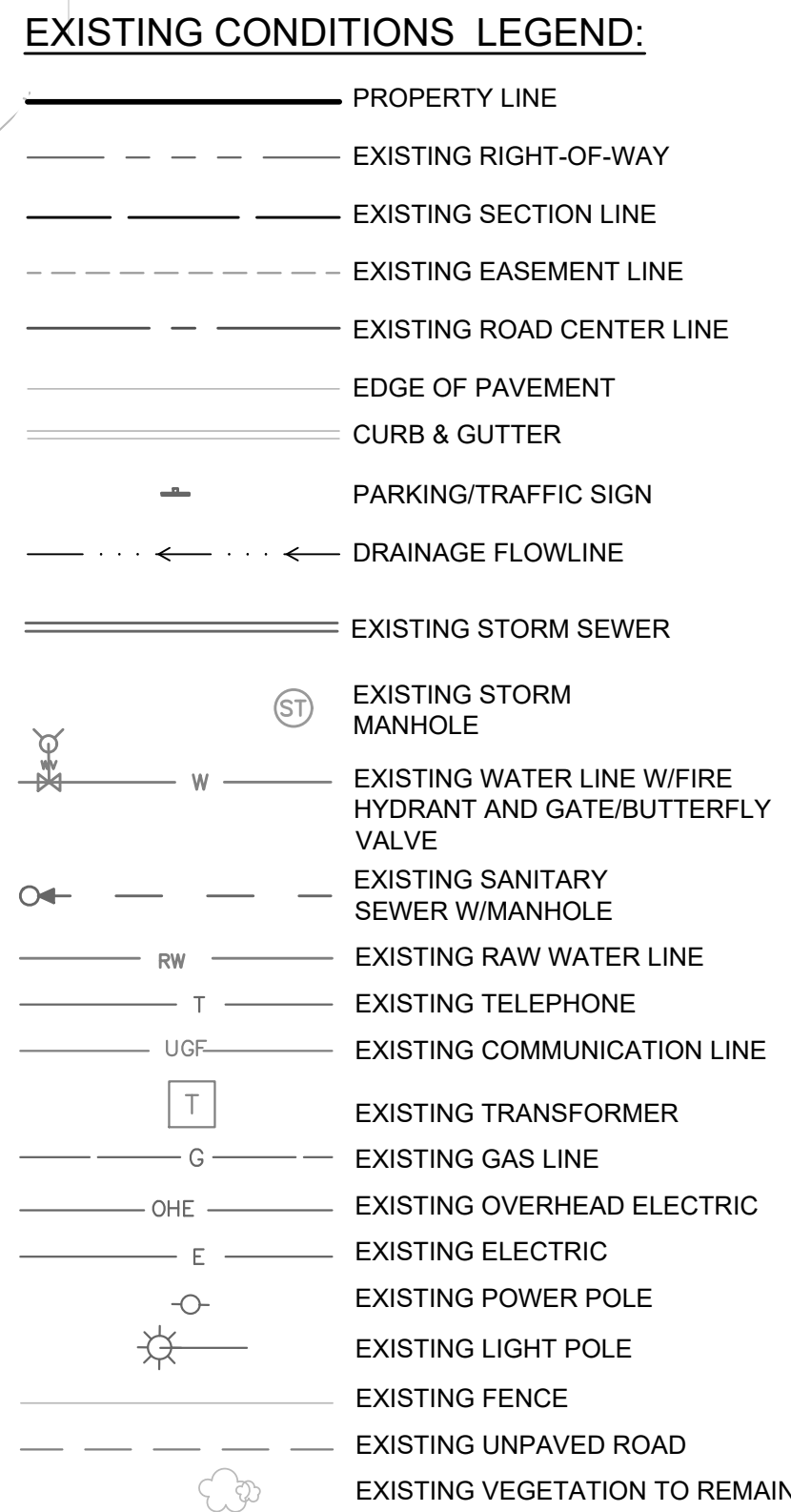
BY

Page 38 of 239



 A	EXISTING DITCH TO REMAIN	 E	EXISTING STORM SEWER INLET TO BE REMOVED
 B	EXISTING DITCH TO BE REGRADED	 F	EXISTING 18" STORM PIPE TO BE REMOVED
 C	STRUCTURE TO BE DEMOLISHED	 G	REMOVE EXISTING PAVEMENT AND CURB AND GUTTER
 D	TRAIL SYSTEM TO BE REMOVED	 H	EXISTING FENCE TO BE DEMOLISHED
	EXISTING VEGETATION TO BE REMOVED		

EXISTING DIRT PILES TO BE UTILIZED FOR ON-SITE
GRADING

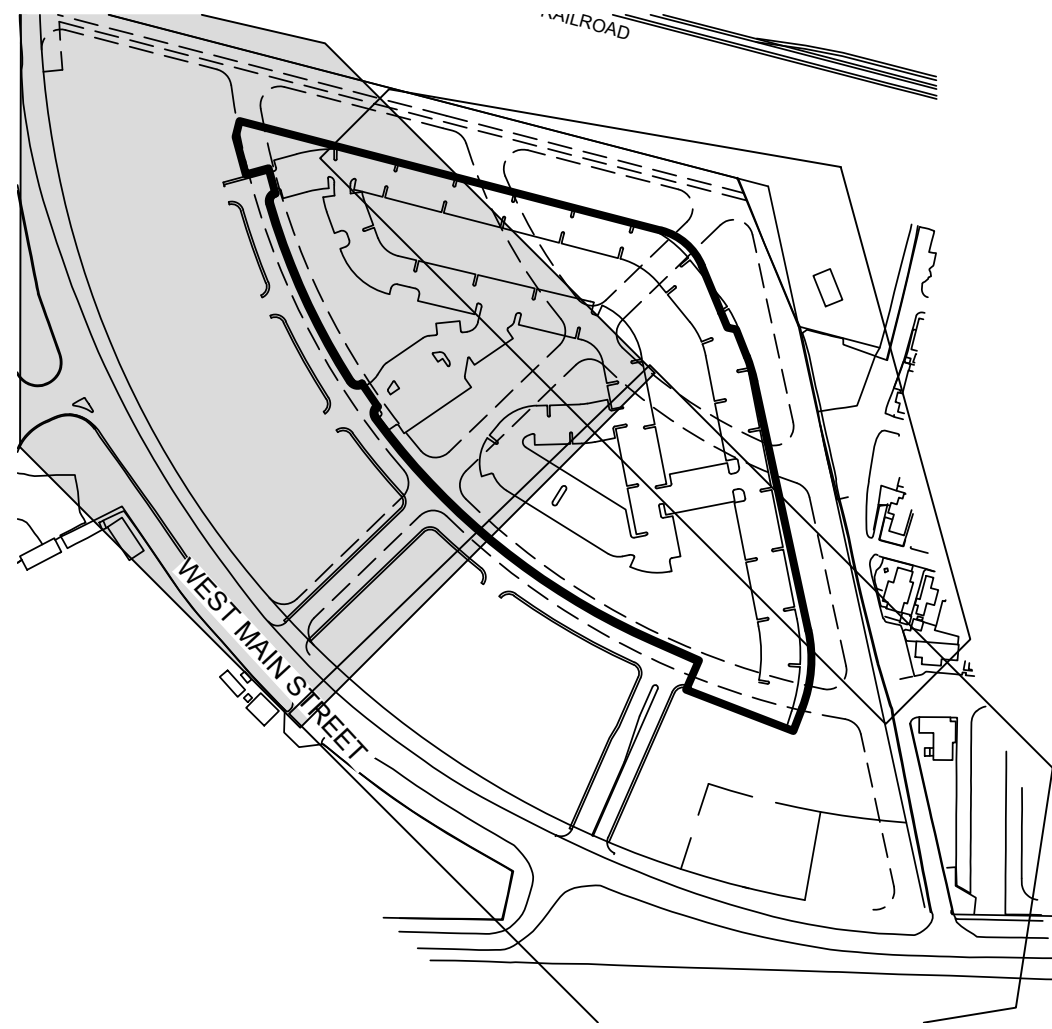


The logo consists of the number '811' in a large, bold, black font. The number is centered within a white, stylized shovel shape that has a curved blade at the bottom and a handle-like top. The entire logo is set against a black background.

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

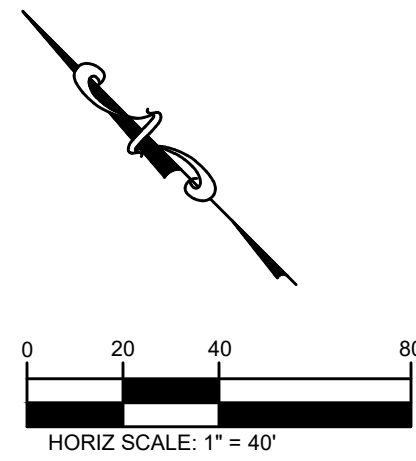
12/09/2021
PROJECT NO.: 21103
5 of 23

Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - EX COND.dwg 6 EXISTING CONDITIONS & DEMO PLAN Jan 10, 2022 3:14pm by: JPucillo



KEY MAP

1" = 300'



EXISTING CONDITIONS LEGEND:

- | | |
|--|---|
| | PROPERTY LINE |
| | EXISTING RIGHT-OF-WAY |
| | EXISTING SECTION LINE |
| | EXISTING EASEMENT LINE |
| | EXISTING ROAD CENTER LINE |
| | EDGE OF PAVEMENT |
| | CURB & GUTTER |
| | PARKING/TRAFFIC SIGN |
| | DRAINAGE FLOWLINE |
| | EXISTING STORM SEWER |
| | EXISTING STORM MANHOLE |
| | EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE |
| | EXISTING SANITARY SEWER W/MANHOLE |
| | EXISTING RAW WATER LINE |
| | EXISTING TELEPHONE |
| | EXISTING COMMUNICATION LINE |
| | EXISTING TRANSFORMER |
| | EXISTING GAS LINE |
| | EXISTING OVERHEAD ELECTRIC |
| | EXISTING ELECTRIC |
| | EXISTING POWER POLE |
| | EXISTING LIGHT POLE |
| | EXISTING FENCE |
| | EXISTING UNPAVED ROAD |
| | EXISTING VEGETATION TO REMAIN |

KEY NOTES:

- | | |
|--|-------------------------------|
| | EXISTING DITCH TO REMAIN |
| | EXISTING DITCH TO BE REGRADED |
| | STRUCTURE TO BE DEMOLISHED |
| | TRAIL SYSTEM TO BE REMOVED |

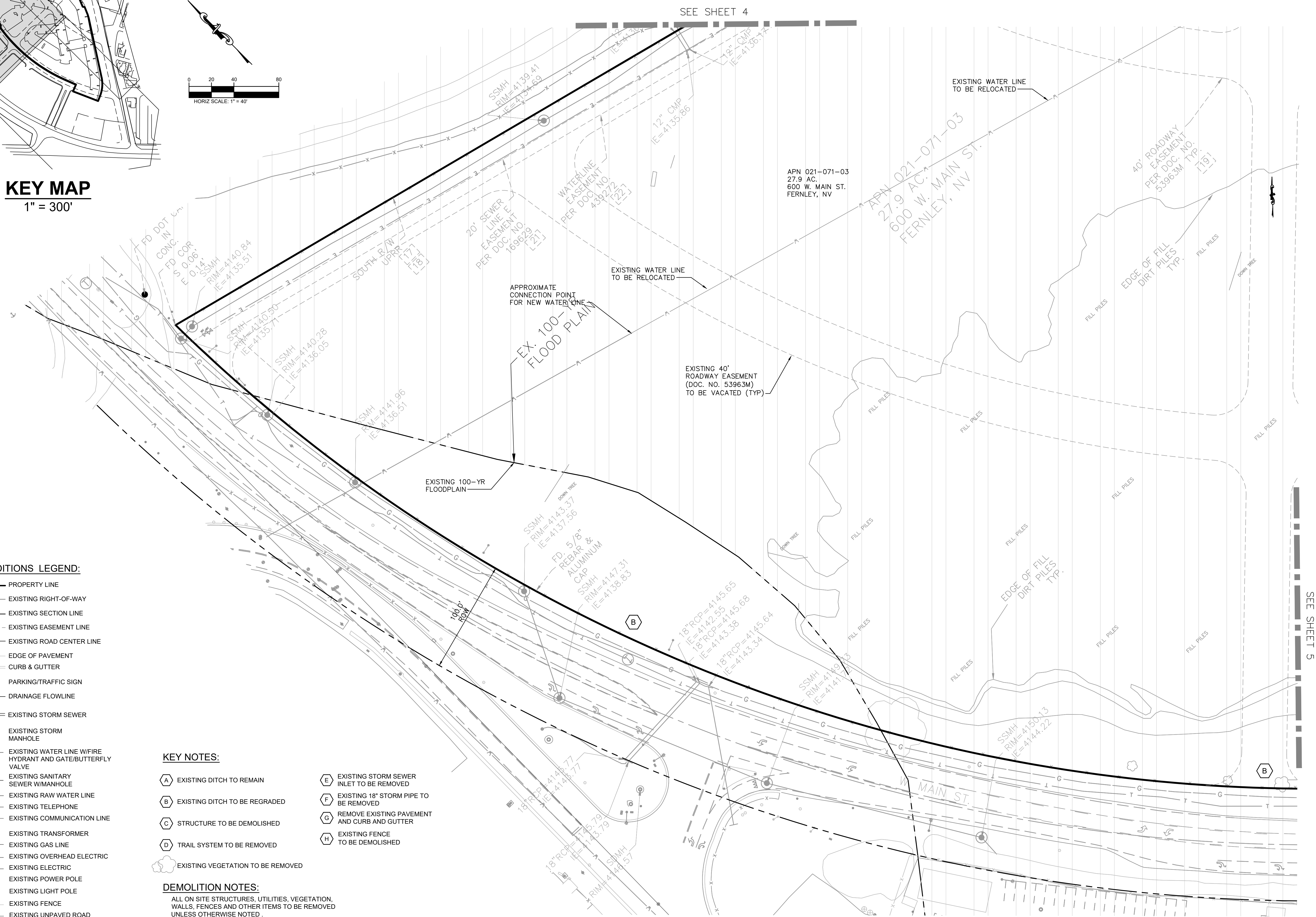
- EXISTING VEGETATION TO BE REMOVED

DEMOLITION NOTES:

ALL ON SITE STRUCTURES, UTILITIES, VEGETATION, WALLS, FENCES AND OTHER ITEMS TO BE REMOVED UNLESS OTHERWISE NOTED.

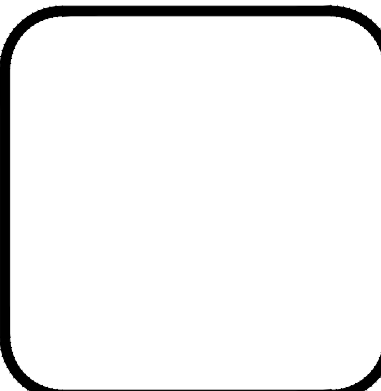
EXISTING DIRT PILES TO BE UTILIZED FOR ON-SITE GRADING

- | | |
|--|--|
| | EXISTING STORM SEWER INLET TO BE REMOVED |
| | EXISTING 18" STORM PIPE TO BE REMOVED |
| | REMOVE EXISTING PAVEMENT AND CURB AND GUTTER |
| | EXISTING FENCE TO BE DEMOLISHED |



REVISIONS		DATE	BY
No.			

155 County Estates Circle, Suite 300
Reno, NV 89511 (775) 969-7200
www.phelpsengineering.net

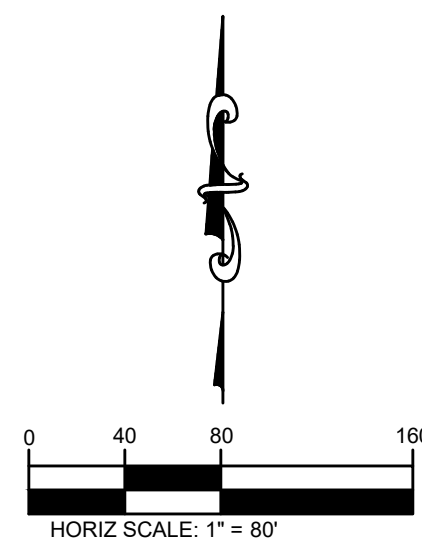


NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36"	
DESIGNED BY: JJP	
DRAWN BY: JJP	
CHECKED BY: LEP	

EXISTING CONDITIONS & DEMO PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103
6 of 23

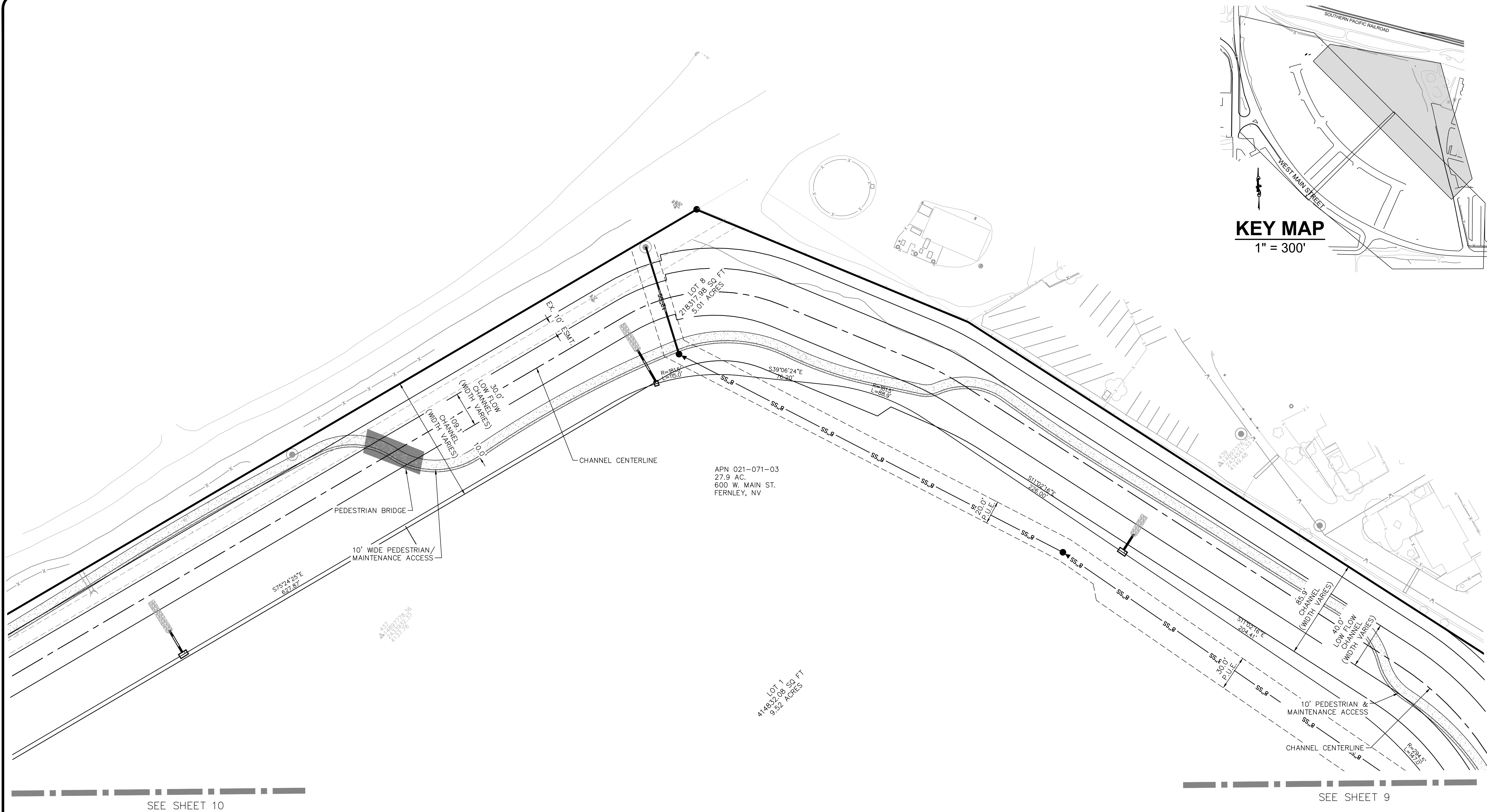


	PROPERTY LINE
	LOT LINE
	UTILITY ACCESS EASEMENT [UAE]
	EXISTING RIGHT-OF-WAY
	EXISTING SECTION LINE
	EASEMENT LINE
	EXISTING EASEMENT LINE
	ROAD CENTER LINE
	EXISTING ROAD CENTER LINE
	TRACT
	EDGE OF PAVEMENT
	CURB & GUTTER
	DRAINAGE FLOWLINE
	STORM SEWER WINLET AND FES
	EXISTING STORM SEWER
	EXISTING STORM MANHOLE
	W
	EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
	WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
	WATER METER
	PLUG W/ 2" BLOWOFF
	AIR RELEASE VALVE
	EXISTING SANITARY SEWER W/MANHOLE
	8"SS 8-INCH Ø SANITARY SEWER W/MANHOLE
	G EXISTING GAS LINE
	G NATURAL GAS LINE
	OHE EXISTING OVERHEAD ELECTRIC
	E EXISTING ELECTRIC
	E ELECTRIC LINE
	EXISTING POWER / LIGHT POLE
	PROPOSED LIGHT POLE

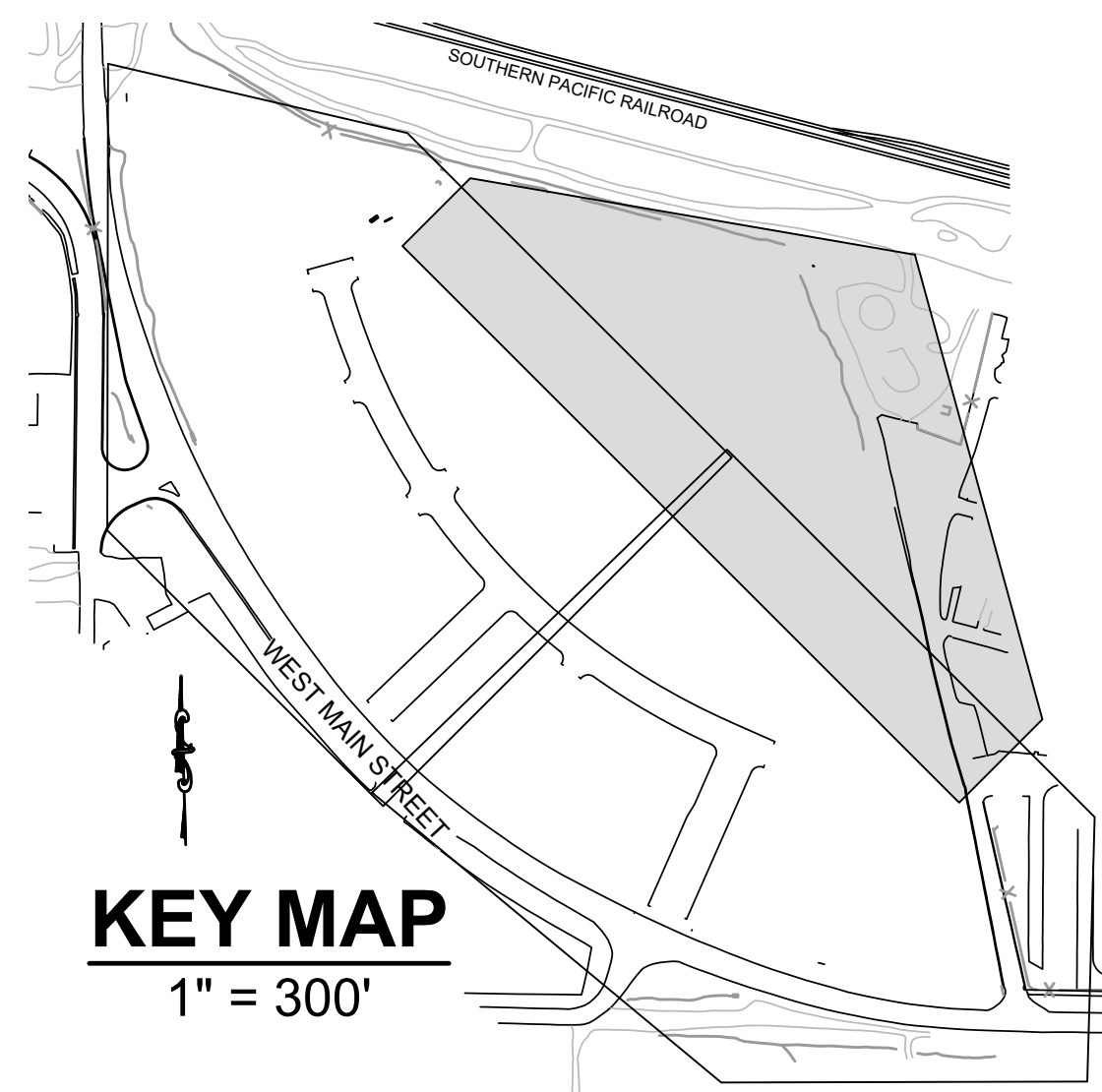
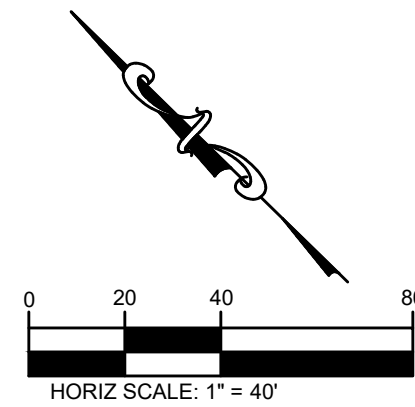
600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103

7 of 23



LEGEND:	
	PROPERTY LINE
	LOT LINE
	UTILITY ACCESS EASEMENT [UAE]
	EXISTING RIGHT-OF-WAY
	EXISTING SECTION LINE
	EASEMENT LINE
	EXISTING EASEMENT LINE
	ROAD CENTER LINE
	EXISTING ROAD CENTER LINE
	TRACT
	EDGE OF PAVEMENT
	CURB & GUTTER
	DRAINAGE FLOWLINE
	STORM SEWER WINLET AND FES
	EXISTING STORM SEWER
	(SM) EXISTING STORM MANHOLE
	W ———— EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
	————— WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
	————— WATER METER
	f ———— PLUG W/ 2" BLOWOFF
	⊗ ———— AIR RELEASE VALVE
	(SS) s ———— s ———— EXISTING SANITARY SEWER W/MANHOLE
	● ———— 8" SS ———— 8-INCH Ø SANITARY SEWER W/MANHOLE
	————— G ———— EXISTING GAS LINE
	————— G ———— NATURAL GAS LINE
	————— OHE ———— EXISTING OVERHEAD ELECTRIC
	————— E ———— EXISTING ELECTRIC
	————— E ———— ELECTRIC LINE
	○ ⊕ ———— EXISTING POWER / LIGHT POLE

[illegible]

PHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 399-7200
www.phelpsengineering.net

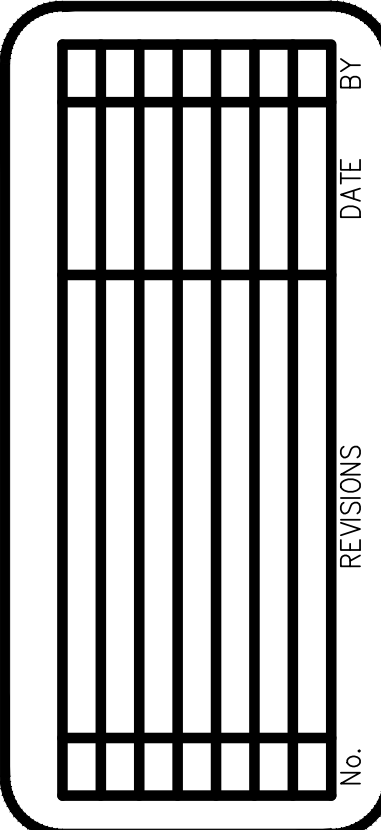


SITE PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

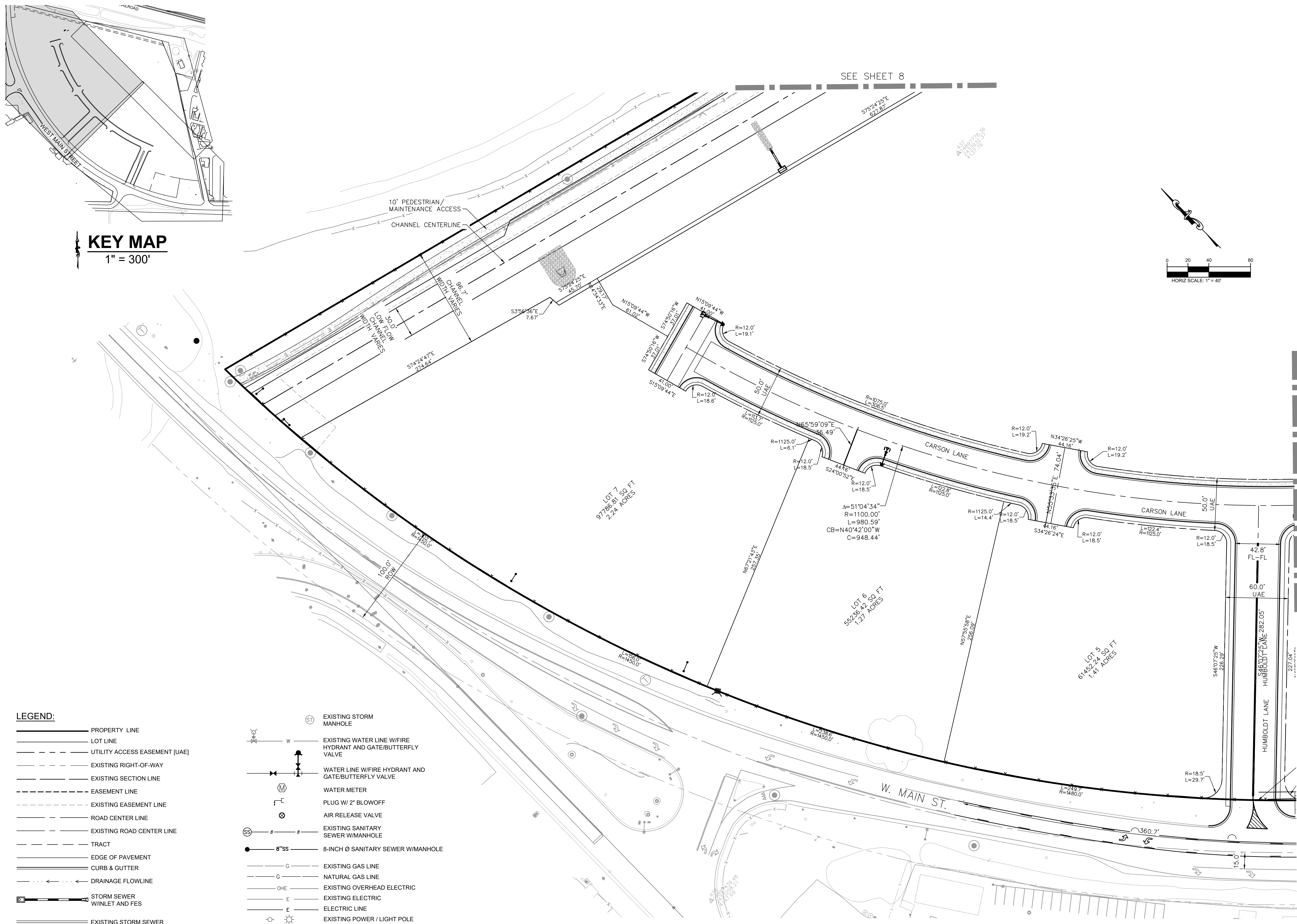
12/09/2021
PROJECT NO.: 21103

8 of 23



EXISTING CONDITIONS (OVERALL MAP)

Page 43 of 239

[illegible]

PHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 389-7200
www.phelpsengineering.net



811

Know what's below.
Call 811 before you dig.

NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

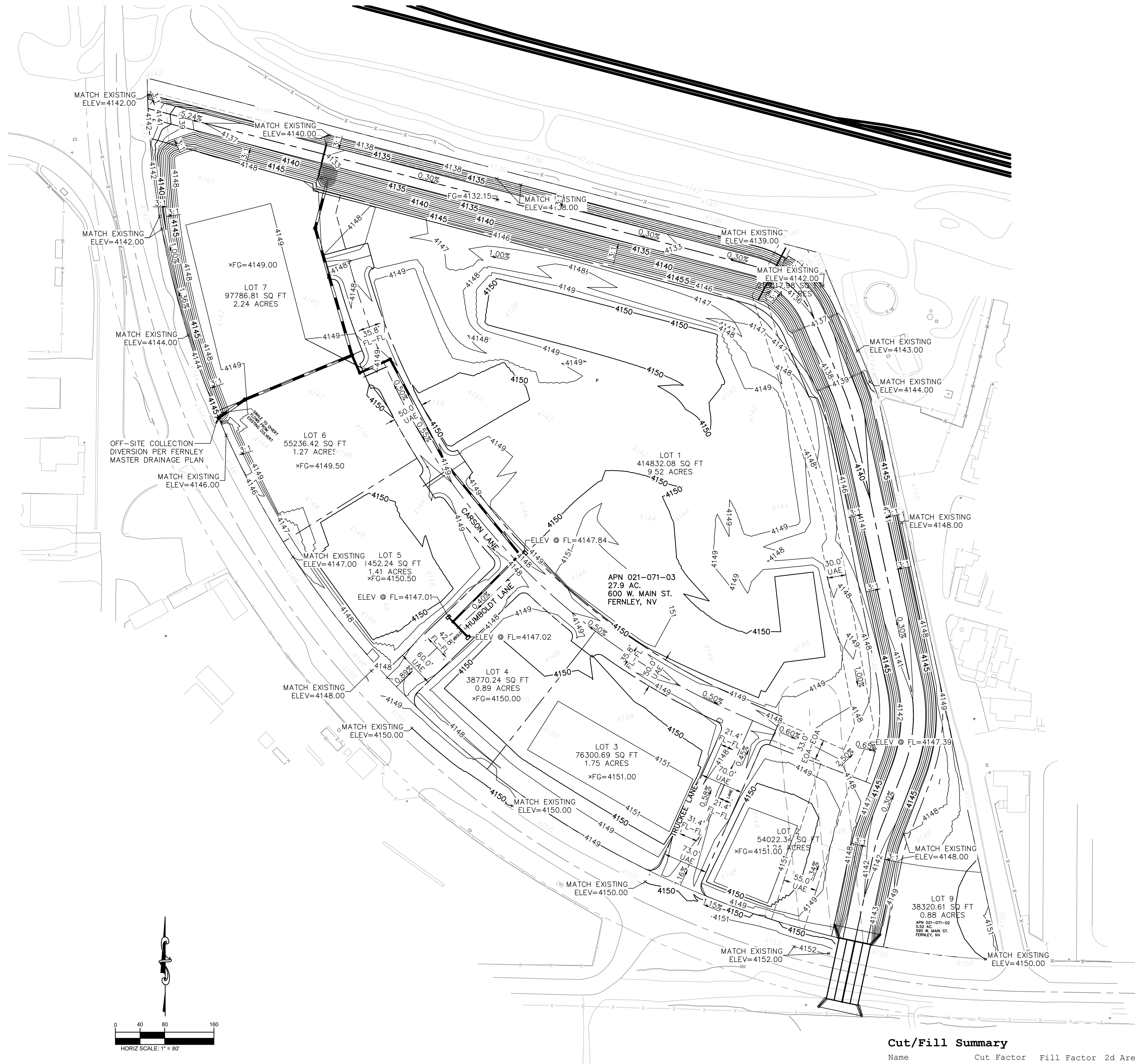
SITE PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

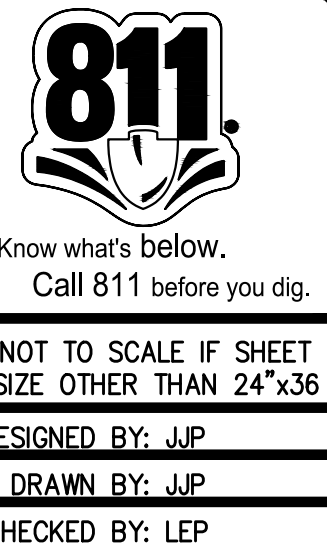
12/09/2021

PROJECT NO.: 21103

10 of 23



Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Volume Surface	1.000	1.070	25.31acres	20651.16 Cu. Yd.	182424.69 Cu. Yd.	161773.53 Cu. Yd.<Fill>
Totals			25.31acres	20651.16 Cu. Yd.	182424.69 Cu. Yd.	161773.53 Cu. Yd.<Fill>

[illegible]

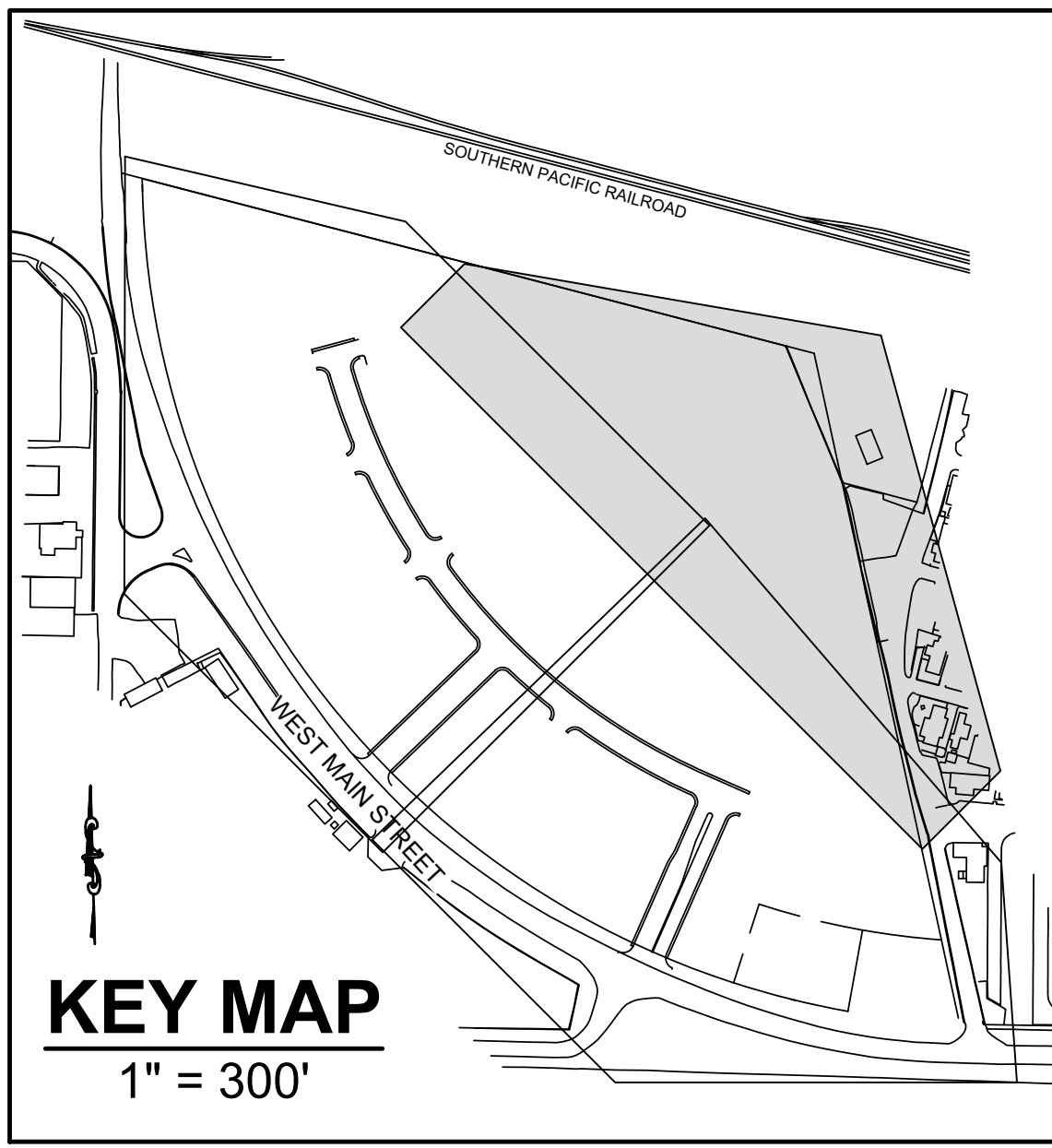
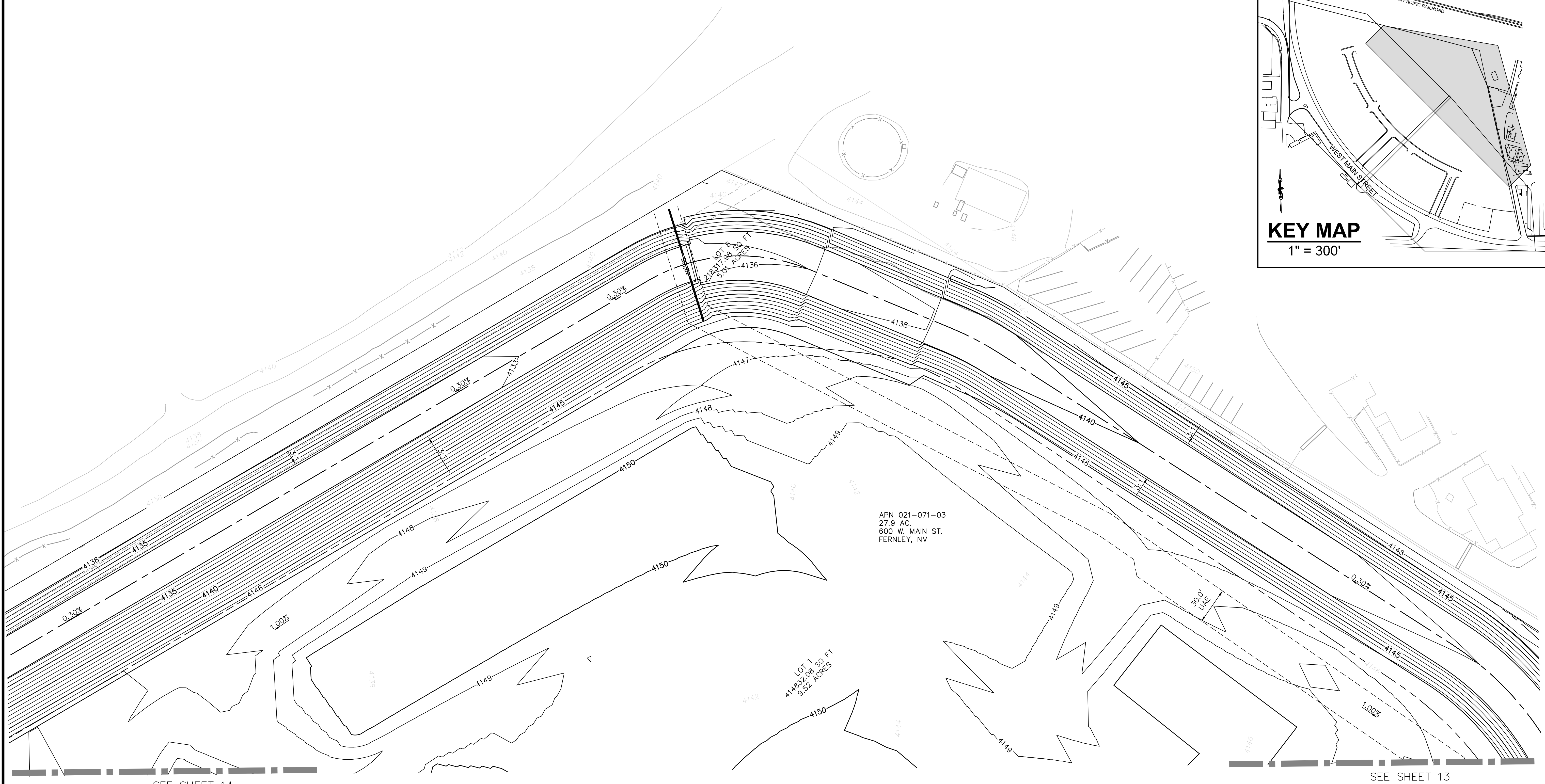
GRADING PLAN
(OVERALL MAP)

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

11 of 23



LEGEND:

- 8600 EXISTING CONTOURS
- 8600 PROPOSED CONTOURS
- LOT LINE
- SETBACK LINE
- RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- EXISTING BOUNDARY LINE
- EXISTING SECTION LINE
- TRACT
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ALIGNMENT CENTER LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- PROPOSED CURB & GUTTER
- STORM SEWER WINLET AND FES
- DRAINAGE FLOWLINE
- 100-YR FLOOD PLAIN
- EXISTING 100-YR FLOOD PLAIN

PHELPS ENGINEERING 155 Country Estates Circle Suite 300 Reno, NV 89511 (775) 399-7200 www.phelpsengineering.net	NO. _____ REVISIONS _____ DATE _____ BY _____
---	---

811.

Know what's below.
Call 811 before you dig.

NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

GRADING PLAN

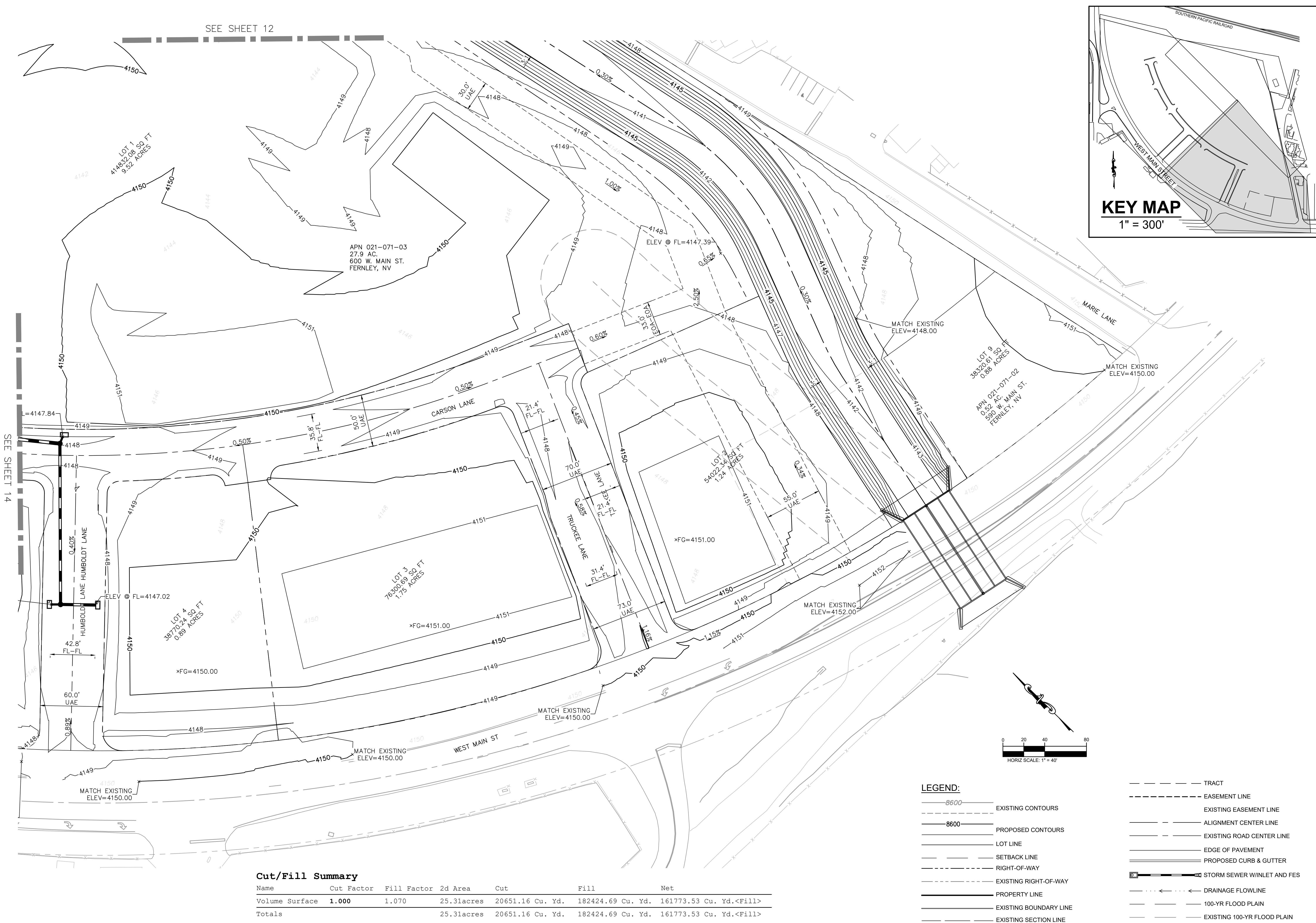
600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

12 of 23

Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - GRADING PLAN.dwg Jan 10, 2022 3:15pm by: JPucillo



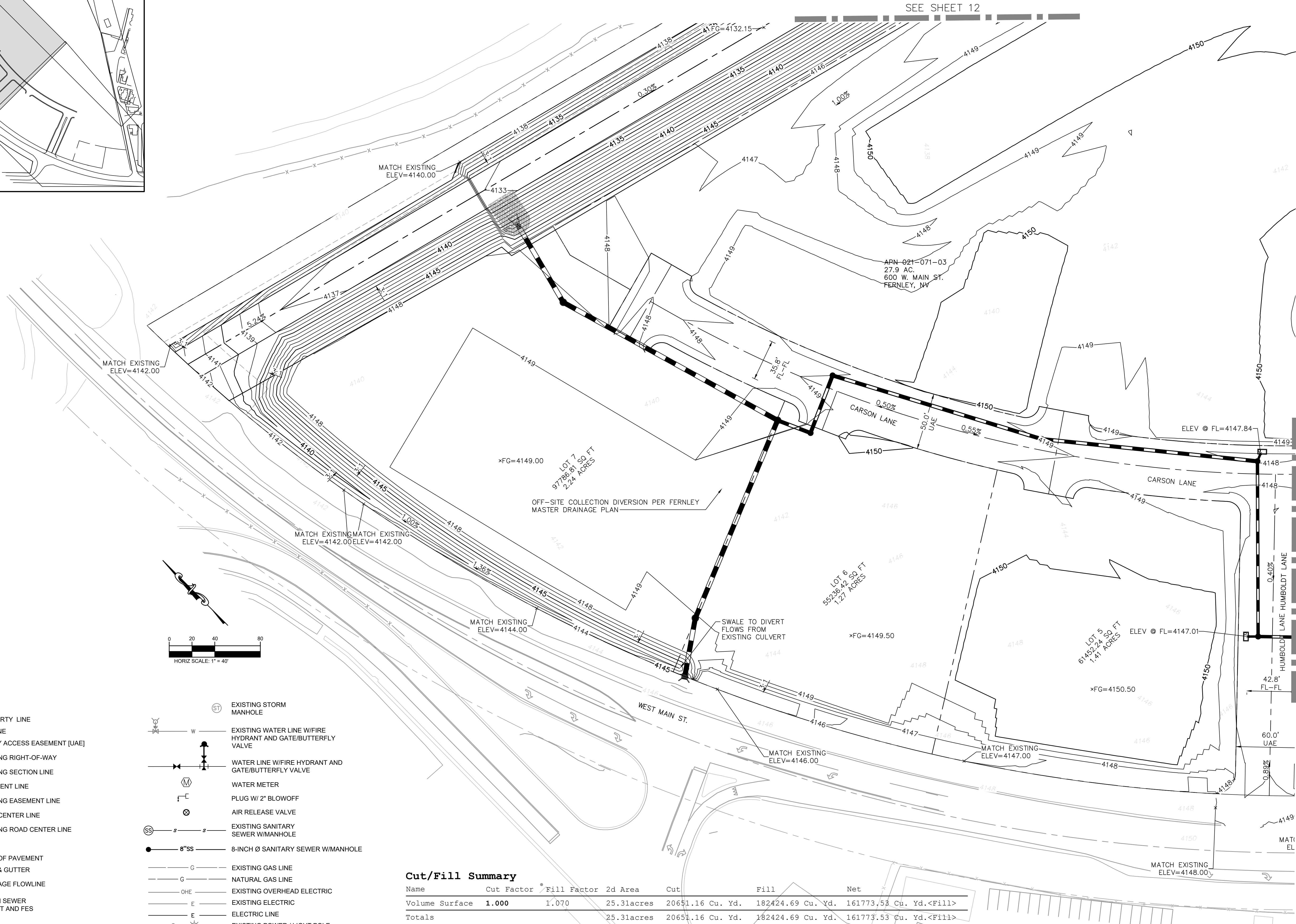
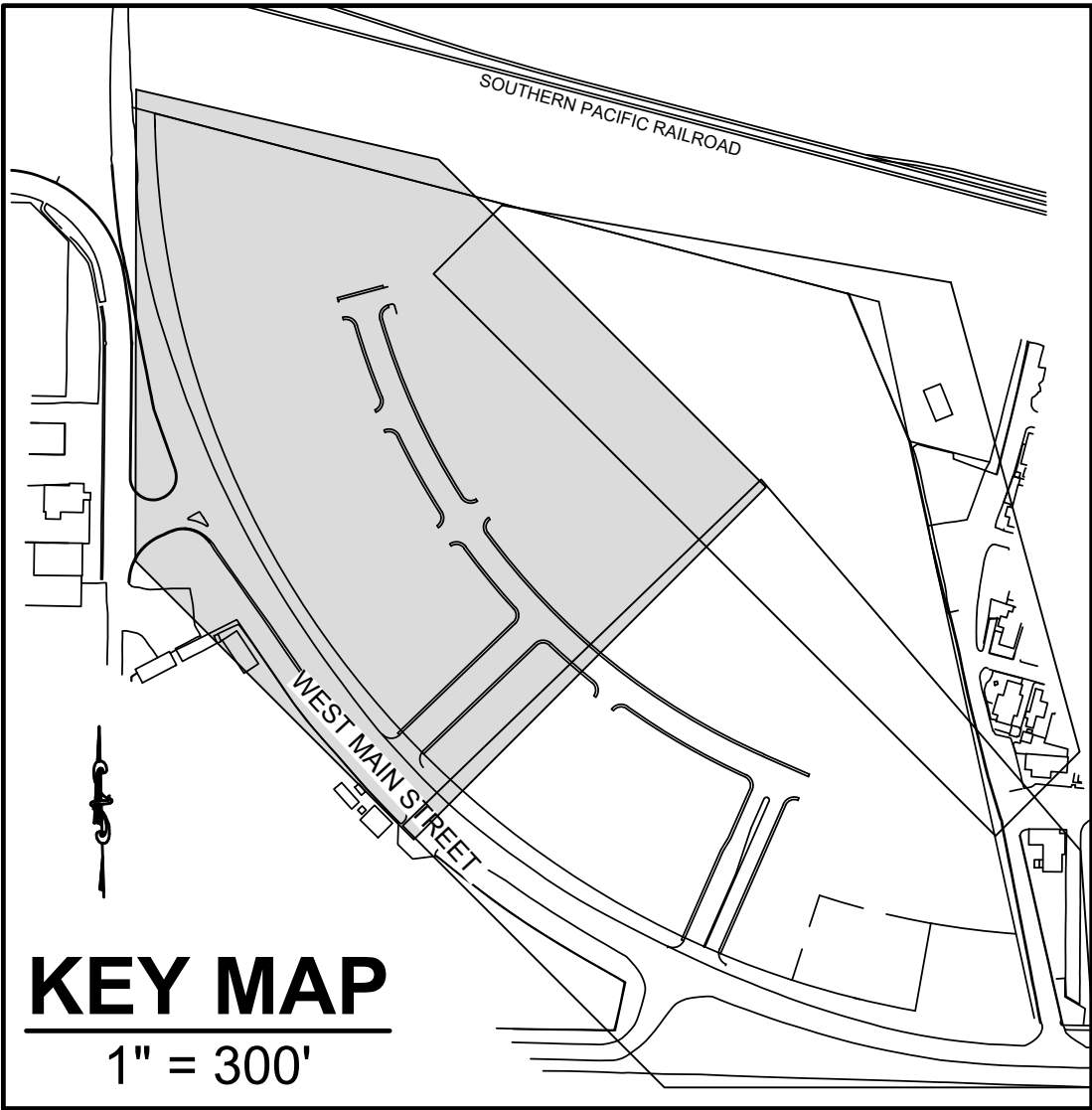
Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Volume Surface	1.000	1.070	25.31acres	20651.16 Cu. Yd.	182424.69 Cu. Yd.	161773.53 Cu. Yd.<Fill>
Totals			25.31acres	20651.16 Cu. Yd.	182424.69 Cu. Yd.	161773.53 Cu. Yd.<Fill>

LEGEND:

- EXISTING CONTOURS
- PROPOSED CONTOURS
- LOT LINE
- SETBACK LINE
- RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- EXISTING BOUNDARY LINE
- EXISTING SECTION LINE
- TRACT
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ALIGNMENT CENTER LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- PROPOSED CURB & GUTTER
- STORM SEWER WINLET AND FES
- DRAINAGE FLOWLINE
- 100-YR FLOOD PLAIN
- EXISTING 100-YR FLOOD PLAIN

Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\21103 - GRADING PLAN.dwg Jan 10, 2022 3:15pm by: JPucillo



LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
- TRACT
- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER
- WINLET AND FES
- EXISTING STORM SEWER

- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER METER
- PLUG W/ 2" BLOWOFF
- AIR RELEASE VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- 8-INCH Ø SANITARY SEWER W/MANHOLE
- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Volume Surface	1.000	1.070	25.31acres	20651.16 Cu. Yd.	182424.69 Cu. Yd.	161773.53 Cu. Yd.<Fill>
Totals			25.31acres	20651.16 Cu. Yd.	182424.69 Cu. Yd.	161773.53 Cu. Yd.<Fill>

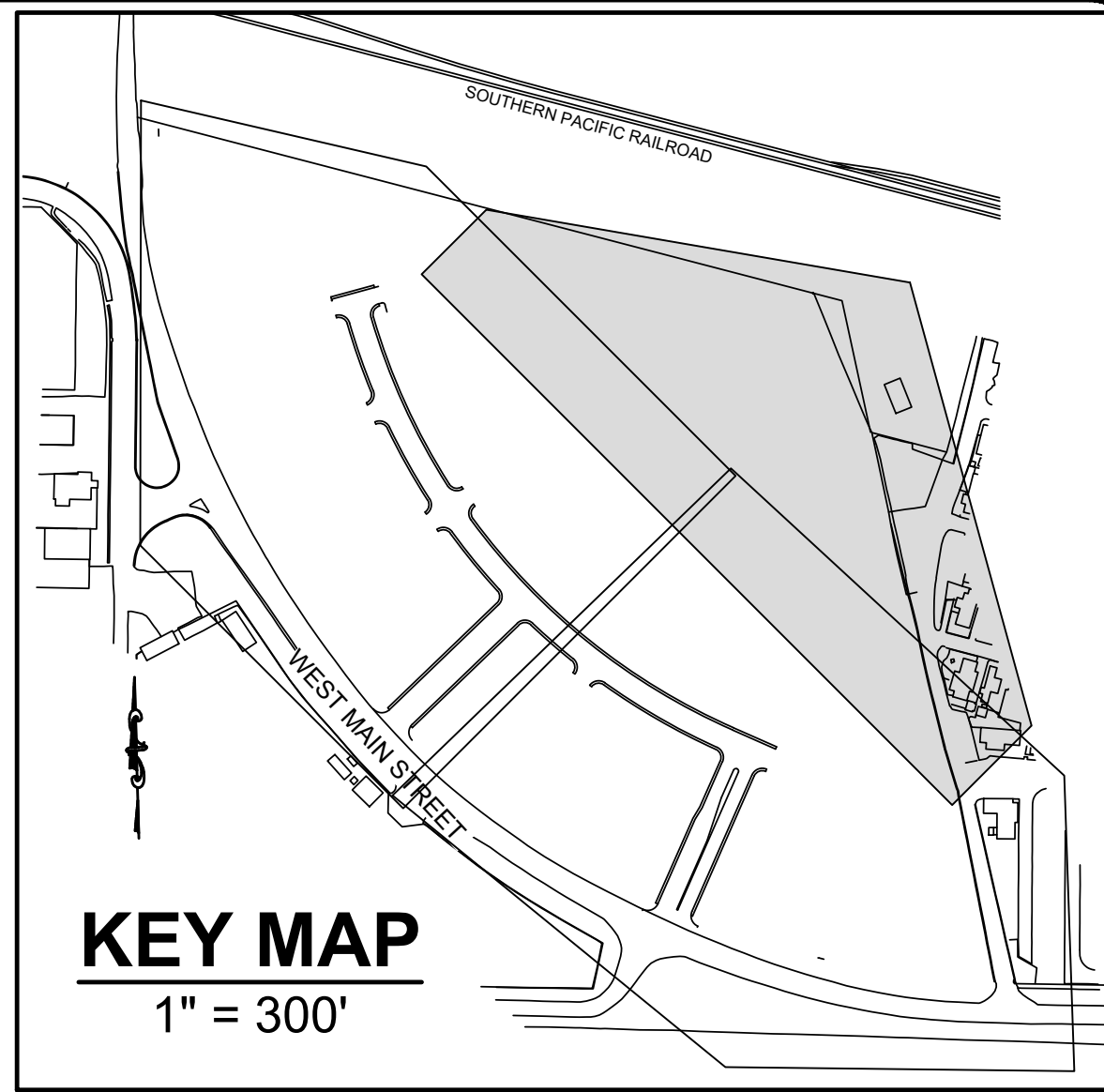
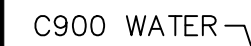


Know what's below.
Call 811 before you dig.
NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"
DESIGNED BY: JWP
DRAWN BY: JWP
CHECKED BY: LEP

GRADING PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103

[illegible]

PHELPS
ENGINEERING

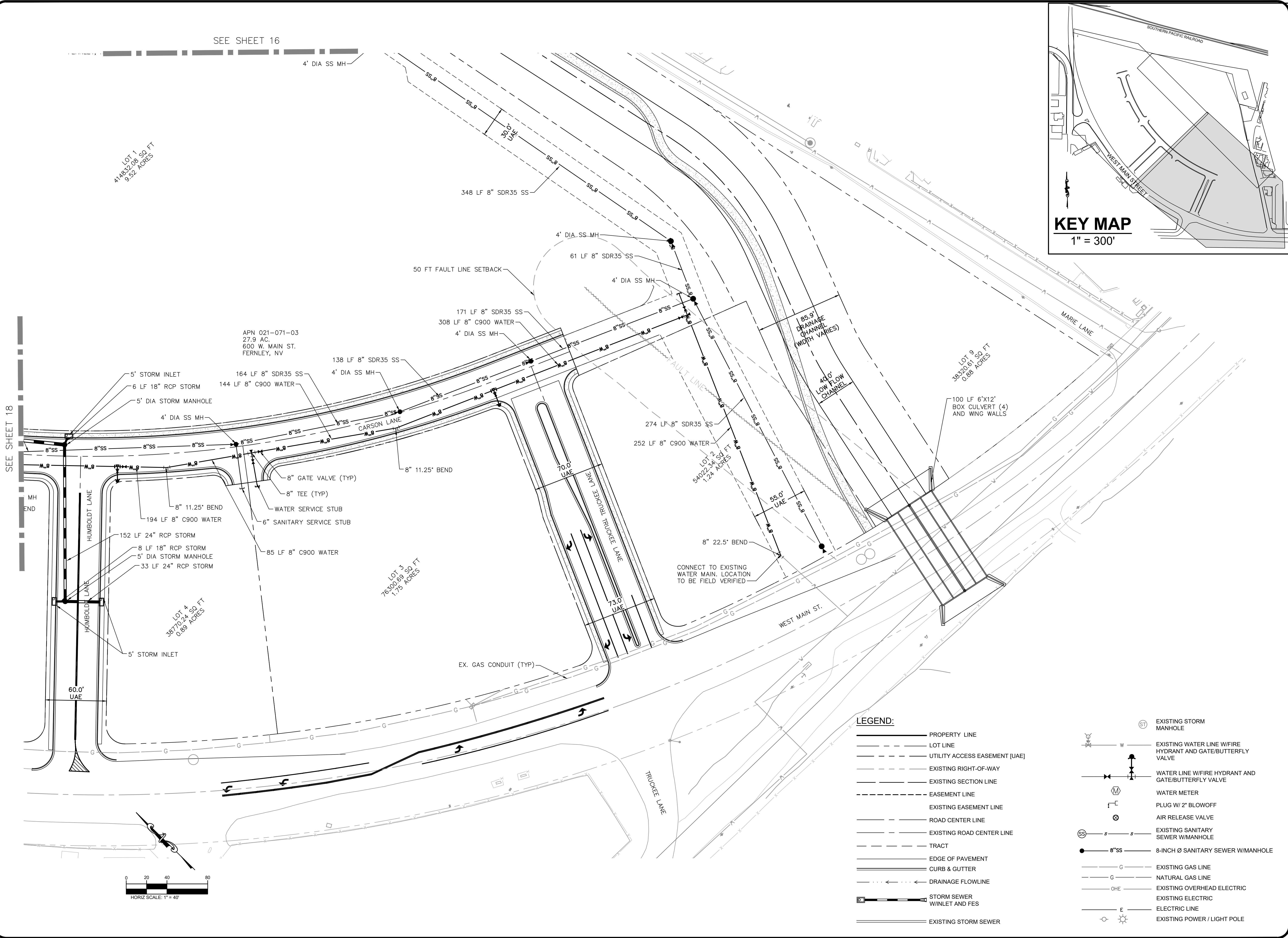
155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 399-7200
www.phelpsengineering.net



UTILITY PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - UTILITY PLAN.dwg 17 UTILITY PLAN Jan 10, 2022 3:15pm by: JPucillo



LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
- TRACT
- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER W/INLET AND FES
- EXISTING STORM SEWER

- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER METER
- PLUG W/ 2" BLOWOFF
- AIR RELEASE VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- 8-INCH Ø SANITARY SEWER W/MANHOLE
- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE

811

Know what's below.
Call 811 before you dig.

NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

UTILITY PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103

17 of 23

PHelps
ENGINEERING

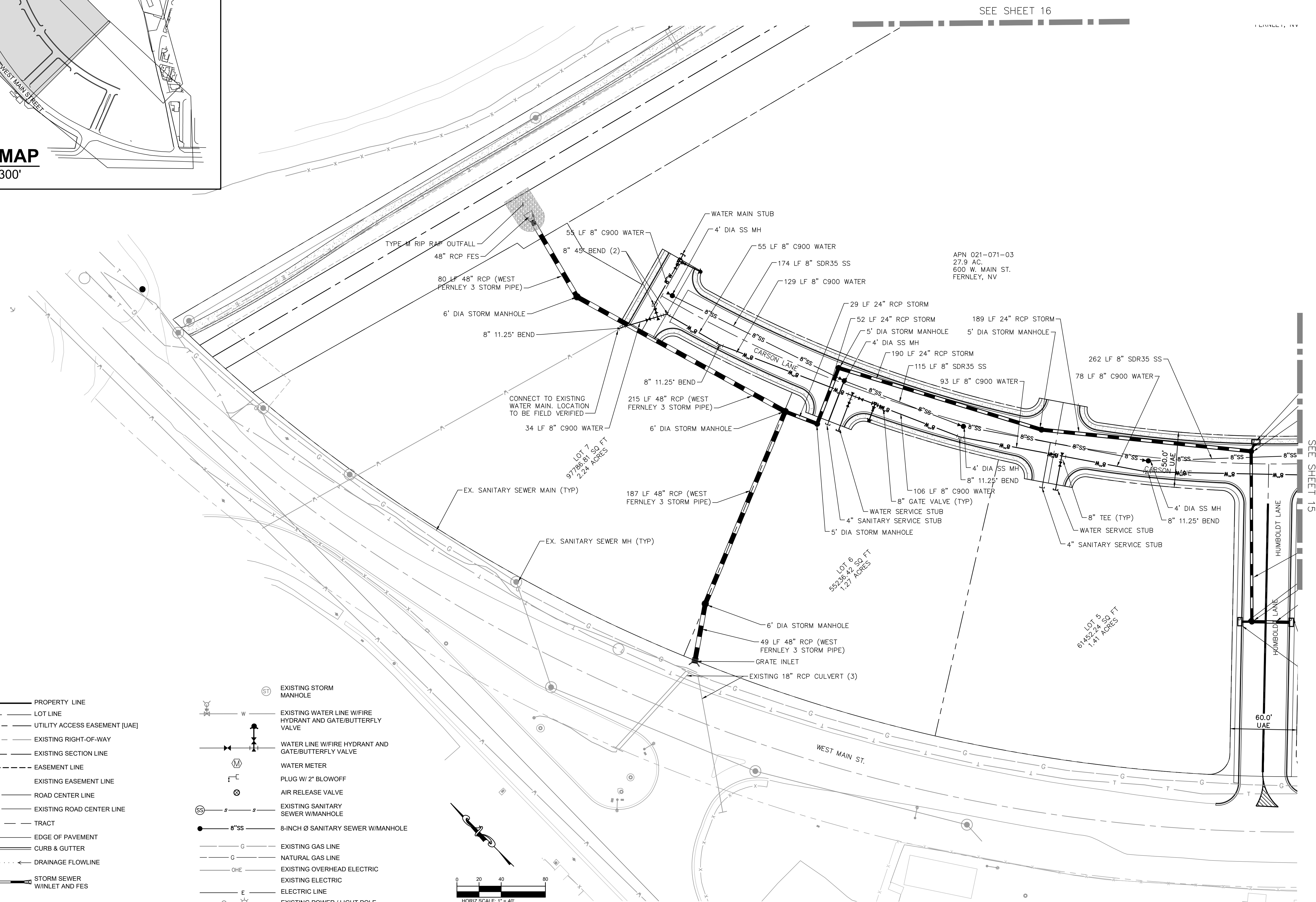
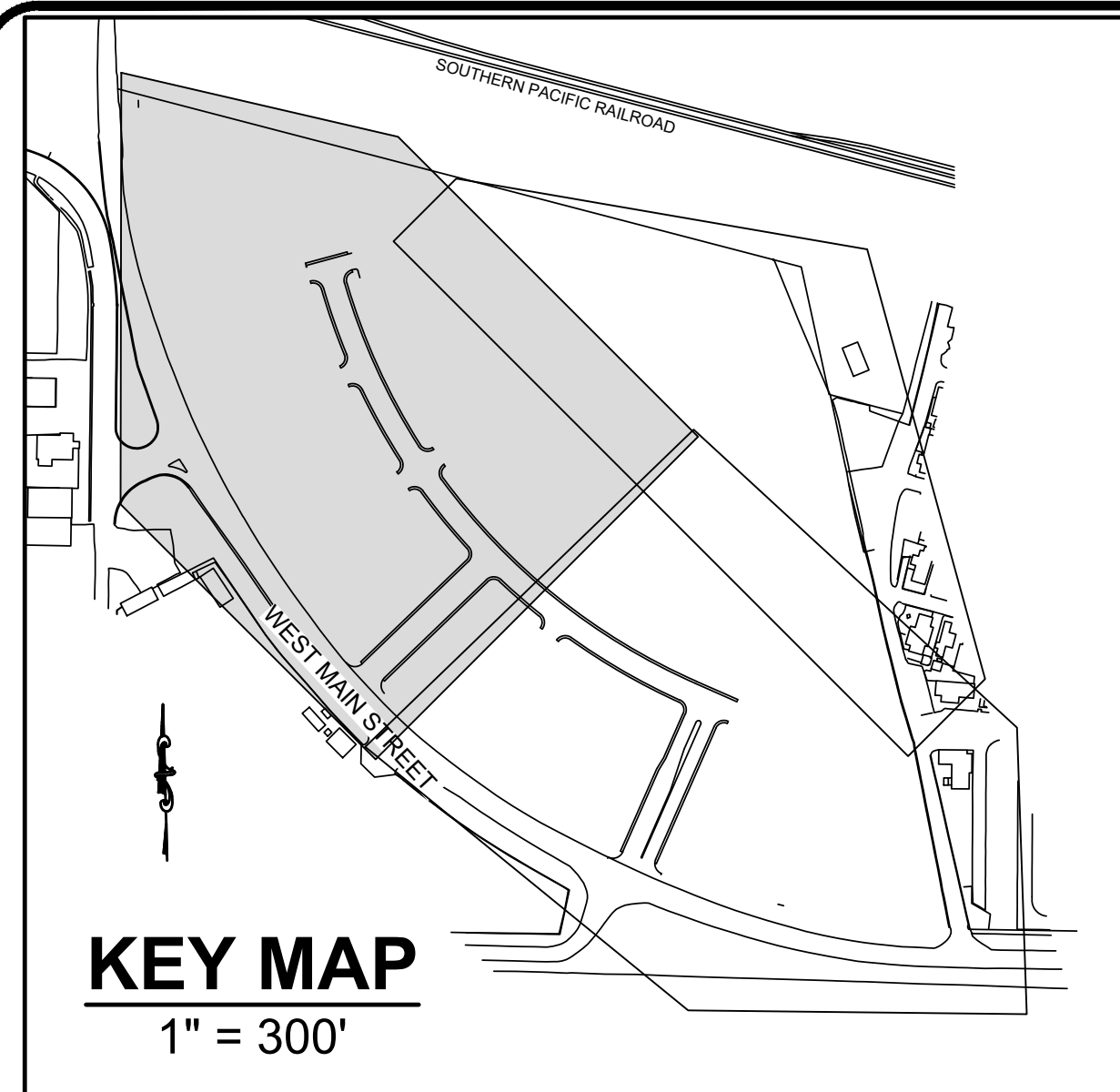
155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 999-7200
www.phelpsengineering.net

No.

REVISIONS

DATE

BY

[illegible]

PHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 398-7200
www.phelpsengineering.net

811.

Know what's below.
Call 811 before you dig.

**NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"**

DESIGNED BY: JJP

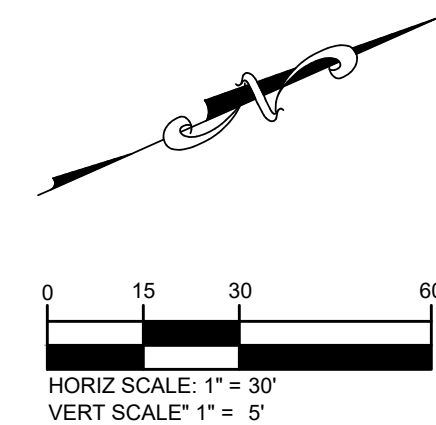
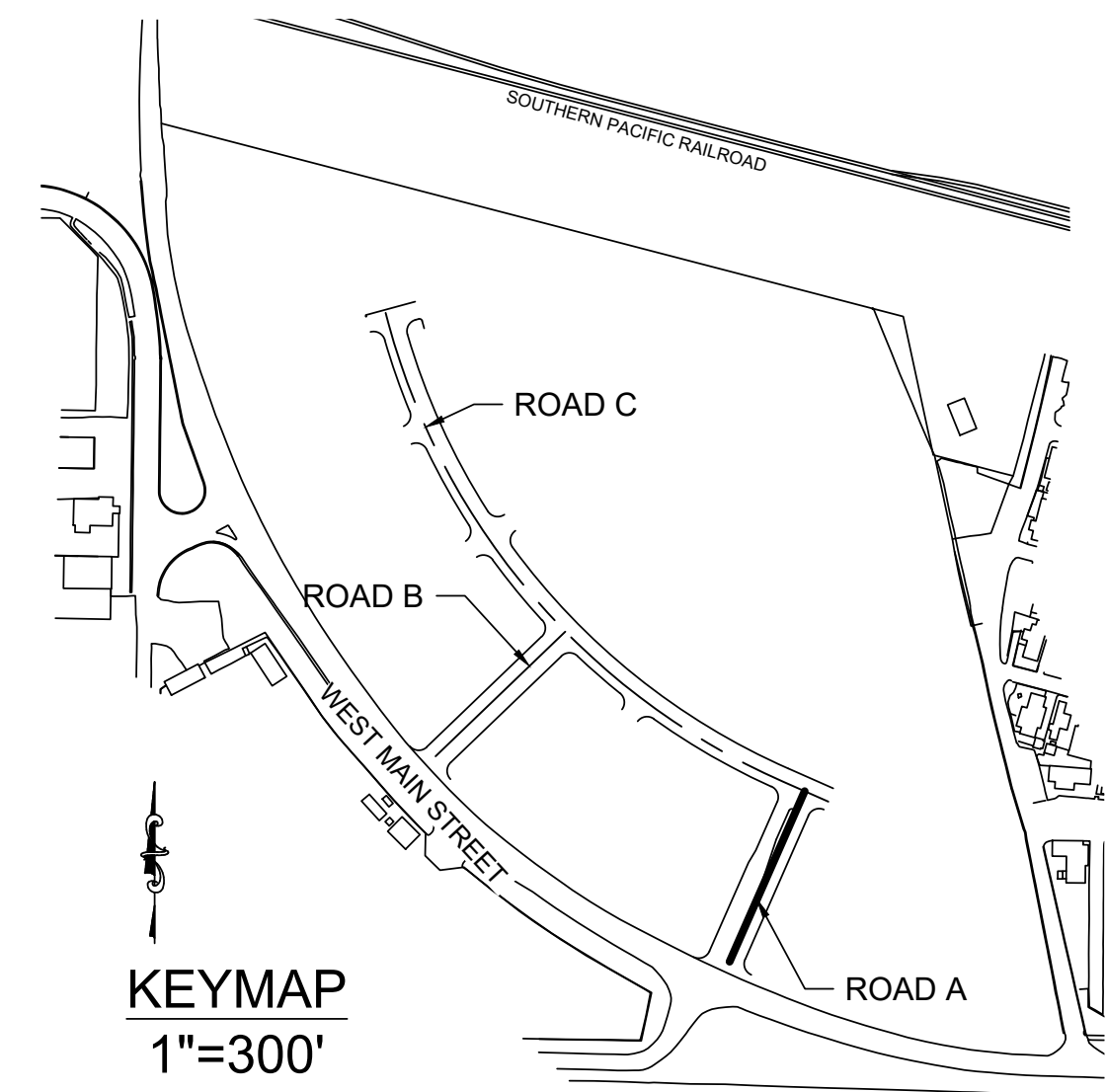
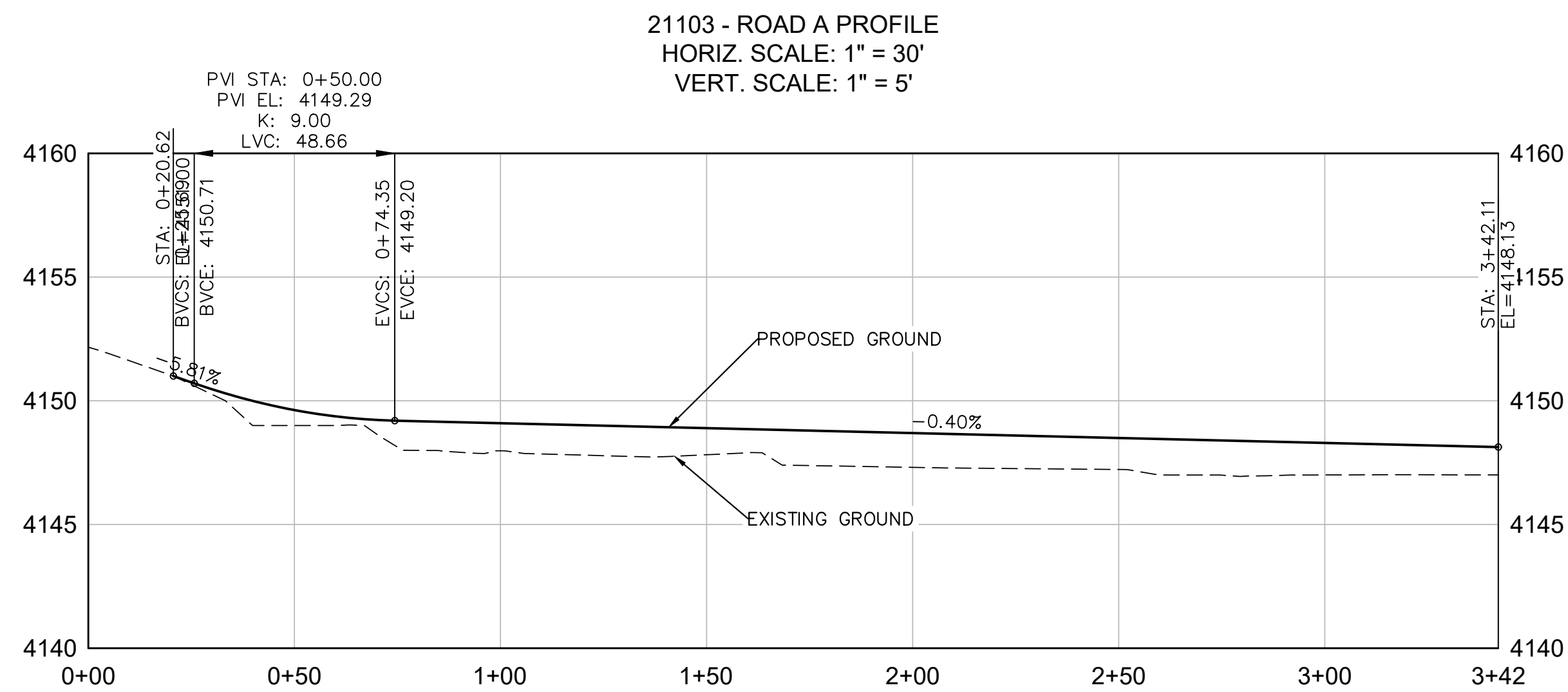
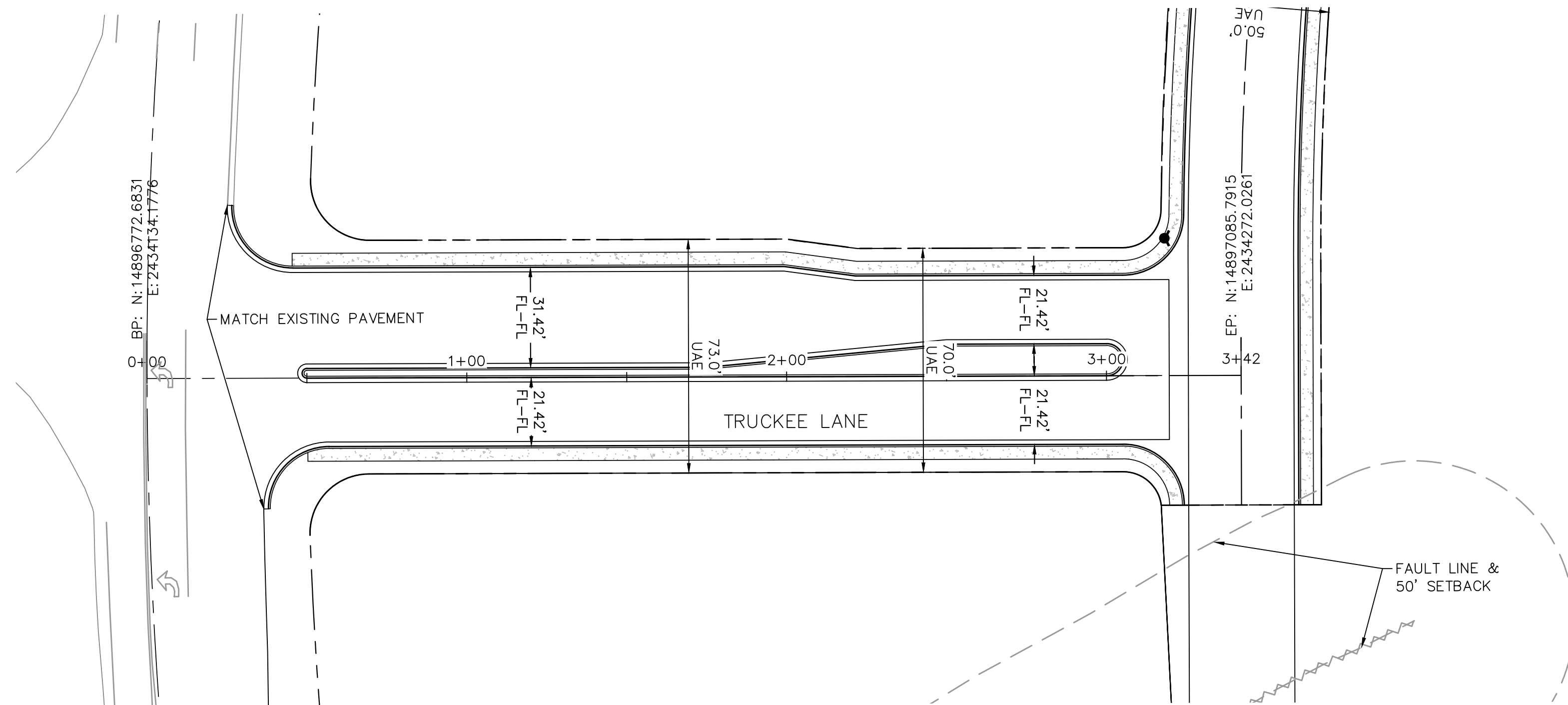
DRAWN BY: JJP

CHECKED BY: LEP

UTILITY PLAN

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 2110



- LEGEND:**
- | | |
|--|-----------------------------|
| | EXISTING CONTOURS |
| | PROPOSED CONTOURS |
| | LOT LINE |
| | SETBACK LINE |
| | RIGHT-OF-WAY |
| | EXISTING RIGHT-OF-WAY |
| | PROPERTY LINE |
| | EXISTING BOUNDARY LINE |
| | EXISTING SECTION LINE |
| | TRACT |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ALIGNMENT CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | EDGE OF PAVEMENT |
| | PROPOSED CURB & GUTTER |
| | STORM SEWER WIN/LET AND FES |
| | DRAINAGE FLOWLINE |
| | 100-YR FLOOD PLAIN |
| | EXISTING 100-YR FLOOD PLAIN |

[illegible]

PHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 389-7200
www.phelpsengineering.net



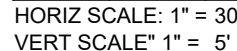
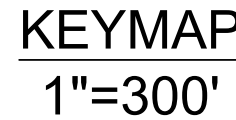
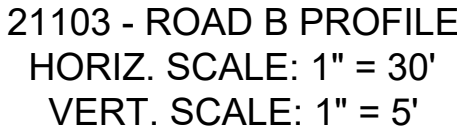
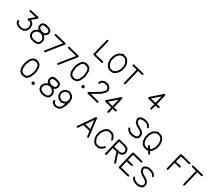
ROAD A P&P

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

19 of 23



- LEGEND:**
- | | |
|--|-----------------------------|
| | EXISTING CONTOURS |
| | PROPOSED CONTOURS |
| | LOT LINE |
| | SETBACK LINE |
| | RIGHT-OF-WAY |
| | EXISTING RIGHT-OF-WAY |
| | PROPERTY LINE |
| | EXISTING BOUNDARY LINE |
| | EXISTING SECTION LINE |
| | TRACT |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ALIGNMENT CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | EDGE OF PAVEMENT |
| | PROPOSED CURB & GUTTER |
| | STORM SEWER WIN/LET AND FES |
| | DRAINAGE FLOWLINE |
| | 100-YR FLOOD PLAIN |
| | EXISTING 100-YR FLOOD PLAIN |

[illegible]

PHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 399-7200
www.phelpsengineering.net



811

Know what's below.
Call 811 before you dig.

**NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36**

DESIGNED BY: JJP

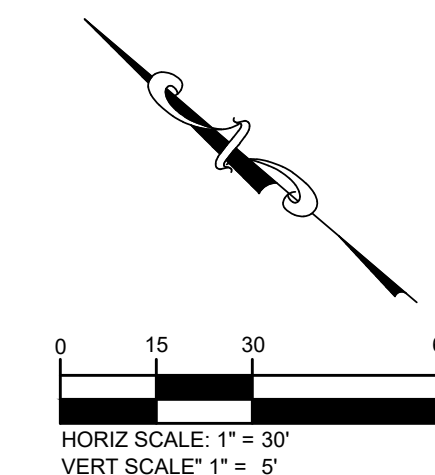
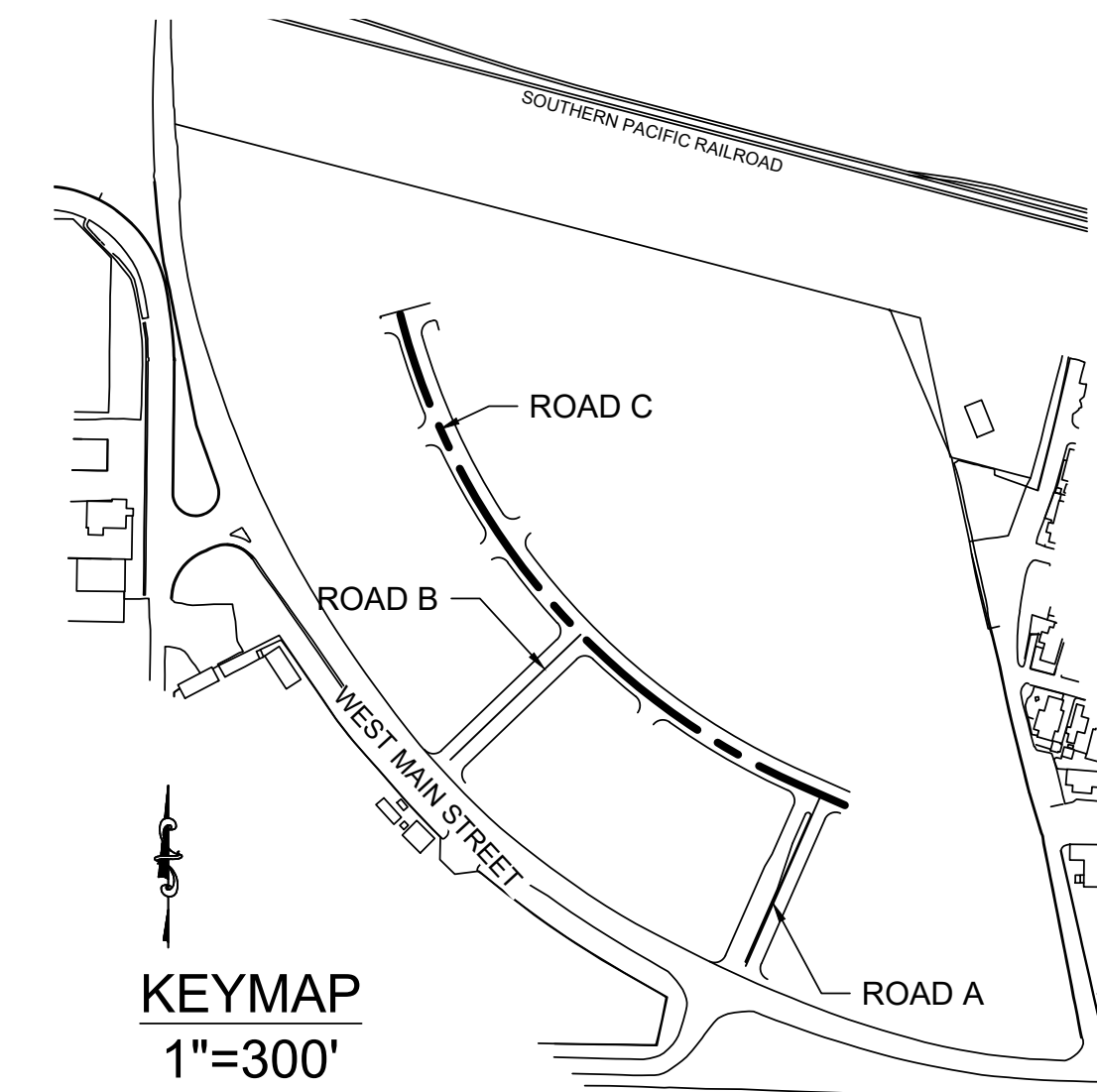
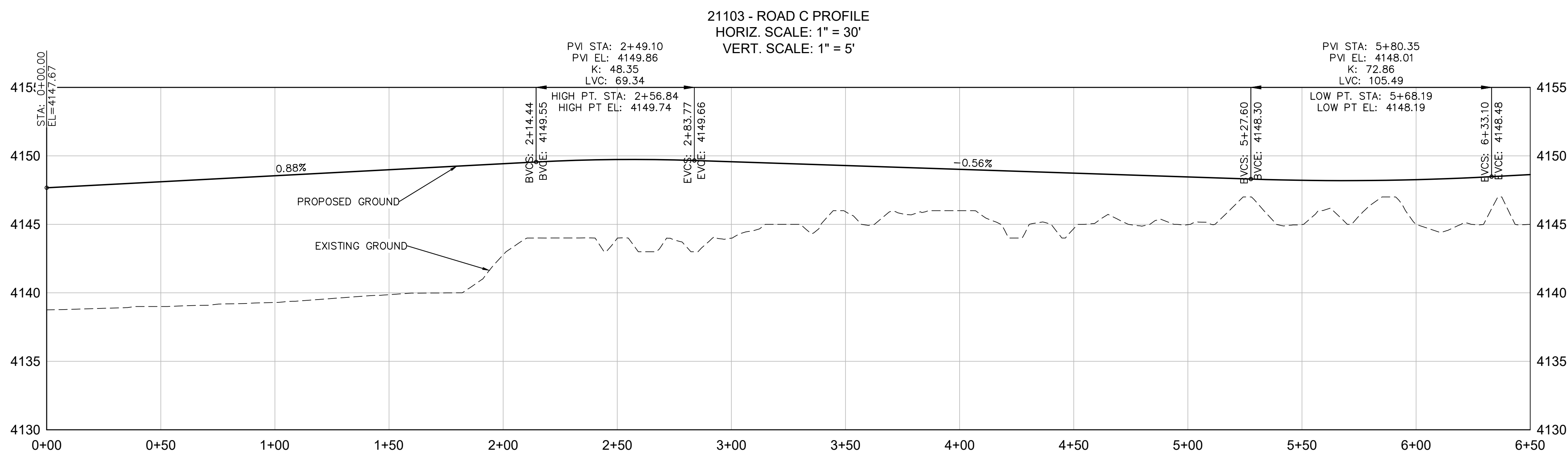
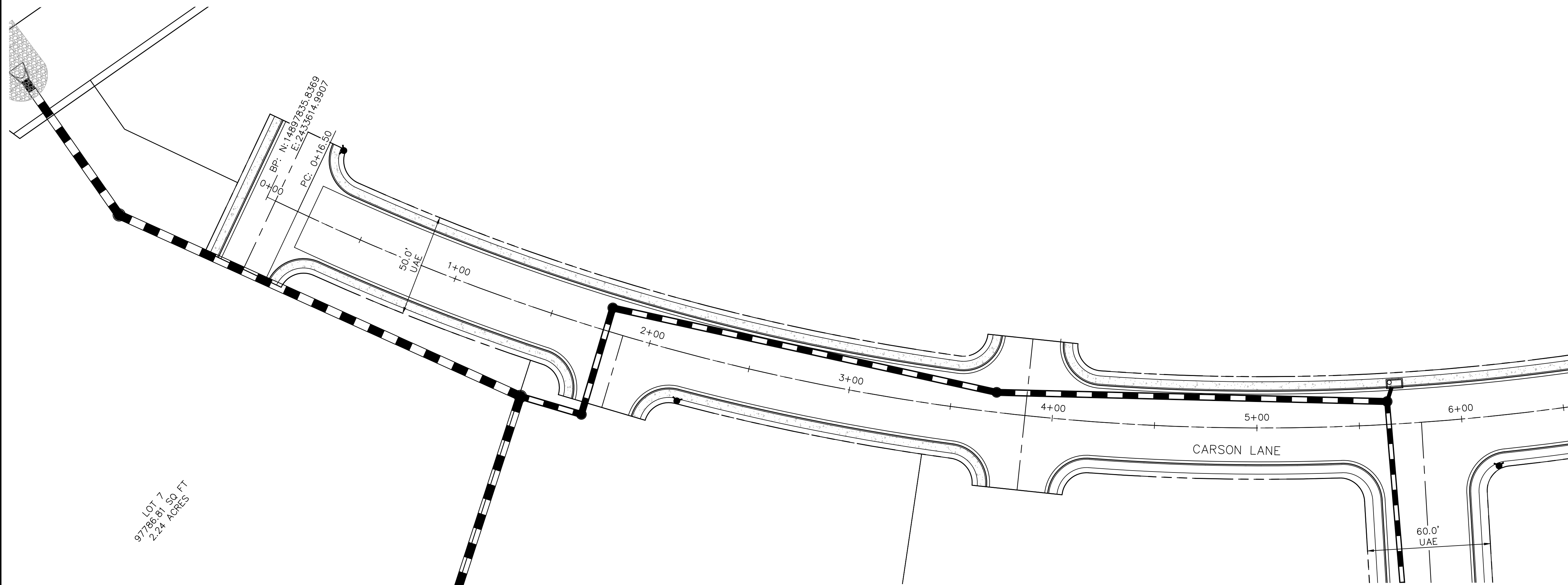
DRAWN BY: JJP

CHECKED BY: LEP

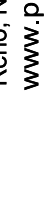
ROAD B P&P

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103
20 of 23



- ### LEGEND:
- | | |
|--|-----------------------------|
| | EXISTING CONTOURS |
| | PROPOSED CONTOURS |
| | LOT LINE |
| | SETBACK LINE |
| | RIGHT-OF-WAY |
| | EXISTING RIGHT-OF-WAY |
| | PROPERTY LINE |
| | EXISTING BOUNDARY LINE |
| | EXISTING SECTION LINE |
| | TRACT |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ALIGNMENT CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | EDGE OF PAVEMENT |
| | PROPOSED CURB & GUTTER |
| | STORM SEWER W/INLET AND FES |
| | DRAINAGE FLOWLINE |
| | 100-YR FLOOD PLAIN |
| | EXISTING 100-YR FLOOD PLAIN |

[illegible]

PHELPS
ENGINEERING

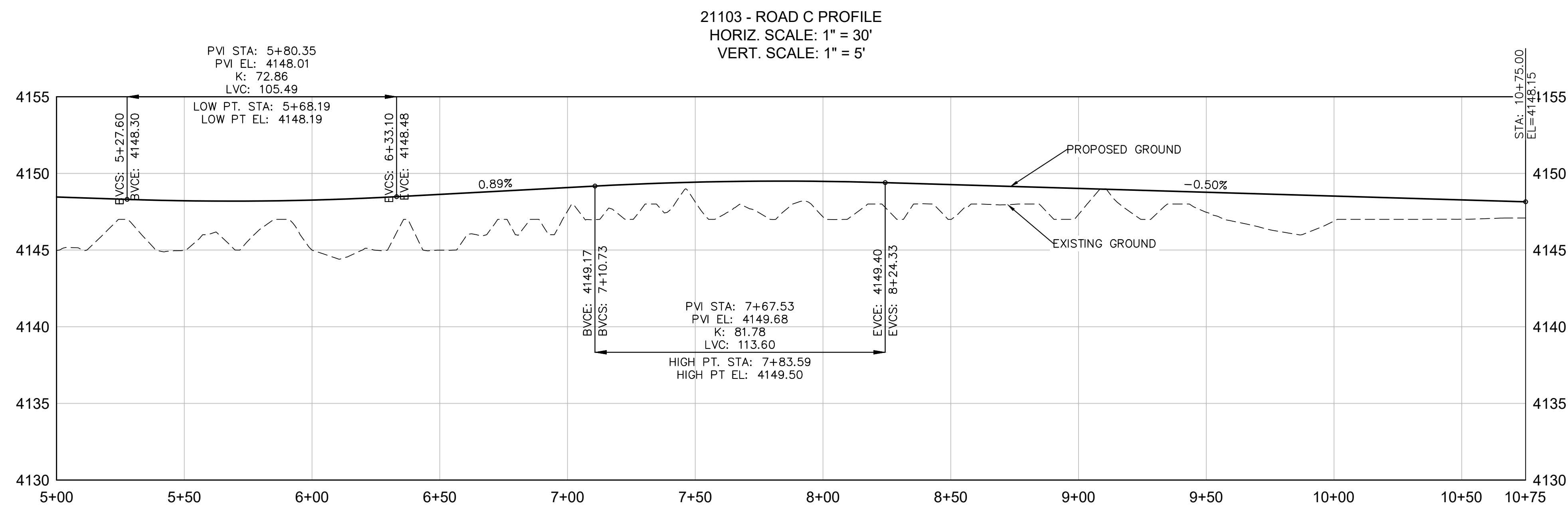
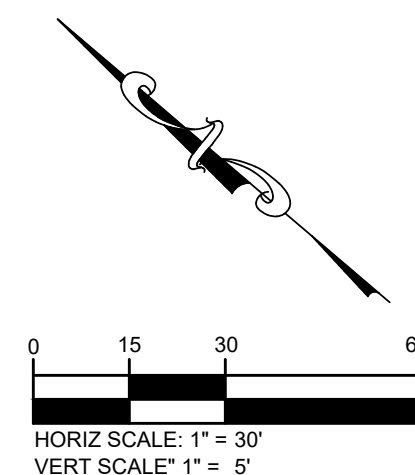
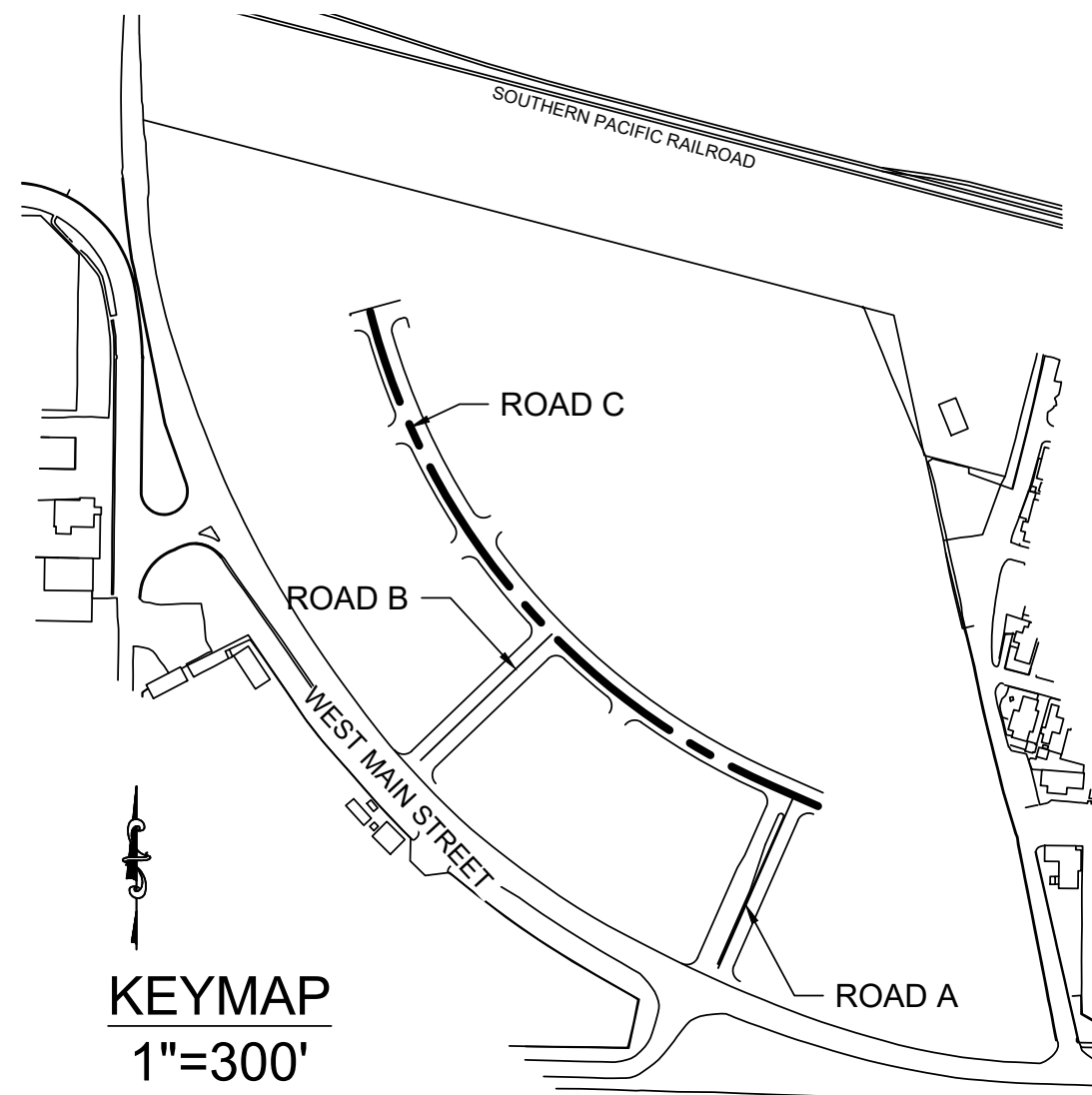
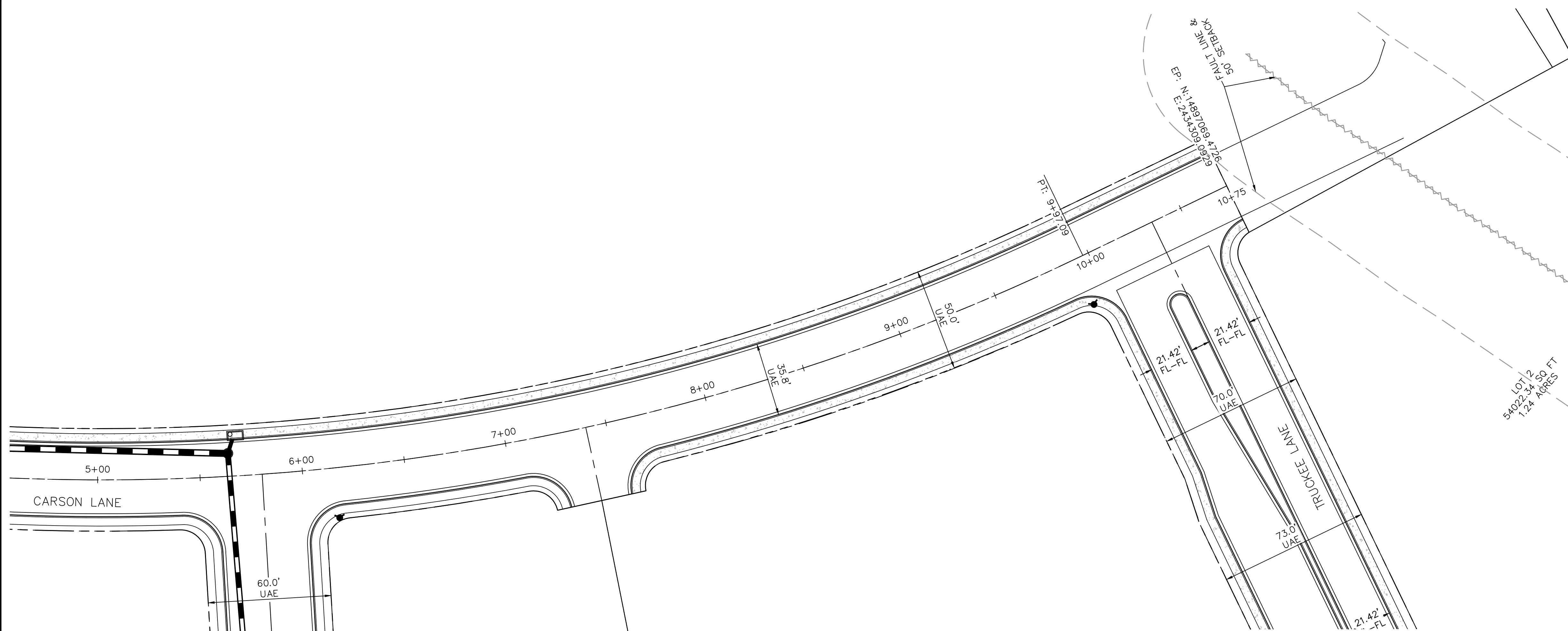
155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 399-7200
www.phelpsengineering.net



ROAD C P&P 0+00 - 6+50

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021
PROJECT NO.: 21103



- LEGEND:**
- | | |
|--|-----------------------------|
| | EXISTING CONTOURS |
| | PROPOSED CONTOURS |
| | LOT LINE |
| | SETBACK LINE |
| | RIGHT-OF-WAY |
| | EXISTING RIGHT-OF-WAY |
| | PROPERTY LINE |
| | EXISTING BOUNDARY LINE |
| | EXISTING SECTION LINE |
| | TRACT |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ALIGNMENT CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | EDGE OF PAVEMENT |
| | PROPOSED CURB & GUTTER |
| | STORM SEWER W/INLET AND FES |
| | DRAINAGE FLOWLINE |
| | 100-YR FLOOD PLAIN |
| | EXISTING 100-YR FLOOD PLAIN |

[illegible]

PHELPS
ENGINEERING

155 Country Estates Circle Suite 300
Reno, NV 89511 (775) 399-7200
www.phelpsengineering.net



811

Know what's below.
Call 811 before you dig.

**NOT TO SCALE IF SHEET
SIZE OTHER THAN 24"x36"**

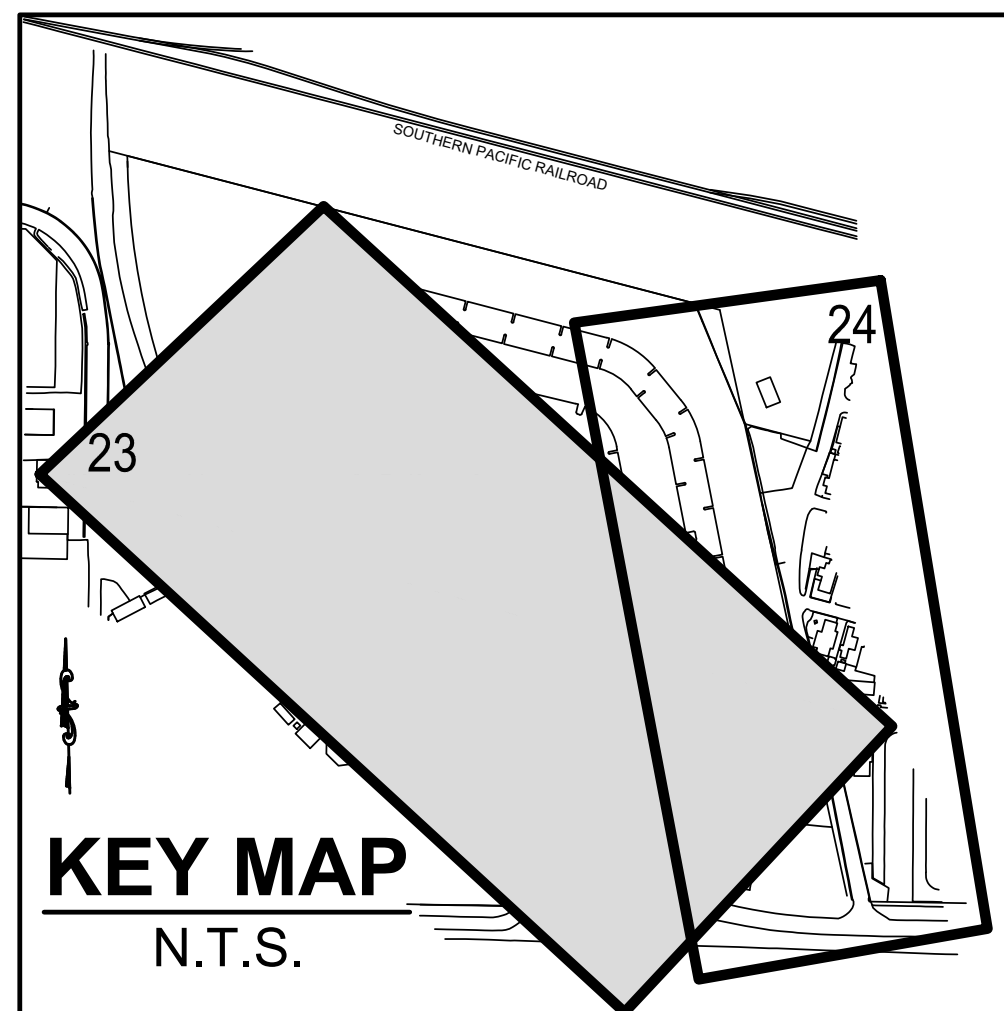
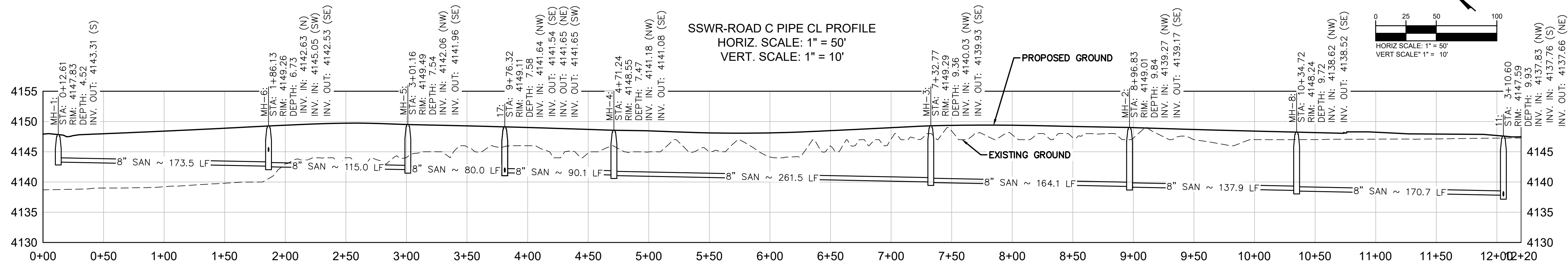
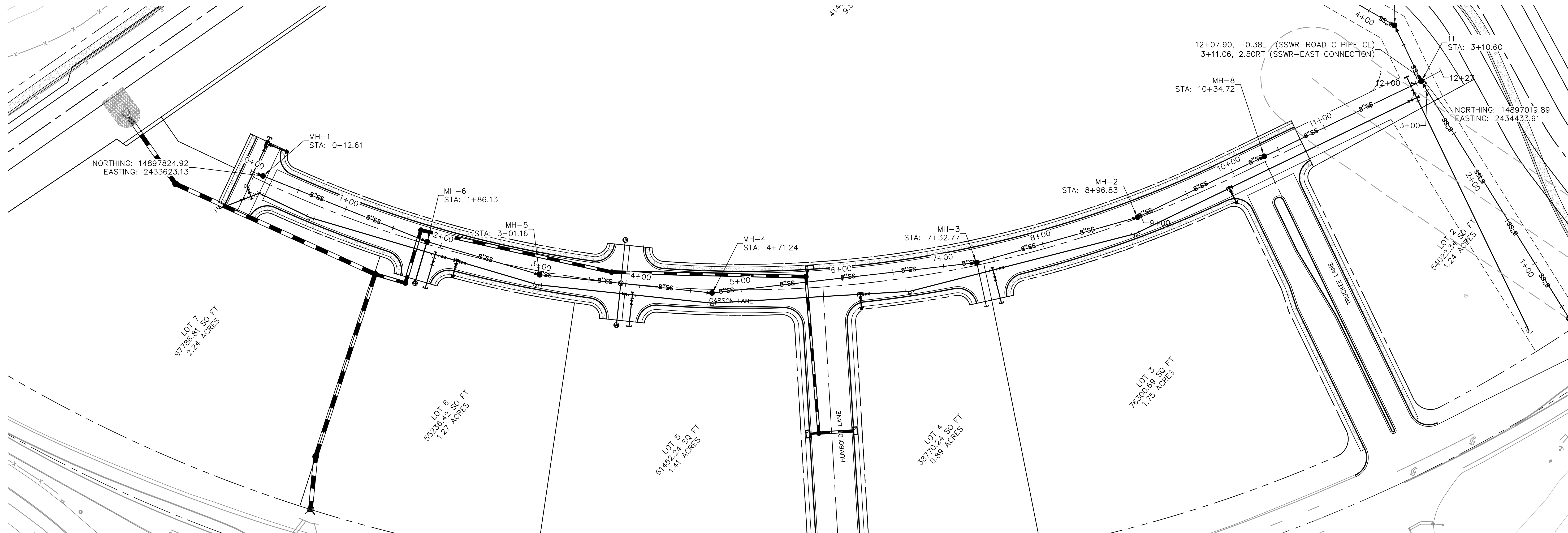
DESIGNED BY: JJP
DRAWN BY: JJP
CHECKED BY: LEP

ROAD C P&P 5+00 - 10+75

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

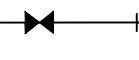
12/09/2021
PROJECT NO.: 21103

22 of 23

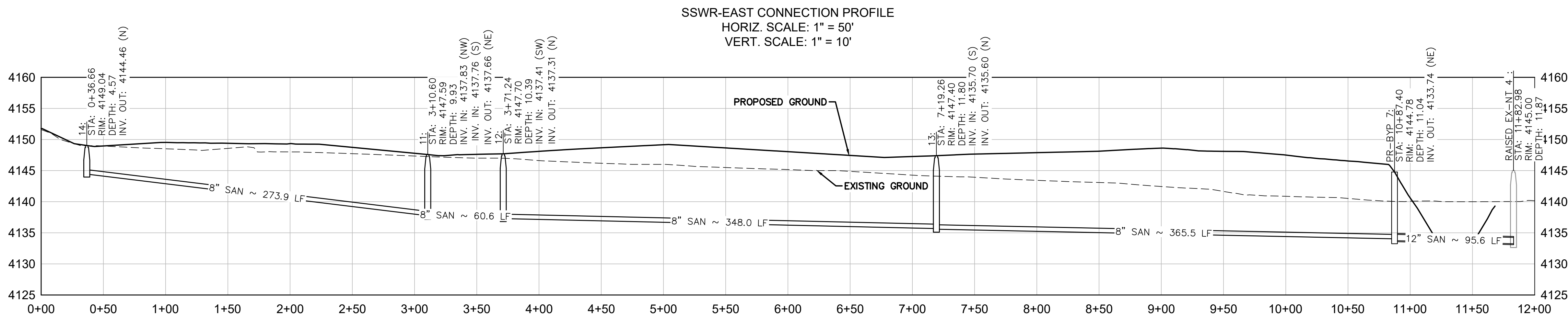
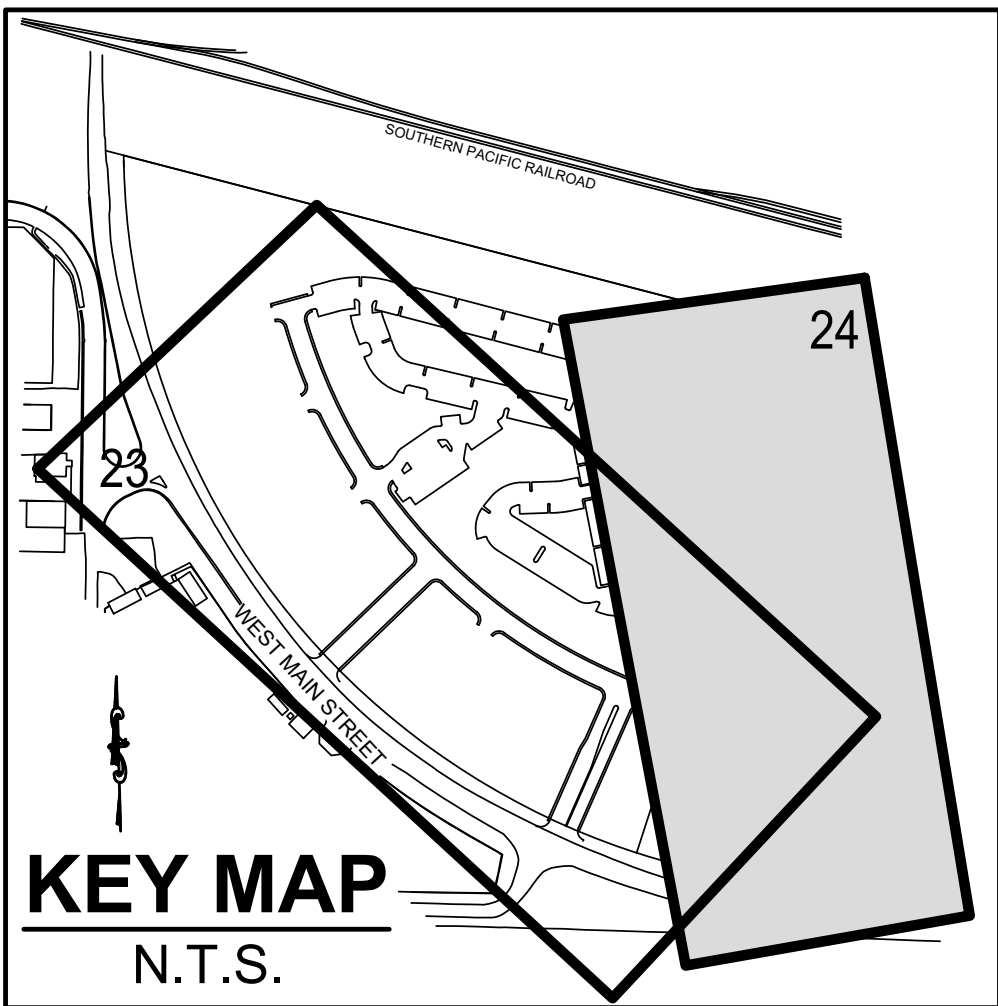


- LEGEND:

- | | |
|--|--------------------------------|
| | PROPERTY LINE |
| | LOT LINE |
| | UTILITY ACCESS EASEMENT [UAE] |
| | EXISTING RIGHT-OF-WAY |
| | EXISTING SECTION LINE |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ROAD CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | TRACT |
| | EDGE OF PAVEMENT |
| | CURB & GUTTER |
| | DRAINAGE FLOWLINE |
| | STORM SEWER
W/INLET AND FES |
| | EXISTING STORM SEWER |

- | | | |
|---|---|---|
|  | W | EXISTING STORM
MANHOLE |
|  | | EXISTING WATER LINE W/FIRE
HYDRANT AND GATE/BUTTERFLY
VALVE |
|  | | WATER LINE W/FIRE HYDRANT AND
GATE/BUTTERFLY VALVE |
|  | | WATER METER |
|  | | PLUG W/ 2" BLOWOFF |
|  | | AIR RELEASE VALVE |
|  | s s | EXISTING SANITARY
SEWER W/MANHOLE |
|  | 8"SS | 8-INCH Ø SANITARY SEWER W/MANHOLE |
|  | G | EXISTING GAS LINE |
|  | G | NATURAL GAS LINE |
|  | OHE | EXISTING OVERHEAD ELECTRIC |
|  | E | EXISTING ELECTRIC |
|  | E | EXISTING LINE |
|  |  | EXISTING POWER / LIGHT POLE |

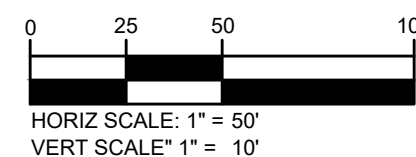
Drawing name: S:\Entitlement_Engineering\21103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\21103 - SSWR P&P.dwg 24 SEWER MAIN P&P (2) Jan 10, 2022 3:16pm by JPuillio



LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
- TRACT
- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER WINLET AND FES
- EXISTING STORM SEWER

- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER METER
- PLUG W/ 2" BLOWOFF
- AIR RELEASE VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- 8-INCH Ø SANITARY SEWER W/MANHOLE
- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE



NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36"

DESIGNED BY: JUP

DRAWN BY: JUP

CHECKED BY: LEP

SEWER MAIN P&P (2)

600 WEST MAIN
TENTATIVE MAP
LYON COUNTY
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

24 of 23

REVISIONS		DATE	BY



SITE AREA: 28.42 ACRES (1,237,915 SF)
PROPOSED ZONING: MIXED USE
ADDRESS: 600 W. MAIN ST.
PROPOSED COMMERCIAL SF: +/- 84,000 SF

REQUIRED LANDSCAPE AREA: 90,124 SF MIN. (2 AC.)

- 15% OF SITE AREA
- NOT CALCULATED IN THIS FIGURE -
 - LOT 1 (414,832 SF, 9.52 AC) - C.U.P SUBMITTED
 - LOT 8 (218,317 SF, 5.01 AC) - NO STRUCTURES, DRAINAGE CHANNEL WITH WALKING TRAIL PER SEC. 32.09.090.D 1, LOT 8 WILL BE REVEGETATED WITH NATIVE PLANTS.

TREES REQUIRED: 368

- 1 TREE PER 500 SF OF REQ. LANDSCAPE AREA = 175
- 1 TREE PER 10 PARKING SPACES (383 SPACES PROVIDED) = 38
- 1 TREE PER 30 LF STREET FRONTAGE = 155

SHRUBS REQUIRED: 1,141 MIN

- 1 SHRUB PER 50 SF

LAWN AREA MAXIMUM ALLOWED: 69,861 SF

- 80% OF REQ'D LANDSCAPE AREA

GENERAL NOTES:

1. ALL PLANTING AND IRRIGATION SHALL BE INSTALLED PER LOCAL GOVERNING CODES.

2. TREES:

A. SECTION 32.09.090, 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"

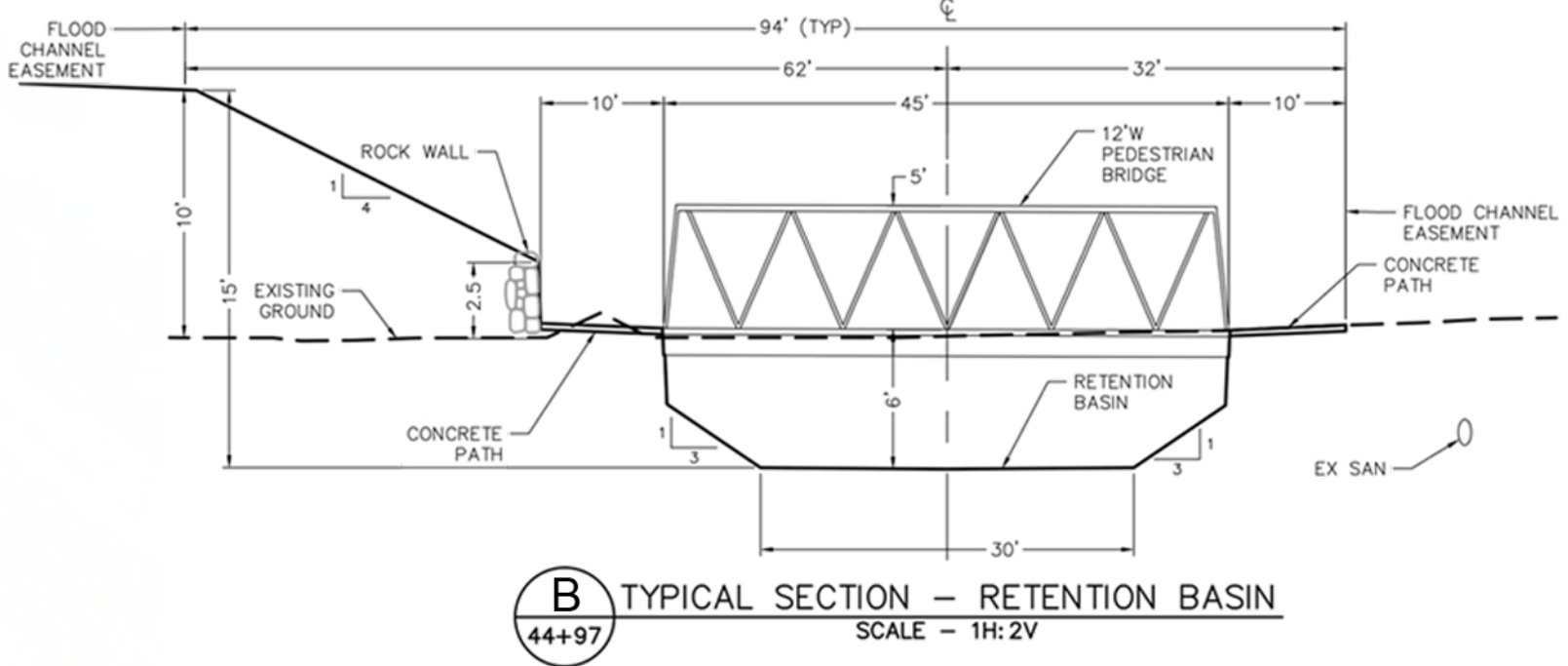
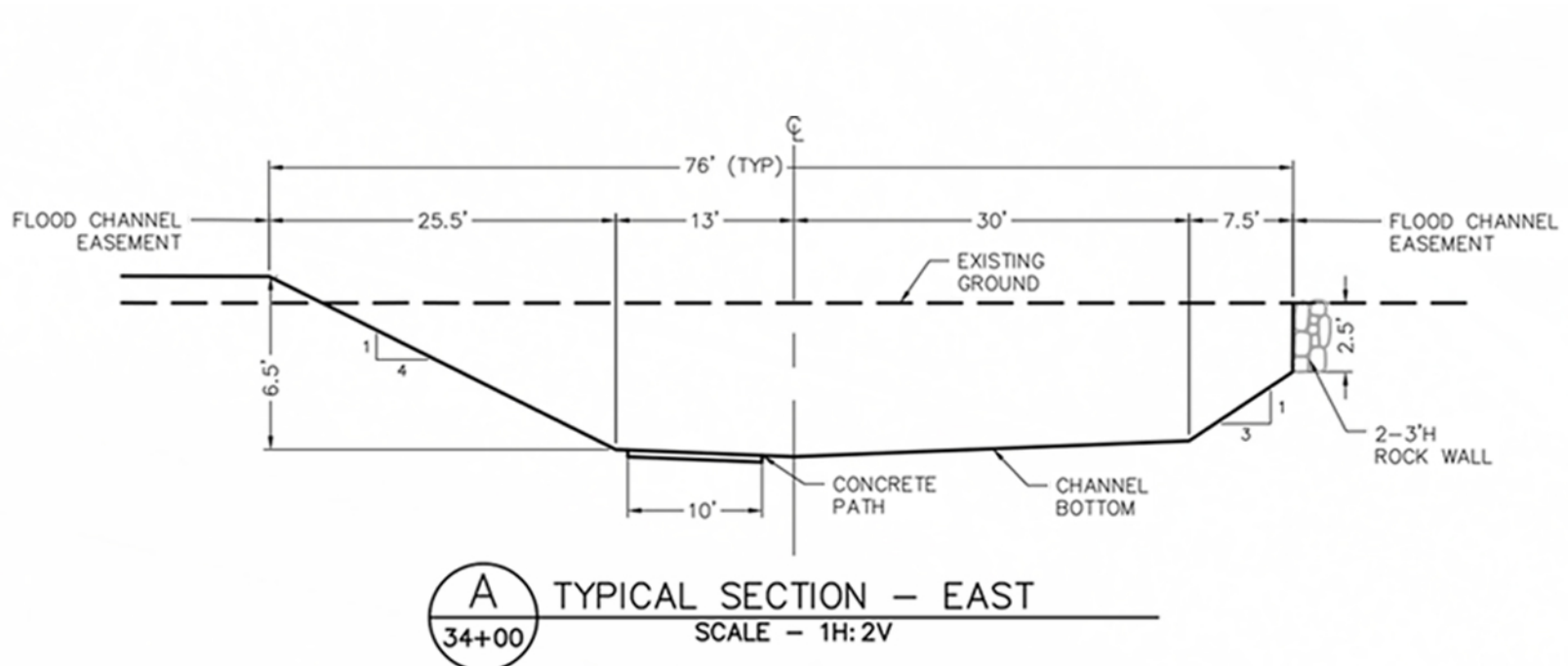
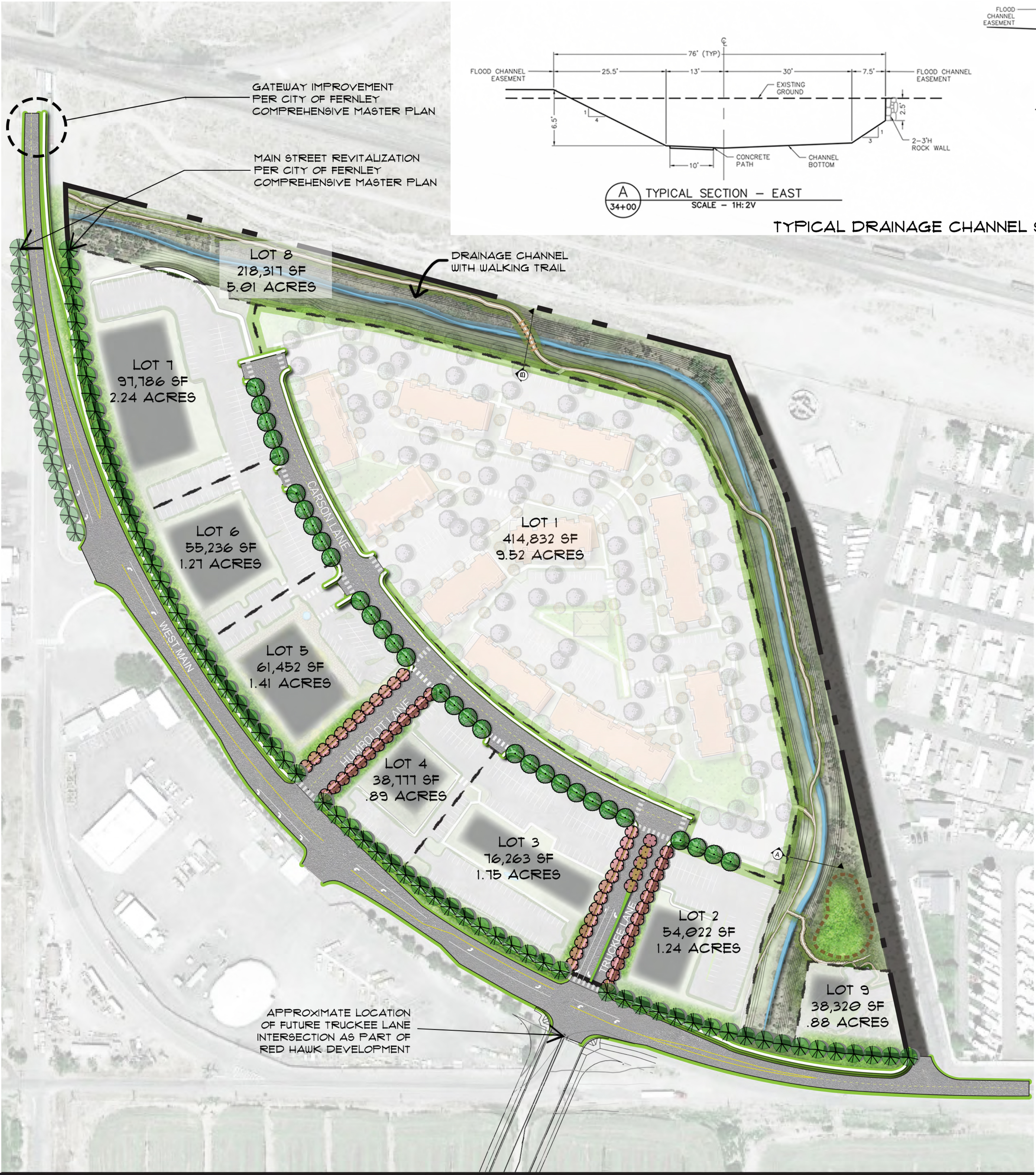
B. ADDITIONAL TREES, BEYOND THOSE REQUIRED BY CODE, MAY BE REDUCED IN SIZE AT INSTALLATION.

3. FINAL PLANT SELECTION AND LAYOUT WILL BE BASED ON SOUND HORTICULTURAL PRACTICES RELATING 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 3" DEPTH MULCH WITH WEED CONTROL.

5. WITH THE EXCEPTION OF LOT 8, 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 PREVENTOR WILL BE PROVIDED ON THE IRRIGATION SYSTEM AS REQUIRED PER CODE. LOT 8 WILL BE TEMPORARILY IRRIGATED UNTIL REVEGETATION IS ESTABLISHED (APPROX. 2-3 YEARS).

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.

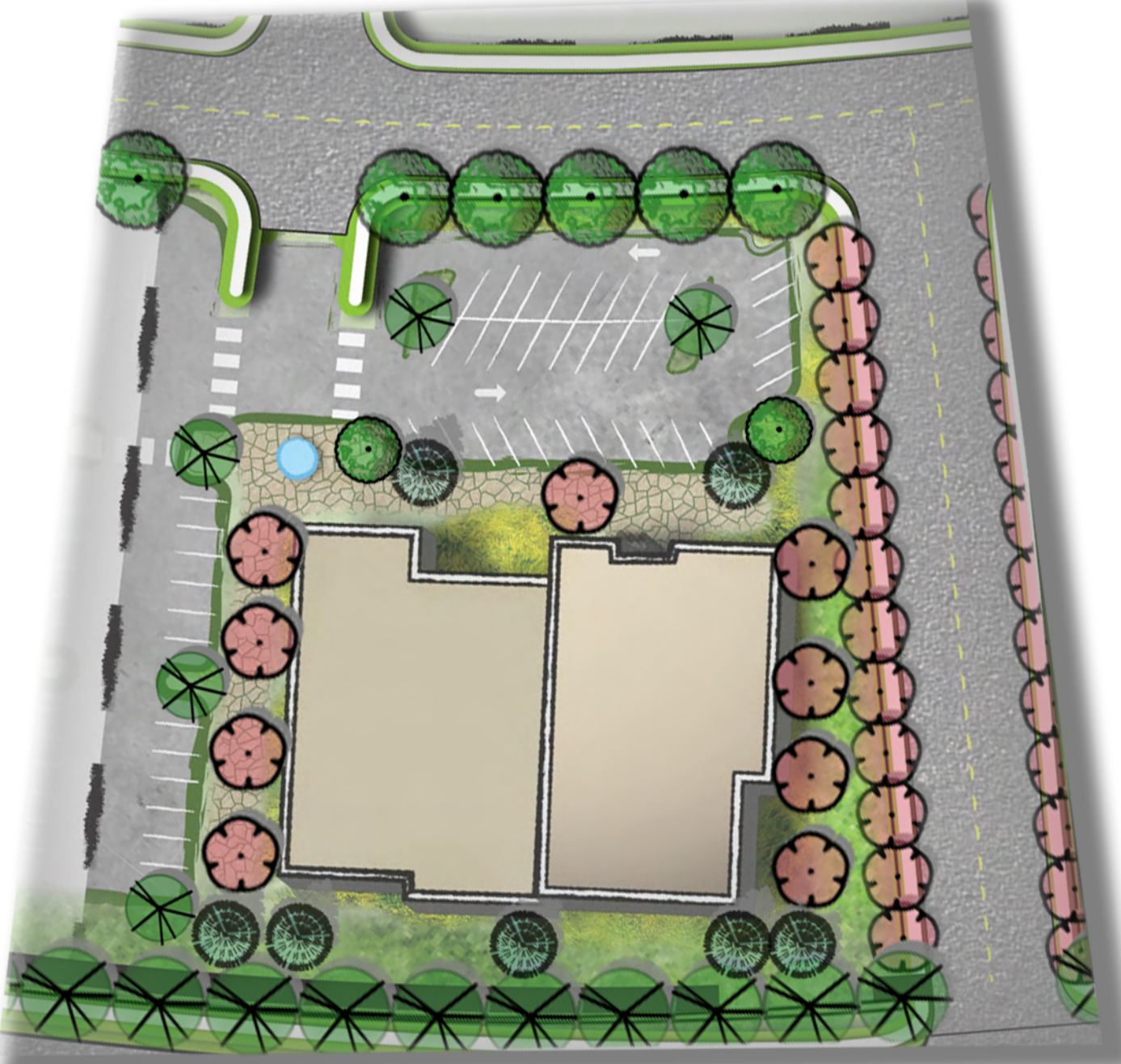


TYPICAL DRAINAGE CHANNEL SECTIONS

EXAMPLE DRAINAGE CHANNEL



ENLARGEMENT OF TYPICAL LOT



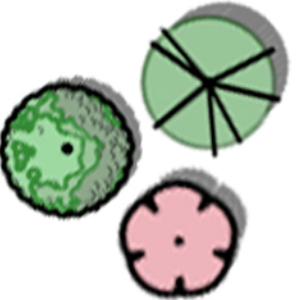
LOT 5 - 61,452 SF
REQUIRED LANDSCAPE AREA: 9,218 SF
- 15% OF TOTAL AREA
TREES REQUIRED: 49
- 1 TREE PER 500 SF OF REQ LANDSCAPE AREA = 18
- 1 TREE PER 10 PARKING SPACES (50) = 5
- 1 TREE PER 30 LF STREET FRONTAGE = 26
SHRUBS REQUIRED: 184
- 1 SHRUB PER 50 SF OF REQ LANDSCAPE AREA



1" = 100'

0 200 400

PLANTING KEY



DECIDUOUS TREES



EVERGREEN TREES



ORNAMENTAL LANDSCAPE/LAWN AREAS

600 WEST MAIN STREET
TRAFFIC STUDY

MAY 2021



Prepared by:
Solaegui Engineers, Ltd.
715 H Street
Sparks, Nevada 89431
(775) 358-1004

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
INTRODUCTION.....	4
STUDY AREA.....	4
EXISTING AND PROPOSED LAND USES.....	4
EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS.....	4
TRIP GENERATION.....	8
TRIP DISTRIBUTION AND ASSIGNMENT.....	9
EXISTING AND PROJECTED TRAFFIC VOLUMES.....	9
INTERSECTION CAPACITY ANALYSIS.....	17
IMPROVEMENT ANALYSIS.....	22
RECOMMENDATIONS.....	26
APPENDIX.....	27

LIST OF FIGURES

FIGURE 1 - VICINITY MAP.....	5
FIGURE 2 - TRIP DISTRIBUTION.....	10
FIGURE 3 - TRIP ASSIGNMENT.....	11
FIGURE 4A - EXISTING TRAFFIC VOLUMES (RAW COUNTS).....	12
FIGURE 4B - EXISTING TRAFFIC VOLUMES (ADJUSTED COUNTS).....	13
FIGURE 5 - EXISTING PLUS PROJECT TRAFFIC VOLUMES.....	14
FIGURE 6 - 2041 BASE TRAFFIC VOLUMES.....	15
FIGURE 7 - 2041 BASE PLUS PROJECT TRAFFIC VOLUMES.....	16

600 WEST MAIN STREET

TRAFFIC STUDY

EXECUTIVE SUMMARY

The proposed 600 West Main Street development will be located in the City of Fernley, Nevada. The project site is located on the northeast side of West Main Street west of Marie Drive and south of Logan Lane. The project site is currently undeveloped land. The purpose of this study is to address the project's impact upon the adjacent street network. The West Main Street intersections with US-95A, Miller Lane, Truckee Lane, Mesa Drive, Logan Lane-Pilot Road, the I-80 eastbound and westbound on and off ramps, and the proposed project driveways have been identified for AM and PM peak hour capacity analysis for the existing, existing plus project, 2041 base, and 2041 base plus project scenarios.

The proposed 600 West Main Street development will consist of the construction of 201 multi-family dwelling units, a 100 room hotel, a 15,000 square foot pharmacy with drive-through lane, an 8,000 square foot sit-down restaurant, and retail buildings containing a total floor area of 47,000 square feet. Project access is proposed from two driveways on West Main Street. The 600 West Main Street development is anticipated to generate 6,623 average daily trips with 322 trips occurring during the AM peak hour and 584 trips occurring during the PM peak hour.

Traffic generated by the 600 West Main Street development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Nevada Department of Transportation and City of Fernley requirements.

It is recommended that the West Main Street/Truckee Lane-East Driveway intersection be designed to include a minimum of one left turn lane and one shared through-right turn lane at both the north driveway and south Truckee Lane approaches and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach. It is recommended that a traffic signal be installed at the West Main Street/Truckee Lane-East Driveway intersection when warranted.

It is recommended that the West Main Street/West Driveway intersection be designed to operate with limited left-in/right-in/right-out movements and contain stop sign control at the driveway approach and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach.

INTRODUCTION

STUDY AREA

The proposed 600 West Main Street development will be located in the City of Fernley, Nevada. The project site is located on the northeast side of West Main Street west of Marie Drive and south of Logan Lane. Figure 1 shows the approximate location of the project site. The purpose of this study is to address the project's impact upon the adjacent street network. The West Main Street intersections with US-95A, Miller Lane, Truckee Lane, Mesa Drive, Logan Lane-Pilot Road, the I-80 eastbound and westbound on and off ramps, and the proposed project driveways have been identified for AM and PM peak hour capacity analysis for the existing, existing plus project, 2041 base, and 2041 base plus project scenarios.

EXISTING AND PROPOSED LAND USES

The project site is currently undeveloped land. Adjacent properties generally include the Union Pacific railroad tracks to the north, agricultural land to the south, a Nevada Department of Transportation maintenance facility to the west, and residential development to the east. The proposed 600 West Main Street development will consist of the construction of 201 multi-family dwelling units, a 100 room hotel, a 15,000 square foot pharmacy with drive-through lane, an 8,000 square foot sit-down restaurant, and 47,000 square feet of retail buildings. Project access is proposed from two driveways on West Main Street.

EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

West Main Street (SR-427) is generally a two-lane roadway with one through lane in each direction near the key intersections. The speed limit is posted for 45 miles per hour north of the I-80 westbound off-ramp, 35 miles per hour between the I-80 westbound off-ramp and Miller Lane, and 25 miles per hour east of Miller Lane. Roadway improvements west of Miller Lane include paved and graded shoulders with striped edgelines and a striped centerline. A raised center island with median openings exists at the interchange. Roadway improvements east of Miller Lane include curb, gutter, and sidewalk on both sides of the street with a striped center two-way left turn lane.

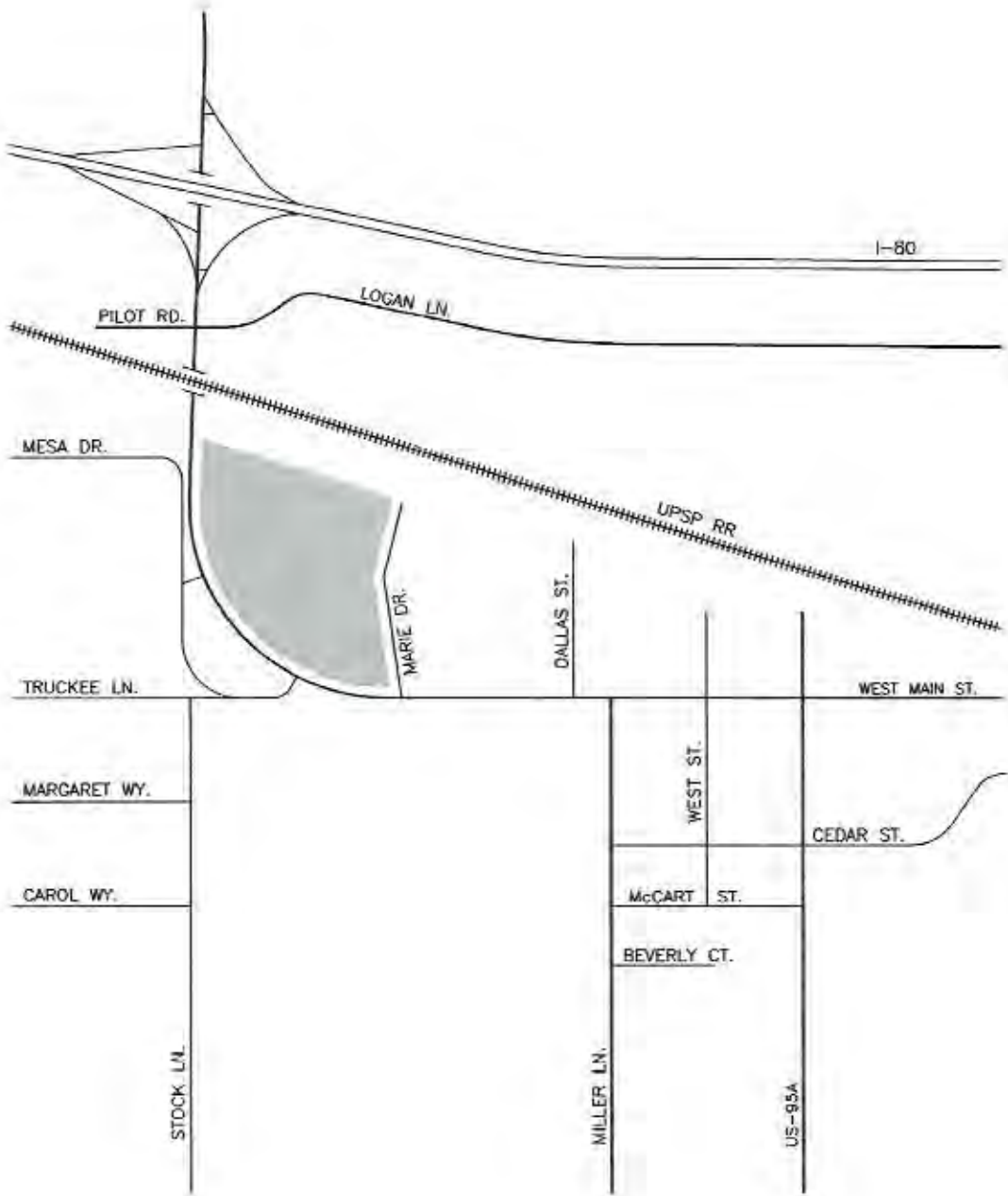
US-95A is a two-lane roadway with one through lane in each direction south of West Main Street. The speed limit is posted for 25 miles per hour. Roadway improvements generally include paved or graded shoulders with striped edgelines and a striped centerline.

Miller Lane is a two-lane roadway with one through lane in each direction south of West Main Street. The speed limit is not posted but assumed to be 25 miles per hour. Roadway improvements generally include graded shoulders.

Truckee Lane is a two-lane roadway with one through lane in each direction south of West Main Street. The speed limit is posted for 25 miles per hour. Roadway improvements generally include graded shoulders with a striped centerline.

LEGEND

PROJECT SITE



600 WEST MAIN STREET

VICINITY MAP

FIGURE 1

Mesa Drive is a two-lane roadway with one through lane in each direction west of West Main Street. The speed limit is posted for 25 miles per hour. Roadway improvements generally include curb and gutter on both sides of the street with a striped centerline.

Logan Lane is a two-lane roadway with one through lane in each direction east of West Main Street. The speed limit is not posted. Roadway improvements generally include graded shoulders with a striped centerline. Some curb, gutter, and sidewalk improvements exist in developed areas. Pilot Road aligns with Logan Lane on the opposite side of West Main Street.

Pilot Road is a two-lane roadway with one through lane in each direction west of West Main Street. The speed limit is not posted. Roadway improvements generally include curb and gutter on both sides of the street. Logan Lane aligns with Pilot Road on the opposite side of West Main Street.

The West Main Street/US-95A intersection is a signalized four-leg intersection with protected left turn phasing at the east and west approaches and split phasing at the north and south approaches. The east, west, and south approaches each contain one left turn lane and one shared through-right turn lane. The north approach (East Street) contains one shared left turn-through-right turn lane. Pedestrian crosswalks exist at the east, west, and south approaches.

The West Main Street/Miller Lane intersection is an unsignalized three-leg intersection with stop sign control at the south approach. The west approach contains one shared through-right turn lane. The east approach contains one left turn lane and one through lane. The south approach contains one shared left turn-right turn lane. A pedestrian crosswalk exists at the east approach.

The West Main Street/Truckee Lane intersection is an unsignalized three-leg intersection with stop sign control at the south approach. The west approach contains one shared through-right turn lane. The east approach contains one left turn lane and one through lane. The south approach contains one shared left turn-right turn lane. With development of the project the intersection will be improved as an unsignalized four-leg intersection with stop sign control at the new north approach and existing south approach. The project's east driveway will form the north leg. At a minimum, the four-leg intersection will include one left turn lane and one shared through-right turn lane at the east and west approaches and one shared left turn-through-right turn lane at the north and south approaches.

The West Main Street/West Driveway intersection does not currently exist but is anticipated to be constructed as an unsignalized three-leg intersection with stop control at the north approach (west driveway) with development of the project. At a minimum, the intersection will include one left turn lane and one through lane at the west approach, one shared through-right turn lane at the east approach, and one shared left turn-right turn lane at the north driveway approach.

The West Main Street/Mesa Drive intersection is an unsignalized three-leg intersection with stop sign control at the west approach. The north approach contains one through lane and one right turn lane. The south approach contains one left turn lane and one through lane. The west approach contains one left turn lane and one right turn lane.

The West Main Street/Logan Lane-Pilot Road intersection is an unsignalized four-leg intersection with stop sign control at the east and west approaches. The north approach contains one left turn lane, one through lane, and one right turn lane. The south approach contains one left turn lane and one shared through-right turn lane. The east approach contains one left turn lane and one shared through-right turn lane with a striped corner island. The west approach contains one shared left turn-through-right turn lane.

The West Main Street/I-80 Eastbound On-Ramp intersection is an unsignalized three-leg intersection with yield sign control at the south approach for only the right turn movement. The north approach contains one left turn lane and two through lanes. The south approach contains one through lane and one right turn lane. The east leg is the on-ramp to eastbound I-80.

The West Main Street/I-80 Eastbound Off-Ramp intersection is an unsignalized three-leg intersection with stop sign control at the west approach for only the left turn movement. The north and south approaches each contain one through lane. The west approach contains one left turn lane and one free right turn lane. A second northbound through lane exists north of the intersection that functions as an acceleration lane for the eastbound left turn movement.

The West Main Street/I-80 Westbound On-Ramp intersection is an unsignalized three-leg intersection with no traffic control. The north approach contains one through lane and one right turn lane. The south approach contains one left turn lane and two through lanes. The west leg is the on-ramp to westbound I-80.

The West Main Street/I-80 Westbound Off-Ramp intersection is an unsignalized three-leg intersection with stop sign control at the east approach for only the left turn movement. The north and south approaches each contain two through lanes. The east approach generally contains one shared left turn-right turn lane with a striped corner island that has a yield sign for the right turn movement.

TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed 600 West Main Street development on the adjacent street network, trip generation rates and peak hours had to be determined. Trip generation rates and equations were obtained from the Tenth Edition of *ITE Trip Generation* (2018) for Land Uses 220: Multifamily Housing (Low-Rise), 310: Hotel, 820: Shopping Center, 881: Pharmacy/Drugstore with Drive-Through Window, and 932: High-Turnover (Sit-Down) Restaurant. The proposed 600 West Main Street development will consist of the construction of 201 multi-family dwelling units, a hotel with 100 rooms, a 15,000 square foot pharmacy with drive-through lane, an 8,000 square foot sit-down restaurant, and 47,000 square feet of retail buildings.

The *ITE Trip Generation Manual* provides guidelines for quantifying pass-by trips for the shopping center, pharmacy, and restaurant land uses. Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination and are attracted directly from the adjacent street traffic stream (West Main Street). The *Trip Generation Manual* indicates that 34% of the PM peak hour trips generated by the shopping center land use are pass-by trips, 49% of the PM peak hour trips generated by the pharmacy land use are pass-by trips, and 43% of the PM peak hour trips generated by the high-turnover restaurant land use are pass-by trips.

Trip generation was calculated for an average weekday and the weekday peak hours occurring between 7:00 AM and 9:00 AM and 4:00 PM and 6:00 PM. These timeframes correspond to the peak hours of adjacent street traffic. Table 1 shows a summary of the average daily traffic (ADT) and peak hour volumes generated by the proposed 600 West Main Street development. The trip generation worksheets are included in the Appendix.

LAND USE	ADT	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Multi-Family Housing (201 D.U.)	1,479	21	72	93	71	42	113
Hotel (100 Rooms)	836	28	19	47	31	29	60
Shopping Center (47,000 S.F.)	1,774	27	17	44	86	93	179
Pharmacy w/Drive-Thru (15,000 S.F.)	1,637	31	27	58	77	77	154
Sit-Down Restaurant (8,000 S.F.)	897	44	36	80	48	30	78
Total Trips	6,623	151	171	322	313	271	584
Pass-By Trips	N/A	0	0	0	-85	-85	-170
New Trips	N/A	151	171	322	228	228	414

As shown in Table 1, the 600 West Main Street development is anticipated to generate 6,623 average daily trips with 322 trips occurring during the AM peak hour and 584 trips occurring during the PM peak hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of new trips to the key intersections was based on existing peak hour traffic patterns and the locations of existing and future attractions and productions in the area. Separate directions of approach are anticipated for the residential, hotel and commercial land uses. The distribution of the pass-by trips was based on directional peak hour through traffic volumes on West Main Street adjacent to the site. The trip distribution for the new and pass-by trips are shown in Figure 2.

EXISTING AND PROJECTED TRAFFIC VOLUMES

Existing peak hour traffic volumes at the key intersections were obtained from weekday traffic counts conducted in May of 2021. Figure 4A shows the existing traffic volumes (raw counts) during the AM and PM peak hours.

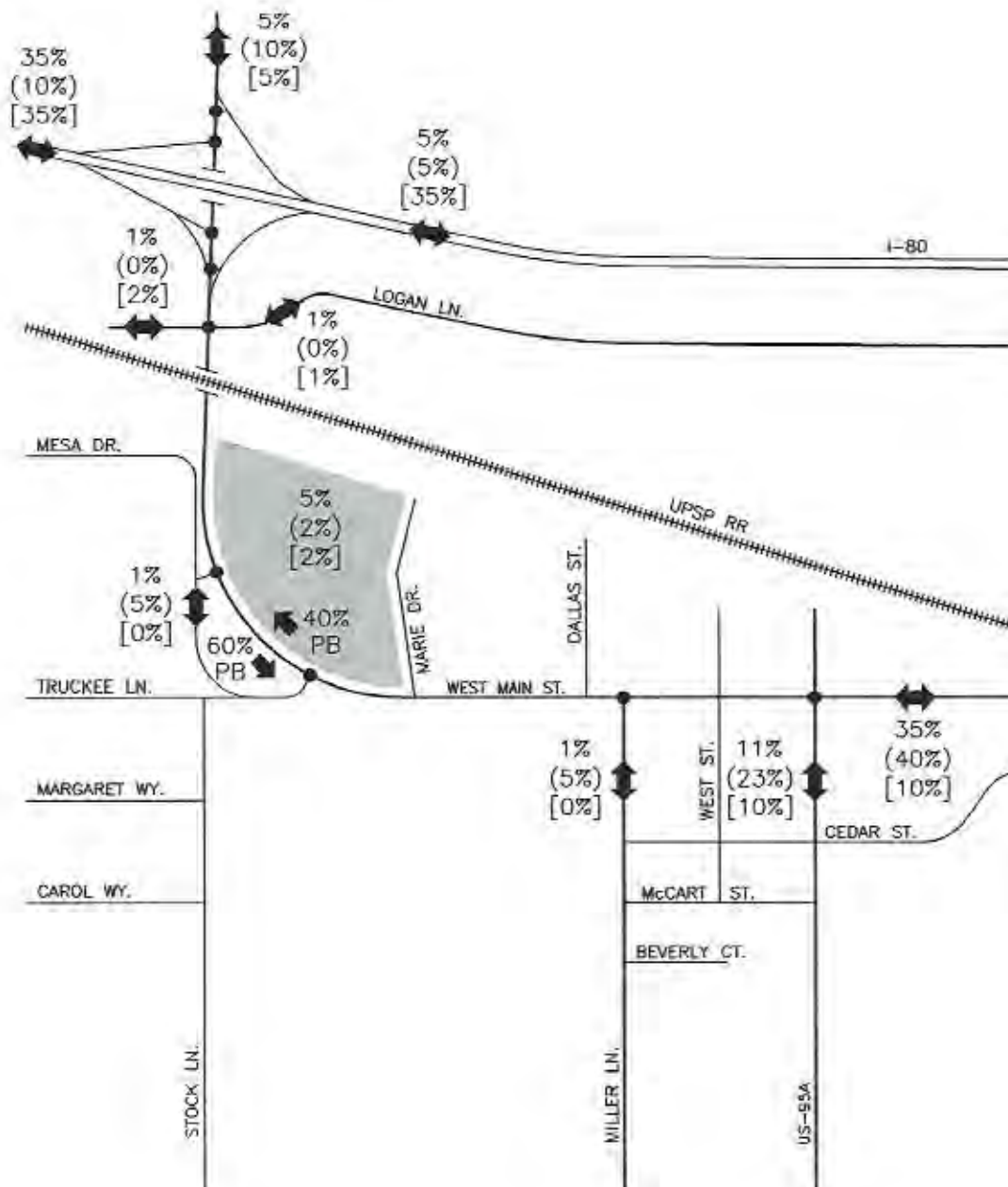
The existing traffic counts were conducted during the COVID-19 pandemic which may have resulted in reduced traffic on the area streets. In order to more closely represent normal traffic conditions the existing traffic counts were compared with pre-pandemic traffic counts conducted by the Nevada Department of Transportation (NDOT) and obtained from the Traffic Records Information Access (TRINA) application for count stations on West Main Street, US-95A, Truckee Lane, and the I-80 on and off-ramps at the Wadsworth-West Fernley interchange. Pre-pandemic counts at the West Main Street/US-95A intersection were also obtained from the City of Fernley Transportation Master Plan (Draft) dated May 2020. The existing traffic counts were subsequently adjusted based on the traffic count comparison. Figure 4B shows the existing traffic volumes (adjusted counts) during the AM and PM peak hours. The adjusted traffic volumes were utilized in the analysis.

Figure 5 shows the existing plus project traffic volumes at the key intersections during the AM and PM peak hours. The existing plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the existing traffic volumes (adjusted counts) shown on Figure 4B.

Figure 6 shows the 2041 base traffic volumes at the key intersections during the AM and PM peak hours. The 2041 base volumes were estimated by applying a $\pm 1.4\%$ average annual growth rate to the existing traffic volumes (adjusted counts) shown on Figure 4B. This growth rate was derived from 20-year historic traffic count data obtained from NDOT's Annual Traffic Reports for count stations on West Main Street, US-95A, Truckee Lane in the vicinity of the site and at the I-80 on and off-ramps at the Wadsworth-West Fernley interchange.

Figure 7 shows the 2041 base plus project traffic volumes at the key intersections during the AM and PM peak hours. The 2041 base plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the 2041 base traffic volumes shown on Figure 6.

LEGEND
 - RESIDENTIAL
 (-) RETAIL
 [-] HOTEL

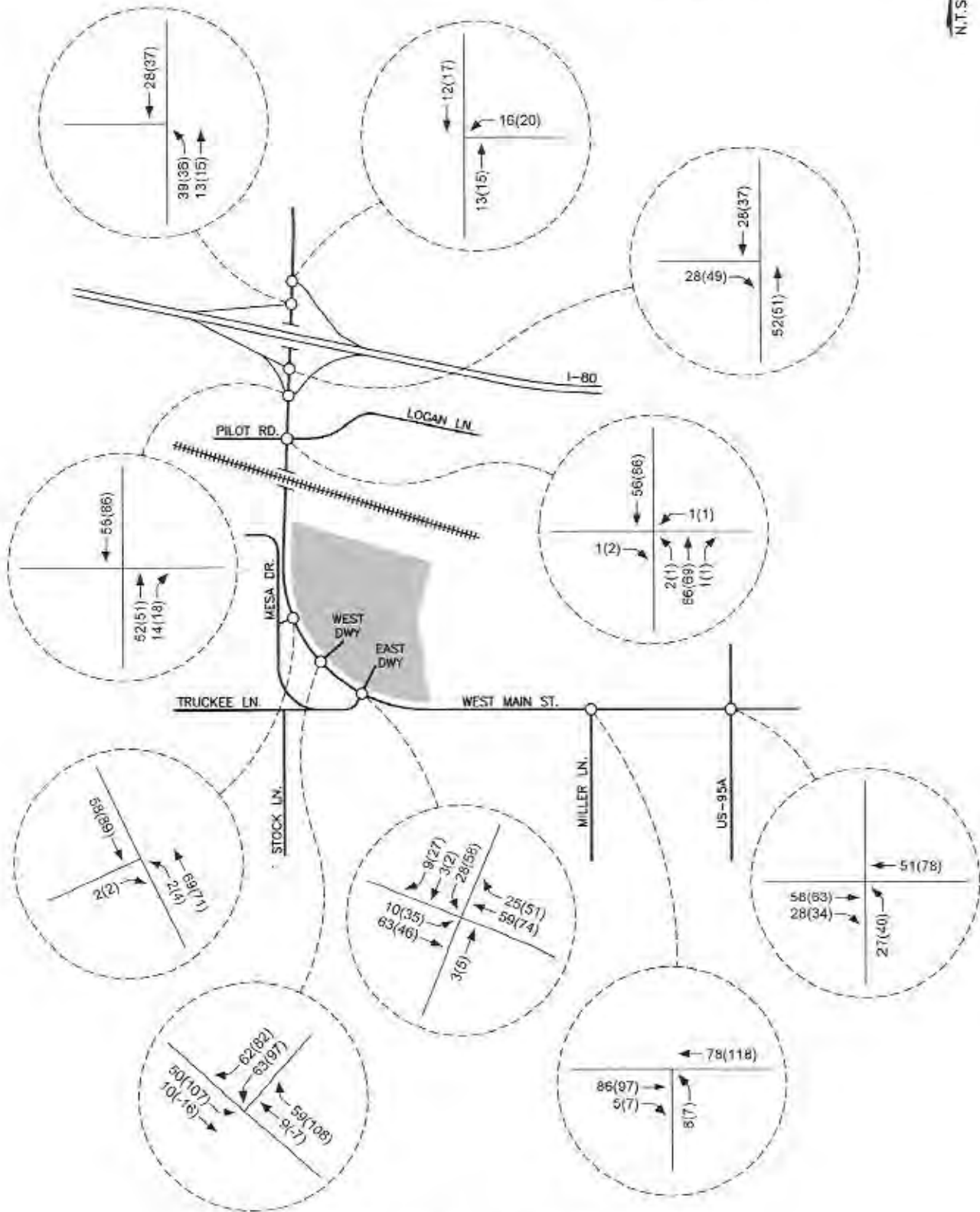


600 WEST MAIN STREET
TRIP DISTRIBUTION
FIGURE 2

LEGEND

— AM PEAK HOUR
(-) PM PEAK HOUR

N.T.S.

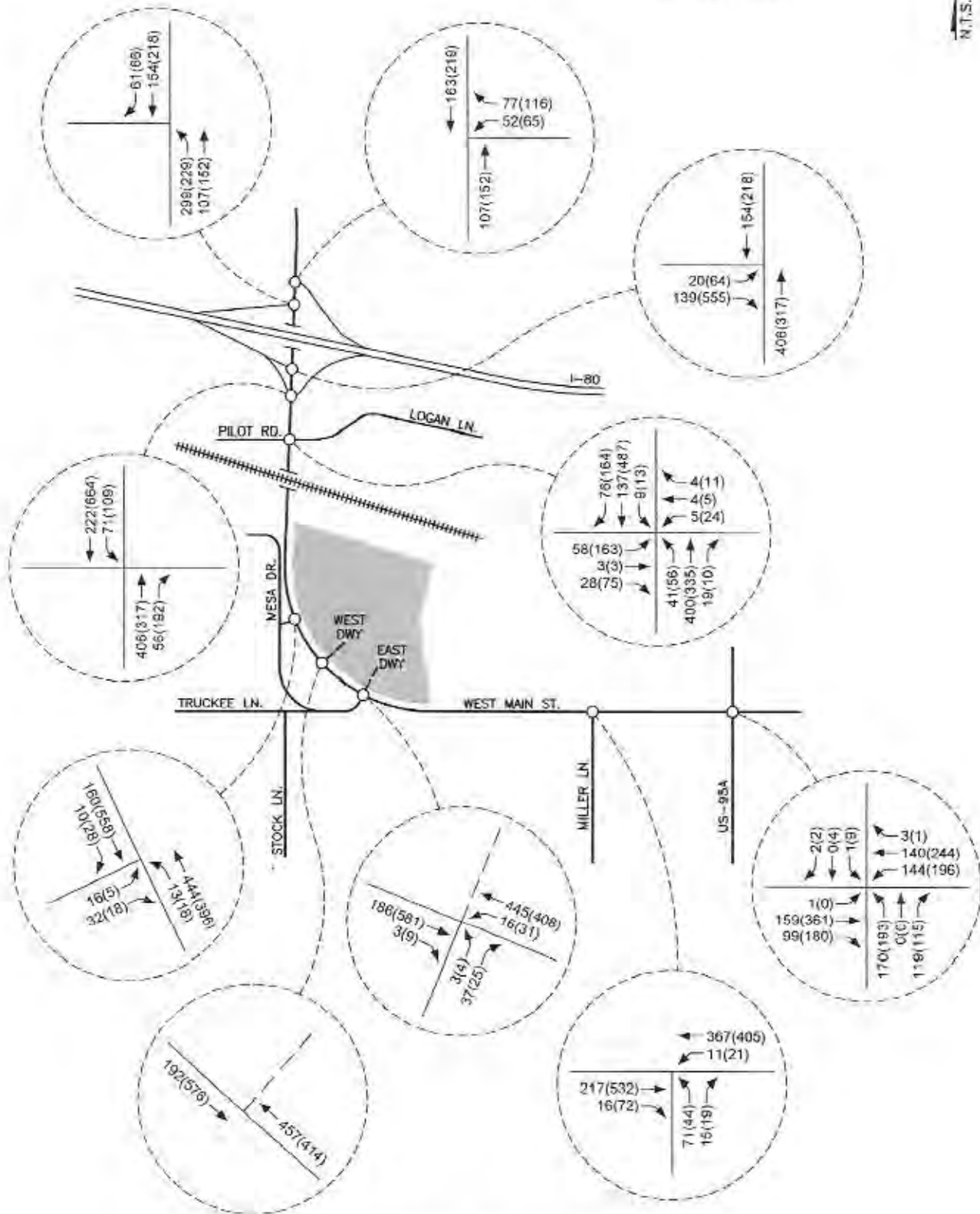


600 WEST MAIN STREET
TRIP ASSIGNMENT
FIGURE 3

LEGEND

— AM PEAK HOUR
(-) PM PEAK HOUR

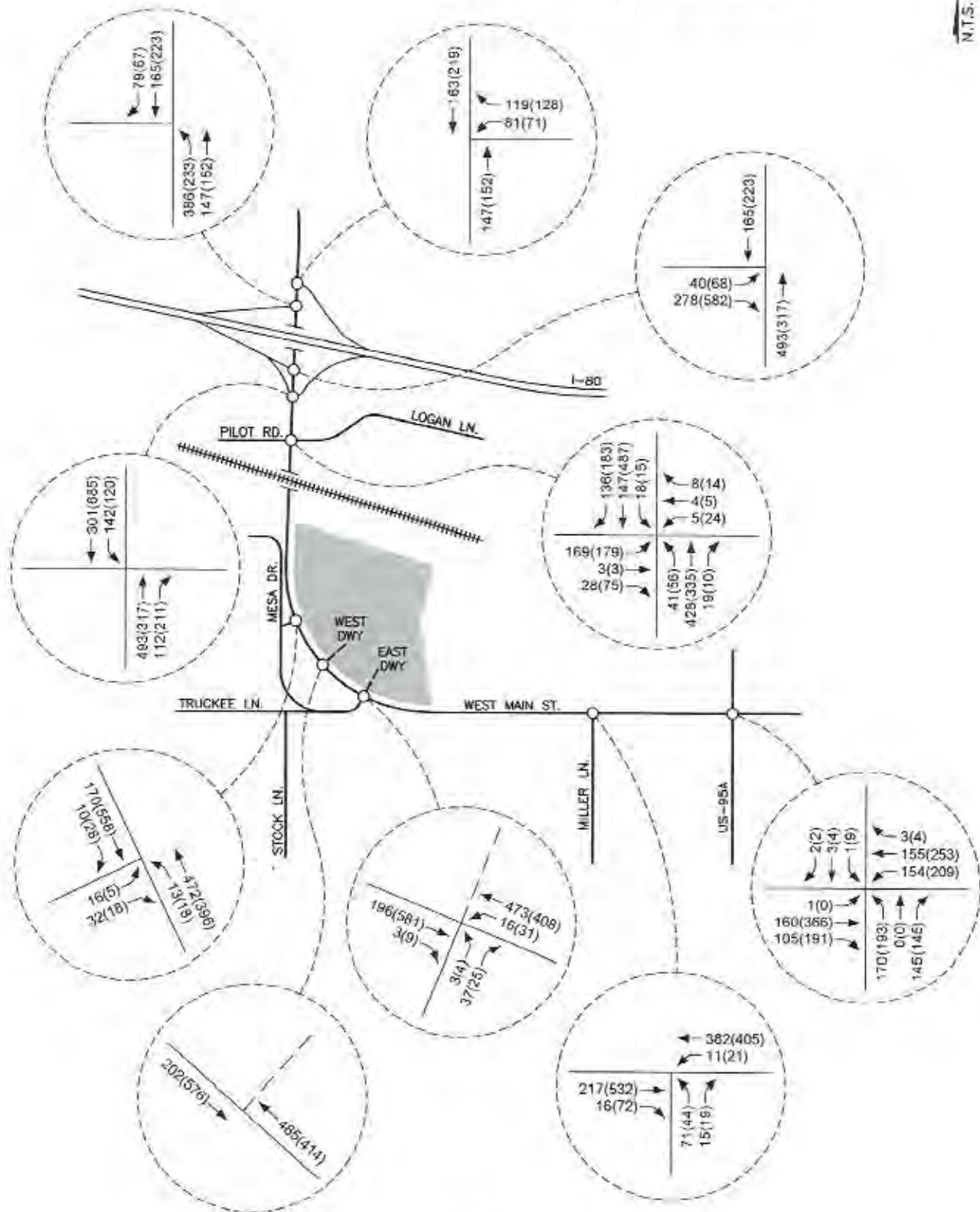
N.T.S.



600 WEST MAIN STREET
EXISTING TRAFFIC VOLUMES (RAW COUNTS)
FIGURE 4A

LEGEND

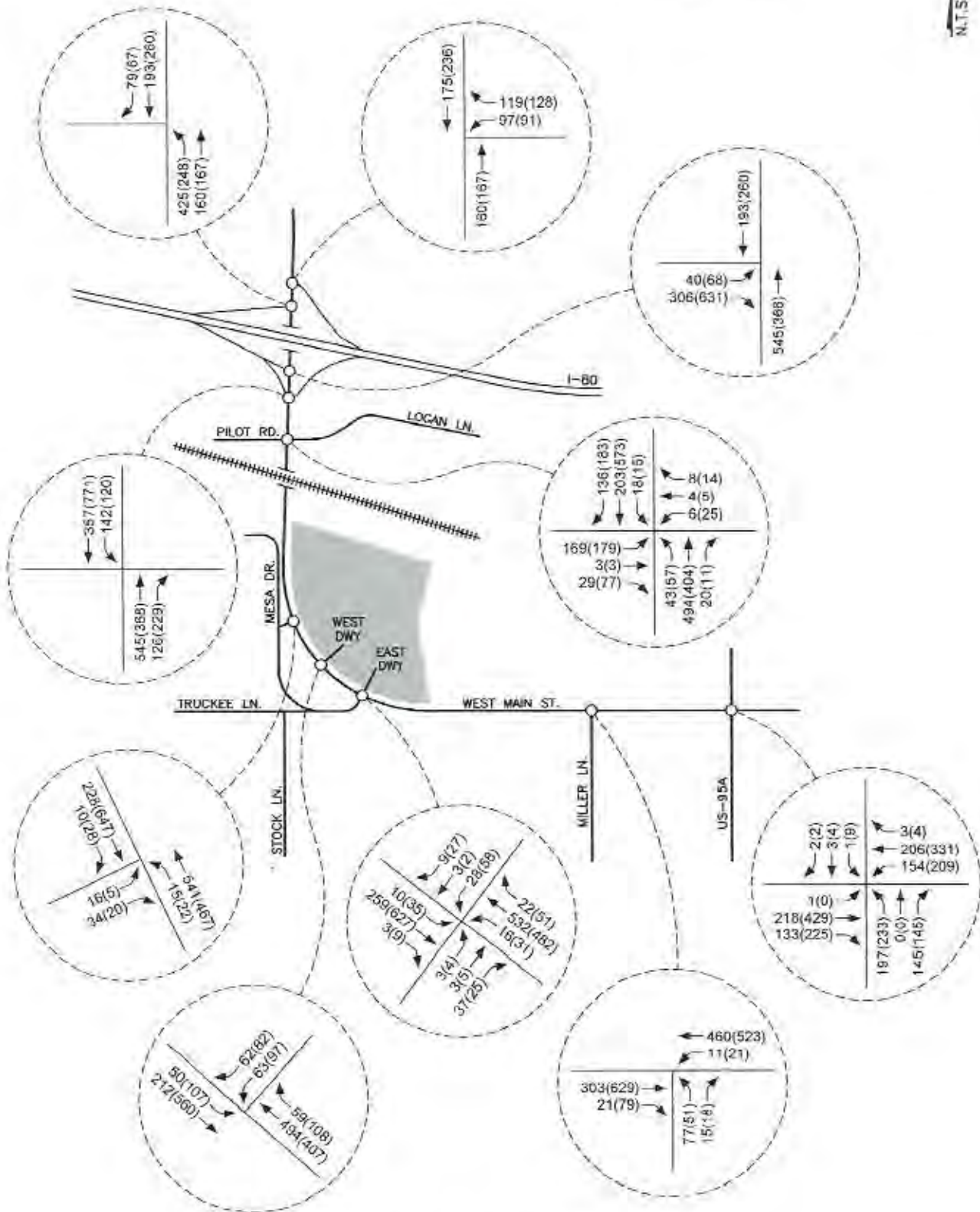
— AM PEAK HOUR
(-) PM PEAK HOUR



600 WEST MAIN STREET
EXISTING TRAFFIC VOLUMES (ADJUSTED COUNTS)
FIGURE 4B

LEGEND

- AM PEAK HOUR
(-) PM PEAK HOUR

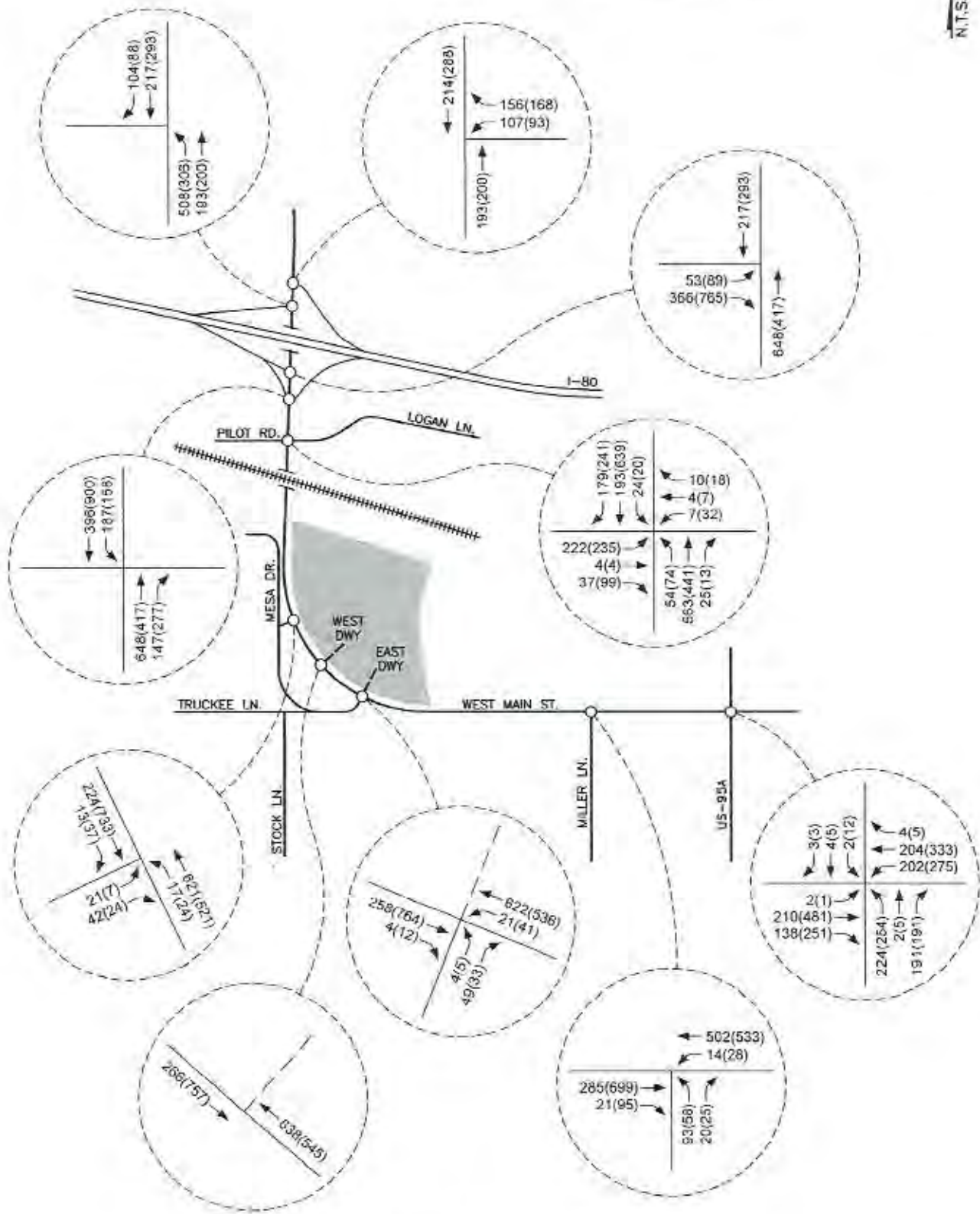


600 WEST MAIN STREET
EXISTING PLUS PROJECT TRAFFIC VOLUMES
FIGURE 5

LEGEND

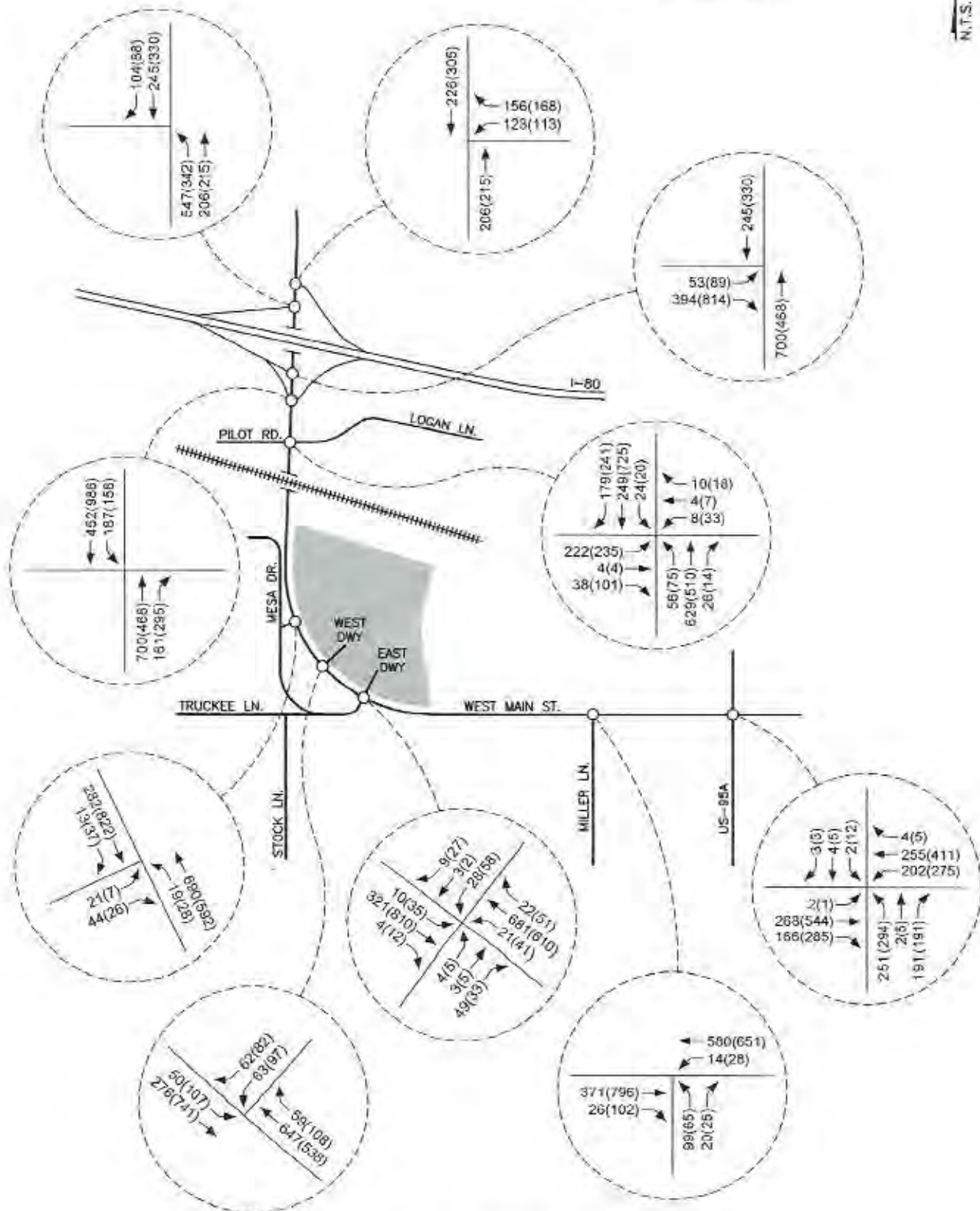
— AM PEAK HOUR
(-) PM PEAK HOUR

N.T.S.



LEGEND

— AM PEAK HOUR
(-) PM PEAK HOUR



600 WEST MAIN STREET

**2041 BASE PLUS PROJECT TRAFFIC VOLUMES
FIGURE 7**

INTERSECTION CAPACITY ANALYSIS

The key intersections were analyzed for capacity based on procedures presented in the *Highway Capacity Manual (6th Edition)*, prepared by the Transportation Research Board, for unsignalized and signalized intersections using the latest version of the Highway Capacity software.

The result of capacity analysis is a level of service (LOS) rating for each signalized intersection or minor movement at partial stop controlled intersections. Level of service is a qualitative measure of traffic operating conditions where a letter grade "A" through "F", corresponding to progressively worsening traffic operation, is assigned to the intersection or minor movement.

The *Highway Capacity Manual* defines level of service for partial stop controlled intersections in terms of computed or measured control delay for each minor movement. Level of service is not defined for a partial stop controlled intersection as a whole. The unsignalized intersection level of service criteria are shown in Table 2.

TABLE 2 LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
LEVEL OF SERVICE	DELAY RANGE (SEC/VEH)
A	≤ 10
B	>10 and ≤ 15
C	>15 and ≤ 25
D	>25 and ≤ 35
E	>35 and ≤ 50
F	>50

Level of service for signalized intersections is stated in terms of the average control delay per vehicle for a peak 15 minute analysis period. The level of service criteria for signalized intersections is shown in Table 3.

TABLE 3 LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)
A	≤ 10
B	>10 and ≤ 20
C	>20 and ≤ 35
D	>35 and ≤ 55
E	>55 and ≤ 80
F	>80

West Main Street (SR-427) is maintained by the Nevada Department of Transportation and therefore LOS D is the policy level of service standard for the key intersections.

Table 4 shows a summary of the AM and PM peak hour level of service and delay results at the key intersections for the existing, existing plus project, 2041 base, and 2041 base plus project scenarios. The intersection capacity worksheets are included in the Appendix.

TABLE 4 INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS								
INTERSECTION	EXISTING		EXISTING + PROJECT		2041 BASE		2041 BASE + PROJECT	
	AM	PM	AM	PM	AM	PM	AM	PM
W. Main/US-95A (Signal)	C25.3	C29.7	C25.8	C33.2	C27.2	D40.9	C28.3	D50.2
W. Main/Miller (Stop at South Leg)								
Westbound Left	A7.8	A9.0	A8.0	A9.4	A8.0	A9.8	A8.2	B10.4
Northbound Left-Right	C15.2	C22.7	C19.3	D34.7	C21.5	E47.9	D30.8	F104
W. Main/Truckee (Stop at South Leg)								
Westbound Left	A7.7	A8.8	N/A	N/A	A7.9	A9.8	N/A	N/A
Northbound Left-Right	B10.1	B14.9	N/A	N/A	B11.0	C19.4	N/A	N/A
W. Main/Truckee/East Dwy (Stop at North and South Legs)								
Eastbound Left	N/A	N/A	A8.8	A8.8	N/A	N/A	A9.3	A9.3
Westbound Left	N/A	N/A	A7.9	A9.2	N/A	N/A	A8.1	B10.1
Northbound Left-Thru-Right	N/A	N/A	B11.7	C21.6	N/A	N/A	B13.3	D34.2
Southbound Left-Thru-Right	N/A	N/A	C22.1	F77.3	N/A	N/A	D33.1	F320
W. Main/West Dwy (Stop at North Leg)								
Eastbound Left	N/A	N/A	A8.9	A9.0	N/A	N/A	A9.6	A9.6
Southbound Left-Right	N/A	N/A	C20.3	F76.8	N/A	N/A	D30.2	F261
W. Main/Mesa (Stop at West Leg)								
Eastbound Left	B14.8	C20.6	C17.0	D25.3	C18.9	D31.1	C22.3	E39.6
Eastbound Right	A9.4	B12.6	A9.8	B13.7	A9.8	C15.0	B10.3	C16.6
Northbound Left	A7.7	A8.9	A7.8	A9.3	A7.8	A9.7	A8.0	B10.2
W. Main/Logan-Pilot (Stop East/West)								
Eastbound Left-Thru-Right	E42.6	F238	F79.3	F436	F262	F999+	F429	F999+
Westbound Left	C19.4	E40.2	C23.7	F58.5	D28.6	F132	E35.5	F247
Westbound Thru-Right	A9.7	B11.2	B10.7	B13.1	B11.2	C17.9	B12.6	C22.2
Northbound Left	A8.0	A9.4	A8.2	A9.9	A8.3	B10.7	A8.5	B11.2
Southbound Left	A8.4	A8.1	A8.6	A8.3	A8.9	A8.5	A9.2	A8.7
W. Main/EB On-Ramp (No Control)								
Southbound Left	A9.9	A8.9	B10.3	A9.1	B11.6	A9.6	B12.1	A9.9
W. Main/EB Off-Ramp (Stop at West Leg)								
Eastbound Left	B12.4	B12.5	B13.1	B13.4	B14.5	B14.9	C15.5	C16.1
W. Main/WB On-Ramp (No Control)								
Northbound Left	B10.0	A9.3	B10.5	A9.6	B12.1	B10.4	B13.2	B11.1
W. Main/WB Off-Ramp (Stop at East Leg)								
Westbound Left-Right	A7.8	A8.1	A8.0	A8.1	A8.1	A9.9	A8.7	B10.3

West Main Street/US-95A Intersection

The West Main Street/US-95A intersection was analyzed as a signalized four-leg intersection with the existing signal phasing for all scenarios. The intersection currently operates at LOS C with a delay of 25.3 seconds per vehicle during the AM peak hour and 29.7 seconds per vehicle during the PM peak hour. For the existing plus project traffic volumes the intersection continues to operate at LOS C with delays slightly increasing to 25.8 seconds per vehicle during the AM peak hour and 33.2 seconds per vehicle during the PM peak hour. For the 2041 base traffic volumes the intersection is anticipated to operate at LOS C with a delay of 27.2 seconds per vehicle during the AM peak hour and LOS D with a delay of 40.9 seconds per vehicle during the PM peak hour. For the 2041 base plus project traffic volumes the intersection operates at LOS C with a delay of 28.3 seconds per vehicle during the AM peak hour and LOS D with a delay of 50.2 seconds per vehicle during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/US-95A intersection meets NDOT's policy LOS D standard for all study scenarios.

West Main Street/Miller Lane Intersection

The West Main Street/Miller Lane intersection was analyzed as an unsignalized three-leg intersection with stop control at the south approach for all scenarios. The intersection minor movements currently operate at LOS C or better during the AM and PM peak hours. For the existing plus project traffic volumes the intersection minor movements operate at LOS C or better during the AM peak hour and LOS D or better during the PM peak hour. For the 2041 base traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the northbound left turn movement which operates at LOS E during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS D or better during the AM and PM peak hours with the exception of the northbound left turn movement which operates at LOS F during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/Miller Lane intersection meets NDOT's policy LOS D standard for the existing and existing plus project traffic volumes but not for the 2041 base and 2041 base plus project traffic volumes.

West Main Street/Truckee Lane-East Driveway Intersection

The West Main Street/Truckee Lane intersection was initially analyzed as an unsignalized three-leg intersection with the existing approach lanes and stop control at the south approach for the existing and 2041 base scenarios. The intersection minor movements currently operate at LOS B or better during the AM and PM peak hours. For the 2041 base traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours. The West Main Street/Truckee Lane intersection meets NDOT's policy LOS D standard for the existing and 2041 base traffic volumes.

The West Main Street/Truckee Lane-East Driveway intersection was analyzed as an unsignalized four-leg intersection with stop control at the north south approach for the existing plus project and 2041 base plus project scenarios. For the existing plus project traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the southbound movement which operates at LOS F during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS D or better during the AM and PM peak hours with the exception of the southbound movement which continues to operate at LOS F during the PM peak hour. The four-leg intersection was analyzed with one left turn lane and one shared through-right turn lane at the east and west approaches and one shared left turn-through-right turn lane at the north and south approaches. The West Main Street/Truckee Lane-East Driveway intersection does not meet NDOT's policy LOS D standard for the existing plus project and 2041 base plus project traffic volumes.

West Main Street/West Driveway Intersection

The West Main Street/West Driveway intersection was analyzed as an unsignalized three-leg intersection with stop control at the north approach (west driveway) for the existing plus project and 2041 base plus project scenarios. For the existing plus project traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the southbound left turn movement which operates at LOS F during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS D or better during the AM and PM peak hours except for the southbound left turn movement which operates at LOS F during the PM peak hour. The intersection was analyzed with one left turn lane and one through lane at the west approach, one shared through-right turn lane at the east approach, and one shared left turn-right turn lane at the north approach. The West Main Street/West Driveway intersection does not meet NDOT's policy LOS D standard for the existing plus project and 2041 base plus project traffic volumes.

West Main Street/Mesa Drive Intersection

The West Main Street/Mesa Drive intersection was analyzed as an unsignalized three-leg intersection with stop control at the west approach for all scenarios. The intersection minor movements currently operate at LOS B or better during the AM peak hour and LOS C or better during the PM peak hour. For the existing plus project traffic volumes the intersection minor movements operate at LOS C or better during the AM peak hour and LOS D or better during the PM peak hour. For the 2041 base traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM peak hour and LOS D or better during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the eastbound left turn movement which operates at LOS E during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/Mesa Drive intersection meets NDOT's policy LOS D standard for the existing, existing plus project, and 2041 base traffic volumes but just exceeds the standard for the 2041 base plus project traffic volumes.

West Main Street/Logan Lane-Pilot Road Intersection

The West Main Street/Logan Lane-Pilot Road intersection was analyzed as an unsignalized four-leg intersection with stop control at the east and west approaches for all scenarios. The intersection minor movements currently operate at LOS C or better during the AM and PM peak hours with the exception of the eastbound left turn movement which operates at LOS F during the AM and PM peak hours and the westbound left turn movement which operates at LOS E during the PM peak hour. For the existing plus project traffic volumes the eastbound left turn movement continues to operate at LOS F during the AM and PM peak hours and the westbound left turn movement operates at LOS F during the PM peak hour. For the 2041 base traffic volumes the eastbound left turn movement operates at LOS F during the AM and PM peak hours and the westbound left turn movement operates at LOS F during the PM peak hour. For the 2041 base plus project traffic volumes the eastbound left turn movement continues to operate at LOS F during the AM and PM peak hours and the westbound left turn movement operates at LOS E during the AM peak hour and LOS F during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/Logan Lane-Pilot Road intersection does not meet NDOT's policy LOS D standard for any of the study scenarios.

West Main Street/I-80 Eastbound On-Ramp Intersection

The West Main Street/I-80 Eastbound On-Ramp intersection was analyzed as an unsignalized three-leg intersection with no traffic control for all scenarios. The southbound left turn movement currently operates at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the southbound left turn movement operates at LOS B during the AM peak hour and LOS A during the PM peak hour. For the 2041 base traffic volumes the southbound left turn movement is anticipated to operate at LOS B during the AM peak hour and LOS A during the PM peak hour. For the 2041 base plus project traffic volumes the southbound left turn movement continues to operate at LOS B during the AM peak hour and LOS A during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Eastbound On-Ramp intersection meets NDOT's policy LOS D standard for all study scenarios.

West Main Street/I-80 Eastbound Off-Ramp Intersection

The West Main Street/I-80 Eastbound Off-Ramp intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the west approach for all scenarios. The eastbound left turn movement currently operates at LOS B during the AM and PM peak hours. For the existing plus project traffic volumes the eastbound left turn movement continues to operate at LOS B during the AM and PM peak hours. For the 2041 base traffic volumes the eastbound left turn movement is anticipated to operate at LOS B during the AM and PM peak hours. For the 2041 base plus project traffic volumes the eastbound left turn movement operates at LOS C during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Eastbound Off-Ramp intersection meets NDOT's policy LOS D standard for all study scenarios.

West Main Street/I-80 Westbound On-Ramp Intersection

The West Main Street/I-80 Westbound On-Ramp intersection was analyzed as an unsignalized three-leg intersection with no traffic control for all scenarios. The northbound left turn movement currently operate at LOS B during the AM peak hour and LOS A during the PM peak hour. For the existing plus project traffic volumes the northbound left turn movement continues to operate at LOS B during the AM peak hour and LOS A during the PM peak hour. For the 2041 base traffic volumes the northbound left turn movement is anticipated to operate at LOS B during the AM and PM peak hours. For the 2041 base plus project traffic volumes the northbound left turn movement continues to operate at LOS B or better during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Westbound On-Ramp intersection meets NDOT's policy LOS D standard for all scenarios.

West Main Street/I-80 Westbound Off-Ramp Intersection

The West Main Street/I-80 Westbound Off-Ramp intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the east approach for all scenarios. The westbound left turn movement currently operates at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the westbound left turn movement continues to operate at LOS A during the AM and PM peak hours. For the 2041 base traffic volumes the westbound left turn movement is anticipated to operate at LOS A during the AM and PM peak hours. For the 2041 base plus project traffic volumes the westbound left turn movement operates at LOS A during the AM peak hour and LOS B during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Westbound Off-Ramp intersection meets NDOT's policy LOS D standard for all scenarios.

IMPROVEMENT ANALYSIS

As discussed above, the signalized West Main Street/US-95A intersection and the unsignalized on and off-ramp intersections at the I-80/West Fernley interchange currently meet NDOT's policy LOS D standard and will continue to do so for the existing plus project, 2041 base, and 2041 base plus project traffic volumes. However, minor Street left turn movements at the remaining key intersections are anticipated to operate at unacceptable LOS E or F for one or more of the study scenarios. These intersections were subsequently re-evaluated for improvements that would meet NDOT's policy LOS D standard. The improvement analysis at these intersections is discussed below.

West Main Street/Logan Lane-Pilot Road Intersection

Minor street left turn movements at the West Main Street/Logan Lane-Pilot Road intersection currently operate at LOS F and will continue to do so for the existing plus project, 2041 base, and 2041 base plus project traffic volumes. Peak hour traffic signal warrant 3 per the *2009 Manual on Uniform Traffic Control Devices (MUTCD)* was reviewed at the intersection.

Warrant 3 appears to be met at the West Main Street/Logan Lane-Pilot Road intersection for the existing plus project, 2041 base, and 2041 base plus project traffic volumes. The West Main Street/Logan Lane-Pilot Road intersection was subsequently analyzed with traffic signal control and is anticipated to operate at LOS C during the AM and PM peak hours for all study scenarios which meets NDOT's policy LOS D standard. The capacity worksheets are included in the Appendix. It should be noted that the MUTCD states that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The MUTCD has eight additional warrants that should also be evaluated when considering the need for the installation of a traffic signal. It should also be noted that the City of Fernley Transportation Master Plan (Draft) dated May 2020 states that the West Main Street/Logan Lane-Pilot Road intersection should be monitored for traffic growth as it may ultimately warrant a traffic signal or other intersection control improvements.

West Main Street/Project Driveway Intersections

The left turn egress movements at the north approach of the West Main Street/Truckee Lane-East Driveway intersection and north approach of the West Main Street/West Driveway intersection are anticipated to operate at an unacceptable LOS F for the existing plus project and 2041 base plus project traffic volumes. The preferred improvement alternative for the project driveways is to ultimately prohibit the left turn egress movement at the West Main Street/West Driveway intersection and provide signalization at West Main Street/Truckee Lane-East Driveway since Truckee Lane is an existing public street.

Prohibiting the left turn egress movement at the West Main Street/West Driveway intersection will result in LOS C operation for the existing plus project and 2041 base plus project traffic volumes. Re-routing the left turn egress volume at the West Main Street/West Driveway intersection to the proposed signalized West Main Street/Truckee Lane-East Driveway intersection will also result in LOS C operation for the existing plus project and 2041 base plus project traffic volumes. The capacity worksheets are included in the Appendix. Peak hour traffic signal warrant 3 per the *2009 Manual on Uniform Traffic Control Devices* (MUTCD) appears to be met for the existing plus project traffic volumes. Again, it should be noted that the MUTCD states that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The MUTCD has eight additional warrants that should also be evaluated when considering the need for the installation of a traffic signal.

Signal spacing was subsequently reviewed for the West Main Street/Truckee Lane-East Driveway intersection based on NDOT's *Access Management System and Standards*. West Main Street (SR-427) is designated as a minor arterial on NDOT's *Roadway Functional Classification* maps. The access management standards indicate that signalized intersections on minor arterials that have posted speed limits of 35 miles per hour shall have uniform spacing of 1,320 feet. The standards indicate that uniform spacing is the exact spacing to be achieved.

The preferred improvement alternative of providing a traffic signal at West Main Street/Truckee Lane-East Driveway intersection results in spacing of $\pm 3,100$ feet from the signalized West Main Street/US-95A intersection and $\pm 2,200$ feet from the West Main Street/Logan Lane-Pilot Road intersection which may ultimately be signalized. The proposed West Main Street/Truckee Lane-East Driveway signalized intersection will easily exceed the signal spacing standard but does not exactly meet the uniform spacing standard.

Unsignalized spacing was also reviewed for the West Main Street/West Driveway intersection based on NDOT's *Access Management System and Standards*. The access management standards indicate that unsignalized access spacing on minor arterials that have posted speed limits of 35 miles per hour shall be a minimum of 660 feet for limited left-in/right-in/right-out movements and 300 feet for limited right-in/right-out movements as measured from the center of the accesses. The site plan indicates that the west project driveway will be located ± 515 feet southeast of Mesa Drive and ± 550 feet northwest of Truckee Lane. The West Main Street/West Driveway intersection will not meet the 660 feet minimum spacing requirement for limited left-in/right-in/right-out movements but does meet the 300 feet minimum spacing requirement for limited right-in/right-out movements. It should be noted that an NDOT maintenance facility driveway exists southeast of the proposed west driveway. The spacing between the NDOT maintenance facility driveway and west driveway will not meet the 660 feet minimum spacing requirement for limited left-in/right-in/right-out movements or the 300 feet minimum spacing requirement for limited right-in/right-out movements.

West Main Street currently contains a center two-way left turn lane along the project frontage from Mesa Drive to east of Truckee Lane. Left turn storage and deceleration requirements were subsequently reviewed on West Main Street at the project driveways as well as at Mesa Drive and the NDOT maintenance facility driveway in order to determine if adequate length exists. NDOT's *Access Management System and Standards (2017 Edition)* state that storage shall be based on operational analysis. The existing plus project and 2041 base plus project capacity results indicate 95th percentile queue lengths of 25 feet for the eastbound left turn movement at the West Main Street/Truckee Lane-East Driveway intersection, the eastbound left turn movement at the West Main Street/West Driveway intersection, and northbound left turn ingress movement at Mesa Drive. It is anticipated that 25 feet of storage is also needed for the left turn ingress at the existing NDOT maintenance facility driveway. In addition to storage, a minimum of 215 feet of deceleration length is needed for the left turn lanes based on the 35 mile per hour speed limit on West Main Street. The left turn lanes at all four locations will therefore require a minimum of 240 feet of combined storage/deceleration length with 50 foot bay tapers included in the deceleration lengths. However, if the 50 foot taper is shared then a minimum of 430 feet of shared length is needed on West Main Street between Mesa Drive and the west driveway and between the NDOT maintenance facility driveway and the east driveway. As previously discussed, the centerline spacing between Mesa Drive and the west driveway is ± 515 feet which should provide the minimum 430 feet required storage/deceleration length. However, ± 350 feet of length is available between the NDOT maintenance facility driveway and the east driveway which will not provide the full storage/deceleration length at each location.

The need for exclusive right turn lanes on West Main Street at the project driveways was reviewed based on NDOT's *Access Management System and Standards (2017 Edition)*. The access management standards provide warrants for the implementation of right turn lanes on two-lane roadways at unsignalized intersections. The turn lane warrants are evaluated based on through and turning movements as well as the 35 mile per hour speed limit on West Main Street. The results of the warrant review indicates that exclusive right turn lanes are required at the east and west project driveways based on the existing plus project traffic volumes. Storage and deceleration requirements were subsequently reviewed for the warranted right turn lanes. The operational analysis indicates no queue storage length is needed for the free right turn ingress movements. NDOT's access management standards indicate that 215 feet of deceleration length is needed for the right turn lanes based on the 35 mile per hour speed limit on West Main Street. The lane addition taper is included in the deceleration length.

In summary, a traffic signal at the West Main Street/Truckee Lane-East Driveway intersection is anticipated to provide acceptable level of service operation. However, the intersection will not meet exact uniform signal spacing requirements nor will enough length be available from the existing NDOT maintenance facility driveway to provide full left turn storage and deceleration length at both locations. Prohibiting the left turn egress movement at the unsignalized West Main Street/West Driveway intersection will also result in acceptable level of service operation. In addition, sufficient length exists between the west driveway and Mesa Drive to provide minimum left turn storage and deceleration length at both locations. However, the west driveway will not meet spacing requirements for left-in/right-in/right-out movement accesses from Mesa Drive and the east driveway. Deviations to NDOT's *Access Management System and Standards* may be required.

West Main Street/Miller Lane Intersection

The West Main Street/Miller Lane intersection currently meets NDOT's policy LOS D standard and will continue to do so for the existing plus project traffic volumes. However, the minor street left turn egress movement is anticipated to operate at unacceptable LOS E for the 2041 base traffic volumes and LOS F for the 2041 base plus project traffic volumes. Traffic signal warrant 3 per the *2009 Manual on Uniform Traffic Control Devices (MUTCD)* was subsequently reviewed at the intersection due to the poor unsignalized level of service operation. Warrant 3 for peak hour volumes is not met for any of the study scenarios. It should again be noted that the MUTCD has eight additional warrants that should be evaluated when considering the need for the installation of a traffic signal. As with other intersections identified in the City of Fernley Transportation Master Plan (Draft) dated May 2020, it is suggested that this intersection be monitored for traffic growth as it may ultimately warrant capacity or traffic control improvements. It is anticipated that a traffic signal at the West Main Street/Truckee Lane-East Driveway intersection will create additional gaps on West Main Street and ultimately decrease delay for the minor street left turn egress movement at Miller Lane.

West Main Street/Mesa Drive Intersection

The West Main Street/Mesa Drive intersection currently meets NDOT's policy LOS D standard and will continue to do so for the existing plus project and 2041 base traffic volumes. However, the minor street left turn movement is anticipated to just exceed the policy LOS D standard for the 2041 base plus project traffic volumes. Traffic signal warrant are not met at this intersection. However, it is anticipated that a traffic signal at the West Main Street/Truckee Lane-East Driveway intersection as well as a potential traffic signal at the West Main Street/Logan Lane-Pilot Road intersection will create additional gaps on West Main Street and ultimately decrease delay for the minor street left turn egress movement at Mesa Drive.

RECOMMENDATIONS

Traffic generated by the 600 West Main Street development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Nevada Department of Transportation and City of Fernley requirements.

It is recommended that the West Main Street/Truckee Lane-East Driveway intersection be designed to include a minimum of one left turn lane and one shared through-right turn lane at both the north driveway and south Truckee Lane approaches and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach. It is recommended that a traffic signal be installed at the West Main Street/Truckee Lane-East Driveway intersection when warranted.

It is recommended that the West Main Street/West Driveway intersection be designed to operate with limited left-in/right-in/right-out movements and contain stop sign control at the driveway approach and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach.

APPENDIX

Multifamily Housing (Low-Rise) (220)

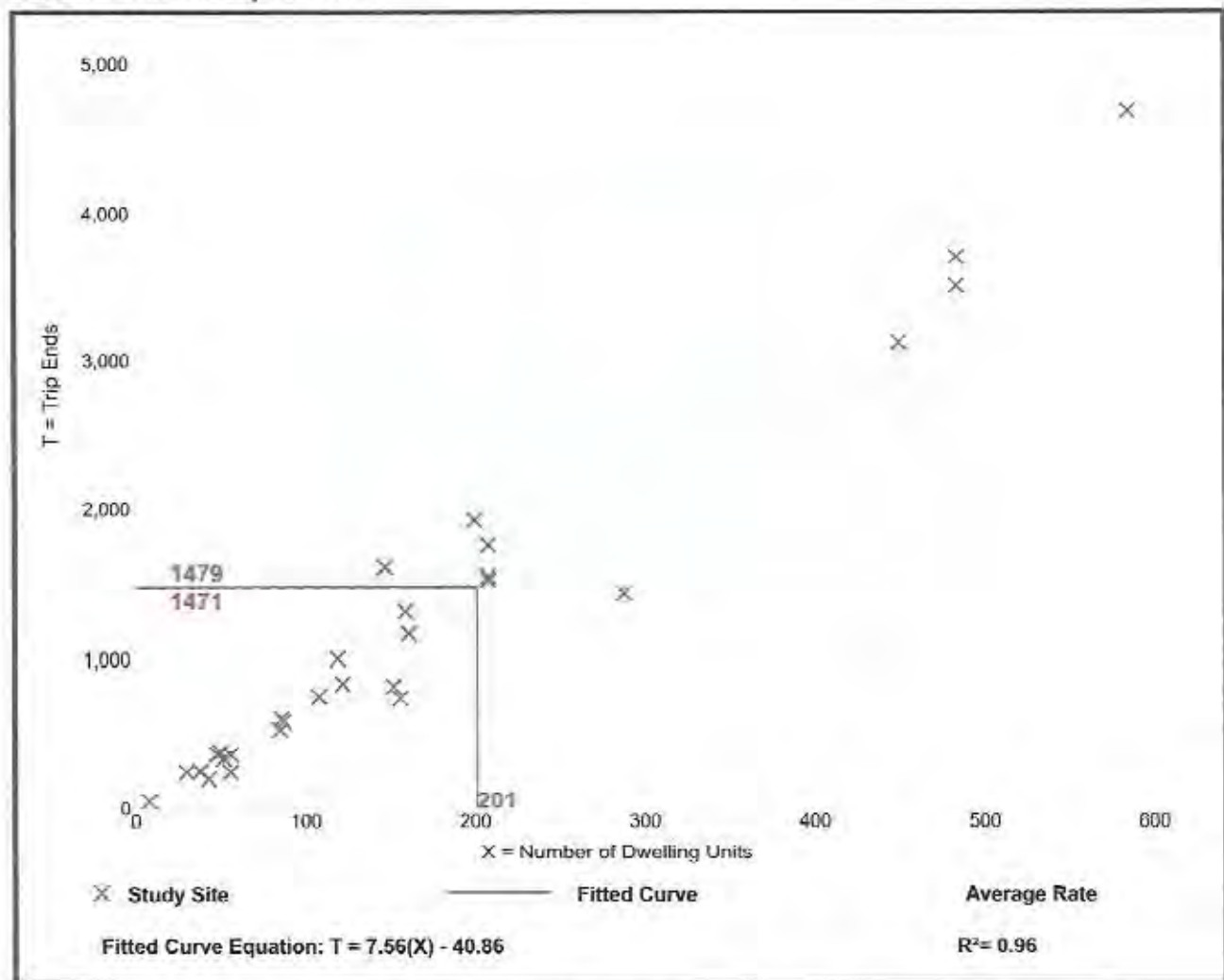
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 42

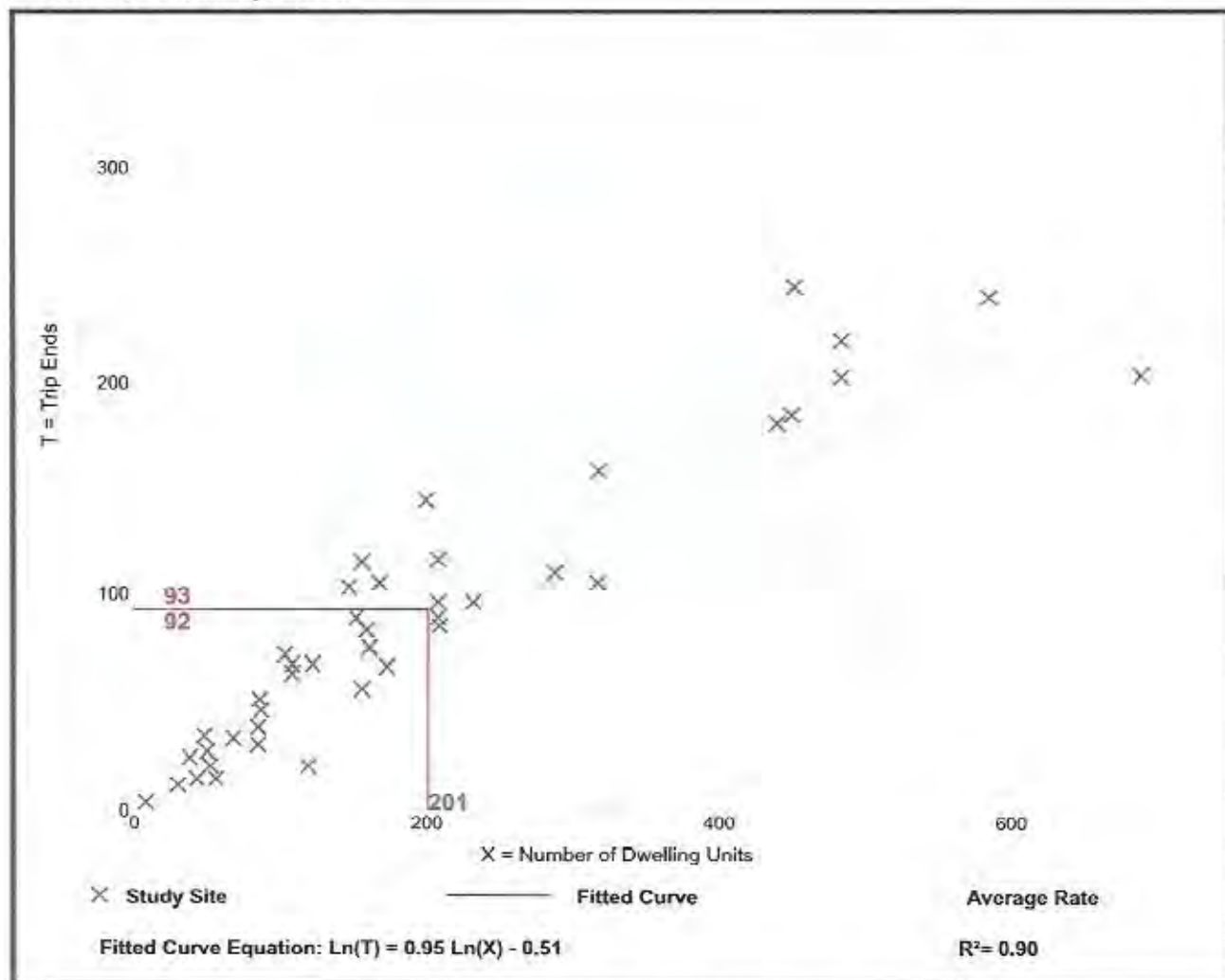
Avg. Num. of Dwelling Units: 199

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 50

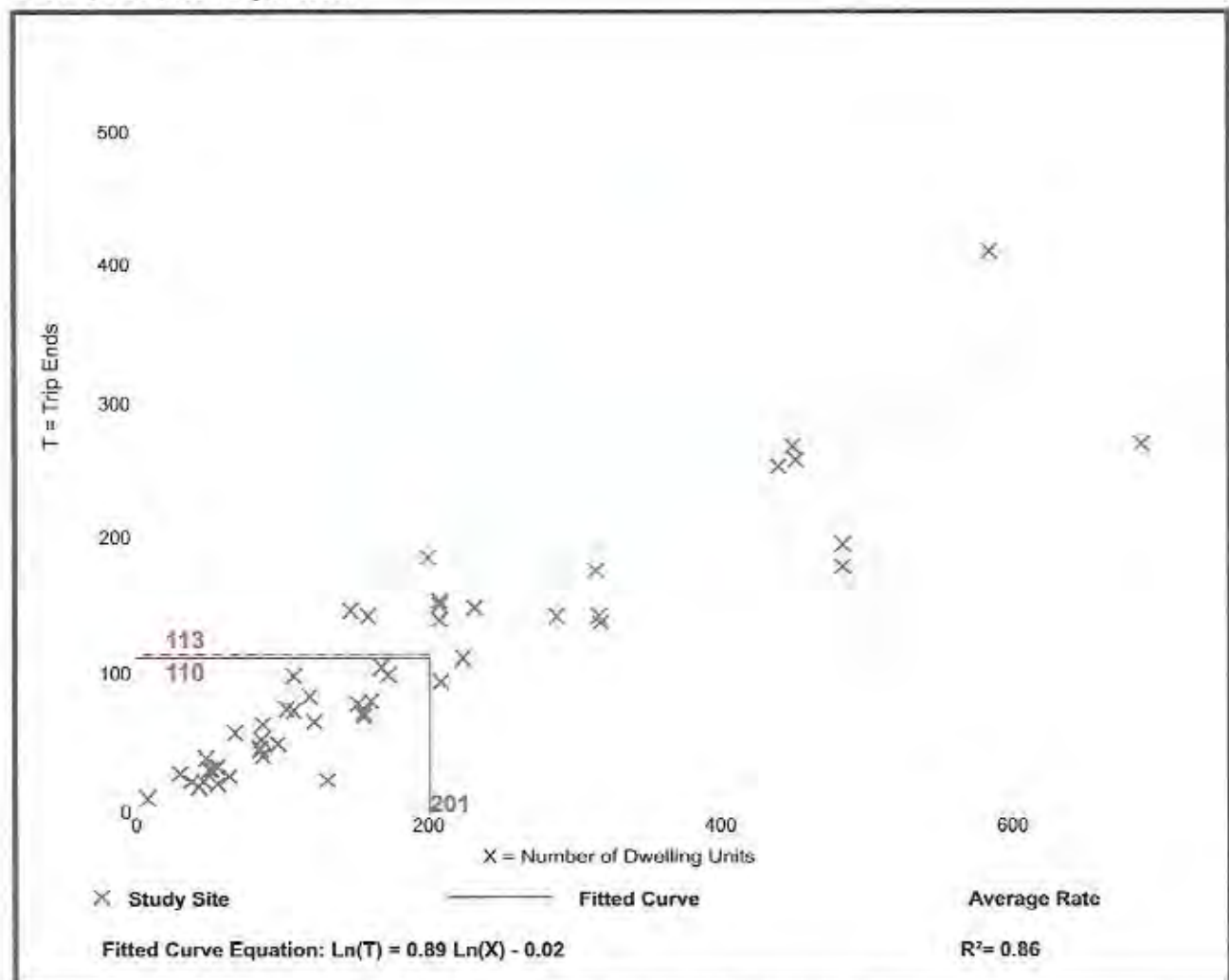
Avg. Num. of Dwelling Units: 187

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



Hotel (310)

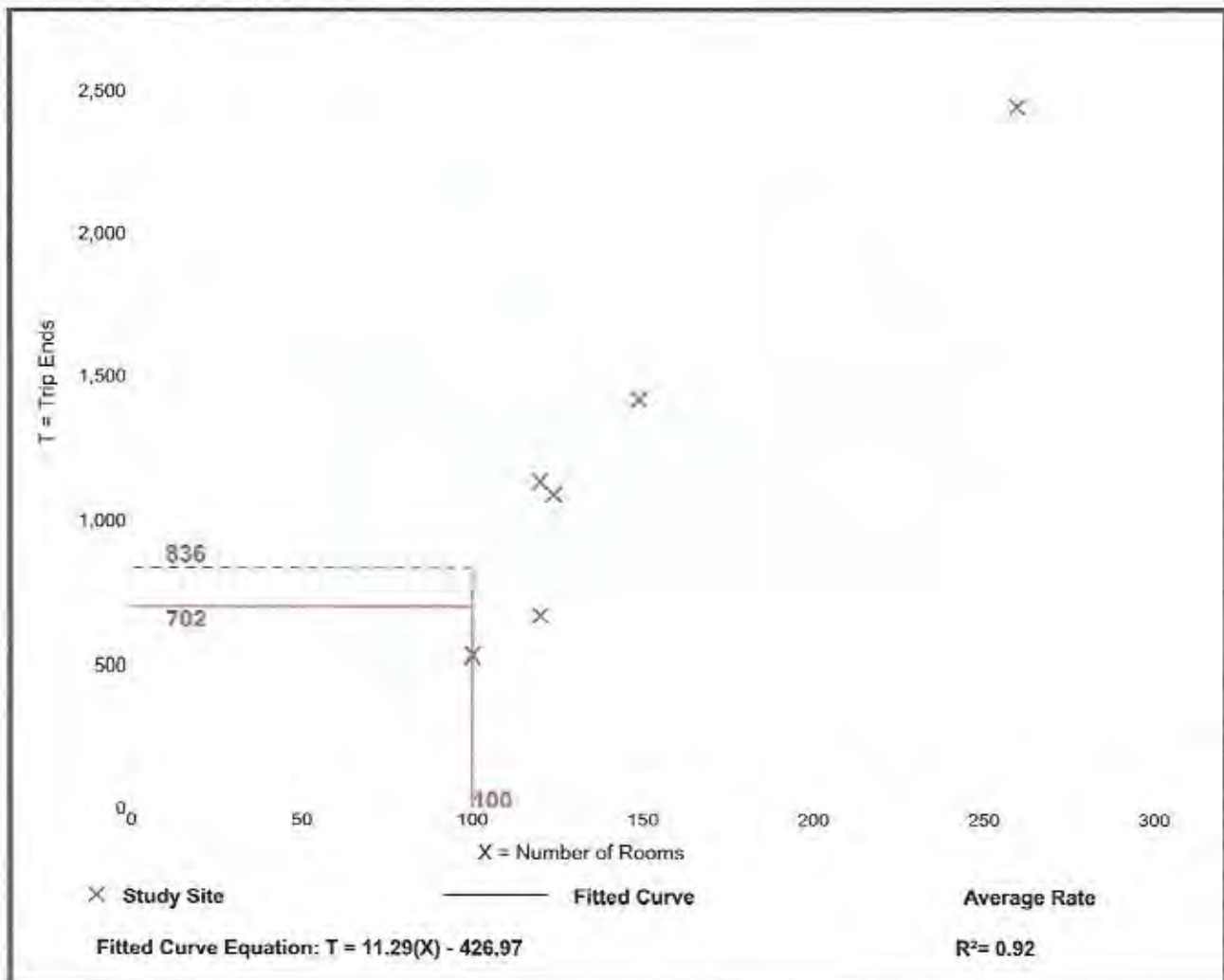
Vehicle Trip Ends vs: Rooms
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 8
Avg. Num. of Rooms: 146
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.36	5.31 - 9.53	1.86

Data Plot and Equation



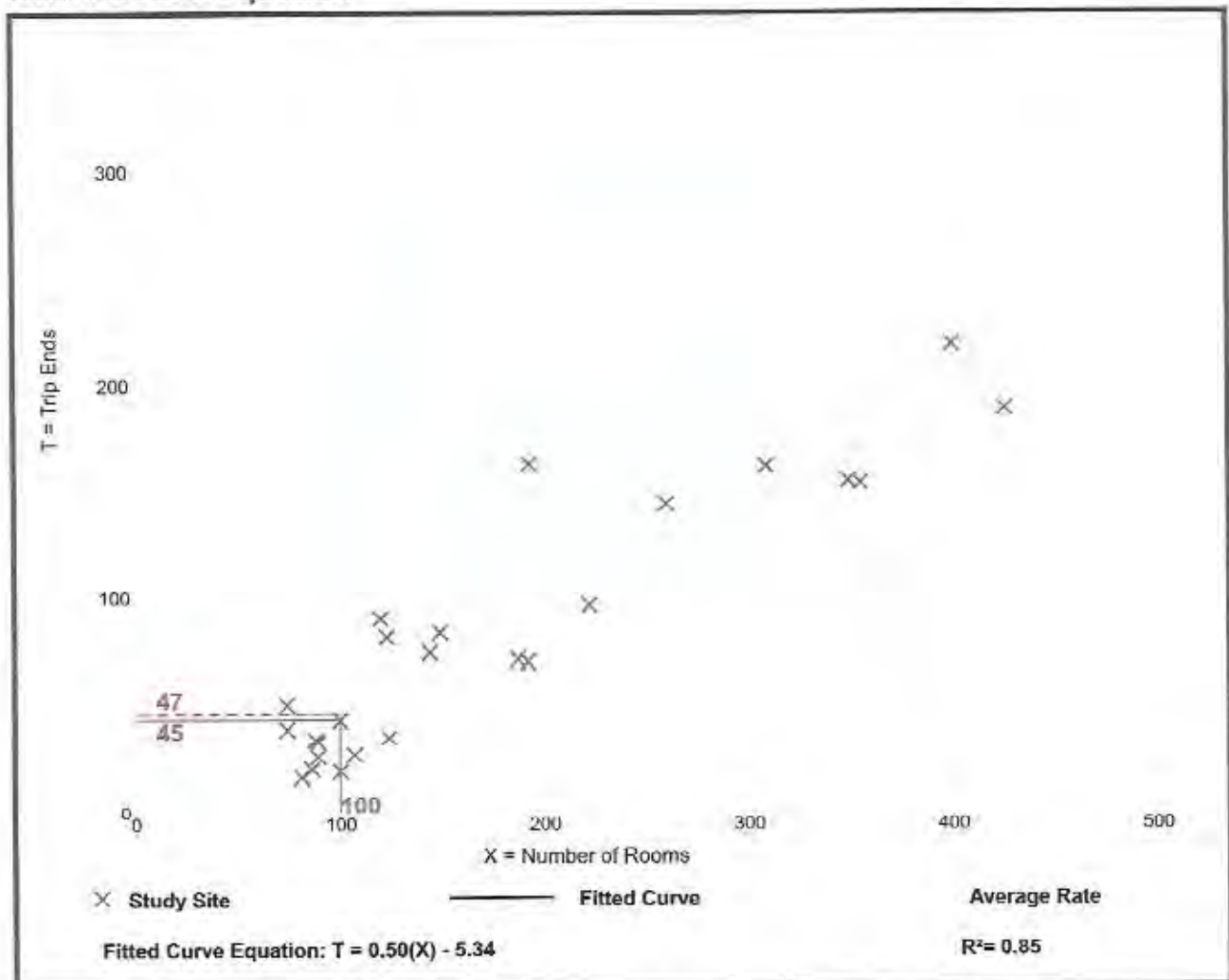
Hotel (310)

Vehicle Trip Ends vs: Rooms
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 25
 Avg. Num. of Rooms: 178
 Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.47	0.20 - 0.84	0.14

Data Plot and Equation



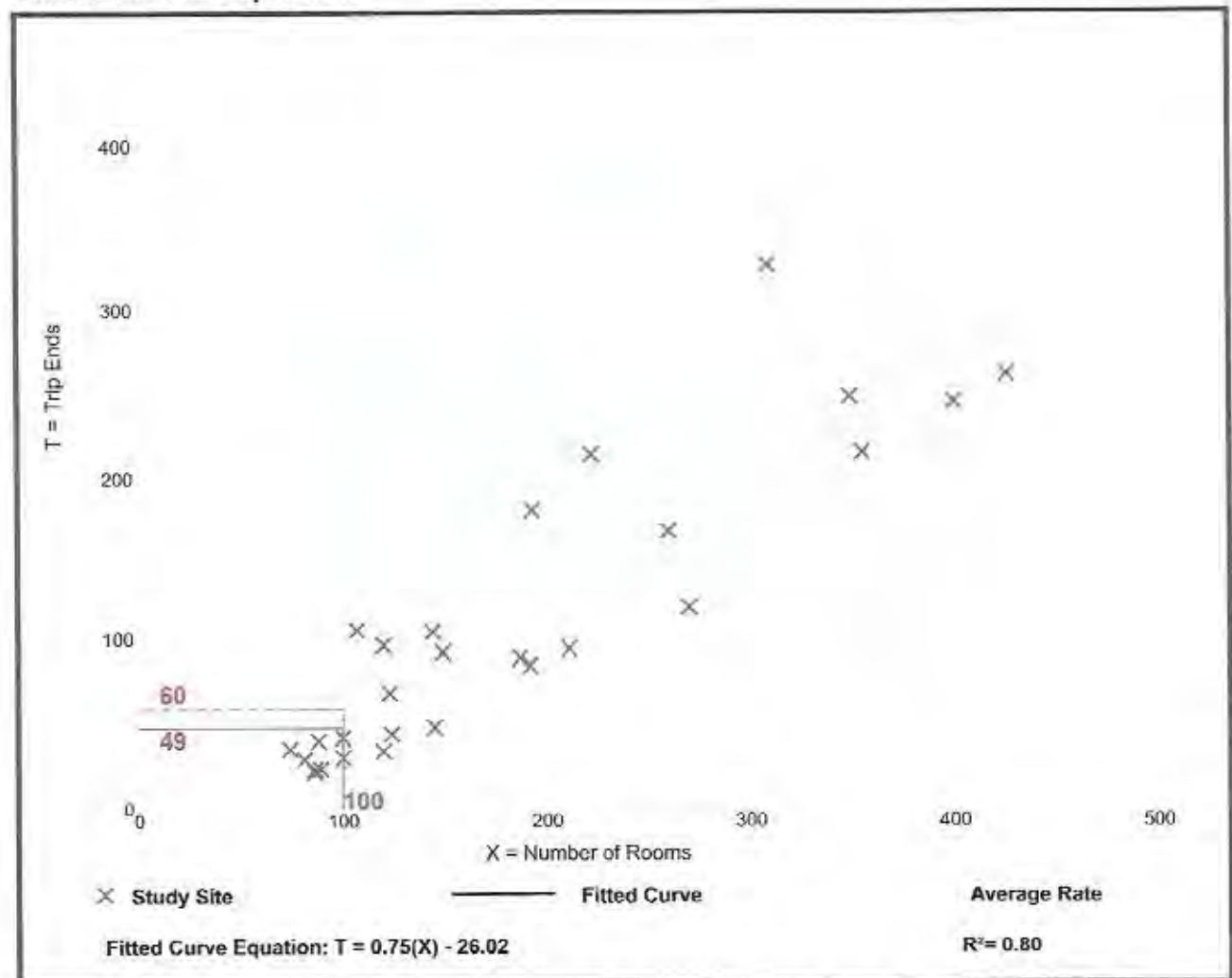
Hotel (310)

Vehicle Trip Ends vs: Rooms
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 28
 Avg. Num. of Rooms: 183
 Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.60	0.26 - 1.06	0.22

Data Plot and Equation



Shopping Center (820)

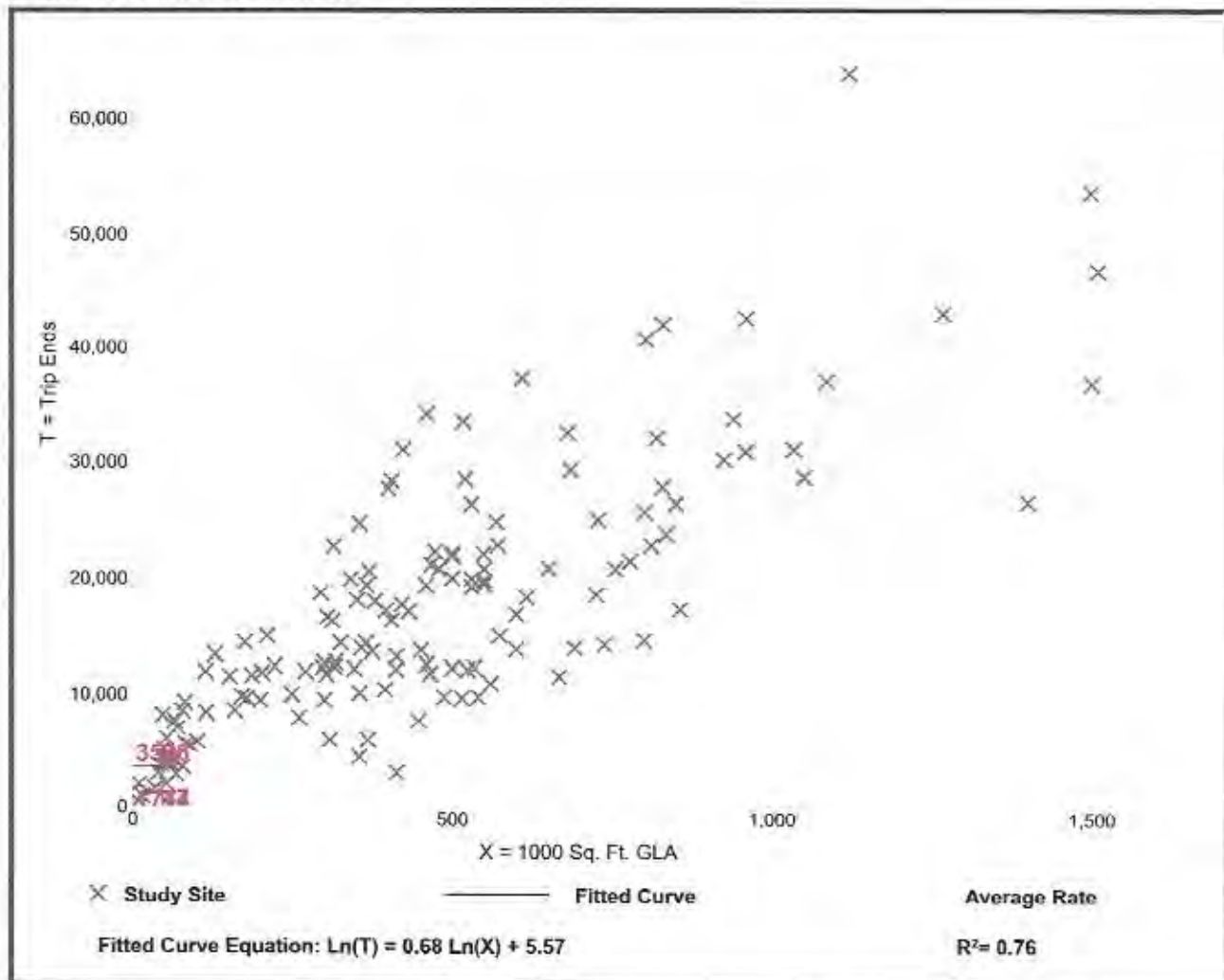
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	18.41

Data Plot and Equation



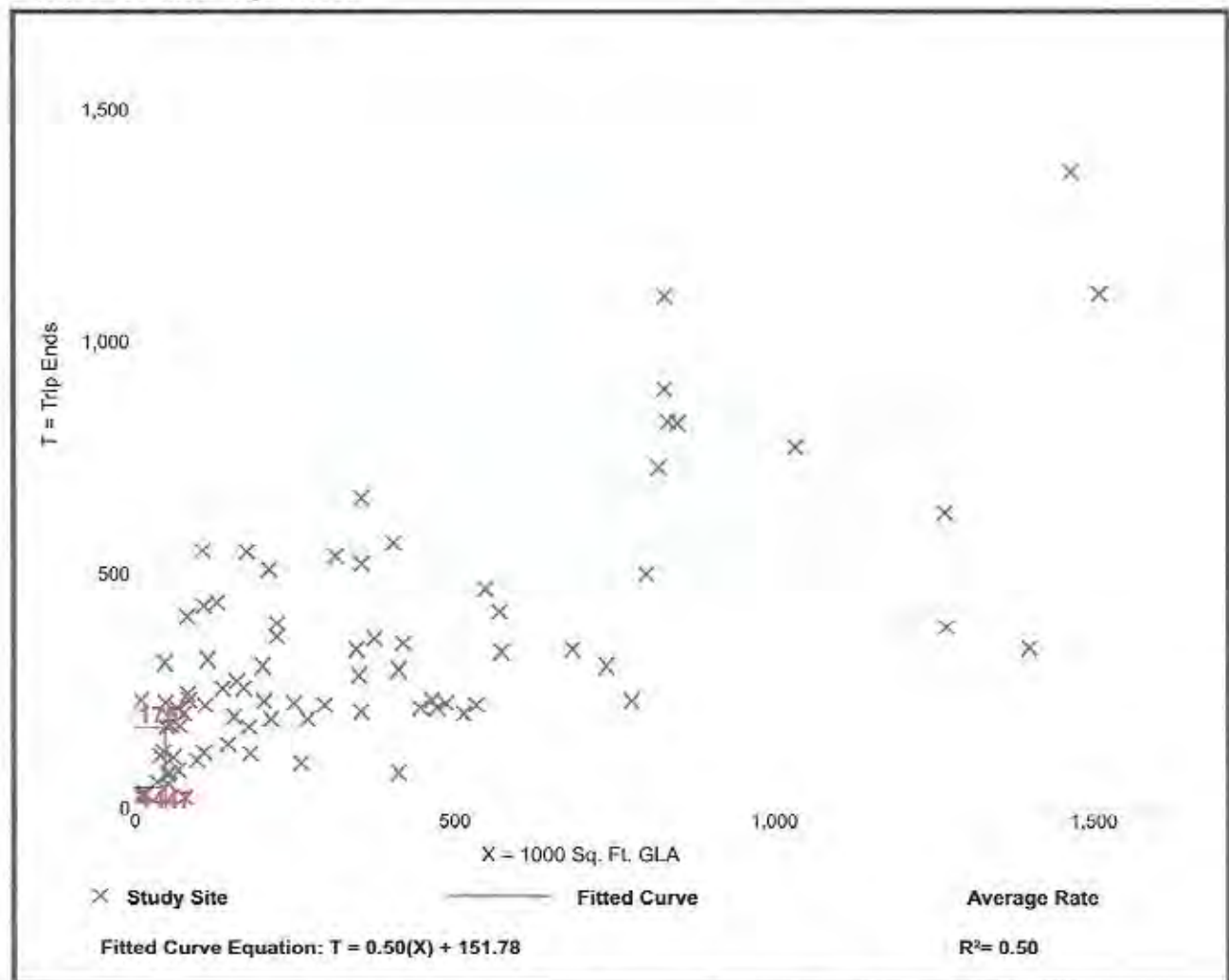
Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 84
 Avg. 1000 Sq. Ft. GLA: 351
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



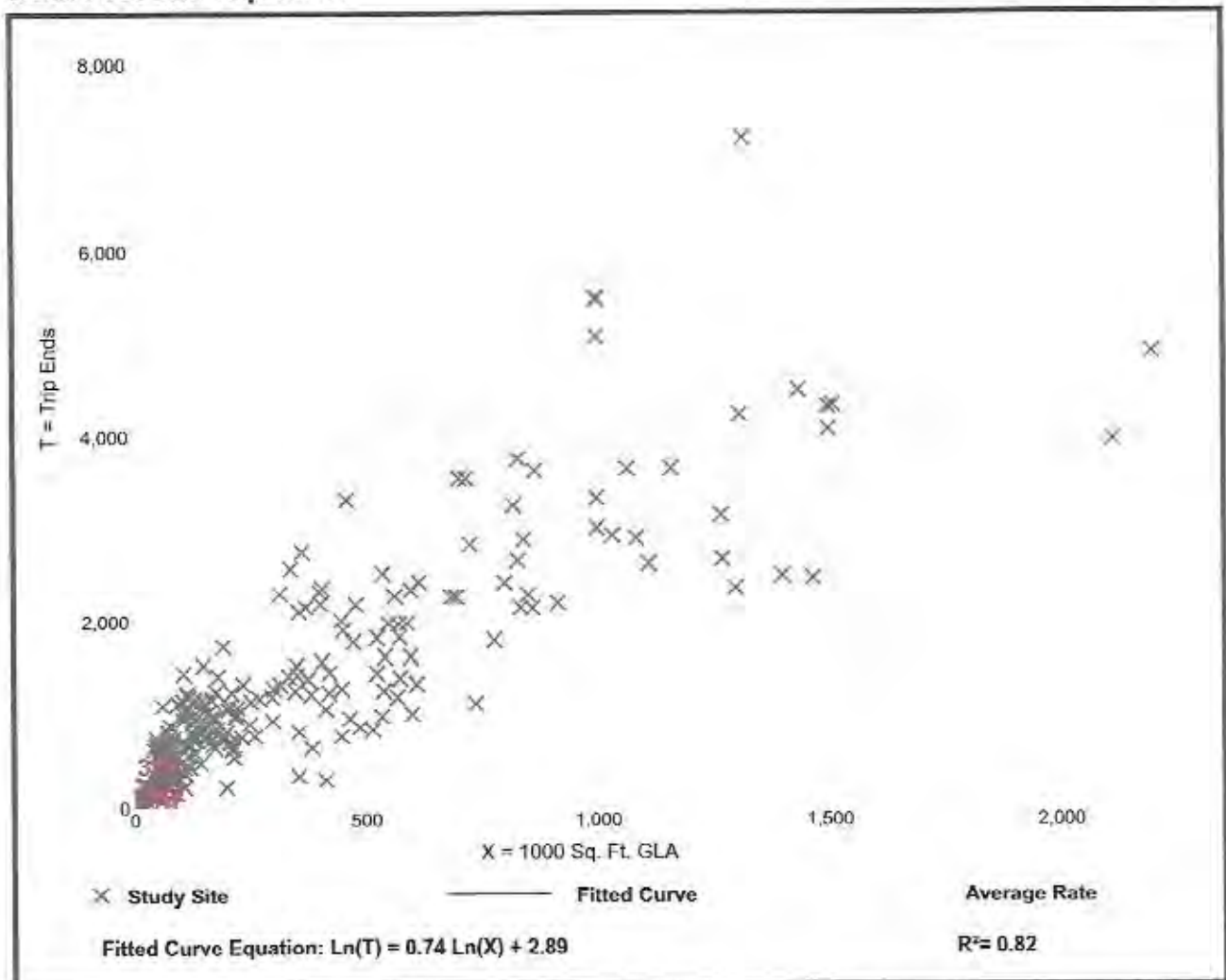
Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 261
 Avg. 1000 Sq. Ft. GLA: 327
 Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



Pharmacy/Drugstore with Drive-Through Window (881)

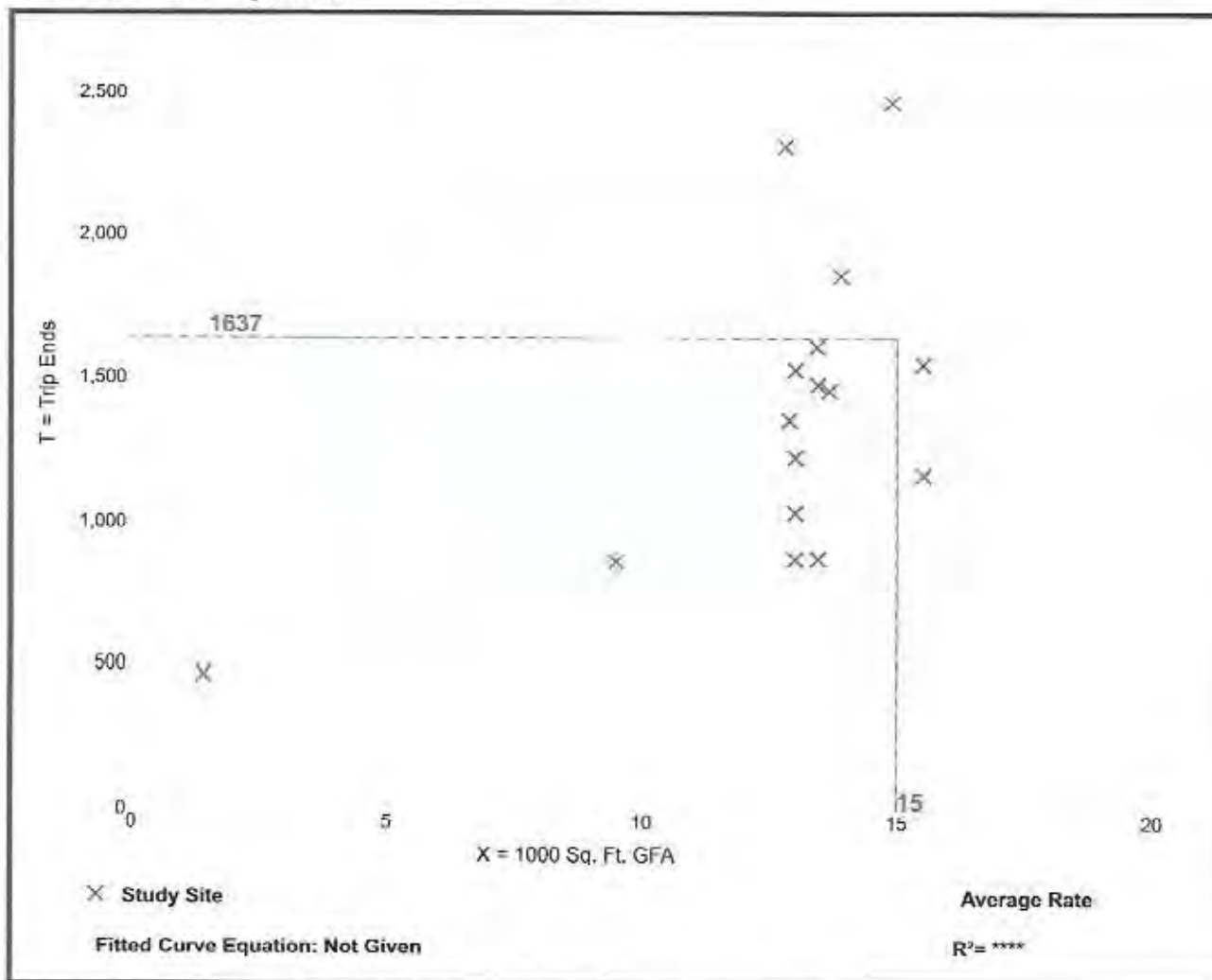
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 16
Avg, 1000 Sq. Ft. GFA: 13
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
109.16	65.05 - 329.35	38.33

Data Plot and Equation



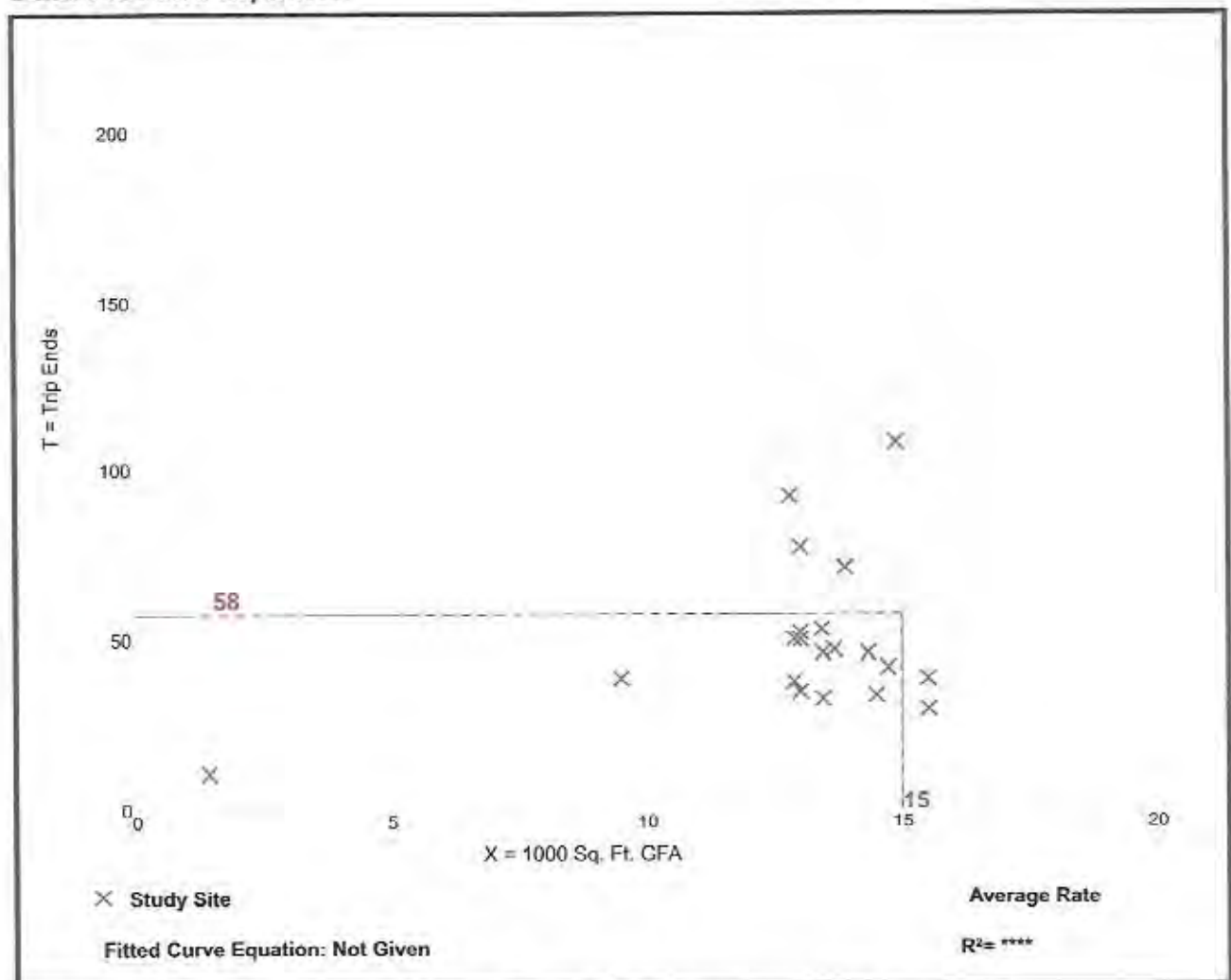
Pharmacy/Drugstore with Drive-Through Window (881)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 20
 Avg. 1000 Sq. Ft. GFA: 13
 Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.84	1.93 - 7.74	1.58

Data Plot and Equation



Pharmacy/Drugstore with Drive-Through Window (881)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 38

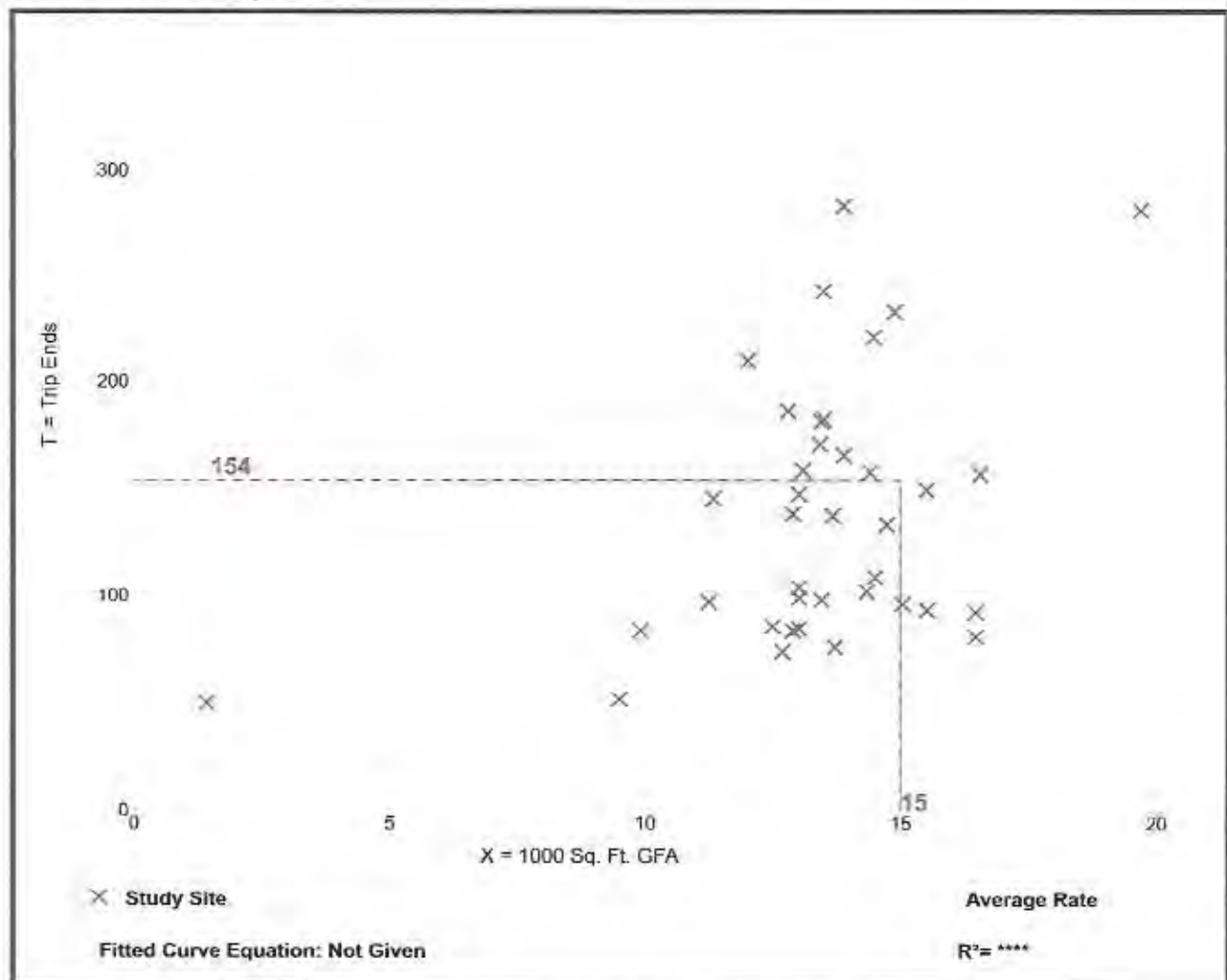
Avg. 1000 Sq. Ft. GFA: 13

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.29	4.86 - 35.19	4.25

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

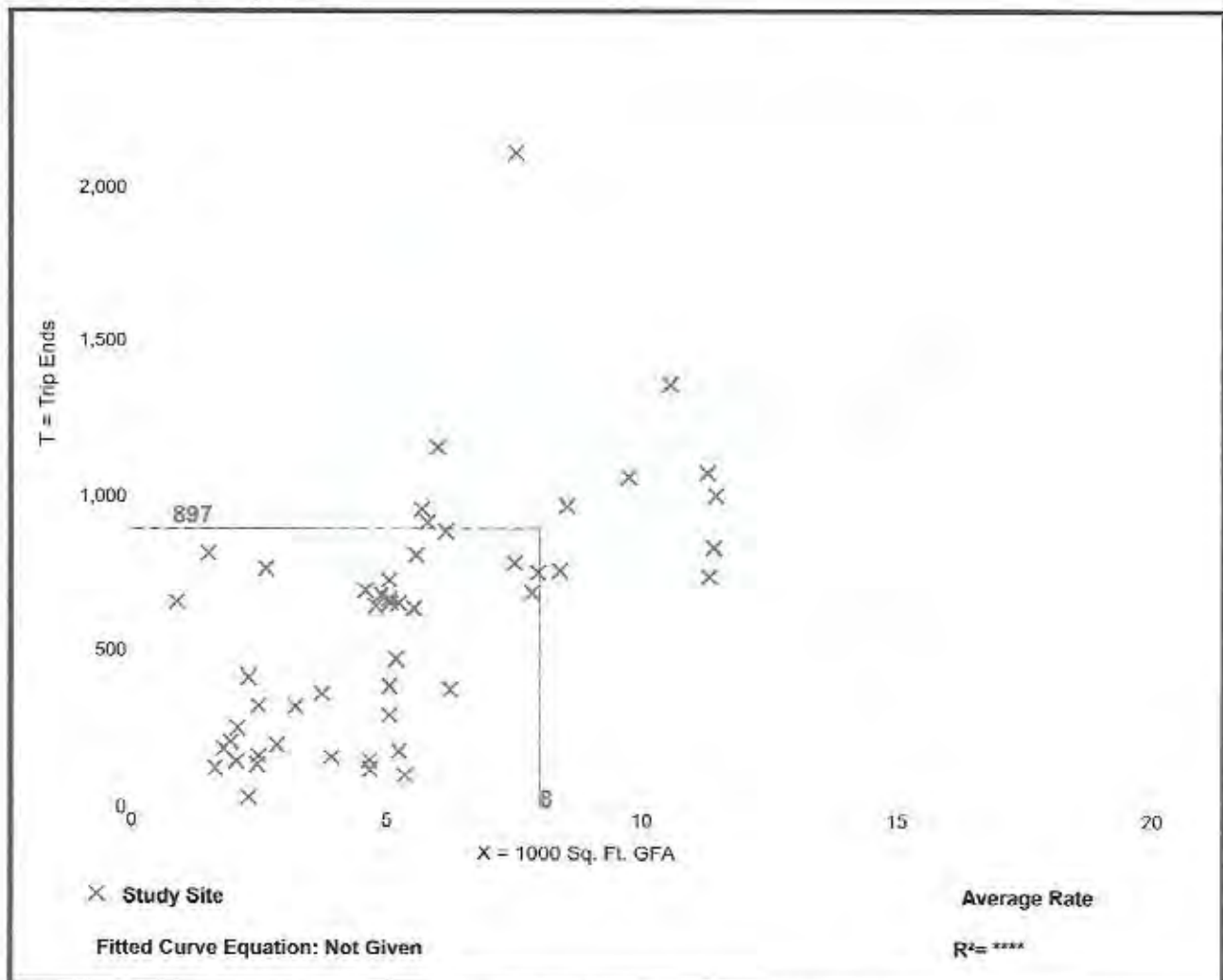
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
112.18	13.04 - 742.41	72.51

Data Plot and Equation



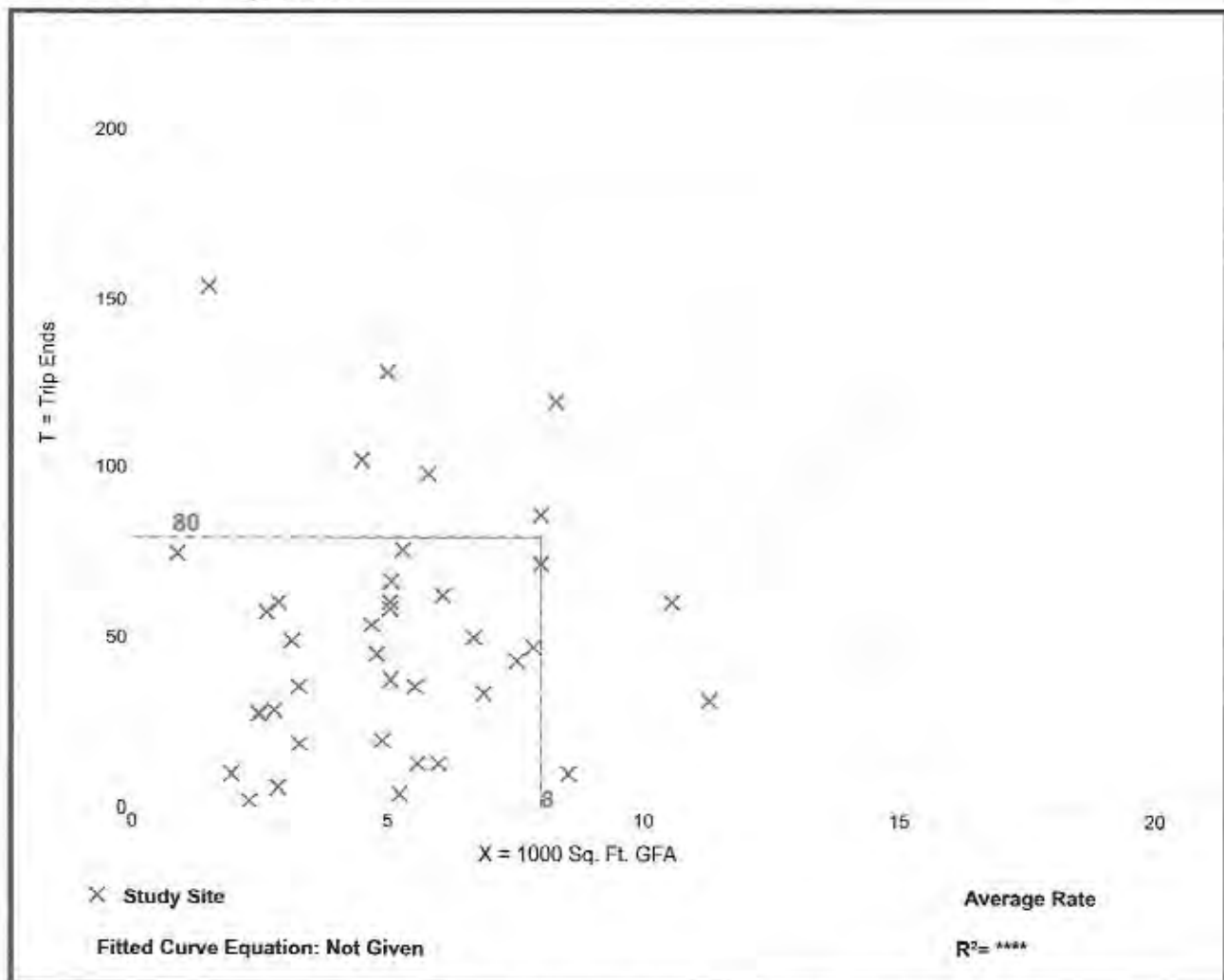
High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 39
 Avg. 1000 Sq. Ft. GFA: 5
 Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.94	0.76 - 102.39	11.33

Data Plot and Equation



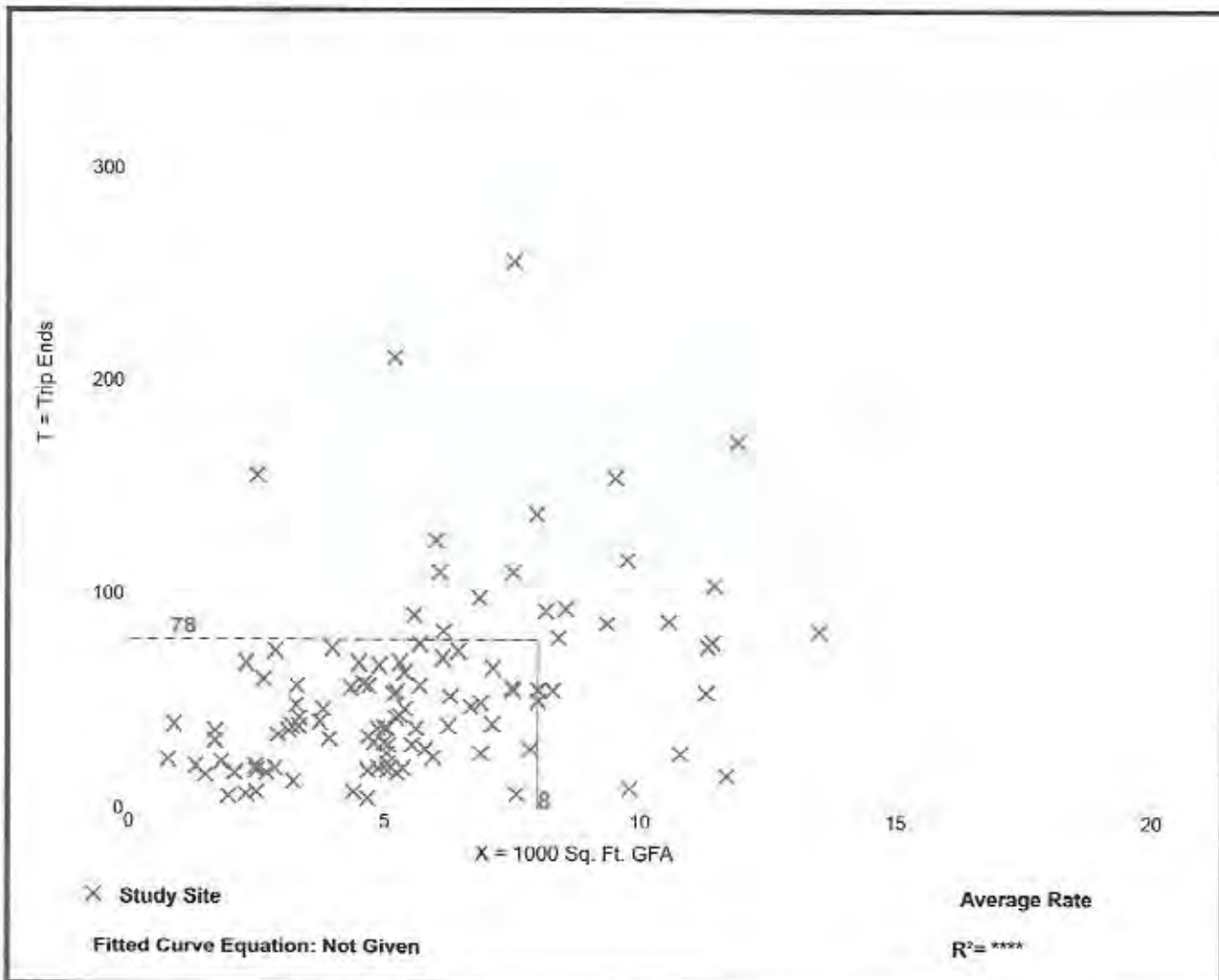
High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 107
 Avg. 1000 Sq. Ft. GFA: 6
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.77	0.92 - 62.00	7.37

Data Plot and Equation

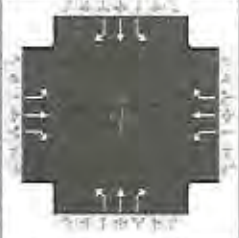


HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers			Duration, h	0.250
Analyst	MSH	Analysis Date	May 19, 2021	Area Type	Other
Jurisdiction	NDOT	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing	Analysis Period	1> 7:00
Intersection	Min & US-95A	File Name	MaUs21ax.xus		
Project Description					

Intersection Information



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	160	105	154	155	3	170	1	145	1	3	2

Signal Information

Cycle, s	80.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.0	4.0	20.0	10.0	20.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0		
				Red	1.0	0.0	1.0	1.0	1.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	3.0	2.0	3.0		9.0		9.0
Phase Duration, s	11.0	25.0	15.0	29.0		25.0		15.0
Change Period, (Y+R _c), s	5.0	5.0	0.0	5.0		5.0		5.0
Max Allow Headway (MAH), s	3.3	3.2	3.3	3.2		3.4		3.3
Queue Clearance Time (g _s), s	2.0	8.3	8.8	7.7		9.8		2.1
Green Extension Time (g _e), s	0.0	0.6	0.2	0.8		0.5		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.09	0.11	0.05	0.00		0.01		0.00

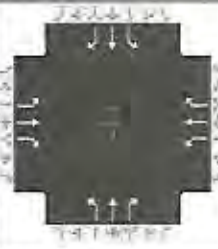
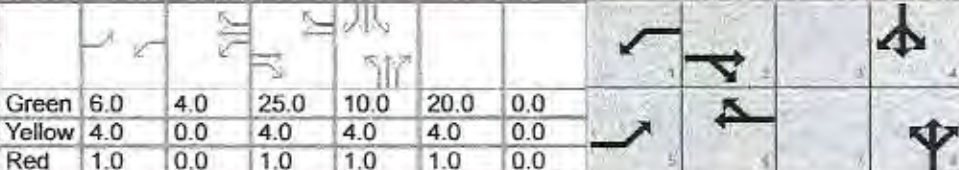
Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	1	174	87	167	168	3	185	1	120	1	3	2
Adjusted Saturation Flow Rate (s), veh/h/in	1767	1826	1369	1767	1826	1519	1598	1856	1514	1767	1856	1487
Queue Service Time (g _s), s	0.0	6.3	4.1	6.8	5.7	0.1	7.8	0.0	5.1	0.0	0.1	0.1
Cycle Queue Clearance Time (g _c), s	0.0	6.3	4.1	6.8	5.7	0.1	7.8	0.0	5.1	0.0	0.1	0.1
Green Ratio (g/C)	0.08	0.25	0.25	0.19	0.30	0.30	0.25	0.25	0.25	0.12	0.12	0.12
Capacity (c), veh/h	133	456	342	331	548	456	399	464	379	221	232	186
Volume-to-Capacity Ratio (X)	0.008	0.381	0.254	0.505	0.308	0.007	0.463	0.002	0.316	0.005	0.014	0.012
Back of Queue (Q), ft/in (95 th percentile)	0.9	127.3	66.3	133	112.8	2	148.9	0.7	84.6	0.8	2.6	1.7
Back of Queue (Q), veh/in (95 th percentile)	0.0	4.9	2.4	5.2	4.3	0.1	5.3	0.0	3.3	0.0	0.1	0.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	34.2	24.9	24.0	29.2	21.6	19.6	25.4	22.5	24.4	30.6	30.7	30.7
Incremental Delay (d ₂), s/veh	0.0	0.2	0.1	0.5	0.1	0.0	0.3	0.0	0.2	0.0	0.0	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	34.3	25.1	24.2	29.7	21.7	19.6	25.8	22.5	24.6	30.6	30.7	30.7
Level of Service (LOS)	C	C	C	C	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS	24.8		C	25.6		C	25.3		C	30.7		C
Intersection Delay, s/veh / LOS	25.3						C					

Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.16		B	2.11		B	2.14		B	2.15		B
Bicycle LOS Score / LOS	0.92		A	1.05		A	0.99		A	0.50		A

HCS7 Signalized Intersection Results Summary

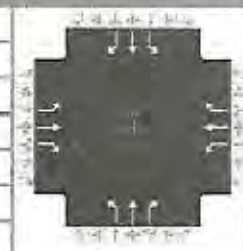
General Information						Intersection Information											
Agency		Solaegui Engineers				Duration, h		0.250									
Analyst		MSH		Analysis Date		May 19, 2021		Area Type		Other							
Jurisdiction		NDOT		Time Period		AM Peak Hour		PHF		0.92							
Urban Street				Analysis Year		Existing		Analysis Period		1> 7:00							
Intersection		Main & US-95A		File Name		MaUs21px.xus											
Project Description																	
Demand Information						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h						1	366	191	209	253	4	193	4	145	9	4	2
Signal Information																	
Cycle, s		85.0	Reference Phase		2	Green	6.0	4.0	25.0	10.0	20.0	0.0					
Offset, s		0	Reference Point		End	Yellow	4.0	0.0	4.0	4.0	4.0	0.0					
Uncoordinated		Yes	Simult. Gap E/W		On	Red	1.0	0.0	1.0	1.0	1.0	0.0					
Force Mode		Fixed	Simult. Gap N/S		On												
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						5	2	1	6		8		4				
Case Number						2.0	3.0	2.0	3.0		9.0		9.0				
Phase Duration, s						11.0	30.0	15.0	34.0		25.0		15.0				
Change Period, (Y+R), s						5.0	5.0	0.0	5.0		5.0		5.0				
Max Allow Headway (MAH), s						3.3	3.2	3.3	3.2		3.4		3.3				
Queue Clearance Time (g s), s						2.0	18.7	12.3	11.9		11.8		2.4				
Green Extension Time (g e), s						0.0	0.4	0.1	1.7		0.5		0.0				
Phase Call Probability						1.00	1.00	1.00	1.00		1.00		1.00				
Max Out Probability						0.09	1.00	1.00	0.01		0.03		0.00				
Movement Group Results						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement						5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h						1	398	153	227	275	4	210	4	114	10	4	2
Adjusted Saturation Flow Rate (s), veh/h/ln						1767	1826	1373	1767	1826	1521	1598	1856	1512	1767	1856	1484
Queue Service Time (g s), s						0.0	16.7	7.5	10.3	9.9	0.2	9.8	0.2	5.3	0.4	0.2	0.1
Cycle Queue Clearance Time (g c), s						0.0	16.7	7.5	10.3	9.9	0.2	9.8	0.2	5.3	0.4	0.2	0.1
Green Ratio (g/C)						0.07	0.29	0.29	0.18	0.34	0.34	0.24	0.24	0.24	0.12	0.12	0.12
Capacity (c), veh/h						125	537	404	312	623	519	376	437	356	208	218	175
Volume-to-Capacity Ratio (X)						0.009	0.741	0.380	0.728	0.441	0.008	0.558	0.010	0.321	0.047	0.020	0.012
Back of Queue (Q), ft/ln (95 th percentile)						1	323.4	123.1	222.1	196.7	2.6	193	3.1	88.4	8.3	3.7	1.8
Back of Queue (Q), veh/ln (95 th percentile)						0.0	12.4	4.4	8.7	7.6	0.1	6.9	0.1	3.5	0.3	0.1	0.1
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d 1), s/veh						36.7	27.1	23.8	33.1	21.7	18.5	28.6	24.9	26.9	33.3	33.2	33.1
Incremental Delay (d 2), s/veh						0.0	4.8	0.2	7.3	0.2	0.0	1.1	0.0	0.2	0.0	0.0	0.0
Initial Queue Delay (d 3), s/veh						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh						36.7	31.9	24.1	40.4	21.9	18.5	29.7	24.9	27.1	33.3	33.2	33.1
Level of Service (LOS)						D	C	C	D	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS						29.7	C		30.2	C		28.7	C		33.3	C	
Intersection Delay, s/veh / LOS						29.7						C					
Multimodal Results						EB			WB			NB			SB		
Pedestrian LOS Score / LOS						2.17	B		2.11	B		2.14	B		2.19	B	
Bicycle LOS Score / LOS						1.40	A		1.32	A		1.03	A		0.51	A	

HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers			Duration, h	0.250
Analyst	MSH	Analysis Date	May 19, 2021	Area Type	Other
Jurisdiction	NDOT	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Min & US-95A	File Name	MaUs21aw.xus		
Project Description					

Intersection Information



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	218	133	154	206	3	197	1	145	1	3	2

Signal Information

Cycle, s	80.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.0	4.0	20.0	10.0	20.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0		
				Red	1.0	0.0	1.0	1.0	1.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	3.0	2.0	3.0		9.0		9.0
Phase Duration, s	11.0	25.0	15.0	29.0		25.0		15.0
Change Period, (Y+R), s	5.0	5.0	0.0	5.0		5.0		5.0
Max Allow Headway (MAH), s	3.3	3.2	3.3	3.2		3.4		3.3
Queue Clearance Time (g _s), s	2.0	10.9	8.8	9.8		11.3		2.1
Green Extension Time (g _e), s	0.0	0.6	0.2	1.1		0.5		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.09	0.66	0.05	0.00		0.02		0.00

Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	1	237	117	167	224	3	214	1	120	1	3	2
Adjusted Saturation Flow Rate (s), veh/h/ln	1767	1826	1369	1767	1826	1519	1598	1856	1514	1767	1856	1487
Queue Service Time (g _s), s	0.0	8.9	5.6	6.8	7.8	0.1	9.3	0.0	5.1	0.0	0.1	0.1
Cycle Queue Clearance Time (g _c), s	0.0	8.9	5.6	6.8	7.8	0.1	9.3	0.0	5.1	0.0	0.1	0.1
Green Ratio (g/C)	0.08	0.25	0.25	0.19	0.30	0.30	0.25	0.25	0.25	0.12	0.12	0.12
Capacity (c), veh/h	133	456	342	331	548	456	399	464	379	221	232	186
Volume-to-Capacity Ratio (X)	0.008	0.519	0.343	0.505	0.409	0.007	0.536	0.002	0.316	0.005	0.014	0.012
Back of Queue (Q), ft/ln (95 th percentile)	0.9	181.6	91.8	133	155	2	178.4	0.7	84.6	0.8	2.6	1.7
Back of Queue (Q), veh/ln (95 th percentile)	0.0	7.0	3.3	5.2	6.0	0.1	6.4	0.0	3.3	0.0	0.1	0.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	34.2	25.9	24.6	29.2	22.3	19.6	26.0	22.5	24.4	30.6	30.7	30.7
Incremental Delay (d ₂), s/veh	0.0	0.5	0.2	0.5	0.2	0.0	0.8	0.0	0.2	0.0	0.0	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d'), s/veh	34.3	26.3	24.8	29.7	22.5	19.6	26.7	22.5	24.6	30.6	30.7	30.7
Level of Service (LOS)	C	C	C	C	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS	25.9		C	25.5		C	26.0		C	30.7		C
Intersection Delay, s/veh / LOS	25.8						C					

Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.16		B	2.11		B	2.14		B	2.15		B
Bicycle LOS Score / LOS	1.07		A	1.14		A	1.04		A	0.50		A

HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers			Duration, h	0.250
Analyst	MSH	Analysis Date	May 19, 2021	Area Type	Other
Jurisdiction	NDOT	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Main & US-95A	File Name	MaUs21pw.xus		
Project Description					

Intersection Information



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	429	225	209	331	4	233	4	145	9	4	2

Signal Information

Cycle, s	85.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.0	4.0	25.0	10.0	20.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0		
				Red	1.0	0.0	1.0	1.0	1.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	3.0	2.0	3.0		9.0		9.0
Phase Duration, s	11.0	30.0	15.0	34.0		25.0		15.0
Change Period, (Y+R), s	5.0	5.0	0.0	5.0		5.0		5.0
Max Allow Headway (MAH), s	3.3	3.2	3.3	3.2		3.4		3.3
Queue Clearance Time (g _c), s	2.0	22.6	12.3	15.7		14.2		2.4
Green Extension Time (g _e), s	0.0	0.0	0.1	2.1		0.5		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.09	1.00	1.00	0.04		0.20		0.00

Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	1	466	190	227	360	4	253	4	114	10	4	2
Adjusted Saturation Flow Rate (s), veh/h/ln	1767	1826	1373	1767	1826	1521	1598	1856	1512	1767	1856	1484
Queue Service Time (g _s), s	0.0	20.6	9.7	10.3	13.7	0.2	12.2	0.2	5.3	0.4	0.2	0.1
Cycle Queue Clearance Time (g _c), s	0.0	20.6	9.7	10.3	13.7	0.2	12.2	0.2	5.3	0.4	0.2	0.1
Green Ratio (g/C)	0.07	0.29	0.29	0.18	0.34	0.34	0.24	0.24	0.24	0.12	0.12	0.12
Capacity (c), veh/h	125	537	404	312	623	519	376	437	356	208	218	175
Volume-to-Capacity Ratio (X)	0.009	0.868	0.471	0.728	0.578	0.008	0.674	0.010	0.321	0.047	0.020	0.012
Back of Queue (Q), ft/ln (95 th percentile)	1	421.4	157.9	222.1	257.6	2.6	243.9	3.1	88.4	8.3	3.7	1.8
Back of Queue (Q), veh/ln (95 th percentile)	0.0	16.2	5.6	8.7	9.9	0.1	8.7	0.1	3.5	0.3	0.1	0.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	36.7	28.4	24.6	33.1	23.0	18.5	29.5	24.9	26.9	33.3	33.2	33.1
Incremental Delay (d ₂), s/veh	0.0	13.6	0.3	7.3	0.9	0.0	3.8	0.0	0.2	0.0	0.0	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	36.7	42.1	24.9	40.4	23.9	18.5	33.4	24.9	27.1	33.3	33.2	33.1
Level of Service (LOS)	D	D	C	D	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS	37.1		D	30.2		C	31.3		C	33.3		C
Intersection Delay, s/veh / LOS	33.2						C					

Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.17		B	2.11		B	2.14		B	2.19		B
Bicycle LOS Score / LOS	1.57		B	1.46		A	1.10		A	0.51		A

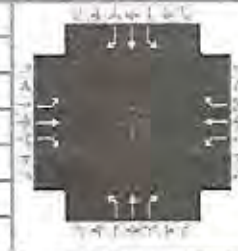
HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers		
Analyst	MSH	Analysis Date	May 19, 2021
Jurisdiction	NDOT	Time Period	AM Peak Hour
Urban Street		Analysis Year	2041 Base
Intersection	Min & US-95A	File Name	MaUs41ax.xus
Project Description			

Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.92
Analysis Period	1> 7:00



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	2	210	138	202	204	4	224	2	191	2	4	3

Signal Information

Cycle, s	80.0	Reference Phase	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
----------	------	-----------------	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	3.0	2.0	3.0		9.0		9.0
Phase Duration, s	11.0	25.0	15.0	29.0		25.0		15.0
Change Period, (Y+R _c), s	5.0	5.0	0.0	5.0		5.0		5.0
Max Allow Headway (MAH), s	3.3	3.2	3.3	3.2		3.4		3.3
Queue Clearance Time (g _s), s	2.1	10.6	11.2	9.7		12.8		2.2
Green Extension Time (g _e), s	0.0	0.6	0.2	1.1		0.6		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.13	0.54	0.62	0.00		0.10		0.00

Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	2	228	123	220	222	4	243	2	170	2	4	3
Adjusted Saturation Flow Rate (s), veh/h/ln	1767	1826	1369	1767	1826	1519	1598	1856	1514	1767	1856	1487
Queue Service Time (g _s), s	0.1	8.6	5.9	9.2	7.7	0.2	10.8	0.1	7.6	0.1	0.2	0.2
Cycle Queue Clearance Time (g _c), s	0.1	8.6	5.9	9.2	7.7	0.2	10.8	0.1	7.6	0.1	0.2	0.2
Green Ratio (g/C)	0.08	0.25	0.25	0.19	0.30	0.30	0.25	0.25	0.25	0.12	0.12	0.12
Capacity (c), veh/h	133	456	342	331	548	456	399	464	379	221	232	186
Volume-to-Capacity Ratio (X)	0.016	0.500	0.359	0.663	0.405	0.010	0.610	0.005	0.448	0.010	0.019	0.018
Back of Queue (Q), ft/ln (95 th percentile)	1.8	173.1	96.4	194.2	153.5	2.6	213.1	1.4	124.6	1.7	3.4	2.6
Back of Queue (Q), veh/ln (95 th percentile)	0.1	6.7	3.4	7.6	5.9	0.1	7.6	0.1	4.9	0.1	0.1	0.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	34.3	25.7	24.7	30.2	22.3	19.7	26.5	22.5	25.3	30.7	30.7	30.7
Incremental Delay (d ₂), s/veh	0.0	0.3	0.2	3.9	0.2	0.0	2.0	0.0	0.3	0.0	0.0	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	34.3	26.0	25.0	34.1	22.5	19.7	28.5	22.5	25.6	30.7	30.7	30.7
Level of Service (LOS)	C	C	C	C	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS	25.7		C	28.2		C	27.3		C	30.7		C
Intersection Delay, s/veh / LOS	27.2						C					

Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.16		B	2.11		B	2.14		B	2.15		B
Bicycle LOS Score / LOS	1.07		A	1.22		A	1.17		A	0.50		A

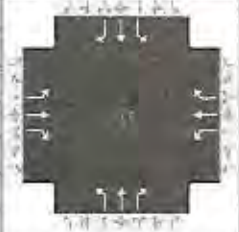
HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers		
Analyst	MSH	Analysis Date	May 19, 2021
Jurisdiction	NDOT	Time Period	PM Peak Hour
Urban Street		Analysis Year	2041 Base
Intersection	Main & US-95A	File Name	MaUs41px.xus
Project Description			

Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.92
Analysis Period	1> 7:00



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	481	251	275	333	5	254	5	191	12	5	3

Signal Information

Cycle, s	90.0	Reference Phase	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
----------	------	-----------------	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	3.0	2.0	3.0		9.0		9.0
Phase Duration, s	12.0	34.0	16.0	38.0		25.0		15.0
Change Period, (Y+R), s	5.0	5.0	0.0	5.0		5.0		5.0
Max Allow Headway (MAH), s	3.3	3.2	3.3	3.2		3.4		3.3
Queue Clearance Time (g _s), s	2.1	26.5	17.1	16.1		16.6		2.6
Green Extension Time (g _e), s	0.0	0.0	0.0	2.4		0.4		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	1.00	1.00	0.02		1.00		0.00

Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	1	523	229	299	362	5	276	5	164	13	5	3
Adjusted Saturation Flow Rate (s), veh/h/ln	1767	1826	1374	1767	1826	1523	1598	1856	1511	1767	1856	1481
Queue Service Time (g _s), s	0.1	24.5	12.2	15.1	14.1	0.2	14.6	0.2	8.5	0.6	0.2	0.2
Cycle Queue Clearance Time (g _c), s	0.1	24.5	12.2	15.1	14.1	0.2	14.6	0.2	8.5	0.6	0.2	0.2
Green Ratio (g/C)	0.08	0.32	0.32	0.18	0.37	0.37	0.22	0.22	0.22	0.11	0.11	0.11
Capacity (c), veh/h	137	588	443	314	669	558	355	412	336	196	206	165
Volume-to-Capacity Ratio (X)	0.008	0.889	0.518	0.951	0.541	0.010	0.778	0.013	0.489	0.066	0.026	0.020
Back of Queue (Q), ft/ln (95 th percentile)	1	489	201.5	379.6	261.6	3.3	300.6	4.2	144	12	5	3
Back of Queue (Q), veh/ln (95 th percentile)	0.0	18.8	7.2	14.8	10.1	0.1	10.7	0.2	5.6	0.5	0.2	0.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	38.3	29.0	24.8	36.6	22.5	18.1	32.9	27.3	30.5	35.8	35.7	35.6
Incremental Delay (d ₂), s/veh	0.0	15.0	0.5	37.6	0.5	0.0	9.6	0.0	0.4	0.1	0.0	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	38.3	43.9	25.3	74.2	23.0	18.1	42.5	27.3	31.0	35.9	35.7	35.7
Level of Service (LOS)	D	D	C	E	C	B	D	C	C	D	D	D
Approach Delay, s/veh / LOS	38.2		D	45.9		D	38.0		D	35.8		D
Intersection Delay, s/veh / LOS	40.9						D					

Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.17		B	2.10		B	2.15		B	2.18		B
Bicycle LOS Score / LOS	1.73		B	1.59		B	1.22		A	0.52		A

HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers		
Analyst	MSH	Analysis Date	May 19, 2021
Jurisdiction	NDOT	Time Period	AM Peak Hour
Urban Street		Analysis Year	2041 Base + Project
Intersection	Min & US-95A	File Name	MaUs41aw.xus
Project Description			



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	2	268	166	202	255	4	251	2	191	2	4	3

Signal Information

Cycle, s	80.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.0	4.0	20.0	10.0	20.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0		
				Red	1.0	0.0	1.0	1.0	1.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	3.0	2.0	3.0		9.0		9.0
Phase Duration, s	11.0	25.0	15.0	29.0		25.0		15.0
Change Period, (Y+R _c), s	5.0	5.0	0.0	5.0		5.0		5.0
Max Allow Headway (MAH), s	3.3	3.2	3.3	3.2		3.4		3.3
Queue Clearance Time (g _s), s	2.1	13.4	11.2	12.0		14.4		2.2
Green Extension Time (g _e), s	0.0	0.4	0.2	1.4		0.6		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.13	1.00	0.62	0.02		0.27		0.00

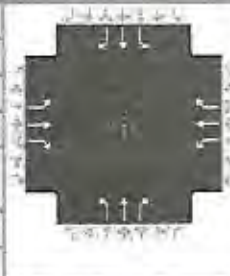
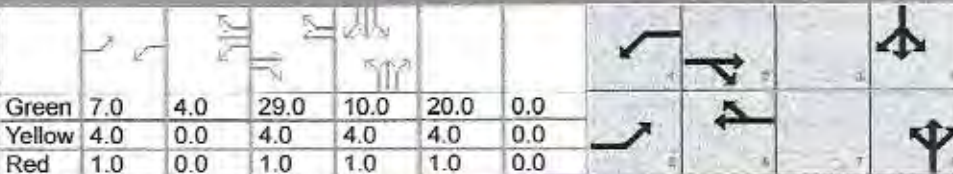
Movement Group Results

Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	2	291	153	220	277	4	273	2	170	2	4	3
Adjusted Saturation Flow Rate (s), veh/h/ln	1767	1826	1369	1767	1826	1519	1598	1856	1514	1767	1856	1487
Queue Service Time (g_s), s	0.1	11.4	7.6	9.2	10.0	0.2	12.4	0.1	7.6	0.1	0.2	0.2
Cycle Queue Clearance Time (g_c), s	0.1	11.4	7.6	9.2	10.0	0.2	12.4	0.1	7.6	0.1	0.2	0.2
Green Ratio (g/C)	0.08	0.25	0.25	0.19	0.30	0.30	0.25	0.25	0.25	0.12	0.12	0.12
Capacity (c), veh/h	133	456	342	331	548	456	399	464	379	221	232	186
Volume-to-Capacity Ratio (X)	0.016	0.638	0.448	0.663	0.506	0.010	0.683	0.005	0.448	0.010	0.019	0.018
Back of Queue (Q), ft/ln (95 th percentile)	1.8	230.5	123.5	194.2	198.7	2.6	244.1	1.4	124.6	1.7	3.4	2.6
Back of Queue (Q), veh/ln (95 th percentile)	0.1	8.9	4.4	7.6	7.6	0.1	8.7	0.1	4.9	0.1	0.1	0.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	34.3	26.8	25.3	30.2	23.1	19.7	27.1	22.5	25.3	30.7	30.7	30.7
Incremental Delay (d_2), s/veh	0.0	2.3	0.3	3.9	0.3	0.0	3.9	0.0	0.3	0.0	0.0	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	34.3	29.1	25.7	34.1	23.4	19.7	31.1	22.5	25.6	30.7	30.7	30.7
Level of Service (LOS)	C	C	C	C	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS	27.9	C		28.1	C		29.0	C		30.7	C	
Intersection Delay, s/veh / LOS	28.3						C					

Multimodal Results

	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.16	B	2.11	B	2.14	B	2.15	B
Bicycle LOS Score / LOS	1.22	A	1.31	A	1.22	A	0.50	A

HCS7 Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Solaegui Engineers				Duration, h		0.250									
Analyst	MSH	Analysis Date	May 19, 2021		Area Type		Other									
Jurisdiction	NDOT	Time Period	PM Peak Hour		PHF		0.92									
Urban Street		Analysis Year	2041 Base + Project		Analysis Period		1> 7:00									
Intersection	Main & US-95A		File Name		MaUs41pw.xus											
Project Description																
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h					1	544	285	275	411	5	294	5	191	12	5	3
Signal Information																
Cycle, s	90.0	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On													
Force Mode	Fixed	Simult. Gap N/S	On		Green	7.0	4.0	29.0	10.0	20.0	0.0					
					Yellow	4.0	0.0	4.0	4.0	4.0	0.0					
					Red	1.0	0.0	1.0	1.0	1.0	0.0					
Timer Results					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					5	2	1	6		8		4				
Case Number					2.0	3.0	2.0	3.0		9.0		9.0				
Phase Duration, s					12.0	34.0	16.0	38.0		25.0		15.0				
Change Period, (Y+R c), s					5.0	5.0	0.0	5.0		5.0		5.0				
Max Allow Headway (MAH), s					3.3	3.2	3.3	3.2		3.4		3.3				
Queue Clearance Time (g s), s					2.1	31.0	17.1	20.5		19.5		2.6				
Green Extension Time (g e), s					0.0	0.0	0.0	2.8		0.1		0.0				
Phase Call Probability					1.00	1.00	1.00	1.00		1.00		1.00				
Max Out Probability					0.00	1.00	1.00	0.12		1.00		0.00				
Movement Group Results					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h					1	591	266	299	447	5	320	5	164	13	5	3
Adjusted Saturation Flow Rate (s), veh/h/ln					1767	1826	1374	1767	1826	1523	1598	1856	1511	1767	1856	1481
Queue Service Time (g s), s					0.1	29.0	14.7	15.1	18.5	0.2	17.5	0.2	8.5	0.6	0.2	0.2
Cycle Queue Clearance Time (g c), s					0.1	29.0	14.7	15.1	18.5	0.2	17.5	0.2	8.5	0.6	0.2	0.2
Green Ratio (g/C)					0.08	0.32	0.32	0.18	0.37	0.37	0.22	0.22	0.22	0.11	0.11	0.11
Capacity (c), veh/h					137	588	443	314	669	558	355	412	336	196	206	165
Volume-to-Capacity Ratio (X)					0.008	1.005	0.601	0.951	0.667	0.010	0.900	0.013	0.489	0.066	0.026	0.020
Back of Queue (Q), ft/ln (95 th percentile)					1	672	239.6	379.6	334.1	3.3	393	4.2	144	12	5	3
Back of Queue (Q), veh/ln (95 th percentile)					0.0	25.8	8.6	14.8	12.9	0.1	14.0	0.2	5.6	0.5	0.2	0.1
Queue Storage Ratio (RQ) (95 th percentile)					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d 1), s/veh					38.3	30.5	25.6	36.6	23.9	18.1	34.0	27.3	30.5	35.8	35.7	35.6
Incremental Delay (d 2), s/veh					0.0	38.3	1.6	37.6	2.1	0.0	24.2	0.0	0.4	0.1	0.0	0.0
Initial Queue Delay (d 3), s/veh					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh					38.3	68.8	27.3	74.2	26.0	18.1	58.2	27.3	31.0	35.9	35.7	35.7
Level of Service (LOS)					D	F	C	E	C	B	E	C	C	D	D	D
Approach Delay, s/veh / LOS					55.9		E	45.1		D	48.7		D	35.8		D
Intersection Delay, s/veh / LOS					50.2						D					
Multimodal Results					EB			WB			NB			SB		
Pedestrian LOS Score / LOS					2.17		B	2.10		B	2.15		B	2.18		B
Bicycle LOS Score / LOS					1.90		B	1.73		B	1.29		A	0.52		A

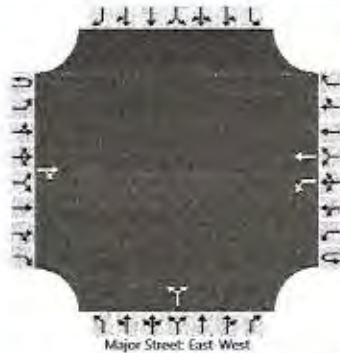
HC57 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Miller
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2021	North/South Street	Miller Lane
Time Analyzed	AM Existing	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Site Information

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			217	16		11	382			71		15				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						12					93					
Capacity, c (veh/h)						1306					447					
v/c Ratio						0.01					0.21					
95% Queue Length, Q ₉₅ (veh)						0.0					0.8					
Control Delay (s/veh)						7.8					15.2					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.2					15.2					
Approach LOS											C					

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Miller
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Miller Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			532	72		21	405			44		19				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						23					68					
Capacity, c (veh/h)						926					271					
v/c Ratio						0.02					0.25					
95% Queue Length, Q ₉₅ (veh)						0.1					1.0					
Control Delay (s/veh)						9.0					22.7					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.4					22.7					
Approach LOS											C					

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Miller
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Miller Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			303	21		11	460			77		15				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						12					100					
Capacity, c (veh/h)						1201					351					
v/c Ratio						0.01					0.29					
95% Queue Length, Q ₉₅ (veh)						0.0					1.2					
Control Delay (s/veh)						8.0					19.3					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)							0.2				19.3					
Approach LOS											C					

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing + Project
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Miller
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Miller Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			629	79		21	526			51		19				
Percent Heavy Vehicles (%)						3				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						23					76					
Capacity, c (veh/h)						840					195					
v/c Ratio						0.03					0.39					
95% Queue Length, Q ₉₅ (veh)						0.1					1.7					
Control Delay (s/veh)						9.4					34.7					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					0.4				34.7							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Miller
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Miller Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			285	21		14	502			93		20				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						15					123					
Capacity, c (veh/h)						1221					340					
v/c Ratio						0.01					0.36					
95% Queue Length, Q ₉₅ (veh)						0.0					1.6					
Control Delay (s/veh)						8.0					21.5					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.2					21.5					
Approach LOS											C					

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Miller
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2041	North/South Street	Miller Lane
Time Analyzed	PM Base	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			699	95		28	533			58		25				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						30					90					
Capacity, c (veh/h)						775					170					
v/c Ratio						0.04					0.53					
95% Queue Length, Q ₉₅ (veh)						0.1					2.7					
Control Delay (s/veh)						9.8					47.9					
Level of Service (LOS)						A					E					
Approach Delay (s/veh)					0.5				47.9							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Miller
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Miller Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			371	26		14	580			99		20				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						15				129						
Capacity, c (veh/h)						1123				266						
v/c Ratio						0.01				0.49						
95% Queue Length, Q ₉₅ (veh)						0.0				2.5						
Control Delay (s/veh)						8.3				30.8						
Level of Service (LOS)						A				D						
Approach Delay (s/veh)						0.2				30.8						
Approach LOS										D						

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Miller
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2041	North/South Street	Miller Lane
Time Analyzed	PM Base + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			796	102		28	651			65		25				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						30					98					
Capacity, c (veh/h)						703					121					
v/c Ratio						0.04					0.81					
95% Queue Length, Q ₉₅ (veh)						0.1					4.8					
Control Delay (s/veh)						10.4					103.5					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					0.4				103.5							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Truckee
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Truckee Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			196	3		16	473			3		37				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						17					43					
Capacity, c (veh/h)						1348					752					
v/c Ratio						0.01					0.06					
95% Queue Length, Q ₉₅ (veh)						0.0					0.2					
Control Delay (s/veh)						7.7					10.1					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						0.3					10.1					
Approach LOS											B					

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Truckee
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Truckee Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			581	9		3	409			5		17				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						3					24					
Capacity, c (veh/h)						938					387					
v/c Ratio						0.00					0.06					
95% Queue Length, Q ₉₅ (veh)						0.0					0.2					
Control Delay (s/veh)						8.8					14.9					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.1				14.9							
Approach LOS									B							

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Truckee-Access
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Truckee Lane-East Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	259	3		16	532	25		3	3	37		28	3	9
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				17					47				43	
Capacity, c (veh/h)		968				1272					582				254	
v/c Ratio		0.01				0.01					0.08				0.17	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.3				0.6	
Control Delay (s/veh)		8.8				7.9					11.7				22.1	
Level of Service (LOS)		A				A					B				C	
Approach Delay (s/veh)	0.3				0.2				11.7				22.1			
Approach LOS									B				C			

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Truckee Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2021	North/South Street	Truckee Lane-East Access
Time Analyzed	PM Existing + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		35	627	9		31	482	51		4	5	25		58	2	27
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		38				34					37				95	
Capacity, c (veh/h)		990				899					254				136	
v/c Ratio		0.04				0.04					0.15				0.70	
95% Queue Length, Q ₉₅ (veh)		0.1				0.1					0.5				3.9	
Control Delay (s/veh)		8.8				9.2					21.6				77.3	
Level of Service (LOS)		A				A					C				F	
Approach Delay (s/veh)	0.5				0.5				21.6				77.3			
Approach LOS									C				F			

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Truckee
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Truckee Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			258	4		21	622			4		49				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						23					58					
Capacity, c (veh/h)						1272					660					
v/c Ratio						0.02					0.09					
95% Queue Length, Q ₉₅ (veh)						0.1					0.3					
Control Delay (s/veh)						7.9					11.0					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.3				11.0							
Approach LOS									B							

HC57 Two-Way Stop-Control Report

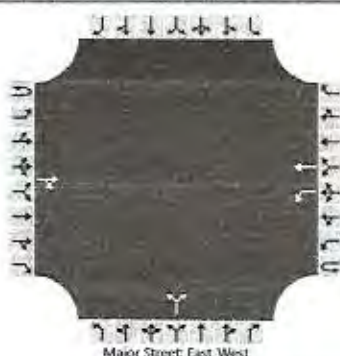
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Truckee
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Truckee Lane
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			764	12		41	536			5		33				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						45					41					
Capacity, c (veh/h)						788					291					
v/c Ratio						0.06					0.14					
95% Queue Length, Q_{95} (veh)						0.2					0.5					
Control Delay (s/veh)						9.8					19.4					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.7					19.4					
Approach LOS											C					

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Truckee-Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2041	North/South Street	Truckee Lane-East Access
Time Analyzed	AM Base + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	321	4		21	681	25		4	3	49		28	3	9
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				23					61				43	
Capacity, c (veh/h)		842				1200					495				171	
v/c Ratio		0.01				0.02					0.12				0.25	
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.4				1.0	
Control Delay (s/veh)		9.3				8.1					13.3				33.1	
Level of Service (LOS)		A				A					B				D	
Approach Delay (s/veh)	0.3				0.2				13.3				33.1			
Approach LOS									B				D			

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/Truckee-Access
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	Truckee Lane-East Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		35	810	12		41	610	51		5	5	33		58	2	27
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type Storage	Undivided															

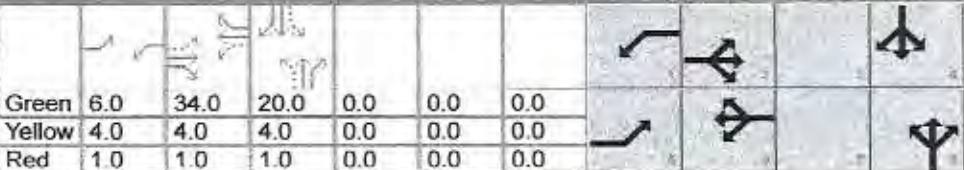
Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

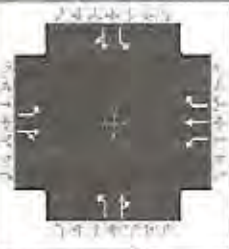
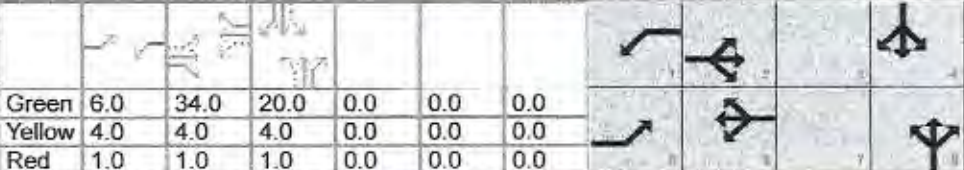
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		38				45					47				95					
Capacity, c (veh/h)		878				755					169				71					
v/c Ratio		0.04				0.06					0.28				1.33					
95% Queue Length, Q ₉₅ (veh)		0.1				0.2					1.1				7.6					
Control Delay (s/veh)		9.3				10.1					34.2				320.0					
Level of Service (LOS)		A				B					D				F					
Approach Delay (s/veh)	0.4					0.6					34.2					320.0				
Approach LOS											D					F				

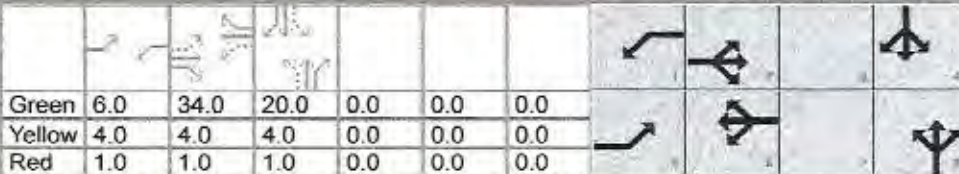
HCS7 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency		Solaegui Engineers				Duration, h		0.250											
Analyst		MSH		Analysis Date		May 19, 2021		Area Type		Other									
Jurisdiction		NDOT		Time Period		AM Peak Hour		PHF		0.92									
Urban Street				Analysis Year		Existing + Project		Analysis Period		1> 7:00									
Intersection		Main & Truckee-East Dri...		File Name		MaTr21aw.xus													
Project Description																			
Demand Information						EB			WB			NB			SB				
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R		
Demand (v), veh/h						10	196	3	16	532	25	3	3	37	91	3	9		
Signal Information																			
Cycle, s	75.0	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On																
Force Mode	Fixed	Simult. Gap N/S	On																
						Green	6.0	34.0	20.0	0.0	0.0	0.0							
						Yellow	4.0	4.0	4.0	0.0	0.0	0.0							
						Red	1.0	1.0	1.0	0.0	0.0	0.0							
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT						
Assigned Phase						5	2	1	6		8		4						
Case Number						1.1	4.0	1.1	3.0		6.0		6.0						
Phase Duration, s						11.0	39.0	11.0	39.0		25.0		25.0						
Change Period, (Y+R _c), s						5.0	5.0	5.0	5.0		5.0		5.0						
Max Allow Headway (MAH), s						3.3	3.2	3.3	3.2		3.4		3.4						
Queue Clearance Time (g _s), s						2.2	7.5	2.3	21.0		3.6		8.1						
Green Extension Time (g _e), s						0.0	1.8	0.0	1.6		0.3		0.2						
Phase Call Probability						1.00	1.00	1.00	1.00		1.00		1.00						
Max Out Probability						0.29	0.00	0.43	0.02		0.00		0.00						
Movement Group Results						EB			WB			NB			SB				
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R		
Assigned Movement						5	2	12	1	6	16	3	8	18	7	4	14		
Adjusted Flow Rate (v), veh/h						11	216		17	578	27	3	43		99	13			
Adjusted Saturation Flow Rate (s), veh/h/ln						1767	1820		1767	1826	1526	1377	1537		1341	1588			
Queue Service Time (g _s), s						0.2	5.5		0.3	19.0	0.7	0.1	1.6		4.5	0.5			
Cycle Queue Clearance Time (g _c), s						0.2	5.5		0.3	19.0	0.7	0.6	1.6		6.1	0.5			
Green Ratio (g/C)						0.53	0.45		0.53	0.45	0.45	0.27	0.27		0.27	0.27			
Capacity (c), veh/h						381	825		645	828	692	455	410		425	424			
Volume-to-Capacity Ratio (X)						0.029	0.262		0.027	0.699	0.039	0.007	0.106		0.233	0.031			
Back of Queue (Q), ft/ln (95 th percentile)						3.6	100.8		5.7	324.6	11.2	1.9	26.2		64.9	7.7			
Back of Queue (Q), veh/ln (95 th percentile)						0.1	3.9		0.2	12.5	0.4	0.1	1.0		2.5	0.3			
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00			
Uniform Delay (d ₁), s/veh						11.2	12.7		8.6	16.4	11.4	20.6	20.8		23.1	20.3			
Incremental Delay (d ₂), s/veh						0.0	0.1		0.0	2.2	0.0	0.0	0.0		0.1	0.0			
Initial Queue Delay (d ₃), s/veh						0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Control Delay (d), s/veh						11.2	12.8		8.6	18.6	11.4	20.6	20.8		23.2	20.3			
Level of Service (LOS)						B	B		A	B	B	C	C		C	C			
Approach Delay, s/veh / LOS						12.7		B	18.0		B	20.8		C	22.8		C		
Intersection Delay, s/veh / LOS						17.5						B							
Multimodal Results						EB			WB			NB			SB				
Pedestrian LOS Score / LOS						1.89		B	1.89		B	2.11		B	1.92		B		
Bicycle LOS Score / LOS						0.86		A	1.52		B	0.56		A	0.67		A		

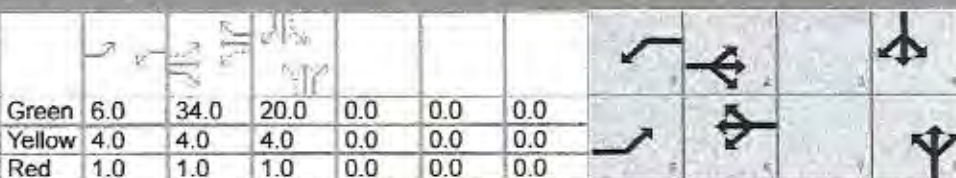
HCS7 Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Solaegui Engineers				Duration, h		0.250									
Analyst	MSH		Analysis Date	May 19, 2021		Area Type		Other								
Jurisdiction	NDOT		Time Period	PM Peak Hour		PHF		0.92								
Urban Street			Analysis Year	Existing + Project		Analysis Period		1> 7:00								
Intersection	Main & Truckee-East Dri...		File Name	MaTr21pw.xus												
Project Description																
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h					35	530	9	31	482	51	4	5	25	155	2	27
Signal Information																
Cycle, s	75.0	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On													
Force Mode	Fixed	Simult. Gap N/S	On													
					Green	6.0	34.0	20.0	0.0	0.0	0.0					
					Yellow	4.0	4.0	4.0	0.0	0.0	0.0					
					Red	1.0	1.0	1.0	0.0	0.0	0.0					
Timer Results					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					5	2	1	6		8		4				
Case Number					1.1	4.0	1.1	3.0		6.0		6.0				
Phase Duration, s					11.0	39.0	11.0	39.0		25.0		25.0				
Change Period, (Y+R _c), s					5.0	5.0	5.0	5.0		5.0		5.0				
Max Allow Headway (MAH), s					3.3	3.2	3.3	3.2		3.4		3.4				
Queue Clearance Time (g _s), s					2.8	21.5	2.7	18.5		3.3		11.2				
Green Extension Time (g _e), s					0.0	2.4	0.0	2.5		0.4		0.3				
Phase Call Probability					1.00	1.00	1.00	1.00		1.00		1.00				
Max Out Probability					1.00	0.08	0.88	0.04		0.00		0.01				
Movement Group Results					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h					38	586		34	524	55	4	33		168	32	
Adjusted Saturation Flow Rate (s), veh/h/ln					1767	1819		1767	1826	1526	1355	1563		1354	1535	
Queue Service Time (g _s), s					0.8	19.5		0.7	16.5	1.5	0.2	1.2		8.0	1.2	
Cycle Queue Clearance Time (g _c), s					0.8	19.5		0.7	16.5	1.5	1.3	1.2		9.2	1.2	
Green Ratio (g/C)					0.53	0.45		0.53	0.45	0.45	0.27	0.27		0.27	0.27	
Capacity (c), veh/h					418	825		375	828	692	436	417		436	409	
Volume-to-Capacity Ratio (X)					0.091	0.710		0.090	0.633	0.080	0.010	0.078		0.387	0.077	
Back of Queue (Q), ft/ln (95 th percentile)					12.7	331.9		11.2	283.9	23.2	2.6	19.5		115.9	18.8	
Back of Queue (Q), veh/ln (95 th percentile)					0.5	12.8		0.4	10.9	0.9	0.1	0.8		4.5	0.7	
Queue Storage Ratio (RQ) (95 th percentile)					0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d ₁), s/veh					10.7	16.5		11.5	15.7	11.6	21.1	20.6		24.0	20.6	
Incremental Delay (d ₂), s/veh					0.0	2.5		0.0	1.2	0.0	0.0	0.0		0.2	0.0	
Initial Queue Delay (d ₃), s/veh					0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (d), s/veh					10.8	19.0		11.6	16.9	11.6	21.1	20.6		24.2	20.6	
Level of Service (LOS)					B	B		B	B	B	C	C		C	C	
Approach Delay, s/veh / LOS					18.5	B		16.2	B		20.7	C		23.7	C	
Intersection Delay, s/veh / LOS					18.3						B					
Multimodal Results					EB			WB			NB			SB		
Pedestrian LOS Score / LOS					1.89	B		1.89	B		2.11	B		1.92	B	
Bicycle LOS Score / LOS					1.52	B		1.50	A		0.55	A		0.82	A	

HCS7 Signalized Intersection Results Summary

General Information						Intersection Information															
Agency	Solaegui Engineers					Duration, h	0.250														
Analyst	MSH		Analysis Date	May 19, 2021		Area Type	Other														
Jurisdiction	NDOT		Time Period	AM Peak Hour		PHF	0.92														
Urban Street			Analysis Year	2041 Base + Project		Analysis Period	1> 7:00														
Intersection	Main & Truckee-East Dri...		File Name	MaTr41aw.xus																	
Project Description																					
Demand Information						EB			WB			NB			SB						
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h						10	258	4	21	681	25	4	3	49	91	3	9				
Signal Information																					
Cycle, s	75.0	Reference Phase	2																		
Offset, s	0	Reference Point	End																		
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.0	34.0	20.0	0.0	0.0	0.0	0.0										
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0										
				Red	1.0	1.0	1.0	0.0	0.0	0.0	0.0										
Timer Results						EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						5		2		1		6				8				4	
Case Number						1.1		4.0		1.1		3.0				6.0				6.0	
Phase Duration, s						11.0		39.0		11.0		39.0				25.0				25.0	
Change Period, (Y+R c), s						5.0		5.0		5.0		5.0				5.0				5.0	
Max Allow Headway (MAH), s						3.3		3.2		3.3		3.2				3.4				3.4	
Queue Clearance Time (g s), s						2.2		9.6		2.5		30.0				4.1				8.7	
Green Extension Time (g e), s						0.0		2.4		0.0		1.2				0.3				0.3	
Phase Call Probability						1.00		1.00		1.00		1.00				1.00				1.00	
Max Out Probability						0.29		0.00		0.56		0.77				0.00				0.00	
Movement Group Results						EB			WB			NB			SB						
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement						5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h						11	285		23	740	27	4	57		99	13					
Adjusted Saturation Flow Rate (s), veh/h/ln						1767	1820		1767	1826	1526	1377	1532		1325	1588					
Queue Service Time (g s), s						0.2	7.6		0.5	28.0	0.7	0.2	2.1		4.6	0.5					
Cycle Queue Clearance Time (g c), s						0.2	7.6		0.5	28.0	0.7	0.6	2.1		6.7	0.5					
Green Ratio (g/C)						0.53	0.45		0.53	0.45	0.45	0.27	0.27		0.27	0.27					
Capacity (c), veh/h						276	825		591	828	692	455	409		412	424					
Volume-to-Capacity Ratio (X)						0.039	0.345		0.039	0.894	0.039	0.010	0.138		0.240	0.031					
Back of Queue (Q), ft/ln (95 th percentile)						3.6	138.7		7.5	510.3	11.2	2.6	34.4		65.7	7.7					
Back of Queue (Q), veh/ln (95 th percentile)						0.1	5.3		0.3	19.6	0.4	0.1	1.3		2.6	0.3					
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00					
Uniform Delay (d 1), s/veh						14.3	13.3		8.9	18.8	11.4	20.6	20.9		23.5	20.3					
Incremental Delay (d 2), s/veh						0.0	0.1		0.0	11.9	0.0	0.0	0.1		0.1	0.0					
Initial Queue Delay (d 3), s/veh						0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0					
Control Delay (d), s/veh						14.3	13.4		8.9	30.7	11.4	20.6	21.0		23.6	20.3					
Level of Service (LOS)						B	B		A	C	B	C	C		C	C					
Approach Delay, s/veh / LOS						13.4		B	29.4		C	21.0		C	23.2		C				
Intersection Delay, s/veh / LOS						24.7						C									
Multimodal Results						EB			WB			NB			SB						
Pedestrian LOS Score / LOS						1.89		B	1.89		B	2.11		B	1.92		B				
Bicycle LOS Score / LOS						0.98		A	1.79		B	0.59		A	0.67		A				

HCS7 Signalized Intersection Results Summary

General Information					Intersection Information										
Agency	Solaegui Engineers					Duration, h	0.250								
Analyst	MSH		Analysis Date	May 19, 2021		Area Type	Other								
Jurisdiction	NDOT		Time Period	PM Peak Hour		PHF	0.92								
Urban Street			Analysis Year	2041 Base + Project		Analysis Period	1> 7:00								
Intersection	Main & Truckee-East Dri...		File Name	MaTr41pw.xus											
Project Description															
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				35	713	12	41	610	51	5	5	33	155	2	27
Signal Information															
Cycle, s	75.0	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On												
Green	6.0	34.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase				5	2	1	6		8		4				
Case Number				1.1	4.0	1.1	3.0		6.0		6.0				
Phase Duration, s				11.0	39.0	11.0	39.0		25.0		25.0				
Change Period, (Y+R c), s				5.0	5.0	5.0	5.0		5.0		5.0				
Max Allow Headway (MAH), s				3.3	3.2	3.3	3.2		3.4		3.4				
Queue Clearance Time (g s), s				2.8	33.3	2.9	25.4		3.5		11.6				
Green Extension Time (g e), s				0.0	0.4	0.0	2.9		0.5		0.3				
Phase Call Probability				1.00	1.00	1.00	1.00		1.00		1.00				
Max Out Probability				1.00	1.00	1.00	0.36		0.00		0.02				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h				38	788		45	663	55	5	41		168	32	
Adjusted Saturation Flow Rate (s), veh/h/ln				1767	1819		1767	1826	1526	1355	1553		1343	1535	
Queue Service Time (g s), s				0.8	31.3		0.9	23.4	1.5	0.2	1.5		8.1	1.2	
Cycle Queue Clearance Time (g c), s				0.8	31.3		0.9	23.4	1.5	1.4	1.5		9.6	1.2	
Green Ratio (g/C)				0.53	0.45		0.53	0.45	0.45	0.27	0.27		0.27	0.27	
Capacity (c), veh/h				325	825		243	828	692	436	414		427	409	
Volume-to-Capacity Ratio (X)				0.117	0.955		0.183	0.801	0.080	0.012	0.100		0.394	0.077	
Back of Queue (Q), ft/ln (95 th percentile)				12.8	615.1		15.1	404.2	23.2	3.3	24.8		117	18.8	
Back of Queue (Q), veh/ln (95 th percentile)				0.5	23.7		0.6	15.5	0.9	0.1	1.0		4.6	0.7	
Queue Storage Ratio (RQ) (95 th percentile)				0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d 1), s/veh				12.9	19.8		16.0	17.6	11.6	21.1	20.7		24.3	20.6	
Incremental Delay (d 2), s/veh				0.1	21.0		0.1	5.2	0.0	0.0	0.0		0.2	0.0	
Initial Queue Delay (d 3), s/veh				0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (d), s/veh				12.9	40.8		16.2	22.8	11.6	21.1	20.8		24.6	20.6	
Level of Service (LOS)				B	D		B	C	B	C	C		C	C	
Approach Delay, s/veh / LOS				39.5		D	21.6		C	20.8		C	23.9		C
Intersection Delay, s/veh / LOS				29.9						C					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				1.89		B	1.89		B	2.11		B	1.92		B
Bicycle LOS Score / LOS				1.85		B	1.75		B	0.56		A	0.82		A

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/West Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2021	North/South Street	West Access
Time Analyzed	AM Existing + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		50	212				494	59						63		62
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		54													136	
Capacity, c (veh/h)		971													369	
v/c Ratio		0.06													0.37	
95% Queue Length, Q ₉₅ (veh)		0.2													1.7	
Control Delay (s/veh)		8.9													20.3	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		1.7												20.3		
Approach LOS															C	

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/West Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2021	North/South Street	West Access
Time Analyzed	PM Existing + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Site Information

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		107	560				407	108						97		82
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		116													195	
Capacity, c (veh/h)		1006													223	
v/c Ratio		0.12													0.87	
95% Queue Length, Q ₉₅ (veh)		0.4													6.9	
Control Delay (s/veh)		9.0													76.8	
Level of Service (LOS)		A													F	
Approach Delay (s/veh)	1.5												76.8			
Approach LOS													F			

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Main/West Access
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	West Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		50	276				647	59						63		62
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		54													136	
Capacity, c (veh/h)		842													275	
v/c Ratio		0.06													0.49	
95% Queue Length, Q ₉₅ (veh)		0.2													2.6	
Control Delay (s/veh)		9.6													30.2	
Level of Service (LOS)		A													D	
Approach Delay (s/veh)		1.5													30.2	
Approach LOS															D	

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/West Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2041	North/South Street	West Access
Time Analyzed	PM Base + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		107	741				538	108						97		82
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		116													195	
Capacity, c (veh/h)		891													143	
v/c Ratio		0.13													1.36	
95% Queue Length, Q ₉₅ (veh)		0.4													12.4	
Control Delay (s/veh)		9.6													260.6	
Level of Service (LOS)		A													F	
Approach Delay (s/veh)		1.2												260.6		
Approach LOS															F	

HC57 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/West Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2021	North/South Street	West Access
Time Analyzed	AM Existing + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	No SBL		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	1
Configuration		L	T					TR								R
Volume (veh/h)		50	212				494	59								62
Percent Heavy Vehicles (%)		3														3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized															No	
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.13														6.23
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.23														3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		54														67
Capacity, c (veh/h)		971														520
v/c Ratio		0.06														0.13
95% Queue Length, Q ₉₅ (veh)		0.2														0.4
Control Delay (s/veh)		8.9														13.0
Level of Service (LOS)		A														B
Approach Delay (s/veh)			1.7												13.0	
Approach LOS																B

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing + Project
Intersection Orientation	East-West
Project Description	No SBL

Site Information

Intersection	Main/West Access
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	West Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	1
Configuration		L	T					TR								R
Volume (veh/h)		107	560				407	108								82
Percent Heavy Vehicles (%)		3														3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized															No	
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.13														6.23
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.23														3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		116														89
Capacity, c (veh/h)		1006														568
v/c Ratio		0.12														0.16
95% Queue Length, Q ₉₅ (veh)		0.4														0.6
Control Delay (s/veh)		9.0														12.5
Level of Service (LOS)		A														B
Approach Delay (s/veh)			1.5												12.5	
Approach LOS																B

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/West Access
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Main Street
Analysis Year	2041	North/South Street	West Access
Time Analyzed	AM Base + Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	No SBL		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	1
Configuration		L	T					TR								R
Volume (veh/h)		50	276				647	59								62
Percent Heavy Vehicles (%)		3														3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized															No	
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.13														6.23
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.23														3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		54														67
Capacity, c (veh/h)		842														418
v/c Ratio		0.06														0.16
95% Queue Length, Q ₉₅ (veh)		0.2														0.6
Control Delay (s/veh)		9.6														15.3
Level of Service (LOS)		A														C
Approach Delay (s/veh)			1.5												15.3	
Approach LOS																C

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	East-West
Project Description	No SBL

Site Information

Intersection	Main/West Access
Jurisdiction	NDOT
East/West Street	Main Street
North/South Street	West Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	1
Configuration		L	T					TR								R
Volume (veh/h)		107	741				538	108								82
Percent Heavy Vehicles (%)		3														3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.13														6.23
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.23														3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		116														89
Capacity, c (veh/h)		891														471
v/c Ratio		0.13														0.19
95% Queue Length, Q ₉₅ (veh)		0.4														0.7
Control Delay (s/veh)		9.6														14.4
Level of Service (LOS)		A														B
Approach Delay (s/veh)		1.2												14.4		
Approach LOS														B		

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		16		32						13	472				170	10
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17		35						14						
Capacity, c (veh/h)		386		855						1371						
v/c Ratio		0.05		0.04						0.01						
95% Queue Length, Q ₉₅ (veh)		0.1		0.1						0.0						
Control Delay (s/veh)		14.8		9.4						7.7						
Level of Service (LOS)		B		A						A						
Approach Delay (s/veh)	11.2								0.2							
Approach LOS	B															

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Mesa
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Mesa Drive
Analysis Year	2021	North/South Street	Main Street
Time Analyzed	PM Existing	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		5		18						18	396				558	28
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5		20						20						
Capacity, c (veh/h)		237		495						942						
v/c Ratio		0.02		0.04						0.02						
95% Queue Length, Q ₉₅ (veh)		0.1		0.1						0.1						
Control Delay (s/veh)		20.6		12.6						8.9						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)		14.3								0.4						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

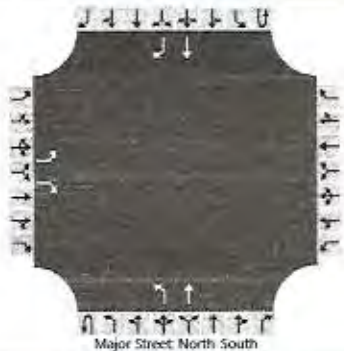
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		16		34						15	541				228	10
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17		37						16						
Capacity, c (veh/h)		317		788						1300						
v/c Ratio		0.05		0.05						0.01						
95% Queue Length, Q ₉₅ (veh)		0.2		0.1						0.0						
Control Delay (s/veh)		17.0		9.8						7.8						
Level of Service (LOS)		C		A						A						
Approach Delay (s/veh)		12.1								0.2						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing+ Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		5		20						22	467				647	28
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5		22						24						
Capacity, c (veh/h)		182		436						867						
v/c Ratio		0.03		0.05						0.03						
95% Queue Length, Q ₉₅ (veh)		0.1		0.2						0.1						
Control Delay (s/veh)		25.3		13.7						9.3						
Level of Service (LOS)		D		B						A						
Approach Delay (s/veh)		16.0								0.4						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		21		42						17	621				224	13
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		23		46						18						
Capacity, c (veh/h)		281		793						1301						
v/c Ratio		0.08		0.06						0.01						
95% Queue Length, Q ₉₅ (veh)		0.3		0.2						0.0						
Control Delay (s/veh)		18.9		9.8						7.8						
Level of Service (LOS)		C		A						A						
Approach Delay (s/veh)		12.9								0.2						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		7		24						24	521				733	37
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		8		26						26						
Capacity, c (veh/h)		146		385						793						
v/c Ratio		0.05		0.07						0.03						
95% Queue Length, Q ₉₅ (veh)		0.2		0.2						0.1						
Control Delay (s/veh)		31.1		15.0						9.7						
Level of Service (LOS)		D		C						A						
Approach Delay (s/veh)	18.6								0.4							
Approach LOS	C															

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		21		44						19	690				282	13
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)	23	48						21						
Capacity, c (veh/h)	231	731						1234						
v/c Ratio	0.10	0.07						0.02						
95% Queue Length, Q ₉₅ (veh)	0.3	0.2						0.1						
Control Delay (s/veh)	22.3	10.3						8.0						
Level of Service (LOS)	C	B						A						
Approach Delay (s/veh)	14.2							0.2						
Approach LOS	B													

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Mesa
Jurisdiction	NDOT
East/West Street	Mesa Drive
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		7		26						28	592				822	37
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		8		28						30						
Capacity, c (veh/h)		112		339						729						
v/c Ratio		0.07		0.08						0.04						
95% Queue Length, Q ₉₅ (veh)		0.2		0.3						0.1						
Control Delay (s/veh)		39.6		16.6						10.2						
Level of Service (LOS)		E		C						B						
Approach Delay (s/veh)		21.5								0.5						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Logan-Pilot
Jurisdiction	NDOT
East/West Street	Logan Lane-Pilot Road
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		169	3	28		5	4	8		41	428	19		18	147	136
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			217			5		13		45				20		
Capacity, c (veh/h)			301			255		775		1247				1072		
v/c Ratio			0.72			0.02		0.02		0.04				0.02		
95% Queue Length, Q ₉₅ (veh)			5.2			0.1		0.1		0.1				0.1		
Control Delay (s/veh)			42.6			19.4		9.7		8.0				8.4		
Level of Service (LOS)			E			C		A		A				A		
Approach Delay (s/veh)	42.6				12.6				0.7				0.5			
Approach LOS	E				B											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Logan-Pilot
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Logan Lane-Pilot Road
Analysis Year	2021	North/South Street	Main Street
Time Analyzed	PM Existing	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Site Information

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		179	3	75		24	5	14		56	335	10		15	487	183
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			279			26		21		61				16		
Capacity, c (veh/h)			205			128		598		871				1178		
v/c Ratio			1.37			0.20		0.03		0.07				0.01		
95% Queue Length, Q ₉₅ (veh)			15.9			0.7		0.1		0.2				0.0		
Control Delay (s/veh)			237.5			40.2		11.2		9.4				8.1		
Level of Service (LOS)			F			E		B		A				A		
Approach Delay (s/veh)	237.5				27.4				1.3				0.2			
Approach LOS	F				D											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Logan-Pilot
Jurisdiction	NDOT
East/West Street	Logan Lane-Pilot Road
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		169	3	39		6	4	8		43	494	20		18	203	136
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			229			7		13		47				20		
Capacity, c (veh/h)			251			199		640		1185				1007		
v/c Ratio			0.91			0.03		0.02		0.04				0.02		
95% Queue Length, Q ₉₅ (veh)			8.0			0.1		0.1		0.1				0.1		
Control Delay (s/veh)			79.3			23.7		10.7		8.2				8.6		
Level of Service (LOS)			F			C		B		A				A		
Approach Delay (s/veh)	79.3				15.1				0.6				0.4			
Approach LOS	F				C											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Logan-Pilot
Jurisdiction	NDOT
East/West Street	Logan Lane-Pilot Road
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		179	3	77		25	5	14		57	404	11		15	573	183
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			282			27		21		62				16						
Capacity, c (veh/h)			156			94		467		803				1104						
v/c Ratio			1.81			0.29		0.04		0.08				0.01						
95% Queue Length, Q ₉₅ (veh)			20.8			1.1		0.1		0.3				0.0						
Control Delay (s/veh)			436.3			58.5		13.1		9.9				8.3						
Level of Service (LOS)			F			F		B		A				A						
Approach Delay (s/veh)	436.3					38.9					1.2					0.2				
Approach LOS	F					E														

HCS7 Two-Way Stop-Control Report

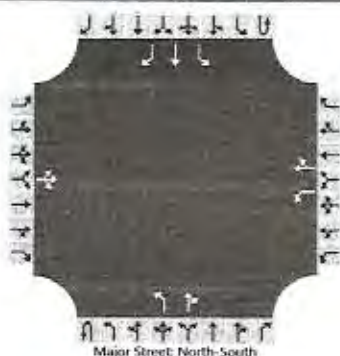
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Logan-Pilot
Jurisdiction	NDOT
East/West Street	Logan Lane-Pilot Road
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		222	4	37		7	4	10		54	563	25		24	193	179
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			286			8		15		59				26		
Capacity, c (veh/h)			201			160		595		1149				940		
v/c Ratio			1.42			0.05		0.03		0.05				0.03		
95% Queue Length, Q ₉₅ (veh)			17.0			0.1		0.1		0.2				0.1		
Control Delay (s/veh)			262.0			28.6		11.2		8.3				8.9		
Level of Service (LOS)			F			D		B		A				A		
Approach Delay (s/veh)	262.0				17.0				0.7				0.5			
Approach LOS	F				C											

HCS7 Two-Way Stop-Control Report

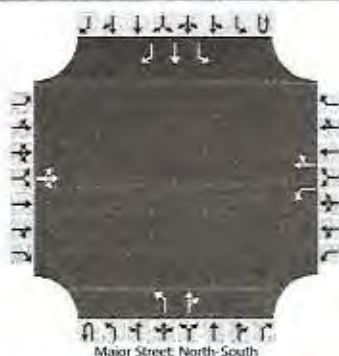
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Logan-Pilot
Jurisdiction	NDOT
East/West Street	Logan Lane-Pilot Road
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		235	4	99		32	7	18		74	441	13		20	639	241
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			367			35		27		80				22		
Capacity, c (veh/h)			112			59		306		715				1065		
v/c Ratio			3.27			0.59		0.09		0.11				0.02		
95% Queue Length, Q ₉₅ (veh)			35.7			2.4		0.3		0.4				0.1		
Control Delay (s/veh)			1103.9			131.4		17.9		10.7				8.5		
Level of Service (LOS)			F			F		C		B				A		
Approach Delay (s/veh)	1103.9				81.6				1.5				0.2			
Approach LOS	F				F											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/Logan-Pilot
Jurisdiction	NDOT
East/West Street	Logan Lane-Pilot Road
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		222	4	38		8	4	10		56	629	26		24	249	179
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			287			9		15		61				26		
Capacity, c (veh/h)			160			127		489		1091				883		
v/c Ratio			1.79			0.07		0.03		0.06				0.03		
95% Queue Length, Q ₉₅ (veh)			21.0			0.2		0.1		0.2				0.1		
Control Delay (s/veh)			429.0			35.5		12.6		8.5				9.2		
Level of Service (LOS)			F			E		B		A				A		
Approach Delay (s/veh)	429.0				20.9				0.7				0.5			
Approach LOS	F				C											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/Logan-Pilot
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	Logan Lane-Pilot Road
Analysis Year	2041	North/South Street	Main Street
Time Analyzed	PM Base + Project	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Site Information

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	1	0		1	1	0	0	1	1	0	0	1	1	1
Configuration			LTR			L		TR		L		TR		L	T	R
Volume (veh/h)		235	4	101		33	7	18		75	510	14		20	725	241
Percent Heavy Vehicles (%)		25	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type Storage					Undivided											

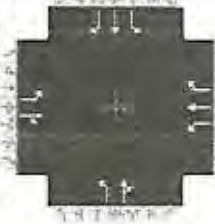
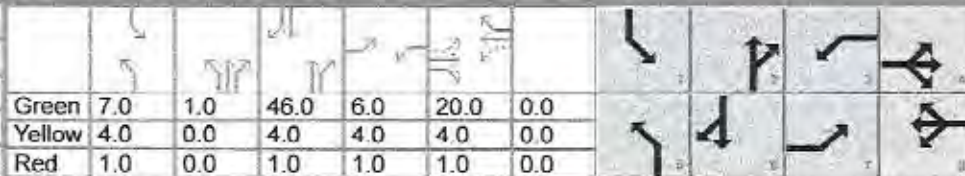
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.35	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.73	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			370			36		27		82				22		
Capacity, c (veh/h)			83			42		237		659				998		
v/c Ratio			4.44			0.86		0.11		0.12				0.02		
95% Queue Length, Q ₉₅ (veh)			39.3			3.3		0.4		0.4				0.1		
Control Delay (s/veh)			1650.5			246.9		22.2		11.2				8.7		
Level of Service (LOS)			F			F		C		B				A		
Approach Delay (s/veh)	1650.5				150.0				1.4				0.2			
Approach LOS	F				F											

HCS7 Signalized Intersection Results Summary

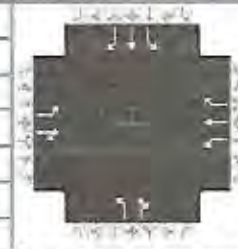
General Information						Intersection Information																
Agency		Solaegui Engineers				Duration, h		0.250														
Analyst		MSH		Analysis Date		May 20, 2021		Area Type		Other												
Jurisdiction		NDOT		Time Period		AM Peak Hour		PHF		0.92												
Urban Street				Analysis Year		Existing + Project		Analysis Period		1> 7:00												
Intersection		Main & Logan-Pilot		File Name		MaLo21aw.xus																
Project Description																						
Demand Information						EB			WB			NB			SB							
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R					
Demand (v), veh/h						169	3	29	6	4	8	43	494	20	18	203	136					
Signal Information																						
Cycle, s	100.0	Reference Phase	2																			
Offset, s	0	Reference Point	End																			
Uncoordinated	Yes	Simult. Gap E/W	On	Green	7.0													1.0	46.0	6.0	20.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0													0.0	4.0	4.0	4.0	0.0
				Red	1.0	0.0	1.0	1.0	1.0	0.0												
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT									
Assigned Phase						7	4	3	8	5	2	1	6									
Case Number						1.1	4.0	1.1	3.0	2.0	4.0	2.0	3.0									
Phase Duration, s						11.0	25.0	11.0	25.0	13.0	52.0	12.0	51.0									
Change Period, (Y+R c), s						5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0									
Max Allow Headway (MAH), s						3.1	3.3	3.1	3.3	3.1	3.1	3.1	3.1									
Queue Clearance Time (g s), s						8.0	3.5	2.3	2.4	4.5	25.1	3.0	9.3									
Green Extension Time (g e), s						0.0	0.0	0.0	0.0	0.0	1.8	0.0	1.5									
Phase Call Probability						1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
Max Out Probability						1.00	0.00	0.20	0.00	0.53	0.00	0.17	0.06									
Movement Group Results						EB			WB			NB			SB							
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R					
Assigned Movement						7	4	14	3	8	18	5	2	12	1	6	16					
Adjusted Flow Rate (v), veh/h						184	29		7	4	9	47	559		20	221	126					
Adjusted Saturation Flow Rate (s), veh/h/ln						1457	1600		1767	1856	1572	1767	1843		1767	1856	1296					
Queue Service Time (g s), s						6.0	1.5		0.3	0.2	0.4	2.5	23.1		1.0	7.3	5.8					
Cycle Queue Clearance Time (g c), s						6.0	1.5		0.3	0.2	0.4	2.5	23.1		1.0	7.3	5.8					
Green Ratio (g/C)						0.26	0.20		0.26	0.20	0.20	0.08	0.47		0.07	0.46	0.46					
Capacity (c), veh/h						365	320		404	371	314	141	866		124	854	596					
Volume-to-Capacity Ratio (X)						0.503	0.092		0.016	0.012	0.028	0.331	0.645		0.158	0.259	0.211					
Back of Queue (Q), ft/ln (95 th percentile)						79	26.5		5.3	3.9	7.7	50.5	376.1		21.1	137.9	90.2					
Back of Queue (Q), veh/ln (95 th percentile)						2.6	1.0		0.2	0.2	0.3	2.0	14.7		0.8	5.4	3.0					
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00					
Uniform Delay (d 1), s/veh						32.4	32.6		27.5	32.1	32.2	43.5	20.2		43.7	16.5	16.2					
Incremental Delay (d 2), s/veh						0.4	0.0		0.0	0.0	0.0	0.5	1.3		0.2	0.1	0.1					
Initial Queue Delay (d 3), s/veh						0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0					
Control Delay (d), s/veh						32.9	32.6		27.5	32.1	32.2	44.0	21.5		43.9	16.6	16.2					
Level of Service (LOS)						C	C		C	C	C	D	C		D	B	B					
Approach Delay, s/veh / LOS						32.8		C	30.6		C	23.2		C	17.9		B					
Intersection Delay, s/veh / LOS						23.4						C										
Multimodal Results						EB			WB			NB			SB							
Pedestrian LOS Score / LOS						1.94		B	2.16		B	2.09		B	1.91		B					
Bicycle LOS Score / LOS						0.84		A	0.52		A	1.49		A	1.09		A					

HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers			Duration, h	0.250
Analyst	MSH	Analysis Date	May 20, 2021	Area Type	Other
Jurisdiction	NDOT	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Main & Logan-Pilot	File Name	MaLo21pw.xus		
Project Description					

Intersection Information



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	179	3	77	25	5	14	57	404	11	15	573	183

Signal Information

Cycle, s	100.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	7.0	1.0	46.0	6.0	20.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0		
				Red	1.0	0.0	1.0	1.0	1.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	3.0	2.0	4.0	2.0	3.0
Phase Duration, s	11.0	25.0	11.0	25.0	13.0	52.0	12.0	51.0
Change Period, (Y+R _c), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s	3.1	3.3	3.1	3.3	3.1	3.1	3.1	3.1
Queue Clearance Time (g _s), s	8.0	5.4	3.2	2.8	5.3	19.1	2.9	29.3
Green Extension Time (g _e), s	0.0	0.1	0.0	0.1	0.0	2.5	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.00	1.00	0.00	1.00	0.00	0.11	1.00

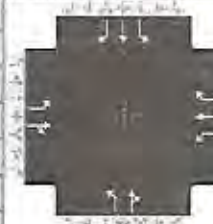
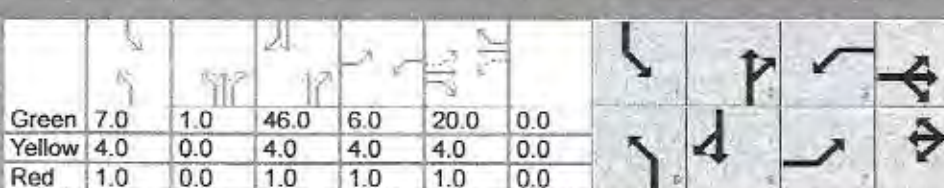
Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h	195	65		27	5	15	62	451		16	623	145
Adjusted Saturation Flow Rate (s), veh/h/ln	1457	1585		1767	1856	1572	1767	1847		1767	1856	1296
Queue Service Time (g _s), s	6.0	3.4		1.2	0.2	0.8	3.3	17.1		0.9	27.3	6.8
Cycle Queue Clearance Time (g _c), s	6.0	3.4		1.2	0.2	0.8	3.3	17.1		0.9	27.3	6.8
Green Ratio (g/C)	0.26	0.20		0.26	0.20	0.20	0.08	0.47		0.07	0.46	0.46
Capacity (c), veh/h	364	317		371	371	314	141	868		124	854	596
Volume-to-Capacity Ratio (X)	0.534	0.206		0.073	0.015	0.048	0.438	0.520		0.132	0.730	0.242
Back of Queue (Q), ft/ln (95 th percentile)	96.3	60.3		22.3	4.8	13.6	67.8	290		17.5	447	105
Back of Queue (Q), veh/ln (95 th percentile)	3.2	2.4		0.9	0.2	0.5	2.6	11.3		0.7	17.5	3.5
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	32.9	33.4		28.0	32.1	32.3	43.9	18.6		43.6	21.9	16.4
Incremental Delay (d ₂), s/veh	0.8	0.1		0.0	0.0	0.0	0.8	0.3		0.2	2.8	0.1
Initial Queue Delay (d ₃), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	33.7	33.5		28.0	32.1	32.3	44.7	18.8		43.8	24.7	16.5
Level of Service (LOS)	C	C		C	C	C	D	B		D	C	B
Approach Delay, s/veh / LOS	33.6	C		29.8	C		22.0	C		23.6	C	
Intersection Delay, s/veh / LOS	24.9						C					

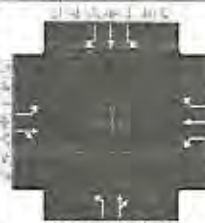
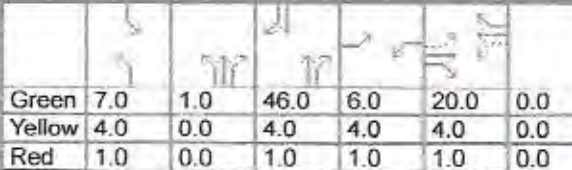
Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	1.94	B		2.20	B		2.09	B		1.93	B	
Bicycle LOS Score / LOS	0.92	A		0.57	A		1.33	A		1.78	B	

HCS7 Signalized Intersection Results Summary

General Information						Intersection Information															
Agency		Solaegui Engineers				Duration, h		0.250													
Analyst		MSH		Analysis Date		May 20, 2021		Area Type		Other											
Jurisdiction		NDOT		Time Period		AM Peak Hour		PHF		0.92											
Urban Street				Analysis Year		2041 Base		Analysis Period		1> 7:00											
Intersection		Main & Logan-Pilot		File Name		MaLo41ax.xus															
Project Description																					
Demand Information						EB			WB			NB			SB						
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h						222	4	37	7	4	10	54	563	25	24	193	179				
Signal Information																					
Cycle, s	100.0	Reference Phase	2																		
Offset, s	0	Reference Point	End																		
Uncoordinated	Yes	Simult. Gap E/W	On																		
Force Mode	Fixed	Simult. Gap N/S	On																		
						Green	7.0	1.0	46.0	6.0	20.0	0.0									
						Yellow	4.0	0.0	4.0	4.0	4.0	0.0									
						Red	1.0	0.0	1.0	1.0	1.0	0.0									
Timer Results						EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						7		4		3		8		5		2		1		6	
Case Number						1.1		4.0		1.1		3.0		2.0		4.0		2.0		3.0	
Phase Duration, s						11.0		25.0		11.0		25.0		13.0		52.0		12.0		51.0	
Change Period, (Y+R _c), s						5.0		5.0		5.0		5.0		5.0		5.0		5.0		5.0	
Max Allow Headway (MAH), s						3.1		3.3		3.1		3.3		3.1		3.1		3.1		3.1	
Queue Clearance Time (g _s), s						8.0		3.7		2.3		2.6		5.2		30.2		3.4		8.9	
Green Extension Time (g _e), s						0.0		0.1		0.0		0.1		0.0		1.9		0.0		1.8	
Phase Call Probability						1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Max Out Probability						1.00		0.00		0.24		0.00		1.00		0.01		0.38		0.06	
Movement Group Results						EB			WB			NB			SB						
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement						7	4	14	3	8	18	5	2	12	1	6	16				
Adjusted Flow Rate (v), veh/h						241	34		8	4	11	59	639		26	210	140				
Adjusted Saturation Flow Rate (s), veh/h/ln						1457	1604		1767	1856	1572	1767	1841		1767	1856	1296				
Queue Service Time (g _s), s						6.0	1.7		0.3	0.2	0.6	3.2	28.2		1.4	6.9	6.6				
Cycle Queue Clearance Time (g _c), s						6.0	1.7		0.3	0.2	0.6	3.2	28.2		1.4	6.9	6.6				
Green Ratio (g/C)						0.26	0.20		0.26	0.20	0.20	0.08	0.47		0.07	0.46	0.46				
Capacity (c), veh/h						365	321		400	371	314	141	865		124	854	596				
Volume-to-Capacity Ratio (X)						0.661	0.105		0.019	0.012	0.035	0.415	0.738		0.211	0.246	0.235				
Back of Queue (Q), ft/ln (95 th percentile)						178.2	30.5		6.2	3.9	9.7	64	455.1		28.2	130.3	101.4				
Back of Queue (Q), veh/ln (95 th percentile)						5.9	1.2		0.2	0.2	0.4	2.5	17.8		1.1	5.1	3.4				
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00				
Uniform Delay (d ₁), s/veh						34.7	32.7		27.6	32.1	32.2	43.8	21.5		43.9	16.4	16.3				
Incremental Delay (d ₂), s/veh						3.5	0.1		0.0	0.0	0.0	0.7	3.0		0.3	0.1	0.1				
Initial Queue Delay (d ₃), s/veh						0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0				
Control Delay (d), s/veh						38.2	32.7		27.6	32.1	32.2	44.5	24.5		44.2	16.5	16.4				
Level of Service (LOS)						D	C		C	C	C	D	C		D	B	B				
Approach Delay, s/veh / LOS						37.6		D	30.7		C	26.2		C	18.4		B				
Intersection Delay, s/veh / LOS						26.4						C									
Multimodal Results						EB			WB			NB			SB						
Pedestrian LOS Score / LOS						1.94		B	2.20		B	2.09		B	1.92		B				
Bicycle LOS Score / LOS						0.94		A	0.53		A	1.64		B	1.11		A				

HCS7 Signalized Intersection Results Summary

General Information						Intersection Information																
Agency		Solaegui Engineers				Duration, h		0.250														
Analyst		MSH		Analysis Date		May 20, 2021		Area Type		Other												
Jurisdiction		NDOT		Time Period		PM Peak Hour		PHF		0.92												
Urban Street				Analysis Year		2041 Base		Analysis Period		1> 7:00												
Intersection		Main & Logan-Pilot		File Name		MaLo41px.xus																
Project Description																						
Demand Information						EB			WB			NB			SB							
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R					
Demand (v), veh/h						235	4	99	32	7	18	74	441	13	20	639	241					
Signal Information																						
Cycle, s	100.0	Reference Phase	2																			
Offset, s	0	Reference Point	End																			
Uncoordinated	Yes	Simult. Gap E/W	On	Green	7.0													1.0	46.0	6.0	20.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0													0.0	4.0	4.0	4.0	0.0
				Red	1.0	0.0	1.0	1.0	1.0	0.0												
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT									
Assigned Phase						7	4	3	8	5	2	1	6									
Case Number						1.1	4.0	1.1	3.0	2.0	4.0	2.0	3.0									
Phase Duration, s						11.0	25.0	11.0	25.0	13.0	52.0	12.0	51.0									
Change Period, (Y+R), s						5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0									
Max Allow Headway (MAH), s						3.1	3.3	3.1	3.3	3.1	3.1	3.1	3.1									
Queue Clearance Time (g s), s						8.0	6.8	3.5	3.0	6.4	21.3	3.2	34.3									
Green Extension Time (g e), s						0.0	0.2	0.0	0.2	0.0	3.0	0.0	0.0									
Phase Call Probability						1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
Max Out Probability						1.00	0.00	1.00	0.00	1.00	0.01	0.22	1.00									
Movement Group Results						EB			WB			NB			SB							
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R					
Assigned Movement						7	4	14	3	8	18	5	2	12	1	6	16					
Adjusted Flow Rate (v), veh/h						255	90		35	8	20	80	493		22	695	208					
Adjusted Saturation Flow Rate (s), veh/h/ln						1457	1584		1767	1856	1572	1767	1846		1767	1856	1296					
Queue Service Time (g s), s						6.0	4.8		1.5	0.3	1.0	4.4	19.3		1.2	32.3	10.3					
Cycle Queue Clearance Time (g c), s						6.0	4.8		1.5	0.3	1.0	4.4	19.3		1.2	32.3	10.3					
Green Ratio (g/C)						0.26	0.20		0.26	0.20	0.20	0.08	0.47		0.07	0.46	0.46					
Capacity (c), veh/h						363	317		349	371	314	141	868		124	854	596					
Volume-to-Capacity Ratio (X)						0.704	0.285		0.100	0.021	0.062	0.569	0.569		0.176	0.814	0.348					
Back of Queue (Q), ft/ln (95 th percentile)						210.1	84.9		28.7	6.8	17.6	93.3	321.9		23.4	533	159.7					
Back of Queue (Q), veh/ln (95 th percentile)						7.0	3.3		1.1	0.3	0.7	3.6	12.6		0.9	20.8	5.3					
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00					
Uniform Delay (d 1), s/veh						35.4	33.9		28.2	32.1	32.4	44.3	19.2		43.8	23.3	17.4					
Incremental Delay (d 2), s/veh						5.2	0.2		0.0	0.0	0.0	3.4	0.6		0.2	5.7	0.1					
Initial Queue Delay (d 3), s/veh						0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0					
Control Delay (d), s/veh						40.5	34.1		28.2	32.1	32.4	47.8	19.7		44.0	29.0	17.5					
Level of Service (LOS)						D	C		C	C	C	D	B		D	C	B					
Approach Delay, s/veh / LOS						38.9		D	30.0		C	23.7		C	26.8		C					
Intersection Delay, s/veh / LOS						28.1						C										
Multimodal Results						EB			WB			NB			SB							
Pedestrian LOS Score / LOS						1.94		B	2.20		B	2.09		B	1.93		B					
Bicycle LOS Score / LOS						1.06		A	0.59		A	1.43		A	2.01		B					

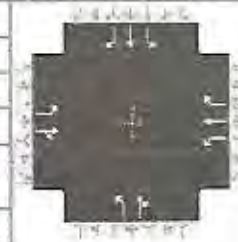
HCS7 Signalized Intersection Results Summary

General Information

Agency	Solaegui Engineers
Analyst	MSH
Jurisdiction	NDOT
Urban Street	
Intersection	Main & Logan-Pilot
Project Description	

Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.92
Analysis Year	2041 Base + Project
Analysis Period	1> 7:00
File Name	MaLo41aw.xus



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	222	4	38	8	4	10	56	629	26	24	249	179

Signal Information

Cycle, s	100.0	Reference Phase	2			
Offset, s	0	Reference Point	End			
Uncoordinated	Yes	Simult. Gap E/W	On			
Force Mode	Fixed	Simult. Gap N/S	On			
Green	7.0	1.0	46.0	6.0	20.0	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	1.0	0.0	1.0	1.0	1.0	0.0

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	3.0	2.0	4.0	2.0	3.0
Phase Duration, s	11.0	25.0	11.0	25.0	13.0	52.0	12.0	51.0
Change Period, (Y+R _c), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s	3.1	3.3	3.1	3.3	3.1	3.1	3.1	3.1
Queue Clearance Time (g _s), s	8.0	3.8	2.4	2.6	5.3	35.4	3.4	11.2
Green Extension Time (g _e), s	0.0	0.1	0.0	0.1	0.0	2.1	0.0	1.9
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.00	0.27	0.00	1.00	0.08	0.38	0.18

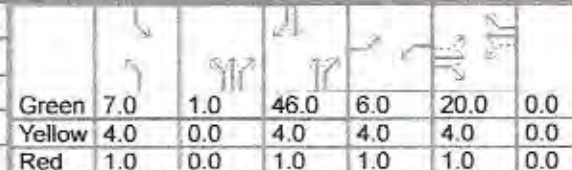
Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h	241	35		9	4	11	61	712		26	271	140
Adjusted Saturation Flow Rate (s), veh/h/ln	1457	1603		1767	1856	1572	1767	1842		1767	1856	1296
Queue Service Time (g _s), s	6.0	1.8		0.4	0.2	0.6	3.3	33.4		1.4	9.2	6.6
Cycle Queue Clearance Time (g _c), s	6.0	1.8		0.4	0.2	0.6	3.3	33.4		1.4	9.2	6.6
Green Ratio (g/C)	0.26	0.20		0.26	0.20	0.20	0.08	0.47		0.07	0.46	0.46
Capacity (c), veh/h	365	321		399	371	314	141	866		124	854	596
Volume-to-Capacity Ratio (X)	0.661	0.108		0.022	0.012	0.035	0.431	0.822		0.211	0.317	0.235
Back of Queue (Q), ft/ln (95 th percentile)	178.2	31.5		7.1	3.9	9.7	66.5	544		28.2	174.8	101.4
Back of Queue (Q), veh/ln (95 th percentile)	5.9	1.2		0.3	0.2	0.4	2.6	21.2		1.1	6.8	3.4
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	34.7	32.7		27.6	32.1	32.2	43.8	22.9		43.9	17.1	16.3
Incremental Delay (d ₂), s/veh	3.5	0.1		0.0	0.0	0.0	0.8	6.0		0.3	0.1	0.1
Initial Queue Delay (d ₃), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	38.2	32.8		27.6	32.1	32.2	44.6	28.9		44.2	17.1	16.4
Level of Service (LOS)	D	C		C	C	C	D	C		D	B	B
Approach Delay, s/veh / LOS	37.5		D	30.5		C	30.1		C	18.5		B
Intersection Delay, s/veh / LOS	28.1						C					

Multimodal Results

	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	1.94		B	2.20		B	2.09		B	1.92		B
Bicycle LOS Score / LOS	0.94		A	0.53		A	1.76		B	1.21		A

HCS7 Signalized Intersection Results Summary

General Information						Intersection Information											
Agency	Solaegui Engineers					Duration, h	0.250										
Analyst	MSH		Analysis Date	May 20, 2021		Area Type	Other										
Jurisdiction	NDOT		Time Period	PM Peak Hour		PHF	0.92										
Urban Street			Analysis Year	2041 Base + Project		Analysis Period	1> 7:00										
Intersection	Mainn & Logan-Pilot		File Name	MaLo41pw.xus													
Project Description																	
Demand Information						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h						235	4	101	33	7	18	75	510	14	20	725	241
Signal Information																	
Cycle, s	100.0	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On														
				Green	7.0	1.0	46.0	6.0	20.0	0.0							
				Yellow	4.0	0.0	4.0	4.0	4.0	0.0							
				Red	1.0	0.0	1.0	1.0	1.0	0.0							
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						7	4	3	8	5	2	1	6				
Case Number						1.1	4.0	1.1	3.0	2.0	4.0	2.0	3.0				
Phase Duration, s						11.0	25.0	11.0	25.0	13.0	52.0	12.0	51.0				
Change Period, (Y+R c), s						5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Allow Headway (MAH), s						3.1	3.3	3.1	3.3	3.1	3.1	3.1	3.1				
Queue Clearance Time (g s), s						8.0	7.0	3.5	3.0	6.4	25.6	3.2	41.9				
Green Extension Time (g e), s						0.0	0.2	0.0	0.2	0.0	3.5	0.0	0.0				
Phase Call Probability						1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Max Out Probability						1.00	0.00	1.00	0.00	1.00	0.03	0.22	1.00				
Movement Group Results						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement						7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h						255	92		36	8	20	82	570		22	788	208
Adjusted Saturation Flow Rate (s), veh/h/ln						1457	1584		1767	1856	1572	1767	1847		1767	1856	1296
Queue Service Time (g s), s						6.0	5.0		1.5	0.3	1.0	4.4	23.6		1.2	39.9	10.3
Cycle Queue Clearance Time (g c), s						6.0	5.0		1.5	0.3	1.0	4.4	23.6		1.2	39.9	10.3
Green Ratio (g/C)						0.26	0.20		0.26	0.20	0.20	0.08	0.47		0.07	0.46	0.46
Capacity (c), veh/h						363	317		347	371	314	141	868		124	854	596
Volume-to-Capacity Ratio (X)						0.704	0.292		0.103	0.021	0.062	0.577	0.656		0.176	0.923	0.348
Back of Queue (Q), ft/ln (95 th percentile)						210.1	87.1		29.6	6.8	17.6	95.2	385.7		23.4	696.7	159.7
Back of Queue (Q), veh/ln (95 th percentile)						7.0	3.4		1.2	0.3	0.7	3.7	15.1		0.9	27.2	5.3
Queue Storage Ratio (RQ) (95 th percentile)						0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d 1), s/veh						35.4	34.0		28.2	32.1	32.4	44.4	20.3		43.8	25.3	17.4
Incremental Delay (d 2), s/veh						5.2	0.2		0.0	0.0	0.0	3.8	1.4		0.2	15.2	0.1
Initial Queue Delay (d 3), s/veh						0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh						40.5	34.2		28.2	32.1	32.4	48.1	21.8		44.0	40.5	17.5
Level of Service (LOS)						D	C		C	C	C	D	C		D	D	B
Approach Delay, s/veh / LOS						38.8		D	30.0		C	25.1		C	35.9		D
Intersection Delay, s/veh / LOS						32.8						C					
Multimodal Results						EB			WB			NB			SB		
Pedestrian LOS Score / LOS						1.94		B	2.20		B	2.09		B	1.93		B
Bicycle LOS Score / LOS						1.06		A	0.59		A	1.56		B	2.17		B

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MSH	Intersection	Main/I-80 EB On
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	EB On-Ramp
Analysis Year	2021	North/South Street	Main Street
Time Analyzed	AM Existing	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											493	112		142	301	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)															4.1	
Critical Headway (sec)															4.60	
Base Follow-Up Headway (sec)															2.2	
Follow-Up Headway (sec)															2.45	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)															154	
Capacity, c (veh/h)															884	
v/c Ratio															0.17	
95% Queue Length, Q ₉₅ (veh)															0.6	
Control Delay (s/veh)															9.9	
Level of Service (LOS)															A	
Approach Delay (s/veh)															3.2	
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB On
Jurisdiction	NDOT
East/West Street	EB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											317	211		120	685	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.60		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.45		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														130		
Capacity, c (veh/h)														1061		
v/c Ratio														0.12		
95% Queue Length, Q ₉₅ (veh)														0.4		
Control Delay (s/veh)														8.9		
Level of Service (LOS)														A		
Approach Delay (s/veh)														1.3		
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MSH	Intersection	Main/I-80 EB On
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	EB On-Ramp
Analysis Year	2021	North/South Street	Main Street
Time Analyzed	AM Existing + Project	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											545	126		142	357	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.60		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.45		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														154		
Capacity, c (veh/h)														838		
v/c Ratio														0.18		
95% Queue Length, Q ₉₅ (veh)														0.7		
Control Delay (s/veh)														10.3		
Level of Service (LOS)														B		
Approach Delay (s/veh)														2.9		
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB On
Jurisdiction	NDOT
East/West Street	EB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	0	0		0	0	0		0	1	1		1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											368	229		120	771	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.60		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.45		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														130		
Capacity, c (veh/h)														1007		
v/c Ratio														0.13		
95% Queue Length, Q ₉₅ (veh)														0.4		
Control Delay (s/veh)														9.1		
Level of Service (LOS)														A		
Approach Delay (s/veh)														1.2		
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/1-80 EB On
Jurisdiction	NDOT
East/West Street	EB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											648	147		187	396	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.60		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.45		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														203		
Capacity, c (veh/h)														752		
v/c Ratio														0.27		
95% Queue Length, Q ₉₅ (veh)														1.1		
Control Delay (s/veh)														11.6		
Level of Service (LOS)														B		
Approach Delay (s/veh)														3.7		
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB On
Jurisdiction	NDOT
East/West Street	EB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											417	277		158	900	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)																4.1
Critical Headway (sec)																4.60
Base Follow-Up Headway (sec)																2.2
Follow-Up Headway (sec)																2.45

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																172
Capacity, c (veh/h)																957
v/c Ratio																0.18
95% Queue Length, Q ₉₅ (veh)																0.7
Control Delay (s/veh)																9.6
Level of Service (LOS)																A
Approach Delay (s/veh)																1.4
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB On
Jurisdiction	NDOT
East/West Street	EB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											700	161		187	452	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)															4.1		
Critical Headway (sec)															4.60		
Base Follow-Up Headway (sec)															2.2		
Follow-Up Headway (sec)															2.45		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)															203		
Capacity, c (veh/h)															712		
v/c Ratio															0.29		
95% Queue Length, Q ₉₅ (veh)															1.2		
Control Delay (s/veh)															12.1		
Level of Service (LOS)															B		
Approach Delay (s/veh)															3.5		
Approach LOS																	

HCS7 Two-Way Stop-Control Report

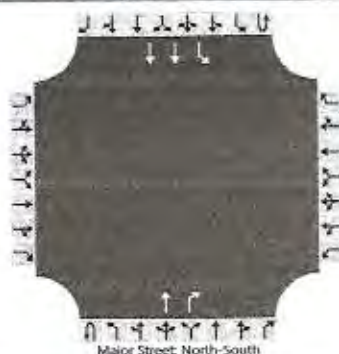
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB On
Jurisdiction	NDOT
East/West Street	EB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	1	0	1	2	0
Configuration											T	R		L	T	
Volume (veh/h)											468	295		158	986	
Percent Heavy Vehicles (%)														25		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized											Yes					
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.60		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.45		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														172		
Capacity, c (veh/h)														908		
v/c Ratio														0.19		
95% Queue Length, Q ₉₅ (veh)														0.7		
Control Delay (s/veh)														9.9		
Level of Service (LOS)														A		
Approach Delay (s/veh)														1.4		
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		40									247				165	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43																
Capacity, c (veh/h)		528																
v/c Ratio		0.08																
95% Queue Length, Q ₉₅ (veh)		0.3																
Control Delay (s/veh)		12.4																
Level of Service (LOS)		B																
Approach Delay (s/veh)	12.4																	
Approach LOS	B																	

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		68									159				223	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		74														
Capacity, c (veh/h)		552														
v/c Ratio		0.13														
95% Queue Length, Q ₉₅ (veh)		0.5														
Control Delay (s/veh)		12.5														
Level of Service (LOS)		B														
Approach Delay (s/veh)	12.5															
Approach LOS	B															

HCS7 Two-Way Stop-Control Report

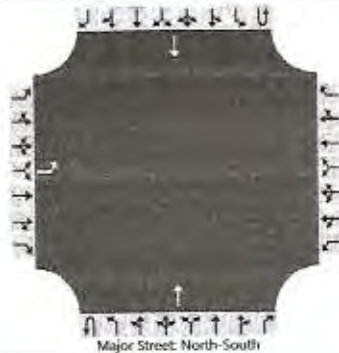
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		40									273				193	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43														
Capacity, c (veh/h)		487														
v/c Ratio		0.09														
95% Queue Length, Q ₉₅ (veh)		0.3														
Control Delay (s/veh)		13.1														
Level of Service (LOS)		B														
Approach Delay (s/veh)		13.1														
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		68									184				260	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		74														
Capacity, c (veh/h)		503														
v/c Ratio		0.15														
95% Queue Length, Q ₉₅ (veh)		0.5														
Control Delay (s/veh)		13.4														
Level of Service (LOS)		B														
Approach Delay (s/veh)		13.4														
Approach LOS		B														

HC57 Two-Way Stop-Control Report

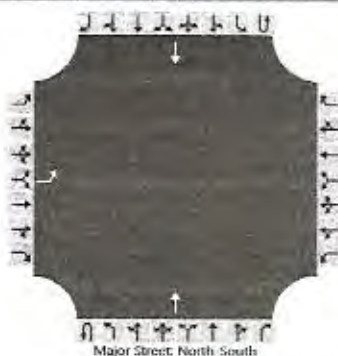
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		53									324				217	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		58														
Capacity, c (veh/h)		435														
v/c Ratio		0.13														
95% Queue Length, Q ₉₅ (veh)		0.5														
Control Delay (s/veh)		14.5														
Level of Service (LOS)		B														
Approach Delay (s/veh)		14.5														
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

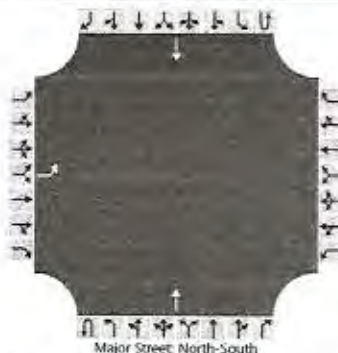
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		89									209				293	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		97															
Capacity, c (veh/h)		462															
v/c Ratio		0.21															
95% Queue Length, Q ₉₅ (veh)		0.8															
Control Delay (s/veh)		14.9															
Level of Service (LOS)		B															
Approach Delay (s/veh)		14.9															
Approach LOS		B															

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		53									350				245	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		58														
Capacity, c (veh/h)		401														
v/c Ratio		0.14														
95% Queue Length, Q ₉₅ (veh)		0.5														
Control Delay (s/veh)		15.5														
Level of Service (LOS)		C														
Approach Delay (s/veh)		15.5														
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 EB Off
Jurisdiction	NDOT
East/West Street	EB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration		L									T				T	
Volume (veh/h)		89									234				330	
Percent Heavy Vehicles (%)		25														
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1														
Critical Headway (sec)		6.65														
Base Follow-Up Headway (sec)		3.5														
Follow-Up Headway (sec)		3.73														

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		97														
Capacity, c (veh/h)		421														
v/c Ratio		0.23														
95% Queue Length, Q ₉₅ (veh)		0.9														
Control Delay (s/veh)		16.1														
Level of Service (LOS)		C														
Approach Delay (s/veh)		16.1														
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										386	147				165	79
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage								Undivided								

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										420						
Capacity, c (veh/h)										1144						
v/c Ratio										0.37						
95% Queue Length, Q ₉₅ (veh)										1.7						
Control Delay (s/veh)										10.0						
Level of Service (LOS)										A						
Approach Delay (s/veh)										7.2						
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										233	152				223	67
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										253						
Capacity, c (veh/h)										1091						
v/c Ratio										0.23						
95% Queue Length, Q ₉₅ (veh)										0.9						
Control Delay (s/veh)										9.3						
Level of Service (LOS)										A						
Approach Delay (s/veh)										5.6						
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										425	160				193	79
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										462						
Capacity, c (veh/h)										1112						
v/c Ratio										0.42						
95% Queue Length, Q ₉₅ (veh)										2.1						
Control Delay (s/veh)										10.5						
Level of Service (LOS)										B						
Approach Delay (s/veh)										7.6						
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										248	167				260	67
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										270						
Capacity, c (veh/h)										1050						
v/c Ratio										0.26						
95% Queue Length, Q ₉₅ (veh)										1.0						
Control Delay (s/veh)										9.6						
Level of Service (LOS)										A						
Approach Delay (s/veh)										5.7						
Approach LOS																

HCS7 Two-Way Stop-Control Report

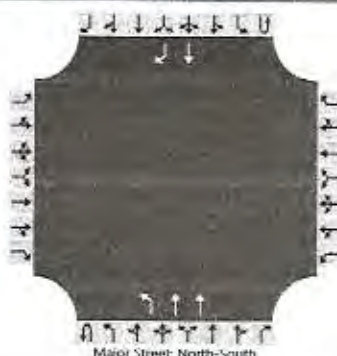
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										508	193				217	104
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										552						
Capacity, c (veh/h)										1057						
v/c Ratio										0.52						
95% Queue Length, Q ₉₅ (veh)										3.1						
Control Delay (s/veh)										12.1						
Level of Service (LOS)										B						
Approach Delay (s/veh)									8.7							
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes	0	0	0		0	0	0		0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										306	200				293	88
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)									4.1							
Critical Headway (sec)									4.60							
Base Follow-Up Headway (sec)									2.2							
Follow-Up Headway (sec)									2.45							

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)									333							
Capacity, c (veh/h)									993							
v/c Ratio									0.33							
95% Queue Length, Q ₉₅ (veh)									1.5							
Control Delay (s/veh)									10.4							
Level of Service (LOS)									B							
Approach Delay (s/veh)									6.3							
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										547	206				245	104
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage								Undivided								

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										595						
Capacity, c (veh/h)										1027						
v/c Ratio										0.58						
95% Queue Length, Q ₉₅ (veh)										3.9						
Control Delay (s/veh)										13.2						
Level of Service (LOS)										B						
Approach Delay (s/veh)										9.6						
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB On
Jurisdiction	NDOT
East/West Street	WB On-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	0	0		0	0	0	0	1	2	0	0	0	1	1
Configuration										L	T				T	R
Volume (veh/h)										342	215				330	88
Percent Heavy Vehicles (%)										25						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized															No	
Median Type Storage								Undivided								

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.60						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.45						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										372						
Capacity, c (veh/h)										956						
v/c Ratio										0.39						
95% Queue Length, Q ₉₅ (veh)										1.9						
Control Delay (s/veh)										11.1						
Level of Service (LOS)										B						
Approach Delay (s/veh)										6.8						
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB Off
Jurisdiction	NDOT
East/West Street	WB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						81		119			147				163	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						217										
Capacity, c (veh/h)						1504										
v/c Ratio						0.14										
95% Queue Length, Q ₉₅ (veh)						0.5										
Control Delay (s/veh)						7.8										
Level of Service (LOS)						A										
Approach Delay (s/veh)						7.8										
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/I-80 WB Off
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	WB Off-Ramp
Analysis Year	2021	North/South Street	Main Street
Time Analyzed	PM Existing	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Site Information

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4	5	6	
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						71		128			152				219	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						216										
Capacity, c (veh/h)						1385										
v/c Ratio						0.16										
95% Queue Length, Q ₉₅ (veh)						0.6										
Control Delay (s/veh)						8.1										
Level of Service (LOS)						A										
Approach Delay (s/veh)					8.1											
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2021
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB Off
Jurisdiction	NDOT
East/West Street	WB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						97		119			160				175	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

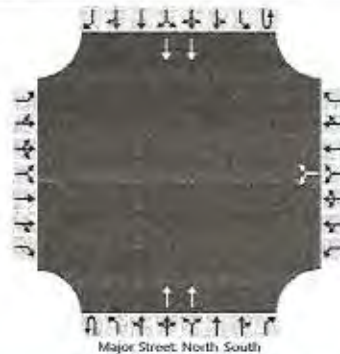
Flow Rate, v (veh/h)						235										
Capacity, c (veh/h)						1421										
v/c Ratio						0.17										
95% Queue Length, Q ₉₅ (veh)						0.6										
Control Delay (s/veh)						8.0										
Level of Service (LOS)						A										
Approach Delay (s/veh)						8.0										
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/I-80 WB Off
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	WB Off-Ramp
Analysis Year	2021	North/South Street	Main Street
Time Analyzed	PM Existing + Project	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						91		128			167				236	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						238										
Capacity, c (veh/h)						1442										
v/c Ratio						0.17										
95% Queue Length, Q ₉₅ (veh)						0.6										
Control Delay (s/veh)						8.0										
Level of Service (LOS)						A										
Approach Delay (s/veh)						8.0										
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB Off
Jurisdiction	NDOT
East/West Street	WB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						107		156			193				214	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						286										
Capacity, c (veh/h)						1437										
v/c Ratio						0.20										
95% Queue Length, Q ₉₅ (veh)						0.7										
Control Delay (s/veh)						8.1										
Level of Service (LOS)						A										
Approach Delay (s/veh)						8.1										
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB Off
Jurisdiction	NDOT
East/West Street	WB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						93		168			200				288	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						284										
Capacity, c (veh/h)						1019										
v/c Ratio						0.28										
95% Queue Length, Q ₉₅ (veh)						1.1										
Control Delay (s/veh)						9.9										
Level of Service (LOS)						A										
Approach Delay (s/veh)						9.9										
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH	Intersection	Main/I-80 WB Off
Agency/Co.	Solaegui Engineers	Jurisdiction	NDOT
Date Performed	5/19/2021	East/West Street	WB Off-Ramp
Analysis Year	2041	North/South Street	Main Street
Time Analyzed	AM Base + Project	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						123		156			206				226	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						303										
Capacity, c (veh/h)						1284										
v/c Ratio						0.24										
95% Queue Length, Q ₉₅ (veh)						0.9										
Control Delay (s/veh)						8.7										
Level of Service (LOS)						A										
Approach Delay (s/veh)					8.7											
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	5/19/2021
Analysis Year	2041
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main/I-80 WB Off
Jurisdiction	NDOT
East/West Street	WB Off-Ramp
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	40	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T				T	
Volume (veh/h)						113		168			215				305	
Percent Heavy Vehicles (%)						25		25								
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9								
Critical Headway (sec)						7.30		7.40								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.75		3.55								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						305										
Capacity, c (veh/h)						987										
v/c Ratio						0.31										
95% Queue Length, Q ₉₅ (veh)						1.3										
Control Delay (s/veh)						10.3										
Level of Service (LOS)						B										
Approach Delay (s/veh)					10.3											
Approach LOS					B											

Conditions of Approval for TSM22001

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 MAP.

2. PROJECT DESCRIPTION:

THE PROJECT APPROVAL IS LIMITED TO A MIXED USE RESIDENTIAL/COMMERCIAL DEVELOPMENT WITH A MAXIMUM OF 9 LOTS ON 28.42 ± ACRES.

3. EXPIRATION DATE:

THE TENTATIVE 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. 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.

7. 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. 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.

Conditions of Approval for TSM22001

Tentative Subdivision Map

8. 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.

9. DESIGN STANDARDS:

THE DEVELOPER SHALL COMPLY WITH THE DESIGN STANDARDS AND DEVELOPMENT 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.

10. 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.

11. LANDSCAPING/IRRIGATION:

THE DEVELOPER SHALL SUBMIT A LANDSCAPING AND IRRIGATION PLAN FOR THE PROJECT IN CONFORMANCE WITH TITLE 32 OF THE FERNLEY MUNICIPAL CODE FOR REVIEW AND APPROVAL BY THE ADMINISTRATOR PRIOR TO APPROVAL AND RECORDATION OF A FINAL MAP FOR EACH PHASE. THE LANDSCAPING AND IRRIGATION SHALL BE INSTALLED PER THE APPROVED PLANS TO THE APPROVAL OF THE ADMINISTRATOR.

12. STREETS:

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

13. 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.

Conditions of Approval for TSM22001

Tentative Subdivision Map

14. 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.

15. 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.

16. 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 APPROVAL AND RECORDATION OF THE FINAL MAP. THE UTILITIES AND INFRASTRUCTURE FOR EACH PHASE MUST OPERATE INDEPENDENTLY OF FUTURE PHASES YET TO BE CONSTRUCTED. 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.

17. NORTH LYON FIRE PROTECTION DISTRICT:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT, INCLUDING BUT NOT LIMITED TO PROVIDING SECONDARY EMERGENCY ACCESS TO THE APPROVAL OF THE ADMINISTRATOR AND FIRE CHIEF PRIOR TO THE ISSUANCE OF ANY FINAL MAP FOR THE PROJECT.

18. 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 RESIDENTIAL UNIT.

19. ADDRESSING AND STREET NAMES:

THE DEVELOPER SHALL SUBMIT A REQUEST FOR ADDRESSING AND STREET NAME RESERVATION TO THE CITY OF FERNLEY FOR REVIEW AND APPROVAL. ALL ADDRESSING OF LOTS SHALL BE COMPLETED BY THE CITY. STREET NAMES SHALL BE APPROVED BY THE CITY PRIOR TO THE SUBMITTAL OF A FINAL MAP FOR THE PROJECT.

Conditions of Approval for TSM22001

Tentative Subdivision Map

20. TRUCKEE CARSON IRRIGATION DISTRICT (TCID)/BUREAU OF RECLAMATION:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE TRUCKEE CARSON IRRIGATION DISTRICT AND/OR THE BUREAU OF RECLAMATION 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.

21. 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.

22. 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.

23. TRUCKEE LANE AND MAIN STREET INTERSECTION:

THE DEVELOPER SHALL SUBMIT A PROPOSED REDEVELOPMENT PLAN FOR THE TRUCKEE LANE EXTENSION/MAIN STREET INTERSECTION, TO THE APPROVAL OF THE CITY ENGINEER, ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND THE NEVADA DEPARTMENT OF TRANSPORTATION.

24. NEVADA DEPARTMENT OF TRANSPORTATION (NDOT):

THE DEVELOPER SHALL OBTAIN APPROVAL FROM THE NEVADA DEPARTMENT OF TRANSPORTATION PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THIS PROJECT. SHOULD NDOT NOT APPROVE OF THE ACCESS PLANS FROM MAIN STREET (SR-427), THE DEVELOPER SHALL PROVIDE THE APPROPRIATE EASEMENTS AND IMPROVEMENT PLANS AS MAY BE REQUIRED BY NDOT. AN ENCROACHMENT PERMIT SHALL ALSO BE OBTAINED FOR ANY WORK OR IMPROVMENTS BEING MADE TO S.R. 427 (MAIN STREET).

25. FINAL MAP PHASING:

IF APPLICABLE, EACH MAP 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.

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

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 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, LANDSCAPE MEDIANS, OR OTHER COMMON ELEMENTS TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: March 9, 2022

REPORT TO: Planning Commission

REPORT THRU: Tim Thompson, Planning Director

REPORT FROM: Tim Thompson, Planning Director

FINANCIAL IMPACT:	CURRENTLY BUDGETED:	FUND/ACCOUNT:
Yes: No: X	Yes: No: X	N/A

ACTION REQUESTED: Resolution
Motion

AGENDA ITEM: (For Possible Action):

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).

AGENDA ITEM BRIEF:

The proposed item accounts for a change in both the Land Use and Zoning of a single parcel of land generally located south of Interstate 80, north of the Union Pacific Railroad, and west of the current terminus of Pilot Road. The purpose of this is to develop an industrial project on the site.

RECOMMENDED MOTION:

Comprehensive Master Plan Amendment

Motion to Approve:

"I 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 Findings MP1 to MP3 and 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 deny Comprehensive Master Plan Amendment Resolution 22-009 associated with MPA22001, and forward a request of Certification to the City Council 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 Comprehensive Master Plan Amendment Findings: I am unable to make the Finding(s) _____ as it relates to _____. Therefore, I cannot approve the Comprehensive Master Plan Amendment."

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 ZMA22001, based on findings Z1 to Z3 and 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 deny the Zoning Map Amendment request associated with ZMA22001 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."

BUSINESS IMPACT (per NRS Chapter 237):

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, alternatives.

ALTERNATIVES:

BACKGROUND:

See Attached Staff Report for Background/Analysis/Alternatives

LEGAL IMPLICATIONS:

N/A

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. Planning Commission Staff Report - MPA22001 & ZMA22001
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Ex_Pro_LandUse Exhibit
4. Attachment 3 - Resolution 22-009
5. Attachment 4 - Ex_Pro_Zoning Exhibit

PROJECT SUMMARY

CASE NUMBER(S):	• MPA 22001 & ZMA 22001
REQUESTED ACTION(S):	• Master Plan Amendment and Zoning Map Amendment
PROJECT DESCRIPTION:	• A Master Plan Amendment request on a vacant parcel of land to convert the Land Use classification from Commercial to Industrial, and a Zoning Map Amendment request on the same parcel to change the zoning from C2 (General Commercial) to I (Industrial). The project site is generally located south of Interstate-80 East, north of the Union Pacific Railroad, and west of the terminus of Pilot Road. (APN: 021-061-32).
PROPERTY OWNER(s):	• Jeffrey M. Herman – 1000 Pilot Road LLC
APPLICANT:	• Tom Theobald – Mohr Capital
LOCATION:	• 1000 Pilot Road
SITE SIZE:	• ±27.83 acres
EXISTING ZONING:	• C2 – General Commercial
PROPOSED ZONING	• I – Industrial
EXISTING LAND USE:	• Commercial
PROPOSED LAND USE:	• Industrial
WARD INFORMATION:	• Ward 1 – Councilman Lacy

***A PUBLIC HEARING IS REQUIRED**

POLICY REFERENCE

Nevada Statutes: NRS 278

Fernley Municipal Code: Title 32

Policies & Procedure Manual: N/A

Community Assessment: N/A

<i>City of Fernley Development Code:</i>	<i>Section 32.03.040 – Comprehensive Master Plan/Zoning Map Amendments</i>
	<i>Section 32.06.110 – Industrial (I) Zoning Districts</i>
	<i>Section 32.09.035 – Dedication of Water Rights</i>
	<i>Section 32.09.140 – Streets (Roadways)</i>
	<i>Section 32.09.150 – Utilities</i>
	<i>Section 32.12.010 – Adequate Public Facilities Required</i>
	<i>Section 32.13.030 – Improvements, Security, & Inspections</i>

BACKGROUND

The project site has been under the ownership of 1000 Pilot Road LLC since December 2014, and has undergone various map adjustments throughout the years, most recently a Parcel Map in 2015. Additionally, the project site has recorded a Deed for Water Rights to be dedicated to the City of Fernley as of May, 2016. The project site has remained vacant throughout history, and as such, does not possess any public facilities such as water or sewer infrastructure at this time.

The project area is currently zoned C2 (General Commercial) and is approximately 27.83 acres in size. The project site consists of a single parcel of land, located at 1000 Pilot Road (APN: 021-061-32). The project area's surrounding land uses generally consist of Commercial and Industrial development, as well as vacant land. The properties directly east contain Commercial development and the properties directly north of the project site are slated for Industrial development. The project area is located within the City of Fernley's "Project Redevelopment Area #1", as stated within the City's Zoning map.

ANALYSIS

The applicant is seeking the approval of a Master Plan and Zoning Map Amendment on a parcel of land located at 1000 Pilot Road, to convert the existing land use classification from Commercial to Industrial and change the zoning of the parcel from C2 (General Commercial) to I (Industrial). The applicant aims to implement these changes in order to develop an Industrial building on the property, expected to be approximately 481,320 square feet in size. Should the Master Plan and Zoning Map amendment be approved, any development on the site would require the approval of an Administrative Review or Conditional Use Permit, depending on the Use.

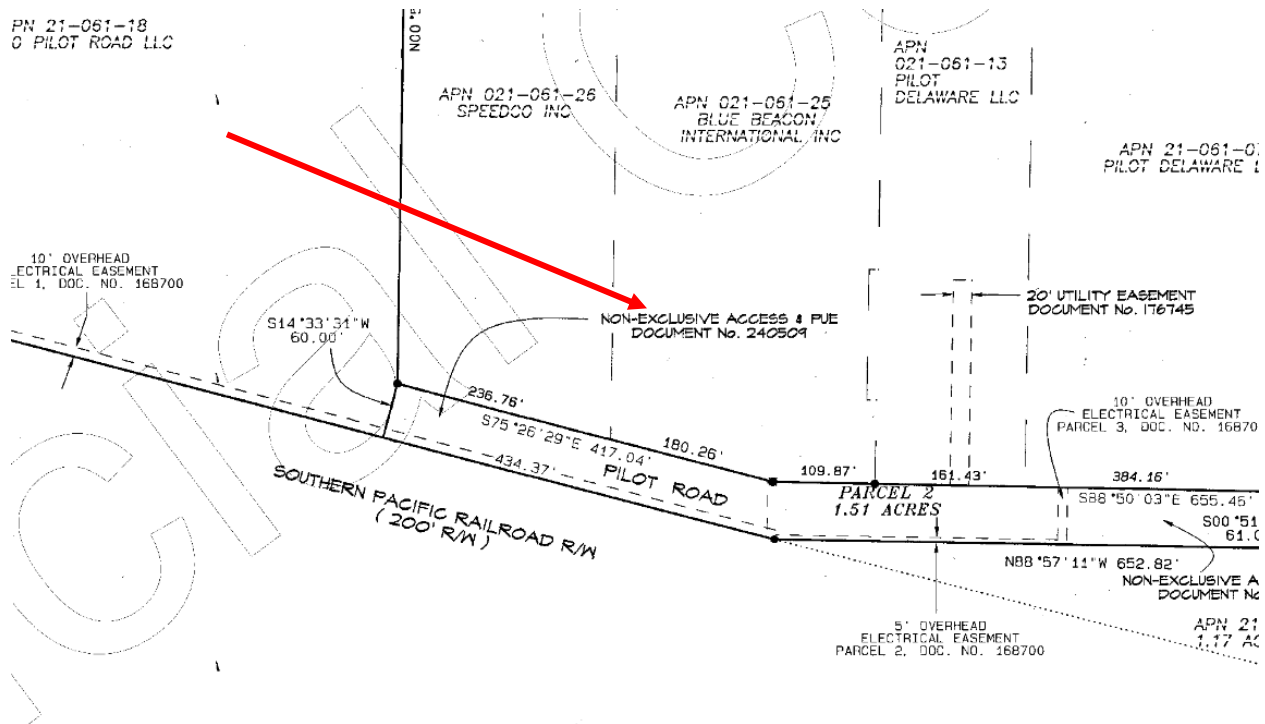
The City of Fernley's Comprehensive Master Plan was most recently updated in 2018. The project area currently has a Land Use classification of Commercial, and an underlying zoning of C2 (General Commercial). The Commercial Land use classification highlights primary uses such as restaurants, lodging, office space, business centers, and general recreation facilities. The current Commercial land use does not permit for Warehousing, Distribution, Storage, Manufacturing/Production along with multiple other industrial uses. To permit the project site for Industrial development, the applicant is first required to submit a request for a Comprehensive Master Plan Amendment to change the Land Use classification from Commercial to Industrial. Once the Master Plan Amendment has been submitted, the applicant must then submit a request for a Zoning Map Amendment, in order to change the zoning from C2 (General Commercial) to I (Industrial).

The Industrial Land Use classification does indeed allow for larger scale uses such as Warehousing, Distribution, Manufacturing, Processing, and so on. The standards for Industrial development highlight the importance of being located near major arterial roads and highways, as well as proximity to rail lines. This standard is met by the project site's location directly south of Interstate 80, directly east of S.R. 427 (Main Street), as well as its proximity to the Union Pacific Rail Line, directly south of the project site. Municipal services such as sewer and water connections are another required development standard of the Industrial Zoning/Land Use, and these do exist in the nearby surrounding area – as a result of the already existing Commercial and Industrial development surrounding the project site.

The proposed development will utilize a non-exclusive access easement from the adjacent parcel directly to the east for primary ingress/egress. This easement exists as its own distinct parcel, and currently

Planning Commission Meeting March 9, 2022
Master Plan Amendment – MPA22001 & Zoning Map Amendment – ZMA22001

provides access to three separate parcels further east of the project site, including the Truck Wash and the SpeedCo Truck Services Facility. This can be seen marked on the recorded parcel map below:



Considering that this easement (Pilot Road) will serve as the project's primary access, it is required to be improved to the standards outlined within the City of Fernley Development Code, to the approval of the City Administrator, Engineer, and Public Works Director. Additionally, the potential increase in traffic may trigger the need for improvements at the intersection of Pilot Road and Main Street, such as traffic signaling or signage.

The proposed change to the Industrial Land Use and the Industrial Zoning, along with the subsequent Industrial Project will have some impact on the existing facilities in the surrounding area. Transportation facilities, especially those along Main Street (S.R. 427) and Pilot Road are expected to require improvements over the 10-year horizon. The applicant does believe that the proposed Master Plan and Zoning Map Amendment will not alter the timing for these improvements to be made, and any immediate development will not require any traffic improvements. Other Public Facilities that may be affected include city utilities such as sewer and water, and public service agencies the Lyon County Sheriff's Office and the North Lyon County Fire Protection district. Due to the nature of the use however, the applicant believes that any impacts to these services will be minimal.

Utilities such as sewer and water will be connected to, and any development will tie in to existing sewer/water mains located within the surrounding area. Although this is expected to have some impact on the overall capacity for water and sewer, the applicant does believe that the specific nature of the industrial use (For the time being, proposed Warehousing/Distribution + Cross Docking facility) indicates that the utility consumption is much lower than a heavier industrial use, such as fabrication and manufacturing.

Given the surrounding uses to the project area, the applicant believes that the proposed Industrial zoning will fit in well with the existing development. The project site is surrounded by three (3) developed parcels

of land to the east, up to the Main Street/Pilot Road Intersection. These three parcels contain a Truck Wash, the Pilot Travel Center, and the Speedco Truck Repair shop. Given that all three of these properties contain to trucks and trailers, it does appear as though the proposed zone change and subsequent development will fit in with the existing development, and potentially increase the service revenues of those surrounding businesses. Furthermore, any residential land south of the project site is significantly buffered by the Union Pacific Railroad, whereas any abutting parcels further north are shielded by the Interstate-80 Right of Way. The parcels directly west of the project site do share a common boundary (021-061-012 and 021-051-14) and are both currently vacant, with land use designations of OSP (Open Space & Parks) and C (Commercial).

The proposed Master Plan and Zoning Map Amendment does accomplish some of the Goals and Action Strategies outlined within the City of Fernley Comprehensive Master Plan, including but not limited to Land Use, Transportation, and Public Services & Facilities. These will be explored in the Findings section of the Staff Report. The applicant does believe that the construction and development of the Industrial Building will lead to a greater influx of higher paying jobs to the community, as Industrial Warehousing and Distribution jobs do tend to pay more than retail or service commercial jobs. This then provides additional opportunity for economic development within the City of Fernley. Conversely, this does take away from some of the Master Plan's goals and strategies as well. These amendments can also reduce the availability of commercial space along the Main Street/I-80 Corridor, as these larger scale Industrial buildings generally do not offer any recreational or entertainment value to the City.

Should the Planning Commission determine the project, as submitted, is consistent with the existing surrounding land uses, 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 approve the item with the attached conditions of approval.

If the Planning Commission cannot make some or all the applicable Findings and determines the project is not consistent with the existing surrounding uses, 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

Master Plan Amendment

MP1: Implementation of the goals and policies outlined within the Master Plan Amendment:

Land Use Goals and Policies included within the City's 2018 Comprehensive Master Plan that are relevant to this project include the following:

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.1.3 Provide a balanced distribution of employment and population.**
- LU.1.3.1 Encourage land uses and development, which maintains a balance of population, housing, and employment.
- LU.1.4 Ensure existing and future land uses are compatible.**
- LU.1.4.2 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
- 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.

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 to fall below LOS D.
 - T.1.1.4 Develop regulations regarding setbacks, signage and right-of-way dedication, and other considerations which preserve and increase roadway capacity and safety.
 - T.1.1.5 Ensure development of the roadways planned in the Streets and Highways Plan section of the Comprehensive Master Plan occurs in a timely manner and with the financial assistance from the development community.
 - 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.1.1.8 Monitor road conditions and prioritize maintenance schedules based on traffic demand and the availability of alternative routes.
- T.1.3 Implement street design and access standards to provide for safe and efficient movement of goods and people.**
 - 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. The access management standards address the location, spacing and frequency of access points on the roadway network.

Public Services & Facilities:

PSF.1.1 To provide and maintain a reliable and adequate water supply and delivery system.

- PSF.1.1.2 Plan water supply for Fernley based upon meeting the average water demand in normal to dry years with additional water conservation measures or other actions in periods of severe drought.
- PSF.1.1.3 Final maps and building permits will be approved only when adequate water rights have been dedicated to the City of Fernley and applicable service and connections fees have been paid.
- PSF.1.1.5 Areas with the potential to pollute the water supply, if developed on septic systems, shall be connected to the municipal wastewater system. Proposals for new development using septic systems shall be reviewed by the Nevada Department of Environmental Protection (NDEP) for compliance with their regulations for quantity of septic systems within the specific hydrographic basin. The maximum allowable number of septic systems currently allowed by the NDEP is 180 within a one-mile radius.
- PSF.1.2 To the maximum extent possible, the costs of improvement, extension and construction of public facilities should be borne by those whose land development and redevelopment actions made such improvement, extension and construction necessary. A procedure is to be established that defines the responsibility for improvements of individual projects.**
- PSF.1.4 Reduce water demand through xeriscape project landscaping, reclamation and reuse of treated wastewater for golf courses, medians, parkways and other appropriate application uses.**
 - PSF.1.4.1 The Department of Community Development will include provisions for reclamation of water resources and appropriate uses for wastewater application in the Fernley Development Code.
- PSF.1.5 Design water treatment and delivery systems to be compatible with the area in which they are located.**
- 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 within 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 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.
- PSF.2.1.4 The City will maintain and improve the existing sanitary sewer system through preventive maintenance and on-going appraisal.
- PSF.2.1.6 The City can require improvement of the existing sewer system in those areas adversely affected by overloaded sewer systems caused by new development.
- PSF.2.1.5 The City shall establish sewer use fees as required to support operations.
- PSF.3.3 Ensure appropriate levels of public services and facilities are continually provided.**
 - PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.
 - PSF.3.3.2 Consider the financial impacts in all growth management decisions.
- PSF.3.11 Require large-scale developments to be within adequate fire service areas.**
 - PSF.3.11.2 All development in the City (except for residential densities less than one residence per acre) shall be within a 4-7-minute response time of an existing or planned fire station.
 - PSF.3.11.3 New Development shall identify and fund facilities and infrastructure necessary to provide adequate fire protection.
 - PSF.3.11.5 Require water distribution systems to meet the Lyon County Fire District standards for all future development.

The Comprehensive Master Plan fosters the City's Mission, promoting future prosperity and the balanced growth of the community, promoting economic development, and improving the quality of life enjoyed by the community's residents. To support future industrial and manufacturing development, that could potentially begin to offer higher-pay and higher-skill employment opportunities within the community, the City of Fernley will have to consider a variety of land use, community development, and economic development strategies designed to diversify its current housing stock and economic profile with additional professional and commercial office space and additional retail space. The incorporation of non-single-family detached residential owner-occupied housing options, with additional multi-family and renter-occupied housing options sited in appropriate areas within the community, will be critical in securing future private investment in the development of new smaller and mid-sized manufacturing space. The diversification of the community's existing housing stock, coupled with improvements in the types of employment opportunities and retail and recreational opportunities offered, will be necessary to support the community's continued prosperity and smart growth.

MP2: Compatibility with surrounding land uses.

The following table shows land use and zoning designations for the parcels directly surrounding the project parcel:

Direction	Current Use	Current Zoning	Master Plan Land Use Designation
North:	Interstate 80, Proposed Industrial Building	I (Industrial)	Industrial
South:	Union Pacific Railroad, Rural Residential land,	RR1 (Residential Rural, 1-acre minimum lot size)	Residential Rural
East:	SpeedCo Truck Repair, Blue Beacon Truck Wash	C2 (General Commercial), and TC (Tourist Commercial)	Commercial
West:	Vacant Land	GR20 (General Rural, 20 acre min. lot size), RR1 (Residential Rural, 1-acre min. lot size)	Open Space & Parks, Commercial

The surrounding parcels contain a small variety of zoning and land use categories, with generally very low densities. There are currently only 4 parcels directly adjacent to the project site, as parcels to the North and South are buffered from the project area by the Interstate-80 Highway, and the Union Pacific Railroad respectively. The two parcels directly east of the project site include the SpeedCo Truck repair shop (021-061-26), and a parcel that serves as a roadway easement (021-061-33) for the Truck Repair Shop, the Truck Wash, and the Travel Center. The SpeedCo Truck Repair shop will most likely benefit from the additional truck traffic that this project is proposed to bring to this area, and the access parcel will also serve as the primary ingress/egress point and will be improved in accordance with the City of Fernley Engineering, Public Works, and Development Standards. The two parcels directly west of the project site are currently vacant and are master planned for Open Space & Parks (021-061-12) and Commercial (021-051-14) land. Industrially zoned land is permitted adjacent to commercial land and or residential, subject to certain conditions and requirements related to screening. The development code requires a minimum 20-foot buffer to be placed along any property line abutting a residential zoning district, in addition to the use of landscaping to provide screening between those areas. Any smoke, noise, excessive light, dust, will also be directed away from those non-industrial zoning districts to the extent possible. Provided the conditions outlined within the City of Fernley Development code can be satisfied, this Finding can be made for the Master Plan Amendment.

MP3: 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. The Planning Commission and City Council meetings function as the public hearings for this matter as required in the City's Municipal Code and Nevada Revised Statutes.

Zoning Map Amendment:

Z1: The application, as submitted, is consistent with the City of Fernley Comprehensive Master Plan.

Relationship to the Master Plan

1. Industrial (I)

The proposed development is located within an area designated as Industrial in the city's Comprehensive Master Plan. The description of the Industrial land use states the equivalent zoning district is I (Industrial). Per the Comprehensive Master Plan document, Industrial land use focuses on Industrial uses, such as manufacturing/warehousing, maintenance and repair shops, distribution, mining, storage, and construction. Other uses such as supporting railroad uses and limited support services for the convenience of employees, such as restaurants, small scale retail, and professional and medical offices may also be permitted. Planned Development (PD) zoning may be applied to the area designated Industrial for entitlement and construction.

The Comprehensive Master Plan goes on to state that Industrial areas are intended to create an environment where industrial activities may occur with a minimum amount of impact on the natural environment and surrounding land uses. Industrial land uses are not appropriate adjacent to residential development. Areas of steep slopes, floodplains and/or potential wetlands should generally be avoided. Industrial land uses are typically located near major transportation corridors but isolated from residential land uses and are generally located south of I-80 and north of US 50A. Municipal Services are required.

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

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.1.5 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.

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 to 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.1.1.8 Monitor road conditions and prioritize maintenance schedules based on traffic demand and the availability of alternative routes.

Public Services & Facilities:

PSF.1.2 To the maximum extent possible, the costs of improvement, extension and construction of public facilities should be borne by those whose land development and redevelopment actions made such improvement, extension and construction necessary. A procedure is to be established that defines the responsibility for improvements of individual projects.

PSF.1.4 Reduce water demand through xeriscape project landscaping, reclamation and reuse of treated wastewater for golf courses, medians, parkways and other appropriate application uses.

- PSF.1.4.1 The Department of Community Development will include provisions for reclamation of water resources and appropriate uses for wastewater application in the Fernley Development Code.

PSF.1.5 Design water treatment and delivery systems to be compatible with the area in which they are located.

PSF.3.3 Ensure appropriate levels of public services and facilities are continually provided.

- PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.

- PSF.3.3.2 Consider the financial impacts in all growth management decisions.

PSF.3.11 Require large-scale developments to be within adequate fire service areas.

- PSF.3.11.2 All development in the City (except for residential densities less than one residence per acre) shall be within a 4-7-minute response time of an existing or planned fire station.
- PSF.3.11.3 New Development shall identify and fund facilities and infrastructure necessary to provide adequate fire protection.
- PSF.3.11.5 Require water distribution systems to meet the Lyon County Fire District standards for all future development.

Z2: Consistent with the surrounding Land uses:

The following chart shows land use and zoning designations for the parcels directly surrounding the project parcels (021-061-32):

Direction	Current Use	Current Zoning	Master Plan Land Use Designation
North:	Interstate 80, Proposed Industrial Building	I (Industrial)	Industrial
South:	Union Pacific Railroad, Rural Residential land,	RR1 (Residential Rural, 1-acre minimum lot size)	Residential Rural
East:	SpeedCo Truck Repair, Blue Beacon Truck Wash	C2 (General Commercial), and TC (Tourist Commercial)	Commercial
West:	Vacant Land	GR20 (General Rural, 20 acre min. lot size), RR1 (Residential Rural, 1-acre min. lot size)	Open Space & Parks, Commercial

The surrounding parcels contain a small variety of zoning and land use categories, with generally very low densities. There are currently only 4 parcels directly adjacent to the project site, as parcels to the North and South are buffered from the project area by the Interstate-80 Highway, and the Union Pacific Railroad respectively. The two parcels directly east of the project site include the SpeedCo Truck repair shop (021-061-26), and a parcel that serves as a roadway easement (021-061-33) for the Truck Repair Shop, the Truck Wash, and the Travel Center. The SpeedCo Truck Repair shop will most likely benefit from the additional truck traffic that this project is proposed to bring to this area, and the access parcel will also serve as the primary ingress/egress point and will be improved in accordance with the City of Fernley Engineering, Public Works, and Development Standards. The two parcels directly west of the project site are currently vacant and are master planned for Open Space & Parks (021-061-12) and Commercial (021-051-14) land. Industrially zoned land is permitted adjacent to commercial land and or residential, subject to certain conditions and requirements related to screening. The development code requires a minimum 20-foot buffer to be placed along any property line abutting a residential zoning district, in addition to the use of landscaping to provide screening between those areas. Any smoke, noise, excessive light, dust, will also be directed away from those non-industrial zoning districts to the extent possible. Provided the conditions outlined within the City of Fernley Development code can be satisfied, this Finding can be made for the Zoning Map Amendment.

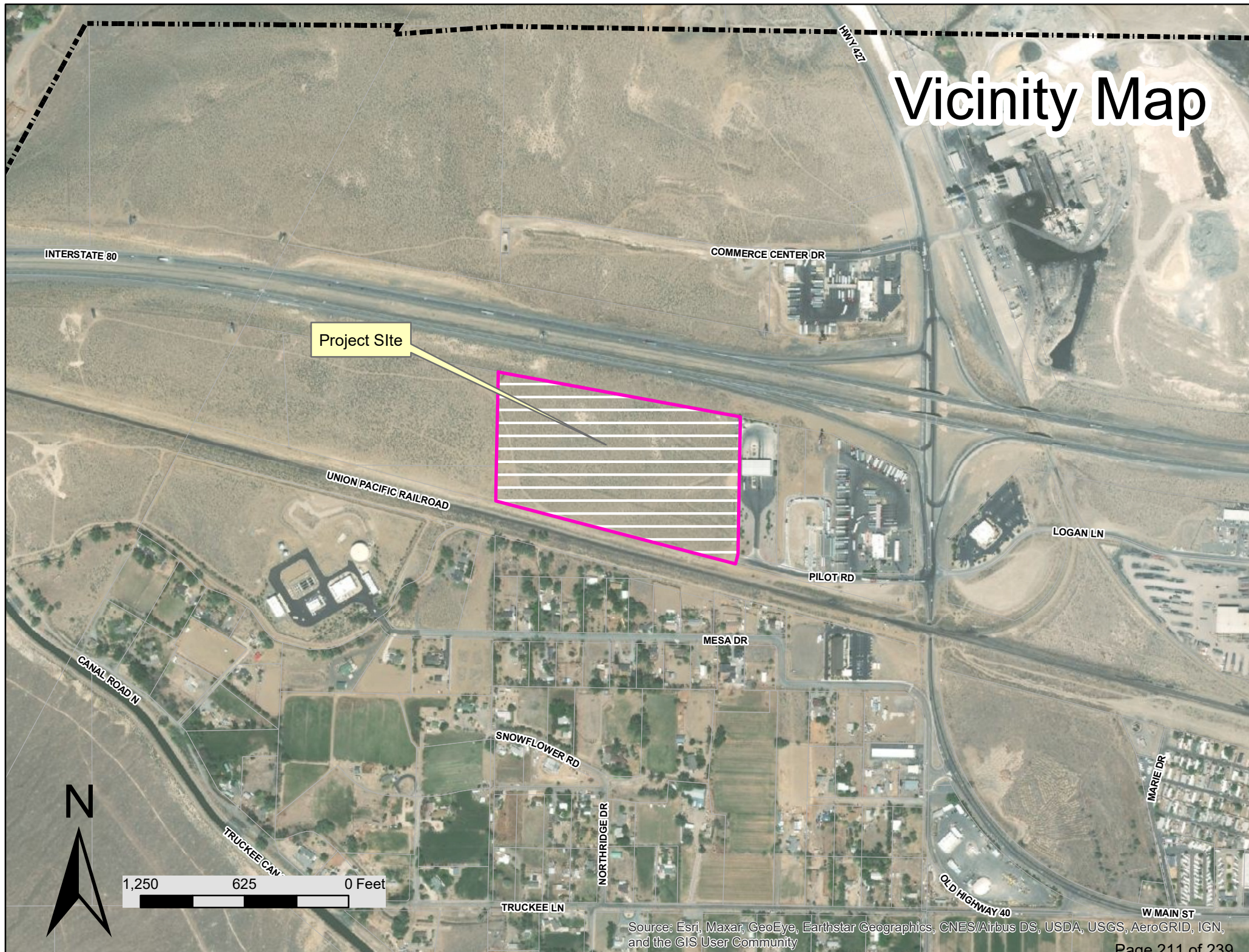
Z3: Public notice was given, and a public hearing has been scheduled per the requirements of the Development Code and Nevada Revised Statutes.

Public notice was given and a public hearing was scheduled. The Planning Commission and City Council meetings function as the public hearings for this matter as required in the City's Municipal Code and Nevada Revised Statutes.

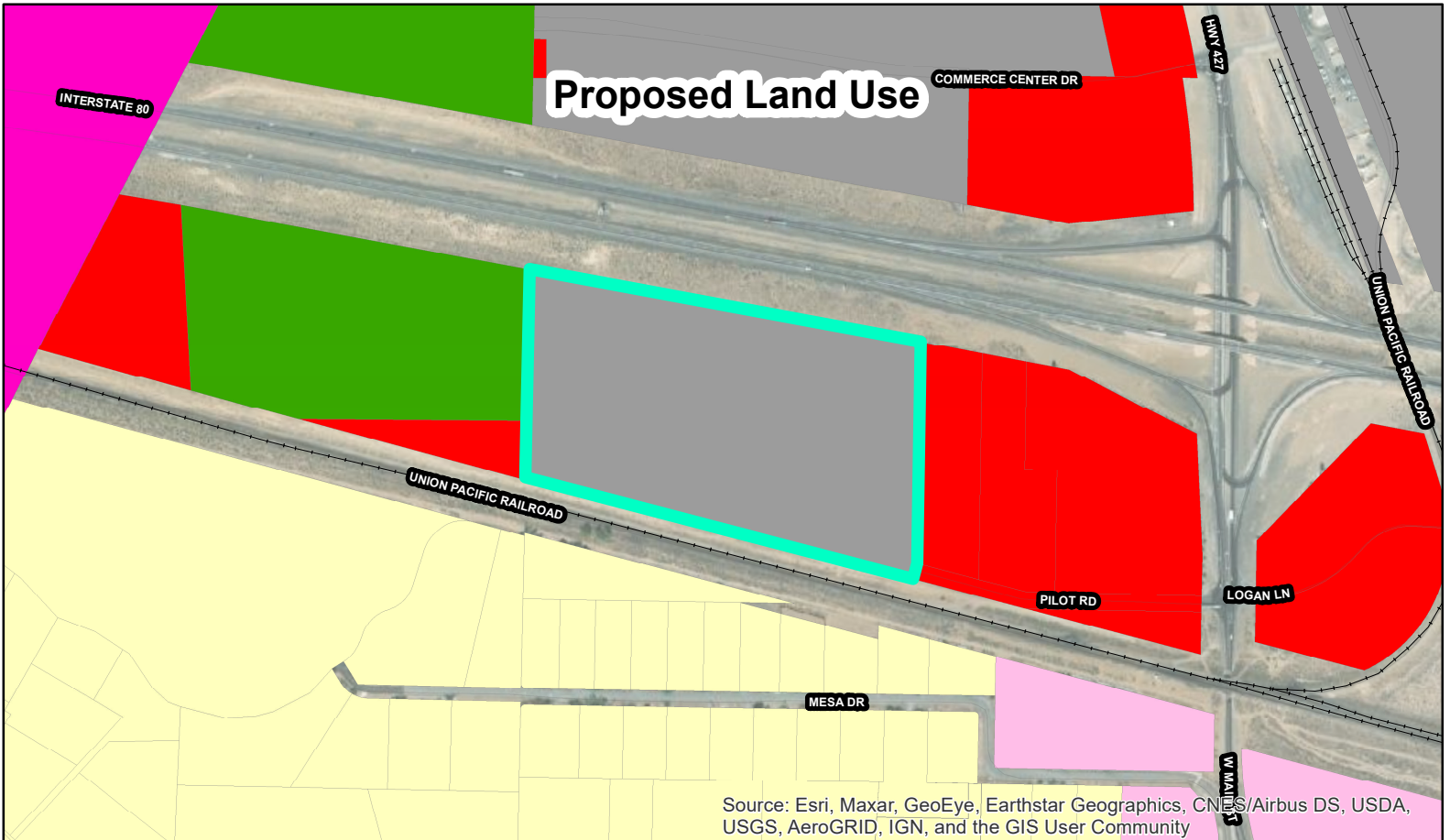
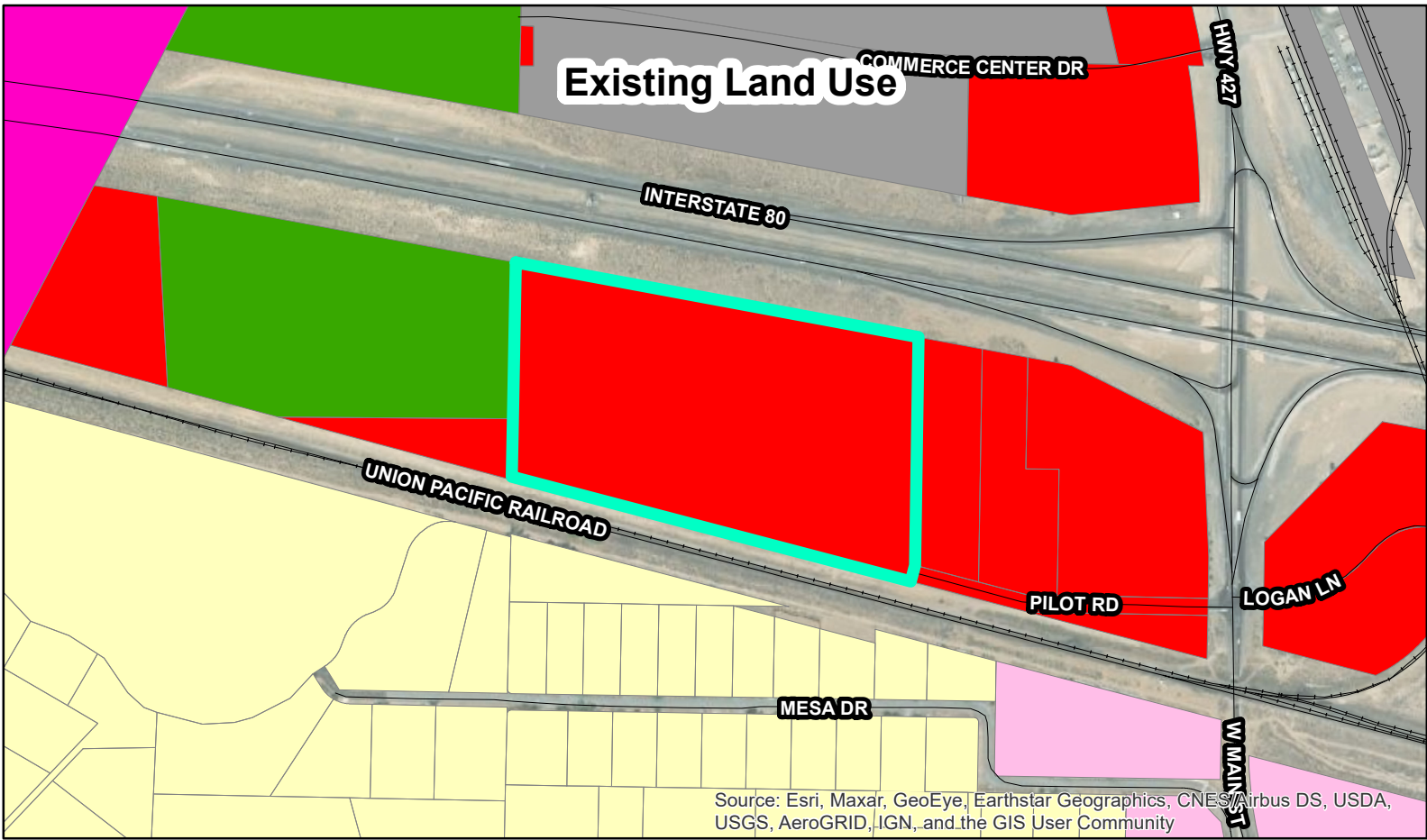
ATTACHMENTS

- 1.) Vicinity Map
- 2.) Existing & Proposed Land Use Map Exhibit
- 3.) Resolution 22-009
- 4.) Existing & Proposed Zoning Map Exhibit

Vicinity Map



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



NOTE: The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley

Legend			
 General Rural (GR)	 Multi Family Residential (MFR)	 Mixed Employment (ME)	
 Rural Residential (RR)	 Commercial (C)	 Public Facility (PF)	
 Single-Family Residential (SFR)	 Suburban Mixed Use (SMU)	 Open Space and Parks (OSP)	
 Mixed Residential (MR)	 Industrial (I)	 Tribal	

CITY OF FERNLEY
RESOLUTION # 22-009

A RESOLUTION OF THE CITY OF FERNLEY FOR A COMPREHENSIVE MASTER PLAN AMENDMENT, ASSOCIATED WITH CASE NUMBER MPA22001, TO CHANGE THE LAND USE CLASSIFICATION FROM COMMERCIAL TO INDUSTRIAL ON A SITE CONSISTING OF ONE PARCEL OF LAND TOTALING ±27.83 ACRES IN SIZE GENERALLY LOCATED SOUTH OF INTERSTATE-80 AND WEST OF THE CURRENT TERMINUS OF PILOT ROAD, AT 1000 PILOT ROAD, FERNLEY, NV. (APN: 021-061-32).

WHEREAS, the 2018 Fernley Comprehensive Plan was adopted by Resolution of the Planning Commission on August 8, 2018, and by the City Council on August 15, 2018; and

WHEREAS Nevada Revised Statutes chapter 278.210 specifies that master plans or any amendments must be adopted by resolution of the Planning Commission; and

WHEREAS the Planning Commission held a public hearing on March 9, 2022;

NOW, THEREFORE, BE IT RESOLVED, that based on the discussion and findings provided in the staff report and/or testimony presented at the March 9th, 2022 public hearing, that the change in the Land Use Classification from Commercial to Industrial on a site consisting of one parcel of land totaling ±27.83 acres in size generally located south of Interstate-80 and west of the current terminus of Pilot Road, at 1000 Pilot Road, Fernley, NV. (APN's: 021-061-32) be adopted as part of the City of Fernley's Comprehensive Plan; and

BE IT FURTHER RESOLVED that the Fernley Planning Commission approves and recommends that the City Council adopt this Master Plan Amendment as part of the Fernley Comprehensive Plan.

AYES: _____ NAYS: _____ ABSTENTIONS: _____ ABSENT: _____

**RESOLUTION PASSED, APPROVED, AND ADOPTED this 9th day of March 2022,
by the following vote of the Fernley Planning Commission:**

By: _____

Date: _____

Barry Williams, Sr., Chairman

Attest By: _____

Date: _____

Brenda Gosser, Deputy City Clerk

**RESOLUTION CERTIFIED this 20th day of April, 2022, by the following vote of
the Fernley City Council:**

AYES: _____ NAYS: _____ ABSTENTIONS: _____ ABSENT: _____

FERNLEY CITY COUNCIL

By: _____

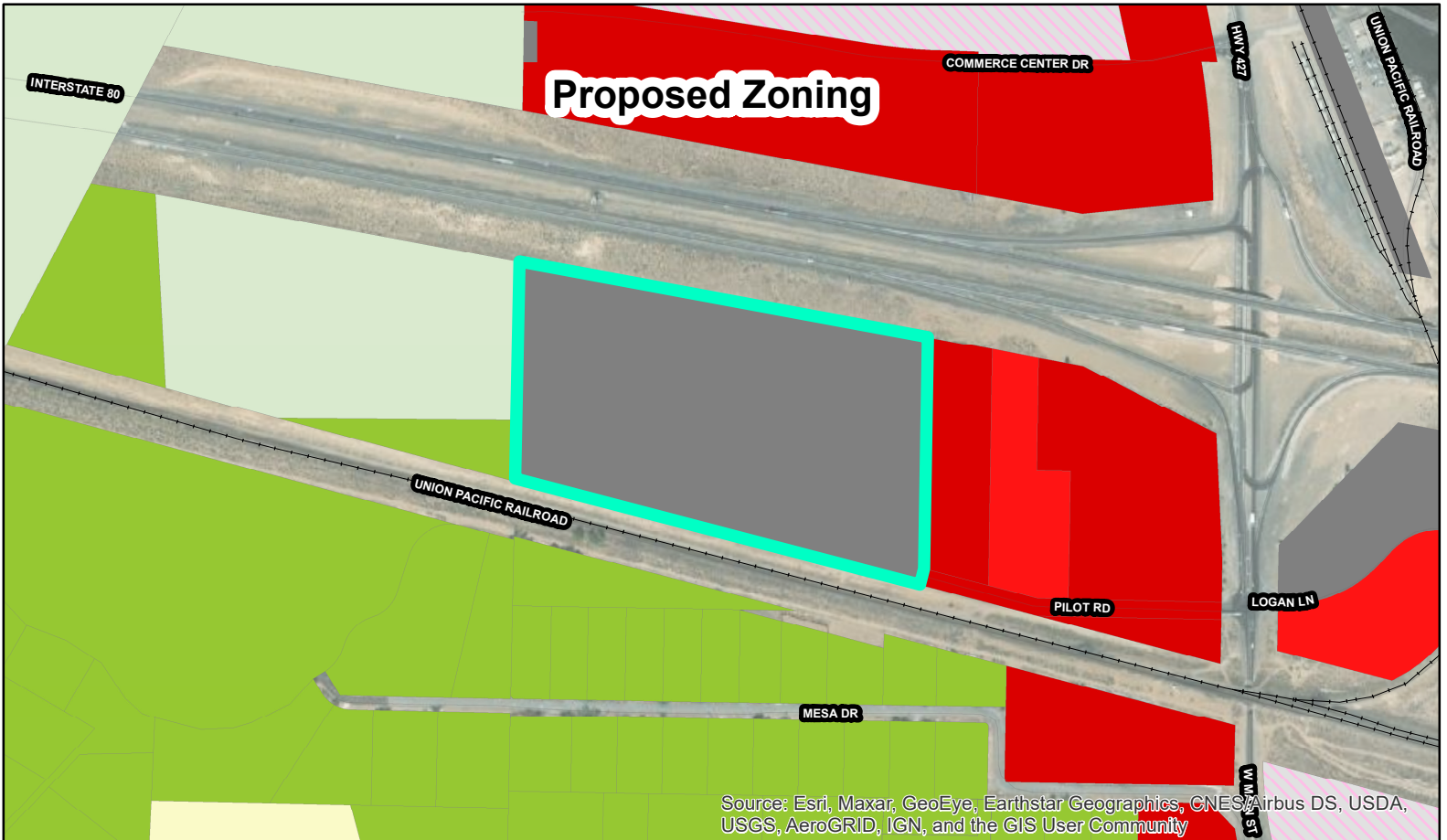
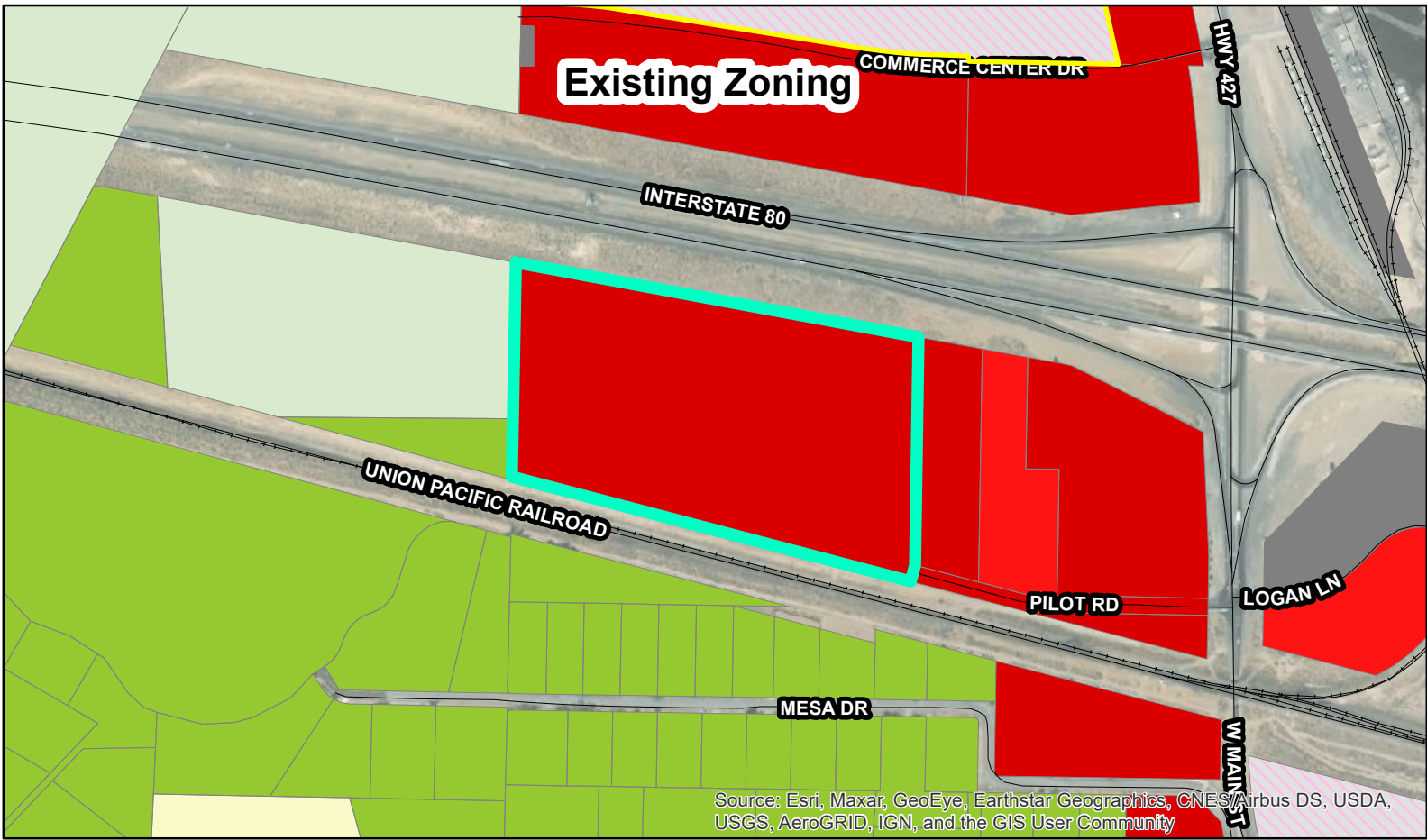
Date: _____

Roy Edgington, Mayor

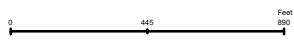
Attest By: _____

Date: _____

Kim Swanson, City Clerk



NOTE: The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley



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

Legend



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: March 9, 2022

REPORT TO: Planning Commission

REPORT THRU: Tim Thompson, Planning Director

REPORT FROM: Nikil Manayathara

FINANCIAL IMPACT:	CURRENTLY BUDGETED:	FUND/ACCOUNT:
Yes: No: X	Yes: No: X	N/A

ACTION REQUESTED: Motion

AGENDA ITEM: (For Possible Action):

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).

AGENDA ITEM BRIEF:

The City of Fernley acquired the subject parcel as part of a land swap with Lyon County. The property has a Master Plan Land Use designation of Multi-Family Residential (MFR). To bring the site into conformance with the comprehensive master plan, the city is requesting to change the zoning from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multifamily, 10-21 dwelling units per acre).

RECOMMENDED MOTION:

Motion to Approve:

"I move to forward a recommendation of approval to the City Council for the Zoning Map Amendment associated with ZMA22003 based on Findings Z1 through Z3 and 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 for the Zoning Map Amendment request associated with ZMA22003 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."

BUSINESS IMPACT (per NRS Chapter 237):

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, alternatives.

ALTERNATIVES:

BACKGROUND:

See Attached Staff Report for Background/Analysis/Alternatives.

LEGAL IMPLICATIONS:

N/A

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. Planning Commission Staff Report - ZMA22003
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Existing + Proposed Zoning Exhibit

Planning Commission Staff Report – March 9, 2022
 Planning Case File: ZMA22003

PROJECT SUMMARY

CASE NUMBER(S):	• ZMA22003
REQUESTED ACTION(S):	• Zoning Map Amendment
PROJECT DESCRIPTION:	• 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).
PROPERTY OWNER(s):	• City of Fernley
APPLICANT:	• City of Fernley
LOCATION:	• 1170 Newlands Drive
SITE SIZE:	• ±3.94 Acres
EXISTING ZONING:	• SF6 (Single Family, 6,000 sq. ft. minimum lot size)
PROPOSED ZONING	• MF21 (Multifamily, 10-21 dwelling units per acre)
EXISTING LAND USE:	• MFR (Multifamily Residential)
WARD INFORMATION:	• Ward 1 – Councilman Lacy

***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>	<i>Section 32.03.040 – Comprehensive Master Plan/Zoning Map Amendments</i>
	<i>Section 32.06.080 – Residential (Multifamily) Zoning Districts</i>
	<i>Section 32.09.035 – Dedication of Water Rights</i>
	<i>Section 32.09.140 – Streets (Roadways)</i>
	<i>Section 32.09.150 – Utilities</i>
	<i>Section 32.12.010 – Adequate Public Facilities Required</i>
	<i>Section 32.13.030 – Improvements, Security, & Inspections</i>

Planning Commission Staff Report – March 9, 2022
Planning Case File: ZMA22003

BACKGROUND

The project parcel is the former site of the Lyon County Senior Center and has been under the ownership of the City of Fernley since the 16th of September, 2021. The parcel had been acquired by the City from Lyon County, who had owned the parcel since 1981. Lyon County Resolution 21-25 ([Document # 644692](#)) had passed in September 2021, proclaiming that the City of Fernley exchange the parcel on which the new Senior Center exists (APN: 021-103-57 – 105 Lois Lane) for the project parcel (APN: 020-321-01 – 1170 Newlands Drive). As a result of the recorded resolution, the Newlands Parcel is currently owned by the City of Fernley, while the Lois Lane Senior Center Parcel is now under the ownership of Lyon County.

At the Fernley City Council Meeting on the 2nd of February, 2022, The City Council approved a motion to instruct City Staff to begin the process of filing a Zoning Map Amendment to change the zoning on the Newlands Parcel from SF6 (Single Family, 6,000 sq. ft minimum lot size) to MF21 (Multifamily, 10-21 dwelling units per acre). The application materials and submissions will be furnished by City Staff, and the Zoning Map Amendment will pass through the City's Planning Commission and City Council for Final Approval - akin to a normal Zoning Map Amendment approval process.

ANALYSIS

The MF21 (Multifamily, 10-21 residential dwelling units per acre) zoning district is intended to act as an area for medium-density residential housing types, ranging from single family detached homes, to condominiums or townhomes as well. Amenities such as parks, trails, fitness centers, swimming pools, are highly encouraged in order to offset the impacts of increased residential density. Commercial uses are not permitted as stated within the City's Development Code, although specific assembly or recreational uses may be permissible, pending the approval of a Conditional Use Permit. The MF21 zoning district does not have a minimum lot size requirement, although the minimum site area for development is 6,000 square feet.

FINDINGS

Zoning Map Amendment:

Z1: The application, as submitted, is consistent with the City of Fernley Comprehensive Master Plan.

Relationship to the Master Plan

1. Multi-Family Residential (MFR)

The proposed development is located within an area designated as Multi-Family Residential (MFR) in the city's Comprehensive Master Plan. The description of the Multi-Family Residential land use states the equivalent zoning districts are MF21 (21 dwelling units per acre maximum) and MF30 (30 dwelling units per acre maximum). Per the Comprehensive Master Plan document, Multi-Family Residential focuses on multi-story living, smaller multifamily buildings, and higher density single family attached multiplex units. Other uses such as Triplex, townhomes, condos, and accessory uses may also be permitted. Planned Development (PD) zoning may be applied to the area designated Commercial for entitlement and construction.

Planning Commission Staff Report – March 9, 2022
Planning Case File: ZMA22003

The Comprehensive Master Plan goes on to state that Multi-Family Residential is intended to provide residential opportunities primarily in the urban core areas and are typically located near transportation corridors, parks, and school sites. Residential uses shall be buffered from adjacent roadways and should integrate convenient pedestrian access when located adjacent to commercial uses. Community amenities should be provided within each development. Direct access from arterials may be allowed with special review and municipal services are required.

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.

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.1.4 Ensure existing and future land uses are compatible.

- LU.1.4.2 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
- 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.

Planning Commission Staff Report – March 9, 2022
Planning Case File: ZMA22003

LU.1.5 Promote infill development.

LU.1.5.1 Encourage the intensification of land use in the existing community core.

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.

Other Goals and Action strategies which may be relevant to this project are, HP.1.2, HP1.2.1, HP1.2.2, HP.1.3, HP.1.3.1, HP.1.3.2, HP.1.4, HP.1.4.1, C.1.2, C.1.2.1, C.1.3, C.1.3.8, LU.1.2, LU.1.2.1, T.1.1, T.1.1.1, T.1.1.5, T.1.1.6, T.1.2, T.1.2.2, T.1.3, T.1.3.2, T.1.3.5, PSF.1.1, PSF.1.1.3, PSF.1.1.4, PSF.1.2, PSF.2.1, PSF.2.1.1, PSF.2.1.2, PSF.2.1.3, PSF.2.1.6, PSF.3.3, PSF.3.3.1, and PSF.3.3.2.

The proposed Zoning Map Amendment will bring the property into conformance with the adopted master plan land use designation.

Z2: Consistent with the surrounding Land uses:

The following chart shows land use and zoning designations for the parcels directly surrounding the project parcel:

SURROUNDING LAND USES & ZONING		
North:	Interstate 80 right-of-way	
East:	Multiple Family Residential 30 du/ac	MF30
South:	Single Family Residential (6,000 sq. ft. minimum)	SF6
West:	Single Family Residential (6,000 sq. ft. minimum)	SF6

There is existing multi-family residential development located directly to the east of the project site. Those parcels are zoned MF30, which allows for a maximum of 30 dwelling units per acre. The proposed MF21 zoning district will help to provide a buffer between the single family residential located to the west and the multi-family residential located to the east. In addition, the development code includes adjacency standards to help minimize potential impacts a development project may have on the single-family residences.

Planning Commission Staff Report – March 9, 2022
Planning Case File: ZMA22003

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

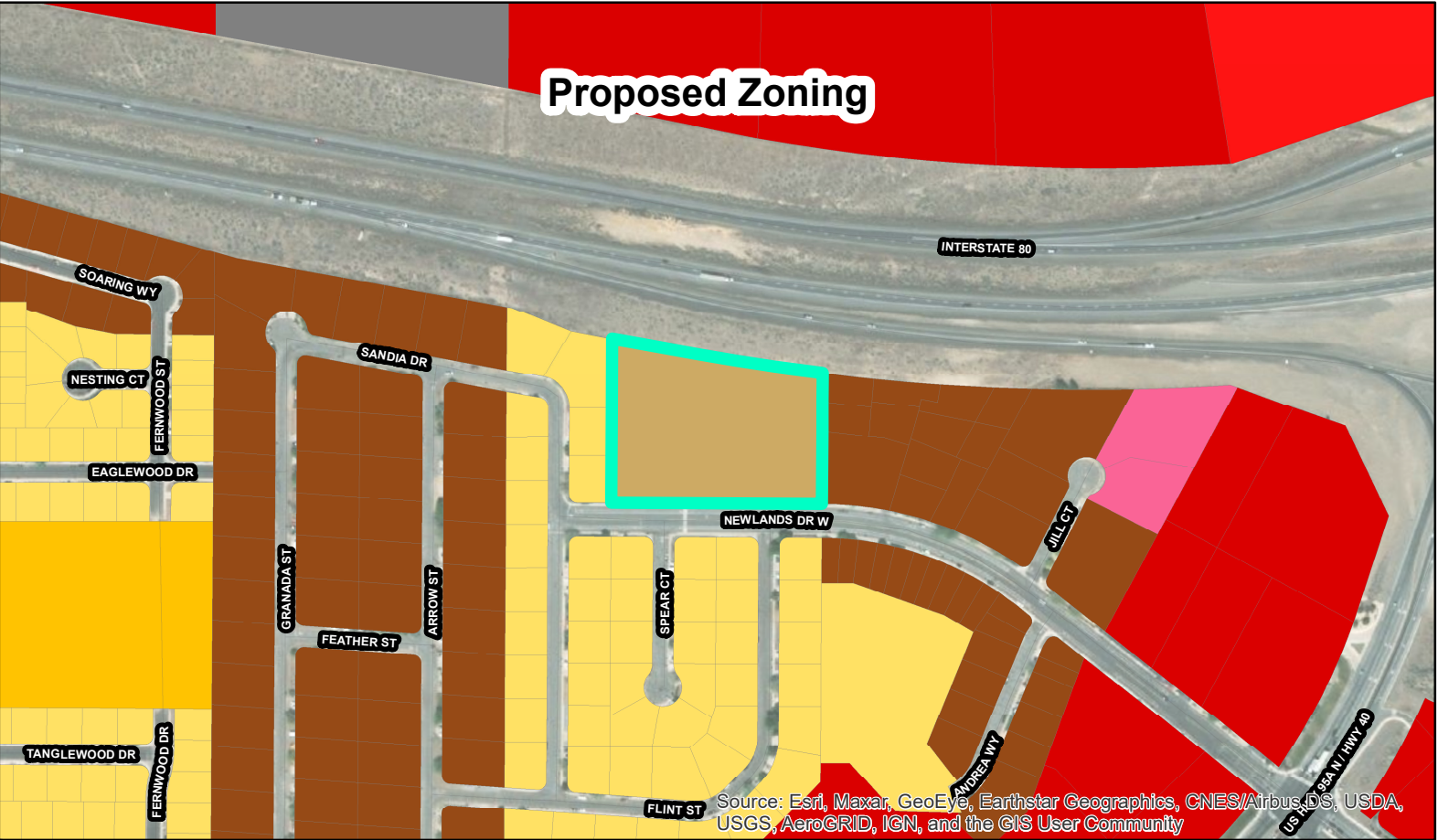
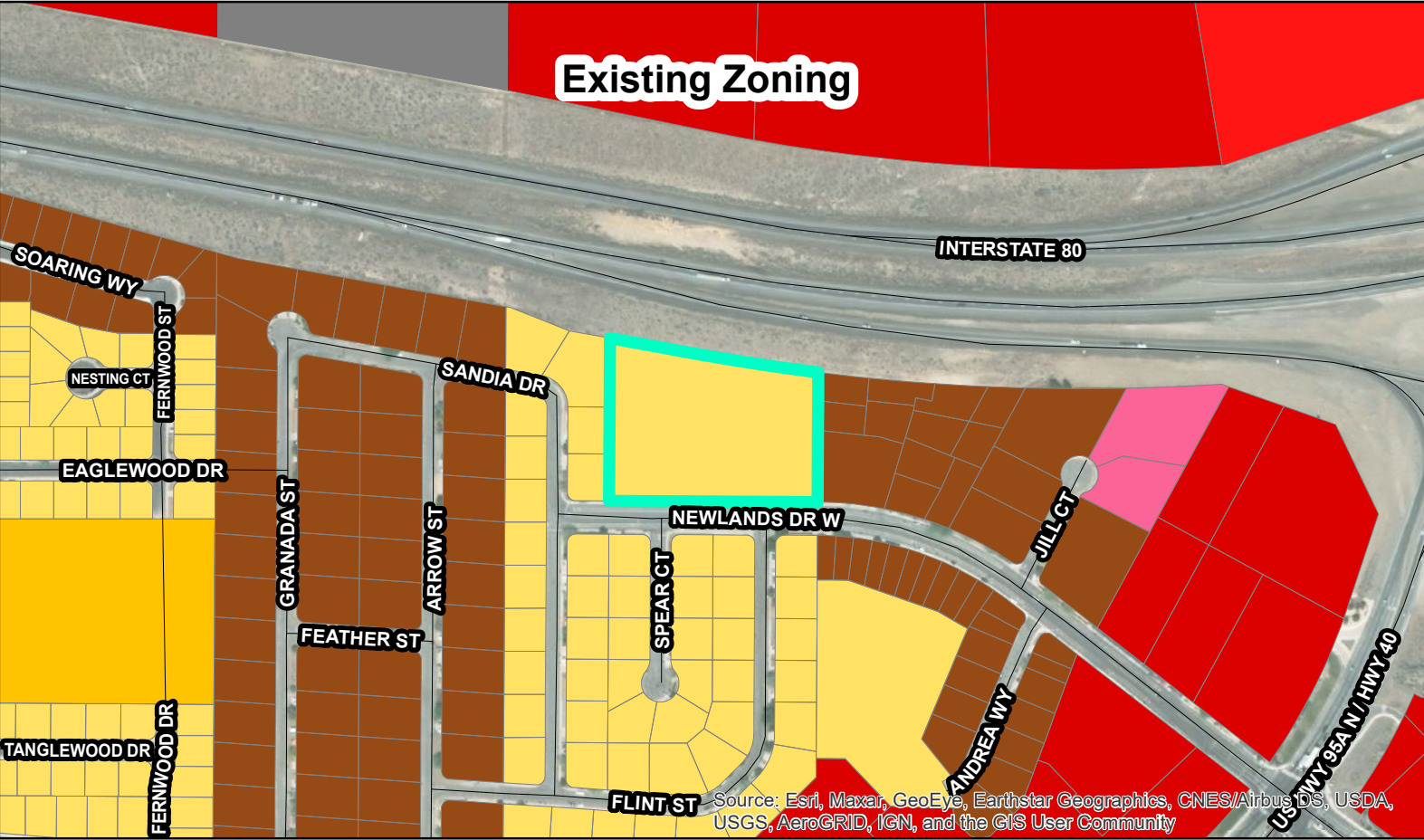
Public notice was given, and a public hearing was scheduled. The Planning Commission and City Council meetings function as the public hearing for this matter as required in the City's Municipal Code and Nevada Revised Statutes.

ATTACHMENTS

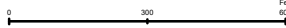
1. Vicinity Map
2. Existing & Proposed Zoning Exhibit

Vicinity Map





NOTE: The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley



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



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: March 9, 2022

REPORT TO: Planning Commission

REPORT THRU: Tim Thompson, Planning Director

REPORT FROM: Tim Thompson, Planning Director

FINANCIAL IMPACT:	CURRENTLY BUDGETED:	FUND/ACCOUNT:
Yes: No: X	Yes: No: X	N/A

ACTION REQUESTED: Motion

AGENDA ITEM: (For Possible Action):

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).

AGENDA ITEM BRIEF:

The applicant is submitting a Tentative Parcel Map request to allow for the subdivision of an approximately 11.94 acre parcel into 4 separate parcels. The parcel has a land use designation of Commercial and is located within the C2 (General Commercial zoning district). The purpose of this parcel map is to subdivide the area for a future commercial and/or multi-family residential development.

RECOMMENDED MOTION:

Motion to Approve:

"I 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."

Motion to Deny:

"Based on information received in written materials, I move to deny the Tentative Parcel Map request

associated with TPM22001 because I have determined that the proposed changes are detrimental to the public's health, safety, and general welfare. In addition, I am unable to make the following required Tentative Parcel Map Finding(s) _____ as it relates to _____. Therefore, I cannot approve the Tentative Parcel Map.

BUSINESS IMPACT (per NRS Chapter 237):

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, alternatives.

ALTERNATIVES:

BACKGROUND:

See Attached Staff Report for Background/Analysis/Alternatives.

LEGAL IMPLICATIONS:

N/A

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. Planning Commission Staff Report - TPM22001
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Tentative Parcel Map
4. Attachment 3 - TPM22001 Conditions of Approval

Planning Commission Meeting March 9, 2022
Tentative Parcel Map – TPM22001

PROJECT SUMMARY

CASE NUMBER(S):	• TPM 22001
REQUESTED ACTION(S):	• Tentative Parcel Map
PROJECT DESCRIPTION:	• A Tentative Parcel Map request to split an approximately 11.94 acre parcel into 4 smaller, separate parcels – varying in size from ±1.76 acres to ±5.45 acres. The project site is generally located south of U.S. Highway 50A and east of Nevada Pacific Parkway (APN: 021-201-47) and is located within the C2 (General Commercial) zoning district. The purpose of the Parcel Map is to prepare for a future commercial project on the site, which will consist of a single, Multi-family residential parcel, and 3 parcels of commercial development.
PROPERTY OWNER(s):	• Goudy Investments LLC
APPLICANT:	• Goudy Investments LLC
LOCATION:	• Southeast of Intersection of U.S. Highway 50A & NV Pacific Parkway
SITE SIZE:	• ±11.94 acres
EXISTING ZONING:	• C2
EXISTING LAND USE:	• Commercial
WARD INFORMATION:	• Ward 5 – Councilwoman McKay

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>	<i>Section 32.03.060 – Land Division Application</i> <i>Section 32.06.100 – Commercial Zoning(s)</i> <i>Section 32.09.140 – Streets (Roadways)</i> <i>Section 32.09.150 – Utilities</i> <i>Section 32.12.010 – Adequate Public Facilities Required</i> <i>Section 32.13.030 – Improvements, Security & Inspection</i>

Planning Commission Meeting March 9, 2022

Tentative Parcel Map – TPM22001

BACKGROUND

The project site has been under the ownership of Goudy Investments LLC since May, 2021 and is currently vacant, with no permanent development or registered personal property. The current project site was created by a Parcel Map recorded in 2007 and has remained undeveloped since. The project site is approximately 11.94 acres in size and is generally located east of Nevada Pacific Parkway and south of U.S. Highway 50A (APN: 021-201-47). The project area is surrounded by Commercially zoned land to the north, east, and west, and abuts residential property to the south, which has a zoning of SF6 (Single Family, 6,000 sq. ft. minimum lot size). It is additionally important to note that this Tentative Parcel Map submission is being processed concurrently with a Boundary Line Adjustment application request. The Boundary Line Adjustment in question is BLA 22001, which aims to adjust the parcel line between the project parcel (021-201-47) and the parcel directly northeast (021-201-50).

ANALYSIS

The applicant has submitted a Tentative Parcel Map request to subdivide the project area into 4 parcels of land for a proposed commercial/residential development. The existing project area of ± 11.94 acres will be divided into parcels of varying size, which are shown below:

Parcel 1 – $\pm 76,588$ sq. ft. (1.76 acres)

Parcel 2 – $\pm 86,749$ sq. ft. (1.99 acres)

Parcel 3 – $\pm 237,271$ sq. ft. (5.45 acres)

Parcel 4 – $\pm 97,009$ sq. ft. (2.23 acres)

Parcels 1, 2, and 4 are expected to be utilized for Commercial development, whereas Parcel 3 is expected to contain a Multifamily housing project. These developments are tentative at this time however and will be addressed through a separate permitting process in the future.

According to the City's Comprehensive Master Plan, the project site has a Commercial Land Use classification, and is located within the C2 (General Commercial) zoning district. Land uses common to Commercial areas include restaurants, lodging, offices, business centers, general retail, and high density residential development (Minimum of 10 dwelling units per acre). Commercial development is generally encouraged on vacant, underutilized properties, and helps provide a sort of buffer between residential areas and highways. Additionally, Commercial development is encouraged to occur adjacent to arterial, higher capacity roads, to provide easier access for people within the surrounding areas. The project site generally meets these standards, as it is located between a major Highway and a residential neighborhood, and is being developed on what is currently vacant, undeveloped property. Additionally, the Parcel Map process separates the potential land uses from being too clustered or close to one another, by ensuring that each future development occurs on a single, individual lot. For these reasons, City staff can ascertain that the proposed project does conform to the standards of the City's Comprehensive Master Plan.

As mentioned previously, the project site is located within the Commercial Land use designation. The properties directly north and west of the project site share the Commercial land use, as well as the zoning (C2 – General Commercial). The properties directly to the south and east of the project area abut the project site and are located within the Single Family land use designation, and are zoned SF6 (Single Family, 6,000 sq. ft. minimum lot size). Lot adjacency and transitional standards will be utilized as necessary to provide adequate buffering between the proposed commercial development and the existing single family subdivision.

Planning Commission Meeting March 9, 2022
Tentative Parcel Map – TPM22001

Access and egress through the site will generally be provided off of Nevada Pacific Parkway, with a main access point directly off the Nevada Pacific Parkway roundabout (3), and a secondary right-in/right-out access slightly north, adjacent to the existing Gas Station and Convenience Store (2). The secondary access is a recorded easement, and legal access is provided via the official recorded map (Lyon County Assessor's – Document 410334). An existing right-in only access exists off of Us Highway 50 Alternate and will be utilized solely for entry into the project site (4). The main entrance will be developed to loop around to the existing secondary access lane, which as mentioned earlier will provide a right-out onto Nevada Pacific Parkway. Any roadways located within this development will not be dedicated to then City of Fernley but will be maintained by a Property Owners' Association. All roadways will be constructed or improved as necessary to the City of Fernley standards. The Roadway network and ingress/egress points are shown on the aerial map shown below:



Planning Commission Meeting March 9, 2022

Tentative Parcel Map – TPM22001

A Traffic Study was provided with the application as it was understood that the proposed development would lead to greater than 100 peak hour trips. Approximately 3,535 additional daily trips were expected to be generated via the project, with an additional 286 AM peak hour trips, and 303 PM peak hour trips. It should be noted that the specific land uses for the proposed parcels of land are not confirmed at this time; For the purposes of this Traffic Study, ITE (The Institute of Transportation Engineers) codes for various tentative land uses (such as fast food restaurant, multifamily buildings, strip retail plaza) were utilized instead. Using these prospective land use codes, the Traffic Study identified that no significant infrastructure improvements would be required for this project, as LOS (Level of Service) conditions were not expected to reduce beyond LOS C. The minimum roadway capacity level utilized by the City of Fernley and NDOT (Nevada Department of Transportation) is Level of Service D. Level of Service D is generally defined below:

“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.”

The Traffic study identified that accounting for future year calculations (20 years), the Level of Service would drop to LOS C at the Nevada Pacific Parkway/US 50 Alt intersection, and all other intersection approaches would operate at LOS A. Essentially, this means that although the project does lead to additional traffic on the nearby roadways, the existing infrastructure provides sufficient capacity for the additional traffic. The full conclusions and recommendations of the Traffic Study are provided below:

CONCLUSIONS & RECOMMENDATIONS

The following is a list of key findings and recommendations:

- ▶ The proposed project is anticipated to generate approximately 3,535 new Daily trips, 286 new AM peak hour trips, and 303 new PM peak hour trips.
- ▶ Access to the internal site road network is provided via the Nevada Pacific Parkway roundabout (full access), the Project Access Road between the roundabout and US 50 ALT (right-in/right-out), and via the eastbound right turn lane from US 50 ALT (right-in only).
- ▶ The US 50 ALT / Nevada Pacific Parkway intersection will be signalized prior to this project; and the roadway will be extended to the north in the future.
- ▶ All study intersections will operate within policy level of service under Baseline, Baseline Plus Project, Future, and Future Plus Project Conditions.
- ▶ No traffic capacity improvements are recommended for this project.
- ▶ The project will construct frontage improvements on the internal roadway network.

A sewer report was provided with the application as well, as it is required for any new development or construction within the C2 (General Commercial) zoning district to connect to the City’s municipal sewer and water services. The proposed commercial development expects to utilize the existing 8-inch sewer main located within the Highway 50 Right-of-Way. Newly constructed sewer mains will serve each parcel within the project area, utilizing 8-inch diameter PVC sewer pipes. The commercial parcels are all expected to produce roughly 1000 gallons per day per acre sewage flow, whereas the multi-family project is expected to produce approximately 150 gallons per day per unit, utilizing a maximum density of 30

Planning Commission Meeting March 9, 2022

Tentative Parcel Map – TPM22001

dwelling units per acre. With these expected calculations, it is estimated that the development will generate 72,975 gallons of sewage flow per day. The provided sewer report states that there is sufficient capacity in the existing sewer main to accommodate the proposed development. Sewage flows for the project site will flow to the City's Wastewater treatment plant via a Lift Station. All improvements and construction will be in accordance with the City of Fernley Public Works Design Standards.

To ensure that the project site will have adequate drainage and retention, a hydrology study was provided with the application as well. FEMA (Federal Emergency Management Agency) floodplain data maps show that the project area is located within flood zone X, which is loosely defined as an area of minimal flood hazard. In order to maintain and collect precipitation runoff on the project site, the applicant has proposed the construction and development of a retention basin, as well as a series of catch basins and storm drains. The proposed catch basins will be located near/at roadway intersections within the project area, and will redirect runoff through a series of 18-inch diameter storm drain pipes. The storm drain pipes will collect the runoff and flow to the north of the project site, where a proposed 5,700 ft³ retention pond will be constructed. This retention basin will provide sufficient storage for the 25-year, 6 hour storm event, and will slowly meter out runoff through an outlet structure, towards the Fernley Sink further north. All facilities will be approved by the City Department of Public Works and Engineering prior to construction.

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 approve the project.

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 could 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

TPM1: Availability and Accessibility of Utilities

The subject parcel is currently vacant, though it is surrounded by existing public facilities, roads, and services. The applicant is aiming to connect to existing infrastructure such as roads, sanitary sewer, and municipal water. Through the submission of technical analyses and supporting studies, it is understood that sufficient capacity generally exists for connecting to existing municipal facilities such as sewer and water. Any new roadways or other facilities proposed to be constructed are required to be developed in compliance with the development standards laid out by the City of Fernley Department of Public Works and the City of Fernley Engineering Department.

Planning Commission Meeting March 9, 2022

Tentative Parcel Map – TPM22001

TPM2: Availability and Accessibility of public services such as schools, police and fire protection, recreation facilities, and parks.

Schools:

Given that the proposed development will contain a residential multi-family development, it is expected that the project will contribute to the existing school capacity. Students living within this development will attend Cottonwood Elementary School, Fernley Intermediate School, Silverland Middle School, and Fernley High School. The 2016 LCSD (Lyon County School District) Master Facilities Plan projected that with expected growth rates, both Cottonwood Elementary school and Fernley High School will be reaching their maximum capacity sometime after 2025. Fernley Intermediate and Silverland Middle school are expected to remain at adequate capacity through 2025 and should provide adequate facilities for new students.

Police & Fire:

The project area is located in an area currently served by the Lyon County Sherriff's Office and the North Lyon Fire protection district. In terms of distance, the project site is approximately 2.85 miles from the North Lyon Fire Protection District office and approximately 2.58 miles from the Lyon County Sherriff's Office.

Parks & Recreational Facilities:

The project site is located approximately 1.30 miles from the Fernley Out of Town Park. Additionally, the PAW-sitive Play Dog Park is adjacent to the Out of Town Park, just another ±0.2 miles further southeast.

TPM3: Consistency with the Zoning district regulations.

The proposed Tentative Map is generally consistent with the zoning regulations as outlined within the City of Fernley Development Code. Adjacency and Lot Transition standards may need to be addressed due to the project areas' proximity to existing Single Family development. This will likely be addressed after specific lot-site plans have been received during a separate permit process.

TPM4: Recommendations & Comments of Review Bodies

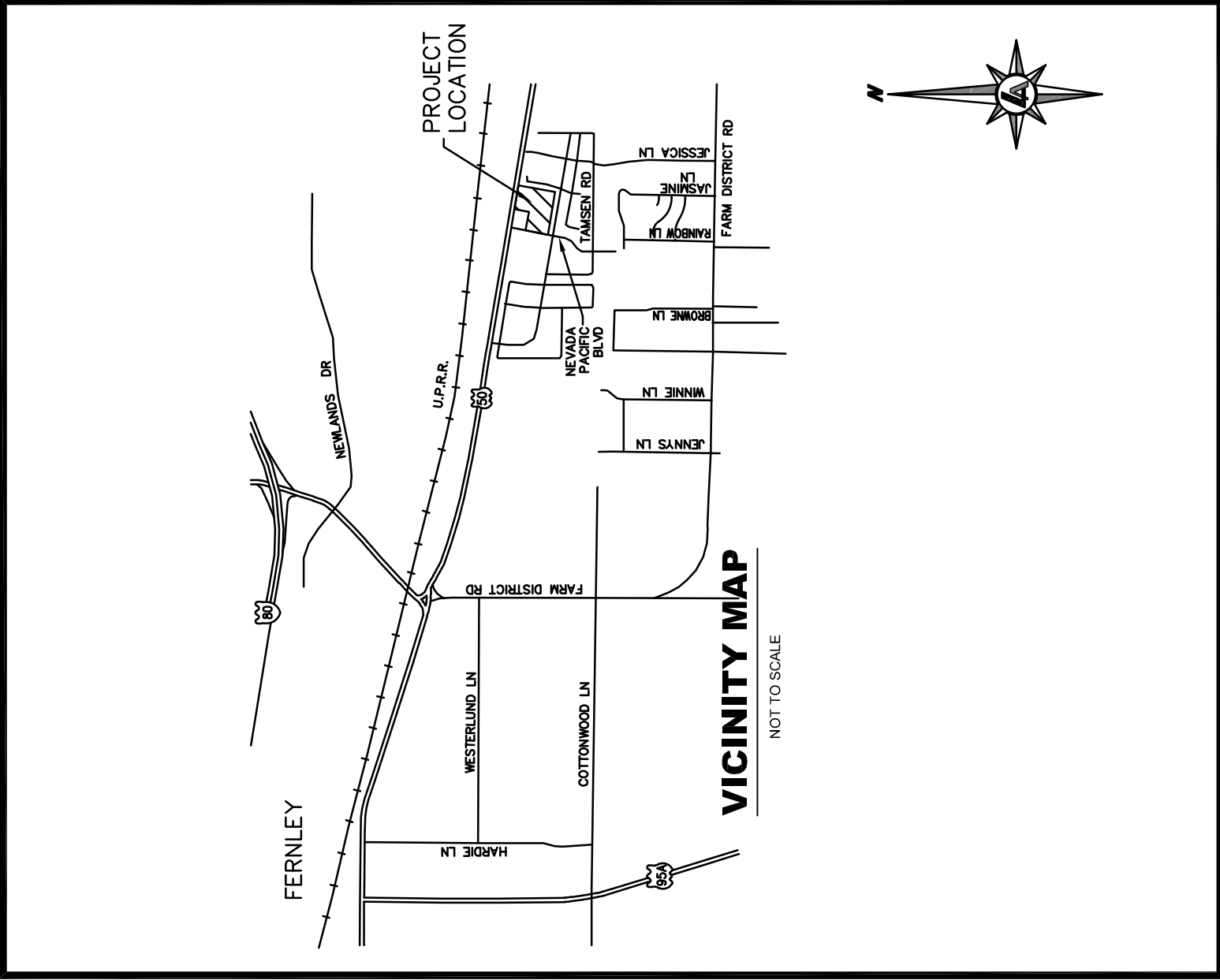
All agency comments and recommendations have been addressed.

TPM5: Compliance with this Code and all other applicable regulations

This Tentative Parcel Map is in compliance with the City's Development Code and all other applicable regulations.

ATTACHMENTS

1. Vicinity Map
2. Tentative Parcel Map
3. TPM22001 Conditions of Approval



LUMOS & ASSOCIATES
178 SOUTH MAINE STREET
FALLON, NV 89406
TEL (775) 423-2188

**VICINITY MAP
FOR
GOUDY INVESTMENTS, LLC**

LYON COUNTY NEVADA

Date: 01/2022
Scale: N.T.S.
Job No: 10392.000

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT THE UNDERSIGNED, GOUDY INVESTMENTS, LLC, IS THE OWNER OF THE TRACT OF LAND REPRESENTED ON THIS PLAT AND HAS CONSENTED TO THE PREPARATION AND RECORDATION OF THIS PLAT AND THAT THE SAME IS EXECUTED IN COMPLIANCE WITH AND SUBJECT TO THE PROVISIONS OF N.R.S. CHAPTER 278, AND THAT THE EASEMENTS AS SHOWN FOR ACCESS, UTILITY AND DRAINAGE ARE HEREBY GRANTED, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS FOREVER.

GOUDY INVESTMENTS, LLC, A NEVADA LIMITED LIABILITY COMPANY

BY: _____ DATE _____

ITS: _____

STATE OF _____ } S.S.
COUNTY OF _____

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____

BY _____ PERSONALLY APPEARED BEFORE ME, A
NOTARY PUBLIC, WHO ACKNOWLEDGED THAT THEY EXECUTED THE ABOVE
INSTRUMENT.

NOTARY PUBLIC
(MY COMMISSION EXPIRES _____)

SECURITY INTEREST HOLDERS CERTIFICATE

APN 021-201-47, 48 & 50, DEED OF TRUST DOCUMENT NO. 637884 IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.

THIS IS TO CERTIFY THAT THE UNDERSIGNED, BH PROPERTIES, LLC, CONSENTS TO THE PREPARATION AND RECORDATION OF THIS PLAT.

BY: _____
TITLE: _____

BY: _____
TITLE: _____

STATE OF _____ } S.S.
COUNTY OF _____

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____

BY _____ PERSONALLY APPEARED BEFORE ME, A
NOTARY PUBLIC, WHO ACKNOWLEDGED THAT THEY EXECUTED THE ABOVE
INSTRUMENT.

NOTARY PUBLIC
(MY COMMISSION EXPIRES _____)

CITY OF FERNLEY CERTIFICATE

IT IS HEREBY CERTIFIED THAT THIS PARCEL MAP IS IN SUBSTANTIAL COMPLIANCE WITH THE CITY OF FERNLEY WATER, WASTEWATER, ROADWAY AND DRAINAGE STANDARDS AND REGULATIONS AND THAT ALL REQUIRED IMPROVEMENTS HAVE BEEN COMPLETED OR PROPER FINANCIAL SECURITY HAS BEEN POSTED GUARANTEEING COMPLETION OF THIS PARCEL MAP AND ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED. THERE ARE NO PUBLIC ROADS OFFERED FOR DEDICATION AS PART OF THIS MAP.

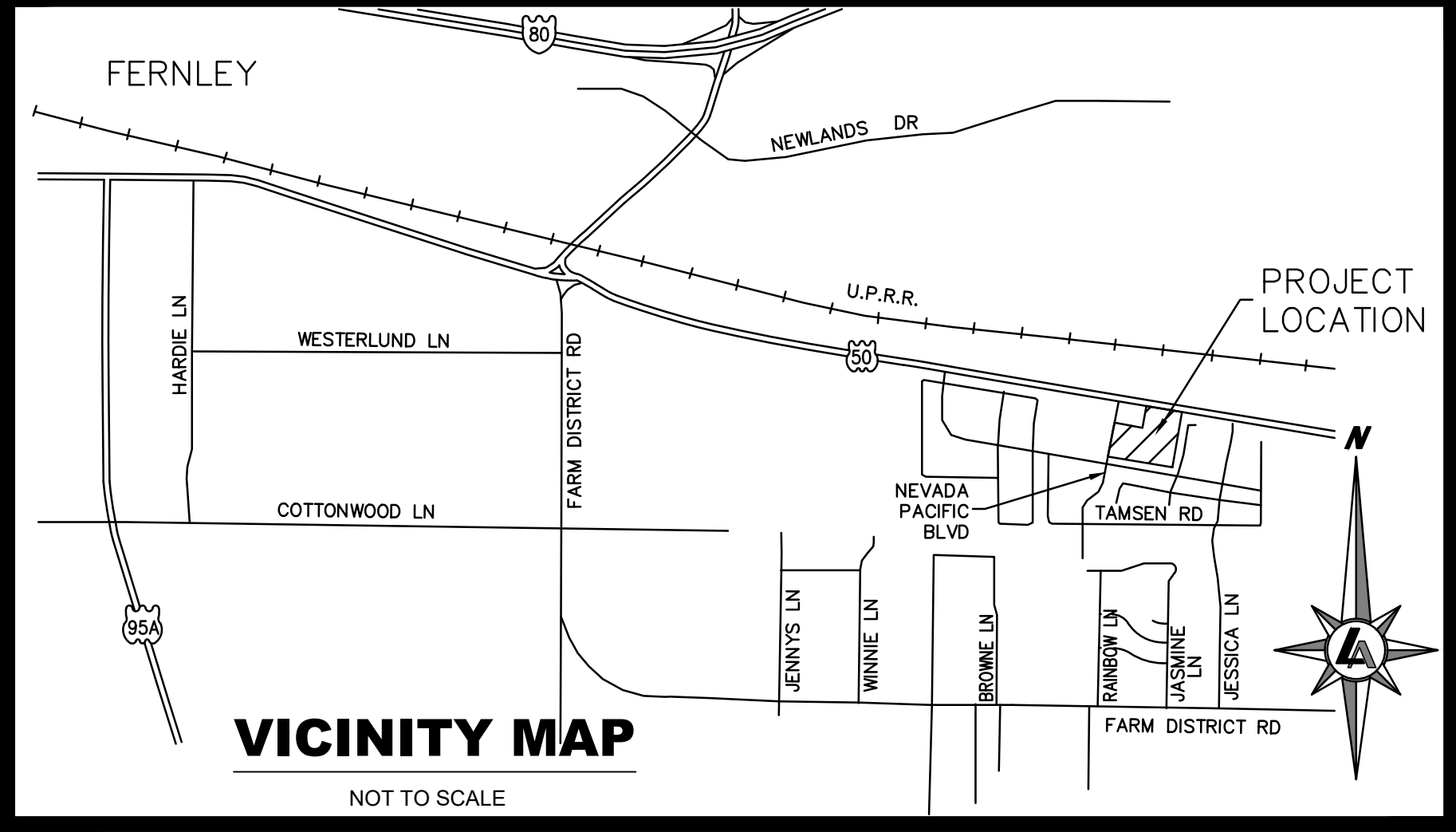
CITY OF FERNLEY ENGINEER _____ DATE _____
PRINTED NAME: _____

TITLE COMPANY CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS PLAT HAS BEEN EXAMINED AND THE SUBDIVIDER OFFERING THIS PLAT IS THE LAST TITLE HOLDER OF RECORD FOR ALL THE LANDS DELINEATED HEREON, AND THE LANDS ARE FREE FROM ANY LIENS OR ENCUMBRANCES, AS OF _____, 2021

TITLE COMPANY _____

BY: _____
TITLE: _____



TRUCKEE-CARSON IRRIGATION DISTRICT

I, RUSTY D. JARDINE, ESQ., GENERAL MANAGER OF THE TRUCKEE-CARSON IRRIGATION DISTRICT (DISTRICT) DOES HEREBY DECLARE AS FOLLOWS:

- EVERY PARCEL DEPICTED UPON THIS MAP LIES WITHIN THE GEO-PHYSICAL BOUNDARIES OF THE NEWLANDS FEDERAL RECLAMATION PROJECT (PROJECT) ESTABLISHED BY ACT OF CONGRESS IN 1902 (32 STAT. 388), AND THE BOUNDARIES OF THE DISTRICT AS AUTHORIZED BY THE NEVADA IRRIGATION DISTRICT ACT (NRS 539.010 ET SEQ). DEPICTED ON THIS MAP ARE PROJECT EASEMENTS AND/OR RIGHTS OF WAY FOR THE CONSTRUCTION, MAINTENANCE, AND/OR OPERATION OF PROJECT CANALS, LATERALS, DRAINS, AND/OR FACILITIES. OBSTRUCTIONS AND/OR NUISANCES TO OR WITHIN PROJECT CANALS, LATERALS, DRAINS, AND/OR FACILITIES, ARE IMPERMISSIBLE.
- THE DISTRICT BY AGREEMENT WITH THE UNITED STATES OF AMERICA, THROUGH THE BUREAU OF RECLAMATION (RECLAMATION) OF THE DEPARTMENT OF THE INTERIOR, IS THE AGENT FOR THE OPERATION AND MAINTENANCE OF THE PROJECT. THE DISTRICT IS AUTHORIZED TO ENTER PROJECT EASEMENTS AND/OR RIGHTS OF WAY FOR ALL LAWFUL PURPOSES ASSOCIATED WITH THE OPERATION AND MAINTENANCE OF THE PROJECT.
- ALL LANDS DEPICTED HEREON, HAVING SURFACE WATER RIGHTS APPURTENANT THERETO, ARE SUBJECT TO REGULATION BY THE DISTRICT FOR THE DELIVERY AND DISTRIBUTION OF WATER AS PROVIDED FOR BY NRS 539.233.
- THE DISTRICT ASSUMES NO LEGAL DUTY, AS TO THE LANDS DEPICTED HEREON, FOR THE INSPECTION OR REVIEW OF PAST OR FUTURE HYDROLOGIC CONDITIONS, INCLUDING, WITHOUT LIMITATION, CHANGES TO SURFACE OR GROUNDWATER SOURCES, WATER TABLES, OR FLOODING, AND MAKES NO CLAIM OR WARRANTY AS TO THE EXISTENCE OF SUCH ADVERSE HYDROLOGIC CONDITION(S) NOW ATTENDING THE LANDS, OR EXISTING STRUCTURES, OR AS TO ANY STRUCTURE(S) TO BE PLANNED OR TO BE CONSTRUCTED THEREON.
- THE DISTRICT ASSUMES NO LEGAL DUTY FOR, NOR MAKES ANY WARRANTY ASSOCIATED WITH, THE ACCURACY OF THE WATER RIGHTS DEPICTED ON THIS MAP.

RUSTY D. JARDINE, ESQ.
DISTRICT MANAGER

CITY SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE FINAL PARCEL MAP HAS BEEN REVIEWED AND APPROVED

CITY SURVEYOR _____ DATE _____

PRINTED NAME: _____

LYON COUNTY FIRE DISTRICT

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PARCEL MAP AND HAVE NO OBJECTIONS TO THE APPROVAL OF THIS MAP.

FIRE MARSHALL _____ DATE _____

PRINTED NAME: _____

PLANNING COMMISSION CERTIFICATE

IT IS HEREBY CERTIFIED THAT THIS PARCEL MAP WAS REVIEWED BY THE CITY OF FERNLEY COMMUNITY DEVELOPMENT DEPARTMENT AND DETERMINED TO BE IN SUBSTANTIAL COMPLIANCE WITH THE CONDITIONS OF APPROVAL ISSUED BY THE PLANNING COMMISSION ON THE _____ DAY OF _____, 2021.

PLANNING COMMISSION CHAIRMAN _____ DATE _____

PRINTED NAME: _____

G.I.S. CERTIFICATE

A DIGITAL COPY OF THIS MAP HAS BEEN DELIVERED TO THE CITY OF FERNLEY AND LYON COUNTY G.I.S. DEPARTMENTS.

CITY OF FERNLEY G.I.S. DEPARTMENT _____ DATE _____
PRINTED NAME: _____

COUNTY OF LYON G.I.S. DEPARTMENT _____ DATE _____
PRINTED NAME: _____

RIGHT TO FARM

THE LANDS SHOWN HEREON ARE SUBJECT TO THE RIGHT TO FARM ORDINANCE AS SET FORTH IN THE CITY OF FERNLEY CITY CODE, TITLE 10.

SURVEYOR'S CERTIFICATE

I, DAVID C. CROOK, A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF NEVADA, AS AGENT FOR LUMOS AND ASSOCIATES, INC., CERTIFY THAT:

- THIS PLAT REPRESENTS THE RESULTS OF A SURVEY CONDUCTED UNDER MY DIRECT SUPERVISION AT THE INSTANCE OF GOUDY INVESTMENTS, LLC..
- THE LANDS SURVEYED LIE WITHIN THE SE1/4 OF SECTION 17, T.20 N., R.25 E., M.D.M., AND THE SURVEY WAS COMPLETED ON _____
- THIS PLAT COMPLIES WITH THE APPLICABLE STATE STATUTES AND ANY LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE GOVERNING BODY GAVE ITS FINAL APPROVAL.
- THE MONUMENTS DEPICTED ON THE PLAT ARE OF THE CHARTER SHOWN, OCCUPY THE POSITIONS INDICATED AND ARE OF SUFFICIENT NUMBER AND DURABILITY.

FOR REVIEW ONLY
DAVID C. CROOK, P.L.S.
NEVADA CERTIFICATE No. 10836

UTILITY COMPANY'S CERTIFICATE

THE UTILITY EASEMENTS SHOWN ON THIS PLAT HAVE BEEN CHECKED, ACCEPTED, AND APPROVED BY THE UNDERSIGNED PUBLIC UTILITY AND CABLE TV COMPANIES.

SIERRA PACIFIC POWER CO. d/b/a NV ENERGY _____ DATE _____
BY: _____
TITLE: _____

NEVADA BELL TELEPHONE CO. d/b/a AT&T NEVADA _____ DATE _____
BY: _____
TITLE: _____

CHARTER COMMUNICATIONS _____ DATE _____
BY: _____
TITLE: _____

SOUTHWEST GAS CORPORATION _____ DATE _____
BY: _____
TITLE: _____

COUNTY CLERK'S CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT THERE ARE NO LIENS FOR UNPAID STATE, COUNTY, CITY OR LOCAL TAXES OR SPECIAL ASSESSMENTS AN THAT ALL TAXES FOR THE FISCAL YEAR HAVE BEEN PAID ON THE PROPERTY SHOWN HEREON. A.P.N. 021-201-47

BY: _____ DATE: _____
LYON COUNTY CLERK / TREASURER

PRINTED NAME: _____

RECORDER'S CERTIFICATE

FILE No. _____

FEE: _____

FILE FOR RECORD AT THE REQUEST OF LUMOS & ASSOCIATES, INC.

ON THIS _____ DAY OF _____, 2022, AT _____ MINUTES

PAST _____ O'CLOCK _____ M., OFFICIAL RECORDS OF LYON COUNTY, NEVADA.

COUNTY RECORDER

BY: _____
DEPUTY

PARCEL MAP

FOR

GOUDY INVESTMENTS, LLC

A DIVISION OF PARCEL _____ OF RECORD OF SURVEY MAP, FILE NO. _____
SITUATE WITHIN A PORTION OF THE SE1/4 OF SECTION 17
TOWNSHIP 20 NORTH, RANGE 25 EAST, M.D.M.

CITY OF FERNLEY

LYON COUNTY

STATE OF NEVADA

LUMOS
& ASSOCIATES

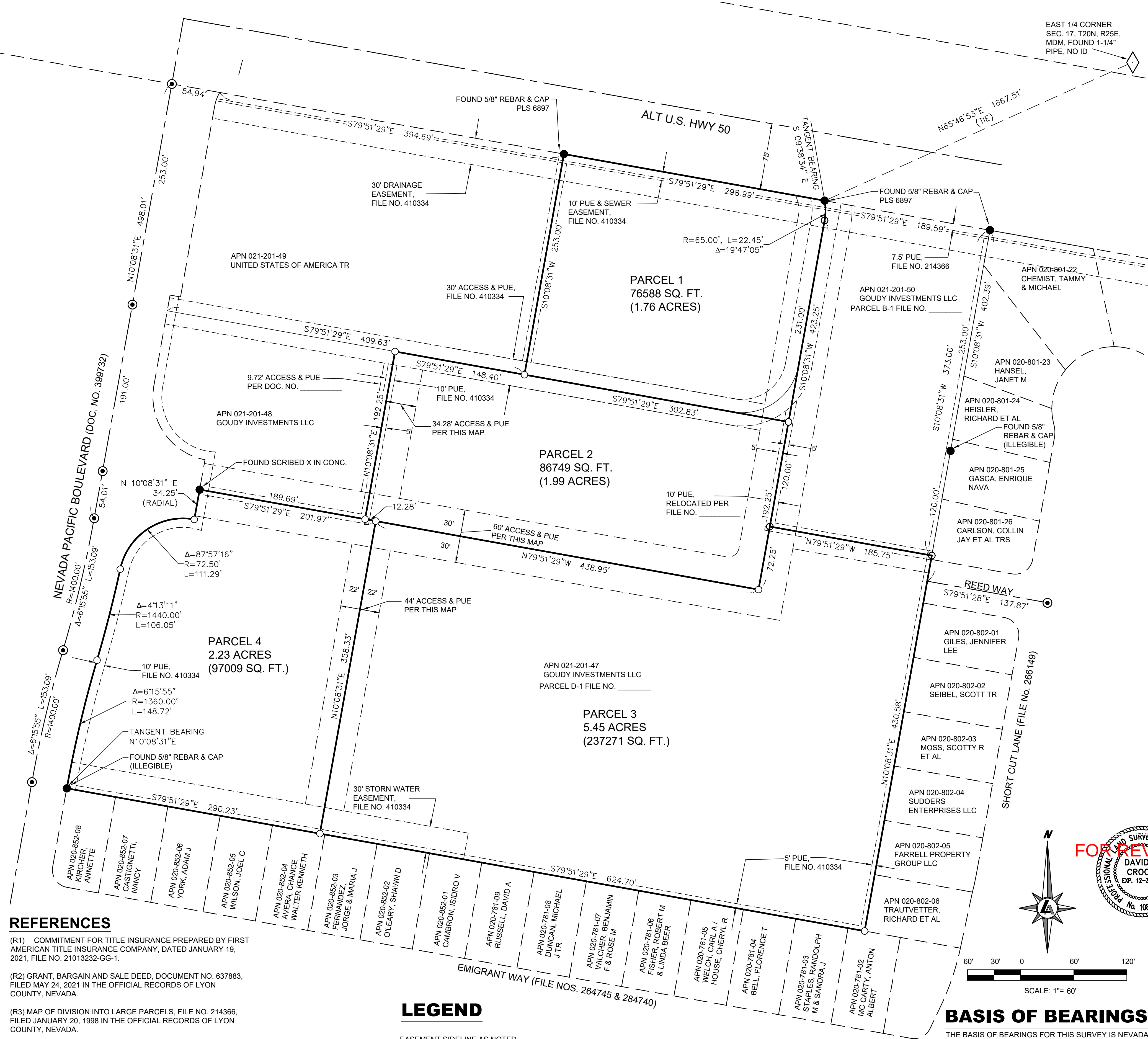
178 SOUTH MAINE STREET
FALLON, NV 89406
TEL (775) 423-2188

Drawn By : DCC

Sheet : 1 of 2

Job No. : 13092.001

Drawing No.: 10392001SURVEY.DWG



REFERENCES

- (R1) COMMITMENT FOR TITLE INSURANCE PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY, DATED JANUARY 19, 2021, FILE NO. 21013232-GG-1.
- (R2) GRANT, BARGAIN AND SALE DEED, DOCUMENT NO. 637883, FILED MAY 24, 2021 IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.
- (R3) MAP OF DIVISION INTO LARGE PARCELS, FILE NO. 214366, FILED JANUARY 20, 1998 IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.
- (R4) RECORD OF SURVEY MAP, FILE NO. 238098, FILED AUGUST 23, 1999 IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.
- (R5) RECORD OF SURVEY MAP, FILE NO. 399734, FILED JANUARY 31, 2007 IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.
- (R6) PARCEL MAP, FILE NO. 410334, FILED JULY 16, 2007 IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.

LEGEND

- EASEMENT SIDELINE AS NOTED
- FOUND CORNER AS NOTED NOTED
- ⊙ FOUND 2" ALUMINUM CAP IN MONUMENT WELL
- SET 5/8" REBAR AND CAP, PLS 10836

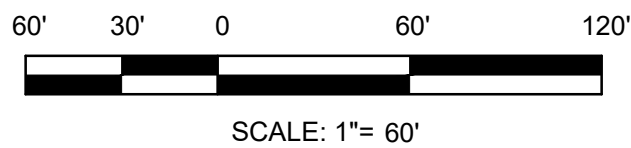
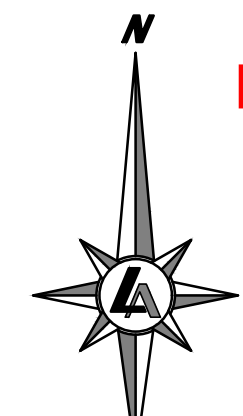
OWNER

GOUDY INVESTMENTS, LLC
2370 DEL MONTE LANE
RENO, NV 89511

NOTES

- LEGAL DESCRIPTION:
ALL THAT CERTAIN PARCEL SITUATE WITHIN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 17, T.20N., R.25E., M.D.M. AND BEING ALL OF PARCEL D-1 AS DESCRIBED IN QUITCLAIM DEED, DOCUMENT NO. _____ IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.
- PROPOSED PARCEL SIZE
PARCEL 1: 76588± SQ.FT./1.76± ACRES
PARCEL 2: 86749± SQ.FT./1.99± ACRES
PARCEL 3: 237271± SQ.FT./5.45± ACRES
PARCEL 4: 97009± SQ. FT./2.23± ACRES
TOTAL AREA: 497617± SQ.FT./11.42± ACRES
- CURRENT ZONING = C2
CURRENT MASTER PLAN DESIGNATION = COMMERCIAL (C)
- A PUBLIC UTILITY EASEMENT HEREBY GRANTED WITHIN EACH PARCEL FOR THE EXCLUSIVE PURPOSE OF INSTALLING AND MAINTAINING UTILITY SERVICE FACILITIES TO THAT PARCEL, WITH THE RIGHT TO EXIT THAT PARCEL WITH SAID UTILITY FACILITIES FOR THE PURPOSE OF SERVING OTHER PARCELS, AT LOCATIONS MUTUALLY AGREED UPON BY OWNER OF RECORD AT THAT TIME OF INSTALLATION AND THE UTILITY COMPANY.
- PUBLIC UTILITY EASEMENTS ARE HEREBY GRANTED AS DEPICTED HEREON.
- ALL PUBLIC UTILITY EASEMENTS SHALL INCLUDE CABLE TELEVISION.
- A PUBLIC UTILITY EASEMENT IS HEREBY GRANTED TO SOUTHWEST GAS CORPORATION WITHIN EACH PARCEL AS SHOWN FOR THE EXCLUSIVE PURPOSE OF INSTALLING AND MAINTAINING UTILITY SERVICE FACILITIES TO THAT PARCEL, WITH THE RIGHT TO EXIT THAT PARCEL WITH SAID UTILITY FACILITIES FOR THE PURPOSE OF SERVING ADJACENT PARCELS.
- RESERVATIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, RECORDED JULY 23, 1902, IN BOOK N OF DEEDS, PAGE 381, LYON COUNTY, NEVADA.
- WAIVER OF DAMAGES IN FAVOR OF THE STATE OF NEVADA FOR ANY AND ALL DAMAGES TO SAID LAND BY REASON OF THE LOCATION, CONSTRUCTION, LANDSCAPING OF MAINTENANCE OF A PUBLIC HIGHWAY CONTIGUOUS TO SAID LAND, AS CONTAINED IN THE INSTRUMENT RECORDED AUGUST 19, 1949 IN BOOK 36 OF DEEDS, PAGE 16, AS DOCUMENT NO. 57104, LYON COUNTY, NEVADA.
- AN EASEMENT AFFECTING A PORTION OF SAID LAND AND FOR THE PURPOSES STATED THEREIN, AND INCIDENTAL PURPOSES IN FAVOR OF NEVADA BELL, TO CONSTRUCT, PLACE, INSPECT, MAINTAIN, REPLACE AND REMOVE COMMUNICATION FACILITIES, RECORDED OCTOBER 9, 1994, AS DOCUMENT NO. 176163, OFFICIAL RECORDS, LYON COUNTY, NEVADA. EASEMENT DOES NOT AFFECT SUBJECT PARCEL, EASEMENT LIES WITHIN HIGHWAY RIGHT-OF-WAY.

FOR REVIEW ONLY



BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD83(94) BASED UPON REAL TIME KINEMATIC GPS OBSERVATIONS, OBSERVED JUNE 11, 2021 USING A SURVEY GRADE DUAL FREQUENCY GPS RECEIVER FROM NEVADA DEPARTMENT OF TRANSPORTATION MONUMENT NO. 1528012 MODIFIED BY A COMBINED FACTOR OF 1.000245, SCALED FROM 0.00N 0.00E AND CONVERTED TO U.S. SURVEY FEET. ALL DIMENSIONS ON THIS MAP ARE GROUND DISTANCES.

PARCEL MAP

FOR

GOUDY INVESTMENTS, LLC

A DIVISION OF PARCEL _____ OF RECORD OF SURVEY MAP, FILE NO. _____ SITUATE WITHIN A PORTION OF THE SE1/4 OF SECTION 17 TOWNSHIP 20 NORTH, RANGE 25 EAST, M.D.M.

CITY OF FERNLEY

LYON COUNTY

STATE OF NEVADA



178 SOUTH MAINE STREET
FALLON, NV 89406
TEL (775) 423-2188

LUMOSINC.COM

Drawn By : DCC

Sheet : 1 of 2

Job No. : 13092.001

Drawing No. : 10392001SURVEY.DWG

Conditions of Approval for TPM22001

Tentative Parcel 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:

A TENTATIVE PARCEL MAP REQUEST ASSOCIATED WITH TPM 22001, TO CREATE 4 PARCELS ON A SITE APPROX. 11.94 ACRES IN SIZE, LOCATED WITHIN THE C2 (GENERAL COMMERCIAL) ZONING DISTRICT, LOCATED ADJACENT TO NEVADA PACIFIC PARKWAY AND US HIGHWAY 50 ALTERNATE (APN: 021-201-47).

3. EXPIRATION DATE:

THE TENTATIVE PARCEL MAP SHALL EXPIRE WITHIN ONE (1) YEAR OF THE DATE OF THE PLANNING COMMISSION APPROVAL, UNLESS THE FINAL PARCEL MAP HAS BEEN RECORDED IN ACCORDANCE WITH NEVADA REVISED STATUTES (N.R.S.) 278.360.

4. 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.

5. SEWER REPORT:

AT THE TIME OF ANY FINAL MAP SUBMITTAL, THE DEVELOPER SHALL SUBMIT A FINAL SEWER REPORT THAT COMPLIES WITH ALL REQUIREMENTS OF CHAPTER 8 OF THE CITY OF FERNLEY'S PUBLIC WORKS DESIGN STANDARDS MANUAL TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

6. 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.

Conditions of Approval for TPM22001

Tentative Parcel Map

7. UTILITY EASEMENTS:

THE DEVELOPER SHALL PROVIDE EASEMENTS TO THE CITY OF FERNLEY FOR THE MAINTENANCE OF THE WATER MAINS, METER BOXES, AND SEWER MAINS 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.

8. WATER SYSTEM LOOPING:

THE DEVELOPER SHALL PROVIDE THE CITY WITH A UTILITY PLAN FOR THE WATER SYSTEM THAT DEMONSTRATES ADEQUATE SYSTEM LOOPING PRIOR TO THE ISSUANCE OF A PERMIT. THE PLAN SHALL BE IN CONFORMANCE WITH THE CITY OF FERNLEY'S MUNICIPAL CODE, NEVADA ADMINISTRATIVE CODE AND PUBLIC WORKS DESIGN MANUAL TO THE APPROVAL OF THE CITY ENGINEER, PUBLIC WORKS DIRECTOR, AND ADMINISTRATOR.

9. PROJECT PHASING:

IF THE PROJECT IS TO BE COMPLETED IN PHASES, 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.

10. 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.

11. ENGINEERING DIVISION:

THE DEVELOPER SHALL COMPLY WITH ALL ENGINEERING REQUIREMENTS WITHIN 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.

12. STREETS:

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

Conditions of Approval for TPM22001

Tentative Parcel Map

13. 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.

14. DRAINAGE AND GRADING:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE CITY'S 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 REPORT AND GRADING PLANS FOR ANY PHASE OF THE DEVELOPMENT SHALL BE REVIEWED AND APPROVED BY THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO THE ISSUANCE OF A GRADING PERMIT FOR EACH PHASE OF THE PROJECT.

15. 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.

16. 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. 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 TITLE 32, IMPROVEMENTS AND AGREEMENTS, OF THE FERNLEY MUNICIPAL CODE.

Conditions of Approval for TPM22001

Tentative Parcel Map

17. NORTH LYON COUNTY FIRE PROTECTION DISTRICT:

THE DEVELOPER SHALL COMPLY WITH THE REQUIREMENTS OF THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT TO THE APPROVAL OF THE ADMINISTRATOR AND THE FIRE CHIEF PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

18. UNITED STATES POSTAL SERVICE:

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.

19. WASTE MANAGEMENT SERVICE:

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.

20. ACCESS:

THE DEVELOPER SHALL DEMONSTRATE THAT LEGAL ACCESS IS PROVIDED TO EACH PROPOSED PARCEL TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF THE FINAL PARCEL MAP FOR THE PROJECT.

21. LANDSCAPING/IRRIGATION PLAN(S)

THE DEVELOPER SHALL PROVIDE ADEQUATE LANDSCAPING THROUGHOUT THE PROJECT AREA FOR EACH INDIVIDUAL PARCEL, AS WELL AS THE PROJECT AREA AS A WHOLE. ALL LANDSCAPING SHALL COMPLY WITH THE STANDARDS OUTLINED IN SECTION 32.09.090 OF THE CITY OF FERNLEY DEVELOPMENT CODE, AND IS SUBJECT TO THE APPROVAL OF THE ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND CITY ENGINEER.

22. ACCESS AND CIRCULATION:

THE DEVELOPER SHALL USE APPROPRIATE STRIPING AND SIGNAGE AS MAY BE NECESSARY TO MINIMIZE TRAFFIC CONFLICT WITHIN THE DEVELOPMENT SITE TO THE APPROVAL OF THE ADMINISTRATOR AND CITY ENGINEER FOR THE LIFE OF THE PROJECT.