



N E V A D A

AGENDA
Regular Meeting
Planning Commission

Wednesday, January 11, 2023 • 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/82966343247>, or one tap_mobile: 12532158782, Dial: 669 900 9128, Webinar ID: 829 6634 3247

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. STAFF REPORTS

3. GENERAL BUSINESS

3.1. (For Possible action) Discussion and election of City of Fernley Planning Commission Officers for 2023.

4. PUBLIC HEARINGS

A. DISCUSSION WITH PLANNING COMMISSION & STAFF B. PUBLIC INPUT C. ADDITIONAL DISCUSSION WITH PLANNING COMMISSION & STAFF D. COUNCIL ACTION OR DIRECTION TO STAFF

4.1. For Possible Action – Public Hearing, TSM 2019-002EOT – Extension of Time

Consideration and possible action on an extension of time request of not more than two years for Genica NV, LLC to record a final parcel map for Donner Trails Estates Phase 12B, a 61-parcel single family subdivision generally located on Mifflin Street between Endeavor Lane and Langdon Street (APN: 021-201-57) on a site ±11.24 acres in size.

4.2. For Possible Action – Public Hearing, TPM22005 – Tentative Parcel Map

Consideration and possible action on a tentative parcel map application from Reno Engineering Corporation to allow for the development of 4 commercial buildings with the working name “Nevada Commerce Center” on a site ±78.86 acres in size and located approximately 850 & 855 Commerce Center Drive (APNs: 021-061-29 & 021-061-30).

4.3. For Possible Action – Public Hearing, TPM22006 – Tentative Parcel Map

Consideration and possible action on a tentative parcel map application from Morton & Pitalo to allow for the division of a commercial site ±12.66 acres in size with the working name “Stanley Drive Commercial”, generally located on Stanley Drive (APN: 021-232-53) into a ±3.5-acre site proposed for the development of a hotel and a ±9.2-acre site reserved for future commercial development.

4.4. For Possible Action – Public Hearing, TSM22005 – Tentative Subdivision Map

Consideration and possible action on a tentative subdivision map application from Phelps Engineering Services to allow for the development of Sherwood Villages, a 316-unit multifamily residential complex on a site ±26.25-acres in size and generally located north of Fremont Street, south of US Interstate 80, west of Wildwood Drive, and east of Vine Street (APNs: 021-092-05, 021-092-23, 021-092-26, 021-092-27, 021-092-46, 021-092-47, 021-092-54, & 021-092-55).

5. CHAIR AND COMMISSION ITEMS

(SUMMARY OR ACTIVITY REPORTS ON PLANNING ISSUES, ACTIVITIES OR ORGANIZATIONS IN WHICH INDIVIDUAL MEMBERS MAY BE INVOLVED. THIS ITEM IS TO PROVIDE GENERAL INFORMATION TO THE COMMISSION AND PUBLIC. NO DISCUSSION SHALL TAKE PLACE AND NO ACTION WILL BE TAKEN.)

6. PLANNING DIRECTOR ITEMS

(ACTIVITY SUMMARY OR UPDATES ON PROJECTS THAT HAVE BEEN PREVIOUSLY REVIEWED BY THE PLANNING COMMISSION. THIS ITEM IS TO PROVIDE GENERAL INFORMATION TO THE COMMISSION AND PUBLIC. NO DISCUSSION SHALL TAKE PLACE AND NO ACTION WILL BE TAKEN.)

7. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

8. PUBLIC FORUM

9. ADJOURNMENT

Next Meeting: February 8, 2023 @ 5pm

**MINUTES OF THE
FERNLEY PLANNING COMMISSION MEETING
DECEMBER 14, 2022**

1. INTRODUCTORY ITEMS

1.1. Roll Call

Present: Planning Commission Chairman Barry Williams, Sr. Planning Commission Vice-Chair Cody Wagner, Commissioner Angela Lewis, Commissioner Shellie Severa, Commissioner Jennie McCullar, Commissioner Jan Hodges. Associate Planner Shea League, Acting Planning Director Lydia Altick, City Engineer Derek Starkey, Deputy City Clerk Brenda Gosser, Administrative Specialist Sandy Harris. **Absent:** Commissioner Lodhi.

1.2. Public Forum

No public comments

1.3. (For Possible Action) Approval of Agenda

Motion: I MOVE TO APPROVE THE AGENDA **Action:** Approved, **Moved by** Commissioner Angela Lewis, **Seconded by** Vice-Chair Cody Wagner. **Vote:** Passed, **Summary:** Yes 6, **Yes:** Chairman Williams, Commissioner Severa, Commissioner McCullar, Commissioner Lewis, Planning Commission Vice-Chair Wagner, Commissioner Hodges. **Absent:** Commissioner Lodhi.

1.4. (Possible Action) Approval of Minutes

Motion: I MOVE TO APPROVE THE MINUTES FROM NOVEMBER 9, 2022. **Action:** Approved, **Moved by** Vice-Chair Cody Wagner, **Seconded by** Commissioner Shellie Severa. **Vote:** Passed, **Summary:** Yes 6. **Yes:** Chairman Williams, Commissioner Hodges, Commissioner Severa, Commissioner McCullar, Commissioner Lewis, Vice-Chair Wagner. **Absent:** Commissioner Lodhi.

2. PUBLIC HEARINGS

2.1. (For Possible Action) Consideration of a type 1 vacation request (T1V22002) by 290 Logan, LLC to abandon the public street right of way known as “Shinook Court”, located at approximately 290 Logan Lane (APNs: 021-071-37, 021-071-38, 021-071-39, and 021-071-40) to facilitate development of a project with the working title of Logan Lane Commercial.

Shay League, Associate Planner, gave detailed presentation.

Commissioner Williams called for public input. There was none.

Motion: I MOVE TO RECOMMEND TO THE CITY COUNCIL APPROVE THE TYPE 1 VACATION REQUEST ASSOCIATED WITH T1V22002. **Action:** Approve. **Moved by** Vice-Chair Cody Wagner, **Seconded by** Commissioner Angela Lewis. **Vote:** Passed, **Summary:** Yes 6. **Yes:** Chairman Williams, Commissioner Hodges, Commissioner Severa, Commissioner

McCullar, Commissioner Lewis, Vice-Chair Wagner. **Absent:** Commissioner Lodhi.

2.2. (For Possible Action) Consideration and possible action on a zoning map amendment (ZMA22009) and conditional use permit request (CUP22004) to change the zoning designation of a ±20.80-acre project site located at approximately 501 River Ranch Road (APNs: 021-281-03, 021-281-04, 021-281-09, and 021-281-10) from ±15.13-acres Industrial (I), ±3.67-acres Employment Center (EC), and ±2.00-acres General Commercial (C2) to Mixed Use (MU) to facilitate the construction of a 320-unit multi-family project called River Ranch Apartments, by request of ERGS, Inc.

Shay League, Associate Planner presented the findings regarding zoning and conditional uses.

Melissa Lindell with ERGS, Inc. provided a site photo presentation along with City conditional use requirements. Ms. Lindell proposed a modification to Condition #39.

Commissioner Wagner expressed concerns with only one street, but okay with no additional through street.

Derek Starkey, City Engineer, explained that the Master Plan language avoided dead head neighborhoods and providing interconnectivity. He stated he agreed with applicant in this scenario.

Commissioner Lewis asked about the gates for school children to use.

Gregory Peek, President ERGS explained the gates are for emergency access that can be used for pedestrian access only.

Commissioner Williams called for public input.

Henry Calselon expressed concern that the infrastructure is not ready. He was also concerned about where River Ranch Road floods at Highway 50.

Jason Bates expressed concern about traffic and security for his children.

Kelly Flodman clarified that you can get to Donner Trails through River Ranch by way of Round Up Road.

John Cannon stated he has traffic safety concerns in regards to line of sight on hill peek.

Amanda Snell stated she felt residents are being encroached upon, and has concerns about traffic with only one street and the flooding.

Motion: I MOVE TO RECOMMEND CITY COUNCIL APPROVE THE ZONING MAP AMENDMENT ASSOCIATED WITH ZMA22009, BASED ON FINDINGS Z1 TO Z3, AND THE FACTS SUPPORTING THOSE FINDINGS AS SET FORTH IN THE STAFF REPORT, **Action:** Approve, **Moved by** Vice-Chair Cody Wagner, **Seconded by** Commissioner Jan Hodges. **Vote:** Passed, **Summary:** Yes 5, No 1. **Yes:** Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Vice-Chair Wagner, **No:** Commissioner Severa, **Absent:** Commissioner Lodhi.

Motion: MOVE TO APPROVE THE CONDITIONAL USE PERMIT ASSOCIATED WITH

CUP22004, ADOPTING FINDINGS CU1 THROUGH CU6 AND THE FACTS SUPPORTING THESE FINDINGS AS SET FORTH IN THE STAFF REPORT AND SUBJECT TO THE CONDITIONS OF APPROVAL 1 THROUGH 38 AS LISTED IN THE STAFF REPORT. FURTHER MOVE TO EDIT CONDITION 39 TO INCLUDE THE PROPOSED LANGUAGE FROM THE DEVELOPER WHERE CURB GUTTER SIDEWALK IS NOT NECESSARY ON THE EAST SIDE BUT WITH THE ADDITIONAL REQUIREMENT THAT THE FLOODING ISSUE AT THE BOTTOM OF RIVER RANCH ROAD IS MITIGATED TO THE APPEASEMENT OF CITY STAFF. **Action:** Approve **Moved by:** Vice-Chair Cody Wagner, **Seconded by:** Commissioner Angela Lewis. **Vote:** Passed, **Summary:** Yes 5, No 1. **Yes:** Chairman Williams, Commissioner Hodges, Commissioner McCullar, Commissioner Lewis, Vice-Chair Wagner, **No:** Commissioner Severa, **Absent:** Commissioner Lodhi.

2.3. (For Possible Action) Consideration and possible action on a type 1 vacation request (T1VAC22001) by Phelps Engineering Services, Inc. to abandon the public street right of way known as “Delores Court”, generally located north of Fremont Street between Vine Street and Wildwood Street (APNs: 021-092-46, 021-092-47, 021-092-54, and 021-092-55) to facilitate the development of a project called Sherwood Villages.

Shay League Associate Planner - Gave presentation of site plan.

Chairman Williams called for public input. There was none.

Motion: MOVE TO RECOMMEND CITY COUNCIL APPROVE THE TYPE 1 VACATION ASSOCIATED WITH T1VAC22001. Action: Approve . **Moved by** Vice-Chair Cody Wagner, **Seconded by** Commissioner Angela Lewis. **Vote:** Passed, **Summary:** Yes 6. **Yes:** Chairman Williams, Commissioner Hodges, Commissioner Severa, Commissioner McCullar, Commissioner Lewis, Vice-Chair Wagner. **Absent:** Commissioner Lodhi.

3. CHAIR AND COMMISSION ITEMS

Commissioner Jan Hodges reminded everyone about Wreaths Across America on Saturday, December 17, 2022.

Brandi Jensen, City Attorney informed the Planning Commission about the delay in training prior to Dec. 21, 2022, meeting, due to the trainer being unavailable. She informed them that they will be receiving an email with dates and times regarding the training. A Zoom link will also be included.

4. PLANNING DIRECTOR ITEMS

There were none.

5. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

There were none.

6. PUBLIC FORUM

There were none.

7. ADJOURNMENT

There being no further business to come before it, the Fernley Planning Commission adjourned at 6:16 PM.

Approved by the Fernley Planning Commission on January 11, 2023 by a vote of:

AYES _____ NAYS: _____ ABSTENTIONS: _____ ABSENT: _____

FPC Chair Barry Williams

ATTEST:



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: January 11, 2023

REPORT TO: Fernley Planning Commission

REPORT FROM: Shay League, Lisa Warner

FINANCIAL IMPACT:

Yes: No: X

CURRENTLY BUDGETED:

Yes: No: X

FUND/ACCOUNT:

N/A

ACTION REQUESTED: Ordinance

AGENDA ITEM: (For Possible Action):

For Possible Action – Public Hearing, TSM 2019-002EOT – Extension of Time

Consideration and possible action on an extension of time request of not more than two years for Genica NV, LLC to record a final parcel map for Donner Trails Estates Phase 12B, a 61-parcel single family subdivision generally located on Mifflin Street between Endeavor Lane and Langdon Street (APN: 021-201-57) on a site ±11.24 acres in size.

AGENDA ITEM BRIEF:

The applicant is submitting a tentative subdivision map extension of time request to allow for the subdivision of ±11.24-acres into 61 separate single-family parcels. The site has a land use designation of Single Family Residential (SFR) and is located within the Residential, Single Family – 6,000 square foot minimum lot size (SF6) zoning district. The purpose of this extension of time is to allow the developer an additional two years to record the next phase of their final subdivision map.

RECOMMENDED MOTION:

Approval

“Considering the information provided in the applicant’s extension of time letter, I move to recommend approval of the tentative subdivision map extension request for Donner Trails 12 associated with TSM 2019-002.”

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:

Denial

“Considering the information provided in the applicant’s extension of time letter, I move to recommend denial of the tentative subdivision map extension request for Donner Trails 12 associated with TSM 2019-002. I have determined that the proposed extension is detrimental to the public’s health, safety, and general welfare.”

Note: Though further specific language has not been provided, all other motions acceptable under Planning Commission parliamentary procedure are possible.

BACKGROUND:

The project site is under the ownership of Genica Nevada, LLC and is currently vacant, with no permanent development or registered personal property. The project site is approximately ±11.24-acres in size and is generally located north and south of Mifflin Street and north and south of Langdon Street (APN: 021-201-57). The project area is surrounded by Single Family Residential (SF6) zoned land to the north, south, east, and west.

ANALYSIS:

The applicant phased this project and divided the overall tentative subdivision map approval for Donner Trails Phase 12 (application TSM 2019-002) into Donner Trails Phase 12A and Donner Trails Phase 12B. Donner Trails Phase 12A (application FSM20002) was approved by City Council on January 6, 2021. This approval encompassed 44 of the 105 single-family lots approved in the tentative map process. The applicant also filed a final map for Donner Trails Phase 12B for the remaining 61 parcels on ±11.24-acres of the originally approved site with staff on July 7, 2021.

NRS 278.360 1. (a) (2) requires that when phasing a final map, the next map in the series or a map encompassing the rest of the project be presented to the planning commission within two years following approval of the first portion of the final subdivision map. This section of NRS also authorizes Planning Commission to grant an extension of time no longer than 2 years. The applicant was unable to finalize preparations for recording the Donner Trails Phase 12B map by the January 6, 2023 deadline and is requesting the maximum two-year extension of time to do so. If granted the extension of time, the applicant must be ready to record either a next phase of the development or the entire final map of this development by January 6, 2025.

FINDINGS OR APPROVAL CRITERIA:

There are no findings or approval criteria required by the applicable regulations, other than the general consideration afforded to conducting the public’s business. It should be noted that we are prohibited from adding additional conditions to the original conditions of approval. If Planning Commission feels the need to recondition this project, they are only able to do so if the application expires.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

Nevada Revised Statutes (NRS) Chapter 278 – Planning and Zoning
Fernley Municipal Code (FMC), Title 32 – Development Code
City of Fernley Comprehensive Master Plan, August 2018 (3rd Update)
Specific References:

- NRS 278.320 – 278.3295 – Subdivision of Land: General Provisions
- NRS 278.330 – 278.353 – Subdivision of Land: Tentative Maps
- NRS 278.360 – 278.460 – Subdivision of Land: Final Maps
- FMC Section 32.03.060 (f) – Development Code, Administration, Land division applications,

Subdivision maps

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. Vicinity Map
2. Extension of Time Request Letter
3. TSM 2019-002 Approval Letter with Conditions
4. TSM 2019-002 Tentative Subdivision Map
5. Donner Trails 12A Recorded Final Map





December 6, 2022

City of Fernley
Planning Department
695 Silverlace Blvd.

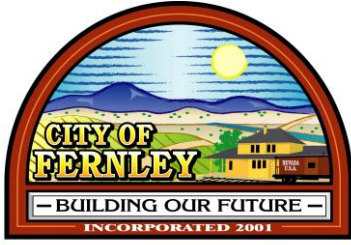
To Whom it May Concern.

Genica NV, LLC respectfully requests a final map extension for Donner 12B, not to exceed two years. Due to the downturn in the real estate market, it doesn't make sense to start 66 new homes.

All horizontal construction has been completed to include utilities, streets, curbs, sidewalks, streetlights and gutters. The City of Fernley has been paid the Quality Assurance Inspection fee of 19,601.89.

Thank you,

Eric Flodman, Project Manager
Genica NV, LLC
795 E. Main Street
Fernley, NV 89408
775-745-0524



Planning Department

Permits
Planning
Development Review
Sustainability

March 5, 2020

Genica Nevada, LLC
795 E. Main Street
Fernley, NV 89408

RE: TSM 2019-002 – Tentative Subdivision Map Approval Letter - Donner Trails Estates Phase 12

Dear Applicant:

A Tentative Subdivision Map, associated with TSM 2019-002, request from Genica Nevada, LLC to allow for a 105-lot single family residential development on a site approximately 20.88 acres, generally located east of Spur Way, south of Rutledge Street, and west of Endeavor Lane, Fernley, NV. (APN: 021-201-51) was approved at the March 4, 2020 City Council Meeting subject to the Conditions of Approval 1 through 24 as listed on the attached Conditions of Approval document. If you wish to appeal this decision or any condition, you may appeal to a court having competent jurisdiction by filing a petition for judicial review within 25 days from the date of City Council's approval. To do so, please contact the City Clerk's Office.

The Tentative Subdivision Map shall expire within four (4) years of the date of the City Council approval, unless the final map has been recorded in accordance with Nevada Revised Statutes, NRS 278.360.

Please make changes and submit for final map. Please include a cover letter explaining how each comment and condition has been addressed. If you have any questions concerning this application, please contact Olivia John at (775) 784-9811 or via email at ojohn@cityoffernley.org.

Sincerely,

Olivia John
Assistant Planner

Cc: TEC Civil Engineering
jhildebrand@tecreno.com

Attachment: Conditions of approval for TSM 2019-002

Conditions of Approval for TSM 2019-002

Tentative Subdivision Map

1. APPROVAL:
THE PROJECT IS APPROVED AS SUBMITTED AND CONDITIONED. ANY SUBSTANTIVE CHANGE SHALL REQUIRE REVIEW AND APPROVAL BY THE PLANNING COMMISSION AND CITY COUNCIL AS AN AMENDMENT TO THIS TENTATIVE SUBDIVISION MAP.
2. PROJECT DESCRIPTION:
THE PROJECT APPROVAL IS LIMITED TO A 105-LOT SINGLE FAMILY RESIDENTIAL SUBDIVISION ON $\pm$ 20.88 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. 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 TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.
6. WATER AND SEWER MODELING:
THE DEVELOPER SHALL PAY ALL FEES AND PROVIDE ALL THE INFORMATION NECESSARY TO COMPLETE WATER AND SEWER MODELING OF THE PROJECT. MODELING WILL BE PERFORMED BY THE CITY OF FERNLEY'S CONSULTANT AND ANY ADDITIONAL INFRASTRUCTURE OR CAPACITY IDENTIFIED BY THE MODELING SHALL BE INCLUDED IN THE IMPROVEMENT PLANS AND CONSTRUCTED BY THE DEVELOPER.
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. 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 TSM 2019-002

Tentative Subdivision Map

8. 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.

9. 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.

10. ENGINEERING DIVISION:

THE DEVELOPER SHALL COMPLY WITH ALL ENGINEERING REQUIREMENTS WITHIN THE CITY'S MUNICIPAL CODE TITLE 32, INCLUDING BUT NOT LIMITED TO, COMPLIANCE WITH CHAPTER 40 (SITE DEVELOPMENT STANDARDS), CHAPTER 43 (FLOODPLAIN MANAGEMENT), CHAPTER 44 (ROADWAYS), CHAPTER 46 (UNDERGROUNDING OF UTILITIES), AND CHAPTER 47 (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. 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.

12. DRAINAGE AND GRADING:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE CITY'S MUNICIPAL CODE CHAPTER 32.42 (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 THE PHASES 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.

Conditions of Approval for TSM 2019-002

Tentative Subdivision Map

13. 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.

14. 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.

15. TRAFFIC ANALYSIS:

THE DEVELOPER SHALL PROVIDE A TRAFFIC ANALYSIS REPORT FOR THE PROJECT THAT COMPLIES WITH CHAPTER 3 OF THE CITY OF FERNLEY DESIGN STANDARDS TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

16. RESIDENTIAL CONSTRUCTION TAX:

THE DEVELOPER IS SUBJECT TO THE PROVISIONS OF FERNLEY MUNICIPAL CODE CHAPTER 26.02 – RESIDENTIAL CONSTRUCTION TAX. THE RESIDENTIAL CONSTRUCTION TAX FEE SHALL BE PAID PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR EACH SINGLE-FAMILY RESIDENCE.

17. FINAL MAP PHASING:

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

NO FINAL MAP, PRESENTED FOR RECORDATION, SHALL INCLUDE LESS THAN 30 RESIDENTIAL LOTS.

THE CURRENT PHASING FOR THE PROJECT CONSISTS OF TWO PHASES: 12A (44 LOTS) AND 12B (61 LOTS). ANY FIRST PHASE OF THE PROJECT SHALL INCLUDE THE CONSTRUCTION OF FORT SUTTER BLVD AND THE REMAINING SEWER MAIN THAT WILL CONNECT FROM RUTLEDGE STREET SOUTH TO THE EXISTING SEWER MAIN IN THE PROPOSED LANGDON STREET.

18. 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.

Conditions of Approval for TSM 2019-002

Tentative Subdivision Map

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, CHAPTER 48 (IMPROVEMENTS AND AGREEMENTS) OF THE CITY'S MUNICIPAL CODE.

THE DEVELOPER SHALL CONSTRUCT PEDESTRIAN PATHS WITHIN THE DEVELOPMENT TO PROVIDE FOR SAFE ROUTES TO SCHOOL TO THE APPROVAL OF THE CITY ENGINEER AND ADMINISTRATOR PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THE PROJECT.

19. 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.

20. RIGHT TO FARM:

THE DEVELOPER SHALL PLACE A NOTE ON THE FINAL MAP PROVIDING NOTICE TO ANY AND ALL SUBSEQUENT PURCHASERS OF "THE RIGHT TO FARM" PROVISIONS INCLUDED IN NEVADA REVISED STATUTES 40.140 AND THE CITY'S DEVELOPMENT CODE.

21. FENCING:

AT THE TIME OF FINAL MAP SUBMITTAL, THE DEVELOPER SHALL SUBMIT A FENCING PLAN IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE CITY'S MUNICIPAL CODE TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

CIVIL IMPROVEMENT PLANS SHALL INDICATE A 6-FOOT HIGH MASONRY WALL ALONG THE SOUTH PROPERTY LINE ADJACENT TO PROPERTIES WITH BURNED DITCHES.

22. 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.

23. 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.

24. TRUCKEE CARSON IRRIGATION DISTRICT (TCID)/BUREAU OF RECLAMATION:

THE DEVELOPER SHALL COMPLY WITH THE 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.

OWNER

GENICA NEVADA, LLC
795 E MAIN STREET
FERNLEY, NV 89408

BASIS OF BEARING

BASED ON THE WEST SIDE LINE OF THE SW ¼ OF SECTION 17,
TOWNSHIP 20 NORTH, RANGE 25 EAST, M.D.B.&M. PER THE FINAL MAP
FOR DONNER TRAIL ESTATES PHASE IV, V & VI. (MAP FILE No.
266149)

BASIS OF ELEVATION

BASIS OF ELEVATION IS NVGD 1929 DATUM

LEGEND

AC	ASPHALT CEMENT CONCRETE	INV	INVERT ELEVATION
ACP	ASBESTOS CEMENT PIPE	LAT	LENGTH OF CURVE
AGG	AGGREGATE	LF	LATERAL
ASS'Y	ASSEMBLY	LF	LINEAR FOOT
AVE	AVENUE	LT	LEFT
AWWA	AMERICAN WATER WORKS ASSOCIATION	MAX	MAXIMUM
BC	BEGIN CURVE	MED	MEDIAN
BCR	BRASS CAP	MFG	MANUFACTURER
BFC	BEGIN CURB RETURN	MG	MILLION GALLONS
BLDC	BACK FACE OF CURB	MH	MANHOLE
BLVD	BOULEVARD	MIN	MINIMUM
BM	BENCH MARK	MISC	MISCELLANEOUS
BOC	BACK FACE OF CURB	MJ	MECHANICAL JOINT
BV	BUTTERFLY VALVE	MOC	MIDDLE OF CURVE
BVC	BEGIN VERTICAL CURVE	MVC	MIDDLE VERTICAL CURVE
BW	BACK OF SIDEWALK	N	NORTH
C	CHORD OF CURVE	NDOT	NEVADA DEPARTMENT OF TRANSPORTATION
CB	CATCH BASIN	NO	NOT IN CONTRACT
C & G	CURB AND GUTTER	NTS	NOT TO SCALE
CI	CAST IRON	OC	ON CENTER
CIR	CIRCLE	OD	OUTSIDE DIAMETER
C/L	CENTER LINE	PAD	PAD ELEVATION
CLR	CLEAR	PAVMT	PAVEMENT
CMAP	CORRUGATED METAL ARCH PIPE	PB	POLYBUTYLENE
CMP	CORRUGATED METAL PIPE	PB	PULL BOX
CO	CLEAN OUT	PC	PRESSURE CLASS OR POINT OF CURVATURE
CONC	CONCRETE	PCC	POINT OF COMPOUND CURVE
CONST	CONSTRUCT	PCC	PORTLAND CEMENT CONCRETE
COR	CORNER	PE	POLYETHYLENE
CP	CONCRETE PIPE	PG	PAD GRADE
CT	COURT	PI	POINT OF INTERSECTION
CY	CUBIC YARD	P/L	PROPERTY LINE
DI	DROP INLET	P-POLE	POWER POLE
DIA	DIAMETER	PRC	POINT OF REVERSE CURVE
DR	DRIVE	PROP	PROPERTY
DRWY	DRIVEWAY	PSI	POUNDS PER SQUARE INCH
DWG	DRAWING	PT	POINT OR POINT OF TANGENCY
E	ELECTRIC	PVC	POLYVINYL CHLORIDE
E	EAST	R	RADIUS
EA	EACH	RAD PT	RADIUS POINT
EC	END CURVE	RCP	REINFORCED CONCRETE PIPE
ECR	END CURB RETURN	RD	ROAD
EG	EXISTING GRADE	REF	REFERENCE
EP	EDGE OF PAVEMENT	RT	RIGHT
EVC	END VERTICAL CURVE	R/W	RIGHT OF WAY
EW	EACH WAY	S	SLOPE
(e)	EXISTING	S	SOUTH
FCA	FLANGED COUPLING ADAPTER	SD	STORM DRAIN
FES	FLARED END SECTION	SDR	STANDARD DIMENSION RATIO
FF	FINISH FLOOR	SHT	SHEET
FFC	FRONT FACE OF CURB	SO	SQUARE
FG	FINISH GRADE	SS	SANITARY SEWER
FH	FIRE HYDRANT	ST	STREET
FL	FLOW LINE	STA	STATION
FLG	FLANGE	STD	STANDARD
FM	FORCE MAIN	T	TANGENT OF CURVE
FND	FOUND	TBM	TEMPORARY BENCH MARK
FOOC	FRONT FACE OF CURB	TC	TOP OF CURB
FS	FINISHED SURFACE	TEL	TELEPHONE
FT	FOOT	TV	TELEVISION
FV	FLUSH VALVE	TYP	TYP
G	GAS	UNLESS OTHERWISE NOTED	
GA	GAUGE	VC	VERTICAL CURVE
GB	GRADE BREAK	VERT	VERTICAL
GF	GARAGE FLOOR	VG	VALLEY GUTTER
GR	GRADE	W	WATER
GRND	GROUND	WTR	WATER
GV	GATE VALVE	W	WEST
HORIZ	HORIZONTAL	W/	WITH
HWY	HIGHWAY	WM	WATER METER
ID	INSIDE DIAMETER	W/O	WITHOUT
IN	INCH	WWF	WELDED WIRE FABRIC
INT	INTERSECTION	WWM	WELDED WIRE MESH

TENTATIVE SUBDIVISION MAP

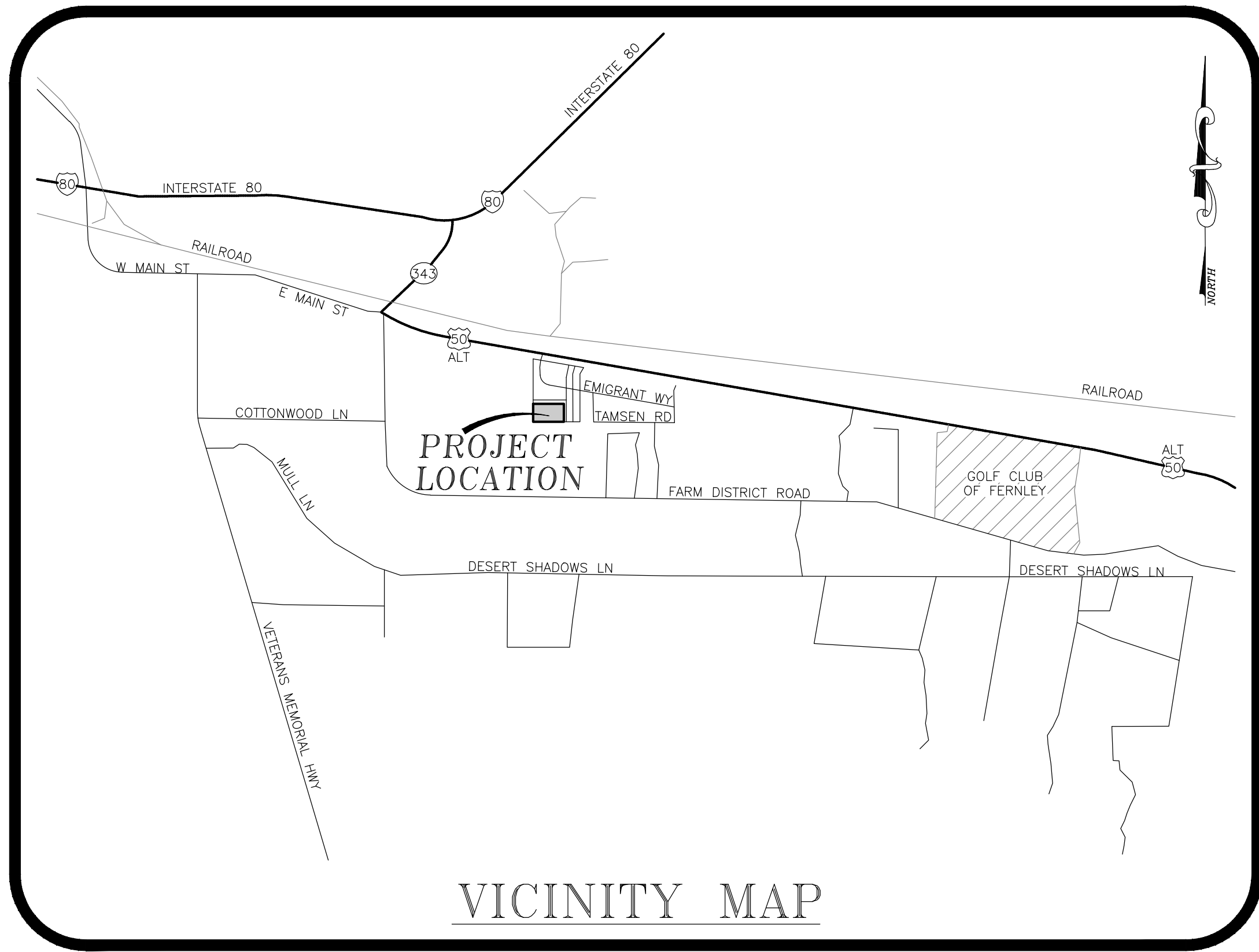
FOR

DONNER TRAILS ESTATES PHASE 12

FERNLEY

LYON COUNTY

NEVADA

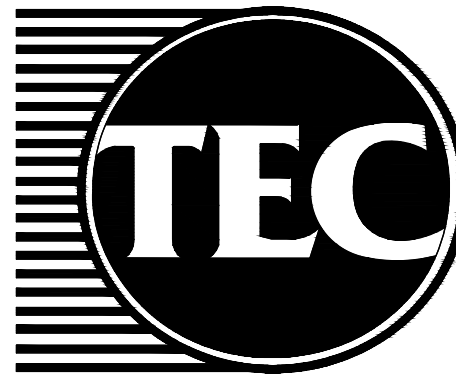


VICINITY MAP



SITE MAP

ENGINEER



CIVIL
ENGINEERING
CONSULTANTS

9429 DOUBLE DIAMOND PARKWAY, STE A
RENO, NEVADA 89521
PH (775) 352-7800 ~ FAX (775) 352-7929

NOTES:

- PROJECT SITE APN: 021-201-51
- SITE IS THE REMAINDER PARCEL OF 'DONNER TRAIL ESTATE PH 11', SM410002
- EXISTING PARCEL MASTER PLAN DESIGNATION: RESIDENTIAL HIGH DENSITY - PROPOSED SAME
- PARCEL LAND USE ZONING: NR-1 (SINGLE FAMILY 6,000) - PROPOSED SAME
- APPLICATION IS FOR STRAIGHT TENTATIVE SUBDIVISION MAP, NO PLAN DEVELOPMENT PROPOSED
- PROPOSED LOT SIZE RANGE: 6,080 MINIMUM TO A MAXIMUM OF 7,553
- AVERAGE LOT WIDTH ALLOWED PER ZONING: 60'
- BUILDING SETBACKS ALLOWED PER ZONING: 20' FRONT, 10' REAR, 5' SIDE
- PROPOSED ROADWAYS: CITY OF FERNLEY, 50' RIGHT OF WAY LOCAL RESIDENTIAL ROAD
*** PROPOSED CITY OF FERNLEY 'ROLLED CURBS' IN LIEU OF 'L-SHAPE CURB'
- PROPOSED PUBLIC WATER SYSTEM: CITY OF FERNLEY
- PROPOSED PUBLIC SEWER SYSTEM: CITY OF FERNLEY
- PROPOSED STORM DRAIN SYSTEM: CITY OF FERNLEY
- JURISDICTIONAL FIRE DEPARTMENT: NORTH LYON COUNTY FIRE PROTECTION DISTRICT
- ELECTRIC UTILITY PROVIDER: NV ENERGY
- NATURAL GAS UTILITY PROVIDER: SOUTHWEST GAS
- TELEPHONE UTILITY PROVIDER: AT&T
- SOLID WASTE COLLECTION PROVIDER: WASTE MANAGEMENT
- EXISTING FLOOD ZONE DESIGNATION: ZONE X - OUTSIDE OF THE FLOODPLAIN
- NO IDENTIFIED CULTURAL OR ARCHEOLOGICAL SITE EXIST UPON SITE

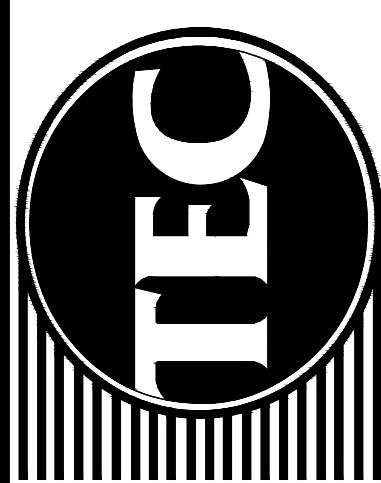
SHEET INDEX

T-1		TITLE SHEET
SHEET 1 of 1		TENTATIVE MAP
G-1		GRADING PLAN
G-2		GRADING PLAN
G-3		GRADING PLAN
G-4		GRADING PLAN
U-1		UTILITY PLAN
U-2		UTILITY PLAN
U-3		UTILITY PLAN
U-4		UTILITY PLAN

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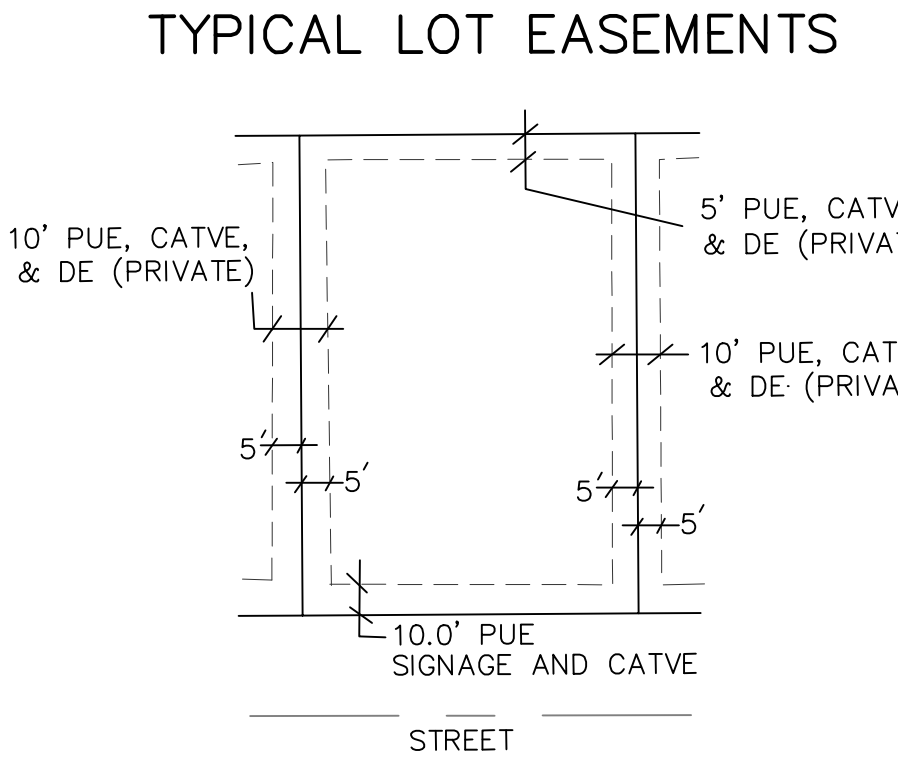
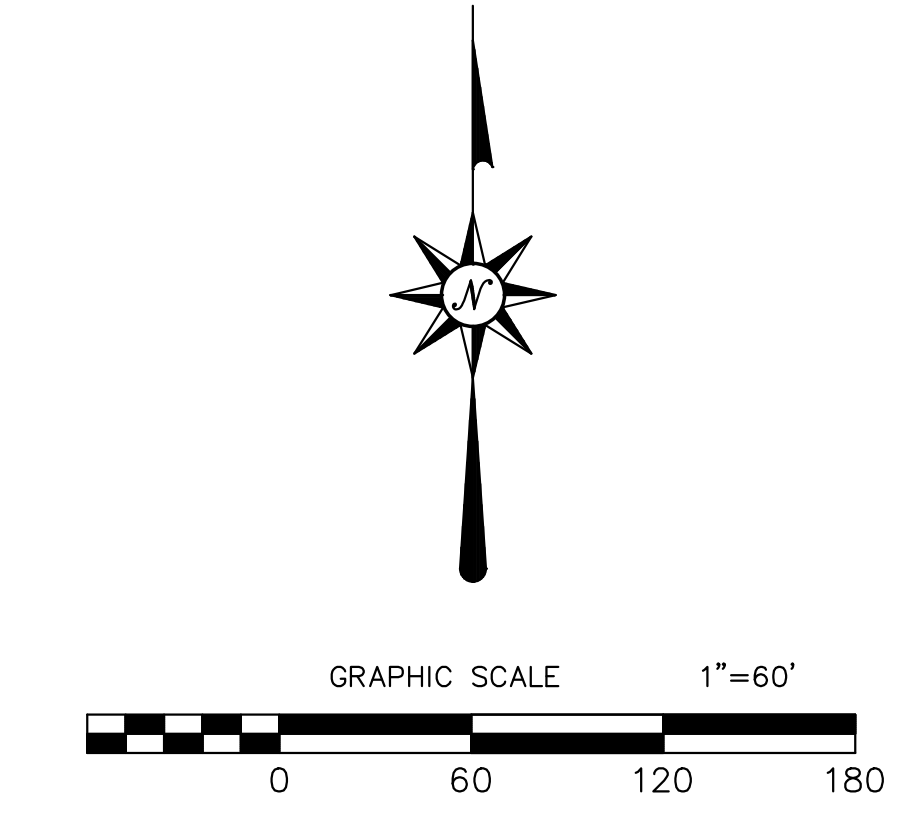
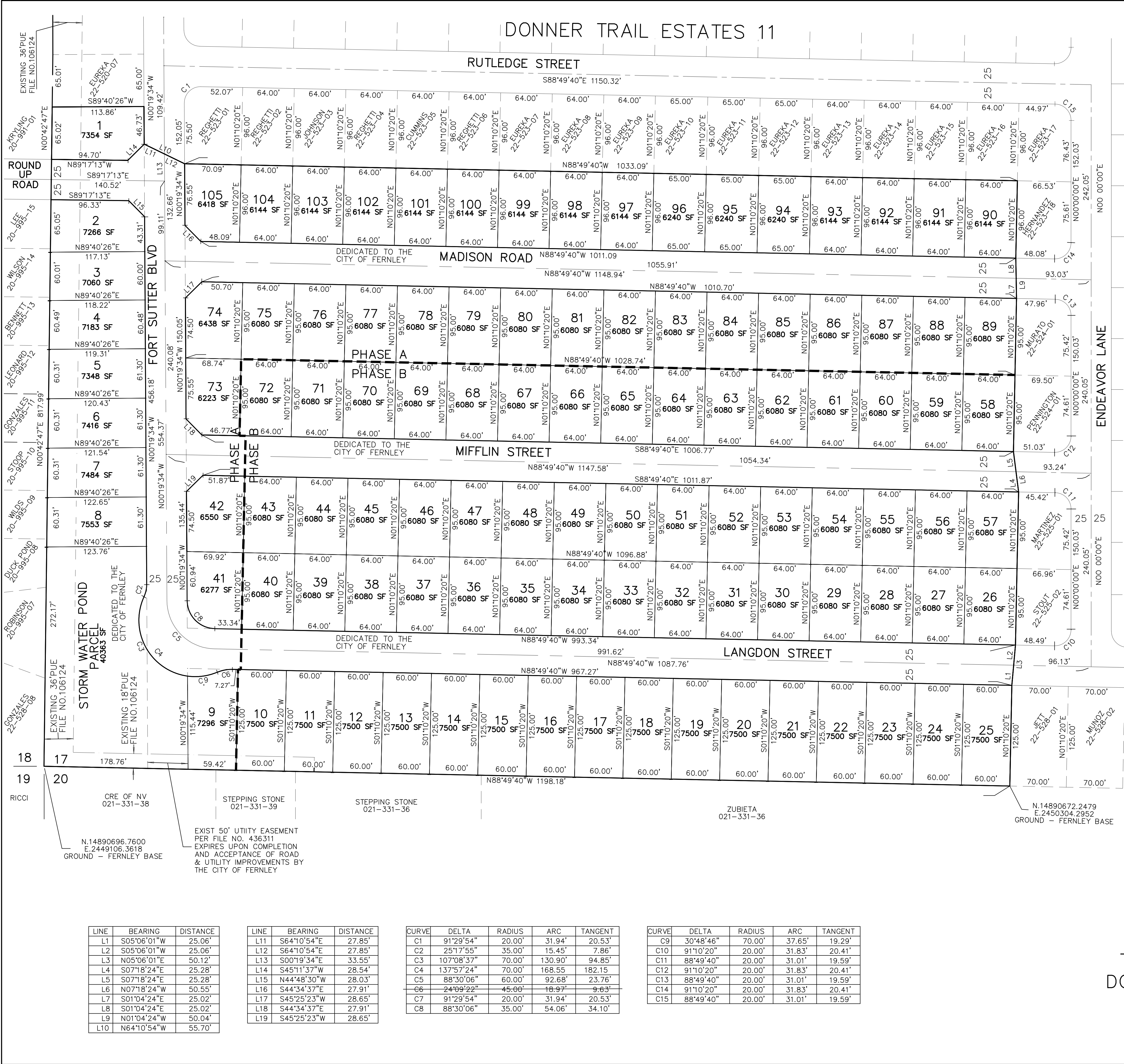
REVISIONS	
NO.	DATE

CIVIL
ENGINEERING
CONSULTANTS
9429 DOUBLE DIAMOND PARKWAY, STE A
RENO, NEVADA 89521
PH (775) 352-7800 ~ FAX (775) 352-7929



CITY OF FERNLEY
TENTATIVE SUBDIVISION MAP
DONNER TRAILS ESTATES PHASE 12
TITLE SHEET

JOB No.	GENICA 01
DATE:	11/13/19
VERT. SCALE:	NA
HORIZ. SCALE:	NA
DRAWN BY:	JGD
CHECKED BY:	JRH
APPROVED BY:	JRH
SHEET	T-1
OF	10
SHEETS	



- LEGEND**
- (R) RADIAL BEARING
 - SET 5/8" REBAR WITH CAP PLS 5665
 - BRASS CAP IN MONUMENT WELL PLS 5665
 - └ SET SCRIBE ON TOP OF CURB ON THE PROJECTION OF PROPERTY LINE
 - ✦ CALCULATED POSITION NOTHING SET
- PHASE A** PHASE LINE
PHASE B

BASIS OF BEARINGS

BASIS OF BEARINGS FOR THIS PLAT IS N.46°01'20"E, BEING THE GRID BEARING BETWEEN NGS STATION WAD AND CONTINUOUSLY OPERATING REFERENCE STATION TUNG WITH THE FOLLOWING NEVADA COORDINATE SYSTEM, WEST ZONE VALUES BASED ON THE NORTH AMERICAN DATUM OF 1983/1999 HIGH ACCURACY REFERENCE NETWORK (NAD83/99 HARN)

WAD N. 14891285.011 E. 2414312.553
TUNG N. 15181824.108 E. 2715407.765

COORDINATES SHOWN ON THIS PLAT ARE GROUND EQUIVALENT VALUES BASED ON THE LOCAL PROJECTION COMBINED FACTOR OF 0.999730577

TENTATIVE SUBDIVISION MAP
DONNER TRAILS ESTATE PH 12
TOTAL LOTS = 105
TOTAL AREA = 20.88 ACRES
RIGHT OF WAY AREA = 4.57 ACRES
SHEET 1 OF 1

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE	CURVE	DELTA	RADIUS	ARC	TANGENT	CURVE	DELTA	RADIUS	ARC	TANGENT
L1	S05°06'01"W	25.06'	L11	S64°10'54"E	27.85'	C1	91°29'54"	20.00'	31.94'	20.53'	C9	30°48'46"	70.00'	37.65'	19.29'
L2	S05°06'01"W	25.06'	L12	S64°10'54"E	27.85'	C2	25°17'55"	35.00'	15.45'	7.86'	C10	91°10'20"	20.00'	31.83'	20.41'
L3	N05°06'01"E	50.12'	L13	S00°19'34"E	33.55'	C3	107°08'37"	70.00'	130.90'	94.85'	C11	88°49'40"	20.00'	31.01'	19.59'
L4	S07°18'24"E	25.28'	L14	S45°11'37"W	28.54'	C4	137°57'24"	70.00'	168.55'	182.15'	C12	91°10'20"	20.00'	31.83'	20.41'
L5	S07°18'24"E	25.28'	L15	N44°48'30"W	28.03'	C5	88°30'06"	60.00'	92.68'	23.76'	C13	88°49'40"	20.00'	31.01'	19.59'
L6	N07°18'24"W	50.55'	L16	S44°34'37"E	27.91'	C6	24°09'22"	45.00'	18.97'	9.63'	C14	91°10'20"	20.00'	31.83'	20.41'
L7	S01°04'24"E	25.02'	L17	S45°25'23"W	28.65'	C7	91°29'54"	20.00'	31.94'	20.53'	C15	88°49'40"	20.00'	31.01'	19.59'
L8	S01°04'24"E	25.02'	L18	S44°34'37"E	27.91'	C8	88°30'06"	35.00'	54.06'	34.10'					
L9	N01°04'24"W	50.04'	L19	S45°25'23"W	28.65'										
L10	N64°10'54"W	55.70'													

OWNERS' CERTIFICATE

THIS IS TO CERTIFY THAT THE UNDERSIGNED, GENICA NEVADA LLC, A NEVADA LIMITED LIABILITY COMPANY, 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 STREETS AND AVENUES SHOWN ARE HEREBY DEDICATED AND SET APART TO BE USED AS PUBLIC THOROUGHFARES FOREVER, AND THAT ALL EASEMENTS FOR DRAINAGE, UTILITY INSTALLATION AND ACCESS SHOWN ARE DEDICATED AS PERMANENT EASEMENTS FOR THE STATED PURPOSES. IN WITNESS WHEREOF THE UNDERSIGNED HAS AFFIXED HIS NAME. THE OWNER HEREBY GRANTS TO ALL PUBLIC UTILITIES AND THE CITY OF FERNLEY, A PERMANENT EASEMENT SHOWN ON THIS PLAT FOR THE CONSTRUCTION AND MAINTENANCE OF DRAINAGE AND UTILITY SYSTEMS, TOGETHER WITH THE RIGHT TO ACCESS THERETO FOREVER. THE WATER AND SEWER FACILITIES AND ASSOCIATED APPURTENANCES ARE HEREBY DEDICATED TO THE CITY OF FERNLEY.

GENICA NEVADA LLC, A NEVADA LIMITED LIABILITY COMPANY

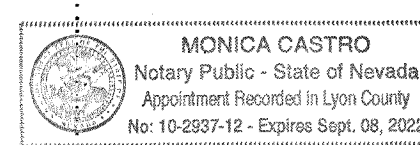
LARRY LES, PRESIDENT

10/21/2020
DATE

STATE OF Nevada
COUNTY OF Lyon } S.S.

ON THIS 21 DAY OF Oct, 2020 Larry Les OF GENICA NEVADA LLC, A NEVADA LIMITED LIABILITY COMPANY, DID PERSONALLY APPEAR BEFORE ME AND UPON OATH DID DEPOSE AND SAY THAT HE EXECUTED THE ABOVE INSTRUMENT. IN WITNESS WHEREOF I HERETO SET MY HAND AND AFFIX MY OFFICIAL SEAL ON THE DATE AND YEAR FIRST ABOVE WRITTEN.

Monica Castro
NOTARY PUBLIC
MY COMMISSION EXPIRES 9/8/22



SECURITY INTEREST HOLDER'S CERTIFICATE

THIS IS TO CERTIFY THAT LEIGH RODNEY AND CLARE F. RODNEY, CO-TRUSTEES OF THE RODNEY FAMILY TRUST AGREEMENT (AS RESTATED 2016 4/10 DATED JANUARY 28, 2016) AS BENEFICIARY OF THE DEED OF TRUST RECORDED SEPTEMBER 4, 2020, AS DOCUMENT NO. 620889, OFFICIAL RECORDS LYON COUNTY, NEVADA, HAS CONSENTED TO THE PREPARATION AND RECORDATION OF THIS PLAT PER DOCUMENT NO. 620889 OFFICIAL RECORDS OF LYON COUNTY, NEVADA.

UTILITY COMPANY APPROVAL

THE UTILITY EASEMENTS SHOWN ON THIS PLAT HAVE BEEN CHECKED, ACCEPTED AND APPROVED BY THE UNDERSIGNED CABLE TV AND UTILITY COMPANIES.

Katherine Perkins / ASSOC RIGHT OF WAY AGENT
NAME / TITLE (PRINT) 10/26/2020
DATE

Katherine Perkins / ASSOC RIGHT OF WAY AGENT
NAME / TITLE (PRINT)

Curt Cooper MCA OSP PLANNING
NAME / TITLE (PRINT) 10/28/2020
DATE

NEVADA BELL TELEPHONE COMPANY, D/B/A AT&T NEVADA

Curt Cooper MCA OSP PLANNING
NAME / TITLE (PRINT)

Amanda Marucci
SOUTHWEST GAS CORPORATION 10/22/20
DATE

Amanda Marucci Supervisor/Engineering
NAME / TITLE (PRINT)

Brian Givens
QUARTER COMMUNICATIONS 10/26/2020
DATE

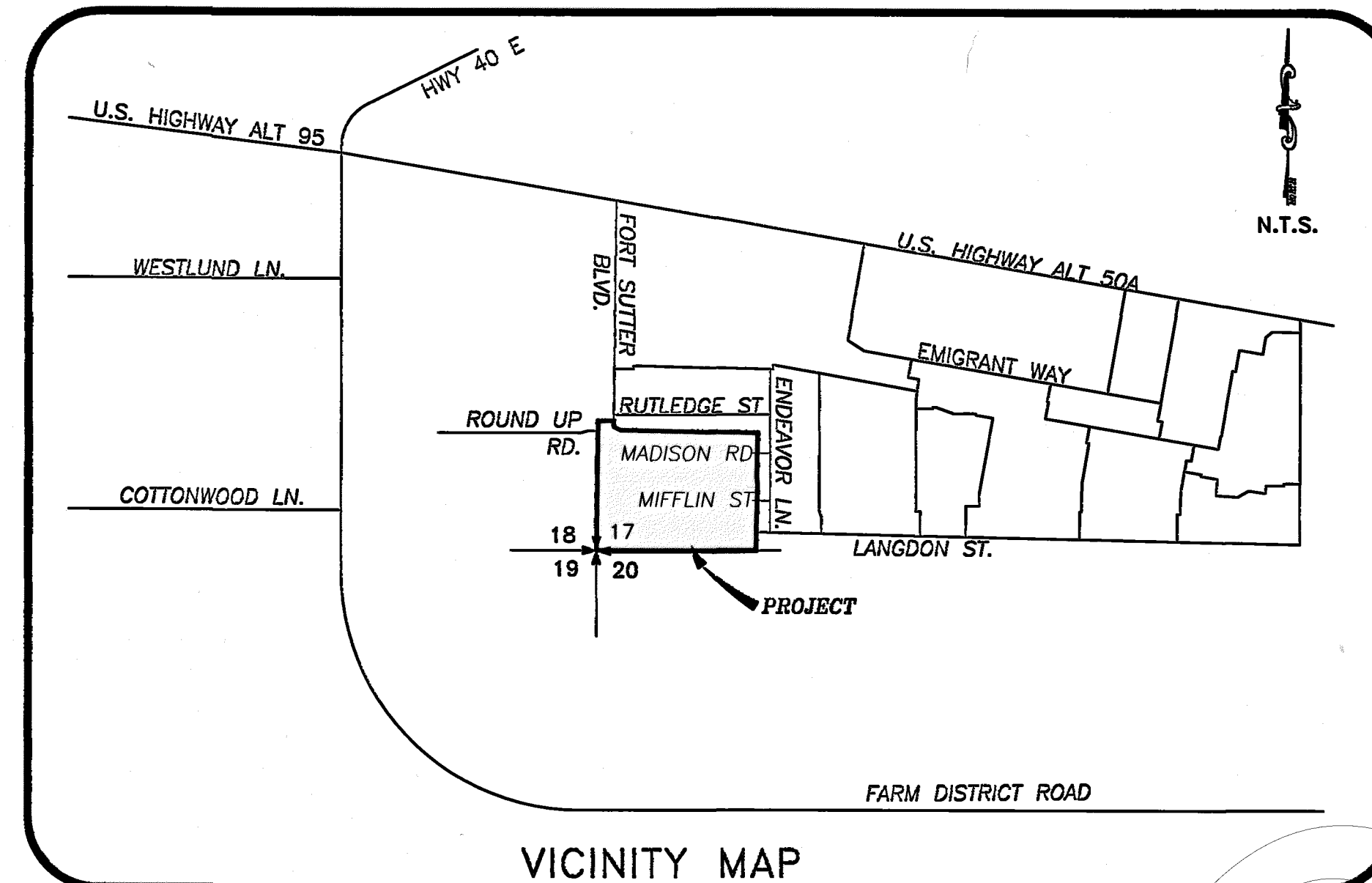
Brian Givens Construction Supervisor
NAME / TITLE (PRINT)

TITLE COMPANY CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS PLAT HAS BEEN EXAMINED AND THAT THE OWNERS SHOWN HEREON ARE THE OWNERS OF RECORD OF SAID LAND; THAT NO ONE HOLDS OF RECORD A SECURITY INTEREST IN THE LANDS (EXCEPT DOC. NO. 620889) AND THERE ARE NO LIENS OF RECORD AGAINST THE OWNERS FOR DELINQUENT STATE, COUNTY, MUNICIPAL, FEDERAL OR LOCAL TAXES COLLECTED AS TAXES OR SPECIAL ASSESSMENTS EXCEPT AS SHOWN BELOW:

Debby H. Cimijotti, VP
WESTERN TITLE COMPANY 10-22-2020
DATE

NAME / TITLE (PRINT)



VICINITY MAP

NORTH LYON COUNTY FIRE DISTRICT CERTIFICATE

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS FINAL MAP AND HAVE NO OBJECTIONS TO THE APPROVAL OF THIS MAP.

Timothy A. Myers 11-10-2020
DIVISION OF WATER RESOURCES DATE
Timothy A. Myers FIRE MARSHAL
NAME / TITLE (PRINT)

CITY OF FERNLEY ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS FINAL MAP OF DONNER TRAIL ESTATES SUBDIVISION PHASE 12A IN SECTION 17, T20N., R25E., M.D.M. HAS BEEN EXAMINED AND I AM SATISFIED THAT THIS MAP IS TECHNICALLY CORRECT.

Deek W. Stakley 11/10/2020
CITY OF FERNLEY ENGINEER DATE
Deek W. Stakley
NAME (PRINT)

DIVISION OF WATER RESOURCES CERTIFICATE

THIS FINAL MAP IS APPROVED BY THE DIVISION OF WATER RESOURCES OF THE STATE OF NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES CONCERNING WATER QUANTITY, SUBJECT TO REVIEW OF APPROVAL IN THIS OFFICE.

Karl E. Starn Miller 10-29-2020
DIVISION OF WATER RESOURCES DATE
Karl E. Starn Miller / SUPERVISOR
NAME / TITLE (PRINT)

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

THIS FINAL MAP IS APPROVED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION OF THE STATE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES. THIS APPROVAL CONCERNS SEWAGE DISPOSAL, WATER POLLUTION, WATER QUALITY, AND WATER SUPPLY FACILITIES AND IS PREDICATED UPON PLANS FOR A PUBLIC WATER SUPPLY AND A COMMUNITY SYSTEM FOR DISPOSAL OF SEWAGE.

April Holt, P.E. 10-29-2020
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER POLLUTION CONTROL DATE
April Holt, P.E.
NAME / TITLE (PRINT)

CITY COUNCIL APPROVAL

I HEREBY ATTEST THAT THIS FINAL MAP WAS APPROVED AND ACCEPTED BY THE FERNLEY CITY COUNCIL ON THE 6th DAY OF January, 2021.

Roy G. Edgington Jr 1-6-2021
CITY COUNCIL DATE
Roy G. Edgington Jr
NAME (PRINT)

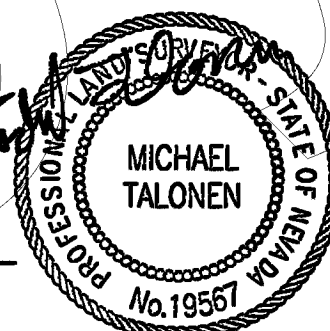
TOTAL AREA SURVEYED: ±20.88 AC.
TOTAL AREA OF PUBLIC STREETS: ±2.25 AC
RETENTION BASIN PARCEL: (±40,364 SQ FT)
44 RESIDENTIAL LOTS (±6.26 AC)
REMAINDER PARCEL (±11.44 AC.)

SURVEYOR'S CERTIFICATE

I, MICHAEL TALONEN, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF NEVADA, CERTIFY THAT:

1. THIS PLAT REPRESENTS THE RESULTS OF A SURVEY CONDUCTED UNDER MY DIRECT SUPERVISION AT THE INSTANCE OF GENICA NEVADA LLC, A NEVADA LIMITED LIABILITY COMPANY.
2. THE LANDS SURVEYED LIE WITHIN THE SW1/4 OF SECTION 17, T20N., R25E., M.D.M. AND THE SURVEY WAS COMPLETED ON FEBRUARY 1, 2017.
3. THIS PLAT COMPLIES WITH THE APPLICABLE STATE STATUTES AND LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE GOVERNING BODY GAVE ITS FINAL APPROVAL.
4. THE MONUMENTS WILL BE OF THE CHARACTER SHOWN AND WILL OCCUPY THE POSITIONS INDICATED BEFORE THE SALE OF ANY LOT AND THAT AN APPROPRIATE PERFORMANCE BOND HAS BEEN POSTED WITH THE GOVERNING BODY TO ASSURE THEIR INSTALLATION AFTER 6 MONTHS FROM THE DATE OF RECORDATION.

MICHAEL TALONEN (PLS)



10-28-2020
DATE

EXP. 06/30/2022

CITY OF FERNLEY SURVEYOR'S CERTIFICATE

I HEREBY CERTIFIED THAT THIS FINAL 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 THE IMPROVEMENTS. IT IS ALSO CERTIFIED THAT THIS FINAL MAP IS IN SUBSTANTIAL CONFORMANCE WITH THE TENTATIVE MAP AND ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED. IN ADDITION ALL OFFERS OF DEDICATION FOR ALL PUBLIC ROADWAYS WERE REJECTED WITH THE RESERVATION TO ACCEPT SAID OFFERS AT A LATER DATE.

Grant R. Alexander 11-5-20
CITY OF FERNLEY SURVEYOR DATE
GRANT ALEXANDER Exp: 12-31-20
NAME (PRINT)

CITY OF FERNLEY CERTIFICATE

IT IS HEREBY CERTIFIED THAT THIS FINAL 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 THE IMPROVEMENTS. IT IS ALSO CERTIFIED THAT THIS FINAL MAP IS IN SUBSTANTIAL CONFORMANCE WITH THE TENTATIVE MAP AND ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED. IN ADDITION ALL OFFERS OF DEDICATION FOR ALL PUBLIC ROADWAYS WERE REJECTED WITH THE RESERVATION TO ACCEPT SAID OFFERS AT A LATER DATE.

David Whalen 11/12/20
PUBLIC WORKS DIRECTOR DATE
DAVID WHALEN
NAME (PRINT)

Tim Thompson 11/12/20
COMMUNITY DEVELOPMENT DIRECTOR DATE
TIM THOMPSON
NAME (PRINT)

COUNTY CLERK'S CERTIFICATE

I, Lea Sencion Deputy, LYON COUNTY CLERK/TREASURER HEREBY CERTIFY THAT THERE ARE NO LIENS OR UNPAID STATE, COUNTY, CITY OR LOCAL TAXES OR SPECIAL ASSESSMENTS AND THAT ALL TAXES FOR THE FISCAL YEAR HAVE BEEN PAID ON PROPERTY THE SUBJECT OF THIS MAP (APN 21-201-51).

Lea Sencion Deputy 1/8/21
LYON COUNTY CLERK / TREASURER DATE
Lea Sencion
NAME (PRINT)

RIGHT TO FARM

THE LANDS SHOWN HEREON ARE SUBJECT TO THE RIGHT TO FARM ORDINANCE AS SET FORTH IN THE CITY OF FERNLEY CODE.

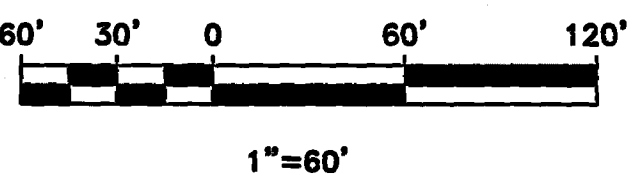
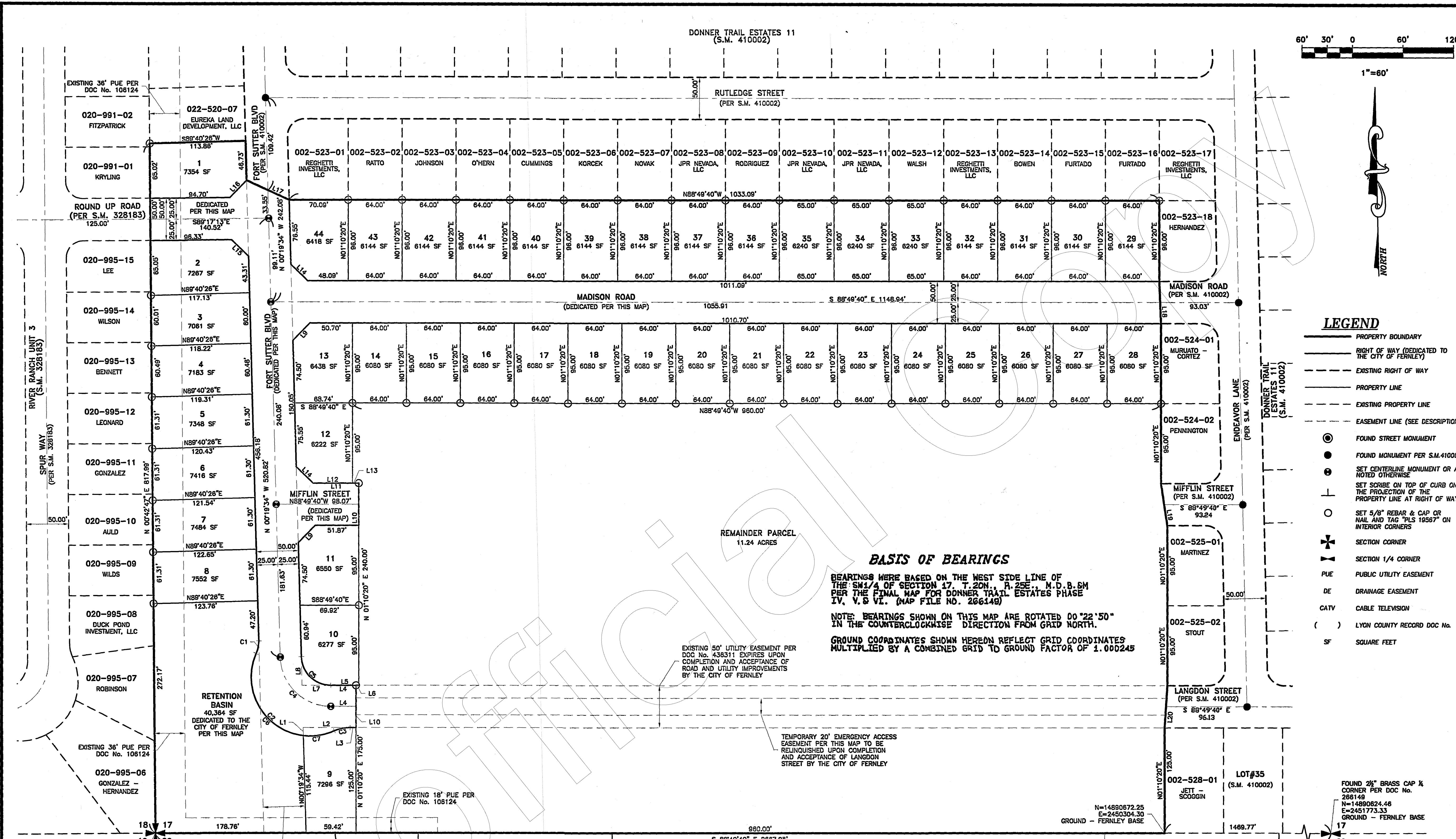
T.C.I.D. I.D. NO. 17-004 TOTAL AREA ±20.88 AC

FILED FOR RECORD AT THE REQUEST OF <u>Genica Nevada LLC</u> ON THIS <u>8th</u> DAY OF <u>January</u> 2020 AT <u>22</u> MINUTES PAST <u>11</u> O'CLOCK, A.M., OFFICIAL RECORDS OF LYON COUNTY, NEVADA FEE: <u>\$75.00</u> FILE NO. <u>628213</u> COUNTY RECORDER BY: <u>Margie Kassarbaum</u> DEPUTY <u>Rebecca A. Brindley</u>		FINAL SUBDIVISION MAP OF <u>DONNER TRAIL ESTATES PHASE 12A</u> A DIVISION OF THE OF REMAINDER PARCEL OF S.M. 410002 SITUATED WITHIN THE SW 1/4 SECTION 17, T20N, R25E M.D.M. LYON COUNTY NEVADA MST Surveying SURVEYORS 15506 QUICKSILVER DR RENO, NEVADA 89511 (775) 544-7817 * (775) 677-8408 Fax * mstsurveying@hotmail.com		SHEET <u>1</u> OF <u>2</u>
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#628213

1-8-2021

1 of 2



LEGEND

- PROPERTY BOUNDARY
- RIGHT OF WAY (DEDICATED TO THE CITY OF FERNLEY)
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- EXISTING PROPERTY LINE
- EASEMENT LINE (SEE DESCRIPTION)
- FOUND STREET MONUMENT
- FOUND MONUMENT PER S.M. 410002
- SET CENTERLINE MONUMENT OR AS NOTED OTHERWISE
- SET SCRIBE ON TOP OF CURB ON THE PROJECTION OF THE PROPERTY LINE AT RIGHT OF WAY
- SET 5/8" REBAR & CAP OR NAIL AND TAG "PLS 19587" ON INTERIOR CORNERS
- SECTION CORNER
- SECTION 1/4 CORNER
- PUE PUBLIC UTILITY EASEMENT
- DE DRAINAGE EASEMENT
- CATV CABLE TELEVISION
- () LYON COUNTY RECORD DOC NO.
- SF SQUARE FEET

BASIS OF BEARINGS

BEARINGS WERE BASED ON THE WEST SIDE LINE OF THE SW 1/4 OF SECTION 47, T.20N., R.25E., M.D.B. 6M PER THE FINAL MAP FOR DONNER TRAIL ESTATES PHASE IV, V & VI. (MAP FILE NO. 266149)

NOTE: BEARINGS SHOWN ON THIS MAP ARE ROTATED 00°22'50" IN THE COUNTERCLOCKWISE DIRECTION FROM GRID NORTH.

GROUND COORDINATES SHOWN HEREON REFLECT GRID COORDINATES MULTIPLIED BY A COMBINED GRID TO GROUND FACTOR OF 1.000245

EXISTING 50' UTILITY EASEMENT PER DOC NO. 436311 EXPIRES UPON COMPLETION AND ACCEPTANCE OF ROAD AND UTILITY IMPROVEMENTS BY THE CITY OF FERNLEY

TEMPORARY 20' EMERGENCY ACCESS EASEMENT PER THIS MAP TO BE RELINQUISHED UPON COMPLETION AND ACCEPTANCE OF LANGDON STREET BY THE CITY OF FERNLEY

EXISTING 18' PUE PER DOC NO. 108124

N=14890672.25
E=2450304.30
GROUND - FERNLEY BASE

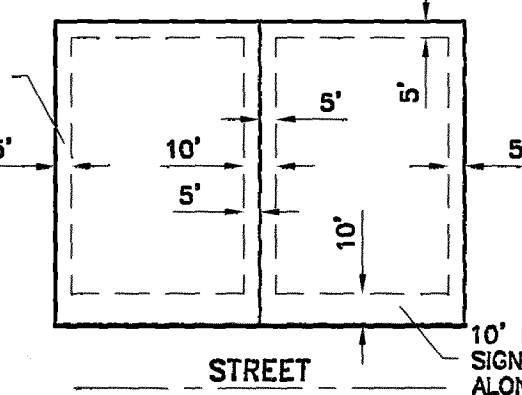
FOUND 2 1/2" BRASS CAP & CORNER PER DOC NO. 266149
N=14890672.46
E=2451773.33
GROUND - FERNLEY BASE

FOUND 2 1/2" BRASS CAP
N=14890672.78
E=2449106.38
GROUND - FERNLEY BASE

EXISTING 50' UTILITY EASEMENT PER DOC NO. 436311 EXPIRES UPON COMPLETION AND ACCEPTANCE OF ROAD AND UTILITY IMPROVEMENTS BY THE CITY OF FERNLEY

NOTES:

- NO OWNER OR TENANT SHALL OBSTRUCT A DRAINAGE CHANNEL WITHIN THE TRACT.
- THE PUBLIC UTILITY EASEMENTS SHOWN AND NOTED ON THIS PLAT INCLUDE USE FOR THE INSTALLATION AND MAINTENANCE OF CABLE TELEVISION FACILITIES, CITY WATER FACILITIES, CITY SEWER FACILITIES AND CITY STORM DRAIN FACILITIES. ALL WATER FACILITIES WITHIN THE STREET EASEMENT AREA ARE TO BE MAINTAINED BY FERNLEY TOWN UTILITIES.
- PUBLIC UTILITY EASEMENTS ARE HEREBY GRANTED, 10 FEET IN WIDTH CENTERED ABOUT ALL INTERIOR LOT LINES, 5 FEET IN WIDTH ADJACENT TO ALL SIDE AND REAR LOT LINES AND 10 FEET IN WIDTH ADJACENT TO ALL STREET RIGHT OF WAYS.
- A PUBLIC UTILITY EASEMENT IS ALSO HEREBY GRANTED WITHIN EACH PARCEL OR THE EXCLUSIVE PURPOSE OF INSTALLING AND MAINTAINING UTILITY FACILITIES TO THAT PARCEL/LOT AND THE RIGHT TO EXIT THAT PARCEL/LOT WITH SAID UTILITY FACILITIES FOR THE PURPOSE OF SERVING ADJACENT PARCELS/LOTS AT LOCATIONS MUTUALLY AGREED UPON BY THE OWNER OF RECORD, AT THAT TIME, AND THE UTILITY COMPANY.
- THE UTILITY EASEMENTS SHOWN AND NOTED ON THIS FINAL MAP INCLUDE USE FOR THE INSTALLATION AND MAINTENANCE OF CABLE TELEVISION FACILITIES, CITY WATER FACILITIES, CITY SEWER FACILITIES AND CITY STORM DRAIN FACILITIES.
- THE CITY, COUNTY, SCHOOL DISTRICT AND SPECIAL DISTRICTS ARE NOT OBLIGATED TO FURNISH AND SERVICE, SPECIFICALLY MENTIONING FIRE PROTECTION AND ROADS, TO THE LAND SO DIVIDED AND THAT ANY PUBLIC UTILITY MAY BE SIMILARLY FREE OF OBLIGATION.
- ALL EASEMENTS ARE ESTABLISHED AS INDICATED EXCEPT WHERE SUCH EASEMENTS OVERLAYS AN EXISTING PUBLICLY MAINTAINED IRRIGATION OR DRAINAGE EASEMENT. IN SUCH CASE THE APPROPRIATE UTILITY EASEMENT SHALL LIE PERPENDICULAR AND CONTIGUOUS TO THE EXISTING EASEMENT.
- ROADS DESIGNATED AS PUBLIC ROADS AS SHOWN UPON THIS MAP WILL NOT BE ELIGIBLE FOR ACCEPTANCE BY THE CITY FOR MAINTENANCE UNTIL THEY ARE IMPROVED (AT NO COST TO THE CITY) TO CITY STANDARDS.
- ACCEPTANCE OF THIS MAP BY THE CITY IS NOT A COMMITMENT THAT A BUILDING PERMIT WILL BE ISSUED ON ANY OR ALL LOTS.
- NO LOT SHALL BE LESS THAN 6000 SQUARE FEET.
- UTILITY EASEMENT DOC. 618319 IS A BLANKET EASEMENT ACROSS THE ENTIRE PARCEL FOR THE CONSTRUCTION, ACCESS AND MAINTENANCE OF UNDERGROUND ELECTRIC AND COMMUNICATION INFRASTRUCTURE. EASEMENT IS UNPLOTTABLE.
- A PUBLIC UTILITY EASEMENT IS HEREBY GRANTED TO SOUTHWEST GAS 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.



TYPICAL LOT EASEMENTS

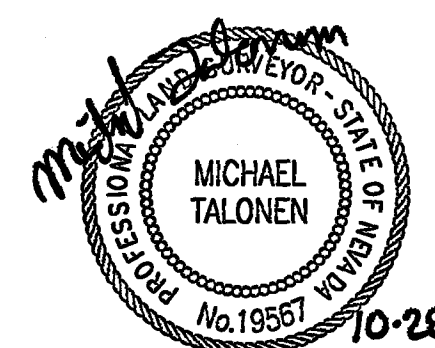
TANGENT TABLE				
CURVE	DELTA	RADIUS	LENGTH	CHORD
C1	25°17'59"	35.00	15.45	15.33
C2	137°57'24"	70.00	168.55	130.68
C3	24°09'22"	45.00	18.97	18.83
C4	85°30'08"	60.00	92.68	83.74
C5	85°30'08"	35.00	54.08	48.85
C6	107°08'37"	70.00	130.90	112.64
C7	30°48'48"	70.00	37.65	37.19

REFERENCES

- DOC. NO. 108124 GRANT OF EASEMENT; 3/17/1987
- DOC. NO. 120396 PARCEL MAP; 11/14/1988
- DOC. NO. 328183 RIVER RANCH SUBDIVISION UNIT 3; 8/11/2004
- DOC. NO. 410002 DONNER TRAIL ESTATES PHASE 11; 7/12/2007
- DOC. NO. 436311 GRANT OF UTILITY EASEMENT; 1/2/2009
- DOC. NO. 444670 BOUNDARY LINE ADJUSTMENT; 6/29/2009
- DOC. NO. 522955 BOUNDARY LINE ADJUSTMENT; 7/02/2004
- DOC. NO. 554363 BOUNDARY LINE ADJUSTMENT; 8/22/2016
- DOC. NO. 618319 GRANT OF EASEMENT; 7/21/2020

ALL REFERENCE DOCUMENTS ARE RECORDED IN THE OFFICIAL RECORDS OF LYON COUNTY.

CURVE TABLE		
LINE	BEARING	DISTANCE
L1	N 00°19'34" W	9.60
L2	S 88°49'40" E	55.43
L3	S 88°49'40" E	7.87
L4	S 88°49'40" E	29.91
L5	S 88°49'40" E	33.34
L6	S 88°49'40" E	3.43
L7	S 88°49'40" E	34.10
L8	S 00°19'29" E	34.10
L9	N 45°25'23" E	28.65
L10	N 01°10'20" E	50.00
L11	S 88°49'40" E	54.23
L12	S 88°49'40" E	46.77
L13	S 88°49'40" E	7.45
L14	N 44°34'37" W	27.91
L15	S 44°48'18" E	28.03
L16	N 45°11'37" E	28.54
L17	S 84°10'54" E	55.70
L18	N 01°04'24" W	50.04
L19	S 07°18'24" E	50.55
L20	N 05°06'01" E	50.12



EXP. 06/30/2022

GIS CERTIFICATE

A DIGITAL COPY OF THIS MAP HAS BEEN DELIVERED TO THE CITY OF FERNLEY AND LYON COUNTY GIS DEPARTMENTS.

CITY OF FERNLEY

John Lowrey *Tasha Lowrey - GIS Tech* 11/2/20
SIGNATURE PRINTED NAME/TITLE DATE
LYON COUNTY
Erin M. Singley *Erin M. Singley* 11/2/21
SIGNATURE PRINTED NAME/TITLE DATE
CHIEF DEPUTY ASSESSOR

FINAL SUBDIVISION MAP
OF
DONNER TRAIL ESTATES PHASE 12A
A DIVISION OF REMAINDER PARCEL OF S.M. 410002
SITUATED WITHIN THE SW 1/4 SECTION 17, T20N, R25E M.D.M.

LYON COUNTY	NEVADA
MST Surveying	
SURVEYORS	
15506 QUICKSILVER DR RENO, NEVADA 89511	
(775) 544-7817 • (775) 677-8408 Fax • mstsurveying@hotmail.com	
SHEET	2
OF	2



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: January 11, 2023

REPORT TO: Fernley Planning Commission

REPORT FROM: Lisa Warner, Shay League

FINANCIAL IMPACT:

Yes: No: X

CURRENTLY BUDGETED:

Yes: No: X

FUND/ACCOUNT:

N/A

ACTION REQUESTED: Motion

AGENDA ITEM: (For Possible Action):

For Possible Action – Public Hearing, TPM22005 – Tentative Parcel Map

Consideration and possible action on a tentative parcel map application from Reno Engineering Corporation to allow for the development of 4 commercial buildings with the working name “Nevada Commerce Center” on a site ±78.86 acres in size and located approximately 850 & 855 Commerce Center Drive (APNs: 021-061-29 & 021-061-30).

AGENDA ITEM BRIEF:

These parcels have a land use designation of Industrial (I) and are equivalently zoned as I (Industrial). The purpose of this parcel map is to subdivide the area for four future commercial buildings.

RECOMMENDED MOTION:

Approval

“I move to approve the Tentative Parcel Map Request associated with TPM22005 subject to conditions of approval 1 through 22 as presented by staff and based on findings TM1 through TM5 and the supporting data as set forth in the staff report.”

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:

Denial

“ Based on information received in written materials and at the public hearings on this matter , I move to recommend City Council deny the tentative parcel map request associated with TPM22005 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 finding(s): I am unable to make the finding _____ as it relates to _____. Therefore, I cannot recommend approval of the parcel map.”

Note: Though further specific language has not been provided, all motions possible under Planning Commission parliamentary procedure are appropriate.

BACKGROUND:

City Council approved a Master Plan Amendment (Resolution 21-012) to change the land use designation from Commercial to Industrial, and a Zone Map Amendment (ZMA 21003) to change the zoning from C2 and GR20 to Industrial (I) on January 19, 2022.

The project site is under the ownership of PW Fund B Development, Inc. and is currently vacant and undeveloped. The project area is surrounded by Commercial (C2) and Industrial (I) land zones to the east, General Rural, 20-acres minimum lot size (GR20) land zones to the west and south, and a Residential – Rural, 5-acre minimum lot size (RR5) land zone to the north.

ANALYSIS:

The applicant submitted a Tentative Parcel Map request to subdivide the project area into 4 parcels of land for a proposed industrial development. The existing project area of ±78.86 acres will be divided into parcels of varying size, which are shown below:

Parcel 1 – ±1,054,152 sq. ft. (24.20 acres)

Parcel 2 – ±1,663,120 sq. ft. (38.18 acres)

Parcel 3 – ±285,318 sq. ft. (6.55 acres)

Parcel 4 – ±300,564 sq. ft. (6.90 acres)

All parcels are expected to be used for Industrial development. The nature of these developments are tentative at this time and will be addressed through a separate permitting process in the future. The intended use will decide if it is required to go through the conditional use permit process and be reviewed by Planning Commission or the administrative review process and be reviewed by staff.

According to the City of Fernley’s Comprehensive Master Plan, the project site has an Industrial Land Use classification. Land uses common to Industrial areas include manufacturing, warehousing, maintenance and repair shops, distribution, mining, storage, and construction. Industrial development is intended to create an environment where industrial activities may occur with a minimum amount of impact on the natural environment and surrounding land uses. Additionally, industrial development is typically located near major transportation corridors. The project generally meets these standards, as it is in proximity to Interstate-80 and is to be developed on vacant property which leads to a minimal impact on the natural environment and surrounding land uses.

The project is also zoned Industrial (I). Lot adjacency and transitional standards are required during the next portion of the permitting process to provide adequate buffering between the proposed industrial development and the existing general rural and residential rural zones.

A traffic study was provided with the application because the proposed development is expected to generate greater than 100 peak hour trips. Approximately 2,376 additional daily trips are expected to be generated via the project, with an additional 232 AM peak hour trips and 259 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 substituted because the exact use of the parcels is currently undetermined. With those prospective land use codes, the traffic study identified that no significant infrastructure improvements are required for this project as LOS (Level of Service) conditions are not expected to decline 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 the calculations for LOS will range between A and D which essentially 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 contained within the attachments.

A sewer report was provided with the application as well, as it is required for any new development or construction within the Industrial (I) zoning district to connect to the City’s municipal sewer and water services. The proposed industrial development expects to use the existing 8-inch sewer main located on Commerce Center Drive. Newly constructed sewer mains will serve each parcel within the project area, using 8-inch diameter PVC sewer pipes. The industrial parcels are expected to produce roughly 3,000 gallons per day combined. With the expected calculations, it is estimated that the development will generate 3,000 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.

Again, all reports regarding the adequacy of infrastructure are estimates for the type of things that may be built here; however, Industrial buildings are subject to further review (either conditional use or administrative) and any infrastructure requirements to support a specific use in a specific location are typically addressed at that time.

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.

TPM2: Availability and Accessibility of public services such as schools, police and fire protection, recreation facilities, and parks.

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 1.9 miles from the North Lyon Fire Protection District office and approximately 2.3 miles from the Lyon County Sherriff’s Office.

Schools, recreation facilities, and parks, are not relevant to these parcels as there are no residential uses intended.\

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. 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.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

Nevada Revised Statutes (NRS) Chapter 278 – Planning and Zoning

Fernley Municipal Code (FMC), Title 32 – Development Code

City of Fernley Comprehensive Master Plan, August 2018 (3rd Update)

Specific References:

- NRS 278.461 – 278.469 – Parcel Maps
- FMC 32.03.020, Table 32.03.020-1 – Development Code, Administration, Review and decision-making bodies, Summary Table of Development Review Procedures
- FMC 32.03.060 (d) – Development Code, Administration, Land division applications, Parcel maps
- Section 32.06.110 – Development Code, Zoning Districts, Industrial (EC and I)
- FMC Chapter 32.09 – Development Code, Development Standards
- Master Plan, Chapter 3, Page 67 – Land Use, Non-Residential Land Uses, Industrial (I)

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. TPM22005 Conditions of Approval
2. Vicinity Map
3. Tentative Parcel Map
4. Traffic Study
5. Fiscal Impact

Conditions of Approval for TPM22005

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 AS AN AMENDMENT TO THIS TENTATIVE PARCEL MAP.

2. **PROJECT DESCRIPTION:**

THE PROJECT APPROVAL IS LIMITED TO INDUSTRIAL DEVELOPMENT WITH A MAXIMUM OF 4 PARCELS ON A ±78.86-ACRE SITE.

3. **EXPIRATION DATE:**

THE TENTATIVE PARCEL MAP SHALL EXPIRE WITHIN FOUR (4) YEARS OF THE DATE OF PLANNING COMMISSION APPROVAL, UNLESS THE FINAL PARCEL MAP HAS BEEN RECORDED.

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 RECORDING THE 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 RECORDING THE 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 ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR. EACH PHASE MUST ALSO BE REVIEWED AND APPROVED BY THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION PRIOR TO CONSTRUCTION.

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 ISSUE 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 ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

9. **PROJECT PHASING:**

Conditions of Approval for TPM22005

Tentative Parcel Map

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 RECORDING THE 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.

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, AND PUBLIC WORKS DIRECTOR PRIOR TO RECORDING THE 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 ISSUE 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 ISSUE 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

Conditions of Approval for TPM22005

Tentative Parcel Map

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 RECORDING 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 RECORDING THE 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.

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 RECORDING THE 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 RECORDING THE 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 RECORDING THE 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 RECORDING THE FINAL PARCEL MAP FOR THE PROJECT.

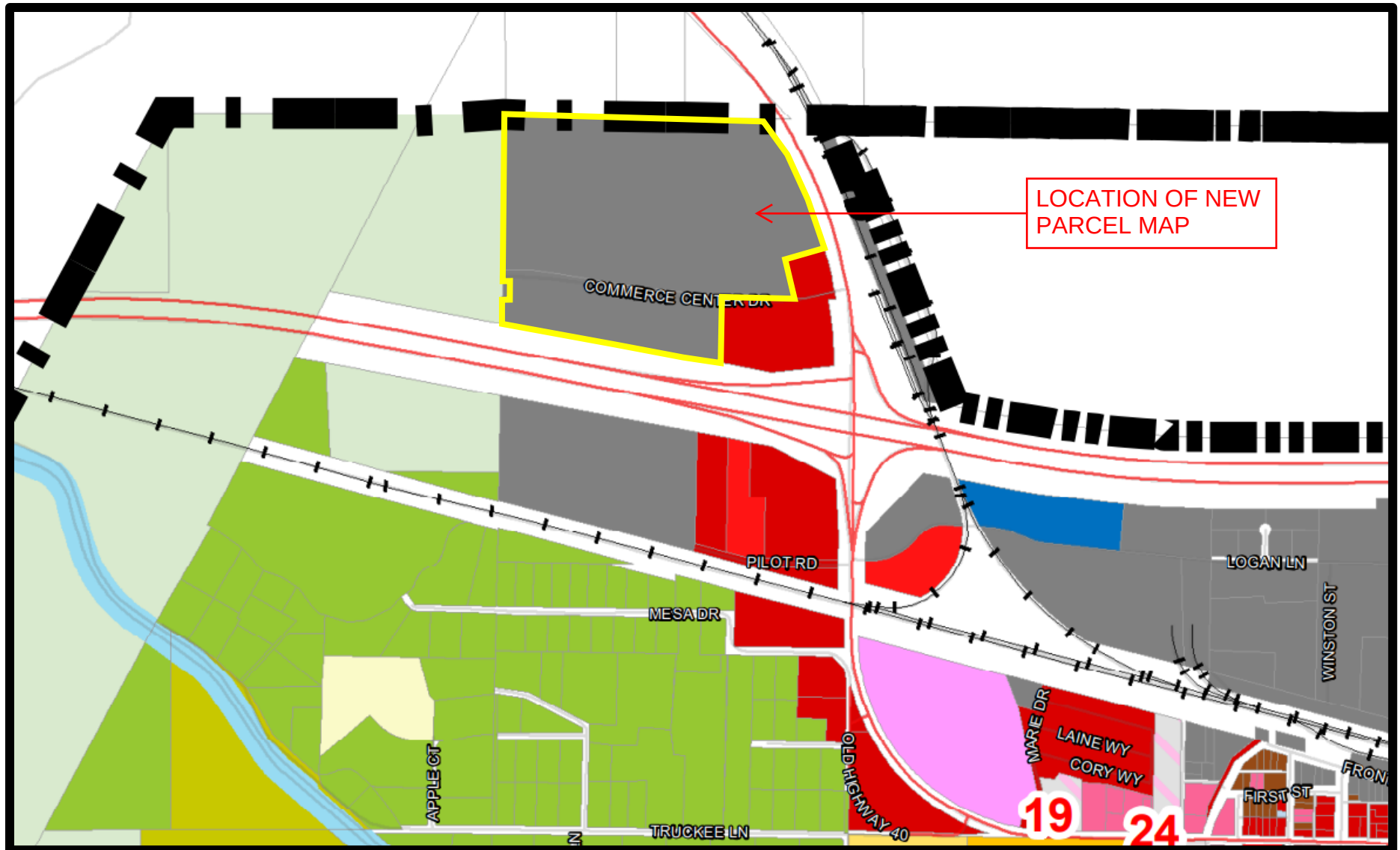
21. LANDSCAPING/IRRIGATION PLAN(S)

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.

NEVADA COMMERCE CENTER VICINITY MAP



COUNTY CLERK/TREASURER CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT ALL THE PROPERTY TAXES ON THE LAND FOR THE FISCAL YEAR HAVE BEEN PAID AND THAT THE FULL AMOUNT OF ANY DEFERRED PROPERTY TAXES FOR THE CONVERSION OF THE PROPERTY FROM AGRICULTURAL USE HAS BEEN PAID PURSUANT TO NRS 361A.265.

A.P.N. 021-061-29 & -30
LYON COUNTY TREASURER

BY: _____ DATE: _____

NAME & TITLE

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 PROPERTY FINANCIAL SECURITY HAS BEEN POSTED GUARANTEEING COMPLETION OF THIS PARCEL MAP AND THAT ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED. THERE ARE NO PUBLIC ROADWAYS OFFERED FOR DEDICATION AS PART OF THIS MAP.

CITY OF FERNLEY ENGINEER _____ DATE _____

PRINT NAME

TITLE COMPANY CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS PLAT HAS BEEN EXAMINED AND THE ENTITY OFFERING THIS PLAT IS THE LAST TITLE HOLDER OF RECORD FOR ALL THE LANDS DELINEATED HEREON AND THAT NO ONE HOLDS OF RECORD A SECURITY INTEREST IN THE LANDS AND THAT THERE ARE NO LIENS OF RECORD AGAINST THE OWNERS FOR DELINQUENT STATE, COUNTY, MUNICIPAL, FEDERAL OR LOCAL TAXES COLLECTED AS TAXES OR SPECIAL ASSESSMENTS EXCEPT AS SHOWN BELOW.

STEWART TITLE GUARANTY COMPANY

BY: _____
TITLE: _____

UTILITY COMPANIES CERTIFICATE

THE UTILITY EASEMENTS SHOWN ON THIS PLAT HAVE BEEN CHECKED AND APPROVED BY THE UNDERSIGNED PUBLIC UTILITY AND CABLE TV COMPANIES AND TRUCKEE MEADOWS WATER AUTHORITY.

SIERRA PACIFIC POWER COMPANY D/B/A NV ENERGY _____ DATE _____

NEVADA BELL TELEPHONE CO. D/B/A AT&T NEVADA _____ DATE _____

SOUTHWEST GAS CORPORATION _____ DATE _____

CHARTER COMMUNICATIONS _____ DATE _____

RIGHT TO FARM

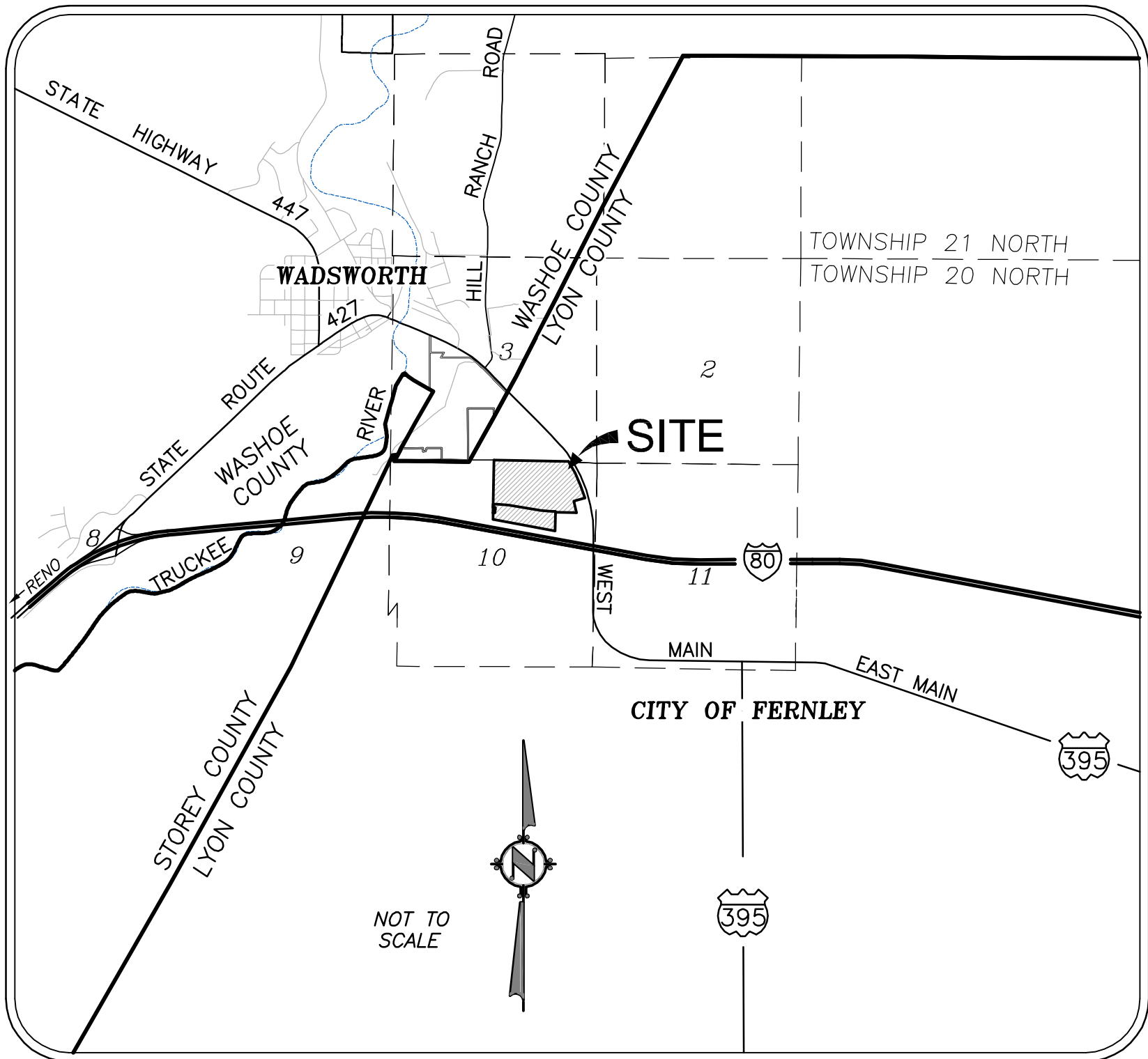
THE LANDS SHOWN HEREON ARE SUBJECT TO THE PROVISIONS AS SET FORTH BY FERNLEY CITY CODE.

CITY PLANNING COMMISSION CERTIFICATE

IT IS HEREBY CERTIFIED THAT THIS PARCEL MAP WAS REVIEWED BY THE CITY OF FERNLEY COMMUNITY DEVELOPMENT AND DETERMINED TO BE IN SUBSTANTIAL COMPLIANCE WITH THE CONDITIONS OF APPROVAL ISSUED BY THE PLANNING COMMISSION ON THE _____ DAY OF _____, 2022

PLANNING COMMISSION CHAIRMAN _____ DATE _____

(PRINT NAME)



VICINITY MAP

NOTES

1. A PUBLIC UTILITY EASEMENT IS HEREBY GRANTED TO SOUTHWEST GAS 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.
2. A PUBLIC UTILITY AND PRIVATE DRAINAGE EASEMENT IS HEREBY GRANTED 10 FEET WIDE COINCIDENT WITH ALL EXTERIOR LOT LINES AND STREET RIGHTS-OF-WAYS, AND 10 FEET CENTERED ABOUT ALL INTERIOR LOT LINES PER THIS MAP.
3. 10' PUE, PRIVATE DRAINAGE & PUBLIC PEDESTRIAN ACCESS EASEMENT GRANTED ALONG THE EXTERIOR RIGHT-OF-WAY OF FUTURE COMMERCE DRIVE AS SHOWN ON THIS MAP.
4. THE PUBLIC UTILITY EASEMENTS SHOWN AND OR NOTED ON THIS PLAT INCLUDE USE FOR THE INSTALLATION AND MAINTENANCE OF CABLE TELEVISION FACILITIES, SOUTHWEST GAS, CITY WATER FACILITIES, CITY SEWER FACILITIES AND CITY STORM DRAIN FACILITIES.
5. A PUBLIC UTILITY EASEMENT IS ALSO HEREBY GRANTED WITHIN EACH PARCEL FOR THE EXCLUSIVE PURPOSE OF INSTALLING AND MAINTAINING UTILITY SERVICE FACILITIES TO THAT PARCEL AND THE RIGHT TO EXIT THAT PARCEL WITH SAID UTILITY FACILITIES FOR THE PURPOSE OF SERVING OTHER PARCELS AT LOCATIONS MUTUALLY AGREED UPON BY THE OWNER OF RECORD AT THE TIME OF INSTALLATION AND THE UTILITY COMPANY.
6. AS SHOWN ON THIS MAP, ALL OF THAT 60' NON-EXCLUSIVE EASEMENT FOR INGRESS/EGRESS GRANTED PER P.M. 51489 AND THAT PORTION OF A 60' NON-EXCLUSIVE EASEMENT FOR INGRESS/EGRESS GRANTED PER P.M. 39634 LYING WITHIN THE SUBJECT PROPERTIES ARE HEREBY ABANDONED PER THIS MAP.
7. A 25' ACCESS EASEMENT ALONG THE SOUTH AND EAST SIDES OF THE CITY OF FERNLEY PROPERTY (APN: 021-061-27) IS HEREBY GRANTED TO THE CITY OF FERNLEY.

GIS NOTE

A DIGITAL COPY OF THIS MAP WAS PROVIDED TO THE CITY OF FERNLEY AND LYON COUNTY G.I.S. DEPARTMENT.

BY: CITY OF FERNLEY G.I.S. DEPARTMENT

NAME & TITLE

BY: LYON COUNTY G.I.S. DEPARTMENT

NAME & TITLE

CITY SURVEYOR'S CERTIFICATE

I CERTIFY THAT THIS FINAL PARCEL MAP HAS BEEN REVIEWED AND APPROVED

CITY SURVEYOR _____ DATE _____

PRINTED NAME

OWNERS CERTIFICATE

THIS IS TO CERTIFY THAT THE UNDERSIGNED ARE THE OWNERS OF THAT TRACT OF LAND REPRESENTED ON THIS PLAT AND HAS CONSENTED TO THE PREPARATION AND RECORDATION OF THIS PLAT, THAT THE SAME IS EXECUTED IN COMPLIANCE WITH AND SUBJECT TO THE PROVISIONS OF N.R.S. CHAPTERS 116 & 278 AND LYON COUNTY CODE TITLE 11; DOES HEREBY OFFER AND DEDICATE TO THE CITY OF FERNLEY THE 81-FOOT PUBLIC STREET AS DESIGNATED HEREON, TOGETHER WITH ALL APPURTENANCES THERETO, FOR PUBLIC USE FOREVER;

THE OWNERS OF THIS PARCEL MAP AND IT'S HEIRS, ASSIGNS AND SUCCESSORS, AGREE TO PROVIDE NOTICE OF THE PROVISIONS OF NRS 40.140 AND CHAPTER 10.15 OF LYON COUNTY CODE TO ANY AND ALL SUBSEQUENT PURCHASERS;

THE OWNERS HEREBY GRANT ALL PUBLIC UTILITY COMPANIES INCLUDING CABLE TV COMPANIES, AND THE CITY OF FERNLEY, THEIR SUCCESSORS AND ASSIGNES, THOSE PERMANENT EASEMENTS DELINEATED AND NOTED HEREON FOR THE CONSTRUCTION AND MAINTENANCE OF UTILITY AND CABLE TV SYSTEMS AND APPURTENANCES, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS FOREVER.

PW FUND B DEVELOPMENT, LLC

A CALIFORNIA LIMITED LIABILITY COMPANY

BY: PW FUND B, LP, A CALIFORNIA LIMITED PARTNERSHIP, SOLE MEMBER
BY: PWIE GP, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, GENERAL PARTNER
BY: PAC WEST EQUITIES, LP, A DELAWARE LIMITED PARTNERSHIP, SOLE MEMBER
BY: PWI GP, LP, A CALIFORNIA LIMITED PARTNERSHIP, GENERAL PARTNER
BY: PWI LEAD, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, GENERAL PARTNER

BY: _____

KEVIN RAMOS, INVESTMENT COMMITTEE CHAIR

BY: _____

LARRY ALLBAUGH, INVESTMENT COMMITTEE MEMBER

NOTARY'S CERTIFICATE

STATE OF _____ SS

COUNTY OF _____

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____, 2022, BY KEVIN RAMOS AS INVESTMENT COMMITTEE CHAIR.

NOTARY PUBLIC

NOTARY'S CERTIFICATE

STATE OF CALIFORNIA SS

COUNTY OF SACRAMENTO

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____, 2022, BY LARRY ALLBAUGH AS INVESTMENT COMMITTEE MEMBER, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.
I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL

SIGNATURE _____ (SEAL)

SURVEYOR'S CERTIFICATE

I, JAMES D. BAILEY, JR., A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF NEVADA, HEREBY CERTIFY THAT:

1. THIS PLAT REPRESENTS THE RESULTS OF A SURVEY PERFORMED UNDER MY DIRECT SUPERVISION AT THE INSTANCE OF PW FUND B DEVELOPMENT, LLC.
2. THE LANDS SURVEYED LIE WITHIN THE NORTHEAST ONE-QUARTER (1/4) OF SECTION 20, T. 20N., R. 24 E., M.D.M., AND THE SURVEY WAS COMPLETED ON _____.
3. THIS PLAT COMPLIES WITH THE APPLICABLE STATUTES OF THIS STATE AND ANY LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE GOVERNING BODY GAVE ITS FINAL APPROVAL, AND THE SURVEY WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 625 OF THE NEVADA ADMINISTRATIVE CODE.
4. THE MONUMENTS DEPICTED ON THE PLAT ARE OF THE CHARACTER SHOWN, OCCUPY THE POSITIONS INDICATED AND ARE OF SUFFICIENT NUMBER AND DURABILITY.

JAMES D. BAILEY, JR. P.L.S. 18368

A.P.N. 021-061-29 & -30

TOTAL AREA = 78.86± ACRES

COUNTY RECORDER'S CERTIFICATE

FILE NO. _____
FILED FOR RECORD AT THE REQUEST OF
MERIDIAN SURVEYING & MAPPING, INC.
ON THIS _____ DAY OF _____, 2022, AT
_____ MINUTES PAST _____ O'CLOCK, _____ M
OFFICIAL RECORDS OF LYON COUNTY, NEVADA

COUNTY RECORDER

BY: _____
DEPUTY RECORDER

FEE: _____

PARCEL MAP

FOR

PW FUND B DEVELOPMENT, LLC

A MERGER & RESUBDIVISION OF PARCELS 1 & 3 OF

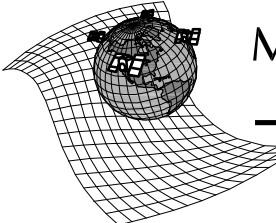
RECORD OF SURVEY 38529

SITUATE WITHIN THE NE 1/4 OF SECTION 20 T. 20 N, R. 24 E, M.D.M.

CITY OF FERNLEY

LYON COUNTY

NEVADA

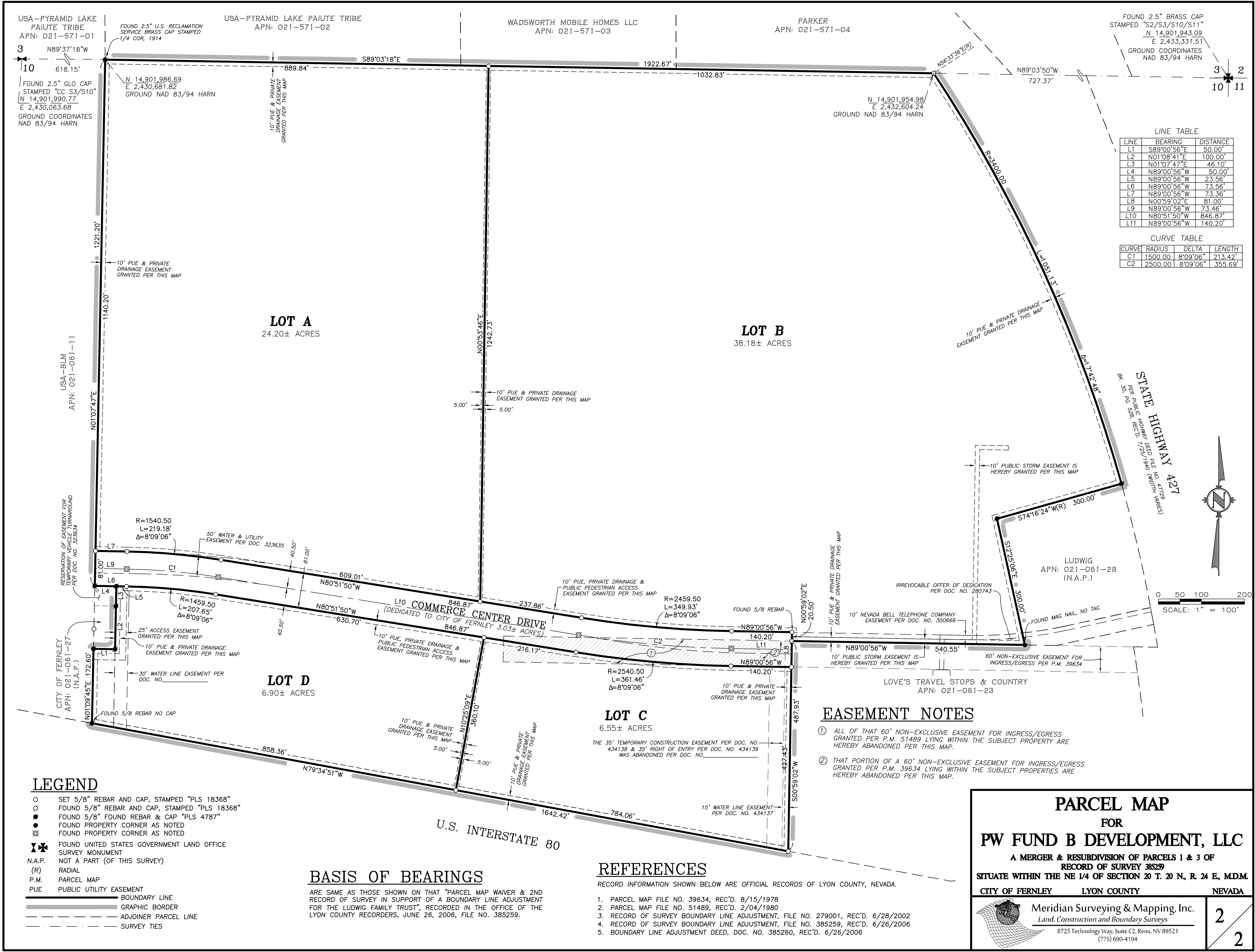


Meridian Surveying & Mapping, Inc.
Land, Construction and Boundary Surveys

8725 Technology Way, Suite C2, Reno, NV 89521
(775) 690-4194

1

2



LINE TABLE

LINE	BEARING	DISTANCE
L1	S89°00'56"E	50.00'
L2	N01°08'41"E	100.00'
L3	N01°07'47"E	46.10'
L4	N89°00'56"W	50.00'
L5	N89°00'56"W	23.56'
L6	N89°00'56"W	73.56'
L7	N89°00'56"W	73.36'
L8	N00°59'02"E	81.00'
L9	N89°00'56"W	73.46'
L10	N80°51'50"W	846.87'
L11	N89°00'56"W	140.20'

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH
C1	1500.00	8°09'06"	213.42'
C2	2500.00	8°09'06"	355.69'

- LEGEND**
- SET 5/8" REBAR AND CAP, STAMPED "PLS 18368"
 - FOUND 5/8" REBAR AND CAP, STAMPED "PLS 18368"
 - FOUND 5/8" FOUND REBAR & CAP "PLS 4787"
 - FOUND PROPERTY CORNER AS NOTED
 - ⊗ FOUND PROPERTY CORNER AS NOTED
 - ✱ FOUND UNITED STATES GOVERNMENT LAND OFFICE SURVEY MONUMENT
 - N.A.P. NOT A PART (OF THIS SURVEY)
 - (R) RADIAL
 - P.M. PARCEL MAP
 - PUE PUBLIC UTILITY EASEMENT
 - BOUNDARY LINE
 - GRAPHIC BORDER
 - ADJOINER PARCEL LINE
 - SURVEY TIES

BASIS OF BEARINGS

ARE SAME AS THOSE SHOWN ON THAT "PARCEL MAP WAIVER & 2ND RECORD OF SURVEY IN SUPPORT OF A BOUNDARY LINE ADJUSTMENT FOR THE LUDWIG FAMILY TRUST", RECORDED IN THE OFFICE OF THE LYON COUNTY RECORDERS, JUNE 26, 2006, FILE NO. 385259.

- REFERENCES**
- RECORD INFORMATION SHOWN BELOW ARE OFFICIAL RECORDS OF LYON COUNTY, NEVADA.
1. PARCEL MAP FILE NO. 39634, REC'D. 8/15/1978
 2. PARCEL MAP FILE NO. 51489, REC'D. 2/04/1980
 3. RECORD OF SURVEY BOUNDARY LINE ADJUSTMENT, FILE NO. 279001, REC'D. 6/28/2002
 4. RECORD OF SURVEY BOUNDARY LINE ADJUSTMENT, FILE NO. 385259, REC'D. 6/26/2006
 5. BOUNDARY LINE ADJUSTMENT DEED, DOC. NO. 385260, REC'D. 6/26/2006

- EASEMENT NOTES**
1. ALL OF THAT 60' NON-EXCLUSIVE EASEMENT FOR INGRESS/EGRESS GRANTED PER P.M. 51489 LYING WITHIN THE SUBJECT PROPERTY ARE HEREBY ABANDONED PER THIS MAP.
 2. THAT PORTION OF A 60' NON-EXCLUSIVE EASEMENT FOR INGRESS/EGRESS GRANTED PER P.M. 39634 LYING WITHIN THE SUBJECT PROPERTIES ARE HEREBY ABANDONED PER THIS MAP.

PARCEL MAP
FOR
PW FUND B DEVELOPMENT, LLC
A MERGER & RESUBDIVISION OF PARCELS 1 & 3 OF
RECORD OF SURVEY 385259
SITUATE WITHIN THE NE 1/4 OF SECTION 20 T. 20 N, R. 24 E, MDM.
CITY OF FERNLEY LYON COUNTY NEVADA

Meridian Surveying & Mapping, Inc.
Land, Construction and Boundary Surveys
8725 Technology Way, Suite C2, Reno, NV 89521
(775) 690-4194

2
2

TRAFFIC IMPACT STUDY

for

Commerce Center Industrial

September 14, 2021

PREPARED FOR:

PW Fund B, LP

PREPARED BY:



Headway Transportation, LLC
5482 Longley Lane, Suite B, Reno, Nevada 89511
775.322.4300
www.HeadwayTransportation.com

YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the development of the proposed Commerce Center Drive Industrial project in Fernley, NV. This study was undertaken to determine the existing and future traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, and develop recommendations to mitigate impacts, if any are found.

What does the project consist of?

The project includes three warehouse buildings totaling up to 1,365,760 square feet on a 78.86-acre property. The proposed project is located on the north and south sides of Commerce Center Drive approximately 300 feet west of the Main Street (SR 427) / Commerce Center Drive intersection. Access is proposed via seven new driveways along Commerce Center Drive.

How much traffic will the project generate?

The proposed project is anticipated to generate approximately 2,376 Daily trips, 232 AM peak hour trips, and 259 PM peak hour trips.

Are there any traffic impacts?

All study intersections operate within policy level of service under all scenarios.

Are any improvements proposed?

No capacity improvements are recommended at the study intersections based on the addition of project traffic. The project will construct frontage improvements on Commerce Center Drive.

It is recommended that the applicant coordinate with the Nevada Department of Transportation (NDOT) to identify potential sight distance improvements for the eastbound approach (looking north) of the Commerce Center Drive / Main Street intersection.



LIST OF FIGURES

1. Project Location
2. Preliminary Site Plan
3. Existing Lane Configurations, Controls, and Traffic Volumes
4. Project Trip Distribution & Assignment
5. Existing Plus Project Traffic Volumes
6. Future Traffic Volumes
7. Future Plus Project Traffic Volumes

LIST OF APPENDICES

- A. Existing Conditions LOS Calculations
- B. Existing Plus Project Conditions LOS Calculations
- C. Future Conditions LOS Calculations
- D. Future Plus Project Conditions LOS Calculations



INTRODUCTION

This Traffic Impact Study evaluates the potential traffic impacts associated with development of the proposed Commerce Center Industrial project in Fernley, NV. This study was undertaken to determine the existing and future (20-year horizon) traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, and develop recommendations to mitigate impacts, if any are found.

Study Area and Evaluated Scenarios

The project site is located on the north and south sides of Commerce Center Drive approximately 300 feet west of the Main Street (SR 427) / Commerce Center Drive intersection. All study intersections are shown in **Figure 1**, and a preliminary site plan is shown in **Figure 2**.

The following intersections are included in this study:

- ▶ Commerce Center Drive / Main Street (SR 427)
- ▶ I-80 Westbound Off-Ramp / Main Street (SR 427)
- ▶ I-80 Westbound On-Ramp / Main Street (SR 427)
- ▶ I-80 Eastbound Off-Ramp / Main Street (SR 427)
- ▶ I-80 Eastbound On-Ramp / Main Street (SR 427)

Lane configurations and intersection controls at the study intersections are shown in **Figure 3**.

This study includes analysis of the both the weekday AM and PM peak hours as these are the periods of time in which peak traffic is anticipated to occur. The evaluated development scenarios are:

- ▶ Existing Conditions (no project)
- ▶ Existing Plus Project
- ▶ Future Conditions (20-year horizon without the project)
- ▶ Future Plus Project Conditions

ANALYSIS METHODOLOGY

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades “A” through “F” with “A” representing optimum conditions and “F” representing breakdown or over capacity flows.

Intersections

Intersection LOS methodology is established in the *Highway Capacity Manual (HCM) 6th Edition*, published by the Transportation Research Board (TRB). The methodology for signalized intersections determines the LOS by comparing the average control delay for the overall intersection to the delay thresholds in



Table 1. LOS at unsignalized (side-street stop controlled) intersections is determined by comparing the average control delay for the worst movement/approach to the delay thresholds in **Table 1**.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: Highway Capacity Manual, Chapters 18 through 21

Level of service calculations were performed using the Synchro 11 software package with results reported in accordance with the current HCM methodology.

Level of Service Policies

The *City of Fernley Comprehensive Master Plan* indicates that “the minimum Level of Service on all city-maintained roadways shall be LOS D.” This is consistent with Nevada Department of Transportation (NDOT) policies, which indicate that “*Level of Service “C” will be the design objective for capacity and under no circumstances will less than Level of Service “D” be accepted for site and non-site traffic.*”

Therefore, LOS D was used as the threshold for evaluating this project. Where intersections are already experiencing LOS beyond the thresholds, conditions should not be exacerbated.

The LOS policies are not specific to minor side street approaches, but rather focus on maintaining quality operations on the mainline corridors. LOS “E” or “F” on a side street approach does not constitute an exceedance of the LOS policy as this is understood to be a common and manageable condition in the urban environment, particularly during peak hours. Overall intersection operations is the measure to which the LOS policy applies.



EXISTING CONDITIONS

Roadway Facilities

A brief description of the key roadways in the study area is provided below:

Commerce Center Drive is an east-west local road, with a 25-mph posted speed limit, that provides access to Main Street and that will bisect the project.

Main Street (SR 427) is classified by NDOT as a Minor Arterial in the project vicinity. The roadway has two lanes near the site. The posted speed limit changes from 55 mph to 45 mph just north of Commerce Center Drive, and then to 35 mph near the I-80 interchange.

The *I-80 interchange ramps* (both eastbound and westbound) are offset so that the on and off ramps are not aligned but separate intersections.

No bicycle lanes or sidewalks exist within the project area.

Crash History

The most recent five years of crash data (2015 – 2019) on Main Street in the project area was obtained through an NDOT Crash Data request. According to the available data there were four total crashes near the intersection of Commerce Center Drive / Main Street between 2015 – 2019. Three crashes caused property damage only and one caused minor injuries. Two of the crashes at this intersection were rear-end type with eastbound vehicles on Commerce Center Drive. The crash data does not indicate a significant safety issue at the intersection.

Traffic Volumes

Traffic volumes were obtained on April 27th and 28th 2021, when some COVID-19 restrictions were still in place and compared to the most recent hourly traffic volume data (2018) from the (NDOT) Traffic Record Information Access (TRINA) database. Based on the 2018 volumes, a growth factor of 15% was applied to newly collected data from 2021 to reflect ‘typical’ conditions. The existing condition (2021) traffic volumes are shown in **Figure 3**.

Intersection Level of Service

Level of service calculations were performed using the existing traffic volumes, lane configurations, and traffic controls. The results are presented in **Table 2** and full calculations are provided in **Appendix A**.



Table 2: Existing Conditions Intersection Level of Service Summary

ID	Intersection Name	Intersection Control	Existing			
			AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
1	Main St & Commerce Center Dr	Side Street STOP				
	Overall		A	4.9	A	3.5
	Eastbound Left		B	14.3	C	15.8
	Eastbound Thru		B	14.4	C	15.1
	Eastbound Right		B	10.2	A	9.8
	Northbound Left		A	8.3	A	8.3
	Southbound Left		A	8.0	A	7.8
	Westbound Approach		C	17.1	C	16.9
2	Main St & WB I-80 Off-Ramp	Side Street STOP				
	Overall		A	2.2	A	3.3
	Westbound Left		B	10.3	B	11.1
	Westbound Right		A	9.1	A	9.4
3	Main St & WB I-80 On-Ramp	Side Street STOP				
	Overall		A	3.4	A	2.7
	Northbound Left		A	8.5	A	8.6
4	Main St & EB I-80 Off-Ramp	Side Street STOP				
	Overall		A	0.8	A	0.5
	Eastbound Left		B	14.0	B	13.5
5	Main St & EB I-80 On-Ramp	Side Street STOP				
	Overall		A	0.5	A	0.6
	Southbound Left		A	8.6	A	8.3

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for unsignalized (side-street stop controlled) intersections.

Source: Headway Transportation, 2021

As shown in **Table 2**, all study intersections currently operate within LOS policy.

PROJECT GENERATED TRAFFIC

Trip Generation

Trip generation rates from the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition were used to develop trip generation estimates for the project. The proposed project consists of approximately 1,365,760 square feet of warehouse space. **Table 3** shows the Daily, AM peak hour, and PM peak hour trip generation estimates.



Table 3: Trip Generation Estimates

Land Use (ITE Code)	Quantity	Daily			AM			PM		
		Total	In	Out	Total	In	Out	Total	In	Out
Warehousing (150)	1,365,760 sq. feet	2,376	1,188	1,188	232	179	53	259	70	189

Source: Headway Transportation, 2021

As shown in **Table 3**, the proposed project is anticipated to generate approximately 2,376 Daily trips, 232 AM peak hour trips, and 259 PM peak hour trips.

Project Access

Access to the site is provided via Main Street / Commerce Center Drive. It is noted that the existing sight line looking north from the eastbound approach of the Commerce Center Drive / Main Street intersection is limited due to the existing roadway curvature and terrain slope, as shown in **Exhibit 1**.



Exhibit 1. Existing sight line looking north from the eastbound approach (Commerce Center Drive)

There is a 'Truck Crossing' sign on Main Street just north of Commerce Center Drive in the southbound direction to alert motorists. The eastbound approach currently services traffic to and from the gas station, and the crash data did not indicate a high crash occurrence. However, this approach may currently not provide adequate sight distance based on the AASHTO's *A Policy on Geometric Design of Highways and Streets* intersection sight distance (ISD) triangles.

The four warehouse buildings which comprise the project are situated on both the north and south side of Commerce Center Drive. Access to the project buildings is proposed at three full access driveways along Commerce Center Drive, as shown in **Figure 2**.

The project will construct frontage improvements along Commerce Center Drive within the project limits. The lane configurations and intersection controls along Main Street under project conditions are unchanged from existing conditions.



Trip Distribution and Assignment

Traffic generated by the project was distributed to the road network based on the location of the project site, the relative locations of major activity centers, and access connection points to regional roadways.

The following percentages were used for distributing the project traffic:

- ▶ 40% to/from west I-80
- ▶ 30% to/from the south via Main Street (SR 427)
- ▶ 25% to/from the east via I-80
- ▶ 5% to/from the north via Main Street (SR 427)

Project generated trips were assigned to the adjacent roadway system based on the distributions outlined above. The project trip assignment is shown on **Figure 4**.

EXISTING PLUS PROJECT CONDITIONS

Traffic Volumes

Existing Plus Project traffic volumes were developed by adding the project generated trips (**Figure 4**) to the existing traffic volumes (**Figure 3**) and are shown on **Figure 5**.

Intersection Level of Service Analysis

Table 4 presents the LOS analysis summary for the existing plus project conditions and the detailed calculation sheets are provided in **Appendix B**.



Table 4: Existing Plus Project Conditions Intersection Level of Service Summary

ID	Intersection Name	Intersection Control	Existing				Existing Plus Project			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Main St & Commerce Center Dr	Side Street STOP								
	Overall		A	4.9	A	3.5	A	6.8	A	6.8
	Eastbound Left		B	14.3	C	15.8	D	25.3	C	20.7
	Eastbound Thru		B	14.4	C	15.1	C	23.9	C	18.3
	Eastbound Right		B	10.2	A	9.8	B	10.6	B	11.7
	Northbound Left		A	8.3	A	8.3	A	9.0	A	8.5
	Southbound Left		A	8.0	A	7.8	A	8.0	A	7.8
	Westbound Approach		C	17.1	C	16.9	D	34.6	D	33.7
2	Main St & WB I-80 Off-Ramp	Side Street STOP								
	Overall		A	2.2	A	3.3	A	2.3	A	2.7
	Westbound Left		B	10.3	B	11.1	B	11.7	B	12.9
	Westbound Right		A	9.1	A	9.4	A	9.9	A	9.7
3	Main St & WB I-80 On-Ramp	Side Street STOP								
	Overall		A	3.4	A	2.7	A	2.7	A	2.2
	Northbound Left		A	8.5	A	8.6	A	8.7	A	9.4
4	Main St & EB I-80 Off-Ramp	Side Street STOP								
	Overall		A	0.8	A	0.5	A	2.7	A	1.1
	Eastbound Left		B	14.0	B	13.5	C	18.2	C	16.1
5	Main St & EB I-80 On-Ramp	Side Street STOP								
	Overall		A	0.5	A	0.6	A	0.6	A	0.8
	Southbound Left		A	8.6	A	8.3	A	8.9	A	8.6

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for unsignalized (side-street stop controlled) intersections.
Source: Headway Transportation, 2021

As shown in **Table 4**, all study intersections are anticipated to operate within overall policy LOS of “D”.

FUTURE CONDITIONS

The *City of Fernley Transportation Master Plan (TMP)* and *Comprehensive Plan* anticipate Fernley to grow by roughly 2% annually through the year 2040. Proactively planning for this level of growth, the City of Fernley has identified future transportation needs and future capacity improvements under a variety of growth scenarios in the TMP.

Roadway Facilities

The *City of Fernley Transportation Master Plan* (July 2020) includes the following planned improvements in the study area:



- ▶ Main Street Improvements from Marie Drive to Hardie Lane including bicycle lanes, updated crosswalks, and evaluating pedestrian crossing signals (5-year Planning Horizon)
- ▶ Railroad Underpass Improvements to widen the railroad underpass on Main Street between Pilot Road and Miller Lane including multi-modal improvements (10-year Planning Horizon)
- ▶ Improve Main Street / SR 427 to provide bicycle facilities from Fernley to the Washoe County line (10-year Planning Horizon)

Traffic Volumes

Future Year (year 2040) traffic volumes were developed considering regional growth rates based on historical traffic count data from the NDOT TRINA tool. **Table 5** shows the historical traffic volume data.

Table 5: NDOT Historical Traffic Volume Data

Roadway – Location	Annual Average Daily Traffic (AADT) Volumes										Annual Growth Rate
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Main Street - I-80 to Marie Drive	9,300	8,700	8,400	8,600	8,200	8,600	9,000	11,000	9,100	9,300	0.50%
Main Street - Marie Drive to US95A	10,000	9,800	9,300	9,500	9,200	9,800	11,000	11,000	10,400	10,600	0.79%
Main Street - US95A to Hardie Lane	11,000	9,900	9,700	9,600	8,900	9,800	10,000	10,500	11,600	11,900	1.10%
Average											0.80%

Source: Headway Transportation, 2021

As shown in **Table 5**, the historical annual growth rate is approximately 0.8% per year. In order to present a conservative analysis, future traffic volumes were developed by applying a 2% annual growth rate, which is consistent with the *City of Fernley Comprehensive Master Plan* projections.

Figure 6 shows the future (20-year horizon) traffic volumes at the study intersections.

Intersection Level of Service Analysis

Table 6 presents the future year (20-year horizon) conditions LOS summary and the detailed calculation sheets are provided in **Appendix D**.



Table 6: Future Conditions Level of Service Summary

ID	Intersection Name	Intersection Control	Future			
			AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
1	Main St & Commerce Center Dr	Side Street STOP				
	Overall		A	5.2	A	4.6
	Eastbound Left		C	19.2	C	24.1
	Eastbound Thru		C	18.5	C	20.7
	Eastbound Right		B	11.3	B	10.8
	Northbound Left		A	8.7	A	8.7
	Southbound Left		A	8.2	A	8.0
	Westbound Approach		D	27.0	D	29.7
2	Main St & WB I-80 Off-Ramp	Side Street STOP				
	Overall		A	2.4	A	3.7
	Westbound Left		B	11.6	B	13.3
	Westbound Right		A	9.6	A	10.0
3	Main St & WB I-80 On-Ramp	Side Street STOP				
	Overall		A	3.9	A	3.1
	Northbound Left		A	9.8	A	9.8
4	Main St & EB I-80 Off-Ramp	Side Street STOP				
	Overall		A	1.2	A	0.7
	Eastbound Left		C	20.0	C	18.5
5	Main St & EB I-80 On-Ramp	Side Street STOP				
	Overall		A	0.6	A	0.6
	Southbound Left		A	9.5	A	9.0

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for unsignalized (side-street stop controlled) intersections.

Source: Headway Transportation, 2021

As shown in **Table 6**, all study intersections will operate within policy LOS under future conditions.

FUTURE PLUS PROJECT CONDITIONS

Traffic Volumes

Future Plus Project traffic volumes were developed by adding the project generated trips (**Figure 4**) to the future year traffic volumes (**Figure 6**) and are shown on **Figure 7**.



Intersection Level of Service Analysis

Level of service calculations were performed using the future year (20-year horizon) plus project conditions described above. The results are presented in **Table 7** and the calculation sheets are provided in **Appendix D**.

Table 7: Future Year Plus Project Conditions Level of Service Summary

ID	Intersection Name	Intersection Control	Future				Future Plus Project			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Main St & Commerce Center Dr	Side Street STOP								
	Overall		A	5.2	A	4.6	A	7.3	A	9.6
	Eastbound Left		C	19.2	C	24.1	E	38.1	E	36.0
	Eastbound Thru		C	18.5	C	20.7	D	33.1	D	26.1
	Eastbound Right		B	11.3	B	10.8	B	11.9	B	13.7
	Northbound Left		A	8.7	A	8.7	A	9.6	A	9.1
	Southbound Left		A	8.2	A	8.0	A	8.2	A	8.0
	Westbound Approach		D	27.0	D	29.7	F	63.6	F	92.3
2	Main St & WB I-80 Off-Ramp	Side Street STOP								
	Overall		A	2.4	A	3.7	A	2.5	A	3.3
	Westbound Left		B	11.6	B	13.3	B	13.4	C	16.1
	Westbound Right		A	9.6	A	10.0	B	10.5	B	10.4
3	Main St & WB I-80 On-Ramp	Side Street STOP								
	Overall		A	3.9	A	3.1	A	3.4	A	2.8
	Northbound Left		A	9.8	A	9.8	B	10.1	B	11.2
4	Main St & EB I-80 Off-Ramp	Side Street STOP								
	Overall		A	1.2	A	0.7	A	4.0	A	1.4
	Eastbound Left		C	20.0	C	18.5	D	32.6	C	24.0
5	Main St & EB I-80 On-Ramp	Side Street STOP								
	Overall		A	0.6	A	0.6	A	0.7	A	0.8
	Southbound Left		A	9.5	A	9.0	A	9.8	A	9.4

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for unsignalized (side-street stop controlled) intersections.

Source: Headway Transportation, 2021

As shown in **Table 7**, each study intersection will operate overall within the policy LOS under Future Plus Project conditions. Side-street operations on Commerce Center Drive are expected to degrade with the addition of project traffic. Level of service E & F is a common condition for STOP controlled minor street approaches along major arterials in an urban context during peak periods.



Recommended Improvements

No intersection improvements are proposed to mitigate project traffic.

During the site development, the land should be graded, and the site constructed to provide adequate sight distance for design vehicles exiting Commerce Center Drive eastbound based on the *AASHTO's A Policy on Geometric Design of Highways and Streets* intersection sight distance (ISD) triangles. This will require coordination with NDOT to determine existing and future sight distance conditions, and appropriate mitigation, if needed.

CONCLUSIONS & RECOMMENDATIONS

The following is a list of key findings and recommendations:

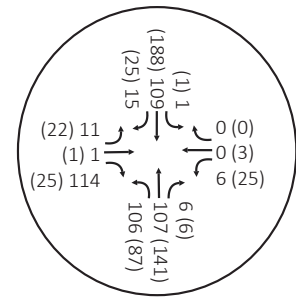
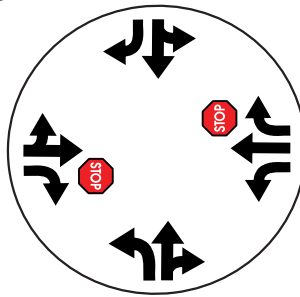
- ▶ The proposed project is anticipated to generate approximately 2,376 Daily trips, 232 AM peak hour trips, and 259 PM peak hour trips.
- ▶ The proposed project would create three intersections along Commerce Center Drive which will provide access to buildings on the north and south of the roadway.
- ▶ It is recommended that the applicant coordinate with NDOT to identify potential sight distance improvements for the eastbound approach of the Commerce Center Drive / Main Street intersection looking north (**Exhibit 1**).
- ▶ All study intersections will operate within policy level of service under Existing, Existing Plus Project, Future, and Future Plus Project conditions.
- ▶ No traffic capacity improvements are recommended for this project.
- ▶ The project will construct frontage improvements along the project edge on Commerce Center Drive.



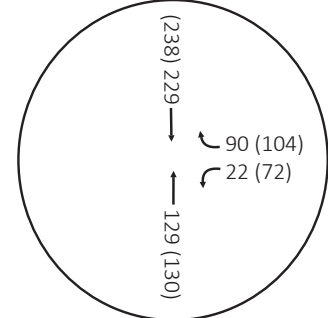
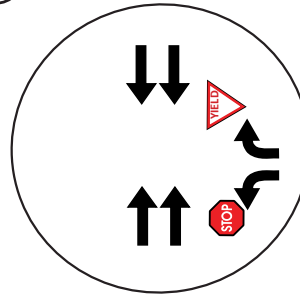




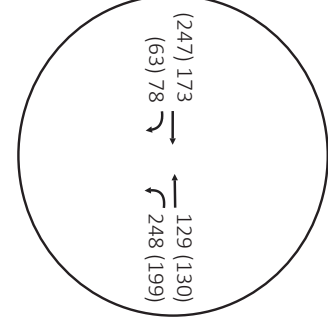
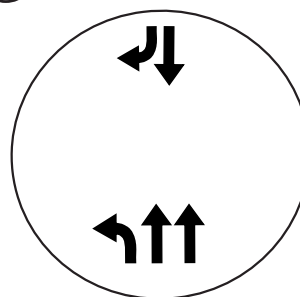
1 Commerce Center Dr / Main Street (SR 427)



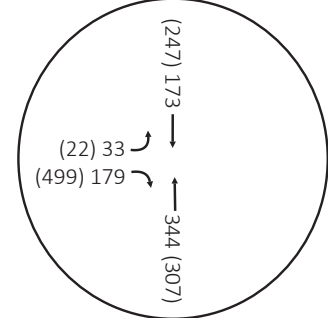
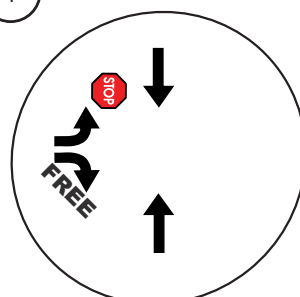
2 I-80 Westbound Off-Ramp / Main Street (SR 427)



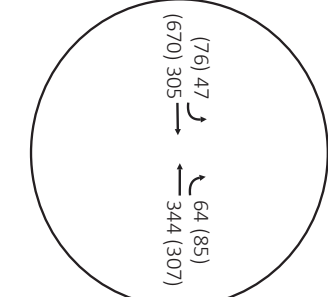
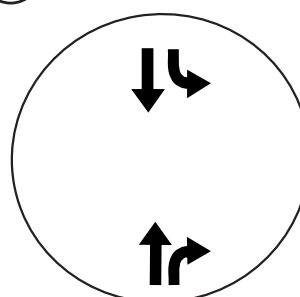
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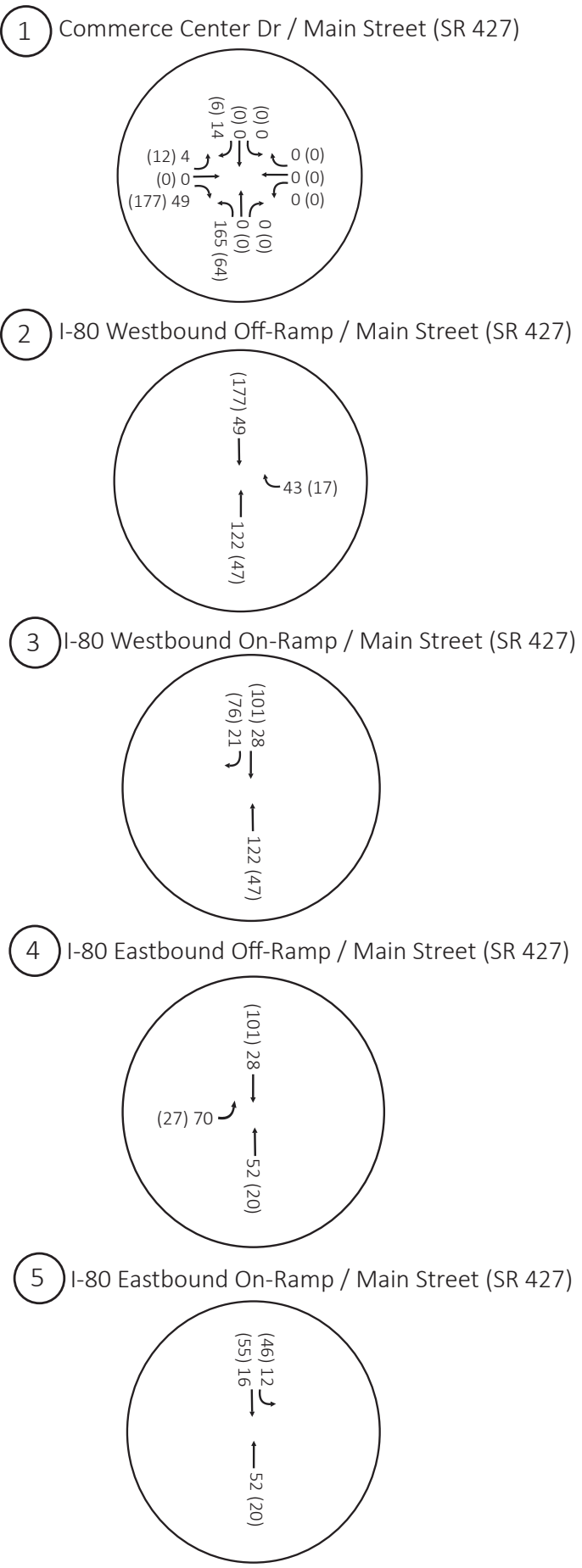


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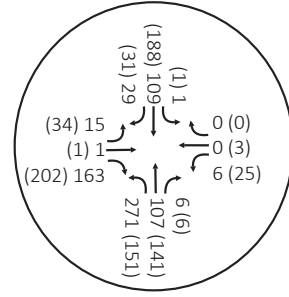
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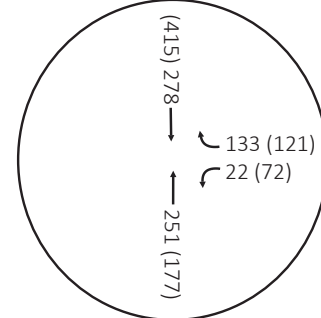




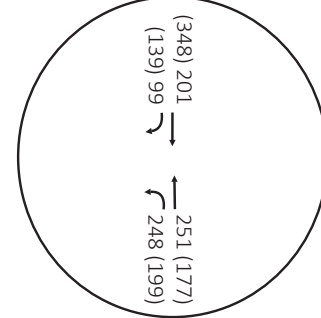
1 Commerce Center Dr / Main Street (SR 427)



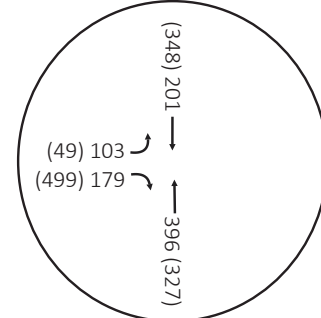
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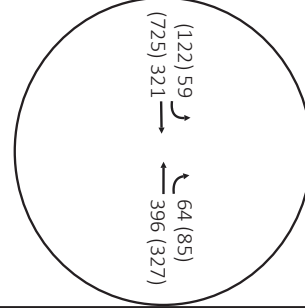
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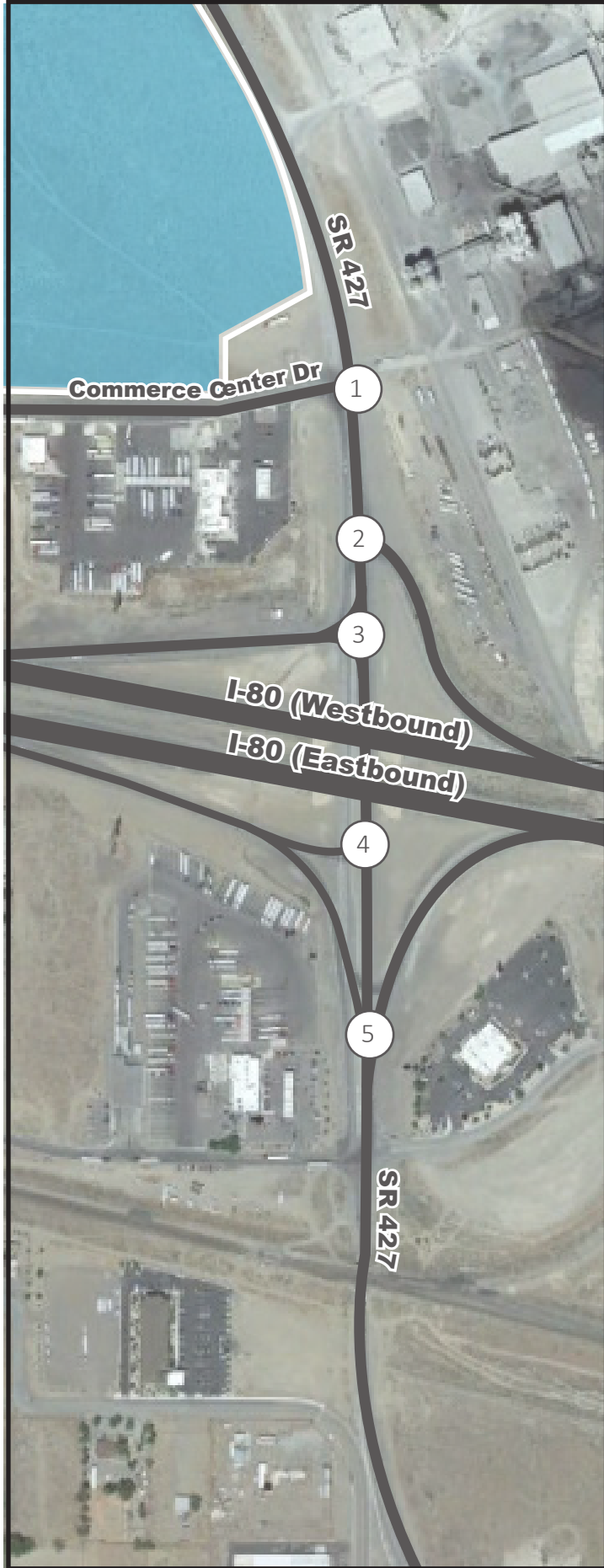


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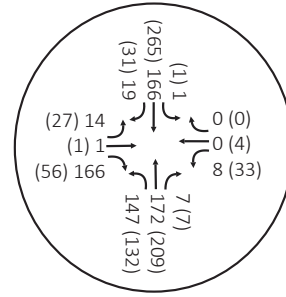


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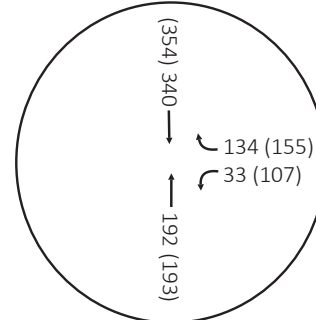




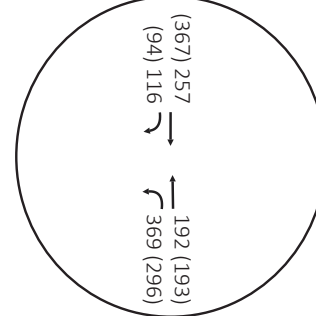
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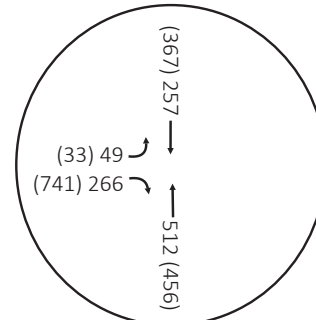
2 I-80 Westbound Off-Ramp / Main Street (SR 427)



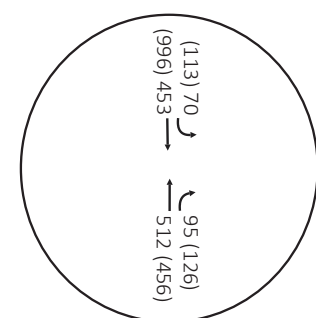
3 I-80 Westbound On-Ramp / Main Street (SR 427)



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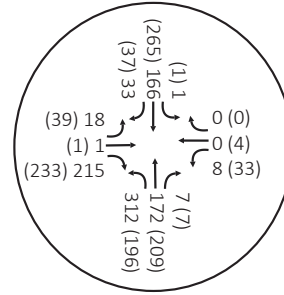


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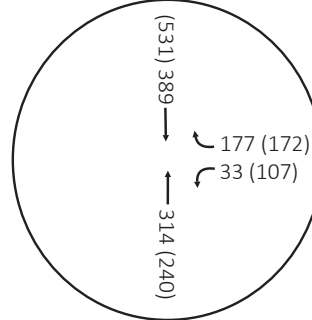




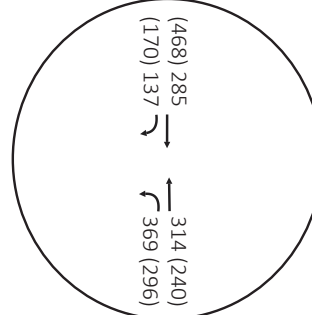
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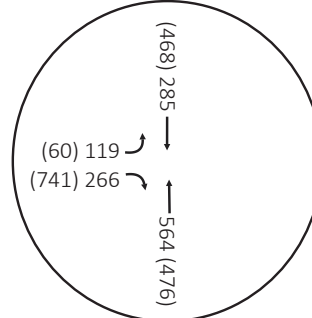
2 I-80 Westbound Off-Ramp / Main Street (SR 427)



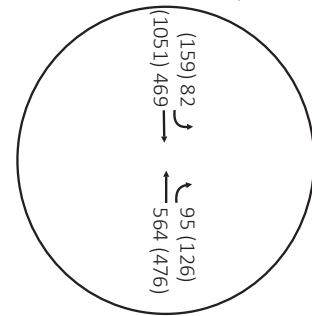
3 I-80 Westbound On-Ramp / Main Street (SR 427)



4 I-80 Eastbound Off-Ramp / Main Street (SR 427)



5 I-80 Eastbound On-Ramp / Main Street (SR 427)



Appendix A

Existing Conditions LOS Calculations



Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1	114	6	0	0	106	107	6	1	109	15
Future Vol, veh/h	11	1	114	6	0	0	106	107	6	1	109	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	50	50	50	50	50	50	50	50	50	50	50	50
Mvmt Flow	12	1	124	7	0	0	115	116	7	1	118	16

Major/Minor	Minor2		Minor1		Major1			Major2			
Conflicting Flow All	470	473	118	541	486	120	134	0	0	123	0
Stage 1	120	120	-	350	350	-	-	-	-	-	-
Stage 2	350	353	-	191	136	-	-	-	-	-	-
Critical Hdwy	7.6	7	6.7	7.6	7	6.7	4.6	-	-	4.6	-
Critical Hdwy Stg 1	6.6	6	-	6.6	6	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.6	6	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.95	4.45	3.75	2.65	-	-	2.65	-
Pot Cap-1 Maneuver	432	426	819	386	418	817	1202	-	-	1214	-
Stage 1	781	713	-	578	556	-	-	-	-	-	-
Stage 2	578	554	-	712	701	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-
Mov Cap-1 Maneuver	400	385	819	303	377	817	1202	-	-	1214	-
Mov Cap-2 Maneuver	400	385	-	303	377	-	-	-	-	-	-
Stage 1	706	712	-	523	503	-	-	-	-	-	-
Stage 2	523	501	-	603	700	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.6		17.1		4		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1202	-	-	400	385	819	303	1214	-	-
HCM Lane V/C Ratio	0.096	-	-	0.03	0.003	0.151	0.022	0.001	-	-
HCM Control Delay (s)	8.3	-	-	14.3	14.4	10.2	17.1	8	0	-
HCM Lane LOS	A	-	-	B	B	B	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	0	0.5	0.1	0	-	-

HCM 6th TWSC
2: Main St/Main Street & WB I-80 Off-Ramp

09/13/2021

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	90	129	0	0	229
Future Vol, veh/h	22	90	129	0	0	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	98	140	0	0	249
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	265	70	0	-	-	-
Stage 1	140	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	702	978	-	0	0	-
Stage 1	872	-	-	0	0	-
Stage 2	887	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	702	978	-	-	-	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.3	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	702	978	-	-	-
HCM Lane V/C Ratio	-	0.034	0.1	-	-	-
HCM Control Delay (s)	-	10.3	9.1	-	-	-
HCM Lane LOS	-	B	A	-	-	-
HCM 95th %tile Q(veh)	-	0.1	0.3	-	-	-

Existing AM

Synchro 11 Report

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	248	129	173	78
Future Volume (Veh/h)	0	0	248	129	173	78
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	270	140	188	85
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	868	188	273			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	868	188	273			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	79			
cM capacity (veh/h)	255	854	1290			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	270	140	188	85		
Volume Left	270	0	0	0		
Volume Right	0	0	0	85		
cSH	1290	1700	1700	1700		
Volume to Capacity	0.21	0.08	0.11	0.05		
Queue Length 95th (ft)	20	0	0	0		
Control Delay (s)	8.5	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	5.6		0.0			
Approach LOS						
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			29.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	179	0	344	173	0
Future Vol, veh/h	33	179	0	344	173	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	30	30	30	30	30	30
Mvmt Flow	37	199	0	382	192	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	574	-	-	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.7	-	-	-	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-	-
Follow-up Hdwy	3.77	-	-	-	-	-
Pot Cap-1 Maneuver	437	0	0	-	-	0
Stage 1	778	0	0	-	-	0
Stage 2	633	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	437	-	-	-	-	-
Mov Cap-2 Maneuver	437	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	437	-	-		
HCM Lane V/C Ratio	-	0.084	-	-		
HCM Control Delay (s)	-	14	0	-		
HCM Lane LOS	-	B	A	-		
HCM 95th %tile Q(veh)	-	0.3	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	344	64	47	305
Future Volume (Veh/h)	0	0	344	64	47	305
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	378	70	52	335
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	817	378			378	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	817	378			378	
tC, single (s)	6.7	6.5			4.4	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.5	
p0 queue free %	100	100			95	
cM capacity (veh/h)	295	611			1042	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	378	70	52	335		
Volume Left	0	0	52	0		
Volume Right	0	70	0	0		
cSH	1700	1700	1042	1700		
Volume to Capacity	0.22	0.04	0.05	0.20		
Queue Length 95th (ft)	0	0	4	0		
Control Delay (s)	0.0	0.0	8.6	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		1.2			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			28.1%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	1	25	25	3	0	87	141	6	1	188	25
Future Vol, veh/h	22	1	25	25	3	0	87	141	6	1	188	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	20	20	20	20	20	20	20	20	20	20	20	20
Mvmt Flow	26	1	29	29	4	0	102	166	7	1	221	29

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	599	600	221	627	626	170	250	0
Stage 1	223	223	-	374	374	-	-	-
Stage 2	376	377	-	253	252	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.3	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.38	-
Pot Cap-1 Maneuver	388	391	776	372	378	829	1217	-
Stage 1	741	687	-	612	587	-	-	-
Stage 2	610	585	-	713	667	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	360	358	776	334	346	829	1217	-
Mov Cap-2 Maneuver	360	358	-	334	346	-	-	-
Stage 1	679	686	-	561	538	-	-	-
Stage 2	555	536	-	684	666	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	16.9	3.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	360	358	776	335	1302	-	-
HCM Lane V/C Ratio	0.084	-	-	0.072	0.003	0.038	0.098	0.001	-	-
HCM Control Delay (s)	8.2	-	-	15.8	15.1	9.8	16.9	7.8	0	-
HCM Lane LOS	A	-	-	C	C	A	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	0	0.1	0.3	0	-	-

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	104	130	0	0	238
Future Vol, veh/h	72	104	130	0	0	238
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	77	112	140	0	0	256
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	268	70	0	-	-	-
Stage 1	140	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	7.1	7.2	-	-	-	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.65	3.45	-	-	-	-
Pot Cap-1 Maneuver	664	938	-	0	0	-
Stage 1	835	-	-	0	0	-
Stage 2	847	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	664	938	-	-	-	-
Mov Cap-2 Maneuver	664	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.1	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	664	938	-	-	-
HCM Lane V/C Ratio	-	0.117	0.119	-	-	-
HCM Control Delay (s)	-	11.1	9.4	-	-	-
HCM Lane LOS	-	B	A	-	-	-
HCM 95th %tile Q(veh)	-	0.4	0.4	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	199	130	247	63
Future Volume (Veh/h)	0	0	199	130	247	63
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	216	141	268	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	841	268	336			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841	268	336			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	82			
cM capacity (veh/h)	276	771	1223			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	216	141	268	68		
Volume Left	216	0	0	0		
Volume Right	0	0	0	68		
cSH	1223	1700	1700	1700		
Volume to Capacity	0.18	0.08	0.16	0.04		
Queue Length 95th (ft)	16	0	0	0		
Control Delay (s)	8.6	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	5.2		0.0			
Approach LOS						
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			50.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	499	0	307	247	0
Future Vol, veh/h	22	499	0	307	247	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	92
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	23	531	0	327	263	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	590	-	-	0	-	0
Stage 1	263	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Critical Hdwy	6.56	-	-	-	-	-
Critical Hdwy Stg 1	5.56	-	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-	-
Follow-up Hdwy	3.644	-	-	-	-	-
Pot Cap-1 Maneuver	448	0	0	-	-	0
Stage 1	750	0	0	-	-	0
Stage 2	700	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	448	-	-	-	-	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.5	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	448	-	-		
HCM Lane V/C Ratio	-	0.052	-	-		
HCM Control Delay (s)	-	13.5	0	-		
HCM Lane LOS	-	B	A	-		
HCM 95th %tile Q(veh)	-	0.2	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	307	85	76	670
Future Volume (Veh/h)	0	0	307	85	76	670
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	327	90	81	713
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1202	327			327	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	327			327	
tC, single (s)	6.6	6.4			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	100	100			93	
cM capacity (veh/h)	178	683			1158	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	327	90	81	713		
Volume Left	0	0	81	0		
Volume Right	0	90	0	0		
cSH	1700	1700	1158	1700		
Volume to Capacity	0.19	0.05	0.07	0.42		
Queue Length 95th (ft)	0	0	6	0		
Control Delay (s)	0.0	0.0	8.3	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			38.6%		ICU Level of Service	A
Analysis Period (min)			15			

Appendix B

Existing Plus Project Conditions LOS Calculations



Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1	163	6	0	0	271	107	6	1	109	29
Future Vol, veh/h	15	1	163	6	0	0	271	107	6	1	109	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	50	50	50	50	50	50	50	50	50	50	50	50
Mvmt Flow	16	1	177	7	0	0	295	116	7	1	118	32

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	830	833	118	935	862	120	150	0	0	123	0	0
Stage 1	120	120	-	710	710	-	-	-	-	-	-	-
Stage 2	710	713	-	225	152	-	-	-	-	-	-	-
Critical Hdwy	7.6	7	6.7	7.6	7	6.7	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	6.6	6	-	6.6	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.6	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.95	4.45	3.75	2.65	-	-	2.65	-	-
Pot Cap-1 Maneuver	241	256	819	202	246	817	1185	-	-	1214	-	-
Stage 1	781	713	-	357	372	-	-	-	-	-	-	-
Stage 2	357	371	-	681	689	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	194	192	819	127	185	817	1185	-	-	1214	-	-
Mov Cap-2 Maneuver	194	192	-	127	185	-	-	-	-	-	-	-
Stage 1	587	712	-	268	279	-	-	-	-	-	-	-
Stage 2	268	279	-	532	688	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.9		34.9		6.4		0.1	
HCM LOS	B		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1185	-	-	194	192	819	127	1214	-	-
HCM Lane V/C Ratio	0.249	-	-	0.084	0.006	0.216	0.051	0.001	-	-
HCM Control Delay (s)	9	-	-	25.3	23.9	10.6	34.9	8	0	-
HCM Lane LOS	A	-	-	D	C	B	D	A	A	-
HCM 95th %tile Q(veh)	1	-	-	0.3	0	0.8	0.2	0	-	-

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	133	251	0	0	278
Future Vol, veh/h	22	133	251	0	0	278
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	145	273	0	0	302
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	424	137	0	-	-	-
Stage 1	273	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	558	886	-	0	0	-
Stage 1	748	-	-	0	0	-
Stage 2	861	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	558	886	-	-	-	-
Mov Cap-2 Maneuver	558	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.2	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	558	886	-	-	-
HCM Lane V/C Ratio	-	0.043	0.163	-	-	-
HCM Control Delay (s)	-	11.7	9.9	-	-	-
HCM Lane LOS	-	B	A	-	-	-
HCM 95th %tile Q(veh)	-	0.1	0.6	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	248	251	201	99
Future Volume (Veh/h)	0	0	248	251	201	99
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	270	273	218	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1031	218	326			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1031	218	326			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	78			
cM capacity (veh/h)	202	822	1234			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	270	273	218	108		
Volume Left	270	0	0	0		
Volume Right	0	0	0	108		
cSH	1234	1700	1700	1700		
Volume to Capacity	0.22	0.16	0.13	0.06		
Queue Length 95th (ft)	21	0	0	0		
Control Delay (s)	8.7	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	4.3		0.0			
Approach LOS						
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			33.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	103	179	0	396	201	0
Future Vol, veh/h	103	179	0	396	201	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	30	30	30	30	30	30
Mvmt Flow	114	199	0	440	223	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	663	-	-	0	-	0
Stage 1	223	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Critical Hdwy	6.7	-	-	-	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-	-
Follow-up Hdwy	3.77	-	-	-	-	-
Pot Cap-1 Maneuver	386	0	0	-	-	0
Stage 1	752	0	0	-	-	0
Stage 2	594	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	386	-	-	-	-	-
Mov Cap-2 Maneuver	386	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.2	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	386	-	-		
HCM Lane V/C Ratio	-	0.296	-	-		
HCM Control Delay (s)	-	18.2	0	-		
HCM Lane LOS	-	C	A	-		
HCM 95th %tile Q(veh)	-	1.2	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	396	64	59	321
Future Volume (Veh/h)	0	0	396	64	59	321
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	435	70	65	353
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	918	435			435	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	918	435			435	
tC, single (s)	6.7	6.5			4.4	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.5	
p0 queue free %	100	100			93	
cM capacity (veh/h)	252	566			991	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	435	70	65	353		
Volume Left	0	0	65	0		
Volume Right	0	70	0	0		
cSH	1700	1700	991	1700		
Volume to Capacity	0.26	0.04	0.07	0.21		
Queue Length 95th (ft)	0	0	5	0		
Control Delay (s)	0.0	0.0	8.9	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		1.4			
Approach LOS						
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			30.8%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	1	202	25	3	0	151	141	6	1	188	31
Future Vol, veh/h	34	1	202	25	3	0	151	141	6	1	188	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	20	20	20	20	20	20	20	20	20	20	20	20
Mvmt Flow	40	1	238	29	4	0	178	166	7	1	221	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	751	752	221	887	785	170	257	0	0	173	0	0
Stage 1	223	223	-	526	526	-	-	-	-	-	-	-
Stage 2	528	529	-	361	259	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.38	-	-	2.38	-	-
Pot Cap-1 Maneuver	306	319	776	246	305	829	1210	-	-	1302	-	-
Stage 1	741	687	-	504	500	-	-	-	-	-	-	-
Stage 2	502	499	-	622	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	269	272	776	151	260	829	1210	-	-	1302	-	-
Mov Cap-2 Maneuver	269	272	-	151	260	-	-	-	-	-	-	-
Stage 1	632	686	-	430	427	-	-	-	-	-	-	-
Stage 2	425	426	-	430	661	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	33.7	4.3	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1210	-	-	269	272	776	158	1302	-	-
HCM Lane V/C Ratio	0.147	-	-	0.149	0.004	0.306	0.208	0.001	-	-
HCM Control Delay (s)	8.5	-	-	20.7	18.3	11.7	33.7	7.8	0	-
HCM Lane LOS	A	-	-	C	C	B	D	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.5	0	1.3	0.8	0	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	121	177	0	0	415
Future Vol, veh/h	72	121	177	0	0	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	77	130	190	0	0	446
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	413	95	0	-	-	-
Stage 1	190	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	7.1	7.2	-	-	-	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.65	3.45	-	-	-	-
Pot Cap-1 Maneuver	535	903	-	0	0	-
Stage 1	786	-	-	0	0	-
Stage 2	755	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	535	903	-	-	-	-
Mov Cap-2 Maneuver	535	-	-	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.9	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	535	903	-	-	-
HCM Lane V/C Ratio	-	0.145	0.144	-	-	-
HCM Control Delay (s)	-	12.9	9.7	-	-	-
HCM Lane LOS	-	B	A	-	-	-
HCM 95th %tile Q(veh)	-	0.5	0.5	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	199	177	348	139
Future Volume (Veh/h)	0	0	199	177	348	139
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	216	192	378	151
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1002	378	529			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1002	378	529			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	79			
cM capacity (veh/h)	213	669	1038			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	216	192	378	151		
Volume Left	216	0	0	0		
Volume Right	0	0	0	151		
cSH	1038	1700	1700	1700		
Volume to Capacity	0.21	0.11	0.22	0.09		
Queue Length 95th (ft)	20	0	0	0		
Control Delay (s)	9.4	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	5.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			55.9%		ICU Level of Service	B
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	499	0	327	348	0
Future Vol, veh/h	49	499	0	327	348	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	92
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	52	531	0	348	370	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	718	-	-	0	-	0
Stage 1	370	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Critical Hdwy	6.56	-	-	-	-	-
Critical Hdwy Stg 1	5.56	-	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-	-
Follow-up Hdwy	3.644	-	-	-	-	-
Pot Cap-1 Maneuver	376	0	0	-	-	0
Stage 1	669	0	0	-	-	0
Stage 2	685	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	376	-	-	-	-	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.1	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	376	-	-		
HCM Lane V/C Ratio	-	0.139	-	-		
HCM Control Delay (s)	-	16.1	0	-		
HCM Lane LOS	-	C	A	-		
HCM 95th %tile Q(veh)	-	0.5	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	327	85	122	725
Future Volume (Veh/h)	0	0	327	85	122	725
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	348	90	130	771
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1379	348			348	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1379	348			348	
tC, single (s)	6.6	6.4			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	100	100			89	
cM capacity (veh/h)	132	665			1137	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	348	90	130	771		
Volume Left	0	0	130	0		
Volume Right	0	90	0	0		
cSH	1700	1700	1137	1700		
Volume to Capacity	0.20	0.05	0.11	0.45		
Queue Length 95th (ft)	0	0	10	0		
Control Delay (s)	0.0	0.0	8.6	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		1.2			
Approach LOS						
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			41.5%		ICU Level of Service	A
Analysis Period (min)			15			

Appendix C

Future Conditions LOS Calculations



Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1	166	8	0	0	147	172	7	1	166	19
Future Vol, veh/h	14	1	166	8	0	0	147	172	7	1	166	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	50	50	50	50	50	50	50	50	50	50	50	50
Mvmt Flow	15	1	180	9	0	0	160	187	8	1	180	21

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	693	697	180	794	714	191	201	0
Stage 1	182	182	-	511	511	-	-	-
Stage 2	511	515	-	283	203	-	-	-
Critical Hdwy	7.6	7	6.7	7.6	7	6.7	4.6	-
Critical Hdwy Stg 1	6.6	6	-	6.6	6	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.6	6	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.95	4.45	3.75	2.65	-
Pot Cap-1 Maneuver	301	311	753	255	304	742	1130	-
Stage 1	720	667	-	467	466	-	-	-
Stage 2	467	464	-	631	652	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	268	267	753	172	261	742	1130	-
Mov Cap-2 Maneuver	268	267	-	172	261	-	-	-
Stage 1	618	666	-	401	400	-	-	-
Stage 2	401	398	-	479	651	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	27	3.9	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1130	-	-	268	267	753	172	1137	-	-
HCM Lane V/C Ratio	0.141	-	-	0.057	0.004	0.24	0.051	0.001	-	-
HCM Control Delay (s)	8.7	-	-	19.2	18.5	11.3	27	8.2	0	-
HCM Lane LOS	A	-	-	C	C	B	D	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	0	0.9	0.2	0	-	-

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	134	192	0	0	340
Future Vol, veh/h	33	134	192	0	0	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	146	209	0	0	370
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	394	105	0	-	-	-
Stage 1	209	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	583	929	-	0	0	-
Stage 1	806	-	-	0	0	-
Stage 2	828	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	583	929	-	-	-	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	583	929	-	-	-
HCM Lane V/C Ratio	-	0.062	0.157	-	-	-
HCM Control Delay (s)	-	11.6	9.6	-	-	-
HCM Lane LOS	-	B	A	-	-	-
HCM 95th %tile Q(veh)	-	0.2	0.6	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	369	192	257	116
Future Volume (Veh/h)	0	0	369	192	257	116
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	401	209	279	126
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1290	279	405			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1290	279	405			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	65			
cM capacity (veh/h)	118	760	1154			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	401	209	279	126		
Volume Left	401	0	0	0		
Volume Right	0	0	0	126		
cSH	1154	1700	1700	1700		
Volume to Capacity	0.35	0.12	0.16	0.07		
Queue Length 95th (ft)	39	0	0	0		
Control Delay (s)	9.8	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	6.4		0.0			
Approach LOS						
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			40.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	266	0	512	257	0
Future Vol, veh/h	49	266	0	512	257	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	30	30	30	30	30	30
Mvmt Flow	54	296	0	569	286	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	855	-	-	0	-	0
Stage 1	286	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Critical Hdwy	6.7	-	-	-	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-	-
Follow-up Hdwy	3.77	-	-	-	-	-
Pot Cap-1 Maneuver	294	0	0	-	-	0
Stage 1	703	0	0	-	-	0
Stage 2	515	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	294	-	-	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	294	-	-		
HCM Lane V/C Ratio	-	0.185	-	-		
HCM Control Delay (s)	-	20	0	-		
HCM Lane LOS	-	C	A	-		
HCM 95th %tile Q(veh)	-	0.7	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	512	95	70	453
Future Volume (Veh/h)	0	0	512	95	70	453
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	563	104	77	498
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1215	563			563	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1215	563			563	
tC, single (s)	6.7	6.5			4.4	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.5	
p0 queue free %	100	100			91	
cM capacity (veh/h)	161	476			883	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	563	104	77	498		
Volume Left	0	0	77	0		
Volume Right	0	104	0	0		
cSH	1700	1700	883	1700		
Volume to Capacity	0.33	0.06	0.09	0.29		
Queue Length 95th (ft)	0	0	7	0		
Control Delay (s)	0.0	0.0	9.5	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		1.3			
Approach LOS						
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			37.5%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	1	56	33	4	0	132	209	7	1	265	31
Future Vol, veh/h	27	1	56	33	4	0	132	209	7	1	265	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	20	20	20	20	20	20	20	20	20	20	20	20
Mvmt Flow	32	1	66	39	5	0	155	246	8	1	312	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	877	878	312	926	910	250	348	0	0	254	0	0
Stage 1	314	314	-	560	560	-	-	-	-	-	-	-
Stage 2	563	564	-	366	350	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.38	-	-	2.38	-	-
Pot Cap-1 Maneuver	250	268	688	231	256	747	1117	-	-	1213	-	-
Stage 1	660	625	-	482	483	-	-	-	-	-	-	-
Stage 2	480	481	-	618	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	220	230	688	186	220	747	1117	-	-	1213	-	-
Mov Cap-2 Maneuver	220	230	-	186	220	-	-	-	-	-	-	-
Stage 1	568	624	-	415	416	-	-	-	-	-	-	-
Stage 2	409	414	-	557	601	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.2		29.7		3.3		0	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1117	-	-	220	230	688	189	1213	-	-
HCM Lane V/C Ratio	0.139	-	-	0.144	0.005	0.096	0.23	0.001	-	-
HCM Control Delay (s)	8.7	-	-	24.1	20.7	10.8	29.7	8	0	-
HCM Lane LOS	A	-	-	C	C	B	D	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.5	0	0.3	0.9	0	-	-

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	107	155	193	0	0	354
Future Vol, veh/h	107	155	193	0	0	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	115	167	208	0	0	381
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	399	104	0	-	-	-
Stage 1	208	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	7.1	7.2	-	-	-	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.65	3.45	-	-	-	-
Pot Cap-1 Maneuver	546	890	-	0	0	-
Stage 1	769	-	-	0	0	-
Stage 2	785	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	546	890	-	-	-	-
Mov Cap-2 Maneuver	546	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.3	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	546	890	-	-	-
HCM Lane V/C Ratio	-	0.211	0.187	-	-	-
HCM Control Delay (s)	-	13.3	10	-	-	-
HCM Lane LOS	-	B	B	-	-	-
HCM 95th %tile Q(veh)	-	0.8	0.7	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	296	193	367	94
Future Volume (Veh/h)	0	0	296	193	367	94
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	322	210	399	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1253	399	501			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1253	399	501			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	70			
cM capacity (veh/h)	132	651	1063			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	322	210	399	102		
Volume Left	322	0	0	0		
Volume Right	0	0	0	102		
cSH	1063	1700	1700	1700		
Volume to Capacity	0.30	0.12	0.23	0.06		
Queue Length 95th (ft)	32	0	0	0		
Control Delay (s)	9.8	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	6.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			71.9%	ICU Level of Service		C
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	741	0	456	367	0
Future Vol, veh/h	33	741	0	456	367	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	92
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	35	788	0	485	390	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	875	-	-	0	-	0
Stage 1	390	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.56	-	-	-	-	-
Critical Hdwy Stg 1	5.56	-	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-	-
Follow-up Hdwy	3.644	-	-	-	-	-
Pot Cap-1 Maneuver	302	0	0	-	-	0
Stage 1	655	0	0	-	-	0
Stage 2	591	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	302	-	-	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.5	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	302	-	-		
HCM Lane V/C Ratio	-	0.116	-	-		
HCM Control Delay (s)	-	18.5	0	-		
HCM Lane LOS	-	C	A	-		
HCM 95th %tile Q(veh)	-	0.4	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	456	126	113	996
Future Volume (Veh/h)	0	0	456	126	113	996
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	485	134	120	1060
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1785	485			485	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1785	485			485	
tC, single (s)	6.6	6.4			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	100	100			88	
cM capacity (veh/h)	73	555			1009	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	485	134	120	1060		
Volume Left	0	0	120	0		
Volume Right	0	134	0	0		
cSH	1700	1700	1009	1700		
Volume to Capacity	0.29	0.08	0.12	0.62		
Queue Length 95th (ft)	0	0	10	0		
Control Delay (s)	0.0	0.0	9.0	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			55.8%		ICU Level of Service	B
Analysis Period (min)			15			

Appendix D

Future Plus Project Conditions LOS Calculations



Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	1	215	8	0	0	312	172	7	1	166	33
Future Vol, veh/h	18	1	215	8	0	0	312	172	7	1	166	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	50	50	50	50	50	50	50	50	50	50	50	50
Mvmt Flow	20	1	234	9	0	0	339	187	8	1	180	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1051	1055	180	1187	1087	191	216	0	0	195	0	0
Stage 1	182	182	-	869	869	-	-	-	-	-	-	-
Stage 2	869	873	-	318	218	-	-	-	-	-	-	-
Critical Hdwy	7.6	7	6.7	7.6	7	6.7	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	6.6	6	-	6.6	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.6	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.95	4.45	3.75	2.65	-	-	2.65	-	-
Pot Cap-1 Maneuver	167	186	753	133	178	742	1115	-	-	1137	-	-
Stage 1	720	667	-	287	310	-	-	-	-	-	-	-
Stage 2	287	309	-	603	642	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	128	129	753	70	124	742	1115	-	-	1137	-	-
Mov Cap-2 Maneuver	128	129	-	70	124	-	-	-	-	-	-	-
Stage 1	501	666	-	200	216	-	-	-	-	-	-	-
Stage 2	200	215	-	415	641	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	63.6	6.1	0
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1115	-	-	128	129	753	70	1137	-	-
HCM Lane V/C Ratio	0.304	-	-	0.153	0.008	0.31	0.124	0.001	-	-
HCM Control Delay (s)	9.6	-	-	38.1	33.1	11.9	63.6	8.2	0	-
HCM Lane LOS	A	-	-	E	D	B	F	A	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.5	0	1.3	0.4	0	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	177	314	0	0	389
Future Vol, veh/h	33	177	314	0	0	389
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	192	341	0	0	423
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	553	171	0	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	463	843	-	0	0	-
Stage 1	692	-	-	0	0	-
Stage 2	803	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	463	843	-	-	-	-
Mov Cap-2 Maneuver	463	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	463	843	-	-	-
HCM Lane V/C Ratio	-	0.077	0.228	-	-	-
HCM Control Delay (s)	-	13.4	10.5	-	-	-
HCM Lane LOS	-	B	B	-	-	-
HCM 95th %tile Q(veh)	-	0.3	0.9	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	369	314	285	137
Future Volume (Veh/h)	0	0	369	314	285	137
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	401	341	310	149
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1453	310	459			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1453	310	459			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	64			
cM capacity (veh/h)	91	730	1102			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	401	341	310	149		
Volume Left	401	0	0	0		
Volume Right	0	0	0	149		
cSH	1102	1700	1700	1700		
Volume to Capacity	0.36	0.20	0.18	0.09		
Queue Length 95th (ft)	42	0	0	0		
Control Delay (s)	10.1	0.0	0.0	0.0		
Lane LOS	B					
Approach Delay (s)	5.5		0.0			
Approach LOS						
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			42.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	119	266	0	564	285	0
Future Vol, veh/h	119	266	0	564	285	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	30	30	30	30	30	30
Mvmt Flow	132	296	0	627	317	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	944	-	-	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Critical Hdwy	6.7	-	-	-	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-	-
Follow-up Hdwy	3.77	-	-	-	-	-
Pot Cap-1 Maneuver	259	0	0	-	-	0
Stage 1	679	0	0	-	-	0
Stage 2	483	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	259	-	-	-	-	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	32.6	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	259	-	-		
HCM Lane V/C Ratio	-	0.511	-	-		
HCM Control Delay (s)	-	32.6	0	-		
HCM Lane LOS	-	D	A	-		
HCM 95th %tile Q(veh)	-	2.7	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	564	95	82	469
Future Volume (Veh/h)	0	0	564	95	82	469
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	620	104	90	515
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1315	620			620	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1315	620			620	
tC, single (s)	6.7	6.5			4.4	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.5	
p0 queue free %	100	100			89	
cM capacity (veh/h)	136	441			839	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	620	104	90	515		
Volume Left	0	0	90	0		
Volume Right	0	104	0	0		
cSH	1700	1700	839	1700		
Volume to Capacity	0.36	0.06	0.11	0.30		
Queue Length 95th (ft)	0	0	9	0		
Control Delay (s)	0.0	0.0	9.8	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		1.5			
Approach LOS						
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			40.9%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1	233	33	4	0	196	209	7	1	265	37
Future Vol, veh/h	39	1	233	33	4	0	196	209	7	1	265	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	0	-	-	-	0	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	20	20	20	20	20	20	20	20	20	20	20	20
Mvmt Flow	46	1	274	39	5	0	231	246	8	1	312	44

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1029	1030	312	1186	1070	250	356	0	0	254	0	0
Stage 1	314	314	-	712	712	-	-	-	-	-	-	-
Stage 2	715	716	-	474	358	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.7	6.4	7.3	6.7	6.4	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.18	3.48	3.68	4.18	3.48	2.38	-	-	2.38	-	-
Pot Cap-1 Maneuver	196	217	688	152	205	747	1110	-	-	1213	-	-
Stage 1	660	625	-	396	410	-	-	-	-	-	-	-
Stage 2	395	408	-	538	597	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	161	172	688	76	162	747	1110	-	-	1213	-	-
Mov Cap-2 Maneuver	161	172	-	76	162	-	-	-	-	-	-	-
Stage 1	523	624	-	314	325	-	-	-	-	-	-	-
Stage 2	308	323	-	323	596	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	92.3	4.3	0
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	161	172	688	81	1213	-	-
HCM Lane V/C Ratio	0.208	-	-	0.285	0.007	0.398	0.537	0.001	-	-
HCM Control Delay (s)	9.1	-	-	36	26.1	13.7	92.3	8	0	-
HCM Lane LOS	A	-	-	E	D	B	F	A	A	-
HCM 95th %tile Q(veh)	0.8	-	-	1.1	0	1.9	2.3	0	-	-

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	107	172	240	0	0	531
Future Vol, veh/h	107	172	240	0	0	531
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	115	185	258	0	0	571
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	544	129	0	-	-	-
Stage 1	258	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Critical Hdwy	7.1	7.2	-	-	-	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.65	3.45	-	-	-	-
Pot Cap-1 Maneuver	439	857	-	0	0	-
Stage 1	724	-	-	0	0	-
Stage 2	700	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	439	857	-	-	-	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.6	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1WBLn2		SBT			
Capacity (veh/h)	-	439	857	-	-	-
HCM Lane V/C Ratio	-	0.262	0.216	-	-	-
HCM Control Delay (s)	-	16.1	10.4	-	-	-
HCM Lane LOS	-	C	B	-	-	-
HCM 95th %tile Q(veh)	-	1	0.8	-	-	-

HCM Unsignalized Intersection Capacity Analysis

3: Main St & WB I-80 On-Ramp

09/13/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	296	240	468	170
Future Volume (Veh/h)	0	0	296	240	468	170
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	322	261	509	185
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1414	509	694			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1414	509	694			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	64			
cM capacity (veh/h)	97	564	901			
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	322	261	509	185		
Volume Left	322	0	0	0		
Volume Right	0	0	0	185		
cSH	901	1700	1700	1700		
Volume to Capacity	0.36	0.15	0.30	0.11		
Queue Length 95th (ft)	41	0	0	0		
Control Delay (s)	11.2	0.0	0.0	0.0		
Lane LOS	B					
Approach Delay (s)	6.2		0.0			
Approach LOS						
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			77.2%	ICU Level of Service		D
Analysis Period (min)			15			

HCM 6th TWSC
4: Main St & EB I-80 Off Ramp

09/13/2021

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	741	0	476	468	0
Future Vol, veh/h	60	741	0	476	468	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	255	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	92
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	64	788	0	506	498	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1004	-	-	0	-	0
Stage 1	498	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Critical Hdwy	6.56	-	-	-	-	-
Critical Hdwy Stg 1	5.56	-	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-	-
Follow-up Hdwy	3.644	-	-	-	-	-
Pot Cap-1 Maneuver	253	0	0	-	-	0
Stage 1	583	0	0	-	-	0
Stage 2	578	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	253	-	-	-	-	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	24	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	253	-	-		
HCM Lane V/C Ratio	-	0.252	-	-		
HCM Control Delay (s)	-	24	0	-		
HCM Lane LOS	-	C	A	-		
HCM 95th %tile Q(veh)	-	1	-	-		

HCM Unsignalized Intersection Capacity Analysis

5: Main St & I-80 EB On-Ramp

09/13/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	476	126	159	1051
Future Volume (Veh/h)	0	0	476	126	159	1051
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	506	134	169	1118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1962	506			506	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1962	506			506	
tC, single (s)	6.6	6.4			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	100	100			83	
cM capacity (veh/h)	53	539			991	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2		
Volume Total	506	134	169	1118		
Volume Left	0	0	169	0		
Volume Right	0	134	0	0		
cSH	1700	1700	991	1700		
Volume to Capacity	0.30	0.08	0.17	0.66		
Queue Length 95th (ft)	0	0	15	0		
Control Delay (s)	0.0	0.0	9.4	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		1.2			
Approach LOS						
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			58.6%		ICU Level of Service	B
Analysis Period (min)			15			

COMMERCE CENTER DRIVE

City of Fernley

Fiscal and Economic Impact Analyses

SEPTEMBER 29, 2021

Prepared by:



EKAY Economic Consultants, Inc.

Economics for the changing world

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EXECUTIVE SUMMARY

Ekay Economic Consultants, Inc. (EEC) of Reno, Nevada was retained to conduct fiscal and economic impact analyses of a proposed industrial development in the City of Fernley, Nevada. Findings of the analysis are summarized below.

- The analysis assumes 1.35 million square feet of industrial space constructed over a three-year construction period.

Fiscal Impact Analysis

- The project is estimated to generate a \$8.3 million revenue surplus over the 40-year analysis period for the City of Fernley's General Fund.
 - The project is estimated to generate \$8.8 million in revenue and \$0.5 million in expenditures over the 40-year analysis period for the City of Fernley's General Fund.
- The project will have a **positive** fiscal impact on the City of Fernley.

Economic Impact Analysis

- Project construction is expected to generate and support 266 direct, indirect, and induced employees, with \$17.2 million in labor income, and \$36.4 million in output impacts in each of the three years of construction.
- Project operations are expected to generate and support 2,041 direct, indirect, and induced employees, with \$109.1 million in labor income, and \$586.2 million in output impacts in each year of the project's lifetime.

Other Impacts

- Project developers estimate if the project is developed into commercial uses as currently zoned, development is unlikely to occur for another 10 years given low levels of commercial demand locally and nationally. The proposed industrial development will occur immediately.
- Industrial labor income (combination of wages and benefits) in Lyon County is significantly higher at an average of \$66,267 per person compared to commercial uses at \$23,990 per person. This will further increase the positive impact of the project on the City.

DEVELOPMENT DESCRIPTION

The Commerce Center Drive project is proposed to be constructed on 80 acres of land located in the City of Fernley, Nevada and include 1.35 million square feet of industrial space. Project developers are estimating a three-year construction period for the project starting in 2022. The report includes estimates of fiscal and economic impacts of the project over the construction period, plus an additional thirty seven years for a total analysis period of 40 years.

METHODOLOGY

Fiscal Impact Analysis

City of Fernley is working with a consulting company, Verdunity, to arrive at a methodology for estimating fiscal impacts of future projects on the City. A tool has been created for City staff to estimate fiscal impacts of projects on the City based on project-related information provided by developers. As this tool is in the early stages of implementation, EEC was asked by Commerce Center Drive project developers to estimate the fiscal impact of this project.

EEC was provided a copy of the “Development Fiscal Impact Analysis Tool Methodology and Instructions” report by Verdunity, dated July 2021. The report outlined much of the methodology and assumptions behind the City’s fiscal impact tool. EEC provided a number of questions to the City regarding this methodology, answers to which were not received prior to the due date of this report. As a result, findings of the fiscal impact analysis contained in this report, which are based on our understanding of Verdunity’s methodology, may need to be updated as additional information becomes available.

The following assumptions were made in this analysis:

1. Industrial land value and improvement costs for the project are unavailable at this early stage in the planning process. As a result, the analysis uses average taxable land and improvement values for nearby industrial developments in City of Fernley, as these provide the latest market information for similar products in the City.

2. The Verdunity methodology covers all General Fund revenues and expenditures. However, it assumes non-residential developments only impact some of these sources. For this industrial development, EEC estimated revenues associated with property tax and building/planning/review fees only. Expenditures for only Public Works and Building and Planning services were included.
3. Additionally, the Verdunity methodology includes an estimate of the long-term impact of a project on infrastructure replacement costs to replace and repair city streets. The proposed project will not add any new public streets to the City's inventory for maintenance. As a result, no infrastructure replacement costs are estimated.
4. The Verdunity report provides no discussion of inflation, as a result, no inflation adjustments have been made to any estimates over the 40-year analysis period recommended by the report.
5. Additional information for revenue and cost estimate methodology, sources of data, calculations, and findings is provided in the appendices attached to this report.

Economic Impact Analysis

While a fiscal impact analysis estimates the impact of a proposed development on revenues and expenditures of a public entity, in this case, City of Fernley, an economic impact analysis estimates the impact of the same project on the regional economy. A development typically includes two types of impacts: impact of construction, which is a one-time impact occurring during the project's construction and impact of operations, annual on-going impact lasting over the life of the project. Both impacts generate and support jobs (employment) in the study region, pay salaries and benefits (labor income), and create additional sales for area businesses (output). All of these impacts are captured in the economic impact analysis.

Project construction costs are shown in Appendix 1 as improvement values, as in Nevada, improvement values are based on the replacement cost of a project, a conservative estimate of its construction costs. Operating impacts are estimated based on projected number of employees for the project. Using the 1.35 million square feet of industrial

space projected for the development and 1,200 square feet per employee¹ results in an estimate of 1,125 operating employees at full buildout.

Construction cost and operating employment estimates are analyzed using the 2019 IMPLAN (Impact Analysis for Planning) model to estimate their economic impact. As IMPLAN data is available primarily on county-level, data for Lyon County is utilized. Definitions relevant to the economic impact analysis are provided below:

Economic Impact: The increase in potential productivity in the regional economy based on the expenditures from the project. Each component of the project (construction expenditures and operating employment) generates economic impacts that can be combined to show the total economic impact of the project.

Direct Economic Impact: Represents the expenditure amounts from the project that directly impact the regional economy. The direct impact of operating employees represents the employees necessary for the project to operate the separate business sections; and the direct impact of construction represents the construction expenditures directly associated with the project.

Indirect Economic Impact: Represents the impact from the project's purchases of goods and services from supplying vendors. Purchases made by supplying vendors to restock their inventory by purchasing goods and services from other vendors who in turn restock by purchasing from other vendors, and so on, is the indirect impact. These purchases are also commonly referred to as the "ripple effect."

Induced Economic Impact: The direct activity and the resulting indirect activity generate some increases in the general level of employment and income in the study area, leading to a tertiary level of economic impact through the higher level of household expenditures on goods and services. These impacts reflect the increase in spending from the household sector as income increases or decreases due to changes in production of goods and services.

¹ Center for Regional Studies, University of Nevada, Reno. The ratio includes data for manufacturing, warehousing and transportation, and wholesale industries.

FINDINGS

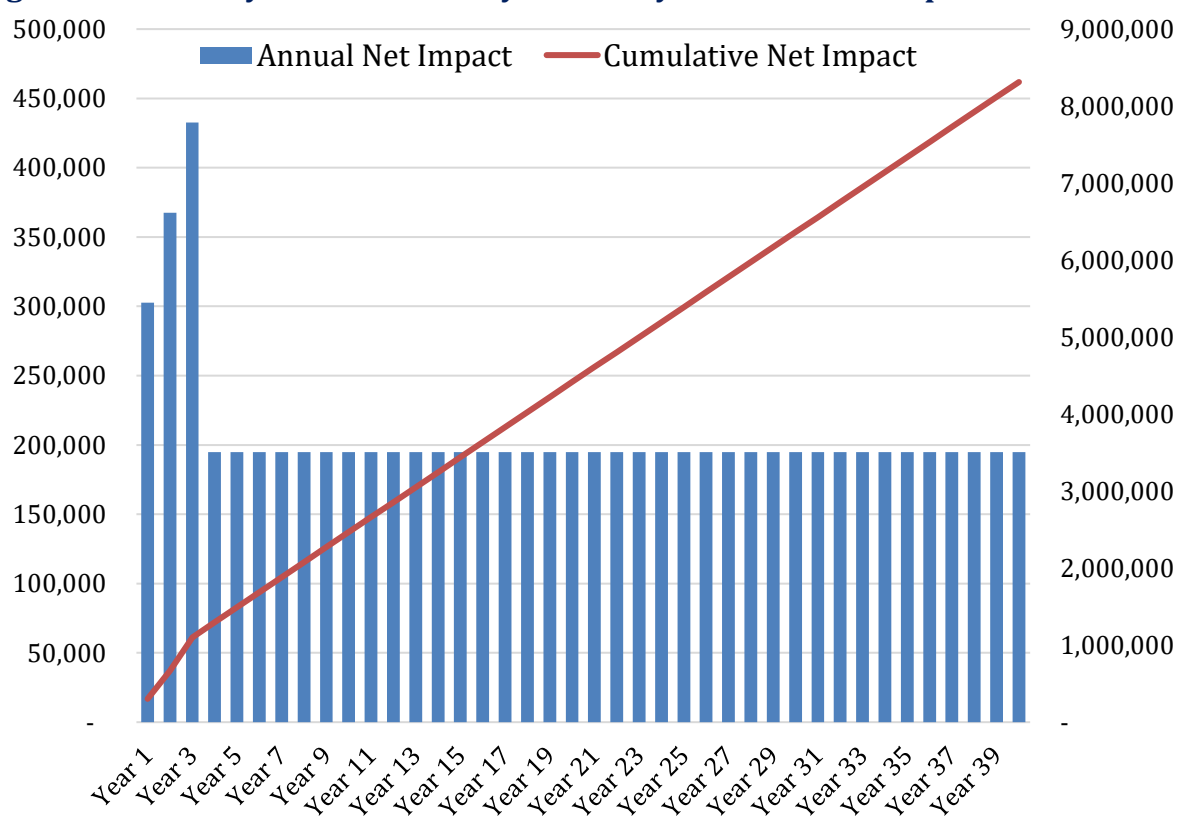
Fiscal Impact Analysis

Findings of the fiscal impact analysis are presented below using tables and graph templates from the Verdunity report.

Table 1. Summary of Estimated City of Fernley General Fund Impacts

Non-Inflated	Buildout	10 Years	20 Years	30 Years	40 Years
Property Tax Revenue	\$ 415,650	\$ 1,870,424	\$ 3,948,674	\$ 6,026,923	\$ 8,105,173
One-Time Fee Revenue ²	712,987	712,987	712,987	712,987	712,987
Total Revenue	\$ 1,128,637	\$ 2,583,412	\$ 4,661,661	\$ 6,739,911	\$ 8,818,160
Commercial Expense ³	\$ 25,920	\$ 116,640	\$ 246,240	\$ 375,840	\$ 505,440
Savings for Streets	-	-	-	-	-
Net Fiscal Impact	\$ 1,102,717	\$ 2,466,772	\$ 4,415,421	\$ 6,364,071	\$ 8,312,720
Per Acre-Revenue	\$ 14,108	\$ 32,293	\$ 58,271	\$ 84,249	\$ 110,227
Per Acre-Expense	324	1,458	3,078	4,698	6,318
Per Acre-Net Impact	\$ 13,784	\$ 30,835	\$ 55,193	\$ 79,551	\$ 103,909

Figure 1. Summary of Estimated City of Fernley General Fund Impacts



² Building permit and planning fees.

³ Public Works and Building/Planning services.

The project is estimated to generate a \$8.3 million revenue surplus over the 40-year analysis period for the City of Fernley's General Fund. This includes \$8.8 million in revenue from on-going property tax revenue and one-time building/planning fee revenue. It also includes \$0.5 million in expenditures for Public Works and Building and Planning services. The analysis does not include estimates of infrastructure replacement costs as the project is not expected to add additional streets to the City for maintenance.

The project will have a **positive** fiscal impact on the City of Fernley.

Economic Impact Analysis

Project construction is expected to generate and support 266 direct, indirect, and induced employees, with \$17.2 million in labor income, and \$36.4 million in output impacts, in each of the three years of construction.

Table 2. Economic Impact of Project Construction

Impact Type	Employment	Labor Income	Output
1 - Direct	212.16	\$ 15,030,451	\$ 26,998,400
2 - Indirect	25.97	1,281,952	5,092,587
3 - Induced	27.52	851,417	4,334,799
Total	265.66	\$ 17,163,820	\$ 36,425,786

Project operations are expected to generate and support 2,041 direct, indirect, and induced employees, with \$109.1 million in labor income, and \$586.2 million in output impacts in each year of the project's lifetime.

Table 3. Economic Impact of Project Operations

Impact Type	Employment	Labor Income	Output
1 - Direct	1,125.00	\$ 74,550,593	\$ 469,182,809
2 - Indirect	750.00	29,426,982	90,888,623
3 - Induced	165.94	5,130,541	26,088,848
Total	2,040.94	\$ 109,108,117	\$ 586,160,279

Other Impacts

Project developers estimate if the project is developed into commercial uses as currently zoned, development is unlikely to occur for another 10 years given low levels of commercial demand locally and nationally. The proposed industrial development will occur immediately. This means the project will begin generating property tax revenues for the City immediately, rather than remain vacant for the next 10 years.

Additionally, the average labor income (wages and benefits) based on IMPLAN data for the commercial sector, as the project is currently zoned, is \$23,990 per person. Average industrial labor income for the proposed project is \$66,267 per person. This further increases the positive impact of the project on the City, as it drives home purchases, sales tax revenues, demand for business services, and more.

LIMITING CONDITIONS & DISCLOSURES

In the preparation of this report, EEC asserts:

- The report is to be used in its entirety, and no part is to be used without the whole.
- In preparing this report, EEC relied on information provided by other individuals or found in previously existing records and/or documents. This information is assumed to be reliable. However, no warranty, either expressed or implied, is given by EEC for the accuracy of such information and EEC assumes no responsibility for information relied upon later found to have been inaccurate.
- EEC may amend this report in the event additional documents and/or other material discovered subsequent to the submission of this report and pertinent to the report and/or the conclusions contained herein are made available.
- EEC assumes no responsibility for economic, physical, or demographic factors, which may affect or alter the opinions of this report if said economic, physical, or demographic factors were not present or known as of the date of this report.
- Possession of this report, or a copy of this report, does not carry with it the right of publication. Without the consent of EEC, this report may not be used for any purpose by any person other than the party for whom this report was prepared.

APPENDICES

**APPENDIX 1
BUILDOUT ASSUMPTIONS**

<u>YEAR</u>	<u>USE TYPE</u>	<u>SQ.FT. ADDED</u>	<u># OF ACRES</u>	<u>ESTIMATED LAND VALUE</u>	<u>IMPROV. VALUE</u>	<u>BUILD. PERMIT VALUATION</u>
Year 1	Industrial	449,973	26.7	\$ 2,320,000	\$ 26,998,400	\$ 43,813,903
Year 2	Industrial	449,973	26.7	2,320,000	26,998,400	43,813,903
Year 3	Industrial	449,973	26.7	2,320,000	26,998,400	43,813,903
TOTAL		1,349,920	80	\$ 6,960,000	\$ 80,995,200	\$ 131,441,710

APPENDIX 1, ASSUMPTIONS:

1. The following information represents the Developer's best estimate and market data as of the date of this report:

	<u>Building Square Feet</u>	<u>Land Acres</u>	<u>Land Value/Acre</u>	<u>Improve. Value/Sq. Ft.</u>
Industrial	1,349,920	80.0	\$ 87,000	\$ 60.00

Source: Development acreage, buildout schedule, and square footage data from Developer.

Land and improvement value information from actual taxable values for similar land uses in the City of Fernley, data from Lyon County Assessor's website for FY 2021-22.

2. Building Valuation is estimated at \$ **97.37** per square foot.
Source: International Code Council, Building Valuation Data – February 2021. Data for IIIA building type.

**APPENDIX 2
CITY OF FERNLEY
ESTIMATED GENERAL FUND REVENUE**

<u>YEAR</u>	<u>LAND USE</u>	<u>TOTAL TAXABLE VALUE</u>	<u>BUILDING PERMIT VALUATION</u>	<u>REAL PROPERTY TAX REVENUE</u>	<u>BUILDING PERMIT/PLAN CHECK REVENUE</u>	<u>TOTAL REVENUE</u>
Year 1	Industrial	\$ 29,318,400	\$ 43,813,903	\$ 69,275	\$ 237,662	\$ 306,937
Year 2	Industrial	58,636,800	43,813,903	138,550	237,662	376,212
Year 3	Industrial	87,955,200	43,813,903	207,825	237,662	445,487
Year 4	Industrial	87,955,200	-	207,825	-	207,825
Year 5	Industrial	87,955,200	-	207,825	-	207,825
Year 6	Industrial	87,955,200	-	207,825	-	207,825
Year 7	Industrial	87,955,200	-	207,825	-	207,825
Year 8	Industrial	87,955,200	-	207,825	-	207,825
Year 9	Industrial	87,955,200	-	207,825	-	207,825
Year 10	Industrial	87,955,200	-	207,825	-	207,825
Year 11	Industrial	87,955,200	-	207,825	-	207,825
Year 12	Industrial	87,955,200	-	207,825	-	207,825
Year 13	Industrial	87,955,200	-	207,825	-	207,825
Year 14	Industrial	87,955,200	-	207,825	-	207,825
Year 15	Industrial	87,955,200	-	207,825	-	207,825
Year 16	Industrial	87,955,200	-	207,825	-	207,825
Year 17	Industrial	87,955,200	-	207,825	-	207,825
Year 18	Industrial	87,955,200	-	207,825	-	207,825
Year 19	Industrial	87,955,200	-	207,825	-	207,825
Year 20	Industrial	87,955,200	-	207,825	-	207,825
Year 21	Industrial	87,955,200	-	207,825	-	207,825
Year 22	Industrial	87,955,200	-	207,825	-	207,825
Year 23	Industrial	87,955,200	-	207,825	-	207,825
Year 24	Industrial	87,955,200	-	207,825	-	207,825
Year 25	Industrial	87,955,200	-	207,825	-	207,825
Year 26	Industrial	87,955,200	-	207,825	-	207,825
Year 27	Industrial	87,955,200	-	207,825	-	207,825
Year 28	Industrial	87,955,200	-	207,825	-	207,825
Year 29	Industrial	87,955,200	-	207,825	-	207,825
Year 30	Industrial	87,955,200	-	207,825	-	207,825
Year 31	Industrial	87,955,200	-	207,825	-	207,825
Year 32	Industrial	87,955,200	-	207,825	-	207,825
Year 33	Industrial	87,955,200	-	207,825	-	207,825
Year 34	Industrial	87,955,200	-	207,825	-	207,825

**APPENDIX 2
CITY OF FERNLEY
ESTIMATED GENERAL FUND REVENUE**

<u>YEAR</u>	<u>LAND USE</u>	<u>TOTAL TAXABLE VALUE</u>	<u>BUILDING PERMIT VALUATION</u>	<u>REAL PROPERTY TAX REVENUE</u>	<u>BUILDING PERMIT/PLAN CHECK REVENUE</u>	<u>TOTAL REVENUE</u>
Year 35	Industrial	87,955,200	-	207,825	-	207,825
Year 36	Industrial	87,955,200	-	207,825	-	207,825
Year 37	Industrial	87,955,200	-	207,825	-	207,825
Year 38	Industrial	87,955,200	-	207,825	-	207,825
Year 39	Industrial	87,955,200	-	207,825	-	207,825
Year 40	Industrial	87,955,200	-	207,825	-	207,825
TOTAL		\$ 3,430,252,800	\$ 131,441,710	\$ 8,105,173	\$ 712,987	\$ 8,818,160

APPENDIX 2, ASSUMPTIONS:

- Development taxable value and building permit valuation from Appendix 1.
- City of Fernley FY 2021-22 property tax rate of **\$ 0.6751** is assumed to remain unchanged over the analysis period.
- Property tax calculation: Taxable X 35% = Assessed Value; Assessed Value/100 X Tax Rate = Property Tax Revenue.
- Analysis assumes a single building permit for the project. Building permit fee calculation is based on the following rate:

\$ 5,748.97	per first	\$ 1,000,000	plus	\$ 3.23
	for each additional	\$1,000	of value.	
- Plan Check fee revenue calculated at **65.0%** of building permit revenue.
 Source: Building Permit Fee Schedule (BPFS), City of Fernley, June 3, 2020.

APPENDIX 3
CITY OF FERNLEY
COMPARISON OF ESTIMATED GENERAL FUND REVENUES AND EXPENDITURES

<u>YEAR</u>	<u>LAND USE</u>	<u>CUMULATIVE # OF ACRES</u>	<u>ESTIMATED GF REVENUE</u>	<u>ESTIMATED GF EXPENDITURES</u>	<u>INFRASTRUCTURE REPLACE. COST</u>	<u>EST. REVENUE SURPLUS</u>
Year 1	Industrial	26.67	\$ 306,937	\$ 4,320	\$ -	\$ 302,617
Year 2	Industrial	53.33	376,212	8,640	-	367,572
Year 3	Industrial	80.00	445,487	12,960	-	432,527
Year 4	Industrial	80.00	207,825	12,960	-	194,865
Year 5	Industrial	80.00	207,825	12,960	-	194,865
Year 6	Industrial	80.00	207,825	12,960	-	194,865
Year 7	Industrial	80.00	207,825	12,960	-	194,865
Year 8	Industrial	80.00	207,825	12,960	-	194,865
Year 9	Industrial	80.00	207,825	12,960	-	194,865
Year 10	Industrial	80.00	207,825	12,960	-	194,865
Year 11	Industrial	80.00	207,825	12,960	-	194,865
Year 12	Industrial	80.00	207,825	12,960	-	194,865
Year 13	Industrial	80.00	207,825	12,960	-	194,865
Year 14	Industrial	80.00	207,825	12,960	-	194,865
Year 15	Industrial	80.00	207,825	12,960	-	194,865
Year 16	Industrial	80.00	207,825	12,960	-	194,865
Year 17	Industrial	80.00	207,825	12,960	-	194,865
Year 18	Industrial	80.00	207,825	12,960	-	194,865
Year 19	Industrial	80.00	207,825	12,960	-	194,865
Year 20	Industrial	80.00	207,825	12,960	-	194,865
Year 21	Industrial	80.00	207,825	12,960	-	194,865
Year 22	Industrial	80.00	207,825	12,960	-	194,865
Year 23	Industrial	80.00	207,825	12,960	-	194,865
Year 24	Industrial	80.00	207,825	12,960	-	194,865
Year 25	Industrial	80.00	207,825	12,960	-	194,865
Year 26	Industrial	80.00	207,825	12,960	-	194,865
Year 27	Industrial	80.00	207,825	12,960	-	194,865
Year 28	Industrial	80.00	207,825	12,960	-	194,865
Year 29	Industrial	80.00	207,825	12,960	-	194,865
Year 30	Industrial	80.00	207,825	12,960	-	194,865
Year 31	Industrial	80.00	207,825	12,960	-	194,865
Year 32	Industrial	80.00	207,825	12,960	-	194,865
Year 33	Industrial	80.00	207,825	12,960	-	194,865
Year 34	Industrial	80.00	207,825	12,960	-	194,865
Year 35	Industrial	80.00	207,825	12,960	-	194,865

APPENDIX 3
CITY OF FERNLEY
COMPARISON OF ESTIMATED GENERAL FUND REVENUES AND EXPENDITURES

<u>YEAR</u>	<u>LAND USE</u>	<u>CUMULATIVE # OF ACRES</u>	<u>ESTIMATED GF REVENUE</u>	<u>ESTIMATED GF EXPENDITURES</u>	<u>INFRASTRUCTURE REPLACE. COST</u>	<u>EST. REVENUE SURPLUS</u>
Year 36	Industrial	80.00	207,825	12,960	-	194,865
Year 37	Industrial	80.00	207,825	12,960	-	194,865
Year 38	Industrial	80.00	207,825	12,960	-	194,865
Year 39	Industrial	80.00	207,825	12,960	-	194,865
Year 40	Industrial	80.00	207,825	12,960	-	194,865
TOTAL			\$ 8,818,160	\$ 505,440	\$ -	\$ 8,312,720

APPENDIX 2, ASSUMPTIONS:

1. Number of developed acres shown in Appendix 1.
2. Revenue estimated in Appendix 2.
3. Expenditures estimated at \$ **162.00** per acre of developed space. Source: Development Fiscal Impact Analysis Tool Methodology and Instructions, Verdunity, July 2021.
 The project is not expected to add any new streets to the City's inventory and, as a result, no infrastructure replacement costs are estimated.



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: January 11, 2023

REPORT TO: Fernley Planning Commission

REPORT FROM: Shay League

FINANCIAL IMPACT:

Yes: No:

CURRENTLY BUDGETED:

Yes: No:

FUND/ACCOUNT:

N/A

ACTION REQUESTED:

AGENDA ITEM: (For Possible Action):

For Possible Action – Public Hearing, TPM22006 – Tentative Parcel Map

Consideration and possible action on a tentative parcel map application from Morton & Pitalo to allow for the division of a commercial site ± 12.66 acres in size with the working name “Stanley Drive Commercial”, generally located on Stanley Drive (APN: 021-232-53) into a ± 3.5 -acre site proposed for the development of a hotel and a ± 9.2 -acre site reserved for future commercial development.

AGENDA ITEM BRIEF:

Associate Planner Shay League will request this item (4.3) be removed from the agenda prior to adoption of the agenda by Planning Commission. Staff did not prepare adequate review materials in time for this item to be sufficiently considered; this item is expected to be considered during the February 8, 2023 meeting.

RECOMMENDED MOTION:

BUSINESS IMPACT (per NRS Chapter 237):

N/A

See attached report for background, analysis, alternatives.

ALTERNATIVES:

BACKGROUND:

N/A

RELEVANT LAWS, STATUTES, AND REGULATIONS:

FINANCIAL IMPLICATIONS:

ATTACHMENTS:

None



CITY OF FERNLEY

Planning Commission AGENDA REPORT

Meeting Date: January 11, 2023

REPORT TO: Fernley Planning Commission

REPORT FROM: Shay League, Nikil Manayathara

FINANCIAL IMPACT:

Yes: No: X

CURRENTLY BUDGETED:

Yes: No: X

FUND/ACCOUNT:

N/A

ACTION REQUESTED: Motion

AGENDA ITEM: (For Possible Action):

For Possible Action – Public Hearing, TSM22005 – Tentative Subdivision Map

Consideration and possible action on a tentative subdivision map application from Phelps Engineering Services to allow for the development of Sherwood Villages, a 316-unit multifamily residential complex on a site ±26.25-acres in size and generally located north of Fremont Street, south of US Interstate 80, west of Wildwood Drive, and east of Vine Street (APNs: 021-092-05, 021-092-23, 021-092-26, 021-092-27, 021-092-46, 021-092-47, 021-092-54, & 021-092-55).

AGENDA ITEM BRIEF:

The applicant is seeking approval for a tentative subdivision map request to subdivide the proposed 18 multi-family buildings into 18 distinct lots, with common areas and roadways expected to be privately owned and maintained. These parcels are master planned as Mixed Residential (MR), and zoned Residential – Medium Density Residential, 14 dwelling units per acre maximum (MDR14), which is an equivalent zoning district.

RECOMMENDED MOTION:

Approval

"I move to recommend City Council approve the tentative subdivision map associated with TSM22005 subject to conditions of approval 1 through 26 as presented by staff and based on findings TM1 through TM11 and the supporting data as set forth in the staff report."

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:

Denial

“Based on information received in written materials and at the public hearings on this matter, I move to recommend City Council deny the tentative subdivision map associated with TSM22005 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 finding(s): I am unable to make the finding _____ as it relates to _____. Therefore, I cannot recommend approval of the subdivision map.”

Note: Though further specific language has not been provided, all other motions acceptable under Planning Commission parliamentary procedure are possible. Of specific note, the conditions of approval may be altered if the Commission feels that approval is possible but more (or less) stringent conditions are required for this application to comply with the required findings.

BACKGROUND:

Previous Applications:

- ZMA22003 Sherwood Village
 - City Council approved a rezone from Residential, Single-family – 6,000 square foot minimum lot size (SF6), Residential, Single-family – 12,000 square foot minimum lot size (SF12), and Residential, Rural – 1-acre minimum lot size (RR1) to Residential, Medium Density Residential – 14 dwelling units per acre (MDR14) on October 12, 2020. The land rezoned through this application has since been divided into two projects, this one known as Sherwood and a second known as Fernwood. Fernwood is a duplex-style development still in the planning phases that is proposed to abut this project site on the east.
- CUP20006 Sherwood
 - Approved by Planning Commission May 12, 2021, this application established an apartment complex with 100 or greater units as a conditional use allowed on this site. The original approval was extended by 1 year on May 11, 2022. Should construction to accommodate this condition use not have started and/or should construction for the use not continue to be diligently pursued, this permit will expire on May 12, 2023. It is ineligible for renewal and the applicant would need to reapply in the case of expiration. This conditional use permit was heavily conditioned to ensure the developer will complete extensive improvements along Fremont Street to maintain the road level of service and provide adequate City infrastructure to serve this development.
- TSM22005 Sherwood
 - The application you are reviewing today was already reviewed by Planning Commission and recommended for approval by a vote of 5-0. Due to changes made to the project, it was never submitted for a ruling by City Council. This application is now different enough that staff feels it merits a second review by Planning Commission.
- T2V22001 Sherwood
 - Approved by City Council November 2, 2022. This vacation request asked that City of Fernley abandon a 20-foot wide utility easement that was intended for the construction of another project. The developer is to rededicate utility easements more appropriate for this project as part of the tentative and final subdivision map process. Though this was submitted as a planning application, this was not presented to Planning Commission because the code requires it to be approved by the City Council as presented by the City Engineer. Staff is looking into transferring this type of application from the purview of the Planning Department to the Engineering

Department.

- DA22002 Sherwood
 - Development agreement approved by City Council December 21, 2022. This development agreement granted the developer the right to phase construction of the project as well as to phase construction of Fremont Street improvements. Further, this agreement established that the developer will bond to fund any improvements they are unable to complete due to inability to secure right of way from property owners. Should they be unable to complete all street improvements as required for their conditional use permit and tentative subdivision map, they will forfeit these funds so that the City of Fernley may do so.
- T1VAC22001 Sherwood
 - Recommended for approval by Planning Commission on December 14, 2022; to be presented to City Council on February 1, 2023. This application is to request the city abandon a right of way previously offered to the City to construct Delores Court. Delores Court and the project associated with it were never developed.

FINDINGS:

Note: These findings contain excerpts written by former Assistant Planner Nikil Manayathara with edits for stylistic preference and updates to any information that has changed since the initial presentation of this application to Planning Commission.

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

The developer will 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. The map must be reviewed by the Nevada Department of Environmental Protection prior to construction, and the developer is to submit a final utility plan for review by staff before recording a final map. Many of the conditions of approval are specifically targeted at ensuring that the development meets these requirements.

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

The conditions of approval require that City of Fernley's consultant engineer firm conduct water modeling and the developer is to construct any additional infrastructure or capacity identified by the modeling.

TM3. Availability and accessibility of utilities

The development is expected to connect to existing municipal water and sewer service. Initial modelling provided by Shaw Engineering identified that the proposed Sherwood subdivision will generate a peak sewage flow of 135.41 gallons per minute, which translates to approximately 194,990 GPD (Gallons per Day). The project will utilize the existing 21-inch diameter main located underneath Fremont Street, and the 10-inch main located underneath Fernwood Drive.

There is currently sufficient capacity within the city's sewer infrastructure system for the development of the Sherwood Subdivision, and any connections or extensions of the city's infrastructure will be constructed to all applicable standards and regulations. An 8-inch diameter pipe will be used for water connection and will also be connected to the existing infrastructure within Fremont Street and Fernwood Street/Wildwood Drive.

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

Schools

Students residing within this development will attend Fernley Elementary School, Fernley Intermediate School, Silverland Middle School, and Fernley High School. Current School District capacity rates indicate that Fernley High School and Fernley Intermediate school will be close to or in excess of 100% capacity by 2025.

As indicated by the Lyon County School District, an additional \$6.43 million in construction capital is required to provide sufficient service to the expected 185 new students this project and the neighboring Fernwood project are expected to bring to the area. That number was determined as the expense to build 7 new classrooms for an anticipated 185 new students. The School District does not anticipate that their portion of development fees and tax revenue will be sufficient to support those construction fees; their comment letter is attached for your review.

Police and Fire

The project is expected to be served by the Lyon County Sherriff's Office and the North Lyon County Fire Protection District. The proposed project is located approximately 1.75 miles from the Sherriff's office on Main Street, and approximately 2.20 miles from the North Lyon County Fire Protection District office, also located on Main Street.

Transportation

The developer is proposing improvement of Fremont Street, to ensure it can handle an increase in traffic. These improvements were conditioned by the City Engineer.

Recreation Facilities and Parks

The project site is located approximately 1.5 miles from the Out of Town Park and approximately 1.45 miles from the PAW-sitive Play Dog Park. Additionally, the Green Valley Dog Park is approximately 2.3 miles away, south of the project site.

TM5. Consistency with the zoning district regulations:

The current zone of the project site is MDR14. The proposed subdivision is expected to have 316 residential multi-family dwelling units within the ±26.25-acre project site. This amounts to an overall site density of 12.03 dwelling units per acre.

The Development Code does not limit parcel size but does have a minimum site size of 6,000 square feet. At ±26.25 acres, this site far exceeds the minimum. As the developer moves into the construction phase of this project, they must comply with all applicable development requirements for the MDR14 zone, including but not limited to dimensional standards (FMC 32.06.080) and design standards (FMC 32.06.080).

TM6. Conformity with the Master streets & highways plan:

This project will bring this area of the city further into conformance with our streets & highways master plan. Fremont Street has a varying width, and the developer is required to ensure that sufficient improvements not already addressed by the Fremont Street apartments are made from the project site to the intersection of Fremont Street with US HWY 95A. The development agreement allows them to make these improvements in phases that are tied to phases of development within the project itself.

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

The new streets expected to serve the Sherwood subdivision are Wildwood Drive, Sherwood Drive, Dogwood Drive, and the internal roadway network that circulates throughout Sherwood. Based on the initial traffic study provided by the applicant, the proposed development is expected to generate an additional ± 2300 daily trips, which includes approximately 145 AM peak hour trips, and approximately 177 PM peak hour trips. This development is intended to be constructed in conjunction with the nearby Fernwood Subdivision, and as a result, the traffic impacts and recommendations are similar for both projects.

The main improvements for the Sherwood project are those to Fremont Street as conditioned by staff for this application and in the prior conditional use permit already granted. Because Fremont Street is a public right-of-way, these improvements benefit existing property owners that currently use Fremont Street in addition to the future tenants of this project. The pertinent conditions of approval expected to minimize the impact on existing public streets are numbers 5, 9, 11, and 15 – 19.

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

The project site has a relatively consistent grade throughout and ranges 1-2% across the project site. Should a grading permit be required for site development, both the City Engineer and Building Official will review it for compliance with all applicable regulations.

The project site has multiple TCID/Bureau of Reclamation facilities within its boundary. As such, the developer is required to work with the respective agencies to ensure that these drainage easements are rerouted or vacated as necessary. The Bureau of Reclamation specifically requested this project be conditioned so that “the relocation of irrigation facilities in a manner and location acceptable to Reclamation” is required. That item is addressed condition of approval number 24.

The project site is within an area of ‘minimal flood risk’ as designated by FEMA (Federal Emergency Management Association) in FEMA Firmette 32019C0105E. The referenced document places the project site within Flood Zone X, which falls outside the annual 0.2% chance floodplain. On-site drainage will be handled via 5 retention basins. Runoff collected via these basins will infiltrate into the soil below. Any infrastructure relating to drainage will be developed in accordance with the City’s Public Works and Engineering Design Standards.

TM9. Recommendation and comments of review bodies:

All application materials were distributed to the applicable City of Fernley departments and several outside reviewing. Feedback provided by City of Fernley staff and comments received in a letter from Bureau of Reclamation have been incorporated into the conditions of approval. A second outside agency letter was received from Lyon County School District. Both letters from outside agencies are attached to this report for your review.

TM10. Conformity to the Master Sewer and Water Utility Plan:

The developer will 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. The map must be reviewed by the Nevada Department of Environmental Protection prior to construction, and the developer is to submit a final utility plan for review by staff before recording a final map. Many of the conditions of approval are specifically targeted at ensuring that the development meets these requirements.

TM11. Compliance with this code and all other applicable regulations:

Staff has conditioned this project in such a way that we believe this project does meet the requirements of Fernley Municipal Code and all other applicable regulations.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

Nevada Revised Statutes (NRS) Chapter 278 – Planning and Zoning

Fernley Municipal Code (FMC), Title 32 – Development Code

City of Fernley Comprehensive Master Plan, August 2018 (3rd Update)

Specific References:

- NRS 278.320 – 278.3295 – Subdivision of Land: General Provisions
- NRS 278.330 – 278.353 – Subdivision of Land: Tentative Maps
- FMC Section 32.03.020, Table 32.03.020-1 – Development Code, Administration, Review and decision-making bodies, Summary Table of Development Review Procedures
- FMC Section 32.03.060 (f) – Development Code, Administration, Land division applications, Subdivision maps
- FMC Section 32.06.080 – Development Code, Zoning Districts, Residential – Multiple family (MDR14, MF21, and MF30)
- FMC Chapter 32.09 – Development Code, Development Standards
- Master Plan, Chapter 3, Page 63 – Land Use, Residential Land Uses, Mixed Residential (MR)

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. TSM22005 Conditions of Approval
2. Vicinity Map
3. Tentative Map
4. Existing Sherwood Plans
5. Traffic Study
6. 2020-08-31 Trip Generation Letter
7. 2022-12-01 Trip Generation Letter
8. Lyon County School District Comments
9. Bureau of Reclamation Comments
10. Bureau of Reclamation Comments, Enclosure 1

Conditions of Approval for TSM22005

Tentative Subdivision Map

SCOPE AND DURATION OF APPROVAL

1. APPROVAL:

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

2. PROJECT DESCRIPTION:

THE PROJECT APPROVAL IS LIMITED TO A RESIDENTIAL MULTI-FAMILY DEVELOPMENT WITH A MAXIMUM OF 18 LOTS ON ±26.28 ACRES.

3. EXPIRATION DATE:

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

4. DESIGN STANDARDS:

THE DEVELOPER SHALL COMPLY WITH DESIGN STANDARDS AND REGULATIONS SET FORTH IN FERNLEY MUNICIPAL CODE (FMC) AND CITY OF FERNLEY DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS MANUAL (COF DESIGN MANUAL). THE GOVERNING VERSION OF EACH SHALL BE THE VERSION EFFECTIVE AT THE TIME ANY MAP, BUILDING PERMIT, CIVIL IMPROVEMENT PERMIT, OR OTHER TYPE OF APPLICATION IS SUBMITTED.

CURRENT RELEVANT DESIGN STANDARDS INCLUDE BUT ARE NOT LIMITED TO: DIMENSIONAL STANDARDS, SITE PLANNING, PARKING AND CIRCULATION, COMMUNITY AMENITIES, LANDSCAPING AND SCREENING, BUILDING ARCHITECTURE, ADJACENCY STANDARDS, GRADING, BUFFER REQUIREMENTS, LIGHTING, STREETS, MECHANICAL AND TRASH SCREENING, AND UTILITY CONSIDERATIONS.

FINAL SUBDIVISION MAP RECORDING REQUIREMENTS

5. IMPROVEMENT PLANS:

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

UNLESS OTHERWISE ADDRESSED BY DEVELOPMENT AGREEMENT DA22002, PRIOR TO RECORDING ANY FINAL SUBDIVISION MAP FOR THIS PROJECT, THE DEVELOPER SHALL CONSTRUCT ALL REQUIRED PUBLIC IMPROVEMENTS OR PROVIDE A SURETY BOND IN ACCORDANCE WITH PROVISIONS SET FORTH IN FERNLEY MUNICIPAL CODE CHAPTER 32.13, IMPROVEMENTS AND AGREEMENTS. FURTHER, THE DEVELOPER MUST MEET ALL THE REQUIREMENTS OF CHAPTER 32.03 OF FERNLEY MUNICIPAL CODE, LAND DIVISION APPLICATIONS. THE REQUIRED PUBLIC IMPROVEMENTS INCLUDE BUT ARE NOT LIMITED TO: PUBLIC UTILITY AND ROADWAY INFRASTRUCTURE ASSOCIATED WITH THE PROJECT.

6. WATER RIGHTS:

Conditions of Approval for TSM22005

Tentative Subdivision Map

THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING DEDICATION OF WATER RIGHTS, INCLUDING ASSOCIATED FEES FOR CONNECTING TO THE CITY'S MUNICIPAL WATER SYSTEM THAT ARE INDEPENDENTLY CALCULATED FOR EACH PHASE WHEN APPLICABLE, PRIOR TO RECORDING A FINAL SUBDIVISION MAP.

7. **WATER AND SEWER:**

THE DEVELOPER SHALL BE RESPONSIBLE FOR CONSTRUCTING ALL IMPROVEMENTS DEEMED NECESSARY TO SERVE THE PROJECT, AS IDENTIFIED IN THE APPROVED WATER AND SEWER MODELING REPORTS, SUBJECT TO APPROVAL OF THE CITY ENGINEER, PRIOR TO RECORDING ANY FINAL SUBDIVISION MAP.

THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING THE SANITARY SEWER AND WATER SYSTEMS, INCLUDING ASSOCIATED CONNECTION FEES, PRIOR TO ISSUING A BUILDING PERMIT FOR THE PUBLIC IMPROVEMENTS FOR THIS PROJECT.

8. **STORM WATER TREATMENT AND DRAINAGE:**

THE DEVELOPER SHALL UTILIZE STRUCTURAL CONTROLS FOR THE TREATMENT OF STORM WATER RUNOFF, IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES, SUBJECT TO APPROVAL OF THE PUBLIC WORKS DIRECTOR AND CITY ENGINEER. DRAINAGE CONVEYANCE FACILITIES AND OTHER IMPROVEMENTS MUST BE CONSTRUCTED AND FUNCTIONAL, PRIOR TO RECORDING A FINAL SUBDIVISION MAP.

ALL INTERNAL STORM DRAIN INFRASTRUCTURE SHALL BE MAINTAINED BY THE PROPERTY OWNER.

9. **STREETS AND SIGNAGE:**

STREET IDENTIFICATION SIGNS MUST BE IN PLACE AND STREETS WITHIN THE SUBDIVISION MUST BE COMPLETE TO THE APPROVAL OF THE CITY ENGINEER AND FIRE CHIEF.

10. **WASTE MANAGEMENT:**

THE DEVELOPER SHALL PROVIDE A WILL SERVE FROM WASTE MANAGEMENT, SUBJECT TO APPROVAL OF THE ADMINISTRATOR, PRIOR TO RECORDING ANY FINAL SUBDIVISION MAP.

11. **RECIPROCAL EASEMENTS:**

THE DEVELOPER SHALL PROVIDE IRREVOCABLE RECIPROCAL PARKING, ACCESS, STORM DRAINAGE MAINTENANCE, WATER INFRASTRUCTURE MAINTENANCE, SANITARY SEWER INFRASTRUCTURE MAINTENANCE, AND LANDSCAPE MAINTENANCE EASEMENTS OVER THE ENTIRE SITE, SUBJECT TO APPROVAL OF THE ADMINISTRATOR, PRIOR TO RECORDING ANY FINAL SUBDIVISION MAP. THESE EASEMENTS SHALL BE INCORPORATED INTO THE RECORDED DOCUMENTS FOR THE SITE.

12. **FINAL SUBDIVISION 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 IMPLEMENTATION.

OTHER IMPROVEMENTS AND REQUIREMENTS

13. **WATER AND SEWER SYSTEM MODELING:**

Conditions of Approval for TSM22005

Tentative Subdivision Map

THE DEVELOPER SHALL COMPLETE WATER AND SEWER MODELING FOR THE PROJECT PRIOR TO ISSUE OF A CIVIL PERMIT. THE DEVELOPER SHALL CONSTRUCT ANY IMPROVEMENTS IDENTIFIED BY THE MODELING AS NECESSARY TO SERVE THE PROJECT IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS PRIOR TO ISSUE OF A BUILDING PERMIT.

14. **WATER METERING:**

THE PROJECT SHALL UTILIZE A MASTER METER FOR DOMESTIC WATER SERVICE FOR EACH BUILDING OR GROUP OF BUILDINGS. THE DEVELOPER MAY INSTALL A SEPARATE IRRIGATION METER OR INSTALL THE IRRIGATION CONNECTION DOWNSTREAM OF THE DOMESTIC MASTER METER WITH APPROPRIATE BACKFLOW PREVENTION. INDIVIDUAL SERVICE METERS FOR EACH UNIT WILL NOT BE ALLOWED. ALL INTERNAL WATER AND SEWER MAINS SHALL BE MAINTAINED BY THE PROPERTY OWNER UNLESS APPROVED FOR ACCEPTANCE BY THE CITY OF FERNLEY PUBLIC WORKS DIRECTOR AND CITY ENGINEER.

15. **FREMONT STREET IMPROVEMENTS:**

THE DEVELOPER SHALL COMPLY WITH THE REQUIREMENTS OF DEVELOPMENT AGREEMENT DA22002 FOR THE COMPLETION OF REQUIRED IMPROVEMENTS ALONG THE FREMONT STREET CORRIDOR.

16. **FREMONT INTERSECTION CAPACITY IMPROVEMENTS:**

THE EXISTING TRAFFIC VOLUMES PLUS PROJECT TRAFFIC WILL CREATE A LEVEL OF SERVICE D ON THE FREMONT STREET/U.S. HIGHWAY 95A INTERSECTION.

PER THE CITY OF FERNLEY DESIGN STANDARDS SECTION 3.3.3.c.ii, THE DEVELOPER SHALL COMPLETE MITIGATION MEASURES FOR INTERSECTIONS THAT OPERATE AT A LEVEL OF SERVICE D OR LESS. POSSIBLE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, SIGNALIZATION OR SIGNALIZATION IMPROVEMENTS, CHANNELIZED MEDIANS, TURNING LANES, STORAGE LANE INCREASE, RESTRICTED TURNS AND/OR ADDITIONAL LANES.

THE APPROVED JANUARY 2020 TRAFFIC STUDY IDENTIFIES RESTRIPING THE EASTBOUND APPROACH OF FREMONT STREET TO INCLUDE A SEPARATE RIGHT TURN LANE AS WELL AS THE ADDITION OF A SEPARATE RIGHT TURN LANE ON THE WESTBOUND APPROACH OF CHISHOLM TRAIL.

THE DEVELOPER SHALL SUBMIT IMPROVEMENT PLANS FOR THE IDENTIFIED MITIGATION MEASURES, PRIOR TO ISSUE OF THE FIRST BUILDING PERMIT FOR THE PROJECT. THE MITIGATION MEASURE WILL NEED TO BE REVIEWED AND APPROVED BY THE ADMINISTRATOR, CITY ENGINEER, PUBLIC WORKS DIRECTOR, AND NEVADA DEPARTMENT OF TRANSPORTATION (NDOT).

THE MITIGATION MEASURES SHALL BE CONSTRUCTED AND ACCEPTED, PRIOR TO ISSUE OF THE CERTIFICATE OF OCCUPANCY FOR THE FIRST BUILDING PERMIT OF THE PROJECT.

17. **ACCESS AND CIRCULATION:**

THE DEVELOPER SHALL USE APPROPRIATE STRIPING AND SIGNAGE AS MAY BE NECESSARY TO MINIMIZE TRAFFIC CONFLICT WITHIN THE DEVELOPMENT SITE FOR THE LIFE OF THE PROJECT, SUBJECT TO APPROVAL OF THE ADMINISTRATOR AND CITY ENGINEER.

THE PROPOSED PINWOOD DRIVE EXTENSION SHALL BE A GATED, VEHICULAR EMERGENCY ACCESS ONLY. THE DEVELOPER SHALL PROVIDE PEDESTRIAN ACCESS FROM THE PROJECT TO THE SINGLE-FAMILY RESIDENTIAL SUBDIVISION TO THE EAST. BOTH THE PINWOOD DRIVE EXTENSION AND THE PROPOSED SHERWOOD DRIVE SHALL REMAIN PRIVATE AND NOT DEDICATED TO THE CITY.

Conditions of Approval for TSM22005

Tentative Subdivision Map

THE DEVELOPER SHALL COMPLY WITH ANY OTHER REQUIREMENTS PERTAINING TO ACCESS AND CIRCULATION OF THE CITY OF FERNLEY AND NORTH LYON COUNTY FIRE PROTECTION DISTRICT, SUBJECT TO APPROVAL OF THE FIRE CHIEF, PUBLIC WORKS DIRECTOR, CITY ENGINEER, AND ADMINISTRATOR.

18. **PARKING:**

VISITOR PARKING SHALL BE PROVIDED THROUGHOUT THE SITE. THE DEVELOPER SHALL SUBMIT IMPROVEMENT PLANS THAT SHOW APPROPRIATE STRIPING AND SIGNAGE FOR THE VISITOR PARKING STALLS, PRIOR TO ISSUE OF ANY BUILDING PERMIT.

19. **PEDESTRIAN CIRCULATION:**

PEDESTRIAN PATHWAYS SHALL BE CONSTRUCTED WITHIN THE DEVELOPMENT INCLUDING CONNECTIONS TO THE SIDEWALKS ALONG FREMONT STREET. THE DEVELOPER SHALL SUBMIT IMPROVEMENT PLANS THAT SHOW ALL PROPOSED PEDESTRIAN PATHWAYS WITHIN THE DEVELOPMENT, PRIOR TO ISSUE OF ANY BUILDING PERMIT.

CONSTRUCTION PHASE

20. **GRADING PERMIT:**

PRIOR TO ISSUE OF A GRADING PERMIT FOR THE DEVELOPMENT, THE DEVELOPER SHALL POST A SURETY BOND FOR REGRADING AND RECLAMATION OF THE SITE. THE DEVELOPER SHALL COMPLY WITH ALL GRADING REQUIREMENTS SET FORTH IN THE CITY OF FERNLEY DEVELOPMENT CODE AS WELL AS ALL STATE AND FEDERAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION AND AIR QUALITY RELATED TO SURFACE AREA DISTURBANCE.

THE DEVELOPER SHALL PROVIDE VERIFICATION OF A STORM WATER DISCHARGE PERMIT FROM THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBJECT TO APPROVAL OF THE CITY ENGINEER, PRIOR TO ISSUE OF A GRADING OR BUILDING PERMIT FOR THE DEVELOPMENT.

21. **CONSTRUCTION MAINTENANCE:**

THE DEVELOPER SHALL LOCATE AND UTILIZE A SUFFICIENT NUMBER OF TRASH CONTAINERS ON-SITE TO BE UTILIZED DURING THE CONSTRUCTION OF THE PROJECT TO MAINTAIN THE PROJECT SITE IN A CLEAN AND ORDERLY STATE, SUBJECT TO APPROVAL OF THE ADMINISTRATOR.

22. **CONSTRUCTION HOURS:**

THE DEVELOPER SHALL LIMIT ALL CONSTRUCTION AND CONSTRUCTION-RELATED ACTIVITIES TO BETWEEN THE HOURS OF 7:00 AM TO 7:00 PM, SEVEN DAYS A WEEK. THE DEVELOPER SHALL INSTALL SIGNS AT ALL ACCESS POINTS TO THE PROJECT THAT CLEARLY INDICATE THE HOURS OF ACTIVITY ON-SITE, PRIOR TO THE START OF ANY CONSTRUCTION-RELATED ACTIVITIES, SUBJECT TO APPROVAL OF THE ADMINISTRATOR. THE DEVELOPER SHALL MAINTAIN THESE SIGNS IN GOOD REPAIR FOR THE DURATION OF THE CONSTRUCTION OF THE PROJECT. ONCE CONSTRUCTION IS FINISHED, THE DEVELOPER SHALL REMOVE THESE SIGNS.

23. **PROJECT CONTACT:**

THE DEVELOPER SHALL DESIGNATE TO THE ADMINISTRATOR A PROJECT CONTACT PERSON RESPONSIBLE AND AUTHORIZED TO CORRECT PROBLEMS REGARDING THE PROJECT ON A 24-HOUR, 7-DAYS-PER-WEEK BASIS. THE DEVELOPER SHALL DESIGNATE A PROJECT CONTACT PERSON TO THE ADMINISTRATOR, PRIOR TO ISSUE OF A GRADING PERMIT FOR THE PROJECT.

Conditions of Approval for TSM22005

Tentative Subdivision Map

REGULATORY AGENCIES

24. BUREAU OF RECLAMATION (BOR) AND TRUCKEE CARSON IRRIGATION DISTRICT (TCID):

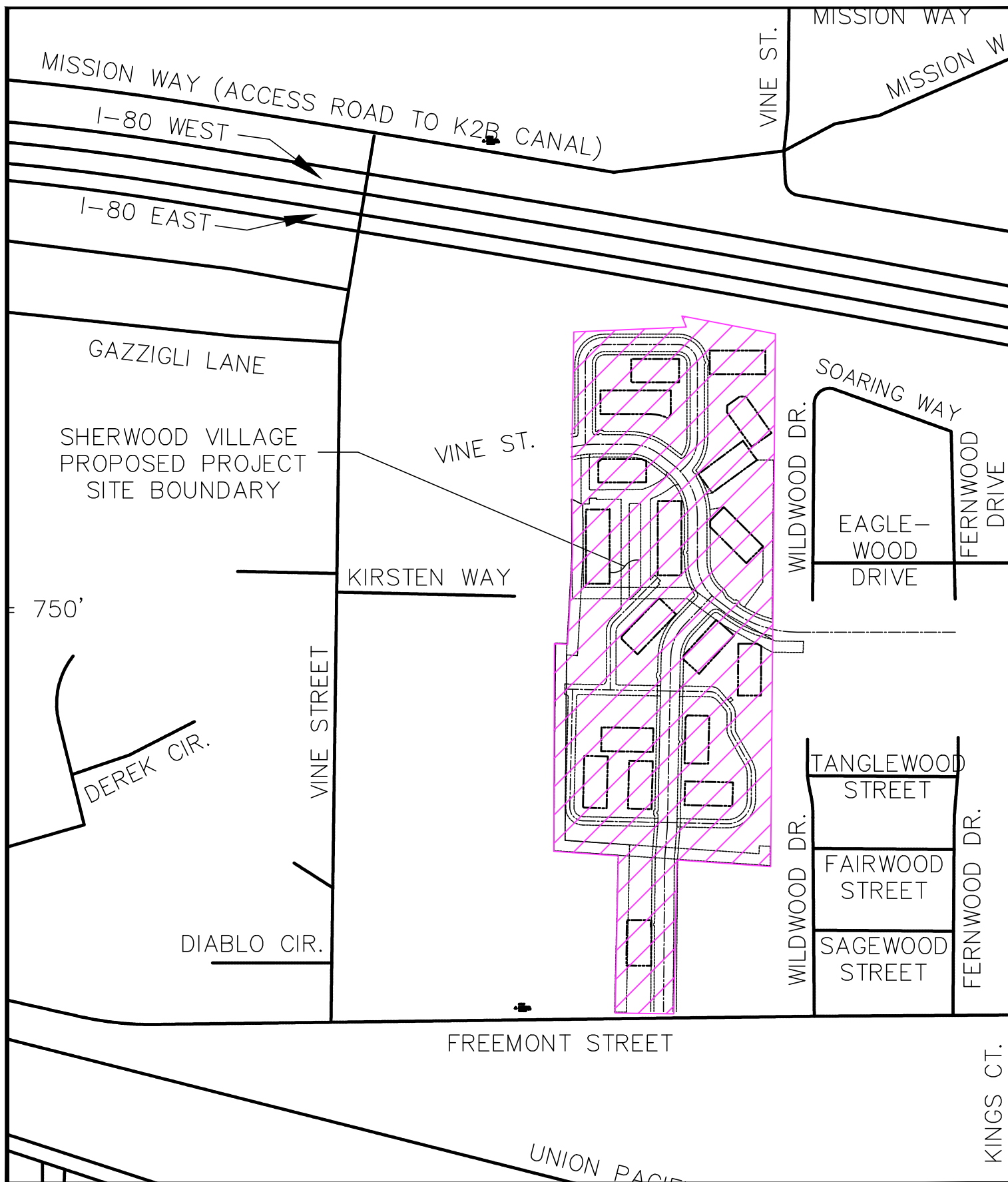
THE DEVELOPER SHALL PROVIDE WRITTEN DOCUMENTATION FROM BOR AND TCID THAT ANY PROPOSED IMPROVEMENTS AFFECTING ANY BOR FACILITY HAVE BEEN REVIEWED AND APPROVED BY THE BOR AND/OR TCID. THE WRITTEN DOCUMENTATION MUST ALSO SPECIFICALLY STATE THAT ALL IRRIGATION FACILITIES HAVE BEEN RELOCATED IN A MANNER AND LOCATION ACCEPTABLE TO BOR. FULFILLMENT OF THIS CONDITION IS SUBJECT TO APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

25. NORTH LYON COUNTY FIRE PROTECTION DISTRICT:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT, INCLUDING BUT NOT LIMITED TO: DEVELOPING A PLAN TO PROVIDE ADEQUATE EMERGENCY ACCESS THROUGHOUT THE SITE, DEVELOPING A MASTER FIRE HYDRANT AND FIRE FLOW PLAN, DEVELOPING A MASTER FIRE DEPARTMENT CONNECTION (FDC) PLAN, AND INSTALLING FIRE SUPPRESSION AND/OR ALARM SYSTEMS, SUBJECT TO APPROVAL OF THE FIRE CHIEF, PRIOR TO ISSUE OF ANY BUILDING PERMIT.

26. FEDERAL, STATE, AND LOCAL AGENCIES:

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF ANY FEDERAL, STATE, LOCAL AGENCY, DEPARTMENT, OR LICENSED PROFESSIONAL WITH JURISDICTION OVER THE PROJECT INCLUDING, BUT NOT LIMITED TO: NEVADA DEPARTMENT OF TRANSPORTATION (NDOT), NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP), NEVADA DIVISION OF WATER RESOURCES (NDWR), NEVADA BUREAU OF WATER POLLUTION CONTROL, NEVADA BUREAU OF SAFE DRINKING WATER, NEVADA STATE ENVIRONMENTAL COMMISSION, THE CITY OF FERNLEY BUILDING OFFICIAL, THE CITY OF FERNLEY ENGINEER, CITY OF FERNLEY PLANNING DEPARTMENT, CITY OF FERNLEY PUBLIC WORKS DEPARTMENT, AND THE CITY OF FERNLEY PROFESSIONAL LAND SURVEYOR.

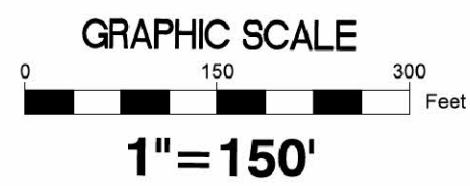
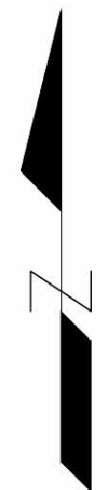


PHELPS
ENGINEERING

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

SCALE:	N.T.S
DESIGNED BY:	JTN
DRAWN BY:	JTN
CHECKED BY:	JTN

VICINITY MAP FOR SHERWOOD VILLAGE



TENTATIVE MAP FOR SHERWOOD VILLAGES

APNs 012-092-05, 012-092-23, 012-092-026, 012-092-27, 012-092-46, 012-092-47, 012-092-54, 012-092-55
DOLORES CT R/W & BOR DITCH

BASIS OF BEARINGS

THE SOUTH-EAST CORNER OF THE SOUTHEAST QUARTER (SE $\frac{1}{4}$) OF SECTION 12-20N-24E MDM BEARS SOUTH 89°43'20" WEST, CONSISTENT WITH THE NORTH AMERICAN DATUM OF 1983 (NAD83), 1994 (4 HARN) NEVADA STATE PLANE COORDINATE SYSTEM WEST ZONE MODIFIED, AND ALL BEARINGS CITED HEREON (OTHER THAN THOSE OF REFERENCED DOCUMENTS) ARE RELATIVE THERETO. ALL DISTANCES SHOWN HEREIN ARE GROUND VALUES. SCALE FACTOR: 1.00025827561. BEARINGS ARE EXPRESSED IN DEGREES (°) MINUTES (') & SECONDS ("). DISTANCES ARE EXPRESSED IN FEET & DECIMAL PARTS THEREOF. CURVES ARE EXPRESSED IN RADIUS (R) CENTRAL ANGLE (A) AND ARC LENGTH (L). COORDINATES ARE EXPRESSED IN NORTHING (N) AND EASTING (E).

EASEMENT NOTE

City drainage easements 30 feet in width shall be offered on the final subdivision map over top of all USBR facilities.

OWNER

FERNLEY SHERWOOD QOZB, LLC
3552 S. EMERSON ST.
ENGLEWOOD, CO. 80113

APPLICANT

FERNLEY SHERWOOD QOZB, LLC
3552 S. EMERSON ST.
ENGLEWOOD, CO. 80113

ENGINEER

PHELPS ENGINEERING SERVICES, INC.
 155 COUNTRY ESTATES CIRCLE
 RENO, NV 89511

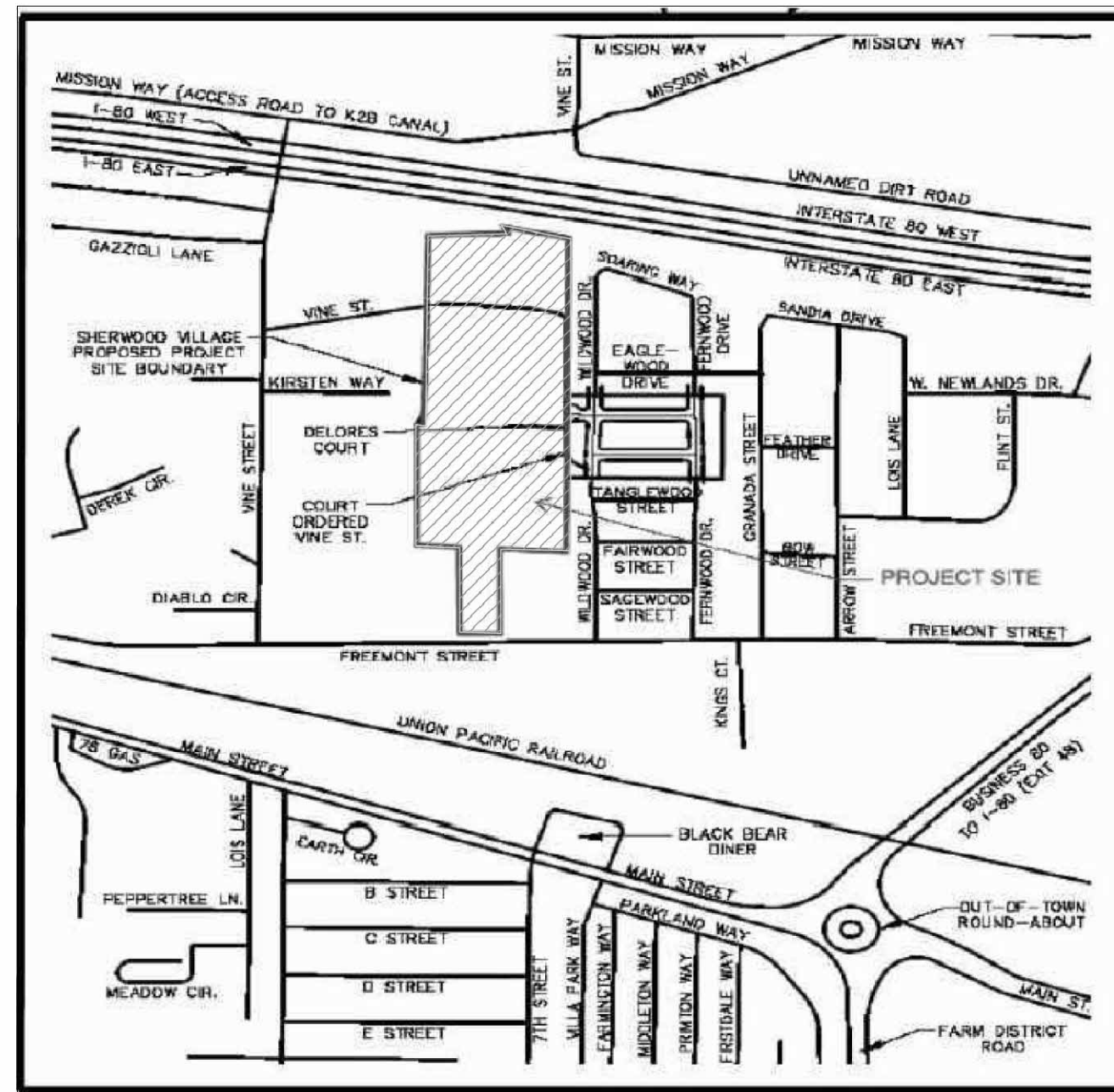
PLANNER

PHELPS ENGINEERING SERVICES, INC.
 155 COUNTRY ESTATES CIRCLE
 RENO, NV 89511

TABULAR DATA

18 LOTS.....	5.158 AC
TRACT 1 (COMMON AREA).....	21.778 AC
TOTAL.....	26.936 AC

VICINITY MAP (NTS)



ABBREVIATIONS

AC	ASPHALT CONCRETE	LH	LEFT
AWWA	AMERICAN WATER WORKS ASSOC	MT	MANHOLE
BOR	BUREAU OF RECLAMATION	MDS	MAX DRY DENSITY
BC	BEGIN CURVE	NTS	NOT TO SCALE
BV	BACK OF WALK	OD	OUTSIDE DIAMETER
BVC	BEGIN VERTICAL CURVE	PCC	PORTLAND CEMENT CONCRETE
CAP	CAPACITY	PF	PUBLIC FACILITY
CB	CATCH BASIN	PL	PROPERTY LINE
CFS	CUBIC FEET PER SECOND	PM	PARCEL MAP
C	CENTERLINE	POT	POT TANGENT
CMP	CORRUGATED METAL PIPE	PR	PRESSURE RATING
C/O	CLEANOUT	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	PUE	PUBLIC UTILITY EASEMENT
CMU	CONCRETE MASONRY UNIT	PVC	POLYVINYL CHLORIDE PIPE
CONST	CONSTRUCT	PVI	POINT OF VERTICAL INTERSECTION
CP	CONCRETE PIPE	Q	VOLUME FLOW RATE
CR	CURB RETURN	R	RADIUS
DET	DETAIL	RCP	REINFORCED CONCRETE PIPE
A	CURVE DELTA	REF	REFERENCE
D	DIAMETER	CRB	CURB RETURN
DWY	DRIVEWAY	REQ	REQUIRED
E	ELECTRICAL	RT	RIGHT
EC	END OF CURVE	R/W	RIGHT-OF-WAY
EG	EXISTING GRADE	S	SLOPE
ELEV	ELEVATION	SD	STORM DRAIN
EVC	END OF VERTICAL CURVE	SDMH	STORM DRAIN MANHOLE
(e)	EXISTING	SF	SQUARE FEET
EXIST	EXISTING	SS	SANITARY SEWER
FES	FIELD SECTION	SSMH	SANITARY SEWER MANHOLE
FF	FINISHED FLOOR	SUB	SUBDRAIN
FDC	FIRE DEPARTMENT CONNECTION	SW	SIDEWALK
FFC	FRONT FACE OF CURB	T	TRANSFORMER
FG	FINISHED GRADE	T	TELEPHONE
FH	FIRE HYDRANT	TBC	TOP BACK OF CURB
FL	FLOW LINE	TCP	TOP OF CURB
FT	FEET	TOP	TOP OF STEP
G	GAS	TP	TEST PIT
GB	GRADE BREAK	TW	TOP OF WALL
HORIZ	HORIZONTAL	TYP	TYPICAL
HP	HIGH POINT	VC	VERTICAL CURVE
HS	HOUSE SERVICE	VERT	VERTICAL
IE	INVERT ELEVATION	VPI	VERTICAL POINT OF INTERSECTION
INT	INTERSECTION	W	WATER
L	LENGTH	WM	WATER MAIN
LF	LINEAR FEET		

SHEET INDEX

1 OF 3 TITLE SHEET
2 OF 3 HORIZONTAL CONTROL
3 OF 3 HORIZONTAL CONTROL

UTILITY PROVIDERS

CABLE TV	CHARTER SPECTRUM
ELECTRIC	NV ENERGY
GAS	SOUTHWEST GAS
SEWER	FERNLEY UTILITIES
SOLID WASTE	CAPITOL SANITATION
TELEPHONE	A.T. & T.
WATER	FERNLEY PUBLIC WORKS

PROJECT DATA

PROPERTY ADDRESS: FREMONT ST
ASSESSOR'S PARCEL NO.s: 021-092-05, 021-092-23, 021-092-26, 021-092-27, 021-092-46, 021-092-47, 021-92-54, 021-092-55
MASTERPLAN DESIGN: MEDIUM DENSITY RESIDENTIAL
CURRENT ZONING: MM12
PLOT SIZE:
NUMBER OF LOTS: 18
TYPICAL LOT SIZE: VARIES
LARGEST LOT SIZE:
COMMON OPEN SPACE:
PROPOSED DENSITY:
PROJECT IS LOCATED WITHIN A PORTION OF THE W½ OF THE SE¼ OF SECTION 12, T20N, R24E, MDM
THERE ARE NO FUTURE LINES WITHIN THE PROXIMITY OF THIS SITE
PROJECT LOCATED WITHIN FEMA ZONE "X"

SURVEYOR'S STATEMENT:

"I HEREBY AFFIRM THAT THIS TENTATIVE MAP FOR THE RIVERSTONE APARTMENTS WERE PREPARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE CITY OF FERNLEY AND STATE OF NEVADA STANDARDS AND STATUTES, RESPECTIVELY; AND THAT I AM FULLY RESPONSIBLE FOR ALL DESIGN AND REVISIONS TO SAID PLANS".

Richard A. Pedraza PLS21076 - expires 12/30/23

RICHARD A. PEDRAZA, PSM/PLS
PROFESSIONAL LAND SURVEYOR
STATE OF NEVADA LICENSE NO. 21076
PHELPS ENGINEERING SERVICES

[illegible]

ENGINEERS • PLANNERS • SURVEYORS • ANALYSTS
PHELPS
ENGINEERING
 10951 Professional Circle, Suite "A", Reno, NV 89521



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

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

DESIGNED BY: JMG

DRAWN BY: RAP

CHECKED BY: LEP

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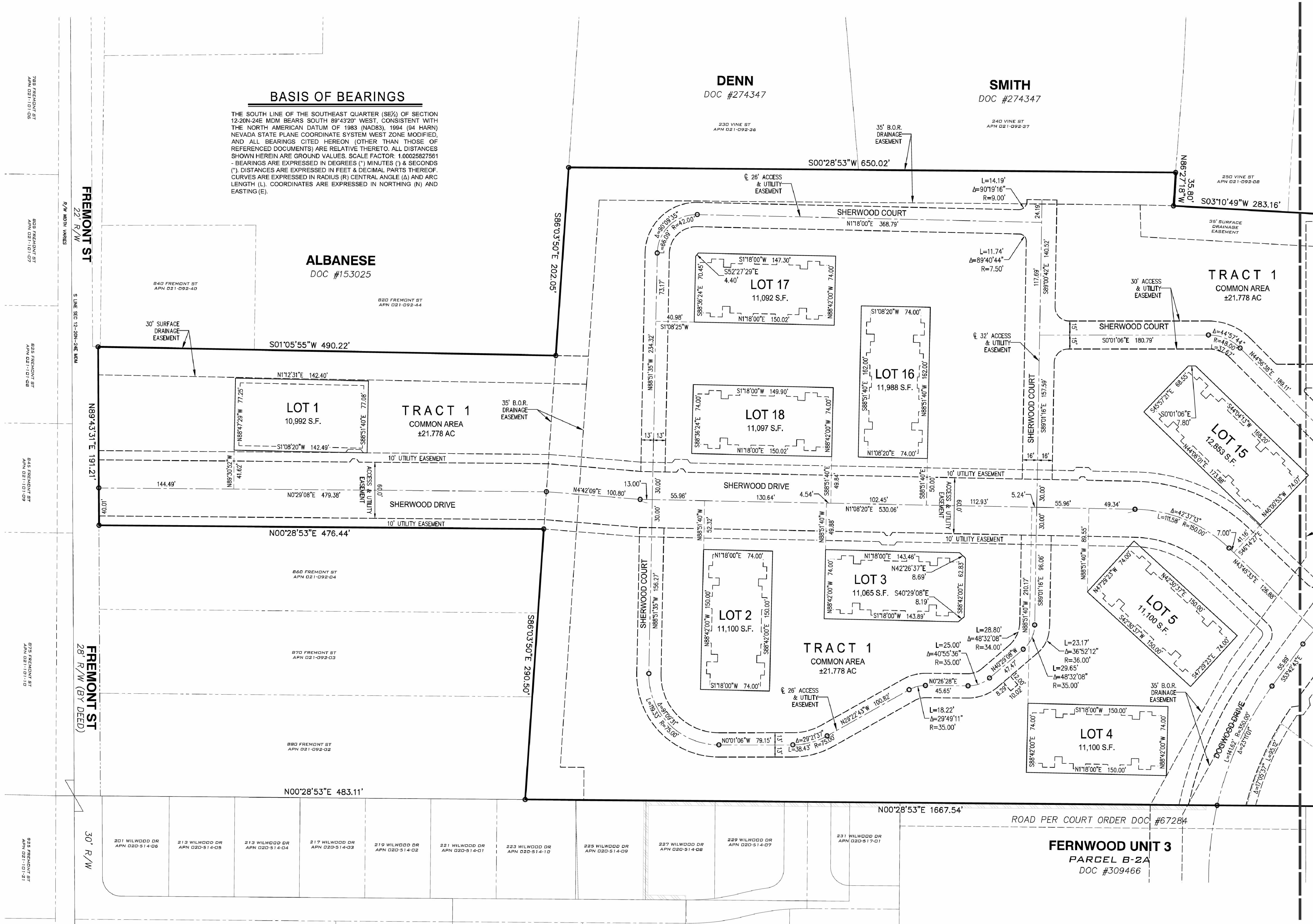
HORIZONTAL CONTROL
TENTATIVE MAP
TITLE SHEET

SHERWOOD VILLAGES
CITY OF FERNLEY
LYON COUNTY, NV

DATE: 02/15/2022

PROJECT NO.: 21603

1 SHEET **3**
OF



MATCH LINE SEE SHEET 3 OF 3

No.	REVISIONS	DATE	BY
2	ADDED STORM DRAIN EASEMENT	11/30/22	RAP
1	ADDED MISSING TCA-1-1 TOD LATERAL	11/05/22	RAP

ENGINEERS-PLANNERS-SURVEYORS-ANALYSTS

PHELPS

ENGINEERING

10851 Professional Circle, Suite "A" - Reno, NV 89521



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CHECKED BY: LEP

TENTATIVE MAP
HORIZONTAL CONTROL PLAN

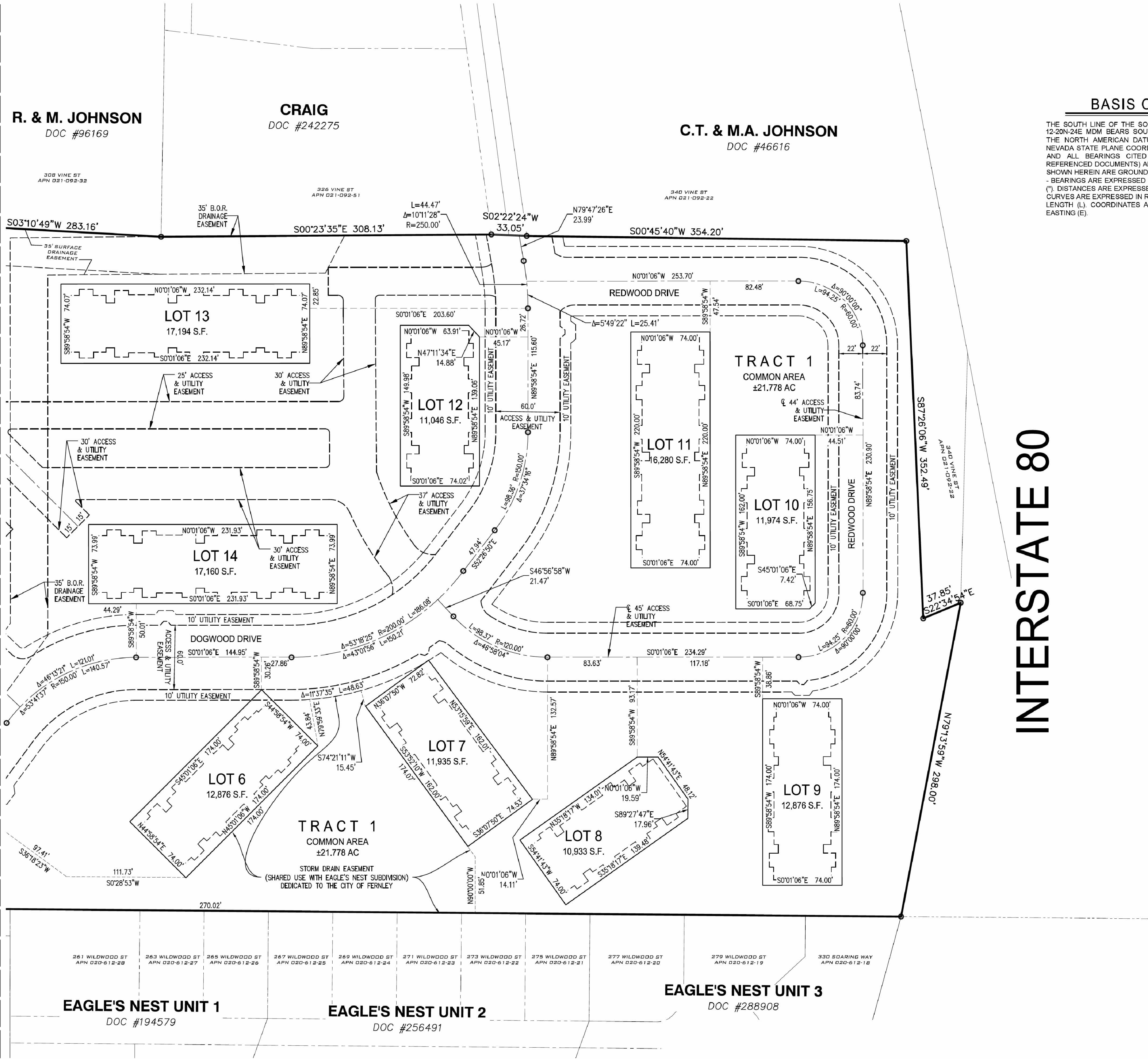
SHERWOOD VILLAGES
CITY OF FERNLEY
LYON COUNTY, NV

DATE: 02/15/2022
PROJECT NO.: 21603
SHEET
2 OF 3

DocuSigned by:
Richard A. Pedraza PL21078 - expires 12/30/23
ACCEPTED FOR FILING

12/2/2022 | 2:11 PM EST

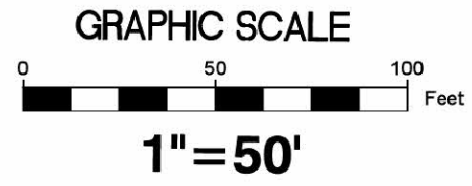
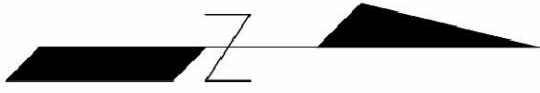
MATCH LINE SEE SHEET 2 OF 3



BASIS OF BEARINGS

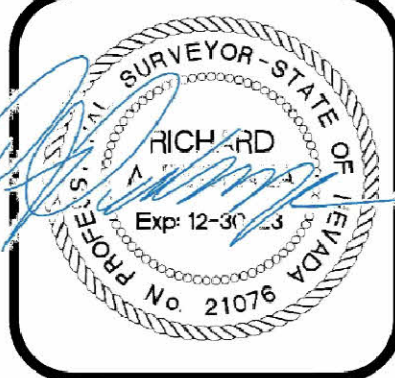
THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE¼) OF SECTION 12-20N-24E MDN BEARS SOUTH 89°43'20" WEST, CONSISTENT WITH THE NORTH AMERICAN DATUM OF 1983 (NAD83), 1994 (94 HARN) NEVADA STATE PLANE COORDINATE SYSTEM WEST ZONE MODIFIED, AND ALL BEARINGS CITED HEREON (OTHER THAN THOSE OF REFERENCED DOCUMENTS) ARE RELATIVE THERETO. ALL DISTANCES SHOWN HEREIN ARE GROUND VALUES. SCALE FACTOR: 1.00025827561 - BEARINGS ARE EXPRESSED IN DEGREES (°) MINUTES (') & SECONDS ("). DISTANCES ARE EXPRESSED IN FEET & DECIMAL PARTS THEREOF. CURVES ARE EXPRESSED IN RADIUS (R) CENTRAL ANGLE (Δ) AND ARC LENGTH (L). COORDINATES ARE EXPRESSED IN NORTHING (N) AND EASTING (E).

INTERSTATE 80



Designed by:
Richard A. Pedraza PLS21076 - cypins 12/30/23
12/2/2022 | 2:11 PM EST

ENGINEERS-PLANNERS-SURVEYORS-ANALYSTS
PHELPS
ENGINEERING
10851 Professional Circle, Suite 'A' - Reno, NV 89521



811
Know what's below.
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DESIGNED BY: JMG
DRAWN BY: RAP
CHECKED BY: LEP

TENTATIVE MAP
HORIZONTAL CONTROL PLAN

SHERWOOD VILLAGES
CITY OF FERNLEY
LYON COUNTY, NV

DATE: 02/15/2022
PROJECT NO.: 21603
SHEET
3 OF **3**

No.	REVISIONS	DATE	BY
2	ADDED STORM DRAIN EASEMENT	11/30/22	RAP
1	ADDED MISSING TCA-1-1 TOD LATERAL	11/09/22	RAP

TYPICAL ROADWAY SECTION - 60'

APN 21-092-23	5.28 AC
APN 21-092-26	5.19 AC
APN 21-092-27	5.13 AC
APN 21-092-46	1.94 AC
APN 21-092-47	0.99 AC
APN 21-092-54	2.00 AC
APN 21-092-55	3.69 AC
APN 21-092-05	2.06 AC
TOTAL ACREAGE	26.28 AC

TOTAL PARCELS:	18
DENSITY:	14 DU/AC
ZONING:	MDR14
COMPREHENSIVE PLAN:	RESIDENTIAL MULTI-FAMILY
LINEAL FEET OF NEW STREETS:	5460 LF

CUT= 36,492 CU YDS
FILL= 58,628 CU YDS W/ 10% COMPACTION
NET= 22,136 CU YDS (IMPORT)

1. MINIMUM LOT SIZE.....5871 SF
2. MINIMUM AVERAGE LOT WIDTH.....45 FT.
3. SETBACKS.....FRONT; 15 FT. , 20 GARAGE
SIDE: 10 FT (0 FT ON SHARED LOT LINE)
REAR: 10 FT.
4. THIS DEVELOPMENT IS IN ZONE "X" ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL 32019C0105E (EFFECTIVE JANUARY 16, 2009) ZONE "X" IS IDENTIFIED AS AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOOD PLAIN.
5. HISTORICALLY, THE PROJECT SITE WAS USED FOR AGRICULTURAL PURPOSES, AN IRRIGATED FIELD
6. DOMESTIC WATER SUPPLIED FROM COMMUNITY WATER SYSTEM.
7. DOMESTIC SEWAGE DISPOSAL BY COMMUNITY SEWER SYSTEM, ESTIMATED AMOUNT OF SEWAGE CONTRIBUTED IS 130 GAL/DAY/DU (MULTI-FAMILY); 200 GAL/DAY/DU (DUPEXES).
8. ALL UTILITIES TO BE PLACED UNDERGROUND
9. ALL STREET AND UTILITY IMPROVEMENTS WILL BE CONSTRUCTED TO CITY STANDARDS
10. STORM DRAINAGE WILL BE RETAINED ON SITE
11. WATER RIGHT SHALL BE IN ACCORDANCE WITH CITY ORDINANCE #714 BILL 696 PASSED 12-21-04
12. THE DISTANCE FROM THE SUBDIVISION TO THE COMMUNITY SEWAGE SYSTEM IS APPROXIMATELY 100 FEET.
13. ALL ROADS AND DRAINAGE FACILITIES ARE PRIVATELY OWNED AND SHALL BE MAINTAINED BY THE HOME OWNER'S ASSOCIATION.

CHARTER COMMUNICATIONS 9335 PROTOTYPE DRIVE RENO, NV. 89511 (775) 850-7243	SOUTHWEST GAS CORPORATION 400 EAGLE STATION LANE CARSON CITY, NV. 89702 (775) 887-2720	FERNLEY PUBLIC WORKS DEPT. 595 SILVER LACE LANE FERNLEY, NV. 89408 (775) 575-2307
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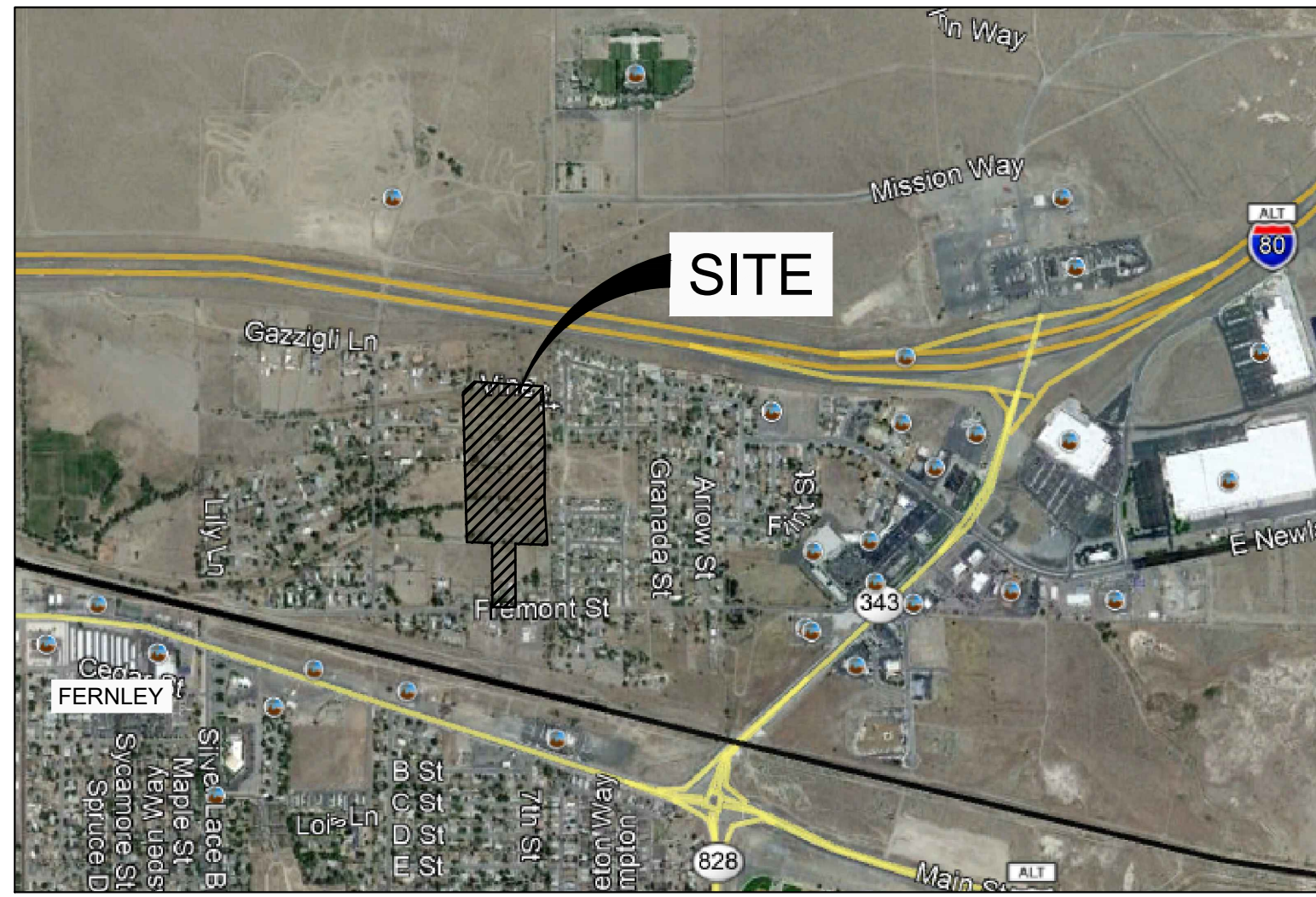
SBC NEVADA BELL	SIERRA PACIFIC POWER CO.
645 E. PLUMB LANE	346 N. MAIN STREET
P.O. BOX 11010	FALLON, NV. 89406
RENO, NV. 89520	(775) 423-3636
(775) 333-4363	

N 89°39'51" W ALONG THE SOUTH LINE OF THE SW1/4-SW1/4 OF SECTION 15, T20N, R24 E M.D.B.&M., AS SHOWN ON THE DIVISION INTO LARGE PARCEL MAP FOR FERNLEY HILLS ENTERPRISES, INC. FILE #239717 IN THE LYON COUNTY RECORDS.

SURVEY CONTROL IS BASED UPON UTILIZING THE ONLINE POSITIONING USER SERVICE (OPUS) PROVIDED BY THE NATIONAL GEODETIC SURVEY (NGS).

POINT # 1 IS A NO. 5 REBAR SET ON THE EAST SIDE OF THE INTERSECTION OF TANGLEWOOD DRIVE AND FERNWOOD DRIVE.

POSITIONAL DATA FOR POINT #1:
LATITUDE: 39°36'35.10922 N
LONGITUDE: 119°13'45.99844 W
EL HEIGHT: 1236.801 M OR 4057.746 US FT
ORTHO HEIGHT: 1260.956 M OR 4136.995 US FT NAVD 88 DATUM
PROCESSED ON 11/21/19



VICINITY MAP
SCALE: 1" = 6,000'

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

COMMUNITY DEVELOPMENT

NORTH LYON COUNTY FIRE PREVENTION DISTRICT

TRUCKEE-CARSON IRRIGATION DISTRICT

ATTEST: CITY CLERK

Sheet Number	Sheet Title
C1	COVER SHEET
C2	GENERAL NOTES
C3	EX. CONDITIONS OVERALL MAP
C4	EX. CONDITIONS AND DEMO PLAN
C5	EX. CONDITIONS AND DEMO PLAN
C6	GRADING PLAN 1
C7	GRADING PLAN 2
C8	GRADING PLAN 3
C9	SWM NORTH
C10	SWM SOUTH
C11	SITE PLAN 1
C12	SITE PLAN 2
C13	UTILITY PLAN 1
C14	UTILITY PLAN 2
C15	WATER DETAILS
C16	WATER AND SANITARY SEWER DETAILS
C17	SANITARY SEWER AND SITE DETAILS
C18	SITE DETAILS
C19	POND DETAILS



12/02/2022

<u>OWNER/DEVELOPER</u>	<u>ENGINEER</u>	<u>SURVEYOR</u>
VERTEX FUND 1, LLC 3522 S. EMERSON ST. DENVER, CO 80113 MATT HURLEY (720) 544-1820	PHELPS ENGINEERING SERVICES, LLC 155 COUNTRY ESTATES CIRCLE SUITE 300 RENO, NV. 89511 (775) 399-2200	PHELPS 155 COUNTRY ESTATES CIRCLE SUITE 300 RENO, NV. 89511 (775) 399-2200

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

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

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

[illegible]

COVER SHEET

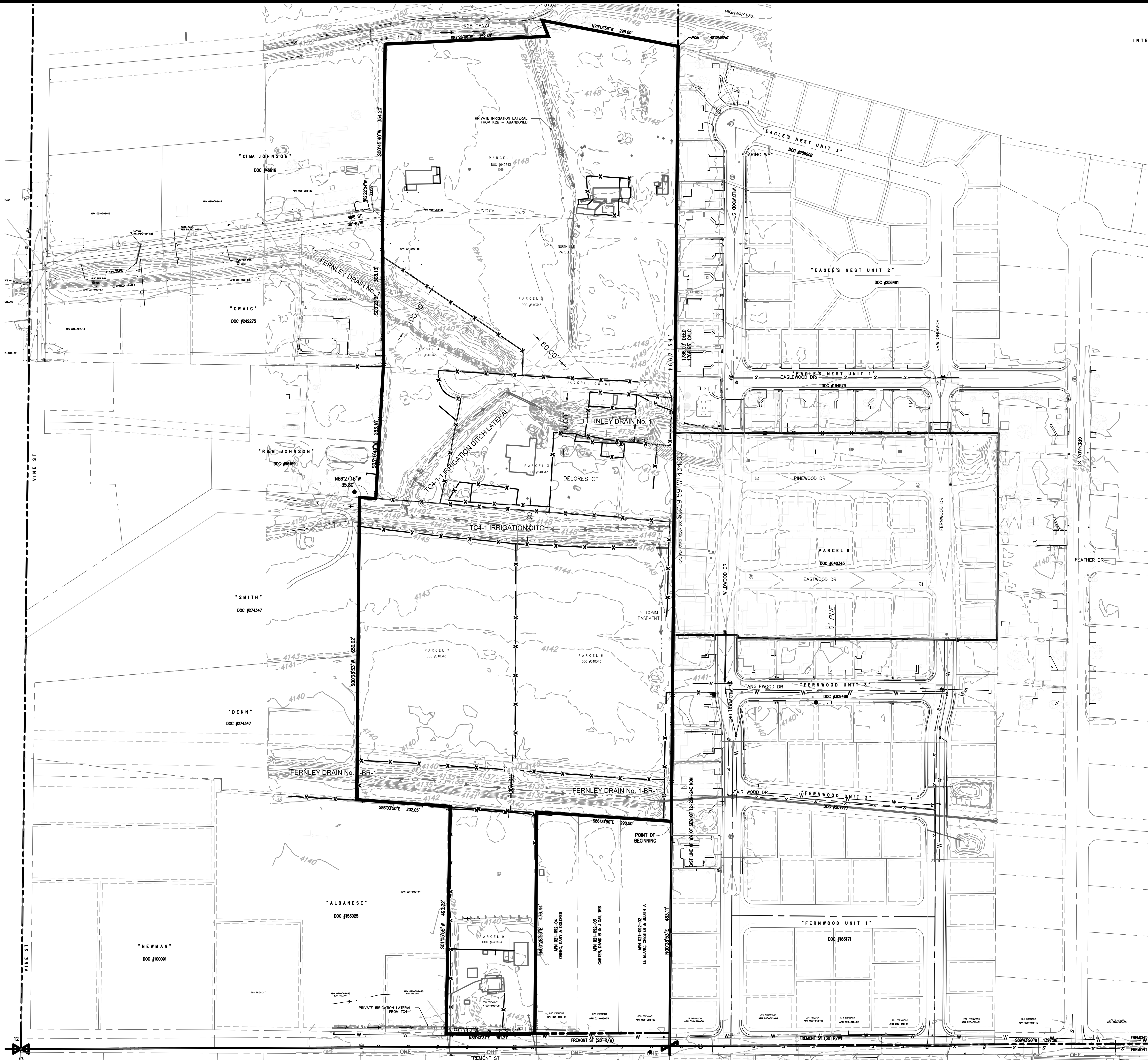
SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021

PROJECT NO.: 21603

C1

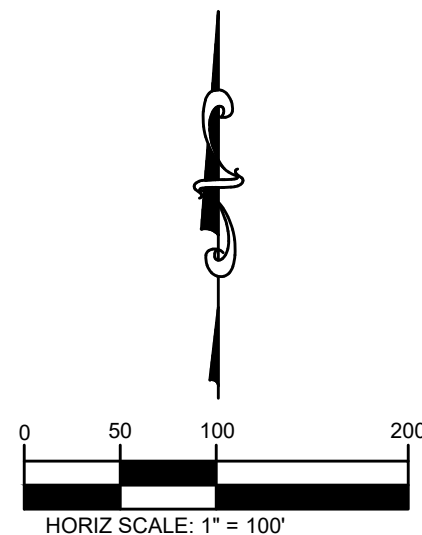
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UTILITY LEGEND:

- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- 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"SS 8-INCH Ø SANITARY SEWER W/MANHOLE
- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE
- PROPOSED LIGHT POLE

NOTES:
MINIMUM COVER ON SANITARY SEWER IS 3.5' UNLESS PREVIOUSLY APPROVED BY DESIGN ENGINEER AND CITY OF FERNLEY.
PVC PIPE FOR WATER DISTRIBUTION SHALL BE IN CONFORMANCE WITH 8" DIAMETER AWWA C900.
PVC PIPE FOR SANITARY SEWER SHALL BE 8" SDR 35 UNLESS OTHERWISE NOTED.
REFER TO CITY OF FERNLEY STANDARD NOTES ON SHEET 2 FOR ADDITIONAL INFORMATION.



12/02/2022

PER CITY COMMENTS

DATE

REVISIONS

No.

PHELPS
ENGINEERING

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

PROFESSIONAL ENGINEER
STATE OF NEVADA
PHELPS
12/31/23
CIVIL
No. 25230

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

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

DESIGNED BY: JWP
DRAWN BY: NW
CHECKED BY: LEP

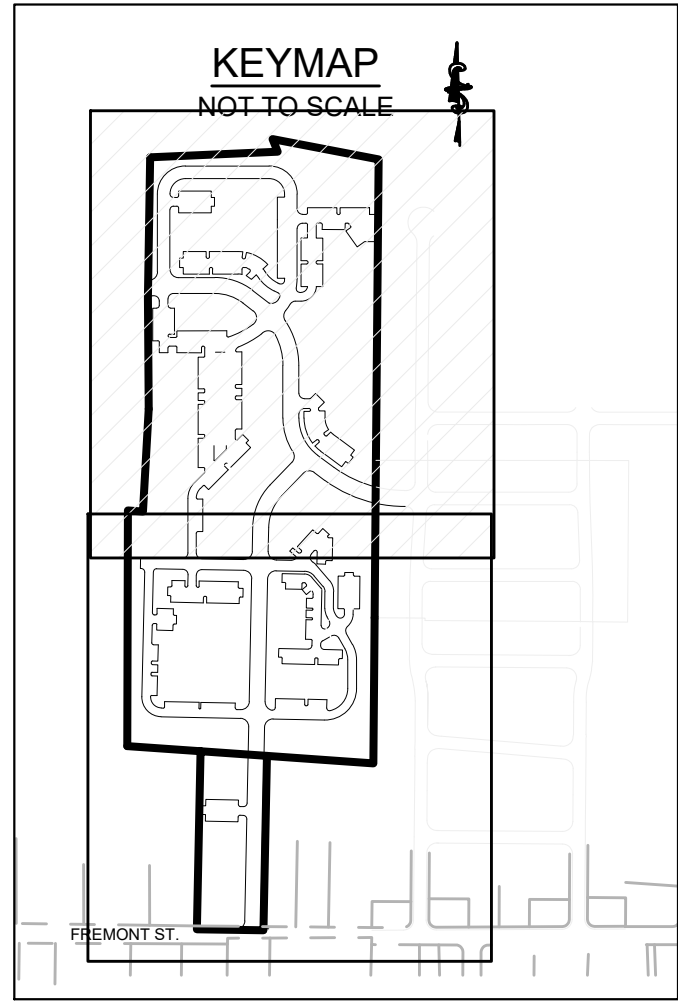
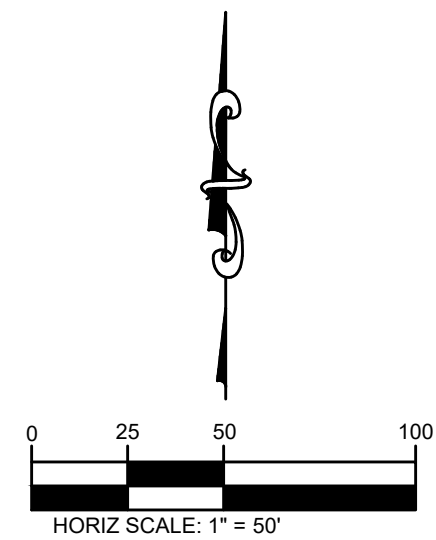
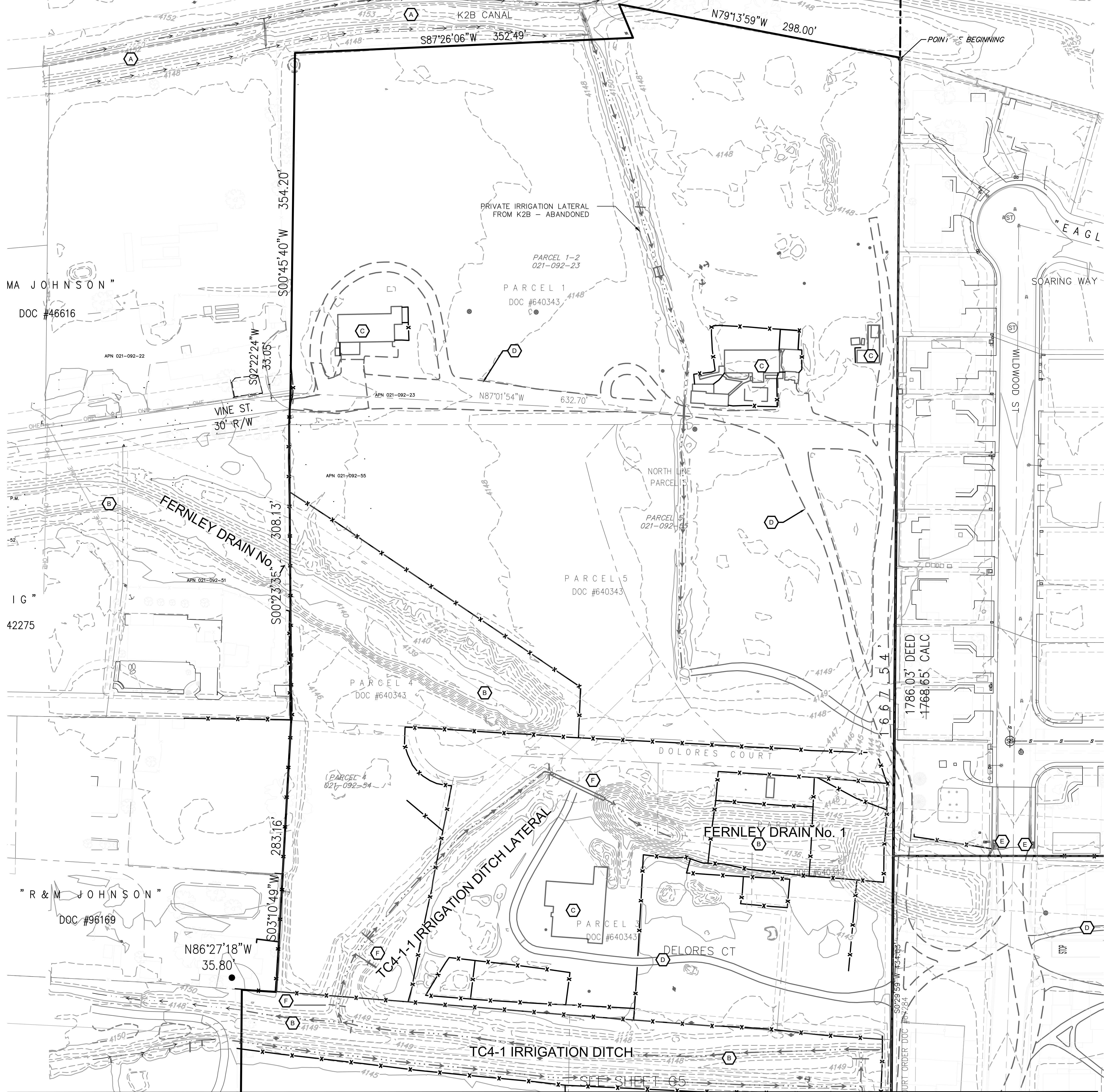
SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

EX. CONDITIONS OVERALL
MAP

11/24/2021
PROJECT NO.: 21603

C3

Drawing name: C:\Users\Zach\OneDrive - Phelps Engineering Services\Company\Entitlement Engineering\21603 - Sherwood\08 - CAD\Engineering\Sheets\CD\EXISTING CONDITIONS.dwg EX. CONDITIONS AND DEMO PLAN Dec 02, 2022 11:27am by: Zach



UTILITY LEGEND:

- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- 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
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- PROPOSED LIGHT POLE

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PVC PIPE FOR SANITARY SEWER SHALL BE 8" SDR 35 UNLESS OTHERWISE NOTED.
REFER TO CITY OF FERNLEY STANDARD NOTES ON SHEET 2 FOR ADDITIONAL INFORMATION

REMOVE AND DEMOLISH KEY NOTES:

- (A) EXISTING DITCH TO BE RELOCATED AND PIPED
- (B) EXISTING DITCH TO BE RELOCATED AND PIPED
- (C) STRUCTURE TO BE DEMOLISHED
- (D) TRAIL SYSTEM TO BE REMOVED
- (E) EXISTING STORM SEWER INLET
- (F) EXISTING 18" STORM PIPE TO BE REMOVED
- (X) EXISTING FENCE TO BE DEMOLISHED
- (V) EXISTING VEGETATION TO BE REMOVED

DEMOLITION NOTES:

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

12/02/2022
PER CITY COMMENTS
No.
REVISIONS
DATE
BY

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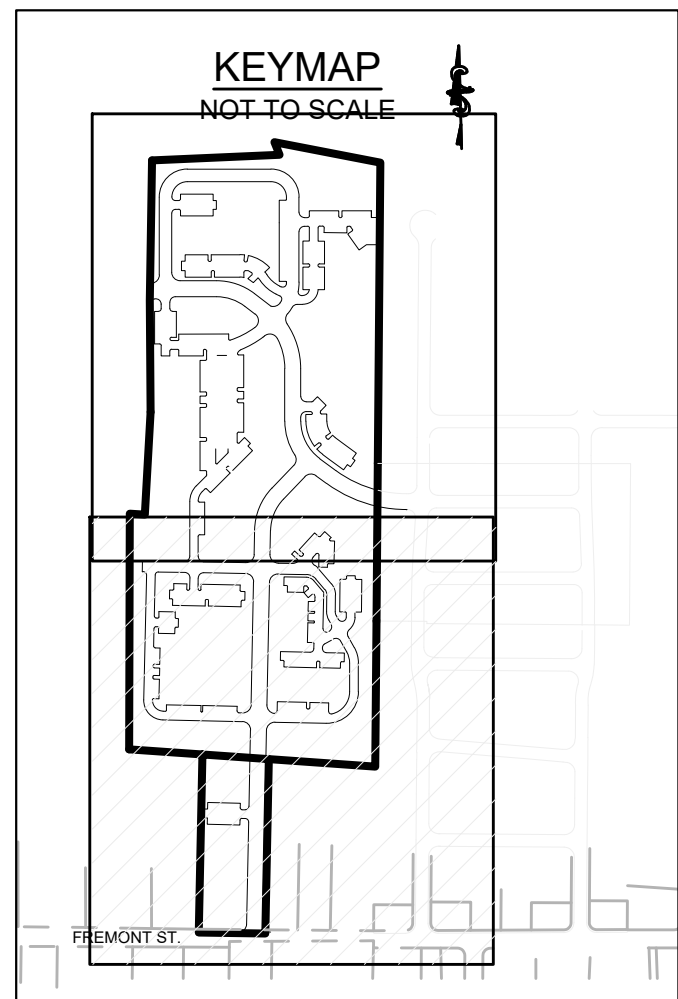
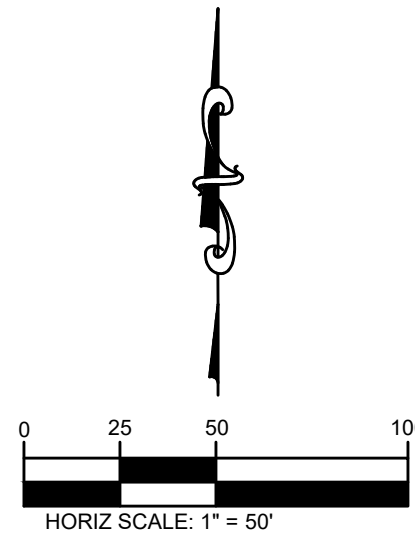
DESIGNED BY: JWP
DRAWN BY: NW
CHECKED BY: LEP

EX. CONDITIONS AND DEMO
PLAN

SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021
PROJECT NO.: 21603
C4

Page 133 of 248



	PROPERTY LINE
	LOT LINE
	RIGHT-OF-WAY
	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
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	EXISTING OVERHEAD ELECTRIC
	EXISTING ELECTRIC
	ELECTRIC LINE
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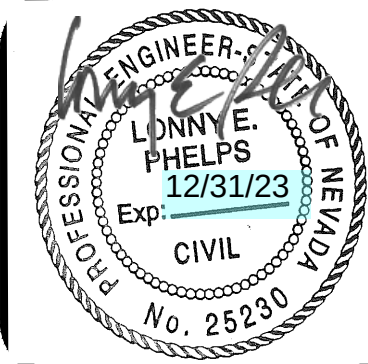
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- EXISTING VEGETATION TO BE REMOVED
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[illegible]

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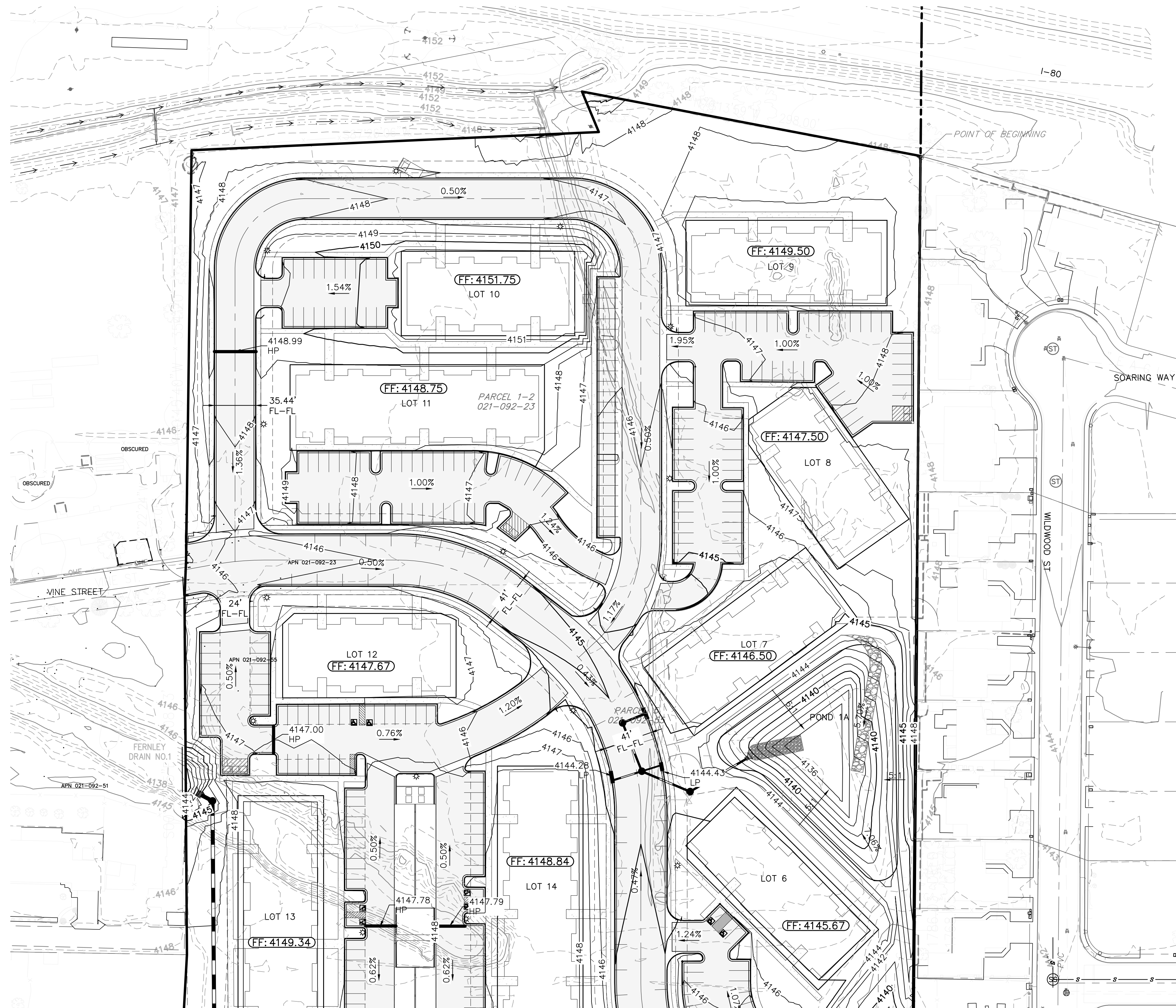
EX. CONDITIONS AND DEMO PLAN

SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021

PROJECT NO.: 21603

C5



SEE SHEET C7

EARTHWORK QUANTITIES

CUT= 36,492 CU YDS
FILL= 58,628 CU YDS W/ 10% COMPACTION
NET= 22,136 CU YDS (IMPORT)

BASIS OF BEARINGS

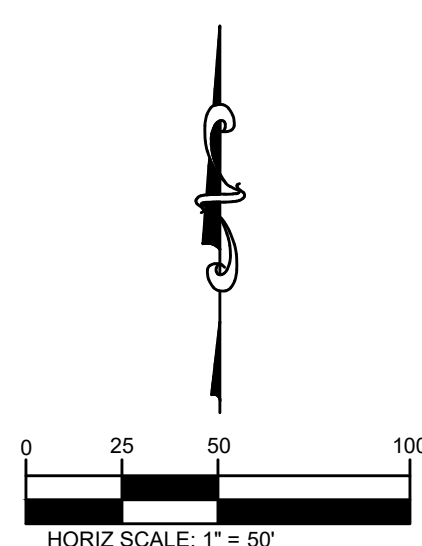
N 89°39'51" W ALONG THE SOUTH LINE OF THE
SW1/4-SW1/4 OF SECTION 15, T20N, R24 E M.D.B.&M.,
AS SHOWN ON THE DIVISION INTO LARGE PARCEL MAP
FOR FERNLEY HILLS ENTERPRISES, INC. FILE #239717
IN THE LYON COUNTY RECORDS.

DATUM STATEMENT

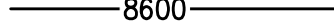
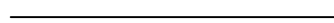
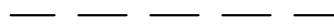
SURVEY CONTROL IS BASED UPON UTILIZING THE ONLINE POSITIONING USER SERVICE (OPUS) PROVIDED BY THE NATIONAL GEODETIC SURVEY (NGS).

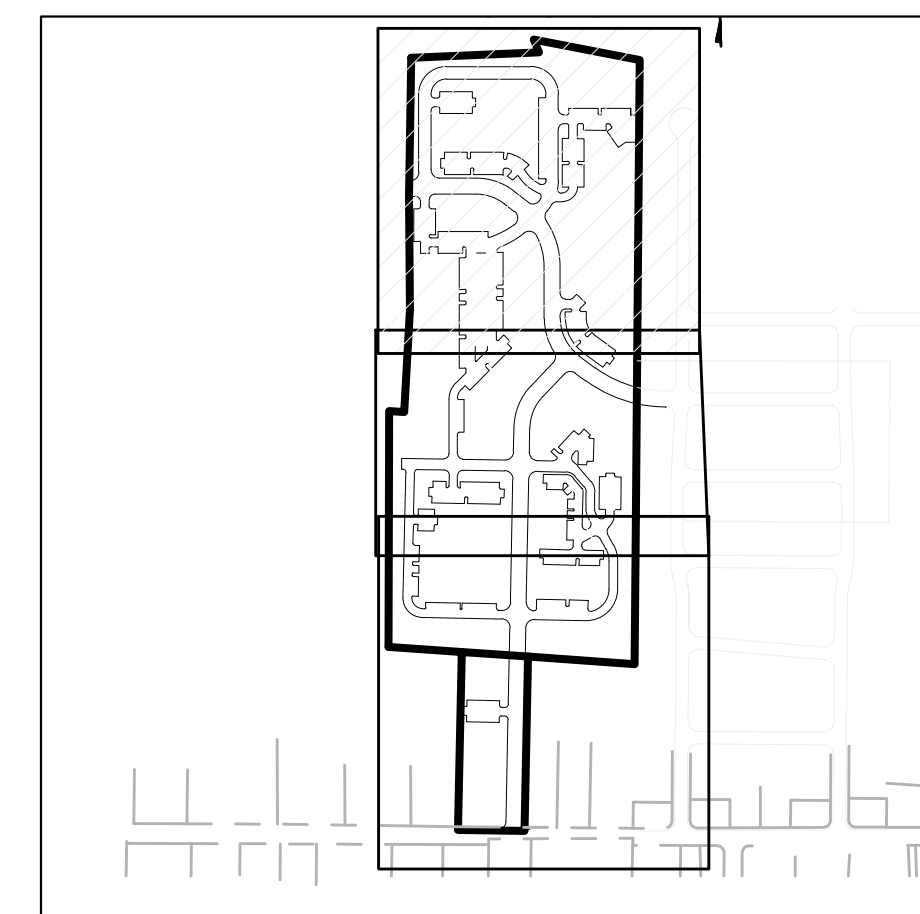
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DATUM
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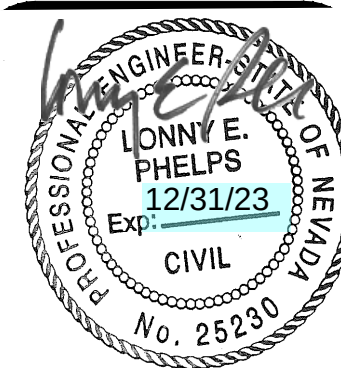
GRADING LEGEND:

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



KEY MAP

N.T.S.



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

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

DESIGNED BY: JJP

DRAWN BY: NW

CHECKED BY: LEP

GRADING PLAN 1

SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021

PROJECT NO.: 21603

C6

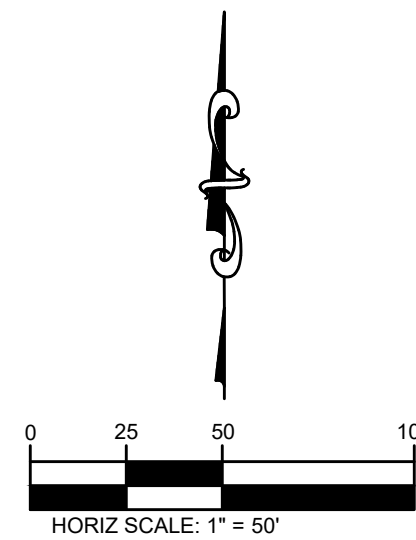
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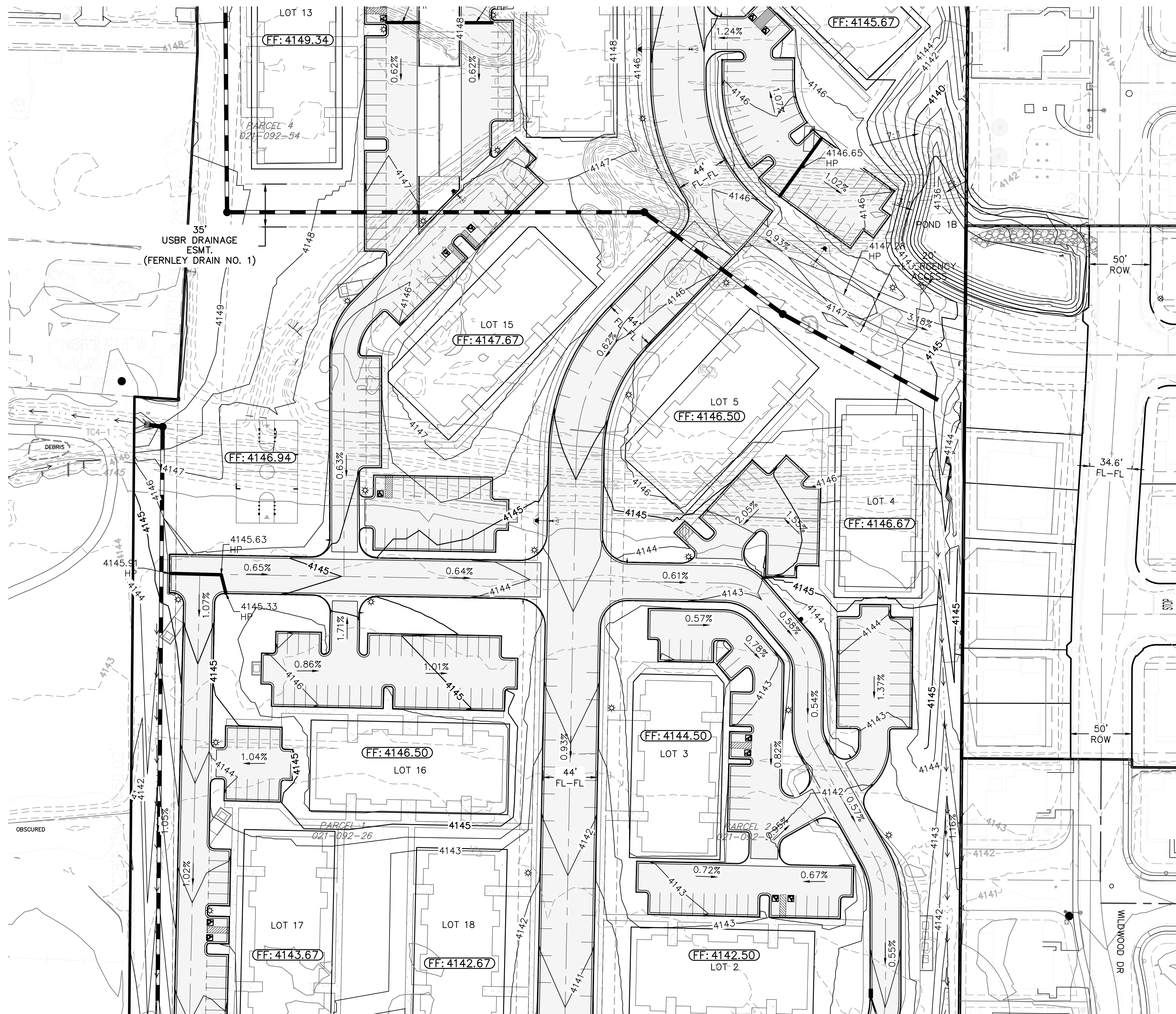
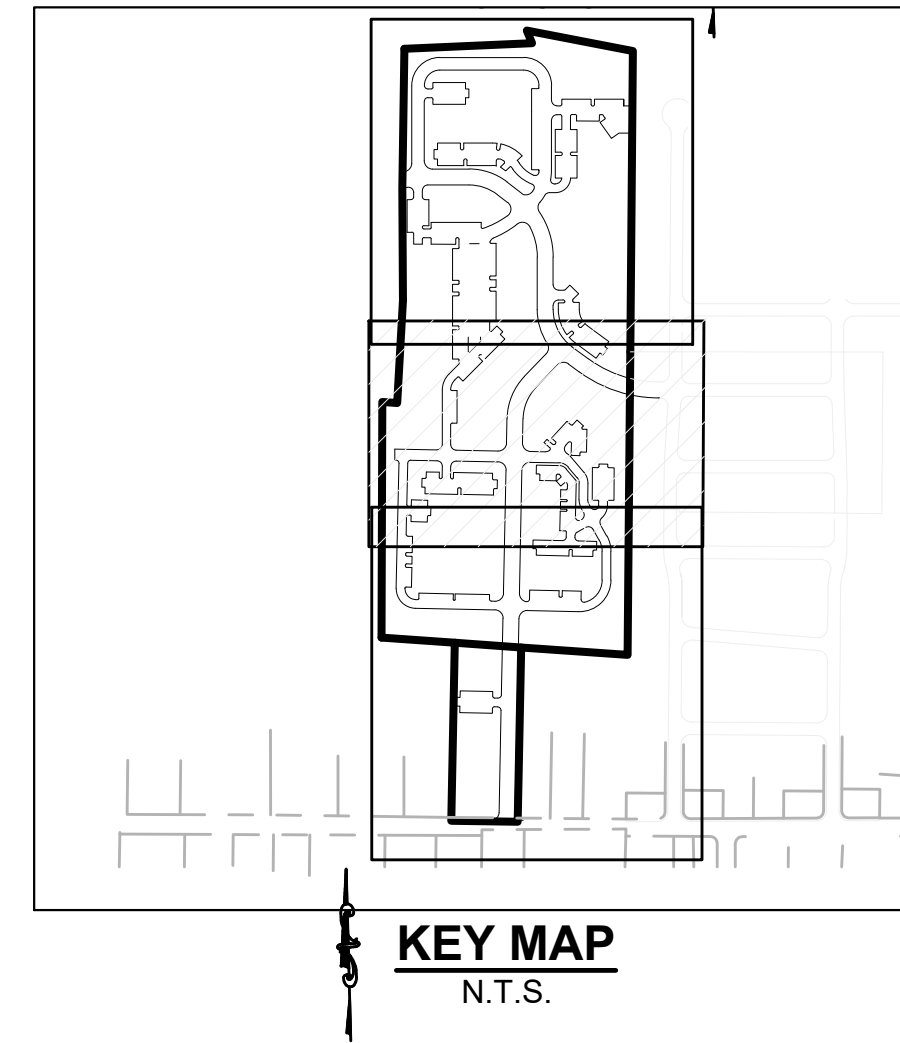
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DATUM
PROCESSED ON 11/21/19

CUT= 36,492 CU YDS
FILL= 58,628 CU YDS W/ 7% COMPACTION
NET= 22,136 CU YDS (IMPORT)



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



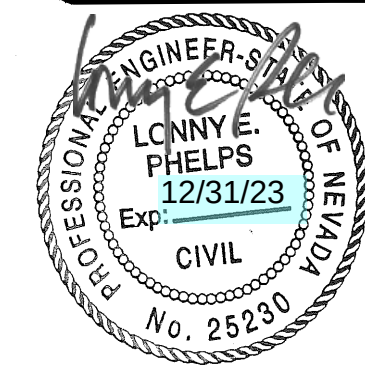
SEE SHEET C6

SEE SHEET C8

[illegible]

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DESIGNED BY: JJP

DRAWN BY: NW

CHECKED BY: LEP

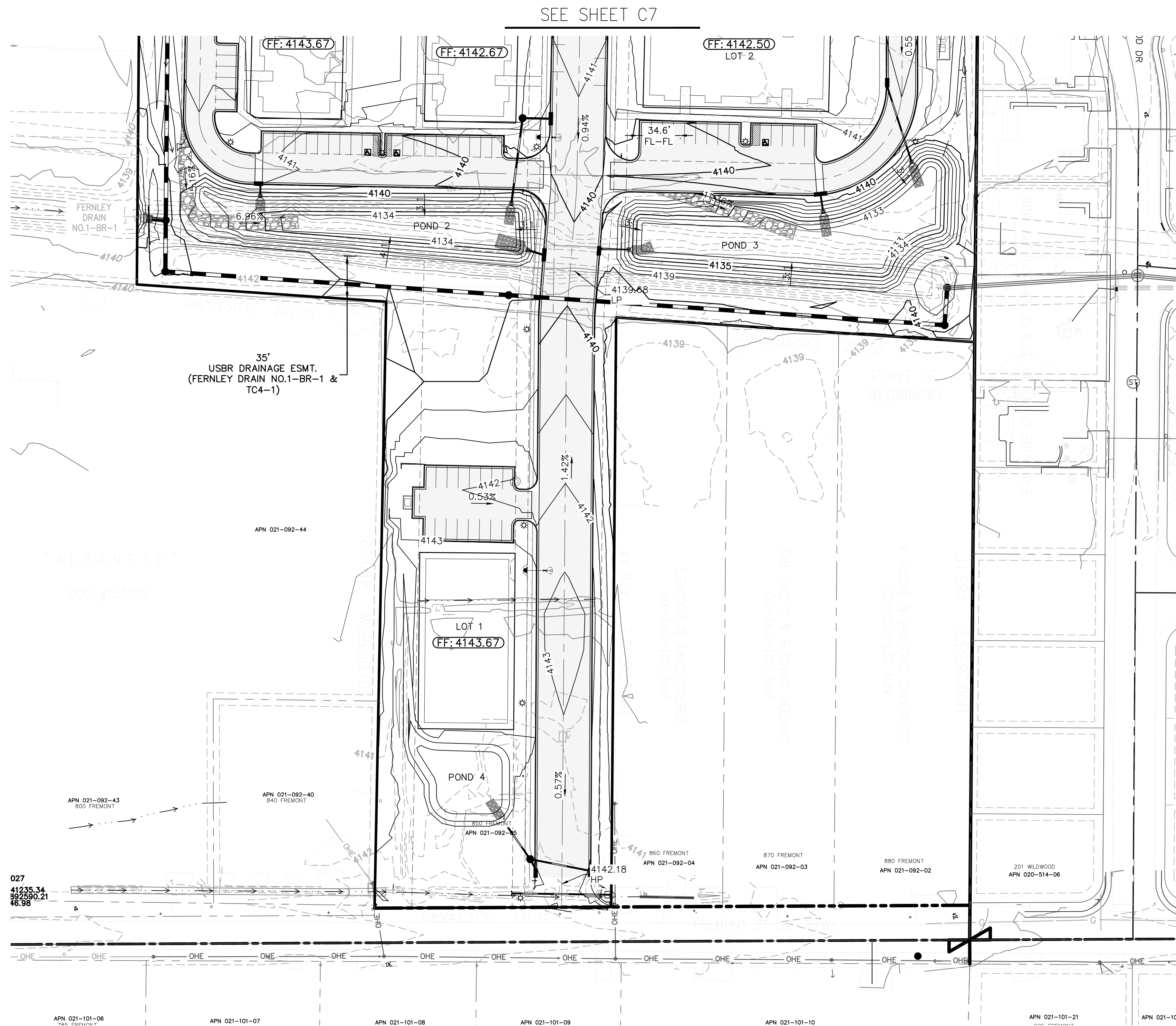
GRADING PLAN 2

SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021

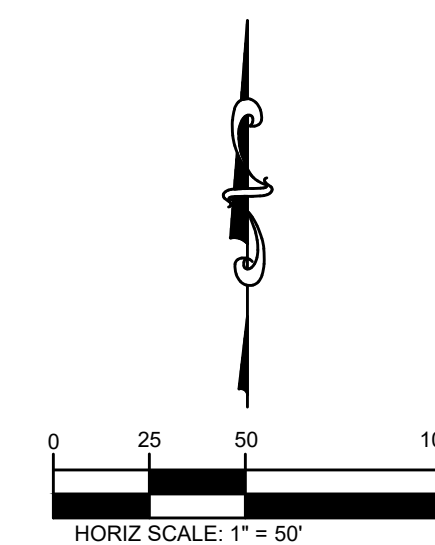
PROJECT NO.: 21603

C7



GRADING 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 |



BASIS OF BEARINGS

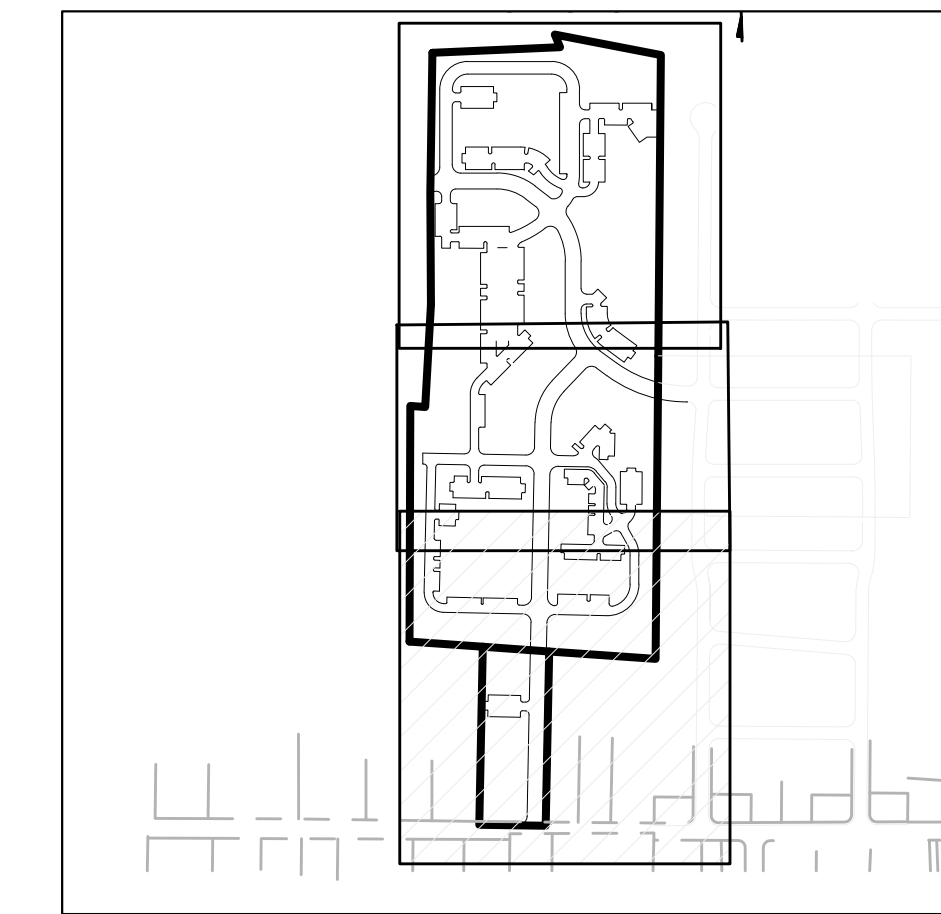
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DATUM STATEMENT

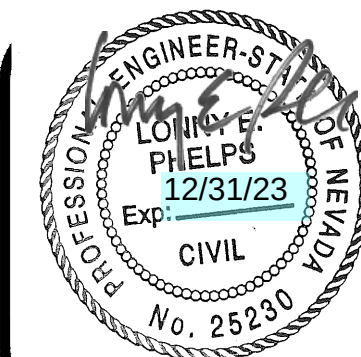
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KEY MAP
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DESIGNED BY: JJP

DRAWN BY: NW

CHECKED BY: LEP

GRADING PLAN 3

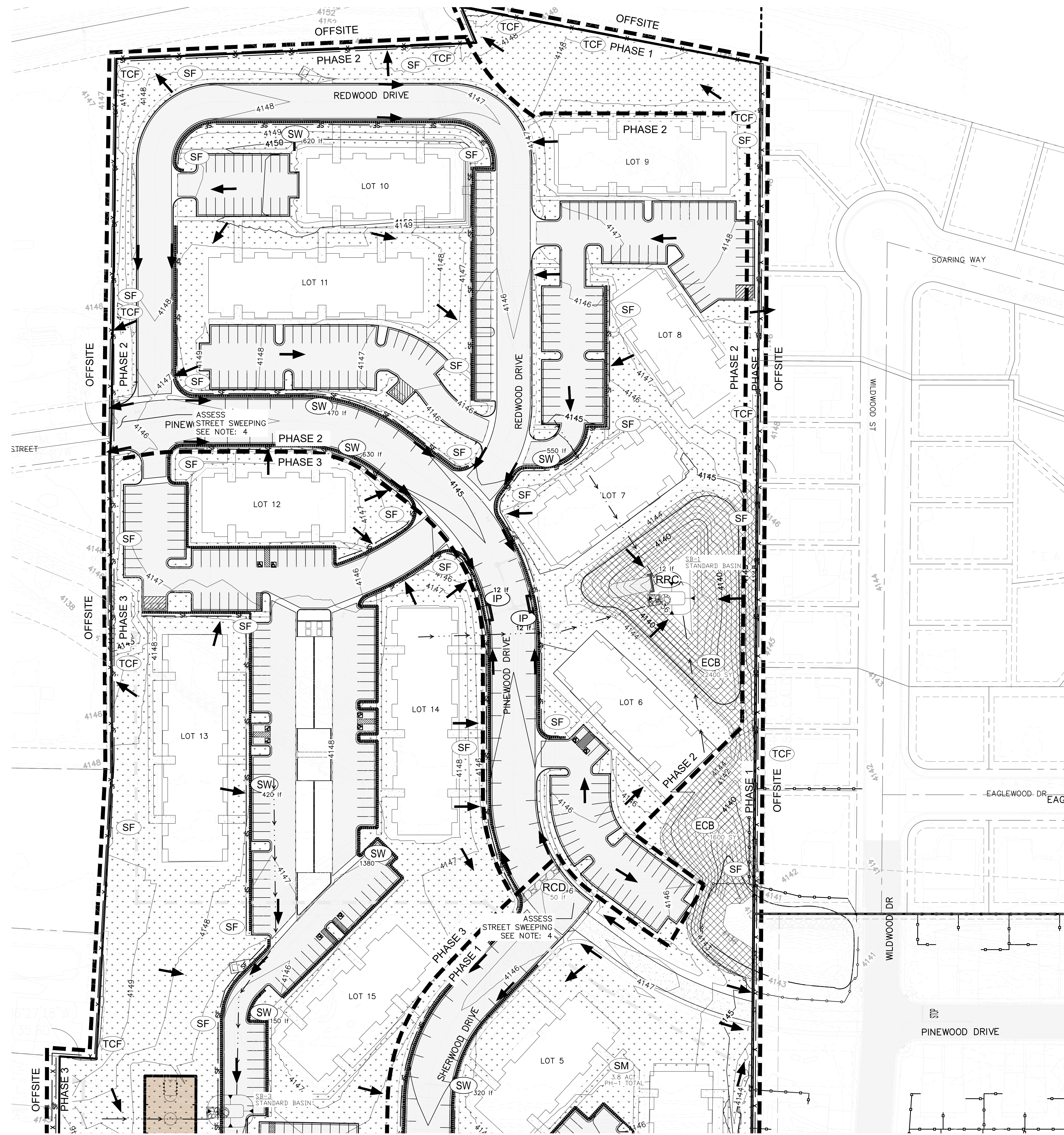
SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021

PROJECT NO.: 21603

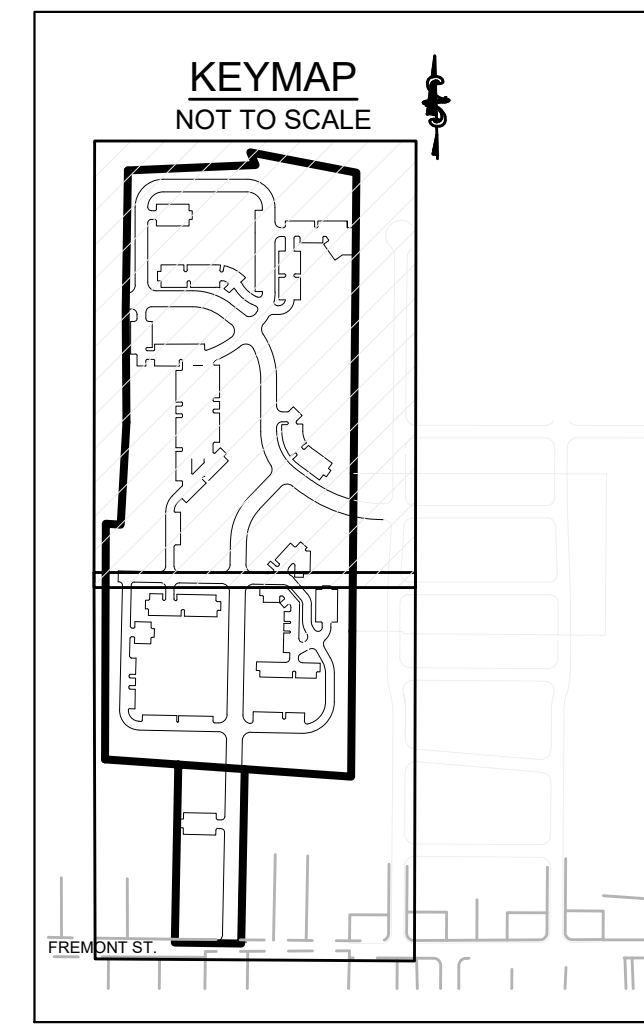
C8

1	PER CITY COMMENTS:	12/02/2023	JD
No.	REVISIONS:	DATE	BY



NOTES

1. ALL GRADING ACTIVITY SHALL COMPLY WITH THE APPROPRIATE NRS AND NAC REGULATIONS REGARDING AIR QUALITY PERMITS AND GRADING.
2. ALL AREAS THAT HAVE BEEN GRADED THAT ARE UNDER CONSTRUCTION SHALL BE WATERED DAILY OR AS NEEDED OR BE TREATED WITH DUST PALLIATIVE.
3. ALL AREAS THAT HAVE BEEN CLEARED OF NATIVE SOIL AND VEGETATION AS A RESULT OF CONSTRUCTION BUT REMAIN UNIMPROVED SHALL BE SEEDED WITH NATIVE VEGETATION AND IRRIGATED WITH TEMPORARY IRRIGATION.



GRADING 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 |
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| | EXISTING EASEMENT LINE |
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| | STORM SEWER W/INLET AND FES |
| | DRAINAGE FLOWLINE |
| | 100-YR FLOOD PLAIN |
| | EXISTING 100-YR FLOOD PLAIN |

SWM LEGEND:

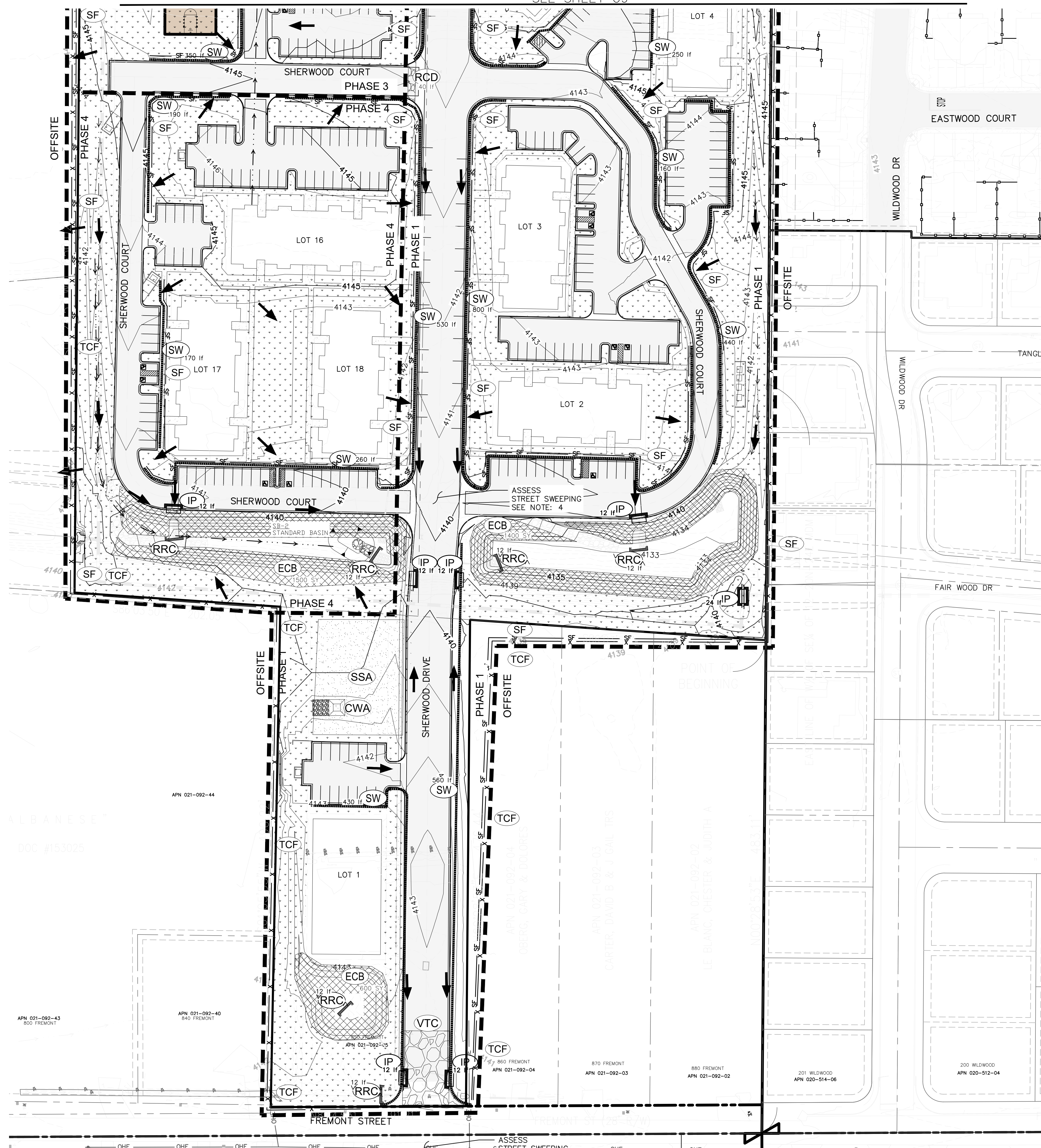
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| (SSA) | | STABILIZED STAGING AREA |
| (VTC) | | VEHICLE TRACKING CONTROL |
| (LOC) | | LIMITS OF CONSTRUCTION |
| (SF) | | SILT FENCE |
| (TCF) | | TEMPORARY CONSTRUCTION FENCE |
| (CM) | | CONSTRUCTION MARKER |
| (CWA) | | CONCRETE WASHOUT AREA |
| (ECB) | | EROSION CONTROL BLANKET |
| (DD) | | DIVERSION DITCH |
| (IP) | | INLET PROTECTION |
| (RRC) | | REINFORCED ROCK BERM FOR CULVERT PROTECTION |
| (SW) | | STRAW WATTLES |
| (SB-B) | | SEDIMENT BASIN |
| (SR) | | SURFACE ROUGHENING |
| (RCD) | | REINFORCED CHECK DAM |
- FLOW ARROW (FINISHED GRADE)

BMP QUANTITIES

BMP	Unit	Quantity
Concrete Washout Area	EA	1
Diversion Ditch	LF	1640
Erosion Control Blanket	SY	7500
Inlet Protection	LF	120
RRB for Culvert Protection	LF	72
Sediment Basin	EA	3
Seeding and Mulching	AC	9
Silt Fence	LF	4000
Stabilized Staging Area	SY	1000
Straw Wattles	LF	8000
Vehicle Tracking Control	EA	1

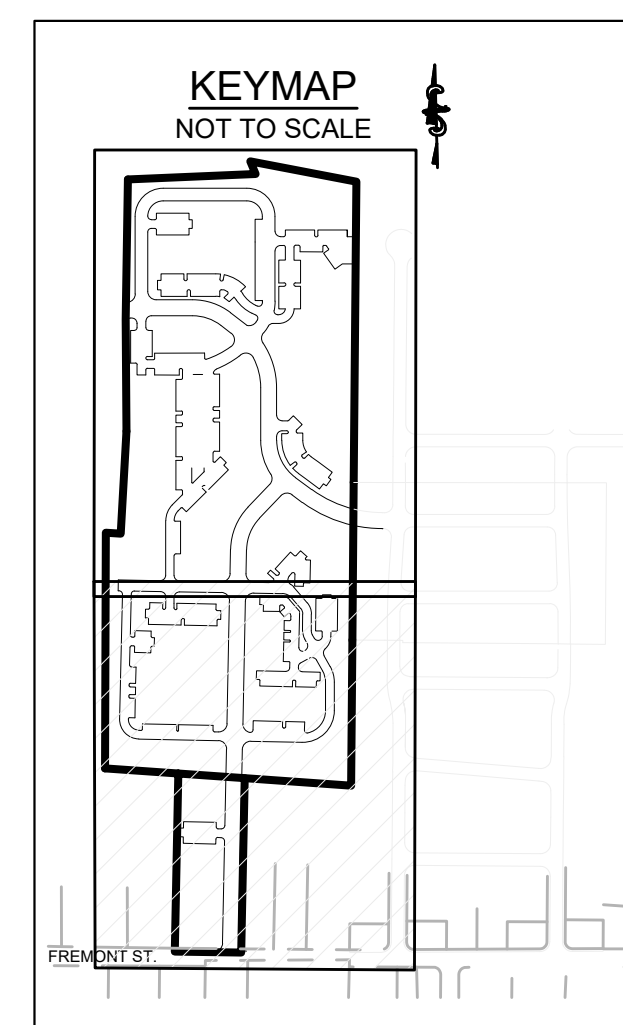
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SEE SHEET C9



NOTES

1. ALL GRADING ACTIVITY SHALL COMPLY WITH THE APPROPRIATE NRS AND NAC REGULATIONS REGARDING AIR QUALITY PERMITS AND GRADING.
2. ALL AREAS THAT HAVE BEEN GRADED THAT ARE UNDER CONSTRUCTION SHALL BE WATERED DAILY OR AS NEED OR BE TREATED WITH DUST PALLIATIVE.
3. ALL AREAS THAT HAVE BEEN CLEARED OF NATIVE SOIL AND VEGETATION AS A RESULT OF CONSTRUCTION BUT REMAIN UNIMPROVED SHALL BE SEEDED WITH NATIVE VEGETATION AND IRRIGATED WITH TEMPORARY IRRIGATION.



GRADING LEGEND:

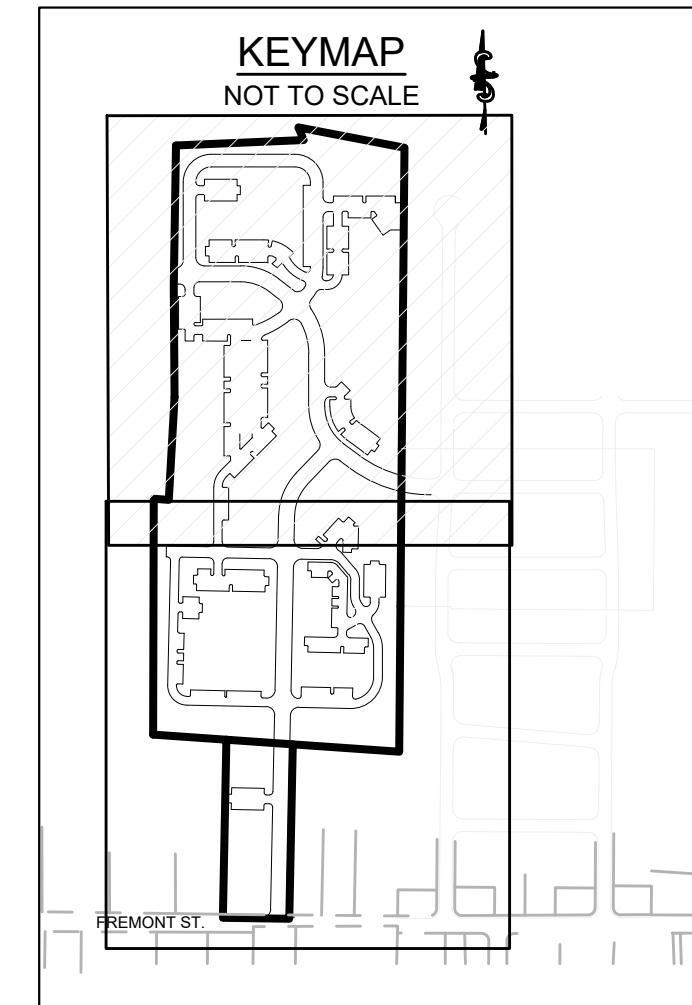
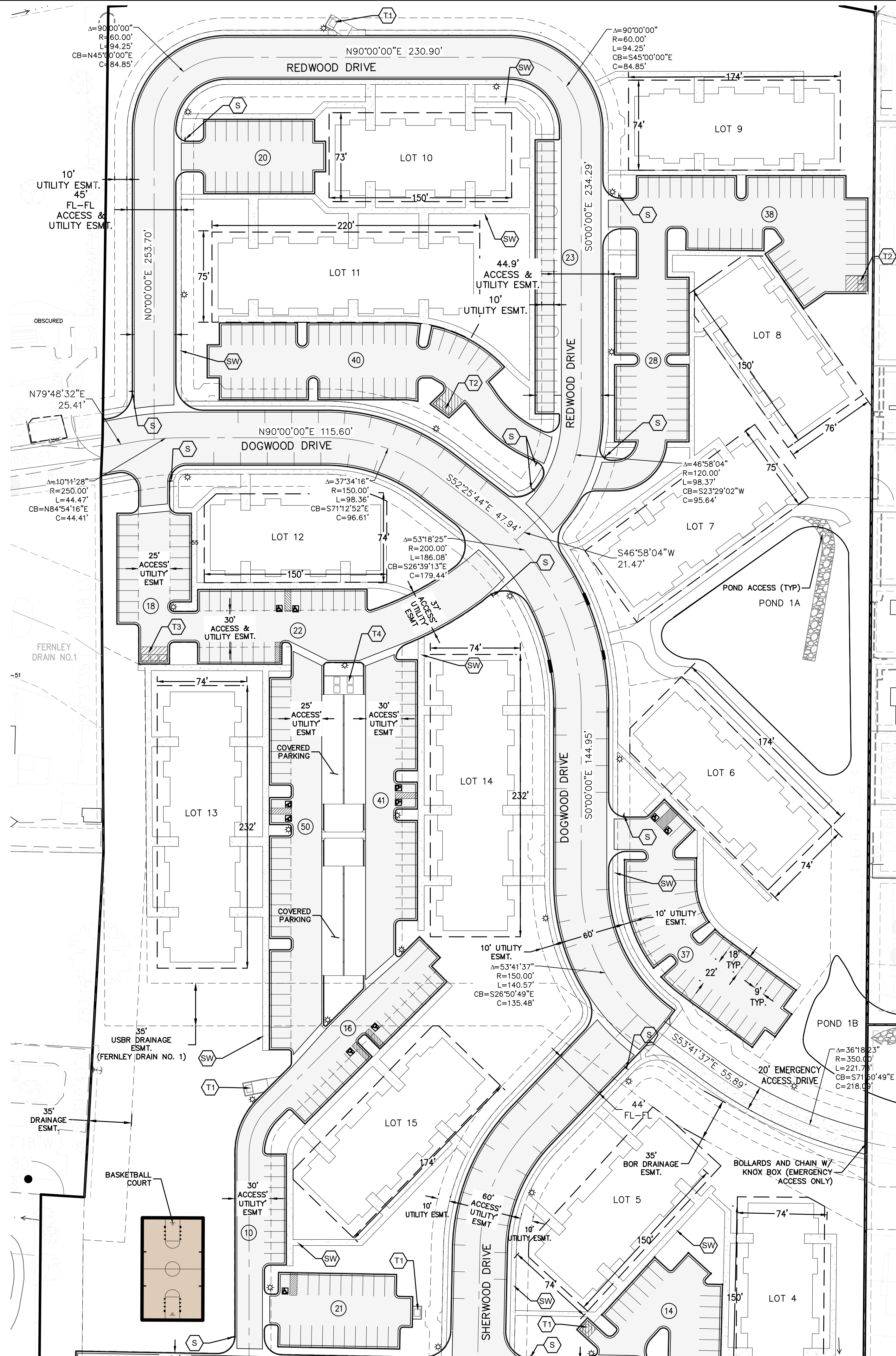
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- 8600 ————— EXISTING CONTOURS
- 8600 ————— PROPOSED CONTOURS
- LOT LINE
- SETBACK LINE
- RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- EXISTING BOUNDARY LINE
- EXISTING SECTION LINE
- TRACT
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ALIGNMENT CENTER LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- ===== PROPOSED CURB & GUTTER
- 5' ————— STORM SEWER WIN/LET AND FES
- ← DRAINAGE FLOWLINE
- 100-YR FLOOD PLAIN
- EXISTING 100-YR FLOOD PLAIN

SWM LEGEND:

- | | | |
|------------------------------------|--|--|
| SSA | | STABILIZED STAGING AREA |
| VTC | | VEHICLE TRACKING CONTROL |
| LOC | | LIMITS OF CONSTRUCTION |
| SF | | SILT FENCE |
| TCF | | TEMPORARY CONSTRUCTION FENCE |
| CW | | CONSTRUCTION MARKER |
| CA | | CONCRETE WASHOUT AREA |
| ECB | | EROSION CONTROL BLANKET |
| DD | | DIVERSION DITCH |
| IP | | INLET PROTECTION |
| RRC | | REINFORCED ROCK BERM FOR CULVERT PROTECTION |
| SW | | STRAW WATTLES |
| SB-B | | SEDIMENT BASIN |
| SR | | SURFACE ROUGHENING |
| RCD | | REINFORCED CHECK DAM |
| FLOW ARROW (FINISHED GRADE) | | |
| SM | | SEEDING AND MULCHING |

BMP QUANTITIES

BMP	Unit	Quantity
Concrete Washout Area	EA	1
Diversion Ditch	LF	1640
Erosion Control Blanket	SY	7500
Inlet Protection	LF	120
RRB for Culvert Protection	LF	72
Sediment Basin	EA	3
Seeding and Mulching	AC	9
Silt Fence	LF	4000
Stabilized Staging Area	SY	1000
Straw Wattles	LF	8000
Vehicle Tracking Control	EA	1



KEY MAP
N.T.S.

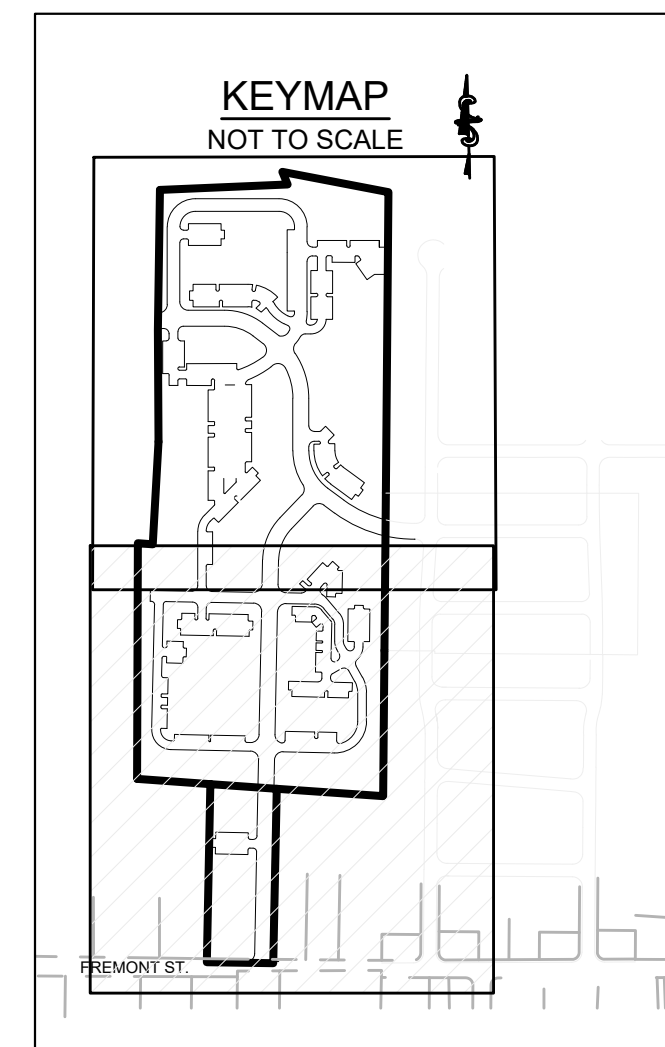
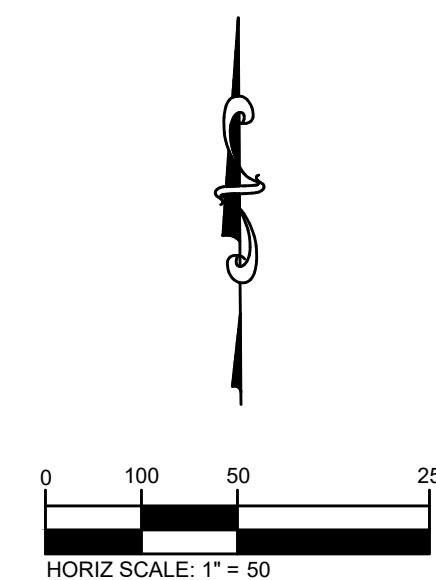
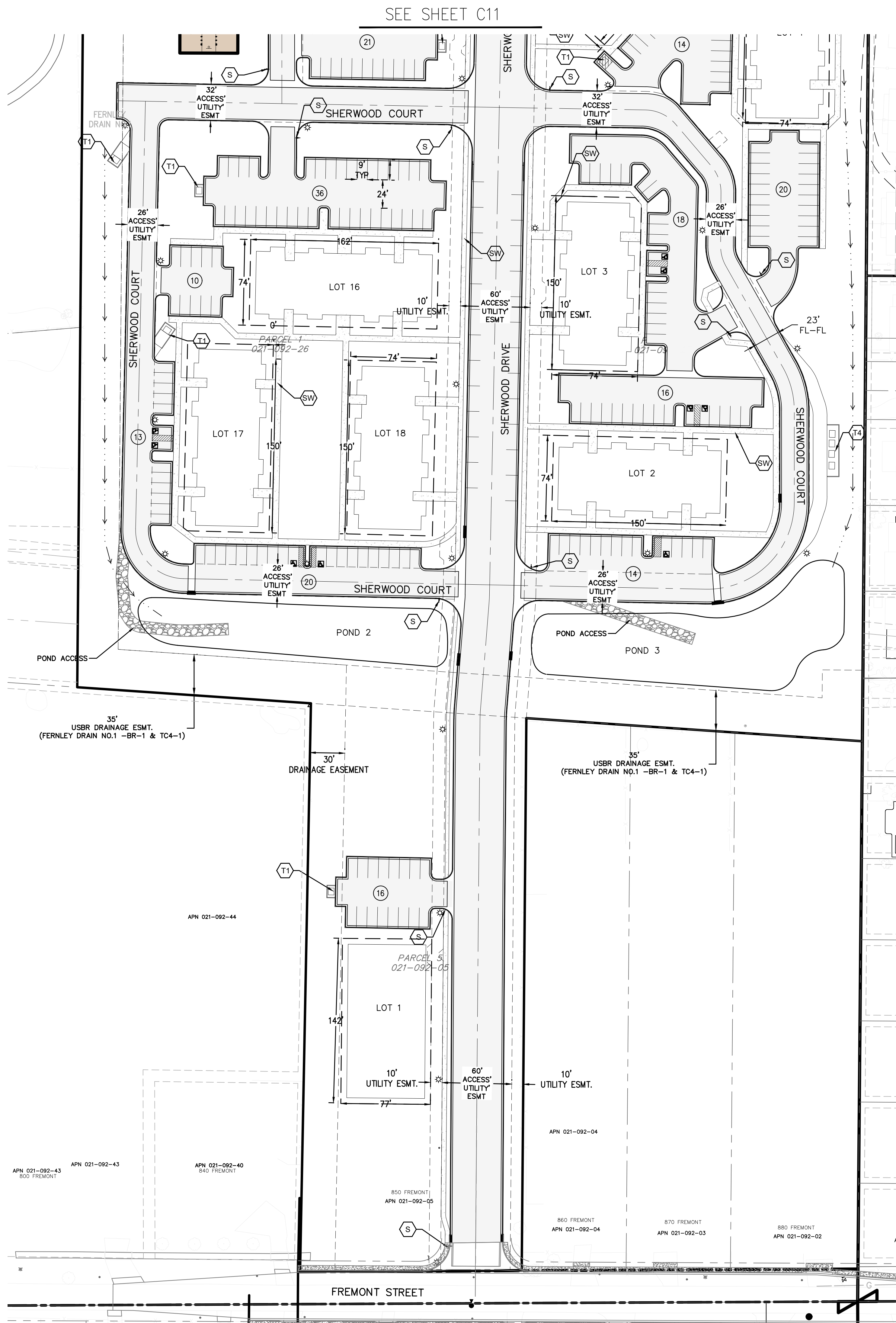
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| | EXISTING SECTION LINE |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ROAD CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | TRACT |
| | EDGE OF PAVEMENT |
| | CURB & GUTTER |
| | DRAINAGE FLOWLINE |
| | STORM SEWER
WINLET AND FES |
| | 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 |
| | PROPOSED LIGHT POLE |
| | BUILDING LOT/SETBACK |

NOTES:
MINIMUM COVER ON SANITARY SEWER IS 3.5' UNLESS
PREVIOUSLY APPROVED BY DESIGN ENGINEER AND CITY OF
FERNLEY.
PVC PIPE FOR WATER DISTRIBUTION SHALL BE IN
CONFORMANCE WITH 8" DIAMETER AWWA C900.
PVC PIPE FOR SANITARY SEWER SHALL BE 8" SDR 35
UNLESS OTHERWISE NOTED.
REFER TO CITY OF FERNLEY STANDARD NOTES ON SHEET 2
FOR ADDITIONAL INFORMATION.

SITE KEY NOTES:

- | | | | |
|----|---|----|----------------------------|
| 4 | 4-FT WIDE SIDEWALK | 13 | TRASH ENCLOSURE & QUANTITY |
| 5 | STOP SIGN (R1-1) AND STREET SIGN LOCATION | | |
| 20 | PARKING COUNT | | |



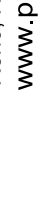
UTILITY LEGEND:

- | | |
|--|---|
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| | LOT LINE |
| | RIGHT-OF-WAY |
| | 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
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| | EXISTING WATER LINE W/FIRE
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| | 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 |
| | PROPOSED LIGHT POLE |
| | BUILDING LOT/SETBACK |

MINIMUM COVER ON SANITARY SEWER IS 3.5' UNLESS
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VC PIPE FOR WATER DISTRIBUTION SHALL BE IN
CONFORMANCE WITH 8" DIAMETER AWWA C900.
VC PIPE FOR SANITARY SEWER SHALL BE 8" SDR 35
UNLESS OTHERWISE NOTED.
REFER TO CITY OF FERNLEY STANDARD NOTES ON SHEET 2
OR ADDITIONAL INFORMATION.

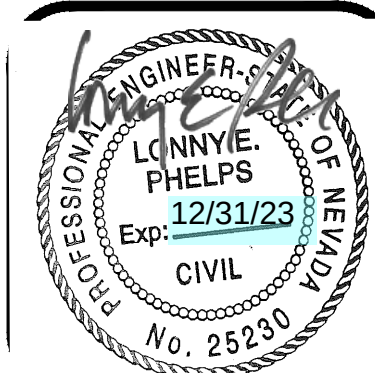
SITE KEY NOTES:

- | | | | |
|----|---|----|----------------------------|
| 4W | 4-FT WIDE SIDEWALK | 17 | TRASH ENCLOSURE & QUANTITY |
| 5 | STOP SIGN (R1-1) AND STREET SIGN LOCATION | | |
| 20 | PARKING COUNT | | |



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Know what's below.
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DRAWN BY: NW

CHECKED BY: LEP

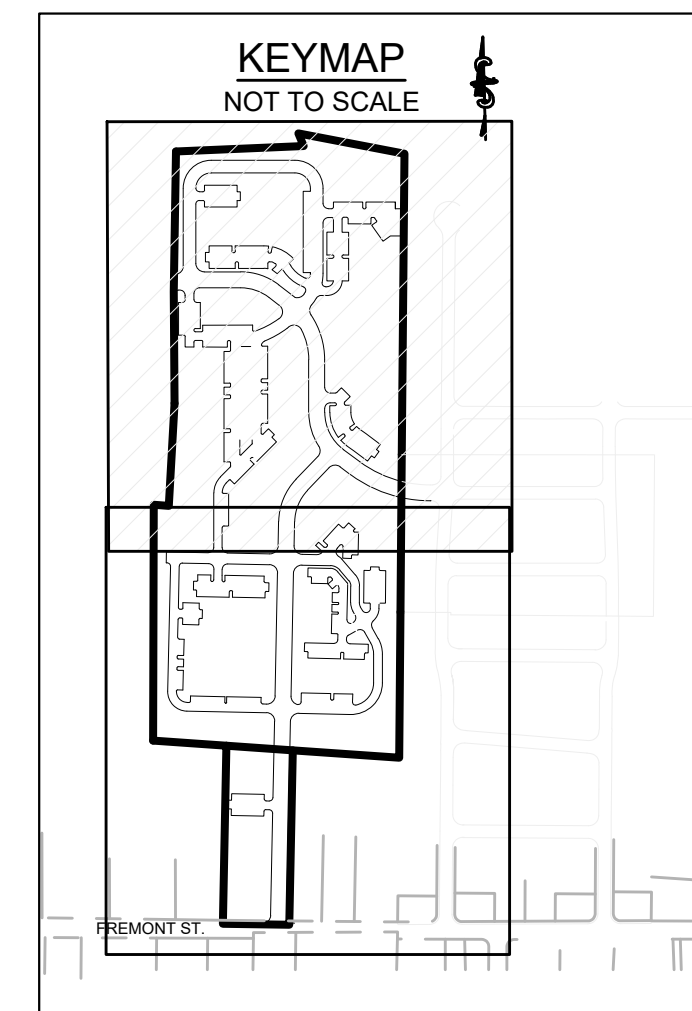
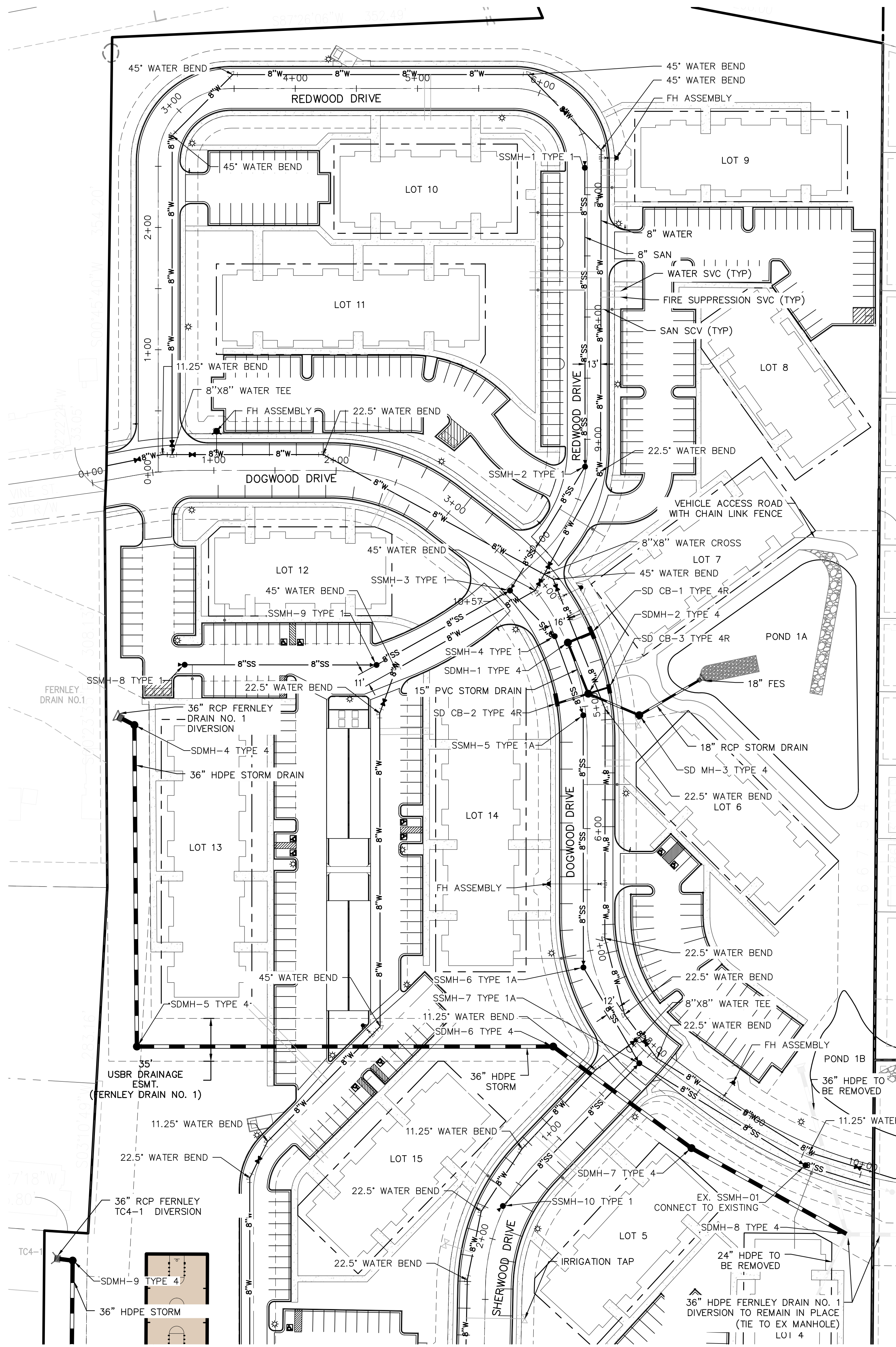
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SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

11/24/2021

PROJECT NO.: 21603

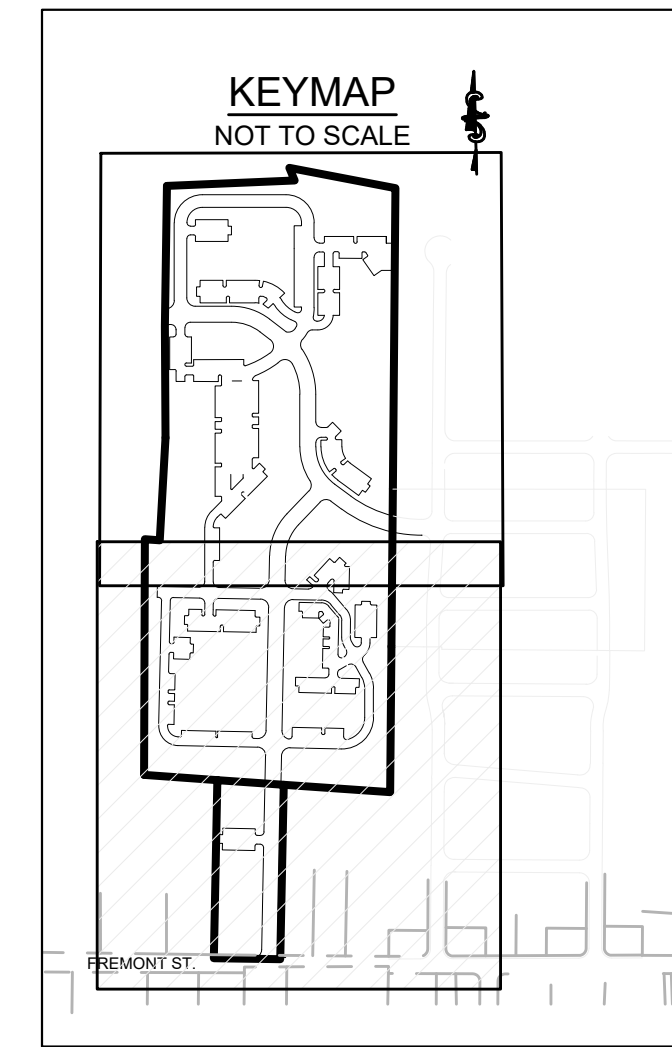
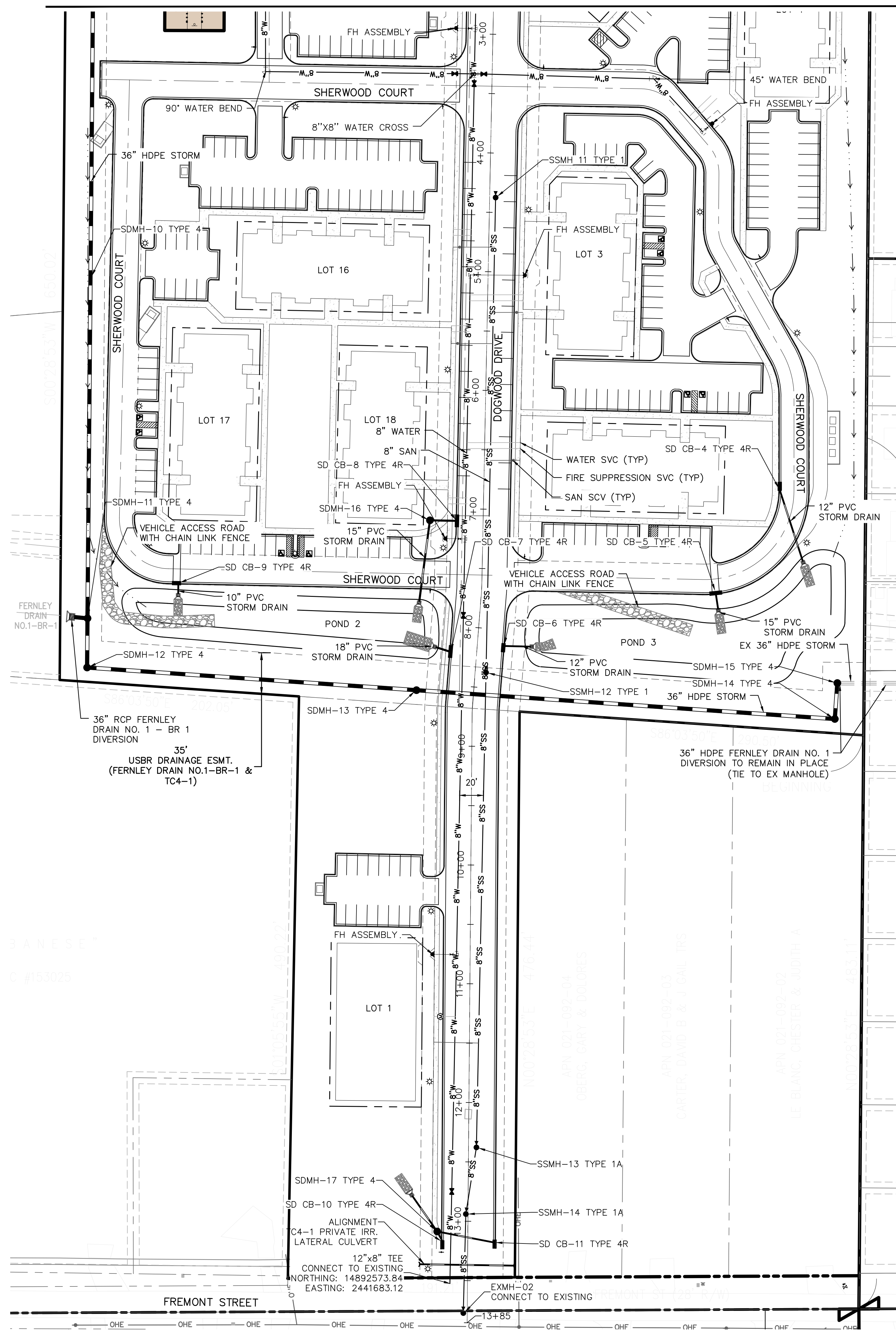
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- | | |
|--|---|
| | PROPERTY LINE |
| | LOT LINE |
| | RIGHT-OF-WAY |
| | EXISTING RIGHT-OF-WAY |
| | EXISTING SECTION LINE |
| | EASEMENT LINE |
| | EXISTING EASEMENT LINE |
| | ROAD CENTER LINE |
| | EXISTING ROAD CENTER LINE |
| | TRACT |
| | EDGE OF PAVEMENT |
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| | EXISTING WATER LINE W/FIRE
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| | EXISTING OVERHEAD ELECTRIC |
| | EXISTING ELECTRIC |
| | ELECTRIC LINE |
| | EXISTING POWER / LIGHT POLE |
| | PROPOSED LIGHT POLE |

- NOTES:
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- PVC PIPE FOR WATER DISTRIBUTION SHALL BE IN CONFORMANCE WITH 8" DIAMETER AWWA C900.
- PVC PIPE FOR SANITARY SEWER SHALL BE 8" SDR 35 UNLESS OTHERWISE NOTED.
- REFER TO CITY OF FERNLEY STANDARD NOTES ON SHEET 2 FOR ADDITIONAL INFORMATION.
- FOR MULTI-FAMILY STRUCTURES WILL BE METERED AT THE BUILDING.

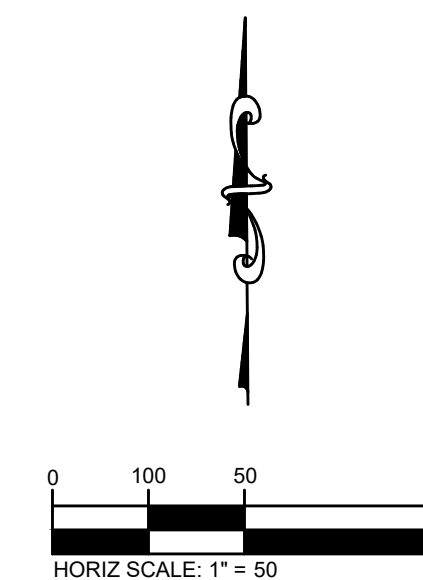
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UTILITY LEGEND:

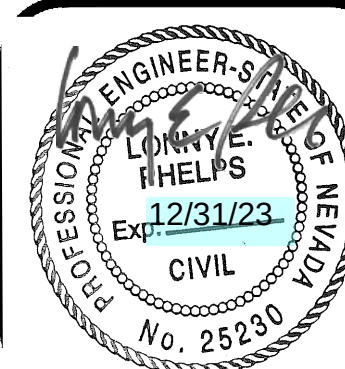
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| | WATER LINE W/FIRE HYDRANT AND
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- WATER FOR MULTI-FAMILY STRUCTURES WILL BE METERED AT THE BUILDING

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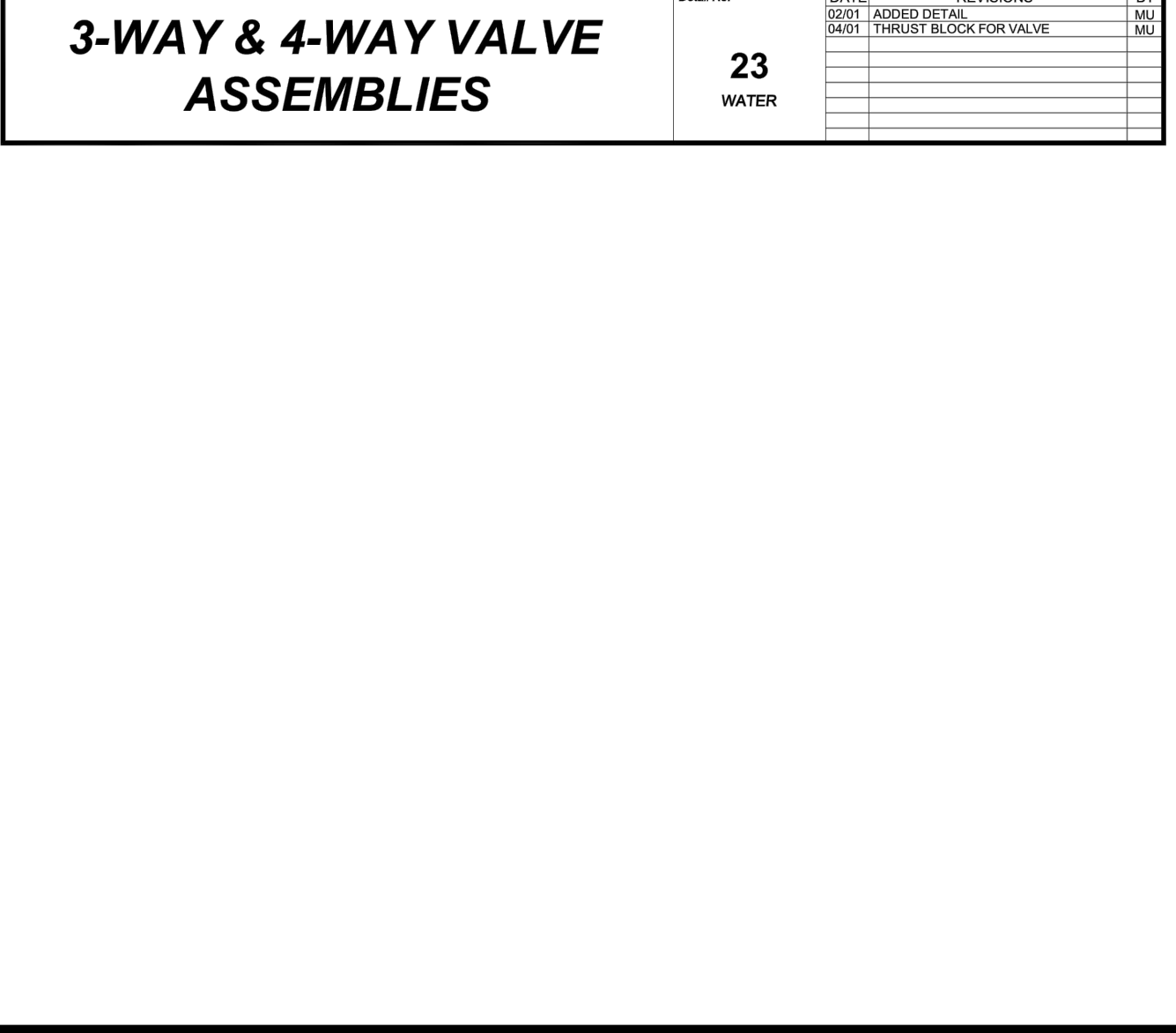
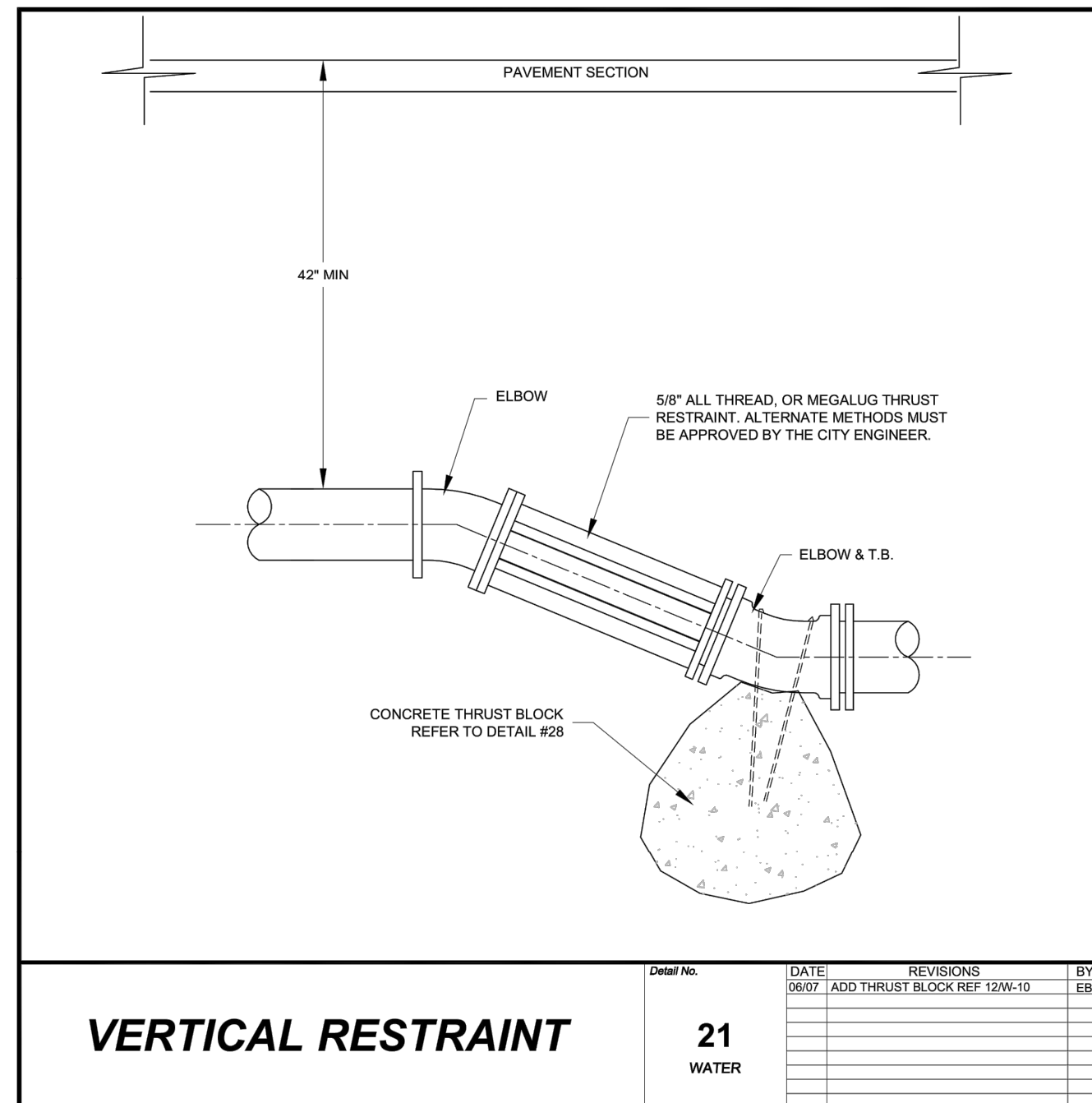
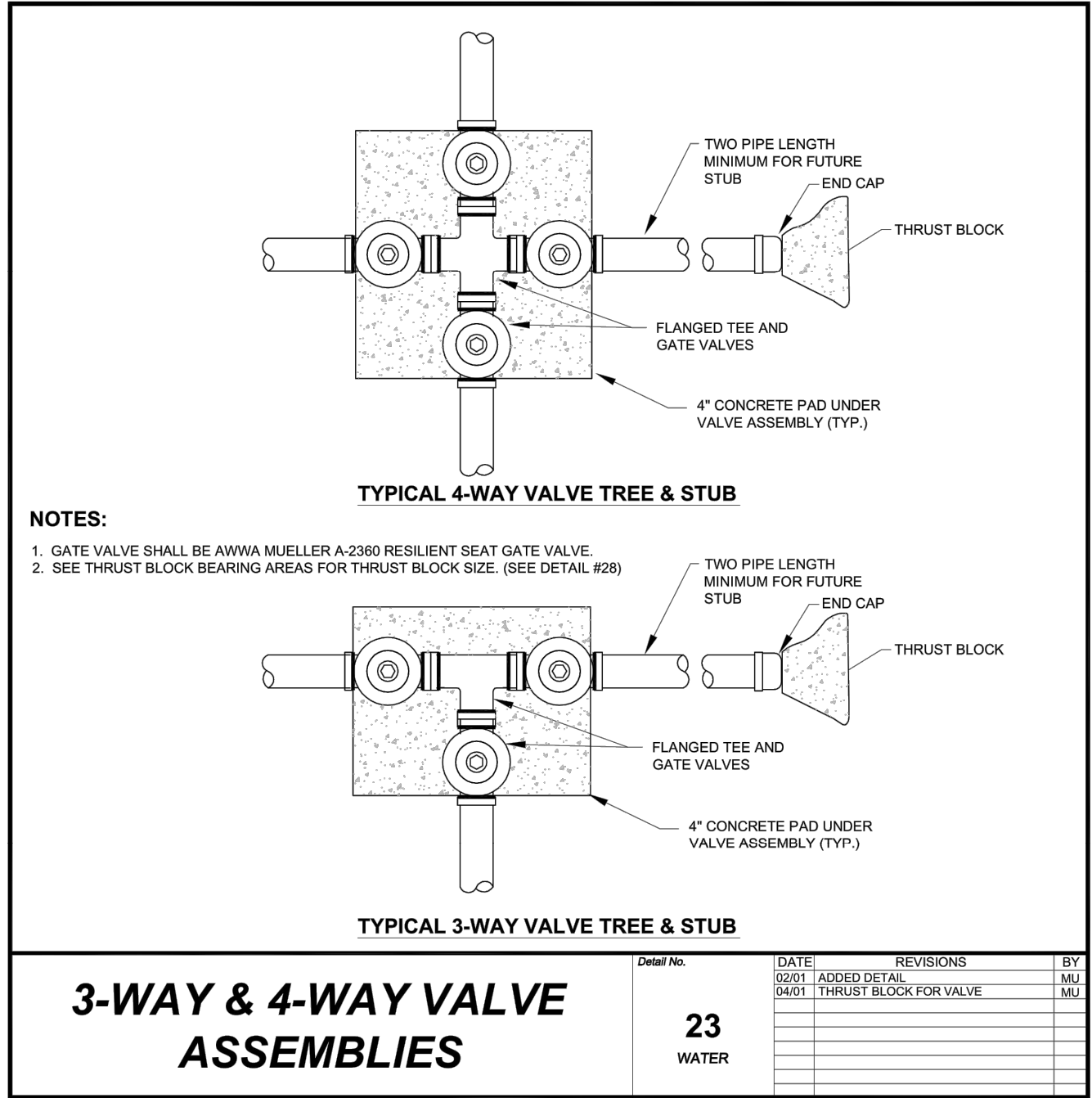
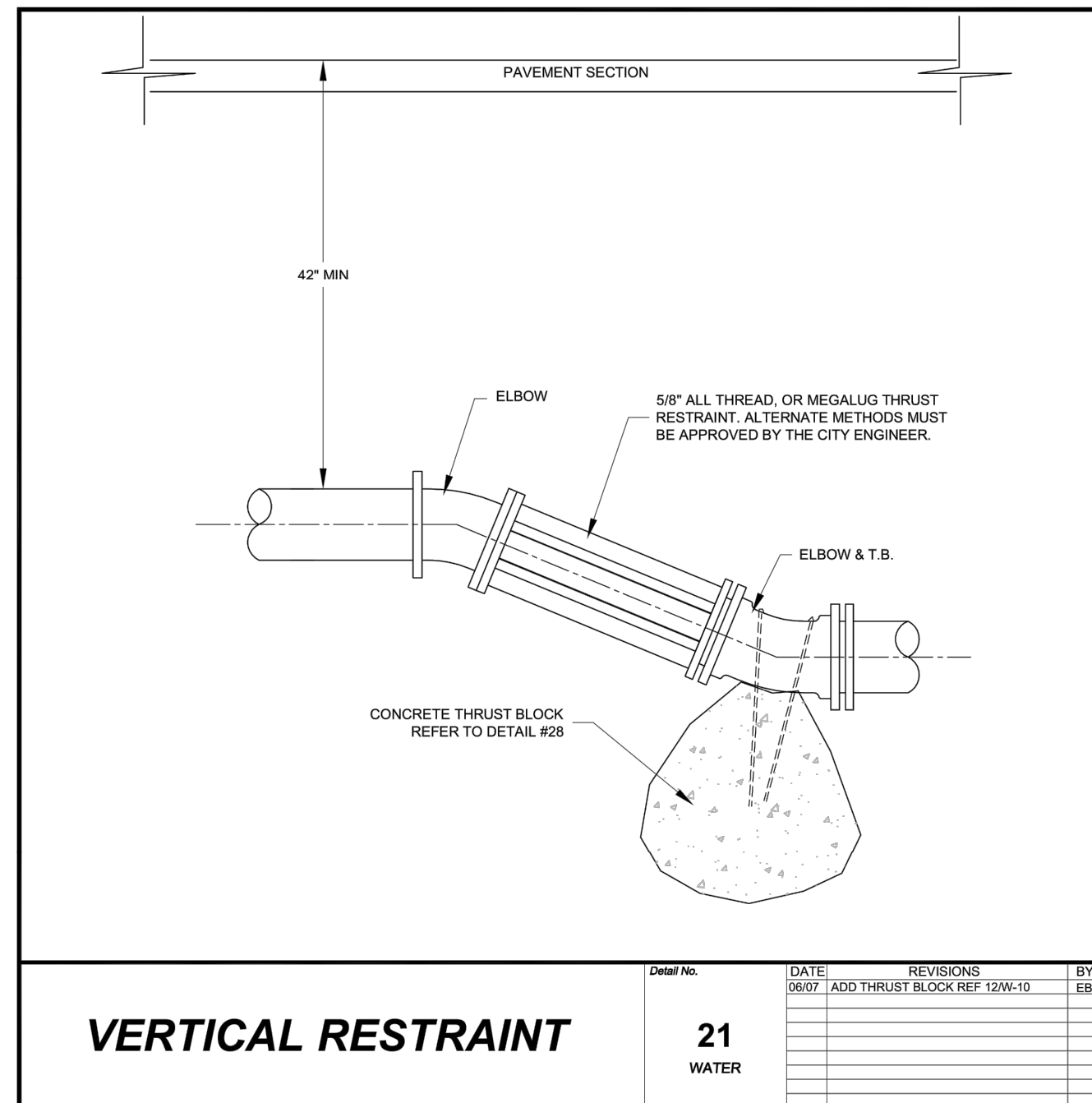
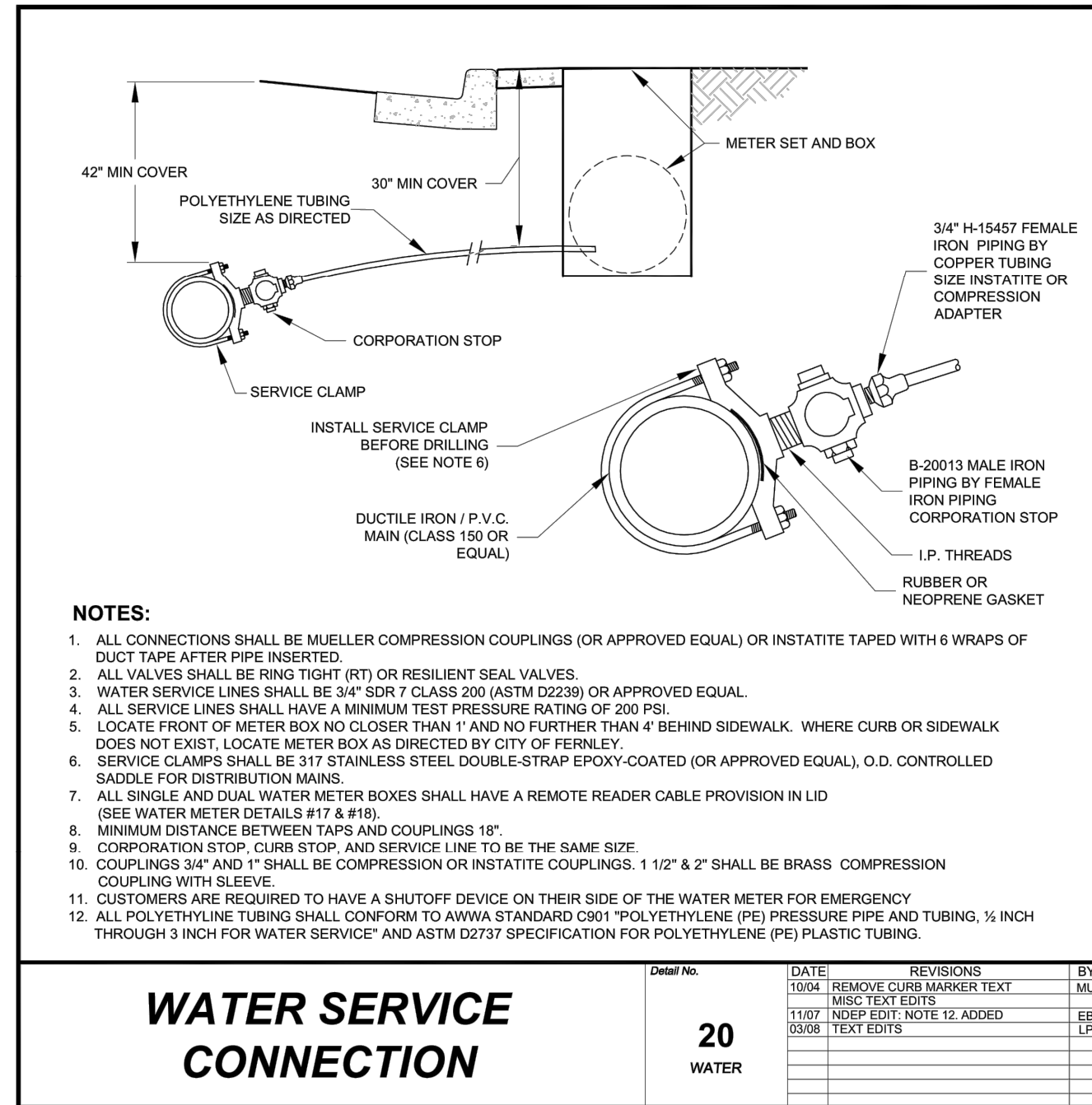
UTILITY PLAN 2

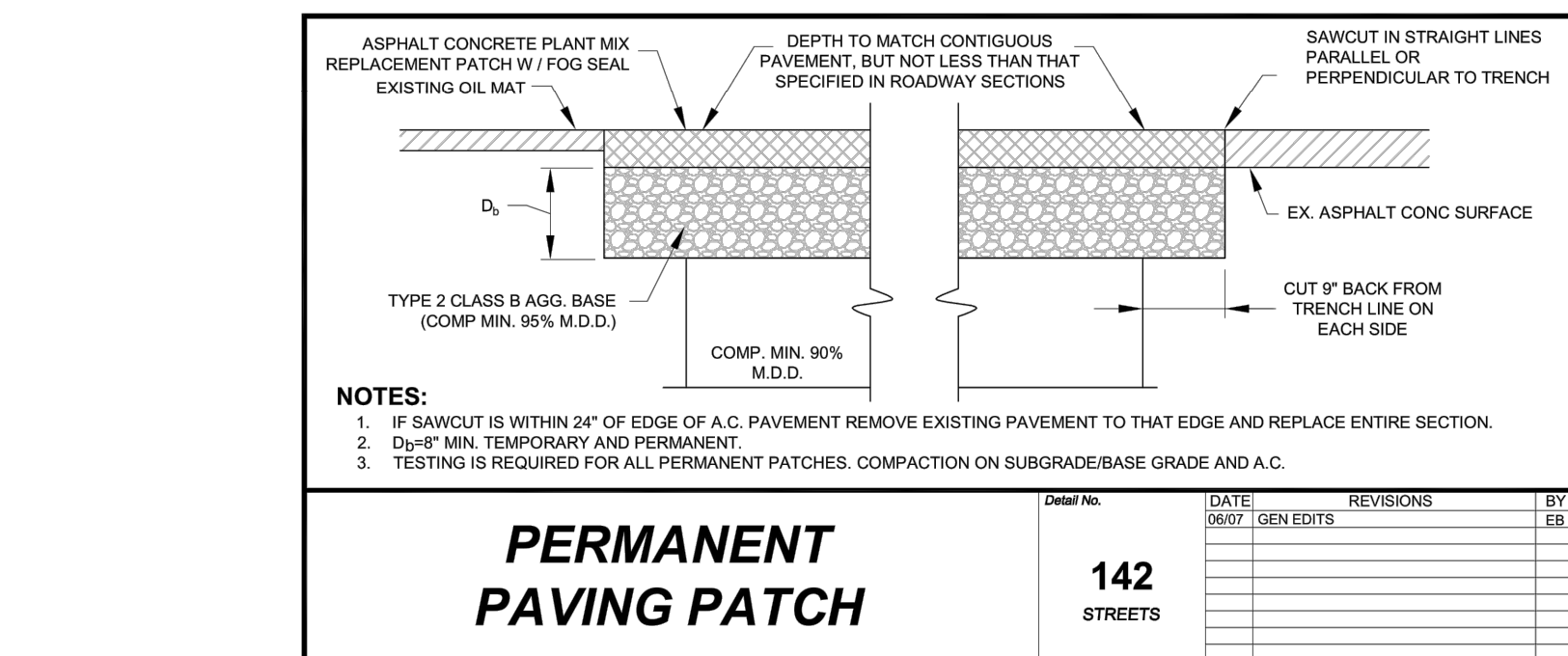
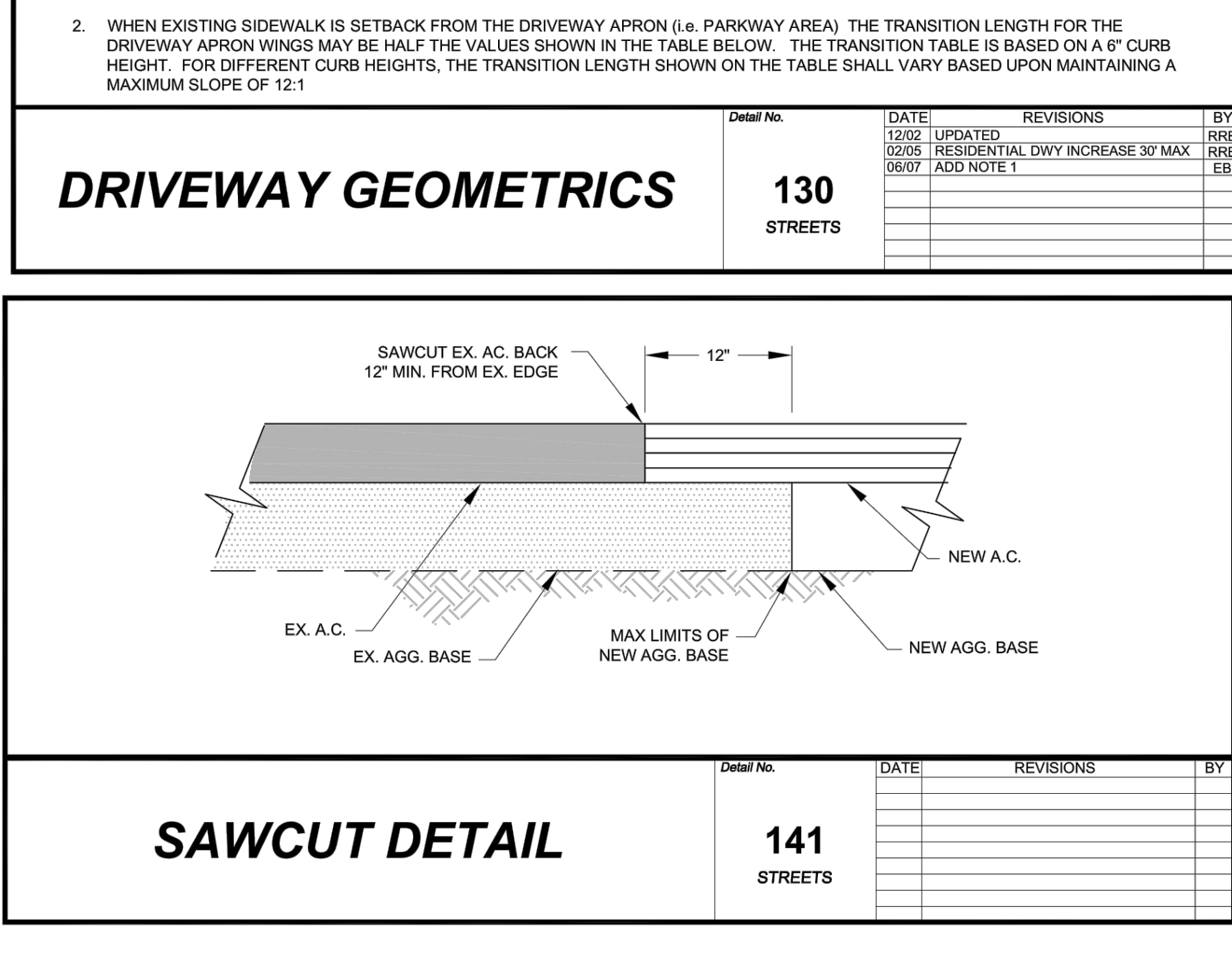
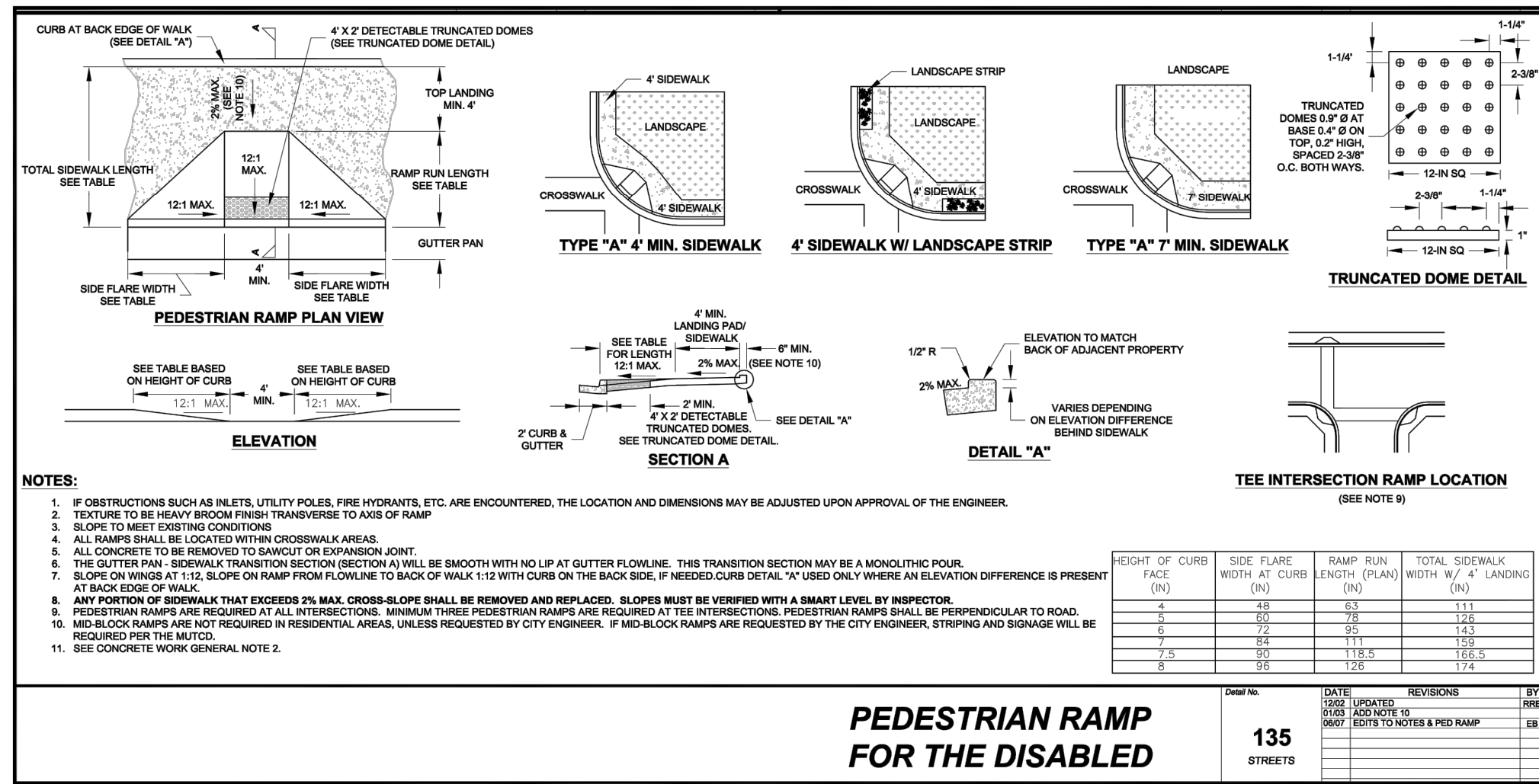
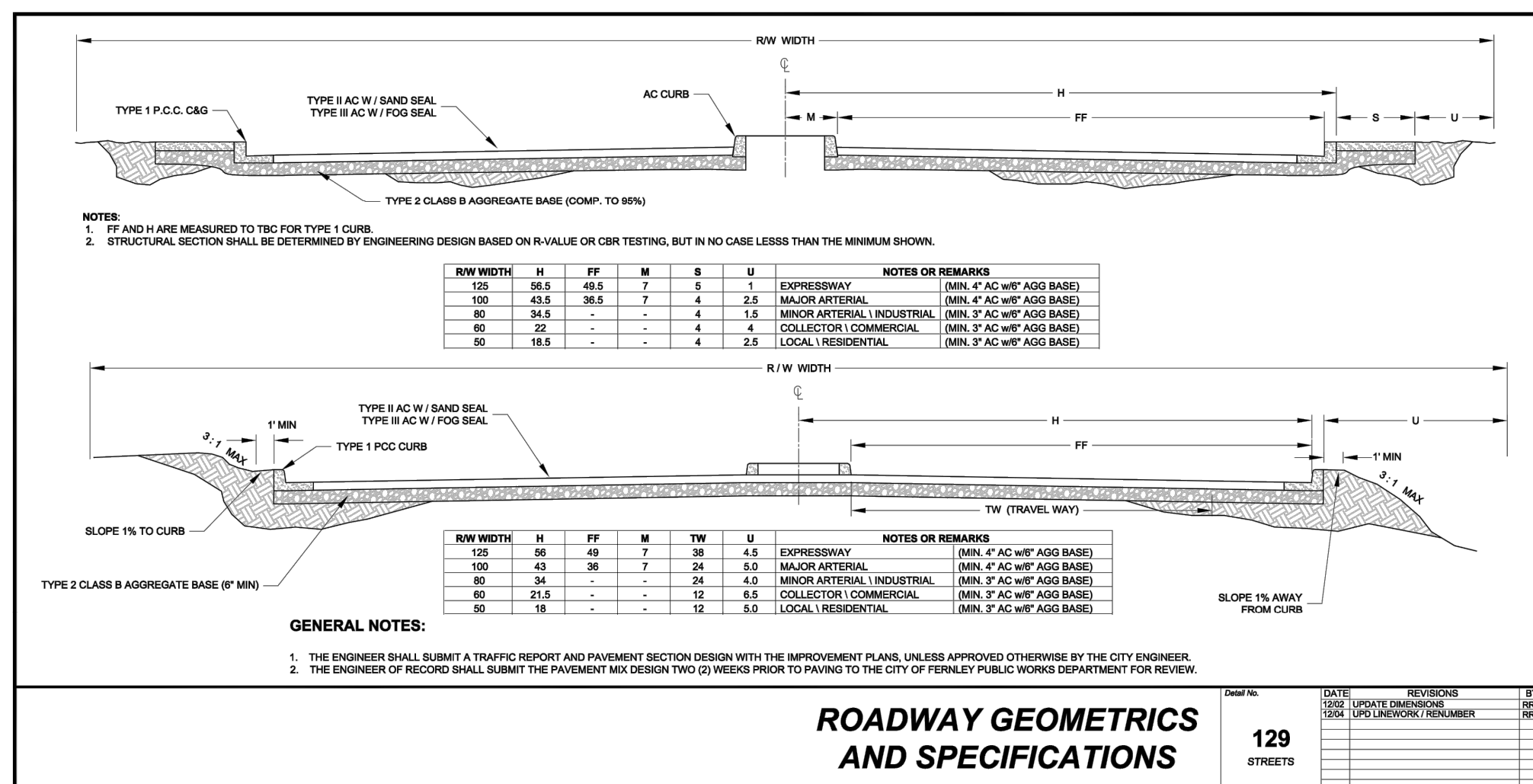
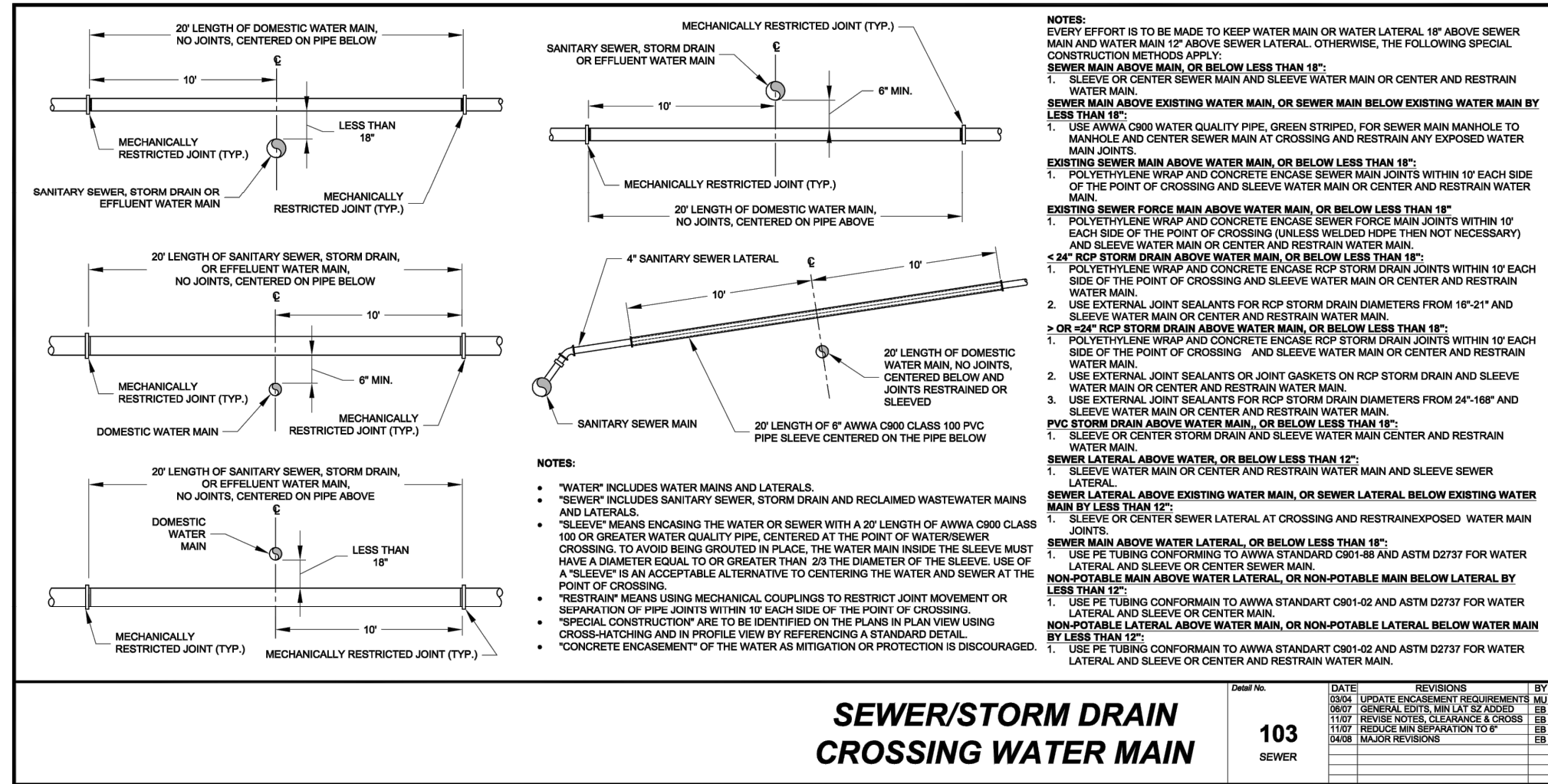
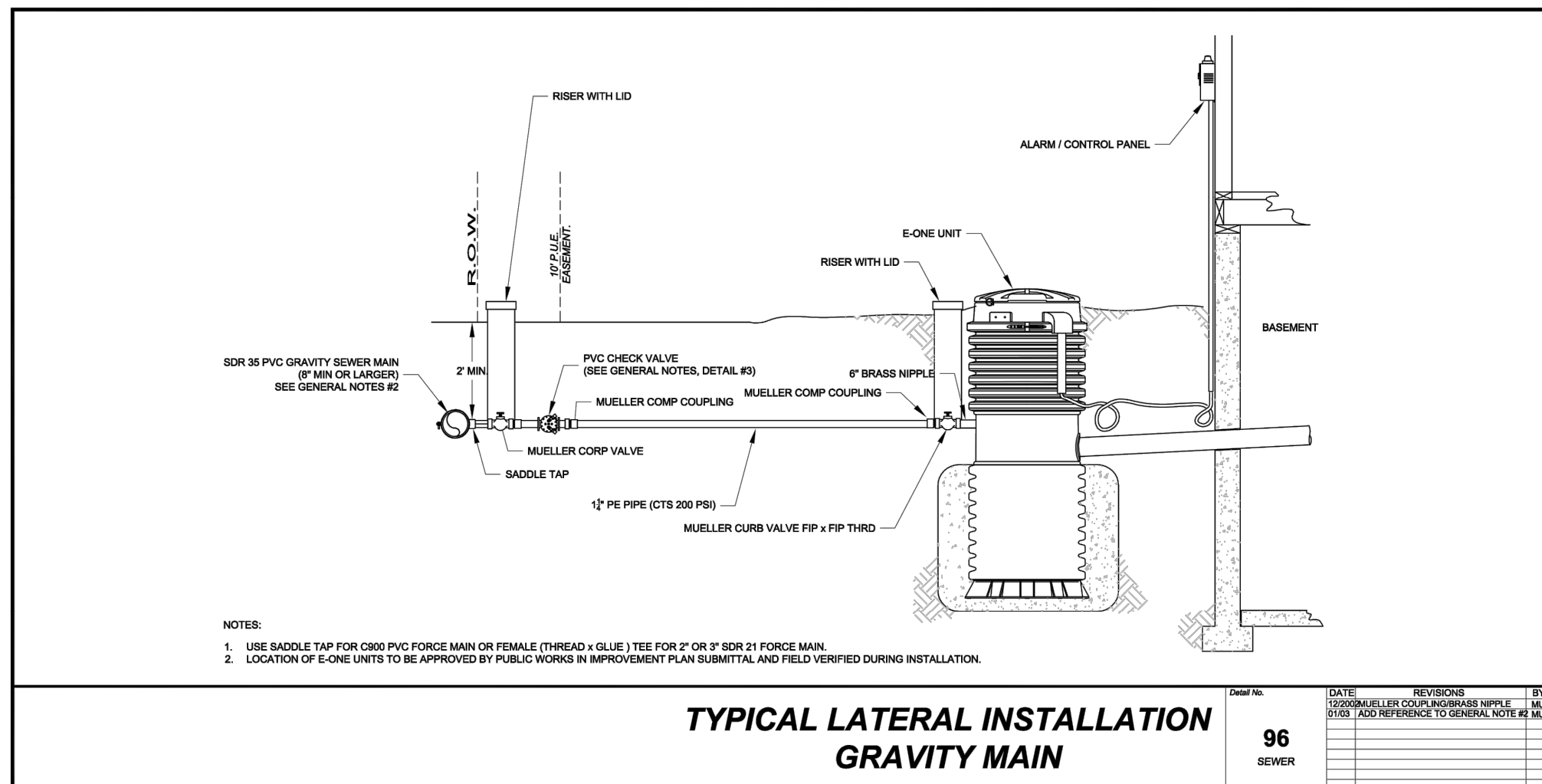
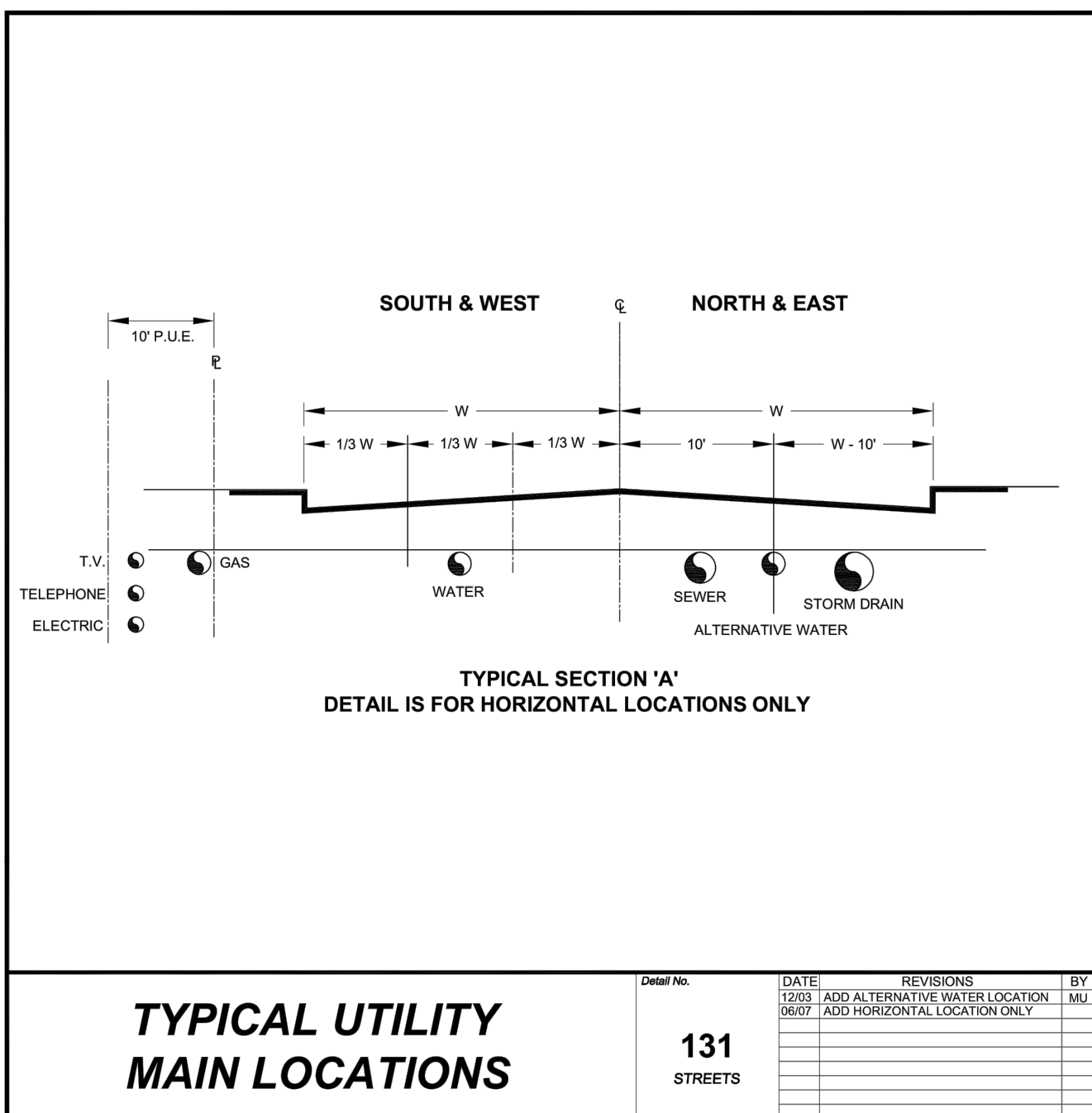
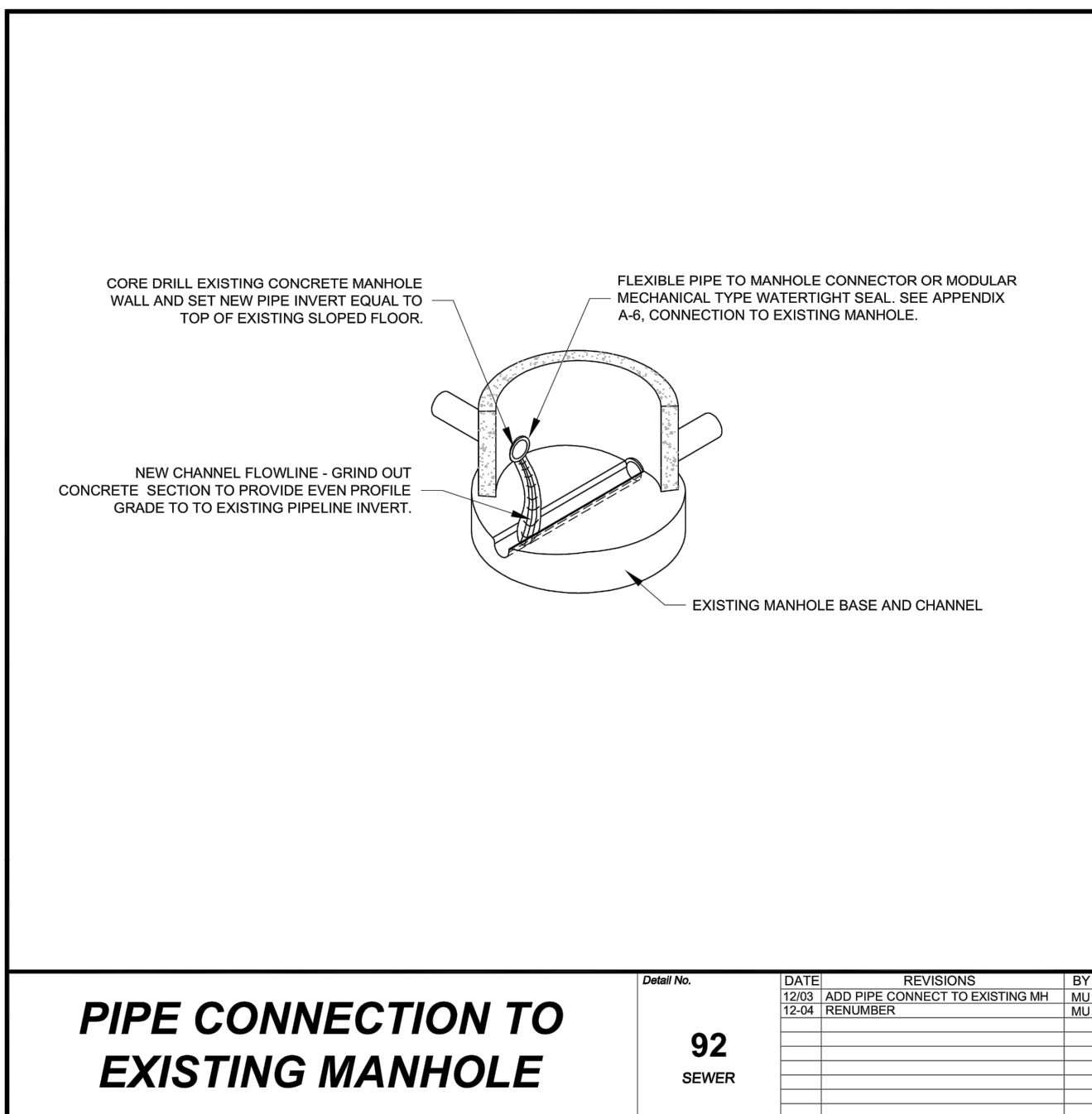
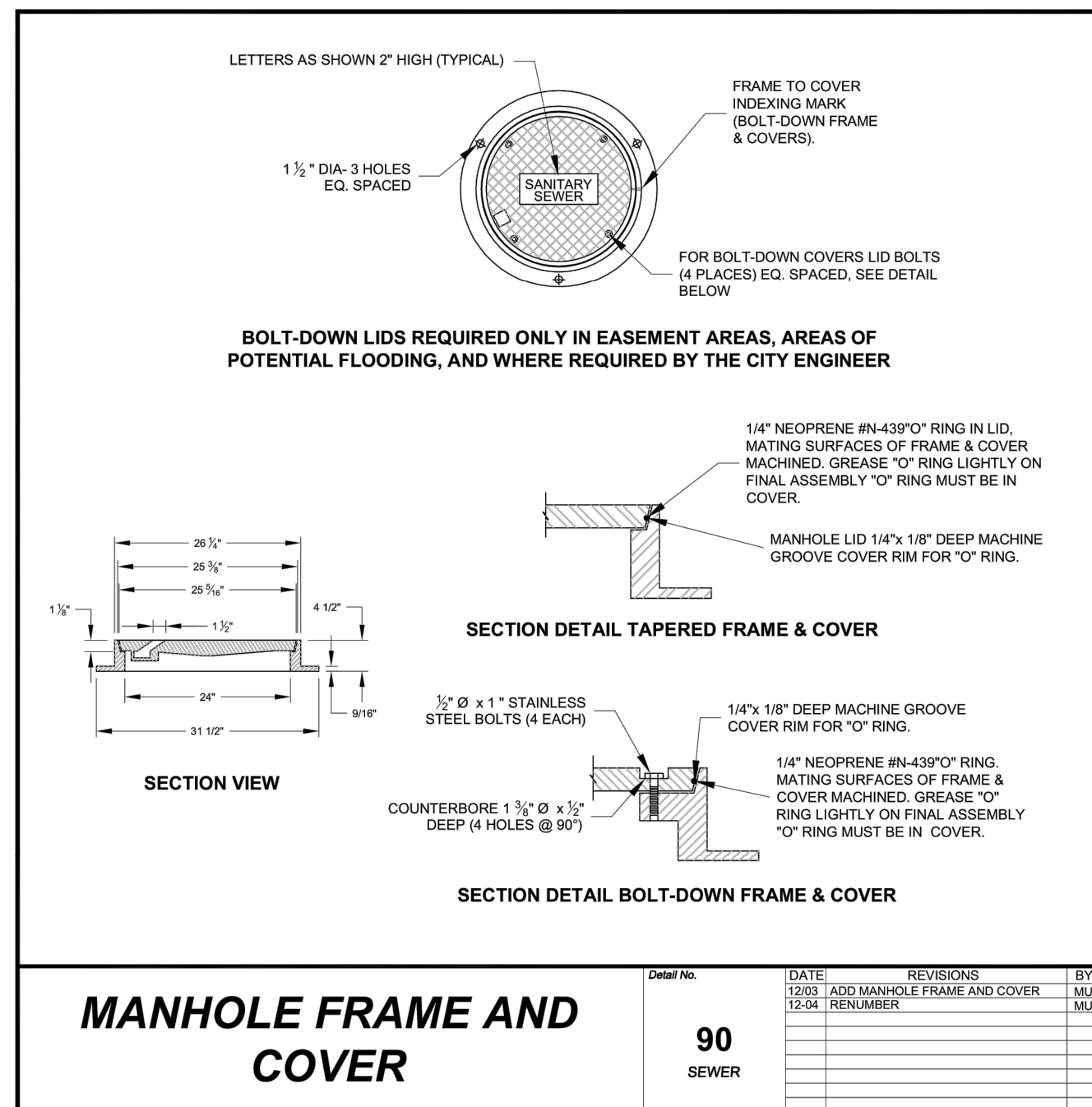
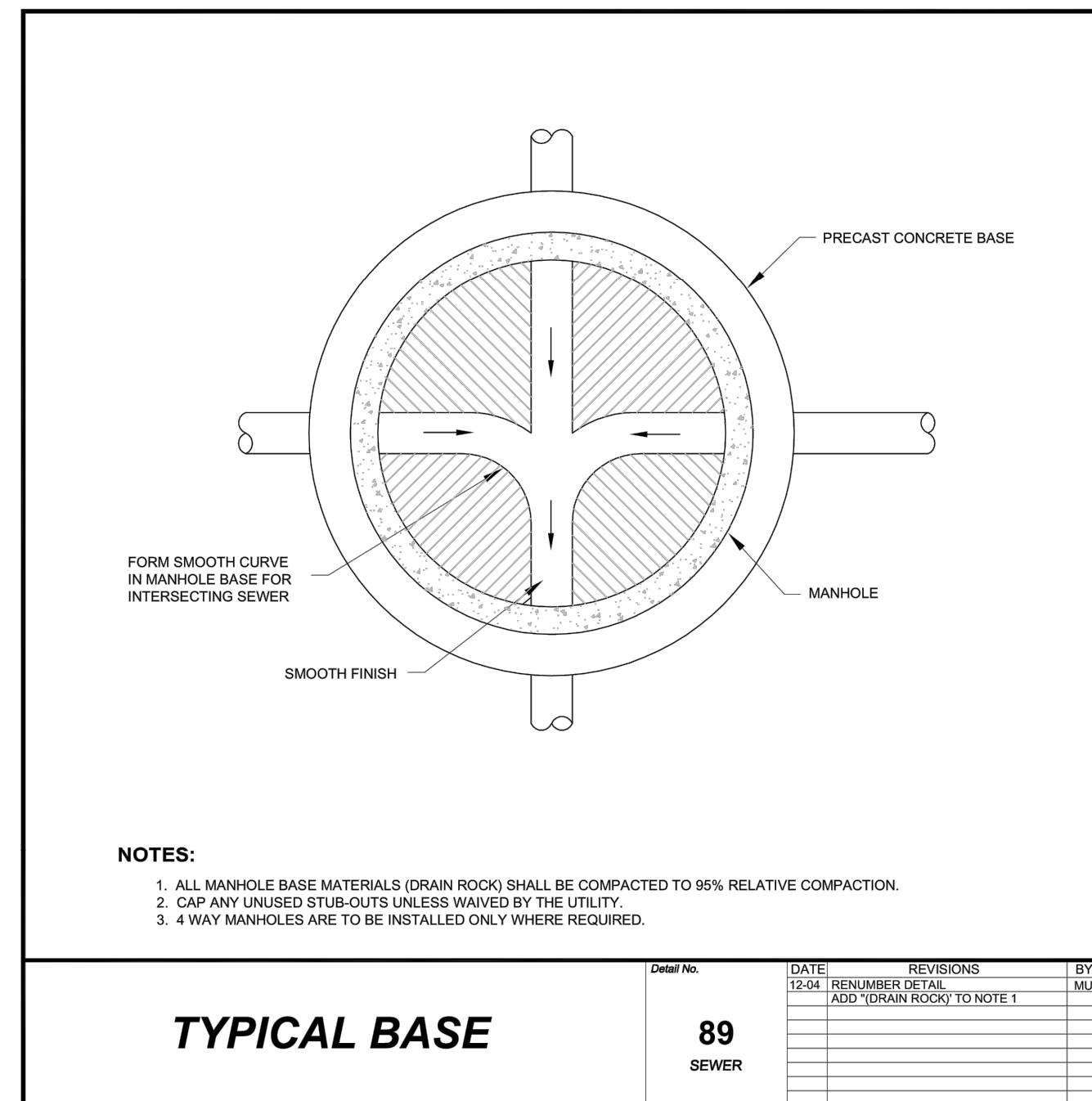
SHERWOOD VILLAGES
TENTATIVE SUBDIVISION MAP
LYON COUNTY
FERNLEY, NEVADA

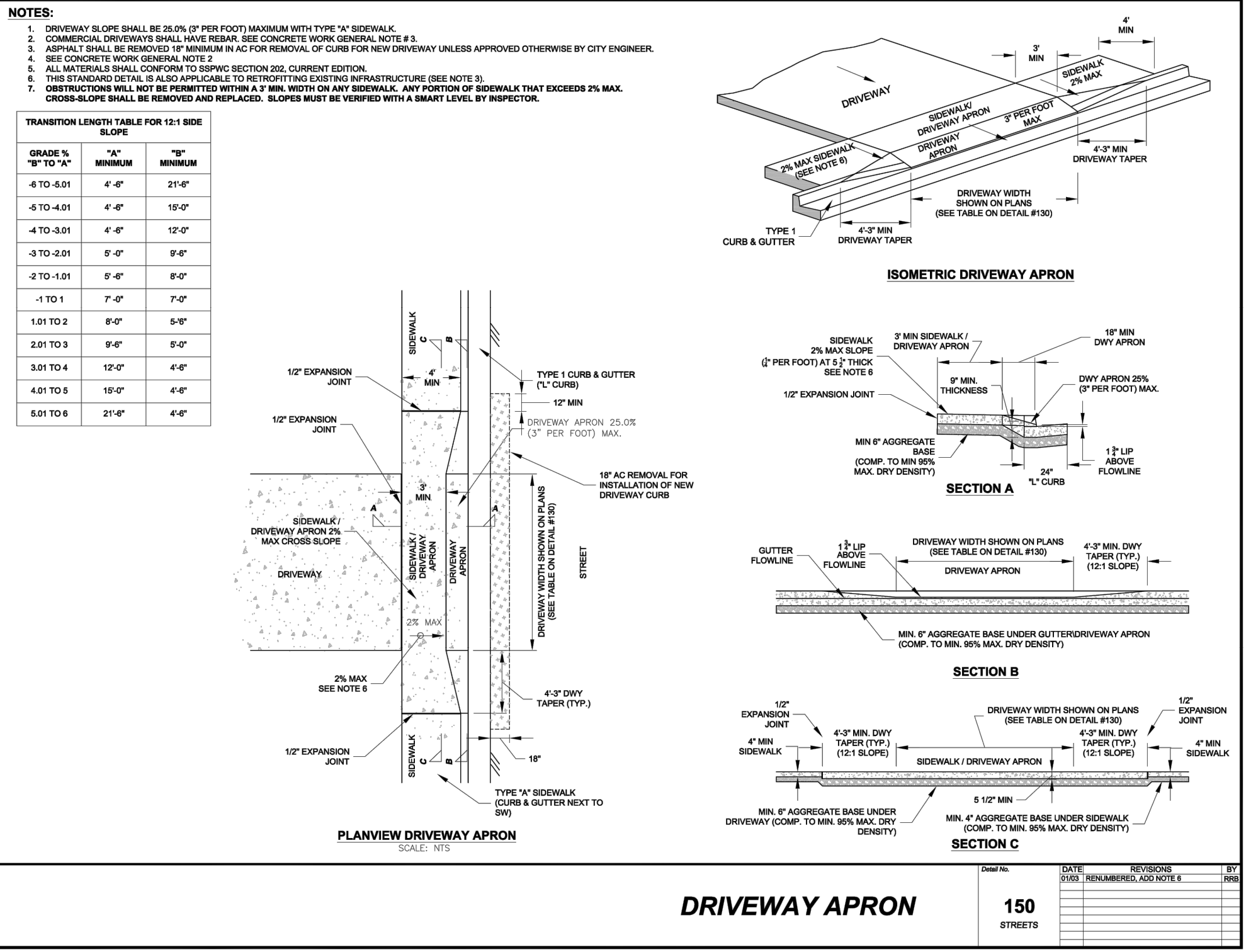
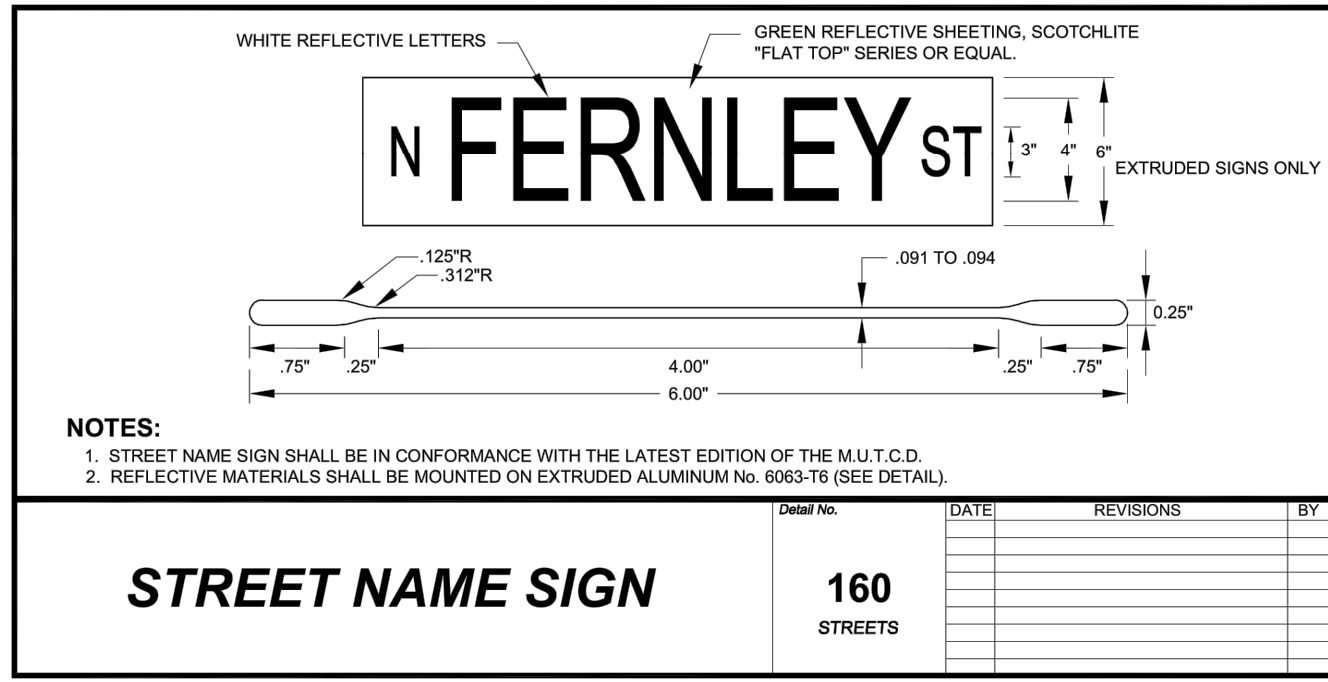
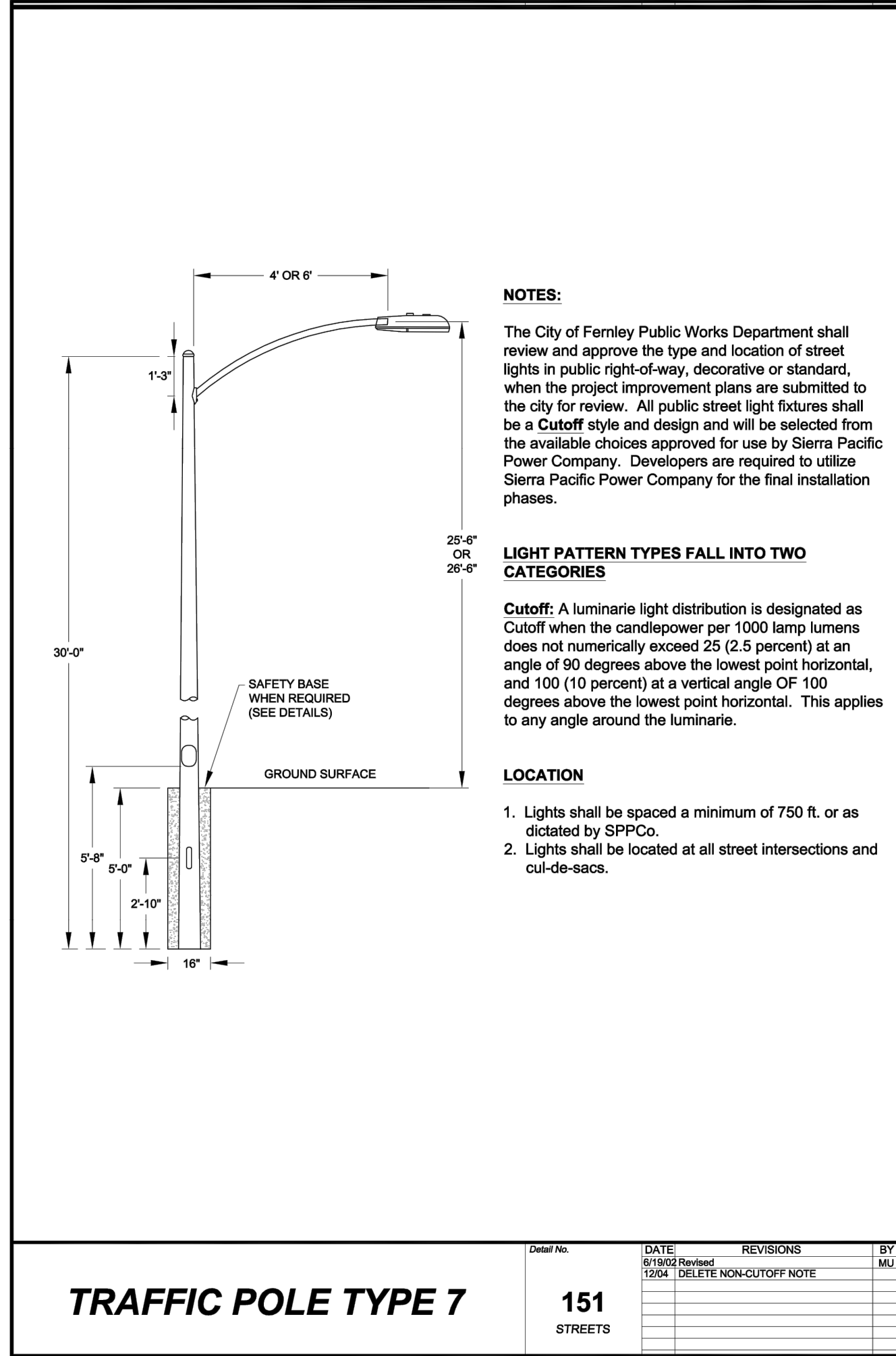
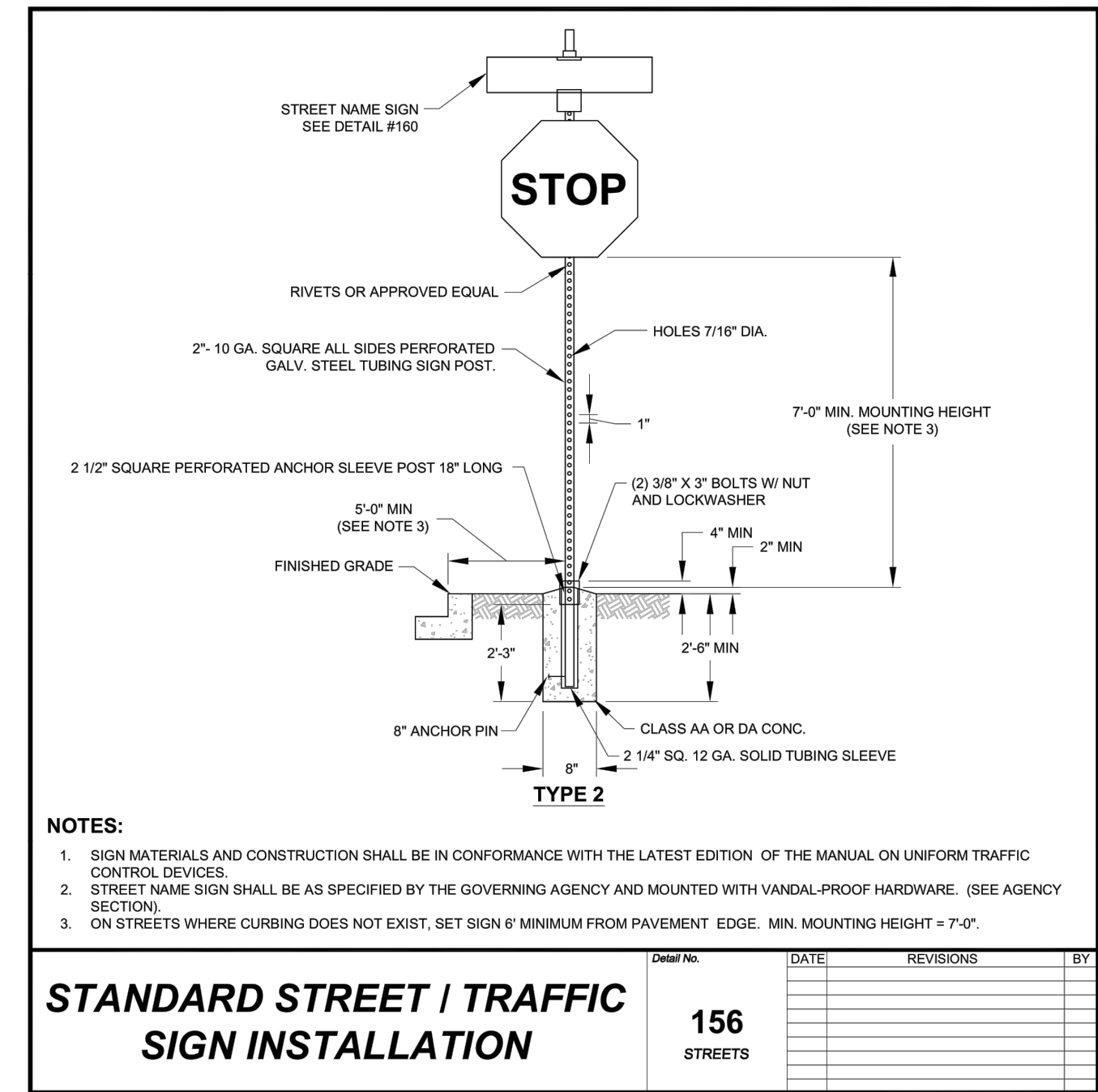
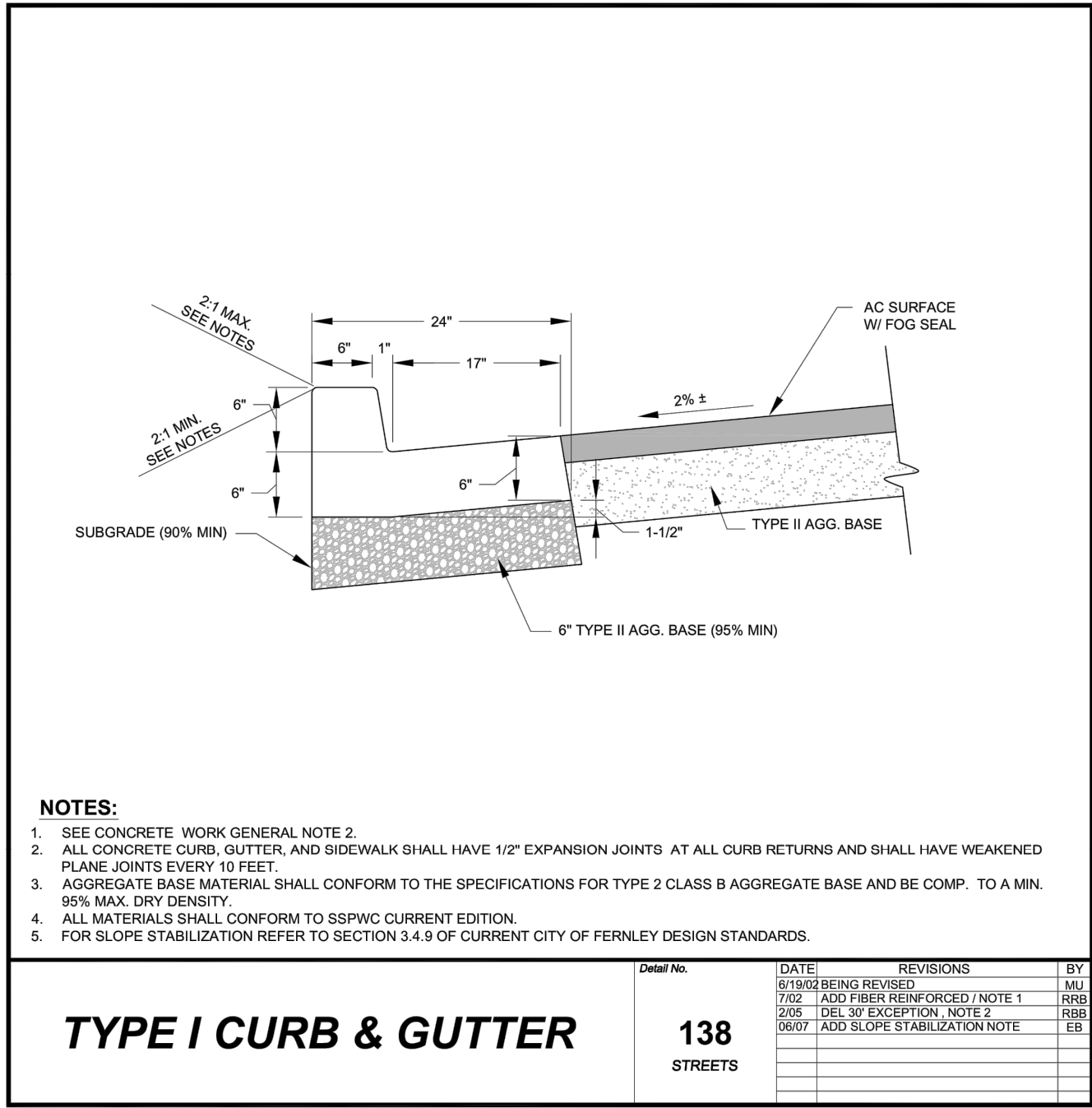
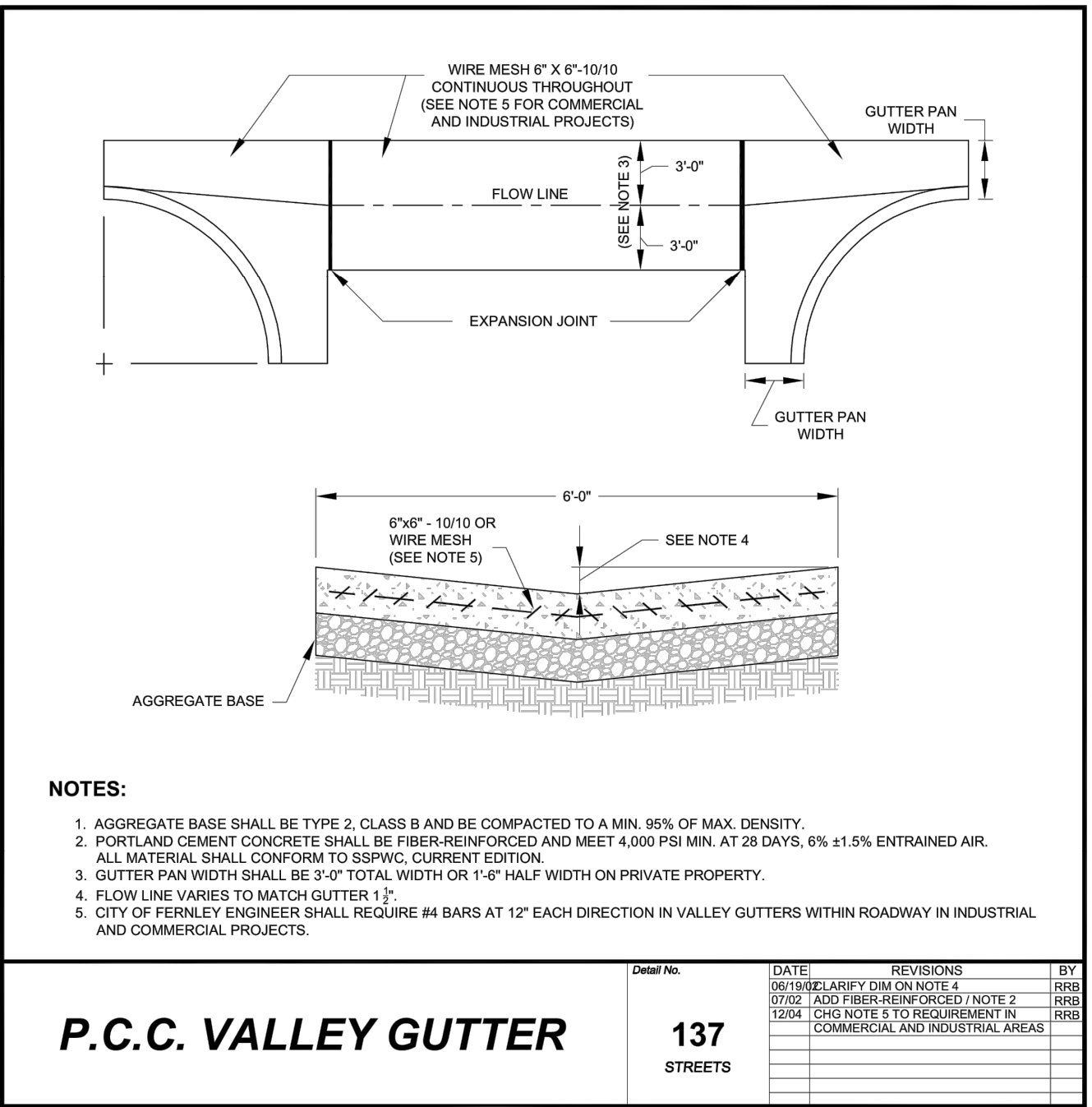
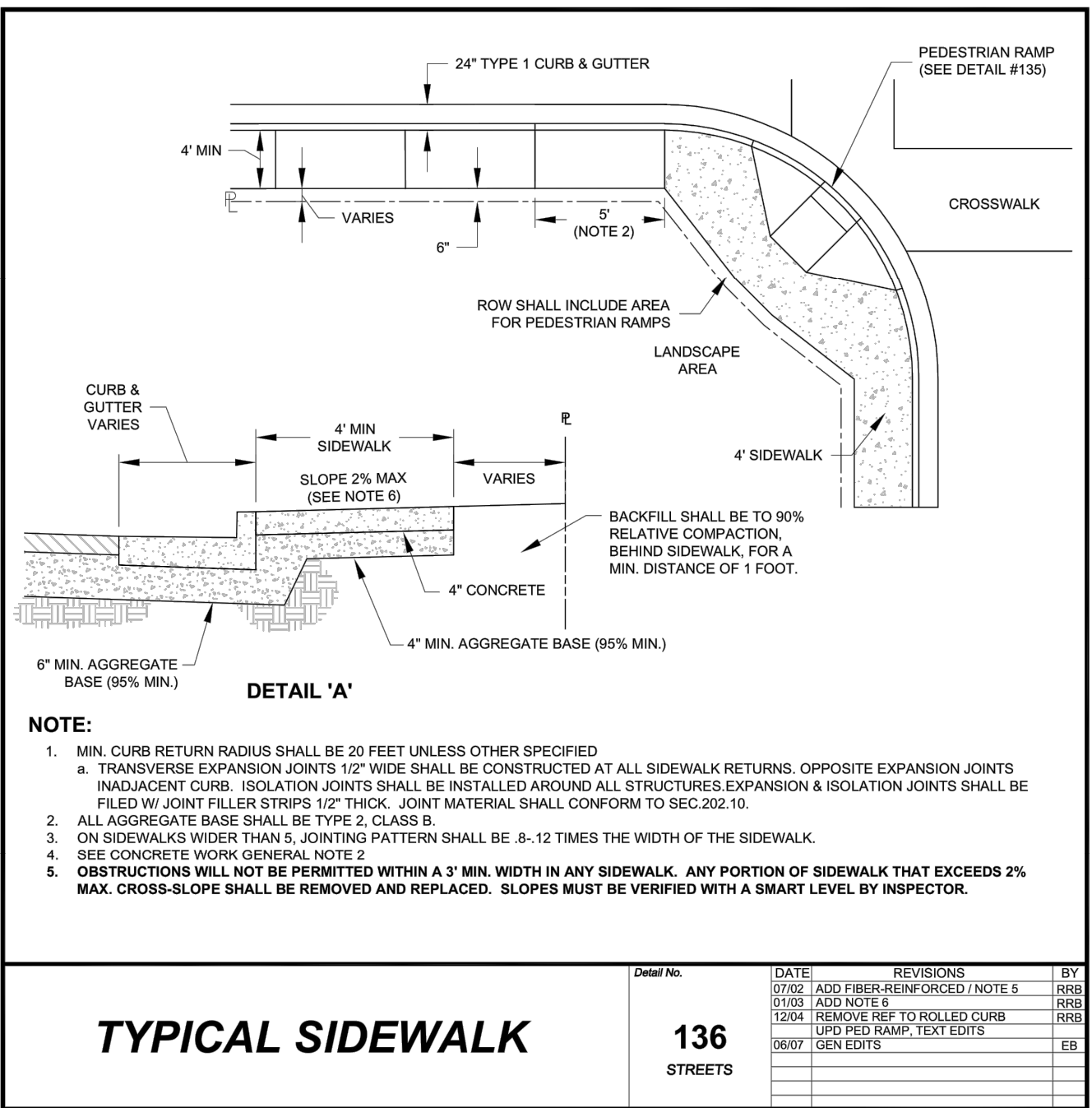
11/24/2021

PROJECT NO.: 21603

C14







SHERWOOD VILLAGE

TRAFFIC ANALYSIS

JANUARY 2020



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

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SHERWOOD VILLAGE

TRAFFIC ANALYSIS

EXECUTIVE SUMMARY

The proposed Sherwood Village development will be located in the City of Fernley, Nevada. The project site is generally located south of I-80, north of Fremont Street, and west of US-95A. The project site is currently undeveloped land. The purpose of this traffic study is to address the project's impact upon the adjacent street network. The US-95A/Newlands Drive and US-95A/Fremont Street/Chisholm Trail intersections have been identified for AM and PM peak hour capacity analysis for the existing, existing plus project, existing plus project plus other project, 2040 base, and 2040 base plus project scenarios. The other projects include the entitled townhome and hotel projects located on the east side of US-95A. Sandia Drive, Wildwood Drive and Fernwood Drive were identified for roadway capacity analysis for the existing plus project scenario.

The proposed Sherwood Village development will consist of the construction of a multi-family housing project containing a total of 434 dwelling units. The site plan indicates that project access will be provided from Wildwood Drive and Fernwood Drive via street connections to Newlands Drive and Fremont Street and ultimately to US-95A. The Sherwood Village development is anticipated to generate 3,325 average weekday trips with 219 trips occurring during the AM peak hour and 273 trips occurring during the PM peak hour.

Traffic generated by the Sherwood Village 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 City of Fernley and Nevada Department of Transportation requirements.

It is recommended that the US-95A/Fremont Street/Chisholm Trail intersection be improved to include separate left turn, through and right turn lanes at the west Fremont Street and east Chisholm Trail approaches. It is recommended that the traffic signal at the US-95A/Fremont Street/Chisholm Trail intersection be modified to contain overlap phasing for the right turn movement at the west Fremont Street approach.

It is recommended that the new on-site segments of Wildwood Drive and Fernwood Drive be constructed per City of Fernley standards. It is recommended that the new east/west street segment located within the duplex portion of the project be constructed per City of Fernley standards.

It is recommended that the on-site roundabout, streets, and parking areas be designed per City of Fernley standards.

INTRODUCTION

STUDY AREA

The proposed Sherwood Village development will be located in the City of Fernley, Nevada. The project site is generally located south of I-80, north of Fremont Street, and west of US-95A. Figure 1 shows the location of the project site. The purpose of this traffic study is to address the project's impact upon the adjacent street network. The US-95A/Newlands Drive and US-95A/Fremont Street/Chisholm Trail intersections have been identified for AM and PM peak hour capacity analysis for the existing, existing plus project, existing plus project plus other project, 2040 base, and 2040 base plus project scenarios. Sandia Drive, Wildwood Drive and Fernwood Drive were identified for roadway capacity analysis for the existing plus project scenario.

EXISTING AND PROPOSED LAND USES

The project site is currently undeveloped land. Adjacent properties include residential dwelling units to the north, south, east and west. The proposed Sherwood Village development will consist of the construction of a multi-family housing project containing a total of 434 dwelling units. The site plan indicates that project access will be provided from Wildwood Drive and Fernwood Drive via street connections to Newlands Drive and Fremont Street and ultimately to US-95A.

EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

US-95A is a four-lane roadway with two through lanes in each direction in the vicinity of the site. The speed limit is posted for 35 miles per hour. Roadway improvements generally include curb, gutter, sidewalk, and a bike lane on both sides of the street and a raised center median with openings at key intersections.

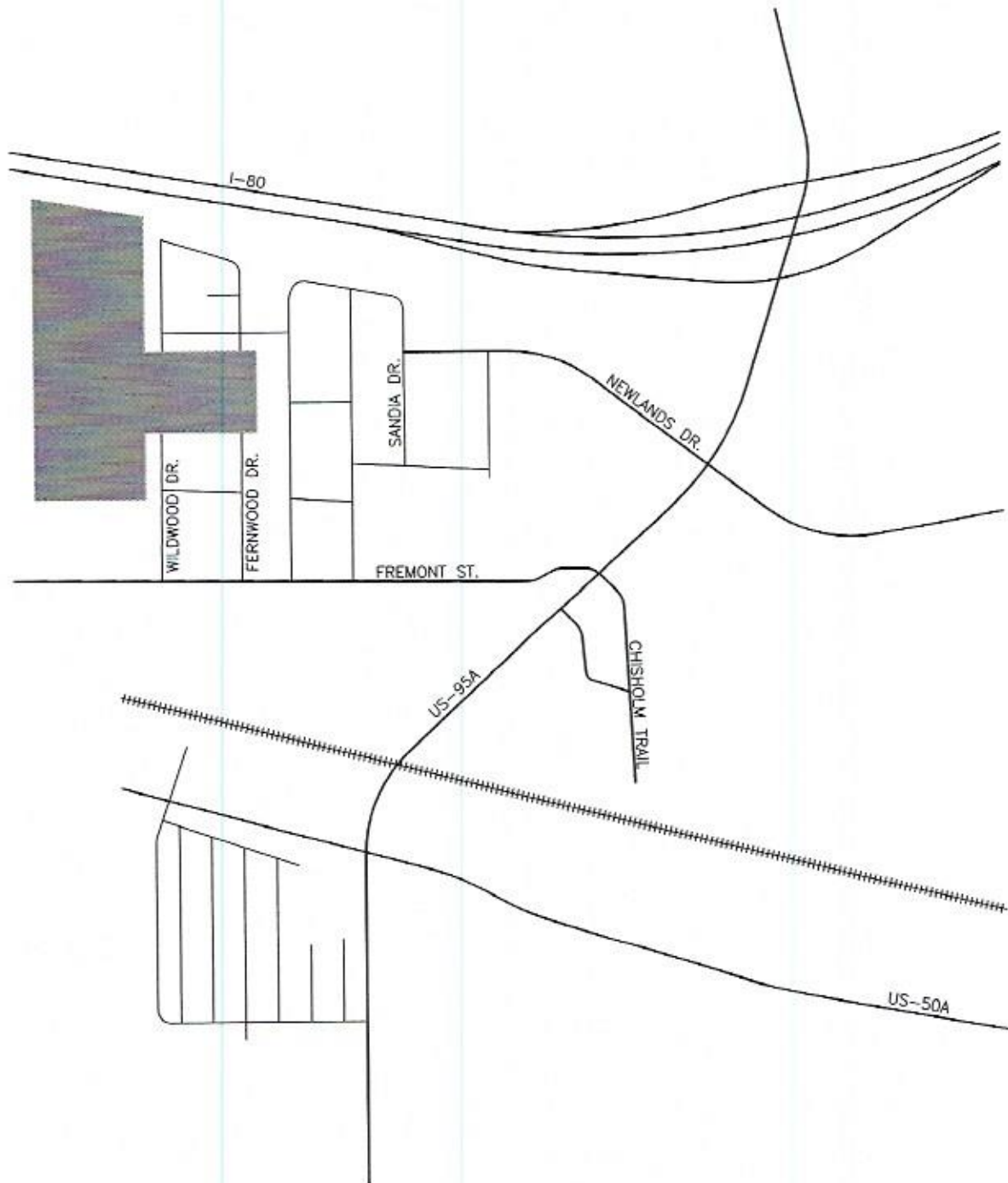
Newland Drive is a two-lane roadway with one through lane in each direction west of US-95A and a four-lane roadway with two through lanes in each direction east of US-95A. The two-lane segment is posted for 25 miles per hour and the four-lane segment is posted for 35 miles per hour. Roadway improvements near US-95A include curb, gutter, and sidewalk on both sides of the street and a striped centerline. Roadway improvements include curb, gutter, and sidewalk on both sides of the street. A raised center median exists on the four-lane segment.

Fremont Street is a two-lane roadway with one through lane in each direction west of US-95A. The speed limit is not posted but assumed to be 25 miles per hour. Roadway improvements near US-95A include curb, gutter, and sidewalk on both sides of the street and a striped centerline. Roadway improvements near the project site include curb, gutter and sidewalk on the north side of the street and a graded shoulder on the south side of the street.

Chisholm Trail is a two-lane roadway with one through lane in each direction southeast of US-95A. The speed limit is not posted but assumed to be 25 miles per hour. Roadway improvements include curb, gutter, and sidewalk on both sides of the street. Parking is allowed on both sides of the street.

LEGEND

PROJECT SITE



SHERWOOD VILLAGE
VICINITY MAP
FIGURE 1

The US-95A/Newlands Drive intersection is a signalized four-leg intersection with protected phasing for all left turn movements. The north approach contains two left turn lanes, one through lane and one shared through-right turn lane. The south approach contains one left turn lane, two through lanes and one right turn lane. The east approach contains two left turn lanes, one through lane and one right turn lane. The west approach contains one left turn lane, one through lane and one shared through-right turn lane. The intersection contains pedestrian crosswalks at the north, south, east and west approaches.

The US-95A/Fremont Street/Chisholm Trail intersection is a signalized four-leg intersection with protected phasing for all left turn movements. The north and south approaches each contain one left turn lane, one through lane and one shared through-right turn lane. The east and west approaches each contain one left turn lane and one shared through-right turn lane. The intersection contains pedestrian crosswalks at the east, west and south approaches.

TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed project on the key roadways and intersections, trip generation rates and peak hours had to be determined. Trip generation rates were obtained from the *10th Edition of ITE Trip Generation* (2018) for Land Uses 210: Single Family Detached Housing and 220: Multifamily Housing (Low-Rise).

The proposed Sherwood Village development will consist of the construction of a multi-family housing project containing a total of 434 dwelling units. The units include 70 duplexes and 364 apartments. The Multifamily Housing land use was used to calculate trips for only the apartments since the description for that land use accounts for buildings with at least four units. The single family land use was therefore used to calculate trip generation for the duplexes.

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 periods correspond to the peak hours of adjacent street traffic. Table 1 shows a summary of the average daily traffic (ADT) volume and AM and PM peak hour traffic volumes generated by the proposed project. The trip generation summary sheets are included in the Appendix.

TABLE 1 TRIP GENERATION							
ITE LAND USE	ADT	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single Family (70 Dwelling Units)	661	13	39	52	43	26	69
Multifamily Housing (364 Dwelling Units)	2,664	38	129	167	128	76	204
Total Trip Generation	3,325	51	168	219	171	102	273

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of project generated traffic to the key intersections was based on existing peak hour traffic patterns and the locations of attractions and productions in the area. Figure 2 shows the anticipated trip distribution percentages. The trips shown in Table 1 were subsequently assigned to the key roadways and intersections based on the trip distribution percentages shown on Figure 2. Figure 3 shows the trip assignment for an average weekday and weekday peak hours.

EXISTING AND PROJECTED TRAFFIC VOLUMES

Figure 4 shows the existing traffic volumes at the key intersections during the AM and PM peak hours and the existing average daily traffic volumes on the key roadways. The existing peak hour traffic volumes at the US-95A/Fremont Street/Chisholm Trail intersection were obtained from manual traffic counts conducted in November of 2019. The existing peak hour traffic volumes at the US-95A/Newlands Drive intersection were obtained from manual traffic counts conducted in January of 2020. The existing average daily traffic volumes on Sandia Drive, Wildwood Drive and Fernwood Drive were obtained from pneumatic tube counts conducted in December of 2019.

Figure 5 shows the existing plus project traffic volumes on the key roadways and 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 shown on Figure 4.

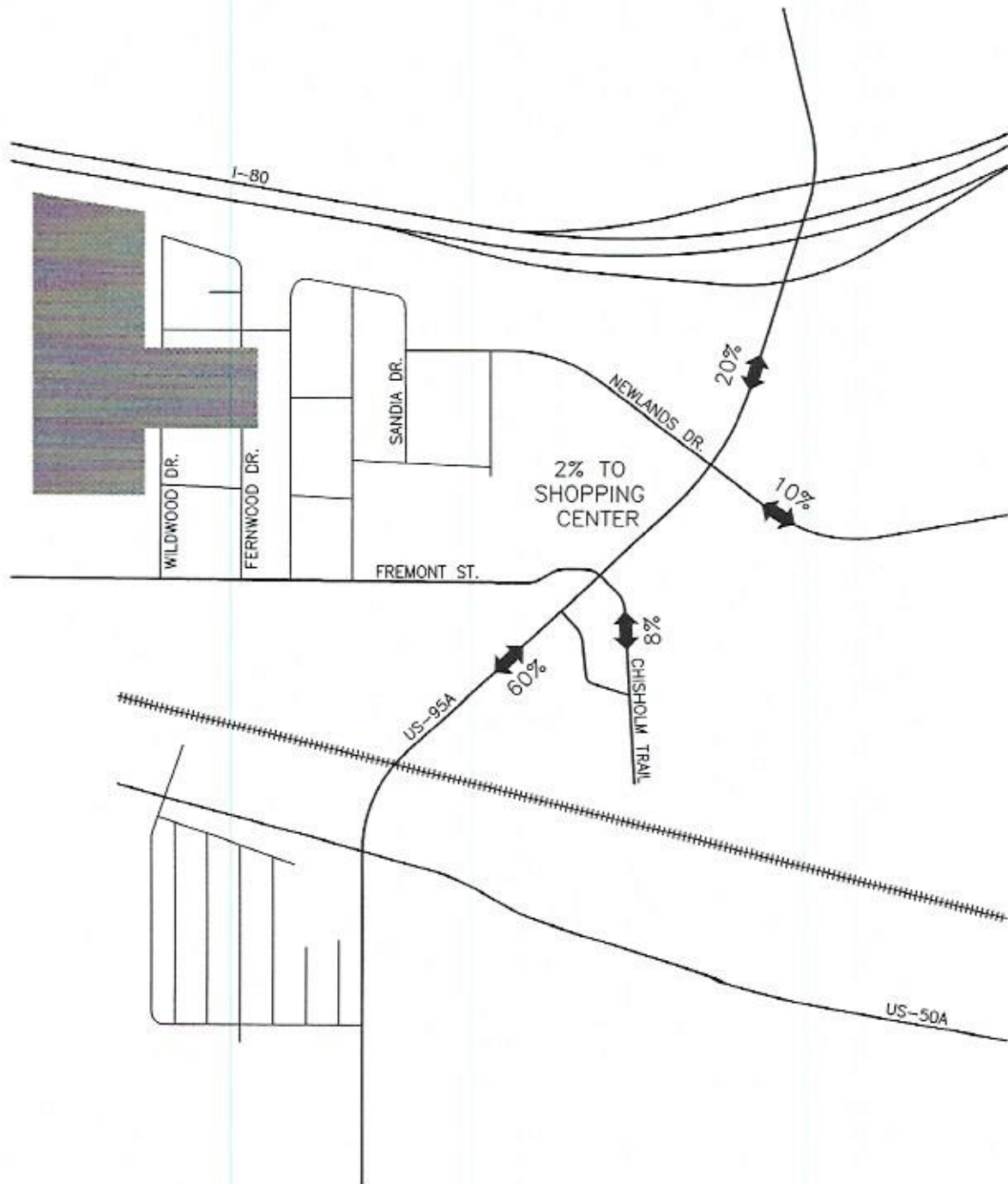
Figure 6 shows the existing plus project plus other traffic volumes at the key intersections during the AM and PM peak hours. The existing plus project plus other traffic volumes were obtained by adding trips generated by the entitled townhome and hotel projects to the existing plus project traffic volumes shown on Figure 5. The trip assignment for the townhome project was obtained from the Fernley Multi-Family Traffic Study dated June 2019. The trip assignment for the hotel project was obtained from the Hampton Inn & Suites Traffic Study dated July 2017.

Figure 7 shows the 2040 base traffic volumes at the key intersections during the AM and PM peak hours. The 2040 base traffic volumes were estimated by applying a 2.2% average annual growth rate to the existing traffic volumes and then re-routing 30% of the through volume on US-95A to Nevada Pacific Boulevard to account for its connection to US-50A. The growth rate was derived from 20-year historic traffic count data obtained from the Nevada Department of Transportation's (NDOT) Annual Traffic Reports for count stations on US-95A and on the East Fernley Interchange ramps. Traffic generated by the entitled townhome and hotel projects is included in the growth rate.

Figure 8 shows the 2040 base plus project traffic volumes at the key intersections during the AM and PM peak hours. The 2040 base plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the 2040 base traffic volumes shown on Figure 7.

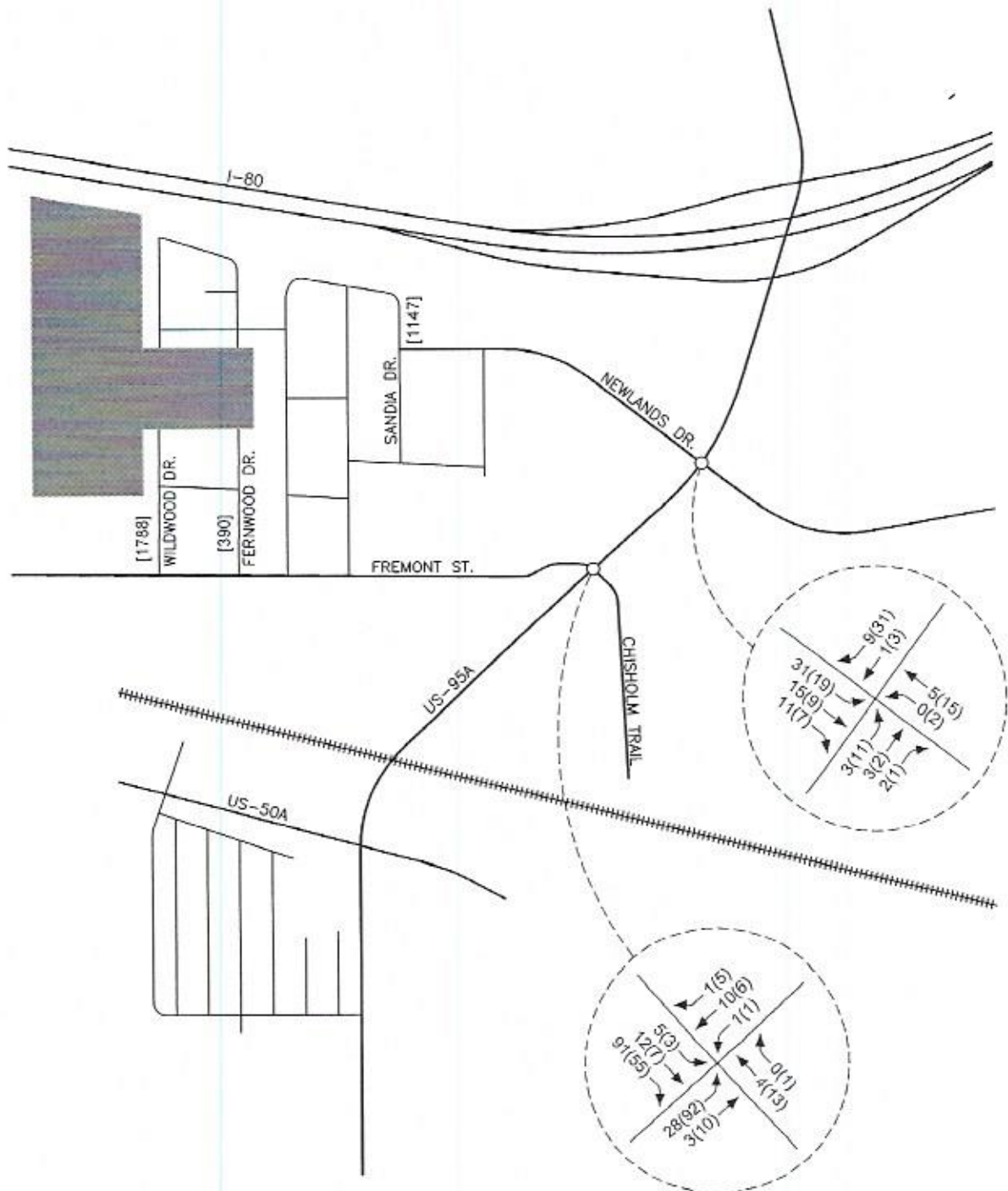
LEGEND

PROJECT SITE



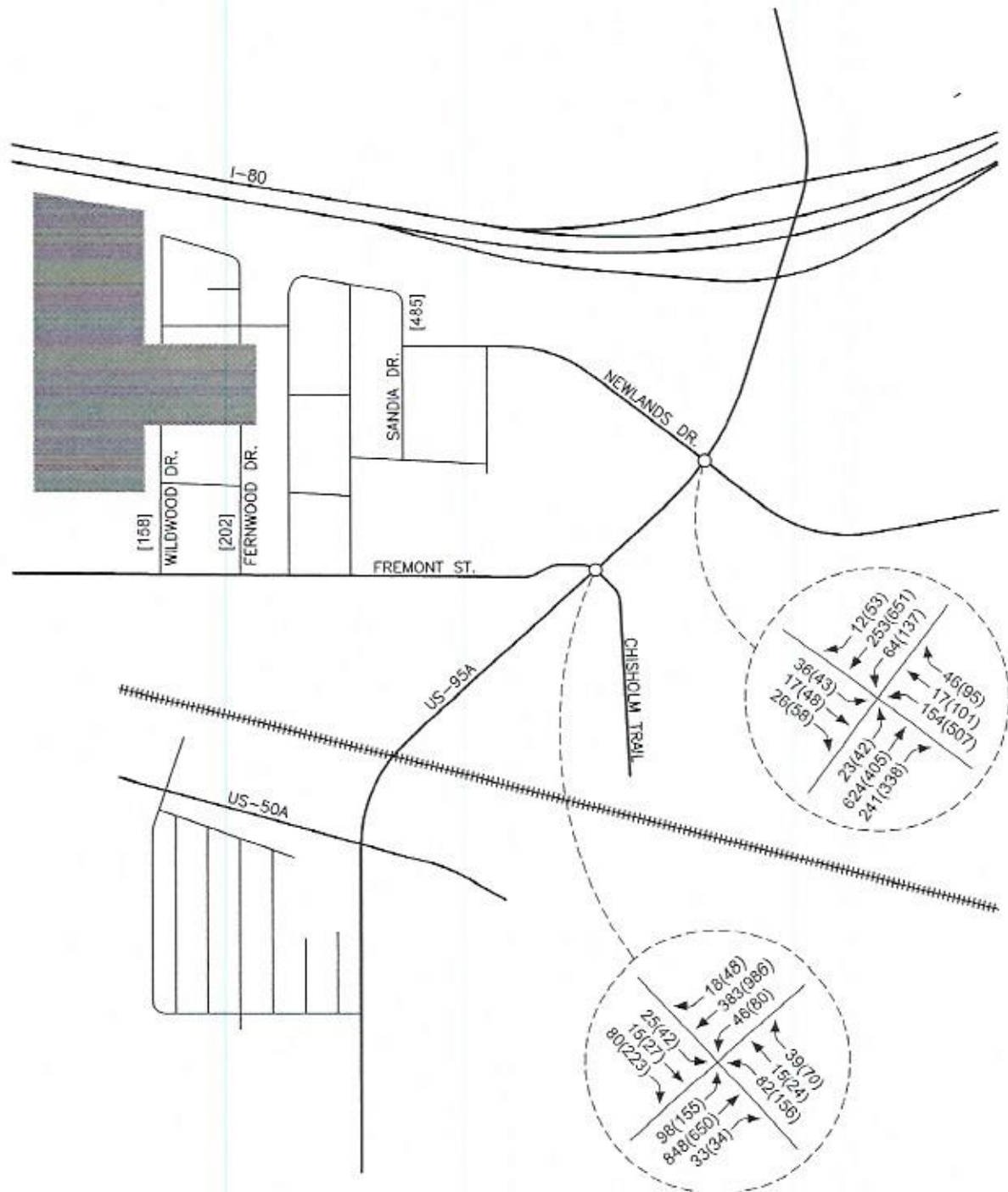
SHERWOOD VILLAGE
TRIP DISTRIBUTION
FIGURE 2

LEGEND
 - AM PEAK HOUR
 (-) PM PEAK HOUR
 [-] ADT



SHERWOOD VILLAGE
TRIP ASSIGNMENT
FIGURE 3

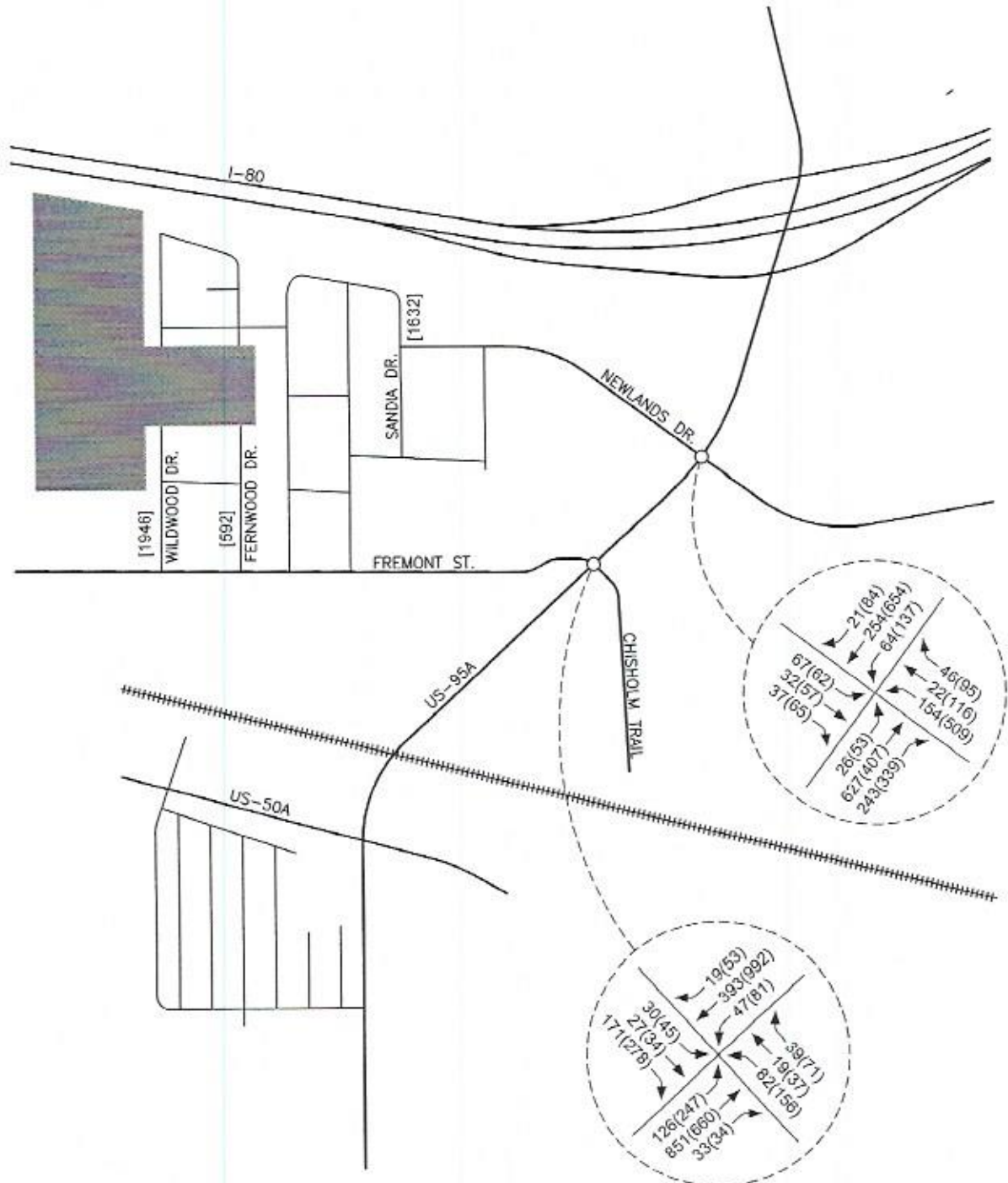
LEGEND
 - AM PEAK HOUR
 (-) PM PEAK HOUR
 [-] ADT



SHERWOOD VILLAGE
 EXISTING TRAFFIC VOLUMES
 FIGURE 4

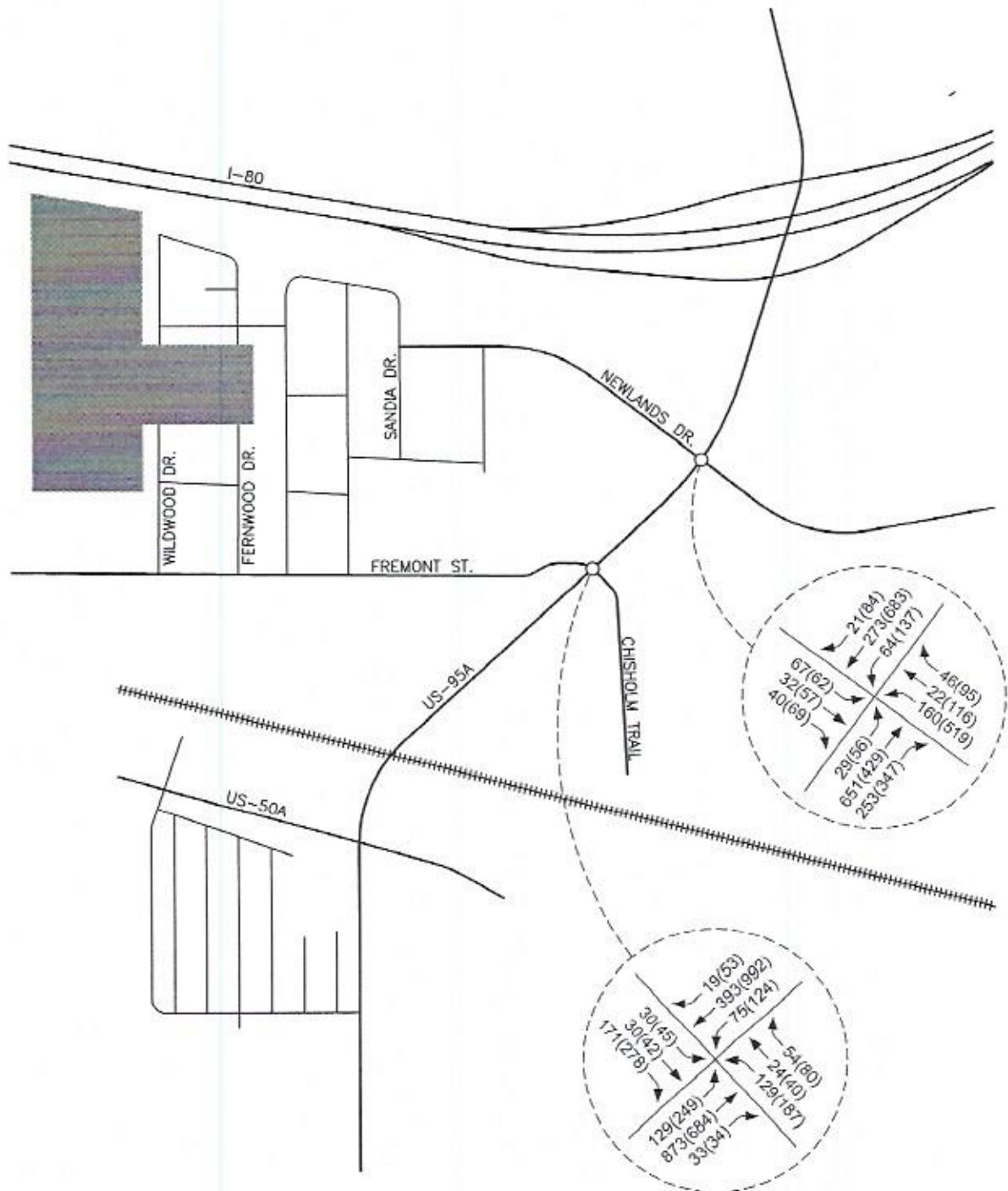
LEGEND
 - AM PEAK HOUR
 (-) PM PEAK HOUR
 [-] ADT

N.T.S.



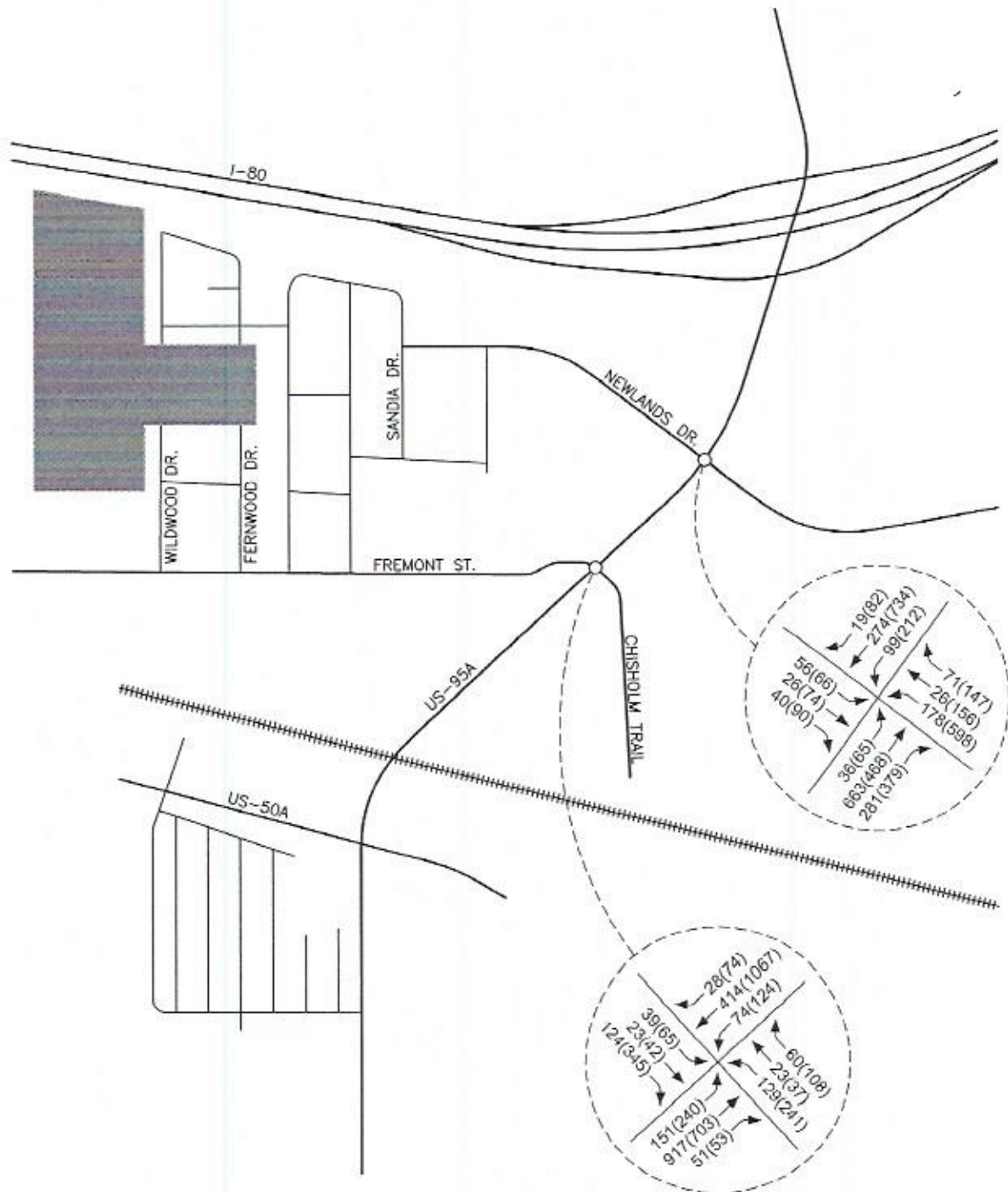
SHERWOOD VILLAGE
EXISTING PLUS PROJECT TRAFFIC VOLUMES
FIGURE 5

LEGEND
— AM PEAK HOUR
(-) PM PEAK HOUR



SHERWOOD VILLAGE
EXISTING PLUS PROJECT PLUS OTHER VOLUMES
FIGURE 6

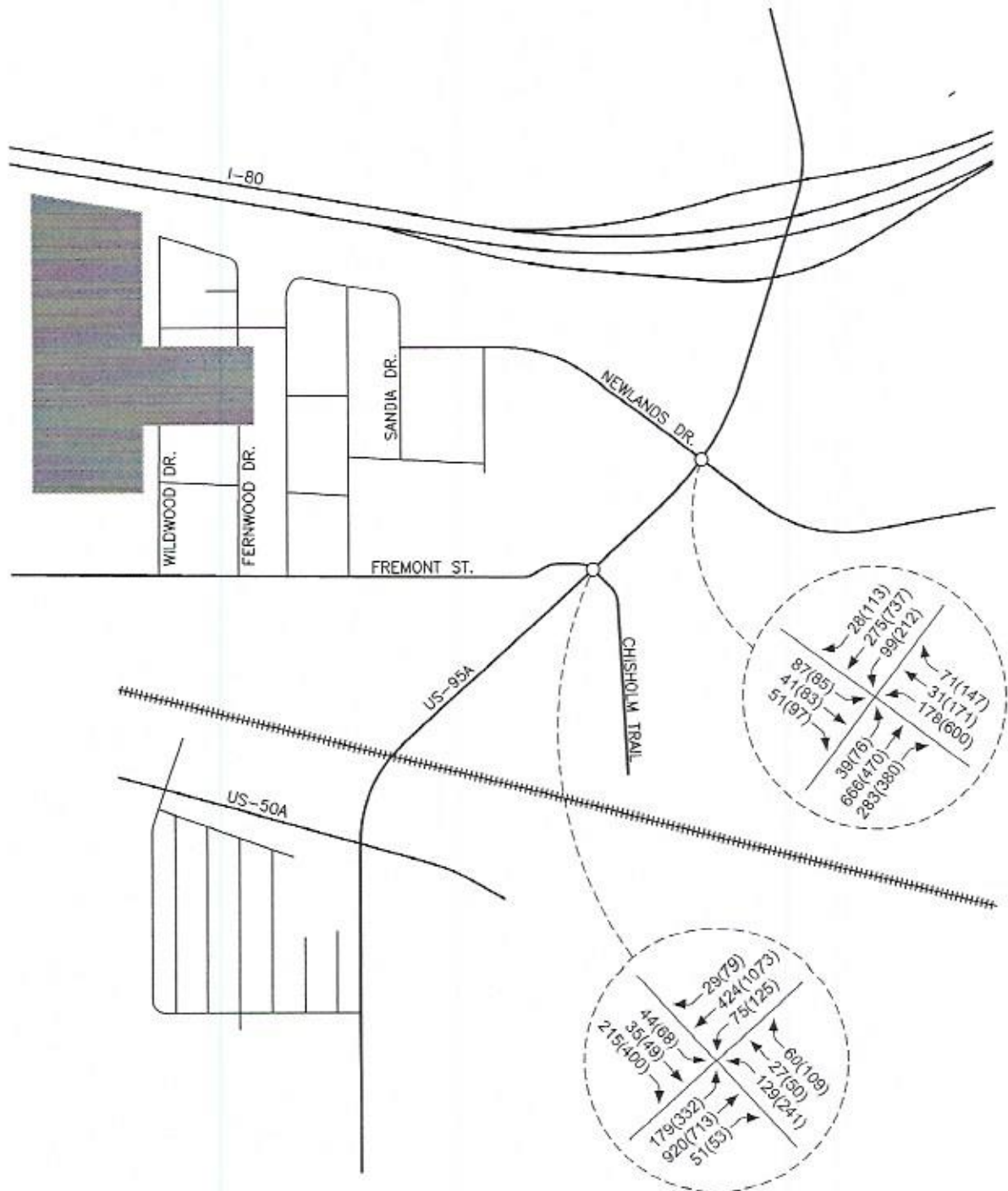
LEGEND
— AM PEAK HOUR
(-) PM PEAK HOUR



SHERWOOD VILLAGE
2040 BASE TRAFFIC VOLUMES
FIGURE 7

LEGEND
— AM PEAK HOUR
(-) PM PEAK HOUR

N.T.S.



SHERWOOD VILLAGE
2040 BASE PLUS PROJECT TRAFFIC VOLUMES
FIGURE 8

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 signalized intersections using the Synchro computer software.

The result of capacity analysis is a level of service (LOS) rating for each signalized intersection. 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.

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 2.

TABLE 2 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

Table 3 shows a summary of the level of service and delay results at the key intersections for the existing, existing plus project, existing plus project plus other, 2040 base and 2040 base plus project scenarios. The capacity analysis worksheets are included in the Appendix.

TABLE 3 INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS										
INTERSECTION	EXISTING		EXISTING + PROJECT		EXISTING + PROJECT + OTHER		2040 BASE		2040 BASE + PROJECT	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
US-95A/Newlands Existing Improvements	C25.8 N/A	D52.4 N/A	C27.6 N/A	D52.8 N/A	C27.6 N/A	D53.1 N/A	D47.9 D46.2	E60.0 D53.8	D48.3 D46.5	E60.8 D54.8
US-95A/Fremont Existing Improvements	C30.3 N/A	D48.2 N/A	C32.6 C32.3	E56.7 D42.3	C34.6 C33.9	E68.5 D50.7	D43.1 D38.0	F92.8 D54.4	D46.7 D38.2	F112 D54.8

US-95A/Newlands Drive Intersection

The US-95A/Newlands Drive intersection was analyzed as a signalized four-leg intersection with the existing approach lanes and signal phasing for all scenarios. The intersection currently operates at LOS C with a delay of 25.8 seconds per vehicle during the AM peak hour and LOS D with a delay of 52.4 seconds per vehicle during the PM peak hour. For the existing plus project traffic volumes the intersection continues to operate at LOS C with delay increasing to 27.6 seconds per vehicle during the AM peak hour and LOS D with delay increasing to 52.8 seconds per vehicle during the PM peak hour. For the existing plus project plus other traffic volumes the intersection continues to operate at LOS C with a delay of 27.6 seconds per vehicle during the AM peak hour and LOS D with delay increasing to 53.1 seconds per vehicle during the PM peak hour. For the 2040 base traffic volumes the intersection operates at LOS D with a delay of 47.9 seconds per vehicle during the AM peak hour and LOS E with a delay of 60.0 seconds per vehicle during the PM peak hour. For the 2040 base plus project traffic volumes the intersection continues to operate at LOS D with delay increasing to 48.3 seconds per vehicle during the AM peak hour and LOS E with delay increasing to 60.8 seconds per vehicle during the PM peak hour.

The US-95A/Newlands Drive intersection meets the Nevada Department of Transportation's policy LOS D standard for the existing, existing plus project and existing plus project plus other scenarios but not for the 2040 base and 2040 base plus project scenarios. The US-95A/Newlands Drive intersection was subsequently re-analyzed with traffic signal timing improvements for the 2040 base and 2040 base plus project traffic volumes and is anticipated to operate at LOS D during the AM and PM peak hours. The traffic signal timing improvements include overlap phasing for the northbound right turn movement. Overlap phasing will allow the northbound right turn and westbound left turn movements to run concurrently.

US-95A/Fremont Street/Chisholm Trail Intersection

The US-95A/Fremont Street/Chisholm Trail intersection was analyzed as a signalized four-leg intersection with the existing approach lanes and signal phasing for all scenarios. The intersection currently operates at LOS C with a delay of 30.3 seconds per vehicle during the AM peak hour and LOS D with a delay of 48.2 seconds per vehicle during the PM peak hour. For the existing plus project traffic volumes the intersection continues to operate at LOS C with delay increasing to 32.6 seconds per vehicle during the AM peak hour but drops to LOS E with a delay of 56.7 seconds per vehicle during the PM peak hour. For the existing plus project plus other traffic volumes the intersection continues to operate at LOS C with delay increasing to 34.6 seconds per vehicle during the AM peak hour and LOS E with delay increasing to 68.5 seconds per vehicle during the PM peak hour. For the 2040 base traffic volumes the intersection operates at LOS D with a delay of 43.1 seconds per vehicle during the AM peak hour and LOS F with a delay of 92.8 seconds per vehicle during the PM peak hour. For the 2040 base plus project traffic volumes the intersection continues to operate at LOS D with delay increasing to 46.7 seconds per vehicle during the AM peak hour and LOS F with delay increasing to 111.9 seconds per vehicle during the PM peak hour.

The US-95A/Fremont Street/Chisholm Trail intersection meets the Nevada Department of Transportation's policy LOS D standard for the existing scenario but not for the remaining scenarios. The US-95A/Fremont Street/Chisholm Trail intersection was subsequently re-analyzed with capacity and signal timing improvements and is anticipated to operate at LOS D or better during the AM and PM peak hours. The capacity improvements include the addition of exclusive right turn lanes at the east Chisholm Trail and west Fremont Street approaches. The traffic signal timing improvements include overlap phasing for the eastbound right turn movement. Overlap phasing will allow the eastbound right turn and northbound left turn movements to run concurrently.

It is recommended that the US-95A/Fremont Street/Chisholm Trail intersection be improved to include separate left turn, through and right turn lanes at the west Fremont Street and east Chisholm Trail approaches. It is recommended that the traffic signal at the US-95A/Fremont Street/Chisholm Trail intersection be modified to contain overlap phasing for the right turn movement at the west Fremont Street approach.

STREET CAPACITY ANALYSIS

Sandia Drive, Wildwood Drive and Fernwood Drive were identified for street capacity analysis for the existing plus project average daily traffic volumes. City of Fernley design standards do not appear to have street capacity thresholds. Sandia Drive, Wildwood Drive and Fernwood Drive were therefore reviewed for capacity based on traffic volume thresholds established by other agencies in the region, in this case Washoe County, Nevada. The Washoe County street standards indicate that 32 foot wide streets, measured from the front face of curbs, can serve a maximum of 1,000 ADT. Also, Washoe County street standards indicate that 40 foot wide streets, measured from the front face of curbs, can serve a maximum of 2,000 ADT when the street provides residential driveway access as is the case for Sandia Drive, Wildwood Drive and Fernwood Drive. Sandia Drive has a street width of ± 39.5 feet and is anticipated to serve $\pm 1,630$ ADT which generally meets Washoe County's 40 foot street width with maximum 2,000 ADT standard. Fernwood Drive has a street width of ± 35 feet and is anticipated to serve ± 600 ADT which meets Washoe County's 32 foot street width with maximum 1,000 ADT standard. Wildwood Drive has a street width of ± 35 feet and is anticipated to serve $\pm 1,950$ ADT which does not meet Washoe County's 32 foot and 40 foot street width standards.

SITE PLAN REVIEW

A copy of the site plan for Sherwood Village is included in the Appendix. The site plan indicates that project access will be provided from Wildwood Drive and Fernwood Drive via existing street connections to Newlands Drive and Fremont Street and ultimately US-95A. Wildwood Drive and Fernwood Drive will be constructed through the eastern portion of the project site that contains duplexes. It is recommended that the new segments of Wildwood Drive and Fernwood Drive be constructed per City of Fernley standards.

The site plan also indicates that a new on-site street will be constructed beginning at Fernwood Drive and running westerly through Wildwood Drive and ending at a roundabout in the apartment portion of the project. It is recommended that the segment of the new east/west street located within the duplex portion of the project be constructed per City of Fernley standards. It is anticipated that the segment of the new east/west street located within the apartment portion of the project will be a private street. However, if this segment is intended to be a public street then the ninety-degree parking spaces shown on the site plan will not be allowed per City of Fernley requirements.

The new east/west is anticipated to provide all access to the apartment complex. The site plan indicates that street stubs will be provided at the west property line near the roundabout and at the east property line in the vicinity of Tanglewood Drive. It is anticipated that these street stubs will be gated for emergency access only.

The main entry street will intersect four additional on-site streets at the proposed roundabout. These internal streets will circulate through the site. On-site parking is provided along the interior streets. The proposed roundabout, interior streets, and parking areas are anticipated to provide good access and on-site circulation. It is recommended that the on-site roundabout, streets, and parking areas be designed per City of Fernley standards.

RECOMMENDATIONS

Traffic generated by the Sherwood Village 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 City of Fernley and Nevada Department of Transportation requirements.

It is recommended that the US-95A/Fremont Street/Chisholm Trail intersection be improved to include separate left turn, through and right turn lanes at the west Fremont Street and east Chisholm Trail approaches. It is recommended that the traffic signal at the US-95A/Fremont Street/Chisholm Trail intersection be modified to contain overlap phasing for the right turn movement at the west Fremont Street approach.

It is recommended that the new on-site segments of Wildwood Drive and Fernwood Drive be constructed per City of Fernley standards. It is recommended that the new east/west street segment located within the duplex portion of the project be constructed per City of Fernley standards.

It is recommended that the on-site roundabout, streets, and parking areas be designed per City of Fernley standards.

APPENDIX



Single-Family Detached Housing (210)

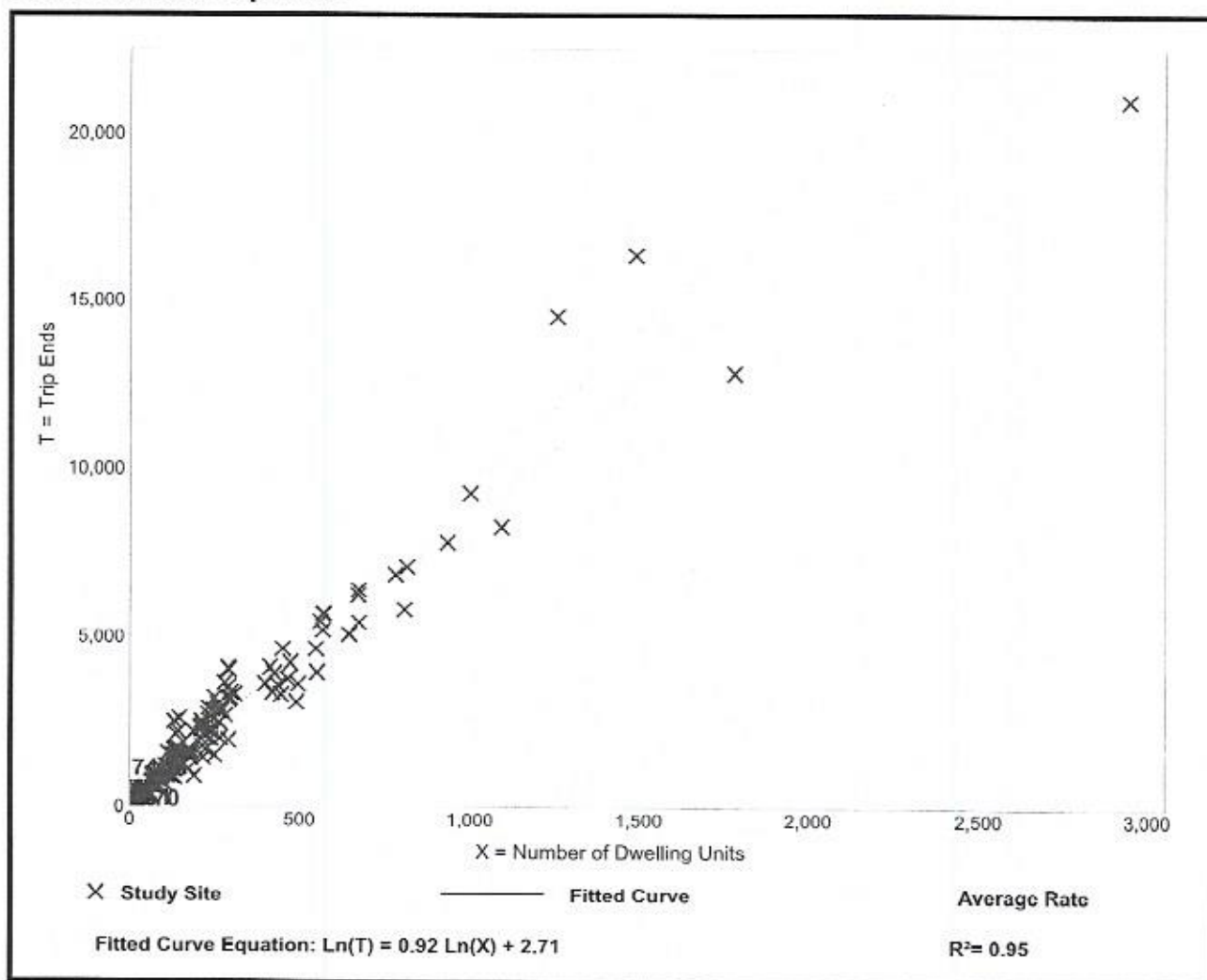
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

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

Setting/Location: General Urban/Suburban

Number of Studies: 173

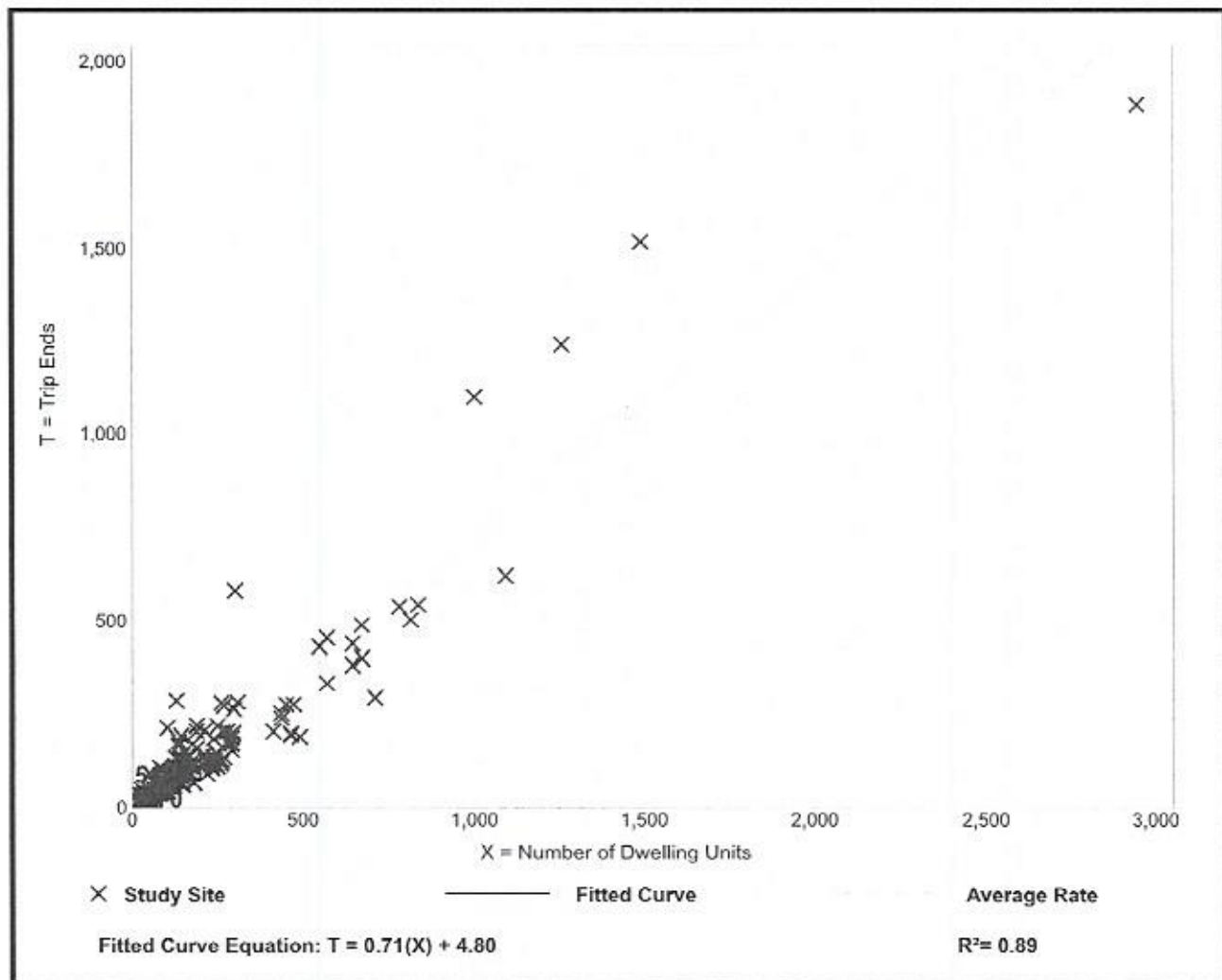
Avg. Num. of Dwelling Units: 219

Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 190

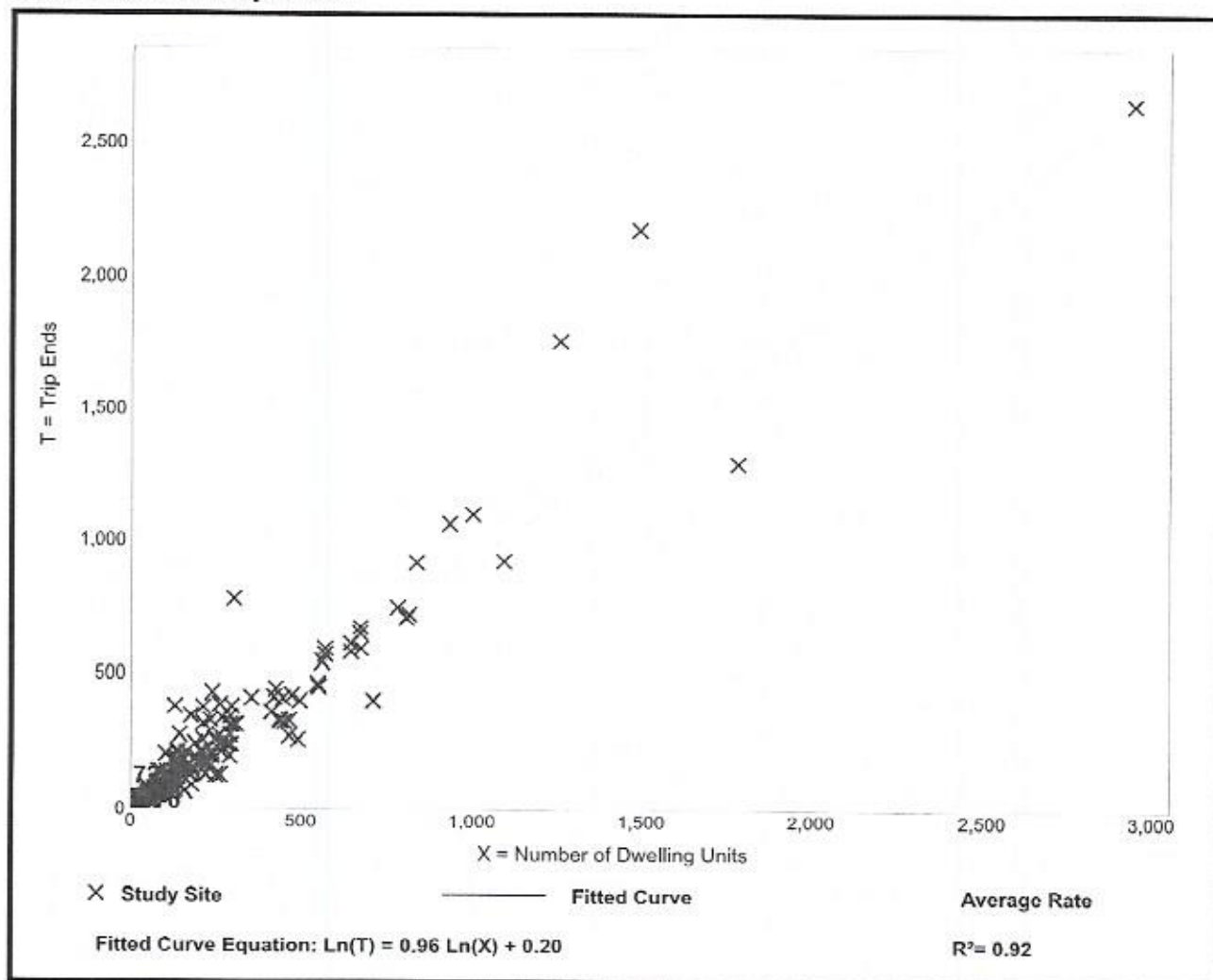
Avg. Num. of Dwelling Units: 242

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

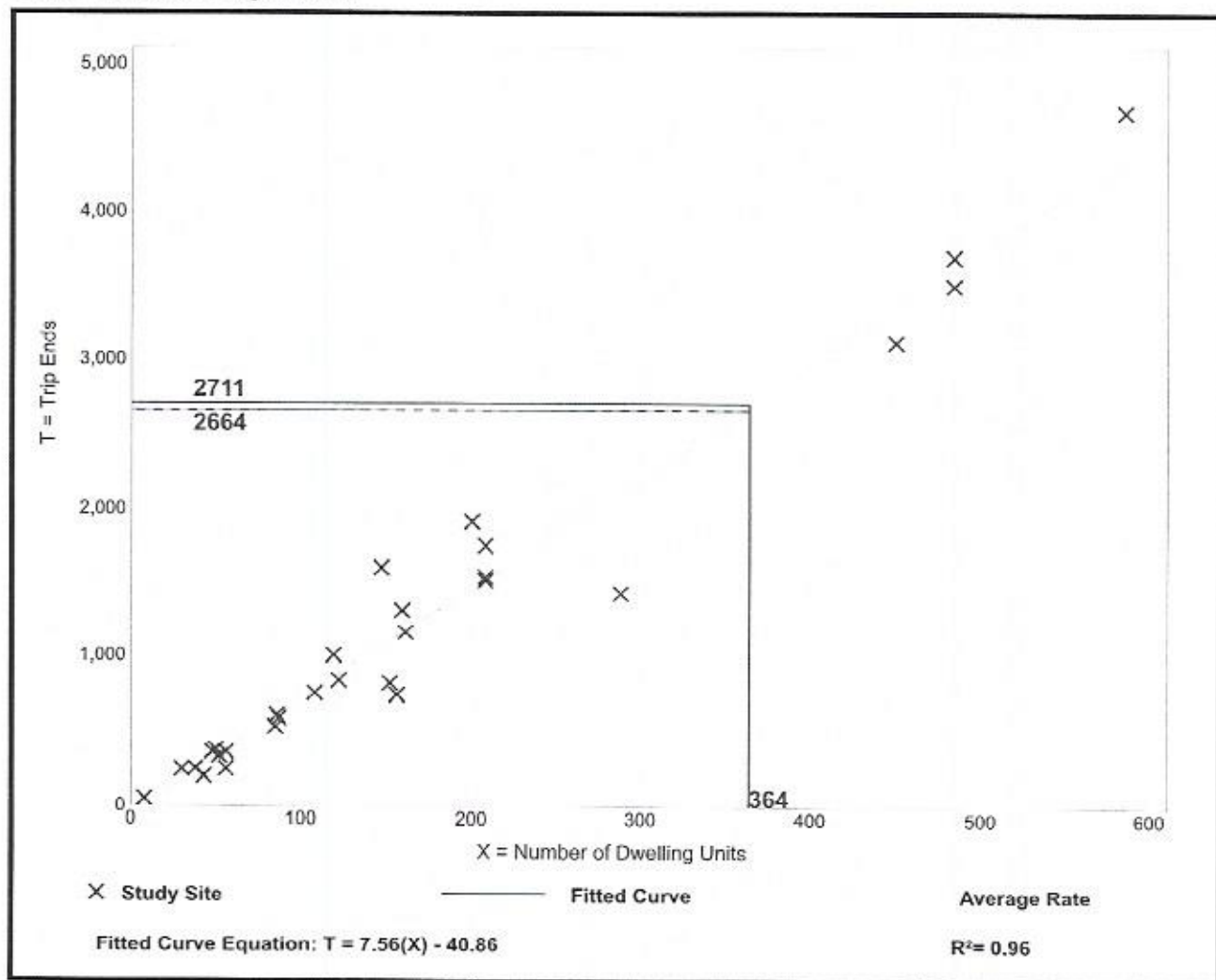
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

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

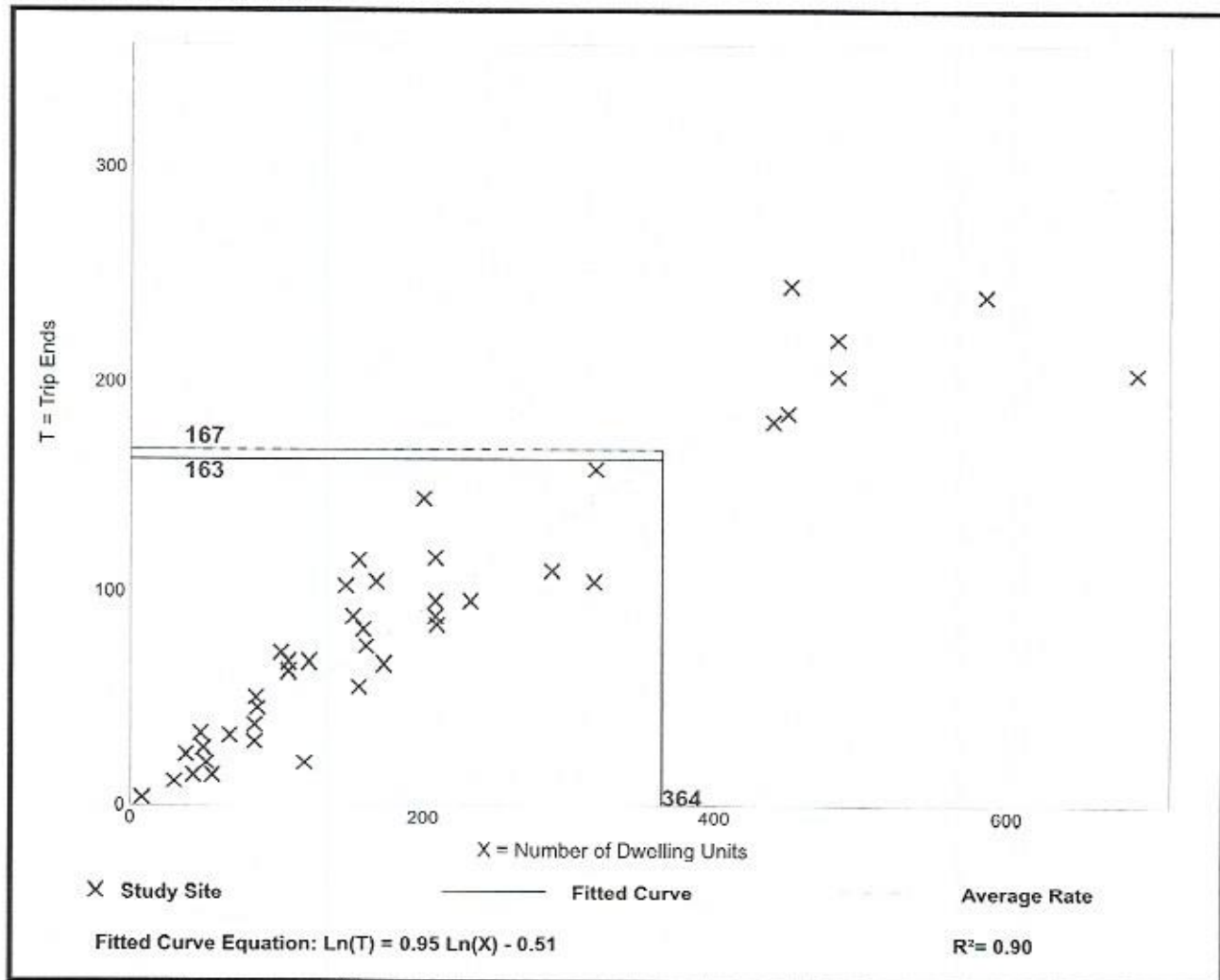
Avg. Num. of Dwelling Units: 199

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

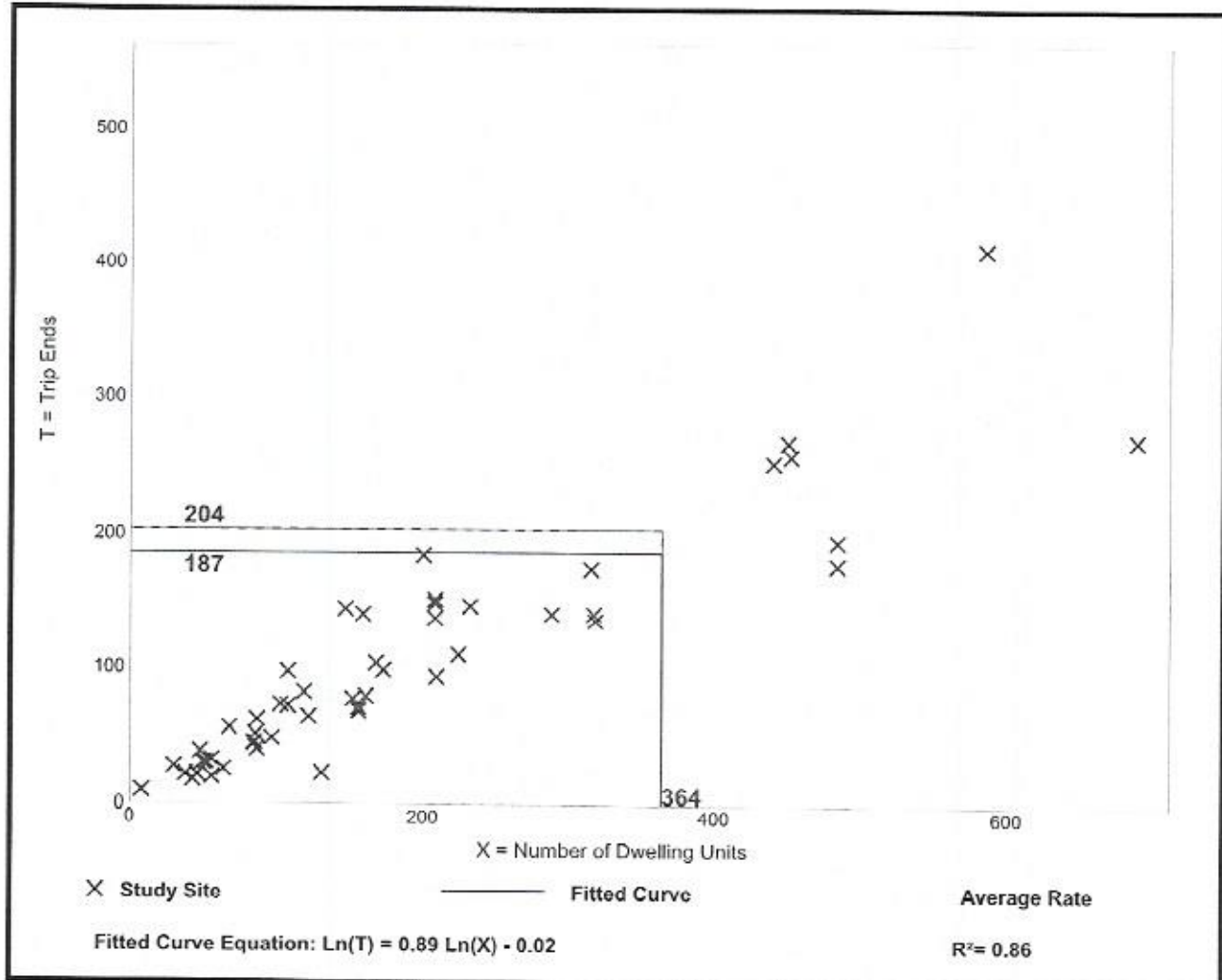
Avg. Num. of Dwelling Units: 187

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



HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	17	26	154	17	46	23	624	241	64	253	12
Future Volume (veh/h)	36	17	26	154	17	46	23	624	241	64	253	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	39	18	28	167	18	50	25	678	262	70	275	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	106	80	71	226	96	81	612	1186	529	655	1246	59
Arrive On Green	0.06	0.05	0.05	0.07	0.05	0.05	0.69	0.67	0.67	0.37	0.36	0.36
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3428	161
Grp Volume(v), veh/h	39	18	28	167	18	50	25	678	262	70	141	147
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1826
Q Serve(g_s), s	2.3	1.1	1.9	5.3	1.0	3.4	0.5	11.3	9.0	2.9	6.1	6.1
Cycle Q Clear(g_c), s	2.3	1.1	1.9	5.3	1.0	3.4	0.5	11.3	9.0	2.9	6.1	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	106	80	71	226	96	81	612	1186	529	655	641	664
V/C Ratio(X)	0.37	0.22	0.39	0.74	0.19	0.62	0.04	0.57	0.50	0.11	0.22	0.22
Avail Cap(c_a), veh/h	106	598	533	249	663	558	612	1186	529	655	641	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	50.7	51.1	50.4	50.0	51.1	11.4	13.8	13.4	22.7	24.2	24.2
Incr Delay (d2), s/veh	2.1	1.4	3.5	10.0	0.9	7.5	0.0	1.8	3.0	0.1	0.8	0.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.1	0.5	0.8	2.5	0.5	1.5	0.2	3.5	2.9	1.2	2.6	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	52.1	54.5	60.4	50.9	58.7	11.4	15.6	16.4	22.7	25.0	25.0
LnGrp LOS	D	D	D	E	D	E	B	B	B	C	C	C
Approach Vol, veh/h	85			235			965			358		
Approach Delay, s/veh	52.8			59.3			15.7			24.6		
Approach LOS	D			E			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.8	42.0	12.3	10.0	42.8	45.0	11.6	10.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	37.0	8.0	37.0	5.0	40.0	6.0	39.0				
Max Q Clear Time (g_c+I1), s	4.9	13.3	7.3	3.9	2.5	8.1	4.3	5.4				
Green Ext Time (p_c), s	0.0	5.7	0.0	0.2	0.0	1.6	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	25.8											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	15	80	82	15	39	98	848	33	46	383	18
Future Volume (veh/h)	25	15	80	82	15	39	98	848	33	46	383	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	27	16	87	89	16	42	107	922	36	50	416	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	165	21	116	113	25	66	134	1352	53	498	2038	98
Arrive On Green	0.09	0.08	0.08	0.06	0.06	0.06	0.08	0.39	0.39	0.56	1.00	1.00
Sat Flow, veh/h	1781	252	1371	1781	456	1198	1781	3459	135	1781	3425	164
Grp Volume(v), veh/h	27	0	103	89	0	58	107	470	488	50	214	222
Grp Sat Flow(s),veh/h/ln	1781	0	1624	1781	0	1655	1781	1763	1831	1781	1763	1826
Q Serve(g_s), s	1.5	0.0	6.8	5.4	0.0	3.8	6.5	24.3	24.3	1.4	0.0	0.0
Cycle Q Clear(g_c), s	1.5	0.0	6.8	5.4	0.0	3.8	6.5	24.3	24.3	1.4	0.0	0.0
Prop In Lane	1.00		0.84	1.00		0.72	1.00		0.07	1.00		0.09
Lane Grp Cap(c), veh/h	165	0	137	113	0	91	134	689	716	498	1049	1087
V/C Ratio(X)	0.16	0.00	0.75	0.79	0.00	0.64	0.80	0.68	0.68	0.10	0.20	0.20
Avail Cap(c_a), veh/h	165	0	399	194	0	511	211	689	716	498	1049	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	46.0	0.0	49.2	50.8	0.0	50.9	50.1	27.8	27.8	17.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	8.0	11.3	0.0	7.2	11.0	5.4	5.2	0.1	0.4	0.4
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	0.0	3.1	2.8	0.0	1.8	3.3	11.0	11.3	0.6	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	0.0	57.3	62.1	0.0	58.1	61.0	33.2	33.0	17.9	0.4	0.4
LnGrp LOS	D	A	E	E	A	E	E	C	C	B	A	A
Approach Vol, veh/h	130			147			1065			486		
Approach Delay, s/veh	55.0			60.5			35.9			2.2		
Approach LOS	E			E			D			A		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.7	48.0	12.0	14.3	13.3	70.5	15.2	11.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	43.0	12.0	27.0	13.0	38.0	5.0	34.0				
Max Q Clear Time (g_c+l1), s	3.4	26.3	7.4	8.8	8.5	2.0	3.5	5.8				
Green Ext Time (p_c), s	0.0	5.6	0.1	0.5	0.1	2.7	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	30.3											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary 3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	48	58	507	101	95	42	405	338	137	651	53
Future Volume (veh/h)	43	48	58	507	101	95	42	405	338	137	651	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	47	52	63	551	110	103	46	440	367	149	708	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	61	105	94	598	373	313	502	1112	496	525	1091	89
Arrive On Green	0.03	0.06	0.06	0.17	0.20	0.20	0.09	0.10	0.10	0.30	0.33	0.33
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3300	270
Grp Volume(v), veh/h	47	52	63	551	110	103	46	440	367	149	378	388
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1807
Q Serve(g_s), s	3.4	3.7	5.1	20.6	6.5	3.9	3.1	15.2	29.5	8.4	23.8	23.8
Cycle Q Clear(g_c), s	3.4	3.7	5.1	20.6	6.5	3.9	3.1	15.2	29.5	8.4	23.8	23.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	61	105	94	598	373	313	502	1112	496	525	583	598
V/C Ratio(X)	0.77	0.50	0.67	0.92	0.30	0.33	0.09	0.40	0.74	0.28	0.65	0.65
Avail Cap(c_a), veh/h	137	506	451	607	719	605	502	1112	496	525	583	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	59.3	59.9	52.8	44.3	12.6	43.7	46.7	53.1	35.0	37.1	37.1
Incr Delay (d2), s/veh	18.5	3.6	8.1	19.5	0.4	0.6	0.1	1.0	8.9	0.3	5.5	5.4
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	3.3	3.2	4.0	15.7	5.5	5.0	2.5	11.6	19.5	6.6	16.5	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.8	62.9	68.1	72.3	44.7	13.3	43.8	47.6	62.0	35.3	42.6	42.5
LnGrp LOS	F	E	E	E	D	B	D	D	E	D	D	D
Approach Vol, veh/h		162			764			853			915	
Approach Delay, s/veh		70.1			60.4			53.6			41.3	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	43.7	46.0	27.7	12.7	41.7	48.0	9.4	30.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.0	41.0	23.0	37.0	7.0	43.0	10.0	50.0				
Max Q Clear Time (g_c+I1), s	10.4	31.5	22.6	7.1	5.1	25.8	5.4	8.5				
Green Ext Time (p_c), s	0.0	3.0	0.1	0.6	0.0	4.4	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			52.4									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	27	223	156	24	70	155	650	34	80	986	48
Future Volume (veh/h)	42	27	223	156	24	70	155	650	34	80	986	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	46	29	242	170	26	76	168	707	37	87	1072	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	59	32	266	196	110	321	311	1389	73	256	1290	63
Arrive On Green	0.03	0.18	0.18	0.11	0.26	0.26	0.17	0.41	0.41	0.14	0.38	0.38
Sat Flow, veh/h	1781	172	1439	1781	420	1229	1781	3408	178	1781	3422	166
Grp Volume(v), veh/h	46	0	271	170	0	102	168	366	378	87	552	572
Grp Sat Flow(s),veh/h/ln	1781	0	1611	1781	0	1649	1781	1763	1823	1781	1763	1826
Q Serve(g_s), s	3.3	0.0	21.4	12.2	0.0	6.3	11.2	20.1	20.2	5.7	36.9	37.0
Cycle Q Clear(g_c), s	3.3	0.0	21.4	12.2	0.0	6.3	11.2	20.1	20.2	5.7	36.9	37.0
Prop In Lane	1.00		0.89	1.00		0.75	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	59	0	297	196	0	431	311	719	743	256	664	688
V/C Ratio(X)	0.77	0.00	0.91	0.87	0.00	0.24	0.54	0.51	0.51	0.34	0.83	0.83
Avail Cap(c_a), veh/h	123	0	335	233	0	444	311	719	743	256	664	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	62.3	0.0	52.0	56.9	0.0	37.8	48.9	28.8	28.8	50.1	36.7	36.7
Incr Delay (d2), s/veh	19.0	0.0	26.3	24.6	0.0	0.3	1.9	2.6	2.5	0.6	9.5	9.2
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	3.3	0.0	16.3	11.2	0.0	4.8	8.8	13.8	14.2	4.7	23.4	24.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.3	0.0	78.3	81.5	0.0	38.1	50.7	31.3	31.3	50.7	46.2	45.9
LnGrp LOS	F	A	E	F	A	D	D	C	C	D	D	D
Approach Vol, veh/h	317			272			912			1211		
Approach Delay, s/veh	78.7			65.3			34.9			46.4		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.7	58.0	19.3	29.0	27.7	54.0	9.3	38.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	53.0	17.0	27.0	17.0	49.0	9.0	35.0				
Max Q Clear Time (g_c+I1), s	7.7	22.2	14.2	23.4	13.2	39.0	5.3	8.3				
Green Ext Time (p_c), s	0.1	4.9	0.1	0.6	0.1	5.0	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	48.2											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	32	37	154	22	46	26	627	243	64	254	21
Future Volume (veh/h)	67	32	37	154	22	46	26	627	243	64	254	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	35	40	167	24	50	28	682	264	70	276	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	108	82	73	226	96	81	610	1186	529	653	1199	99
Arrive On Green	0.06	0.05	0.05	0.07	0.05	0.05	0.68	0.67	0.67	0.37	0.36	0.36
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3296	273
Grp Volume(v), veh/h	73	35	40	167	24	50	28	682	264	70	147	152
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1806
Q Serve(g_s), s	4.4	2.1	2.7	5.3	1.4	3.4	0.6	11.4	9.1	2.9	6.4	6.4
Cycle Q Clear(g_c), s	4.4	2.1	2.7	5.3	1.4	3.4	0.6	11.4	9.1	2.9	6.4	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	108	82	73	226	96	81	610	1186	529	653	641	657
V/C Ratio(X)	0.68	0.43	0.55	0.74	0.25	0.62	0.05	0.58	0.50	0.11	0.23	0.23
Avail Cap(c_a), veh/h	108	598	533	249	663	558	610	1186	529	653	641	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	51.0	51.3	50.4	50.1	51.1	11.5	13.8	13.4	22.8	24.3	24.3
Incr Delay (d2), s/veh	15.6	3.5	6.2	10.0	1.3	7.4	0.0	1.8	3.0	0.1	0.8	0.8
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	4.3	1.8	2.2	4.6	1.2	2.7	0.4	6.3	5.2	2.1	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.2	54.5	57.5	60.4	51.4	58.5	11.5	15.6	16.4	22.8	25.1	25.1
LnGrp LOS	E	D	E	E	D	E	B	B	B	C	C	C
Approach Vol, veh/h	148			241			974			369		
Approach Delay, s/veh	61.1			59.1			15.7			24.7		
Approach LOS	E			E			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.7	42.0	12.3	10.1	42.7	45.0	11.7	10.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	37.0	8.0	37.0	5.0	40.0	6.0	39.0				
Max Q Clear Time (g_c+I1), s	4.9	13.4	7.3	4.7	2.6	8.4	6.4	5.4				
Green Ext Time (p_c), s	0.0	5.8	0.0	0.4	0.0	1.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	27.6											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	27	171	82	19	39	126	851	33	47	393	19
Future Volume (veh/h)	30	27	171	82	19	39	126	851	33	47	393	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	33	29	186	89	21	42	137	925	36	51	427	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	288	34	218	113	32	65	166	1352	53	370	1729	85
Arrive On Green	0.16	0.16	0.16	0.06	0.06	0.06	0.09	0.39	0.39	0.42	1.00	1.00
Sat Flow, veh/h	1781	218	1400	1781	557	1113	1781	3459	135	1781	3420	168
Grp Volume(v), veh/h	33	0	215	89	0	63	137	471	490	51	220	228
Grp Sat Flow(s),veh/h/ln	1781	0	1618	1781	0	1670	1781	1763	1831	1781	1763	1825
Q Serve(g_s), s	1.7	0.0	14.2	5.4	0.0	4.1	8.3	24.5	24.5	2.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	14.2	5.4	0.0	4.1	8.3	24.5	24.5	2.0	0.0	0.0
Prop In Lane	1.00		0.87	1.00		0.67	1.00		0.07	1.00		0.09
Lane Grp Cap(c), veh/h	288	0	253	113	0	97	166	689	716	370	891	923
V/C Ratio(X)	0.11	0.00	0.85	0.79	0.00	0.65	0.83	0.68	0.68	0.14	0.25	0.25
Avail Cap(c_a), veh/h	288	0	397	194	0	516	211	689	716	370	891	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	39.4	0.0	45.2	50.8	0.0	50.7	49.0	27.9	27.9	26.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	10.0	11.3	0.0	7.2	18.9	5.4	5.2	0.2	0.6	0.6
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	1.4	0.0	10.6	5.0	0.0	3.4	8.0	16.4	16.9	1.5	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	55.1	62.1	0.0	57.9	67.9	33.3	33.1	26.2	0.6	0.6
LnGrp LOS	D	A	E	E	A	E	E	C	C	C	A	A
Approach Vol, veh/h	248			152			1098			499		
Approach Delay, s/veh	53.1			60.3			37.5			3.3		
Approach LOS	D			E			D			A		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.8	48.0	12.0	22.2	15.2	60.6	22.8	11.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	43.0	12.0	27.0	13.0	38.0	5.0	34.0				
Max Q Clear Time (g_c+I1), s	4.0	26.5	7.4	16.2	10.3	2.0	3.7	6.1				
Green Ext Time (p_c), s	0.0	5.6	0.1	0.9	0.1	2.7	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	32.6											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	27	171	82	19	39	126	851	33	47	393	19
Future Volume (veh/h)	30	27	171	82	19	39	126	851	33	47	393	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	33	29	186	89	21	42	137	925	36	51	427	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	277	258	219	113	86	73	166	1352	53	402	1791	88
Arrive On Green	0.16	0.14	0.14	0.06	0.05	0.05	0.09	0.39	0.39	0.45	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3459	135	1781	3420	168
Grp Volume(v), veh/h	33	29	186	89	21	42	137	471	490	51	220	228
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1763	1831	1781	1763	1825
Q Serve(g_s), s	1.8	1.5	12.6	5.4	1.2	2.9	8.3	24.5	24.5	1.8	0.0	0.0
Cycle Q Clear(g_c), s	1.8	1.5	12.6	5.4	1.2	2.9	8.3	24.5	24.5	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.09
Lane Grp Cap(c), veh/h	277	258	219	113	86	73	166	689	716	402	923	956
V/C Ratio(X)	0.12	0.11	0.85	0.79	0.24	0.58	0.83	0.68	0.68	0.13	0.24	0.24
Avail Cap(c_a), veh/h	277	459	389	194	578	490	211	689	716	402	923	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	40.0	41.5	46.3	50.8	50.6	51.4	49.0	27.9	27.9	23.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	8.9	11.3	1.5	7.0	18.9	5.4	5.2	0.1	0.6	0.6
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	1.4	1.3	9.4	5.0	1.1	2.3	8.0	16.4	16.9	1.4	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	41.7	55.2	62.1	52.1	58.4	67.9	33.3	33.1	24.0	0.6	0.6
LnGrp LOS	D	D	E	E	D	E	E	C	C	C	A	A
Approach Vol, veh/h	248			152			1098			499		
Approach Delay, s/veh	51.6			59.7			37.5			3.0		
Approach LOS	D			E			D			A		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.8	48.0	12.0	20.2	15.2	62.6	22.1	10.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	43.0	12.0	27.0	13.0	38.0	5.0	34.0				
Max Q Clear Time (g_c+I1), s	3.8	26.5	7.4	14.6	10.3	2.0	3.8	4.9				
Green Ext Time (p_c), s	0.0	5.6	0.1	0.6	0.1	2.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	32.3											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	57	65	509	116	95	53	407	339	137	654	84
Future Volume (veh/h)	62	57	65	509	116	95	53	407	339	137	654	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	67	62	71	553	126	103	58	442	368	149	711	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	86	115	103	599	358	301	519	1031	460	555	992	127
Arrive On Green	0.05	0.06	0.06	0.17	0.19	0.19	0.20	0.20	0.20	0.31	0.32	0.32
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3144	402
Grp Volume(v), veh/h	67	62	71	553	126	103	58	442	368	149	398	404
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1783
Q Serve(g_s), s	4.8	4.4	5.7	20.6	7.6	3.8	3.5	14.3	29.0	8.2	26.0	26.0
Cycle Q Clear(g_c), s	4.8	4.4	5.7	20.6	7.6	3.8	3.5	14.3	29.0	8.2	26.0	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	86	115	103	599	358	301	519	1031	460	555	556	562
V/C Ratio(X)	0.78	0.54	0.69	0.92	0.35	0.34	0.11	0.43	0.80	0.27	0.72	0.72
Avail Cap(c_a), veh/h	137	506	451	607	719	605	519	1031	460	555	556	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	58.9	59.5	52.8	45.6	12.1	38.5	42.7	48.7	33.4	39.4	39.4
Incr Delay (d2), s/veh	14.2	3.9	8.0	19.7	0.6	0.7	0.1	1.2	12.7	0.3	7.7	7.7
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	4.5	3.8	4.5	15.7	6.4	5.1	2.8	10.7	19.1	6.4	18.1	18.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.4	62.8	67.6	72.5	46.1	12.8	38.6	43.9	61.3	33.6	47.1	47.0
LnGrp LOS	E	E	E	E	D	B	D	D	E	C	D	D
Approach Vol, veh/h	200			782			868			951		
Approach Delay, s/veh	68.7			60.4			51.0			45.0		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.9	43.0	27.7	13.4	42.9	46.0	11.3	29.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	23.0	37.0	9.0	41.0	10.0	50.0				
Max Q Clear Time (g_c+I1), s	10.2	31.0	22.6	7.7	5.5	28.0	6.8	9.6				
Green Ext Time (p_c), s	0.1	2.4	0.1	0.7	0.0	4.1	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	52.8											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	34	278	156	37	71	247	660	34	81	992	53
Future Volume (veh/h)	45	34	278	156	37	71	247	660	34	81	992	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	49	37	302	170	40	77	268	717	37	88	1078	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	63	37	298	192	160	308	301	1469	76	178	1230	66
Arrive On Green	0.04	0.21	0.21	0.11	0.28	0.28	0.17	0.43	0.43	0.10	0.36	0.36
Sat Flow, veh/h	1781	176	1436	1781	572	1101	1781	3411	176	1781	3402	183
Grp Volume(v), veh/h	49	0	339	170	0	117	268	370	384	88	558	578
Grp Sat Flow(s), veh/h/ln	1781	0	1612	1781	0	1672	1781	1763	1824	1781	1763	1823
Q Serve(g_s), s	3.5	0.0	27.0	12.2	0.0	7.0	19.1	19.7	19.7	6.1	38.5	38.5
Cycle Q Clear(g_c), s	3.5	0.0	27.0	12.2	0.0	7.0	19.1	19.7	19.7	6.1	38.5	38.5
Prop In Lane	1.00		0.89	1.00		0.66	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	63	0	335	192	0	468	301	759	786	178	637	659
V/C Ratio(X)	0.77	0.00	1.01	0.89	0.00	0.25	0.89	0.49	0.49	0.49	0.88	0.88
Avail Cap(c_a), veh/h	123	0	335	192	0	468	301	759	786	178	637	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	62.2	0.0	51.5	57.2	0.0	36.2	52.8	26.7	26.7	55.4	38.8	38.8
Incr Delay (d2), s/veh	17.9	0.0	52.4	35.5	0.0	0.3	26.0	2.2	2.2	1.7	12.8	12.5
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	3.5	0.0	22.5	11.9	0.0	5.4	16.0	13.5	13.8	5.0	24.8	25.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	0.0	103.9	92.7	0.0	36.5	78.8	28.9	28.8	57.1	51.6	51.3
LnGrp LOS	F	A	F	F	A	D	E	C	C	E	D	D
Approach Vol, veh/h	388			287			1022			1224		
Approach Delay, s/veh	100.9			69.8			42.0			51.9		
Approach LOS	F			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	61.0	19.0	32.0	27.0	52.0	9.6	41.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	56.0	14.0	27.0	22.0	47.0	9.0	32.0				
Max Q Clear Time (g_c+I1), s	8.1	21.7	14.2	29.0	21.1	40.5	5.5	9.0				
Green Ext Time (p_c), s	0.1	5.1	0.0	0.0	0.1	3.7	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	56.7											
HCM 6th LOS	E											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	34	278	156	37	71	247	660	34	81	992	53
Future Volume (veh/h)	45	34	278	156	37	71	247	660	34	81	992	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	49	37	302	170	40	77	268	717	37	88	1078	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	63	111	597	192	246	208	566	1469	76	443	1230	66
Arrive On Green	0.04	0.06	0.06	0.11	0.13	0.13	0.32	0.43	0.43	0.25	0.36	0.36
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3411	176	1781	3402	183
Grp Volume(v), veh/h	49	37	302	170	40	77	268	370	384	88	558	578
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1763	1824	1781	1763	1823
Q Serve(g_s), s	3.5	2.5	4.5	12.2	2.5	3.6	15.7	19.7	19.7	5.1	38.5	38.5
Cycle Q Clear(g_c), s	3.5	2.5	4.5	12.2	2.5	3.6	15.7	19.7	19.7	5.1	38.5	38.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	63	111	597	192	246	208	566	759	786	443	637	659
V/C Ratio(X)	0.77	0.33	0.51	0.89	0.16	0.37	0.47	0.49	0.49	0.20	0.88	0.88
Avail Cap(c_a), veh/h	123	388	833	192	460	390	566	759	786	443	637	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	62.2	58.7	14.6	57.2	50.1	20.2	35.6	26.7	26.7	38.6	38.8	38.8
Incr Delay (d2), s/veh	17.9	1.7	0.7	35.5	0.3	1.1	0.6	2.2	2.2	0.2	12.8	12.5
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	3.5	2.2	8.0	11.9	2.1	4.2	11.2	13.5	13.8	4.0	24.8	25.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	60.4	15.2	92.7	50.4	21.3	36.2	28.9	28.8	38.8	51.6	51.3
LnGrp LOS	F	E	B	F	D	C	D	C	C	D	D	D
Approach Vol, veh/h	388			287			1022			1224		
Approach Delay, s/veh	27.7			67.6			30.8			50.5		
Approach LOS	C			E			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	37.3	61.0	19.0	12.7	46.3	52.0	9.6	22.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	56.0	14.0	27.0	22.0	47.0	9.0	32.0				
Max Q Clear Time (g_c+I1), s	7.1	21.7	14.2	6.5	17.7	40.5	5.5	5.6				
Green Ext Time (p_c), s	0.1	5.1	0.0	1.2	0.3	3.7	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	42.3											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	32	40	160	22	46	29	651	253	64	273	21
Future Volume (veh/h)	67	32	40	160	22	46	29	651	253	64	273	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	35	43	174	24	50	32	708	275	70	297	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	115	86	76	233	96	81	619	1186	529	646	1176	91
Arrive On Green	0.06	0.05	0.05	0.07	0.05	0.05	0.69	0.67	0.67	0.37	0.35	0.35
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3317	255
Grp Volume(v), veh/h	73	35	43	174	24	50	32	708	275	70	157	163
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1810
Q Serve(g_s), s	4.4	2.1	2.9	5.5	1.4	3.4	0.6	12.1	9.7	2.9	6.9	7.0
Cycle Q Clear(g_c), s	4.4	2.1	2.9	5.5	1.4	3.4	0.6	12.1	9.7	2.9	6.9	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	115	86	76	233	96	81	619	1186	529	646	625	642
V/C Ratio(X)	0.63	0.41	0.56	0.75	0.25	0.62	0.05	0.60	0.52	0.11	0.25	0.25
Avail Cap(c_a), veh/h	115	598	533	249	663	558	619	1186	529	646	625	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	50.8	51.2	50.3	50.1	51.1	11.0	13.9	13.5	23.0	25.2	25.2
Incr Delay (d2), s/veh	10.9	3.1	6.3	11.0	1.3	7.4	0.0	1.9	3.2	0.1	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	4.1	1.8	2.3	4.8	1.2	2.7	0.5	6.6	5.4	2.2	5.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	53.9	57.6	61.3	51.4	58.5	11.1	15.9	16.7	23.1	26.1	26.1
LnGrp LOS	E	D	E	E	D	E	B	B	B	C	C	C
Approach Vol, veh/h	151			248			1015			390		
Approach Delay, s/veh	58.4			59.8			15.9			25.6		
Approach LOS	E			E			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.2	42.0	12.5	10.3	43.2	44.0	12.1	10.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	37.0	8.0	37.0	6.0	39.0	6.0	39.0				
Max Q Clear Time (g_c+I1), s	4.9	14.1	7.5	4.9	2.6	9.0	6.4	5.4				
Green Ext Time (p_c), s	0.0	6.0	0.0	0.4	0.0	1.8	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay				27.6								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	30	171	129	24	54	129	873	33	75	393	19
Future Volume (veh/h)	30	30	171	129	24	54	129	873	33	75	393	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	33	33	186	140	26	59	140	949	36	82	427	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	321	39	218	168	37	83	169	1385	53	295	1610	79
Arrive On Green	0.18	0.16	0.16	0.09	0.07	0.07	0.09	0.40	0.40	0.33	0.94	0.94
Sat Flow, veh/h	1781	244	1378	1781	509	1154	1781	3463	131	1781	3420	168
Grp Volume(v), veh/h	33	0	219	140	0	85	140	483	502	82	220	228
Grp Sat Flow(s),veh/h/ln	1781	0	1622	1781	0	1663	1781	1763	1832	1781	1763	1825
Q Serve(g_s), s	1.7	0.0	14.5	8.5	0.0	5.5	8.5	24.9	24.9	3.7	1.1	1.1
Cycle Q Clear(g_c), s	1.7	0.0	14.5	8.5	0.0	5.5	8.5	24.9	24.9	3.7	1.1	1.1
Prop In Lane	1.00		0.85	1.00		0.69	1.00		0.07	1.00		0.09
Lane Grp Cap(c), veh/h	321	0	257	168	0	120	169	705	733	295	830	859
V/C Ratio(X)	0.10	0.00	0.85	0.83	0.00	0.71	0.83	0.69	0.69	0.28	0.26	0.27
Avail Cap(c_a), veh/h	321	0	398	194	0	514	211	705	733	295	830	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	37.6	0.0	45.1	48.9	0.0	49.9	48.9	27.3	27.3	32.0	1.7	1.7
Incr Delay (d2), s/veh	0.1	0.0	10.4	22.8	0.0	7.4	19.6	5.4	5.2	0.5	0.8	0.7
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	1.4	0.0	10.8	8.5	0.0	4.6	8.2	16.6	17.1	2.8	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	0.0	55.4	71.7	0.0	57.3	68.5	32.6	32.4	32.5	2.5	2.5
LnGrp LOS	D	A	E	E	A	E	E	C	C	C	A	A
Approach Vol, veh/h		252			225			1125			530	
Approach Delay, s/veh		53.1			66.3			37.0			7.1	
Approach LOS		D			E			D			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.2	49.0	15.4	22.4	15.4	56.8	24.9	13.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	44.0	12.0	27.0	13.0	38.0	5.0	34.0				
Max Q Clear Time (g_c+I1), s	5.7	26.9	10.5	16.5	10.5	3.1	3.7	7.5				
Green Ext Time (p_c), s	0.0	5.8	0.0	1.0	0.1	2.7	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			34.6									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	30	171	129	24	54	129	873	33	75	393	19
Future Volume (veh/h)	30	30	171	129	24	54	129	873	33	75	393	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	33	33	186	140	26	59	140	949	36	82	427	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	313	259	219	168	107	91	169	1385	53	330	1678	82
Arrive On Green	0.18	0.14	0.14	0.09	0.06	0.06	0.09	0.40	0.40	0.37	0.98	0.98
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3463	131	1781	3420	168
Grp Volume(v), veh/h	33	33	186	140	26	59	140	483	502	82	220	228
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1763	1832	1781	1763	1825
Q Serve(g_s), s	1.7	1.7	12.6	8.5	1.5	4.0	8.5	24.9	24.9	3.5	0.3	0.3
Cycle Q Clear(g_c), s	1.7	1.7	12.6	8.5	1.5	4.0	8.5	24.9	24.9	3.5	0.3	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.09
Lane Grp Cap(c), veh/h	313	259	219	168	107	91	169	705	733	330	865	896
V/C Ratio(X)	0.11	0.13	0.85	0.83	0.24	0.65	0.83	0.69	0.69	0.25	0.25	0.26
Avail Cap(c_a), veh/h	313	459	389	194	578	490	211	705	733	330	865	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	38.1	41.6	46.3	48.9	49.6	50.8	48.9	27.3	27.3	29.3	0.5	0.5
Incr Delay (d2), s/veh	0.1	0.2	8.8	22.8	1.2	7.6	19.6	5.4	5.2	0.4	0.7	0.7
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	1.4	1.5	9.4	8.5	1.3	3.2	8.2	16.6	17.1	2.6	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	41.8	55.1	71.7	50.7	58.4	68.5	32.6	32.4	29.7	1.2	1.2
LnGrp LOS	D	D	E	E	D	E	E	C	C	C	A	A
Approach Vol, veh/h	252			225			1125			530		
Approach Delay, s/veh	51.1			65.8			37.0			5.6		
Approach LOS	D			E			D			A		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	49.0	15.4	20.2	15.4	59.0	24.3	11.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	44.0	12.0	27.0	13.0	38.0	5.0	34.0				
Max Q Clear Time (g_c+I1), s	5.5	26.9	10.5	14.6	10.5	2.3	3.7	6.0				
Green Ext Time (p_c), s	0.0	5.8	0.0	0.6	0.1	2.7	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	33.9											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	57	69	519	116	95	56	429	347	137	683	84
Future Volume (veh/h)	62	57	69	519	116	95	56	429	347	137	683	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	67	62	75	564	126	103	61	466	377	149	742	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	86	120	107	607	367	309	497	1031	460	547	1021	125
Arrive On Green	0.05	0.07	0.07	0.18	0.20	0.20	0.19	0.20	0.20	0.31	0.32	0.32
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3161	388
Grp Volume(v), veh/h	67	62	75	564	126	103	61	466	377	149	414	419
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1786
Q Serve(g_s), s	4.8	4.4	6.0	21.1	7.5	3.8	3.7	15.2	29.9	8.3	27.0	27.0
Cycle Q Clear(g_c), s	4.8	4.4	6.0	21.1	7.5	3.8	3.7	15.2	29.9	8.3	27.0	27.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	86	120	107	607	367	309	497	1031	460	547	570	577
V/C Ratio(X)	0.78	0.52	0.70	0.93	0.34	0.33	0.12	0.45	0.82	0.27	0.73	0.73
Avail Cap(c_a), veh/h	137	506	451	607	719	605	497	1031	460	547	570	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	58.6	59.3	52.7	45.0	12.1	39.6	43.1	49.0	33.8	38.9	38.9
Incr Delay (d2), s/veh	14.2	3.4	8.1	21.0	0.6	0.6	0.1	1.2	13.3	0.3	7.9	7.8
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	4.5	3.7	4.8	16.1	6.4	5.1	3.0	11.1	19.5	6.5	18.6	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.4	62.0	67.4	73.7	45.6	12.7	39.7	44.3	62.3	34.1	46.8	46.7
LnGrp LOS	E	E	E	E	D	B	D	D	E	C	D	D
Approach Vol, veh/h	204			793			904			982		
Approach Delay, s/veh	68.4			61.3			51.5			44.8		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.2	43.0	28.0	13.8	41.2	47.0	11.3	30.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	23.0	37.0	8.0	42.0	10.0	50.0				
Max Q Clear Time (g_c+I1), s	10.3	31.9	23.1	8.0	5.7	29.0	6.8	9.5				
Green Ext Time (p_c), s	0.1	2.3	0.0	0.7	0.0	4.2	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	53.1											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	42	278	187	40	80	249	684	34	124	992	53
Future Volume (veh/h)	45	42	278	187	40	80	249	684	34	124	992	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	49	46	302	203	43	87	271	743	37	135	1078	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	63	44	292	227	166	335	307	1262	63	252	1152	62
Arrive On Green	0.04	0.21	0.21	0.13	0.30	0.30	0.17	0.37	0.37	0.05	0.11	0.11
Sat Flow, veh/h	1781	214	1404	1781	552	1117	1781	3418	170	1781	3402	183
Grp Volume(v), veh/h	49	0	348	203	0	130	271	383	397	135	558	578
Grp Sat Flow(s), veh/h/ln	1781	0	1618	1781	0	1669	1781	1763	1825	1781	1763	1823
Q Serve(g_s), s	3.5	0.0	27.0	14.6	0.0	7.7	19.3	22.8	22.8	9.6	40.8	40.9
Cycle Q Clear(g_c), s	3.5	0.0	27.0	14.6	0.0	7.7	19.3	22.8	22.8	9.6	40.8	40.9
Prop In Lane	1.00		0.87	1.00		0.67	1.00		0.09	1.00		0.10
Lane Grp Cap(c), veh/h	63	0	336	227	0	501	307	651	674	252	597	617
V/C Ratio(X)	0.77	0.00	1.04	0.89	0.00	0.26	0.88	0.59	0.59	0.54	0.94	0.94
Avail Cap(c_a), veh/h	123	0	336	233	0	501	307	651	674	252	597	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	62.2	0.0	51.5	55.8	0.0	34.6	52.5	33.0	33.0	57.8	56.3	56.4
Incr Delay (d2), s/veh	17.9	0.0	58.7	31.7	0.0	0.3	24.6	3.9	3.8	1.7	20.2	19.8
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	3.5	0.0	23.6	13.4	0.0	5.8	16.0	15.6	16.0	7.8	29.6	30.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	0.0	110.2	87.5	0.0	34.8	77.1	36.9	36.8	59.5	76.5	76.1
LnGrp LOS	F	A	F	F	A	C	E	D	D	E	E	E
Approach Vol, veh/h		397			333			1051			1271	
Approach Delay, s/veh		106.5			66.9			47.2			74.6	
Approach LOS		F			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.4	53.0	21.6	32.0	27.4	49.0	9.6	44.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	48.0	17.0	27.0	22.0	44.0	9.0	35.0				
Max Q Clear Time (g_c+I1), s	11.6	24.8	16.6	29.0	21.3	42.9	5.5	9.7				
Green Ext Time (p_c), s	0.2	4.9	0.0	0.0	0.1	0.8	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			68.5									
HCM 6th LOS			E									

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	42	278	187	40	80	249	684	34	124	992	53
Future Volume (veh/h)	45	42	278	187	40	80	249	684	34	124	992	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	49	46	302	203	43	87	271	743	37	135	1078	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	63	120	602	227	293	248	562	1262	63	508	1152	62
Arrive On Green	0.04	0.06	0.06	0.13	0.16	0.16	0.32	0.37	0.37	0.19	0.23	0.23
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3418	170	1781	3402	183
Grp Volume(v), veh/h	49	46	302	203	43	87	271	383	397	135	558	578
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1763	1825	1781	1763	1823
Q Serve(g_s), s	3.5	3.1	5.1	14.6	2.6	3.6	16.0	22.8	22.8	8.4	40.4	40.4
Cycle Q Clear(g_c), s	3.5	3.1	5.1	14.6	2.6	3.6	16.0	22.8	22.8	8.4	40.4	40.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.10
Lane Grp Cap(c), veh/h	63	120	602	227	293	248	562	651	674	508	597	617
V/C Ratio(X)	0.77	0.38	0.50	0.89	0.15	0.35	0.48	0.59	0.59	0.27	0.94	0.94
Avail Cap(c_a), veh/h	123	388	830	233	504	427	562	651	674	508	597	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	62.2	58.3	13.6	55.8	47.3	16.0	35.9	33.0	33.0	41.0	48.9	48.9
Incr Delay (d2), s/veh	17.9	2.0	0.6	31.7	0.2	0.8	0.6	3.9	3.8	0.2	20.2	19.8
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	3.5	2.8	7.5	13.4	2.2	4.6	11.3	15.6	16.0	6.7	28.4	29.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	60.3	14.3	87.5	47.6	16.8	36.5	36.9	36.8	41.2	69.1	68.7
LnGrp LOS	F	E	B	F	D	B	D	D	D	D	E	E
Approach Vol, veh/h	397			333			1051			1271		
Approach Delay, s/veh	27.7			63.9			36.8			65.9		
Approach LOS	C			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.0	53.0	21.6	13.4	46.0	49.0	9.6	25.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	48.0	17.0	27.0	22.0	44.0	9.0	35.0				
Max Q Clear Time (g_c+I1), s	10.4	24.8	16.6	7.1	18.0	42.4	5.5	5.6				
Green Ext Time (p_c), s	0.2	4.9	0.0	1.3	0.3	1.0	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	50.7											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	26	40	178	26	71	36	663	281	99	274	19
Future Volume (veh/h)	56	26	40	178	26	71	36	663	281	99	274	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	61	28	43	193	28	77	39	721	305	108	298	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	92	82	73	250	126	106	619	1087	485	717	1225	86
Arrive On Green	0.05	0.05	0.05	0.07	0.07	0.07	0.11	0.10	0.10	0.41	0.37	0.37
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3342	234
Grp Volume(v), veh/h	61	28	43	193	28	77	39	721	305	108	156	163
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1813
Q Serve(g_s), s	4.0	1.8	3.2	6.6	1.7	5.8	2.3	23.6	22.3	4.6	7.4	7.5
Cycle Q Clear(g_c), s	4.0	1.8	3.2	6.6	1.7	5.8	2.3	23.6	22.3	4.6	7.4	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	92	82	73	250	126	106	619	1087	485	717	646	665
V/C Ratio(X)	0.66	0.34	0.59	0.77	0.22	0.72	0.06	0.66	0.63	0.15	0.24	0.24
Avail Cap(c_a), veh/h	178	563	502	314	577	485	619	1087	485	717	646	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	55.5	56.1	54.6	53.0	54.8	35.7	47.9	47.3	22.6	26.4	26.4
Incr Delay (d2), s/veh	7.9	2.4	7.3	8.8	0.9	9.0	0.0	2.8	5.2	0.1	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	2.0	0.9	1.4	3.1	0.8	2.5	1.0	11.6	10.1	1.9	3.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	57.9	63.4	63.5	53.8	63.8	35.7	50.6	52.6	22.7	27.3	27.3
LnGrp LOS	E	E	E	E	D	E	D	D	D	C	C	C
Approach Vol, veh/h	132			298			1065			427		
Approach Delay, s/veh	62.4			62.7			50.6			26.1		
Approach LOS	E			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.7	42.0	13.8	10.5	46.7	49.0	11.2	13.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	37.0	11.0	38.0	7.0	44.0	12.0	37.0				
Max Q Clear Time (g_c+I1), s	6.6	25.6	8.6	5.2	4.3	9.5	6.0	7.8				
Green Ext Time (p_c), s	0.1	4.5	0.1	0.4	0.0	1.9	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	47.9											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary
6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	23	124	129	23	60	151	917	51	74	414	28
Future Volume (veh/h)	39	23	124	129	23	60	151	917	51	74	414	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	42	25	135	140	25	65	164	997	55	80	450	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	248	30	163	168	34	88	585	1302	72	422	979	65
Arrive On Green	0.14	0.12	0.12	0.09	0.07	0.07	0.33	0.38	0.38	0.24	0.29	0.29
Sat Flow, veh/h	1781	254	1370	1781	460	1195	1781	3397	187	1781	3355	223
Grp Volume(v), veh/h	42	0	160	140	0	90	164	517	535	80	236	244
Grp Sat Flow(s),veh/h/ln	1781	0	1624	1781	0	1655	1781	1763	1822	1781	1763	1815
Q Serve(g_s), s	2.5	0.0	11.6	9.3	0.0	6.4	8.2	30.7	30.7	4.3	13.1	13.2
Cycle Q Clear(g_c), s	2.5	0.0	11.6	9.3	0.0	6.4	8.2	30.7	30.7	4.3	13.1	13.2
Prop In Lane	1.00		0.84	1.00		0.72	1.00		0.10	1.00		0.12
Lane Grp Cap(c), veh/h	248	0	193	168	0	122	585	676	698	422	514	529
V/C Ratio(X)	0.17	0.00	0.83	0.83	0.00	0.73	0.28	0.77	0.77	0.19	0.46	0.46
Avail Cap(c_a), veh/h	248	0	365	238	0	483	585	676	698	422	514	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	45.5	0.0	51.7	53.4	0.0	54.4	29.8	32.3	32.3	36.6	34.8	34.8
Incr Delay (d2), s/veh	0.3	0.0	8.7	15.9	0.0	8.2	0.3	8.1	7.8	0.2	2.8	2.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.1	0.0	5.2	4.9	0.0	3.0	3.5	14.3	14.7	1.9	6.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	0.0	60.3	69.3	0.0	62.6	30.1	40.4	40.1	36.8	37.6	37.5
LnGrp LOS	D	A	E	E	A	E	C	D	D	D	D	D
Approach Vol, veh/h	202			230			1216			560		
Approach Delay, s/veh	57.3			66.7			38.9			37.4		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.4	51.0	16.3	19.3	44.4	40.0	21.7	13.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	46.0	16.0	27.0	22.0	35.0	8.0	35.0				
Max Q Clear Time (g_c+l1), s	6.3	32.7	11.3	13.6	10.2	15.2	4.5	8.4				
Green Ext Time (p_c), s	0.1	5.5	0.1	0.7	0.3	2.6	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	43.1											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	26	40	178	26	71	36	663	281	99	274	19
Future Volume (veh/h)	56	26	40	178	26	71	36	663	281	99	274	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	61	28	43	193	28	77	39	721	305	108	298	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	92	82	73	250	126	106	619	1087	600	717	1225	86
Arrive On Green	0.05	0.05	0.05	0.07	0.07	0.07	0.11	0.10	0.10	0.41	0.37	0.37
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3342	234
Grp Volume(v), veh/h	61	28	43	193	28	77	39	721	305	108	156	163
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1813
Q Serve(g_s), s	4.0	1.8	3.2	6.6	1.7	5.8	2.3	23.6	13.0	4.6	7.4	7.5
Cycle Q Clear(g_c), s	4.0	1.8	3.2	6.6	1.7	5.8	2.3	23.6	13.0	4.6	7.4	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	92	82	73	250	126	106	619	1087	600	717	646	665
V/C Ratio(X)	0.66	0.34	0.59	0.77	0.22	0.72	0.06	0.66	0.51	0.15	0.24	0.24
Avail Cap(c_a), veh/h	178	563	502	314	577	485	619	1087	600	717	646	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	55.5	56.1	54.6	53.0	54.8	35.7	47.9	39.0	22.6	26.4	26.4
Incr Delay (d2), s/veh	7.9	2.4	7.3	8.8	0.9	9.0	0.0	2.8	2.7	0.1	0.9	0.9
Initial Q Delay(d3), 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
%ile BackOfQ(50%), veh/ln	2.0	0.9	1.4	3.1	0.8	2.5	1.0	11.6	5.8	1.9	3.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.8	57.9	63.4	63.5	53.8	63.8	35.7	50.7	41.7	22.7	27.3	27.3
LnGrp LOS	E	E	E	E	D	E	D	D	D	C	C	C
Approach Vol, veh/h	132			298			1065			427		
Approach Delay, s/veh	62.4			62.7			47.6			26.1		
Approach LOS	E			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.7	42.0	13.8	10.5	46.7	49.0	11.2	13.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	37.0	11.0	38.0	7.0	44.0	12.0	37.0				
Max Q Clear Time (g_c+I1), s	6.6	25.6	8.6	5.2	4.3	9.5	6.0	7.8				
Green Ext Time (p_c), s	0.1	4.5	0.1	0.4	0.0	1.9	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	46.2											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	23	124	129	23	60	151	917	51	74	414	28
Future Volume (veh/h)	39	23	124	129	23	60	151	917	51	74	414	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	42	25	135	140	25	65	164	997	55	80	450	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	136	78	709	168	111	94	723	1302	72	560	979	65
Arrive On Green	0.08	0.04	0.04	0.09	0.06	0.06	0.41	0.38	0.38	0.42	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3397	187	1781	3355	223
Grp Volume(v), veh/h	42	25	135	140	25	65	164	517	535	80	236	244
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1763	1822	1781	1763	1815
Q Serve(g_s), s	2.7	1.6	1.5	9.3	1.5	4.8	7.2	30.7	30.7	3.3	12.0	12.0
Cycle Q Clear(g_c), s	2.7	1.6	1.5	9.3	1.5	4.8	7.2	30.7	30.7	3.3	12.0	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.12
Lane Grp Cap(c), veh/h	136	78	709	168	111	94	723	676	698	560	514	529
V/C Ratio(X)	0.31	0.32	0.19	0.83	0.22	0.69	0.23	0.77	0.77	0.14	0.46	0.46
Avail Cap(c_a), veh/h	136	421	1000	238	546	462	723	676	698	560	514	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	52.4	55.9	8.5	53.4	53.8	55.3	23.3	32.3	32.3	24.9	29.7	29.7
Incr Delay (d2), s/veh	1.3	2.3	0.1	15.9	1.0	8.6	0.2	8.1	7.8	0.1	2.8	2.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.3	0.8	1.3	4.9	0.8	2.2	3.1	14.3	14.7	1.4	5.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	58.2	8.6	69.3	54.8	64.0	23.5	40.4	40.1	25.0	32.5	32.5
LnGrp LOS	D	E	A	E	D	E	C	D	D	C	C	C
Approach Vol, veh/h		202			230			1216			560	
Approach Delay, s/veh		24.1			66.2			38.0			31.4	
Approach LOS		C			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.7	51.0	16.3	10.0	53.7	40.0	14.2	12.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	46.0	16.0	27.0	22.0	35.0	8.0	35.0				
Max Q Clear Time (g_c+I1), s	5.3	32.7	11.3	3.6	9.2	14.0	4.7	6.8				
Green Ext Time (p_c), s	0.1	5.5	0.1	0.5	0.3	2.7	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			38.0									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary 3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	74	90	598	156	147	65	468	379	212	734	82
Future Volume (veh/h)	66	74	90	598	156	147	65	468	379	212	734	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	69	78	95	629	164	155	68	493	399	223	773	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	88	142	126	661	418	351	443	957	427	553	1074	119
Arrive On Green	0.05	0.08	0.08	0.19	0.22	0.22	0.08	0.09	0.09	0.31	0.34	0.34
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3199	356
Grp Volume(v), veh/h	69	78	95	629	164	155	68	493	399	223	426	433
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1792
Q Serve(g_s), s	5.4	5.9	8.2	25.4	10.5	6.0	5.0	18.7	35.3	13.9	29.6	29.6
Cycle Q Clear(g_c), s	5.4	5.9	8.2	25.4	10.5	6.0	5.0	18.7	35.3	13.9	29.6	29.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	88	142	126	661	418	351	443	957	427	553	592	601
V/C Ratio(X)	0.79	0.55	0.75	0.95	0.39	0.44	0.15	0.52	0.93	0.40	0.72	0.72
Avail Cap(c_a), veh/h	165	470	419	661	681	573	443	957	427	553	592	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.8	62.0	63.1	55.9	46.3	11.9	50.5	54.9	62.5	37.8	40.7	40.7
Incr Delay (d2), s/veh	14.1	3.3	8.6	23.6	0.6	0.9	0.1	1.7	26.8	0.5	7.4	7.3
Initial Q Delay(d3), 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
%ile BackOfQ(95%), veh/ln	5.0	5.0	6.5	19.0	8.6	8.0	4.1	13.7	24.6	10.1	20.1	20.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	79.9	65.3	71.7	79.5	46.9	12.8	50.7	56.6	89.3	38.3	48.1	48.0
LnGrp LOS	E	E	E	E	D	B	D	E	F	D	D	D
Approach Vol, veh/h		242			948			960			1082	
Approach Delay, s/veh		72.0			62.9			69.8			46.0	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.8	43.0	32.0	16.2	39.8	52.0	11.9	36.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	38.0	27.0	37.0	9.0	47.0	13.0	51.0				
Max Q Clear Time (g_c+I1), s	15.9	37.3	27.4	10.2	7.0	31.6	7.4	12.5				
Green Ext Time (p_c), s	0.1	0.4	0.0	1.0	0.0	4.8	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			60.0									
HCM 6th LOS			E									

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	42	345	241	37	108	240	703	53	124	1067	74
Future Volume (veh/h)	65	42	345	241	37	108	240	703	53	124	1067	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	68	44	363	254	39	114	253	740	56	131	1123	78
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	87	34	277	254	121	353	344	1305	99	229	1099	76
Arrive On Green	0.05	0.19	0.19	0.14	0.29	0.29	0.19	0.39	0.39	0.04	0.11	0.11
Sat Flow, veh/h	1781	174	1437	1781	420	1229	1781	3322	251	1781	3344	232
Grp Volume(v), veh/h	68	0	407	254	0	153	253	393	403	131	592	609
Grp Sat Flow(s), veh/h/ln	1781	0	1612	1781	0	1649	1781	1763	1810	1781	1763	1814
Q Serve(g_s), s	5.3	0.0	27.0	20.0	0.0	10.2	18.7	24.4	24.4	10.1	46.0	46.0
Cycle Q Clear(g_c), s	5.3	0.0	27.0	20.0	0.0	10.2	18.7	24.4	24.4	10.1	46.0	46.0
Prop In Lane	1.00		0.89	1.00		0.75	1.00		0.14	1.00		0.13
Lane Grp Cap(c), veh/h	87	0	311	254	0	473	344	693	711	229	579	596
V/C Ratio(X)	0.78	0.00	1.31	1.00	0.00	0.32	0.74	0.57	0.57	0.57	1.02	1.02
Avail Cap(c_a), veh/h	153	0	311	254	0	473	344	693	711	229	579	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	65.9	0.0	56.5	60.0	0.0	39.2	53.2	33.2	33.2	63.2	62.4	62.4
Incr Delay (d2), s/veh	14.3	0.0	160.5	55.9	0.0	0.4	8.0	3.3	3.3	2.6	37.9	37.8
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	5.0	0.0	37.6	18.9	0.0	7.7	14.1	16.4	16.8	8.2	36.0	37.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	0.0	217.0	115.9	0.0	39.6	61.2	36.5	36.5	65.8	100.3	100.2
LnGrp LOS	F	A	F	F	A	D	E	D	D	E	F	F
Approach Vol, veh/h	475			407			1049			1332		
Approach Delay, s/veh	197.4			87.2			42.5			96.9		
Approach LOS	F			F			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	60.0	25.0	32.0	32.0	51.0	11.8	45.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	55.0	20.0	27.0	27.0	46.0	12.0	35.0				
Max Q Clear Time (g_c+I1), s	12.1	26.4	22.0	29.0	20.7	48.0	7.3	12.2				
Green Ext Time (p_c), s	0.1	5.3	0.0	0.0	0.4	0.0	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay	92.8											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary 3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	74	90	598	156	147	65	468	379	212	734	82
Future Volume (veh/h)	66	74	90	598	156	147	65	468	379	212	734	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	69	78	95	629	164	155	68	493	399	223	773	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	88	142	126	661	418	351	443	957	730	553	1074	119
Arrive On Green	0.05	0.08	0.08	0.19	0.22	0.22	0.08	0.09	0.09	0.31	0.34	0.34
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3199	356
Grp Volume(v), veh/h	69	78	95	629	164	155	68	493	399	223	426	433
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1792
Q Serve(g_s), s	5.4	5.9	8.2	25.4	10.5	6.0	5.0	18.7	5.8	13.9	29.6	29.6
Cycle Q Clear(g_c), s	5.4	5.9	8.2	25.4	10.5	6.0	5.0	18.7	5.8	13.9	29.6	29.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	88	142	126	661	418	351	443	957	730	553	592	601
V/C Ratio(X)	0.79	0.55	0.75	0.95	0.39	0.44	0.15	0.52	0.55	0.40	0.72	0.72
Avail Cap(c_a), veh/h	165	470	419	661	681	573	443	957	730	553	592	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.8	62.0	63.1	55.9	46.3	11.9	50.5	54.9	36.6	37.8	40.7	40.7
Incr Delay (d2), s/veh	14.1	3.3	8.6	23.6	0.6	0.9	0.1	1.7	2.6	0.5	7.4	7.3
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	5.0	5.0	6.5	19.0	8.6	8.0	4.1	13.7	19.1	10.1	20.1	20.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.9	65.3	71.7	79.5	46.9	12.8	50.7	56.7	39.2	38.3	48.1	48.0
LnGrp LOS	E	E	E	E	D	B	D	E	D	D	D	D
Approach Vol, veh/h	242			948			960			1082		
Approach Delay, s/veh	72.0			62.9			49.0			46.0		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.8	43.0	32.0	16.2	39.8	52.0	11.9	36.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	38.0	27.0	37.0	9.0	47.0	13.0	51.0				
Max Q Clear Time (g_c+I1), s	15.9	20.7	27.4	10.2	7.0	31.6	7.4	12.5				
Green Ext Time (p_c), s	0.1	4.4	0.0	1.0	0.0	4.8	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay	53.8											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary
6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	42	345	241	37	108	240	703	53	124	1067	74
Future Volume (veh/h)	65	42	345	241	37	108	240	703	53	124	1067	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	68	44	363	254	39	114	253	740	56	131	1123	78
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	87	153	511	278	353	299	833	1210	92	455	1266	88
Arrive On Green	0.05	0.08	0.08	0.16	0.19	0.19	0.24	0.36	0.36	0.08	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	3322	251	1781	3344	232
Grp Volume(v), veh/h	68	44	363	254	39	114	253	393	403	131	592	609
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1763	1810	1781	1763	1814
Q Serve(g_s), s	5.3	3.1	8.0	19.7	2.4	5.3	8.4	25.5	25.5	9.7	46.2	46.3
Cycle Q Clear(g_c), s	5.3	3.1	8.0	19.7	2.4	5.3	8.4	25.5	25.5	9.7	46.2	46.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.13
Lane Grp Cap(c), veh/h	87	153	511	278	353	299	833	642	659	455	667	687
V/C Ratio(X)	0.78	0.29	0.71	0.91	0.11	0.38	0.30	0.61	0.61	0.29	0.89	0.89
Avail Cap(c_a), veh/h	153	361	688	305	521	442	833	642	659	455	667	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	65.9	60.5	18.9	58.2	47.0	17.7	43.5	36.4	36.4	52.2	58.3	58.3
Incr Delay (d2), s/veh	14.3	1.0	2.2	29.0	0.1	0.8	0.2	4.3	4.2	0.3	12.8	12.6
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	5.0	2.8	10.9	16.7	2.1	6.3	6.5	17.3	17.7	7.7	31.4	32.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.1	61.5	21.1	87.2	47.2	18.5	43.7	40.7	40.6	52.4	71.1	70.9
LnGrp LOS	F	E	C	F	D	B	D	D	D	D	E	E
Approach Vol, veh/h	475			407			1049			1332		
Approach Delay, s/veh	33.3			64.1			41.4			69.2		
Approach LOS	C			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.7	56.0	26.8	16.4	38.7	58.0	11.8	31.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	51.0	24.0	27.0	16.0	53.0	12.0	39.0				
Max Q Clear Time (g_c+I1), s	11.7	27.5	21.7	10.0	10.4	48.3	7.3	7.3				
Green Ext Time (p_c), s	0.2	5.1	0.2	1.5	0.4	3.0	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	54.4											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	41	51	178	31	71	39	666	283	99	275	28
Future Volume (veh/h)	87	41	51	178	31	71	39	666	283	99	275	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	45	55	193	34	77	42	724	308	108	299	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	119	98	87	273	127	107	591	1087	485	690	1187	118
Arrive On Green	0.07	0.06	0.06	0.08	0.07	0.07	0.11	0.10	0.10	0.39	0.37	0.37
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3238	322
Grp Volume(v), veh/h	95	45	55	193	34	77	42	724	308	108	162	167
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1798
Q Serve(g_s), s	6.3	2.9	4.1	6.6	2.1	5.8	2.5	23.7	22.6	4.8	7.7	7.8
Cycle Q Clear(g_c), s	6.3	2.9	4.1	6.6	2.1	5.8	2.5	23.7	22.6	4.8	7.7	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	119	98	87	273	127	107	591	1087	485	690	646	659
V/C Ratio(X)	0.80	0.46	0.63	0.71	0.27	0.72	0.07	0.67	0.64	0.16	0.25	0.25
Avail Cap(c_a), veh/h	178	563	502	314	577	485	591	1087	485	690	646	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	55.0	55.5	53.9	53.1	54.8	36.8	47.9	47.4	23.8	26.5	26.5
Incr Delay (d2), s/veh	13.9	3.3	7.3	6.0	1.1	8.8	0.0	2.8	5.3	0.1	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	3.3	1.4	1.8	3.0	1.0	2.5	1.1	11.6	10.2	2.0	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.1	58.3	62.8	59.9	54.2	63.7	36.9	50.7	52.7	23.9	27.4	27.5
LnGrp LOS	E	E	E	E	D	E	D	D	D	C	C	C
Approach Vol, veh/h	195			304			1074			437		
Approach Delay, s/veh	64.9			60.2			50.7			26.6		
Approach LOS	E			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	51.8	42.0	14.6	11.6	44.8	49.0	13.0	13.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	37.0	11.0	38.0	7.0	44.0	12.0	37.0				
Max Q Clear Time (g_c+I1), s	6.8	25.7	8.6	6.1	4.5	9.8	8.3	7.8				
Green Ext Time (p_c), s	0.1	4.5	0.1	0.5	0.0	1.9	0.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	48.3											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary
6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	35	215	129	27	60	179	920	51	75	424	29
Future Volume (veh/h)	44	35	215	129	27	60	179	920	51	75	424	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	48	38	234	140	29	65	195	1000	55	82	461	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	365	42	261	168	39	88	464	1302	72	300	976	68
Arrive On Green	0.21	0.19	0.19	0.09	0.08	0.08	0.26	0.38	0.38	0.11	0.20	0.20
Sat Flow, veh/h	1781	226	1393	1781	513	1150	1781	3398	187	1781	3345	232
Grp Volume(v), veh/h	48	0	272	140	0	94	195	519	536	82	242	251
Grp Sat Flow(s),veh/h/ln	1781	0	1620	1781	0	1663	1781	1763	1822	1781	1763	1814
Q Serve(g_s), s	2.6	0.0	19.7	9.3	0.0	6.6	10.9	30.9	30.9	5.1	14.6	14.7
Cycle Q Clear(g_c), s	2.6	0.0	19.7	9.3	0.0	6.6	10.9	30.9	30.9	5.1	14.6	14.7
Prop In Lane	1.00		0.86	1.00		0.69	1.00		0.10	1.00		0.13
Lane Grp Cap(c), veh/h	365	0	303	168	0	127	464	676	698	300	514	529
V/C Ratio(X)	0.13	0.00	0.90	0.83	0.00	0.74	0.42	0.77	0.77	0.27	0.47	0.47
Avail Cap(c_a), veh/h	365	0	364	238	0	485	464	676	698	300	514	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	39.0	0.0	47.6	53.4	0.0	54.3	36.9	32.3	32.3	46.5	40.1	40.1
Incr Delay (d2), s/veh	0.2	0.0	21.4	15.9	0.0	8.2	0.6	8.2	7.9	0.5	3.0	2.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.2	0.0	9.8	4.9	0.0	3.1	4.8	14.3	14.8	2.3	7.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	69.0	69.3	0.0	62.4	37.5	40.5	40.3	47.0	43.0	43.0
LnGrp LOS	D	A	E	E	A	E	D	D	D	D	D	D
Approach Vol, veh/h	320			234			1250			575		
Approach Delay, s/veh	64.5			66.6			39.9			43.6		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.2	51.0	16.3	27.5	36.2	40.0	29.6	14.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	46.0	16.0	27.0	22.0	35.0	8.0	35.0				
Max Q Clear Time (g_c+I1), s	7.1	32.9	11.3	21.7	12.9	16.7	4.6	8.6				
Green Ext Time (p_c), s	0.0	5.5	0.1	0.8	0.3	2.7	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	46.7											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	41	51	178	31	71	39	666	283	99	275	28
Future Volume (veh/h)	87	41	51	178	31	71	39	666	283	99	275	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	95	45	55	193	34	77	42	724	308	108	299	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	119	98	87	273	127	107	591	1087	610	690	1187	118
Arrive On Green	0.07	0.06	0.06	0.08	0.07	0.07	0.11	0.10	0.10	0.39	0.37	0.37
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3238	322
Grp Volume(v), veh/h	95	45	55	193	34	77	42	724	308	108	162	167
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1798
Q Serve(g_s), s	6.3	2.9	4.1	6.6	2.1	5.8	2.5	23.7	12.4	4.8	7.7	7.8
Cycle Q Clear(g_c), s	6.3	2.9	4.1	6.6	2.1	5.8	2.5	23.7	12.4	4.8	7.7	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	119	98	87	273	127	107	591	1087	610	690	646	659
V/C Ratio(X)	0.80	0.46	0.63	0.71	0.27	0.72	0.07	0.67	0.50	0.16	0.25	0.25
Avail Cap(c_a), veh/h	178	563	502	314	577	485	591	1087	610	690	646	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	55.0	55.5	53.9	53.1	54.8	36.8	47.9	38.4	23.8	26.5	26.5
Incr Delay (d2), s/veh	13.9	3.3	7.3	6.0	1.1	8.8	0.0	2.8	2.6	0.1	0.9	0.9
Initial Q Delay(d3), 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
%ile BackOfQ(50%), veh/ln	3.3	1.4	1.8	3.0	1.0	2.5	1.1	11.7	5.5	2.0	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.1	58.3	62.8	59.9	54.2	63.7	36.9	50.8	41.0	23.9	27.4	27.5
LnGrp LOS	E	E	E	E	D	E	D	D	D	C	C	C
Approach Vol, veh/h		195			304			1074			437	
Approach Delay, s/veh		64.9			60.2			47.4			26.6	
Approach LOS		E			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	51.8	42.0	14.6	11.6	44.8	49.0	13.0	13.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	37.0	11.0	38.0	7.0	44.0	12.0	37.0				
Max Q Clear Time (g_c+I1), s	6.8	25.7	8.6	6.1	4.5	9.8	8.3	7.8				
Green Ext Time (p_c), s	0.1	4.5	0.1	0.5	0.0	1.9	0.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			46.5									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	35	215	129	27	60	179	920	51	75	424	29
Future Volume (veh/h)	44	35	215	129	27	60	179	920	51	75	424	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	48	38	234	140	29	65	195	1000	55	82	461	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	148	91	709	168	112	95	711	1302	72	548	976	68
Arrive On Green	0.08	0.05	0.05	0.09	0.06	0.06	0.40	0.38	0.38	0.31	0.29	0.29
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3398	187	1781	3345	232
Grp Volume(v), veh/h	48	38	234	140	29	65	195	519	536	82	242	251
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1763	1822	1781	1763	1814
Q Serve(g_s), s	3.0	2.4	2.8	9.3	1.8	4.8	8.9	30.9	30.9	4.0	13.5	13.6
Cycle Q Clear(g_c), s	3.0	2.4	2.8	9.3	1.8	4.8	8.9	30.9	30.9	4.0	13.5	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.13
Lane Grp Cap(c), veh/h	148	91	709	168	112	95	711	676	698	548	514	529
V/C Ratio(X)	0.32	0.42	0.33	0.83	0.26	0.69	0.27	0.77	0.77	0.15	0.47	0.47
Avail Cap(c_a), veh/h	148	421	989	238	546	462	711	676	698	548	514	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	51.9	55.5	9.1	53.4	53.9	55.3	24.3	32.3	32.3	30.2	34.9	34.9
Incr Delay (d2), s/veh	1.3	3.1	0.3	15.9	1.2	8.5	0.2	8.2	7.9	0.1	3.0	2.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.4	1.2	2.4	4.9	0.9	2.2	3.7	14.3	14.8	1.7	6.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	58.5	9.4	69.3	55.1	63.9	24.5	40.5	40.3	30.3	37.9	37.8
LnGrp LOS	D	E	A	E	E	E	C	D	D	C	D	D
Approach Vol, veh/h	320			234			1250			575		
Approach Delay, s/veh	21.8			66.0			37.9			36.8		
Approach LOS	C			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	41.9	51.0	16.3	10.8	52.9	40.0	15.0	12.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	46.0	16.0	27.0	22.0	35.0	8.0	35.0				
Max Q Clear Time (g_c+I1), s	6.0	32.9	11.3	4.8	10.9	15.6	5.0	6.8				
Green Ext Time (p_c), s	0.1	5.5	0.1	1.0	0.4	2.7	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	38.2											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	83	97	600	171	147	76	470	380	212	737	113
Future Volume (veh/h)	85	83	97	600	171	147	76	470	380	212	737	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	89	87	102	632	180	155	80	495	400	223	776	119
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	110	151	134	661	403	339	434	957	427	545	1029	158
Arrive On Green	0.06	0.08	0.08	0.19	0.22	0.22	0.08	0.09	0.09	0.31	0.34	0.34
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3064	470
Grp Volume(v), veh/h	89	87	102	632	180	155	80	495	400	223	446	449
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1771
Q Serve(g_s), s	6.9	6.6	8.8	25.5	11.7	6.2	5.9	18.8	35.4	14.0	31.5	31.5
Cycle Q Clear(g_c), s	6.9	6.6	8.8	25.5	11.7	6.2	5.9	18.8	35.4	14.0	31.5	31.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	110	151	134	661	403	339	434	957	427	545	592	595
V/C Ratio(X)	0.81	0.58	0.76	0.96	0.45	0.46	0.18	0.52	0.94	0.41	0.75	0.75
Avail Cap(c_a), veh/h	165	470	419	661	681	573	434	957	427	545	592	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	61.7	62.7	55.9	47.7	12.7	51.4	55.0	62.5	38.3	41.4	41.4
Incr Delay (d2), s/veh	15.8	3.5	8.5	24.5	0.8	1.0	0.2	1.6	26.1	0.5	8.7	8.6
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	6.5	5.6	6.9	19.2	9.4	8.0	4.9	13.6	24.4	10.2	21.4	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	65.1	71.2	80.5	48.4	13.7	51.5	56.6	88.7	38.8	50.0	50.0
LnGrp LOS	F	E	E	F	D	B	D	E	F	D	D	D
Approach Vol, veh/h	278			967			975			1118		
Approach Delay, s/veh	72.3			63.8			69.3			47.8		
Approach LOS	E			E			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.1	43.0	32.0	16.9	39.1	52.0	13.7	35.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	38.0	27.0	37.0	9.0	47.0	13.0	51.0				
Max Q Clear Time (g_c+I1), s	16.0	37.4	27.5	10.8	7.9	33.5	8.9	13.7				
Green Ext Time (p_c), s	0.1	0.3	0.0	1.0	0.0	4.7	0.1	1.6				
Intersection Summary												
HCM 6th Ctrl Delay	60.8											
HCM 6th LOS	E											

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	49	400	241	50	109	332	713	53	125	1073	79
Future Volume (veh/h)	68	49	400	241	50	109	332	713	53	125	1073	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	72	52	421	254	53	115	349	751	56	132	1129	83
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	91	34	277	254	149	324	344	1307	97	229	1094	80
Arrive On Green	0.05	0.19	0.19	0.14	0.28	0.28	0.19	0.39	0.39	0.04	0.11	0.11
Sat Flow, veh/h	1781	177	1435	1781	525	1140	1781	3326	248	1781	3330	245
Grp Volume(v), veh/h	72	0	473	254	0	168	349	398	409	132	597	615
Grp Sat Flow(s),veh/h/ln	1781	0	1612	1781	0	1665	1781	1763	1811	1781	1763	1812
Q Serve(g_s), s	5.6	0.0	27.0	20.0	0.0	11.2	27.0	24.8	24.8	10.2	46.0	46.0
Cycle Q Clear(g_c), s	5.6	0.0	27.0	20.0	0.0	11.2	27.0	24.8	24.8	10.2	46.0	46.0
Prop In Lane	1.00		0.89	1.00		0.68	1.00		0.14	1.00		0.14
Lane Grp Cap(c), veh/h	91	0	311	254	0	474	344	693	711	229	579	595
V/C Ratio(X)	0.79	0.00	1.52	1.00	0.00	0.35	1.02	0.57	0.58	0.58	1.03	1.03
Avail Cap(c_a), veh/h	153	0	311	254	0	474	344	693	711	229	579	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	65.7	0.0	56.5	60.0	0.0	39.9	56.5	33.3	33.3	63.3	62.4	62.4
Incr Delay (d2), s/veh	13.9	0.0	250.4	55.9	0.0	0.5	52.7	3.4	3.4	2.6	40.2	40.2
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	5.3	0.0	50.4	18.9	0.0	8.3	24.0	16.7	17.1	8.2	36.6	37.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	0.0	306.9	115.9	0.0	40.3	109.2	36.8	36.7	65.9	102.6	102.6
LnGrp LOS	E	A	F	F	A	D	F	D	D	E	F	F
Approach Vol, veh/h	545			422			1156			1344		
Approach Delay, s/veh	276.9			85.8			58.6			99.0		
Approach LOS	F			F			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	60.0	25.0	32.0	32.0	51.0	12.2	44.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	55.0	20.0	27.0	27.0	46.0	12.0	35.0				
Max Q Clear Time (g_c+I1), s	12.2	26.8	22.0	29.0	29.0	48.0	7.6	13.2				
Green Ext Time (p_c), s	0.1	5.4	0.0	0.0	0.0	0.0	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	111.9											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary

3: US-95A & Newlands

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	83	97	600	171	147	76	470	380	212	737	113
Future Volume (veh/h)	85	83	97	600	171	147	76	470	380	212	737	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1856	1870	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	89	87	102	632	180	155	80	495	400	223	776	119
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	3	2	3	2	3	3	3	3	3
Cap, veh/h	110	151	134	661	403	339	434	957	730	545	1029	158
Arrive On Green	0.06	0.08	0.08	0.19	0.22	0.22	0.08	0.09	0.09	0.31	0.34	0.34
Sat Flow, veh/h	1781	1777	1585	3428	1870	1572	1781	3526	1572	1767	3064	470
Grp Volume(v), veh/h	89	87	102	632	180	155	80	495	400	223	446	449
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1714	1870	1572	1781	1763	1572	1767	1763	1771
Q Serve(g_s), s	6.9	6.6	8.8	25.5	11.7	6.2	5.9	18.8	5.9	14.0	31.5	31.5
Cycle Q Clear(g_c), s	6.9	6.6	8.8	25.5	11.7	6.2	5.9	18.8	5.9	14.0	31.5	31.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	110	151	134	661	403	339	434	957	730	545	592	595
V/C Ratio(X)	0.81	0.58	0.76	0.96	0.45	0.46	0.18	0.52	0.55	0.41	0.75	0.75
Avail Cap(c_a), veh/h	165	470	419	661	681	573	434	957	730	545	592	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	61.7	62.7	55.9	47.7	12.7	51.4	55.0	36.6	38.3	41.4	41.4
Incr Delay (d2), s/veh	15.8	3.5	8.5	24.5	0.8	1.0	0.2	1.7	2.5	0.5	8.7	8.6
Initial Q Delay(d3), 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
%ile BackOfQ(95%), veh/ln	6.5	5.6	6.9	19.2	9.4	8.0	4.9	13.7	19.0	10.2	21.4	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	80.6	65.1	71.2	80.5	48.4	13.7	51.5	56.7	39.2	38.8	50.0	50.0
LnGrp LOS	F	E	E	F	D	B	D	E	D	D	D	D
Approach Vol, veh/h		278			967			975			1118	
Approach Delay, s/veh		72.3			63.8			49.1			47.8	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.1	43.0	32.0	16.9	39.1	52.0	13.7	35.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	38.0	27.0	37.0	9.0	47.0	13.0	51.0				
Max Q Clear Time (g_c+I1), s	16.0	20.8	27.5	10.8	7.9	33.5	8.9	13.7				
Green Ext Time (p_c), s	0.1	4.4	0.0	1.0	0.0	4.7	0.1	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			54.8									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary 6: US-95A & Fremont/Chisholm

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	49	400	241	50	109	332	713	53	125	1073	79
Future Volume (veh/h)	68	49	400	241	50	109	332	713	53	125	1073	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	72	52	421	254	53	115	349	751	56	132	1129	83
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	3	2	3	3
Cap, veh/h	91	179	511	278	375	318	784	1212	90	430	1261	93
Arrive On Green	0.05	0.10	0.10	0.16	0.20	0.20	0.23	0.36	0.36	0.08	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	3326	248	1781	3330	245
Grp Volume(v), veh/h	72	52	421	254	53	115	349	398	409	132	597	615
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1763	1811	1781	1763	1812
Q Serve(g_s), s	5.6	3.6	9.7	19.7	3.3	5.3	12.2	25.9	26.0	9.8	46.7	46.8
Cycle Q Clear(g_c), s	5.6	3.6	9.7	19.7	3.3	5.3	12.2	25.9	26.0	9.8	46.7	46.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.14
Lane Grp Cap(c), veh/h	91	179	511	278	375	318	784	642	660	430	667	686
V/C Ratio(X)	0.79	0.29	0.82	0.91	0.14	0.36	0.44	0.62	0.62	0.31	0.90	0.90
Avail Cap(c_a), veh/h	153	361	665	305	521	442	784	642	660	430	667	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	65.7	58.9	19.9	58.2	46.1	17.9	46.5	36.5	36.5	53.4	58.5	58.5
Incr Delay (d2), s/veh	13.9	0.9	6.4	29.0	0.2	0.7	0.4	4.5	4.3	0.3	13.1	13.0
Initial Q Delay(d3),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
%ile BackOfQ(95%),veh/ln	5.3	3.2	13.4	16.7	2.8	6.3	9.0	17.5	17.9	7.7	31.6	32.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	59.8	26.3	87.2	46.2	18.6	46.9	41.0	40.9	53.7	71.7	71.5
LnGrp LOS	E	E	C	F	D	B	D	D	D	D	E	E
Approach Vol, veh/h	545			422			1156			1344		
Approach Delay, s/veh	36.5			63.4			42.7			69.8		
Approach LOS	D			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.8	56.0	26.8	18.4	36.8	58.0	12.2	33.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	18.0	51.0	24.0	27.0	16.0	53.0	12.0	39.0				
Max Q Clear Time (g_c+I1), s	11.8	28.0	21.7	11.7	14.2	48.8	7.6	7.3				
Green Ext Time (p_c), s	0.1	5.1	0.2	1.7	0.2	2.7	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	54.8											
HCM 6th LOS	D											

SOLAEGUI
ENGINEERS

August 31, 2020

Mr. Derek Starkey, P.E.
City of Fernley
595 Silver Lace Boulevard
Fernley, Nevada 89408

Re: Sherwood Village, Trip Generation Letter

Dear Derek:

This letter contains the findings of our trip generation comparison of the current site plan of Sherwood Village and the site plan which was the basis of our January 2020 traffic study and further discussion about updated street connections. The project is generally located west of Fernwood Drive and north of Freemont Street in Fernley, Nevada. The original density included 70 duplex dwelling units and 364 multifamily dwelling units. The current site plan has 58 duplex units and 376 multifamily units. The new site plan is attached. Table 1 shows the trip generation summary for the project being calculated as "Single Family Detached Housing for the duplex units and Multifamily (Low Rise) for the remainder. The ITE multifamily land use description limits the use of this category to building containing three or more units. For that reason trip generation totals for the duplexes were calculated at the single homes values. "TTE Land Use #210 for the Single Family Detached Housing land use and #220 Multifamily (Low Rise) were taken from the Tenth Edition of ITE Trip Generation.

TABLE 1
TRIP GENERATION

<u>LAND USE</u>	<u>ADT</u>	<u>AM PEAK HOUR TOTAL</u>	<u>PM PEAK HOUR TOTAL</u>
January 2020 Study			
Single Family			
70 Dwelling Units	661	52	69
Multifamily			
364 Dwelling units	2,664	167	204
Total	3,325	219	273
August New Site Plan			
Single Family			
58 Dwelling Units	630	46	60
Multifamily			
376 Dwelling units	2,802	168	192
Total	3,427	214	252
Difference (August Compared to January)	+102	-5	-21

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As indicated in Table 1, the new site plan results in project trip generation of 3,427 average daily trips with 214 AM peak hour trips and 252 PM peak hour trips. These totals are 102 more average daily trips with 5 fewer AM peak hour trips and 21 fewer PM peak hour trips than the January totals. Because the traffic study capacity analysis work is based on peak hour trips and both new peak hour totals are slightly lower than the traffic study values the January capacity analysis represents worse case project traffic impacts. For that reason the study was not updated for the new site plan.

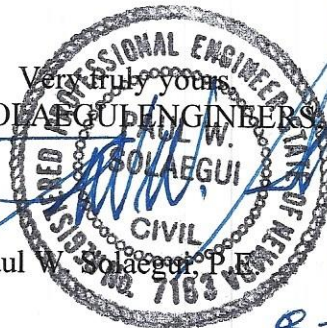
In recent City of Fernley comments regarding the Vine Street connection to the west and the additional street connection to Freemont Street on the south we have the following comments. We acknowledge that the new Vine Street connection will allow project traffic to conveniently access the local street network west of the site. However, because of the lack of collector or arterial street connecting infrastructure to the west we do not see any significant volume of project residents using that route to access the regional street network. In our opinion the project trip assignment found in the original traffic study is still valid.

The additional on-site street connection to Freemont Street will be attractive to project traffic. In fact as much as 75% of the project traffic bound for Freemont Street will use the new street rather than the Wildwood Drive and Fernwood Drive connections. This new street connection will greatly reduce project traffic impacts on Wildwood Drive and Fernwood Drive. The new on-site street, providing the additional connection to Freemont Street, should be designed to accommodate 2,000 average daily trips.

We trust that this information will be adequate for your review. Please contact us if you have questions or comments.

Very truly yours,
SOLAEGUI ENGINEERS, LTD

Paul W. Solaequi, P.E.



8-31-20
EXP 6-30-22

Enclosures
Letters/ Sherwood Village Letter 2



NOT FOR
CONSTRUCTION
80%
PROGRESS

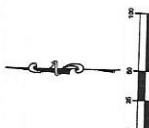


NO.	REVISIONS	DATE	BY
1	PER SHAUN ENGINEERING COMMENTS	9/02/2020	GI

SITE KEY NOTES:

- 4-FT WIDE SIDEWALK
PARKING LOT WITH SQUARE FOOTAGE
PARKING COUNT
PARKING CANNOPY
BUILDING NUMBER

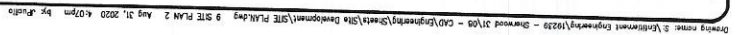
_____	EDGE OF PAVEMENT
=====	CURB & GUTTER
— 4 —	DRAINAGE FLOW LINE
— T —	EXISTING TELEPHONE
— G —	EXISTING GAS
— E —	EXISTING OVERHEAD ELECTRIC
— E —	EXISTING ELECTRIC
— P —	EXISTING POWER POLE
— L —	EXISTING LIGHT POLE
— P —	PROPOSED LIGHT POLE
— F —	EXISTING FENCE
— U —	EXISTING UNPAVED ROAD



LOT NUMBER
LOT SIZE
IN SQUARE
FEET

BUILDING DATA TABLE				TOTAL	
BUILDING #	UNITS/FLOOR	AREA (SQ. FT.)	STORIES	UNITS	AREA (SQ. FT.)
1	8	8,700	3	24	26,100
2	8	8,700	3	36	26,100
3	8	8,700	3	36	26,100
4	8	8,700	2	16	17,400
5	8	7,000	2	16	14,000
6	8	7,000	2	16	14,000
7	8	7,000	2	16	14,000
8	8	7,000	2	16	14,000
9	8	7,000	2	16	14,000
10	8	8,700	2	16	14,000
11	8	7,000	2	16	14,000
12	8	7,000	3	24	21,000
13	8	7,000	3	24	21,000
14	8	7,000	3	24	21,000
15	8	7,000	2	24	17,000
16	8	7,000	2	24	17,000
17	12	105,500	3	36	31,500
TOTALS				366	346,500





Single-Family Detached Housing (210)

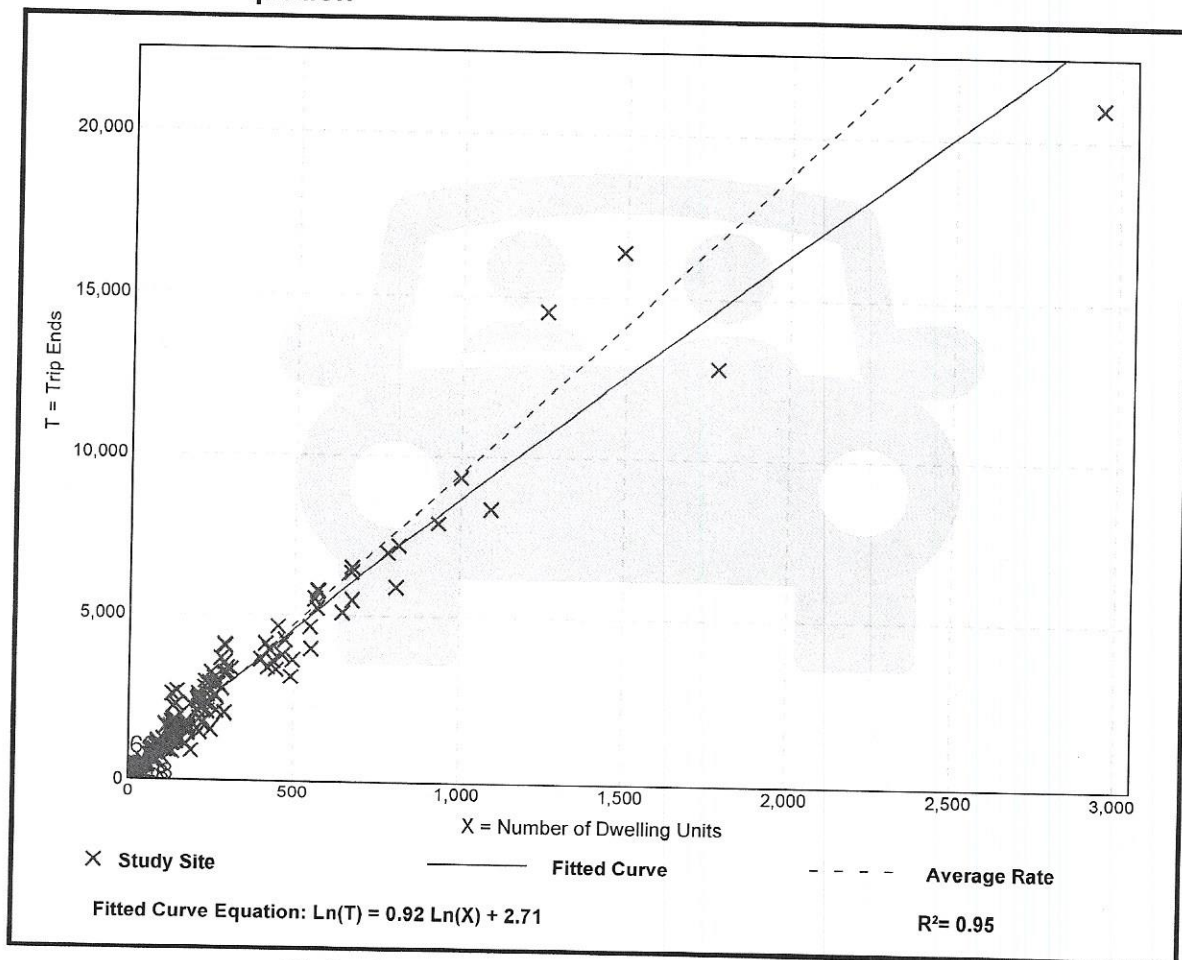
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



Trip Gen Manual, 10th Edition • Institute of Transportation Engineers

Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

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

Setting/Location: General Urban/Suburban

Number of Studies: 173

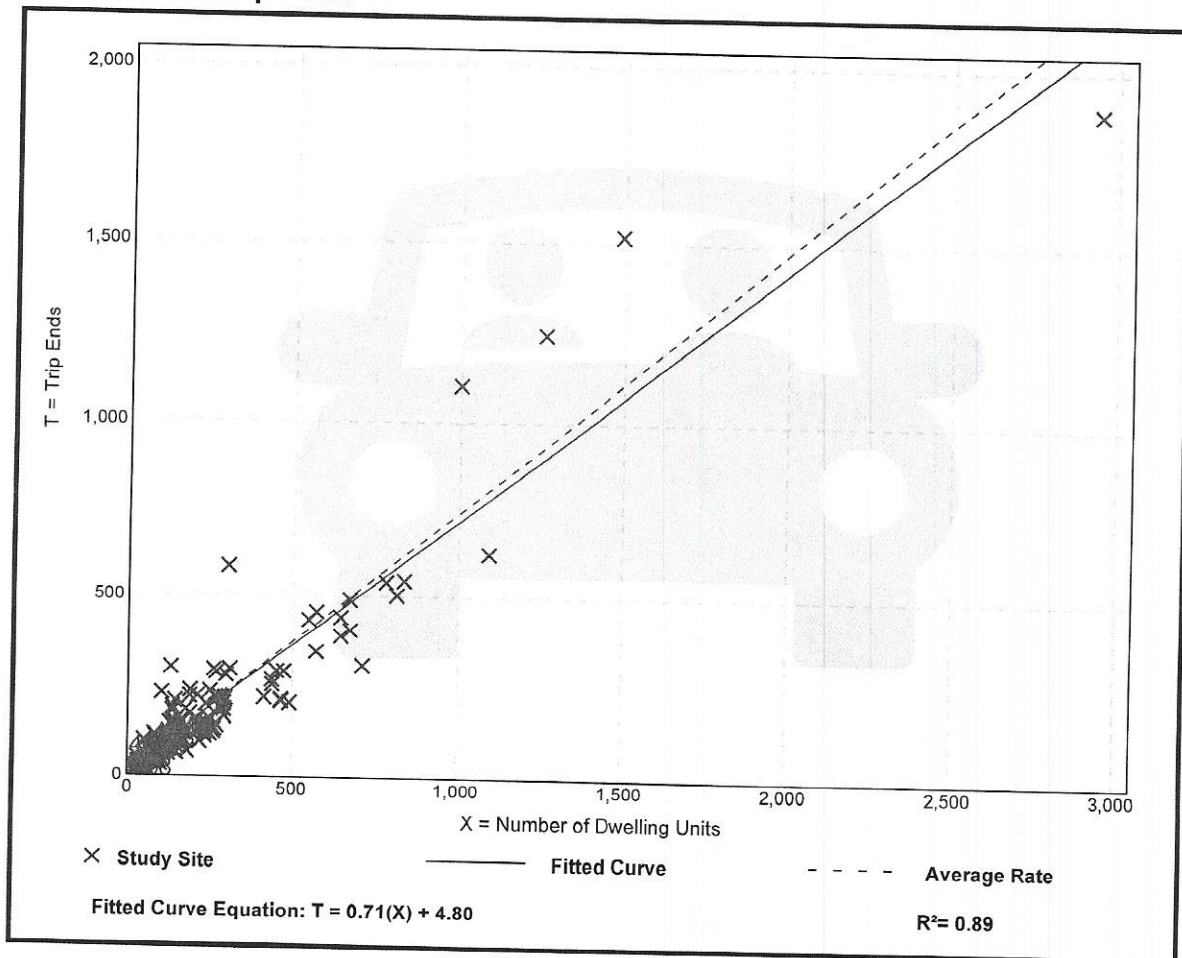
Avg. Num. of Dwelling Units: 219

Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



Trip Gen Manual, 10th Edition • Institute of Transportation Engineers

Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

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

Setting/Location: General Urban/Suburban

Number of Studies: 190

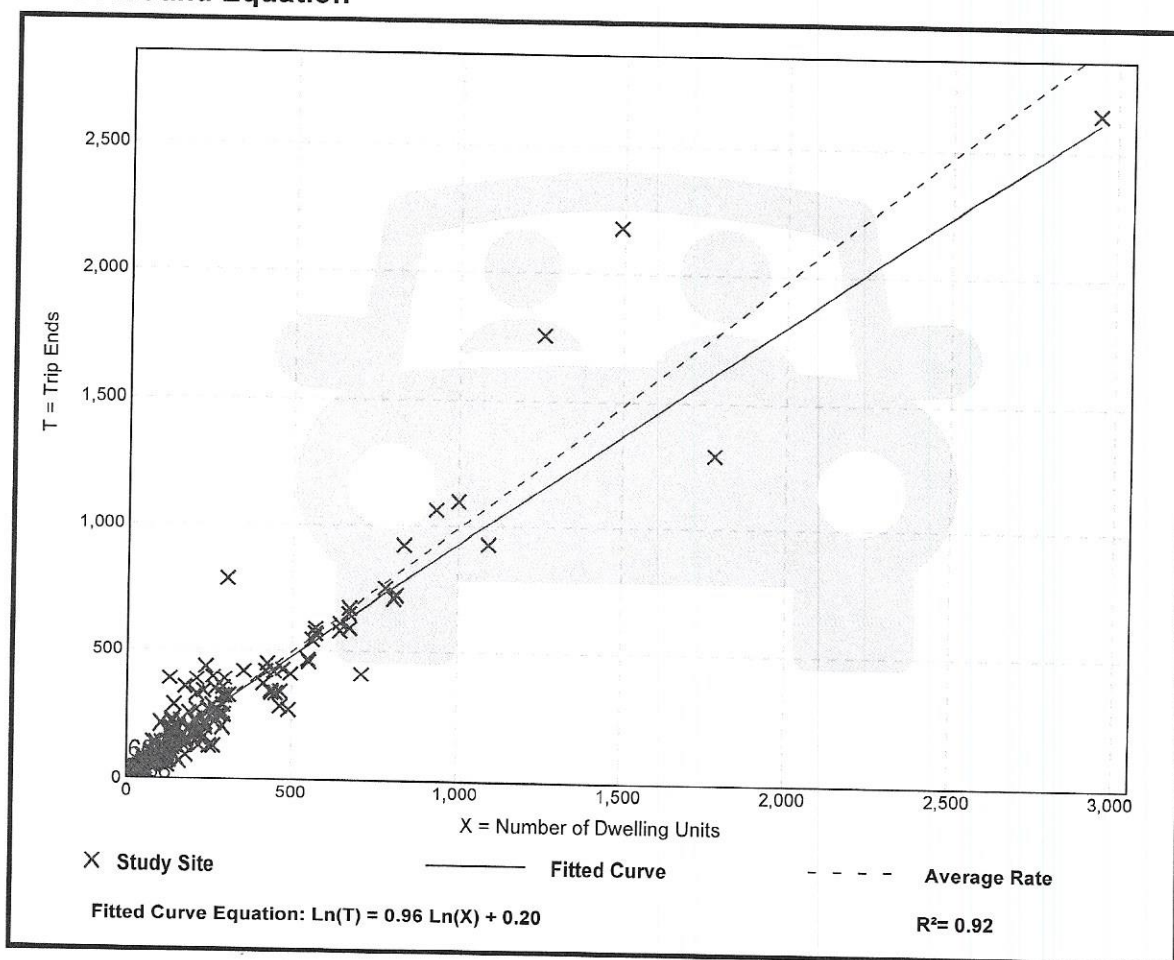
Avg. Num. of Dwelling Units: 242

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



Trip Gen Manual, 10th Edition • Institute of Transportation Engineers

Multifamily Housing (Low-Rise) (220)

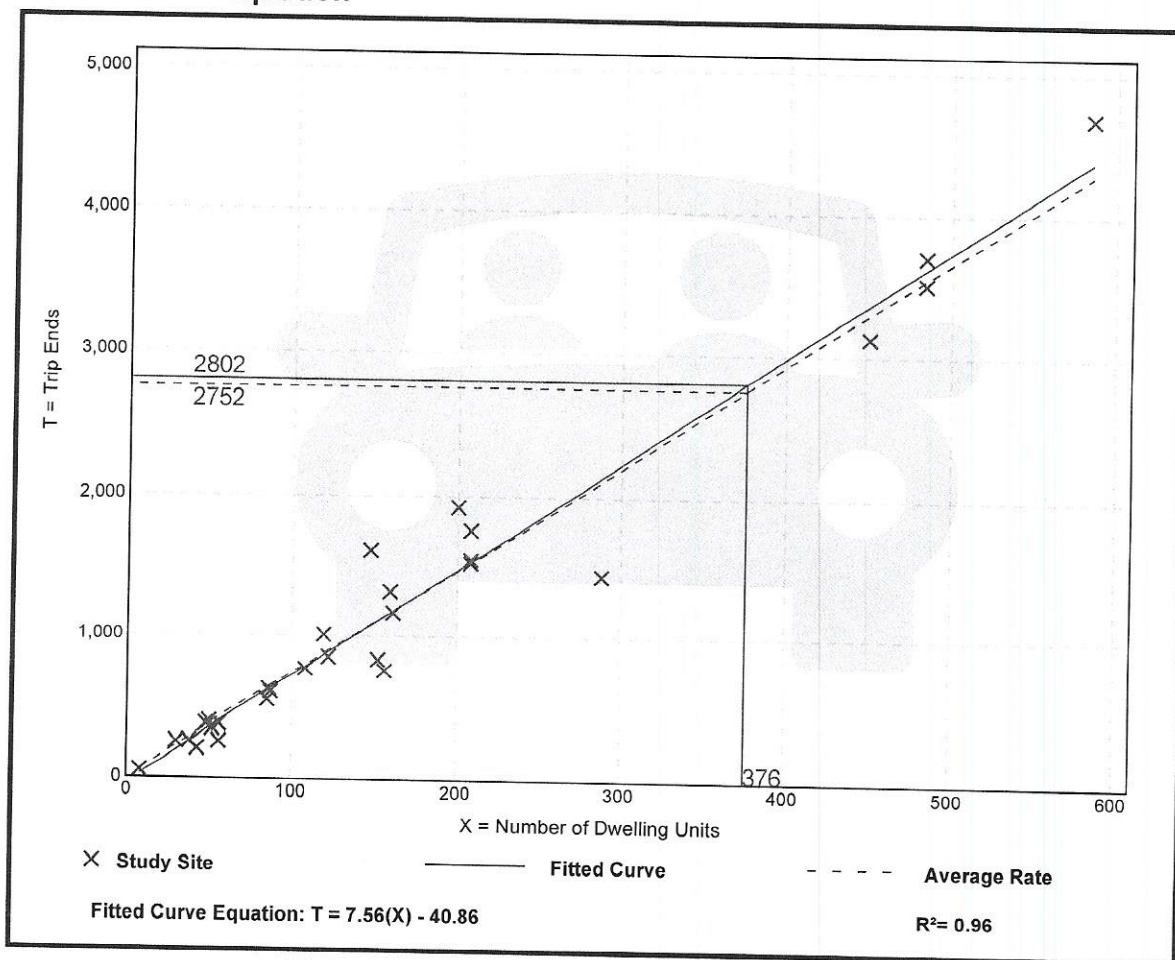
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

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



Trip Gen Manual, 10th Edition • Institute of Transportation Engineers

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

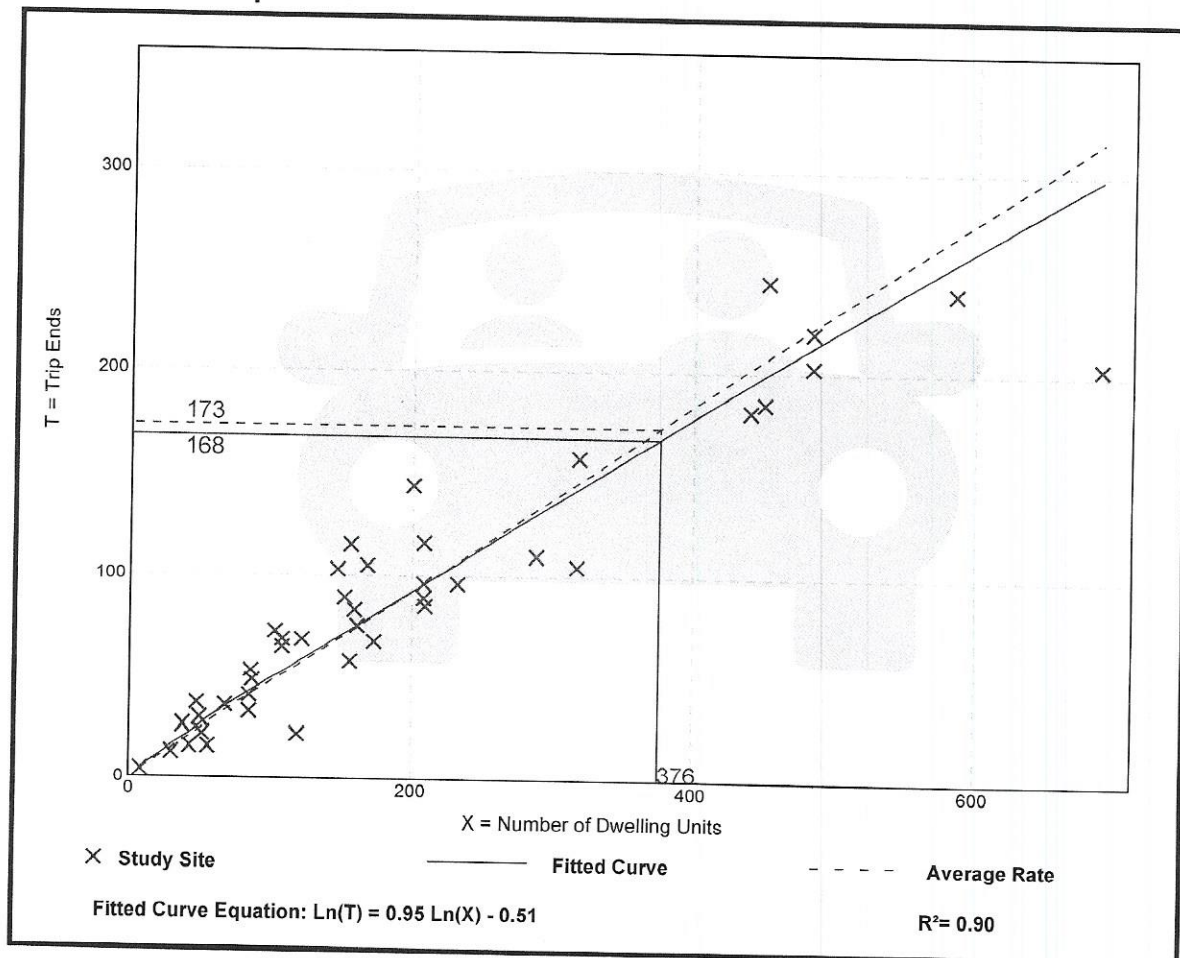
Avg. Num. of Dwelling Units: 199

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



Trip Gen Manual, 10th Edition • Institute of Transportation Engineers

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

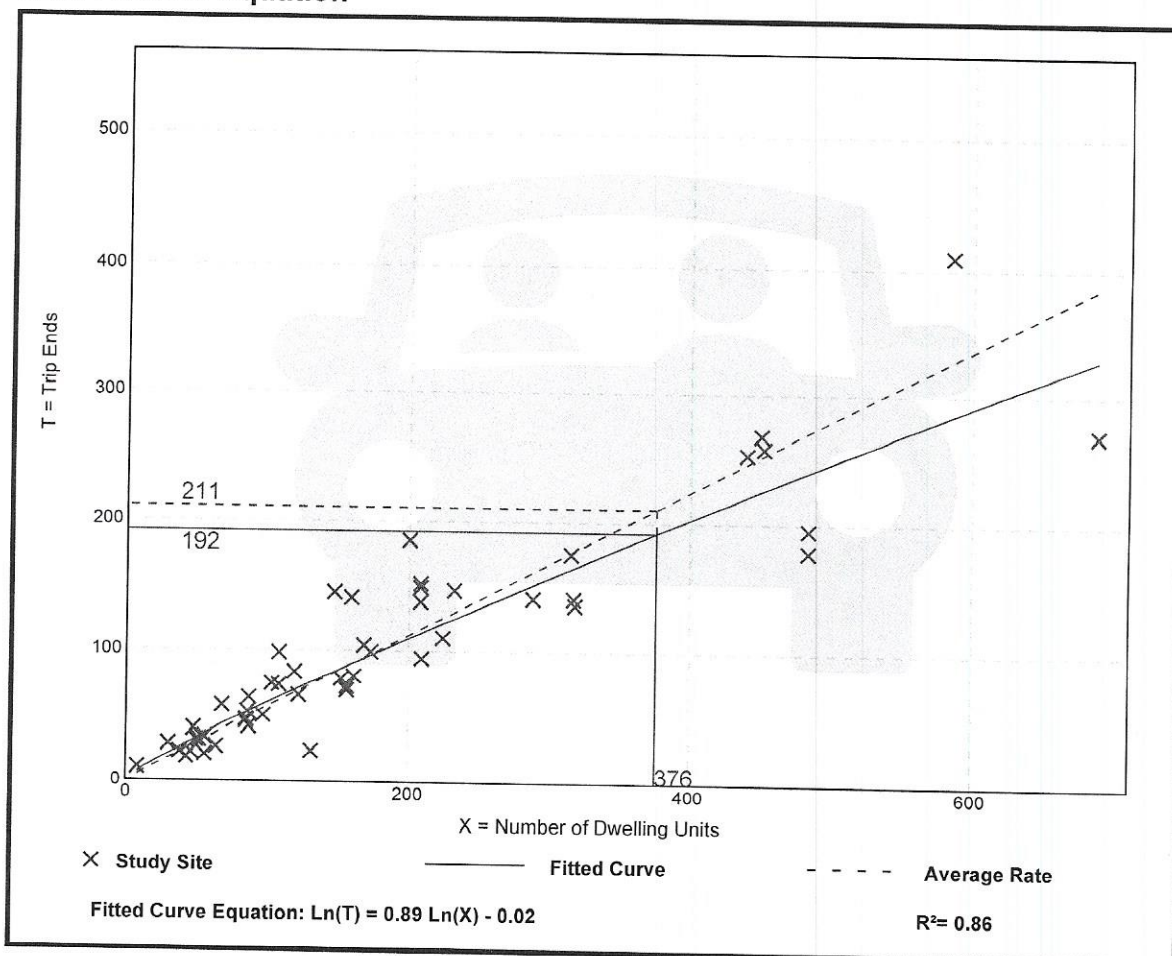
Avg. Num. of Dwelling Units: 187

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



Trip Gen Manual, 10th Edition • Institute of Transportation Engineers



December 1, 2022

City of Fernley
Shay League, City Planner
595 Silverlace Blvd
Fernley, NV 89408

RE: December 2022 Sherwood Village, Trip Generation Update Letter

Dear Shay,

This letter contains the findings of our trip generation comparison of the current site plan for Sherwood Village, dated August 25, 2022 and included as an attachment to this letter, and the previous site plans that were the basis of our January 2020 Sherwood Village Traffic Analysis and August 2020 Sherwood Village Trip Generation Letter (attached). The project is located west of Fernwood Drive and north of Fremont Street in Fernley, Nevada. The August 2020 development planned density included fifty-eight single-family attached dwelling units and 376 multi-family dwelling units. Since then, the development was divided into two separate residential developments, Sherwood Village containing apartments and Fernwood Village containing single-family attached units. On February 9, 2021, the project submitted the Fernwood Village Tentative Subdivision Map and Fernwood Trip Generation Letter (attached), which presented a separate traffic analysis for the development with a total of fifty-four single-family attached units. Therefore, the current site plan for Sherwood Village contains zero single-family attached units and 316 multi-family units as shown in the building dwelling unit summary below.

PLANNERS

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

ENGINEERS

ANALYSTS

155 Country Estates Circle
Suite 300
Reno, NV 89511

PHASE 1 // BUILDING INFORMATION						
BLDG TYPE	BLDG #	UNITS / FLOOR	STOREYS	UNITS / BLDG	GROSS SF / STOREY	GROSS SF
A	1	8	2	16	7560	15120
A	2	8	2	16	7560	15120
C	3	8	2	16	8056	16112
C	4	8	3	24	8056	24168
SITE TOTALS				72	31,232	70,520
PHASE 2 // BUILDING INFORMATION						
BLDG TYPE	BLDG #	UNITS / FLOOR	STOREYS	UNITS / BLDG	GROSS SF / STOREY	GROSS SF
B	5	8	2	16	8692	17384
A	6	8	2	16	7560	15120
C	7	8	2	16	8056	16112
B	8	8	2	16	8692	17384
A	9	8	2	16	7560	15120
D	10	12	2	24	11340	22680
SITE TOTALS				104	51,900	103,800
PHASE 3 // BUILDING INFORMATION						
BLDG TYPE	BLDG #	UNITS / FLOOR	STOREYS	UNITS / BLDG	GROSS SF / STOREY	GROSS SF
A	11	8	2	16	7560	15120
D	12	12	3	36	11340	34020
D	13	12	2	24	11340	22680
B	14	8	2	16	8692	17384
SITE TOTALS				92	38,932	89,204
PHASE 4 // BUILDING INFORMATION						
BLDG TYPE	BLDG #	UNITS / FLOOR	STOREYS	UNITS / BLDG	GROSS SF / STOREY	GROSS SF
C	15	8	2	16	8056	16112
C	16	8	2	16	8056	16112
A	17	8	2	16	7560	15120
SITE TOTALS				48	23,672	47,344
ALL PHASES TOTAL						
SITE TOTALS				316	145,736	310,868

Table 1: Building dwelling unit summary from Sherwood Village Site Plan dated 8-25-2022.

Table 2 below shows the August 2020 trip generation values for the project being calculated as "Single-Family Detached Housing" for the single-family attached units and "Multi-family (Low Rise)" for the remainder. The ITE multi-family land use description limits the use of this category to building containing three or more units. For that reason, trip generation totals for the single-family attached units were calculated at the single home values. ITE Land Use #210 for the Single-Family Detached Housing land use and #220 Multi-family (Low Rise) were taken from the Tenth Edition of ITE *Trip Generation Manual*.

TABLE 1 TRIP GENERATION			
<u>LAND USE</u>	<u>ADT</u>	<u>AM PEAK HOUR TOTAL</u>	<u>PM PEAK HOUR TOTAL</u>
January 2020 Study			
Single Family			
70 Dwelling Units	661	52	69
Multifamily			
364 Dwelling units	2,664	167	204
Total	3,325	219	273
August New Site Plan			
Single Family			
58 Dwelling Units	630	46	60
Multifamily			
376 Dwelling units	2,802	168	192
Total	3,427	214	252
Difference (August Compared to January)	+102	-5	-21

Table 2: Table 1 from the Sherwood Village, Trip Generation Letter dated 8-31-2020 (attached).

As indicated in Table 2, the August 2020 site plan results in project trip generation of 3,427 average daily trips with 214 AM peak hour trips and 252 PM peak hour trips. As indicated in Table 3 below, the current site plan for Sherwood Village results in 2,301 average daily trips generated with 146 AM peak hour trips and 181 PM peak hour trips. The new trip generation totals are 1,126 fewer average daily trips with sixty-eight fewer AM peak hour trips and seventy-one fewer PM peak hour trips when compared to the August 2020 trip generation totals.

LAND USE	DWELLING UNITS	AVERAGE DAILY TRIPS (ADT)	AM PEAK HOUR TOTAL	PM PEAK HOUR TOTAL
Single-Family Housing (Townhome)	0	0	0	0
Multi-Family Housing (Apartment)	316	2,301	146	181
TOTAL		2,301	146	181
DIFFERENCE (Aug. 2020 Compared to Dec. 2022)		-1,126	-68	-71

Table 3: December 2022 Trip Generation summary based on the current Sherwood Village site plan.

The new trip generation estimates are significantly lower than before because of the elimination of single-family attached units from Sherwood Village and a reduction in the number of apartment units included

in the current site plan. The impacts of site generated traffic on the adjacent road network are also diminished due to lower anticipated traffic volumes. Table 4 below shows the intersection level of service and delay results from the original traffic impact study completed in January 2020.

INTERSECTION	EXISTING		EXISTING + PROJECT		EXISTING + PROJECT + OTHER		2040 BASE		2040 BASE + PROJECT	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
US-95A/Newlands Existing Improvements	C25.8 N/A	D52.4 N/A	C27.6 N/A	D52.8 N/A	C27.6 N/A	D53.1 N/A	D47.9 D46.2	E60.0 D53.8	D48.3 D46.5	E60.8 D54.8
US-95A/Fremont Existing Improvements	C30.3 N/A	D48.2 N/A	C32.6 C32.3	E56.7 D42.3	C34.6 C33.9	E68.5 D50.7	D43.1 D38.0	F92.8 D54.4	D46.7 D38.2	F112 D54.8

Table 4: Table 3 Intersection Level of Service and Delay Results from the Sherwood Village Traffic Analysis dated 1-20-2020.

Table 4 shows that the development was anticipated to generate enough traffic during the PM peak hour that the level of service and vehicle delay at the intersection of US-95A/Fremont St./Chisholm Trl. was below NDOT's minimum standards of LOS D or average delay less than or equal to 55.0 sec/veh for NHS highways. Therefore, both the original January 2020 Traffic Analysis and August 2020 Trip Generation Letter recommended that the US-95A/Fremont St./Chisholm Trl. intersection, "be improved to include separate left-turn, through, and right-turn lanes at the west Fremont Street and east Chisholm Trail approaches." These capacity improvements plus the addition of "overlap phasing for the right turn movement at the west Fremont Street approach," were shown to improve the intersection level of service enough to meet NDOT's minimum standard of LOS D for NHS highways.

Now, based on the updated site generated traffic volumes, the following intersection level of service and delay results were calculated using the *Highway Capacity Manual, 6th Edition*, published by the Transportation Research Board, as done previously.

Intersection	Existing		Existing + Project		2040 Base		2040 Base + Project	
	AM	PM	AM	PM	AM	PM	AM	PM
Existing	C 30.3	D 48.2	D 35.1	D 52.1	D 43.1	F 92.8	D 41.8	F 109.9
With Improvements	N/A	N/A	C 29.5	D 42.1	D 38.0	D 54.4	D 33.2	D 53.6

Table 5: December 2022 intersection level of service and delay (sec/veh) results.

The updated capacity analysis at the intersection of US-95A/Fremont St./Chisholm Trl. demonstrates that the intersection as a whole is anticipated to operate at LOS D with the additional traffic generated by

Sherwood Village during the AM and PM peak hours. However, the Chisholm Trl. approach alone is anticipated to operate at LOS E, with an average delay of 57.9 sec/veh, during the AM peak hour and at LOS D during the PM peak hour with the additional trips generated by the Sherwood Village development. Left-turning vehicles experience the highest amount of delay with an average of 64.6 sec/veh during the AM peak hour and an average of 64.9 sec/veh during the PM peak hour.

To address the significant delay for left-turning vehicles during the AM and PM peak hours, it is recommended that the Chisholm Trl. approach be improved to allow more vehicles per cycle to make a left-turn from Chisholm Trl. on to US-95A. The improvements could include extending the green time for protected left-turns or allowing permissive left turns to occur during the minor street's green light time. Our traffic analysis (included in the attached intersection level of service reports) demonstrates that LOS D or better can be achieved on the Chisholm Trl. approach by allowing protected/permissive left turns during the AM and PM peak hours. Adding a dedicated right-turn lane on Chisholm Trl., as previously recommended in the January 2020 Traffic Analysis and August 2020 Traffic Letter, is not shown to improve the average approach delay by a significant amount of time, and the approach would continue to operate at a LOS E because a dedicated right-turn lane would not improve delay for the left-turning vehicles.

It is important to acknowledge that the new on-site east-west collector street, named Pinewood Drive in the attached site plan, will be gated at the west and east limits of the Sherwood Village property, and will not allow vehicular traffic to access the local street network west or east of the site. 100 percent of the traffic generated by Sherwood Village will use the Sherwood Drive/Fremont St. intersection to access the site. Therefore, the new on-site north-south collector street, named Sherwood Drive, should be designed to accommodate 2,400 average daily trips. In our opinion, the project trip distribution found in the original traffic study from January 2020 is still valid.

We trust that this information will be adequate for your review. Please contact us if you have questions or comments.

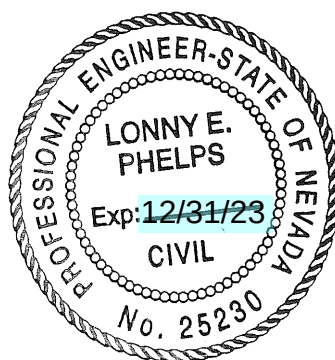
Sincerely,

Lonny Phelps



President

Phelps Engineering Services, Inc.



Attachments: Sherwood Village, Trip Generation Letter; Fernwood, Trip Generation Letter; Sherwood Village Site Plan; Intersection Level of Service Reports

SOLAEGUI
ENGINEERS

August 31, 2020

Mr. Derek Starkey, P.E.
City of Fernley
595 Silver Lace Boulevard
Fernley, Nevada 89408

Re: Sherwood Village, Trip Generation Letter

Dear Derek:

This letter contains the findings of our trip generation comparison of the current site plan of Sherwood Village and the site plan which was the basis of our January 2020 traffic study and further discussion about updated street connections. The project is generally located west of Fernwood Drive and north of Freemont Street in Fernley, Nevada. The original density included 70 duplex dwelling units and 364 multifamily dwelling units. The current site plan has 58 duplex units and 376 multifamily units. The new site plan is attached. Table 1 shows the trip generation summary for the project being calculated as "Single Family Detached Housing for the duplex units and Multifamily (Low Rise) for the remainder. The ITE multifamily land use description limits the use of this category to building containing three or more units. For that reason trip generation totals for the duplexes were calculated at the single homes values. "TTE Land Use #210 for the Single Family Detached Housing land use and #220 Multifamily (Low Rise) were taken from the Tenth Edition of ITE Trip Generation.

TABLE 1
TRIP GENERATION

<u>LAND USE</u>	<u>ADT</u>	<u>AM PEAK HOUR TOTAL</u>	<u>PM PEAK HOUR TOTAL</u>
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Multifamily			
364 Dwelling units	2,664	167	204
Total	3,325	219	273
August New Site Plan			
Single Family			
58 Dwelling Units	630	46	60
Multifamily			
376 Dwelling units	2,802	168	192
Total	3,427	214	252
Difference (August Compared to January)	+102	-5	-21

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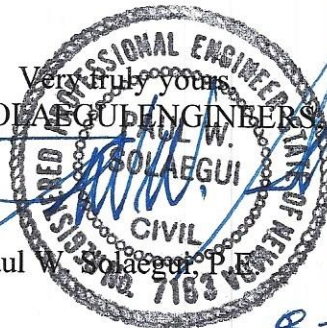
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We trust that this information will be adequate for your review. Please contact us if you have questions or comments.

Very truly yours,
SOLAEGUI ENGINEERS, LTD

Paul W. Solaequi, P.E.



8-31-20
EXP 6-30-22

Enclosures

Letters/ Sherwood Village Letter 2

Drawing name: S:\Development\Projects\Site Development\Site Planning to SITE PLAN 3 Aug 31, 2020 4:07pm by Jrcb

118 SHAW ENGINEERING CONSULTANTS

DATE: 07/20/2020

NO. _____

REVISIONS _____

PHILIPS

ENGINEERING

180 COUNTY EXHIBIT CENTER DRIVE, SUITE 200
FARMINGTON, NH 03025 (603) 255-7200
www.philips-engineering.com

NOT FOR CONSTRUCTION

80% PROGRESS SET

811

Know what's below.
Call 811 before you dig.
NOT TO SCALE: P-SHEET
SIZE: OTHER THAN 24"x36"
DRAWN BY: JRC
CHECKED BY: JRC

SITE PLAN 3

SHERWOOD VILLAGES

TENTATIVE MAP

LYON COUNTY

FERNLEY, NEVADA

09/07/2020

PROJECT NO. 19239

10 of 20

The main site plan shows a large rectangular area divided into several building footprints and parking lots. The buildings are arranged in a grid-like pattern. Parking lots are located around the buildings. Roads and utility lines are also shown. A keymap in the top right corner shows the location of the site within a larger area. A detailed view of a specific building footprint is shown in the bottom right corner, with dimensions and labels.

BUILDING DATA TABLE

BUILDING #	UNITS	FLOOR AREA (SQ FT)	STORIES	TOTAL UNITS	TOTAL AREA (SQ FT)
1	1	6,700	2	1	6,700
2	8	7,800	2	8	63,200
3	8	7,800	2	16	126,400
4	8	7,800	2	24	190,600
5	8	7,800	2	32	250,800
6	8	7,800	2	40	311,000
7	8	7,800	2	48	371,200
8	8	7,800	2	56	431,400
9	8	7,800	2	64	491,600
10	8	7,800	2	72	551,800
11	8	7,800	2	80	612,000
12	8	7,800	2	88	672,200
13	8	7,800	2	96	732,400
14	8	7,800	2	104	792,600
15	8	7,800	2	112	852,800
16	8	7,800	2	120	913,000
17	12	10,500	3	368	246,700
TOTALS					

SITE KEY NOTES:

- 1 MONUMENTARY LINE
- 2 LOT LINE
- 3 RIGHT-OF-WAY
- 4 EXISTING RIGHT-OF-WAY
- 5 EXISTING SECTION LINE
- 6 EXISTING EASEMENT LINE
- 7 EXISTING CENTER LINE
- 8 ROAD CENTER LINE
- 9 EXISTING ROAD CENTER LINE
- 10 EDGE OF PAVEMENT
- 11 CURB & GUTTER
- 12 DRAINAGE FLOW LINE
- 13 EXISTING TELEPHONE
- 14 EXISTING GAS
- 15 EXISTING OVERHEAD ELECTRIC
- 16 EXISTING ELECTRIC
- 17 EXISTING POWER POLE
- 18 EXISTING LIGHT POLE
- 19 PROPOSED LIGHT POLE
- 20 EXISTING FENCE
- 21 EXISTING IMPAVED ROAD
- 22 LOT NUMBER
- 23 1" = 100' SCALE
- 24 1" = 100' SCALE
- 25 1" = 100' SCALE

KEYMAP
NOT TO SCALE

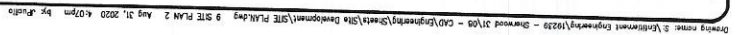
The keymap shows a large rectangular area divided into several smaller rectangular areas. The site is located in the center of the area. The keymap is not to scale.

SITE LEGEND:

- 1 MONUMENTARY LINE
- 2 LOT LINE
- 3 RIGHT-OF-WAY
- 4 EXISTING RIGHT-OF-WAY
- 5 EXISTING SECTION LINE
- 6 EXISTING EASEMENT LINE
- 7 EXISTING CENTER LINE
- 8 ROAD CENTER LINE
- 9 EXISTING ROAD CENTER LINE
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- 20 EXISTING FENCE
- 21 EXISTING IMPAVED ROAD
- 22 LOT NUMBER
- 23 1" = 100' SCALE
- 24 1" = 100' SCALE
- 25 1" = 100' SCALE

TYPICAL SETBACK DETAIL
(SEE TYPICAL SETBACK DETAIL SHEET)

The typical setback detail shows a rectangular area with dimensions and labels. The dimensions are 10' and 10'. The labels are 10' SETBACK (REAR) and 10' SETBACK (SIDE). The detail is not to scale.



SOLAEGUI
ENGINEERS

February 4, 2021

Mr. Derek Starkey, P.E.
City of Fernley
595 Silver Lace Boulevard
Fernley, Nevada 89408

Re: Fernwood, Trip Generation Letter

Dear Derek:

At the request of our clients this letter contains the findings of our trip generation review of the current site plan of Fernwood. The project is generally located at the north ends of the Fernwood Drive and Wildwood Drive street stubs in Fernley, Nevada. The current site plan has 54 duplex units. The site plan is attached. Table 1 shows the trip generation summary for the project being calculated as "Single Family Detached Housing" for the duplex units. The ITE multifamily land use description limits the use of this category to building containing three or more units. For that reason trip generation totals for the duplexes are calculated at the single family home values. "ITE Land Use #210 for the "Single Family Detached Housing" land use was taken from the Tenth Edition of ITE Trip Generation.

TABLE 1
TRIP GENERATION

LAND USE	ADT	AM PEAK HOUR TOTAL	PM PEAK HOUR TOTAL
Single Family (Duplex Units) 54 Dwelling Units	590	43	56

As indicated in Table 1, the new site plan results in project trip generation of 590 average daily trips with 43 AM peak hour trips and 56 PM peak hour trips. These totals are below the threshold that triggers the need for a full traffic study.

We trust that this information will be adequate for your review. Please contact us if you have questions or comments.

Enclosures
Letters/ Fernwood Letter

Very truly yours,
SOLAEGUI ENGINEERS, LTD.
PAUL W. SOLAEGUI
CIVIL ENGINEER
No. 7163
2-4-21
EXP 6-30-22

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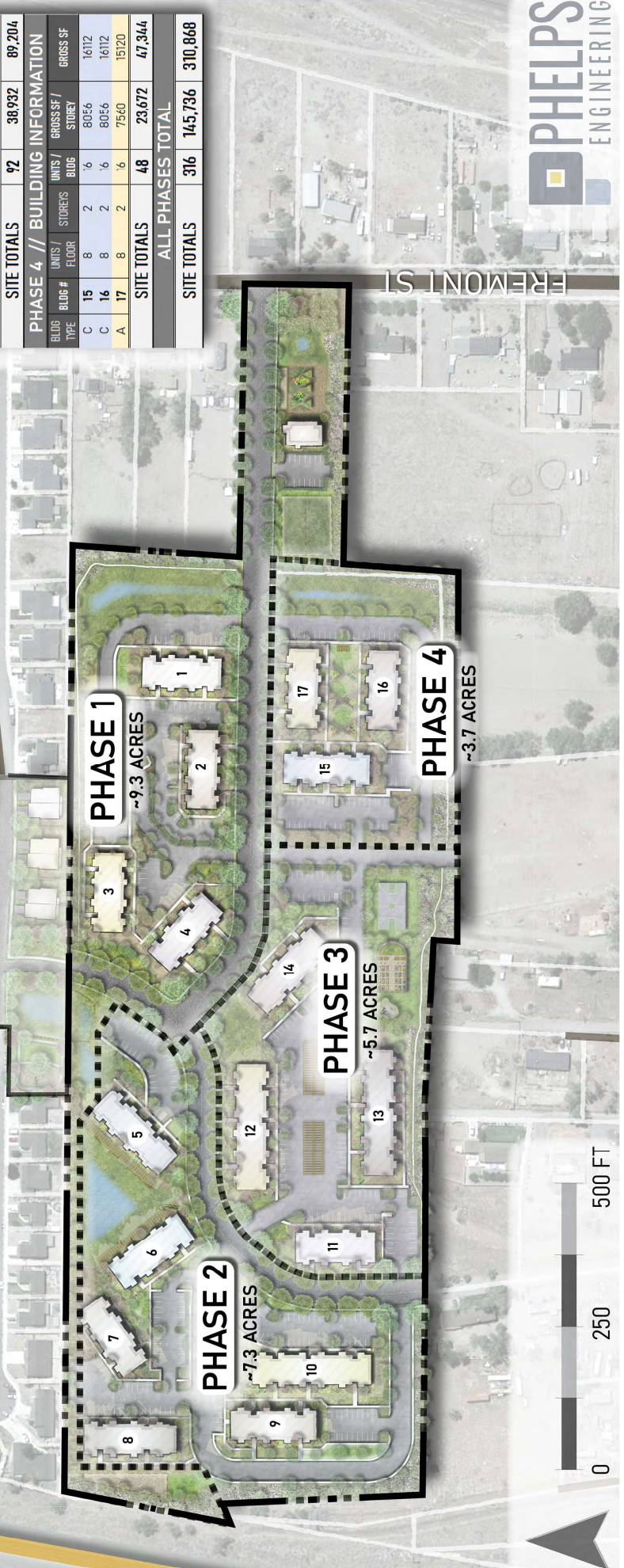
SHERWOOD VILLAGE

FERNLEY, NV



PHASE 1 \\\ LAND USE											
	BLDG FPRINT	R.O.W	PARKING	OPEN SPACE	TOTAL						
SQ FT	34,232	94,920	63,400	211,657	404,219						
ACRE (AC)	0.8	2.2	1.5	4.5	5.3						
%TOTAL	8%	23%	16%	52%	100%						
PHASE 2 \\\ LAND USE											
	BLDG FPRINT	R.O.W	PARKING	OPEN SPACE	TOTAL						
SQ FT	51,900	45,240	98,500	134,540	330,200						
ACRE (AC)	1.2	1.0	2.3	3.1	7.6						
%TOTAL	16%	14%	30%	41%	100%						
PHASE 3 \\\ LAND USE											
	BLDG FPRINT	R.O.W	PARKING	OPEN SPACE	TOTAL						
SQ FT	38,932	-	89,300	120,040	248,272						
ACRE (AC)	0.9	-	2.1	2.8	5.7						
%TOTAL	16%	0%	36%	48%	100%						
PHASE 4 \\\ LAND USE											
	BLDG FPRINT	R.O.W	PARKING	OPEN SPACE	TOTAL						
SQ FT	23,672	-	35,700	101,800	161,172						
ACRE (AC)	0.5	-	0.8	2.3	3.7						
%TOTAL	15%	0%	22%	63%	100%						
ALL PHASES \\\ TOTAL											
	BLDG FPRINT	R.O.W	PARKING	OPEN SPACE	TOTAL						
SQ FT	148,736	140,180	286,900	568,941	1,144,757						
ACRE (AC)	3.4	3.2	6.6	13.1	24.3						
%TOTAL	13%	12%	25%	50%	100%						
					316 UNITS \\\ 12,027 DU/AC						
TOTAL UNITS											

PHASE 1 // BUILDING INFORMATION										PHASE 2 // BUILDING INFORMATION										PHASE 3 // BUILDING INFORMATION										PHASE 4 // BUILDING INFORMATION									
BLDG TYPE	BLDG #	UNITS / FLOOR	STORIES	BLDG	UNITS / BLDG	GROSS SF / STORY	GROSS SF	BLDG TYPE	BLDG #	UNITS / FLOOR	STORIES	BLDG	UNITS / BLDG	GROSS SF / STORY	GROSS SF	BLDG TYPE	BLDG #	UNITS / FLOOR	STORIES	BLDG	UNITS / BLDG	GROSS SF / STORY	GROSS SF	BLDG TYPE	BLDG #	UNITS / FLOOR	STORIES	BLDG	UNITS / BLDG	GROSS SF / STORY	GROSS SF	BLDG TYPE	BLDG #	UNITS / FLOOR	STORIES	BLDG	UNITS / BLDG	GROSS SF / STORY	GROSS SF
A	1	8	2	'6	7560	15120	15120	B	5	8	2	'6	8642	17284	17284	A	11	8	2	'6	7560	15120	15120	C	15	8	2	'6	8056	16112	16112	C	16	8	2	'6	8056	16112	16112
C	2	8	2	'6	7560	15120	15120	C	7	8	2	'6	8056	16112	16112	D	12	12	3	36	11340	34020	34020	C	16	8	2	'6	8056	16112	16112	A	17	8	2	'6	7560	15120	15120
A	3	8	2	'6	8056	16112	16112	B	8	8	2	'6	8642	17284	17284	D	13	12	2	24	11340	22680	22680	C	16	8	2	'6	8056	16112	16112	C	4	8	3	24	8056	24168	24168
C	4	8	3	24	8056	24168	24168	D	10	12	2	24	11340	22680	22680	B	14	8	2	'6	8642	17284	17284	A	17	8	2	'6	7560	15120	15120	C	4	8	3	24	8056	24168	24168
SITE TOTALS										SITE TOTALS										SITE TOTALS										SITE TOTALS									
72										104										92										48									
31232										51900										38932										23672									
70,520										103,800										89,204										47,344									
ALL PHASES TOTAL										ALL PHASES TOTAL										ALL PHASES TOTAL										ALL PHASES TOTAL									
316										316										316										316									
145,736										145,736										145,736										145,736									
310,868										310,868										310,868										310,868									



Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name	Chisholm Trl			Fremont St			US-95A			US-95A		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	480.00	100.00	100.00	266.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Chisholm Trl			Fremont St			US-95A			US-95A		
Base Volume Input [veh/h]	82	15	39	25	15	80	98	848	33	46	383	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	2	0	23	6	46	13	0	0	0	0	6
Site-Generated Trips [veh/h]	0	3	0	34	9	67	20	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	20	39	82	30	193	131	848	33	46	383	34
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	5	11	22	8	52	36	230	9	13	104	9
Total Analysis Volume [veh/h]	89	22	42	89	33	210	142	922	36	50	416	37
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	21	0	30	36	0	21	59	0	10	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	17	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	17	26	32	17	55	55	6	44	44
g / C, Green / Cycle	0.09	0.14	0.22	0.27	0.14	0.46	0.46	0.05	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.04	0.05	0.15	0.08	0.26	0.26	0.03	0.12	0.12
s, saturation flow rate [veh/h]	1781	1676	1781	1623	1781	1870	1845	1781	1870	1817
c, Capacity [veh/h]	163	237	386	433	252	857	846	89	686	666
d1, Uniform Delay [s]	52.11	45.96	38.75	37.95	48.03	23.72	23.72	55.71	27.43	27.45
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.46	2.77	1.39	5.19	8.79	2.66	2.70	23.17	1.31	1.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.27	0.23	0.56	0.56	0.56	0.56	0.56	0.33	0.34
d, Delay for Lane Group [s/veh]	64.57	48.73	40.15	43.14	56.83	26.38	26.42	78.88	28.74	28.81
Lane Group LOS	E	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.13	1.89	2.33	6.79	4.52	10.20	10.07	2.03	4.89	4.79
50th-Percentile Queue Length [ft/ln]	78.28	47.37	58.13	169.65	112.90	254.88	251.81	50.76	122.20	119.83
95th-Percentile Queue Length [veh/ln]	5.64	3.41	4.19	11.06	8.00	15.43	15.28	3.65	8.51	8.38
95th-Percentile Queue Length [ft/ln]	140.90	85.27	104.64	276.46	200.03	385.79	381.93	91.37	212.84	209.59

Movement, Approach, & Intersection Results

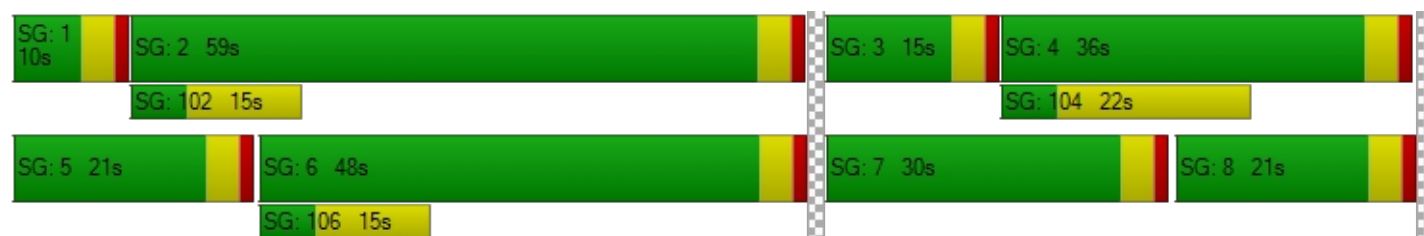
d_M, Delay for Movement [s/veh]	64.57	48.73	48.73	40.15	43.14	43.14	56.83	26.40	26.42	78.88	28.77	28.81
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	57.94			42.34			30.33			33.75		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	35.09											
Intersection LOS	D											
Intersection V/C	0.486											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			9.0			9.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	51.34			51.34			51.34			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.044			2.129			2.787			0.000		
Crosswalk LOS	B			B			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	283			533			917			733		
d_b, Bicycle Delay [s]	44.20			32.27			17.60			24.07		
I_b,int, Bicycle LOS Score for Intersection	1.812			2.107			2.467			1.975		
Bicycle LOS	A			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Option 2: Copy of New Intersection

Number	1											
Intersection	New Intersection											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chisholm Trl			Fremont St			US-95A			US-95A		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	82	15	39	25	15	80	98	848	33	46	383	18
Total Analysis Volume [veh/h]	89	22	42	89	33	212	142	922	36	50	416	37

Intersection Settings

Cycle Length [s]	120											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fixed time											
Lost time [s]	0.00											
Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	29	0	16	35	35	23	64	0	11	52	0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	17	17	0	10	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.34	0.21	0.34	0.26	0.26	0.16	0.50	0.50	0.06	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.04	0.06	0.02	0.13	0.08	0.26	0.26	0.03	0.12	0.12
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3		3		3		
s, saturation flow rate [veh/h]	1261	1676	1489	1870	1589	1781	1870	1845	1781	1870	1817
c, Capacity [veh/h]	505	349	556	483	411	282	935	923	104	748	727
X, volume / capacity	0.18	0.18	0.16	0.07	0.52	0.50	0.52	0.52	0.48	0.31	0.31
d, Delay for Lane Group [s/veh]	28.14	40.25	28.05	33.87	42.67	52.48	22.24	22.27	69.84	25.67	25.74
Lane Group LOS	C	D	C	C	D	D	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No

Version 2022 (SP 0-3)

50th-Percentile Queue Length [veh/ln]	1.89	1.68	1.88	0.77	5.86	4.38	9.48	9.37	1.90	4.69	4.59
50th-Percentile Queue Length [ft/ln]	47.31	41.90	47.02	19.26	146.62	109.43	237.01	234.14	47.55	117.16	114.87
95th-Percentile Queue Length [veh/ln]	3.41	3.02	3.39	1.39	9.84	7.81	14.53	14.38	3.42	8.24	8.11
95th-Percentile Queue Length [ft/ln]	85.15	75.42	84.63	34.66	245.91	195.21	363.25	359.61	85.60	205.92	202.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.14	40.25	40.25	28.05	33.87	42.67	52.48	22.26	22.27	69.84	25.70	25.74
Movement LOS	C	D	D	C	C	D	D	C	C	E	C	C
Critical Movement	No	No	No	No	No	No	No	No	No	Yes	No	No
d_A, Approach Delay [s/veh]	33.21			37.90			26.16			30.09		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	29.50											
Intersection LOS	C											
Intersection V/C	0.456											

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type:	Signalized	Delay (sec / veh):	52.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.802

Intersection Setup

Name	Chisholm Trl			Fremont St			US-95A			US-95A		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	480.00	100.00	100.00	266.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Chisholm Trl			Fremont St			US-95A			US-95A		
Base Volume Input [veh/h]	156	24	70	42	27	223	155	650	34	80	986	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	6	0	13	4	27	45	0	0	0	0	23
Site-Generated Trips [veh/h]	0	9	0	20	5	41	68	0	0	0	0	34
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	156	39	70	75	36	291	268	650	34	80	986	105
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	11	19	20	10	79	73	177	9	22	268	29
Total Analysis Volume [veh/h]	170	42	76	82	39	316	291	707	37	87	1072	114
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	38	0	11	32	0	25	59	0	12	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	20	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	34	7	28	21	56	56	7	42	42
g / C, Green / Cycle	0.11	0.28	0.06	0.23	0.18	0.46	0.46	0.06	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.05	0.22	0.16	0.20	0.20	0.05	0.32	0.32
s, saturation flow rate [veh/h]	1781	1679	1781	1616	1781	1870	1837	1781	1870	1808
c, Capacity [veh/h]	193	475	104	376	312	866	851	111	655	634
d1, Uniform Delay [s]	52.74	33.18	55.79	45.25	48.81	21.65	21.65	55.44	37.33	37.39
k, delay calibration	0.11	0.11	0.11	0.36	0.20	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.17	0.27	12.59	27.67	19.37	1.58	1.61	11.19	20.04	20.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.25	0.79	0.94	0.93	0.43	0.43	0.78	0.92	0.92
d, Delay for Lane Group [s/veh]	64.91	33.45	68.39	72.93	68.19	23.23	23.26	66.63	57.36	58.33
Lane Group LOS	E	C	E	E	E	C	C	E	E	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.70	2.70	2.81	13.21	10.08	7.21	7.09	2.90	19.91	19.48
50th-Percentile Queue Length [ft/ln]	142.41	67.58	70.33	330.37	252.04	180.16	177.20	72.53	497.70	486.95
95th-Percentile Queue Length [veh/ln]	9.61	4.87	5.06	19.18	15.29	11.61	11.45	5.22	27.23	26.72
95th-Percentile Queue Length [ft/ln]	240.26	121.64	126.59	479.42	382.22	290.22	286.36	130.55	680.63	667.90

Movement, Approach, & Intersection Results

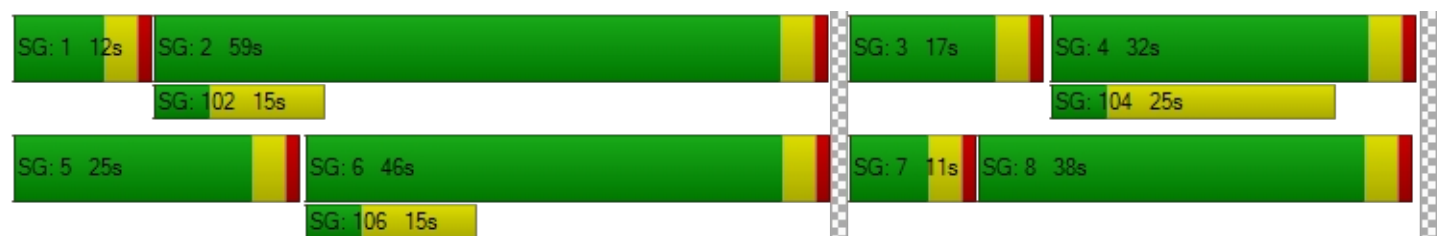
d_M, Delay for Movement [s/veh]	64.91	33.45	33.45	68.39	72.93	72.93	68.19	23.24	23.26	66.63	57.79	58.33
Movement LOS	E	C	C	E	E	E	E	C	C	E	E	E
d_A, Approach Delay [s/veh]	52.02			72.08			35.88			58.44		
Approach LOS	D			E			D			E		
d_I, Intersection Delay [s/veh]	52.10											
Intersection LOS	D											
Intersection V/C	0.802											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.102	2.243	2.989	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	467	917	700
d_b, Bicycle Delay [s]	30.82	35.27	17.60	25.35
I_b,int, Bicycle LOS Score for Intersection	2.035	2.281	2.413	2.610
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Option 2: Copy of New Intersection

Number	1											
Intersection	New Intersection											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chisholm Trl			Fremont St			US-95A			US-95A		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	156	24	70	42	27	223	155	650	34	80	986	48
Total Analysis Volume [veh/h]	170	42	76	82	39	317	292	707	37	87	1072	115

Intersection Settings

Cycle Length [s]	120											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	37	0	10	31	31	26	30	0	43	47	0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	17	17	0	10	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.34	0.26	0.34	0.22	0.22	0.18	0.50	0.50	0.06	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.14	0.07	0.06	0.02	0.20	0.16	0.20	0.20	0.05	0.32	0.32
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3			3			3		
s, saturation flow rate [veh/h]	1258	1679	1368	1870	1589	1781	1870	1837	1781	1870	1807
c, Capacity [veh/h]	495	431	478	403	343	318	935	919	114	722	697
X, volume / capacity	0.34	0.27	0.17	0.10	0.93	0.92	0.40	0.40	0.76	0.84	0.84
d, Delay for Lane Group [s/veh]	29.71	35.97	28.11	37.81	69.35	65.82	20.04	20.07	65.28	44.41	44.97
Lane Group LOS	C	D	C	D	E	E	C	C	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes

Version 2022 (SP 0-3)

50th-Percentile Queue Length [veh/ln]	3.68	2.82	1.68	0.94	11.42	10.09	6.79	6.68	2.91	17.85	17.42
50th-Percentile Queue Length [ft/ln]	91.94	70.45	41.93	23.45	285.57	252.27	169.76	166.97	72.74	446.19	435.50
95th-Percentile Queue Length [veh/ln]	6.62	5.07	3.02	1.69	16.97	15.30	11.06	10.92	5.24	24.78	24.26
95th-Percentile Queue Length [ft/ln]	165.49	126.82	75.48	42.22	424.14	382.51	276.60	272.92	130.94	619.40	606.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.71	35.97	35.97	28.11	37.81	69.35	65.82	20.05	20.07	65.28	44.66	44.97
Movement LOS	C	D	D	C	D	E	E	C	C	E	D	D
Critical Movement	No	No	No	No	No	Yes	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	32.27			58.82			32.95			46.09		
Approach LOS	C			E			C			D		
d_I, Intersection Delay [s/veh]	42.13											
Intersection LOS	D											
Intersection V/C	0.760											

Shey League
City of Fernley Planning Department
595 Silver Lance Blvd.
Fernley NV, 89408

RE: Proposed Sherwood Village and Frenwood Village developments

Dear Shey League,

Phillips Engineering Services proposed projects Sherwood Village and Frenwood Village will consist of 316 multi-family and 54 single family units. This project will impact Lyon County School District (LCSD) facilities as it is currently zoned for the following schools:

Fernley Elementary School
Cottonwood Elementary School
Fernley Intermediate School
Silverland Middle School
Fernley High School

Traditionally, LCSD has been able to count on approximately .5 children for every new unit built in Lyon County. Therefore, LCSD is predicting 185 new students with this proposed Sherwood and Frenwood Village developments. Increasing capacity throughout LCSD is an immediate need but unfortunately current property tax abatements and caps prevent the collection of enough revenue to meet the increasing facility needs.

MGT Master Plan study in 2016 predicted enrollment and utilization at Fernley Elementary, Cottonwood Elementary, Fernley Intermediate, Silverland Middle, and Fernley High to be adequate or approaching inadequate levels by 2025. Today, 3 of the 5 have already approached "adequate" utilization and 2 of those 3 are soon to be "approaching inadequate" levels all well before the MGT 2025 utilization projections.

LYON COUNTY SCHOOL DISTRICT	
CURRENT AND PROJECTED UTILIZATION RATES	
UTILIZATION	DESCRIPTION
>110	Inadequate
100-109.9	Approaching Inadequate
85-99.9	Adequate
70-84.9	Approaching Inefficient
<70	Inefficient

School	Enrollment Oct 1, 2021	Enrollment Sept 1, 2022	Enrollment Dec 11, 2022	Capacity* please see notes below	MGT 2015 Utilization	MGT 2025 Utilization	Utilization as of Dec 11, 2022
Cottonwood ES, Prek-4	576	583	592	711	105%	107%	83%
Fernley ES, Prek-4	438	424	427	606	82%	91%	70%
Fernley IS, 5-6	620	633	649	680	81%	96%	95%
Silverland MS, 7-8	649	646	644	759	73%	86%	85%
Fernley HS, 9-12	1,236	1,311	1,301	1,346	92%	106%	97%
Total Fernley (46% of LCSD)	3,519	3,597	3,613	4,102			88%

Capacity Formula:

= # of rooms x 20 (preK) or x 25 (K-6) or x 30 (7-12) x scheduling factor (high 75%, middle 85%, elem 95%)

(please see pg 44 of Lyon CSD MGT Master Facility Plan for an example on estimating capacity)

*** Capacity Adjustments**

Fernley HS - Includes 4 modular buildings increasing capacity (8 classrooms)

Cottonwood ES - Includes 2 modular buildings increasing capacity (4 classrooms)

The most recent project LCSD completed to increase capacity was at East Valley Elementary School. This project netted 8 new classrooms at total project cost of \$7.35 million or \$918,750 per classroom. Sherwood and Frenwood Village developments project 185 new students which would require approximately 7 new classrooms or \$6,431,250 (\$918,750 x 7) in construction only capital. LCSD has relied on Bond Funding to build new schools and additions. Unfortunately, given the district current bonding capacity and nationwide increased construction costs, it's not possible for the district to have sufficient capital to build anything alleviating student capacity concerns.

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

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

Thanks again for the opportunity to provide this input.

Superintendent
Wayne Workman

Deputy Superintendent
Tim Logan

Board of Trustees

President Holly Villines
Clerk Philip Cowee
Michael Hogan
Sherry Parsons
Bridget Peterson

Lyon County School District
25 E. Goldfield Ave.
Yerington, NV 89447

Ph. (775) 463-6800
Fax (775) 463-6808

www.lyoncsd.org



United States Department of the Interior

BUREAU OF RECLAMATION
Lahontan Basin Area Office
705 North Plaza Street, Room 320
Carson City, NV 89701-4015



IN REPLY REFER TO:

Dec 23, 2022

LO-620
2.2.3.19

VIA ELECTRONIC MAIL

Ms. Lisa Warner
City of Fernley
595 Silverlace Blvd.
Fernley, Nevada 89408
lwarner@cityoffernley.org

Subject: Comments Regarding the Resubmission of Sherwood Subdivision Tentative Subdivision Map 22002, Section 12, T. 20 N., R. 24 E., Mount Diablo Base & Meridian, Fernley Drain No.1 and No. 1 BR 1 Drains, TC 4-1 and TC 4-1-1 Laterals, Newlands Project, Fernley, Nevada

Dear Ms. Warner:

The Bureau of Reclamation (Reclamation) has received an electronic mail notice seeking comments regarding the Resubmission of the Tentative Subdivision Map for the Sherwood Subdivision in Fernley, Nevada.

Reclamation offers the following comments and request for conditions of approval:

- The United States has four irrigation facilities on the subject property, Fernley Drain No. 1, Fernley Drain No. 1 BR 1, TC 4-1 Lateral and TC 4-1-1 Lateral. The facilities are depicted on the enclosed map (Enclosure 1). The drains are each located on 100-foot-wide easements and the laterals are located on 60-foot easements. The developer has submitted the required application to relocate and modify these facilities. Until such application is approved, no part of the development may disturb the easements for the four federal facilities.
- The developer has proposed to relocate the above drains and TC-4-1 lateral into 35-foot easements with those facilities being piped. Additionally, the developer has proposed to eliminate the TC 4-1-1 lateral. Reclamation is not conceptually opposed to these plans, provided the storm water is not directed into the federal facilities and that the developer constructs detention ponds that will handle at least 100-year flood events. Reclamation Directives and Standards do not allow storm water into Federal canals, ditches, or laterals without complying with Clean Water Act National Pollutant Discharge Elimination System permit requirements.
- Reclamation has concerns regarding the statement that storm water easements will be placed "over top" of Reclamation easements. See Developer's Response No. 5 in the

INTERIOR REGION 10 • CALIFORNIA-GREAT BASIN

CALIFORNIA*, NEVADA*, OREGON*

* PARTIAL

December 2, 2022, letter to the City Engineer (Enclosure 2). This comment will need to be clarified by the developer and might not be acceptable to Reclamation.

- Permanent structures within the easement will not be permitted.
- No landscaping or fences will be allowed within the aforementioned easements.
- The developer and Reclamation have had several meetings to discuss the easements and storm water concerns, but an agreement has not yet been reached.
- The final map shall be transmitted to Reclamation.

Because the easements and irrigation facilities occupy so much of the Sherwood property (see Enclosure 1), and the development depends upon the relocation of those facilities, Reclamation requests that approval of the TSM be deferred or that a conditional approval be adopted requiring the relocation of irrigation facilities in a manner and location acceptable to Reclamation.

Reclamation appreciates the opportunity to comment. Should you have any questions regarding this matter, please contact Mr. Peter M. Schannauer, Water and Lands Specialist, at (775) 884-8349, by email to pschannauer@usbr.gov, or TTY Federal Relay System (800) 877-8339.

Sincerely,

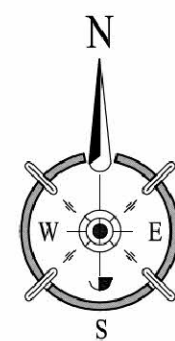
KENNETH VICENCIO  Digitally signed by KENNETH VICENCIO
Date: 2022.12.23 08:22:34 -08'00'

for Rena Ballew
Resource Division Manager

Enclosures - 2

cc: Ms. Ida Adams
Truckee-Carson Irrigation District
P.O. Box 1356
Fallon, Nevada 89407-1356
(w/encl)

Drawing name: C:\Users\pdedraza\OneDrive - Phelps Engineering Services\Company\Entitlement Engineering\21603 - Sherwood\08 - CAD\Surveying\Exhibit\BOR\21063_Sherwood_BOR.dwg KEY Nov 16, 2022 9:01pm by: RPedraza



1"=150'

AREA OF TC4-1-1 DITCH
TO BE VACATED BY
SEPARATE DOCUMENT
(60' WIDE HERE)

MANHOLE FOR
36" STORM PIPE
TO BE INSTALLED
(TYPICAL)

36" RCP STORM PIPE
TO BE INSTALLED
(TYPICAL)

BEARINGS ARE BASED UPON THE NEVADA STATE PLANE COORDINATE SYSTEM OF 1983, WEST ZONE, ADJUSTED TO GROUND VALUES, AS ESTABLISHED BY REAL TIME KINEMATIC (RTK) GPS METHODS, USING A GRID TO GROUND SCALE FACTOR OF 1.0002827561 - BEARINGS ARE EXPRESSED IN DEGREES, MINUTES & SECONDS - DISTANCES ARE EXPRESSED IN FEET & DECIMAL PARTS THEREOF - CURVES ARE EXPRESSED IN RADIUS (R) CENTRAL ANGLE (Δ) AND ARC LENGTH (L) - COORDINATES ARE EXPRESSED IN NORTHING (N) & EASTING (E).

THE SITE FALLS IN ZONE "X" DEFINED AS:
 *0.2% ANNUAL CHANCE FLOOD HAZARD WITH
 AREAS OF 1% ANNUAL CHANCE FLOOD WITH
 AVERAGE DEPTHS LESS THAN ONE FOOT OR
 WITH DRAINAGE AREAS OF LESS THAN ONE
 SQUARE MILE* FOUND IN NATIONAL FLOOD
 INSURANCE PROGRAM (NFIP) FLOOD INSURANCE
 RATE MAP (FIRM) PANEL NUMBER
 32019C0105E, EFFECTIVE DATE: 01-16-09 -
 FIRMEITE PRODUCED BY THIS OFFICE, DATE:
 05-05-22

PETER SCHANAUER
BUREAU OF
RECLAMATION

021-092-05
021-092-23
021-092-26
021-092-27
021-092-46
021-092-47
021-092-54
021-092-55

[illegible]

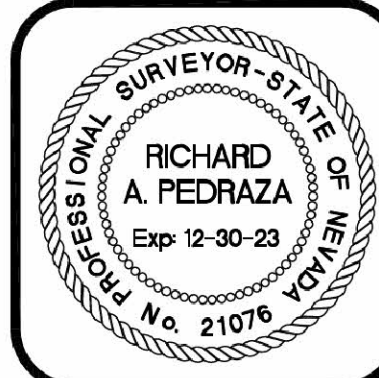
1. RCP = REINFORCED CONCRETE PIPE
2. APPROXIMATE GROUND AFFECT DIMENSIONS OF RELOCATED FERNLEY DRAIN No. 1:
LENGTH = 650 LINEAR FEET ±
WIDTH = 75 LINEAR FEET ±
DEPTH = 15 LINEAR FEET ±
3. APPROXIMATE LENGTH OF FERNLEY DRAIN No. 1 & TC-4 LATERAL, EXISTING AND RELOCATED
OLD EASEMENT LENGTH = 3,211 LINEAR FEET ± (66% AT 100' WIDTH, 34% AT 60' WIDTH)
NEW EASEMENT LENGTH = 2,300 LINEAR FEET ± (100% AT 35' WIDTH)
4. EXCAVATION TO BE IMPLEMENTED WITH A BACKHOE
5. THIS IS NOT A SURVEY

NO.	NAME	DATE OF RECORD	DOCUMENT NO.
1	Sandia Marine Unit No. 1	09/17/74	020127
2	Rancho Sierra Sub	02/02/78	035734
3	CT & MA Johnson Prod	06/28/79	046616
4	Chisholm	02/12/80	051624
5	Roy & Mabel Johnson	11/07/85	086169
6	Fernwood	06/11/86	108191
7	Gilliland/Mongolo	06/16/88	116731
8	Albensee	06/30/92	153025
9	Horton	06/13/95	183107
10	Fernwood No. 1	06/15/95	198771
11	Eagles Nest No. 1	06/20/96	194579
12	Fernwood No. 2	07/17/97	207777
13	Craig	12/15/99	242275
14	Eagles Nest No. 2	01/18/01	258101
15	Denn	03/27/02	274347
16	Grant/Fain	04/10/02	275037
17	Eagles Nest No. 3	07/14/03	285808
18	Fernwood No. 3	12/06/03	309466
19	Sherwood Fernwood	06/20/04	640343
20	Court ditched road	06/30/06	667284
21	Fernwood 51 site (Barrel 5)	06/29/06	667464
22	Abandoned Oil Field 6	04/29/12	656855

(ALL OF THE ABOVE IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA)

[illegible]

ENGINEERS • PLANNERS • SURVEYORS • ANALYSTS
PHELPS
 ENGINEERING
 10651 Professional Circle, Suite "A" • Reno, NV. 89521
www.phelpsengineering.net • tel: 775-241-3807



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

EXHIBIT PREPARED FOR:
PETER SCHNAUER
BUREAU OF RECLAMATION

TRACT 1 THRU TRACT 8, A.K.A.
 "SHERWOOD VILLAGE" PER THAT
 S. FOUND IN DOCUMENT No. _____
 CITY OF FERNLEY, LYON CO., NV

DATE: 11/18/2022
PROJECT NO.: 21602

1 OF 3