City of Fernley

NEVADA

AGENDA
Regular Meeting
City Council
Wednesday, January 17, 2024 • 5:00 PM

Mayor
Neal E. McIntyre

City Council
Ward 1 - Ryan Hanan
Ward 2 - Felicity Zoberski
Ward 3 - Stan Lau
Ward 4 - Albert Torres
Ward 5 - Fran McKay

City Manager
Benjamin Marchant

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, 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. Pledge of Allegiance

1.2. Roll Call

1.3. Public Forum

1.4. (For Possible Action) Approval of Agenda

2. CONSENT AGENDA

(PLEASE NOTE: ALL MATTERS LISTED UNDER THE CONSENT AGENDA ARE CONSIDERED ROUTINE, AND MAY BE ACTED UPON BY THE COUNCIL MEMBERS IN ONE MOTION, AND WITHOUT AN EXTENSIVE HEARING. ANY MEMBER OF THE COUNCIL MAY REQUEST THAT AN ITEM BE TAKEN FROM THE CONSENT AGENDA, DISCUSSED, AND ACTED UPON SEPARATELY DURING THIS MEETING.)

2.1. (Possible Action) Approval of Voucher Report

2.2. (Possible Action) Approval of Minutes

2.3. (Possible Approval) Approval of Business Licenses

2.4. Possible action to authorize the execution of the water rights banking and dedication agreement with Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-57 TCID serial number 1058-1-1-A in the amount of 4.96 acre-feet.

2.5. Possible action to authorize the execution of the water rights banking and dedication agreement with Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-56 TCID serial number 1058-1-1-C in the amount of 4.815 acre-feet.

2.6. Possible action to authorize the execution of the water rights banking and dedication agreement with John Edwin Picetti and Sherry Kim Picetti, APN 021-291-01 TCID serial number 1051-2 in the amount of 14.175 acre-feet.

2.7. Possible action to authorize the execution of the water rights banking and dedication agreement with John Edwin Picetti and Sherry Kim Picetti, APN 020-417-06 TCID serial number 1019-C-C-C in the amount of .14 acre-feet.

2.8. Possible action to approve a contract with the Nevada Department of Transportation for the reimbursement of construction costs required to relocate an existing water main within the NDOT 3935 I740 Bridge project.

2.9. Possible action to approve a contract with Construction Materials Engineers, CME, in an amount not to exceed $169,690.00 for special inspection and testing services for the Community Response and Resource Center Phase I.

2.10. Possible Action to accept the public improvements including roadway, water, storm drain and sewer infrastructure for The Meadows at Inglewood – "Connector Road" project.

2.11. Possible action to approve amendment A to the TSK Architects contract for the Community Response and Resource Center for an amount not to exceed $63,455 for additional engineering design services.

2.12. Possible action to approve the Mayor's appointment of Robert C Flores to the Fernley Planning Commission for a 4-year term expiring December 31, 2028.

2.13. Possible action to approve the Mayor's reappointment of Jennie McCullar to the Fernley Planning Commission for a 4-year term expiring December 31, 2028.

3. REPORTS - THIS ITEM IS FOR VARIOUS PUBLIC ENTITY REPRESENTATIVES TO PROVIDE GENERAL INFORMATION TO THE COUNCIL AND PUBLIC. NO ACTION WILL BE TAKEN.

3.1. Reports by City Staff, City Council, and the Mayor, including but not limited to monthly statistical reports by city departments.

4. PROCLAMATIONS BY THE MAYOR

5. PRESENTATIONS

5.1. Presentation, discussion and possible action to approve the Annual Comprehensive Financial Report for the year ended June 30, 2023. Presentation by Hinton Burdick, CPAs and Advisors.

5.2. Presentation by (Tracy) Jocelyn Runnels, Rural Community Navigator with Nevada Volunteers presenting an AmeriCorps VISTA outreach and resource-sharing strategy to build capacity across Nevada

6. STAFF REPORTS

6.1. (For Possible Action) Consideration and possible action to conditionally approve TSM 22002, a Tentative Subdivision Map submitted by Mark IV Capital for multiple parcels totaling approximately 2,174 acres generally located south of Interstate 80, east of Nevada Pacific Parkway, and north of US 50A.

6.2. Possible action to confirm the mayor's appointment of Robert Carson as City Treasurer/Finance Director, pursuant to NRS 266.405, and approval of a compensation package

6.3. Possible action to approve the FY 2024/2025 Budget Calendar.

7. RESOLUTIONS

7.1. Discussion and possible action to approve resolution 24-001 to accept the public improvements including roadway, water, and sewer infrastructure for the Donner Trails 12B subdivision.

7.2. Discussion and possible action to approve resolution #24-002 to accept the public improvements including roadway, water, sewer, and storm drain infrastructure for the Friendly Five Village 1 subdivision

7.3. Discussion and possible action to approve resolution 24-003 to accept the public improvements including roadway, water, storm drain and sewer infrastructure for the Cook Ranch Phase 3 subdivision.

8. PUBLIC HEARINGS

8.1. (For possible action) Consideration of a type I vacation request (T1V23002) and associated order of abandonment by Phelps Engineering Services on behalf of Richard Jackson to abandon the right-of-way known as "Hartsock Avenue", located at approximately 590 West Main Street (APN: 021-171-02).

9. ITEMS REQUESTED BY MAYOR OR CITY COUNCIL MEMBERS

9.1. Possible action to request a future agenda item to discuss the need for a nuisance ordinance. (Councilman Hanan)

10. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

11. PUBLIC FORUM

12. ADJOURNMENT

Next Meeting: February 7th @ 5pm

Report Criteria:
Detail report.
Invoice detail records above $0 included.
Paid and unpaid invoices included.
Vendor.Vendor Number = {<>} 2201

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
AERATOR SOLUTIONS								
8980	AERATOR SOLUTIONS	5449	2 replacement Turbos	12/05/2023	48,710.00	12/21/2023	520-810-430 Service-Repair and Maintenance	1223
	Total 8980:				48,710.00			
AFLAC								
5690	AFLAC	012406	SUPPLEMENTAL INSURANCE	12/12/2023	676.86	12/14/2023	100-217400 AFLAC Insurance Payable	1223
	Total 5690:				676.86			
ALHAMBRA								
4688	ALHAMBRA	7661929122123	water service	12/21/2023	198.35	12/28/2023	510-810-614 Supplies-Plant/Shop/Maint	1223
	Total 4688:				198.35			
ALLDATA LLC								
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.65	12/21/2023	510-840-610 Automotive Supplies	1223
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.65	12/21/2023	100-528-610 Automotive Supplies	1223
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.70	12/21/2023	520-810-610 Supplies-Automotive	1223
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.65	12/21/2023	100-417-610 Automotive Supplies	1223
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.65	12/21/2023	100-575-610 Automotive Supplies	1223
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.65	12/21/2023	510-810-610 Automotive Supplies	1223
8930	ALLDATA LLC	INVC03613190	Fleet Management Software	12/13/2023	51.65	12/21/2023	100-475-610 Automotive Supplies	1223
	Total 8930:				361.60			
AQUA BACKFLOW, INC								
8934	AQUA BACKFLOW, INC	2024-0008	Program Management	01/02/2024	332.50		510-810-320 Prof Serv-Engineering	124
	Total 8934:				332.50			
ARAMARK								
1895	ARAMARK	5980156228	pants service	12/11/2023	56.83	12/21/2023	510-810-614 Supplies-Plant/Shop/Maint	1223
1895	ARAMARK	5980156233	shirt contract	12/11/2023	47.44	12/21/2023	100-480-600 GENERAL SUPPLIES/TOOLS	1223
1895	ARAMARK	5980156234	uniforms	12/11/2023	43.90	12/21/2023	100-475-616 Supplies-Safety	1223
1895	ARAMARK	5980158023	mats	12/14/2023	187.82	12/21/2023	100-475-614 Supplies-Plant/Shop/Maint	1223
1895	ARAMARK	5980158025	shop supplies	12/14/2023	97.26	12/21/2023	520-810-610 Supplies-Automotive	1223
1895	ARAMARK	5980158027	PS rags and rugs	12/14/2023	116.77	12/21/2023	510-840-420 Contract Services	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
1895	ARAMARK	5980158609	pants service	12/18/2023	56.83	12/21/2023	510-810-614 Supplies-Plant/Shop/Maint	1223
1895	ARAMARK	5980158614	uniforms	12/18/2023	47.44		100-480-600 GENERAL SUPPLIES/TOOLS	1223
1895	ARAMARK	5980158615	uniforms	12/18/2023	43.90	12/21/2023	100-475-616 Supplies-Safety	1223
1895	ARAMARK	5980160534	pants service	12/25/2023	56.83		510-810-614 Supplies-Plant/Shop/Maint	1223
1895	ARAMARK	5980160539	uniforms	12/25/2023	47.44		100-480-600 GENERAL SUPPLIES/TOOLS	1223
1895	ARAMARK	5980160540	uniforms	12/25/2023	43.90		100-475-616 Supplies-Safety	1223
1895	ARAMARK	5980161656	mats	12/28/2023	187.82		100-475-614 Supplies-Plant/Shop/Maint	1223
1895	ARAMARK	5980161658	towels	12/28/2023	97.26		520-810-600 General Supplies	1223
1895	ARAMARK	5980161660	PS rags and rugs	12/28/2023	116.77		510-840-420 Contract Services	1223
1895	ARAMARK	5980162536	pants service	01/01/2024	62.40		510-810-614 Supplies-Plant/Shop/Maint	124
1895	ARAMARK	5980162542	uniforms	01/01/2024	47.44		100-480-600 GENERAL SUPPLIES/TOOLS	124
1895	ARAMARK	5980162543	uniforms	01/01/2024	43.90		100-475-616 Supplies-Safety	124
1895	ARAMARK	5980164392	uniforms	01/08/2024	43.90		100-475-616 Supplies-Safety	124
	Total 1895:				1,445.85			
ARC GENERATOR SERVICE, LLC								
8984	ARC GENERATOR SERVICE, LLC	1461	well 14 repair	10/30/2023	4,537.22	12/21/2023	510-810-430 Repairs & Maintenance	1023
8984	ARC GENERATOR SERVICE, LLC	1545	trouble shooting well 11 generator	12/14/2023	257.60	12/21/2023	510-810-430 Repairs & Maintenance	1223
	Total 8984:				4,794.82			
AT&T								
13	AT&T	28574 DEC 23	131 252-7192 857 4	12/02/2023	308.16	12/27/2023	100-417-530 Communications (Internet,Cell)	1223
13	AT&T	98670 JAN 24	775-786-2229 867 0 DEC 20 2023- JAN 19 2024	12/20/2023	1,421.55	01/12/2024	100-417-530 Communications (Internet,Cell)	1223
	Total 13:				1,729.71			
AT&T LONG DISTANCE								
448	AT&T LONG DISTANCE	815519343-	Nov 2-Dec 1-23	12/04/2023	111.47	12/21/2023	100-417-530 Communications (Internet,Cell)	1223
	Total 448:				111.47			
AUTOZONE STORES LLC								
4473	AUTOZONE STORES LLC	3742988751	starter motor for streets 3006	12/12/2023	162.09	12/21/2023	100-475-610 Automotive Supplies	1223
4473	AUTOZONE STORES LLC	3742989064	Core return	12/13/2023	10.00-	12/21/2023	100-475-610 Automotive Supplies	1223
4473	AUTOZONE STORES LLC	3742991752	fleet wipers	12/18/2023	199.80	01/04/2024	100-480-610 AUTOMOTIVE SUPPLIES	1223
	Total 4473:				351.89			
BAKER, JENNIFER								
8982	BAKER, JENNIFER	DEC 12142023	CITY COUNCIL WORK SESSION 12/14/23	12/15/2023	1,800.10	12/21/2023	100-413-580 Training	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
Total 8982:					1,800.10			
BIG R OF FERNLEY								
20	BIG R OF FERNLEY	18327/5	Plant supplies	12/12/2023	101.82	12/21/2023	510-840-614 Plant/Shop/Maint. Supplies	1223
20	BIG R OF FERNLEY	18329/5	chain and graphite	12/12/2023	18.55	12/21/2023	100-475-600 General Supplies	1223
20	BIG R OF FERNLEY	18330/5	tarp	12/12/2023	17.91	12/21/2023	100-528-600 General Supplies	1223
20	BIG R OF FERNLEY	18334/5	propane misc.	12/13/2023	120.79	12/21/2023	100-575-623 Propane	1223
20	BIG R OF FERNLEY	18338/5	hose and strap	12/13/2023	43.96	12/21/2023	100-528-600 General Supplies	1223
20	BIG R OF FERNLEY	18339/5	hose clamp	12/13/2023	55.96	12/21/2023	100-475-600 General Supplies	1223
20	BIG R OF FERNLEY	18341/5	pump for parks	12/13/2023	627.29	12/21/2023	100-575-600 General Supplies	1223
20	BIG R OF FERNLEY	18344/5	hoses and nozzels	12/14/2023	169.80	12/21/2023	100-475-600 General Supplies	1223
20	BIG R OF FERNLEY	18347/5	flood lights misc.	12/14/2023	147.94	12/21/2023	100-475-614 Supplies-Plant/Shop/Maint	1223
20	BIG R OF FERNLEY	18352/5	safety hasp and misc.	12/15/2023	43.96	12/21/2023	100-575-616 Safety Supplies	1223
20	BIG R OF FERNLEY	18354/5	silicone, areator	12/15/2023	17.95	12/21/2023	100-528-600 General Supplies	1223
20	BIG R OF FERNLEY	18355/5	auto cleaning	12/15/2023	74.73	12/21/2023	100-475-610 Automotive Supplies	1223
20	BIG R OF FERNLEY	18357/5	grinder	12/15/2023	137.00	12/21/2023	100-480-600 GENERAL SUPPLIES/TOOLS	1223
20	BIG R OF FERNLEY	18366/5	gloves	12/18/2023	17.95	12/21/2023	100-528-616 Safety Supplies	1223
20	BIG R OF FERNLEY	18367/5	swivel caster	12/18/2023	28.04	12/21/2023	100-528-600 General Supplies	1223
20	BIG R OF FERNLEY	18377/5	gate	12/19/2023	259.00		100-575-600 General Supplies	1223
20	BIG R OF FERNLEY	18378/5	gate	12/19/2023	30.00		100-575-600 General Supplies	1223
20	BIG R OF FERNLEY	18388/5	Misc. duct tape surge protector	12/20/2023	124.92		100-475-600 General Supplies	1223
20	BIG R OF FERNLEY	18396/5	starting fluid misc.	12/21/2023	53.91		100-475-610 Automotive Supplies	1223
20	BIG R OF FERNLEY	18424/55	misc. screws and fasteners	12/27/2023	31.47		100-575-600 General Supplies	1223
20	BIG R OF FERNLEY	18433/5	bit bolt and sand paper	12/29/2023	68.92		100-417-612 Building Maintenance Supplies	1223
20	BIG R OF FERNLEY	18435/5	hooks and misc.	12/29/2023	66.10		100-475-600 General Supplies	1223
20	BIG R OF FERNLEY	18444/55	propane	01/02/2024	169.18		100-475-623 Propane	124
20	BIG R OF FERNLEY	18445/5	marking paint	01/02/2024	35.97		100-575-600 General Supplies	124
20	BIG R OF FERNLEY	18448/5	gloves lock pin safety spring antifreeze.	01/02/2024	44.39		100-575-616 Safety Supplies	124
20	BIG R OF FERNLEY	18455/55	PARTS FOR SANDER	01/03/2024	35.37		100-475-430 Service-Repair and Maintenance	124
20	BIG R OF FERNLEY	18458/5	PVC Pipe and Glue	01/03/2024	15.98		520-810-614 Supplies-Plant/Shop/Maint	124
20	BIG R OF FERNLEY	18459/5	paint, tape	01/03/2024	29.77		100-417-612 Building Maintenance Supplies	124
20	BIG R OF FERNLEY	18461/5	PS shop supplies	01/03/2024	113.86		510-840-614 Plant/Shop/Maint. Supplies	124
20	BIG R OF FERNLEY	18469/5	lath	01/04/2024	11.99		100-417-612 Building Maintenance Supplies	124
20	BIG R OF FERNLEY	18471/5	brush and nozzel	01/04/2024	59.57		100-475-600 General Supplies	124
20	BIG R OF FERNLEY	18476/5	propane and misc.	01/05/2024	196.71		100-576-623 Propane	124
20	BIG R OF FERNLEY	18492/5	grout saw knife	01/09/2024	21.98		100-417-612 Building Maintenance Supplies	124
20	BIG R OF FERNLEY	18494/5	torch	01/09/2024	79.95		100-475-612 Supplies-Building Maintenance	124
Total 20:					3,072.69			
BLUE BEACON INTERNATIONAL								
200	BLUE BEACON INTERNATIONAL	060261056	VacCon Washed	12/18/2023	122.90	12/21/2023	520-810-610 Supplies-Automotive	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
	Total 200:				122.90			
BOB'S PRINTING AND SIGNAGE								
6970	BOB'S PRINTING AND SIGNAGE	121223-1	Business Cards	12/28/2023	164.80		100-605-550 Printing and Postage	1223
	Total 6970:				164.80			
BOYS & GIRLS CLUB OF TRUCKEE MEADOWS								
8833	BOYS & GIRLS CLUB OF TRUCKEE MEADOWS	Oct/Nov 23	ARPA reimb Oct - Nov 2023	12/12/2023	19,309.93	12/21/2023	220-480-810 ARPA	1223
	Total 8833:				19,309.93			
BRADY INDUSTRIES OF NEVADA LLC								
8837	BRADY INDUSTRIES OF NEVADA LLC	8539947	tissue cleaning supplies	12/29/2023	387.01		100-417-612 Building Maintenance Supplies	1223
	Total 8837:				387.01			
BUREAU OF RECLAMATION								
3438	BUREAU OF RECLAMATION	LO-610	2023-2024 Upstream Storage advance payment	11/27/2023	19,158.03	12/28/2023	510-810-698 Water Rights Protection	1123
	Total 3438:				19,158.03			
CARE FLIGHT								
7204	CARE FLIGHT	DEC 23	HEALTH INSURANCE/CARE FLIGHT	12/22/2023	24.00	01/04/2024	100-217000 HEALTH INSURANCE PAYABLE	1223
	Total 7204:				24.00			
CDW GOVERNMENT INC.								
27	CDW GOVERNMENT INC.	NM87073	Bldg dept speaker and webcam	12/11/2023	81.82	12/21/2023	100-605-605 Minor Equipment	1223
	Total 27:				81.82			
CFA INC								
499	CFA INC	26954	Engineering design services for ITP project	11/30/2023	678.50	12/28/2023	230-575-730 Improve other than Buildings	1123
	Total 499:				678.50			
CHARTER COMMUNICATIONS								
4479	CHARTER COMMUNICATIONS	175969701120123	69701 Communications	12/01/2023	1,332.88	12/21/2023	100-417-530 Communications (Internet,Cell)	1223
4479	CHARTER COMMUNICATIONS	175970201120123	70201 Communications DEC 23	12/01/2023	382.88	12/21/2023	100-417-530 Communications (Internet,Cell)	1223
	Total 4479:				1,715.76			

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
CHASE PAYMENTECH MERCHANT SERVICES								
8637	CHASE PAYMENTECH MERCHANT SERVICES	12/2023	SEWER-CREDIT CARD PROCESSING FEES 6181757	12/31/2023	3,350.02	01/04/2024	520-810-609 Credit Card Fees	1223
8637	CHASE PAYMENTECH MERCHANT SERVICES	12/2023	WATER-CREDIT CARD PROCESSING FEES 6181757	12/31/2023	3,350.02	01/04/2024	510-810-609 Credit Card Fees	1223
8637	CHASE PAYMENTECH MERCHANT SERVICES	12/2023	FINANCE-CREDIT CARD PROCESSING FEES 6291057	12/31/2023	1,101.17	01/04/2024	100-415-609 Credit Card Fees - Govt Svcs	1223
8637	CHASE PAYMENTECH MERCHANT SERVICES	12/2023	FINANCE-CREDIT CARD PROCESSING FEES 6291058	12/31/2023	84.30	01/04/2024	100-415-609 Credit Card Fees - Govt Svcs	1223
Total 8637:					7,885.51			
CIVIC PLUS								
3028	CIVIC PLUS	285112	Parks & Recreation Software	11/30/2023	2,799.00	12/28/2023	100-417-420 Contract Services	1123
3028	CIVIC PLUS	285112	Parks & Recreation Software	11/30/2023	2,799.00	12/28/2023	100-575-420 Contract Services	1123
Total 3028:					5,598.00			
COLONIAL INSURANCE								
3520	COLONIAL INSURANCE	31039340101082	E3103934 SUPPLEMENTAL INSURANC	12/20/2023	55.16	12/21/2023	100-218000 COLONIAL INSURANCE PAYABL	1223
Total 3520:					55.16			
CONSTRUCTION MATERIALS ENGINEERS								
5587	CONSTRUCTION MATERIALS ENGINEERS	14956	Materials testing and inspection services for All abilities park	12/08/2023	1,912.50	01/04/2024	230-575-730 Improve other than Buildings	1223
Total 5587:					1,912.50			
CUMMING MANAGEMENT GROUP, INC								
8889	CUMMING MANAGEMENT GROUP, INC	129052-0	REIMBURSABLE EXPENSES-MICHAEL ALLEN	12/18/2023	58.95	12/21/2023	220-480-810 ARPA	1223
8889	CUMMING MANAGEMENT GROUP, INC	133338	Sept1/23-9/30/23	09/01/2023	9,688.00	01/04/2024	220-480-810 ARPA	923
8889	CUMMING MANAGEMENT GROUP, INC	136641	CRRC Services Nov 1 Nov 30 2023	11/01/2023	9,688.00	12/21/2023	220-480-810 ARPA	1123
Total 8889:					19,434.95			
DOWL, LLC								
8931	DOWL, LLC	7363.30292.01-1	on call GIS services	12/01/2023	622.25	01/04/2024	510-810-320 Prof Serv-Engineering	1223
8931	DOWL, LLC	7363.30292.01-1	on call GIS services	12/01/2023	622.25	01/04/2024	100-575-320 Prof Serv-Engineering	1223
8931	DOWL, LLC	7363.30292.01-1	on call GIS services	12/01/2023	622.25	01/04/2024	100-417-320 PROF SEV-ENGINEERING	1223
8931	DOWL, LLC	7363.30292.01-1	on call GIS services	12/01/2023	622.25	01/04/2024	520-810-320 Prof Serv-Engineering	1223
8931	DOWL, LLC	7363.30292.01-1	on call GIS services	12/01/2023	622.25	01/04/2024	100-475-320 Prof Serv-Engineering	1223
Total 8931:					3,111.25			
EMPLOYEES, CITY OF FERNLEY								
8639	EMPLOYEES, CITY OF FERNLEY	112146	REIMB FOR TAXI FOR TRAINING	12/13/2023	41.36	01/04/2024	200-425-582 Travel	1223
8639	EMPLOYEES, CITY OF FERNLEY	12/23	REIMB FOR EMPLOYEE XMAS LUNCH	12/21/2023	66.95	01/04/2024	100-412-586 Employee Recognition	1223
8639	EMPLOYEES, CITY OF FERNLEY	1219	REIMB FOR LICENSE RENEWAL	01/09/2024	50.00		100-475-580 Training	124

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
8639	EMPLOYEES, CITY OF FERNLEY	480300025	TREASURER INTERVIEW LUNCH	12/15/2023	49.91	12/21/2023	100-413-582 Travel	1223
8639	EMPLOYEES, CITY OF FERNLEY	810000033126	BOOKS FOR ART 100-1002 AND BOOK FOR PSY 208-1001	08/29/2023	207.20	01/04/2024	100-425-580 Training	823
8639	EMPLOYEES, CITY OF FERNLEY	820886	REIMB FOR NOTARY BOND FILING FEES	01/04/2024	20.00		100-414-581 Dues and Memberships	124
8639	EMPLOYEES, CITY OF FERNLEY	83336 & 83718	GREAT BASIN COURSES PSY 208 & ART 100	08/29/2023	768.00	01/04/2024	100-425-580 Training	823
8639	EMPLOYEES, CITY OF FERNLEY	DEC 2023	REIMB FOR TRAVEL- MILEAGE	12/13/2023	237.89	12/21/2023	100-418-580 Training	1223
8639	EMPLOYEES, CITY OF FERNLEY	DEC 2023	REIMB FOR TRAVEL- GREEN VALLEY RANCH ROOM CHA	12/13/2023	465.12	12/21/2023	100-418-580 Training	1223
8639	EMPLOYEES, CITY OF FERNLEY	DMWZQ	REIMB FOR HOTEL ROOM FOR TRAINING	12/13/2023	244.90	01/04/2024	200-425-582 Travel	1223
	Total 8639:				2,151.33			
FERNLEY ART & CULTURE EVENT SQUAD								
8729	FERNLEY ART & CULTURE EVENT SQUAD	2Final FY23/24 R1	Final FY23/24 R1 July-Dec 23 Fernley Aces Art/Culture Squa	12/29/2023	7,473.24		225-575-650 Grant Awards	1223
	Total 8729:				7,473.24			
FERNLEY JUNIOR RODEO ASSOC								
6065	FERNLEY JUNIOR RODEO ASSOC	Final FY23/24 R1	Final FY23/24 R1 July-Dec 23 Fernley JR Rodeo	12/29/2023	10,000.00		225-575-650 Grant Awards	1223
	Total 6065:				10,000.00			
FLYERS ENERGY, LLC								
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-PARKS	11/30/2023	326.71	12/21/2023	100-575-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-STREETS	11/30/2023	1,135.05	12/21/2023	100-475-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-BUILDING	11/30/2023	198.77	12/21/2023	100-605-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-WATER	11/30/2023	1,088.96	12/21/2023	510-810-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-ANIMAL CONTROL	11/30/2023	288.60	12/21/2023	100-525-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-VECTOR	11/30/2023	46.53	12/21/2023	100-528-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-FLEET	11/30/2023	163.59	12/21/2023	100-480-626 GASOLINE	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-FACILITIES	11/30/2023	265.30	12/21/2023	100-417-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-SEWER	11/30/2023	1,207.40	12/21/2023	520-810-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3651282	GASOLINE-COURT	11/30/2023	60.57	12/21/2023	100-425-626 Gasoline	1123
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- WTP	12/15/2023	38.08	01/04/2024	510-840-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- COURT	12/15/2023	53.45	01/04/2024	100-425-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- WD	12/15/2023	1,092.23	01/04/2024	510-810-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- BUILDING	12/15/2023	109.11	01/04/2024	100-605-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- ANIMAL CONTROL	12/15/2023	262.37	01/04/2024	100-525-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- VECTOR	12/15/2023	68.13	01/04/2024	100-528-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- STREETS	12/15/2023	1,967.19	01/04/2024	100-475-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- FLEET	12/15/2023	110.28	01/04/2024	100-480-626 GASOLINE	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- FACILITIES	12/15/2023	365.65	01/04/2024	100-417-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- PARKS	12/15/2023	531.83	01/04/2024	100-575-626 Gasoline	1223
18	FLYERS ENERGY, LLC	CFS-3670503	GASOLINE- WW	12/15/2023	1,094.33	01/04/2024	520-810-626 Gasoline	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
	Total 18:				10,474.13			
FLYNN GIUDICI GOVERNMENT AFFAIRS LLC								
8869	FLYNN GIUDICI GOVERNMENT AFFAIRS LLC	INV-0320	Lobbyist Contract JAN24	01/10/2024	5,800.00		100-413-322 Prof Serv-Other	124
	Total 8869:				5,800.00			
GRAINGER								
252	GRAINGER	9936621417	New vibration plate	12/15/2023	3,207.04	12/21/2023	510-810-605 Minor Equipment	1223
252	GRAINGER	9945997295	PS Lab supplies	12/27/2023	495.58		510-840-430 Service-Repair and Maintenance	1223
	Total 252:				3,702.62			
GRANITE CONSTRUCTION CO								
64	GRANITE CONSTRUCTION CO	2630503	hot mix	12/13/2023	743.60	12/21/2023	100-475-600 General Supplies	1223
	Total 64:				743.60			
GRANITE TELECOMMUNICATIONS, LLC								
8838	GRANITE TELECOMMUNICATIONS, LLC	627477969	Communications	12/01/2023	210.00	01/04/2024	100-417-530 Communications (Internet,Cell)	1223
	Total 8838:				210.00			
HARRIS INDUSTRIAL GASES								
8630	HARRIS INDUSTRIAL GASES	1028595-00	welder fix	12/22/2023	62.50		100-575-600 General Supplies	1223
8630	HARRIS INDUSTRIAL GASES	1932232	welder repair	12/31/2023	62.50		100-475-605 Minor Equipment	1223
	Total 8630:				125.00			
HINTON BURDICK, PLLC								
8486	HINTON BURDICK, PLLC	296220	FY23 Single Audit Services	11/30/2023	1,600.00	01/04/2024	100-415-328 Prof Serv-Auditing	1123
8486	HINTON BURDICK, PLLC	296220	FY23 Audit Services	11/30/2023	31,000.00	01/04/2024	100-415-328 Prof Serv-Auditing	1123
	Total 8486:				32,600.00			
HOBBS COMPANY LIMITED LLC								
8978	HOBBS COMPANY LIMITED LLC	2112	sensor for big mama	12/15/2023	349.00	12/21/2023	510-810-430 Repairs & Maintenance	1223
	Total 8978:				349.00			
IBEW Local 1245								
83	IBEW Local 1245	DEC 2023-2	UNION DUES, ONE HALF OF MONTH	12/15/2023	812.38	12/15/2023	100-219900 OTHER PAYROLL PAYABLES	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
	Total 83:				812.38			
INTERNAL REVENUE SERVICE								
7879	INTERNAL REVENUE SERVICE	DEC 2023-2	MED TAX PAYABLE, PAYROLL	12/15/2023	5,753.46	12/15/2023	100-211000 FICA PAYABLE	1223
7879	INTERNAL REVENUE SERVICE	DEC 2023-2	FICA TAX PAYABLE, PAYROLL	12/15/2023	274.08	12/15/2023	100-211000 FICA PAYABLE	1223
7879	INTERNAL REVENUE SERVICE	DEC 2023-2	W/HOLD TAX PAYABLE, PAYROLL	12/15/2023	19,176.45	12/15/2023	100-212000 FEDERAL WITHHOLDING PAYAB	1223
7879	INTERNAL REVENUE SERVICE	DEC 2023-3	W/HOLD TAX PAYABLE, PAYROLL	12/29/2023	19,993.74	12/29/2023	100-212000 FEDERAL WITHHOLDING PAYAB	1223
7879	INTERNAL REVENUE SERVICE	DEC 2023-3	MED TAX PAYABLE, PAYROLL	12/29/2023	5,920.82	12/29/2023	100-211000 FICA PAYABLE	1223
7879	INTERNAL REVENUE SERVICE	DEC 2023-3	FICA TAX PAYABLE, PAYROLL	12/29/2023	290.18	12/29/2023	100-211000 FICA PAYABLE	1223
	Total 7879:				51,408.73			
INTERSTATE OIL COMPANY								
4329	INTERSTATE OIL COMPANY	0835264-IN	oil for fleet	12/26/2023	39.46		100-475-610 Automotive Supplies	1223
4329	INTERSTATE OIL COMPANY	0835264-IN	oil for fleet	12/26/2023	39.47		520-810-610 Supplies-Automotive	1223
4329	INTERSTATE OIL COMPANY	0835264-IN	oil for fleet	12/26/2023	39.46		510-810-610 Automotive Supplies	1223
4329	INTERSTATE OIL COMPANY	0835264-IN	oil for fleet	12/26/2023	39.46		100-525-610 Automotive Supplies	1223
4329	INTERSTATE OIL COMPANY	0835264-IN	oil for fleet	12/26/2023	39.46		100-575-610 Automotive Supplies	1223
4329	INTERSTATE OIL COMPANY	TW77944-IN	gasoline	12/07/2023	278.72	12/21/2023	100-575-626 Gasoline	1223
4329	INTERSTATE OIL COMPANY	TW77944-IN	gasoline	12/07/2023	278.72	12/21/2023	100-475-626 Gasoline	1223
4329	INTERSTATE OIL COMPANY	TW77944-IN	gasoline	12/07/2023	278.72	12/21/2023	100-417-626 Gasoline	1223
4329	INTERSTATE OIL COMPANY	TW77944-IN	gasolne	12/07/2023	278.72	12/21/2023	510-810-626 Gasoline	1223
4329	INTERSTATE OIL COMPANY	TW77944-IN	gasoline	12/07/2023	278.72	12/21/2023	520-810-626 Gasoline	1223
	Total 4329:				1,590.91			
JOHNSON CONTROLS								
8907	JOHNSON CONTROLS	1-131633201764	PS MF Building HVAC Inspection, repair, and commissioning.	12/12/2023	4,260.00	01/04/2024	510-840-424 Contract Services-HVAC	1223
	Total 8907:				4,260.00			
JOHNSON CONTROLS FIRE PROTECTION LP								
8667	JOHNSON CONTROLS FIRE PROTECTION LP	23875148	PS Fire system inspection/backflow BLD 3	12/06/2023	382.00	12/21/2023	100-417-420 Contract Services	1223
8667	JOHNSON CONTROLS FIRE PROTECTION LP	23875149	PS fire system inspection/backflow BLD4	12/06/2023	382.00	12/21/2023	510-840-420 Contract Services	1223
8667	JOHNSON CONTROLS FIRE PROTECTION LP	23879690	monitoring service	12/13/2023	447.30	01/04/2024	100-417-420 Contract Services	1223
	Total 8667:				1,211.30			
KOCH ELEVATOR CO.								
8751	KOCH ELEVATOR CO.	33754	elevator service	01/01/2024	196.65		100-417-420 Contract Services	124
	Total 8751:				196.65			

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
KOLVET, BRENT								
8611	KOLVET, BRENT	DEC 23	FULL DAY COVERAGE 12/11/23	12/29/2023	396.00	01/04/2024	100-425-325 PROF SERV-CONFLICT COUNS	1223
	Total 8611:				396.00			
LegalEdge Software								
8963	LegalEdge Software	52471	legal edge hosting costs	01/02/2024	4,212.00		100-414-342 Tech Services-Other	124
8963	LegalEdge Software	DEC 2023	Legal Edge services	12/08/2023	17,100.00	12/21/2023	100-414-342 Tech Services-Other	1223
	Total 8963:				21,312.00			
LEMONS, GRUNDY & EISENBERG								
8835	LEMONS, GRUNDY & EISENBERG	3	HR legal matter	12/10/2023	180.00	01/04/2024	100-320-100 Business License Fees	1223
	Total 8835:				180.00			
LOWES CREDIT SERVICES								
7650	LOWES CREDIT SERVICES	1157	grinder and wheels	01/05/2024	116.80		100-417-605 Minor Equipment	124
7650	LOWES CREDIT SERVICES	1572	eye wear trash bags misc.	12/22/2023	164.15		100-475-600 General Supplies	1223
7650	LOWES CREDIT SERVICES	1734	joiner and supplies	12/28/2023	256.41		100-417-605 Minor Equipment	1223
7650	LOWES CREDIT SERVICES	1755	asphalt concrete misc.	12/29/2023	1,759.45		100-475-600 General Supplies	1223
7650	LOWES CREDIT SERVICES	75926	anchors	12/27/2023	50.56		100-417-612 Building Maintenance Supplies	1223
7650	LOWES CREDIT SERVICES	77318	sprayer for fleet	12/07/2023	475.89	12/21/2023	100-480-600 GENERAL SUPPLIES/TOOLS	1223
7650	LOWES CREDIT SERVICES	78136	cleaning supplies	12/29/2023	36.53		100-417-612 Building Maintenance Supplies	1223
7650	LOWES CREDIT SERVICES	84067	8 bags of concrete for MH ring at Hwy 50	12/11/2023	31.44	12/21/2023	520-810-614 Supplies-Plant/Shop/Maint	1223
7650	LOWES CREDIT SERVICES	84304	PS plant supplies	12/11/2023	60.19	12/21/2023	510-840-614 Plant/Shop/Maint. Supplies	1223
7650	LOWES CREDIT SERVICES	84919	concrete and electrical pipe for cemetery	01/03/2024	400.62		100-576-614 Plant/Shop Maint. Supplies	124
7650	LOWES CREDIT SERVICES	85400	PS shop supplies	01/03/2024	229.68		510-840-614 Plant/Shop/Maint. Supplies	124
7650	LOWES CREDIT SERVICES	85515	PS Shop supplies	01/03/2024	37.98-		510-840-614 Plant/Shop/Maint. Supplies	124
7650	LOWES CREDIT SERVICES	85967	Replacement Hand Tools	12/12/2023	220.32	12/21/2023	520-810-605 Minor Equipment	1223
7650	LOWES CREDIT SERVICES	86121	bucket concrete tape lid.	01/04/2024	93.37		100-575-600 General Supplies	124
7650	LOWES CREDIT SERVICES	86782	bubble wrap	12/13/2023	21.81	12/21/2023	100-480-600 GENERAL SUPPLIES/TOOLS	1223
7650	LOWES CREDIT SERVICES	87331	tarps for salt and sand pile	01/05/2024	290.64		100-475-600 General Supplies	124
7650	LOWES CREDIT SERVICES	87502	gloves	01/05/2024	56.92		100-475-616 Supplies-Safety	124
7650	LOWES CREDIT SERVICES	88002	cleaning and disinfectant	12/14/2023	74.21	01/04/2024	510-810-612 Supplies-Janitorial	1223
7650	LOWES CREDIT SERVICES	88028	tape and measure cup	12/14/2023	42.18	01/04/2024	100-417-612 Building Maintenance Supplies	1223
7650	LOWES CREDIT SERVICES	89715	space heater for well 4	12/15/2023	85.48	01/04/2024	510-840-614 Plant/Shop/Maint. Supplies	1223
7650	LOWES CREDIT SERVICES	901334	misc roofing supplies for shed at cottonwood shop	11/06/2023	822.12	12/21/2023	100-475-600 General Supplies	1123
7650	LOWES CREDIT SERVICES	93876	gloves and cleaner	12/18/2023	236.45	12/21/2023	100-475-616 Supplies-Safety	1223
7650	LOWES CREDIT SERVICES	93922	carrige bolts washer nuts	12/18/2023	63.16	12/21/2023	100-528-430 Service-Repair and Maintenance	1223
7650	LOWES CREDIT SERVICES	94203	pail and picker	12/18/2023	63.27	01/04/2024	100-417-612 Building Maintenance Supplies	1223
7650	LOWES CREDIT SERVICES	95918	misc. and paint	12/19/2023	58.52	01/04/2024	100-575-600 General Supplies	1223
7650	LOWES CREDIT SERVICES	96220-0	PS Plant Supplies Credit Memo	12/13/2023	24.42-	12/21/2023	510-840-614 Plant/Shop/Maint. Supplies	1223
7650	LOWES CREDIT SERVICES	96928	PS Shop supplies	12/20/2023	401.29		510-840-614 Plant/Shop/Maint. Supplies	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
7650	LOWES CREDIT SERVICES	970629-MATROT	PS shop supplies	11/14/2023	118.86	12/21/2023	510-840-614 Plant/Shop/Maint. Supplies	1123
7650	LOWES CREDIT SERVICES	980134	cabinet	11/20/2023	407.55	12/21/2023	100-417-605 Minor Equipment	1123
7650	LOWES CREDIT SERVICES	982644	cleaning supplies	11/22/2023	48.44	12/21/2023	100-417-612 Building Maintenance Supplies	1123
7650	LOWES CREDIT SERVICES	98465	PS Fence Slats	12/21/2023	693.98		510-840-614 Plant/Shop/Maint. Supplies	1223
7650	LOWES CREDIT SERVICES	994074-mcrabb	north east booster	11/29/2023	19.93	12/21/2023	510-810-614 Supplies-Plant/Shop/Maint	1123
	Total 7650:				7,337.82			
LP INSURANCE SERVICES, INC								
8746	LP INSURANCE SERVICES, INC	865760	NOTARY BOND	01/03/2024	50.00		100-414-581 Dues and Memberships	124
	Total 8746:				50.00			
LUMOS & ASSOCIATES INC								
370	LUMOS & ASSOCIATES INC	119586	WWTP PER	09/22/2023	5,398.50	12/21/2023	520-810-320 Prof Serv-Engineering	923
370	LUMOS & ASSOCIATES INC	120628	Engineering services for flashing beacon project	10/21/2023	497.00	12/28/2023	100-475-730 Improve other than Buildings	1023
370	LUMOS & ASSOCIATES INC	120630	Engineering services for FY23/24 pavement maintenance proj	12/11/2023	17,730.75	01/04/2024	100-475-430 Service-Repair and Maintenance	1223
	Total 370:				23,626.25			
LYON COUNTY								
1126	LYON COUNTY	JAN 2024	PUBLIC DEFENDER - JANUARY 2024	12/19/2023	10,000.00	12/21/2023	100-413-322 Prof Serv-Other	1223
	Total 1126:				10,000.00			
LYON COUNTY CLERK/TREASURER								
106	LYON COUNTY CLERK/TREASURER	TLT Dec 23	Transient Lodging Tax	12/31/2023	2,360.90		225-227010 TLT Payable to County	1223
	Total 106:				2,360.90			
LYON COUNTY COMPTROLLER								
107	LYON COUNTY COMPTROLLER	308309581	REIMBURSEMENT FOR 5 CE-PRETRIAL USERS	12/18/2023	645.00	01/04/2024	100-425-341 Pretrial Services Program	1223
107	LYON COUNTY COMPTROLLER	FY2024	Citywatch 911	01/02/2024	2,000.00		100-412-650 Community Support	124
	Total 107:				2,645.00			
LYON COUNTY HUMAN SERVICES								
3266	LYON COUNTY HUMAN SERVICES	FEARPA2023-09	ARPA Nov 2023	12/15/2023	6,739.31	12/28/2023	220-480-810 ARPA	1223
	Total 3266:				6,739.31			
MARSHALL'S SEPTIC CARE								
8509	MARSHALL'S SEPTIC CARE	116021	ponderosa park	01/01/2024	118.33		100-575-420 Contract Services	124
8509	MARSHALL'S SEPTIC CARE	I16016	BMX track	01/01/2024	118.33		100-575-420 Contract Services	124

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
8509	MARSHALL'S SEPTIC CARE	I16017	autumn winds	01/01/2024	118.33		100-575-420 Contract Services	124
8509	MARSHALL'S SEPTIC CARE	I16018	OTP	01/01/2024	526.65		100-575-420 Contract Services	124
8509	MARSHALL'S SEPTIC CARE	I16019	green valley park	01/01/2024	210.66		100-575-420 Contract Services	124
8509	MARSHALL'S SEPTIC CARE	I16020	ITP	01/01/2024	200.66		100-575-420 Contract Services	124
8509	MARSHALL'S SEPTIC CARE	I16026	Depot	01/01/2024	113.33		100-575-420 Contract Services	124
	Total 8509:				1,406.29			
MATHEUS, SENIOR JUDGE LORI								
8042	MATHEUS, SENIOR JUDGE LORI	DEC 2023	MUNICIPAL COURT JUDGE	12/19/2023	3,750.00	12/21/2023	100-425-322 Prof Serv-Other	1223
	Total 8042:				3,750.00			
MCDONALD CARANO								
322	MCDONALD CARANO	12472028	Planning C-tax	10/31/2023	275.00	01/04/2024	100-414-310 Prof Serv-Legal	1023
322	MCDONALD CARANO	12473625	Planning and Mark IV	11/30/2023	4,895.00	01/04/2024	100-414-310 Prof Serv-Legal	1123
322	MCDONALD CARANO	12474178	Planning	11/30/2023	343.75	01/04/2024	100-414-310 Prof Serv-Legal	1123
	Total 322:				5,513.75			
METLIFE SMALL BUSINESS CENTER								
5387	METLIFE SMALL BUSINESS CENTER	JAN 2024	5952725 GROUP DENTAL INSURANCE	01/01/2024	9,908.81	12/21/2023	100-217100 Dental Insurance Payable MetL	124
	Total 5387:				9,908.81			
MISCELLANEOUS ONE TIME VENDOR								
1111	MISCELLANEOUS ONE TIME VENDOR	121823	RENTAL CAR	12/18/2023	128.42	12/21/2023	100-415-582 Travel	1223
1111	MISCELLANEOUS ONE TIME VENDOR	121823	LODGING FOR INTERVIEW FINANCE DIRECTOR	12/18/2023	228.45	12/21/2023	100-415-582 Travel	1223
1111	MISCELLANEOUS ONE TIME VENDOR	DEC 146754	FSCAC RESOURCE GUIDE PRINTING	12/13/2023	318.00	12/14/2023	100-413-322 Prof Serv-Other	1223
	Total 1111:				674.87			
MOBO LAW, LLP								
8906	MOBO LAW, LLP	141486	criminal conflict	12/31/2023	979.02		100-414-310 Prof Serv-Legal	1223
	Total 8906:				979.02			
MOUNTAIN ALARM								
8814	MOUNTAIN ALARM	4170671	monitoring Depot and OTP	01/01/2024	399.00		100-417-420 Contract Services	124
	Total 8814:				399.00			
NAPA AUTO & TRUCK PARTS								
58	NAPA AUTO & TRUCK PARTS	402550	paving machine fix	12/12/2023	71.08	12/21/2023	100-475-430 Service-Repair and Maintenance	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
58	NAPA AUTO & TRUCK PARTS	402630	grease fittings	12/14/2023	35.16	12/21/2023	510-810-610 Automotive Supplies	1223
58	NAPA AUTO & TRUCK PARTS	402635	generator fill	12/14/2023	24.98	12/21/2023	100-480-610 AUTOMOTIVE SUPPLIES	1223
58	NAPA AUTO & TRUCK PARTS	402644	Lift Station Filters	12/14/2023	71.86	12/21/2023	520-810-614 Supplies-Plant/Shop/Maint	1223
58	NAPA AUTO & TRUCK PARTS	402814	parts for vactor	12/18/2023	39.94	12/21/2023	100-475-430 Service-Repair and Maintenance	1223
58	NAPA AUTO & TRUCK PARTS	402875	governor for air brakes	12/19/2023	27.99	01/04/2024	100-475-610 Automotive Supplies	1223
58	NAPA AUTO & TRUCK PARTS	403187	gloves	12/28/2023	43.77		100-575-616 Safety Supplies	1223
58	NAPA AUTO & TRUCK PARTS	403391	automotive	01/03/2024	118.44		100-475-610 Automotive Supplies	124
58	NAPA AUTO & TRUCK PARTS	403415	PARTS FOR WATER TRUCK	01/03/2024	426.70		100-475-430 Service-Repair and Maintenance	124
	Total 58:				859.92			
NCE								
7617	NCE	675222514	On call development inspection services	12/08/2023	7,215.25	01/04/2024	100-529-320 Prof Serv-Engineering	1223
	Total 7617:				7,215.25			
NDEP NV DIV OF ENVIRONMENTAL PROTECTION								
4038	NDEP NV DIV OF ENVIRONMENTAL PROTECTION	WD12.27.23	M. GOTHAN D-3 RENEWAL	12/27/2023	150.00	01/04/2024	510-810-580 Training	1223
4038	NDEP NV DIV OF ENVIRONMENTAL PROTECTION	WD12.27.23	T. HARRIS D-2 RENEWAL	12/27/2023	150.00	01/04/2024	510-810-580 Training	1223
	Total 4038:				300.00			
NEVADA DEPARTMENT OF TAXATION								
6378	NEVADA DEPARTMENT OF TAXATION	TLT Dec 23	Transient Lodging Tax	12/31/2023	1,416.54		225-227015 TLT Payable to State	1223
	Total 6378:				1,416.54			
NEVADA EMPLOYMENT SECURITY DIV								
300	NEVADA EMPLOYMENT SECURITY DIV	3RD QTR 10/2023	UNEMPLOYMENT CONTRIBUTIONS	09/30/2023	156.78	12/15/2023	100-218900 UNEMPLOYMENT PAYABLE	923
300	NEVADA EMPLOYMENT SECURITY DIV	4TH QTR 2023	UNEMPLOYMENT CONTRIBUTIONS	12/31/2023	5,564.00	01/03/2024	100-218900 UNEMPLOYMENT PAYABLE	1223
	Total 300:				5,720.78			
NEVADA STATE TREASURER								
127	NEVADA STATE TREASURER	4TH QTR 2023	CHILD SUPPORT WITHHOLDING FEES	12/31/2023	12.00	01/04/2024	100-219900 OTHER PAYROLL PAYABLES	1223
	Total 127:				12.00			
NEVADA WATER RESOURCES ASSN - NWRA								
5586	NEVADA WATER RESOURCES ASSN - NWRA	105024	TRUCKEE RIVER FIELD STUDY COURSE -LYDIA, BEN &	01/05/2024	975.00		100-413-580 Training	124
5586	NEVADA WATER RESOURCES ASSN - NWRA	80652628	Truckee River Tour	12/20/2023	55.00		510-840-580 Training	1223
5586	NEVADA WATER RESOURCES ASSN - NWRA	80652628	Truckee River Tour	12/20/2023	54.00		100-575-580 Training	1223
5586	NEVADA WATER RESOURCES ASSN - NWRA	80652628	Truckee River Tour	12/20/2023	54.00		100-417-580 Training	1223
5586	NEVADA WATER RESOURCES ASSN - NWRA	80652628	Truckee River Tour	12/20/2023	54.00		510-810-580 Training	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
5586	NEVADA WATER RESOURCES ASSN - NWRA	80652628	Truckee River Tour	12/20/2023	54.00		520-810-580 Training	1223
5586	NEVADA WATER RESOURCES ASSN - NWRA	80652628	Truckee River Tour	12/20/2023	54.00		100-475-580 Training	1223
Total 5586:					1,300.00			
NV ENERGY								
167	NV ENERGY	12019 JAN 24	34596505012019 ACH	12/16/2023	5,674.63	01/08/2024	510-810-622 Electricity	1223
167	NV ENERGY	13050 DEC 23	48768103613050 ACH	12/09/2023	2,255.35	12/29/2023	100-417-622 Electricity	1223
167	NV ENERGY	13924 JAN 24	48768108113924 ACH	12/29/2023	33.59	01/19/2024	100-575-622 Electricity	1223
167	NV ENERGY	14319 DEC 23	34596405214319 ACH	12/09/2023	121.74	12/29/2023	100-575-622 Electricity	1223
167	NV ENERGY	26093 DEC 23	34596402626093 ACH	12/07/2023	1,746.43	12/27/2023	100-575-622 Electricity	1223
167	NV ENERGY	26100 DEC 23	34596502626100 ACH	12/07/2023	20,530.93	12/27/2023	510-810-622 Electricity	1223
167	NV ENERGY	26100 DEC 23	34596502626100 ACH	12/07/2023	41.69	12/27/2023	520-810-622 Electricity	1223
167	NV ENERGY	26445 DEC 23	34596505226445 ACH	12/27/2023	4,950.77	01/18/2024	510-840-622 Electricity	1223
167	NV ENERGY	28458 DEC 23	34596505228458 ACH	12/27/2023	10,569.32	01/18/2024	510-840-622 Electricity	1223
167	NV ENERGY	29499 DEC 23	1000213677906929499 ACH	12/01/2023	75.97	12/19/2023	100-475-622 Electricity	1223
167	NV ENERGY	30037 DEC 23	34596403630037 ACH	12/16/2023	36.45	01/08/2024	100-576-622 Electricity	1223
167	NV ENERGY	34991 DEC 23	34596407734991 ACH	12/12/2023	33.59	01/02/2024	510-810-622 Electricity	1223
167	NV ENERGY	37594 DEC 23	80865904937594 ACH	12/12/2023	33.92	01/02/2024	100-475-622 Electricity	1223
167	NV ENERGY	41110 DEC 23	82190403641110 ACH	12/07/2023	37.94	12/27/2023	520-810-622 Electricity	1223
167	NV ENERGY	42683 DEC 23	82190404842683 ACH	12/07/2023	6,481.55	12/27/2023	520-810-622 Electricity	1223
167	NV ENERGY	42683 DEC 23	82190404842683 ACH	12/07/2023	899.21	12/27/2023	510-810-622 Electricity	1223
167	NV ENERGY	42683 DEC 23	82190404842683 ACH	12/07/2023	65.56	12/27/2023	100-475-622 Electricity	1223
167	NV ENERGY	42683 DEC 23	82190404842683 ACH	12/07/2023	498.70	12/27/2023	100-575-622 Electricity	1223
167	NV ENERGY	65197 DEC 23	34596407565197 ACH	12/09/2023	33.59	12/29/2023	510-810-622 Electricity	1223
167	NV ENERGY	67463 DEC 23	34596404867463 ACH	12/12/2023	170.13	01/02/2024	100-575-622 Electricity	1223
167	NV ENERGY	68387 DEC 23	345964082-68387	12/12/2023	33.59	01/02/2024	100-475-622 Electricity	1223
167	NV ENERGY	84389 DEC 23	34596503684389 ACH	12/09/2023	128.00	12/29/2023	100-417-622 Electricity	1223
167	NV ENERGY	97899 DEC 23	80865904797899 ACH	12/07/2023	14,431.51	12/27/2023	100-475-622 Electricity	1223
167	NV ENERGY	98954 DEC 23	82190405098954 ACH	12/07/2023	3,877.11	12/27/2023	520-810-622 Electricity	1223
Total 167:					72,761.27			
OFFICE DEPOT								
133	OFFICE DEPOT	343753646001	Blue Highlighters	11/29/2023	12.60	12/21/2023	100-425-600 General Supplies	1123
133	OFFICE DEPOT	343753647001	File Folders	11/29/2023	70.99	12/21/2023	100-425-600 General Supplies	1123
133	OFFICE DEPOT	345187217001	Paper clip holder-post its Dev Serv Co	12/07/2023	28.33	12/21/2023	100-413-600 General Supplies	1223
133	OFFICE DEPOT	345195530001	tape Dispenser Dry Erase- General Supplies- DSC- Com	12/07/2023	18.25	12/21/2023	100-413-600 General Supplies	1223
133	OFFICE DEPOT	345195531001	DSC Business Cards	12/11/2023	24.50	12/21/2023	100-413-550 Printing and Postage	1223
133	OFFICE DEPOT	345557860001	Desk pad- Pens etc Animal Con Gen supplies	12/07/2023	137.24	12/21/2023	100-525-601 Office Supplies	1223
133	OFFICE DEPOT	345558464001	Kodak Pix Pro	12/07/2023	329.98	12/21/2023	100-525-600 General Supplies	1223
133	OFFICE DEPOT	345558466001	camera bag	12/07/2023	59.98	12/21/2023	100-525-600 General Supplies	1223
133	OFFICE DEPOT	345658650001	PW Calendars	12/12/2023	47.99	12/21/2023	510-810-601 Office Supplies	1223
133	OFFICE DEPOT	345658650001	PW Calendars	12/12/2023	24.00	12/21/2023	100-417-601 OFFICE SUPPLIES	1223

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133	OFFICE DEPOT	345658650001	PW Calendars	12/12/2023	24.00	12/21/2023	510-840-601 Office Supplies	1223
133	OFFICE DEPOT	345658650001	PW Calendars	12/12/2023	47.99	12/21/2023	520-810-601 Office Supplies	1223
133	OFFICE DEPOT	345658650001	PW Calendars	12/12/2023	35.99	12/21/2023	100-575-601 Office Supplies	1223
133	OFFICE DEPOT	345658650001	PW Calendars	12/12/2023	59.99	12/21/2023	100-475-601 Supplies-Office	1223
133	OFFICE DEPOT	345660715001	PW Office Supplies	12/12/2023	4.22	12/21/2023	100-475-601 Supplies-Office	1223
133	OFFICE DEPOT	345660715001	PW Office Supplies	12/12/2023	3.38	12/21/2023	520-810-601 Office Supplies	1223
133	OFFICE DEPOT	345660715001	PW Office Supplies	12/12/2023	1.69	12/21/2023	100-417-601 OFFICE SUPPLIES	1223
133	OFFICE DEPOT	345660715001	PW Office Supplies	12/12/2023	3.38	12/21/2023	510-810-601 Office Supplies	1223
133	OFFICE DEPOT	345660715001	PW Office Supplies	12/12/2023	1.69	12/21/2023	510-840-601 Office Supplies	1223
133	OFFICE DEPOT	345660715001	PW Office Supplies	12/12/2023	2.53	12/21/2023	100-575-601 Office Supplies	1223
133	OFFICE DEPOT	345660718001	PW Office Supplies	12/12/2023	22.48	12/21/2023	510-840-601 Office Supplies	1223
133	OFFICE DEPOT	345660718001	PW Office Supplies	12/12/2023	22.49	12/21/2023	100-417-601 OFFICE SUPPLIES	1223
133	OFFICE DEPOT	345660718001	PW Office Supplies	12/12/2023	56.21	12/21/2023	100-475-601 Supplies-Office	1223
133	OFFICE DEPOT	345660718001	PW Office Supplies	12/12/2023	33.73	12/21/2023	100-575-601 Office Supplies	1223
133	OFFICE DEPOT	345660718001	PW Office Supplies	12/12/2023	44.97	12/21/2023	510-810-601 Office Supplies	1223
133	OFFICE DEPOT	345660718001	PW Office Supplies	12/12/2023	44.97	12/21/2023	520-810-601 Office Supplies	1223
133	OFFICE DEPOT	345776806001	Office Chair	12/13/2023	423.79	01/04/2024	100-605-601 Office Supplies	1223
133	OFFICE DEPOT	345777102001	Office Supplies	12/13/2023	135.17	12/21/2023	100-605-601 Office Supplies	1223
133	OFFICE DEPOT	345777103001	Ink for stamps	12/14/2023	27.96	01/04/2024	100-605-601 Office Supplies	1223
133	OFFICE DEPOT	345777104001	Office supplies	12/13/2023	11.99	01/04/2024	100-605-601 Office Supplies	1223
133	OFFICE DEPOT	345777742001	Office Chair	12/13/2023	423.79	01/04/2024	100-605-601 Office Supplies	1223
133	OFFICE DEPOT	347864702001	markers/erasers /note pads CMO	12/28/2023	52.00		100-413-600 General Supplies	1223
	Total 133:				2,238.27			
O'REILLY AUTO PARTS								
6230	O'REILLY AUTO PARTS	3599-267407	ring compresser	10/03/2023	19.99		100-480-610 AUTOMOTIVE SUPPLIES	1023
6230	O'REILLY AUTO PARTS	3599-270957	washer pump	10/25/2023	22.50		100-480-610 AUTOMOTIVE SUPPLIES	1023
6230	O'REILLY AUTO PARTS	3599-277410	parts for streets	12/11/2023	24.16	12/21/2023	100-475-610 Automotive Supplies	1223
6230	O'REILLY AUTO PARTS	3599-277919	parts for parks 4007	12/15/2023	9.73	12/21/2023	100-575-610 Automotive Supplies	1223
6230	O'REILLY AUTO PARTS	3599-278332	tune up of 9002	12/18/2023	195.72	01/04/2024	100-480-610 AUTOMOTIVE SUPPLIES	1223
	Total 6230:				272.10			
PACIFIC OFFICE AUTOMATION								
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	Utilities 8/23-9/23	09/01/2023	272.45	12/21/2023	510-810-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	FMC 8/23-9/23	09/01/2023	544.91	12/21/2023	100-425-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	Clerk 8/23-9/23	09/01/2023	544.91	12/21/2023	100-416-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	CAO 8/23-9/23	09/01/2023	544.91	12/21/2023	100-414-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	HR/CMO 8/23-9/23	09/01/2023	544.91	12/21/2023	100-413-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	Utilities 8/23-9/23	09/01/2023	272.46	12/21/2023	520-810-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS11	Main 8/23-9/23	09/01/2023	544.91	12/21/2023	100-417-550 Printing and Postage	923
8929	PACIFIC OFFICE AUTOMATION	COF-KS12	Utilities 9/23-10/23	10/03/2023	272.45	12/21/2023	510-810-550 Printing and Postage	1023
8929	PACIFIC OFFICE AUTOMATION	COF-KS12	FMC 9/23-10/23	10/03/2023	544.91	12/21/2023	100-425-550 Printing and Postage	1023

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8929	PACIFIC OFFICE AUTOMATION	COF-KS12	Clerk 9/23-10/23	10/03/2023	544.91	12/21/2023	100-416-550 Printing and Postage	1023
8929	PACIFIC OFFICE AUTOMATION	COF-KS12	CAO 9/23-10/23	10/03/2023	544.91	12/21/2023	100-414-550 Printing and Postage	1023
8929	PACIFIC OFFICE AUTOMATION	COF-KS12	Utilities 9/23-10/23	10/03/2023	272.46	12/21/2023	520-810-550 Printing and Postage	1023
8929	PACIFIC OFFICE AUTOMATION	COF-KS12	Main 9/23-10/23	10/03/2023	544.91	12/21/2023	100-417-550 Printing and Postage	1023
8929	PACIFIC OFFICE AUTOMATION	COF-KS12	HR/CMO 9/23-10/23	10/03/2023	544.91	12/21/2023	100-413-550 Printing and Postage	1023
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	Utilities 2/23-3/23	07/01/2023	272.45	12/21/2023	510-810-550 Printing and Postage	723
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	FMC 2/23-3/23	07/01/2023	544.91	12/21/2023	100-425-550 Printing and Postage	723
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	CAO 2/23-3/23	07/01/2023	544.91	12/21/2023	100-414-550 Printing and Postage	723
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	MAIN 2/23-3/23	07/01/2023	544.91	12/21/2023	100-417-550 Printing and Postage	723
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	Clerk 2/23-3/23	07/01/2023	544.91	12/21/2023	100-416-550 Printing and Postage	723
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	HR-CMO 2/23-3/23	07/01/2023	544.91	12/21/2023	100-413-550 Printing and Postage	723
8929	PACIFIC OFFICE AUTOMATION	COF-MY5	Utilities 2/23-3/23	07/01/2023	272.46	12/21/2023	520-810-550 Printing and Postage	723
	Total 8929:				9,808.38			
PACIFIC STORAGE COMPANY								
8876	PACIFIC STORAGE COMPANY	5187850	shred	12/13/2023	66.00	12/21/2023	100-416-420 Contract Services	1223
8876	PACIFIC STORAGE COMPANY	5187851	Shredding Bin	12/13/2023	16.50	01/04/2024	100-425-322 Prof Serv-Other	1223
	Total 8876:				82.50			
PDM								
139	PDM	123123	LATE CHARGE	12/31/2023	7.73		100-475-430 Service-Repair and Maintenance	1223
	Total 139:				7.73			
PORTER'S PLUMBING LLC								
8900	PORTER'S PLUMBING LLC	4031	water heater in North breakroom.	12/20/2023	1,200.00		100-417-430 Service-Building Repair/Maint	1223
	Total 8900:				1,200.00			
PUBLIC AGENCY COMPENSATION TRU								
145	PUBLIC AGENCY COMPENSATION TRU	2ND QTR 2023-2024	WORKERS COMP 2ND QTR 23-24	12/31/2023	35,086.25	01/22/2024	100-219000 WORKERS COMPENSATION PA	1223
	Total 145:				35,086.25			
PUBLIC EMPLOYEES BENEFITS PROG								
143	PUBLIC EMPLOYEES BENEFITS PROG	12/2023	RETIREE INSURANCE - #819	12/02/2023	94.16	12/21/2023	100-605-240 Group Insurance	1223
143	PUBLIC EMPLOYEES BENEFITS PROG	12/2023	RETIREE INSURANCE - #819	12/02/2023	1.08	12/21/2023	510-810-240 Group Insurance	1223
143	PUBLIC EMPLOYEES BENEFITS PROG	12/2023	RETIREE INSURANCE - #819	12/02/2023	217.68	12/21/2023	100-415-240 Group Insurance	1223
143	PUBLIC EMPLOYEES BENEFITS PROG	12/2023	RETIREE INSURANCE - #819	12/02/2023	261.08	12/21/2023	520-810-240 Group Insurance	1223
	Total 143:				574.00			

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
PUBLIC EMPLOYEES RETIREMENT SYSTEM								
144	PUBLIC EMPLOYEES RETIREMENT SYSTEM	NOV 2023	#621 RETIREMENT CONTRIBUTIONS	11/30/2023	130,579.40	12/14/2023	100-216000 RETIREMENT PAYABLE	1123
Total 144:					130,579.40			
PURCHASE POWER								
3155	PURCHASE POWER	69812 DEC 23	SUPPLIES - WATER	11/30/2023	29.04	12/31/2023	510-810-550 Printing and Postage	1123
Total 3155:					29.04			
REDWOOD TOXICOLOGY LABORATORY, INC.								
8886	REDWOOD TOXICOLOGY LABORATORY, INC.	812889	UA Tests	11/29/2023	444.48	01/04/2024	100-425-341 Pretrial Services Program	1123
Total 8886:					444.48			
RELIANT ELECTRIC, LLC								
4934	RELIANT ELECTRIC, LLC	23300-1	Pump 2 trouble shooting	12/19/2023	480.00		520-810-428 Contract Services-ELECTRICAL	1223
Total 4934:					480.00			
RENO GAZETTE JOURNAL								
152	RENO GAZETTE JOURNAL	5974319	BILL #330	10/31/2023	90.24	12/21/2023	100-416-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	BILL #334	10/31/2023	92.52	12/21/2023	100-416-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	PUBLIC HEARING DEVELOPMENT AGREEMENT 22001	10/31/2023	74.28	12/21/2023	100-610-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	BILL #332	10/31/2023	74.28	12/21/2023	100-416-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	BILL #340	10/31/2023	94.80	12/21/2023	100-610-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	RESOLUTION #23-015	10/31/2023	90.24	12/21/2023	100-610-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	BILL #337	10/31/2023	76.56	12/21/2023	100-416-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	RESOLUTION #23-016	10/31/2023	78.84	12/21/2023	100-610-540 Advertising	1023
152	RENO GAZETTE JOURNAL	5974319	BILL #340	10/31/2023	92.52	12/21/2023	100-610-540 Advertising	1023
152	RENO GAZETTE JOURNAL	6047919	Applications to lease surface water	11/30/2023	152.20	12/21/2023	510-810-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Legal 1 Column	11/30/2023	106.20	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	1st Qtr. Total Receipts & Total Expenses	11/30/2023	99.36	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #335	11/30/2023	74.28	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #338	11/30/2023	92.52	12/21/2023	100-610-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Legal 1 Column	11/30/2023	65.16	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #338	11/30/2023	106.20	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #332	11/30/2023	65.16	12/21/2023	100-610-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Legal 1 Column	11/30/2023	106.20	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #341	11/30/2023	74.28	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Type I Vacation request application	11/30/2023	74.28	12/21/2023	100-610-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #335	11/30/2023	60.60	12/21/2023	100-610-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Legal 2 Column Full	11/30/2023	78.84	12/21/2023	100-416-540 Advertising	1123
152	RENO GAZETTE JOURNAL	6047919	Bill #332	11/30/2023	78.84	12/21/2023	100-416-540 Advertising	1123

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
152	RENO GAZETTE JOURNAL	6047919	Public Hearing for PD22001 Cancelled	11/30/2023	108.48	12/21/2023	100-610-540 Advertising	1123
	Total 152:				2,106.88			
RENOWN HEALTH								
190	RENOWN HEALTH	2427557	MRN 4991481 D Guptill	12/11/2023	16.17	12/28/2023	100-417-322 Prof Serv-Other	1223
190	RENOWN HEALTH	2427557	MRN 4991481 D Guptill	12/11/2023	8.83	12/28/2023	100-575-322 Prof Serv-Other	1223
190	RENOWN HEALTH	2427557	MRN 4223409 Twalker	12/11/2023	50.00	12/28/2023	510-810-322 Prof Serv-Other	1223
190	RENOWN HEALTH	2427557	MRN 4925446 P Sparks	12/11/2023	40.00	12/28/2023	510-840-322 Prof Serv-Other	1223
	Total 190:				115.00			
RESOURCE CONCEPTS								
8602	RESOURCE CONCEPTS	23-1846	Water Rights Services	11/30/2023	11,698.95	12/21/2023	510-380-500 In Lieu of Water Rights	1123
8602	RESOURCE CONCEPTS	23-1847	Water Rights Consulting Services	11/30/2023	5,372.50	12/21/2023	510-380-500 In Lieu of Water Rights	1123
	Total 8602:				17,071.45			
SECRETARY OF STATE								
1872	SECRETARY OF STATE	1022024	APPLICATION FOR APPOINTMENT OF NOTARY	01/02/2024	35.00		100-414-581 Dues and Memberships	124
	Total 1872:				35.00			
SECTRAN SECURITY, INC.								
8629	SECTRAN SECURITY, INC.	23120564	ARMORED SERVICE-GF	12/12/2023	185.18	12/21/2023	100-415-322 Prof Serv-Other	1223
8629	SECTRAN SECURITY, INC.	23120564	ARMORED SERVICE-SEWER	12/12/2023	185.18	12/21/2023	520-810-342 Tech Services-Other	1223
8629	SECTRAN SECURITY, INC.	23120564	ARMORED SERVICE-WATER	12/12/2023	185.18	12/21/2023	510-810-342 Tech Services-Other	1223
	Total 8629:				555.54			
SHAW ENGINEERING								
1897	SHAW ENGINEERING	185164	On call water and sewer modeling for CRRC phase 1	10/31/2023	4,540.00	12/28/2023	220-480-810 ARPA	1023
	Total 1897:				4,540.00			
Sierra Boiler Service, Inc								
8925	Sierra Boiler Service, Inc	R2609	PS boiler relief valve replacement	12/22/2023	950.00		510-840-424 Contract Services-HVAC	1223
8925	Sierra Boiler Service, Inc	R2610	PS boiler expansion tank diagnostic	12/22/2023	280.00		510-840-424 Contract Services-HVAC	1223
	Total 8925:				1,230.00			
SIERRA CONTROLS, LLC								
8935	SIERRA CONTROLS, LLC	124661	PS Chem UPS replacement-materials only portion	12/08/2023	13,043.89	01/04/2024	510-840-420 Contract Services	1223
8935	SIERRA CONTROLS, LLC	124736	PS UPS Replacement Labor	12/31/2023	1,728.22		510-840-420 Contract Services	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
	Total 8935:				14,772.11			
SIERRA ELECTRONICS								
161	SIERRA ELECTRONICS	AR43169	radios	12/19/2023	570.00		100-475-605 Minor Equipment	1223
	Total 161:				570.00			
SILVER STATE ANALYTICAL LABORATORIES								
7856	SILVER STATE ANALYTICAL LABORATORIES	RN309029	WWTP Influent & Effluent Samples	12/19/2023	502.00	12/21/2023	520-810-423 Contract Services-ANALYTICAL	1223
7856	SILVER STATE ANALYTICAL LABORATORIES	RN309213	WWTP Monitoring Well Samples	12/27/2023	665.00		520-810-423 Contract Services-ANALYTICAL	1223
7856	SILVER STATE ANALYTICAL LABORATORIES	RN309255	monthly coliform sampling	12/27/2023	264.00		510-810-423 Contract Services-ANALYTICAL	1223
7856	SILVER STATE ANALYTICAL LABORATORIES	RN309617	PS Lab samples	01/02/2024	18.00		510-840-423 Contract Services-ANALYTICAL	124
	Total 7856:				1,449.00			
SILVER STATE BARRICADE								
170	SILVER STATE BARRICADE	028345	safety	12/20/2023	512.43		100-475-616 Supplies-Safety	1223
170	SILVER STATE BARRICADE	21923	signs	10/06/2023	2,627.24	12/28/2023	100-475-615 Supplies-Signs and Striping	1023
	Total 170:				3,139.67			
SILVER STATE INTERNATIONAL TRUCKS								
265	SILVER STATE INTERNATIONAL TRUCKS	E201025757	vactor governor	12/19/2023	26.08		100-475-430 Service-Repair and Maintenance	1223
	Total 265:				26.08			
SINNETT CONSULTING SERVICES								
1286	SINNETT CONSULTING SERVICES	25399	2024 Company Random Compliance Program	01/02/2024	215.00		100-413-322 Prof Serv-Other	124
	Total 1286:				215.00			
SIPPOLA, REENA G.								
8878	SIPPOLA, REENA G.	23-1016	Punjabi Sushil Kumar	10/17/2023	150.00	01/04/2024	100-320-110 Franchise Fees	1023
	Total 8878:				150.00			
SNAP-ON INDUSTRIAL								
8735	SNAP-ON INDUSTRIAL	ARV/59783527	8mm and 10mm open end wrenches	12/13/2023	95.70	12/21/2023	100-480-600 GENERAL SUPPLIES/TOOLS	1223
8735	SNAP-ON INDUSTRIAL	ARV/59845150	tools	12/19/2023	126.96		100-480-600 GENERAL SUPPLIES/TOOLS	1223
	Total 8735:				222.66			

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
SOSU TV CORP								
8909	SOSU TV CORP	WC1260	Fernley Focus Videos NOV 23	11/01/2023	1,083.00	12/21/2023	100-413-322 Prof Serv-Other	1123
8909	SOSU TV CORP	WC1277	Fernley Focus Videos DEC 23	12/02/2023	1,083.00	12/21/2023	100-413-322 Prof Serv-Other	1223
8909	SOSU TV CORP	WC1293	Fernley Focus Videos JAN24	12/29/2023	1,083.00		100-413-322 Prof Serv-Other	1223
	Total 8909:				3,249.00			
SOUTHERN TIRE MART LLC								
8964	SOUTHERN TIRE MART LLC	7590022807	animal control colorado tires	12/21/2023	736.28		100-525-610 Automotive Supplies	1223
	Total 8964:				736.28			
SOUTHWEST GAS CORP								
204	SOUTHWEST GAS CORP	18971 DEC 23	910000818971 ACH	12/15/2023	30.24	01/03/2024	520-810-621 Natural Gas	1223
204	SOUTHWEST GAS CORP	33096 DEC 23	910001133096 ACH	12/28/2023	1,063.43	01/05/2024	510-810-621 Natural Gas	1223
204	SOUTHWEST GAS CORP	33438 JAN 24	910001133438 ACH	12/21/2023	3,339.92	01/09/2024	100-417-621 Natural Gas	1223
204	SOUTHWEST GAS CORP	86744 DEC 23	910001086744 WTP	12/12/2023	6,213.82	01/02/2024	510-840-621 Natural Gas	1223
	Total 204:				10,647.41			
STATE COLLECTION & DISB. UNIT (SCaDU)								
176	STATE COLLECTION & DISB. UNIT (SCaDU)	DEC 2023-2	CHILD SUPPORT	12/14/2023	324.46	12/14/2023	100-219900 OTHER PAYROLL PAYABLES	1223
176	STATE COLLECTION & DISB. UNIT (SCaDU)	DEC 2023-3	CHILD SUPPORT	12/29/2023	324.46	12/28/2023	100-219900 OTHER PAYROLL PAYABLES	1223
	Total 176:				648.92			
SUSIE'S BBQ & CATERING								
8983	SUSIE'S BBQ & CATERING	DEC 2023	CATERING FOR EMPLOYEE CHRISTMAS LUNCHEON 12/	12/20/2023	1,290.00	12/20/2023	100-412-586 Employee Recognition	1223
	Total 8983:				1,290.00			
TAGGART & TAGGART LTD								
3275	TAGGART & TAGGART LTD	17452	Water Right Contract FY23/24 Nov 23	11/01/2023	19,797.11	12/21/2023	510-810-698 Water Rights Protection	1123
	Total 3275:				19,797.11			
THATCHER COMPANY, INC.								
8646	THATCHER COMPANY, INC.	2023400117116	WWTP Chlorine	12/21/2023	6,281.20		520-810-617 Supplies-Chemical	1223
	Total 8646:				6,281.20			
TITAN ELECTRICAL CO								
6548	TITAN ELECTRICAL CO	12202	School Beacon Repair	11/28/2023	1,703.00	01/04/2024	100-475-422 Contract-Traffic Light Mainten	1123
6548	TITAN ELECTRICAL CO	12203	Stoplight Camera Maintenance	11/28/2023	1,637.50	01/04/2024	100-475-422 Contract-Traffic Light Mainten	1123

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
6548	TITAN ELECTRICAL CO	12210	Traffic Control Programming	11/28/2023	1,100.00	01/04/2024	100-475-422 Contract-Traffic Light Mainten	1123
	Total 6548:				4,440.50			
U S POSTAL SERVICE								
7344	U S POSTAL SERVICE	JAN 2024	PREPAID POSTAGE FOR IN-HOUSE BILLING	01/03/2024	1,900.00	01/03/2024	510-810-550 Printing and Postage	124
7344	U S POSTAL SERVICE	JAN 2024	PREPAID POSTAGE FOR IN-HOUSE BILLING	01/03/2024	1,900.00	01/03/2024	520-810-550 Printing and Postage	124
	Total 7344:				3,800.00			
ULTIMATE AIR, INC.								
8575	ULTIMATE AIR, INC.	7149	filters	12/18/2023	1,423.20	01/04/2024	100-417-424 Contract Services-HVAC	1223
	Total 8575:				1,423.20			
UNITED CENTRAL INDUSTRIAL SUPPLY								
8676	UNITED CENTRAL INDUSTRIAL SUPPLY	2776498	hose for streets	12/12/2023	328.49	12/21/2023	100-475-430 Service-Repair and Maintenance	1223
	Total 8676:				328.49			
USA BLUEBOOK								
464	USA BLUEBOOK	INV00147850	sampling	09/28/2023	55.20	12/21/2023	510-810-614 Supplies-Plant/Shop/Maint	923
464	USA BLUEBOOK	INV00216250	mesa prv flow meter	12/08/2023	2,379.77	12/21/2023	510-810-430 Repairs & Maintenance	1223
464	USA BLUEBOOK	INV00219521	Misc Supplies	12/12/2023	605.19	12/21/2023	520-810-614 Supplies-Plant/Shop/Maint	1223
464	USA BLUEBOOK	INV00220604	PS Chlorine analyzer	12/13/2023	678.23	12/21/2023	510-840-605 Minor Equipment	1223
464	USA BLUEBOOK	INV00220968	gasket for chem tank at well 13	12/13/2023	63.52	12/21/2023	510-810-614 Supplies-Plant/Shop/Maint	1223
464	USA BLUEBOOK	INV00222855	PS parts	12/15/2023	40.48	12/21/2023	510-840-430 Service-Repair and Maintenance	1223
464	USA BLUEBOOK	INV00225723	chart pens and chart paper wells 13/14	12/19/2023	568.40		510-810-614 Supplies-Plant/Shop/Maint	1223
464	USA BLUEBOOK	INV00226973	whiskers and gloves	12/20/2023	224.75		520-810-616 Supplies-Safety	1223
	Total 464:				4,615.54			
VERIZON WIRELESS								
8495	VERIZON WIRELESS	9950573523	IT	12/24/2023	56.05	12/28/2023	100-418-530 Communications (Internet,Cell)	1223
8495	VERIZON WIRELESS	9950573523	WWRouter	12/24/2023	91.91	12/28/2023	520-810-530 Communications	1223
8495	VERIZON WIRELESS	9950573523	CMO	12/24/2023	107.95	12/28/2023	100-413-530 Communications (Internet,Cell)	1223
8495	VERIZON WIRELESS	9950573523	City Hall /Facilities	12/24/2023	644.16	12/28/2023	100-417-530 Communications (Internet,Cell)	1223
8495	VERIZON WIRELESS	9950573523	WW	12/24/2023	314.92	12/28/2023	520-810-530 Communications	1223
8495	VERIZON WIRELESS	9950573523	COA	12/24/2023	140.03	12/28/2023	100-414-530 Communications (Internet,Cell)	1223
8495	VERIZON WIRELESS	9950573523	WTP	12/24/2023	448.80	12/28/2023	510-840-530 Communications	1223
8495	VERIZON WIRELESS	9950573523	Council	12/24/2023	167.10	12/28/2023	100-412-530 Communications (Internet,Cell)	1223
8495	VERIZON WIRELESS	9950573523	WD	12/24/2023	255.75	12/28/2023	510-810-530 Communications	1223
8495	VERIZON WIRELESS	9950573523	Bldg	12/24/2023	333.25	12/28/2023	100-417-530 Communications (Internet,Cell)	1223
8495	VERIZON WIRELESS	9950573523	FMC	12/24/2023	155.51	12/28/2023	100-425-530 Communications (Internet,Cell)	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
8495	VERIZON WIRELESS	9950668678	NOV 2- DEC 1 23 ACT 742052267-00001	12/24/2023	40.01	12/21/2023	520-810-530 Communications	1223
	Total 8495:				2,755.44			
VOYA FINANCIAL								
8591	VOYA FINANCIAL	DEC 2023-2	ROTH IRA	12/15/2023	210.00	12/15/2023	100-215000 457 PAYABLE	1223
8591	VOYA FINANCIAL	DEC 2023-2	DEFERRED COMPENSATION, 457	12/15/2023	2,597.50	12/15/2023	100-215000 457 PAYABLE	1223
8591	VOYA FINANCIAL	DEC 2023-3	DEFERRED COMPENSATION, 457	12/29/2023	2,697.50	12/29/2023	100-215000 457 PAYABLE	1223
8591	VOYA FINANCIAL	DEC 2023-3	ROTH IRA	12/29/2023	210.00	12/29/2023	100-215000 457 PAYABLE	1223
	Total 8591:				5,715.00			
WALKER LAKE DISPOSAL								
6118	WALKER LAKE DISPOSAL	23-5013	WWTP Dumpster	12/22/2023	297.00		520-810-412 Utility Service-Refuse	1223
	Total 6118:				297.00			
WASTE MANAGEMENT								
447	WASTE MANAGEMENT	25001 JAN 24	6-82646-25001	01/02/2024	2,722.84		100-475-412 Utility Services-Refuse	124
447	WASTE MANAGEMENT	33001 JAN 24	11-60772-33001	01/04/2024	103.14		100-417-412 Utility Services-Refuse	124
447	WASTE MANAGEMENT	33005 JAN 24	11-60745-3305	01/04/2024	14.39		510-840-412 Utility Service-Refuse	124
447	WASTE MANAGEMENT	33009 JAN 24	11-60774-33009	01/04/2024	84.39		510-810-412 Utility Service-Refuse	124
447	WASTE MANAGEMENT	43003 JAN 24	11-60760-43003	01/04/2024	42.20		520-810-412 Utility Service-Refuse	124
447	WASTE MANAGEMENT	63002 JAN 24	11-74239-63002	01/02/2024	465.00		100-575-412 Utility Service-Refuse	124
447	WASTE MANAGEMENT	65007 JAN 24	6-82641-65007	01/02/2024	157.91		100-417-412 Utility Services-Refuse	124
447	WASTE MANAGEMENT	95009 JAN 24	8-29467-95009	01/02/2024	448.45		100-575-412 Utility Service-Refuse	124
	Total 447:				4,038.32			
WESTERN NEVADA COLLEGE								
194	WESTERN NEVADA COLLEGE	288	Fleet CDL Training	11/08/2023	567.00	12/21/2023	100-475-580 Training	1123
194	WESTERN NEVADA COLLEGE	288	Fleet CDL Training	11/08/2023	567.00	12/21/2023	510-840-580 Training	1123
194	WESTERN NEVADA COLLEGE	288	Fleet CDL Training	11/08/2023	565.00	12/21/2023	100-575-580 Training	1123
194	WESTERN NEVADA COLLEGE	288	Fleet CDL Training	11/08/2023	567.00	12/21/2023	510-810-580 Training	1123
194	WESTERN NEVADA COLLEGE	288	Fleet CDL Training	11/08/2023	567.00	12/21/2023	100-417-580 Training	1123
194	WESTERN NEVADA COLLEGE	288	Fleet CDL Training	11/08/2023	567.00	12/21/2023	520-810-580 Training	1123
	Total 194:				3,400.00			
WESTERN NEVADA SUPPLY CO.								
195	WESTERN NEVADA SUPPLY CO.	11056536	bin stock	12/08/2023	1,323.58	12/21/2023	510-810-613 Supplies-Meter Service	1223
195	WESTERN NEVADA SUPPLY CO.	11060563-1	PS lights	12/21/2023	255.85		510-840-614 Plant/Shop/Maint. Supplies	1223
195	WESTERN NEVADA SUPPLY CO.	11060563-2	PS shop supplies	12/27/2023	213.20		510-840-614 Plant/Shop/Maint. Supplies	1223
195	WESTERN NEVADA SUPPLY CO.	11062418	PS sand paper	12/21/2023	154.88		510-840-614 Plant/Shop/Maint. Supplies	1223

Vendor	Vendor Name	Invoice Number	Description	Invoice Date	Invoice Amount	Date Paid	GL Account and Title	GL Period
195	WESTERN NEVADA SUPPLY CO.	11065642	bin stock	12/27/2023	1,522.87		510-810-613 Supplies-Meter Service	1223
195	WESTERN NEVADA SUPPLY CO.	11067761	PS facility thermostats	01/04/2024	509.50		510-840-430 Service-Repair and Maintenance	124
195	WESTERN NEVADA SUPPLY CO.	11071769	sensus m2 single and dual port mxu	12/27/2023	4,411.71		510-166100 Construction In Progress	1223
195	WESTERN NEVADA SUPPLY CO.	11073344	PS replacement backflow relief valve MF	12/19/2023	1,395.00	12/21/2023	510-840-430 Service-Repair and Maintenance	1223
195	WESTERN NEVADA SUPPLY CO.	11076572	PS parts	12/21/2023	272.30		510-840-430 Service-Repair and Maintenance	1223
195	WESTERN NEVADA SUPPLY CO.	11076577	PS gaskets	12/27/2023	766.63		510-840-430 Service-Repair and Maintenance	1223
195	WESTERN NEVADA SUPPLY CO.	11080035	sensus iperl 1 1 gal trpl water meter	12/27/2023	1,169.40		510-166100 Construction In Progress	1223
195	WESTERN NEVADA SUPPLY CO.	11085198	PS 2"" brass nipples	01/04/2024	58.52		510-840-430 Service-Repair and Maintenance	124
195	WESTERN NEVADA SUPPLY CO.	11085199	PS gasket hole punch	01/04/2024	24.59		510-840-430 Service-Repair and Maintenance	124
195	WESTERN NEVADA SUPPLY CO.	11088753	bin stock	01/02/2024	531.66		510-810-613 Supplies-Meter Service	124
	Total 195:				12,609.69			
YESCO, LLC								
6806	YESCO, LLC	INY-0476262	Credit for lost sign	01/01/2024	.00		225-575-320 PROFESSIONAL SERVICES	124
	Total 6806:				.00			
	Grand Totals:				776,273.27			

Dated: _____

Mayor: _____

City Treasurer: _____

Report Criteria:

Detail report.

Invoice detail records above $0 included.

Paid and unpaid invoices included.

Vendor.Vendor Number = {<>} 2201

MINUTES OF THE
FERNLEY CITY COUNCIL MEETING
DECEMBER 20, 2023

Mayor Neal E. McIntyre called the meeting to order at 5:00 pm.

1. INTRODUCTORY ITEMS

1.1. Pledge of Allegiance

1.2. Roll Call

Present: Mayor Neal E. McIntyre, Councilman Ryan Hanan, Councilwoman Felicity Zoberski, Councilman Stan Lau, Councilman Albert Torres, Councilwoman Fran McKay, City Manager Ben Marchant, Deputy City Manager Lydia Altick, City Attorney Aaron Mouritsen, Deputy Finance Director Jennie Carrick, Building Official Charity Birkel, Planning Director Michele Rambo, Public Works Director Barry Williams, City Engineer Derek Starkey, City Clerk Kim Swanson, Administrative Specialist I Sandy Harris.

1.3. Public Forum

None

1.4. (For Possible Action) Approval of Agenda

Motion: I MOVE TO APPROVE THE AGENDA. **Action**: Approved**. Moved by**: Councilman Stan Lau, **Seconded by:** Councilman Ryan Hanan. **Vote**: Passed**, Summary**: Yes 5. **Yes:** Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

2. CONSENT AGENDA

2.1. (Possible Action) Approval of Voucher Report

2.2. (Possible Action) Approval of Minutes

2.3 . (Possible Approval) Approval of Business Licenses

City Clerk Kim Swanson read the approved business licenses.

2.4 . (Possible Action) Possible action regarding a surveying contract with DOWL, LLC to set per-item rates for reviews of planning applications with a map component.

2.5. Possible action to approve a contract with F.W. Carson Construction for the Villa Park Water and Sewer Replacement Project in the amount not to exceed $2,988,447.10 with a 3% contingency of $89,660.00 for a total amount of $3,078,107.10.

2.6. Possible action to approve: a letter to the Nevada Department of Emergency Management certifying that the 2022 Emergency Operations Plan was reviewed by City staff; a Cybersecurity Incident Response Plan; and the Vulnerability Assessment and Emergency Response Plan.

Motion: I MOVE TO APPROVE THE CONSENT AGENDA. **Action:** Approved. **Moved by:** Councilman Stan Lau, **Seconded by:** Councilman Ryan Hanan. **Vote**: Passed, **Summary**: Yes 5. **Yes**: Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

3. REPORTS - this item is for various public entity representatives to provide general information to the Council and public. No action will be taken

Chief Deputy Mitch Brantingham, LCSD, gave an update on the staffing in the Fernley area. The total patrol officers allotted for Fernley is 20. He gave an update on the CCW process. The department would like to see more CCW holders. The department is extending the time period for renewals of CCW's to 364 days. Processing times are around 90 to 120 days. Shop-With-A-Sheriff had 42 kids. On Sunday, December 17, 2023, there was a strong-arm robbery, and the suspect was identified and will be in custody shortly.

Councilwoman Felicity Zoberski asked if the CCW went into a database. Chief Deputy stated that it is in a State and National database.

3.1. Reports by City Staff, City Council, and the Mayor, including but not limited to monthly statistical reports by city departments.

Councilman Torres stated that he wants it on the record that the City of Fernley Code Enforcement, Fernley Intermediate School and the Sheriff's department are all working together on getting the squatter off the property that is south of Fernley Intermediate School. Charity Birkel, Building Official, stated that there has been contact with the person, and she is waiting for Lyon County Human Services to get housing. She has 15 days to vacate the property. Councilman Torres also announced that he has been selected to the Nevada League of Cities Executive Board. Next year he will be the Secretary/Treasurer, in 2025 he will be Vice-President, and 2026 the President.

Councilman Ryan Hanan asked about the permit under review process, specifically for Panda Express. Charity Birkel, Building Official, stated in regard to Panda Express, they are awaiting corrections back from Panda Express. Panda Express has received all the comment letters from all of the departments.

Mayor Neal McIntyre announced that they have interviewed for City Treasurer Finance Director. City Hall will be closed December 25, 26 and January 1. He thanked everyone for their hard work at putting together the Christmas lunch. Wreaths Across America was a very successfully attended event. He congratulated Councilman Torres for his selection to the Board of the Nevada League of Cities.

4. PROCLAMATIONS BY THE MAYOR

None

5. ORDINANCES

5.1. (For Possible Action) Introduction and First Reading of Bill #342, an Ordinance establishing a Development Agreement (DA22001) between the developer (Mark IV Capital) and the City of Fernley in association with Phase 1 of the Victory Logistics District Planned Development relating to improvements of utilities, public services, and other related items.

Michele Rambo, Planning Director, presented the first reading and stated that it will be brought back for the second reading on January 17, 2024.

Councilman Ryan Hanan asked if there are changes made, will it re-set the clock on these presentations. Director Rambo stated that it could depending on when the planning department gets the changes put in place. The Planning Commission required in their motion that any changes go back to them for review. The current version in the agenda packet is the version the Planning Commission recommended approval. Today the department got changes the applicant wants to make, so the department will be working on them to get them back to the Planning Commission.

6. STAFF REPORTS

6.1. (For possible action) Approval of the Mayor's appointments to various Boards and Committees.

Mayor Neal McIntyre went through the current appointments and changes to various Boards and Committees Charity Birkel, Building Official, stated that there is no Code Enforcement Committee at this time but would like to get one set up.

Mayor Neal McIntyre stated that last year he made Mayor Pro Tem a 2-year term, and Councilman Torres will continue to Mayor Pro Tem.

Motion: I MOVE TO APPROVE THE MAYOR'S APPOINTMENT TO VARIOUS BOARDS AND COMMITTEES AS PROPOSED. **Action:** Approved**. Moved by:** Councilman Ryan Hanan, **Seconded by:** Councilman Stan Lau. **Vote:** Passed, **Summary**: Yes 5. **Yes**: Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

6.2. Possible action to consider canceling the January 3rd City Council meeting.

Motion: I MOVE TO CANCEL THE JANUARY 3, 2024, COUNCIL MEETING**. Action**: Approved. **Moved by:** Councilwoman Fran McKay, **Seconded by:** Councilwoman Felicity Zoberski**. Vote**: Passed, **Summary**: Yes 5**. Yes:** Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

7. RESOLUTIONS

7.1. For Possible Action: To approve a resolution to adopt the Regional Hazard Mitigation Plan for FEMA approval as prepared by Lyon County in coordination with the City of Fernley and other regional jurisdictions.

Taylor Allison, Lyon County Emergency / Communications Manager, gave a presentation on the 2023 Lyon County Regional Hazard Mitigation Plan.

Motion: I MOVE TO APPROVE RESOLUTION #23-017 ADOPTING THE REGIONAL HAZARD MITIGATION PLAN. **Action:** Approved**. Moved by**: Councilman Albert Torres, **Seconded by:** Councilman Ryan Hanan. **Vote:** Passed, **Summary**: Yes 5. **Yes**: Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

8. PUBLIC HEARINGS

8.1. For Possible Action) Second Reading and Adoption of Bill # 341, amending Section 2.02.07 of the City of Fernley Municipal Code modifying the appointment of a City Manager in the long term absence of a City Manager.

Aaron Mouritsen, City Attorney, gave a presentation on the changes to the current code language and the proposed new language. The term "may" in the current code will be changed to "shall" in the new proposed language.

No public input at this time.

Motion: I MOVE TO ADOPT BILL #341, AMENDING SECTION 2.02.7 OF THE CITY OF FERNLEY MUNICIPAL CODE MODIFYING THE APPOINTMENT OF A CITY MANAGER IN THE LONG TERM ABSENCE OF A CITY MANAGER. **Action:** Approved. **Moved by:** Councilman Albert Torres, **Seconded by:** Councilwoman Fran McKay. **Vote:** Passed, **Summary:** Yes 5. **Yes**: Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

9. ITEMS REQUESTED BY MAYOR OR CITY COUNCIL MEMBERS

9.1. Possible action to request a future agenda item to compare our water rates with other surrounding cities water rates. (Councilwoman McKay)

Councilwoman Fran McKay would like to direct staff to get comparisons from other cities water rates. Councilman Torres as when the next water rate assessment report would be. Barry Williams, Public Works Director, stated that it is scheduled to start after July of 2024.

Councilman Ryan Hanan would like to add the connection fees and how they affect the rates, and if staff would propose increasing those fees to help stabilize the overall rate of the water.

Motion: I MOVE TO DIRECT STAFF TO LOOK AT OTHER CITIES AT WHAT THEY ARE CHARGING FOR WATER RATES AND ALSO WHAT THEY ARE CHARGING FOR THEIR CONNECTION FEES. **Action:** Approved**. Moved by:** Councilwoman Fran McKay, **Seconded by:** Councilman Ryan Hanan. **Vote:** Passed, **Summary**: Yes. **Yes:** Councilwoman Zoberski, Councilman Lau, Councilman Torres, Councilwoman McKay, Councilman Hanan.

10. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

Councilman Ryan Hanan would like to add our need for a nuisance ordnance, what it is and what it entails, and why we need it or do not need it.

11. PUBLIC FORUM

James W. Roberts, Fernley Resident, thanked the council for the excellent job they are doing working together and what they are doing for the City.

12. ADJOURNMENT

The next meeting will be Wednesday, January 17, 2024, at 5:00 pm.

There being no further business to come before it, the Fernley City Council meeting adjourned at 6:09 pm.

Approved by the Fernley City Council on January 17, 2024, by a vote of:

AYES _____ NAYS:_____ ABSTENTIONS:_____ ABSENT:_____

_____ _____

Mayor Neal E. McIntyre ATTEST: City Clerk Kim Swanson

Report Criteria:
License.Status = "Active"
Business.Origination date = 12/14/2023-01/10/2024

Business Name	Name	Location	Location City	Location State	Location Zip	Business Tel	Description	Occupation
Nevada ICF, LLC	Hector Gamboa	1491 Serendipity	Sparks	NV	89436	775-219-6897	Contractor	Residential & Small Commerci
Nevada Fence LLC	Robert McFadden	508 N Curry Street	Carson City	NV	89703	775-562-2220	Contractor	Fence Contractor #83263
JC Companies LLC	Jose Camarena	5765 Campbell Rd.	Las Vegas	NV	89149	702-848-7243	Contractor	General Engineering Contracto
REM NV, Inc.	CEO, Phillip R. Kauf	1535 Old Hot Springs Rd, Ste	Carson City	NV	89706	775-461-3200	In Home Personal Care	Service provider for people wit
Blood Sweat & Shears	Vanessa Smith	1130 Chisholm Trail	Fernley	NV	89408	775-217-1649	Hair/Nail/Tanning/Spa Se	Cosmetologist
Joy of Song LLC	Anna Tescher	2165 Snow Drift Rd	Fernley	NV	89408	701-590-2302	Business Specific Profes	Private voice and piano lesson
Dowd Bookkeeping Services LLC	Phyllys Dowd	5760 Rivers Edge Drive	Fallon	NV	89406	559-707-4625	Accounting/Tax/Bookeepi	Consulting services for govern
Specialty Roof Repairs LLC	Juan Perez	1140 Xman Way	Sparks	NV	89431	775-830-5007	Contractor	Roofing Contractor #89476
F.W. Carson Co.	Barbara Carson	1064 Tahoe Blvd	Incline Village	NV	89451	775-831-5008	Contractor	General Engineering Contracto
Apex Construction, Inc.	Eric Haddox	9410 Prototype Drive, Ste 1	Reno	NV	89521	775-531-5760	Contractor	Residential & Small Commerci
Santa Rosa Distributors	Rigoberto Lopez Estr	652 Canary Circle	Fernley	NV	89408	775-431-0403	Hobby/Crafter, Sewing, J	Printing services:vinyl stickers/
Reyes Masonry LLC	Roberto Reyes	265 Diamond Circle	Sun Valley	NV	89433	775-335-6170	Contractor	Masonry Contractor #87727

Grand Totals:
12

Report Criteria:
License.Status = "Active"
Business.Origination date = 12/14/2023-01/10/2024

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Kari Weitzel**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:X	No:	Yes:X	No:	510-810-698

ACTION REQUESTED: Consent

AGENDA ITEM:

Possible action to authorize the execution of the water rights banking and dedication agreement with Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-57 TCID serial number 1058-1-1-A in the amount of 4.96 acre-feet.

AGENDA ITEM BRIEF:

Staff is seeking Council approval to authorize the execution of the Water Right Banking and Dedication Agreement with Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-57 TCID serial number 1058-1-1-A in the amount of 4.96 acre-feet.

RECOMMENDED MOTION:

"I move to authorize the execution of the Water Right Banking and Dedication Agreement from Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-57 TCID serial number 1058-1-1-A in the amount of 4.96 acre feet."

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:

The City Council could choose to reject the dedication of water rights. This alternative is not recommended by staff and would be contrary to existing city policies.

BACKGROUND:

It is policy for the City of Fernley to have City Council approve all water right dedication agreements.

Joanne Kuylen Stursa and Gleen Stursa are proposing to dedicate 4.96 acre-feet of water rights appurtenant to APN 021-303-57 (TCID Serial Number 1058-1-1-A) to the City of Fernley. The deed and dedication package were reviewed and approved by Taggart and Taggart, Ltd. The water will be used to support future development projects.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

FMC 32.09.035 requires developers to dedicate sufficient water rights to support their proposed development projects. Water dedicated to the City and banked under a banking agreement such as the one proposed here may be used to meet that requirement.

FINANCIAL IMPLICATIONS:

This dedication is being made to support future will serve commitment requests. Pursuant to prior Council direction on December 3, 2014, the City will cover all legal and engineering costs associated with the dedication.

ATTACHMENTS:

1. Stursa Dedication Agreement 4.96
2. Stursa Draft Deed 4.96

WATER RIGHTS BANKING
AND DEDICATION AGREEMENT

This Water Rights Banking and Dedication Agreement made as of the ____ day of _____, 20__ (this "Agreement"), by and between Joanne Kuylen Stursa, wife and husband, (the "Dedicator") and the City of Fernley, a political subdivision of the State of Nevada (the "City"), for the purpose of dedicating and banking certain water rights.

R E C I T A L S

WHEREAS, the City owns and operates a water distribution system located in the City of Fernley, Lyon County; and

WHEREAS, the Dedicator desires to transfer certain water rights to the City as described in Section 2 of this Agreement (the "Water Rights"), to be reserved and credited towards future water utility service requirements; and

WHEREAS, the City is willing to accept the Water Rights to be utilized by the Dedicator for future development requirements within the City's water utility service area, as it may change from time to time; and

WHEREAS, the Dedicator may desire to assign its rights to apply the Water Rights towards future water utility service requirements to an assignee (the "Assignee"); and

WHEREAS, the City will accept the Water Rights in lieu of the provision of new water rights when an application for water utility service is made in the future by the Dedicator or the Assignee, thereby satisfying one of the pre-conditions for water utility service (i.e. the provision of a water right).

NOW, THEREFORE, it is hereby agreed between the Dedicator and City as follows:

1. **Dedication of Water Rights and Facilities.** The Dedicator hereby agrees to dedicate the Water Rights to the City. The Dedicator and the Assignee agree and understand that dedication of the Water Rights is a condition precedent to receiving a will-serve commitment for water utility service from the City. The parties further agree that:

   (a) The quantity of surface or ground water rights reasonably necessary to insure an adequate water supply to the subject property is independently determined by the City. The Dedicator and Assignee understand and agree that the determination of the quantity of surface or ground water rights necessary to serve any proposed development will be made at such time as the Dedicator or Assignee request a will serve commitment for the development in accordance with the ordinances, resolutions, statutes, standards, and policies in effect at the time the request for a

will serve commitment is made. In addition, the parties agree and understand that the City has no obligation to independently obtain the necessary water rights to fulfill a will-serve commitment;

(b) Any facilities for water treatment, supply, storage, transmission and distribution, treatment and disposal, and appurtenances (such as wells, pipelines, pumps and storage tanks), located within or outside of the property for which future will-serve commitments are sought, that are requested and which are reasonably necessary to insure an adequate water supply to the property, will be constructed by the Dedicator or the Assignee, and dedicated to the City; and

(c) Any easement or legal access reasonably necessary to insure an adequate water supply to the property will also be dedicated from the Dedicator or the Assignee to the City as part of the grant of will-serve commitments.

2. **Dedicated Water Rights.** The Water Rights dedicated by this Agreement are described as follows:

A Four and Ninety-Six One-Hundredths (4.96) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1058-1-1-A. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 021-303-57 and further described in that certain Grant, Bargain, and Sale Deed recorded in the official records of Lyon County on May 3, 2023, as Document No. 669426.

3. **Revegetation Requirements.** As a condition of receiving water right dedications in exchange for utility service, any lands which are being irrigated within the existing place of use of the Dedicated Water Rights, and which will no longer be a place of use of the Dedicated Water Rights, must be re-vegetated pursuant to a re-vegetation plan approved by the City. The intent of this requirement is to prevent formerly irrigated lands from becoming dust and erosion hazards when the land is no longer irrigated. This requirement does not apply to land which is the existing place of use if that land will become a subdivision, or other use that will maintain ground cover.

(a) As part of any dedication, the City will determine whether revegetation of formerly irrigated land is required, and if re-vegetation is required, the Dedicator of the water rights, or its assignee, will submit a plan for re-vegetation that will be reviewed and approved by the City.

(b) A re-vegetation plan must be prepared by a qualified agricultural engineer or the equivalent, and must outline the method by which permanent ground cover will be established. The re-vegetation plan shall provide for the application of a suitable seed mixture susceptible to natural germination in the climatic conditions existing

on the formerly irrigated land. The re-vegetation plan shall be deemed fully performed upon the first to occur of the following:

(i) The City's written confirmation that the re-vegetation plan has been fully performed or

(ii) The Dedicator or its assignee, as the case may be, diligently and in compliance with the re-vegetation plan causes not less than two applications of the approved seed mixture to be placed upon the formerly irrigated land without success during a period of thirty (30) months following the date of dedication of the applicable water rights.

(c) The goal of a re-vegetation plan is to establish natural ground cover that will limit dust and erosion and can be sustained in Fernley's climatic conditions without human assistance.

(d) For each water right that is dedicated to the City of Fernley from land that it is determined by the City to require re-vegetation, the City of Fernley will hold back a portion of the water right, in an amount equal to ten (10) percent of the total water right, from the issuance of will serve commitments until the City of Fernley has approved the actual re-vegetation of the property at issue. Once the City of Fernley has approved the actual re-vegetation on a former place of use for a dedicated water right, the ten (l0) percent portion of the Water Right held back pursuant to this section will be made available for future will serve commitments.

4. **Annexation.** If water utility service is requested by the Dedicator or the Assignee from the City outside the city limits of the City, and the Dedicator or the Assignee desires to use the Water Rights to satisfy the water right dedication requirements for water utility service, the City will determine whether it is appropriate to annex that property, and will only provide water utility service if the area is annexed into the City.

(a) If annexation is necessary, the Dedicator or the Assignee is responsible for any and all annexation costs and fees in the same manner as any other person or entity requesting that property be annexed to the City.

(b) If annexation is necessary, all line extensions, water distribution systems and upgrades shall be constructed to the standard required by the City, and the Dedicator or Assignee shall pay all hook-up fees and complete all required improvements that the City determines are reasonably necessary to service the property.

5. **Banking.** The Water Rights dedicated to the City under this Agreement shall be available for use in the satisfaction of the water right dedication requirement that is a pre-condition to receiving water utility service from the City. Once the water rights have been dedicated

to the City, the City will maintain those rights in an account as a credit for the Dedicator for the term of this agreement, including any renewal period.

(a) During the term of this agreement, including any renewal period, the Dedicator and the Assignee may request will-serve commitments for water utility service from the City. The Water Rights that are held by the City pursuant to this Agreement may be used to satisfy the water dedication requirement that exists at the time of the request for the will-serve commitments.

(b) **Place of Will-Serve Commitments.** The Dedicator and the Assignee may request will-serve commitments for water utility service from the City anywhere within the City's water utility service area. Will-serve commitments may be requested for property to which the Water Rights are not appurtenant.

(c) **Assignment of Banked Credits.** The Dedicator's banked credits that are held in an account with the City may be assigned to an Assignee. Upon the execution of an assignment agreement with the Assignee, the City will allow the Assignee to receive the credits as satisfaction of the water right dedication requirement in existence when the Assignee applies for will-serve commitments from the City for water utility service.

(d) **City Consent to Assignment.** The assignment of banked credits includes the assignment of all rights and obligations under this Agreement, and requires the consent of the City. An assignment of banked credits created by this Agreement is invalid without the City's consent. Consent may only be withheld by the City if the Assignee does not agree to comply with the terms of this Agreement. All fees and costs assessed against banked water rights, if any, shall be paid to the City prior to any assignment of banked credits. No assignment agreement will be valid unless and until such costs are reimbursed.

(e) **Reduction in Banked Credits.** The City will file an application to change the manner of use and place of use of the Water Rights to municipal uses in the City's water utility service area. If the State Engineer determines, or if appeal from such a ruling by the State Engineer determines, that the total number of acre-feet that can be used by the City for municipal uses in its water utility service area is less that the amount of Water Rights that are dedicated under this Agreement, the City will reduce the credits that are accounted to the Dedicator by the amount of the reduction in the State Engineer's ruling, or in the appeal from such a ruling.

6. **Change Applications.** Dedicator recognizes that the manner of use and place of use of the Water Rights must be changed to allow for municipal use in the City. Change applications that change the points of diversion, manner and place of use of the Water Rights will be prepared so that the Water Rights may be utilized for municipal purposes

within the City's water utility service area as its boundaries are currently set and as they may be expanded through annexation.

(a) At the option of the Dedicator, the City may prepare all required change applications.

(b) If the Dedicator elects to prepare the required change applications, they must be completed, along with appropriate maps and documentation, to the City's satisfaction and delivered to the City for submittal to the State Engineer by and on behalf of the City.

(c) The City shall pay all associated statutory fees relating to the filing and approval of the Change Application, including but not limited to the application filing fees, permit fees, and certificate fees.

7. **Use of Dedicated Water Rights.** Dedicator and Assignee agree and acknowledge that the City receives the dedication of Water Rights that are the subject of this agreement free and clear of any encumbrances or liens and that as a result of such dedication the City shall be the sole holder of legal title to such Water Rights. Accordingly, the City may perform any action that a holder of such Water Rights is legally allowed to perform including, without limitation, hypothecation, rental, or lease of the dedicated Water Rights to a third party; and any revenue collected pursuant to such agreements may be utilized by the City at its sole and complete discretion. The parties agree that the City may, by contract or written agreement, permit the use of the Water Rights by other governmental entities, public or private utilities, or any other person or entity, including those engaged in providing water, storm drainage or sewer service. The Parties agree that in exchange for the dedication of Water Rights pursuant to this Agreement, the Dedicator or Assignee shall have the ability, pursuant to Section 5, to use the dedicated Water Rights to satisfy the water right dedication requirement that is a pre-condition to receiving water utility service from the City, however, nothing in this agreement shall be construed as creating an encumbrance or lien on the title of the dedicated Water Rights in favor of Dedicator or Assignee. The Parties further agree that the City reserves the right to satisfy its obligation to provide water service to Dedicator or Assignee in any manner that the City, at its sole discretion and consistent with Nevada Law and the Fernley Municipal Code, determines best serves the interests of the City water system.

8. **Facilities Standards.** Any facilities that are subject to this Agreement shall be designed and constructed in accordance with standards and other requirements prescribed by the City as a condition to provision of water utility service.

9. **Approval of Service Conditional.** Every will-serve notification and administrative approval of applications for water utility service is conditioned upon the acceptance of the dedication, and the satisfaction of all other service requirements that are established by local ordinance or state law. Any application or renewal, including applications for extension of will-serve commitments is subject to the provisions herein. The parties agree that:

(a) The City is the final authority in determining the number of will-serve commitments which may be granted by the City; and

(b) The City is the final authority regarding the number of will serves that may be serviced by the Water Rights for any development. Such determination shall be based on the criteria established by the City and further established by the State Engineer.

10. **Term of Agreement.** The term of this Agreement shall be for a period of twenty-five (25) years and shall be renewable for one successive twenty-five (25) year period upon application of the Dedicator or the Assignee, and the approval of the City.

(a) It is further understood and agreed between the City and the Dedicator that the Parties must agree to renew this agreement for the subsequent twenty-five year period. The City's decision to approve or reject a renewal of this agreement must be made pursuant to a vote by the Fernley City Council.

(b) The City may reject approval of a renewal of this Agreement **only** if:

(i) The City sends notice of the expiration of the initial twenty-five year term to the record owner of the Water Rights and receives no response within thirty (30) days of such notice; and

(ii) The Dedicator has not complied with the obligations included in this Agreement or does not agree to comply with the obligations of this Agreement during the renewal term of this Agreement.

(c) In the event that this Agreement is terminated, or expires pursuant to the provisions of this section, the City shall retain the title to the Water Rights, regardless of whether the Water Rights have been credited to an existing will-serve commitment.

11. **Notice.** Any notice required pursuant to this Agreement shall be sent via certified mail to the address listed below. Each Party is responsible for informing the other Party of any change in address. Notices from the City, including but not limited to notice of expiration of the 25-year term of this Agreement, shall be made to the address listed below, or to an updated address provided by the Dedicator or Assignee.

Dedicator	**City of Fernley**
ERGS Fernley, LLC	Department of Public Works
9345 Lemmon Dr.	595 Silver Lace Boulevard
Reno, NV 89506	Fernley, NV 89408

12. **General Conditions.**

(a) **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute but one and the same instrument.

(b) **Governing Law.** This Agreement shall be governed by, interpreted under, and construed and enforced in accordance with the laws of the State of Nevada applicable to agreements made and to be performed wholly within the State of Nevada.

(c) **Venue.** Any action or proceeding concerning the rights or responsibilities of the parties to this Agreement shall be heard and entertained in the State district court in Lyon County, Nevada.

(d) **Entire Agreement.** This Agreement (including any exhibits attached hereto) constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings with respect thereto, including without limitation, that certain memorandum of understanding between the parties. This Agreement may not be modified, changed or supplemented, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The parties do not intend to confer any benefit hereunder on any person, firm or corporation other than the parties hereto.

(e) **Survivability.** The parties' rights and responsibilities under this Agreement shall survive the conveyance of the Water Rights by the Dedicator to the City.

(f) **Waivers; Extensions.** No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

(g) **Non-Waiver of Rights.** No failure or delay of either party in the exercise of any

right given to such party hereunder shall constitute a waiver thereof unless the time specified herein for exercise of such right has expired, nor shall any single or partial exercise of any right preclude any other or further exercise thereof or of any other right. The waiver of any breach hereunder shall not be deemed to be a waiver of any other or any subsequent breach hereof.

(h) **Further Assurances.** The parties agree to do such further acts and things and to execute and deliver such additional agreements and instruments as the other may reasonably require to consummate, evidence or confirm the dedication of the above reference water rights or any other agreement contained herein in the manner contemplated hereby.

(i) **Successors and Assigns: Assignment.** This Agreement shall be binding upon and shall inure to the benefit of each of the City and the Dedicator and to their respective heirs, successors and assigns.

(i) The City shall have the right to assign its interest in this Agreement in whole or in part to any successor agency, subsidiary, or entity with jurisdiction to supply water service to customers within the City of Fernley, in which case, the references to the City herein shall include such assignee, and provided that such assignee assumes all of the obligations of the City under this Agreement by written instrument.

(ii) Any such assignment shall not relieve any party of its obligations under this Agreement. Any attempt to transfer, convey or assign this Agreement other than as provided herein shall be null and void.

(j) **Time.** Time is of the essence in respect to each and every particular of this Agreement. Any time period to be computed pursuant to this Agreement shall be computed by excluding the first day and including the last. If the last day falls on a Saturday, Sunday or holiday, the last day shall be extended until the next business day that the City is open for business, but in no case will the extension be for more than four (4) days.

(k) **Severability.** The determination that any covenant, agreement, condition or provision of this Agreement is invalid shall not affect the enforceability of the remaining covenants, agreements, conditions or provisions hereof and, in the event of such determination, this Agreement shall be construed as if such invalid covenant, agreement, condition or provision were not included herein.

(l) **Delivery of Deed and Warranty.** The Dedicator shall deliver a Water Rights Grant Bargain and Sale Deed conveying and dedicating the Water Rights to the City at the time of the execution of this Agreement. Further, the Dedicator shall warrant that it is the legal owner of the Water Rights.

(m) **Indemnification.** The Dedicator and the Assignee agree, jointly and severally, to indemnify the City at all times and hold the City harmless in respect of any claims, damages or losses (including, without limitation, attorney's fees and costs), whether known or unknown, disclosed or undisclosed, arising from, by reason of or in connection with any part or portion of this Agreement. Dedicator hereby represents and warrants it has not sold, assigned, transferred, conveyed, hypothecated, pledged, or otherwise disposed of or encumbered the water rights transferred herein except as provided in this Agreement. Dedicator acknowledges that in the event that any claim or dispute relating to the title of the water rights renders such water rights unusable within, or unavailable to, the City's water delivery system, the City may, at its sole discretion and in addition to any other remedies provided for by law, rescind this Agreement and withhold the will-serve commitments provided for herein. In the event that such will-serve commitments have already been issued, the City, in addition to any other remedies provided by law, may require Dedicator or Assignee, jointly or severally, to immediately acquire and dedicate to the City the same quantity and quality of water rights as the water rights rendered unusable within, or unavailable to, the City's water delivery system and/or the City may assign any other banked or reserved water rights in which Dedicator or Assignee have a beneficial interest, and that remain uncommitted to will-serve commitments, to the will-serve commitments already issued pursuant to this Agreement.

(n) **Attorney's Fees.** In the event of any litigation between the parties hereto arising out of this Agreement, or if one party seeks to judicially enforce the terms of this Agreement, the prevailing party shall be reimbursed for all reasonable costs, including, but not limited to, reasonable attorney's fees.

[signature page follows]

Agreed upon the date set forth above between the following parties:

City of Fernley

_____
Mayor of Fernley

_____
Date:

Attested:

_____
City Clerk

Dedicator

_____
Joanne Kuylen Strusa

_____
Date:

_____
Glenn Strusa

_____
Date:

Assignee

Dedicator assigns all of its interest in the forgoing agreement to the Assignee identified below who by executing this document agrees to assume all obligations of Dedicator hereunder.

ERGS FERNLEY, LLC
a Nevada limited liability company

_____
George F. Peek, Manager

_____
Date:

The undersigned hereby affirms that there is no Social Security number contained in this document

LYON CO. APN: 021-303-57

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

AFTER RECORDATION RETURN TO:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

SPACE ABOVE THIS LINE FOR RECORDER'S USE

WATER RIGHTS GRANT, BARGAIN, & SALE DEED

THIS WATER RIGHTS DEED is made and entered into this _____ day of _____, 20__, to convey the below-mentioned water rights from JOANNE KUYLEN STURSA and GLENN STURSA, wife and husband as joint tenants with right of survivorship, (hereinafter referred to as "GRANTOR") to the CITY OF FERNLEY, a political subdivision of the State of Nevada (hereinafter referred to as "GRANTEE")

W I T N E S S E T H :

That said GRANTOR, for and in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, and for other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell, and convey to the GRANTEE, and to their successors, heirs, and assigns forever, all of GRANTOR's right, title, and interest in and to those certain waters and water rights situate in Lyon County, State of Nevada, as described as follows, to wit:

> A Four and Ninety-Six One-Hundredths (4.96) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1058-1-1-A. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 021-303-57 and further described as follows:
>
> *The real property situate in the County of Lyon, State of Nevada, described as follows:*
>
> *Parcel 3 as shown on "Parcel Map for the Renslow Family Revocable Trust" filed as Document No. 546847 on February 11, 2016 in the Office*

of the County Recorder, Lyon County, Nevada. Said Parcel is situate within the Northeast ¼ of Section 20, Township 20 North, Range 25 East, M.D.M..

This legal description appeared previously in Document No. 669426, recorded on May 3, 2023, Official Records of Lyon County, Nevada.

TOGETHER WITH all and singular the tenements, hereditaments, and appurtenances thereunto belonging or in anywise appertaining, and any reversions, remainders, rents, issues, or profits thereof.

TO HAVE AND TO HOLD, all and singular, the said water rights and the appurtenances, unto the said GRANTEE, and to their successors and assigns forever.

IN WITNESS WHEREOF the GRANTOR has hereunto executed this WATER RIGHTS GRANT, BARGAIN, & SALE DEED the day and year first written above.

DATED this ___ day of_____, 20__.

GRANTOR:

BY: _____
Joanne Kuylen Stursa

BY: _____
Glenn Stursa

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 20__, by Joanne Kuylen Stursa.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 20__, by Glenn Stursa.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Kari Weitzel**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:X	No:	Yes:X	No:	510-810-698

ACTION REQUESTED: Consent

AGENDA ITEM:

Possible action to authorize the execution of the water rights banking and dedication agreement with Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-56 TCID serial number 1058-1-1-C in the amount of 4.815 acre-feet.

AGENDA ITEM BRIEF:

Staff is seeking Council approval to authorize the execution of the Water Right Banking and Dedication Agreement with Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-56 TCID serial number 1058-1-1-C in the amount of 4.815 acre-feet.

RECOMMENDED MOTION:

"I move to authorize the execution of the Water Right Banking and Dedication Agreement from Joanne Kuylen Stursa and Gleen Stursa, APN 021-303-56 TCID serial number 1058-1-1-C in the amount of 4.815 acre feet."

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:

The City Council could choose to reject the dedication of water rights. This alternative is not recommended by staff and would be contrary to existing city policies.

BACKGROUND:

It is policy for the City of Fernley to have City Council approve all water right dedication agreements.

Joanne Kuylen Stursa and Gleen Stursa are proposing to dedicate 4.815 acre-feet of water rights appurtenant to APN 021-303-56 (TCID Serial Number 1058-1-1-C) to the City of Fernley. The deed and dedication package were reviewed and approved by Taggart and Taggart, Ltd. The water will be used to support future development projects.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

FMC 32.09.035 requires developers to dedicate sufficient water rights to support their proposed development projects. Water dedicated to the City and banked under a banking agreement such as the one proposed here may be used to meet that requirement.

FINANCIAL IMPLICATIONS:

This dedication is being made to support future will-serve commitment requests. Pursuant to prior Council direction on December 3, 2014, the City will cover all legal and engineering costs associated with the dedication.

ATTACHMENTS:

1. Stursa Dedication Agreement 4.815
2. Stursa Draft Deed 4.815

WATER RIGHTS BANKING
AND DEDICATION AGREEMENT

This Water Rights Banking and Dedication Agreement made as of the ____ day of _____, 20__ (this "Agreement"), by and between Joanne Kuylen Stursa, wife and husband, (the "Dedicator") and the City of Fernley, a political subdivision of the State of Nevada (the "City"), for the purpose of dedicating and banking certain water rights.

R E C I T A L S

WHEREAS, the City owns and operates a water distribution system located in the City of Fernley, Lyon County; and

WHEREAS, the Dedicator desires to transfer certain water rights to the City as described in Section 2 of this Agreement (the "Water Rights"), to be reserved and credited towards future water utility service requirements; and

WHEREAS, the City is willing to accept the Water Rights to be utilized by the Dedicator for future development requirements within the City's water utility service area, as it may change from time to time; and

WHEREAS, the Dedicator may desire to assign its rights to apply the Water Rights towards future water utility service requirements to an assignee (the "Assignee"); and

WHEREAS, the City will accept the Water Rights in lieu of the provision of new water rights when an application for water utility service is made in the future by the Dedicator or the Assignee, thereby satisfying one of the pre-conditions for water utility service (i.e. the provision of a water right).

NOW, THEREFORE, it is hereby agreed between the Dedicator and City as follows:

1. **Dedication of Water Rights and Facilities.** The Dedicator hereby agrees to dedicate the Water Rights to the City. The Dedicator and the Assignee agree and understand that dedication of the Water Rights is a condition precedent to receiving a will-serve commitment for water utility service from the City. The parties further agree that:

   (a) The quantity of surface or ground water rights reasonably necessary to insure an adequate water supply to the subject property is independently determined by the City. The Dedicator and Assignee understand and agree that the determination of the quantity of surface or ground water rights necessary to serve any proposed development will be made at such time as the Dedicator or Assignee request a will serve commitment for the development in accordance with the ordinances, resolutions, statutes, standards, and policies in effect at the time the request for a

will serve commitment is made. In addition, the parties agree and understand that the City has no obligation to independently obtain the necessary water rights to fulfill a will-serve commitment;

(b) Any facilities for water treatment, supply, storage, transmission and distribution, treatment and disposal, and appurtenances (such as wells, pipelines, pumps and storage tanks), located within or outside of the property for which future will-serve commitments are sought, that are requested and which are reasonably necessary to insure an adequate water supply to the property, will be constructed by the Dedicator or the Assignee, and dedicated to the City; and

(c) Any easement or legal access reasonably necessary to insure an adequate water supply to the property will also be dedicated from the Dedicator or the Assignee to the City as part of the grant of will-serve commitments.

2. **Dedicated Water Rights.** The Water Rights dedicated by this Agreement are described as follows:

> A Four and Eight Hundred Fifteen One-Thousandths (4.815) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1058-1-1-C. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 021-303-56 and further described in that certain Grant, Bargain, and Sale Deed recorded in the official records of Lyon County on April 18, 2023, as Document No. 668829.

3. **Revegetation Requirements.** As a condition of receiving water right dedications in exchange for utility service, any lands which are being irrigated within the existing place of use of the Dedicated Water Rights, and which will no longer be a place of use of the Dedicated Water Rights, must be re-vegetated pursuant to a re-vegetation plan approved by the City. The intent of this requirement is to prevent formerly irrigated lands from becoming dust and erosion hazards when the land is no longer irrigated. This requirement does not apply to land which is the existing place of use if that land will become a subdivision, or other use that will maintain ground cover.

(a) As part of any dedication, the City will determine whether revegetation of formerly irrigated land is required, and if re-vegetation is required, the Dedicator of the water rights, or its assignee, will submit a plan for re-vegetation that will be reviewed and approved by the City.

(b) A re-vegetation plan must be prepared by a qualified agricultural engineer or the equivalent, and must outline the method by which permanent ground cover will be established. The re-vegetation plan shall provide for the application of a suitable seed mixture susceptible to natural germination in the climatic conditions existing

on the formerly irrigated land. The re-vegetation plan shall be deemed fully performed upon the first to occur of the following:

(i) The City's written confirmation that the re-vegetation plan has been fully performed or

(ii) The Dedicator or its assignee, as the case may be, diligently and in compliance with the re-vegetation plan causes not less than two applications of the approved seed mixture to be placed upon the formerly irrigated land without success during a period of thirty (30) months following the date of dedication of the applicable water rights.

(c) The goal of a re-vegetation plan is to establish natural ground cover that will limit dust and erosion and can be sustained in Fernley's climatic conditions without human assistance.

(d) For each water right that is dedicated to the City of Fernley from land that it is determined by the City to require re-vegetation, the City of Fernley will hold back a portion of the water right, in an amount equal to ten (10) percent of the total water right, from the issuance of will serve commitments until the City of Fernley has approved the actual re-vegetation of the property at issue. Once the City of Fernley has approved the actual re-vegetation on a former place of use for a dedicated water right, the ten (l0) percent portion of the Water Right held back pursuant to this section will be made available for future will serve commitments.

4. **Annexation.** If water utility service is requested by the Dedicator or the Assignee from the City outside the city limits of the City, and the Dedicator or the Assignee desires to use the Water Rights to satisfy the water right dedication requirements for water utility service, the City will determine whether it is appropriate to annex that property, and will only provide water utility service if the area is annexed into the City.

(a) If annexation is necessary, the Dedicator or the Assignee is responsible for any and all annexation costs and fees in the same manner as any other person or entity requesting that property be annexed to the City.

(b) If annexation is necessary, all line extensions, water distribution systems and upgrades shall be constructed to the standard required by the City, and the Dedicator or Assignee shall pay all hook-up fees and complete all required improvements that the City determines are reasonably necessary to service the property.

5. **Banking.** The Water Rights dedicated to the City under this Agreement shall be available for use in the satisfaction of the water right dedication requirement that is a pre-condition to receiving water utility service from the City. Once the water rights have been dedicated

to the City, the City will maintain those rights in an account as a credit for the Dedicator for the term of this agreement, including any renewal period.

(a) During the term of this agreement, including any renewal period, the Dedicator and the Assignee may request will-serve commitments for water utility service from the City. The Water Rights that are held by the City pursuant to this Agreement may be used to satisfy the water dedication requirement that exists at the time of the request for the will-serve commitments.

(b) **Place of Will-Serve Commitments.** The Dedicator and the Assignee may request will-serve commitments for water utility service from the City anywhere within the City's water utility service area. Will-serve commitments may be requested for property to which the Water Rights are not appurtenant.

(c) **Assignment of Banked Credits.** The Dedicator's banked credits that are held in an account with the City may be assigned to an Assignee. Upon the execution of an assignment agreement with the Assignee, the City will allow the Assignee to receive the credits as satisfaction of the water right dedication requirement in existence when the Assignee applies for will-serve commitments from the City for water utility service.

(d) **City Consent to Assignment.** The assignment of banked credits includes the assignment of all rights and obligations under this Agreement, and requires the consent of the City. An assignment of banked credits created by this Agreement is invalid without the City's consent. Consent may only be withheld by the City if the Assignee does not agree to comply with the terms of this Agreement. All fees and costs assessed against banked water rights, if any, shall be paid to the City prior to any assignment of banked credits. No assignment agreement will be valid unless and until such costs are reimbursed.

(e) **Reduction in Banked Credits.** The City will file an application to change the manner of use and place of use of the Water Rights to municipal uses in the City's water utility service area. If the State Engineer determines, or if appeal from such a ruling by the State Engineer determines, that the total number of acre-feet that can be used by the City for municipal uses in its water utility service area is less that the amount of Water Rights that are dedicated under this Agreement, the City will reduce the credits that are accounted to the Dedicator by the amount of the reduction in the State Engineer's ruling, or in the appeal from such a ruling.

6. **Change Applications.** Dedicator recognizes that the manner of use and place of use of the Water Rights must be changed to allow for municipal use in the City. Change applications that change the points of diversion, manner and place of use of the Water Rights will be prepared so that the Water Rights may be utilized for municipal purposes

within the City's water utility service area as its boundaries are currently set and as they may be expanded through annexation.

(a) At the option of the Dedicator, the City may prepare all required change applications.

(b) If the Dedicator elects to prepare the required change applications, they must be completed, along with appropriate maps and documentation, to the City's satisfaction and delivered to the City for submittal to the State Engineer by and on behalf of the City.

(c) The City shall pay all associated statutory fees relating to the filing and approval of the Change Application, including but not limited to the application filing fees, permit fees, and certificate fees.

7. **Use of Dedicated Water Rights.** Dedicator and Assignee agree and acknowledge that the City receives the dedication of Water Rights that are the subject of this agreement free and clear of any encumbrances or liens and that as a result of such dedication the City shall be the sole holder of legal title to such Water Rights. Accordingly, the City may perform any action that a holder of such Water Rights is legally allowed to perform including, without limitation, hypothecation, rental, or lease of the dedicated Water Rights to a third party; and any revenue collected pursuant to such agreements may be utilized by the City at its sole and complete discretion. The parties agree that the City may, by contract or written agreement, permit the use of the Water Rights by other governmental entities, public or private utilities, or any other person or entity, including those engaged in providing water, storm drainage or sewer service. The Parties agree that in exchange for the dedication of Water Rights pursuant to this Agreement, the Dedicator or Assignee shall have the ability, pursuant to Section 5, to use the dedicated Water Rights to satisfy the water right dedication requirement that is a pre-condition to receiving water utility service from the City, however, nothing in this agreement shall be construed as creating an encumbrance or lien on the title of the dedicated Water Rights in favor of Dedicator or Assignee. The Parties further agree that the City reserves the right to satisfy its obligation to provide water service to Dedicator or Assignee in any manner that the City, at its sole discretion and consistent with Nevada Law and the Fernley Municipal Code, determines best serves the interests of the City water system.

8. **Facilities Standards.** Any facilities that are subject to this Agreement shall be designed and constructed in accordance with standards and other requirements prescribed by the City as a condition to provision of water utility service.

9. **Approval of Service Conditional.** Every will-serve notification and administrative approval of applications for water utility service is conditioned upon the acceptance of the dedication, and the satisfaction of all other service requirements that are established by local ordinance or state law. Any application or renewal, including applications for extension of will-serve commitments is subject to the provisions herein. The parties agree that:

(a) The City is the final authority in determining the number of will-serve commitments which may be granted by the City; and

(b) The City is the final authority regarding the number of will serves that may be serviced by the Water Rights for any development. Such determination shall be based on the criteria established by the City and further established by the State Engineer.

10. **Term of Agreement.** The term of this Agreement shall be for a period of twenty-five (25) years and shall be renewable for one successive twenty-five (25) year period upon application of the Dedicator or the Assignee, and the approval of the City.

(a) It is further understood and agreed between the City and the Dedicator that the Parties must agree to renew this agreement for the subsequent twenty-five year period. The City's decision to approve or reject a renewal of this agreement must be made pursuant to a vote by the Fernley City Council.

(b) The City may reject approval of a renewal of this Agreement **only** if:

(i) The City sends notice of the expiration of the initial twenty-five year term to the record owner of the Water Rights and receives no response within thirty (30) days of such notice; and

(ii) The Dedicator has not complied with the obligations included in this Agreement or does not agree to comply with the obligations of this Agreement during the renewal term of this Agreement.

(c) In the event that this Agreement is terminated, or expires pursuant to the provisions of this section, the City shall retain the title to the Water Rights, regardless of whether the Water Rights have been credited to an existing will-serve commitment.

11. **Notice.** Any notice required pursuant to this Agreement shall be sent via certified mail to the address listed below. Each Party is responsible for informing the other Party of any change in address. Notices from the City, including but not limited to notice of expiration of the 25-year term of this Agreement, shall be made to the address listed below, or to an updated address provided by the Dedicator or Assignee.

Dedicator	**City of Fernley**
ERGS Fernley, LLC	Department of Public Works
9345 Lemmon Dr.	595 Silver Lace Boulevard
Reno, NV 89506	Fernley, NV 89408

12. **General Conditions.**

(a) **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute but one and the same instrument.

(b) **Governing Law.** This Agreement shall be governed by, interpreted under, and construed and enforced in accordance with the laws of the State of Nevada applicable to agreements made and to be performed wholly within the State of Nevada.

(c) **Venue.** Any action or proceeding concerning the rights or responsibilities of the parties to this Agreement shall be heard and entertained in the State district court in Lyon County, Nevada.

(d) **Entire Agreement.** This Agreement (including any exhibits attached hereto) constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings with respect thereto, including without limitation, that certain memorandum of understanding between the parties. This Agreement may not be modified, changed or supplemented, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The parties do not intend to confer any benefit hereunder on any person, firm or corporation other than the parties hereto.

(e) **Survivability.** The parties' rights and responsibilities under this Agreement shall survive the conveyance of the Water Rights by the Dedicator to the City.

(f) **Waivers; Extensions.** No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

(g) **Non-Waiver of Rights.** No failure or delay of either party in the exercise of any

right given to such party hereunder shall constitute a waiver thereof unless the time specified herein for exercise of such right has expired, nor shall any single or partial exercise of any right preclude any other or further exercise thereof or of any other right. The waiver of any breach hereunder shall not be deemed to be a waiver of any other or any subsequent breach hereof.

(h) **Further Assurances.** The parties agree to do such further acts and things and to execute and deliver such additional agreements and instruments as the other may reasonably require to consummate, evidence or confirm the dedication of the above reference water rights or any other agreement contained herein in the manner contemplated hereby.

(i) **Successors and Assigns: Assignment.** This Agreement shall be binding upon and shall inure to the benefit of each of the City and the Dedicator and to their respective heirs, successors and assigns.

(i) The City shall have the right to assign its interest in this Agreement in whole or in part to any successor agency, subsidiary, or entity with jurisdiction to supply water service to customers within the City of Fernley, in which case, the references to the City herein shall include such assignee, and provided that such assignee assumes all of the obligations of the City under this Agreement by written instrument.

(ii) Any such assignment shall not relieve any party of its obligations under this Agreement. Any attempt to transfer, convey or assign this Agreement other than as provided herein shall be null and void.

(j) **Time.** Time is of the essence in respect to each and every particular of this Agreement. Any time period to be computed pursuant to this Agreement shall be computed by excluding the first day and including the last. If the last day falls on a Saturday, Sunday or holiday, the last day shall be extended until the next business day that the City is open for business, but in no case will the extension be for more than four (4) days.

(k) **Severability.** The determination that any covenant, agreement, condition or provision of this Agreement is invalid shall not affect the enforceability of the remaining covenants, agreements, conditions or provisions hereof and, in the event of such determination, this Agreement shall be construed as if such invalid covenant, agreement, condition or provision were not included herein.

(l) **Delivery of Deed and Warranty.** The Dedicator shall deliver a Water Rights Grant Bargain and Sale Deed conveying and dedicating the Water Rights to the City at the time of the execution of this Agreement. Further, the Dedicator shall warrant that it is the legal owner of the Water Rights.

(m) **Indemnification.** The Dedicator and the Assignee agree, jointly and severally, to indemnify the City at all times and hold the City harmless in respect of any claims, damages or losses (including, without limitation, attorney's fees and costs), whether known or unknown, disclosed or undisclosed, arising from, by reason of or in connection with any part or portion of this Agreement. Dedicator hereby represents and warrants it has not sold, assigned, transferred, conveyed, hypothecated, pledged, or otherwise disposed of or encumbered the water rights transferred herein except as provided in this Agreement. Dedicator acknowledges that in the event that any claim or dispute relating to the title of the water rights renders such water rights unusable within, or unavailable to, the City's water delivery system, the City may, at its sole discretion and in addition to any other remedies provided for by law, rescind this Agreement and withhold the will-serve commitments provided for herein. In the event that such will-serve commitments have already been issued, the City, in addition to any other remedies provided by law, may require Dedicator or Assignee, jointly or severally, to immediately acquire and dedicate to the City the same quantity and quality of water rights as the water rights rendered unusable within, or unavailable to, the City's water delivery system and/or the City may assign any other banked or reserved water rights in which Dedicator or Assignee have a beneficial interest, and that remain uncommitted to will-serve commitments, to the will-serve commitments already issued pursuant to this Agreement.

(n) **Attorney's Fees.** In the event of any litigation between the parties hereto arising out of this Agreement, or if one party seeks to judicially enforce the terms of this Agreement, the prevailing party shall be reimbursed for all reasonable costs, including, but not limited to, reasonable attorney's fees.

[signature page follows]

Agreed upon the date set forth above between the following parties:

City of Fernley

_____
Mayor of Fernley

_____
Date:

Attested:

_____
City Clerk

Dedicator

_____
Joanne Kuylen Strusa

_____
Date:

_____
Glenn Strusa

_____
Date:

Assignee

Dedicator assigns all of its interest in the forgoing agreement to the Assignee identified below who by executing this document agrees to assume all obligations of Dedicator hereunder.

ERGS FERNLEY, LLC
a Nevada limited liability company

_____
George F. Peek, Manager

_____
Date:

The undersigned hereby affirms that there is no Social Security number contained in this document

LYON CO. APN: 021-303-56

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

AFTER RECORDATION RETURN TO:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

SPACE ABOVE THIS LINE FOR RECORDER'S USE

WATER RIGHTS GRANT, BARGAIN, & SALE DEED

THIS WATER RIGHTS DEED is made and entered into this _____ day of _____, 20__, to convey the below-mentioned water rights from JOANNE KUYLEN STURSA and GLENN STURSA, wife and husband as joint tenants with right of survivorship, (hereinafter referred to as "GRANTOR") to the CITY OF FERNLEY, a political subdivision of the State of Nevada (hereinafter referred to as "GRANTEE")

W I T N E S S E T H :

That said GRANTOR, for and in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, and for other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell, and convey to the GRANTEE, and to their successors, heirs, and assigns forever, all of GRANTOR's right, title, and interest in and to those certain waters and water rights situate in Lyon County, State of Nevada, as described as follows, to wit:

> A Four and Eight Hundred Fifteen One-Thousandths (4.815) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1058-1-1-C. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 021-303-56 and further described as follows:
>
> *The real property situate in the County of Lyon, State of Nevada, described as follows:*
>
> *Parcel 2 as shown on "Parcel Map for the Renslow Family Revocable Trust" filed as Document No. 546847 on February 11, 2016 in the Office*

of the County Recorder, Lyon County, Nevada. Said Parcel is situate within the Northeast ¼ of Section 20, Township 20 North, Range 25 East, M.D.M..

This legal description appeared previously in Document No. 668829, recorded on April 18, 2023, Official Records of Lyon County, Nevada.

TOGETHER WITH all and singular the tenements, hereditaments, and appurtenances thereunto belonging or in anywise appertaining, and any reversions, remainders, rents, issues, or profits thereof.

TO HAVE AND TO HOLD, all and singular, the said water rights and the appurtenances, unto the said GRANTEE, and to their successors and assigns forever.

IN WITNESS WHEREOF the GRANTOR has hereunto executed this WATER RIGHTS GRANT, BARGAIN, & SALE DEED the day and year first written above.

DATED this ___ day of_____, 20__.

GRANTOR:

BY: _____
Joanne Kuylen Stursa

BY: _____
Glenn Stursa

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 20__, by Joanne Kuylen Stursa.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 20__, by Glenn Stursa.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

WATER RIGHTS BANKING
AND DEDICATION AGREEMENT

This Water Rights Banking and Dedication Agreement made as of the ____ day of _____, 2023 (this "Agreement"), by and between John Edwin Picetti and Sherry Kim Picetti, husband and wife, (the "Dedicator") and the City of Fernley, a political subdivision of the State of Nevada (the "City"), for the purpose of dedicating and banking certain water rights.

R E C I T A L S

WHEREAS, the City owns and operates a water distribution system located in the City of Fernley, Lyon County; and

WHEREAS, the Dedicator desires to transfer certain water rights to the City as described in Section 2 of this Agreement (the "Water Rights"), to be reserved and credited towards future water utility service requirements; and

WHEREAS, the City is willing to accept the Water Rights to be utilized by the Dedicator for future development requirements within the City's water utility service area, as it may change from time to time; and

WHEREAS, the Dedicator may desire to assign its rights to apply the Water Rights towards future water utility service requirements to an assignee (the "Assignee"); and

WHEREAS, the City will accept the Water Rights in lieu of the provision of new water rights when an application for water utility service is made in the future by the Dedicator or the Assignee, thereby satisfying one of the pre-conditions for water utility service (i.e. the provision of a water right).

NOW, THEREFORE, it is hereby agreed between the Dedicator and City as follows:

1. **Dedication of Water Rights and Facilities.** The Dedicator hereby agrees to dedicate the Water Rights to the City. The Dedicator and the Assignee agree and understand that dedication of the Water Rights is a condition precedent to receiving a will-serve commitment for water utility service from the City. The parties further agree that:

   (a) The quantity of surface or ground water rights reasonably necessary to insure an adequate water supply to the subject property is independently determined by the City. The Dedicator and Assignee understand and agree that the determination of the quantity of surface or ground water rights necessary to serve any proposed development will be made at such time as the Dedicator or Assignee request a will serve commitment for the development in accordance with the ordinances, resolutions, statutes, standards, and policies in effect at the time the request for a

will serve commitment is made. In addition, the parties agree and understand that the City has no obligation to independently obtain the necessary water rights to fulfill a will-serve commitment;

(b) Any facilities for water treatment, supply, storage, transmission and distribution, treatment and disposal, and appurtenances (such as wells, pipelines, pumps and storage tanks), located within or outside of the property for which future will-serve commitments are sought, that are requested and which are reasonably necessary to insure an adequate water supply to the property, will be constructed by the Dedicator or the Assignee, and dedicated to the City; and

(c) Any easement or legal access reasonably necessary to insure an adequate water supply to the property will also be dedicated from the Dedicator or the Assignee to the City as part of the grant of will-serve commitments.

2. **Dedicated Water Rights.** The Water Rights dedicated by this Agreement are described as follows:

> A Fourteen and One Hundred and Seventy-Five One-Thousandths (14.175) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1051-2. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 021-291-01 and further described in that certain Grant, Bargain, and Sale Deed recorded in the official records of Lyon County on April 21, 2021, as Document No. 635864.

3. **Revegetation Requirements.** As a condition of receiving water right dedications in exchange for utility service, any lands which are being irrigated within the existing place of use of the Dedicated Water Rights, and which will no longer be a place of use of the Dedicated Water Rights, must be re-vegetated pursuant to a re-vegetation plan approved by the City. The intent of this requirement is to prevent formerly irrigated lands from becoming dust and erosion hazards when the land is no longer irrigated. This requirement does not apply to land which is the existing place of use if that land will become a subdivision, or other use that will maintain ground cover.

(a) As part of any dedication, the City will determine whether revegetation of formerly irrigated land is required, and if re-vegetation is required, the Dedicator of the water rights, or its assignee, will submit a plan for re-vegetation that will be reviewed and approved by the City.

(b) A re-vegetation plan must be prepared by a qualified agricultural engineer or the equivalent, and must outline the method by which permanent ground cover will be established. The re-vegetation plan shall provide for the application of a suitable seed mixture susceptible to natural germination in the climatic conditions existing

on the formerly irrigated land. The re-vegetation plan shall be deemed fully performed upon the first to occur of the following:

(i) The City's written confirmation that the re-vegetation plan has been fully performed or

(ii) The Dedicator or its assignee, as the case may be, diligently and in compliance with the re-vegetation plan causes not less than two applications of the approved seed mixture to be placed upon the formerly irrigated land without success during a period of thirty (30) months following the date of dedication of the applicable water rights.

(c) The goal of a re-vegetation plan is to establish natural ground cover that will limit dust and erosion and can be sustained in Fernley's climatic conditions without human assistance.

(d) For each water right that is dedicated to the City of Fernley from land that it is determined by the City to require re-vegetation, the City of Fernley will hold back a portion of the water right, in an amount equal to ten (10) percent of the total water right, from the issuance of will serve commitments until the City of Fernley has approved the actual re-vegetation of the property at issue. Once the City of Fernley has approved the actual re-vegetation on a former place of use for a dedicated water right, the ten (l0) percent portion of the Water Right held back pursuant to this section will be made available for future will serve commitments.

4. **Annexation.** If water utility service is requested by the Dedicator or the Assignee from the City outside the city limits of the City, and the Dedicator or the Assignee desires to use the Water Rights to satisfy the water right dedication requirements for water utility service, the City will determine whether it is appropriate to annex that property, and will only provide water utility service if the area is annexed into the City.

(a) If annexation is necessary, the Dedicator or the Assignee is responsible for any and all annexation costs and fees in the same manner as any other person or entity requesting that property be annexed to the City.

(b) If annexation is necessary, all line extensions, water distribution systems and upgrades shall be constructed to the standard required by the City, and the Dedicator or Assignee shall pay all hook-up fees and complete all required improvements that the City determines are reasonably necessary to service the property.

5. **Banking.** The Water Rights dedicated to the City under this Agreement shall be available for use in the satisfaction of the water right dedication requirement that is a pre-condition to receiving water utility service from the City. Once the water rights have been dedicated

to the City, the City will maintain those rights in an account as a credit for the Dedicator for the term of this agreement, including any renewal period.

(a) During the term of this agreement, including any renewal period, the Dedicator and the Assignee may request will-serve commitments for water utility service from the City. The Water Rights that are held by the City pursuant to this Agreement may be used to satisfy the water dedication requirement that exists at the time of the request for the will-serve commitments.

(b) **Place of Will-Serve Commitments.** The Dedicator and the Assignee may request will-serve commitments for water utility service from the City anywhere within the City's water utility service area. Will-serve commitments may be requested for property to which the Water Rights are not appurtenant.

(c) **Assignment of Banked Credits.** The Dedicator's banked credits that are held in an account with the City may be assigned to an Assignee. Upon the execution of an assignment agreement with the Assignee, the City will allow the Assignee to receive the credits as satisfaction of the water right dedication requirement in existence when the Assignee applies for will-serve commitments from the City for water utility service.

(d) **City Consent to Assignment.** The assignment of banked credits includes the assignment of all rights and obligations under this Agreement, and requires the consent of the City. An assignment of banked credits created by this Agreement is invalid without the City's consent. Consent may only be withheld by the City if the Assignee does not agree to comply with the terms of this Agreement. All fees and costs assessed against banked water rights, if any, shall be paid to the City prior to any assignment of banked credits. No assignment agreement will be valid unless and until such costs are reimbursed.

(e) **Reduction in Banked Credits.** The City will file an application to change the manner of use and place of use of the Water Rights to municipal uses in the City's water utility service area. If the State Engineer determines, or if appeal from such a ruling by the State Engineer determines, that the total number of acre-feet that can be used by the City for municipal uses in its water utility service area is less that the amount of Water Rights that are dedicated under this Agreement, the City will reduce the credits that are accounted to the Dedicator by the amount of the reduction in the State Engineer's ruling, or in the appeal from such a ruling.

6. **Change Applications.** Dedicator recognizes that the manner of use and place of use of the Water Rights must be changed to allow for municipal use in the City. Change applications that change the points of diversion, manner and place of use of the Water Rights will be prepared so that the Water Rights may be utilized for municipal purposes

within the City's water utility service area as its boundaries are currently set and as they may be expanded through annexation.

(a) At the option of the Dedicator, the City may prepare all required change applications.

(b) If the Dedicator elects to prepare the required change applications, they must be completed, along with appropriate maps and documentation, to the City's satisfaction and delivered to the City for submittal to the State Engineer by and on behalf of the City.

(c) The City shall pay all associated statutory fees relating to the filing and approval of the Change Application, including but not limited to the application filing fees, permit fees, and certificate fees.

7. **Use of Dedicated Water Rights.** Dedicator and Assignee agree and acknowledge that the City receives the dedication of Water Rights that are the subject of this agreement free and clear of any encumbrances or liens and that as a result of such dedication the City shall be the sole holder of legal title to such Water Rights. Accordingly, the City may perform any action that a holder of such Water Rights is legally allowed to perform including, without limitation, hypothecation, rental, or lease of the dedicated Water Rights to a third party; and any revenue collected pursuant to such agreements may be utilized by the City at its sole and complete discretion. The parties agree that the City may, by contract or written agreement, permit the use of the Water Rights by other governmental entities, public or private utilities, or any other person or entity, including those engaged in providing water, storm drainage or sewer service. The Parties agree that in exchange for the dedication of Water Rights pursuant to this Agreement, the Dedicator or Assignee shall have the ability, pursuant to Section 5, to use the dedicated Water Rights to satisfy the water right dedication requirement that is a pre-condition to receiving water utility service from the City, however, nothing in this agreement shall be construed as creating an encumbrance or lien on the title of the dedicated Water Rights in favor of Dedicator or Assignee. The Parties further agree that the City reserves the right to satisfy its obligation to provide water service to Dedicator or Assignee in any manner that the City, at its sole discretion and consistent with Nevada Law and the Fernley Municipal Code, determines best serves the interests of the City water system.

8. **Facilities Standards.** Any facilities that are subject to this Agreement shall be designed and constructed in accordance with standards and other requirements prescribed by the City as a condition to provision of water utility service.

9. **Approval of Service Conditional.** Every will-serve notification and administrative approval of applications for water utility service is conditioned upon the acceptance of the dedication, and the satisfaction of all other service requirements that are established by local ordinance or state law. Any application or renewal, including applications for extension of will-serve commitments is subject to the provisions herein. The parties agree that:

(a) The City is the final authority in determining the number of will-serve commitments which may be granted by the City; and

(b) The City is the final authority regarding the number of will serves that may be serviced by the Water Rights for any development. Such determination shall be based on the criteria established by the City and further established by the State Engineer.

10. **Term of Agreement.** The term of this Agreement shall be for a period of twenty-five (25) years and shall be renewable for one successive twenty-five (25) year period upon application of the Dedicator or the Assignee, and the approval of the City.

(a) It is further understood and agreed between the City and the Dedicator that the Parties must agree to renew this agreement for the subsequent twenty-five year period. The City's decision to approve or reject a renewal of this agreement must be made pursuant to a vote by the Fernley City Council.

(b) The City may reject approval of a renewal of this Agreement **only** if:

(i) The City sends notice of the expiration of the initial twenty-five year term to the record owner of the Water Rights and receives no response within thirty (30) days of such notice; and

(ii) The Dedicator has not complied with the obligations included in this Agreement or does not agree to comply with the obligations of this Agreement during the renewal term of this Agreement.

(c) In the event that this Agreement is terminated, or expires pursuant to the provisions of this section, the City shall retain the title to the Water Rights, regardless of whether the Water Rights have been credited to an existing will-serve commitment.

11. **Notice.** Any notice required pursuant to this Agreement shall be sent via certified mail to the address listed below. Each Party is responsible for informing the other Party of any change in address. Notices from the City, including but not limited to notice of expiration of the 25-year term of this Agreement, shall be made to the address listed below, or to an updated address provided by the Dedicator or Assignee.

Dedicator	**City of Fernley**
John & Sherry Picetti	Department of Public Works
2946 Walker Court	595 Silver Lace Boulevard
Fernley, NV 89408	Fernley, NV 89408

12. **General Conditions.**

(a) **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute but one and the same instrument.

(b) **Governing Law.** This Agreement shall be governed by, interpreted under, and construed and enforced in accordance with the laws of the State of Nevada applicable to agreements made and to be performed wholly within the State of Nevada.

(c) **Venue.** Any action or proceeding concerning the rights or responsibilities of the parties to this Agreement shall be heard and entertained in the State district court in Lyon County, Nevada.

(d) **Entire Agreement.** This Agreement (including any exhibits attached hereto) constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings with respect thereto, including without limitation, that certain memorandum of understanding between the parties. This Agreement may not be modified, changed or supplemented, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The parties do not intend to confer any benefit hereunder on any person, firm or corporation other than the parties hereto.

(e) **Survivability.** The parties' rights and responsibilities under this Agreement shall survive the conveyance of the Water Rights by the Dedicator to the City.

(f) **Waivers; Extensions.** No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

(g) **Non-Waiver of Rights.** No failure or delay of either party in the exercise of any

right given to such party hereunder shall constitute a waiver thereof unless the time specified herein for exercise of such right has expired, nor shall any single or partial exercise of any right preclude any other or further exercise thereof or of any other right. The waiver of any breach hereunder shall not be deemed to be a waiver of any other or any subsequent breach hereof.

(h) **Further Assurances.** The parties agree to do such further acts and things and to execute and deliver such additional agreements and instruments as the other may reasonably require to consummate, evidence or confirm the dedication of the above reference water rights or any other agreement contained herein in the manner contemplated hereby.

(i) **Successors and Assigns: Assignment.** This Agreement shall be binding upon and shall inure to the benefit of each of the City and the Dedicator and to their respective heirs, successors and assigns.

(i) The City shall have the right to assign its interest in this Agreement in whole or in part to any successor agency, subsidiary, or entity with jurisdiction to supply water service to customers within the City of Fernley, in which case, the references to the City herein shall include such assignee, and provided that such assignee assumes all of the obligations of the City under this Agreement by written instrument.

(ii) Any such assignment shall not relieve any party of its obligations under this Agreement. Any attempt to transfer, convey or assign this Agreement other than as provided herein shall be null and void.

(j) **Time.** Time is of the essence in respect to each and every particular of this Agreement. Any time period to be computed pursuant to this Agreement shall be computed by excluding the first day and including the last. If the last day falls on a Saturday, Sunday or holiday, the last day shall be extended until the next business day that the City is open for business, but in no case will the extension be for more than four (4) days.

(k) **Severability.** The determination that any covenant, agreement, condition or provision of this Agreement is invalid shall not affect the enforceability of the remaining covenants, agreements, conditions or provisions hereof and, in the event of such determination, this Agreement shall be construed as if such invalid covenant, agreement, condition or provision were not included herein.

(l) **Delivery of Deed and Warranty.** The Dedicator shall deliver a Water Rights Grant Bargain and Sale Deed conveying and dedicating the Water Rights to the City at the time of the execution of this Agreement. Further, the Dedicator shall warrant that it is the legal owner of the Water Rights.

(m) **Indemnification.** The Dedicator and the Assignee agree, jointly and severally, to indemnify the City at all times and hold the City harmless in respect of any claims, damages or losses (including, without limitation, attorney's fees and costs), whether known or unknown, disclosed or undisclosed, arising from, by reason of or in connection with any part or portion of this Agreement. Dedicator hereby represents and warrants it has not sold, assigned, transferred, conveyed, hypothecated, pledged, or otherwise disposed of or encumbered the water rights transferred herein except as provided in this Agreement. Dedicator acknowledges that in the event that any claim or dispute relating to the title of the water rights renders such water rights unusable within, or unavailable to, the City's water delivery system, the City may, at its sole discretion and in addition to any other remedies provided for by law, rescind this Agreement and withhold the will-serve commitments provided for herein. In the event that such will-serve commitments have already been issued, the City, in addition to any other remedies provided by law, may require Dedicator or Assignee, jointly or severally, to immediately acquire and dedicate to the City the same quantity and quality of water rights as the water rights rendered unusable within, or unavailable to, the City's water delivery system and/or the City may assign any other banked or reserved water rights in which Dedicator or Assignee have a beneficial interest, and that remain uncommitted to will-serve commitments, to the will-serve commitments already issued pursuant to this Agreement.

(n) **Attorney's Fees.** In the event of any litigation between the parties hereto arising out of this Agreement, or if one party seeks to judicially enforce the terms of this Agreement, the prevailing party shall be reimbursed for all reasonable costs, including, but not limited to, reasonable attorney's fees.

[signature page follows]

Agreed upon the date set forth above between the following parties:

City of Fernley

_____
Mayor of Fernley

_____
Date:

Attested:

_____
City Clerk

Dedicator

_____
John Edwin Picetti

_____
Date:

_____
Sherry Kim Picetti

_____
Date:

The undersigned hereby affirms that there is no Social Security number contained in this document

LYON CO. APN: 021-291-01

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

AFTER RECORDATION RETURN TO:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

SPACE ABOVE THIS LINE FOR RECORDER'S USE

WATER RIGHTS GRANT, BARGAIN, & SALE DEED

THIS WATER RIGHTS DEED is made and entered into this _____ day of _____, 2023, to convey the below-mentioned water rights from JOHN EDWIN PICETTI and SHERRY KIM PICETTI, husband and wife as joint tenants, (hereinafter referred to as "GRANTOR") to the CITY OF FERNLEY, a political subdivision of the State of Nevada (hereinafter referred to as "GRANTEE")

W I T N E S S E T H :

That said GRANTOR, for and in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, and for other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell, and convey to the GRANTEE, and to their successors, heirs, and assigns forever, all of GRANTOR's right, title, and interest in and to those certain waters and water rights situate in Lyon County, State of Nevada, as described as follows, to wit:

> A Fourteen and One Hundred and Seventy-Five One-Thousandths (14.175) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1051-2. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 021-291-01 and further described as follows:
>
> *All that certain real property situate in the County of Lyon, State of Nevada, being a portion of the South ½ of the Southwest ¼ of Section 18, Township 20 North, Range 25 East of the Mount Diablo Base and Meridian, described as follows:*

Parcel A of the Joe & Judy Garbarino Parcel Map, Recorded in the Office Records of Lyon County, Nevada on May 20, 1980 as Document No. 53404.

This legal description appeared previously in Document No. 635864, recorded on April 21, 2021, Official Records of Lyon County, Nevada.

TOGETHER WITH all and singular the tenements, hereditaments, and appurtenances thereunto belonging or in anywise appertaining, and any reversions, remainders, rents, issues, or profits thereof.

TO HAVE AND TO HOLD, all and singular, the said water rights and the appurtenances, unto the said GRANTEE, and to their successors and assigns forever.

IN WITNESS WHEREOF the GRANTOR has hereunto executed this WATER RIGHTS GRANT, BARGAIN, & SALE DEED the day and year first written above.

DATED this ___ day of_____, 2023.

GRANTOR:

BY: _____
John Edwin Picetti

BY: _____
Sherry Kim Picetti

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 2023, by John Edwin Picetti.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 2023, by Sherry Kim Picetti.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

WATER RIGHTS BANKING
AND DEDICATION AGREEMENT

This Water Rights Banking and Dedication Agreement made as of the ____ day of _____, 2023 (this "Agreement"), by and between John Edwin Picetti and Sherry Kim Picetti, husband and wife, (the "Dedicator") and the City of Fernley, a political subdivision of the State of Nevada (the "City"), for the purpose of dedicating and banking certain water rights.

R E C I T A L S

WHEREAS, the City owns and operates a water distribution system located in the City of Fernley, Lyon County; and

WHEREAS, the Dedicator desires to transfer certain water rights to the City as described in Section 2 of this Agreement (the "Water Rights"), to be reserved and credited towards future water utility service requirements; and

WHEREAS, the City is willing to accept the Water Rights to be utilized by the Dedicator for future development requirements within the City's water utility service area, as it may change from time to time; and

WHEREAS, the Dedicator may desire to assign its rights to apply the Water Rights towards future water utility service requirements to an assignee (the "Assignee"); and

WHEREAS, the City will accept the Water Rights in lieu of the provision of new water rights when an application for water utility service is made in the future by the Dedicator or the Assignee, thereby satisfying one of the pre-conditions for water utility service (i.e. the provision of a water right).

NOW, THEREFORE, it is hereby agreed between the Dedicator and City as follows:

1. **Dedication of Water Rights and Facilities.** The Dedicator hereby agrees to dedicate the Water Rights to the City. The Dedicator and the Assignee agree and understand that dedication of the Water Rights is a condition precedent to receiving a will-serve commitment for water utility service from the City. The parties further agree that:

   (a) The quantity of surface or ground water rights reasonably necessary to insure an adequate water supply to the subject property is independently determined by the City. The Dedicator and Assignee understand and agree that the determination of the quantity of surface or ground water rights necessary to serve any proposed development will be made at such time as the Dedicator or Assignee request a will serve commitment for the development in accordance with the ordinances, resolutions, statutes, standards, and policies in effect at the time the request for a

will serve commitment is made. In addition, the parties agree and understand that the City has no obligation to independently obtain the necessary water rights to fulfill a will-serve commitment;

(b) Any facilities for water treatment, supply, storage, transmission and distribution, treatment and disposal, and appurtenances (such as wells, pipelines, pumps and storage tanks), located within or outside of the property for which future will-serve commitments are sought, that are requested and which are reasonably necessary to insure an adequate water supply to the property, will be constructed by the Dedicator or the Assignee, and dedicated to the City; and

(c) Any easement or legal access reasonably necessary to insure an adequate water supply to the property will also be dedicated from the Dedicator or the Assignee to the City as part of the grant of will-serve commitments.

2. **Dedicated Water Rights.** The Water Rights dedicated by this Agreement are described as follows:

> A Fourteen One-Hundredths (0.14) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1019-C-C-C. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 020-417-06 and further described in that certain Grant, Bargain, and Sale Deed recorded in the official records of Lyon County on February 27, 2006, as Document No. 376077.

3. **Revegetation Requirements.** As a condition of receiving water right dedications in exchange for utility service, any lands which are being irrigated within the existing place of use of the Dedicated Water Rights, and which will no longer be a place of use of the Dedicated Water Rights, must be re-vegetated pursuant to a re-vegetation plan approved by the City. The intent of this requirement is to prevent formerly irrigated lands from becoming dust and erosion hazards when the land is no longer irrigated. This requirement does not apply to land which is the existing place of use if that land will become a subdivision, or other use that will maintain ground cover.

(a) As part of any dedication, the City will determine whether revegetation of formerly irrigated land is required, and if re-vegetation is required, the Dedicator of the water rights, or its assignee, will submit a plan for re-vegetation that will be reviewed and approved by the City.

(b) A re-vegetation plan must be prepared by a qualified agricultural engineer or the equivalent, and must outline the method by which permanent ground cover will be established. The re-vegetation plan shall provide for the application of a suitable seed mixture susceptible to natural germination in the climatic conditions existing

on the formerly irrigated land. The re-vegetation plan shall be deemed fully performed upon the first to occur of the following:

(i) The City's written confirmation that the re-vegetation plan has been fully performed or

(ii) The Dedicator or its assignee, as the case may be, diligently and in compliance with the re-vegetation plan causes not less than two applications of the approved seed mixture to be placed upon the formerly irrigated land without success during a period of thirty (30) months following the date of dedication of the applicable water rights.

(c) The goal of a re-vegetation plan is to establish natural ground cover that will limit dust and erosion and can be sustained in Fernley's climatic conditions without human assistance.

(d) For each water right that is dedicated to the City of Fernley from land that it is determined by the City to require re-vegetation, the City of Fernley will hold back a portion of the water right, in an amount equal to ten (10) percent of the total water right, from the issuance of will serve commitments until the City of Fernley has approved the actual re-vegetation of the property at issue. Once the City of Fernley has approved the actual re-vegetation on a former place of use for a dedicated water right, the ten (l0) percent portion of the Water Right held back pursuant to this section will be made available for future will serve commitments.

4. **Annexation.** If water utility service is requested by the Dedicator or the Assignee from the City outside the city limits of the City, and the Dedicator or the Assignee desires to use the Water Rights to satisfy the water right dedication requirements for water utility service, the City will determine whether it is appropriate to annex that property, and will only provide water utility service if the area is annexed into the City.

(a) If annexation is necessary, the Dedicator or the Assignee is responsible for any and all annexation costs and fees in the same manner as any other person or entity requesting that property be annexed to the City.

(b) If annexation is necessary, all line extensions, water distribution systems and upgrades shall be constructed to the standard required by the City, and the Dedicator or Assignee shall pay all hook-up fees and complete all required improvements that the City determines are reasonably necessary to service the property.

5. **Banking.** The Water Rights dedicated to the City under this Agreement shall be available for use in the satisfaction of the water right dedication requirement that is a pre-condition to receiving water utility service from the City. Once the water rights have been dedicated

to the City, the City will maintain those rights in an account as a credit for the Dedicator for the term of this agreement, including any renewal period.

(a) During the term of this agreement, including any renewal period, the Dedicator and the Assignee may request will-serve commitments for water utility service from the City. The Water Rights that are held by the City pursuant to this Agreement may be used to satisfy the water dedication requirement that exists at the time of the request for the will-serve commitments.

(b) **Place of Will-Serve Commitments.** The Dedicator and the Assignee may request will-serve commitments for water utility service from the City anywhere within the City's water utility service area. Will-serve commitments may be requested for property to which the Water Rights are not appurtenant.

(c) **Assignment of Banked Credits.** The Dedicator's banked credits that are held in an account with the City may be assigned to an Assignee. Upon the execution of an assignment agreement with the Assignee, the City will allow the Assignee to receive the credits as satisfaction of the water right dedication requirement in existence when the Assignee applies for will-serve commitments from the City for water utility service.

(d) **City Consent to Assignment.** The assignment of banked credits includes the assignment of all rights and obligations under this Agreement, and requires the consent of the City. An assignment of banked credits created by this Agreement is invalid without the City's consent. Consent may only be withheld by the City if the Assignee does not agree to comply with the terms of this Agreement. All fees and costs assessed against banked water rights, if any, shall be paid to the City prior to any assignment of banked credits. No assignment agreement will be valid unless and until such costs are reimbursed.

(e) **Reduction in Banked Credits.** The City will file an application to change the manner of use and place of use of the Water Rights to municipal uses in the City's water utility service area. If the State Engineer determines, or if appeal from such a ruling by the State Engineer determines, that the total number of acre-feet that can be used by the City for municipal uses in its water utility service area is less that the amount of Water Rights that are dedicated under this Agreement, the City will reduce the credits that are accounted to the Dedicator by the amount of the reduction in the State Engineer's ruling, or in the appeal from such a ruling.

6. **Change Applications.** Dedicator recognizes that the manner of use and place of use of the Water Rights must be changed to allow for municipal use in the City. Change applications that change the points of diversion, manner and place of use of the Water Rights will be prepared so that the Water Rights may be utilized for municipal purposes

within the City's water utility service area as its boundaries are currently set and as they may be expanded through annexation.

(a) At the option of the Dedicator, the City may prepare all required change applications.

(b) If the Dedicator elects to prepare the required change applications, they must be completed, along with appropriate maps and documentation, to the City's satisfaction and delivered to the City for submittal to the State Engineer by and on behalf of the City.

(c) The City shall pay all associated statutory fees relating to the filing and approval of the Change Application, including but not limited to the application filing fees, permit fees, and certificate fees.

7. **Use of Dedicated Water Rights.** Dedicator and Assignee agree and acknowledge that the City receives the dedication of Water Rights that are the subject of this agreement free and clear of any encumbrances or liens and that as a result of such dedication the City shall be the sole holder of legal title to such Water Rights. Accordingly, the City may perform any action that a holder of such Water Rights is legally allowed to perform including, without limitation, hypothecation, rental, or lease of the dedicated Water Rights to a third party; and any revenue collected pursuant to such agreements may be utilized by the City at its sole and complete discretion. The parties agree that the City may, by contract or written agreement, permit the use of the Water Rights by other governmental entities, public or private utilities, or any other person or entity, including those engaged in providing water, storm drainage or sewer service. The Parties agree that in exchange for the dedication of Water Rights pursuant to this Agreement, the Dedicator or Assignee shall have the ability, pursuant to Section 5, to use the dedicated Water Rights to satisfy the water right dedication requirement that is a pre-condition to receiving water utility service from the City, however, nothing in this agreement shall be construed as creating an encumbrance or lien on the title of the dedicated Water Rights in favor of Dedicator or Assignee. The Parties further agree that the City reserves the right to satisfy its obligation to provide water service to Dedicator or Assignee in any manner that the City, at its sole discretion and consistent with Nevada Law and the Fernley Municipal Code, determines best serves the interests of the City water system.

8. **Facilities Standards.** Any facilities that are subject to this Agreement shall be designed and constructed in accordance with standards and other requirements prescribed by the City as a condition to provision of water utility service.

9. **Approval of Service Conditional.** Every will-serve notification and administrative approval of applications for water utility service is conditioned upon the acceptance of the dedication, and the satisfaction of all other service requirements that are established by local ordinance or state law. Any application or renewal, including applications for extension of will-serve commitments is subject to the provisions herein. The parties agree that:

(a) The City is the final authority in determining the number of will-serve commitments which may be granted by the City; and

(b) The City is the final authority regarding the number of will serves that may be serviced by the Water Rights for any development. Such determination shall be based on the criteria established by the City and further established by the State Engineer.

10. **Term of Agreement.** The term of this Agreement shall be for a period of twenty-five (25) years and shall be renewable for one successive twenty-five (25) year period upon application of the Dedicator or the Assignee, and the approval of the City.

(a) It is further understood and agreed between the City and the Dedicator that the Parties must agree to renew this agreement for the subsequent twenty-five year period. The City's decision to approve or reject a renewal of this agreement must be made pursuant to a vote by the Fernley City Council.

(b) The City may reject approval of a renewal of this Agreement **only** if:

(i) The City sends notice of the expiration of the initial twenty-five year term to the record owner of the Water Rights and receives no response within thirty (30) days of such notice; and

(ii) The Dedicator has not complied with the obligations included in this Agreement or does not agree to comply with the obligations of this Agreement during the renewal term of this Agreement.

(c) In the event that this Agreement is terminated, or expires pursuant to the provisions of this section, the City shall retain the title to the Water Rights, regardless of whether the Water Rights have been credited to an existing will-serve commitment.

11. **Notice.** Any notice required pursuant to this Agreement shall be sent via certified mail to the address listed below. Each Party is responsible for informing the other Party of any change in address. Notices from the City, including but not limited to notice of expiration of the 25-year term of this Agreement, shall be made to the address listed below, or to an updated address provided by the Dedicator or Assignee.

Dedicator	**City of Fernley**
John & Sherry Picetti	Department of Public Works
2946 Walker Court	595 Silver Lace Boulevard
Fernley, NV 89408	Fernley, NV 89408

12. **General Conditions.**

(a) **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute but one and the same instrument.

(b) **Governing Law.** This Agreement shall be governed by, interpreted under, and construed and enforced in accordance with the laws of the State of Nevada applicable to agreements made and to be performed wholly within the State of Nevada.

(c) **Venue.** Any action or proceeding concerning the rights or responsibilities of the parties to this Agreement shall be heard and entertained in the State district court in Lyon County, Nevada.

(d) **Entire Agreement.** This Agreement (including any exhibits attached hereto) constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings with respect thereto, including without limitation, that certain memorandum of understanding between the parties. This Agreement may not be modified, changed or supplemented, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The parties do not intend to confer any benefit hereunder on any person, firm or corporation other than the parties hereto.

(e) **Survivability.** The parties' rights and responsibilities under this Agreement shall survive the conveyance of the Water Rights by the Dedicator to the City.

(f) **Waivers; Extensions.** No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

(g) **Non-Waiver of Rights.** No failure or delay of either party in the exercise of any

right given to such party hereunder shall constitute a waiver thereof unless the time specified herein for exercise of such right has expired, nor shall any single or partial exercise of any right preclude any other or further exercise thereof or of any other right. The waiver of any breach hereunder shall not be deemed to be a waiver of any other or any subsequent breach hereof.

(h) **Further Assurances.** The parties agree to do such further acts and things and to execute and deliver such additional agreements and instruments as the other may reasonably require to consummate, evidence or confirm the dedication of the above reference water rights or any other agreement contained herein in the manner contemplated hereby.

(i) **Successors and Assigns: Assignment.** This Agreement shall be binding upon and shall inure to the benefit of each of the City and the Dedicator and to their respective heirs, successors and assigns.

(i) The City shall have the right to assign its interest in this Agreement in whole or in part to any successor agency, subsidiary, or entity with jurisdiction to supply water service to customers within the City of Fernley, in which case, the references to the City herein shall include such assignee, and provided that such assignee assumes all of the obligations of the City under this Agreement by written instrument.

(ii) Any such assignment shall not relieve any party of its obligations under this Agreement. Any attempt to transfer, convey or assign this Agreement other than as provided herein shall be null and void.

(j) **Time.** Time is of the essence in respect to each and every particular of this Agreement. Any time period to be computed pursuant to this Agreement shall be computed by excluding the first day and including the last. If the last day falls on a Saturday, Sunday or holiday, the last day shall be extended until the next business day that the City is open for business, but in no case will the extension be for more than four (4) days.

(k) **Severability.** The determination that any covenant, agreement, condition or provision of this Agreement is invalid shall not affect the enforceability of the remaining covenants, agreements, conditions or provisions hereof and, in the event of such determination, this Agreement shall be construed as if such invalid covenant, agreement, condition or provision were not included herein.

(l) **Delivery of Deed and Warranty.** The Dedicator shall deliver a Water Rights Grant Bargain and Sale Deed conveying and dedicating the Water Rights to the City at the time of the execution of this Agreement. Further, the Dedicator shall warrant that it is the legal owner of the Water Rights.

(m) **Indemnification.** The Dedicator and the Assignee agree, jointly and severally, to indemnify the City at all times and hold the City harmless in respect of any claims, damages or losses (including, without limitation, attorney's fees and costs), whether known or unknown, disclosed or undisclosed, arising from, by reason of or in connection with any part or portion of this Agreement. Dedicator hereby represents and warrants it has not sold, assigned, transferred, conveyed, hypothecated, pledged, or otherwise disposed of or encumbered the water rights transferred herein except as provided in this Agreement. Dedicator acknowledges that in the event that any claim or dispute relating to the title of the water rights renders such water rights unusable within, or unavailable to, the City's water delivery system, the City may, at its sole discretion and in addition to any other remedies provided for by law, rescind this Agreement and withhold the will-serve commitments provided for herein. In the event that such will-serve commitments have already been issued, the City, in addition to any other remedies provided by law, may require Dedicator or Assignee, jointly or severally, to immediately acquire and dedicate to the City the same quantity and quality of water rights as the water rights rendered unusable within, or unavailable to, the City's water delivery system and/or the City may assign any other banked or reserved water rights in which Dedicator or Assignee have a beneficial interest, and that remain uncommitted to will-serve commitments, to the will-serve commitments already issued pursuant to this Agreement.

(n) **Attorney's Fees.** In the event of any litigation between the parties hereto arising out of this Agreement, or if one party seeks to judicially enforce the terms of this Agreement, the prevailing party shall be reimbursed for all reasonable costs, including, but not limited to, reasonable attorney's fees.

[signature page follows]

Agreed upon the date set forth above between the following parties:

City of Fernley

_____
Mayor of Fernley

_____
Date:

Attested:

_____
City Clerk

Dedicator

_____
John Edwin Picetti

_____
Date:

_____
Sherry Kim Picetti

_____
Date:

The undersigned hereby affirms that there is no Social Security number contained in this document

LYON CO. APN: 020-471-06

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

AFTER RECORDATION RETURN TO:
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408

SPACE ABOVE THIS LINE FOR RECORDER'S USE

WATER RIGHTS GRANT, BARGAIN, & SALE DEED

THIS WATER RIGHTS DEED is made and entered into this _____ day of _____, 2023, to convey the below-mentioned water rights from JOHN EDWIN PICETTI and SHERRY KIM PICETTI, husband and wife as joint tenants, (hereinafter referred to as "GRANTOR") to the CITY OF FERNLEY, a political subdivision of the State of Nevada (hereinafter referred to as "GRANTEE")

W I T N E S S E T H :

That said GRANTOR, for and in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, and for other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell, and convey to the GRANTEE, and to their successors, heirs, and assigns forever, all of GRANTOR's right, title, and interest in and to those certain waters and water rights situate in Lyon County, State of Nevada, as described as follows, to wit:

> A Fourteen One-Hundredths (0.14) acre-foot/annually portion of Truckee-Carson Irrigation District Serial Number 1019-C-C-C. Said water rights are appurtenant to that certain real property located in Lyon County, State of Nevada described as Lyon County Assessor Parcel Number 020-417-06 and further described as follows:
>
> *The real property situate in the County of Lyon, State of Nevada, described as follows:*
>
> *Lot 5, Block D, as shown on the Official Map of FERNLEY VILLA PARK MOBILE HOME SUBDIVISION, UNIT NO. 1, recorded in the Official*

Records of Lyon County, Nevada on September 26, 1984, as Document No. 88564.

This legal description appeared previously in Document No. 376077, recorded on February 27, 2006, Official Records of Lyon County, Nevada.

TOGETHER WITH all and singular the tenements, hereditaments, and appurtenances thereunto belonging or in anywise appertaining, and any reversions, remainders, rents, issues, or profits thereof.

TO HAVE AND TO HOLD, all and singular, the said water rights and the appurtenances, unto the said GRANTEE, and to their successors and assigns forever.

IN WITNESS WHEREOF the GRANTOR has hereunto executed this WATER RIGHTS GRANT, BARGAIN, & SALE DEED the day and year first written above.

DATED this ___ day of_____, 2023.

GRANTOR:

BY: _____
John Edwin Picetti

BY: _____
Sherry Kim Picetti

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 2023, by John Edwin Picetti.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

STATE OF _____)
: ss.
COUNTY OF_____)

This instrument was acknowledged before me on _____, 2023, by Sherry Kim Picetti.

WITNESS my hand and official seal.

_____
NOTARY PUBLIC

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Derek Starkey, City Engineer**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:x	No:	Yes:	No: x	510-166100

ACTION REQUESTED: Consent

AGENDA ITEM:

Possible action to approve a contract with the Nevada Department of Transportation for the reimbursement of construction costs required to relocate an existing water main within the NDOT 3935 I740 Bridge project.

AGENDA ITEM BRIEF:

Staff is looking for approval to enter into an agreement with the NDOT in order to pay for construction costs associated with NDOT's contractor relocating the City's water main that is in conflict with the NDOT project.

RECOMMENDED MOTION:

I move to approve of the agremeent between NDOT and the City of Fernley to pay for construction costs associated with the relocation of a city water main.

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:

The Council could choose to direct staff to contract with our own contractor in order to complete the work.

BACKGROUND:

In September of 2023, staff was contacted by the Nevada Department of Transportation to talk about the next phase of their project that will rehabilitate and install seismic protection to bridge crossings on Interstate 80. The first bridge in Fernley at Exit 46, located near the Loves and Pilot Travel Stops, is nearing completion. The next bridge is located at Exit 48 which is near the Flying J Travel Center and Walmart. The work at Exit 48 will include widening the existing foundations of the bridge. NDOT and its contractor were preparing for the work and discovered the City's water main is located next to the foundations and will need to be relocated before they can complete the work on the footings.

The City has a revocable encroachment permit with the NDOT to have its waterline within the NDOT's right of way beneath the bridges. As such, if the NDOT requires the utility to be removed or relocated, they can require that the permit holder complete the work at its own expense. The City has similar rights within its right of way and has required communication and power companies to relocate conduits and poles at no expense to the City.

In order to complete the work,the City will need to provide plans to the NDOT's contractor so that they can complete the work. The City will pay for the cost of design, construction and any inspection required. The City selected JUB Engineers to do the work due to their experience working on utility projects and on projects with the City of Fernley.

Since the contract award, staff and JUB Engineers have completed the design work and permitting review with the Nevada Department of Environmental Protection - Bureau of Safe Drinking Water and the Nevada Department of Transportation. Q&D, the contractor for NDOT, has provided their costs for construction and it has been incorporated into a reimbursement contract with NDOT that is attached for your reference.

This work was not budgeted into the current fiscal year's budget. The project costs will be paid for by the water enterprise fund.

Previous action:
October 18, 2023 - City Council approved a design contract with JUB Engineers for engineering design services associated with the project.
January 17, 2024 - City Council considers approval of a reimbursement agreement with NDOT.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

NRS 338 - Public Works

FINANCIAL IMPLICATIONS:

The project cost is $220,201.00 and will be paid out of the water enterprise fund, 510-166100.

ATTACHMENTS:

1. 74046 Fernley Final Revision - 705R Agreement

Project: SPI-080-1(080)
E.A.: 74046
Hwy. Agr. #: R

AGREEMENT FOR THE ADJUSTMENT
OF UTILITY FACILITIES REIMBURSABLE TO STATE

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between the STATE OF NEVADA acting by and through its DEPARTMENT OF TRANSPORTATION, hereinafter referred to as "STATE", and CITY OF FERNLEY, whose mailing address is 595 Silver Lace Blvd, Fernley, NV 89408-8547, hereinafter referred to as "CITY ".

WHEREAS, in the course of construction of Project SPI-080-1(080), E.A. 74046, certain adjustments will have to be made to utility facilities owned by CITY; specifically, STATE or STATE's Contractor shall relocate a 12 inch D.I.P. Water Main located along U.S. Highway 95 Alt. from right of Highway Engineer's Station "C" 236+22 to right of Highway Engineer's Station "C" 239+46 herein referred to as "FACILITIES". Relocations and/or adjustments will be performed by STATE's contractor in accordance with CITY's plans and specifications as provided to the STATE for approval and attached hereto as EXHIBIT "B", and made a part hereof; and,

WHEREAS, CITY has not established a compensable interest in and to the FACILITIES needing relocation; FACILITIES were installed under Revocable Occupancy Permit Number 2-7-96 (Sys. ID #6272), issued January 22, 1996. STATE and CITY shall execute a new Revocable Permit for all of the facilities needing relocation and/or adjustment in the form attached hereto as EXHIBIT "C" and made a part hereof.

WHEREAS, STATE has selected a project contractor technically qualified to perform the required work for Project SPI-080-1(080), E.A. 74046 (Contract 3935) in accordance with state law and shall incorporate CITY's plans attached hereto as EXHIBIT "B" into STATE's Project plans for STATE's contractor to perform the necessary relocation/adjustment to CITY's FACILITIES.

NOW, THEREFORE, STATE and CITY hereby agree as follows:

1.

(A) CITY's signature on this Agreement hereby authorizes STATE's contractor to proceed with the necessary relocation of CITY's FACILITIES per approved plans and specifications provided by CITY. STATE shall cause its contractor to perform said work in a good workman like manner to the reasonable satisfaction of CITY. Said work further, will be performed in accordance with the provisions of Title 23 Part 645, Subpart A, of the Code of Federal Regulations (CFR), hereinafter referred to as 23 CFR Part 645, Subpart A, such federal regulations being incorporated by reference, and Nevada law.

(B) CITY or its assigned subcontractor, will be responsible to perform field inspection and testing services of work performed by the STATE's contractor for compliance with CITY's standards.

(C) CITY is responsible for acceptance of STATE contractor's relocation of CITY's FACILITIES. CITY must inspect and accept such work. STATE shall obtain CITY's written approval of all change orders or extra work, if any, subsequent to the execution of this Agreement and prior to commencement of proposed work. All work installed by STATE's contractor under this Agreement shall become property owned, maintained, and controlled by CITY after CITY's acceptance.

(D) In the event CITY discovers what its inspector believes to be a discrepant condition with regard to the relocation and/or adjustment of its FACILITIES, CITY shall immediately contact the STATE's Resident Engineer or Project Manager and provide him/her with oral notice of the discrepancy, followed by written notice as soon thereafter as reasonably practicable. CITY shall not contact the contractor in effort to stop contractor's work.

(E) CITY agrees to indemnify and hold harmless the STATE from any future liability for work done to or around CITY's FACILITIES during this Project.

(F) STATE does not warrant any of the work performed by its contractor in relocating and/or adjusting CITY's FACILITIES. STATE on behalf of CITY shall require its contractor to repair or replace any defective workmanship within the working-day contract period for the Project.

(G) Under the STATE's contract with its contractor, the contractor is required to adhere to the STATE's STANDARD Specifications for Road and Bridge Construction (2014 edition). As such, within the contract period, should any damage occur to CITY's FACILITIES within the scope of the Project, STATE's contractor will be responsible to remedy the defect(s) to CITY's reasonable satisfaction.

(H) STATE's contractor is responsible for repairing or replacing any defective work during the Project's construction period. If STATE's contractor fails to honor its warranty obligations, CITY may, at its option, remedy the defect in materials or workmanship that develops during the particular construction period. The option and obligation to repair extends to any damage to FACILITIES or work caused by the particular defect or repair of the defect. Should CITY be required to remedy a defect, STATE shall reimburse CITY any resulting amounts it incurred.

(I) STATE's contractor will provide CITY with forty-eight (48) hour notice for on-call inspection. A CITY inspector shall be present at all times that STATE's contractor is working on CITY's FACILITIES. Design changes may be requested by CITY at any time and shall be submitted in writing to STATE's Resident Engineer or Project Manager for final approval. STATE's response of approval or denial shall be in writing. STATE shall provide said response to CITY within five (5) business days. Design changes requested by STATE shall be submitted in writing to CITY's Engineer for review and approval prior to execution of an appropriate change order. CITY shall reply in writing to STATE within five (5) business days. If STATE does not receive a reply, either approving or disapproving the requested changes by the end of the five (5) business day period, it will be deemed that CITY approves the requested changes. If CITY disapproves the requested design change, then the relocation shall be placed on hold, the parties will discuss revising the design and scope of the relocation, and amend the change order as necessary. Changes that delay the Project, increase Project costs, or impact STATE facilities or other utilities will be evaluated on a case-by-case basis.

2. The parties hereto recognize CITY is a self-insured entity and CITY hereby agrees to fully exonerate, indemnify, defend, and hold harmless the State of Nevada, and its departments, divisions, agencies, officers or employees from and against all claims or actions and all expenses incidental to the defense of any such claims or actions, based upon or arising out of damage or injury (including death) to persons or property due to any error, negligence, omission or act of CITY or any person employed by CITY, or any others for whose acts CITY is legally liable. The sums shall include, in the event of any actions, the amount of the judgment, court costs, expenses of litigation, expert witness fees, and reasonable attorney fees.

3. Should CITY elect to utilize an outside contractor to perform field inspection within the work-site, CITY shall require said contractor to maintain, at its own or CITY's expense, worker's compensation and general liability insurance with a single limit of One Million and No/100 Dollars ($1,000,000.00) naming the STATE as an additional insured and to maintain such insurance for the entire period during which the contractor occupies and or conducts field inspection, excavation, construction, and or installation activities within STATE's right-of-way under this Agreement.

The insurance policies shall include a provision requiring a thirty (30) calendar day advance written notice of any modification or cancellation of said policies. All insurance shall be with a CITY having an A.M. Best and CITY, Inc., policyholder rating of A-:VII or better. The insurance provider, CITY's insurance broker, or CITY shall furnish the STATE with insurance policy endorsements, declarations page, and certificates of insurance evidencing such insurance before commencement of field inspection, excavation, construction, installation, and or occupancy of said right-of-way.

4. The total estimated cost for performing the adjustments on behalf of CITY is TWO HUNDRED TWENTY THOUSAND TWO HUNDRED ONE AND 00/100 DOLLARS ($220,201.00). ZERO AND 00/100 DOLLARS ($0.00) is attributable to salvage credits and ZERO AND 00/100 DOLLARS ($0.00) is attributable to voluntary betterments undertaken by CITY. Details of the estimated costs are set forth in EXHIBIT "A" attached hereto and made a part hereof. Actual costs might exceed this estimated amount. STATE in its sole discretion may charge up to TWELVE percent (12%) Construction Engineering to all or part of the above adjustment costs.

CITY shall pay STATE's invoices in accordance with Paragraph 6 below. Under this Agreement, cost or costs include without limitation those items provided for in NRS 408.407, NAC 408.303 through 408.379, inclusive, and 23 CFR § 645.117.

5. The parties designate that the method of developing the adjustment costs shall be actual direct and related indirect costs to be accumulated in accordance with an approved work order accounting system or procedure prescribed by the applicable Federal or State regulatory body in accordance with the provisions of 23 CFR Part 645, Subpart A.

6. STATE shall submit to CITY the original plus one (1) copy of a detailed, itemized statement showing all the costs for which STATE is claiming reimbursement in connection with a final billing or progress billing. CITY shall reimburse STATE for all appropriate charges in accordance with the provisions of 23 CFR Part 645, Subpart A. CITY shall, within sixty (60) calendar days after it receives the monthly progress billing, pay STATE the amount of that billing. During that 60-day period, CITY’s assigned inspector may verify that the work has been performed and the items for which the monthly billing applies have been purchased for use on the described Project.

7. The accounts and records of CITY and STATE pertaining to the relocation shall be subject to audit by representatives of STATE and/or the Federal Highway Administration for a period of three (3) years after STATE closes its Project. CITY shall retain the financial records relating to the adjustments and shall make the records available for inspection by representatives of STATE and/or the Federal Highway Administration upon request during the course of the adjustments and for a period of not less than three (3) years after STATE has provided CITY with written notification of the Project’s closure.

8 All notices or other communications required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by telephonic facsimile with simultaneous regular mail, or mailed certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other Party at the address set forth below:

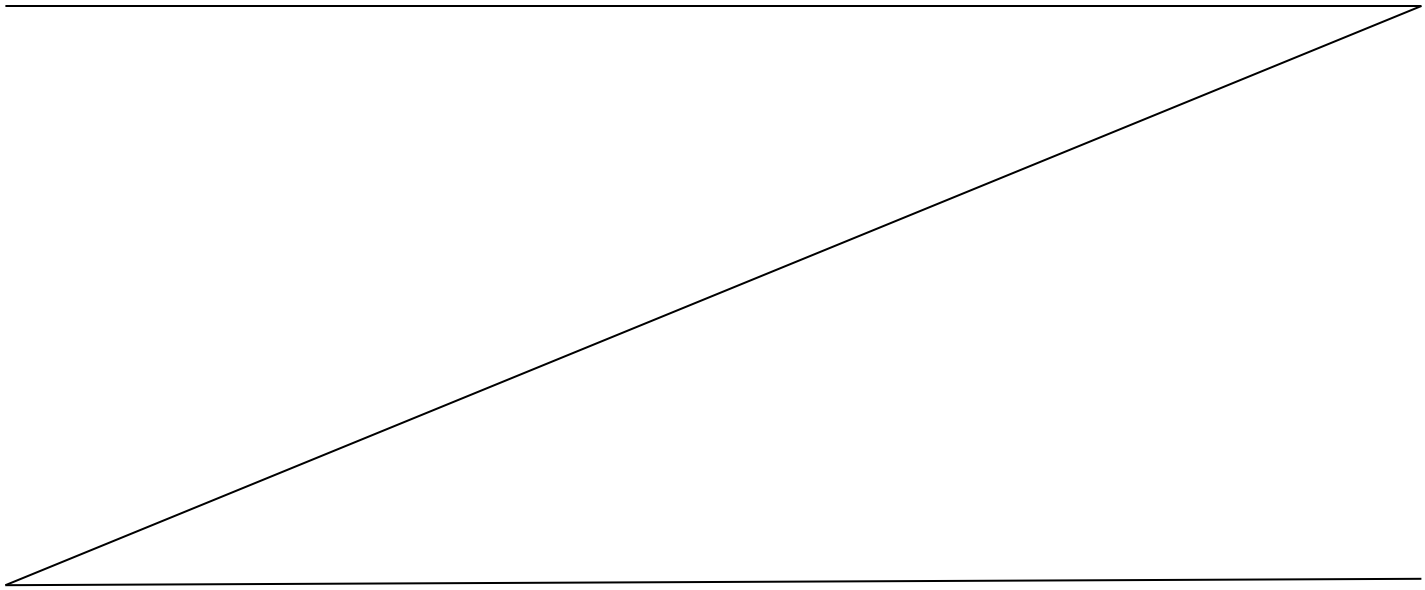
FOR STATE: STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
William Grennan, Assistant Chief R/W Agent
1263 S. Stewart Street
Carson City, NV 89712
Phone: 775-888-7292
E-mail: wgrennan@dot.nv.gov

FOR CITY: Derek Starkey, City Engineer
City of Fernley
595 Silver Lace Blvd
Fernley, NV 89408-8547
Phone: (775) 784-9918
E-mail: dstarkey@cityoffernley.org

9. This Agreement and the rights and obligations of the Parties hereto shall be governed by, and construed according to, the laws of the State of Nevada. The Parties consent to the exclusive jurisdiction of the Nevada state district courts for enforcement of this Agreement.

10. It is specifically agreed between the Parties executing this Agreement that it is not intended by any of the provisions of any part of this Agreement to create in the public or any member thereof a third party beneficiary status hereunder, or to authorize anyone not a Party to this Agreement to maintain a suit for personal injuries, property damage, contract damages, or for any reason whatsoever, pursuant to the terms or provisions of this Agreement.

11. The Parties hereto represent and warrant that the person executing this Agreement on behalf of each Party has full power and authority to enter into this Agreement and that the Parties are authorized by law to perform the services set forth herein.



12. This Agreement constitutes the entire agreement of the Parties and such is intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other agreements that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Agreement specifically displays a mutual intent to amend a particular part of this Agreement, general conflicts in language between any such attachment and this Agreement shall be construed consistent with the terms of this Agreement. Unless otherwise expressly authorized by the terms of this Agreement, no modification or amendment to this Agreement shall be binding upon the Parties unless the same is in writing and signed by the respective Parties hereto and approved as to the legality and form by the Attorney General.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their officials, thereunto duly authorized, on the date first above written.

CITY

By: _____
Neal McIntyre, Mayor

APPROVED AS TO LEGALITY AND FORM:

_____

STATE OF NEVADA
COUNTY OF _____

This instrument was acknowledged before me on _____ by _____ as _____ of _____.

_____
(Notary)

ACKNOWLEDGED BY:

Bhupinder Sandhu, Acting District Engineer

REVIEWED AND RECOMMENDED BY:

Craig Reynoldson, Chief Right-of-Way Agent

APPROVED AS TO LEGALITY AND FORM:

, Deputy Attorney General

STATE OF NEVADA, acting by and through its
DEPARTMENT OF TRANSPORTATION

Sajid Sulahria, P.E., Deputy Director

STATE OF NEVADA
CARSON CITY

On this _____ day of _____, 20___, personally appeared before me, the undersigned, a Notary Public in and for Carson City, State of Nevada, _____personally known (or proved) to me to be the _____ Director of the Department of Transportation of the State of Nevada who subscribed to the above instrument for the Nevada Department of Transportation under authorization of Nevada Revised Statutes (NRS) Chapter 408.205; that he affirms that the seal affixed to said instrument is the seal of said Department; and that said instrument was executed for the Nevada Department of Transportation freely and voluntarily and for the uses and purposes therein mentioned.

S
E
A
L

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

A23-147

EXHIBIT "A"

Estimated Costs

(attached separately)

NDOT I740 Bridges 11/20/2023

CITY OF FERNLEY- 12" Water Main Relocation

Item	Description	Est Qty	Unit	Unit Price	Total Price
1	12" RJ DIP CL350 WATER MAIN w/POLYWRAP, COMPLETE IN PLACE	350	LF	$ 225.00	$ 78,750.00
2	RETIRE EXISTING 12" WATER MAIN	305	LF	$ 64.00	$ 19,520.00
3	12" GATE VALVE	1	EA	$16,500.00	$ 16,500.00
4	PERMANENT BITUMINOUS PAVEMENT PATCH	2100	SF	$ 16.00	$ 33,600.00
5	2" MILL AND INLAY WITH OPEN GRADE	5630	SF	$ 4.50	$ 25,335.00
6	MISC SURFACE RESTORATION	540	SF	$ 22.00	$ 11,880.00
7	4" SOLID WHITE PAINTED STRIPE	343	LF	$ 6.00	$ 2,058.00
8	4" DOUBLE SOLID YELLOW PAINTED STRIPE	343	LF	$ 6.00	$ 2,058.00
9	RUNOFF CONTROL PLAN (BMPs)	1	LS	$ 1,500.00	$ 1,500.00
10	MOB/DEMOB	1	LS	$22,000.00	$ 22,000.00
11	TRAFFIC CONTROL	1	LS	$ 7,000.00	$ 7,000.00
			Grand Total		$ 220,201.00

Item	Notes
1	Includes all labor, equipment, and materials required to complete the installation of the water main, including, but not limited to, coordination of delivery, inspection and storage of materials; removal and disposal of existing improvements regardless of material; trench excavation (including haul and disposal of unusable and excess excavated material); furnishing and installing all restrained joint pipe, fittings, restraints, concrete thrust blocks, and locator wires; laying and jointing pipe; pipe bedding, trench backfill and compaction; companion flange with 2-inch temporary flush assembly; water main testing, disinfection, flushing, care and transportation of testing samples to laboratory; and clean-up.
2	Includes cutting of existing water main piping, providing and installing appropriate sized cap. This item includes and trenching, removal and disposal of existing improvements as needed, grout placement, cap, and all requred appurtenances to retire the water main as shown on the plans, including, backfill, and compaction
3	Includes all labor, equipment, and materials required to complete the installation of the gate valve, including, but not limited to, coordination of delivery, inspection and storage of materials; valve assembly, restraints, anchor block, locate wire, conductor pipe, valve box, concrete collar, and other necessary appurtenances,
4 thru 11	Work is being completed in association with NDOT Contract 3935. All work shall conform to NDOT Standard Specifications for Road and Bridge Construction, 2014 Edition, and NDOT Standard Plans for Road and Bridge Construction, 2022 Edition. Traffic Control shall conform to MUTCD current edition and NDOT Standard Plans. Contractor shall submit Location Specific Traffic Control Plans. Dense-Grade and Open-Grade plantmix bituminous pavement shall be a previously approved NDOT mix, within the past 12 months

EXHIBIT "B"

Drawings

(attached separately)

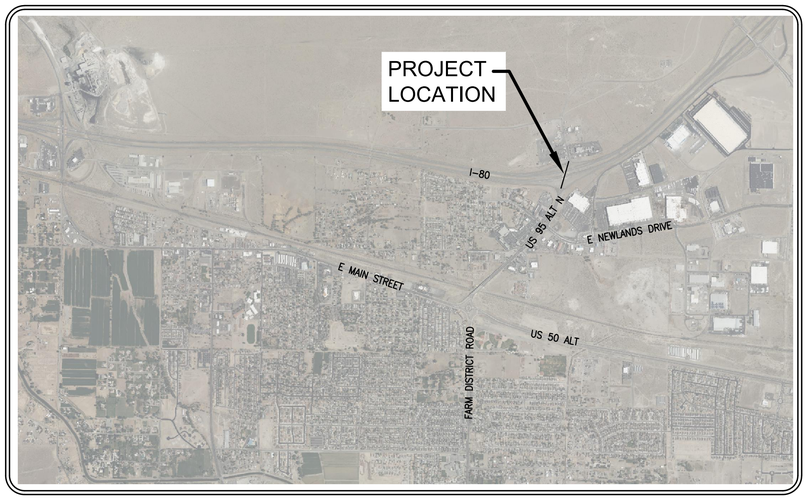
US HIGHWAY 95A N
WATER MAIN RELOCATION - I740 BRIDGES

FERNLEY LYON COUNTY NEVADA

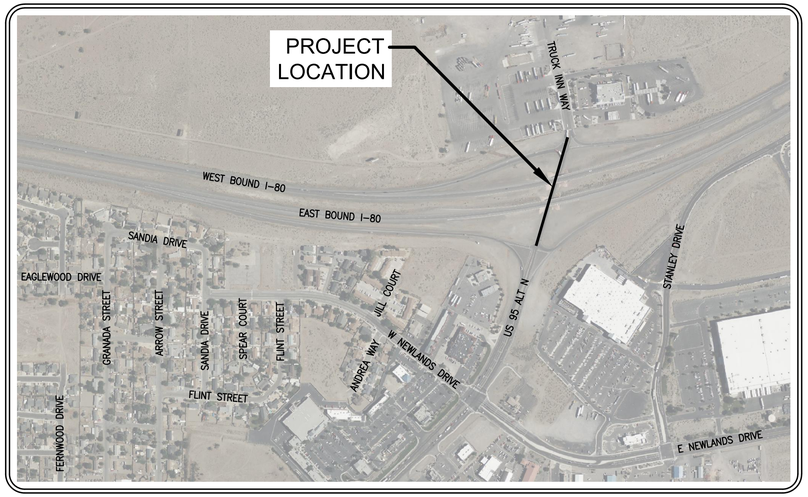
NDOT CONTRACT 3935
SECTION 7, T20N, R25E

INDEX OF SHEETS

SHEET NO.	DRAWING NO.	DESCRIPTION
1	C-1	COVER SHEET
2	C-2	GENERAL NOTES AND LEGENDS
3	C-3	MATERIAL SPECIFICATIONS
4	C-4	SHEET INDEX MAP
5	W-1	PLAN AND PROFILE
6	W-2	PLAN AND PROFILE
7	R-1	SURFACE RESTORATION
8	D-1	CONNECTION DETAILS
9	D-2	DETAILS
10	TC-1	NDOT TRAFFIC CONTROL



VICINITY MAP
SCALE: 1" = 2000'



LOCATION MAP
SCALE: 1" = 500'

PREPARED & SUBMITTED BY:

PROFESSIONAL ENGINEER STATE OF NEVADA — MICHAEL J. WILHELM — Exp: 6-30-24 — CIVIL — No. 16371

MIKE WILHELM, PE — PROJECT MANAGER — 10/31/2023 — DATE

BEARING SOURCE:

BEARINGS OF THIS MAP WERE DERIVED FROM NEVADA STATE PLANE COORDINATES NAD 83/94 DATUM WEST ZONE, WITH A MEAN CONVERGENCY OF -0°24'59". USING LOCAL CONTROL POINTS: MYL001X, X 339 X AND 3 HJH AS FIXED AND IS FURTHER ARCHIVED AT NDOT UNDER FILE LPN1027. COORDINATES AND DISTANCES REFLECT A SINGLE COMBINATION GROUND TO GRID FACTOR OF 0.9997550600 AND HAVE BEEN CONVERTED TO FEET. MONUMENTS ARE STAMPED WITH "NDOT" AND MONUMENT NAME UNLESS NOTED IN DESCRIPTION.

VERTICAL DATUM:

ELEVATIONS ARE BASED UPON NAVD88 HOLDING PUBLISHED USC & GS BENCH MARK: A 22 (4158.633), F 442 (4048.352), & Y 339 (4157.147), A 441 (4132.899) AND B 340 (4154.998) AS FIXED.

CITY OF FERNLEY
DEREK STARKEY, P.E.
CITY ENGINEER

INSPECTOR
TBD
Cell Phone: 775-XXX-XXXX

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Know what's below. Call before you dig.

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C-1
SHEET 1 OF 10

49-23-035

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Nov 09, 2023 - 3:34pm

GENERAL NOTE FOR ALL DETAILS

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

GENERAL NOTES FOR WATER

1. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA AND CHAPTER 618 OF NRS, IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE COMPLETION OF THIS PROJECT.
2. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK ACCORDING TO GENERALLY ACCEPTED CONSTRUCTION PRACTICES.
3. ALL UNDERGROUND VALVES LARGER THAN 2", TEES, ETC., SHALL BE COATED IN MASTIC.
4. NOTIFY CITY OF FERNLEY 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
5. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS; MIN 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45; AIR ENTRAINMENT 6% ± 1.5%; SLUMP AT 1 TO 4 INCHES; ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURERS RECOMMENDATIONS.
6. NO OTHER UTILITIES MAY BE PLACED IN A WATER OR SEWER TRENCH.
7. CONTRACTORS SHALL COMPLY WITH HOST EMPLOYER (NDOT) SAFETY PROGRAM AND IS RESPONSIBLE FOR REVIEWING HOST EMPLOYER'S SAFETY PROGRAM. CONTRACTOR AT PRE-BID SHALL FURNISH CITY OF FERNLEY SAFETY RECORDS FROM THE LAST THREE YEAR PERIOD AND A COPY OF ITS OWN COMPANY SAFETY PROGRAM.
8. ALL VALVE BOXES, MANHOLE STRUCTURES, AND CLEANOUTS SHALL BE MARKED AND ACCESSIBLE AT ALL TIMES.
9. FOR DETAILS NOT SHOWN, REFER TO CITY OF FERNLEY PUBLIC WORKS DESIGN STANDARDS, JUNE 2008.
10. THE CITY OF FERNLEY IS RESPONSIBLE FOR FURNISHING QUALIFIED SITE INSPECTIONS DURING CONSTRUCTION OF PUBLIC IMPROVEMENTS.
11. CITY OF FERNLEY SHALL APPROVE OF THE INSPECTOR & TESTING FIRM PRIOR TO CONSTRUCTION.
12. THE INSPECTOR SHALL INVENTORY ALL CONSTRUCTION MATERIALS TO ENSURE QUALITY CONTROL. REJECTION OF DEFECTIVE MATERIALS MUST BE COORDINATED WITH CITY OF FERNLEY.
13. CONTRACTOR IS RESPONSIBLE TO MAKE FIELD MEASUREMENTS TO LOCATE AND SIZE EXISTING FACILITIES OR UNDERGROUND UTILITIES.
14. PLACE CHLORINE TABLETS IN WATER LINES AS FOLLOWS: 3 TABLETS PER 6" DIAMETER OF LINE; 4 TABLETS PER 8" DIAMETER LENGTH OF LINE; 5 TABLETS PER 10" DIAMETER LENGTH OF LINE; 6 TABLETS PER 12" OR GREATER DIAMETER LENGTH OF LINE; TABLETS MUST BE GLUED AT EQUALLY SPACED INTERVALS TO INSIDE OF PIPE USING APPROVED ADHESIVE. DISINFECTION SHALL MEET AWWA STANDARD C651.
15. CONTRACTOR SHALL SUBMIT CUT SHEETS & SHOP DRAWINGS FOR REVIEW TO THE PROJECT ENGINEER, AND/OR THE UTILITY ENGINEER PRIOR TO ORDERING CONSTRUCTION MATERIALS. A SIGNED SET OF DRAWINGS MUST ALWAYS BE AVAILABLE ONSITE DURING CONSTRUCTION.
16. PER THE CITY OF FERNLEY RULES AND REGULATIONS, SECTION 1.04.054, A BOND MUST BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.

WATER MAIN PRESSURE & BACTERIA TESTING

1. CONTRACTOR SHALL MAINTAIN TEST PRESSURE WITHIN 5 PSI FOR A PERIOD OF 2 HOURS. TEST PRESSURE SHALL BE 150 AND 200 PSI, PER PRESSURE ZONE, AS INDICATED ON PLANS.
2. ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING:

$$\text{ALLOWABLE LEAKAGE (GALLONS PER HOUR)} = \frac{SD\sqrt{P}}{133{,}200}$$

WHERE S=LENGTH OF PIPE IN TEST SECTION (FEET)
D = PIPE DIAMETER (INCHES)
P = TEST PRESSURE (PSIG)

3. LEAKAGE SHALL BE MEASURED BY THE VOLUME OF WATER REQUIRED TO MAINTAIN THE TEST PRESSURE WITHIN 5 PSI FOR THE TEST PERIOD, NOT THE DROP IN PRESSURE.
4. INSPECTOR IS RESPONSIBLE FOR OBTAINING AND DELIVERING TESTING LAB SAMPLE BOTTLES AND COLLECTING SAMPLES FOR BACTERIA TESTING. INSPECTOR SHALL PRESENT TEST RESULTS TO THE UTILITY.

UTILITY LEGEND

- (E) STORM DRAIN PIPE W/MH
- (E) STORM DRAIN CATCH BASINS
- (E) SANITARY SEWER PIPE W/MH
- (E) SANITARY SEWER SERVICE LATERAL
- (E) SANITARY SEWER CLEANOUT
- (P) WATER MAIN W/VALVE AND HYDRANT
- (E) WATER MAIN W/VALVE AND HYDRANT
- (P) WATER SERVICE
- (E) WATER SERVICE
- (E) WATER MAIN ABANDONED/RETIRED
- (E) OVERHEAD COMMUNICATIONS W/POLE
- (E) GAS LINE W/VALVE
- (E) MONUMENT

WATER LEGEND

- 11° ELBOW
- 22° ELBOW
- 45° ELBOW
- 90° ELBOW
- FIRE HYDRANT W/VALVE
- REDUCER
- TEE W/VALVES
- VALVE
- THRUST BLOCK
- TEST STATION
- TRANSITION COUPLING

ABBREVIATIONS

ARV	AIR RELEASE VALVE
ASSY	ASSEMBLY
BOT	BOTTOM (OF PIPE)
BOV	BLOW-OFF VALVE
CL	CENTERLINE
CONST	CONSTRUCT
CTS	COPPER TUBE SIZE
DI OR DIP	DUCTILE IRON PIPE
DIA	DIAMETER
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
EX.	EXISTING
FCA	FLANGE COUPLING ADAPTER
FH	FIRE HYDRANT
FLG OR FL	FLANGE
FVA	FLUSH VALVE ASSEMBLY
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
IE	INVERT ELEVATION
MJ	MECHANICAL JOINT
MRJ	MECHANICALLY RESTRAINED JOINT
OD	OUTSIDE DIAMETER
PL OR P/L	PROPERTY LINE
PE	PLAIN END
PO	PUSH ON
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RFCA	RESTRAINED FLANGE COUPLING ADAPTER
ROW OR R/W	RIGHT OF WAY
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
STL	STEEL
TB	THRUST BLOCK
TS	TEST STATION
TYP	TYPICAL
W	WATER
W/	WITH
XING	CROSSING

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MICHAEL J. WILHELM
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10/31/23

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NO.	DESCRIPTION	BY	APP'L	DATE
	REVISION			

WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

GENERAL NOTES AND LEGENDS

FILE : 49-23-035_C-2_C-3
JUB PROJ. # : 49-23-035
DRAWN BY: CWH
DESIGN BY: CWH
CHECKED BY: MW
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 11/1/2023

DRAWING:
C-2

SHEET: 2 OF 10

Plot Date:11/9/2023 3:35 PM Plotted By: Mike Wilhelm
Date Created:11/1/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITYPROJECTS\49-23-035_NDOTWATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_C-2_C-3.DWG

MATERIAL SPECIFICATIONS

1. **ALL MATERIALS IN CONTACT WITH WATER SHALL BE NSF61 CERTIFIED.**

2. THESE MATERIAL SPECIFICATIONS SUPPLEMENT THE TECHNICAL SPECIFICATIONS, THE CITY OF FERNLEY ENGINEERING & CONSTRUCTION STANDARDS, AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "ORANGE BOOK", LATEST EDITION. AND DISPCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CITY OF FERNLEY PROJECT REPRESENTATIVE FOR RESOLUTION.

3. DUCTILE IRON PIPE:

   ALL PIPE MATERIALS AND APPURTENANCES SHALL BE PER THE CITY OF FERNLEY ENGINEERING & CONSTRUCTION STANDARDS, UNLESS MODIFIED/AMENDED HEREIN. INSTALLATION, WORKMANSHIP, PRESSURE TESTING AT 150 PSI, AND DISINFECTION SHALL BE PER THE CITY OF FERNLEY DESIGN STANDARDS.

   ALL DUCTILE IRON PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARDS C151, C104 AND C111 WITH PRESSURE CLASS AS SPECIFIED IN THE IMPROVEMENT PLANS. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE ENCASED WITH V-BIO ENHANCED POLYWRAP WITH A THICKNESS OF 8 MIL. FILM SHALL BE A 3 LAYER CO-EXTRUDED LINEAR LOW DENSITY POLYETHYLENE (LLDPE) FILM THAT CONFORMS TO ANSI/AWWA/ASTM (C105/A21.5/A674). DUCTILE IRON PIPE SHALL BE EQUIPPED WITH TYTON TYPE BELL AND SPIGOT JOINTS. DUCTILE IRON PIPE SHALL BE TYTON JOINT DUCTILE IRON PIPE AS MANUFACTURED BY U.S. PIPE, GRIFFIN TYTON JOINT DUCTILE IRON PIPE AS MANUFACTURED BY GRIFFIN PIPE PRODUCTS CO., INC. OR APPROVED EQUAL.

4. GATE VALVES:

   GATE VALVES FOR SIZES UP TO AND INCLUDING 12-INCHES SHALL MEET AWWA C509 OR C515, NON-RISING STEM, RESILIENT-SEATED VALVES WITH 2-INCH OPERATING NUT FOR BURIED SERVICE. VALVES MEETING THE AWWA C515 STANDARD SHALL HAVE A DUCTILE IRON BODY. 14-INCH AND LARGER GATE VALVES SHALL MEET AWWA C515, DUCTILE IRON BODY AND BONNET, NON-RISING STEM, RESILIENT-SEATED VALVES WITH 2-INCH OPERATING NUT FOR BURIED SERVICE. VALVE ENDS SHALL BE AS SPECIFIED IN THE IMPROVEMENT PLANS. ALL GATE VALVES SHALL BE FUSION EPOXY LINED AND COATED. ALL VALVES SHALL BE POLYETHYLENE ENCASED PER AWWA C105. GATE VALVES UP TO AND INCLUDING 12-INCHES SHALL BE MUELLER 2360 SERIES RESILIENT WEDGE GATE VALVES, AMERICAN AVK COMPANY SERIES 25 RESILENT WEDGE GATE VALVES, OR APPROVED EQUAL.

5. FITTINGS:

   ALL FITTINGS SHALL BE DUCTILE IRON AND MEET THE REQUIREMENTS OF AWWA STANDARDS C110/C153 AND C104 WITH END CONFIGURATIONS AS SPECIFIED IN THE IMPROVEMENT PLANS. FITTINGS SHALL BE POLYETHYLENE ENCASED WITH V-BIO ENHANCED POLYWRAP WITH A THICKNESS OF 8 MIL. FILM SHALL BE A 3 LAYER CO-EXTRUDED LINEAR LOW DENSITY POLYETHYLENE (LLDPE) FILM THAT CONFORMS TO ANSI/AWWA/ASTM (C105/A21.5/A674). FITTINGS SHALL BE ASPHALTIC COATED WITH CEMENT-MORTAR LINING PER AWWA C110/C153 AND C104. FOR FITTINGS WHERE CEMENT-MORTAR LININGS ARE NOT NORMALLY SUPPLIED, SUCH AS CAPS, PLUGS, AND SLEEVES, THE INSIDE OF THESE FITTINGS SHALL BE ASPHALTIC COATED PER AWWA C110/C153 CONFORMING TO ALL APPROPRIATE REQUIREMENTS FOR SEAL COAT PER AWWA C104.

6. RESTRAINED JOINT PIPE AND RESTRAINED JOINT FITTINGS:

   ALL RESTRAINED JOINT PIPING SHALL BE DUCTILE IRON PIPE, UNLESS OTHERWISE SPECIFIED IN THE IMPROVEMENT PLANS. BELL AND SPIGOT PUSH-ON TYPE DUCTILE IRON TYTON JOINTS SHALL BE RESTRAINED USING RUBBER GASKETS WITH STAINLESS STEEL LOCKING SEGMENTS VULCANIZED INTO THE RUBBER GASKETS. RESTRAINED JOINT RUBBER GASKETS FOR PIPE DIAMETER 12" OR SMALLER SHALL BE FIELD LOK 350 GASKETS AS MANUFACTURED BY U.S. PIPE, THE GRIPPER GASKET AS MANUFACTURED BY GRIPPER GASKET LLC, OR APPROVED EQUAL. RESTRAINED JOINT FITTINGS SHALL BE MECHANICAL JOINT (MJ) DUCTILE IRON WITH MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS COMPATIBLE WITH ALL MECHANICAL JOINTS CONFORMING TO ANSI/AWWA C111/A21.11. GLAND BODY, WEDGES, AND WEDGE ACTUATING COMPONENTS SHALL BE CAST FROM GRADE 65-45-12 DUCTILE IRON IN ACCORDANCE WITH ASTM A536. DUCTILE IRON GRIPPING WEDGES SHALL BE HEAT TREATED WITHIN A RANGE OF 370 TO 470 BHN. WEDGE ASSEMBLIES SHALL BE XYLAN FLUOROPOLYMER COATED. CASTING BODIES SHALL BE COATED WITH A POLYESTER BASED POWDER TO PROVIDE CORROSION PROTECTION THAT IS ELECTROSTATICALLY APPLIED AND HEAT CURED. MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS SHALL BE MEGALUG SERIES 1100 FOR DUCTILE IRON PIPE OR MEGALUG SERIES 2000PV FOR C900 PVC PIPE AS MANUFACTURED BY EBAA IRON, INC., STARGRIP SERIES 3000 WITH STANDARD COATING FOR DUCTILE IRON PIPE OR PVC STARGRIP SERIES 4500 WITH STANDARD COATING FOR C900 PVC PIPE AS MANUFACTURED BY STAR PIPE PRODUCTS, OR APPROVED EQUAL.

7. STRAIGHT AND TRANSITION COUPLINGS:

   STRAIGHT AND TRANSITION COUPLINGS SHALL MEET THE REQUIREMENTS FOR AWWA C219. SLEEVE MATERIAL SHALL BE CARBON STEEL OR DUCTILE IRON WITH NSF-61 REGISTERED FUSION-BONDED EPOXY COATING. BOLTS AND NUTS FOR BURIED SERVICE APPLICATIONS SHALL BE 304 STAINLESS STEEL. COUPLINGS SHALL BE DESIGNED SPECIFICALLY FOR THE PIPE MATERIAL/SIZE AND APPLICATION. COUPLINGS SHALL INSTALL WITH A MAXIMUM OF ONE BOLT AT EACH END. STRAIGHT AND TRANSITION COUPLINGS SHALL BE HYMAX 2000 SERIES AS MANUFACTURED BY TOTAL PIPE SOLUTIONS, INC., ROMAC MACRO TWO-BOLT WIDE RANGE DUCTILE IRON COUPLING AS MANUFACTURED BY ROMAC INDUSTRIES, INC., OR APPROVED EQUAL. WHERE CALLED OUT ON PLANS, RESTRAINED FLANGE COUPLING ADAPTERS (RFCA) SHALL BE ROMAC ALPHA, OR APPROVED EQUAL.

8. FLANGED COULING ADAPTERS:

   FLANGED COUPLING ADAPTERS SHALL MEET THE REQUIREMENTS OF AWWA C219. SLEEVE MATERIAL SHALL BE CARBON STEEL WITH NSF-61 REGISTERED FUSION-BONDED EPOXY COATING. BOLTS AND NUTS FOR BURIED SERVICE APPLICATIONS SHALL BE ANSI 304/303 STAINLESS STEEL. FLANGED COUPLING ADAPTERS SHALL BE DESIGNED SPECIFICALLY FOR THE PIPE MATERIAL/SIZE AND APPLICATION AND SHALL INSTALL WITH A MAXIMUM OF ONE BOLT ON THE COMPRESSION END. FLANGED COUPLING ADAPTERS SHALL BE HYMAX 2100 SERIES FLANGED ADAPTERS AS MANUFACTURED BY TOTAL PIPING SOLUTIONS, INC., OR APPROVED EQUAL. WHERE CALLED OUT ON THE PLANS, RESTRAINED FLANGE COUPLING ADAPTERS (RFCA) SHALL BE ROMAC APHA, OR APPROVED EQUAL.

9. FLANGE AND MECHANICAL JOINT T-HEAD BOLTS AND NUTS:

   FLANGE BOLTS AND NUTS: BOLTS AND NUTS SHALL BE CARBON STEEL WITH A MINIMUM 60,000 PSI TENSILE STRENGTH CONFORMING TO ASTM A307, GRADE A. BOLTS SHALL BE STANDARD ANSI B1.1, CLASS 2A COURSE THREADS. NUTS SHALL CONFORM TO ASTM A563 AND BE STANDARD ANSI B1.1, CLASS 2A COURSE THREADS. ALL BOLT HEADS AND NUTS SHALL BE HEXAGONAL. IDENTIFICATION ON THE HEAD OF THE BOLT SHALL BE: A 307 A MECHANICAL JOINT T-HEAD BOLTS AND NUTS: BOLTS SHALL BE ASTM A242 WEATHERING STEEL WITH A MINIMUM YIELD STRENGTH OF 45,000 PSI. ALL T-HEAD BOLTS AND NUTS SHALL BE THREADED IN ACCORDANCE WITH ANSI B1.1, CLASS 2A COURSE THREADS. HEAVY HEX NUTS SHALL BE USED. BOLT HEADS SHALL BE IN ACCORDANCE WITH THE DIMENSIONS OF ANSI/AWWA C111/A21.11-95. FINISH: ALL FLANGE BOLTS AND NUTS AND MECHANICAL JOINT T-HEAD BOLTS AND NUTS SHALL BE FINISHED WITH THE TRIPAC 2000 BLUE COATING SYSTEM TO SIGNIFICANTLY REDUCE THE EFFECTS OF CORROSION, OR APPROVED EQAUL. A MULTI-STEP PROCESS SHALL BE UTILIZED TO CHEMICALLY CLEAN, ABRASIVE BLAST, AND PRIME WITH ZINC/NICKEL PHOSPHATE PRIMER PRIOR TO APPLICATION OF THE XYLAN FLUOROPOLYMER. WEAR RESISTANCE (K-FACTOR) SHALL BE IN THE RANGE OF 6 TO 8 (EXCELLENT) AND MINIMAL EFFECTS SHOULD BE SEEN AFTER A 3,000 HOUR SALT SPRAY TEST CONFORMING TO ASTM B-117. BOLTS AND NUTS FINISHED WITH THE TRIPAC 2000 BLUE COATING SYSTEM DO NOT REQUIRE COATING WITH MASTIC 6" PIPES. FOR 36" PIPES ALL BOLTS AND NUTS SHALL BE COVERED WITH DENSO PETROLEUM TAPE SYSTEM.

10. CORPORATION STOPS FOR 2-INCH TEMPORARY FLUSHING AND TESTING ASSEMBLIES:

    CORPORATION STOPS SHALL BE BALL VALVE, BRASS CONFORMING TO AWWA C900 AND ASTM B-62, AND SUITABLE FOR A WORKING PRESSURE OF 300 PSI. INLET END SHALL BE MALE IRON PIPE THREAD, (MIP) OR AWWA I.P. THREAD, OUTLET END SHALL BE MALE IRON PIPE THREAD (MIP). CORPORATION STOPS FOR 2-INCH TEMPORARY FLUSHING AND TESTING ASSEMBLIES SHALL BE FORD BALLCORP CORPORATION STOPS MODEL # FB500-7 AS MANUFACTURED BY THE FORD METER BOX COMPANY, INC., MUELLER 300 BALL TYPE CORPORATIONS VALVES MODEL # B-2969, OR APPROVED EQUAL.

11. GASKETS:

    NATURAL RUBBER GASKETS WILL NOT BE ACCEPTED. FLANGE GASKETS SHALL BE FULL FACE TYPE WITH PROFILE BY ACIPCO (TORUSEAL®) OR U.S. PIPE (FLANGE-TYTE®), OR APPROVED EQUAL.

12. GROUT FOR PIPE RETIREMENT:

    THE FOLLOWING GROUT MATERIAL SHALL BE UTILIZED FOR RETIREMENT OF EXISTING WATER MAINS. GROUT MATERIALS SHALL CONSIST OF PORTLAND CEMENT AND FLY ASH, AND/OR ADDITIVES. BIODEGRADABLE MATERIALS WILL NOT BE PERMITTED IN THE MIXTURE. THE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 100 P.S.I. IN 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C495 OR C109. GROUT MATERIAL SHALL HAVE LESS THAN 1% SHRINKAGE BY VOLUME. THE VISCOSITY SHALL NOT EXCEED 20 SECONDS IN ACCORDANCE WITH ASTM C939 UNLESS OTHERWISE APPROVED BY THE ENGINEER.

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MICHAEL J. WILHELM
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No. 16371
10/31/23

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NO.	DESCRIPTION	BY	APPR.	DATE
	REVISION			

WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

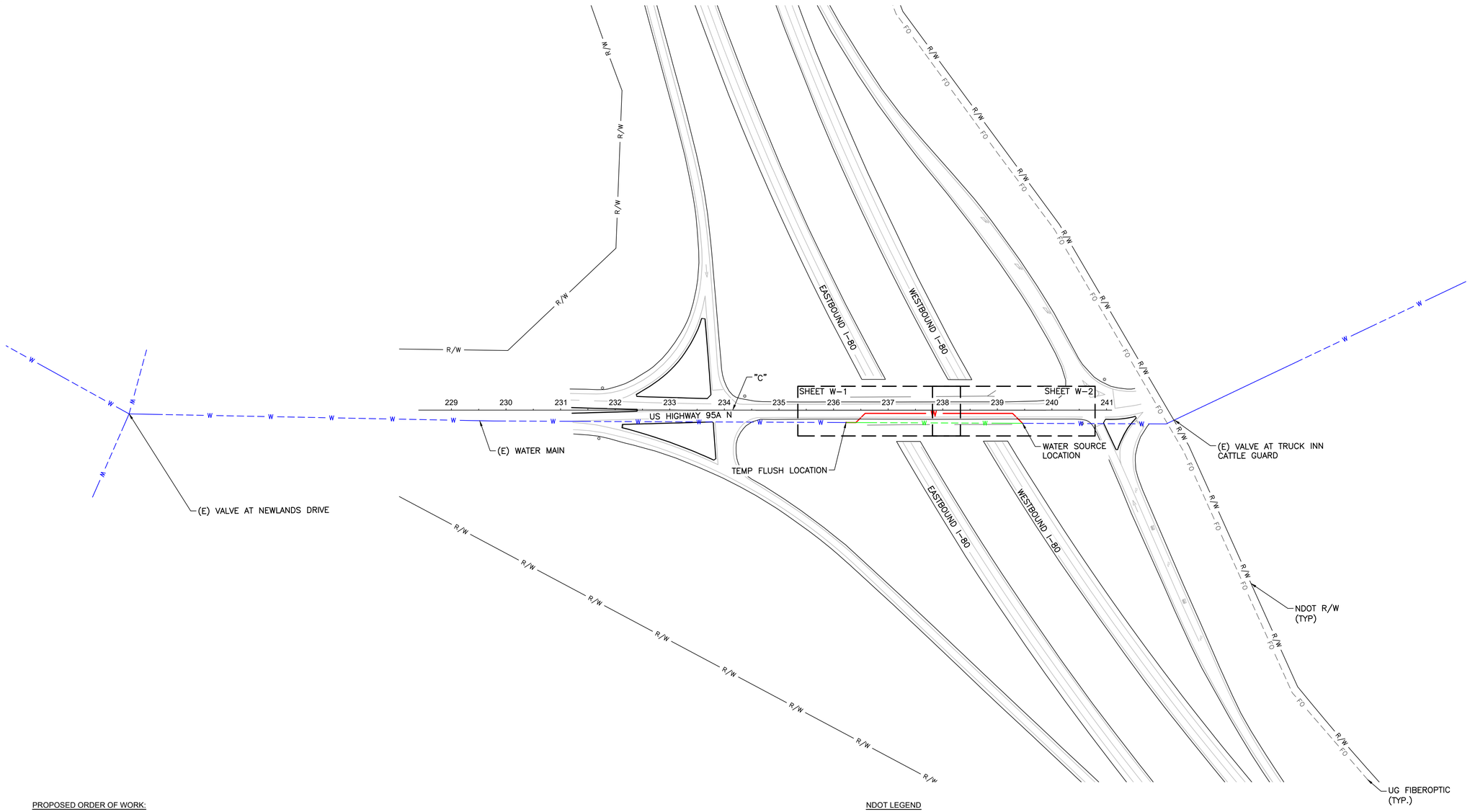
MATERIAL SPECIFICATIONS

FILE : 49-23-035 C-2 C-3
JUB PROJ. # : 49-23-035
DRAWN BY: CWH
DESIGN BY: CWH
CHECKED BY: MW
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 11/1/2023

DRAWING:
C-3

SHEET: 3 OF 10

Plot Date:11/9/2023 3:35 PM Plotted By: Mike Wilhelm
Date Created:11/1/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITYPROJECTS\49-23-035_NDOTWATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_C-2_C-3.DWG



PROPOSED ORDER OF WORK:

1. CONSTRUCT NEW MAIN AND INSTALL TEMPORARY FLUSH ASSEMBLY WHERE INDICATED AND DETAILED ON SHEETS D-1.
2. CLOSE EXISTING VALVES AT THE TRUCK INN CATTLE GUARD AND NEWLANDS DRIVE.
3. CONNECT NEW WATER MAIN TO EXISTING WITH 12" HYMAX COUPLING AT NORTH LOCATION B/D-1. CHARGE NEW MAIN AFTER IMPROVEMENTS ARE COMPLETED AND TRENCH IS BACKFILLED.
4. PRESSURE TEST NEW MAIN AND ALLOW TO DISINFECT (COOK). FLUSH AND BAC-T TEST (TWO TESTS 24 HR APART, FOR EACH SEGMENT). FOLLOWING PASSING BAC-T TEST, PROCEED WITH WORK.
5. NOTIFY ALL CUSTOMERS AFFECTED BY SHUTDOWN AND FOR BOIL WATER NOTICE IF NEEDED PER CITY OF FERNLEY REQUIREMENTS.
6. CUT AND CAP EXISTING MAINS AT SPECIFIED LOCATIONS AND TIE PROPOSED MAIN INTO EXISTING MAIN AT SOUTH LOCATION A/D-1.
7. GROUT FILL RETIRED WATER MAIN.
8. STREET RESTORATION PER SHEET R-1.

NDOT LEGEND

IMPROVEMENTS TO BE INSTALLED

IMPROVEMENTS TO BE REMOVED

IMPROVEMENTS TO REMAIN

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NO.	DESCRIPTION	BY	APPR.	DATE
REVISION				

WATER MAIN RELOCATION - I740 BRIDGES CITY OF FERNLEY

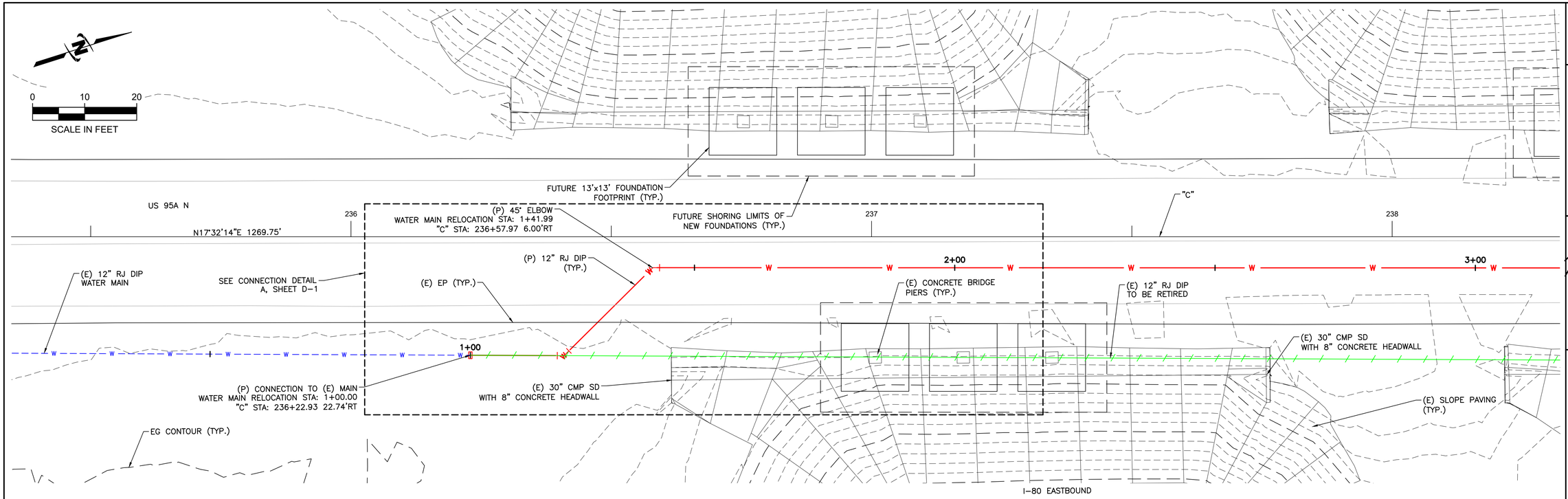
SHEET INDEX MAP

FILE : 49-23-035 C-4
JUB PROJ. # : 49-23-035
DRAWN BY: CWH
DESIGN BY: CWH
CHECKED BY: MW
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 11/1/2023

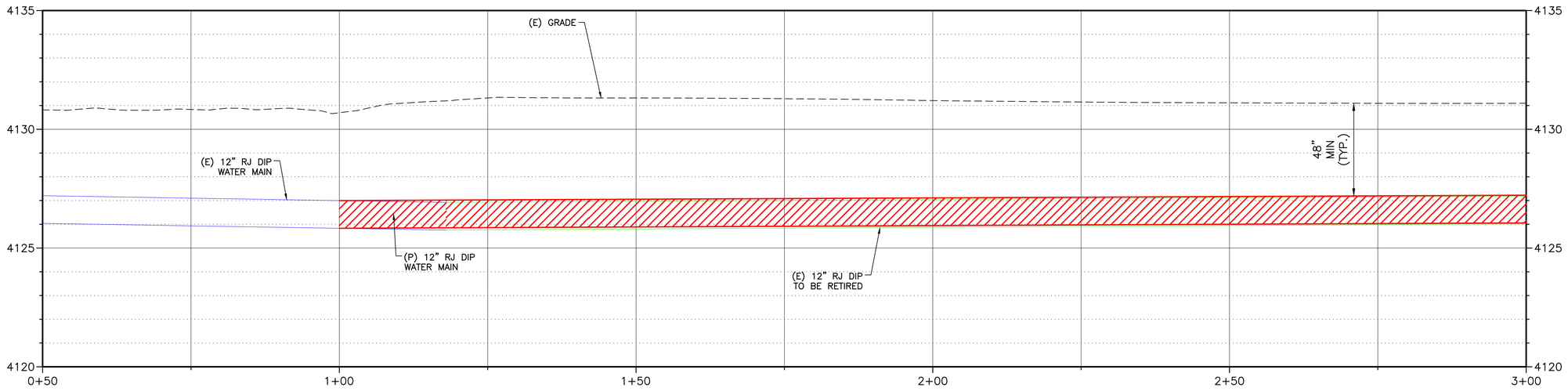
DRAWING:
C-4

SHEET: 4 OF 10

Plot Date=11/3/2023 3:36 PM Plotted By: Mike Wilhelm
Date Created=10/23/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITY\PROJECTS\49-23-035_NDOT\WATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_C-4.DWG



US HIGHWAY 95A N
WATER MAIN RELOCATION STATIONING



100% PLANS

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
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www.jub.com

PROFESSIONAL ENGINEER
MICHAEL J. WILHELM
Exp: 6-30-24
CIVIL
No. 16371
STATE OF NEVADA
10/31/23

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WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

PLAN AND PROFILE
STA. 0+50 TO 3+00

FILE : 49-23-035_W-X
JUB PROJ. # : 49-23-035
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ONE INCH
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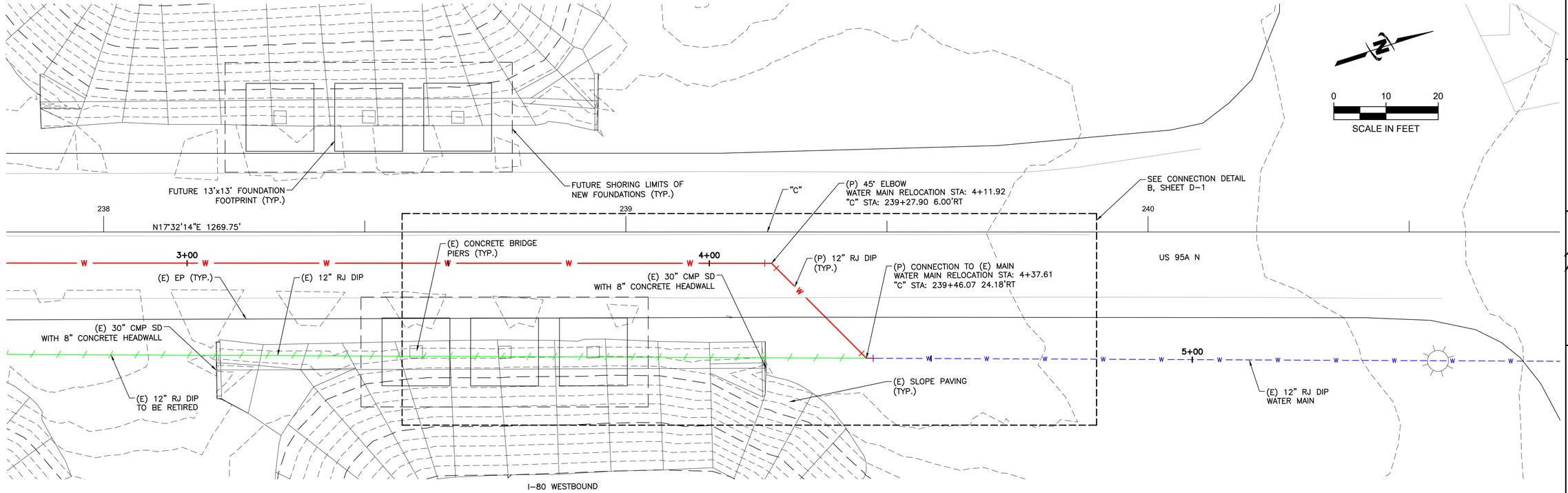
LAST UPDATED: 11/1/2023

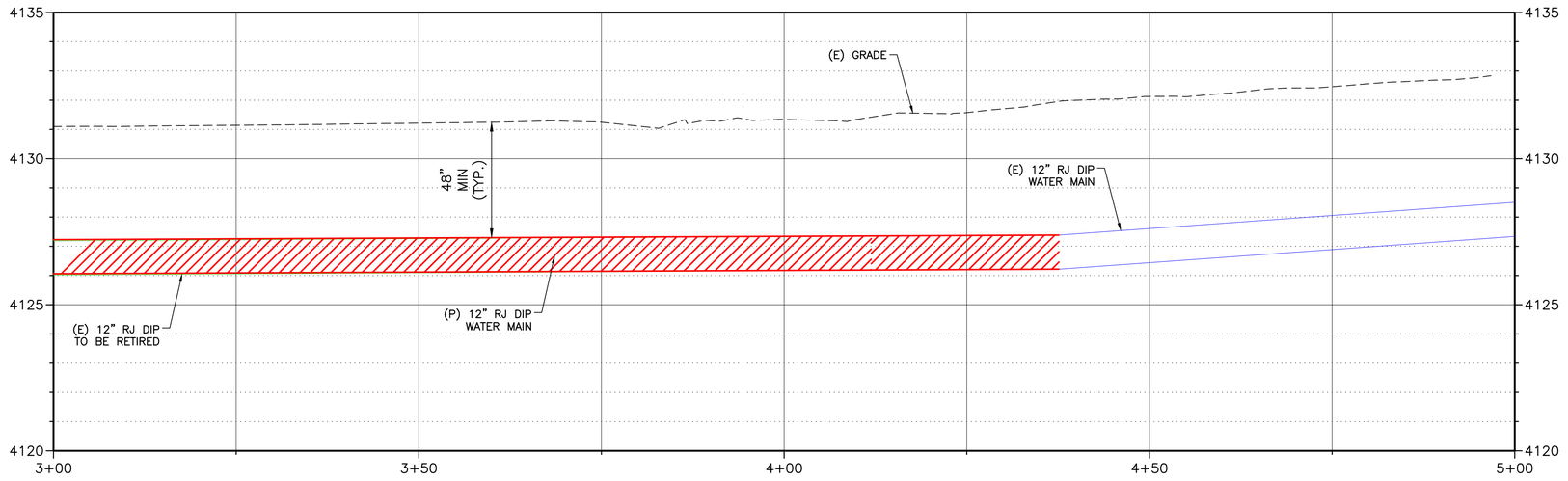
DRAWING:
W-1

SHEET: 5 OF 10

Plot Date:11/9/2023 3:37 PM Plotted By: Mike Wilhelm
Date Created:11/1/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITY\PROJECTS\49-23-035_NDOT\WATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_W-X.DWG



US HIGHWAY 95A N
WATER MAIN RELOCATION STATIONING



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WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

PLAN AND PROFILE
STA. 3+00 TO 5+00

FILE : 49-23-035_W-X
JUB PROJ. # : 49-23-035
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DESIGN BY: CWH
CHECKED BY: MW
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 11/1/2023

DRAWING:
W-2

SHEET: 6 OF 10

Plot Date:11/9/2023 3:37 PM Plotted By: Mike Wilhelm
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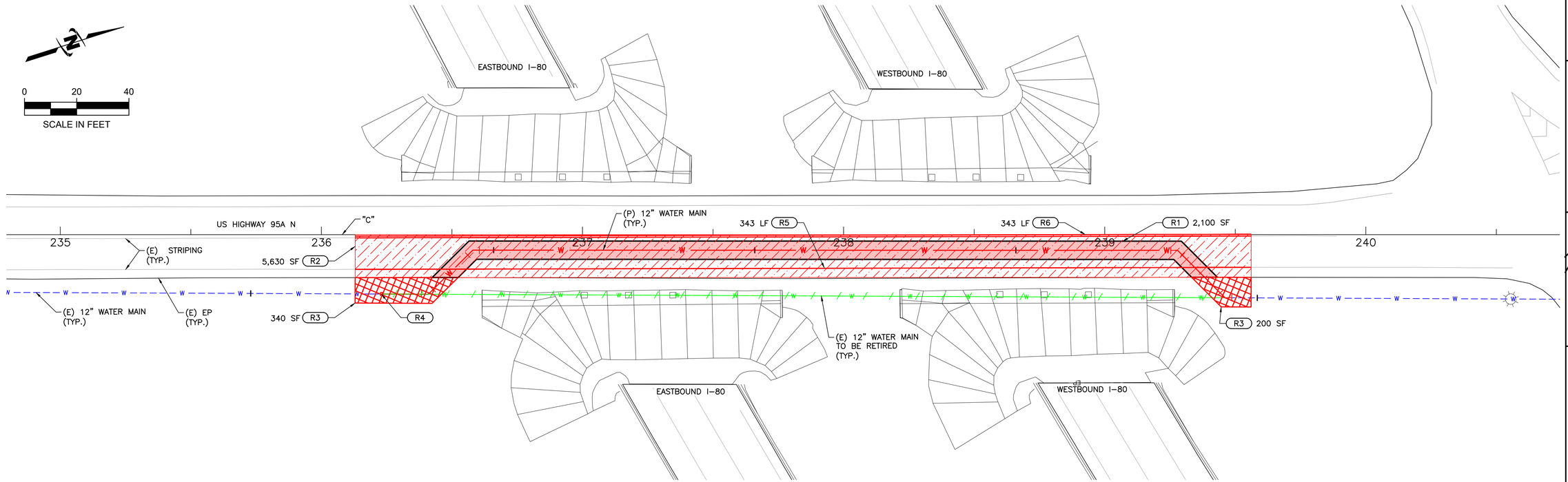

STREET RESTORATION KEY NOTES

KEY NOTE	DESCRIPTION
R1	PERMANENT BITUMINOUS PAVEMENT PATCH, SEE DETAIL 1, SHEET D–2. APPROX. LIMITS SHOWN, CONTRACTOR SHALL FIELD ADJUST AS REQUIRED BY NDOT.
R2	2" MILL AND INLAY WITH OPEN GRADE (WIDTH VARIES), APPROX. LIMITS SHOWN, CONTRACTOR SHALL FIELD ADJUST
R3	MISCELLANEOUS SURFACE RESTORATION – NATURAL GROUND (RETURN TO PRE–CONSTRUCTION CONDITIONS, INCIDENTAL)
R4	ADJUST WATER COLLAR TO FINISHED GRADE, SEE DETAIL 2, SHEET D–2
R5	RE–ESTABLISH 4"–WIDE SOLID WHITE PAINTED LINE
R6	RE–ESTABLISH 4"–WIDE DOUBLE SOLID YELLOW PAINTED LINE

STREET RESTORATION LEGEND

KEY NOTE	HATCHING
R1	
R2	
R3	

1. ALL WORK SHALL BE CONFINED TO THE RIGHTS–OF–WAYS, PERMANENT EASEMENTS, AND TEMPORARY EASEMENTS SHOWN ON THE PLANS. CONTRACTOR IS RESPONSIBLE FOR SECURING ANY CONSTRUCTION STAGING AREAS AND TEMPORARY CONSTRUCTION EASEMENTS THAT MAY BE REQUIRED TO CONSTRUCT THE PROJECT.
2. UNLESS OTHERWISE NOTED, RETAIN AND PROTECT ALL EXISTING FEATURES. REFER TO GENERAL NOTES.
3. GRADE ALL STAGING AREAS AND NATURAL GROUND SURFACE REPAIR AREAS TO PREEXISTING GRADES/SLOPES.
4. ALL LONGITUDINAL LINES SHALL BE PAINTED WITH (2) COATS OF NDOT TYPE II PAINT OR APPROVED EQUAL.
5. ANY REMOVAL OR DAMAGE TO STRIPING OUTSIDE OF LIMITS AS SHOWN, WILL BE RE–STRIPED AT THE CONTRACTOR'S EXPENSE.
6. ALL PAVEMENT MARKINGS AND STRIPING SHALL CONFORM TO AASHTO AND MUTCD SPECIFICATIONS AND REQUIREMENTS FOR STREETS AND HIGHWAYS, LATEST EDITION.
7. CONTRACTOR SHALL CONSTRUCT MINIMUM AGGREGATE BASE DEPTHS AS SHOWN IN DETAILS OR MATCH EXISTING, WHICHEVER IS GREATER.
8. REFERENCE GEOTECHNICAL INVESTIGATION.

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WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

SURFACE RESORATION

FILE : 49-23-035_SURFACE-RESORATION
JUB PROJ. # : 49-23-035
DRAWN BY: CWH
DESIGN BY: CWH
CHECKED BY: MW
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 11/9/2023

DRAWING:
R-1

SHEET: 7 OF 10

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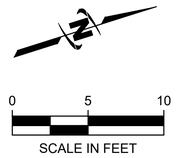
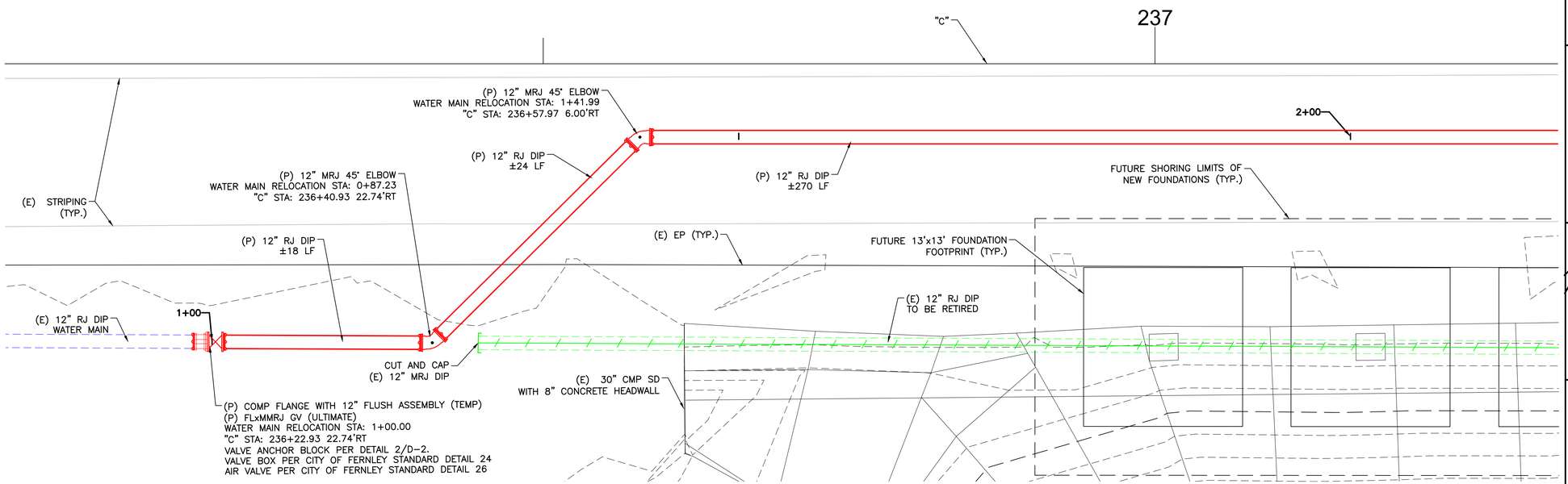
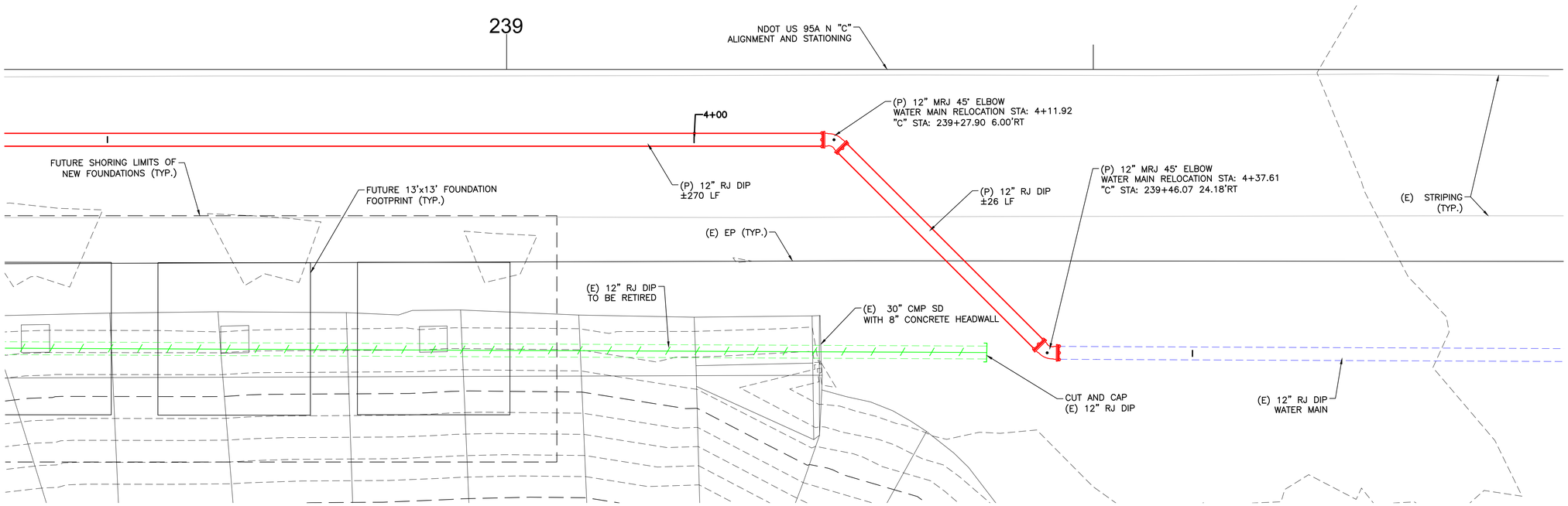
Plot Date:11/9/2023 3:38 PM Plotted By: Mike Wilhelm
Date Created:10/25/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITY\PROJECTS\49-23-035_NDOTWATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_SURFACE-RESORATION.DWG





A SOUTH CONNECTION
SCALE:AS SHOWN



B NORTH CONNECTION
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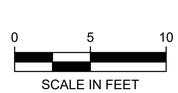

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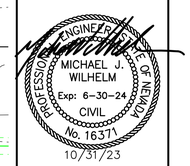

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WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

CONNECTION DETAILS

FILE :	49-23-035 CONN-DETAILS
JUB PROJ. # :	49-23-035
DRAWN BY:	CWH
DESIGN BY:	CWH
CHECKED BY:	MW
ONE INCH	AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:	11/9/2023

DRAWING:
D-1

SHEET: 8 OF 10

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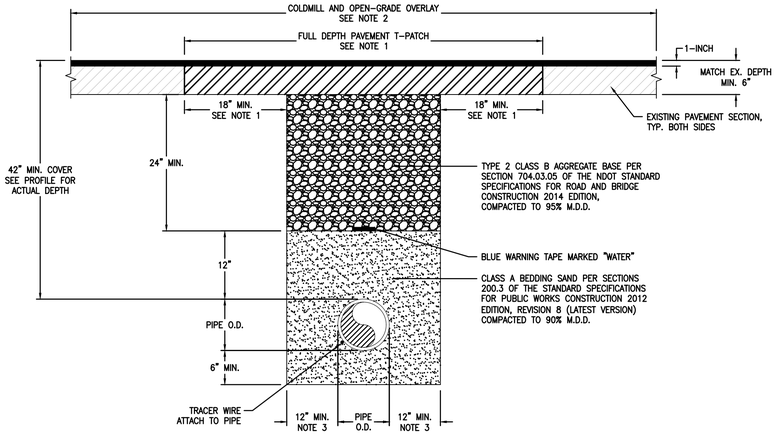
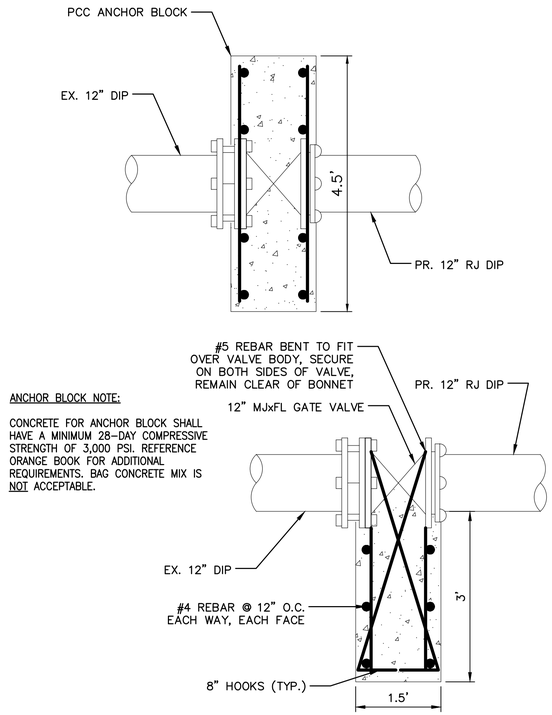
Date Created:11/1/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITYPROJECTS\49-23-035_NDOTWATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_CONN-DETAILS.DWG



NOTES:

1. THE EDGES OF THE PAVEMENT PATCH SHALL BE STRAIGHT AND UNIFORM (EDGES SHALL BE SAW-CUT). DENSE-GRADE ASPHALTIC CONCRETE SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH SECTION 401 OF THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION (NDOT) 2014 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. PAVEMENT MIX DESIGN SHALL BE AS SPECIFIED IN THE NDOT OCCUPANCY PERMIT TERMS AND CONDITIONS.
2. COLDMILL TO A DEPTH OF 2-INCH AND REPLACE WITH OPEN-GRADE ASPHALTIC CONCRETE AS DESCRIBED IN NOTE 1 ABOVE. EXTENTS OF COLDMILL AND OVERLAY SHALL BE FIELD DETERMINED BY THE NDOT INSPECTOR.
3. TRENCH WIDTH DEPICTED IN DETAIL IS A MINIMUM WIDTH. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADDITIONAL BACKFILL MATERIALS AND/OR PAVEMENT PATCH FOR TRENCH WIDTHS IN EXCESS OF THOSE DEPICTED IN THE DETAIL.

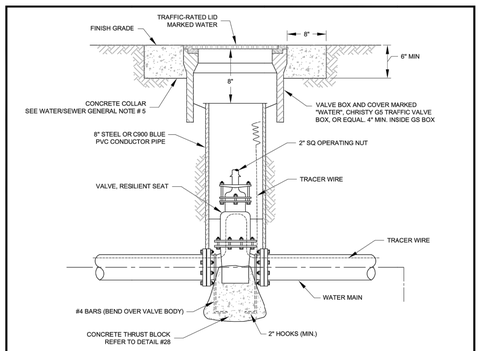
1 / D-2 NDOT R/W TRENCH DETAIL
SCALE:NTS



ANCHOR BLOCK NOTE:

CONCRETE FOR ANCHOR BLOCK SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. REFERENCE ORANGE BOOK FOR ADDITIONAL REQUIREMENTS. BAG CONCRETE MIX IS NOT ACCEPTABLE.

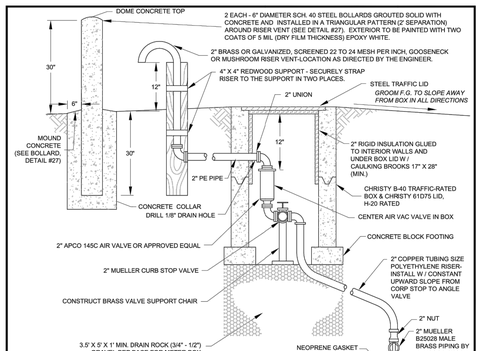
2 / D-2 ANCHOR BLOCK DETAIL
SCALE:NTS



NOTES:

1. GATE VALVE SHALL BE AWWA MUELLER A-2360 RESILIENT SEAT GATE VALVE (OR APPROVED EQUAL).
2. SEE THRUST BLOCK BEARING AREAS FOR THRUST BLOCK SIZE. (SEE DETAIL #28)
3. WHERE CENTER OF PIPE EXCEEDS 5 FOOT DEPTH, PROVIDE EXTENSION STEM WITH STEM GUIDE.
4. ALL VALVES SHALL BE RING TIGHT (RT) RESILIENT SEAT VALVES.
5. VALVES 12" AND SMALLER SHALL BE GATE VALVES AND VALVES LARGER THAN 12" SHALL BE BUTTERFLY VALVES (MUELLER LINESEAL III).
6. CONTRACTOR MUST ENSURE THAT THE VALVE BOX IS CLEAN AND ACCESSIBLE.

VALVE & VALVE BOX	Detail No. 24 WATER	DATE	REVISIONS	BY
		10/04	TRACER WIRE ADDED	MLC
		12/04	NOTE TRAFFIC RATED LID	
		05/07	CHG DOMC TO F, ADD TRACER WIRE	EB



NOTE:

1. ALL VALVES SHALL BE BRONZE OR BRASS. ALL PIPE AND FITTINGS SHALL BE BRASS EXCLUDING VENT PIPE.
2. AIR VALVE SHALL BE BETWEEN 2' TO 4' BEHIND SIDEWALK

AIR VALVE	Detail No. 26 WATER	DATE	REVISIONS	BY
		06/07	GENERAL UPDATES	EB
		11/07	NDEP EDIT: SCREEN IN 2" GOOSENECK	EB

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WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

DETAILS

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JUB PROJ. # : 49-23-035
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LAST UPDATED: 11/9/2023

DRAWING:
D-2

SHEET: 9 OF 10

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325

(1)

ADVANCE WARNING SIGN SPACING

SPEED MPH	DISTANCE BETWEEN SIGNS FT.		
	A	B	C
0 - 20	200	200	200
25 - 30	300	300	300
35 - 40	400	400	400
45 - 50	600	600	600
55 - 80	1000	1600	2640

(2)

TAPER LENGTH AND CHANNELIZING DEVICE SPACING

SPEED MPH	LENGTH FOR MERGING TAPER (L)			TAPER AND CHANNELIZATION DEVICE SPACING FT.
	LANE WIDTH			
	10 FT.	11 FT.	12 FT.	
20	80	80	80	20
25	125	125	125	25
30	150	180	180	30
35	210	245	245	35
40	280	320	320	40
45	450	495	540	45
50	500	550	600	50
55	550	605	660	55 ★
60	600	660	720	60 ★
65	650	715	780	65 ★
70	700	770	840	70 ★
75	750	825	900	75 ★
80	800	880	960	80 ★

★ ON RURAL INTERSTATE HIGHWAYS WHERE THE SPEED LIMIT IS 55 MPH OR GREATER, THE CHANNELIZATION DEVICE SPACING (EXCEPT FOR TAPERS) MAY BE INCREASED TO 80-FEET. WHEN INCREASED DEVICE SPACING IS USED, 3 DRUMS WILL BE PLACED DIAGONALLY AT 0.5-MILE INCREMENTS TO INDICATE THE LANE IS CLOSED

NOTES:

1. Projects with an existing speed limit greater than 55 mph may be temporarily reduced by 10 mph or to 55 mph, whichever is lower, with the concurrence from the Chief Traffic Operations Engineer. Any temporary reductions to a speed lower than 55 MPH may be reduced with concurrence from the Chief Traffic Operations Engineer and a recommendation forwarded by Traffic Operations to the Director for approval.
2. The W1-3 signs shall be used when the recommended speed on a curve is 30 mph or less, the W1-4 signs shall be used when the recommended speed is 35 mph or greater.
3. The W6-3 and R4-1 signs shall be installed alternately at 0.5-mile intervals when the lengths of crossovers exceed 0.5-mile.
4. All regulatory signs (R series) shall be black on retroreflective white.
5. All warning signs (W series) shall be black on retroreflective orange.
6. Warning signs shall be a minimum of 3' x 3' for speeds of 45 mph or less, R2-1 shall be 3' x 4'.
7. Warning signs shall be a minimum of 4' x 4' for speeds of 50 mph or greater, R2-1 shall be 4' x 5'.
8. All device spacing and taper lengths shall be designed based on work zone speed.
9. All crashworthy channelizing devices shall be Drums if the work zone speed is greater than 45 mph or posted above 65 mph.

(3)

BUFFER LENGTH

SPEED MPH	LENGTH FT.
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	920

(4)

SHIFTING TAPER = 1/2 L
SHOULDER TAPER = 1/3 L

≤ 40 MPH	$L = \frac{WS^2}{60}$
≥ 45 MPH	L = WS

S = SPEED (MPH)
L = TAPER LENGTH (FT.)
W = WIDTH OF LATERAL SHIFT (FT.)

TYPICAL APPLICATIONS:

NDOT STANDARD DETAILS TC-2 THRU TC-22 INCLUDE A VARIETY OF TRAFFIC CONTROL METHODS, BUT DO NOT INCLUDE A LAYOUT FOR EVERY CONCEIVABLE WORK SITUATION. TYPICAL APPLICATIONS SHOULD BE ALTERED WHEN NECESSARY TO FIT THE CONDITIONS OF A PARTICULAR TEMPORARY TRAFFIC CONTROL ZONE. FOR ADDITIONAL INFORMATION REFER TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND REVISIONS.

ADVANCE WARNING ARROW PANEL

TYPE	MINIMUM SIZE INCHES	POSTED SPEED
A	48 x 24	30 MPH OR LESS
B	60 x 30	35 MPH TO 50 MPH
C	96 x 48	55 MPH OR MORE

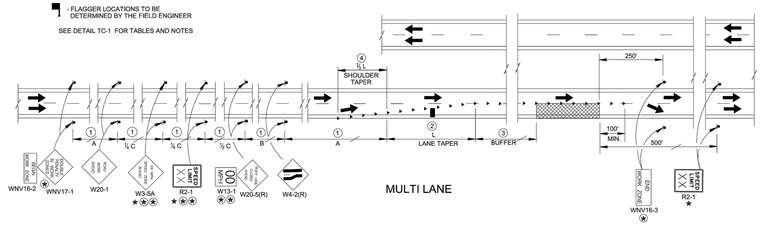
NEVADA DEPARTMENT OF TRANSPORTATION
CHIEF TRAFFIC OPS ENGR. SIGNED ORIGINAL ON FILE
ADOPTED 9/2000
REVISED 9/2022
TYPICAL TABLE / NOTES FOR TRAFFIC CONTROL SHEETS TC-1 THRU TC-20
SPEC. # 625
DETAIL NUMBER TC-1

326

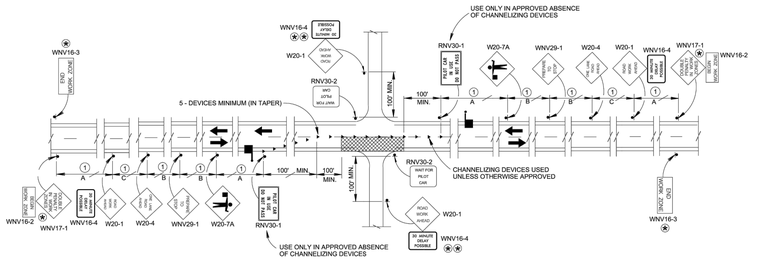
LEGEND:

- WORK AREA
- CHANNELIZING DEVICES
- ARROW BOARD
- ★ ≥ 45 MPH
- ★★ - OPTIONAL
- ★ - SEE NOTE 1 ON DETAIL TC-1
- FLAGGER LOCATIONS TO BE DETERMINED BY THE FIELD ENGINEER

SEE DETAIL TC-1 FOR TABLES AND NOTES



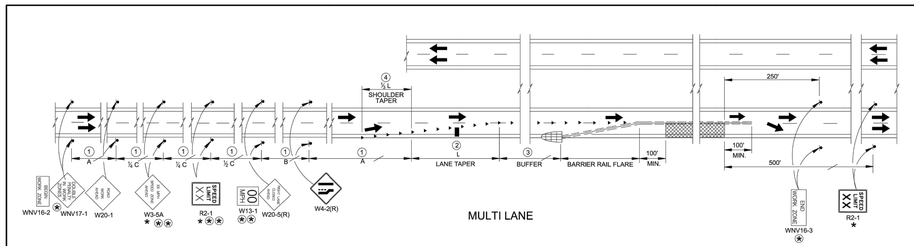
MULTI LANE



TWO LANE - TWO WAY

NEVADA DEPARTMENT OF TRANSPORTATION
CHIEF TRAFFIC OPS ENGR. SIGNED ORIGINAL ON FILE
ADOPTED 7/1996
REVISED 7/2019
TYPICAL TRAFFIC CONTROL FOR ONE LANE CLOSURES
SPEC. # 625
DETAIL NUMBER TC-2

327



MULTI LANE

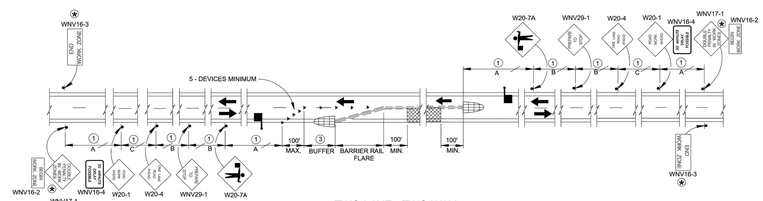
LEGEND:

- WORK AREA
- CHANNELIZING DEVICES
- ARROW BOARD
- ★ ≥ 45 MPH
- ★★ - OPTIONAL
- ★ - SEE NOTE 1 ON DETAIL TC-1
- FLAGGER LOCATIONS TO BE DETERMINED BY THE FIELD ENGINEER
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY BARRIER RAIL

SEE DETAIL TC-1 FOR TABLES AND NOTES

BARRIER RAIL FLARE RATES

DESIGN SPEED	FLARE RATE
80 MPH	24:1
75 MPH	22:1
70 MPH	20:1
60 MPH	18:1
55 MPH	16:1
50 MPH	14:1
45 MPH	12:1
40 MPH	10:1
30 MPH	8:1



TWO LANE - TWO WAY

NEVADA DEPARTMENT OF TRANSPORTATION
CHIEF TRAFFIC OPS ENGR. SIGNED ORIGINAL ON FILE
ADOPTED 7/1996
REVISED 7/2019
TYPICAL TRAFFIC CONTROL FOR PORTABLE PRECAST CONCRETE BARRIER RAIL CLOSURES
SPEC. # 625
DETAIL NUMBER TC-3

100% PLANS

J-U-B ENGINEERS, INC.
5190 Neil Road
Suite 500
Reno, NV 89502
Phone: 775.852.1440
www.jub.com

PROFESSIONAL ENGINEER STATE OF NEVADA
MICHAEL J. WILHELM
Exp: 6-30-24
CIVIL
No. 16371
10/31/23

REUSE OF DRAWINGS
J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS, AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY J-U-B WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.

NO.	DESCRIPTION	BY	APPR.	DATE
	REVISION			

WATER MAIN RELOCATION - I740 BRIDGES
CITY OF FERNLEY

TRAFFIC CONTROL

FILE : 49-23-035_TRAFFIC-CONTRO
JUB PROJ. # : 49-23-035
DRAWN BY: CWH
DESIGN BY: CWH
CHECKED BY: MW
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 11/1/2023

DRAWING:
TC-1

SHEET: 10 OF 10

Plot Date:11/3/2023 3:40 PM Plotted By: Mike Wilhelm
Date Created:10/18/2023 \\JUB.COM\CENTRAL\CLIENTS\NV\FERNLEY\CITY\PROJECTS\49-23-035_NDOTWATERMAINRELOCATION\DESIGN\CAD\SHEET\49-23-035_TRAFFIC-CONTROL.DWG

EXHIBIT "C"

FORM
Revocable Permit

(attached separately)

725

Fee:	Permit No.:
Milepost:	District:
System No.:	
Applicant:	
Type of Work:	

FOR DEPARTMENT USE ONLY

REVOCABLE APPLICATION AND PERMIT FOR OCCUPANCY OF
NEVADA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY
(Under the provisions of NRS 408.423, 408.210 and NAC 408)

1. Location where excavation, construction, installation and/or occupancy is proposed

US Highway 95A N (SR-343) — Local name of highway

W Newlands Drive — Street address or nearest cross street

2. Describe in detail the type and scope of work; capacity or size of facility; stages and time frame for development; scheduled dates for start and completion. Attach 4 sets of detailed plans or drawings.

The project involves the relocation of 12-in ductile iron water main by City of Fernley in US Highway 95A N/SR 343.

The point of connection is located with NDOT R/W along State Route 343 and the intersection of I-80 West and State Route 343. The relocation will install approximately 338 LF of 12-in diameter ductile iron pipe and cut and cap approximately 306 LF of 12-in ductile iron pipe.

This project is scheduled for construction December 2023. Pavement patching will be completed by City of Fernley at the conclusion of the water main relocation.

3. PERMITTEE hereby acknowledges that he has received and read a copy of the specific Terms and Conditions Relating to Right-of-Way Occupancy Permits issued by the State of Nevada Department of Transportation, and accepts said terms and conditions and any additional terms and conditions stated in this permit.

4. **SPECIFIC TERMS AND CONDITIONS APPURTENANT TO THIS PERMIT ARE LISTED ON PAGE 2.**

5. THE PERMIT SHALL BE SIGNED AND RETURNED TO THE DISTRICT OFFICE.

City of Fernley Name of PERMITTEE (Type or Print)	 Signature of PERMITTEE
595 Silver Lace Boulevard Address	Sr. Project Manager (775)784-9800 Title Phone No.
Fernley,NV, 89408 City, State, Zip	10/30/2023 Date of Application
(775)784-9917 N/A Phone No. Fax No.	N/A Permittee's I.D. No. or Parcel No.

NDOT
Rev. 06/2011

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Derek Starkey, City Engineer**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:x	No:	Yes:x	No:	ARPA

ACTION REQUESTED: Consent

AGENDA ITEM:

Possible action to approve a contract with Construction Materials Engineers, CME, in an amount not to exceed $169,690.00 for special inspection and testing services for the Community Response and Resource Center Phase I.

AGENDA ITEM BRIEF:

Staff is seeking Council approval of a contract for special inspection services for Construction Materials Engineers, Inc. to be performed during the construction of the Community Response and Resource Center Phase I.

RECOMMENDED MOTION:

I move to approve a contract for special inspection services to Construciton Materials Engineers, Inc. in an amount not to exceed $169,690.00 for the Community Response and Resource Center Project Phase I.

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:

None.

BACKGROUND:
This staff report presents the contract for special inspection and testing services to Construction Materials Engineers, CME. If the contract is approved, staff will move forward with executing the contract. Special inspection is required during construciotn of the building to verify the adequacy of materials and cosntruciton methods used in the construction of the building and associated site improvements.

The Community Response and Resource Center, CRRC, project design process started in 2021 with TSK Architects. Phase one of the project, also known as the Base Bid of the CRRC project, is an approximately 17,900 square foot building to be located at 695 East Main Street. In addition to constructing the CRRC building, phase one will construct improvements to Lois Lane, an additional parking lot for the CRRC, and a multipurpose event lawn to the south of the existing Train Depot. The CRRC building will include a multipurpose room, teen center, kitchen with a walk-in cooler, a walk-in freezer and dry storage, a youth game room, and four classroom spaces.

CORE Construction was selected by the City of Fernley through a request for qualifications that was advertised and completed in May of 2022. CORE was awarded a contract for preconstruction activities in an amount not to exceed $94,500 by the City of Fernley on July 20, 2022. CORE has been working with the City of Fernley and the design team throughout the design of phase one and to come up with estimates for the cost of construction for the project.
The advantage of utilizing a construction manager at risk is to improve cost controls throughout the stages of project development and construction. A CMAR is able to develop a strong collaborative relationship with the architect and engineer during the design phase and through construction. They are able to assist with value engineering, cost estimating and constructability reviews during design phase of the project. Once design is complete, the CMAR will provide detailed cost estimates for the project to give the owner a better idea of budget and avoid unexpected costs at a typical bid opening where the contractors are not involved in design.

The project design was completed and CORE Construction advertised the project for bid in accordance with the requirements of the Nevada Revised Statues starting in June and opened bids on September 20th. The City and CORE reviewed and finalized the GMP and a final GMP was issued by CORE on November 1st. Construction is scheduled to start in April of 2024.

The GMP came in lower than the estimate provided by CORE during the 50% construction document submittal. The 50% estimate for phase one was $18,287,768. The 50% plans were presented and approved at the April 19, 2023 meeting of City Council.

On December 6, 2023, Council approved a revised contract with CORE Construction for construction manager risk services for the guaranteed maximum price of $17,765,798.00. The guaranteed maximum price has decreased slightly from the previous council meeting from $17,935,872.00 down to $17,765,798.00. The change is due to some items being identified in the specifications that resulted in a lower cost to purchase material.

PRIOR CITY COUNCIL ACTION

- On December 6, 2023, Council approved a revised contract with CORE Construction for construction manager risk services for the guaranteed maximum price of $17,765,798.00. The guaranteed maximum price has decreased slightly from the previous council meeting from $17,935,872.00 down to $17,765,798.00. The change is due to some items being identified in the specifications that resulted in a lower cost to purchase material. On Decem

- On November 15, 2023, City Council approved the guaranteed maximum price for the construction of the first phase of the Community Response and Resource Center in an amount not to exceed $17,935,872.00.
- On September 6, 2023, City Council approved $3.577,592.80 in remaining ARPA funds that were allocated to sewer projects and other general services to Phase I of the Community Response and Resource Center.

- On April 6, 2023, City Council approved Resolution 23-001 to commit 5% local match for the Nevada Department of Transportation 2023 Transportation Alternatives Program Grant application for Multimodal transportation improvements required for the Community Response & Resource Center project. Council also approved Resolution 23-002 to commit unassigned fund balance that is in excess of 8.3% of General Fund expenditures less capital outlay for the purpose of funding the City of Fernley Community Response & Resource Center.
- On April 5, 2023, City Council directed staff to remove/relocate the Old School House building from the Fernley Depot property to make room for the Community Response & Resource Center project.
- On March, 15, 2023, City Council approved staff to apply for local, state, and federal grant funding requests and committed $4,000,000 in City reserve funds for the construction of the Community Response & Resource Center.
- On February 15, 2023, City Council approved the Community Response & Resource Center project Design Development Submittal.
- On December 21, 2022, City Council approved the contract with Headway Transportation LLC to conduct a traffic study for the Community Response & Resource Center in the amount of $22,000.00.
- On November 2, 2022, City Council approved the revised re-scoping, floor, plan, schematic plan, and cost estimate of the Community Response & Resource Center. On October 5, 2022, City Council tabled the decision regarding the revised schematic design and cost estimates of the Community Response & Resource Center. Council directed staff to report back on November 2, 2022, and inform council about why the workgroup decisions were made regarding the revised schematic design. The council also appointed two council members to the CRRC workgroup to discuss layout options.
- On October 5, 2022, City Council approved a contract between the City of Fernley and Resource Concepts, Inc. for environmental consulting services for the project in the amount of $25,000.00.
- On July 7, 2022, City Council approved the schematic design and cost estimate of the Community Response & Resource Center. The CRRC, as presented on July 7th, was a single story 56,000 gsf facility that consisted of t wo separate structures at a total base bid construction cost including breakout of $38,491.547.00.
- On July 7, 2022, City Council approved the Owner-Construction Manager At Risk Pre-Construction agreement between the City of Fernley and Core Construction in the amount of $94,500.00.
- On June 15, 2022, City Council approved the Lyon County and City of Fernley Subrecipient ARPA Agreement in the amount of $300,000 for the construction of the Community Response & Resource Center. On April 14, 2022, at the Lyon County Board of Commissioners meeting, the CRRC Workgroup presented the project and requested ARPA funding. The Lyon County Board of Commissioners graciously awarded ARPA funds to the City of Fernley in the amount of $350,000 for the CRRC project.
- On May 23, 2021, the Lyon County Board of Commissioners revisited their ARPA allocations and reduced the amount to $300,000 for the CRRC project. The City is currently in the process of approving the funding agreement.
- On June 15, 2022, City Council approved the Letter of Intent to a lease agreement between the Boys & Girls Club of Truckee Meadows to operate and maintain sections of the Community Response & Resource Center once constructed. This is in part due to the leadership, and the Boys & Girls Club experience of operating and maintaining facilities and programs, including five Boys & Girls Club afterschool and summer programs, thirteen school sites, four early learning centers, and seven teen centers. Under this agreement, the Boys and Girls Club would operate the day-care, afterschool programming, kitchen, cafeteria, gym, and meeting rooms. The letter of intent is critical to a funding source, the Nevada ARPA Child Care Extension Grant for the construction of the Community Response & Resource Center.
- On February 16, 2022, City Council approved the contract for the Owners Representative Construction Manager as Agent contract with Cumming Management Group. This contract is to ensure there is a person/company who represents the City and focuses on evaluating the project from the City's perspective beginning at the earliest stages of planning and continuing through occupancy. At the same meeting, the Council also approved staff to enter into contract negotiations with the selected CMAR for reconstruction services for the CRRC.

- City Council approved the programming and services that will be in the CRRC on January 19, 2022. The programming and services in the CRRC must be ARPA eligible because the City is using ARPA monies to fund the project. Staff identified the following ARPA eligible services and programs needed in our community in response to the public health crisis that will be in the Community Response & Resource Center: COVID-19 testing and vaccination site, workforce development services/programming, education assistance services, afterschool programming, and early childhood education.
- On October 20, 2021, City Council approved the contract with TSK Architects for the architectural engineering services of the Community Response & Resource Center. The scope of work, among other items, included the Pre-Design Services/Concepts Update to determine the programming and services that will be housed in the CRRC and the completion of the final schematic design.
- On August 4, 2021, Fernley City Council approved the American Rescue Plan Act spending plan which$12,000,000 for the development of a Community Response and Resource Center.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

NRS 625

FINANCIAL IMPLICATIONS:

The design, construction, permitting, and administration of the project is estimated to cost over 21 million dollars. The project includes multiple funding sources including ARPA funding from the City of Fernley and Lyon County, Community Development Block Grant funding, Congressional Appropriations, and Transient Lodging Tax Funding.

ATTACHMENTS:

1. 2024.01.03 CME Contract ARPA & CDBG
2. CME - City of Fernley - Community Responce and Resource Center Proposal

CONTRACT

A Contract For Design Professional Services

THIS CONTRACT is made and entered into this 3rd day of January, 2024, by and between the CITY OF FERNLEY, a municipal corporation within the State of Nevada whose address is 595 Silver Lace Blvd, Fernley, Nevada 89408 (the "City"), and Construction Materials Engineers, Special Inspections and Material Testing Firm, whose address is 300 Sierra Manor Drive, Suite 1, Reno, NV 89511 ("Consultant").

WHEREAS Nevada Revised Statutes ("NRS") Chapter 266 authorizes the City to engage the services of independent contractors; and

WHEREAS the services of Consultant are deemed to be both necessary and in the best interests of the City; and

WHEREAS the City desires to retain the services of Consultant on the terms and conditions set forth in this Contract;

NOW, THEREFORE, in consideration of the aforesaid premises, the parties mutually agree as follows:

1. **CONTRACT TERM:** This Contract shall be effective from the day it is approved by the City Council (which date shall be inserted into the introductory paragraph of this Contract) and, subject to appropriation, shall remain in full force and effect until the services are completed unless terminated earlier pursuant to Section 6.

2. **CONSULTANT'S SERVICES:**

    a. **Description of Services.**

        i. **Attachments:**

            1. **Attachment A:** Scope of Work and Fee Schedule. Consultant hereby agrees to provide the services set forth in the Scope of Work and Fee Schedule attached hereto as Attachment A and incorporated herein by this reference.

            2. **Attachment B:** N/A

            3. **Attachment C:** N/A

            4. A**ttachment D:** N/A

b. **Standard Of Care:** Notwithstanding anything to the contrary in this agreement or in any other contract document relating to the project, in performing its work under this agreement Consultant shall perform its services to the standard of care of a reasonable professional that is performing the same or similar work, at the same time and locality and under the same or similar conditions faced by Consultant Cooperation with City. Consultant agrees that its officers, associates, employees and subcontractors will cooperate with the City in providing the services under this Contract and will be, with advance notice, available for consultation with the City at such reasonable times as to not conflict with the City's other responsibilities.

c. **Notice to Proceed.** Consultant shall not commence work until the Contract is fully executed by City and Consultant and a Notice to Proceed (NTP) has been issued to the Consultant by the City.

d. **Optional Services.** The City shall have the right to exercise its option(s) for all or any part of the OPTIONAL tasks or subtasks identified in Attachment B Fee Schedule, (and further described in Attachment A Scope of Services). The Consultant shall not commence work on any OPTIONAL task prior to issuance of a NTP for the OPTIONAL task by the City.

3. REQUIRED APPROVAL COMPENSATION AND TERMS OF PAYMENT:

a. **Compensation.** The City agrees to pay Consultant for the services set forth in the Scope of Work either a lump sum fee or an hourly fee based on the Fee Schedule attached hereto as Attachment A and incorporated herein by this reference.

b. **Reimbursable Expenses.** Consultant agrees that all of its direct and indirect expenses are included in the lump sum or hourly fee set forth in the Fee Schedule, unless the Fee Schedule specifically provides otherwise.

c. **Payment Invoicing.** Consultant shall submit an invoice for payment for the services provided by Consultant based on the manner or method of payment set forth in Attachment A (Scope of Work) (Fee Schedule)

d. T**imeliness of Billing.** Consultant acknowledges and agrees that timeliness of billing is of the essence to this Contract and recognizes that the City is on a fiscal year ending on June 30. All invoices for services rendered prior to July 1 must be submitted to the City no later than 30 days after the end of the fiscal year.

4.

e. **Dispute:** If the City disputes a payment or portion thereof that a design professional alleges is due, the city must dispute the matter in a written notice and no later than 30 days after the design professional submits the notice of payment. If the City fails to pay the invoice amount in a timely manner than a penalty of $100 will be imposed.

f. **Not to Exceed.** The maximum amount payable to Consultant to complete each task is equal to the not-to-exceed amounts identified in Attachment B. Consultant may submit a written request to the City's Project Manager to reallocate not-to-exceed amounts between Tasks. The request to reallocate must be accompanied by a revised fee schedule with associated revised not-to-exceed amounts and must be approved in writing by the City's Project Manager prior to performance of the work. Consultant shall not be compensated in excess of the Total not-to-exceed Contract amount:

Subtotal Professional Services:	$169,690.00
g. Subtotal OPTIONAL Professional Services:	$0
Total NTE Amount (Including OPTIONAL Services)	$169,690.00

4. **NOTICE:** All notices or other communications required or permitted to be given hereunder shall be deemed delivered: (i) when written notice is received by the party to whom it is directed, if delivered personally, or by email; or (ii) three (3) days after deposit with the United States Post Office, if mailed by certified mail, return receipt requested, postage prepaid and addressed to the party to be notified. Notices shall be addressed as follows:

If to the City:
City Engineering Department
City of Fernley
595 Silverlace Blvd.
Fernley, NV 89408

If to Consultant:
CME
300 Sierra Manor Drive, Suite
Reno, NV 89511

5. INSPECTION & AUDIT:

a. **Books and Records**. Consultant agrees to keep and maintain under general accepted accounting principles (GAAP) full, true, and complete records, contracts, books, and documents as are necessary to fully disclose to the City, the State of Nevada or the United States Government, or their authorized representatives, upon audits or reviews, sufficient information to determine compliance with all state and federal regulations and statutes.

b. **Inspection & Audit**. Consultant agrees that the relevant books, records (written, electronic, computer related or otherwise), including, without limitation, relevant accounting procedures and practices of Consultant or its subcontractors, financial statements and supporting documentation, and documentation related to the performance of this Contract shall be subject, at any reasonable time, to inspection, examination, review, audit, and copying at any office or location of Consultant where such records may be found, with or without notice by the City, and with regard to any federal funding, the relevant federal agency, the Comptroller General, the General Accounting Office, the Office of the Inspector General, or any of their authorized representatives. All subcontracts shall reflect the requirements of this paragraph.

c. **Period of Retention**. All books, records, reports, and statements relevant to this Contract must be retained a minimum three years and for five years if any federal funds are used under this Contract. The retention period runs from the date of payment for the relevant services by the City, or from the date of termination of this Contract, whichever is later. Retention time shall be extended when an audit is scheduled or in progress for a period reasonably necessary to complete an audit and/or to complete any administrative and judicial litigation which may ensue.

6. TERMINATION OR SUSPENSION:

a. **Suspension**. The City may suspend, without cause, the performance by Contract under this Contract for such period of time as the City, in its sole discretion, may prescribe by providing written notice to Consultant. The suspension shall be effective as of the date set forth in the written notice. With such suspension, the City agrees to pay Consultant the amount of compensation earned as of the effective date of the suspension.

b. **Termination Without Cause**. The City reserves the right to terminate this Contract without cause or default on the part of Consultant with ten (10)

days' prior written notice to Consultant. In the event of termination, without cause or default, the City agrees to pay Consultant for the services performed before the date that notice of termination is received by Consultant.

c. **Termination for Non-Appropriation**. Consultant acknowledges that the City is a governmental entity and the Contract's validity is based upon the availability of public funding under its authority. The City reserves the right to reduce estimated or actual quantities, in whatever amount necessary, without prejudice or liability to the City, if funding is not available or if legal restrictions are placed upon the expenditure of monies for the services required under this Contract. In addition, without prejudice or liability to the City, if funding is not appropriated or otherwise made available to support the continuation of this Contract in any fiscal year succeeding the first fiscal year, this Contract will be deemed to have been terminated automatically when appropriated funds expire and are not available.

d. **Default or Breach.** A default or breach (an "Event of Default") may be declared with or without termination. Each of the following shall constitute an Event of Default:

   i. If Consultant fails, in the judgment of the City, to provide or satisfactorily perform any of the conditions, work, deliverables, goods, or services called for by this Contract, and such failure continues for more than fifteen (15) days after written notice is delivered to Consultant provided that if the nature of such breach is such that although curable, the breach cannot reasonably be cured within a fifteen (15) day period, an Event of Default shall not exist if Consultant shall commence to cure such breach and thereafter rectifies and cures such breach with due diligence, but in no event later than sixty (60) days after the written notice;

   ii. If any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Consultant to provide the goods or services required by this Contract is for any reason denied, revoked, debarred, excluded, terminated, suspended, lapsed, or not renewed; or

   iii. If Consultant: (i) becomes insolvent, subject to receivership, or voluntarily or involuntarily subject to the jurisdiction of the bankruptcy court; (ii) makes a general assignment for the benefit of creditors; (iii) admits in writing to the inability to pay its debts as they become due; or (iv) takes any action for the purpose of effecting any of the foregoing.

e. **For Cause Termination and Time to Correct. For Cause Termination and Time to Correct**. This Contract may be terminated by the non-defaulting party upon a declared default or breach only after service of formal written notice as specified in paragraph (4), and the subsequent failure of the defaulting party within a reasonable time of receipt of that notice to provide evidence, satisfactory to the non-defaulting party, showing that the declared default or breach has been corrected or is being corrected as expeditiously as is prudent and practicable.

f. **Winding Up Affairs upon Termination.** In the event that this Contract is terminated for any reason, the parties agree that the provisions of this paragraph survive termination:

i. The parties shall account for and properly present to each other all claims for fees and expenses and pay those which are undisputed and otherwise not subject to set off under this Contract. Neither party may withhold performance of winding up provisions solely based on nonpayment of fees or expenses accrued up to the time of termination.

ii. Consultant shall satisfactorily complete work in progress at the agreed rate (or a pro rata basis if necessary) if requested by the City.

iii. Consultant shall execute any documents and take any actions necessary to effectuate an assignment of this Contract if requested by the City; and

iv. Consultant shall preserve, protect, and promptly deliver possession to the City of all proprietary information in accordance with Section 18.

v. In the event that dispute(s) arise during the winding up of affairs upon termination, the parties agree to meet and negotiate in good faith to resolve any such disputes(s).

7. REMEDIES: Except as otherwise provided for by law or this Contract, the rights and remedies of the parties shall not be exclusive and are in addition to any other rights and remedies provided by law or equity, including, without limitation, actual damages exclusive of lost profits.

8. ATTORNEYS' FEES, COSTS, AND EXPENSES: Unless otherwise stated herein, the parties will bear their own attorneys' fees, costs, and expenses in connection with the negotiation, execution, and performance of this Contract. In the event of an action to enforce the contract, the prevailing party is entitled to reasonable attorney's fees and costs.

9. **LIMITED LIABILITY:** Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply unless otherwise specified in the Attachments. Damages for any default or breach by the City shall never exceed the amount of funds appropriated for payment under this Contract, but not yet paid to Consultant, for the fiscal year budget in existence at the time of the default or breach.

10. **FORCE MAJEURE:** Neither party shall be deemed to be in violation of this Contract if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of this Contract after the intervening cause ceases.

11. **INDEMNIFICATION:** The City does not require the Consultant to defend, indemnify or hold harmless the public body or the employees, officers or agents of that public body from any liability, damage, loss, claim, action or proceeding caused by the negligence, errors, omissions, recklessness or intentional misconduct of the employees, officers or agents of the public body.

    a. The City does require the Consultant to indemnify and hold harmless the public body, and the employees, officers and agents of the public body from any liabilities, damages, losses, claims, actions or proceedings, including, without limitation, reasonable attorneys' fees and costs, to the extent that such liabilities, damages, losses, claims, actions or proceedings are caused by the negligence, errors, omissions, recklessness or intentional misconduct of the Consultant or the employees or agents of the Consultant in the performance of the contract.

    b. The City does not require the Consultant to defend the public body and the employees, officers and agents of the public body with respect to the liabilities, damages, losses, claims, actions or proceedings caused by the negligence, errors, omissions, recklessness or intentional misconduct of the Consultant or the employees or agents of the Consultant which are based upon or arising out of the professional services of the Consultant. If the Consultant is adjudicated to be liable by a trier of fact, the trier of fact shall award reasonable attorney's fees and costs to be paid to the public body, as reimbursement for the attorney's fees and costs incurred by the public body in defending the action, by the Consultant in an amount which is proportionate to the liability of the Consultant.

    c. The City does require the Consultant to defend the public body and the employees, officers and agents of the public body with respect to the liabilities, damages, losses, claims, actions or proceedings caused by the

negligence, errors, omissions, recklessness or intentional misconduct of the Consultant or the employees or agents of the Consultant which are not based upon or arising out of the professional services of the Consultant.

12. **INDEPENDENT CONTRACTOR:** Consultant is associated with the City only for the purposes and to the extent specified in this Contract, and in respect to performance of the contracted services pursuant to this Contract, Consultant is and shall be an independent contractor and, subject only to the terms of this Contract, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Contract. Nothing contained in this Contract shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for the City whatsoever with respect to the indebtedness, liabilities, and obligations of Consultant or any other party. Consultant shall be solely responsible for, and the City shall have no obligation with respect to: (1) withholding of income taxes, FICA or any other taxes or fees; (2) industrial insurance coverage; (3) participation in any group insurance plans available to employees of the City; (4) participation or contributions by either Consultant or the Public Employees Retirement System; (5) accumulation of vacation leave or sick leave; or (6) unemployment compensation coverage provided by the City. Consultant shall indemnify and hold the City harmless from, and defend the City against, any and all losses, damages, claims, costs, penalties, liabilities, and expenses arising or incurred because of, incident to, or otherwise with respect to any such taxes or fees. Neither Consultant nor its employees, agents, or representatives shall be considered employees, agents, or representatives of the City.

13. **INSURANCE:** Unless expressly waived in writing by the City, Consultant shall, at Consultant's sole expense, procure, maintain and keep in force during the entire term of this Contract those policies of insurance which have been agreed to by the parties as evidenced by the parties initials in the signature spaces provided below. The City shall have no liability except as specifically provided in this Contract. Consultant shall not commence work before Consultant has provided the required evidence of insurance to the City. Any insurance or self-insurance available to the City shall be in excess of, and non-contributing with, any insurance required from Consultant. Consultant's insurance policies shall apply on a primary basis. Until such time as the insurance is no longer required by the City, Consultant shall provide the City with renewal or replacement evidence of insurance no less than thirty (30) days before the expiration or replacement of the required insurance. If at any time during the period when insurance is required by this Contract, an insurer or surety shall fail to comply with the requirements of this Contract, as soon as Consultant has knowledge of any such failure, Consultant shall immediately notify the City and immediately replace such insurance or bond with an insurer meeting the requirements.

COF CTR

a. **Workers' Compensation and Employer's Liability Insurance**. Industrial insurance protecting Consultant and the City from potential employee claims based upon job-related sickness, injury, or accident, during the performance of this Contract. Consultant shall provide a work certificate issued by a qualified insurer in accordance with NRS 616B.627. Prior to commencing any work, Consultant shall complete and provide the following written request to a qualified insurer: ****CONTACTOR NAME has entered into a contract with Owner to perform work from THE ___ DAY OF _____, 20__ to THE ___ DAY OF _____, 20__ and requests that an industrial insurance provider qualified and licensed to offer such insurance within the State of Nevada, provide to The City of Fernley, Nevada 1) a certificate of coverage issued pursuant to NRS 616B.627 and 2) notice of any lapse in coverage or nonpayment of coverage that Consultant is required to maintain. The certificate and notice should be mailed to:

City of Fernley

595 Silver Lace Blvd

Fernley, NV 89408

i. Consultant may, in lieu of furnishing a certificate of an insurer, provide an affidavit indicating that Consultant is a sole proprietor and that:

1. In accordance with the provisions of NRS 616B.659, Consultant has not elected to be included within the terms, conditions, and provisions of NRS chapters 616A to 616D, inclusive; and

2. Consultant is otherwise in compliance with those terms, conditions and provisions.

COF CTR

b. **Professional Liability Insurance**. Minimum Coverage Limit required (not deductible amount): $1,000,000 Each Claim, $2,000,000 Aggregate.

i. Retroactive date: Prior to commencement of the performance of this Contract

ii. Discovery period: Three (3) years after the termination date of this Contract.

c. **General Requirements**.

i. Additional Insured: By endorsement to the general liability insurance policy evidenced by Consultant, ***the City of Fernley, its officers, employees, and immune contractors*** shall be named as additional insureds for all liability arising from this Contract.

ii. Waiver of Subrogation: Each insurance policy shall provide for a waiver of subrogation in favor of the City.

iii. Cross-Liability: All required liability policies shall provide cross-liability coverage as would be achieve under the standard ISO separation of insureds clause.

iv. Deductibles and Self-Insured Retentions: Insurance maintained by Consultant shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by the City. Such approval shall not relieve Consultant from the obligation to pay any deductible or self-insured retention. Any deductible or self-insured retention shall not exceed $5,000 per occurrence, unless otherwise approved by the City.

v. Policy Cancellation: Except for ten days' notice for non-payment of premium, each insurance policy shall be endorsed to state that; without thirty (30) days prior written notice to the City, the policy shall not be canceled, non-renewed or coverage and/or limits reduced or materially altered, and shall provide that notices required by this paragraph shall be sent by certified mail to the address shown below.

vi. Approved Insurer: Each insurance policy shall be issued by insurance companies: (a) authorized to do business in the State of Nevada or eligible surplus lines insurers acceptable to the City and having agents in the State of Nevada upon whom service of process may be made; and (b) currently rated by A.M. Best as "A-VII" or better.

d. **Evidence of Insurance.** Prior to the start of any work, Consultant must provide the following documents to the City:

i. Certificate of Insurance: The Acord 25 Certificate of Insurance form or a form substantially similar must be submitted to the City to evidence the insurance policies and coverages required of Consultant.

ii. Additional Insured Endorsement: An Additional Insured Endorsement (CG20 10 or C20 26), signed by an authorized insurance company representative, **must** be submitted to the City to evidence the endorsement of the City as an additional insured per General Requirements, Subsection 1) above.

iii. Schedule of Underlying Insurance Policies: If an Umbrella or Excess insurance policy is evidenced to comply with minimum limits, a copy of the underlying schedule from the Umbrella or Excess insurance policy may be required.

iv. Review and Approval: Documents specified above must be submitted for review and approval by the City prior to the commencement of work by Consultant. Neither approval by the City nor failure to disapprove the insurance furnished by Consultant shall relieve Consultant of Consultant's full responsibility to provide the insurance required by this Contract. Compliance with the insurance requirements of this Contract shall not limit the liability of Consultant or its sub-contractors, employees or agents to the City or others, and shall be in addition to and not in lieu of any other remedy available to the City under this Contract or otherwise. The City reserves the right to request and review a copy of any required insurance policy or endorsement to assure compliance with these requirements. Consultant will mail all required insurance documents to the City at the address identified in section 4 of this Contract.

e. **Failure to Maintain Required Coverages.** If Consultant fails to carry the required insurance, the City may: (i) order Consultant to stop further performance of the Contract, and declare Consultant in breach, terminate the Contract if such breach is not remedied; or (ii) purchase replacement insurance and withhold the costs or premium payments made from the payments due to Consultant or charge the replacement insurance costs back to Consultant.

14. COMPLIANCE WITH LEGAL OBLIGATIONS: Consultant shall procure and maintain for the duration of this Contract any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Consultant to provide the goods or services required by this Contract. Consultant will be responsible to pay all taxes, assessments, fees, premiums, permits, and licenses required by law. Real property and personal property taxes are the responsibility of Consultant in accordance with NRS 361.157 and 361.159. Consultant agrees to be responsible for payment of any such government obligations not paid by its subcontractors during performance of this Contract.

15. WAIVER OF BREACH: Failure to declare a breach or the actual waiver of any particular breach of this Contract or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other default or breach.

16. SEVERABILITY: If any portion, provision, or part of this Contract is held, determined, or adjudicated by any court of competent jurisdiction to be invalid, unenforceable, or void for any reason whatsoever, each such portion, provision, or part shall be severed

from the remaining portions, provisions, or parts of this Contract, and such determination or adjudication shall not affect the validity or enforceability of such remaining portions, provisions, or parts.

17. **ASSIGNMENT/DELEGATION:** To the extent that any assignment of any right under this Contract changes the duty of either party, increases the burden or risk involved, impairs the chances of obtaining the performance of this Contract, attempts to operate as a novation, or includes a waiver or abrogation of any defense to payment by the City, such offending portion of the assignment shall be void, and shall be a breach of this Contract. Consultant shall neither assign, transfer nor delegate any rights, obligations, or duties under this Contract without the prior written consent of the City.

18. **PROPRIETARY INFORMATION:** Any reports, histories, studies, tests, manuals, instructions, photographs, negatives, blue prints, plans, maps, data, system designs, computer code (which is intended to be consideration under this Contract), or any other documents or drawings, prepared or in the course of preparation by Consultant (or its subcontractors) in performance of its obligations under this Contract shall be the exclusive property of the City and all such materials shall be delivered into the possession of the City by Consultant upon completion, termination, or cancellation of this Contract. Consultant shall not use, willingly allow, or cause to have such materials used for any purpose other than performance of Consultant's obligations under this Contract without the prior written consent of the City. Notwithstanding the foregoing, the City shall have no proprietary interest in any materials licensed for use by the City that are subject to patent, trademark, or copyright protection.

19. **PUBLIC RECORDS:** Pursuant to NRS 239.010, information or documents received from Consultant may be open to public inspection and copying. The City will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests. Consultant may label specific parts of an individual document as a "trade secret" or "confidential," provided that Consultant thereby agrees to indemnify and defend the City for honoring such a designation. The failure to so label any document that is released by the City shall constitute a complete waiver of any and all claims for damages caused by any release of the records.

20. **FEDERAL FUNDING:** In the event federal funds are used for payment of all or part of this contrat:

    a. Consultant certifies, by signing this Contract, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency. This certification is made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp. 19160-19211), and any relevant program specific regulations. This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds.

b. Consultant and its subcontractors shall comply with all terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program-specific regulations.

c. Consultant and its subcontractors shall comply with the requirements of the Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, P.L. 93-112, as amended, and any relevant program-specific regulations, and shall not discriminate against any employee or offeror for employment because of race, national origin, creed, color, sex, religion, age, disability or handicap condition (including AIDS and AIDS-related conditions.)

d. **American Rescue Plan Act**: The Contractor shall comply with all ARPA requirements and all required provisions to be adhered to in accordance with Federal Uniform Guidance. Costs incurred as a result of this contract shall only be for actions taken in response to the COVID-19 public health emergency, the impacts of COVID-19 on the community, residents and businesses and for the efforts to contain COVID-19. These expenditures shall be a direct response to the emergency and include but are not limited to addressing medical or public health needs, as well as expenditures incurred in response to second-order effects of the emergency.

    i. This contract provides for the architectural-engineering professional services required to construct a Community Resource and Response Center will provide a venue for responding to the pandemic with the delivery of vaccines, testing, and other public health needs. Further, the Center will provide programs and resources that address the negative economic impacts from the pandemic including, but not limited to food insecurity, emergency shelter/quarantine, childcare, educational needs, and mental health support.

    ii. The parties agree that timeliness of billing is of the essence to this Contract and recognize that the City is on a fiscal year. The parties further understand that all billing must be submitted by the 15th day of the subsequent month. Should contractor fail to submit timely bills, Contractor hereby agrees to be liable to the City for any costs of the project not covered by the ARPA Act due to contractor's negligence in billing. All billings for dates of service prior to July 1 must be submitted to the City no later that the first Friday in August of the same year. Contractor as a contractor shall also maintain the following for tracking purposes:

1. Chart of accounts, written accounting procedures, internal and administrative controls, accounting journals and ledgers.

2. Payment requests and source documentation (vendor invoices, bills of lading, purchase orders, payment vouchers, payrolls, bank statements and reconciliations); and

3. Financial statements, correspondence, and audit files.

4. In addition to these cost accounting and record-keeping requirements, contractors are also expected to comply with the following list of required flow-down terms. These terms include:

    a. Equal Employment Opportunity requirements.
    b. Davis Bacon Act (40 U.S.C. §§ 3141-3148);
    c. Anti-Kickback Act (40 U.S.C. § 3145);
    d. Contract Work Hours and Safety Standards (40 U.S.C. §§ 3701-3708);
    e. Rights to Inventions Made Under a Contract or Agreement (37 C.F.R. Part 401);
    f. Clean Air Act (42 U.S.C. §§ 7401-7671q) and Water Pollution Control Act (33 U.S.C. §§ 1251-1387);
    g. Debarment and Suspension (Executive Orders 12549 and 12689);
    h. Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352);
    i. Procurement of recovered materials (2 C.F.R. § 200.323) (pursuant to section 6002 of the EPA's Solid Waste Disposal Act);
    j. Prohibition on certain telecommunications and video surveillance services or equipment (2 C.F.R. § 200.216); and
    k. Domestic preferences for procurements (2 C.F.R. § 200.322).

e. Failure to comply with ARPA and other federal, state or local requirements may result in the City of Fernley taking one of the following actions:
    i. Temporarily withholding cash payments pending correction of the deficiency or more severe enforcement action by the Federal awarding agency;
    ii. Denying both use of funds and any applicable matching credit for all or part of the cost of the activity or action not in compliance;
    iii. Wholly or partly suspending or terminating the contract;
    iv. Initiating suspension or debarment proceedings;
    v. Requesting reimbursement for ineligible costs;

vi. Withholding further funds for the project or program; or
vii. Taking other remedies that may be legally available.

21. **LOBBYING:** The parties agree, whether expressly prohibited by federal, state or local law, or otherwise, that no funding associated with this Contract will be used for any purpose associated with or related to lobbying or influencing or attempting to lobby or influence any of the following: (a) any federal, state, county or local agency, legislature, commission, council or board; (b) any federal, state, county or local legislator, commission member, council member, board member, or other elected official; or (c) any officer or employee of any federal, state, county or local agency; legislature, commission, council or board.

22. **CERTIFICATION REQUIRED BY NEVADA SENATE BILL 26 (2017):** By signing this Agreement, the CONSULTANT provides a written certification, as a material part of this Agreement, that the CONSULTANT is not currently engaged in, and during the Term shall not engage in, a boycott of Israel. The term "boycott of Israel" has the meaning ascribed to that term in Section 3 of Nevada Senate Bill 26 (2017). The CONSULTANT shall be responsible for fines, penalties, and repayment of any State of Nevada or federal funds that may arise (including those that the CITY pays, becomes liable to pay, or becomes liable to repay) as a direct result of the CONSULTANT's non-compliance with this Section. If, at any time during the formation or duration of this Agreement, CONSUTLANT is engaged or engages in a boycott of Israel, it will constitute a material breach of this Agreement.

23. **PROPER AUTHORITY:** Consultant represents and warrants Consultant has full power and authority to enter into this Contract. Any services performed by Consultant before this Contract is effective or after it ceases to be effective are performed at the sole risk of Consultant.

24. **GOVERNING LAW; VENUE:** This Contract will be interpreted, and the rights and liabilities of the parties determined, in accordance with the laws of the State of Nevada, excluding its conflict of laws rules. In any action or proceeding arising under this Contract, each party (a) consents to the jurisdiction of Nevada Courts, and of the pertinent appellate courts, and consents to the venue of such action or proceeding in Lyon County, Nevada courts, (b) irrevocably agrees that all actions or proceedings arising out of or relating to this Contract shall be litigated in such courts, and (c) consents to personal jurisdiction within Lyon County, Nevada. Each party accepts for itself, generally and unconditionally, the exclusive jurisdiction and venue of the aforesaid courts and waives any defense of lack of personal jurisdiction, improper venue, inconvenient forum or any similar defense, and irrevocably agrees to be bound by any non-appealable judgment rendered thereby in connection with this Contract.

25. **INTEGRATED CONTRACT:** This Contract (including any addenda, exhibits, or attachments incorporated into and made a part of this contract) constitutes the entire agreement and understanding among the parties regarding the matters set forth

herein and supersedes all previous negotiations, discussions, and understandings regarding such matters. The parties acknowledge and represent that they have not relied on any promise, inducement, representation, or other statement made in connection with this Contract that is not expressly contained herein. The terms of this Contract are contractual and not a mere recital.

26. COUNTERPARTS: This Contract may be executed in multiple counterparts, each of which shall be deemed an original, and all of such counterparts together shall constitute one and the same instrument.

27. ADVICE OF COUNSEL: Each party hereto represents and agrees that it has had the opportunity to seek and has sought from attorneys any such advice as it deems appropriate with respect to signing this Contract or the meaning of it. Each party has undertaken such independent investigation and evaluation as it deems appropriate and is entering into this Contract in reliance on that and not in reliance on any advice, disclosure, representation or information provided by or expected from any other party or such party's attorneys. This is an agreement of settlement and compromise, made in recognition that the parties may have different, disputed or incorrect understandings, information and contentions, as to facts and law, and with each party compromising and settling any potential correctness or incorrectness of its understandings, information and contentions as to the facts, law, claims, duties, disclosures and conduct occurring before or during the entry into this Contract. No conduct, failure, misunderstanding or misinformation and no claim of fraud or fraudulent inducement occurring prior to or in connection with the execution hereof shall be a ground for rescission hereof or for recovery of damages, except as otherwise expressly provided herein.

28. MODIFICATION; NO WAIVER: The provisions of this Contract, including this paragraph, may be modified or waived only in writing signed by both parties. No waiver with respect to any portion of this Contract shall apply to any other portion of the Contract, and a waiver on one occasion shall not be deemed to be a waiver of the same or any other breach on a future occasion. No course of dealing by any party, and no failure, omission, delay, or forbearance by any party in exercising such party's rights or remedies shall be deemed a waiver of any such rights or remedies or a modification of this Contract.

29. INTERPRETATION OF AGREEMENT: This Contract shall be construed without regard to the party or parties responsible for its preparation and shall be deemed to have been prepared collectively by the parties. Any ambiguity or uncertainty arising herein shall not be interpreted or construed against any party hereto on the basis that a party prepared or drafted a particular provision of this Contract.

30. COOPERATION OF PARTIES: The parties agree to cooperate to accomplish the purpose of this Contract and to execute any and all supplementary documents and to take all additional actions not inconsistent with the terms set forth in this Contract that

are necessary and appropriate to give full force and effect to the terms and intent of this Contract.

31. NON-DISCRIMINATION: In connection with the performance of work under this Contract, Consultant agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, gender identity or expression, or age, including, without limitation, with regard to employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including, without limitation, apprenticeship. Consultant further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

32. NON-DISCRIMINATION & CDBG

a. In connection with the performance of work under this contract, the contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, gender identity or expression, or age, including, without limitation, with regard to employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including, without limitation, apprenticeship. The contractor further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.
b. The Contractor will abide by the provisions of the Civil Rights Act of 1964 which states that under Title VII, no person may, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.
c. The Contractor will comply with the following provision: SECTION 109 OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974: No person in the United States may on the grounds of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with the funds made available under this title. Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975 or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973 will also apply to any such program or activity.
d. SECTION 3 OF THE HOUSING AND URBAN DEVELOPMENT ACT OF 1968. The Contractor will ensure that to the greatest extent feasible, opportunities for training and employment arising in connection with this CDBG-assisted project will be extended to lower income project area residents. Further, the Contractor will, to the greatest extent feasible, utilize business concerns located in or substantially owned by residents of the project area, in the award of contracts and purchase of services and supplies.

e. MINORITY BUSINESS ENTERPRISE. Consistent with the provisions of Executive Order 11246, the Contractor will take affirmative steps to assure that minority businesses are used when possible as sources of supplies, equipment, construction and services. Additionally, the Contractor will document all affirmative steps taken to solicit minority businesses and will forward this documentation along with the names of the minority subcontractors and suppliers to the local government CDBG recipient upon request.

In witness whereof, the parties hereto have caused this Contract to be signed and intend to be legally bound thereby:

CITY OF FERNLEY

_____
Benjamin Marchant, City Manager, City of Fernley Date

_____
Neal E. McIntyre, Mayor, City of Fernley Date

_____
Kim Swanson, City Clerk, City of Fernley Date

Approved as to form:

_____
Aaron Mouritsen, City Attorney, City of Fernley Date

Originating Department:

_____
Derek Starkey, City Engineer, City of Fernley Date

CONTRACT

A Contract For Design Professional Services

CONSULTANT, being first duly sworn, deposes and says: That CONSULTANT. is the Consultant**;** that NAME OF PERSON REPRESENTING CONSULTANT has read the foregoing Contract; and that he understands the terms, conditions, and requirements thereof.

CONSULTANT
BY:
TITLE:
FIRM: CME
BUSINESS LICENSE #:
Address: 300 Sierra Manor Drive, Suite 1
City: Reno State: NV Zip Code: 89511
Telephone: 775-737-7564

_____
(Signature of Consultant)

DATED this _____ day of _____, 20__.

STATE OF _____)
) ss
County of _____ _____)

On this _____ day of , in the year 20__, before me, _____ / Notary Public, personally appeared , personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to this instrument, and acknowledged that he executed it.

WITNESS my hand and official seal.

_____
Notary's Signature

My Commission Expires: _____

CME CONSTRUCTION MATERIALS ENGINEERS, INC.
300 Sierra Manor Drive, Suite 1
Reno, NV 89511

September 29, 2023

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

RE: City of Fernley – Community Response and Resource Center (CRRC)
Fernley, Nevada
Special Inspection, Inspection and Materials Testing Services Proposal

Dear Mr. Starkey:

CME, Inc. is pleased to provide this cost proposal for special inspection, inspection and materials testing services on the referenced project.

It is understood that our scope of work is to provide on-site special inspection and materials testing services when required during the construction of the new CRRC building, sire work and the partial reconstruction of Lois Lane. Our on-site inspector can also provide material testing of subgrade soils, bedding soils, backfill soils, aggregate base, asphalt and concrete. Based upon plans dated June 12th, 2023, the project specifications, the 2018 International Building Code and the 2012 Standard Specifications for Public Works Construction Revision 8, we will provide the following services which will require inspection and materials testing:

- *Earthwork Grading*
- *Sewer and Storm Drain Installation*
- *Utilities Bedding and Backfill Compaction Testing*
- *Aggregate Base & Subgrade Placement*
- *Concrete Placement – (SP)*
- *Asphalt Concrete Placement*
- *Masonry Inspection – (SP)*
- *Post-Installed Anchorage Inspection – (SP)*
- *Structural Steel Welding Inspection – (SP)*
- *Structural Steel Bolting Inspection*
- *Laboratory Testing*

(SP) Special Inspection Required

A detailed outline including total trips, hours per trip and associated fees is attached for your review.

Based on the project plans and the provided preliminary construction schedule dated August 3, 2023, we will provide our services on a time and expense basis for an estimated fee of $169,690.00. As you know, our services are dependent on your provided 2024 – 2025 construction schedule and the scope of work. Any changes to your schedule or the anticipated scope may result in a change in cost. All services outside the

attached estimate will be provided on a time and expense basis in accordance with our current standard fee schedule.

If this proposal is acceptable to you, please issue a professional service agreement for our execution. We appreciate the opportunity to provide our inspection and materials testing services. Please do not hesitate to call if you have any questions or comments.

Sincerely,

CONSTRUCTION MATERIALS ENGINEERS, INC.

Jon A. Del Santo, PE
Principal
jdelsanto@cmenv.com
Direct: 775-737-7564
Mobile: 775-846-4399

JAD:bm
Enclosure

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CITY OF FERNLEY - COMMUNITY RESPONSE AND RESOURCE CENTER
2024 & 2025 SPECIAL INSPECTION & MATERIALS TESTING SERVICES
FERNLEY, NV

CITY OF FERNLEY **DATE :** **9/29/2023**

ACTIVITY	QTY/DAYS	HRS/DAY	RATE	TOTAL	COMMENTS
2024					
PROJECT MANAGEMENT					40 WEEKS
PROJECT MANAGER	40	1	$ 185.00	$ 7,400.00	COORDINATION, CONSULTATION AND REPORTS
PROJECT MANAGER	20	1.5	$ 185.00	$ 5,550.00	PRE-CON/PROJECT MEETINGS
VEHICLE	30		$ 15.00	$ 450.00	
					$ 13,400.00
EARTHWORK					
INSPECTOR REG.	20	8	$ 120.00	$ 19,200.00	ROUGH GRADE - SUBGRADE - 20 DAYS
INSPECTOR REG.	10	6	$ 120.00	$ 7,200.00	PAD SUBGRADE - 10 DAYS
INSPECTOR REG.	12	3	$ 120.00	$ 4,320.00	AGG BASE
NUCLEAR GAUGE	256		$ 10.00	$ 2,560.00	
VEHICLE	256		$ 15.00	$ 3,840.00	
MOISTURE DENSITY CURVE	4		$ 300.00	$ 1,200.00	
					$ 38,320.00
UTILITIES					
INSPECTOR REG.	5	6	$ 120.00	$ 3,600.00	WATER (2" & 6') (259 LF) - 10 DAYS
INSPECTOR REG.	10	6	$ 120.00	$ 7,200.00	SANITARY SEWER (4") (136 LF) - 10 DAYS
INSPECTOR REG.	10	6	$ 120.00	$ 7,200.00	STORM DRAIN (6", 8", 12") (568 LF) - 10 DAYS
INSPECTOR REG.	10	4	$ 120.00	$ 4,800.00	DRY UTILITIES
VEHICLE	190		$ 15.00	$ 2,850.00	
					$ 25,650.00
PORTLAND CEMENT CONCRETE (PCC)					
INSPECTOR REG. (SP)	5	6	$ 120.00	$ 3,600.00	SLAB ON GRADE (~282 CY)
INSPECTOR REG.	4	6	$ 120.00	$ 2,880.00	BLDG FOOTINGS (~155 CY)
INSPECTOR REG. (SP)	7	2	$ 120.00	$ 1,680.00	REINFORCED CONCRETE
INSPECTOR REG.	5	6	$ 120.00	$ 3,600.00	PCC SIDEWALK & PEDESTRIAN RAMPS (~298 CY)
INSPECTOR REG.	10	5	$ 120.00	$ 6,000.00	TYPE 1, MEDIAN & VALLEY C&G (~56 CY)
INSPECTOR O.T.	2	0	$ 156.00	$ -	IF NEEDED
VEHICLE	148		$ 15.00	$ 2,220.00	
CONCRETE CYLINDERS	16		$ 200.00	$ 3,200.00	SETS OF 5
					$ 23,180.00
ASPHALT CONCRETE					**15 DAYS**
INSPECTOR REG.	1	6	$ 120.00	$ 720.00	3" AC PAVEMENT (~849 TONS)
INSPECTOR REG.	2	6	$ 120.00	$ 1,440.00	4" AC PAVEMENT (~885 TONS)
INSPECTOR O.T.	2	0	$ 156.00	$ -	IF NEEDED
VEHICLE	18		$ 15.00	$ 270.00	
CORING TECHNICIAN REG.	2	7	$ 120.00	$ 1,680.00	
CORE RIG/VEHICLE	14		$ 60.00	$ 840.00	
ASPHALT FULL MARSHALL SERIES	4		$ 640.00	$ 2,560.00	1/500 TONS
CORE UNIT WEIGHTS	4		$ 270.00	$ 1,080.00	SETS OF THREE
					$ 8,590.00
MASONRY					**35 DAYS**
INSPECTOR REG. (SP)	35	6	$ 120.00	$ 25,200.00	CMU WALLS (8" & 12") (~804 LF)
INSPECTOR REG. (SP)	10	2	$ 120.00	$ 2,400.00	GROUT AND MORTAR SAMPLING
VEHICLE	230		$ 15.00	$ 3,450.00	
COMPRESSIVE STRENGTH OF BLOCK	4		$ 255.00	$ 1,020.00	SETS OF 3 (8" & 12")
MORTAR CYLINDERS	4		$ 120.00	$ 480.00	SETS OF 3
GROUT CYLINDERS	10		$ 120.00	$ 1,200.00	SETS OF 3
					$ 33,750.00

CITY OF FERNLEY **DATE :** **9/29/2023**

ACTIVITY	QTY/DAYS	HRS/DAY	RATE	TOTAL	COMMENTS
STRUCTURAL STEEL					**30 DAYS - EVERY OTHER DAY**
INSPECTOR REG. (SP)	15	3	$ 130.00	$ 5,850.00	FIELD - WELDING INSPECTION AND HIGH STRENGTH BOLTS
INSPECTOR REG. (SP)	5	8	$ 130.00	$ 5,200.00	SHOP - WELDING INSPECTION FULL PFN
VEHICLE	45		$ 15.00	$ 675.00	
UT EQUIPMENT	45		$ 25.00	$ 1,125.00	
					$ 12,850.00
POST-INSTALLED ANCHORAGE					
INSPECTOR REG. (SP)	5	2	$ 120.00	$ 1,200.00	EPOXY, ANCHORS
VEHICLE	10		$ 15.00	$ 150.00	
					$ 1,350.00

2025

PROJECT MANAGEMENT					
PROJECT MANAGER	7	1	$ 185.00	$ 1,295.00	COORDINATION, CONSULTATION AND REPORTS
					$ 1,295.00
EARTHWORK					**5 DAYS**
INSPECTOR REG.	5	4	$ 120.00	$ 2,400.00	FINISH GRADE
NUCLEAR GAUGE	20		$ 10.00	$ 200.00	
VEHICLE	20		$ 15.00	$ 300.00	
MOISTURE DENSITY CURVE	2		$ 300.00	$ 600.00	
					$ 3,500.00
PORTLAND CEMENT CONCRETE (PCC)					**5 DAYS**
INSPECTOR REG.	5	5	$ 120.00	$ 3,000.00	PCC SIDEWALK & PEDESTRIAN RAMPS
INSPECTOR O.T.	2	0	$ 156.00	$ -	IF NEEDED
VEHICLE	25		$ 15.00	$ 375.00	
CONCRETE CYLINDERS	5		$ 200.00	$ 1,000.00	SETS OF 5
					$ 4,375.00
ASPHALT CONCRETE					**5 DAYS**
INSPECTOR REG.	1	8	$ 120.00	$ 960.00	AC PAVEMENT
VEHICLE	8		$ 15.00	$ 120.00	
CORING TECHNICIAN REG.	1	8	$ 120.00	$ 960.00	
CORE RIG/VEHICLE	8		$ 60.00	$ 480.00	
ASPHALT FULL MARSHALL SERIES	1		$ 640.00	$ 640.00	1/500 TONS
CORE UNIT WEIGHTS	1		$ 270.00	$ 270.00	SETS OF THREE
					$ 3,430.00

ESTIMATED TOTAL FEE: $ 169,690.00

NOTES:

1. **(SP) - SPECIAL INSPECTION REQUIRED**
2. **BASED ON CME PAYING NON-PREVAILING WAGE RATES**
3. **OVERTIME IS NOT ANTICIPATED, BUT IF NEEDED, WILL BE CHARGED AT 1.3 TIMES REGULAR RATE**
4. **PROPOSAL BASED ON 2024 CME RATES**
5. **INSPECTION FOR DEDICATED IMPROVEMENTS IS INCLUDED**

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Gavin Henderson**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:X	No:	Yes:	No: X	100-475-320 510-810-430 520-810-430

ACTION REQUESTED: Consent

AGENDA ITEM:

Possible Action to accept the public improvements including roadway, water, storm drain and sewer infrastructure for The Meadows at Inglewood – "Connector Road" project.

AGENDA ITEM BRIEF:

Staff is seeking Council approval to accept the roadways and utility infrastructure for the **TMAI – "Connector Road" Project.** The new roadways are a new roadway, Marie Lynn Drive. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

RECOMMENDED MOTION:

"I recommend approving the acceptance of the new roadway, sewer, water, and storm drain infrastructure associated with the TMAI – Connector Road Project."

BUSINESS IMPACT (per NRS Chapter 237):

N/A

See attached report for background, analysis, alternatives.

ALTERNATIVES:

N/A

BACKGROUND:

Staff is seeking Council approval to accept the roadways and utility infrastructure for the **TMAI – "Connector Road" Project.** The new roadways are a new roadway, Marie Lynn Drive. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

N/A

FINANCIAL IMPLICATIONS:

The added value of the new improvements will be added to the City's financial records. The ongoing cost of maintenance will be absorbed into the current budget for streets, water and sewer.

ATTACHMENTS:

1. 2023.01.06 TMAI - Connector Road Acceptance Memo to Finance
2. 2023.12.12 TMAI Connector Road Vicinity Map

CITY OF FERNLEY
Engineering Department

Water Treatment/Distribution
Wastewater
Streets/Storm Drain
Parks
Facilities &
Vector Control

To: **Finance Department**

Cc: **City Manager Office**
Gavin Henderson, Associate Engineer

From: **Derek Starkey, City Engineer**

Date: **December 1, 2023**

Subject: **Acceptance of The Meadows at Inglewood – "Connector Road" Public Infrastructure**

This memo is to inform you of the estimated value of new infrastructure recently accepted by the City of Fernley.

On **December 15, 2022**, the engineering department issued a notice of completion for: **The Meadows at Inglewood – "Connector Road."**

The new utility quantities and values are included with the engineer's estimate included with this memorandum.

Streets	$137,475.00
Sanitary Sewer	$51,600.00
Storm Drain	$9,650.00
Water	$94,150.00
Total:	**$292,875.00**

To keep the C.A.F.R. up to date we have included the following quantities for this project:

Total new miles of streets: 0.11 mi
Total new miles of water line: 0.13 mi
Total new hydrants: 2
Total new miles of sewer main: 0.11 mi
Total new manholes: 3

Please let us know if additional information is needed.

RIVER RANCH RD
MARIE LYNN RD

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Derek Starkey, City Engineer**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:x	No:	Yes:x	No:	American Rescue Pan Act, ARPA, Transient Lodging Tax, Community Development Block Grant, Federal Appropriations

ACTION REQUESTED: Consent

AGENDA ITEM:

Possible action to approve amendment A to the TSK Architects contract for the Community Response and Resource Center for an amount not to exceed $63,455 for additional engineering design services.

AGENDA ITEM BRIEF:

I move to approve the Amendment A to the TSK Architects contract for the Community Response and Resource Center in an amount not to exceed $63,455.

RECOMMENDED MOTION:

i move to

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:

Council could choose not to approve the amendment to the contract and direct staff to find a different solution with TSK Architects.

BACKGROUND:
This staff report is for an amendment to the existing contract with TSK Architects for the Community Response and Resource Center project. TSK Architects is subcontracting civil engineering design services for the project to Lumos and Associates. During the permit review process and GMP development, engineering design items were identified that needed to be corrected before final permits could be approved and issued. The main items to be addressed are: design of a deceleration lane on Main Street, design for widening Lois Lane to comply with City Development Code, design of storm water pollution prevention plans for State permitting, and landscaping revisions to comply with the City's Development Code.

The additional design tasks will require additional surveying and right of way mapping, geotechnical investigation, as well as additional design time to update the plans and specifications. The additional services will also cover costs of applying for an NDOT encroachment permit and Storm Water Pollution Prevention Permit from the Nevada Department of Environmental Protection.

The costs for the deceleration lane and additional costs for Lois Lane and other design items were conservatively estimated and included in the guaranteed maximum price that was presented and approved by City Council in December of 2023.

The next steps will be to have Lumos and Associates complete the remaining design work and resubmit the permits for final review and approval with the City, NDOT, and NDEP.

The Community Response and Resource Center, CRRC, project design process started in 2021 with TSK Architects. Phase one of the project, also known as the Base Bid of the CRRC project, is an approximately 17,900 square foot building to be located at 695 East Main Street. In addition to constructing the CRRC building, phase one will construct improvements to Lois Lane, an additional parking lot for the CRRC, and a multipurpose event lawn to the south of the existing Train Depot. The CRRC building will include a multipurpose room, teen center, kitchen with a walk-in cooler, a walk-in freezer and dry storage, a youth game room, and four classroom spaces. CORE Construction was selected by the City of Fernley through a request for qualifications that was advertised and completed in May of 2022. CORE was awarded a contract for preconstruction activities in an amount not to exceed $94,500 by the City of Fernley on July 20, 2022. CORE has been working with the City of Fernley and the design team throughout the design of phase one and to come up with estimates for the cost of construction for the project. The City awarded the final CMAR contract to CORE in December of 2023 with a GMP of $17,935,872.00.

PRIOR COUNCIL ACTION:

- On December 6, 2023 City Council approved the CMAR contract with CORE Construction for the first phase of the Community Response and Resource Center.
- On November 15, 2023, City Coincil approved the guaranteed maximum price for the construction of the first phase of the Community Response and Resource Center in an amount not to exceed $17,935,872.00.
- On September 6, 2023, City Council approved $3.577,592.80 in remaining ARPA funds that were allocated to sewer projects and other general services to Phase I of the Community Response and Resource Center.
- On April 6, 2023, City Council approved Resolution 23-001 to commit 5% local match for the Nevada Department of Transportation 2023 Transportation Alternatives Program Grant application for Multimodal transportation improvements required for the Community Response & Resource Center project. Council also approved Resolution 23-002 to commit unassigned fund balance that is in excess of 8.3% of General Fund expenditures less capital outlay for the purpose of funding the City of Fernley

Community Response & Resource Center.

- On April 5, 2023, City Council directed staff to remove/relocate the Old School House building from the Fernley Depot property to make room for the Community Response & Resource Center project.
- On March, 15, 2023, City Council approved staff to apply for local, state, and federal grant funding requests and committed $4,000,000 in City reserve funds for the construction of the Community Response & Resource Center.
- On February 15, 2023, City Council approved the Community Response & Resource Center project Design Development Submittal.
- On December 21, 2022, City Council approved the contract with Headway Transportation LLC to conduct a traffic study for the Community Response & Resource Center in the amount of $22,000.00.
- On November 2, 2022, City Council approved the revised re-scoping, floor, plan, schematic plan, and cost estimate of the Community Response & Resource Center. On October 5, 2022, City Council tabled the decision regarding the revised schematic design and cost estimates of the Community Response & Resource Center. Council directed staff to report back on November 2, 2022, and inform council about why the workgroup decisions were made regarding the revised schematic design. The council also appointed two council members to the CRRC workgroup to discuss layout options.
- On October 5, 2022, City Council approved a contract between the City of Fernley and Resource Concepts, Inc. for environmental consulting services for the project in the amount of $25,000.00.
- On July 7, 2022, City Council approved the schematic design and cost estimate of the Community Response & Resource Center. The CRRC, as presented on July 7th, was a single story 56,000 gsf facility that consisted of two separate structures at a total base bid construction cost including breakout of $38,491.547.00.
- On June 15, 2022, City Council approved the Lyon County and City of Fernley Subrecipient ARPA Agreement in the amount of $300,000 for the construction of the Community Response & Resource Center. On April 14, 2022, at the Lyon County Board of Commissioners meeting, the CRRC Workgroup presented the project and requested ARPA funding. The Lyon County Board of Commissioners graciously awarded ARPA funds to the City of Fernley in the amount of $350,000 for the CRRC project.
- On May 23, 2021, the Lyon County Board of Commissioners revisited their ARPA allocations and reduced the amount to $300,000 for the CRRC project. The City is currently in the process of approving the funding agreement.
- On June 15, 2022, City Council approved the Letter of Intent to a lease agreement between the Boys & Girls Club of Truckee Meadows to operate and maintain sections of the Community Response & Resource Center once constructed. This is in part due to the leadership, and the Boys & Girls Club experience of operating and maintaining facilities and programs, including five Boys & Girls Club afterschool and summer programs, thirteen school sites, four early learning centers, and seven teen centers. Under this agreement, the Boys and Girls Club would operate the day-care, afterschool programming, kitchen, cafeteria, gym, and meeting rooms. The letter of intent is critical to a funding source, the Nevada ARPA Child Care Extension Grant for the construction of the Community Response & Resource Center.
- On February 16, 2022, City Council approved the contract for the Owners Representative Construction Manager as Agent contract with Cumming Management Group. This contract is to ensure there is a person/company who represents the City and focuses on evaluating the project from the City's perspective beginning at the earliest stages of planning and continuing through occupancy. At the same meeting, the Council also approved staff to enter into contract negotiations with the selected CMAR for reconstruction services for the CRRC.
- City Council approved the programming and services that will be in the CRRC on January 19, 2022. The programming and services in the CRRC must be ARPA eligible because the City is using ARPA monies to fund the project. Staff identified the following ARPA eligible services and programs needed in our community in response to the public health crisis that will be in the Community Response & Resource Center: COVID-19 testing and vaccination site, workforce development services/programming,

education assistance services, afterschool programming, and early childhood education.

- On October 20, 2021, City Council approved the contract with TSK Architects for the architectural engineering services of the Community Response & Resource Center. The scope of work, among other items, included the Pre-Design Services/Concepts Update to determine the programming and services that will be housed in the CRRC and the completion of the final schematic design.
- On August 4, 2021, Fernley City Council approved the American Rescue Plan Act spending plan which $12,000,000 for the development of a Community Response and Resource Center.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

Nevada Revised Statutes 338 - Public Works

FINANCIAL IMPLICATIONS:

The design, construction, permitting and administration of the project is estimated to cost over 21 million dollars. The project includes multiple funding sources including: ARPA funding from the City of Fernley and Lyon County, Community Development Block Grant funding, Congressional Appropriations, and Transient Lodging Tax Funding.

ATTACHMENTS:

1. 2024.01.17 TSK CRRC Contract Amendment A
2. 2023_11.16 Lumos Fernley CRRC Add Service Request 1rev

AMENDMENT A

TO THE CONTRACT FOR INDEPENDENT CONTRACTOR SERVICES BETWEEN THE CITY OF FERNLEY AND TSK ARCHITECTS

This Amendment a to the Contract for Independent Contractor between the City of Fernley and TSK Architects is entered into this _____ day of _____ _____, 2024, by and between The City of Fernley ("City"), and TSK Architects; also referred to as "The Parties."

On October 20, 2021, the City and TSK Architects entered into a Contract for services related to Community Response and Resource Center. The parties hereby wish to

1.) Extend the date of the Contract to June 30th, 2025.

2.) Amend the Scope of Work to reflect the Scope and Tasks as described in Attachment A, with approved additional Project funding, not to exceed $63,455.00.

The Parties hereby approve and consent to the Amendment changes above. All of the other terms and conditions in the Contract that are not modified by this Amendment A, shall remain in full force and effect.

Each signatory for the Parties below has read the Amendment A, agrees to be bound by said document, and has the authority to bind their respective entity as listed.

THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

DATED _____ _____

TSK Architects

DATED: _____ _____

Neal McIntyre
Mayor, City of Fernley

Attest:
DATED: _____ _____

KIM SWANSON
City Clerk, City of Fernley

APPROVED AS TO FORM:

DATED: _____ _____

Aaron Mouritsen, City Attorney
595 Silver Lace Blvd.
Fernley, NV 89408
775) 784-9861
Attorney for the City of Fernley

ATTACHMENT A

Project Proposal

City of Fernley
Community Resource & Response Center
ASR #1 – Design and Engineering Services

Mike Allen, Project Manager & Owner's Representative
Cumming Corporation

November 16, 2023
Rev. December 5, 2023

November 16, 2023

City of Fernley
595 Silver Lace Blvd.
Fernley, NV 89408

Attention: Mike Allen, Project Manager

Subject: City of Fernley Community Resource & Response Center

Dear Mr. Allen,

TSK is happy to be able to provide you with this proposal for additional Architectural and Engineering Design services for the City of Fernley Community Resource & Response Center. We understand the impact that this project will have on the adjacent community and the need for additional engineering services to meet the traffic and roadway goals for this project. We truly appreciate the opportunity to continue our working relationship with the City of Fernley.

Enclosed is our proposal for this important phase of work.

We hope it meets your expectations and are glad to answer any questions you may have. Please do not hesitate to contact us.

For TSK Architects,

Kevin E. Kemner, Director

Attachments: Lumos Engineering Proposal
Scope of Work Exhibit

PROJECT UNDERSTANDING

This proposal is prepared for the following project: City of Fernley Community Resource & Response Center based upon feedback from City review and contracted traffic studies.

SCOPE OF WORK

A. Civil and Architectural Construction Documentation will be revised to incorporate the redesign of Lois Lane Right of Way and the Lois Lane and E. Main Street Intersection. This work includes revision to the adjacent proposed landscape design. This work is in response to comments received form the City of Fernley as well as Traffic Recommendations provided by Headway Transportation.

PROJECT TEAM

The following basic services will be provided by the following consultants:

• Topographic Survey	Lumos & Associates
• Lois Lane R/W Mapping	Lumos & Associates
• Geotechnical Investigation	Lumos & Associates
• Civil Construction Documentation	Lumos & Associates
• NDOT Occupancy Permit Submittal	Lumos & Associates
• SWPPP Erosion Control Plan	Lumos & Associates
• Landscape Architectural Services	Lumos & Associates

SCHEDULE

Based on our understanding of the scope of work, Lumos & Associates anticipates that the design will be completed within 5-6 weeks of notice to proceed. TSK will require anticipates an additional 1 week to incorporate design changes to complete this work.

COMPENSATION

A. Design Team Fee

TSK proposes to complete the work as defined by this proposal as a Lump Sum Fixed Fee of:

1)	TSK	$6,600
2)	Lumos & Associates	$56,855
	Total:	**$63,455**

Please refer to the attached proposal for a breakdown of Lumos & Associates overall fee.

EXCEPTIONS / CLARIFICATIONS

A. Additional Services

1. No Additional Services will be incurred without written approval from the client.
2. All other services that are considered additional services (beyond the scope of work noted herein) will be billed on an hourly basis per our standard hourly rates. Please refer to our 2023/2024 hourly rate

B. Insurance

TSK carries the following insurance and will provide the Owner with certificates:

- Comprehensive General Liability $1,000,000 for each occurrence and in the aggregate for bodily injury and property damage
- Automobile Liability - $1,000,000 combined single limit and aggregate for bodily injury and property damage
- Workers' Compensation - $1,000,000
- Professional Liability - $2,000,000 per claim and in the aggregate for Architect's negligent acts, errors, and omissions

C. Consultants

- Please refer to the Lumos & Associates for specific exceptions/clarifications related to the civil scope of this project.

LUMOS & ASSOCIATES

Carson City • Fallon • Lake Tahoe • Reno www.LumosInc.com

Reno
9222 Prototype Drive
Reno, Nevada
775.827.6111

November 16, 2023

Mr. Kolby Harpstead LA21.852
TSK ARCHITECTS
225 South Arlington Avenue, Suite A
Reno, Nevada 89501

Subject: ***Proposal for Engineering Services – Addendum #1***
Fernley Community Response & Resource Center – Fernley, Nevada

Dear Kolby:

Lumos and Associates, Inc. (Lumos) is pleased to provide you with this proposal for engineering and related additional services supporting the Fernley Community Response & Resource Center (CRRC).

Understanding of Existing Project

The City of Fernley is pursuing the development of a new community center as an addition to the new Fernley Community complex (currently comprised of the historic train depot and the new Lyon County Senior Center & Human Services Facility completed in December, 2020). Lumos has been assisting TSK Architects (TSK) with the Civil and Landscape site design of a new ±17,710 square-foot community response & resource center, parking and drive areas, open space, and event lawn.

Administrative Review comments were provided by the City of Fernley following the development of the final deliverables set forth by the original contract, consisting of 100% Civil and Landscaping Construction Documents, (Reference 5). These comments are currently being addressed under the original contract. Additional work items came forth as a part of the review comments and this addendum is presented to address these changes in the existing scope of work.

Understanding of Additional Services Requested

Planning and Engineering comments were provided by the City of Fernley following the development of the final deliverables set forth by the original contract, consisting of 100% Civil and Landscaping Construction Documents (References 3 and 4). These comments are proposed to be addressed under this proposal, to serve as Addendum I to the Original Contact, (Reference 6).

Planning and Engineering comments (References 3 and 4) require pursuing the reconstruction of Lois Lane from the main entrance to the Fernley CRRC from Lois Lane, north to the intersection at E. Main Street. (approximately 360 lineal-feet of road), to match City of Fernley Standard Drawing 128. This direction was further refined in subsequent coordination between TSK and the City of Fernley to configure Lois Lane to match the current roadway section recently constructed with the Senior Center project.

Additionally, Headway Transportation prepared two documents for the City of Fernley, (References 1 and 2) following the submittal of the original contract deliverables. The traffic recommendations included in the Headway reports require offsite work along approximately 230 lineal-feet of roadway on US Highway 50 (E. Main Street). The construction of additional roadway width along E. Main Street will require the

reconfiguration of the intersection of Lois Lane at East Main Street per the Headway Traffic Impact Study for Fernley CRRC and the Design Deviation Letter for Fernley CRRC.

Additional areas to be landscaped, as requested by the City of Fernley, are also included in the additional services requested, and consist of the west edge of the parking lot, as well as the east side of Lois Lane.

Investigation Project Scope

Lumos will prepare a topographic and boundary survey and a soil investigation for these additional areas of work. This information will be utilized by the design team in developing design plans and specifications for both the NDOT right-turn deceleration lane as well as the widening of Lois Lane.

Task 10 – Topographic Survey

Additional filed collected topography will be added to the project base map. Field shots will be obtained at critical locations such as edge of roadway, curb and flowline elevations, surface evidence of utilities and storm drain features (with inverts). The digital terrain model and topographic base map will be updated using the combination of additional ground collected topography and the previously aerial collected data. Control for the project will be referenced to the Nevada Coordinate System, West Zone, NAD83 using a local combined scale factor to establish ground values for the base map. The vertical datum for the project will be reference to NAVD88.

The area to be mapped will be the additional areas on the east side of Lois Lane, the area along the northerly side of the existing Senior Center Building, the northerly side of U.S. 50 adjacent to the project and a portion of U.S. 50, approximately 150' easterly of the U.S. 50 and Lois Lane intersection.

This work can be completed within four to six (4-6) weeks from receipt of authorization to proceed.

Task 11 – Lois Lane Right-of-Way Mapping

Lumos will conduct a records search of the right-of-way location and dedication of Lois Lane. We will calculate search coordinates and monument types for the right-of-way locations. Lumos will perform field surveying measurements to locate monuments and evidence that affect the the right-of-way of Lois Lane. The determined right-of-way lines will be added to the project base map.

This work can be completed within four to six (4-6) weeks from receipt of authorization to proceed.

Task 12 – Geotechnical Investigation

Lumos proposes a field investigation that will consist of test pit explorations at approximately two (2) locations outside of the NDOT R.O.W. and adjacent to Lois Lane and core hole explorations within Lois Lane at approximately two (2) locations along the proposed project limits. Exploration depth will range from one (1) to five (5) feet below ground surface, or practical refusal, whichever comes first. We understand Lumos and Associates, Inc. will complete the USA Dig clearance and will provide the excavation.

Lumos and Associates, Inc. herein proposes to provide sampling of each exploration, classify the encountered soils in accordance with the Unified Soil Classification System (USCS), and conduct laboratory testing on the samples collected. Additionally, we propose to perform engineering analysis and calculations and develop a

Geotechnical Investigation Report that will discuss the geologic setting, exploration and site condition, field and laboratory test data, and our conclusions and recommendations from a Geotechnical perspective. Our Geotechnical Evaluation will specifically include the following services:
Field Investigation will include:

- USA Dig Clearance
- Location of Exploration Test Pits
- Logging of all Soil Profiles Based on USCS
- Water Table Measurement, if encountered

Laboratory analysis may include:

- Atterberg Limits
- Moisture Density Curve
- Grain Size Analysis (including fines content)
- R-Value

Report, Recommendations, and Conclusions

- Exploration Logs
- Soil Types and Classification
- Site Geology
- Laboratory Test Results
- Geotechnical Discussion
- Grading Recommendations
- Roadway Reconstruction Recommendations
- Construction Procedures
- Groundwater Lever, if encountered

Lumos can begin work within three (3) weeks of Authorization to Proceed. Fieldwork will take approximately one (1) to two (2) days to complete. Laboratory testing will be assigned upon completion of the fieldwork, and may take two (2) to three (3) weeks. The analysis and report preparation is anticipated to take one (1) week. Therefore, we have estimated a time frame of approximately five (5) to six (6) weeks – from Authorization to Proceed – to complete this project. However, verbal results may be provided, as they become available.

Design Project Scope

Lumos' design scope of work will include preparation of civil improvement drawings, calculations and documents for review by the owner for permitting, bidding and construction of the project improvements. Lumos will use AutoCad Civil 3D 2022 or compatible with the design team. The drawings will be prepared on 30" x 42" format sheets and at a standard engineering scale.

Lumos will perform this scope of work on a fixed fee basis unless noted otherwise.

Task 13 – Civil Construction Document Revision

Lumos will amend the Construction Document plans and specifications deliverable from the Original Scope of Work (as indicated in the letter from Lumos to TSK dated September 17, 2021) to incorporate comments associated with the requirement to construct an eastbound deceleration taper along US50 at the Lois Lane intersection, as well as comments associated with the widening of Lois Lane. Construction Documents will be

created with the intent of securing a bidding contractor for construction of the prescribed improvements. Adjustments to the original 100%CD Submittal dated June 9, 2023 to incorporate these changes will include, but are not limited to, the following:

- Redesign and reconfiguration of utility connections from the Fernley CRRC to the utility mains in Lois Lane (water, sewer, and stormwater)
- Redesign and reconfiguration of tie-in points to existing features affected by additional work proposed as part of this Addendum (illustrated in Exhibit 1).
- Supplement CD plan set with design drawings and specifications associated with previously mentioned additional requested services associated with the NDOT right-turn deceleration taper and widening of Lois Lane
- One round of Design Team comments will be addressed with this task.

Task 14 – NDOT Occupancy Permit Submittal

This task will include preparation of civil construction drawings for submittal to NDOT for an Occupancy Permit for the US50 right-turn deceleration taper. The drawings will be prepared on 24"x36" format sheets and at a standard engineering scale. The improvement plans for this project will include the following: title sheet, demolition plans (if required), site plans, grading plans and detail sheets. Proposed improvements will be color coded per NDOT submittal requirements. A pre-application meeting is included, and one round of Agency comments will be addressed through this task.

Task 15 – SWPPP and Erosion Control Plan

Lumos will complete the online application for Stormwater General Permit NVR100000 Notice of Intent (NOI) through NDEP's Water Pollution Control General Permits System. We will provide the owner with the completed document to be signed and mailed to NDEP. Lumos will also prepare the Storm Water Pollution Prevention Plan (SWPPP) including the filling out of NDEP's SWPPP document, compiling all necessary appendices, and developing an Erosion Control Plan. Lumos will submit the Notice of Intent (NOI) online with NDEP. All related permit fees shall be paid by the City.

Task 16 – Landscape Architectural Services

Lumos will provide updated Landscaping Plans that incorporate planting and irrigation along western side of property adjacent to the proposed parking area. Additionally, Landscape Plans will be updated to incorporate planting and irrigation along the east side of Lois Lane across from the proposed CRRC building.

Assumptions / Exceptions

Lumos has made the following assumptions in preparation of this proposal:

- Utility extensions (mains) and design of "dry" utilities (i.e., gas, electric, telephone, cable television) are not included in this fee proposal, and is assumed it will be included by the mechanical and electrical engineers. If utility main extensions are required, Lumos will provide a scope of work and fee estimate for consideration.
- TSK will provide Specification and Title Block examples for formatting purposes.
- TSK/Fernley will facilitate the selection of the CMAR and manage the project during construction.
- It is assumed the CMAR will participate and provide all construction cost estimates during the design phase.

- Lumos does not anticipate developing Special Use Permits, entitlement reviews, planning approvals, or public outreach as part of this project.
- This proposal excludes the design of any retaining or sound walls.
- The selected CMAR/sub-contractor will maintain the SWPPP for construction activities within the NDOT ROW.
- Note that geotechnical investigation (Task 12) does not include any soil and/or groundwater contamination evaluation at the site. Lumos has assumed that no permits are required to conduct our field investigation and/or tests, and that access to the property will be granted to our Field Engineer.

Fee Schedule

Lumos will perform the Scope of Work included in this proposal on a Fixed Fee basis as detailed below:

TASK		FEE
10	Topographic Survey	$5,000
11	Lois Lane R/W Mapping	$3,700
12	Geotechnical Investigation	$7,475
13	Civil Construction Document Revision	$16,810
14	NDOT Occupancy Permit Submittal	$15,580
15	SWPPP & Erosion Control Plan	$5,970
16	Landscape Architectural Services	$3,000
	TOTAL:	**$56,855**

References

1. Headway Transportation. (March 20, 2023). *Traffic Impact Study for Fernley CRRC*. Prepared for the City of Fernley.

2. Headway Transportation. (May 12, 2023). *Design Deviation Letter for Fernley CRRC.* Addressed to Michael Fuess, PE, PTOE, District Engineer, NDOT District II.

3. City of Fernley, Derek Starkey, PE, City Engineer. (August 8, 2023). *CRRC Phase I – Pre-Bid Initial Comment Letter*. Addressed to Mike Allen, Cummings Group.

4. City of Fernley, Shay League, Senior Planner. (August 8, 2023). *AR23004 – Administrative Review for Fernley Community Response and Resource Center*. Addressed to Kolby Harpstead, Project Manager, TSK Architects.

5. Shaw Engineering, Cody Black, PE, Principal Engineer. (August 7, 2023). AR23004 – *Fernley Community Resource and Recovery Center Administrative Review*. Addressed to Derek Starkey, PE, City of Fernley.

6. AIA Agreement between Tate Snyder Kimsey Architect, Ltd. (TSK) and Lumos & Associates. (April 1, 2022).

This proposal does not include provisions for construction staking, inspection, or materials testing (other than the testing associated with the Geotechnical Investigation). Lumos and Associates will amend this proposal as requested to include any of these services.

It is assumed that if this proposal is acceptable, TSK Architects will provide a contract addendum for Lumos review and signature. Any additional services requested but not covered by this Scope of Work can be provided by an amendment to this proposal.

Lumos and Associates, Inc. will send monthly progress billings on this project. The amount of these billings will be based upon the percentage of work completed. The terms are 'Due Upon Receipt' and accounts are past due after 30 days. Accounts over 30 days old will be subject to interest at the rate of 1 ½% per month and such collection action as may be necessary to collect the account. In addition, a "Stop Work Order" may be issued on past due accounts. In this case, no further work will be performed until the account is brought current.

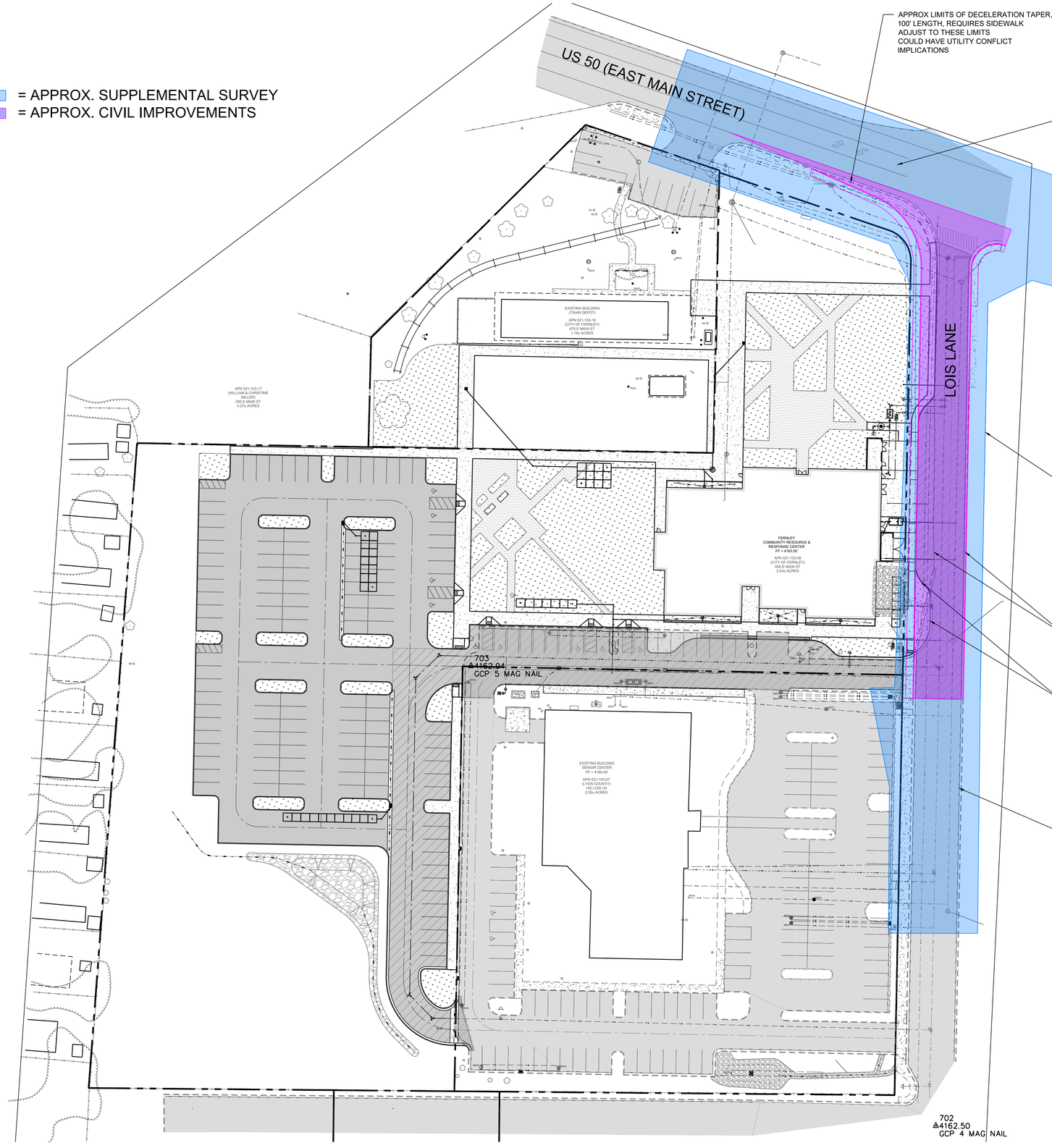
Thank you again for allowing Lumos and Associates to provide you with this proposal. Please do not hesitate to call me if you have questions.

Sincerely,

Vanessa Gallo, P.E.
Senior Engineer

Michelle Gamble, P.E.
Group Manager

= APPROX. SUPPLEMENTAL SURVEY
= APPROX. CIVIL IMPROVEMENTS



APPROX LIMITS OF DECELERATION TAPER, 100' LENGTH, REQUIRES SIDEWALK ADJUST TO THESE LIMITS COULD HAVE UTILITY CONFLICT IMPLICATIONS

TOPO ACROSS STREET AND DOWN US 50 TOPO NDOT R/W ON SOUTH SIDE OF US50, TOPO TO ASSESS DRAINAGE PATTERN

SOME TOPO IS ACQUIRED WITHIN LOIS LANE ALREADY BUT SUPPLEMENTAL NEEDED TO RECONSTRUCT AND TIE INTO SHOULDER AND SENIOR CENTER'S SEGMENT OF LOIS LANE.

R/W ON EAST SIDE OF LOIS LANE CURRENTLY UNKNOWN, REQUIRES MAPPING. SUPPLEMENTAL TOPO WHERE GAPS EXIST WITHIN THE BLUE AREA ARE REQUIRED.

CURRENT EXTENTS OF LOIS LANE PAVEMENT

CURRENT DESIGN OF LOIS LANE UNDER ORIGINAL CONTRACT TO BE REDESIGNED

TOPO IN THIS AREA TO DETERMINE TIE IN GRADES & TRANSITION FROM CROWNED ROAD TO SINGLE CROSS-SLOPE DRAINS TO EAST SIDE OF LOIS LANE

L:\APPS\10683.000 - Fernley Community Center Complex\DWG\Exhibits\ADDED SCOPE OF WORK.dwg,BASE (2), 10/07/2023 01:33 pm vgonio

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111

WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

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TSK ARCHITECTURE

FERNLEY CRRC

ADDITIONAL SCOPE OF WORK

LYON

FERNLEY

NEVADA

REV	DATE	DESCRIPTION	BY

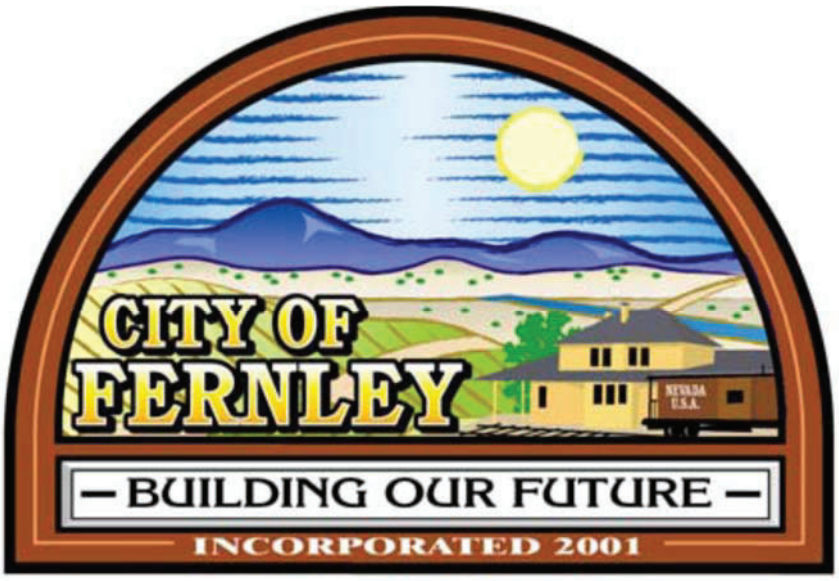
PRELIMINARY
NOT FOR CONSTRUCTION
10/6/2023

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

EXHIBIT-1

DRAWN BY:	VG
DESIGNED BY:	VG
CHECKED BY:	-
JOB NO.:	10683.000

ANNUAL COMPREHENSIVE FINANCIAL REPORT



FISCAL YEAR ENDED
JUNE 30, 2023

City of Fernley
Nevada

CITY OF FERNLEY, NEVADA

Table of Contents

Page

INTRODUCTORY SECTION

Letter of Transmittal i
Organizational Chart v
List of Principal Officials vi
GFOA Certificate of Achievement vii

FINANCIAL SECTION

Independent Auditors' Report 1

Management's Discussion and Analysis 5

Basic Financial Statements:

Government-wide Financial Statements:
Statement of Net Position 25

Statement of Activities 26

Fund Financial Statements:
Balance Sheet – Governmental Funds 27

Reconciliation of the Balance Sheet of Governmental Funds to the Statement of Net Position 28

Statement of Revenues, Expenditures, and Changes in Fund Balances – Governmental Funds 29

Reconciliation of the Statement of Revenues, Expenditures, and Changes in Fund Balances of Governmental Funds to the Statement of Activities 30

Statement of Net Position – Proprietary Funds 31

Statement of Revenues, Expenses, and Changes in Net Position – Proprietary Funds 32

Statement of Cash Flows – Proprietary Funds 33

Statement of Fiduciary Net Position – Fiduciary Funds 34

Statement of Changes in Fiduciary Net Position – Fiduciary Funds 35

Notes to the Financial Statements 36

Required Supplementary Information:

Schedule of the Proportionate Share of the Net Pension Liability 69

Schedule of Changes in the Net OPEB Liability and Related Ratios 70

Schedule of Contributions 71

Notes to Required Supplementary Information 72

Schedule of Revenues, Expenditures (Expenses), and Changes in Fund Balances – Budget and Actual:

General Fund 74

Grants Special Revenue Fund 76

Table of Contents (Continued)

Supplementary Information:

Combining and Individual Fund Statements and Schedules:
Combining Balance Sheet – Non-major Governmental Funds....80

Combining Statement of Revenues, Expenditures and Changes in Fund Balances – Non-major Governmental Funds....81

Schedules of Revenues, Expenditures, and Changes in Fund Balances – Budget and Actual – Non-major Governmental Funds:
Municipal Court Administrative Fees Special Revenue Fund....82

Municipal Court Facilities Fees Special Revenue Fund....83

Transient Lodging Tax Special Revenue Fund....84

Capital Projects Fund....85

Capital Improvement – Capital Projects Fund....86

Schedules of Revenues, Expenses, and Changes in Net Position – Budget and Actual – Enterprise Funds:
Water Utility – Enterprise Fund....88

Sewer Utility – Enterprise Fund....89

STATISTICAL SECTION

Financial Trends:

Net Position by Component....93

Change in Net Position....94

Fund Balances of Governmental Funds....97

Changes in Fund Balances of Governmental Funds....98

Revenue Capacity:

Assessed and Estimated Actual Value of Taxable Property....99

Property Tax Rates – Direct and Overlapping Governments....100

Principal Property Owners....101

Water User Fees....102

Principal Water Users....103

Table of Contents (Continued)

Debt Capacity:

Ratios of Outstanding Debt by Type 104
Ratios of General Bonded Debt Outstanding 105
Computation of General Obligation Direct and Overlapping Debt 106
Computation of Legal Debt Margin 107
Water and Sewer Funds Revenue Bond Coverage 108

Demographic and Economic Information:

Demographic Statistics 109
Major Employers 110

Operating Information:

Full-time Equivalent City Government Employees by Function/Program 111
Operating Indicators by Function/Program 112
Capital Asset Statistics by Function/Program 113

COMPLIANCE SECTION:

Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters 117
Independent Auditors' Report on State Legal Compliance 119
Schedule of Fees Imposed Subject to the Provisions of NRS 354.5989 Limitation of Fees for Business Licenses 121

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CITY OF FERNLEY

January 17, 2023

To the Honorable Mayor, Members of the City Council, and Residents of the City of Fernley Nevada:

The annual comprehensive financial report (ACFR) for the City of Fernley for the fiscal year ended June 30, 2023 is hereby submitted. State law requires that local governments provide for an annual audit by independent certified public accountants of its financial statements in accordance with auditing standards generally accepted in the United States of America.

This report consists of management's representations concerning the finances of the City of Fernley. Consequently, management assumes full responsibility for the completeness and reliability of all the information presented in the report. To provide a reasonable basis for making these representations, management of the City of Fernley has established a comprehensive internal control framework that is designed both to protect the city's assets from loss, theft, or misuse and to compile sufficient reliable information for the preparation of the City of Fernley's financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP). Because the cost of internal controls should not outweigh their benefits, the City of Fernley's comprehensive framework of internal controls has been designed to provide reasonable rather than absolute assurance that the financial statements will be free from material misstatement. As management, we assert that, to the best of our knowledge and belief, this financial report is complete and reliable in all material respects.

The City of Fernley's financial statements have been audited by Hinton, Burdick CPAs & Advisors, a firm of licensed certified public accountants. The goal of the independent audit is to provide reasonable assurance that the financial statements of the City of Fernley for the fiscal year ended June 30, 2023 are free of material misstatement. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; assessing the accounting principles used and significant estimates made by management; and evaluating the overall financial statement presentation. The independent auditor concluded based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that the City of Fernley's financial statements for the fiscal year ended June 30, 2022, are fairly presented in conformity with GAAP. The independent auditor's report is presented as the first component of the financial section of this report.

The city was required to have a single audit performed given the City of Fernley expended more than $750,000 in federal financial assistance during the fiscal year ended June 30, 2023. The federally mandated "Single Audit" is designed to meet the special needs of federal grantor

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agencies. GAAP requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of a Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. The City of Fernley's MD&A can be found immediately following the report of the independent auditors.

Profile of the Government

The City of Fernley "the city" was incorporated in 2001 under the provisions of Nevada Revised Statutes (NRS) Chapter 266. The city is in western Nevada, occupies a land area of 164 square miles and serves a population of 22,895 according to the United States Census taken in 2020. The city is empowered to levy a property tax on both real and personal properties located within its boundaries.

The city operates under the Council/Manager form of government. Policy-making and legislative authority are vested in a governing council consisting of the Mayor and five City Council members. The City Council is responsible for establishing policy, passing ordinances, adopting the budget, appointing committees and establishing the organizational structure of the city. Pursuant to NRS, the Mayor is the chief executive officer of the city. The City Manager is the chief administrative officer of the city. This individual is responsible for carrying out the policies and ordinances of the City Council, for overseeing the day-to-day operations of the city and for supervising the heads of various departments, excluding appointed officials. The City Council members are elected by Ward to serve four-year staggered terms. The Mayor is an elected position and serves a four-year term.

The city provides a wide range of services, including construction and maintenance of streets, parks, buildings and water and sewer systems; recreational activities and events; vector and animal control; building and planning services; municipal court services; cemetery services; general administrative services; and water and sewer services. The Lyon County Sheriff's office provides law enforcement services. The city contracts with Lyon County for animal shelter services. Fire protection services are provided through the legally separate North Lyon County Fire Protection District. The Fernley Swimming Pool District owns and operates a swimming pool in Fernley and Lyon County operates the senior center. Lyon County and the Lyon County School District also provide regional services in Fernley.

The annual budget serves as the foundation for the city's financial planning and control. All city department heads are required to submit requests for appropriation to the City Manager and Treasurer in January of each year. The two use these requests as the starting point for developing a proposed budget. A series of City Council workshops are held to discuss the budget and during these workshops, the City Manager presents the proposed budgets to the City Council for review. The City Council is required to hold a public hearing on the proposed budget no earlier than the Third Monday in May and not later than the last day in May; and then adopt a final budget by June 1 of each year to be filed with the Department of Taxation. The appropriated budget is a policy document prepared by fund and department. Any augments must be approved by City Council and submitted to the Department of taxation. Department heads may request transfers of appropriations and depending on the departments and funds, City Council may or may not be required to authorize a transfer of appropriations as per NRS. However, City Council is informed of all transfers of appropriations.

Factors Affecting Financial Condition and Outlook

The information presented in the financial statements is perhaps best understood when it is considered from the broader perspective of the specific environment within which the city operates. The city relies on property tax revenues, which is the city's main revenue source, to support general government services. As revenues fluctuate, so do the level of the services that may be provided. Given the State of Nevada's property tax structure, the city's limited revenue sources and its inability to impose taxes, it is difficult for the city to maintain city streets at appropriate levels. The city continues to seek other revenue sources, utilize tools and review current revenue streams and fees that may assist in providing additional money for city streets. Federal funding is also reviewed for any opportunities. The city was awarded a $25 million grant by the US Department of Transportation to construct a major roadway that would connect US 50 and Interstate 80.

Local Economy

The city's population continues to grow, but as a result of the pandemic, labor and supply challenges continue to impact projects and costs. While development experienced some decline in the prior year, it has continued as mortgage rates have increased significantly. However, there still exists a significant interest in Fernley for industrial, commercial, and residential development. New and expanding businesses will generate future sales, property, and shared tax revenues for the city.

When the pandemic hit in March of 2020, the city, like many other areas throughout the nation, began to experience significant unemployment. In April 2020, the nation's unemployment rate went from 8.4% the previous month, to an unemployment rate that paralleled the rate at the height of great recession (20.0%). Things have gotten better, however. The US average unemployment rate as of September 2022 was 3.5%; the State of Nevada's was 4.4%; and the city's unemployment rate was 4.7%. Fernley has seen a small increase in the job market over the last year. However, future job growth is expected to increase significantly over the next ten years due to industrial growth.

While the pandemic certainly affected the local economy and still does to this day, there are three other major factors that continue to impact the city. First, the property tax law that was passed in 2005 continues to affect property tax revenue resulting in the under-collection of revenues due to abatement. Second, the city's C-TAX revenue distribution impacts the city and third, the demands and costs to provide city services to the community, including parks, roads, and other services are increasing. While the city has saved to address some of these issues, with the increase in population, the needs are outpacing the city's revenue growth. Therefore, the city must continue to identify revenue sources to ensure quality programs and services can be provided to the community.

Given the negative economic impacts of COVID-19, which resulted in a national recession and the highest inflation rate since 1990, it is critical that the city continues to take a very conservative approach when preparing the budget. While the budget presented is balanced, going forward, there may be a need to look at delaying purchases or hiring to ensure the city's funds are stable and consistent with the current economy.

Long-term financial planning

City staff has worked on establishing many long-range plans. In December 2020, the Fernley City Council adopted the 2021-2026 Strategic Plan, which focuses on the following goals:

- Manage sustainable growth and maintain public infrastructure
- Develop a defined city center with a mix of businesses, restaurants, and entertainment
- Encourage a variety of housing types, density and costs that accommodate the needs, desires, and financial abilities of current and future households.
- Increase opportunities for civic engagement and community building
- Maintain strong partnerships with public agencies and community organizations
- Ensure municipal services meet the needs and expectations of the community
- Develop and maintain revenue sources to support community improvements and services.

Long-term planning is critical for the sustainability of the city. The following plans are used to plan for financial needs and resources for the responsible growth and development of the city.

Description	Date Completed
ADA Transition Plan Infrastructure Survey and Inventory	August 2019
City's Master Plan (Comprehensive Plan)	August 2018
Communications Plan	September 2017
Community Center Conceptual Design	September 2019
Emergency Management Plan	Work in progress
Parks Master Plan	September 2017
Redevelopment Plan	March 2019
Sewer Master Plan	Work in progress
Strategic Plan	Completed December 2020 (2021-2026)
Transportation Master Plan	June 2020
Water Conservation Plan	September 2016
Wastewater Master Plan	Work in progress
Water Resource Plan	December 2019

Appreciation and Acknowledgements:

The management of the City of Fernley would like to acknowledge the efforts of the city's Finance Department and Hinton, Burdick CPAs & Advisors for their effort and dedication in producing this document.

The preparation of this report could not have been accomplished without the professional, efficient and dedicated staff of the Finance Department. Our auditors, Hinton, Burdick CPAs & Advisors provided the expert support and guidance that made the preparation of this report possible. We would also like to express our thanks to the department heads and employees of the city for their cooperation and assistance, and to the citizens of Fernley whose continued cooperation, support, and assistance have contributed greatly to the financial stability of the City of Fernley.

City of Fernley

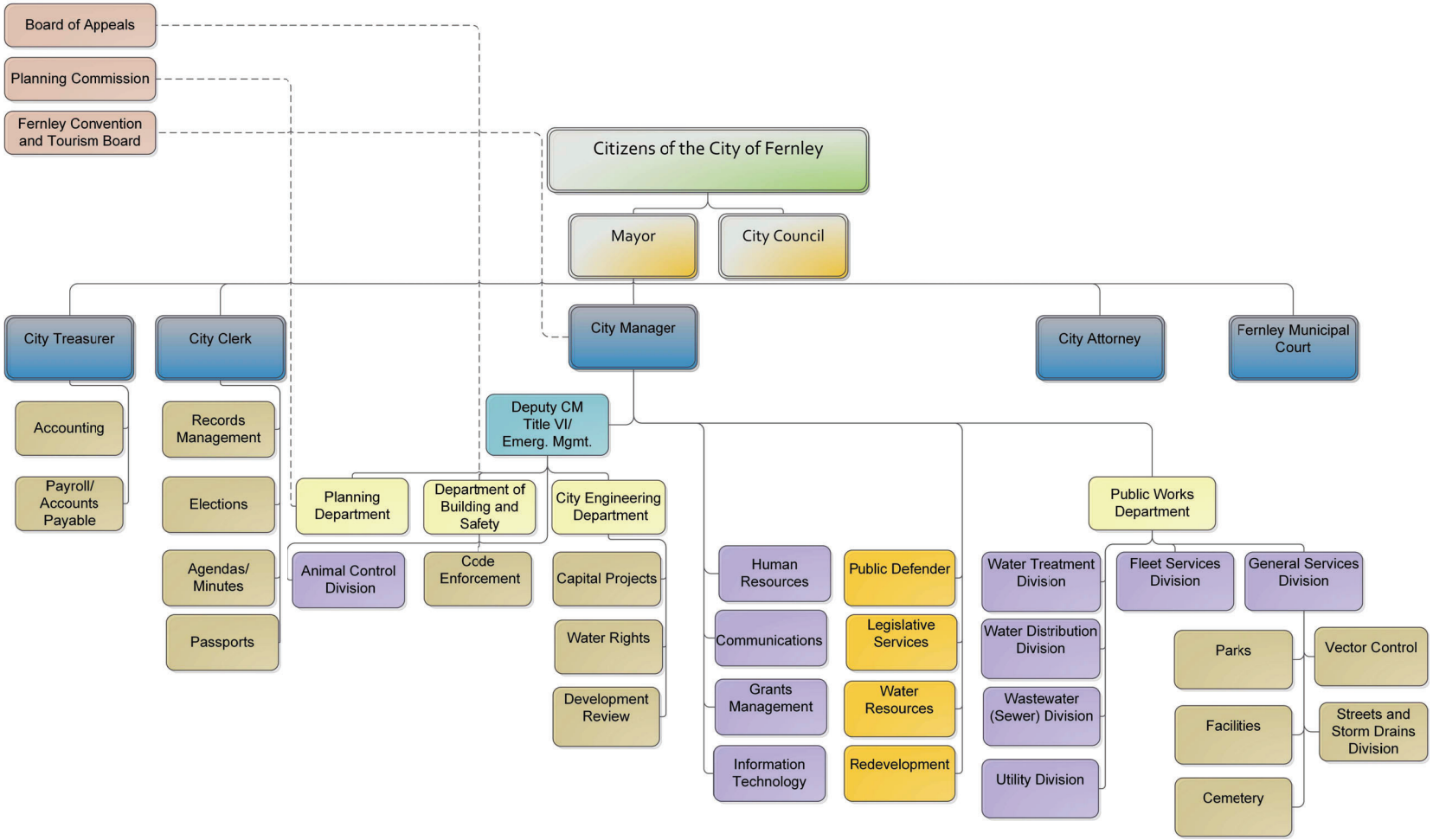
Respectfully submitted,

Benjamin Marchant
City Manager

Respectfully submitted,

Jennie Carrick
Deputy Finance Director

Organizational Chart



City Council

Mayor	Roy Edgington
Council Member Ward 1	Raymond Lacy
Council Member Ward 2	Felicity Zoberski
Council Member Ward 3	Stan Lau
Council Member Ward 4	Albert Torres
Council Member Ward 5	Fran McKay

The Fernley City Council meets in regular session the first and third Wednesday of the month in the Council chambers in City Hall located at 595 Silver Lace Boulevard, Fernley, Nevada.

Staff

City Manager	Daphne Hooper
City Attorney	Brandi Jensen
City Treasurer	Denise Lewis
Municipal Court Judge	Lori Matheus
City Clerk	Kimberly Swanson
Public Works Director	Dave Whalen
City Engineer	Derek Starkey
Planning Director	Timothy Thompson
Building Official	Billy Staten

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

City of Fernley
Nevada

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

June 30, 2022

Christopher P. Morrill

Executive Director/CEO

FINANCIAL SECTION

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HINTON BURDICK
CPAs & ADVISORS

Independent Auditors' Report

The Honorable Mayor and City Council
City of Fernley, Nevada

Report on the Audit of the Financial Statements

Opinions

We have audited the financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Fernley, Nevada (the City), as of and for the year ended June 30, 2023, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

In our opinion the accompanying financial statements present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Fernley, Nevada, as of June 30, 2023, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the City and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Change in Accounting Principle

As described in Note 1 to the financial statements, in fiscal year 2023, the City of Fernley, Nevada implemented the provisions of GASB Statement No. 96, *Subscription-Based Information Technology Arrangements*. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

The City's management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error. In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for one year after the date that the financial statements are issued or when applicable, one year after the date that the financial statements are available to be issued.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control–related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the schedule of the proportionate share of the net pension liability, the schedule of changes in the net OPEB liability and related ratios, the schedule of contributions, and the budgetary comparison information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic

financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City's basic financial statements. The combining statements and individual nonmajor fund and enterprise fund budgetary comparison schedules are presented for purposes of additional analysis and are not a required part of the basic financial statements.

Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining statements and individual nonmajor fund and enterprise fund budgetary comparison schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the introductory section, statistical section, and schedule of business license fees but does not include the financial statements and our auditor's report thereon. Our opinions on the financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon. In connection with our audit of the financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated January 3, 2024, on our consideration of the City's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering City's internal control over financial reporting and compliance.

HintonBurdick, PLLC
St. George, Utah
January 3, 2024

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Management's Discussion and Analysis

As management of the City of Fernley (city), we offer readers of the city's financial statements this narrative overview and analysis of the city's financial performance during the fiscal year ended June 30, 2023. This report provides financial information on the city as a whole and by fund. We encourage readers to consider the information presented here in conjunction with the city's letter of transmittal and the financial statements, which follow this section.

Financial Highlights

- The city's total net position was $223,929,747 at June 30, 2023.
- The city's total expenses were $24,340,208 at June 30, 2023.
- Business-Type Activities revenue:
    - Water: $22,084,374
    - Sewer: $10,161,359
- The city's total Governmental Activities revenue was $19,227,331.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the city's basic financial statements. The city's basic financial statements comprise three components: 1) government-wide financial statements, 2) basic fund financial statements, and 3) notes to the financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Government-wide financial statements. The *government-wide financial statements* are designed to provide readers with a broad overview of the city's finances, in a manner similar to a private-sector business.

The *Statement of Net Position* presents information on all of the city's assets, deferred outflows, liabilities and deferred inflows with the differences reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the city is improving or deteriorating.

The *Statement of Activities* presents information showing how the government's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g., uncollected taxes and earned but unused vacation leave).

Each of the government-wide financial statements identify the activities of the city that are principally supported by taxes and intergovernmental revenues (*governmental activities*) and the activities that are intended to recover all or a significant portion of their costs through user fees and charges (*business-type activities*). The governmental activities of the city include general government, judicial, public works, culture and recreation, community

support and development and health functions. The business-type activities of the city include water and sewer functions.

The government-wide financial statements can be found on pages 25 and 26 of this report.

Basic fund financial statements. A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The city, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the city can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

Governmental funds. Governmental funds are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in evaluating a government's near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the government's near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balance provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The city maintains seven individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the General Fund and the Grants Fund, which are considered major funds. Data for the remaining, non-major governmental funds are combined into a single, aggregated presentation. Individual fund data for each of these nonmajor governmental funds is provided in the form of *combining statements* elsewhere in this report.

The city adopts an annual appropriated budget for its General Fund. A budgetary comparison statement has been provided for the General Fund to demonstrate compliance with this budget.

The basic governmental fund financial statements can be found on pages 27 through 30 of this report.

Proprietary funds. The city maintains two proprietary funds as *enterprise funds* to account for its potable water and sewer (wastewater) operations. *Enterprise Funds* are used to report the same functions presented as *business-type activities* in the government-wide financial statements.

Proprietary funds provide the same type of information as the government-wide financial statements, only in more detail. The Proprietary Fund financial statements provide separate information for the water and sewer operations. The Water Fund and Sewer Fund are considered to be major funds of the city.

The basic Enterprise Fund financial statements can be found on pages 31 through 33 of this report.

Custodial fund. The Custodial Fiduciary fund is used to account for resources held for the benefit of parties outside the government. Custodial funds are *not* reflected in the government-wide financial statements because the resources of those funds are *not* available to support the city's own programs. The custodial fund uses the economic resources measurement focus for accounting purposes.

The statement of Fiduciary Net Position for the Custodial Fund can be found on pages 34 and 35 of this report.

Notes to the financial statements. The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements. The notes to the financial statements can be found on pages 36 through 66 of this report.

Other Information. In addition to the basic financial statements and accompanying notes, this report also presents certain supplementary information. The combining statements referred to earlier in connection with nonmajor governmental funds are presented immediately following the required supplementary information. Combining and individual fund statements and schedules can be found on pages 80 through 89 of this report.

Government-wide Financial Analysis

One of the most important questions asked about the city's finances is "Is the city as a whole better off or worse off as a result of this year's activities?" The statement of activities reports information about the city's activities in a way that will help answer this question. The statement of net position presents information on all of the city's assets and liabilities, with the difference between the two reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the city is improving or deteriorating. These two statements report the net position of the city and the changes in them. However, considerations should also be given to other non-financial factors such as changes in economic conditions, population growth and new or changed governmental legislation.

The following table represents a summary of the City's statement of net position.

City of Fernley's Net Position

	Governmental Activities		Business-type Activities		Totals	
	FY23	FY22	FY23	FY22	FY23	FY22
Assets						
Cash & investments	$15,223,902	$16,307,802	$64,884,845	$56,166,398	$80,108,747	$72,474,200
Receivables (net)	3,543,698	753,324	1,952,329	1,630,100	5,496,027	2,383,424
Inventory	-	-	183,817	159,772	183,817	159,773
Prepaids	-	-	742	2,700	742	2,700
Restricted assets:						
Temporarily restricted:						
Cash & investments	11,182,128	7,135,178	414,788	485,034	11,596,916	7,620,212
Capital assets (net):						
Land & water rights	5,099,616	5,099,616	49,138,516	46,466,183	54,238,132	51,565,799
Construction in progress	6,218,775	1,527,380	11,402,675	5,765,896	17,621,450	7,293,276
Buildings	2,758,857	3,070,754	-	-	2,758,857	3,070,754
Improvements and Other	7,348,727	6,982,947	95,777,394	98,422,463	103,126,121	105,405,410
Machinery, equipment and vehicles	666,984	217,789	856,246	856,687	1,523,230	1,074,476
Infrastructure	27,329,282	26,679,503	-	-	27,329,282	26,679,503
Total assets	79,371,969	67,774,293	224,611,352	209,955,234	303,983,321	277,729,527
Deferred outflows						
Deferred charge on refunding	-	-	2,856,132	3,047,170	2,856,132	3,047,170
Deferred outflows related to pensions/OPEB	2,582,161	2,234,639	2,029,468	1,739,885	4,611,629	3,974,524
Total deferred outflows	2,582,161	2,234,639	4,885,600	4,787,055	7,431,393	7,021,694
Liabilities						
Accounts payable and other current liabilities	2,762,095	3,944,817	278,828	2,396,025	3,040,923	6,340,842
Unearned Revenue	10,987,744	7,074,748	3,083,073	2,142,652	14,070,817	9,217,400
Refundable deposits	-	-	414,788	485,034	414,788	485,034
Accrued interest	-	-	702,213	733,368	702,213	733,368
Noncurrent liabilities:						
Due within one year	-	-	3,143,968	3,223,545	3,143,968	3,223,545
Due in more than one year	159,002	193,003	54,028,559	57,119,259	54,187,561	57,312,262
Net OPEB liability	108,277	169,266	137,511	183,505	245,788	342,904
Net pension liability	6,359,165	3,172,916	4,601,133	2,239,769	10,960,298	5,412,685
Total liabilities	20,376,283	14,554,750	66,390,073	68,523,157	86,766,356	83,076,735
Deferred Inflows						
Deferred inflows related to pensions/OPEB	327,024	2,661,404	427,955	2,216,191	754,979	4,887,595

Net position:						
Net investment in capital assets	49,422,241	43,577,989	102,946,878	94,334,014	152,369,119	137,912,003
Restricted for:						
Capital projects	620,040	874,060	-	-	620,040	874,060
Future development	309,008	174,199	-	-	309,008	174,199
Judicial	123,403	116,492	-	-	123,403	116,492
Unrestricted	10,776,131	8,050,038	59,732,046	49,670,099	70,508,177	57,720,137
Total net position	$61,250,823	$52,792,778	$162,678,924	$144,004,113	$223,929,747	$196,796,891

At the close of the current fiscal year, the city's total assets and deferred outflows exceeded its total liabilities and deferred inflows by $223,929,747. The city has total positive working capital (current assets less current liabilities) of $59,398,863.

Deferred outflows and deferred inflows are the flows of resources into and out of the city during the fiscal year and represent the recognition of revenues and expenses that are deferred until the future period to which the outflows and inflows are related. $2.8 million of the city's deferred outflows relate to water and sewer refunding bonds and represent the difference between the reacquisition price (funds required to refund the old debt) and the net carrying amount of the old debt (amount due at maturity, adjusted for any unamortized premium or discount related to the old debt). $734,210 of deferred outflows are related to pension contributions made to the plan after the net pension liability's measurement date and prior to fiscal year end. The city reported $2.8 million in deferred inflows related to pensions and changes in assumptions.

The majority of the city's net position (70% or $152 million) reflects its investment in capital assets (e.g., land, buildings, machinery, and equipment); net of any related outstanding debt used to acquire those assets. The city uses these capital assets to provide services to citizens; consequently, these assets are not available for future spending. Although the city's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

Less than 1%, or $1 million, of the city's net position represents resources that are subject to external restrictions on how they may be used. The remaining balance of *unrestricted net position* 70 million) may be used to meet the government's ongoing obligations to citizens and creditors.

The following table summarizes the change in net position for the current fiscal year:

	Governmental Activities		Business-Type Activities		Total	
	FY23	FY22	FY23	FY22	FY23	FY22
Revenues:						
Program revenues:						
Charges for services	$5,425,946	$4,977,772	$16,038,432	$15,419,524	$21,464,378	$20,397,296
Operating grants and contributions	5,990,119	2,708,379	-	-	5,990,119	2,708,379
Capital grants and contributions	2,268,815	1,468,592	10,873,570	5,527,857	13,142,385	6,996,449
General revenues:						
Property taxes	4,100,313	3,635,121	-	-	4,100,313	3,635,121
Consolidated taxes	216,346	205,075	-	-	216,346	205,075
Fuel Taxes	394,632	391,070	-	-	394,632	391,070
Residential Const. Tax	303,000	279,000	-	-	303,000	279,000
Ancillary fee	-	-	4,426,104	4,407,245	4,426,104	4,407,245
Gaming Licenses	122,355	120,170	-	-	122,355	120,170
Gain (loss) on disposal	-	8,496	-	2,210	-	10,706
Investment Earnings	405,805	(372,467)	907,627	(945,853)	1,313,432	(1,318,320)
Miscellaneous revenues	-	-	-	-	-	-
Total revenues	19,227,331	13,421,208	32,245,733	24,410,983	51,473,064	37,832,191
Expenses:						
General government	3,497,519	3,586,290	-	-	3,497,519	3,586,290
Judicial	591,999	445,902	-	-	591,999	445,902
Public works	4,766,951	4,523,736	-	-	4,766,951	4,523,736
Culture & recreation	933,738	1,022,103	-	-	933,738	1,022,103
Community development	749,955	722,118	-	-	749,955	722,118
Health	229,084	121,443	-	-	229,084	121,443
Water	-	-	9,893,288	9,241,599	9,893,288	9,241,599
Sewer	-	-	5,119,968	3,167,761	5,119,968	3,167,761
Interest and fiscal charges	-	3,439	-	-	-	3,439
Total expenses	10,769,286	10,425,031	13,570,922	12,409,360	24,340,208	22,834,391
Increase(decrease) in net position	8,458,045	2,996,175	18,674,811	12,001,623	27,132,856	14,997,798
Net position, July 1	52,782,778	49,796,603	162,678,924	132,002,490	196,796,891	181,799,093
Prior period adjustment	-	-	-	-	-	-
Restatement adjustment	-	-	-	-	-	-
Net position, June 30	$61,250,823	$52,792,778	$181,353,735	$144,004,113	$223,929,747	$196,796,891

While the statement of net position shows the financial position of the city, the statement of activities provides answers as to the nature and source of these changes. From a government-wide perspective and as reported in the statement of activities, the city's total change in net position at June 30 was $27,132,856.

Governmental activities net position increased by $8 million due to revenues exceeding expenses and certain RTC streets projects not being completed. In March of 2021, the American Rescue plan Act of 2021 (ARPA) established the Coronavirus State and Local Fiscal Recovery Funds (SLFRF) to provide state, local, and Tribal governments with the

resources needed to respond to the pandemic and its economic effects and to build a stronger, more equitable economy during the recovery. As a result, the city as a whole received $22 million in funding. In fiscal year 2023, the city recognized as revenue and expended $1.5 million in ARPA funds. $1.7 million in streets infrastructure was dedicated to the city in 2023. Permit, planning and business license revenues continue to increase as the city continues to grow. In addition, increases in property tax revenues continue due to higher assessed values.

Bu*siness-type activities* net position increased by $5.7 million due to revenues exceeding expenses. Charges for services increased due to an increase in water and sewer user fee revenues resulting from Council approved rate increases. Such increases have provided for the coverage of operating costs as well as for the savings for capital replacement and repairs. Total connections continue to increase due to growth. Water ancillary fees increase or decrease as debt requirements change from year to year. The sewer fund was allocated $5 million in ARPA funding. $2.6 million was spent in fiscal year 2023.

At the close of the current fiscal year, the city is reporting positive balances in all three categories of net position, to include net investment in capital assets, restricted and unrestricted net position. The same situation held true for the prior fiscal year.

Fund Financial Analysis

Governmental Funds

The focus of the city's *governmental funds* is to provide information on the near-term inflows, outflows, and balances of *available* financial resources. Such information is useful in assessing the city's financing requirements. In particular, *fund balance* may serve as a useful measure of a government's net resources available for spending at the end of the fiscal year.

From a fund perspective, at the close of the current fiscal year, the city's governmental funds reported combined ending fund balances of $16,171,588. with an excess of revenues over expenditures of $3,036,124.

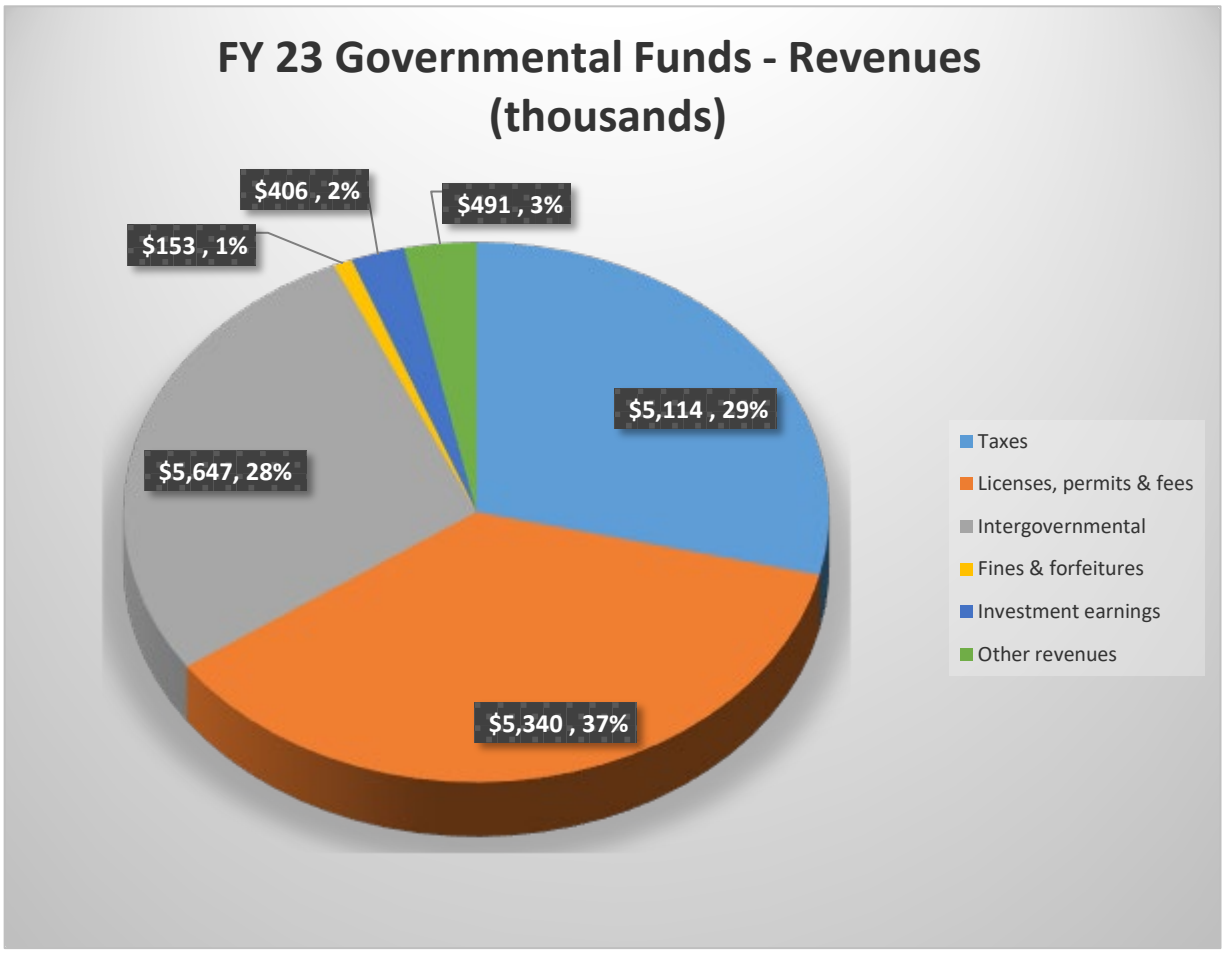
The General Fund is the main operating fund of the city. At the close of the current fiscal year, fund balance for the General Fund was $12,739,826, with an excess of revenues over expenditures of $2,462,627.

General Fund restricted fund balance, which includes amounts constrained for a specific purpose by external parties, is $929,229; General Fund committed fund balance, which represents funds constrained by Council for public works projects, is $11,105,596 for the current year. The remaining General Fund fund balance of $705,001 is unassigned. Unassigned fund balance represents 8.3% of total General Fund expenditures less capital outlay.

The Transient Lodging Tax Fund (TLT) is a governmental fund which is used to account for taxes collected for transient accommodations. A portion of the tax collected is reserved for future facilities and a portion is provided as grant awards. Fund balance for the TLT Fund at year end is $2,766,182, with $1,071,083 assigned for future facilities.

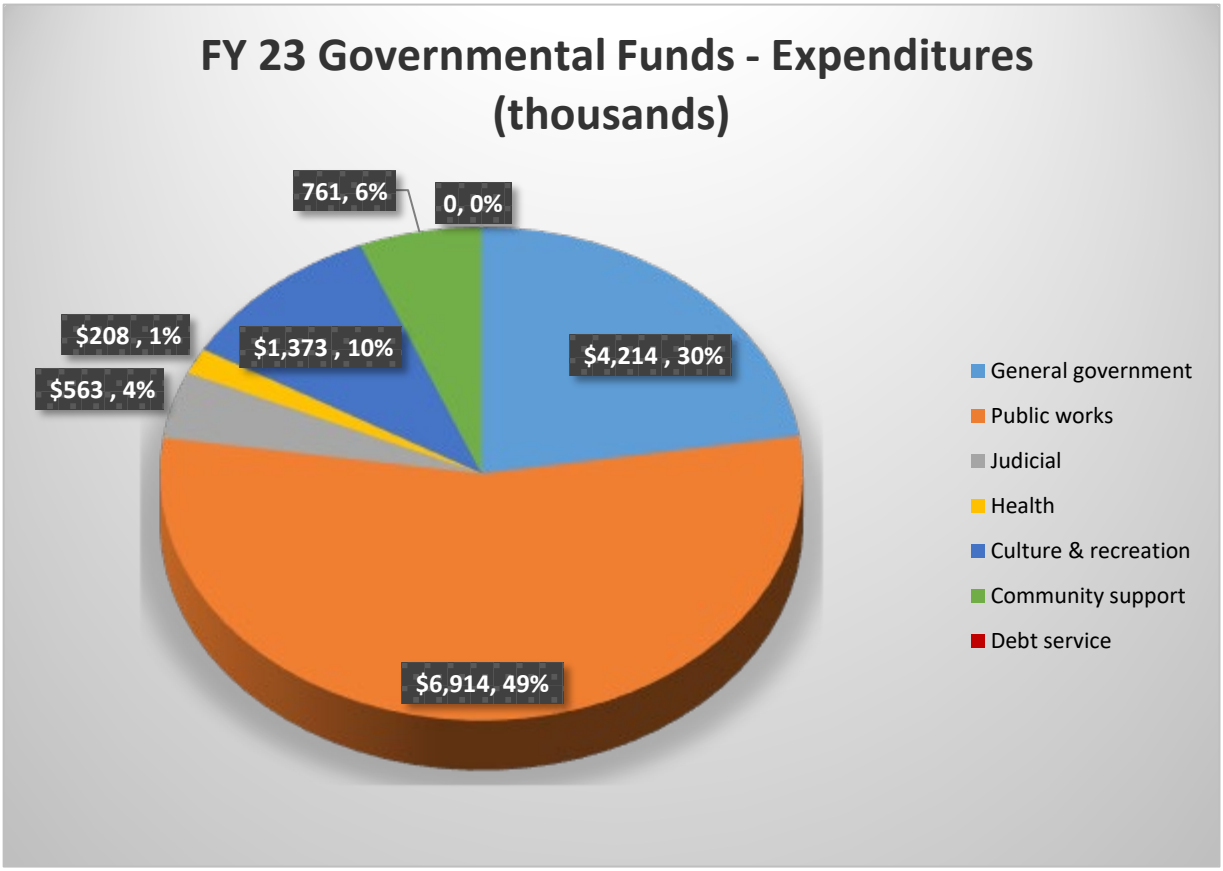
Governmental funds also include those such as the Grants Fund, which is used to account for revenues and expenditures of various grants that the city has applied for and received. The city expended $5.6 million in grants funds in fiscal year 2023, in the Grants Fund and the proprietary funds, all of which were federal funds related to ARPA.

Other government funds include the Municipal Court Administration Fees Fund, the Municipal Court Facilities Fees Fund, the Capital Improvement Fund and the Capital Projects Fund. The Capital Projects Fund is used to account for funds to be used for the acquisition or construction of capital assets, other than those of Enterprise Funds. Fund balance for the Capital Projects fund at year end is $542,167.



The total of governmental fund revenues as of June 30 is $17,151,489. The three main sources of governmental revenues for the fiscal year were taxes, licenses/permits and intergovernmental revenue. Taxes make up 29% of revenues and include property taxes

and transient lodging taxes. Licenses, permits and fees make up 37% of revenues and include business licenses, franchise fees, liquor licenses, gaming licenses, animal licenses, passport fees, permitting fees, planning fees and inspection fees. Intergovernmental revenues make up 28% of revenues and include consolidated tax, motor vehicle fuel tax, RTC tax, grants and County parks and roads contributions. Fines and forfeitures make up 1% of revenues and include municipal court penalties/fines and warrant fees. Other revenues, which make up 5% of revenues, includes investment losses, cemetery fees, donations and other.



The total of governmental fund expenditures as of June 30 is $14,115,365 and includes the general fund, the grants fund, the muni court administration fund, the muni court facilties fund, lodging tax fund and both capital funds. Within the general fund, there are six different functions for which there are outlays of expenditures reported and within the functions there are departments. The general government function, which has 30% of outlays, includes the following departments: Mayor/City Council, City Manager, City Attorney, City Clerk, City Treasurer, Facilities, Fleet and Information Technology. The public works function, which has 49% of outlays includes the streets department. The judicial function, which has 4% of outlays, includes the municipal court department and muni court funds. The health function, which has 1% of outlays, includes the cemetery, animal control and vector control departments. The culture and recreation function,

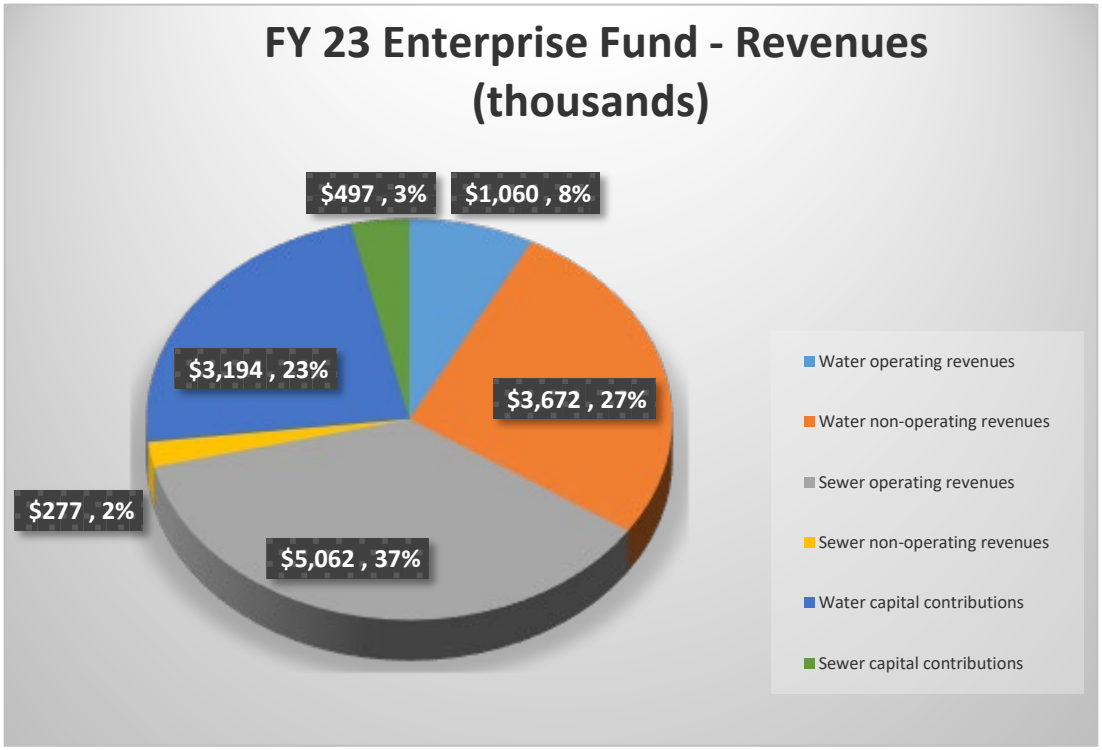
which has 10% of outlays, includes the parks department. The community support function, which has 6% of outlays, includes the building and planning departments. Debt service is reported separately and is 0% of outlays and includes principal and interest payments for payoff of the city's administration building.

Proprietary Funds

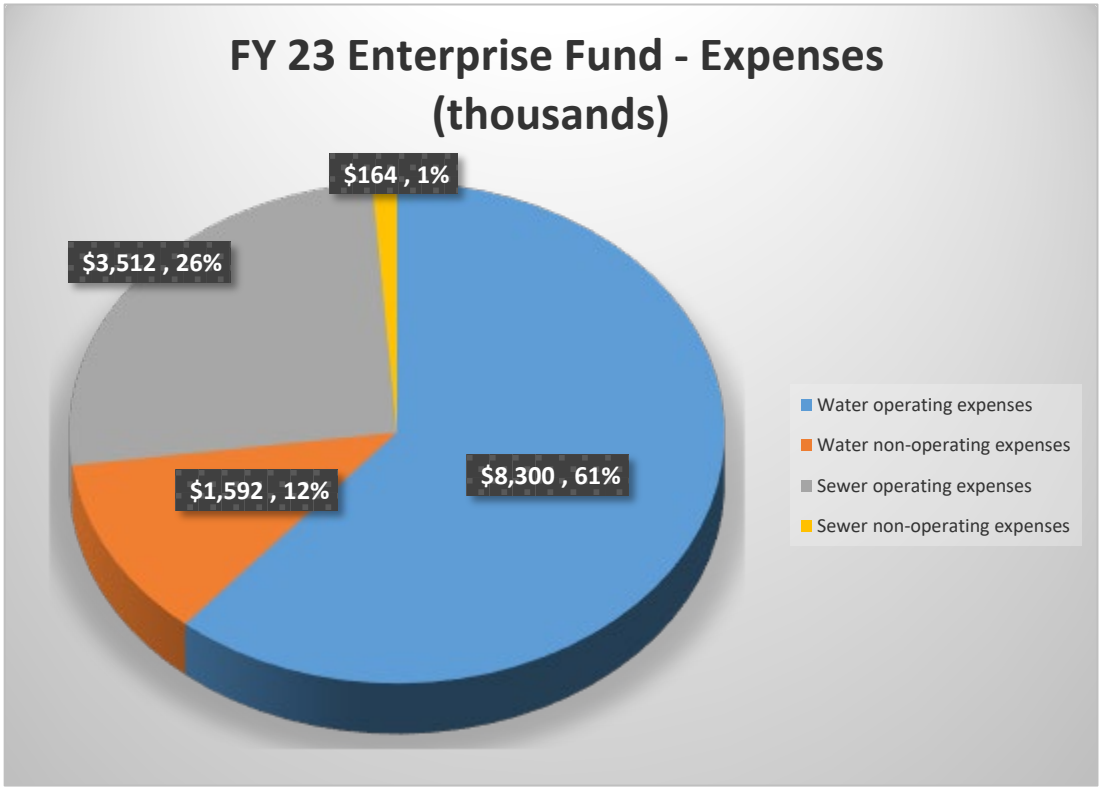
Whereas government funds measure and report available financial resources, *proprietary funds* measure and report economic resources. Proprietary funds are business-like funds and include the city's water and sewer Enterprise Funds.

At the close of the current fiscal year, the city's Enterprise Funds reported a combined ending net position of $162,678,924, with a change in net position of $18,674,811. Water Fund operating revenues for the fiscal year is $10,603,216 and the change in net position is $12,191,086. Sewer Fund operating revenues for the fiscal year is $5,062,281 and the change in net position is $6,486,725. Total net position in the Water Fund at the end of the year is $116,635,069. Of that amount $37,321,383 is unrestricted. Total net position in the Sewer Fund at the end of the year is $46,043,855. Of that amount, $22,410,663 is unrestricted. Unrestricted net position is the portion of the excess of total assets over total liabilities that may be utilized at the discretion of Council.

In addition, Enterprise funds have combined positive working capital of $43,148,116. The Water Fund has positive working capital of $25,988,478. The Sewer Fund has positive working capital of $17,159,638.



The major sources of operating revenues for both water and sewer are user fees for services. These fees represent 60% of total enterprise revenues. Non-operating revenues include ancillary water fee revenue and interest income and make up 29% of total enterprise revenues. The remaining 11% is grants and capital contribution revenues, which include connection fees.



Operating expenses for both water and sewer include salaries, employee benefits, services, supplies and depreciation. They make up 87% of total enterprise expenses. Non-operating expenses include interest expense on debt and make up 13% of total enterprise expenses.

Budgetary Highlights

The City Council adopts an annual operating budget and a five-year capital budget following public budget workshops and a public hearing. The operating budget includes proposed appropriations and the means of financing them. The city's budget remains in effect the entire year, but may be augmented by City Council prior to year end. Budget vs. actual (variance) financial reports are provided to management on a monthly basis and such are presented to City Council on a quarterly basis.

Total General Fund revenues indicate a positive budget vs. actual variance of $869K. This is a result of $1.3 million more than budget in licenses fees and permits being collected. General Fund expenditures indicate a positive budget vs. actual variance of $6.9 million. This is due in part to the city not spending $455K it had appropriated in its contingency account; a result of not spending approximately $328K on parks projects and $360K on planning projects, and $4.7 million in public works budgeted for repairs and projects which did not occur. General Fund excess of revenues over expenditures for the year indicated a positive variance of $7.7 million.

Total water revenues (excluding grants and capital contributions) indicate a positive budget vs. actual variance of 275K as service fees were less than budgeted by $306K but had an

increase in investment income of 523K. Total water expenses indicate a positive budget vs. actual variance of $986K. This is attributable to savings in operational expenses including $622K in employee benefits and $133k in services and supplies. The Water Fund's change in net position indicates a positive budget vs. actual variance of $5.6 million due in part to an increase over budget of capital contributions totaling $2.7 million and the savings mentioned above.

Total sewer revenues (excluding grants and capital contributions) indicate a positive budget vs. actual variance of $494K. This is due to investment income of $384K. Total sewer expenses indicate a positive budget vs. actual variance of $547K. This is due to operational savings. The Sewer Fund's change in net position indicates a positive budget vs. actual variance of $3.4 million due in part to an increase over budget of grant and capital contributions of $1.9 million and operating savings of $547K.

Budgetary schedules can be found on pages 70 through 74 and pages 78 through 85 of this report.

Capital Asset and Debt Administration

Capital assets. The city's total capital assets for its governmental and business-type activities as of June 30, 2023, amounts to $206,597,073 (net of accumulated depreciation) and includes land, construction in progress, buildings, improvements, machinery and equipment, infrastructure and other capital assets. The city's total net capital assets increased by $11,507,855 from the prior year. This increase is mainly due to the increase in construction in progress for the surface water conveyance project, the Sage tank rehabilitation project and the US50A/95A sewer improvement project. A major project completed during the year was Sage Tank $526K. Major construction in progress projects include $1.3 million for the West Lift Station Upgrade; $1.4M for Cottonwood Water Lines; and $907K for the Farm District Road Lift Station Rehab.

City of Fernley Capital Assets
(net of depreciation)

	Governmental activities		Business-type activities		Totals	
	FY23	FY22	FY23	FY22	FY23	FY22
*Land	$5,099,616	$5,099,616	$1,201,609	$1,201,609	$6,380,107	$6,301,225
*Water rights	--	--	47,936,907	45,264,574	47,858,025	45,264,574
*Construction in progress	6,218,775	1,527,380	11,402,676	5,765,897	17,621,451	7,293,277
Buildings	8,667,420	8,667,420	17,530	17,530	8,684,950	8,684,950
Improvements other than buildings	14,065,874	13,253,634	166,640,653	164,816,964	180,706,527	178,070,598
Machinery & Equipment	2,397,188	1,875,153	3,386,384	3,229,035	5,783,572	5,104,187
Other capital assets	42,187,306	40,499,798	1,671,630	1,671,630	43,858,936	42,171,428
TOTAL	78,636,179	68,708,203	232,257,389	213,498,820	310,893,568	282,207,023

Accumulated depreciation	(29,213,938)	(27,345,012)	(75,082,557)	(70,456,010)	(104,296,495)	(97,801,023)
Capital assets, net	$49,422,241	$43,577,989	$157,174,832	$151,511,229	$206,597,073	$195,089,217

*Capital assets, which are not being depreciated

Additional information on the city's capital assets can be found in note 6 of the financial statements.

Long-term debt. At the end of the current fiscal year, the city had total bonded debt outstanding of $55,086,581. This debt is backed by pledged revenues from the utility system. The unamortized bond premium/discount balance related is $1,997,504. In addition, the city's long-term liabilities include estimated compensated absences of $247,444, net pension liability of $10,960,298 and other post employment benefits (OPEB) of $245,789.

Pension benefit payments are recognized when due and payable in accordance with the benefit terms. OPEB benefit payments are also recognized when due and payable in accordance with the benefit terms. The city has no obligation other than contributions required by the Nevada Public Employee Retirement System (PERS) and payments required by the Public Employee Benefits Program (PEBP).

	Governmental activities		Business-type activities		Totals	
	FY23	FY22	FY23	FY22	FY23	FY22
General obligation/revenue bonds	--	--	55,086,581	58,092,409	55,086,581	$58,092,409
Installment purchase debt	-	-	--	--	-	--
Unamortized bond premium	--	--	1,997,504	2,131,976	1,997,504	2,131,976
Compensated absences	159,002	193,003	88,442	117,247	247,444	310,250
Net pension liability	6,359,165	3,172,916	4,601,133	2,239,769	10,960,298	5,412,685
Other postemployment benefit obligations	108,278	169,266	137,511	183,505	245,789	352,771
TOTAL	$6,626,445	$3,535,185	$61,911,171	$62,764,906	$68,537,616	$66,300,091

The city's total debt balances decreased by $3 million during the current fiscal year due to the principal payments made toward bond debt for business type activities; the payoff of the installment loan; and a decrease in pension liability.

Additional information on the city's long-term debt, Post Employment Retirement Health Insurance Benefits and the city's Defined Benefit Pension Plan can be found in Notes 7, 9 and 10, respectively, of the financial statements.

Economic Factors and Next Year's Budget and Rates

Factors Affecting Financial Condition and Outlook

The information presented in the financial statements is perhaps best understood when it is considered from the broader perspective of the specific environment within which the City of Fernley operates. The city relies on property tax revenues, which is the city's main revenue source, to support general government services. As revenues fluctuate, so do the level of the services that may be provided. Given the State of Nevada's property tax structure, the city's limited revenue sources and its inability to impose taxes, it is difficult for the city to maintain city streets at appropriate levels. The city continues to seek other revenue sources, utilize tools and review current revenue streams and fees that may assist in providing additional money for city streets. Any potential opportunities will be reviewed and discussed.

Local Economy

The city's population continues to grow, but as a result of the pandemic, labor and supply challenges continue to impact projects and costs. While development experienced some decline in the prior year, it has continued as mortgage rates have increased significantly. However, there still exists a significant interest in Fernley for industrial, commercial, and residential development. New and expanding businesses will generate future sales, property, and shared tax revenues for the city.

While the pandemic certainly affected the local economy and still does to this day, there are three other major factors that continue to impact the city. First, the property tax law that was passed in 2005 continues to affect property tax revenue resulting in the under-collection of revenues due to abatement. Second, the city's C-TAX revenue distribution impacts the city and third, the demands and costs to provide city services to the community, including parks, roads, and other services are increasing. While the city has saved to address some of these issues, with the increase in population, the needs are outpacing the city's revenue growth. Therefore, the city must continue to identify revenue sources to ensure quality programs and services can be provided to the community.

Given the negative economic impacts of COVID-19, which resulted in a national recession and the highest inflation rate since 1990, it is critical that the city continues to take a very conservative approach when preparing the budget. While the budget presented is balanced, going forward, there may be a need to look at delaying purchases or hiring to ensure the city's funds are stable and consistent with the current economy.

Long-term financial planning

The City of Fernley has worked on establishing many long-range plans. In December 2020, the Fernley City Council adopted the 2021-2026 Strategic Plan, which focuses on the following goals:

- Manage sustainable growth and maintain public infrastructure
- Develop a defined city center with a mix of businesses, restaurants, and entertainment
- Encourage a variety of housing types, density and costs that accommodate the needs, desires, and financial abilities of current and future households.
- Increase opportunities for civic engagement and community building
- Maintain strong partnerships with public agencies and community organizations
- Ensure municipal services meet the needs and expectations of the community
- Develop and maintain revenue sources to support community improvements and services.

Long-term planning is critical for the sustainability of the city. The following plans are used to plan for financial needs and resources for the responsible growth and development of the City of Fernley.

Description	Date Completed
ADA Transition Plan Infrastructure Survey and Inventory	August 2019
City's Master Plan (Comprehensive Plan)	August 2018
Communications Plan	September 2017
Community Center Conceptual Design	September 2019
Emergency Management Plan	Work in progress
Parks Master Plan	September 2017
Redevelopment Plan	March 2019
Sewer Master Plan	Work in progress
Strategic Plan	Completed August 2020 (2021-2026)
Transportation Master Plan	June 2020
Water Conservation Plan	September 2016
Waster Master Plan	Work in progress
Water Resource Plan	December 2019

Long-term planning is critical for the sustainability of the city. These plans are utilized to plan for financial needs and resources for the responsible growth and development of the City of Fernley.

Budget

The city's annual budget is an all-encompassing financial plan, policy document, operations guide and communications device, which incorporates an organization's mission, vision and strategic plan. Budgets are management tools to help plan for the future.

Each December, City Council establishes key priorities, which assists staff in making determinations as to the types of expenses and expenditures to include in their respective budget requests and as to total appropriations, which are ultimately approved by City Council. In addition, management of the City of Fernley annually updates the Capital Improvement Plan required by state statute and continues to prepare the necessary facilities plans for ultimate development of a more comprehensive Capital Improvement Plan.

For 2023/24, General fund general revenues are budgeted for a $477K increase in property taxes and RTC streets revenue is budgeted to increase $3.1 million over prior year's actual.

General fund expenditures are budgeted to increase over prior year's actual by approximately $7.0 million due to the following: $6.5 million in the streets department with $6.2 million being for additional streets capital projects and major maintenance; there is an additional $250K over prior year actual budgeted for parks improvements, machinery and equipment; and an additional $200K is budgeted over prior year actual in the planning department for area planning. A 2% cola and 3% merit increase is budgeted for all departments, which also increases PERS contributions and payroll taxes for FY 24. Fund balance for the general fund is budgeted to increase by $10M compared to prior year's actual due to committed funds being used for streets and other capital projects.

The City has experienced notable turnover over the last few years, which has left certain departments with cost savings when left without key employees. This creates significant variances when comparing prior year actual to the next year's budget and does not necessarily mean that costs are being increased by as much. While a current year's actual's will reflect the savings of an employee that has departed and not yet replaced, the next year's budget will reflect the entire cost for that position.

For 2023/24 Water fund revenues, excluding capital contributions, are budgeted to increase over prior year's actual by $1 million. This is due to a budgeted increase in user fee revenue of approximately $650K and current investment gain of $350K. Water fund expenses are budgeted to increase by $1.2 million and is due to an increase in salaries and benefits; an increase in water rights protection; an increase in repairs and maintenance; an increase in pension expenses; increases in engineering and contract costs; increases in supplies and materials due to increased costs; and increases in other operational expenses.

For 2023/24 Sewer fund revenues, excluding capital contributions, are budgeted to increase by $525K and is due to an increase in user fees and current investment gains. Sewer fund operational expenses are budgeted to increase by approximately $600K due to an increase in salaries and benefits; increases in repairs and maintenance; increases in pension

expenses; increases in engineering and contract costs; increases in supplies and materials due to increased costs; and increases in other operational expenses.

An increase in net position is budgeted for both the water and sewer funds at $7.6 million and $4 million, respectively.

The current financial position of the city indicates that the city will be able to meet its financial obligations as they become due and it will be able to provide service obligations to its constituencies. Therefore, there is adequate cash to meet current obligations and those expected in the near future. However, to ensure the financial position of the city remains positive, it will be in the best interest of the city for management to continue to incorporate long-term planning, look at economic development opportunities, operate within budget, collect revenue due, continue to analyze water and sewer rates and other fee structures and continue to save for capital replacement and maintenance. In order to properly plan for the city's future, it will be very important that responsible decisions are made at all levels of management.

Requests for Information

This financial report is designed to provide a general overview of the city's finances for all those with an interest in the city's finances. Questions concerning any of the information provided in this report or requests for additional information should be addressed to the City Treasurer/Finance Director, 595 Silver Lace Blvd, Fernley NV 89408.

BASIC FINANCIAL STATEMENTS

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CITY OF FERNLEY, NEVADA
Statement of Net Position
June 30, 2023

	Governmental Activities	Business-type Activities	Total
Assets			
Cash and investments	$ 15,223,902	$ 64,884,845	$ 80,108,747
Receivables (net of allowance)	3,543,698	1,952,329	5,496,027
Inventory	-	183,817	183,817
Prepaids	-	742	742
Restricted assets:			
Temporarily restricted:			
Cash and investments	11,182,128	414,788	11,596,916
Capital assets (net of accumulated depreciation):			
Land and water rights	5,099,616	49,138,516	54,238,132
Construction in progress	6,218,775	11,402,675	17,621,450
Buildings	2,758,857	-	2,758,857
Improvements and other	7,348,727	95,777,394	103,126,121
Machinery, equipment and vehicles	666,984	856,246	1,523,230
Infrastructure	27,329,282	-	27,329,282
Total assets	79,371,969	224,611,352	303,983,321
Deferred outflows of resources			
Deferred charge on refunding	-	2,856,132	2,856,132
Deferred outflows related to pensions/OPEB	2,582,161	2,029,468	4,611,629
Total deferred outflows of resources	2,582,161	4,885,600	7,467,761
Liabilities			
Accounts payable and other current liabilities	2,762,095	278,828	3,040,923
Unearned revenue	10,987,744	3,083,073	14,070,817
Refundable deposits	-	414,788	414,788
Accrued interest	-	702,213	702,213
Noncurrent liabilities:			
Due within one year	-	3,143,968	3,143,968
Due in more than one year:			
Long-term debt	159,002	54,028,559	54,187,561
Net OPEB liability	108,277	137,511	245,788
Net pension liability	6,359,165	4,601,133	10,960,298
Total liabilities	20,376,283	66,390,073	86,766,356
Deferred inflows of resources			
Deferred inflows related to pensions/OPEB	327,024	427,955	754,979
Net position			
Net investment in capital assets	49,422,241	102,946,878	152,369,119
Restricted for:			
Capital projects	620,040	-	620,040
Future development	309,008	-	309,008
Judicial	123,403	-	123,403
Unrestricted	10,776,131	59,732,046	70,508,177
Total net position	$ 61,250,823	$ 162,678,924	$ 223,929,747

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Activities
For the Year Ended June 30, 2023

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants & Contributions	Program Revenues: Capital Grants & Contributions	Net (Expense) Revenue and Changes in Net Position: Governmental Activities	Net (Expense) Revenue and Changes in Net Position: Business-type Activities	Net (Expense) Revenue and Changes in Net Position: Total
Governmental activities:							
General government	$ 3,497,519	$ 4,598,594	$ 2,028,808	$ -	$ 3,129,883	$ -	$ 3,129,883
Public works	4,766,951	642,576	3,214,446	2,268,815	1,358,886	-	1,358,886
Judicial	591,999	153,296	-	-	(438,703)	-	(438,703)
Health	229,084	-	-	-	(229,084)	-	(229,084)
Culture and recreation	933,738	31,480	746,865	-	(155,393)	-	(155,393)
Community support and development	749,995	-	-	-	(749,995)	-	(749,995)
Total governmental activities	10,769,286	5,425,946	5,990,119	2,268,815	2,915,594	-	2,915,594
Business-type activities:							
Water	9,893,288	10,918,464	-	6,216,785	-	7,241,961	7,241,961
Sewer	3,677,634	5,119,968	-	4,656,785	-	6,099,119	6,099,119
Total business-type activities	13,570,922	16,038,432	-	10,873,570	-	13,341,080	13,341,080
Total primary government	$ 24,340,208	$ 21,464,378	$ 5,990,119	$ 13,142,385			
General revenues:							
Taxes:							
Property taxes					4,100,313	-	4,100,313
Fuel taxes					394,632	-	394,632
Residential construction tax					303,000	-	303,000
Water ancillary fee revenue					-	4,426,104	4,426,104
Unrestricted state consolidation tax					216,346	-	216,346
Unrestricted gaming licenses					122,355	-	122,355
Unrestricted investment earnings (loss)					405,805	907,627	1,313,432
Total general revenues					5,542,451	5,333,731	10,876,182
Change in net position					8,458,045	18,674,811	27,132,856
Net position - beginning					52,792,778	144,004,113	196,796,891
Net position - ending					$ 61,250,823	$ 162,678,924	$ 223,929,747

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Balance Sheet
Governmental Funds
June 30, 2023

	General Fund	Special Revenue Grants Fund	Other Governmental Funds	Total Governmental Funds
Assets				
Cash and investments	$ 11,833,355	$ -	$ 3,390,547	$ 15,223,902
Receivables:				
Property taxes	40,119	-	-	40,119
Interest receivable	98,727	-	12,946	111,673
Other	491,081	-	75,625	566,706
Due from other governments	2,825,200	-	-	2,825,200
Restricted cash and investments	-	11,182,128	-	11,182,128
Total assets	$ 15,288,482	$ 11,182,128	$ 3,479,118	$ 29,949,728
Liabilities				
Accounts payable	2,090,046	265,524	47,366	2,402,936
Accrued liabilities	80,781	-	-	80,781
Due to developers	278,378	-	-	278,378
Unearned revenue	71,150	10,916,594	-	10,987,744
Total liabilities	2,520,355	11,182,118	47,366	13,749,839
Deferred inflows of resources				
Unavailable revenue - property taxes	28,301	-	-	28,301
Fund balances				
Restricted for:				
Judicial	-	-	123,403	123,403
Capital projects	620,040	-	-	620,040
Future development	309,189	10	-	309,199
Committed:				
Capital projects	-	-	542,167	542,167
Convention center	-	-	1,695,099	1,695,099
Public works	11,105,596	-	-	11,105,596
Assigned to:				
Culture and recreation	-	-	1,071,083	1,071,083
Unassigned	705,001	-	-	705,001
Total fund balances	12,739,826	10	3,431,752	16,171,588
Total liabilities, deferred inflows of resources, and fund balances	$ 15,288,482	$ 11,182,128	$ 3,479,118	$ 29,949,728

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Reconciliation of the Balance Sheet of Governmental Funds
to the Statement of Net Position
June 30, 2023

Amounts reported for governmental activities in the statement of net position are different because:		
Total fund balances - total governmental funds		$ 16,171,588
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.		
Governmental capital assets	$ 78,636,179	
Accumulated depreciation	(29,213,938)	49,422,241
Some liabilities, including bonds payable and net pension liabilities, are not due and payable in the current period and therefore are not reported in the funds.		
Compensated absences	$ (159,002)	
Other postemployment benefits liability	(108,277)	
Net pension liability	(6,359,165)	(6,626,444)
Unavailable revenue associated with property taxes is recognized as revenue in the government-wide statements.		28,301
Deferred outflows and inflows of resources related to pensions are applicable to future reporting periods and, therefore, are not reported in the funds.		
Deferred outflows related to pensions	$ 2,582,161	
Deferred inflows related to pensions	(327,024)	2,255,137
Net position of governmental activities		$ 61,250,823

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Revenues, Expenditures, and Changes in Fund Balances
Governmental Funds
For the Year Ended June 30, 2023

	General	Special Revenue Grants Fund	Other Governmental Funds	Total Governmental Funds
Revenues				
Taxes	$ 4,438,026	$ -	$ 675,875	$ 5,113,901
Licenses, permits and fees	5,340,054	-	-	5,340,054
Intergovernmental revenue	4,070,272	1,576,415	-	5,646,687
Fines and forfeitures	124,498	-	28,797	153,295
Investment earnings (loss)	361,079	-	44,725	405,804
Other revenues	483,348	-	8,400	491,748
Total revenues	14,817,277	1,576,415	757,797	17,151,489
Expenditures				
Current:				
General government	2,638,300	1,576,415	-	4,214,715
Public works	6,914,751	-	-	6,914,751
Judicial	540,131	-	23,404	563,535
Health	208,099	-	-	208,099
Culture and recreation	1,291,868	-	80,901	1,372,769
Community support and development	761,501	-	-	761,501
Debt service:	-	-	-	-
Capital outlay	-	-	79,995	79,995
Total expenditures	12,354,650	1,576,415	184,300	14,115,365
Excess (deficiency) of revenues over (under) expenditures	2,462,627	-	573,497	3,036,124
Other financing sources (uses)	-	-	-	-
Net change in fund balances	2,462,627	-	573,497	3,036,124
Fund balances, beginning of year	10,277,199	10	2,858,255	13,135,464
Fund balances, end of year	$ 12,739,826	$ 10	$ 3,431,752	$ 16,171,588

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Reconciliation of the Statement of Revenues,
Expenditures, and Changes in Fund Balances of Governmental Funds
to the Statement of Activities
For the Year Ended June 30, 2023

Amounts reported for governmental activities in the statement of activities are different because:		
Net change in fund balances - total governmental funds		$ 3,036,124
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the costs of those assets is allocated over their estimated useful lives and reported as depreciation expense. This is the difference between depreciation expense and capital outlay in the current period.		
Capital outlay	$ 5,624,363	
Depreciation expense	(1,868,926)	3,755,437
Governmental funds do not report the contributions of capital assets as revenue, unless the assets will be held for sale. However, in the statement of activities, the donation of capital assets is reported as revenue.		2,088,815
Because some property taxes will not be collected in time to pay for obligations in the current period, they are not considered available revenues in the governmental funds and are instead reported as deferred revenues. These revenues are accounted for as revenue in the statement of activities.		(12,969)
Pension contributions are reported as expenditures in the governmental funds when made. However, they are reported as deferred outflows of resources in the statement of net position because the net pension liability is measured a year before the government's report date. Pension expense, which is the change in the net pension liability adjusted for changes in deferred outflows and inflows of resources related to pensions, is reported in the statement of activities.		
Pension/OPEB contributions	$ (2,634,443)	
Pension/OPEB expense	2,814,106	(443,363)
Compensated absences and other postemployment benefit obligation expenses reported in the statement of activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds. This adjustment reflects the change in compensated absences and other postemployment benefit obligations.		34,001
Change in net position of governmental activities		$ 8,458,045

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Net Position
Proprietary Funds
June 30, 2023

	Water Fund	Sewer Fund	Total Enterprise Funds
Assets			
Current assets:			
Cash and investments	$ 38,627,650	$ 26,257,195	$ 64,884,845
Receivables, net of allowance	1,247,693	451,161	1,698,854
Interest receivable	149,742	103,733	253,475
Inventory	174,495	9,322	183,817
Prepaid expense	371	371	742
Total current assets	40,199,951	26,821,782	67,021,733
Noncurrent assets:			
Restricted cash and investments	224,725	190,063	414,788
Capital assets:			
Land and water rights	48,952,806	185,710	49,138,516
Construction-in-progress	7,723,451	3,679,224	11,402,675
Buildings	8,765	8,765	17,530
Improvements and other	122,540,767	45,771,516	168,312,283
Machinery, equipment and vehicles	1,631,747	1,754,637	3,386,384
Less accumulated depreciation	(53,584,030)	(21,498,527)	(75,082,557)
Total noncurrent assets	127,498,231	30,091,388	157,589,619
Total assets	167,698,182	56,913,170	224,611,352
Deferred outflows of resources			
Deferred charge on refunding	2,582,818	273,314	2,856,132
Deferred outflows related to pensions/OPEB	1,352,100	677,368	2,029,468
Total deferred outflows of resources	3,934,918	950,682	4,885,600
Liabilities			
Current liabilities:			
Accounts payable	124,497	113,427	237,924
Accrued liabilities	26,985	13,919	40,904
Refundable deposits	224,725	190,063	414,788
Accrued interest	631,319	70,894	702,213
Compensated absences	46,809	14,813	61,622
Bonds payable - current	2,691,975	390,371	3,082,346
Unearned revenue	-	3,083,073	3,083,073
Total current liabilities	3,746,310	3,876,560	7,622,870
Noncurrent liabilities:			
Compensated absences	19,119	7,701	26,820
Bonds payable	47,850,663	6,151,076	54,001,739
Other postemployment benefits obligation	55,637	81,874	137,511
Net pension liability	3,005,314	1,595,819	4,601,133
Total noncurrent liabilities	50,930,733	7,836,470	58,767,203
Total liabilities	54,677,043	11,713,030	66,390,073
Deferred inflows of resources			
Deferred inflows related to pensions/OPEB	320,988	106,967	427,955
Net position			
Net investment in capital assets	79,313,686	23,633,192	102,946,878
Unrestricted	37,321,383	22,410,663	59,732,046
Total net position	$ 116,635,069	$ 46,043,855	$ 162,678,924

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Revenues, Expenses, and Changes in Net Position
Proprietary Funds
For the Year Ended June 30, 2023

	Water Fund	Sewer Fund	Total Enterprise Funds
Operating revenues			
Service fees	$ 10,573,092	$ 5,062,281	$ 15,635,373
Other revenues	30,124	-	30,124
Total operating revenues	10,603,216	5,062,281	15,665,497
Operating expenses			
Salaries	1,524,494	759,547	2,284,041
Employee benefits	677,246	532,713	1,209,959
Service, supplies and other	2,719,817	972,891	3,692,708
Depreciation expense	3,379,057	1,247,489	4,626,546
Total operating expenses	8,300,614	3,512,640	11,813,254
Operating income	2,302,602	1,549,641	3,852,243
Nonoperating revenues (expenses)			
Water ancillary fee revenue	4,426,104	-	4,426,104
Investment income (loss)	523,021	384,606	907,627
Other income	315,248	57,687	372,935
Interest expense	(1,592,674)	(164,994)	(1,757,668)
Total nonoperating revenues (expenses)	3,671,699	277,299	3,948,998
Income before contributions	5,974,301	1,826,940	7,801,241
Grant income	1,438,750	2,620,829	4,059,579
Capital contributions - connection fees	1,583,962	1,538,546	3,122,508
Capital contributions - other	3,194,073	497,410	3,691,483
Change in net position	12,191,086	6,483,725	18,674,811
Total net position, beginning of year	104,443,983	39,560,130	144,004,113
Total net position, end of year	$ 116,635,069	$ 46,043,855	$ 162,678,924

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Cash Flows
Proprietary Funds
For the Year Ended June 30, 2023

	Water Fund	Sewer Fund	Total Enterprise Funds
Cash flows from operating activities:			
Cash received from customers, service fees	$ 10,404,642	$ 5,015,172	$ 15,419,814
Cash received from customers, capacity fees and other	30,124	-	30,124
Cash paid to suppliers	(4,638,491)	(1,124,402)	(5,762,893)
Cash paid to employees	(2,229,981)	(1,124,371)	(3,354,352)
Net cash flows from operating activities	3,566,294	2,766,399	6,332,693
Cash flows from capital and related financing activities:			
Water rights and settlement income	315,248	57,687	372,935
Water ancillary fee revenue	4,426,104	-	4,426,104
Grant revenue	1,438,750	3,561,250	5,000,000
Principal paid on capital debt	(2,647,332)	(358,496)	(3,005,828)
Interest paid on capital debt	(1,584,018)	(148,239)	(1,732,257)
Acquisition and construction of capital assets	(3,816,249)	(2,737,122)	(6,553,371)
Connection fees	1,583,962	1,538,546	3,122,508
Net cash flows from capital and related financing activities	(283,535)	1,868,332	1,584,797
Cash flows from investing activities:			
Investment income (loss)	420,708	310,003	730,711
Net change in cash and investments	3,703,467	4,944,734	8,648,201
Cash and investments, including restricted, beginning of year	35,148,908	21,502,524	56,651,432
Cash and investments, including restricted, end of year	$ 38,852,375	$ 26,447,258	$ 65,299,633
Reconciliation of operating income to net cash flows from operating activities:			
Operating income	$ 2,302,602	$ 1,549,641	$ 3,852,243
Adjustments to reconcile operating income to net cash flows from operating activities			
Depreciation expense	3,379,057	1,247,489	4,626,546
Pension expense	287,712	304,054	591,766
Pension contributions	(201,320)	(106,901)	(308,221)
Changes in operating assets and liabilities:			
(Increase) decrease in receivables	(134,837)	(10,476)	(145,313)
(Increase) decrease in inventories	(30,556)	6,512	(24,044)
(Increase) decrease in prepaid expenses	979	979	1,958
Increase (decrease) in accounts payable	(1,889,097)	(159,002)	(2,048,099)
Increase (decrease) in accrued liabilities	(50,514)	(18,584)	(69,098)
Increase (decrease) in customer deposits	(33,613)	(36,633)	(70,246)
Increase (decrease) in other postemployment benefits	(47,023)	1,029	(45,994)
Increase (decrease) in compensated absences payable	(17,096)	(11,709)	(28,805)
Net cash flows from operating activities	$ 3,566,294	$ 2,766,399	$ 6,332,693
Noncash investing, capital, and financing activities:			
Contributions of capital assets from developers	$ 3,194,073	$ 542,704	$ 3,736,777

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Net Position
Fiduciary Fund
June 30, 2023

	Custodial Funds
Assets	
Cash and investments	$ 40,133
Total assets	$ 40,133
Liabilities	
Accounts payable and other liabilities	$ -
Total liabilities	-
Net Position	
Restricted for asset forfeiture	40,133
Total net position	$ 40,133

The accompanying notes are an integral part of the financial statements.

CITY OF FERNLEY, NEVADA
Statement of Changes in Net Position
Fiduciary Fund
For the Year Ended June 30, 2023

	Custodial Funds
Additions	
Asset forfeitures	$ 142,941
Total additions	142,941
Deductions	
Asset forfeiture expenses and payments to other governments	(127,450)
Total deductions	(127,450)
Net increase (decrease) in fiduciary net position	15,491
Net position - beginning	24,642
Net position - ending	$ 40,133

The accompanying notes are an integral part of the financial statements.

NOTE 1. Summary of Significant Accounting Policies

Description of government-wide financial statements

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. All fiduciary activities are reported only in the fund financial statements. *Governmental activities*, which normally are supported by taxes, intergovernmental revenues, and other nonexchange transactions, are reported separately from *business-type activities*, which rely to a significant extent on fees and charges to external customers for support. Likewise, when applicable, the *primary government* is reported separately from certain legally separate *component units* for which the primary government is financially accountable.

Reporting entity

The City of Fernley, Nevada (City) was incorporated on July 1, 2001 in accordance with NRS 266. The City operates under a Council-Manager form of government and provides the following services as authorized by law: water and sewer utilities, streets and storm drains, culture and recreation, planning and zoning, animal control, vector control, building and safety, and general and administrative services. Prior to July 1, 2001, the entity was organized as an unincorporated town in accordance with Nevada Revised Statutes 269. The accompanying financial statements present all activities of the City. The City has no separate component units, entities for which the City is considered to be financially accountable that would be combined to form the reporting entity.

Basis of presentation – government-wide financial statements

While separate government-wide and fund financial statements are presented, they are interrelated. The governmental activities column incorporates data from governmental funds, while business-type activities incorporate data from the City's enterprise funds. Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds, even though the latter are excluded from the government-wide financial statements.

As a general rule, the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are charges between the government's water function and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Basis of presentation – fund financial statements

The fund financial statements provide information about the City's funds, including its fiduciary funds and blended component units. Separate statements for each fund category—governmental, proprietary, and fiduciary—are presented. The emphasis of fund financial statements is on major governmental and enterprise funds, each displayed in a separate column. All remaining governmental and enterprise funds are aggregated and reported as nonmajor funds. Major individual governmental and enterprise funds are reported as separate columns in the fund financial statements.

NOTE 1. Summary of Significant Accounting Policies, Continued

The City reports the following major governmental funds:

The **General Fund** is the City's primary operating fund. It accounts for all financial resources of the general government, except those accounted for in another fund.

The **Grants Fund** is used to account for federal and state grants that are restricted or committed for a specific use.

The City reports the following major enterprise funds:

The **Water Utility Fund** is used to account for the provision of water services to the residents of the City and some residents of Lyon County. All activities necessary to provide services are accounted for in this fund, including, but not limited to, administration, operations, maintenance, financing and related debt.

The **Sewer Utility Fund** is used to account for sewer collection and treatment services for the residents of the City and some residents of Lyon County. All activities necessary to provide services are accounted for in this fund, including, but not limited to, administration, operations, maintenance, financing and related debt.

Additionally, the City reports the following fund type:

The **Custodial Fiduciary Fund** accounts for asset forfeiture funds collected by the City on behalf of others. Included are bonds posted with the municipal court. This fund is excluded from the government-wide financial statements.

During the course of operations the City has activity between funds for various purposes. Any residual balances outstanding at year end are reported as due from/to other funds and advances to/from other funds. While these balances are reported in fund financial statements, certain eliminations are made in the preparation of the government-wide financial statements. Balances between the funds included in governmental activities (i.e., the governmental funds) are eliminated so that only the net amount is included as internal balances in the governmental activities column. Similarly, balances between the funds included in business-type activities (i.e., the enterprise funds) are eliminated so that only the net amount is included as internal balances in the business-type activities column.

Further, certain activity occurs during the year involving transfers of resources between funds. In fund financial statements these amounts are reported at gross amounts as transfers in/out. While reported in fund financial statements, certain eliminations are made in the preparation of the government-wide financial statements. Transfers between the funds included in governmental activities are eliminated so that only the net amount is included as transfers in the governmental activities column. Similarly, balances between the funds included in business-type activities are eliminated so that only the net amount is included as internal balances in the business-type activities column.

NOTE 1. Summary of Significant Accounting Policies, Continued

Measurement focus and basis of accounting

The accounting and financial reporting treatment is determined by the applicable measurement focus and basis of accounting. Measurement focus indicates the type of resources being measured such as *current financial resources* or *economic resources*. The basis of accounting indicates the timing of transactions or events for recognition in the financial statements.

The government-wide financial statements are reported using the *economic resources measurement* focus and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

The governmental fund financial statements are reported using the *current financial resources measurement* focus and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the City considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences, and claims and judgments, are recorded only when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Issuance of long-term debt and acquisitions under leases are reported as other financing sources.

Property taxes, consolidated taxes, licenses, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. Entitlements are recorded as revenues when all eligibility requirements are met, including any time requirements, and the amount is received during the period or within the availability period for this revenue source (within 60 days of year-end). Expenditure-driven grants are recognized as revenue when the qualifying expenditures have been incurred and all other eligibility requirements have been met, and the amount is received during the period or within the availability period for this revenue source (within 60 days of year-end). All other revenue items are considered to be measurable and available only when cash is received by the City.

The proprietary funds and custodial funds are reported using the *economic resources measurement* focus and the *accrual basis of accounting*.

Assets, liabilities, deferred outflows/inflows of resources, and net position/fund balance

Cash and Investments

Cash resources of the individual funds are combined to form a pool of cash and investments, which is managed by the City Treasurer. The City invests in the State of Nevada Local Government Investment Pool, which is reported at fair value.

NOTE 1. Summary of Significant Accounting Policies, Continued

Interest income earned is distributed to the appropriate funds based on each fund's equity in the investment. The City also invests in the Nevada Enhanced Savings Term Program (NVEST) and monies are managed by a money manager. The money manager is required to report to the City on a quarterly basis.

The City's policy allows for the investment of funds in time certificates of deposit with federally insured depositories, investment in the State Treasurer's Pool, obligations of the U. S. Government and other investments as allowed by Nevada State Statutes (NRS 355 and NRS355.170). Investments for the City are reported at fair value (generally based on quoted market prices) except for the position in the State Treasurer's Investment Pool (Pool). In accordance with state law, the Pool operates in conformity with all of the requirements of the Security and Exchange Commission's (SEC) Rule 2a7 as promulgated under the Investment Company Act of 1940, as amended. Accordingly, the Pool qualifies as a 2a7-like pool and is reported at the net asset value per share (which approximates fair value) even though it is calculated using the amortized cost method.

Cash equivalents

The City's cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with original maturities of three months or less from the date of acquisition. Based on the nature of the investment policies, all amounts are available on demand and are, therefore, classified as cash equivalents on the Statement of Cash Flows.

Receivables

Due to the nature of the accounts receivable in the governmental type activities, management does not consider an allowance for uncollectible accounts receivable necessary or material.

Receivables in proprietary fund types have arisen in the ordinary course of business, and are shown net of an allowance for uncollectible accounts, as applicable.

Inventories and prepaid items

Proprietary fund inventories are valued at cost using the first-in/first-out (FIFO) method and consist of supplies and materials. Inventories of governmental funds in the fund financial statements are considered consumable supplies and as such are recorded as expenditures at the time of purchase.

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both the government-wide and fund financial statements. The cost of prepaid items is recorded as expenditures/expenses when consumed rather than when purchased.

Restricted Assets

City policy requires that certain resources be set aside for various purposes such as for refundable deposits in the City's water and sewer utility funds.

NOTE 1. Summary of Significant Accounting Policies, Continued

Capital assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the applicable governmental or business-type activities columns in the government-wide financial statements.

Capital assets are defined by the City as assets with an individual cost of more than $5,000 for non-infrastructure assets and $100,000 for infrastructure assets and an estimated useful life in excess of two years. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated acquisition value at the date of donation. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized. Interest incurred during the construction phase of capital assets of business-type activities is included as part of the capitalized value of the assets constructed.

Water rights are intangible assets. A water right can be conveyed or transferred. Water rights, however, are appurtenant to the land and are conveyed by deed with the land unless the seller specifically reserves the water right in the deed. Water rights are not depreciable or amortizable.

Property, plant and equipment are depreciated using the straight-line method over the following estimated useful lives:

Buildings	25 to 40 years
Treatment facilities and improvements	10 to 20 years
Machinery, equipment and vehicles	5 to 10 years
Other capital assets	25 to 40 years
Infrastructure - Streets and sidewalks	20 to 40 years

Deferred outflows/inflows of resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of net assets that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The City has two items that qualify for reporting in this category. One item is a pension/OPEB related item reported on the government-wide financial statements. See footnote 9 and 10 for more information. The second item is the deferred charge on refunding reported in the government-wide statement of net position. A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt.

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources*, represents an acquisition of net assets that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The City has two types of these items that qualify for reporting in this category. One type arises only under a modified accrual basis of accounting. Accordingly, the item, *unavailable revenue*, is reported only in the governmental fund's balance sheet.

NOTE 1. Summary of Significant Accounting Policies, Continued

The governmental funds report unavailable revenues from one source: property taxes. These amounts are deferred and recognized as an inflow of resources in the period that the amounts become available. The other item is a pension/OPEB related item reported on the government-wide financial statements. See footnote 9 and 10 for more information.

Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the pension plan's fiduciary net position of the Public Employees' Retirement System of Nevada (PERS) and additions to/deductions from the plan's fiduciary net position have been determined on the same basis as they are reported by PERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Postemployment Benefits Other than Pensions (OPEB)

For purposes of measuring the City's OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the City's OPEB plans (the Plans) and additions to/deductions from the Plans' fiduciary net position have been determined based on annual actuarial reports. Benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Net position flow assumption

Sometimes the City will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted – net position and unrestricted – net position in the government-wide and proprietary fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is the City's policy to consider restricted – net position to have been depleted before unrestricted – net position is applied.

Fund balance flow assumptions

Sometimes the City will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements a flow assumption must be made about the order in which the resources are considered to be applied. It is the City's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

NOTE 1. Summary of Significant Accounting Policies, Continued

Fund balance policies

Fund balance of governmental funds is reported in various categories based on the nature of any limitations requiring the use of resources for specific purposes. The City itself can establish limitations on the use of resources through either a commitment (committed fund balance) or an assignment (assigned fund balance).

The committed fund balance classification includes amounts that can be used only for the specific purposes determined by a formal action of the City's highest level of decision-making authority. The governing council is the highest level of decision-making authority for the City that can, by adoption of a resolution prior to the end of the fiscal year, commit fund balance. Once adopted, the limitation imposed by the resolution remains in place until a similar action is taken (the adoption of another resolution) to remove or revise the limitation.

Amounts in the assigned fund balance classification are intended to be used by the City for specific purposes but do not meet the criteria to be classified as committed. The city manager is authorized to assign amounts to specific purposes in accordance with the City's budget policy. The council may also assign fund balance as it does when appropriating fund balance to cover a gap between estimated revenue and appropriations in the subsequent year's appropriated budget. Unlike commitments, assignments generally only exist temporarily. In other words, an additional action does not normally have to be taken for the removal of an assignment. Conversely, as discussed above, an additional action is essential to either remove or revise a commitment.

Revenues and expenditures/expenses

Program revenues

Amounts reported as program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions (including special assessments) that are restricted to meeting the operational or capital requirements of a particular function or segment. All taxes, including those dedicated for specific purposes, and other internally dedicated resources are reported as general revenues rather than as program revenues.

Compensated absences

It is the City's policy to permit employees to accumulate earned but unused vacation and sick pay benefits.

For governmental funds, amounts of vested or accumulated vacation and sick leave that are not expected to be liquidated with expendable available financial resources are reported as liabilities in the government-wide statement of net position and as expenses in the government-wide statement of activities. No expenditures are reported for these amounts in the fund financial statements. A liability for compensated absences is reported in the governmental funds, primarily the General Fund, only if they have matured as a result of employee resignations, terminations and retirements.

NOTE 1. Summary of Significant Accounting Policies, Continued

Vested or accumulated vacation and sick leave in the proprietary funds are recorded as an expense and a liability of that fund as the benefits accrue to the employees and are thus recorded in both the government-wide financial statements and the individual fund financial statements.

Proprietary funds operating and nonoperating revenues and expenses

Proprietary funds distinguish *operating* revenues and expenses from *nonoperating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the water and sewer fund are charges to customers for sales and services. Operating expenses for enterprise funds include the cost of sales and services, administrative expenses and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures/expenses during the reporting period. Actual results could differ from those estimates.

New Pronouncements

For the year ended June 30, 2023, the City of Fernley, Nevada, implemented the provisions of GASB Statement No. 96, *Subscription-Based Information Technology Arrangements*, which (1) defines a subscription-based information technology arrangement (SBITA); (2) establishes that a SBITA results in a right-to-use subscription asset—an intangible asset—and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. The City of Fernley, Nevada, had no SBITAs during the year ended June 30, 2023 that required reporting under GASB statement No. 96.

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NOTE 2. Reconciliation of Government-wide and Fund Financial Statements

The governmental fund balance sheet includes a reconciliation between total governmental fund balances and net position of governmental activities as reported in the government-wide statement of net position. This difference primarily results from the long-term economic focus of the statement of net position versus the current financial resources focus of the governmental fund balance sheets. The details of these differences are reported in the reconciliation on page 23.

The governmental fund statement of revenues, expenditures, and changes in fund balance includes a reconciliation between net changes in fund balances-total governmental funds and changes in net position of governmental activities as reported in the government-wide statement of activities. These differences are the result of converting from the current financial resources measurement focus and modified accrual basis for governmental fund statements to the economic resources measurement focus and full accrual basis used for government-wide statements. The details of these differences are reported in the reconciliation on page 25.

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NOTE 3. Stewardship, Compliance and Accountability

Budgets and budgetary accounting

The City of Fernley adheres to the Local Government Budget and Finance Act (Act) incorporated within the statutes of the State of Nevada, in which annual budgets are legally adopted for all funds except fiduciary funds. The Act and City policy include the following procedures to establish the budgetary data, which is reflected in these financial statements:

1. On or before April 15, the City Manager submits to the Fernley City Council a tentative budget for the fiscal year commencing the following July 1, to be filed with the Nevada Department of Taxation.
2. Public hearings on the tentative budget are held no sooner than the third Monday in May and no later than the last day in May, to obtain taxpayer comments.
3. Prior to June 1, at a public hearing, the Council indicates changes, if any, to be made to the tentative budget and adopts a final budget by the favorable vote of a majority of the members of the Council. The final budget must then be forwarded to the Nevada Department of Taxation for final approval.
4. The City may not amend the budget without approval by the City Council. The Finance Director is authorized to transfer appropriations between accounts within any function, with notification to the City Council. Any revisions that alter the total appropriations of a function or fund must be approved in advance by the City Council. Formal budgetary integration in the financial records of all funds is employed to enhance management control during the year.
5. Budgets for all fund types are adopted on a basis consistent with accounting principles generally accepted in the United States of America (GAAP). Appropriations lapse at year end.
6. In accordance with State statute, actual expenditures may not exceed budgeted appropriations of the various governmental functions of the General, Special Revenue, and Capital Project Funds. Per NRS 354.626, expenditures over budgeted appropriations are allowed for bond repayments, medium term obligation repayments, and other long-term contracts expressly authorized by law. Expense charged to an Enterprise Fund in excess of the original budget appropriation are allowable in accordance with NRS 354.612 and are not a violation of NRS 354.626 if the expenses do not cause a deficit in the equity balance of the fund and if the budget is adjusted in a manner provided by law.

The budget reflected in the financial statements has not been amended from the original budget amounts. There were no amendments for augmentations for prior obligations or supplemental appropriations needed for contingencies and other uses except for grants.

Expenditures over Appropriations

The individual Schedule of Revenues, Expenditures/Expenses and Changes in Fund Balances/Net Position – Budget and Actual reports are listed in the table of contents. None of the City's funds incurred an excess of expenditures/expenses over appropriations for the year ended June 30, 2023.

Encumbrances

Encumbrance accounting, under which purchase orders, contracts, and other commitments for the expenditure of monies are recorded in order to reserve that portion of the applicable appropriation, is not employed by the City.

NOTE 3. Stewardship, Compliance and Accountability, Continued

Property tax calendar

Real property taxes result in a lien on the property and attach on July 1 (the levy date) of the year for which the taxes are levied. Taxes may be paid in four installments payable on the third Monday in August, and the first Mondays in October, January and March to the County Clerk/Treasurer of Lyon County in which the City of Fernley is located. Penalties are assessed if a taxpayer fails to pay an installment within ten days of the installment due date. After a two year waiting period, if taxes remain unpaid, a tax deed is issued conveying the property to Lyon County with a lien for back taxes and accumulated charges. Redemption may be made by the owner and such persons as described by statute by paying all back taxes and accumulated penalties, interest and costs before sale. As such, real property taxes receivable reflect only those taxes receivable from the delinquent roll years, and current taxes collected within 60 days of year end and delinquent taxes from all roll years prior to 2003-2004 have been written off. No provision for uncollectible accounts has been established, as management does not anticipate any material collection losses with respect to the remaining balances.

Taxes on personal property are collected currently. Personal property declarations are mailed out annually and the tax is computed using percentages of taxable values established by the Department of Taxation at the tax rates described above

Article X, Section 2, of the Constitution of the State of Nevada limits the total taxes levied by all overlapping governmental units within the boundaries of any county (i.e., the county, the county school district, the State, and any other city, town, or special district) to an amount not to exceed $5 per $100 of assessed valuation of the property being taxed.

The 1979 Nevada Legislature enacted provisions whereby, commencing July 1, 1979, the combined overlapping tax rate was limited to $3.64 per $100 of assessed valuation (as thereafter annually adjusted).

The 1981 Legislature enacted “tax shift” legislation designed to further reduce the level of property taxes collected throughout the State. The additional revenue is being distributed to local governmental units in order to reduce the revenues they would otherwise be required to generate from property taxes for operating purposes.

Delinquent taxes receivable not collected within sixty days after year-end are normally recorded as unavailable revenue as they are not available to pay liabilities of the current period. However, delinquent taxes receivable not collected within sixty days as of year-end were not deemed material and have not been recorded.

Capital Projects Fund

Pursuant to NRS 354.6113, the City is required to indicate in detail the projects that have been funded with money from the Capital Projects Fund, as well as, disclose any planned accumulations of the money in the fund. For the year-ended June 30, 2023, there were no expenditures for any projects and the only accumulation of funds were from interest earnings.

NOTE 4. Cash and Investments

A reconciliation of cash deposits and investments to the government-wide statement of net position is as follows:

Cash and investments	$	80,108,747
Restricted cash and investments		11,596,916
Custodial fund monies		40,133
	$	91,745,796

Deposits

Custodial credit risk

For deposits this is the risk that in the event of a bank failure, the City's deposit may not be returned. The City does not have a formal policy for custodial credit risk. At June 30, 2023 cash on hand was $3,150 and the carrying amount of the City's deposits was $2,101,264. None of the City's bank balance of $2,242,603 was exposed to custodial credit risk since it was insured and collateralized.

Investments

The Nevada State Treasurer's Office operates the Local Government Investment Pool (LGIP). The LGIP is available for investment of funds administered by any Nevada Public Treasurer. The LGIP is not registered with the SEC as an investment company. Deposits in the LGIP are not insured or otherwise guaranteed by the State of Nevada, and participants share proportionally in any realized gain or losses on investments.

The provisions of State Law (NRS 355.170) govern the investment of public funds.

As of June 30, 2023 the City had the following investments, maturities and credit ratings:

Investment Type	Fair Value	Credit Rating (1) S&P	Credit Rating (1) Moody's	Weighted Average Maturity (2)
Corporate Bonds	$ 13,349,842	N/A	N/A	393,714
Mortgage-Backed	20,274,563	N/A	N/A	1,289
U.S. Treasuries	34,279,400	AA+	Aaa	585
Nevada Local Government Investment Pool (LGIP)	21,737,576	N/A	N/A	
Total Fair Value	$ 89,641,382			

(1) Ratings are provided where applicable to indicate associated credit risk. N/A indicates
(2) Interest rate risk is estimated using the weighted average days to maturity.
(3) FDIC insured.

NOTE 4. Cash and Investments, Continued

The City categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The City has the following recurring fair value measurements as of June 30, 2023:

- Corporate Bonds are valued using a matrix pricing model (Level 2 inputs)
- Mortgage-Backed investments are valued using a matrix pricing model (Level 2 inputs)
- U.S. Agencies investments are valued using quoted market prices (Level 1 inputs)
- U.S. Treasuries bills are valued using quoted market prices (Level 1 inputs)
- LGIP: 29.56% is valued using quoted market prices (Level 1 inputs)
- LGIP: 70.44% is valued using a matrix pricing model (Level 2 inputs)

Interest rate risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The City's policy for managing its exposure to fair value loss arising from increasing interest rates is to comply with the provisions of State law (NRS 355.170).

Credit risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The City's policy for reducing its exposure to credit risk is to comply with State law (NRS 355.170).

NOTE 5. Receivables

Receivables, net of allowance

A summary of receivables reported in the proprietary funds is as follows:

	Water Fund	Sewer Fund
Service revenue receivable	$ 1,000,832	$ 451,390
Allowance for doubtful accounts	(3,008)	(229)
	997,824	451,161
Water ancillary fees receivable	249,869	-
	$ 1,247,693	$ 451,161

NOTE 5. Receivables, Continued

Due from other governments

Due from other governments reported in the general fund relate to consolidated tax, motor fuel tax, and RTC shared revenue receivable.

Due from other governments reported in the grants fund relate to various grant revenue receivable.

Other receivables

The other receivables reported in the general fund are franchise taxes receivable that were measurable and available per GASB.

The other receivables reported in the Non-major governmental funds relate to miscellaneous court revenue receivable and transient lodging tax revenues receivable from various entities.

NOTE 6. Capital Assets

Governmental capital asset activity for the fiscal year ended June 30, 2023 was as follows:

Governmental Activities:	Balance 06/30/22	Additions	Deletions	Balance 06/30/23
Capital assets, not being depreciated:				
Land	$ 5,099,616	$ -	$ -	$ 5,099,616
Construction in progress	1,527,380	5,503,635	(812,240)	6,218,775
Total capital assets, not being depreciated:	6,626,996	5,503,635	(812,240)	11,318,391
Capital assets, being depreciated:				
Buildings	8,667,420	-	-	8,667,420
Improvements	13,253,634	812,240	-	14,065,874
Machinery and equipment	1,875,153	522,035	-	2,397,188
Infrastructure	40,499,798	1,687,508	-	42,187,306
Total capital assets, being depreciated:	64,296,005	3,021,783	-	67,317,788
Less accumulated depreciation for:				
Buildings	(5,596,666)	(311,897)	-	(5,908,563)
Improvements	(6,270,687)	(446,460)	-	(6,717,147)
Machinery and equipment	(1,657,364)	(72,840)	-	(1,730,204)
Infrastructure	(13,820,295)	(1,037,729)	-	(14,858,024)
Total accumulated depreciation	(27,345,012)	(1,868,926)	-	(29,213,938)
Total capital assets, being depreciated, net	36,950,993	1,152,857	-	38,103,850
Governmental activities capital assets, net	$ 43,577,989	$ 6,656,492	$ (812,240)	$ 49,422,241

NOTE 6. Capital Assets, Continued

Depreciation expense was charged to the functions/programs of the City as follows:

Governmental Activities:	
General government	$ 458,155
Public works	1,215,956
Judicial	12,028
Culture and recreation	167,873
Health	14,914
Total depreciation expense - governmental activities	$ 1,868,926

Business-type capital asset activity for the fiscal year ended June 30, 2023 was as follows:

Business Type Activities:	**Balance 06/30/22**	**Additions**	**Deletions**	**Balance 06/30/23**
Capital assets not being depreciated:				
Land	$ 1,201,609	$ -	$ -	$ 1,201,609
Water rights	45,264,574	2,672,333	-	47,936,907
Construction in progress	5,765,897	6,404,527	(767,748)	11,402,676
Total capital assets, not being depreciated	52,232,080	9,076,860	(767,748)	60,541,192
Capital assets being depreciated:				
Buildings	17,530	-	-	17,530
Improvements	164,816,964	1,823,689	-	166,640,653
Machinery and equipment	3,229,035	157,349	-	3,386,384
Other capital assets	1,671,630	-	-	1,671,630
Total capital assets, being depreciated	169,735,159	1,981,038	-	171,716,197
Less accumulated depreciation for:				
Buildings	(17,530)	-	-	(17,530)
Improvements	(66,432,582)	(4,453,415)	-	(70,885,997)
Machinery and equipment	(2,372,348)	(157,790)	-	(2,530,138)
Other capital assets	(1,633,550)	(15,342)	-	(1,648,892)
Total accumulated depreciation	(70,456,010)	(4,626,547)	-	(75,082,557)
Total capital assets, being depreciated, net	99,279,149	(2,645,509)	-	96,633,640
Business-type activities capital assets, net	$ 151,511,229	$ 6,431,351	$ (767,748)	$ 157,174,832

Depreciation expense was charged to the functions/programs of the City as follows:

Business-Type Activities:	
Water	$ 3,379,058
Sewer	1,247,489
Total depreciation expense - business-type activities	$ 4,626,547

NOTE 7. Long-Term Liabilities

The following is a summary of changes in long-term liabilities for the fiscal year ended June 30, 2023:

	Issue Date	Interest Rate	Maturity Date	Authorized and Issued	Balance 06/30/22	Additions	Retirements	Balance 06/30/23	Current Portion
Governmental Activities:									
Compensated absences					$ 193,003	$ 146,639	$ (180,640)	$ 159,002	$ 104,941
Net pension liability					3,172,916	3,186,249	-	6,359,165	-
Net OPEB liability					169,267	-	(60,989)	108,278	-
Total Governmental Activities				-	3,535,186	3,332,888	(241,629)	6,626,445	104,941
Business-type Activities:									
Sewer Fund:									
Direct placements									
2020 Refunding	5/27/2020	1.03%	2/1/2026	1,239,468	1,038,530	-	(176,664)	861,866	283,025
2015A Refunding	8/6/2015	2.35%	2/1/2038	5,807,691	4,642,615	-	(113,587)	4,529,028	37,436
Total direct placements					5,681,145	-	(290,251)	5,390,894	320,461
2017 Series G.O. Bond	1/11/2017	2.43%	1/1/2037	1,416,266	1,218,794	-	(68,241)	1,150,553	69,910
				8,463,425	6,899,939	-	(358,492)	6,541,447	390,371
Water Fund:									
Direct placements									
2020 Refunding	5/27/2020	1.03%	2/1/2026	11,066,532	9,272,470	-	(1,577,336)	7,695,134	2,526,975
Total direct placements					9,272,470	-	(1,577,336)	7,695,134	2,526,975
2015B Refunding	11/4/2015	2%-5%	2/1/2038	37,665,000	29,625,000	-	(1,070,000)	28,555,000	165,000
2016 Refunding	11/3/2016	2% - 3%	2/1/2037	9,085,000	8,970,000	-	-	8,970,000	-
2017 Refunding	1/26/2017	3% - 3.75%	2/1/2037	4,425,000	3,325,000	-	-	3,325,000	-
				62,241,532	51,192,470	-	(2,647,336)	48,545,134	2,691,975
Unamortized bond (discount)/premium					2,131,976	-	(134,472)	1,997,504	134,472
Compensated absences					117,247	83,160	(111,965)	88,442	58,372
Net pension liability					2,239,769	2,361,364	-	4,601,133	-
Net OPEB liability					183,505	1,029	(47,023)	137,511	-
Total Business-type Activities				70,704,957	62,764,906	2,445,553	(3,299,288)	61,911,171	3,275,190
Total Long Term Debt				70,704,957	$ 66,300,092	$ 5,778,441	$ (3,540,917)	$ 68,537,616	$ 3,380,131

The compensated absence liability is paid from the fund responsible for the employee's compensation with significant liabilities payable from the general fund. The net pension liability and the net other postemployment benefit obligations are liquidated by the general fund. The City has no unused lines of credit as of June 30, 2023.

NOTE 7. Long-Term Liabilities, Continued

The direct placement 2015 A refunding bonds in the sewer fund for $4,751,761 contain a provision in the event of default, a penalty in the amount of one-tenth of one percent of the defaulted payment will be due for each day of nonpayment beyond the grace period.

The direct placement 2020 refunding bonds in the sewer and water fund for $1,213,482 and $10,834,518, respectively, contain a provision in the event of default the bond requirements shall be paid out of the expense account or out of the general fund of the City or out of the General Taxes until such time as the event of default is cured.

The purposes of individual bond issues are as follows:

- 2015A and B Refunding Bond Issue: Refund a portion of the 2007 and 2008 Bond Issues
- 2016 Refunding Bond Issue: Refund a portion of the 2007 Bond Issue.
- 2017 Refunding Bond Issue: Refund a portion of the 2007 and 2008 Bond Issues.
- 2020 Refunding Bond Issue: Refund a portion of the 2014 Bond Issues.

Estimated debt service requirements for bonds payable are as follows:

Business-Type Activities Direct Placement				
Sewer		Water		
Principal	Interest	Principal	Interest	
$ 320,461	$ 115,091	$ 2,526,975	$ 79,260	
325,274	111,291	2,562,047	53,232	
331,115	107,429	2,606,112	26,843	
346,946	101,704	-	-	
1,871,896	381,072	-	-	
2,099,075	149,259	-	-	
96,127	1,698	-	-	
$ 5,390,894	$ 1,086,677	$ 7,695,134	$ 254,841	

Fiscal Year Ending June 30,	Business-Type Activities			
	Sewer		Water	
	Principal	Interest	Principal	Interest
2024	$ 69,910	$ 27,536	$ 165,000	$ 1,435,906
2025	71,619	25,827	165,000	1,430,956
2026	73,370	24,076	170,000	1,426,006
2027	75,164	22,283	2,905,000	1,417,506
2028-2032	404,297	82,934	16,495,000	5,181,875
2033-2037	456,193	31,037	19,390,000	2,261,988
2038	-	-	1,560,000	56,550
Total	$ 1,150,553	$ 242,898	$ 40,850,000	$ 14,700,194

NOTE 7. Long-Term Liabilities, Continued

The combined total debt service for both governmental and business-type debt is as follows:

Fiscal Year Ending June 30,	Total	
	Principal	Interest
2024	$ 3,082,346	$ 1,657,793
2025	3,123,940	1,621,306
2026	3,180,597	1,584,355
2027	3,327,110	1,541,492
2028-2032	18,771,193	5,645,881
2033-2037	21,945,268	2,442,284
2038	1,656,127	58,248
Total	$ 55,086,581	$ 16,284,611

NOTE 8. Interfund Transactions and Balances

As of June 30, 2023, the City had no internal balances.

Interfund balances result from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made. All interfund balances are expected to be repaid within one year.

For the fiscal year ended June 30, 2023, the City did not have any interfund transfers.

Transfers are normally used to (1) move revenues from the fund that statute or budget requires to collect them to the fund that statute or budget requires to expend them, (2) move receipts restricted to debt service from the funds collecting the receipts to the debt service fund as debt service payments become due, and (3) use unrestricted revenues collected in the general fund to finance various programs accounted for in other funds in accordance with budgetary authorizations.

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NOTE 9. Postemployment Retirement Health Insurance Benefit

Plan Descriptions:

The City administers a single-employer defined benefit healthcare plan, City of Fernley Employee Health Benefits Plan (COFEHBP). Additionally, the City contributes to an agent multiple-employer defined benefit postemployment healthcare plan, Public Employees' Benefits Plan (PEBP). Each plan provides medical, vision, dental, and life insurance benefits to eligible retired City employees and beneficiaries.

Benefit provisions for the COFEHBP are established pursuant to NRS 287.023 and amended through negotiations between the City and the respective associations. NRS 288.150 assigns the authority to establish benefit provisions to the Board of Commissioners. The plan provides healthcare insurance for eligible retirees and their beneficiaries through the City's group health insurance plan, which covers both active and retired members. Under NRS 287.023, eligible retirees are able to participate in the plan with blended rates, thereby benefitting from an implicit subsidy. Retirees are required to pay 100% of their premiums under the plan. The COFEHBP does not issue a publicly available financial report.

Benefit provisions for the PEBP are administered by the State of Nevada. NRS 287.043 assigns the authority to establish and amend benefit provisions to the PEBP nine-member board of trustees.

City employees who met the eligibility requirements effective September 1, 2008 for retirement within the Nevada Public Employee Retirement System had the option upon retirement to enroll in coverage under the PEBP. NRS 287.023 sunsetted the option to join PEBP for City employees who retired from the City after November 29, 2008. Local governments are required to pay the same portion of the cost of coverage for their retirees joining PEBP that the State of Nevada pays for state retirees participating in the plan.

Combined balances for OPEB plans:

The combined balances for both the COFEHBP and PEBP OPEB plans as of and for the year ended June 30, 2022 are as follows:

	COFEHBP	PEBP	Combined
Net OPEB liability	$ 163,423	$ 82,366	$ 245,789
Deferred outflows	216,885	6,957	223,842
Deferred inflows	708,510	-	708,510
OPEB expense	(34,518)	(3,313)	(37,831)

NOTE 9. Postemployment Retirement Health Insurance Benefit, Continued

Benefits provided:

COFEHBP

Employees who retire from the City are eligible to continue their coverage under the health plans and life insurance plan offered by the City to its active employees or, if they retired prior to September 1, 2008, could elect to participate in the Public Employees' Benefit Plan (PEBP).

Retirees may elect to continue their medical, dental, vision and life insurance coverage for themselves and their dependents under the programs made available to the City's active employees, but are required to pay 100% of the monthly premiums. The only conditions to be eligible for coverage as a retiree are:

1. The employee must have qualified for and started his or her retirement benefits from Nevada PERS;
2. The employee was eligible for benefits while employed by the City; and
3. The City is the employee's last Nevada public agency employer.

City health plan premium rates: The premium rates applicable to retirees not yet eligible for Medicare are the same as those for active employees. Reduced premiums apply to those retirees covered by Medicare.

The monthly medical premium rates in effect for the City beginning July 1, 2023 were:

Coverage Level	Base PPO Actives & PreMedicare Retirees	Base PPO Medicare Retirees	PPO Actives & PreMedicare Retirees	PPO Medicare Retirees
Employee Only	$ 601.40	$ 406.74	$ 636.21	$ 430.29
Employee & Spouse	1,428.91	966.41	1,511.64	1,022.37
Employee & Children	1,398.84	946.08	1,479.83	1,000.85
Employee & Family	1,665.86	1,183.03	1,762.32	1,251.53

Life insurance: The face amount of life insurance for retirees is $20,000 until age 65, when it decreases to $13,000; the insurance amount decreases again to $10,000 at age 70. Premiums for retiree life insurance coverage are currently at the rate of $0.173 per month per $1,000 of coverage. A retiree may elect to cover his or her spouse with $2,000 in life insurance for a premium of $0.67 per month. Neither the insurance amount nor the premium decrease with age.

Plan Membership:

At July 1, 2020 membership consisted of the following:

	COFEBP	PEBP
Active employees	69	-
Retirees	-	5

NOTE 9. Postemployment Retirement Health Insurance Benefit, Continued

Contributions:

COFEHBP

City contributions to the Plan occur as benefits are paid to or on behalf of retirees. Benefit payments may occur in the form of direct payments for premiums and taxes ("explicit subsidies") and/or indirect payments to retirees in the form of higher premiums for active employees ("implicit subsidies"). The implicit subsidy contribution does not represent cash payments to retirees, but reclassification of what was initially paid as an active healthcare expense to be recognized instead as a retiree healthcare expense. Contribution requirements of the plan members and the City are established and may be amended through negotiations between the City and the associations. Retirees pay 100% of the pay-as-you-go premiums based on a blended rate that blends active participants and retirees. The City's contribution requirements for retirees relate to the implicit subsidy that results from using the blended rates and is determined in actuarial studies contracted for by the City. Implicit contributions reported by the City were $0 for the year ended June 30, 2023 (measurement date June 30, 2022).

PEBP

City contributions to the Plan occur as benefits are paid to retirees and/or to an OPEB trust. In this PEBP program, the only benefit payments occur in the form of direct payments to PEBP on behalf of currently covered retirees. NRS 287.046 establishes the subsidies to be contributed toward the premium costs of the eligible retired City employees. The contribution requirements of plan members and the City may be amended by the PEBP board. Contributions to the Plan from the City were $6,213 for the year ended June 30, 2023 (measurement date June 30, 2022).

Plan financial reports:

The PEBP financial report may be obtained by writing to Public Employee's Benefits Program, 901 S. Stewart Street, Suite 1001, Carson City, NV 89701, or by calling (775) 684-7000, or by accessing the website at https://pebp.state.nv.us/. COFEHBP does not issue a separate financial report.

OPEB liability

Net OPEB liability

At June 30, 2023, the City reported a net OPEB liability of $163,423 for COFEHBP and $82,366 for PEBP. The net liability was measured as of June 30, 2022 and the total liability was determined by an actuarial valuation as of June 30, 2022. An OPEB trust has not been established so the total liability is equal to net liability. There are no assets accumulated in a trust that meet the criteria in GASB 75 (paragraph 4) to pay related benefits. The total OPEB liability as of June 30, 2023 reflects a change in the use of discount rates of 2.18% as of June 30, 2021 and 4.09% as of June 30, 2022 (2023). There were no other significant changes of actuarial assumptions. The projections are based on established patterns of practice.

NOTE 9. Postemployment Retirement Health Insurance Benefit, Continued

OPEB liability discount rate sensitivity

The following presents the net OPEB liability calculated using the discount rate of 2.18%, as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current discount rate:

	1% Decrease (3.09%)	Discount Rate (4.09%)	1% Increase (5.09%)
Net OPEB liability - COFEHBP	$ 179,052	$ 163,423	$ 149,016
Net OPEB liability - PEBP	90,960	82,366	75,132

OPEB liability healthcare cost trend rates sensitivity

The following presents the net OPEB liability calculated using current healthcare cost trend rates, as well as what the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than current healthcare cost trend rates:

	1% Decrease (5.00% decreasing to 4.00%)	Medical Trend (6.00% decreasing to 5.00%)	1% Increase (7.00% decreasing to 6.00%)
Net OPEB liability - COFEHBP	$ 141,900	$ 163,423	$ 189,104
Net OPEB liability - PEBP	75,458	82,366	90,402

Actuarial assumptions:

The total OPEB liability was determined using the following actuarial assumptions, applied to all periods included in the measurement:

COFEHBP

Inflation rate	2.50%
Salary increases	3.00%
Discount rate	2.18% as of June 30, 2021 and 4.09% as of June 30, 2022
Funding method	Entry age normal cost, closed group, level percent of pay
Healthcare trend	Medical premium increase: 5.80% for 7/1/21, 7.40% for 7/1/23, 7.4% for 7/1/23 fluctuating down to 3.9% by 2075

NOTE 9. Postemployment Retirement Health Insurance Benefit, Continued

PEBP

Inflation rate	2.50%
Salary increases	N/A – no active employee in this plan
Discount rate	2.18% as of June 30, 2021 and 4.09% as of June 30, 2022
Funding method	Entry age normal cost, closed group, level percent of pay
Healthcare cost trend rates	Pre-Medicare subsidy increase: 5.80% for 7/1/21, 7.40% for 7/1/23fluctuating down to 3.9% by 2075 Medicare subsidy increase: 4.50% for 7/1/21 and later years

The demographic actuarial assumptions used in this valuation are based on the most recently published report of the Nevada Public Employees Retirement System, issued September 2021, which covers the employees included in this valuation except for a different basis used to project future mortality improvements.

Non-disabled life rates for regular employees:
Males and Females: PUB-2010 Healthy Annuitant Table set forward 1 year

These rates were then adjusted to anticipate future mortality improvement by applying MacLeod Watts Scale 2022 on a generational basis from 2010 forward (i.e. mortality is projected to improve each year until the payments anticipated in any future year occur).

The discount rate used to measure the total OPEB liability was 2.18% as of June 30, 2021 and 4.09% on June 30, 2022. The City funds the OPEB liability on a pay-as-you-go basis. The discount rate used in the valuations is based on the S&P General Obligation Municipal Bond 20 Year High Grade Index.

Changes in the net OPEB liability

	COFEBP			PEBP		
	Total OPEB liability (a)	Plan fiduciary net position (b)	Net OPEB (asset) liability (a) - (b)	Total OPEB liability (a)	Plan fiduciary net position (b)	Net OPEB (asset) liability (a) - (b)
Balances at June 30, 2020	$ 260,879	$ -	$ 260,879	$ 91,892	$ -	$ 91,892
Changes during the period:						
Service cost	31,961	-	31,961	-	-	-
Interest cost	6,384	-	6,384	1,936	-	1,936
Expected investment income	-	-	-	-	-	-
Employer contributions	-	-	-	-	6,213	(6,213)
Differences between expected and actual experience	-	-	-	-	-	-
Assumption changes	(72,695)	-	(72,695)	(23,539)	-	(23,539)
Benefit payments	-	-	-	(6,213)	(6,213)	-
Plan experience	(63,106)	-	(63,106)	18,290	-	18,290
Investment experience	-	-	-	-	-	-
Net changes	(97,456)	-	(97,456)	(9,526)	-	(9,526)
Balances at June 30, 2021	$ 163,423	$ -	$ 163,423	$ 82,366	$ -	$ 82,366

NOTE 9. Postemployment Retirement Health Insurance Benefit, Continued

Plan fiduciary net position

Detailed information about PEBP's fiduciary net position is available in a separately issued PEBP financial report. COFEHBP does not issue a separate financial report.

OPEB expense

For the year ended June 30, 2023, the City recognized OPEB prepaid expense of $27,831

Deferred outflows/inflows of resources related to OPEB

At June 30, 2023, the City reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	COFEBP		PEBP	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Changes of assumptions	$ 19,021	$ 593,407	$ -	$ -
Differences between expected and actual experience	197,864	115,103	-	-
Net difference between projected and actual earnings	-	-	-	-
Contributions subsequent to the measurement date	-	-	6,957	-
Total	$ 216,885	$ 708,510	$ 6,957	$ -

Expected average remaining service life: 9.26 years

The amount $6,957 reported as deferred outflows of resources related to OPEB resulting from City contributions subsequent to the measurement date will be recognized as a reduction of the net OPEB liability in the subsequent fiscal year. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

	COFEBP	PEBP
Year Ending June 30,	Deferred Outflows (Inflows) of Resources	Deferred Outflows (Inflows) of Resources
2024	$ (72,863)	$ -
2025	(72,863)	-
2026	(72,863)	-
2027	(72,863)	-
2028	(72,863)	-
Thereafter	(127,310)	-

NOTE 10. Defined Benefit Pension Plan

Public Employees' Retirement System of Nevada (PERS)

Plan description

PERS administers a cost-sharing, multiple-employer, defined benefit pension plan, which includes both Regular and Police/Fire members. The System was established by the Nevada Legislature in 1947, effective July 1, 1948. The System is administered to provide a reasonable base income to qualified employees who have been employed by a public employer and whose earning capacities have been removed or substantially impaired by age or disability.

Benefits provided

Benefits, as required by the Nevada Revised Statutes (NRS or statute), are determined by the number of years of accredited service at time of retirement and the member's highest average compensation in any 36 consecutive months with special provisions for members entering the System on or after January 1, 2010, and July 1, 2015. Benefit payments to which participants or their beneficiaries may be entitled under the plan include pension benefits, disability benefits, and survivor benefits.

Monthly benefit allowances for members are computed as 2.50% of average compensation for each accredited year of service prior to July 1, 2001. For service earned on and after July 1, 2001, this factor is 2.67% of average compensation. For members entering the System on or after January 1, 2010, there is a 2.50% service time factor and for regular members entering the System on or after July 1, 2015, there is a 2.25% factor. The System offers several alternatives to the unmodified service retirement allowance which, in general, allow the retired employee to accept a reduced service retirement allowance payable monthly during his or her lifetime and various optional monthly payments to a named beneficiary after his or her death.

Post-retirement increases are provided by authority of NRS 286.575 - .579.

Vesting

Regular members entering the System prior to January 1, 2010, are eligible for retirement at age 65 with 5 years of service, at age 60 with 10 years of service, or at any age with 30 years of service. Regular members entering the System on or after January 1, 2010, are eligible for retirement at age 65 with 5 years of service, or age 62 with 10 years of service, or any age with 30 years of service. Regular members who entered the System on or after July 1, 2015, are eligible for retirement at age 65 with 5 years of service, or at age 62 with 10 years of service, or at age 55 with 30 years of service, or any age with 33 1/3 years of service.

Police/Fire members entering the System prior to January 1, 2010, are eligible for retirement at age 65 with 5 years of service, at age 55 with 10 years of service, at age 50 with 20 years of service, or at any age with 25 years of service. Police/Fire members entering the System on or after January 1, 2010, are eligible for retirement at 65 with 5 years of service, or age 60 with 10 years of service, or age 50 with 20 years of service, or at any age with 30 years of service. Only service performed in a position as a police officer or firefighter may be counted towards eligibility for retirement as Police/Fire accredited service.

NOTE 10. Defined Benefit Pension Plan, Continued

The normal ceiling limitation on monthly benefit allowances is 75% of average compensation. However, a member who has an effective date of membership before July 1, 1985, is entitled to a benefit of up to 90% of average compensation. Both Regular and Police/Fire members become fully vested as to benefits upon completion of five years of service.

Contributions

The authority for establishing and amending the obligation to make contributions and member contribution rates is set by statute. New hires, in agencies which did not elect the Employer-Pay Contribution (EPC) plan prior to July 1, 1983, have the option of selecting one of two contribution plans. In one plan, contributions are shared equally by employer and employee. In the other plan, employees can take a reduced salary and have contributions made by the employer (EPC).

The System's basic funding policy provides for periodic contributions at a level pattern of cost as a percentage of salary throughout an employee's working lifetime in order to accumulate sufficient assets to pay benefits when due.

The System receives an actuarial valuation on an annual basis indicating the contribution rates required to fund the System on an actuarial reserve basis. Contributions made are in accordance with the required rates established by the Nevada Legislature. These statutory rates are increased/decreased pursuant to NRS 286.421 and 286.450.

The actuarial funding method used is the Entry Age Normal Cost Method. It is intended to meet the funding objective and results in a relatively level long-term contribution requirement as a percentage of salary.

For the fiscal years ended June 30, 2022 and June 30, 2023 the Statutory Employer/employee matching rate was 15.50%, for Regular employees and 22.75% for Police/Fire. The Employer-pay contribution (EPC) rate was 29.75% for Regular employees and 44.00% for Police/Fire.

The City's contributions for the current and two preceding fiscal years, all of which were equal to the required contributions, were as follows:

Year Ended June 30,	Regular Fund
2021	$ 621,239
2022	667,753
2023	734,210

Investment policy

The System's policies which determine the investment portfolio target asset allocation are established by the Board. The asset allocation is reviewed annually and is designed to meet the future risk and return needs of the System.

NOTE 10. Defined Benefit Pension Plan, Continued

The following was the Board adopted policy target asset allocation as of June 30, 2022:

Asset Class	Target Allocation	Long-term Geometric Expected Real Rate of Return*
U.S. stocks	42%	5.50%
International stocks	18%	5.50%
U.S. bonds	28%	0.75%
Private markets	12%	6.65%

*As of June 30, 2022, PERS' long-term inflation assumption was 2.50%.

Pension liability

Net pension liability

At June 30, 2023, the City reported a liability of $10,960,298 for its proportionate share of the PERS net pension liability. The net pension liability was measured as of June 30, 2022, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The employer allocation percentage of the net pension liability was based on the total contributions due on wages paid during the measurement period. Each employer's proportion of the net pension liability is based on their combined employer and member contributions relative to the total combined employer and member contributions for all employers for the period ended June 30, 2022. The City's proportion measured as of June 30, 2022, was 0.06071 percent, which was an increase of 0.001360 percent from its proportion measured as of June 30, 2021.

Pension liability discount rate sensitivity

The following presents the net pension liability of the PERS as of June 30, 2022, calculated using the discount rate of 7.25%, as well as what the PERS net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current discount rate:

1% Decrease (6.25%)	Discount Rate (7.25%)	1% Increase (8.25%)
$ 16,827,643	$ 10,960,298	$ 6,118,858

Pension plan fiduciary net position

Detailed information about the pension plan's fiduciary net position is available in the PERS Annual Comprehensive Financial Report, available on the PERS website www.nvpers.org.

NOTE 10. Defined Benefit Pension Plan, Continued

Actuarial assumptions

The City's net pension liability was measured as of June 30, 2022, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The total pension liability was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation rate	2.50%
Investment rate of return	7.25%
Productivity pay increase	0.50%
Projected salary increases	Regular: 4.20% to 9.10%, depending on service Police/Fire: 4.60% to 14.50%, depending on service Rates include inflation and productivity increases
Other assumptions	Same as those used in the June 30, 2022 funding actuarial valuation

Actuarial assumptions used in the June 30, 2022 valuation were based on the results of the experience study for the period July 1, 2016 through June 30, 2020.

The discount rate used to measure the total pension liability was 7.25% as of June 30, 2022. The projection of cash flows used to determine the discount rate assumed plan contributions will be made in amounts consistent with statutory provisions and recognizing the plan's current funding policy and cost-sharing mechanism between employers and members. For this purpose, all contributions that are intended to fund benefits for all plan members and their beneficiaries are included, except that projected contributions that are intended to fund the service costs for future plan members and their beneficiaries are not included.

Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2022.

Pension expense and deferred outflows/inflows of resources related to pensions

For the fiscal year ended June 30, 2023, the City recognized pension expense for PERS of $478,786 due to plan performance and the classification and timing of recognition on contributions made during the year.

NOTE 10. Defined Benefit Pension Plan, Continued

At June 30, 2023, the City reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 1,419,177	$ 7,830
Changes in assumptions	1,407,927	-
Net difference between projected and actual earnings on pension plan investments	133,723	-
Changes in proportion and differences between contributions and proportional share of contributions	692,750	38,639
Subtotal	3,653,577	46,469
Contributions subsequent to the measurement date	734,210	-
Total	$ 4,387,787	$ 46,469
Governmental activities	$ 2,545,793	$ 26,961
Business-type activities	1,841,994	19,508
	$ 4,387,787	$ 46,469

The $734,210 reported as deferred outflows of resources related to PERS pensions resulting from City contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the subsequent fiscal year. Other amounts reported as deferred outflows of resources and deferred inflows of resources, excluding the changes in proportion and differences between actual contributions and proportionate share of contributions, will be recognized in pension expense as follows:

Year Ending June 30	Deferred Outflows (Inflows) of Resources
2024	$ 553,330
2025	525,159
2026	468,852
2027	1,814,159
2028	245,608
2029	-
Thereafter	-
	$ 3,607,108

NOTE 11. Risk Management

The City, like any governmental entity, is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries of employees; and natural disasters.

The City has joined together with similar public agencies (cities, counties and special Citys) throughout the State of Nevada to create a pool under the Nevada Interlocal Cooperation Act. The Nevada Public Agency Insurance Pool (Pool) is a public entity risk pool currently operating as a common risk management and insurance program for its members.

The City pays an annual premium and specific deductibles, as necessary, to the Pool for its general insurance coverage. The Pool is considered a self-sustaining risk pool that will provide coverage for its members for up to $10,000,000 per event and a $13,000,000 general aggregate per member.

The City has also joined together with similar public agencies, under the Nevada Interlocal Cooperation Act, to create an intergovernmental self-insured association for workers compensation insurance, the Public Agency Compensation Trust (PACT).

The City pays premiums based on payroll costs to the PACT. The PACT is considered a self-sustaining pool that will provide coverage based on established statutory limits.

The City continues to carry commercial insurance for other risks of loss, including specific risks of loss not covered by the Pool, including bonding and employee health and accident insurance. Settled claims resulting from these risks have not exceeded commercial coverage for the past three years.

NOTE 12. Commitments and Contingencies

The City is involved with several significant construction contracts that will continue from fiscal year 2023 through subsequent fiscal years. Details of the projects are available in the City's budget. The most significant contracts are listed as follows:

Project	Estimated Cost	Construction in Progress
Cottonwood Lane Reconstruction & Drainage Engineering Design	$ 3,550,000	$ 3,522,951
Shadow Lane	5,280,000	249,903
Community Center	22,400,000	1,669,850
Green Valley Park	800,000	14,330
Water Treatment Plant Surface Water Conveyance Design and Improvements	7,100,000	6,175,170
Cottonwood Lane Reconstruction Waterline Replacement & Extension Design	1,550,000	1,491,979
Sewer Improvement	1,290,000	615,855
West Lift Station Upgrade	1,550,000	1,540,727
FDR Lift Station Rehabilitation	1,150,000	1,011,673

The City is involved in various matters of litigation. Although the outcome of the litigation is not presently determinable, it is the opinion of City officials that none of the cases will have a materially adverse effect on the City's financial condition.

NOTE 13. Tax Abatements

The State of Nevada has entered into various tax abatement agreements that reduce the tax revenues of the City. Partial abatement of sales and use taxes imposed on eligible machinery or equipment used by certain new or expanded businesses under NRS 374-357 have resulted in tax abatements of consolidated taxes for the City for the year ended June 30, 2023 in the amount of $1,307.

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REQUIRED SUPPLEMENTARY INFORMATION

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CITY OF FERNLEY, NEVADA
Schedule of the Proportionate Share of the Net Pension Liability
June 30, 2023

PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEVADA

	Reporting Fiscal Year (Measurement Date)								
	2023 (2022)	2022 (2021)	2021 (2020)	2020 (2019)	2019 (2018)	2018 (2017)	2017 (2016)	2016 (2015)	2015 (2014)
Proportion of the net pension liability (asset)	0.06071%	0.05935%	0.05663%	0.05236%	0.05233%	0.05349%	0.05457%	0.05058%	0.04724%
Proportionate share of the net pension liability (asset)	10,960,298	5,412,683	7,887,995	7,139,247	$ 7,136,642	$ 7,113,745	$ 7,343,649	$ 5,796,699	$ 4,922,973
Covered payroll	$ 4,445,283	$ 4,156,008	$ 3,959,512	$ 3,532,948	$ 3,413,209	$ 3,377,388	$ 3,272,180	$ 2,993,735	$ 2,635,478
Proportionate share of the net pension liability (asset) as a percentage of its covered payroll	246.56%	130.24%	199.22%	202.08%	209.09%	210.63%	224.43%	193.63%	186.80%
Plan fiduciary net position as a percentage of the total pension liability	75.10%	86.50%	77.00%	76.50%	75.2%	74.5%	72.2%	75.1%	76.3%

Note: In accordance with GASB 68, employers will need to disclose a 10-year history for the pension schedule above. Additional information will be displayed as it becomes available.

CITY OF FERNLEY, NEVADA
Schedule of Changes in the Net OPEB Liability and Related Ratios
June 30, 2023

	COFEHBP Reporting Fiscal Year (Measurement Date)						PEHBP Reporting Fiscal Year (Measurement Date)					
	2023 (2022)	2022 (2021)	2021 (2020)	2020 (2019)	2019 (2018)	2018 (2017)	2023 (2022)	2022 (2021)	2021 (2020)	2020 (2019)	2019 (2018)	2018 (2017)
Total OPEB liability												
Service cost	$ 31,961	$ 28,770	$ 35,948	$ 33,774	$ 78,992	$ 85,896	$ -	$ -	$ -	$ -	$ -	$ -
Interest cost	6,384	6,481	7,662	6,785	23,006	19,172	1,936	2,327	3,360	3,575	2,568	2,362
Changes of benefit terms	-	-	-	-	-	-	-	-	(109,692)	-	-	-
Differences between expected and actual experience	-	-	(77,838)	-	365,059	-	-	-	77,838	-	33,036	-
Assumption changes	(72,695)	10,736	10,451	4,188	(923,051)	(64,002)	(23,539)	4,981	1,760	2,579	6,642	(3,524)
Benefit payments	-	-	-	-	(12,243)	(16,761)	(6,213)	(5,764)	(6,712)	(4,683)	(3,912)	(5,964)
Plan experience	-	-	-	-	-		(44,816)	-	-	-	-	-
Net change in total OPEB liability	(34,350)	45,987	(23,777)	44,747	(468,237)	24,305	(72,632)	1,544	(33,446)	1,471	38,334	(7,126)
Total OPEB liability - beginning	260,879	214,892	238,669	193,922	662,159	637,854	91,892	90,348	123,794	122,323	83,989	91,115
Total OPEB liability - ending (a)	$ 226,529	$ 260,879	$ 214,892	$ 238,669	$ 193,922	$ 662,159	$ 19,260	$ 91,892	$ 90,348	$ 123,794	$ 122,323	$ 83,989
Plan fiduciary net position												
Employer contributions	$ -	$ -	$ -	$ -	$ -	$ 16,761	$ 6,213	$ -	$ -	$ -	$ -	$ 5,964
Net investment income	-	-	-	-	-	-	-	-	-	-	-	-
Benefit payments	-	-	-	-	-	(16,761)	(6,213)	-	-	-	-	(5,964)
Investment experience	-	-	-	-	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	-	-	-	-	-	-	-	-	-	-	-	-
Plan fiduciary net position - beginning	-	-	-	-	-		-	-	-	-	-	-
Plan fiduciary net position - ending (b)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net OPEB liability - ending (a) - (b)	$ 226,529	$ 260,879	$ 305,240	$ 362,463	$ 316,245	$ 746,148	$ 19,260	$ 91,892	$ 90,348	$ 123,794	$ 122,323	$ 83,989
Plan fiduciary net position as a percentage of the total OPEB liability	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Covered-employee payroll	$ 4,514,073	$ 4,266,942	$ 4,075,394	$ 3,875,297	$ 3,875,297	$ 2,651,097	$ -	$ -	$ -	$ -	$ -	$ -
Net OPEB liability as a percentage of covered-employee payroll	5.02%	6.11%	7.49%	9.35%	8.16%	28.14%	N/A	N/A	N/A	N/A	N/A	N/A

Note: In accordance with GASB 75, the City will need to disclose a 10 year history for the OPEB schedule above. Additional information will be displayed as it becomes available

CITY OF FERNLEY, NEVADA
Schedule of Contributions
June 30, 2023

Schedule of Retirement Contributions
PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEVADA

	Reporting Fiscal Year								
	2023	2022	2021	2020	2019	2018	2017	2016	2015
Contractually required contribution	$ 734,210	$ 667,753	$ 621,239	$ 590,184	$ 504,013	$ 485,466	$ 480,099	$ 462,679	$ 390,397
Contributions in relation to the contractually required contribution	(734,210)	(667,753)	(621,239)	(590,184)	(504,013)	(485,466)	(480,099)	(462,679)	(390,397)
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
**Covered payroll	$ 4,781,673	$ 4,445,283	$ 4,156,008	$ 3,959,512	$ 3,532,948	$ 3,413,209	$ 3,377,388	$ 3,272,180	$ 2,993,735
Contributions as a percentage of covered payroll	15.35%	15.02%	14.95%	14.91%	14.27%	14.22%	14.00%	14.14%	13.04%

Schedule of OPEB Contributions
COFEHBP and PEHBP

	COFEHBP Reporting Fiscal Year						PEHBP Reporting Fiscal Year					
	2023	2022	2021	2020	2019	2018	2023	2022	2021	2020	2019	2018
Contractually required contributions	$ -	$ -	$ -	$ -	$ -	$ 16,761	$ -	$ -	$ -	$ -	$ -	$ 5,964
Contributions in relation to the contractually required contribution	$ -	$ -	$ -	$ -	$ -	$ (16,761)	$ -	$ -	$ -	$ -	$ -	$ (5,964)
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered-employee payroll	$ 4,514,073	$ 4,266,942	$ 4,075,394	$ 3,875,297	$ 3,875,297	$ 2,651,097	$ -	$ -	$ -	$ -	$ -	$ -
Contributions as a percentage of covered-employee payroll	0.00%	0.00%	0.00%	0.00%	0.00%	0.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Note: In accordance with GASB 68 and GASB 75, the City will need to disclose a 10 year history for the Pension and OPEB schedules above. Additional information will be displayed as it becomes available.

NOTE 1. OPEB – Factors that Affect Trends

There are no factors (e.g. changes in benefit terms, the use of different assumptions, changes in investment policies) that significantly affect trends in the amounts reported in the required schedules.

NOTE 2. OPEB Plan Assets

There are no assets accumulated in a trust that meet the criteria in GASAB 75 (paragraph 4) to pay related benefits.

CITY OF FERNLEY, NEVADA

REQUIRED SUPPLEMENTARY INFORMATION

Major Governmental Funds
Schedules of Revenues, Expenditures, and Changes in Fund Balances
Budget and Actual
For the Year Ended June 30, 2023

The **General Fund** is the City's primary operating fund. It accounts for all financial resources of the general government, except for those required to be accounted for in another fund.

The **Grants Fund** is used to account for federal and state grants that are restricted or committed for a specific use.

Basis of Budgeting:

The City budget is prepared on a basis consistent with accounting principles generally accepted in the United States of America, except for certain activities reported in the General Fund that are budgeted separately in special revenue funds.

Budget and actual comparisons are presented for all funds of the City as required by Nevada Revised Statutes. Such budget comparisons are required to be presented using the budget as adopted, and approved by the State of Nevada Department of Taxation. However, guidance provided in governmental accounting standards specify that four internally reported funds of the City, not meeting the definition of a special revenue fund, do not qualify to be separately presented for external reporting purposes.

The following funds that are reported separately for internal reporting purposes by the City are combined with the General Fund for external financial reporting:

- Residential Construction Tax Fund
- Parks and Facilities Fund
- Arts and Culture Fund
- Computer Technology Fund

CITY OF FERNLEY, NEVADA
General Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Original Budget	Final Budget	Actual	Variance with Final Budget
REVENUES				
Taxes:				
Property tax	$ 3,953,950	$ 3,953,950	$ 4,113,287	$ 159,337
Residential construction tax	200,000	200,000	303,000	103,000
Marijuana sales tax	21,500	21,500	21,739	239
Total taxes	4,175,450	4,175,450	4,438,026	262,576
Licenses, permits and fees:				
Business licenses	825,000	825,000	860,927	35,927
Franchise fee	1,540,000	1,540,000	2,133,586	593,586
Liquor licenses	38,000	38,000	38,350	350
Gaming licenses	120,000	120,000	122,355	2,355
Building permits	933,052	933,052	1,486,269	553,217
Planning and zoning fees	310,000	310,000	410,113	100,113
Public works and inspection fees	225,000	225,000	232,463	7,463
Other permits and fees	17,400	17,400	55,991	38,591
Total licenses, fees and permits	4,008,452	4,008,452	5,340,054	1,331,602
Intergovernmental:				
Motor vehicle fuel tax	413,119	413,119	394,632	(18,487)
RTC shared revenue	4,578,000	4,578,000	3,214,446	(1,363,554)
State consolidated tax	240,870	240,870	216,346	(24,524)
Fernley park agreement	60,000	60,000	60,000	-
County roads contribution	180,000	180,000	180,000	-
Administration fee	2,500	2,500	4,848	2,348
Total intergovernmental	5,474,489	5,474,489	4,070,272	(1,404,217)
Fines and forfeitures:				
Community service fee	1,000	1,000	4,081	3,081
Municipal court fines and fees	200,600	200,600	120,417	(80,183)
Total fines and forfeitures	201,600	201,600	124,498	(77,102)
Investment earnings:				
Investment earnings (loss)	10,750	10,750	361,079	350,329
Total investment earnings	10,750	10,750	361,079	350,329
Other revenues:				
Cemetery fees	4,000	4,000	650	(3,350)
Donations	1,500	1,500	2,590	1,090
Park facility rental fee	12,500	12,500	9,741	(2,759)
Contributed Revenue	-	-	407,505	407,505
Miscellaneous	58,745	58,745	62,862	4,117
Total other revenues	76,745	76,745	483,348	406,603
Total revenues	13,947,486	13,947,486	14,817,277	869,791

(continued)

CITY OF FERNLEY, NEVADA
General Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual (Continued)
For the Year Ended June 30, 2023

EXPENDITURES	Budget	Budget	Actual	Final Budget
General government:				
Mayor and city council:				
Salaries and wages	$ 78,145	$ 78,145	$ 79,791	$ (1,646)
Employee benefits	19,961	19,961	24,001	(4,040)
Services, supplies and other	54,350	54,350	47,971	6,379
	152,456	152,456	151,763	693
City management:				
Salaries and wages	252,291	252,291	217,479	34,812
Employee benefits	122,065	122,065	66,287	55,778
Services, supplies and other	395,594	395,594	364,881	30,713
	769,950	769,950	648,647	121,303
City clerk:				
Salaries and wages	181,834	181,834	180,053	1,781
Employee benefits	106,898	106,898	101,656	5,242
Services, supplies and other	63,870	63,870	35,951	27,919
	352,602	352,602	317,660	34,942
Finance:				
Salaries and wages	105,132	105,132	104,832	300
Employee benefits	31,282	31,282	35,655	(4,373)
Services, supplies and other	516,340	516,340	54,285	462,055
	652,754	652,754	194,772	457,982
City attorney:				
Salaries and wages	336,798	336,798	350,359	(13,561)
Employee benefits	180,819	180,819	159,481	21,338
Services, supplies and other	152,024	152,024	131,034	20,990
	669,641	669,641	640,874	28,767
Facilities (City Hall) and general:				
Salaries and wages	159,448	159,448	155,328	4,120
Employee benefits	74,277	74,277	68,190	6,087
Services, supplies and other	170,755	170,755	271,336	(100,581)
Capital outlay	45,000	45,000	-	45,000
	449,480	449,480	494,854	(45,374)
Information technology:				
Salaries and wages	48,217	48,217	48,629	(412)
Employee benefits	18,278	18,278	18,654	(376)
Services, supplies and other	98,925	98,925	118,624	(19,699)
Capital outlay	11,500	11,500	3,823	7,677
	176,920	176,920	189,730	(12,810)
Total general government	3,223,803	3,223,803	2,638,300	585,503
Public works:				
Streets and public works:				
Salaries and wages	380,295	380,295	324,048	56,247
Employee benefits	190,193	190,193	132,594	57,599
Services, supplies and other	4,078,750	4,078,750	2,035,478	2,043,272
Capital outlay	6,210,255	6,210,255	3,565,434	2,644,821
	10,859,493	10,859,493	6,057,554	4,801,939

(continued)

CITY OF FERNLEY, NEVADA
General Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual (Continued)
For the Year Ended June 30, 2023

	Original Budget	Final Budget	Actual	Variance with Final Budget
Expenditures (continued)				
Transportation				
Salaries and wages	$ 80,262	$ 80,262	$ 84,108	$ (3,846)
Employee benefits	39,005	39,005	43,481	(4,476)
Services, supplies and other	19,435	19,435	20,984	(1,549)
	138,702	138,702	148,573	(9,871)
Engineering:				
Salaries and wages	394,286	394,286	388,293	5,993
Employee benefits	139,930	139,930	144,329	(4,399)
Services, supplies and other	140,772	140,772	176,002	(35,230)
	674,988	674,988	708,624	(33,636)
Total public works	11,673,183	11,673,183	6,914,751	4,758,432
Judicial:				
Municipal court:				
Salaries and wages	287,984	287,984	257,451	30,533
Employee benefits	150,998	150,998	133,321	17,677
Services, supplies and other	169,443	169,443	149,359	20,084
Total judicial	608,425	608,425	540,131	68,294
Health:				
Animal control:				
Salaries and wages	51,919	51,919	54,243	(2,324)
Employee benefits	18,323	18,323	19,112	(789)
Services, supplies and other	34,000	34,000	25,432	8,568
	104,242	104,242	98,787	5,455
Vector control:				
Salaries and wages	27,311	27,311	26,600	711
Employee benefits	12,415	12,415	12,375	40
Services, supplies and other	43,628	43,628	4,907	38,721
	83,354	83,354	43,882	39,472
Cemetery				
Services, supplies and other	132,000	132,000	65,430	66,570
	132,000	132,000	65,430	66,570
Total health	319,596	319,596	208,099	111,497
Culture and recreation:				
Parks:				
Salaries and wages	109,752	109,752	107,958	1,794
Employee benefits	42,903	42,903	46,664	(3,761)
Services, supplies and other	604,650	604,650	490,303	114,347
Capital outlay	1,354,327	1,354,327	646,943	707,384
Total culture and recreation	2,111,632	2,111,632	1,291,868	819,764

(continued)

CITY OF FERNLEY, NEVADA
General Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual (Continued)
For the Year Ended June 30, 2023

	Original Budget	Final Budget	Actual	Variance with Final Budget
Expenditures (continued)				
Community development:				
Building:				
Salaries and wages	$ 330,058	$ 330,058	$ 229,014	$ 101,044
Employee benefits	126,264	126,264	79,513	46,751
Services, supplies and other	62,800	62,800	149,030	(86,230)
Capital outlay	32,000	32,000	33,718	(1,718)
	551,122	551,122	491,275	59,847
Planning:				
Salaries and wages	213,250	213,250	146,705	66,545
Employee benefits	108,393	108,393	61,402	46,991
Services, supplies and other	455,100	455,100	62,119	392,981
	776,743	776,743	270,226	506,517
Total community development	1,327,865	1,327,865	761,501	566,364
Debt service:	-	-	-	-
Total expenditures	19,264,504	19,264,504	12,354,650	6,909,854
Excess of revenues over (under) expenditures	(5,317,018)	(5,317,018)	2,462,627	7,779,645
Fund balance, beginning of year	8,591,715	8,591,715	10,277,199	1,685,484
Fund balance, end of year	$ 3,274,697	$ 3,274,697	$ 12,739,826	$ 9,465,129

CITY OF FERNLEY, NEVADA
Grants Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Original Budget	Final Budget	Actual	Variance with Final Budget
Revenues				
Intergovernmental revenue:				
Grant revenue	$ -	$ 1,576,415	$ 1,576,415	$ -
Total revenues	-	1,576,415	1,576,415	-
Expenditures				
Current:				
General government	-	1,576,415	1,576,415	-
Community development	-	-	-	-
Total expenditures	-	1,576,415	1,576,415	-
Fund balance, beginning of year	10	10	10	-
Fund balance, end of year	$ 10	$ 10	$ 10	$ -

CITY OF FERNLEY, NEVADA

SUPPLEMENTARY INFORMATION
NONMAJOR GOVERNMENTAL FUNDS

COMBINING STATEMENTS
AND
BUDGET AND ACTUAL REPORTS

Special revenue funds are used to account for specific revenues that are restricted or committed to expenditure for particular purposes.

The **Municipal Court Administrative Fees Fund** is used to account for the proceeds from Court Administrative Fees set aside per NRS 268.4085 for court administration and graffiti abatement (judicial department expenditures).

The **Municipal Court Facilities Fees Fund** is used to account for the proceeds from Court Facilities Fees set aside per NRS 176.0611 for the provision of court facilities.

The **Transient Lodging Tax Fund** accounts for Transient Lodging Tax revenues to be used for economic development activities.

Capital projects funds are used to account for the acquisition and construction of major capital facilities other than those financed by proprietary funds and trust funds.

The **Capital Projects Fund** is used to account for financial resources used for the acquisition or construction of capital projects for governmental activities. The fund is utilized to set aside funds to provide funding for future projects involving replacement or acquisition of building, improvements and equipment.

The **Capital Improvement Fund** is used to account for road tax revenues used for the acquisition or construction of capital improvements for governmental activities. These funds are also utilized for the repayment of medium-term obligations used for capital improvements.

CITY OF FERNLEY, NEVADA
Combining Balance Sheet
Nonmajor Governmental Funds
June 30, 2023

	Special Revenue			Capital Projects		
	Municipal Court Administration Fees	Municipal Court Facilities Fees	Transient Lodging Fund	Capital Projects	Capital Improvement	Total Nonmajor Governmental Funds
Assets						
Cash and investments	$ 12,216	$ 110,728	$ 2,726,502	$ 541,271	$ (170)	$ 3,390,547
Receivables:						
Interest	39	420	10,201	2,116	170	12,946
Other	-	-	75,625	-	-	75,625
Total assets	$ 12,255	$ 111,148	$ 2,812,328	$ 543,387	$ -	$ 3,479,118
Liabilities and Fund Balances						
Liabilities:						
Accounts payable	$ -	$ -	$ 46,146	$ 1,220	$ -	$ 47,366
Total liabilities	-	-	46,146	1,220	-	47,366
Fund Balances:						
Restricted for:						
Judicial	12,255	111,148	-	-	-	123,403
Committed:						
Capital projects	-	-	-	542,167	-	542,167
Convention Center	-	-	1,695,099	-	-	1,695,099
Assigned	-	-	1,071,083	-	-	1,071,083
Total fund balances	12,255	111,148	2,766,182	542,167	-	3,431,752
Total liabilities and fund balances	$ 12,255	$ 111,148	$ 2,812,328	$ 543,387	$ -	$ 3,479,118

CITY OF FERNLEY, NEVADA
Combining Statement of Revenues, Expenditures, and Changes in Fund Balances
Nonmajor Governmental Funds
For the Year Ended June 30, 2023

	Special Revenue			Capital Projects		
	Municipal Court Administration Fees	Municipal Court Facilities Fees	Transient Lodging Fund	Capital Projects	Capital Improvement	Total Nonmajor Governmental Funds
Revenues						
Taxes	$ -	$ -	$ 675,875	$ -	$ -	$ 675,875
Fines and forfeitures	11,919	16,878	-	-	-	28,797
Investment earnings (loss)	70	1,448	35,084	7,532	591	44,725
Other revenues	-	-	8,400	-	-	8,400
Total revenues	11,989	18,326	719,359	7,532	591	757,797
Expenditures						
Current:						
Judicial	22,609	795	-	-	-	23,404
Culture and recreation	-	-	80,901	-	-	80,901
Capital outlay	-	-	-	36,257	43,738	79,995
Total expenditures	22,609	795	80,901	36,257	43,738	184,300
Excess (deficiency) of revenues over (under) expenditures	(10,620)	17,531	638,458	(28,725)	(43,147)	573,497
Fund balances, beginning of year	22,875	93,617	2,127,724	570,892	43,147	2,858,255
Fund balances, end of year	$ 12,255	$ 111,148	$ 2,766,182	$ 542,167	$ -	$ 3,431,752

CITY OF FERNLEY, NEVADA
Municipal Court Administration Fees Special Revenue Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Revenues			
Fines and forfeitures:			
Municipal administrative fees	$ 20,000	$ 11,919	$ (8,081)
Investment earnings (loss)	25	70	45
Total revenues	20,025	11,989	(8,036)
Expenditures			
Judicial:			
Service, supplies and other	32,100	22,609	9,491
Total expenditures	32,100	22,609	9,491
Excess (deficiency) of revenues over (under) expenditures	(12,075)	(10,620)	1,455
Fund balance, beginning of year	15,905	22,875	6,970
Fund balance, end of year	$ 3,830	$ 12,255	$ 8,425

CITY OF FERNLEY, NEVADA
Municipal Court Facilities Fees Special Revenue Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Revenues			
Fines and forfeitures:			
Municipal facilities fees	$ 26,000	$ 16,878	$ (9,122)
Investment earnings (loss)	5,000	1,448	(3,552)
Total revenues	31,000	18,326	(12,674)
Expenditures			
Judicial:			
Service, supplies and other	35,000	795	34,205
Total expenditures	35,000	795	34,205
Excess (deficiency) of revenues over (under) expenditures	(4,000)	17,531	21,531
Fund balance, beginning of year	99,746	93,617	(6,129)
Fund balance, end of year	$ 95,746	$ 111,148	$ 15,402

CITY OF FERNLEY, NEVADA
Transient Lodging Tax Special Revenue Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Revenues			
Taxes:			
Transient lodging tax	$ 400,000	$ 675,875	$ 275,875
Investment earnings (loss)	1,000	35,084	34,084
Miscellaneous	4,000	8,400	4,400
Total revenues	405,000	719,359	314,359
Expenditures			
Culture and recreation:			
Services, supplies and other	152,000	80,901	71,099
Capital outlay	1,000,000	-	1,000,000
Total expenditures	1,152,000	80,901	1,071,099
Excess of revenues over (under) expenditures	(747,000)	638,458	1,385,458
Fund balance, beginning of year	1,881,619	2,127,724	246,105
Fund balance, end of year	$ 1,134,619	$ 2,766,182	$ 1,631,563

CITY OF FERNLEY, NEVADA
Capital Projects Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Revenues			
Investment earnings (loss)	$ 6,000	$ 7,532	$ 1,532
Total revenues	6,000	7,532	1,532
Expenditures			
Capital outlay	600,000	36,257	563,743
Total expenditures	600,000	36,257	563,743
Excess (deficiency) of revenues over (under) expenditures	(594,000)	(28,725)	565,275
Fund balance, beginning of year	599,692	570,892	(28,800)
Fund balance, end of year	$ 5,692	$ 542,167	$ 536,475

CITY OF FERNLEY, NEVADA
Capital Improvements Fund
Schedule of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Revenues			
Investment earnings (loss)	$ 350	$ 591	$ 241
Total revenues	350	591	241
Expenditures			
Capital outlay	43,745	43,738	7
Total expenditures	43,745	43,738	7
Excess (deficiency) of revenues over (under) expenditures	(43,395)	(43,147)	248
Fund balance, beginning of year	44,228	43,147	(1,081)
Fund balance, end of year	$ 833	$ -	$ (833)

CITY OF FERNLEY, NEVADA

SUPPLEMENTARY INFORMATION

ENTERPRISE FUND
BUDGET AND ACTUAL REPORTS

The **Water Utility Fund** is used to account for the provision of water services to the residents of the City and some residents of Lyon County. All activities necessary to provide services are accounted for in this fund, including, but not limited to, administration, operations, maintenance, financing and related debt.

The **Sewer Utility Fund** is used to account for sewer collection and treatment services for the residents of the City and some residents of Lyon County. All activities necessary to provide services are accounted for in this fund, including, but not limited to, administration, operations, maintenance, financing and related debt.

CITY OF FERNLEY, NEVADA
Water Fund
Schedule of Revenues, Expenses, and Changes in Net Position
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Operating revenues			
Service fees	$ 10,879,450	$ 10,573,092	$ (306,358)
Other revenues	140,000	30,124	(109,876)
Total operating revenues	11,019,450	10,603,216	(416,234)
Operating expenses			
Salaries	1,534,243	1,524,494	9,749
Employee benefits	1,299,606	677,246	622,360
Service, supplies and other	2,853,501	2,719,817	133,684
Depreciation and amortization	3,600,000	3,379,057	220,943
Total operating expenses	9,287,350	8,300,614	986,736
Operating income	1,732,100	2,302,602	570,502
Nonoperating revenues (expenses)			
Water ancillary fee revenue	4,232,248	4,426,104	193,856
Investment income (loss)	25,000	523,021	498,021
Other income	388,000	315,248	(72,752)
Interest expense	(1,584,913)	(1,592,674)	(7,761)
Total nonoperating revenues (expenses)	3,060,335	3,671,699	611,364
Income (loss) before contributions and transfers	4,792,435	5,974,301	1,181,866
Capital contributions - connection fees	1,321,000	1,583,962	262,962
Grant revenue	-	1,438,750	1,438,750
Capital contributions - other	400,000	3,194,073	2,794,073
Change in net position	6,513,435	12,191,086	5,677,651
Net position, beginning of year	104,443,983	104,443,983	-
Net position, end of year	$ 110,957,418	$ 116,635,069	$ 5,677,651

CITY OF FERNLEY, NEVADA
Sewer Fund
Schedule of Revenues, Expenses, and Changes in Net Position
Budget and Actual
For the Year Ended June 30, 2023

	Final Budget	Actual	Variance with Final Budget
Operating revenues			
Service fees	$ 4,932,000	$ 5,062,281	$ 130,281
Total operating revenues	4,932,000	5,062,281	130,281
Operating expenses			
Salaries	772,415	759,547	12,868
Employee benefits	565,783	532,713	33,070
Service, supplies and other	1,242,044	972,891	269,153
Depreciation and amortization	1,350,000	1,247,489	102,511
Total operating expenses	3,930,242	3,512,640	417,602
Operating income (loss)	1,001,758	1,549,641	547,883
Nonoperating revenues (expenses)			
Investment income (loss)	10,000	384,606	374,606
Other revenues	68,000	57,687	(10,313)
Interest expense	(148,340)	(164,994)	(16,654)
Total nonoperating revenues (expenses)	(70,340)	277,299	347,639
Income (loss) before contributions and transfers	931,418	1,826,940	895,522
Grant revenue	1,000,000	2,620,829	1,620,829
Capital contributions - connection fees	929,700	1,538,546	608,846
Capital contributions	200,000	497,410	297,410
Change in net position	3,061,118	6,483,725	3,422,607
Net position, beginning of year	39,560,130	39,560,130	-
Net position, end of year	$ 42,621,248	$ 46,043,855	$ 3,422,607

CITY OF FERNLEY, NEVADA

STATISTICAL SECTION

This part of the City of Fernley's annual comprehensive financial report presents detailed information as a context for understanding what the information in the financial statements, notes disclosures, and required supplementary information says about the government's overall financial health.

Contents **Schedule #**

Financial Trends ..... 1 - 4

These schedules contain trend information to help the reader understand how the government's financial performance and well-being have changed over time.

Revenue Capacity ..... 5 - 9

These schedules contain information to help the reader assess the government's most significant local revenues source, the property tax.

Debt Capacity ..... 10 - 14

These schedules present information to help the reader assess the affordability of the government's current levels of outstanding debt and the government's ability to issue additional debt in the future.

Demographic and Economic Information..... 15 - 16

These schedules offer demographic and economic indicators to help the reader understand the environment within which the government's financial activities take place.

Operating Information ..... 17 - 19

These schedules contain service and infrastructure data to help the reader understand how the information in the government's financial report relates to the services the government provides and the activities it performs.

Sources: Unless otherwise noted, the information in these schedules is derived from annual comprehensive financial reports of the relevant year.

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CITY OF FERNLEY, NEVADA
NET POSITION BY COMPONENT
LAST TEN FISCAL YEARS

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
GOVERNMENTAL ACTIVITIES										
Net investment in capital assets	$ 38,673,348	$ 37,695,679	$ 37,994,508	$ 37,208,612	$ 37,323,025	$ 38,680,768	$ 40,357,694	$ 41,468,491	$ 43,577,989	$ 49,422,241
Restricted	451,356	495,088	581,220	721,349	831,863	1,005,536	1,176,707	1,378,656	1,164,751	1,052,451
Unrestricted	3,630,111	937,118	1,502,904	1,569,877	1,043,219	2,644,869	5,042,053	6,949,456	8,050,038	10,776,131
Total Governmental Activities Net Position	$ 42,754,815	$ 39,127,885	$ 40,078,632	$ 39,499,838	$ 39,198,107	$ 42,331,173	$ 46,576,454	$ 49,796,603	$ 52,792,778	$ 61,250,823
BUSINESS-TYPE ACTIVITIES										
Net investment in capital assets	$ 85,184,784	$ 83,801,681	$ 86,036,844	$ 85,478,988	$ 87,836,128	$ 86,902,632	$ 86,087,313	$ 87,734,750	$ 94,334,014	$ 102,946,878
Restricted	588,478	589,005	-	-	-	-	-	-	-	-
Unrestricted	12,816,064	13,380,569	12,852,334	15,277,028	20,652,315	29,464,793	36,647,760	44,267,740	49,660,232	59,732,046
Total Business-type Activities Net Position	$ 98,589,326	$ 97,771,255	$ 98,889,178	$ 100,756,016	$ 108,488,443	$ 116,367,425	$ 122,735,073	$ 132,002,490	$ 143,994,246	$ 162,678,924
PRIMARY GOVERNMENT										
Net investment in capital assets	$ 123,858,132	$ 121,497,360	$ 124,031,352	$ 122,687,600	$ 125,159,153	$ 125,583,400	$ 126,445,007	$ 129,203,241	$ 137,912,003	$ 152,369,119
Restricted	1,039,834	1,084,093	581,220	721,349	831,863	1,005,536	1,176,707	1,378,656	1,164,751	1,052,451
Unrestricted	16,446,175	14,317,687	14,355,238	16,846,905	21,695,534	32,109,662	41,689,813	51,217,196	57,710,270	70,508,177
Total Primary Government Net Position	$ 141,344,141	$ 136,899,140	$ 138,967,810	$ 140,255,854	$ 147,686,550	$ 158,698,598	$ 169,311,527	$ 181,799,093	$ 196,787,024	$ 223,929,747

CITY OF FERNLEY, NEVADA
CHANGE IN NET POSITION
LAST TEN FISCAL YEARS

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
EXPENSES										
Governmental Activities:										
General government	$ 1,991,411	$ 2,283,841	$ 2,192,152	$ 2,374,481	$ 2,475,923	$ 2,378,207	$ 2,126,212	$ 3,887,890	$ 3,586,290	$ 3,497,519
Judicial	238,892	276,019	316,607	357,630	382,905	406,089	304,202	358,504	445,902	591,999
Culture and recreation	1,384,571	788,165	570,042	1,076,790	1,027,991	1,009,256	866,419	932,490	1,022,103	933,738
Community development	849,079	937,675	761,489	894,130	658,254	700,250	615,483	764,387	722,118	749,995
Public works	2,202,499	2,001,841	2,786,120	2,596,460	2,370,288	2,736,438	3,040,844	3,478,603	4,523,736	4,766,951
Health	192,690	194,156	210,014	205,322	231,491	271,017	120,909	130,491	121,443	229,084
Debt Service:										
Interest and fiscal charges	92,415	88,060	81,325	74,435	67,366	60,119	52,705	45,113	3,439	-
Total Governmental Activities Expenses	6,951,557	6,569,757	6,917,749	7,579,248	7,214,218	7,561,376	7,126,774	9,597,478	10,425,031	10,769,286
Business-type Activities:										
Water	9,323,274	9,319,610	9,022,783	9,287,677	8,764,164	8,860,175	10,775,140	9,413,340	9,241,599	9,893,288
Sewer	2,492,747	2,472,798	2,579,837	2,721,599	2,657,654	2,876,352	3,525,867	3,364,620	3,167,761	3,677,634
Total Business-type Activities Expenses	11,816,021	11,792,408	11,602,620	12,009,276	11,421,818	11,736,527	14,301,007	12,777,960	12,409,360	13,570,922
Total Primary Government Expenses	$ 18,767,578	$ 18,362,165	$ 18,520,369	$ 19,588,524	$ 18,636,036	$ 19,297,903	$ 21,427,781	$ 22,375,438	$ 22,834,391	$ 24,340,208

CITY OF FERNLEY, NEVADA
CHANGE IN NET POSITION
LAST TEN FISCAL YEARS
CONTINUED

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PROGRAM REVENUES										
Governmental Activities:										
Charges for Services:										
General government	$ 1,870,597	$ 1,837,966	$ 1,849,714	$ 2,008,097	$ 2,350,210	$ 2,766,705	$ 3,018,252	$ 3,148,777	$ 3,967,086	$ 4,598,594
Judicial	155,846	268,742	275,179	239,898	245,457	281,212	240,177	225,069	205,469	153,296
Culture and recreation	14,722	15,410	15,054	14,223	34,708	10,441	30,307	30,241	31,973	31,480
Community development	-	-	-	-	-	-	-	-	-	-
Public works	17,019	41,363	44,247	39,265	143,102	323,774	274,520	529,318	773,244	642,576
Health	-	-	-	-	-	-	-	-	-	-
Operating Grants and Contributions	616,222	933,829	1,655,405	1,090,508	646,981	3,355,145	2,163,973	3,862,058	2,708,379	5,990,119
Capital Grants and Contributions	1,008,428	404,435	710,254	381,488	211,148	182,674	1,521,915	743,317	1,468,592	2,268,815
Total Governmental Activities Program Revenues	3,682,834	3,501,745	4,549,853	3,773,479	3,631,606	6,919,951	7,249,144	8,538,780	9,154,743	13,684,880
Business-type Activities:										
Charges for Services										
Water	5,174,551	5,681,977	5,416,406	7,035,414	9,377,744	9,136,029	9,641,223	10,347,050	10,557,631	10,918,464
Sewer	1,981,631	2,560,138	2,204,453	2,820,540	3,814,919	4,158,774	4,393,118	4,679,744	4,864,103	5,119,968
Other	-	-		-	-	-	-	-	-	-
Operating Grants and Contributions	-	-		-	-	-	-	-	-	-
Capital Grants and Contributions	501,543	1,555,727	1,633,213	902,539	1,418,743	1,304,147	1,452,994	2,554,555	5,527,857	10,873,570
Total Business-type Activities Revenues	7,657,725	9,797,842	9,254,072	10,758,493	14,611,406	14,598,950	15,487,335	17,581,349	20,949,591	26,912,002
Total Primary Government Revenues	$ 11,340,559	$ 13,299,587	$ 13,803,925	$ 14,531,972	$ 18,243,012	$ 21,518,901	$ 22,736,479	$ 26,120,129	$ 30,104,334	$ 40,596,882
NET (EXPENSE)/REVENUE										
Governmental Activities	$ (3,268,723)	$ (3,068,012)	$ (2,367,896)	$ (3,805,769)	$ (3,582,612)	$ (641,425)	$ 122,370	$ (1,058,698)	$ (1,270,288)	$ 2,915,594
Business-type Activities	(4,158,296)	(1,994,566)	(2,348,548)	(1,250,783)	3,189,588	2,862,423	1,186,328	4,803,389	8,540,231	13,341,080
Total Primary Government Net (Expense)/Revenue	$ (7,427,019)	$ (5,062,578)	$ (4,716,444)	$ (5,056,552)	$ (393,024)	$ 2,220,998	$ 1,308,698	$ 3,744,691	$ 7,269,943	$ 16,256,674

CITY OF FERNLEY, NEVADA
CHANGE IN NET POSITION
LAST TEN FISCAL YEARS
CONTINUED

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
GENERAL REVENUES AND OTHER CHANGES IN NET POSITION										
Governmental Activities:										
Taxes:										
Property	$ 2,145,992	$ 2,199,262	$ 2,452,000	$ 2,322,674	$2,468,443	$ 2,625,643	$ 2,948,107	$ 3,293,351	$ 3,635,121	$ 4,100,313
Consolidated	136,402	143,389	148,249	154,423	163,528	172,906	181,233	196,323	205,075	216,346
Fuel	306,330	344,360	402,749	378,322	389,175	406,360	391,939	306,563	391,070	394,632
Residential Construction Tax	-	-	-	-	196,000	203,000	134,000	191,600	279,000	303,000
Unrestricted gaming licenses	106,132	104,513	120,221	116,693	124,344	121,418	98,213	116,483	120,170	122,355
Unrestricted interest income	10,032	6,485	25,243	30,001	67,822	160,048	185,105	36,097	(372,467)	405,805
Miscellaneous revenue	14,000	14,000	150,525	224,862	83,558	85,116	184,316	138,430	8,496	-
Total Governmental Activities	2,718,888	2,812,009	3,298,987	3,226,975	3,492,870	3,774,491	4,122,913	4,278,847	4,266,465	5,542,451
Business-type Activities:										
Unrestricted interest income	32,634	20,361	69,582	87,782	205,986	604,173	749,133	133,235	(945,853)	907,628
Miscellaneous revenue	3,326,391	3,378,183	3,396,889	3,029,839	4,477,714	4,412,386	4,432,186	4,330,793	4,407,245	4,426,104
Total Business-type Activities Revenues	3,359,025	3,398,544	3,466,471	3,117,621	4,683,700	5,016,559	5,181,319	4,464,028	3,461,392	5,333,732
Total Primary Government Revenues	$ 6,077,913	$ 6,210,553	$ 6,765,458	$ 6,344,596	$8,176,570	$ 8,791,050	$ 9,304,232	$ 8,742,875	$ 7,727,857	$10,876,183
CHANGE IN NET POSITION										
Governmental Activities	$ (549,835)	$ (256,003)	$ 931,091	$ (578,794)	$ (89,742)	$ 3,133,066	$ 4,245,283	$ 3,220,149	$ 2,996,177	$ 8,458,045
Business-type Activities	(799,271)	1,403,978	1,117,923	1,866,838	7,873,288	7,878,982	6,367,647	9,267,417	12,001,623	18,674,812
Total Primary Government Change in Net Position	$ (1,349,106)	$ 1,147,975	$ 2,049,014	$ 1,288,044	$7,783,546	$11,012,048	$10,612,930	$12,487,566	$14,997,800	$27,132,857

Schedule 3

CITY OF FERNLEY, NEVADA
FUND BALANCES OF GOVERNMENTAL FUNDS
LAST TEN FISCAL YEARS

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
General fund:										
Nonspendable	$ 25,250	$ 10,812	$ 29,922	$ 30,284	$ -	$ -	$ -	$ -	$ -	$ -
Restricted	342,572	370,168	419,398	561,017	692,652	877,714	1,024,586	1,209,442	1,005,102	929,229
Committed	1,541,178	2,982,946	3,174,349	3,155,343	3,490,868	4,995,231	6,789,537	8,371,753	8,541,389	11,105,596
Assigned	405,310	47,349	166,089	364,750	358,654	287,546	-			
Unassigned	841,826	397,344	429,488	441,228	490,621	496,447	499,320	525,164	730,708	705,001
Total general fund	$ 3,156,136	$ 3,808,619	$ 4,219,246	$4,552,622	$5,032,795	$6,656,938	$8,313,443	$ 10,106,359	$ 10,277,199	$ 12,739,826
All other governmental funds										
Nonspendable	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Restricted	108,784	124,920	161,822	160,332	139,211	127,822	152,121	169,214	159,649	123,403
Committed	1,073,980	1,123,386	1,273,255	1,448,069	692,933	940,312	1,209,139	1,488,942	1,860,466	2,237,266
Assigned	133,690	162,254	229,289	278,752	380,287	451,216	569,512	682,982	838,150	1,071,083
Total all other governmental funds	$ 1,316,454	$ 1,410,560	$ 1,664,366	$1,887,153	$1,212,431	$1,519,350	$1,930,772	$ 2,341,138	$ 2,858,265	$ 3,431,752

* Due to implementation of GASB 54, fund balance classifications changed in fiscal year 2011.

CITY OF FERNLEY, NEVADA
CHANGES IN FUND BALANCE OF GOVERNMENTAL FUNDS
LAST TEN FISCAL YEARS

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
REVENUES										
Taxes	$ 2,411,183	$ 2,487,401	$ 2,795,364	$ 2,812,455	$3,067,427	$3,220,095	$3,533,231	$ 3,982,332	$ 4,572,466	$ 5,113,901
Licenses and permits	1,867,564	1,798,242	1,973,548	2,117,464	2,564,561	3,202,328	3,382,189	3,784,452	4,841,836	5,340,054
Intergovernmental	1,776,740	1,556,833	2,318,128	1,643,631	1,013,704	3,216,222	2,785,663	3,942,337	2,770,410	5,646,687
Fines and forfeits	155,845	268,742	275,178	239,899	245,457	281,213	240,177	225,068	205,469	153,295
Miscellaneous	173,738	222,002	106,838	115,390	148,117	695,291	241,645	184,315	(285,948)	897,552
Developer fees	-	-	-	-	-	-	-	-	-	-
Total revenues	6,385,070	6,333,220	7,469,056	6,928,839	7,039,266	10,615,149	10,182,905	12,118,504	12,104,233	17,151,489
EXPENDITURES										
General government	1,933,656	1,974,369	1,894,419	1,859,292	2,164,818	2,057,249	1,924,107	4,950,269	3,716,450	4,214,715
Judicial	235,890	278,105	319,189	346,754	373,745	388,640	309,668	345,133	443,626	563,535
Culture and recreation	909,293	756,953	707,664	880,248	957,631	880,657	770,684	830,168	1,187,066	1,372,769
Community development	1,035,564	952,037	759,975	862,260	677,702	1,789,963	1,079,507	890,158	734,911	761,501
Public works	1,156,200	1,053,634	2,664,492	1,946,728	1,574,313	3,017,847	3,690,576	2,504,197	4,081,764	6,914,751
Health	190,276	181,749	212,740	193,821	229,966	260,962	157,046	161,415	108,416	208,099
Debt service:										
Principal	86,000	280,000	286,000	293,000	301,000	308,000	315,000	323,000	1,119,337	-
Interest	92,415	88,060	81,325	74,435	67,366	60,119	52,705	45,113	3,439	-
Cost sharing Water and Sewer funds	-	-	(101,525)	(83,862)	(83,096)	(79,350)	(184,315)	(138,431)	-	-
Bond issuance cost	-	-	-	-	-	-	-	-	-	-
Capital outlay	316,091	82,816	-	-	956,358	-	-	4,200	29,753	79,995
Total expenditures	5,955,385	5,647,723	6,824,279	6,372,676	7,219,803	8,684,087	8,114,978	9,915,222	11,424,762	14,115,365
Excess (deficiency) of revenues over expenditures	429,685	685,497	644,777	556,163	(180,537)	1,931,062	2,067,927	2,203,282	679,471	3,036,124
OTHER FINANCING SOURCES (USES)										
Transfer out	(105,507)	(11,051)	-	-	-	-	-	-	-	-
Transfer in	105,507	11,051	-	-	-	-	-	-	-	-
General obligation bonds issued	-	-	-	-	-	-	-	-	-	-
Proceeds from insurance	-	-	-	-	-	-	-	-	-	-
Proceeds from disposal of capital assets	-	-	-	-	-	-	-	-	8,496	-
Total other financing sources (uses)	-	-	-	-	-	-	-	-	8,496	-
Net change in fund balance	$ 429,685	$ 685,497	$ 644,777	$ 556,163	$ (180,537)	$1,931,062	$2,067,927	$ 2,203,282	$ 687,967	$ 3,036,124
Debt service as a percentage of noncapital expenditures	3.3%	6.8%	6.6%	6.2%	6.3%	6.0%	6.0%	4.6%	11.4%	0.0%

SCHEDULE 5

CITY OF FERNLEY, NEVADA
ESTIMATED ASSESSED VALUE OF TAXABLE PROPERY
LAST TEN FISCAL YEARS

Fiscal Year	Assessed Value			Estimated Actual Value	Ratio of Total Assessed to Total Estimated Actual Value
	Real Property	Personal Property	Total		
2014*	405,137,703	39,114,259	444,251,962	1,269,291,320	35.0
2015	543,179,007	35,480,263	578,659,270	1,653,312,200	35.0
2016	620,951,224	34,017,878	654,969,102	1,871,340,291	35.0
2017	555,711,189	29,916,104	585,627,293	1,673,220,837	35.0
2018	602,011,283	38,175,159	640,186,442	1,829,104,120	35.0
2019	676,171,175	39,120,159	715,291,334	2,043,689,526	35.0
2020	759,219,557	45,816,542	805,036,099	2,300,103,140	35.0
2021	823,291,448	57,767,554	881,059,002	2,517,311,434	35.0
2022	860,202,471	58,590,439	918,792,910	2,625,122,600	35.0
2023	1,058,870,617	66,692,739	1,125,563,356	3,215,895,303	35.0

* First year breakdown of assessed value between real and personal property was made available.
Personal Property amounts provided by Lyon County Assessor's Office.

SCHEDULE 6

CITY OF FERNLEY, NEVADA
PROPERTY TAX LEVIES AND COLLECTIONS
LAST FIVE FISCAL YEARS

Fiscal Year	Taxes Levied	Tax Collections	Collections as a % of Original Levy	Collections in Subsequent Years	Total Tax Collections	Total Collections as a % of Original Levy
2014	2,153,267	2,100,601	97.55%	34,904	2,135,505	99.18%
2015	2,309,133	2,182,422	94.51%	18,827	2,201,249	95.33%
2016	2,370,149	2,327,316	98.19%	26,237	2,353,553	99.30%
2017	2,333,033	2,297,252	98.47%	16,442	2,313,694	99.17%
2018	2,486,770	2,447,325	98.41%	18,843	2,466,168	99.17%
2019	2,652,966	2,606,805	98.26%	23,526	2,630,331	99.15%
2020	2,652,966	2,606,805	98.26%	22,223	2,629,028	99.10%
2021	3,333,289	3,268,314	98.05%	25,206	3,293,520	98.81%
2022	3,628,330	3,608,138	99.44%	12,156	3,620,294	99.78%
2023	4,567,274	3,674,473	80.45%	21,056	3,695,529	80.91%

Source: Lyon County, State of NV Department of Taxation and City of Fernley

CITY OF FERNLEY, NEVADA
PRINCIPAL PROPERTY OWNERS
JUNE 30, 2023

		Fiscal Year 2023			Fiscal Year 2014		
		Taxable		Approximate Percentage of Total Estimated Assessed Value	Taxable		Approximate Percentage of Total Estimated Assessed Value
Taxpayer	Land Use	Taxable Value (1)	Assessed Value		Taxable Value (1)	Assessed Value	
M4 NEW FERNLEY QOZB LLC	General Industrial	32,569,348	11,399,272	1.24%	-	-	-
TREX COMPANY LLC	General Industrial	20,511,956	7,179,185	0.78%	29,548,143	10,341,850	0.85%
POLARIS SALES INC	General Industrial	$ 10,168,788	$ 3,559,076	0.39%	-	-	-
NEWLANDS INDUSTRIAL LLC	Commercial Industrial	8,833,240	3,091,634	0.34%	-	-	-
MSC INDUSTRIAL DIRECT CO INC	General Industrial	7,715,279	2,700,348	0.31%	-	-	-
FERNLEY NEWLANDS LLC	General Industrial	7,224,695	2,528,643	0.28%	-	-	-
DECEUNINCK NORTH AMERICA LLC	General Industrial	6,536,976	2,287,942	0.26%	-	-	-
ILPT FERNLEY, LLC	General Industrial	6,061,035	2,121,362	0.23%	-	-	-
WAL-MART STORES INC	General Commercial	5,003,192	1,751,117	0.19%	-	-	-
SHERWIN-WILLIAMS ACCEPTANCE COR	Heavy Industrial	4,716,083	1,650,629	0.18%	22,661,434	7,931,502	0.65%
AGRU AMERICA INC	General Industrial	4,543,033	1,590,062	0.14%	-	-	0.00%
NV Energy	Utility	-	-	-	161,904,911	56,666,719	4.64%
Quebecor World Nevada	Manufacturer	-	-	-	34,495,500	12,073,425	0.99%
1600 East Newlands Dr., LLC	Developer	-	-	-	23,266,760	8,143,366	0.67%
Peri & Peri/Desert Pearl Farms	Agriculture	-	-	-	19,804,863	6,931,702	0.57%
Southwest Gas Corp	Utility	-	-	-	19,723,043	6,903,065	0.57%
Union Pacific Railroad	Railroad	-	-	-	19,190,814	6,716,785	0.55%
Sonterra Development Co. Inc.	Developer	-	-	-	19,133,257	6,696,640	0.55%
AT&T Nevada	Communications	-	-	-	16,794,211	5,877,974	0.48%
		$ 113,883,625	$ 39,859,269	4.33%	$ 366,522,936	$ 128,283,028	10.52%

Source: Lyon County Assessor's Office
Note: (1) Assessed value is 35% of estimated taxable value.

CITY OF FERNLEY, NEVADA
WATER USER FEES
LAST TEN FISCAL YEARS

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WATER UTILITY										
Number of Customers	6,510	6,769	6,774	7,114	7,495	7,674	7,790	7,937	8,144	8,352
Annual Average Day Demand per customer	509	465	444	437	405	420	421	506	472	477
Gallons of water used (in thousands) *	1,209,731	1,148,351	1,097,947	1,133,827	1,107,035	1,176,667	1,198,017	1,465,753	1,403,382	1,452,963
Direct rate per 1,000 gallons	$ 2.15	$ 2.15	$ 2.15	$ 3.10	$ 3.10	$ 3.28	$ 3.45	$ 3.60	$ 3.68	$ 3.79

Source: City of Fernley

* Includes residential and commercial customers.

SCHEDULE 9

CITY OF FERNLEY, NEVADA
PRINCIPLE WATER USERS

	June 30, 2023		2014	
Employer	**User Fees**	**Rank**	**User Fees**	**Rank**
*Lyon County School District	391,266	1	170,708	2
*City of Fernley	225,502	2	180,158	1
Trex Manufacturing Company	225,107	3	108,568	3
Pilot Travel Centers, LLC	166,369	4	-	-
Reno/Villa Park llc	164,572	5	-	-
Trex Company	130,568	6	-	-
Sherwin Williams	108,676	7	33,372	8
Veterans Cemetery	77,165	8	56,761	5
Blue Beacon	74,872	9	31,948	10
Essential Industries Inc	66,293	10	-	-
World Color Fernley	-	-	76,057	4
Hollywood Investments	-	-	52,105	6
Siri Hospitality	-	-	39,770	7
Amazon.com	-	-	38,645	9

Source: City of Fernley
* User Fees totals represent all City of Fernley and all Lyon County School District facilities combined

SCHEDULE 10

CITY OF FERNLEY, NEVADA
RATIOS OF OUTSTANDING DEBT BY TYPE
LAST TEN FISCAL YEARS

	Governmental Activities	Business-Type Activities					
Fiscal Year	Intallment Purchase Agreement	Water Bonds	Sewer Bonds	Unamortized Bond Premium (Discount)	Total Primary Government	Percentage of Personal Income (1)	Per Capita (1)
2013	3,926,000	68,134,205	7,300,795	45,835	79,406,835	15.15%	4,217
2014	3,840,000	66,557,336	7,132,664	43,350	77,573,350	13.45%	4,086
2015	3,560,000	65,933,524	7,071,476	40,865	76,605,865	12.96%	4,016
2016	3,274,000	65,175,380	7,073,707	2,552,345	78,075,432	13.00%	4,123
2017	2,981,000	63,153,474	7,091,821	2,804,336	76,030,631	10.50%	3,806
2018	2,680,000	60,886,568	6,950,855	2,669,864	73,187,287	11.28%	3,792
2019	2,372,000	58,590,165	7,941,221	2,535,392	71,438,778	9.81%	3,610
2020	2,057,000	56,366,532	7,616,378	2,400,920	68,440,830	8.67%	3,356
2021	1,734,000	53,774,518	7,250,650	2,266,448	65,025,616	7.85%	3,111
2022	-	51,192,470	6,899,939	2,131,976	60,224,385	6.47%	2,854
2023	-	49,407,000	5,679,581	1,997,504	57,084,085	5.26%	2,459

Note: Details regarding the City's outstanding debt can be found in the notes to the financial statements.
(1) See Schedule 15 of Demographic Statistics for personal income and population data.

SCHEDULE 11

CITY OF FERNLEY, NEVADA
RATIOS OF GENERAL OBLIGATION DEBT OUTSTANDING
LAST TEN FISCAL YEARS

Fiscal Year	Business-Type General Obligation Revenue Bonds	Percentage of Actual Property Value (1)	Percentage of Personal Income (2)	Per Capita (2)
2014	73,733,350	5.81%	12.79%	3,883
2015	73,045,865	4.42%	12.35%	3,829
2016	74,801,432	4.00%	12.45%	3,950
2017	73,116,113	4.37%	10.10%	3,660
2018	70,507,287	3.85%	10.87%	3,653
2019	69,066,778	3.38%	9.48%	3,490
2020	66,383,831	2.89%	8.41%	3,255
2021	63,291,616	2.51%	7.64%	3,028
2022	60,224,385	2.29%	6.47%	2,854
2023	57,084,085	1.78%	5.26%	2,459

Note: (1) See the Schedule of Assessed Value and Estimated Actual Value of Taxable Property for property value data - Schedule 5.
(2) Population information may be found on Schedule 15 - Demographic Statistics.

SCHEDULE 12

CITY OF FERNLEY, NEVADA
GENERAL OBLIGATION DIRECT AND OVERLAPPING DEBT
JUNE 30, 2023

	Debt Outstanding	Presently Self-Supporting General Obligation Debt	Percent Applicable[1]	Applicable Net Debt
Direct				
City of Fernley [2]	$ 60,224,385	$ 60,224,385	100.00%	$ -
Overlapping				
Lyon County	$ 17,906,145	11,680,580	38.00%	2,365,601
Lyon County School District	$ 79,360,000	79,360,000	38.00%	-
			Total Overlapping Debt	2,365,601
			Total Direct and Overlapping Debt	$ 2,365,601

[1] Calculation based on present assessed valuation of Fernley compared to Lyon County

[2] Amounts are net of issuance (discounts)/premiums

SCHEDULE 13

CITY OF FERNLEY, NEVADA
COMPUTATION OF GENERAL OBLIGATION DEBT LIMIT
JUNE 30, 2023

Estimated Assessed Value	$	1,125,563,356
Debt Limit - 30 Percent of Total Assessed Value		337,669,007
General Obligation Revenue Bonds		58,092,409
Total Amount of Debt Applicable to Debt limit		58,092,409
Legal Debt Margin	$	279,576,598
Total debt applicable to the limit as a percentage of debt limit		17.20%

General Obligation Debt Limit

The City is limited by NRS 266.600 as to the amount of general obligation debt is can have outstanding. The limit is equal to 30 percent of the City's total assessed valuation. As of June 30, 2023, the City has no general obligation debt outstanding and none proposed. It has $58,092,409 of general obligation revenue supported debt outstanding. Based on the fiscal year 2022 assessed value, the City's available general obligation debt limit is approximately $279,576,598.

Other factors also limit the amount of debt the City can issue. These factors include, but are not limited to, voter approval, overlapping tax rates, available revenues, market conditions and types of projects to be funded.

SCHEDULE 14

CITY OF FERNLEY, NEVADA
WATER AND SEWER FUNDS REVENUE BOND COVERAGE
LAST TEN FISCAL YEARS

				Debt Service Requirements			
Fiscal Year	**Operating Revenue**	**Operating Expenses (1)**	**Net Revenue Available for Debt Service**	**Principal**	**Interest**	**Total**	**Coverage**
2014	7,121,106	4,157,098	2,964,008	1,745,000	3,501,453	5,246,453	56%
2015	7,042,676	4,428,993	2,613,683	1,905,868	3,330,671	5,236,539	50%
2016	7,009,051	4,378,965	2,630,086	4,309,399	733,462	5,042,861	52%
2017	8,757,498	4,788,516	3,968,982	2,267,295	2,440,032	4,707,327	84%
2018	12,056,792	4,619,356	7,437,436	2,474,354	2,403,558	4,877,912	152%
2019	13,164,375	4,895,196	8,269,179	2,604,667	2,331,202	4,935,869	168%
2020	13,735,523	6,732,112	7,003,411	2,226,092	2,734,476	4,960,568	141%
2020	13,735,523	6,732,112	7,003,411	2,226,092	2,734,476	4,960,568	141%
2021	14,696,543	10,849,562	3,846,981	2,932,759	1,805,391	4,738,150	81%
2022	15,062,971	10,578,197	4,484,774	2,932,759	1,806,223	4,738,982	95%
2023	15,665,497	11,813,254	3,852,243	3,005,829	1,806,223	4,812,051	80%

Note: (1) Total operating expenses exclusive of depreciation

SCHEDULE 15

CITY OF FERNLEY, NEVADA
DEMOGRAPHIC STATISTICS
LAST TEN FISCAL YEARS

Fiscal Year	Population (1)	Total Personal Income (2)	Per Capita Personal Income (3)	Unemployment Rate (4)
2013	18,831	524,160,885	27,835	13.60%
2014	18,987	576,597,216	30,368	11.30%
2015	19,077	591,253,461	30,993	9.80%
2016	18,936	600,649,920	31,720	8.10%
2017	19,975	723,772,922	36,234	6.30%
2018	19,300	648,885,300	33,621	6.00%
2019	19,790	728,390,740	36,806	5.40%
2020	20,396	789,590,348	38,713	8.50%
2021	20,901	828,724,650	39,650	6.30%
2022	21,105	930,688,290	44,098	5.50%
2023	23,210	1,084,719,350	46,735	5.70%

Sources:
(1) Nevada Demographers' Office
(2) Bureau of Economic Analysis
(3) Nevada Employment Security Department-BEA
(4) Lyon County Data

(1) NV Demographer's Office. Fernley is 36% of Lyon County population.

SCHEDULE 16

CITY OF FERNLEY, NEVADA
LYON COUNTY MAJOR EMPLOYERS
JUNE 30,

	2023			2014		
Employer	**Employees**	**Rank**	**Percentage of Total County Employment (1)**	**Employees**	**Rank**	**Percentage of Total County Employment (1)**
Lyon County School District	1000-1499	1	5.32%	1000-1499	1	8.95%
Lyon County	500-599	2	2.34%	300-399	3	2.68%
Wal-Mart	250-499	3	1.59%	200-299	5	1.79%
Snyder Family foods	250-499	4	1.59%	-	-	-
Trex Company, Inc.	100-249	5	0.74%	-	-	-
Sherwin-Williams	100-249	6	0.74%	-	-	-
Pilot Travel Center	100-249	7	0.74%	-	-	-
Lowe's Home Improvement	100-249	8	0.74%	100-199	9	0.89%
Nevada Cement Co	100-249	9	0.74%	-	-	-
City of Fernley	100-249	10	0.34%	-	-	-
Amazon.com	-	-	-	900-999	2	8.05%
MSC Industrial	-	-	-	200-299	4	1.79%
South Lyon Medical Center	-	-	-	100-199	6	0.89%
Production Pattern & Foundry	-	-	-	100-199	7	0.89%
Metallic Art Company	-	-	-	100-199	8	0.89%
Nevada Automotive Testing Center	-	-	-	100-199	10	0.89%

Source: Nevada Department of Employment, Training & Rehabilitation

(1) Total employment statistics are for the Lyon County area, as information is not available at the City level.

SCHEDULE 17

CITY OF FERNLEY, NEVADA
FULL-TIME EQUIVALENT CITY GOVERNMENT EMPLOYEES BY FUNCTION/PROGRAM
LAST TEN FISCAL YEARS

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FUNCTION/PROGRAM										
General government	13.1	13.1	15.1	14.1	14.1	14.6	15.9	16.1	20.5	21.1
Judicial	3.0	3.0	3.5	4.0	4.0	4.0	5.0	4.0	5.0	5.0
Public works	4.8	4.8	6.3	7.9	7.9	8.2	7.3	7.9	10.1	11.5
Culture and recreation	4.6	4.6	4.7	4.7	4.7	5.7	4.4	4.6	3.7	2.2
Community development	5.0	5.0	5.0	5.0	6.0	7.0	7.0	7.0	7.0	8.0
Health	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.2	1.1	1.5
Water	16.4	16.4	17.4	16.5	16.8	17.3	22.0	23.0	21.7	20.5
Sewer	6.6	6.6	7.6	8.9	8.9	10.3	12.0	13.0	11.4	11.3
Total	55.0	55.0	61.0	62.5	63.8	68.5	74.7	76.8	80.5	81.1

CITY OF FERNLEY, NEVADA
OPERATING INDICATORS BY FUNCTION/PROGRAM
LAST TEN FISCAL YEARS

FUNCTION/PROGRAM	2014	2015*	2016	2017	2018	2019	2020	2021	2022	2023
Judicial:										
Municipal Court Cases Filed:										
Drug	9	-	75	45	22	42	26	31	30	n/a
Driving under influence	22	57	58	52	48	52	54	72	69	n/a
Domestic violence	9	77	99	53	77	57	13	-	-	n/a
Traffic	2,129	3,463	3,008	2,073	2,443	3,204	2,795	2,025	2,239	n/a
Other	262	373	372	194	105	307	253	238	231	n/a
Public Safety:										
Calls for Service:										
Criminal	4,415	845	856	802	882	1,192	1029	1303	1101	1085
Non-criminal	3,745	4,165	4,408	4,366	4,267	3,524	2408	2431	2451	2105
Domestic violence	776	397	422	388	439	420	361	369	353	376
Follow-up	3,384	1,167	880	849	1,094	1,212	1012	1097	804	796
Traffic-stops	1,490	1,862	1,804	1,798	2,251	1,607	1246	1726	1151	1697
Civil papers	1,323	125	102	680	897	939	819	961	817	749
Animal	451	300	237	1,558	981	485	334	527	501	356
Death/Coroner	88	-	-	-	-	-	-			
Public service	2,807	1,022	1,141	1,175	1,167	1,421	1,711	1,715	1,843	1,873
Assist other agencies	938	744	713	699	841	753	652	721	627	518
Alarms	934	500	569	586	439	322	307	293	310	312
Accident	176	131	180	171	202	237	353	384	319	363
Private property accident	141	-	-	-	-	-	-			-
Mental health	7	120	145	122	133	147	119	157	166	174
Other	0	639	754	101	103	344	683	860	775	941
Administrative	23,029	-	-	-	-	-	-			
Total Calls for Service	43,880	12,017	12,211	13,295	13,696	12,603	11,034	12,544	11,218	11,345
Total Charges										
Felon	109	308	292	274	206	273	233	272	310	241
Gross misdemeanor	16	72	55	49	34	45	35	61	69	64
Misdemeanor	152	742	624	560	510	547	416	487	462	637
Driving under influence	30	-	-	-	-	-				
Domestic violence	38	-	-	-	-	-				
Total Arrests	345	763	660	642	574	637	506	639	607	652
Citations:										
Traffic	314	-	-	-	-	-	-	-	-	-
Non-traffic	244	-	-	-	-	-	-	-	-	-
Total Citations	558	-	-	-	-	-	-	-	-	-
Water Utility:										
Customer count	7,341	7,362	7,431	7,114	7,258	7,440	7,572	7,754	7,935	8,186
New connections	17	285	78	111	1,126	1,804	1,556	1,655	1,605	1,273
Sewer Utility:										
Customer count	6,466	6,539	6,600	6,463	6,673	6,854	6,980	7,144	7,338	8,186
New connections	13	281	75	106	1,075	1,630	1,407	1,454	1,452	1,094
Building:										
Number of permits issued	237	256	400	486	567	700	533	581	772	736
Number of inspection	873	1,059	1,996	5,647	12,218	16,737	12,092	7,954	13,654	9,962
Planning:										
Number of applications processed	23	25	53	53	65	42	48	51	50	53

Source: City of Fernley

* In 2015 the Lyon Councy Sheriff's Office changed the way they tracked statistical information. Some categories reported in the past are no longer tracked.

SCHEDULE 19

CITY OF FERNLEY, NEVADA
CAPITAL ASSET STATISTICS BY FUNCTION/PROGRAM
LAST TEN FISCAL YEARS

FUNCTION/PROGRAM	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Streets:										
Public Road Mileage	126.79	126.79	127.09	127.09	127.09	127.09	130.06	130.06	131.2	131.61
Parks and Recreation:										
Parks and Open Space Acreage	155	155	155	155	155	155	155	155	155	155
Developed Parks	12	12	12	12	12	12	12	12	12	12
Tennis Courts	1	1	1	1	1	1	1	1	1	1
Rodeo Arena	2	2	2	2	2	2	2	2	2	2
Playing Fields	19	19	19	19	19	19	19	19	19	19
Pavilions	7	7	7	7	7	7	7	7	7	7
Skate Park	1	1	1	1	1	1	1	1	1	1
Water Utility:										
Water lines (miles)	152.1	152.1	152.4	152.4	152.4	152.4	152.4	152.4	153.4	153.8
Fire Hydrants	1,073	1,073	1,075	1,077	1,077	1,077	1,077	1,077	1,094	1,098
Sewer Utility:										
Sanitary Sewer Lines (miles)	124.2	124.2	124.5	124.5	124.5	124.5	124.6	124.6	125.4	125.8
Sanitary Sewer Manhole Count	1,825	1,825	1,832	1,832	1,832	1,832	1,835	1,835	1,859	1,868

Source: City of Fernley

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COMPLIANCE SECTION

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HINTON BURDICK
CPAs & ADVISORS

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

The Honorable Mayor and City Council
City of Fernley, Nevada

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Fernley, Nevada, as of and for the fiscal year ended June 30, 2023, and the related notes to the financial statements, which collectively comprise the City's basic financial statements and have issued our report thereon dated January 3, 2024.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the City's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, we do not express an opinion on the effectiveness of the City's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the City's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

HintonBurdick, PLLC
St. George, Utah
January 3, 2024

HINTON BURDICK
CPAs & ADVISORS

Independent Auditors' Report on
State Legal Compliance

The Honorable Mayor and City Council
City of Fernley, Nevada

We have audited the financial statements of the City of Fernley, Nevada for the fiscal year ended June 30, 2023 and have issued our report thereon dated January 3, 2024. Our audit also included test work on the City's compliance with selected requirements identified in the State of Nevada Revised Statutes (NRS) including, but not limited to, NRS section 354.624 and section 354.6241.

Management of the City is responsible for the City's compliance with all requirements identified above. Our responsibility is to express an opinion on compliance with those requirements based on our audit and make specific statements regarding funds established and the status of prior year findings and recommendations; accordingly, we make the following statements:

For the fiscal year ended June 30, 2023, the City of Fernley has taken steps to act upon recommendations made in prior years.

The City has established a number of funds in accordance with NRS 354.624 as follows:

Enterprise Funds:
- Water Utility Fund
- Sewer Utility Fund

Funds whose balance is required to be used only for a specific purpose or carried forward to the succeeding fiscal year in any designated amount:

Special Revenue Funds:
- Grants Fund
- Municipal Court Administration Fund
- Municipal Court Facilities Fund
- Transient Lodging Tax Fund

Capital Projects Funds:
- Capital Projects Fund
- Capital Improvements Fund

The City appears to be using the above listed funds expressly for the purposes for which they were created and in accordance with NRS 354.624 and as per the provisions of NRS 354.6113 for capital projects funds. The funds are being administered in accordance with Generally Accepted Accounting Principles and the reserves, as applicable, appear reasonable and necessary to carry out the purposes of the funds. Sources of revenues available and fund balances and net position are reflected in the individual fund financial statements.

The statutory and regulatory requirements of the funds are as follows:

Water Fund	City Resolution
Sewer Fund	City Resolution
Grants Fund	City Resolution
Municipal Court Administration Fund	NRS 268.4085
Municipal Court Facilities Fund	NRS 176.0611
Transient Lodging Tax Fund	City Ordinance #2009-018
Capital Projects Fund	City Resolution
Capital Improvements Fund	City Resolution

NRS 354.624 requires a schedule of all fees imposed by the City that were subject to the provisions of NRS 354.5989. See the following page for the schedule.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether material noncompliance with the requirements referred to above occurred. An audit includes examining, on a test basis, evidence about the City's compliance with those requirements. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the City of Fernley complied, in all material respects, with the requirements identified above for the fiscal year ended June 30, 2023.

The purpose of this report is solely to describe the scope of our testing of the applicable compliance requirements identified in the Nevada Revised Statutes (NRS) and the results of that testing based on the state requirements. Accordingly, this report is not suitable for any other purpose.

HintonBurdick, PLLC

St. George, Utah
January 3, 2024

CITY OF FERNLEY, NEVADA

Schedule of Fees Imposed Subject to the Provisions of NRS 354.5989 – Limitation of Fees for Business Licenses

Flat fixed fees:		
Base revenue:		
Business license revenue for the year ended June 30, 2022		$ 217,313
Adjustment to base:		
1. Percentage increase in population of the local government	9.97%	
2. Percentage increase in the Consumer Price Index for the year ending on December 31, next preceding the year for which the limit is being calculated	8.3%	
	18.27%	39,703
Adjusted base at June 30, 2023		$ 257,016
Actual business license revenue for the year ended June 30, 2023		$ 232,450
Fee calculated on a percentage of gross revenue:		
Base revenue:		
Business license revenue for the year ended June 30, 2022		$ 587,551
Adjustment to base:		
1. Percentage increase in the Consumer Price Index	8.3%	48,767
Adjusted base at June 30, 2023		$ 636,318
Actual business license revenue for the year ended June 30, 2023		$ 628,477

The city implemented a change in calculating business license fees that was effective January 1, 2017. Certain business licenses are now calculated as a fraction or percentage of the gross revenue of the business instead of a flat fixed fee as in previous years.

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Michele Rambo, Planning Director**

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

ACTION REQUESTED: Motion

AGENDA ITEM:

(For Possible Action) Consideration and possible action to conditionally approve TSM 22002, a Tentative Subdivision Map submitted by Mark IV Capital for multiple parcels totaling approximately 2,174 acres generally located south of Interstate 80, east of Nevada Pacific Parkway, and north of US 50A.

AGENDA ITEM BRIEF:

Mark IV Capital is going through the approval process for multiple applications to develop Phase 1 of the Victory Logistics District, an industrial development proposed for the east side of Fernley consisting of APNs 021-201-01 and -16; 021-211-02, -03, -04, and -06; 021-242-11 and -17; 021-251-25; 021-261-43 and -44. A Planned Development and associated handbook have previously been approved by the City Council and a Development Agreement is currently being negotiated.

At their meeting of December 13, 2023, the Planning Commission voted to recommend approval of this Tentative Subdivision Map to the City Council.

RECOMMENDED MOTION:

I move to approve TSM 22002 as presented by staff, based on the findings and conditions of approval outlined 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:

I move to deny TSM 22002 based on the fact that Finding No. __ can not be met for the following reason: _____.

BACKGROUND:

The first phase of Victory Logistics District Planned Development consists of approximately 2,174 acres generally located south of Interstate 80 and east of Nevada Pacific Parkway. The District will consist of mainly industrial uses, but a small amount of commercial is anticipated to be scattered throughout, especially around the Interstate 80/Nevada Pacific Parkway interchange. The existing railroad spur in the southern portion of the development is anticipated to be expanded and used by future buildings.

The Planned Development is envisioned to create a large-scale employment center with an overall positive impact to the local economy by providing jobs to Fernley residents. These jobs will be found through a diverse range of uses extending from distribution warehouses and e-commerce to high end manufacturing and data centers. Commercial uses will be integrated throughout the development to serve residents, employees of the area, and travelers along Interstate 80. The map below shows the extent of the currently proposed Planned Development.

The Tentative Subdivision Map, if approved, will create an industrial subdivision out of the existing lots. Industrial subdivisions are slightly different than a typical residential subdivision in that instead of creating individual lots, the map acts only to dedicate streets, rights-of-way, and/or easements to the City of Fernley.

This creates the opportunity to later divide the property in a way more tailored to individual users through a series of Final Maps, which will follow to formally create the individual parcels. As the development occurs, additional maps and/or boundary adjustments may be requested based on market needs.

Current Conditions

The area in question is currently vacant with some existing industrial uses already operating to the west. The adjoining area north of Interstate 80 is also vacant and falls within the North Fernley Future Area of Development in the City of Fernley Master Plan. An Area Plan is currently being developed for this portion of the city. The land to the east of this project is designated as open space, a portion of which consists of the Fernley Wildlife Management Area. The southern boundary of the development falls across US 50A from a residential subdivision (Donner Trail Estates Phase 5).

The majority of the area proposed for development has historically been zoned Industrial (I) with a small amount of General Commercial (C2) along Interstate 80 at Exit 50. A Planned Development has recently been approved that changes the zoning of all subject parcels to Planned Development (PD). Surrounding zoning includes Rural Residential – 5 Acre (RR5) to the north across Interstate 80, Industrial (I) and General Commercial (C2) to the west, General Rural – 20 Acres (GR20) to the east, and General Commercial (C2) and Single-Family Residential – 6,000 Square Feet (SF6) to the south across US 50A.

The City of Fernley Master Plan also designates most of the development area as Industrial (I) with General Commercial (C2) along Interstate 80 at Exit 50. In addition, the Master Plan designates two parcels on the south edge of the area as Mixed Employment (ME). The new Planned Development (PD) zoning is a corresponding zoning with each of these land use designations. Similar to surrounding zoning, the Master Plan designates the area to the north across Interstate 80 as General Rural (GR), a combination of Industrial (I), Commercial (C), and Mixed Employment (ME) to the west, Open Space and Parks (OSP) to the east, and both Commercial (C) and Single-Family Residential (SFR) to the south across US 50A.

ANALYSIS:

Several studies and reports were submitted as part of this proposed Tentative Map. Topics include water, sewer, drainage, and traffic. These issues have been studied and discussed extensively throughout the process of reviewing the overall development. Details of these studies have been covered in length in previous reports done for both the Planned Development and Development Agreement. A short summary of each is below.

Water: The developer has the water rights to accommodate the anticipated water usage of the development at full buildout. Additional storage capacity in the form of three new storage tanks will be required and will be phased in with the development of the project.

Sewer: The existing sewage treatment plant will reach capacity at some point during project development and will need to be upgraded and/or expanded at the developer's expense. Capacity of the plant will be closely monitored with the addition of each building and/or use.

Drainage: Drainage improvements will convey on-site flows throughout the project by way of pipes, drainage channels, catch basins, and detention basins. Off-site flows will be intercepted, detained, and ultimately released downstream to the Fernley Sink.

Traffic: The increase in traffic created by the project development will impact many of the surrounding streets and intersections, including US 95A and Newlands Drive. Traffic signals, street widening, and the extension of Nevada Pacific Parkway are recommended to minimize these impacts.

FINDINGS:
To approve the Tentative Subdivision Map, the following findings must be met:

TSM1
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 shall comply with all standards, codes, and requirements regarding connection to the City's sanitary sewer and potable water systems, including but not limited to, associated fees, easements, design standards, system looping, development code requirements, and state requirements. Prior to the recordation of a final map for the project, the developer shall provide the City with a utility plan for water and sanitary sewer that is in conformance with the City of Fernley's Municipal Code and Public Works Design Manual to the approval of the City Engineer, Public Works Director, and Administrator. The Map must be reviewed and approved by the Nevada Department of Environmental Protection prior to construction.

TSM2
Availability of water that meets applicable health standards and is sufficient for the reasonably foreseeable needs of the subdivision.

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

TSM3
Availability and accessibility of utilities.

The nature and size of the Victory Logistics District Planned Development creates several challenges with providing utilities. The biggest challenge is the sewage treatment plant, which does not currently have the capacity to handle the amount of waste that a project of this size would generate. At some point, the plant will need to be upgraded and/or enlarged. A solution to this problem is currently being negotiated as part of the Development Agreement between Mark IV Capital and the City of Fernley. A condition of approval has been added requiring that the Development Agreement be in place prior to the recordation of the first Final Map.

The increased demand for water can be covered by the developer's existing water rights, but significant infrastructure improvements will need to be made to get the water to the site. Three additional storage tanks and pipe infrastructure to the project site will be installed by the developer as the project develops.

TSM4
Availability and accessibility of public services such as schools, police and fire protection, transportation, recreation facilities, and parks.

The need for a new fire station has been identified by the North Lyon County Fire Protection District as being critical to providing an adequate level of service for this new development. Once this fire station is complete, the project will be consistent with the Master Plan. The details of the fire station's location, funding, and timing will be included in the forthcoming Development Agreement between Mark IV Capital and the City of Fernley. A condition of approval has been added requiring that the Development Agreement be in place prior to the

recordation of the first Final Map.

The project will consist of a combination of public and private roads. All public roads to be dedicated to the City of Fernley are required to comply with street standards as outlined in the Planned Development Handbook and/or the City of Fernley street requirements. A traffic study has been submitted which makes recommendations for several necessary improvements including signage, striping, and signaling. The extension of Nevada Pacific Parkway will alleviate many of the overall transportation concerns.

Schools, recreation facilities, and parks will not be impacted due to the industrial nature of the development. The approved Planned Development does require a minimum amount of open space, but most of the open space provided will not be usable by the public.

TSM5
Consistency with the zoning district regulations.

The Victory Logistics District Planned Development is located on the edge of an existing industrial portion of the city. The area has historically been zoned for industrial use and is identified for industrial use in the Master Plan. In addition, a Planned Development has been approved which indicates the use of the area will be predominantly industrial in nature. Therefore, there is no adverse relationship to the area.

TSM6
Conformity with the master streets and highways plan.

Any roadway construction additions or improvements required to serve the project will need to conform to the Master Streets and Highways Plan, and be approved by the City Engineer, Administrator, and Public Works Director.

TSM7
Effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

The existing roads in and around the project area are not adequate to handle the significant increase in traffic, especially truck traffic, that would be generated. The submitted traffic study identifies several needed improvements, including an extension of Nevada Pacific Parkway south to US 50A, to mitigate this issue and take the pressure off of some of the other surrounding streets. The developer is currently working with NDOT and the Union Pacific Railroad to get their approval for the extension, which will be required to be constructed when the number of trips reaches a certain threshold outlined in the Development Agreement. A condition of approval has been added requiring that the Development Agreement be in place prior to the recordation of the first Final Map.

TSM8
Physical land characteristics, such as floodplain, slope, soil, and elevation differentials with abutting properties.

A small portion of the southern end of the project area lies within a FEMA designated Flood Zone A. This indicates that the area has a 1 percent chance of flooding annually. Detailed analyses are not performed in these areas so no base flood elevations are indicated. The applicant has submitted an application for a Conditional Letter of Map Revision (CLOMR) which proposes to eliminate the Flood Zone designation through drainage improvements outlined in the project drainage report.

TSM9

Recommendations and comments of review bodies.

The application was distributed to the City's Public Works Department, City Engineer, and several outside agencies for comment. Comments were received and provided to the applicant. The application has been conditioned such that all comments and recommendations of reviewing bodies shall be addressed prior to Final Map Approval.

TSM10
Conformity to the master sewer and water utility plan.

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

TSM11
Compliance with the Development Code and all other applicable regulations.

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

RELEVANT LAWS, STATUTES, AND REGULATIONS:

City of Fernley Development Code Section 32.03.060 (Land Division Applications)
City of Fernley Development Code Chapter 32.12 (Adequate Public Facilities)
NRS 278.325 (Mapping for industrial or commercial development)

FINANCIAL IMPLICATIONS:

None

ATTACHMENTS:

1. Conditions of Approval
2. Tentative Map Plans
3. Planning Report and Signed Applications
4. Water Report Stamped
5. Sewer Report Stamped

6. Victory Traffic Impact Study
7. Traffic Study Appendices
8. Drainage Report Stamped
9. Fiscal Impact Analysis

Conditions of Approval for TSM22002
Tentative Subdivision Map

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

2. **PROJECT DESCRIPTION:**
   THE PROJECT APPROVAL IS LIMITED TO AN INDUSTRIAL DEVELOPMENT WITH A MAXIMUM OF 11 LOTS ON ± 2,173.64 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 AND THE DEVELOPMENT AGREEMENT.

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

5. **DOCUMENT RECORDATION:**
   PRIOR TO RECORDATION OF THE FIRST FINAL MAP, THE ASSOCIATED PLANNED DEVELOPMENT HANDBOOK AND DEVELOPMENT AGREEMENT SHALL BE RECORDED WITH LYON COUNTY.

6. **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.

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

8. **WATER AND SEWER MAINS AND SERVICES:**
   UNLESS OTHERWISE STATED IN THE DEVELOPMENT AGREEMENT, 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 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 PLANNED DEVELOPMENT HANDBOOK, 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.

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

10. **DESIGN STANDARDS:**
    THE DEVELOPER SHALL COMPLY WITH THE DESIGN STANDARDS AND DEVELOPMENT REGULATIONS AS SET FORTH IN THE PLANNED DEVELOPMENT HANDBOOK AND/OR 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**:
    UNLESS OTHERWISE STATED IN THE PLANNED DEVELOPMENT HANDBOOK OR DEVELOPMENT AGREEMENT, THE DEVELOPER SHALL COMPLY WITH ALL ENGINEERING REQUIREMENTS WITHIN THE FERNLEY MUNICIPAL CODE TITLE 32, INCLUDING BUT NOT LIMITED TO, COMPLIANCE WITH SITE DEVELOPMENT STANDARDS, FLOODPLAIN MANAGEMENT, ROADWAYS, UNDERGROUNDING OF UTILITIES, AND WATER AND WASTEWATER FACILITIES TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF ANY FINAL MAP(S) FOR THE PROJECT.

12. **LANDSCAPING/IRRIGATION:**
    THE DEVELOPER SHALL SUBMIT A LANDSCAPING AND IRRIGATION PLAN FOR THE PROJECT IN CONFORMANCE WITH TITLE 32 OF THE FERNLEY MUNICIPAL CODE FOR REVIEW AND APPROVAL BY THE ADMINISTRATOR PRIOR TO APPROVAL AND RECORDATION OF A FINAL MAP FOR EACH PHASE. THE LANDSCAPING AND IRRIGATION SHALL BE INSTALLED PER THE APPROVED PLANS TO THE APPROVAL OF THE ADMINISTRATOR.

13. **STREETS:**
    UNLESS OTHERWISE STATED IN THE PLANNED DEVELOPMENT HANDBOOK OR DEVELOPMENT AGREEMENT, THE DEVELOPER SHALL CONSTRUCT ANY ROADWAY IMPROVEMENTS NECESSARY TO SERVE THE PROJECT TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR, PRIOR TO APPROVAL AND RECORDATION OF A FINAL MAP.

14. **DRAINAGE AND GRADING:**
    UNLESS OTHERWISE STATED IN THE DEVELOPMENT AGREEMENT, THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE FERNLEY MUNICIPAL CODE CHAPTER 32 (DRAINAGE AND GRADING) AND CHAPTER 10 OF THE CITY OF FERNLEY'S PUBLIC WORKS DESIGN MANUAL TO THE APPROVAL OF ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR. THE DEVELOPER SHALL PROVIDE A DRAINAGE REPORT FOR THE PROJECT IN CONFORMANCE WITH THE CITY'S DEVELOPMENT CODE, MUNICIPAL CODE, AND THE PUBLIC WORKS DESIGN MANUAL FOR REVIEW AND APPROVAL BY THE CITY ENGINEER. EACH SUCCESSIVE PHASE OF THE PROJECT SHALL SUBMIT AN UPDATED DRAINAGE REPORT FOR REVIEW AND APPROVAL BY THE CITY ENGINEER SHOWING THE CUMULATIVE EFFECT OF THE DEVELOPED PORTION OF THE PROJECT ALONG WITH THE PROPOSED PHASE'S EFFECT ON THE TOTAL DISCHARGE INTO THE DRAINAGE SYSTEM. THE DRAINAGE BASIN SHALL BE DEDICATED TO THE CITY OF FERNLEY UPON COMPLETION OF THE PROJECT IN ORDER FOR THE CITY TO MAINTAIN THE STORM DRAIN SYSTEM FOR THE SUBDIVISION.

15. **GRADING PERMIT:**
    THE DEVELOPER SHALL SUBMIT A GRADING PLAN FOR ANY PHASE OF THE PROJECT TO THE APPROVAL OF THE CITY ENGINEER. PRIOR TO THE ISSUANCE OF A GRADING PERMIT

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

16. **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 THE RECORDATION OF A FINAL MAP FOR ANY PORTION OF THE PROJECT.

17. **IMPROVEMENT PLANS:**
WITH THE SUBMITTAL OF ANY FINAL MAP APPLICATION, THE DEVELOPER SHALL SUBMIT THE ASSOCIATED IMPROVEMENT PLANS FOR REVIEW AND APPROVAL. THE IMPROVEMENT PLANS SHALL BE APPROVED PRIOR TO THE APPROVAL AND RECORDATION OF THE FINAL MAP. THE UTILITIES AND INFRASTRUCTURE FOR EACH PHASE MUST OPERATE INDEPENDENTLY OF FUTURE PHASES YET TO BE CONSTRUCTED. UNLESS OTHERWISE STATED IN THE DEVELOPMENT AGREEMENT, PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP FOR THE PROJECT THE DEVELOPER SHALL CONSTRUCT ALL REQUIRED PUBLIC IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, PUBLIC UTILITY AND ROADWAY INFRASTRUCTURE ASSOCIATED WITH THE PROJECT OR PROVIDE A SURETY BOND IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN FERNLEY MUNICIPAL CODE CHAPTER 32.13, IMPROVEMENTS AND AGREEMENTS, AND MEET THE REQUIREMENTS OF CHAPTER 32.03, LAND DIVISION APPLICATIONS OF THE FERNLEY MUNICIPAL CODE.

18. **NORTH LYON FIRE PROTECTION DISTRICT:**
THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT, INCLUDING BUT NOT LIMITED TO CONSTRUCTING A FIRE STATION AS OUTLINED IN THE DEVELOPMENT AGREEMENT, PROVIDING SECONDARY EMERGENCY ACCESS TO THE APPROVAL OF THE ADMINISTRATOR AND FIRE CHIEF PRIOR TO THE ISSUANCE OF ANY FINAL MAP FOR THE PROJECT, OR OTHER ITEMS REQUIRED BY THE APPLICABLE FIRE CODE.

19. **ADDRESSING AND STREET NAMES:**
THE DEVELOPER SHALL SUBMIT A REQUEST FOR ADDRESSING AND STREET NAME RESERVATION TO THE CITY OF FERNLEY FOR REVIEW AND APPROVAL. ALL ADDRESSING OF LOTS SHALL BE COMPLETED BY THE CITY. STREET NAMES SHALL BE APPROVED BY THE CITY PRIOR TO THE SUBMITTAL OF A FINAL MAP FOR THE PROJECT.

20. **TRUCKEE CARSON IRRIGATION DISTRICT (TCID)/BUREAU OF RECLAMATION:**
THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE TRUCKEE CARSON IRRIGATION DISTRICT AND/OR THE BUREAU OF RECLAMATION RELATED TO ANY FACILITY OR EASEMENT WITHIN THE PROJECT BOUNDARY TO THE APPROVAL OF THE ADMINISTRATOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

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

WORKS DIRECTOR.

22. **WASTE MANAGEMENT:**
THE DEVELOPER SHALL PROVIDE A WILL SERVE FROM A SOLID WASTE COLLECTION SERVICE TO THE APPROVAL OF THE ADMINISTRATOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

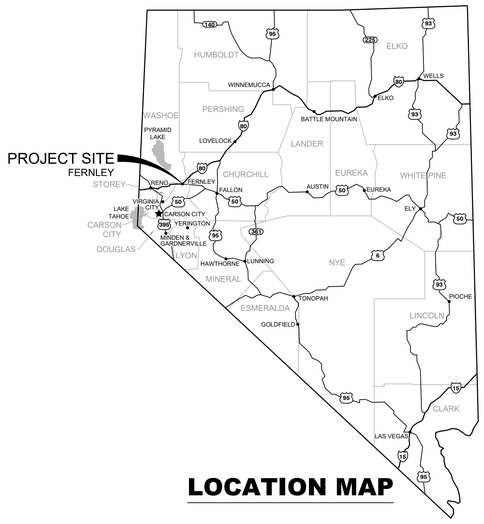
23. **FINAL MAP PHASING:**
IF APPLICABLE, EACH MAP PHASE SUBMITTED MUST BE DESIGNED TO MEET THE PUBLIC FACILITIES AND IMPROVEMENT STANDARDS AND BE ABLE TO OPERATE INDEPENDENTLY AND AS PART OF THE OVERALL DESIGN. CHANGES TO THE PHASING PLAN WILL REQUIRE REVIEW AND APPROVAL BY THE ADMINISTRATOR, CITY ENGINEER,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

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

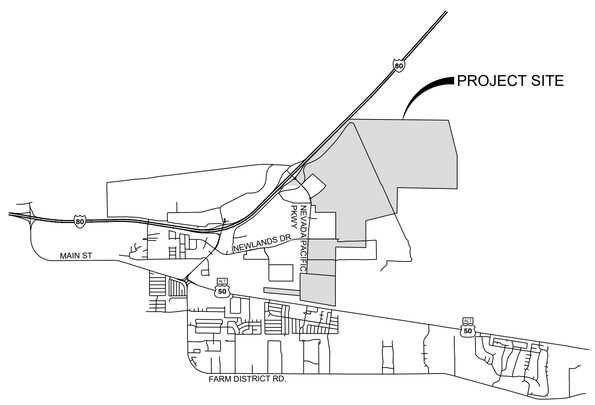
25. **FLOODPLAIN MANAGEMENT AND FEDERAL EMERGENCY MANAGEMENT AGENCY:**
THE DEVELOPER SHALL COMPLY WITH CHAPTER 32.09.060 OF THE CITY OF FERNLEY DEVELOPMENT CODE TITLED: FLOODPLAIN MANAGEMENT AS WELL AS ALL FEDERAL EMERGENCY MANAGEMENT AGENCY, FEMA, NATIONAL FLOOD INSURANCE PROGRAM REQUIREMENTS FOR ALL FLOODPLAIN MODIFICATIONS. THE REQUIRED APPROVALS FROM THE CITY OF FERNLEY AND FEMA SHALL BE OBTAINED PRIOR TO WORK BEGINNING WITHIN THE MAPPED FLOODPLAIN AREA. ALL REQUIRED IMPROVEMENTS SHALL BE CONSTRUCTED AND APPROVED PRIOR TO THE RECORDATION OF A FINAL MAP OR BONDED FOR IN ACCORDANCE WITH FERNLEY DEVELOPMENT CODE CHAPTER 32.13 (IMPROVEMENTS AND AGREEMENTS).

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP



LOCATION MAP



VICINITY MAP

OWNER/DEVELOPER

M4 NEW FERNLEY QOZB, LLC
ATTN: ROSS PFAUTZ
4450 MACARTHUR BLVD., 2ND FLOOR
NEWPORT BEACH, CA 92660
TEL.: 949.509.1444

ENGINEER

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NEVADA 89521
TEL: 775.827.6111
INFO@LUMOSINC.COM

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

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS PROJECT IS NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD83(94) BASED UPON CITY OF FERNLEY (COF1) CORS BASE STATION COORDINATES AND DISTANCES SHOWN HEREON ARE AT GROUND LEVEL BASED ON A COMBINED GRID TO GROUND FACTOR OF 1.000245.

BASIS OF ELEVATION

THE BASIS OF ELEVATION FOR CONSTRUCTION ON THIS PROJECT IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED UPON GPS OBSERVATIONS UTILIZING GEIOD 12A.

SHEET INDEX:

TITLE SHEET	C1.0
NOTE SHEET	C1.1
TENTATIVE MAP PARCELS	C1.2 - C1.3
PRELIMINARY SITE PLANS	C2.0 - C2.1
PRELIMINARY STREET SECTIONS	C2.2
PRELIMINARY GRADING PLANS	C3.0 - C3.4
PRELIMINARY OVERALL UTILITY PLAN	C4.0
PRELIMINARY UTILITY PLANS	C4.1 - C4.10
PROPOSED HYDROLOGIC CONDITIONS	C5.0
LANDSCAPE TITLE & NOTES	L1.0
LANDSCAPE PLANS	L2.0 - L2.3
LANDSCAPE DETAILS	L5.0
IRRIGATION DETAILS	L5.1

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PROFESSIONAL ENGINEER - STATE OF NEVADA
CAMILLE BUEHLER
Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC
VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
TITLE SHEET
LYON COUNTY
NEVADA
FERNLEY

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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LEGEND

EXISTING		PROPOSED
4174	CONTOUR LINE	4174
	EDGE OF PAVEMENT	
	CURB & GUTTER	
	RAIL	
	FLOW LINE	
	STORM DRAIN MANHOLE	Ⓓ
	SEWER MANHOLE	Ⓢ
EX SD	STORM DRAIN	24"SD
EX SS	SEWER LINE	10"SS
EX SS	SANITARY SEWER FORCE MAIN	SSFM
EX WL	WATER LINE	16"W

ABBREVIATIONS

AC	ASPHALT CONCRETE
ACP	ASBESTOS CEMENT PIPE
AGG	AGGREGATE
BC	BEGIN CURVE (HORIZONTAL)
BOW	BOTTOM OF WALL
BF, BOF	BOTTOM OF FOOTING
BV	BUTTERFLY VALVE
BVC	BEGIN VERTICAL CURVE
BW	BACK OF WALK
CB	CATCH BASIN
cfs	CUBIC FEET PER SECOND
CF	CUBIC FEET
C&G	CURB AND GUTTER
℄	CENTER LINE
CL	CLASS / CENTER LINE
CMP	CORRUGATED METAL PIPE
COMP	COMPACTION
CONC	CONCRETE
CONTR	CONTRACTOR
CP	CONCRETE PAD
CTV	CABLE TELEVISION
DI	DROP INLET
DIA	DIAMETER
DWY	DRIVEWAY
E	EAST
EA	EACH
EC	END CURVE (HORIZONTAL)
ELL	ELBOW
ELEC	ELECTRICAL
ELEV	ELEVATION
EVC	END VERTICAL CURVE
EX, (E)	EXISTING
EXT	EXTERIOR
FCA	FLANGE COUPLING ADAPTER
FE	FINISH ELEVATION
FES	FLARED END SECTION
FF	FINISH FLOOR
FFC	FRONT FACE OF CURB
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FLG	FLANGE
fps	FEET PER SECOND
FTG	FOOTING
G	GAS
GALV	GALVANIZED
GB	GRADE BREAK
GDW	GRAVEL DRIVEWAY
GD	GROUND
GV	GATE VALVE
H	HANDICAPPED
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
HP	HIGH POINT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERSECTION
IRR	IRRIGATION
LAT	LATERAL
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MDD	MAXIMUM DRY DENSITY
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MMD	MAXIMUM MARSHALL DENSITY
MUTCD	MANUAL FOR TRAFFIC CONTROL DEVICES
N	NORTH
NAP	NOT A PART
NIP	NOT IN PROJECT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
(P)	PROPOSED
PCC	PORTLAND CEMENT CONCRETE
PG	PAD GRADE
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION VERTICAL CURVE
PL	PROPERTY LINE
POCC	POINT OF COMPOUND CURVATURE
POT	POINT OF TANGENCY
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PRS	PRESSURE REDUCING STATION
PRVC	POINT OF REVERSE VERTICAL CURVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
Q 5	5 YEAR PEAK FLOW
Q 100	100 YEAR PEAK FLOW
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
RET	CURB RETURN
RP	RADIUS POINT
RT	RIGHT
R/W, ROW	RIGHT-OF-WAY
S=	SLOPE
S	SOUTH
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SL	STREET LIGHT
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEAN OUT
SSMH	SANITARY SEWER MANHOLE
SSPWC	STANDARD SPEC. FOR PUBLIC WORKS CONSTRUCTION
STA	STATION
SW	SIDEWALK
TELE	TELEPHONE
TBO	TEMPORARY BLOW OFF VALVE
TC	TOP OF CURB, TOP OF CONC
TG	TO GRADE
TOB	TOP OF BERM
TF, TOF	TOP OF FOOTING
TOW	TOP OF WALL
TS	TRAFFIC SIGNAL
TSCB	TRAFFIC CONTROL SIGNAL BOX
TR	TOP OF RAIL
TRANS	TRANSITION
TYP	TYPICAL
UG/P	UNDER GROUND POWER
UNO	UNLESS NOTED OTHERWISE
Vs	VELOCITY AT 5 YEAR PEAK
VC	VERTICAL CURVE
VEL	VELOCITY
VERT	VERTICAL
VG	VALLEY GUTTER
W	WEST
W/G	WATER AND GAS
WL	WATER LINE
WM	WATER METER
WS	WATER SURFACE
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
YR	YEAR

NOTES:

GENERAL

1. ALL INFORMATION IS PRELIMINARY IN NATURE AND NOT TO BE TAKEN AS COMPLETE OR ACCURATE.
2. REFERENCE THE PRELIMINARY TRAFFIC ANALYSIS BY HEADWAY TRANSPORTATION DATED FEBRUARY 2022.
3. REFERENCE THE PRELIMINARY GEOTECHNICAL REPORT BY LUMOS & ASSOCIATES DATED JULY 2021.

LUMOS & ASSOCIATES
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PROFESSIONAL ENGINEER – STATE OF NEVADA
CAMILLE BUEHLER
Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
NOTE SHEET

FERNLEY / LYON COUNTY / NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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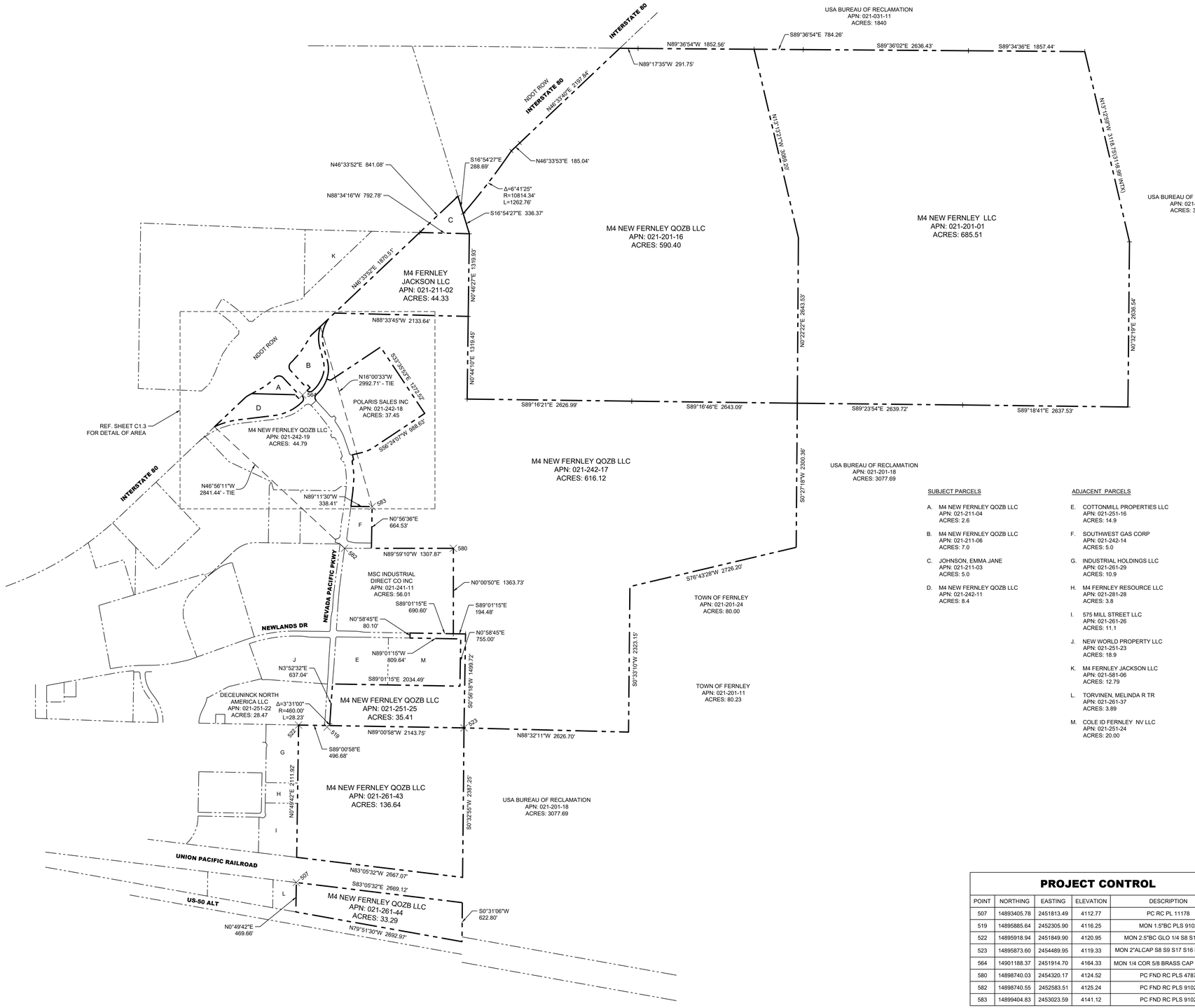

SUBJECT PARCELS

A. M4 NEW FERNLEY QOZB LLC
APN: 021-211-04
ACRES: 2.6

B. M4 NEW FERNLEY QOZB LLC
APN: 021-211-06
ACRES: 7.0

C. JOHNSON, EMMA JANE
APN: 021-211-03
ACRES: 5.0

D. M4 NEW FERNLEY QOZB LLC
APN: 021-242-11
ACRES: 8.4

ADJACENT PARCELS

E. COTTONMILL PROPERTIES LLC
APN: 021-251-16
ACRES: 14.9

F. SOUTHWEST GAS CORP
APN: 021-242-14
ACRES: 5.0

G. INDUSTRIAL HOLDINGS LLC
APN: 021-261-29
ACRES: 10.9

H. M4 FERNLEY RESOURCE LLC
APN: 021-281-28
ACRES: 3.8

I. 575 MILL STREET LLC
APN: 021-261-26
ACRES: 11.1

J. NEW WORLD PROPERTY LLC
APN: 021-251-23
ACRES: 18.9

K. M4 FERNLEY JACKSON LLC
APN: 021-581-06
ACRES: 12.79

L. TORVINEN, MELINDA R TR
APN: 021-261-37
ACRES: 3.89

M. COLE ID FERNLEY NV LLC
APN: 021-251-24
ACRES: 20.00

PROJECT CONTROL

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
507	14893405.78	2451813.49	4112.77	PC RC PL 11178
519	14895885.64	2452305.90	4116.25	MON 1.5"BC PLS 9102
522	14895918.94	2451849.90	4120.95	MON 2.5"BC GLO 1/4 S8 S17 1931
523	14895873.60	2454489.95	4119.33	MON 2"ALCAP S8 S9 S17 S16 PLS 204_1
564	14901188.37	2451914.70	4164.33	MON 1/4 COR 5/8 BRASS CAP PLS 11420
580	14898740.03	2454320.17	4124.52	PC FND RC PLS 4787
582	14898740.55	2452583.51	4125.24	PC FND RC PLS 9102
583	14899404.83	2453023.59	4141.12	PC FND RC PLS 9102

N

0 800' 1600'

22x34 SHEETS: 1" = 800'
11x17 SHEETS: 1" = 1600'

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111

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CAMILLE BUEHLER
Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
TENTATIVE MAP PARCELS

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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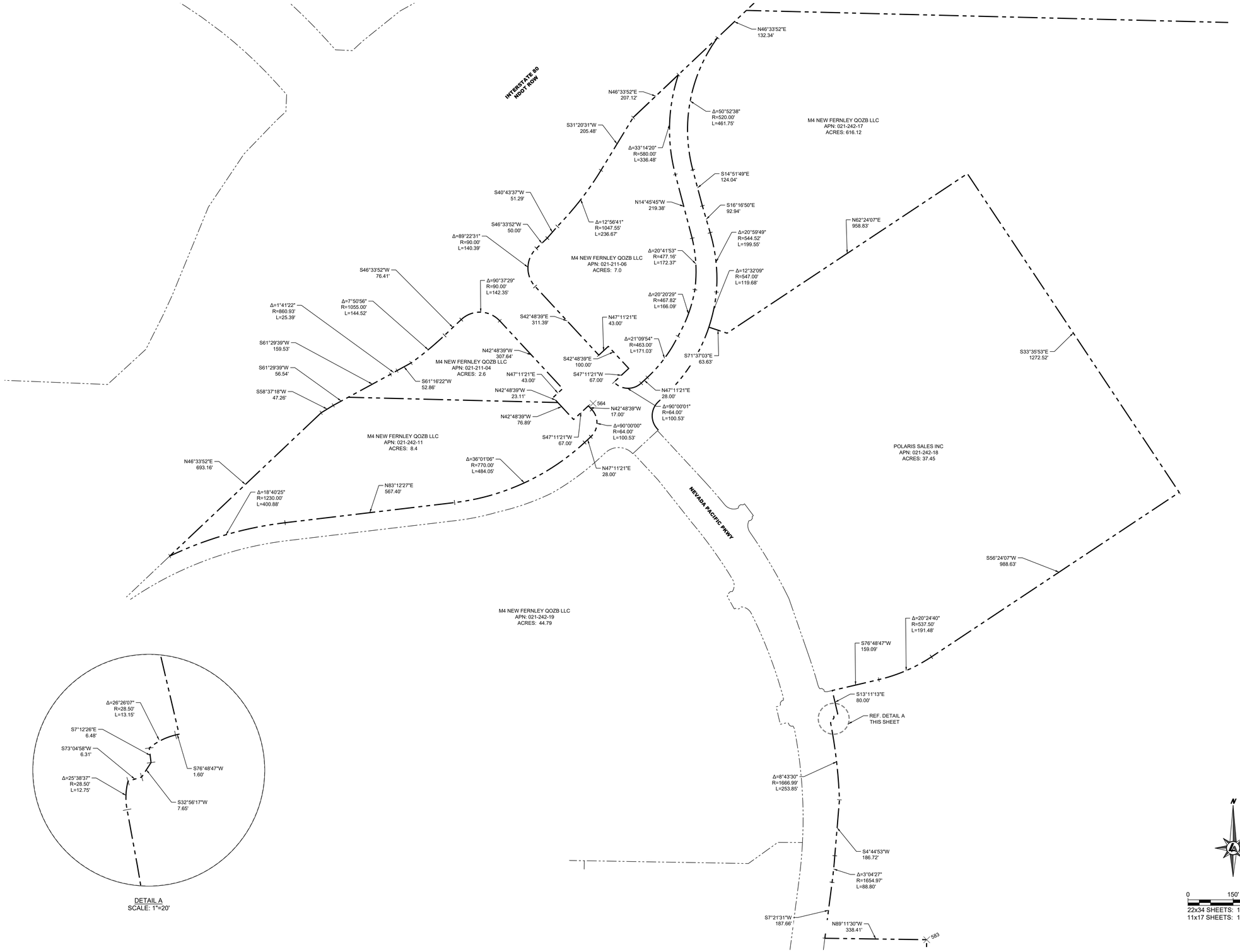

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LUMOS & ASSOCIATES

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PROFESSIONAL ENGINEER - STATE OF NEVADA
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09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
TENTATIVE MAP PARCELS

FERNLEY — LYON COUNTY — NEVADA

REV | DATE | DESCRIPTION | BY

TENTATIVE MAP

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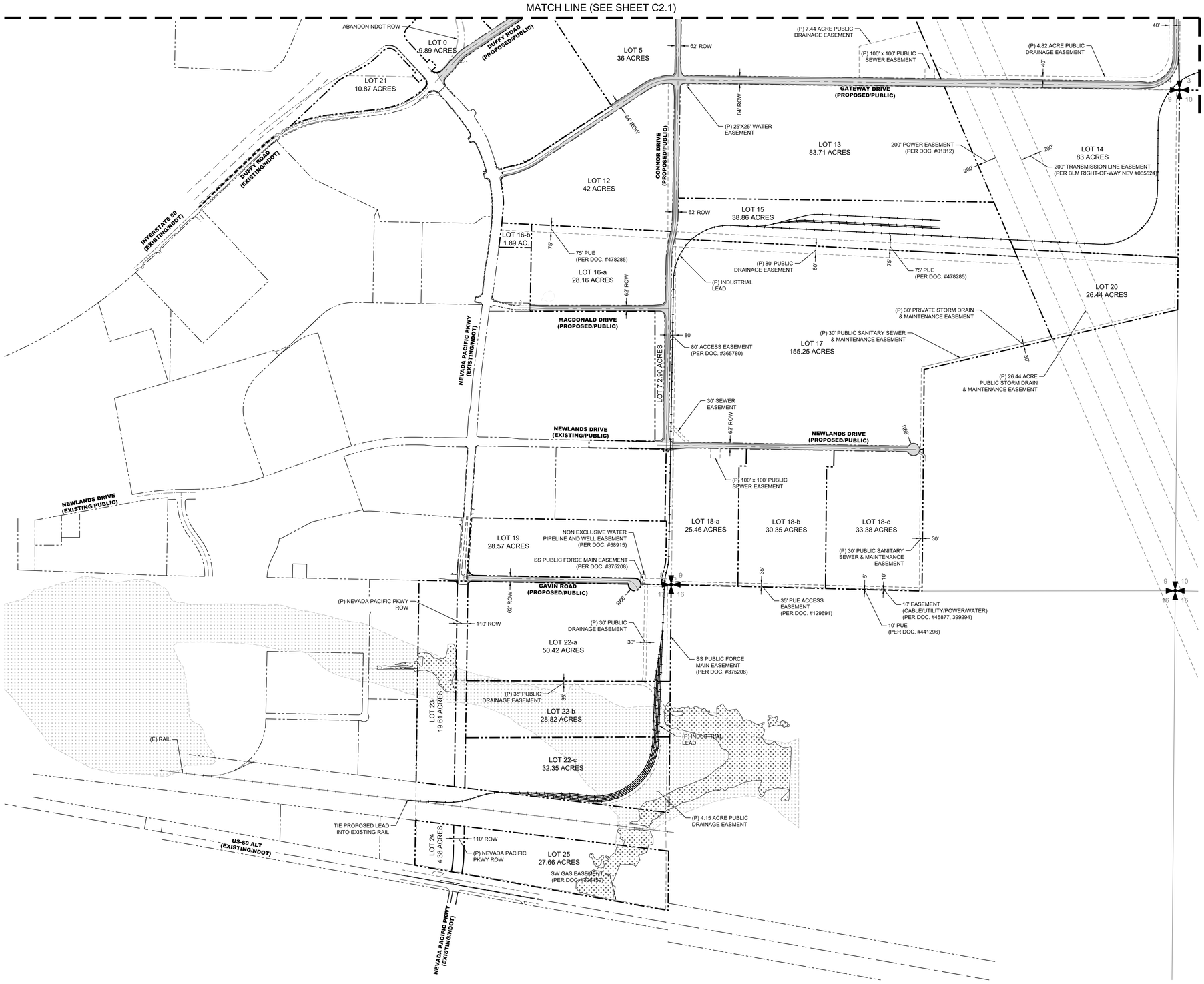


LEGEND

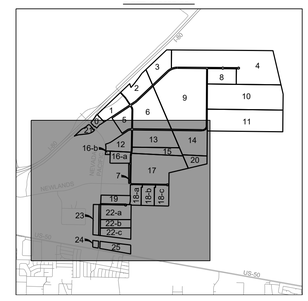
- PROPOSED BOUNDARY LINES
- EXISTING BOUNDARY LINES TO BE ABANDONED
- PROPOSED RIGHT OF WAY/ PROPOSED BOUNDARY LINE
- SECTION LINE
- EXISTING PROPERTY LINE
- EASEMENT
- EXISTING SPECIAL FLOOD HAZARD
- PROPOSED SPECIAL FLOOD HAZARD ZONE

N

0 500' 1000'

22x34 SHEETS: 1" = 500'
11x17 SHEETS: 1" = 1000'

KEYMAP



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CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY SITE PLAN

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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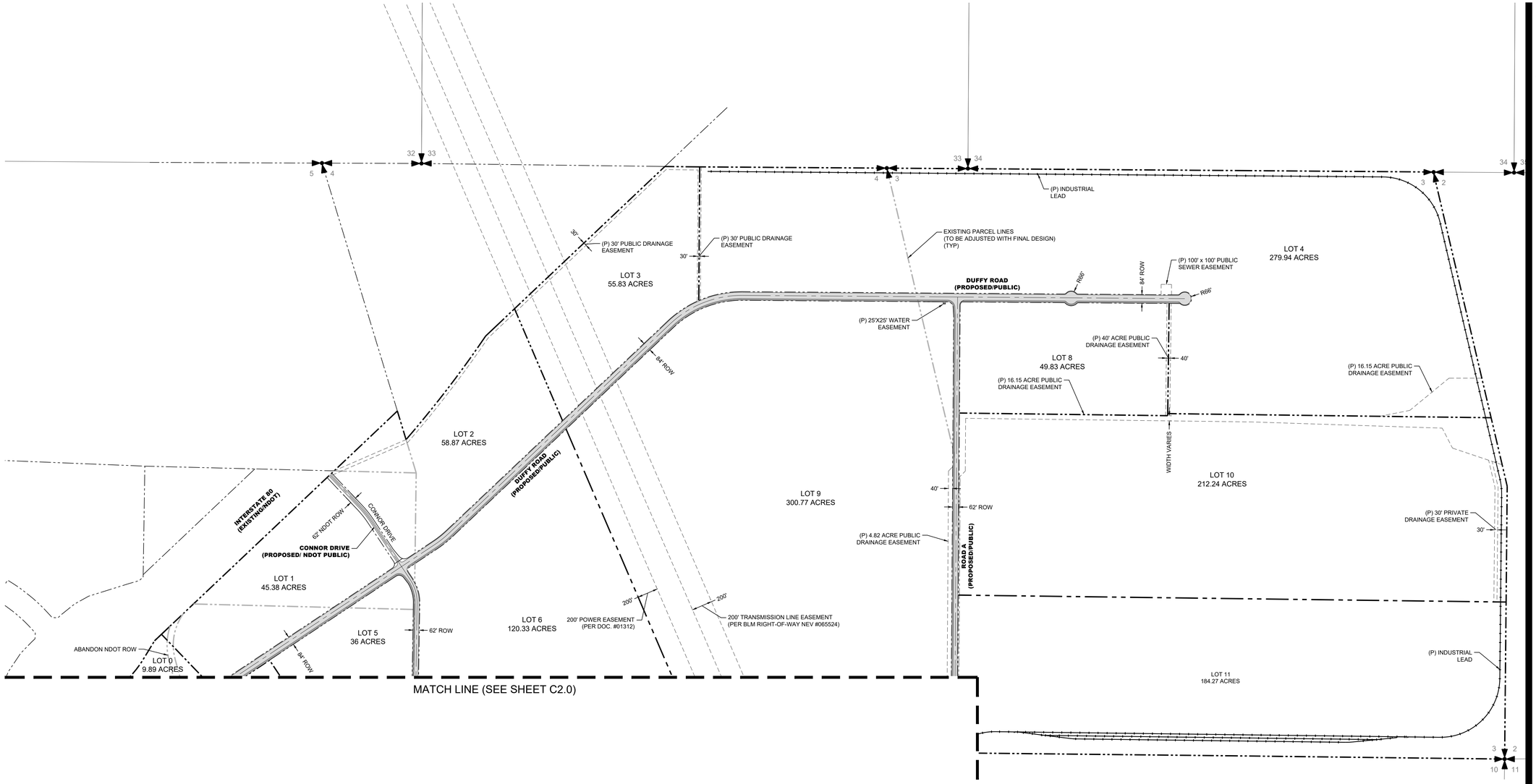

LEGEND

- PROPOSED BOUNDARY LINES
- EXISTING BOUNDARY LINES TO BE ABANDONED
- PROPOSED RIGHT OF WAY/ PROPOSED BOUNDARY LINE
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- PROPOSED SPECIAL FLOOD HAZARD ZONE

0 500' 1000'

22x34 SHEETS: 1" = 500'
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KEYMAP

LUMOS & ASSOCIATES
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PROFESSIONAL ENGINEER - STATE OF NEVADA
CAMILLE BUEHLER
Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT

TENTATIVE MAP

PRELIMINARY SITE PLAN

LYON COUNTY NEVADA

FERNLEY

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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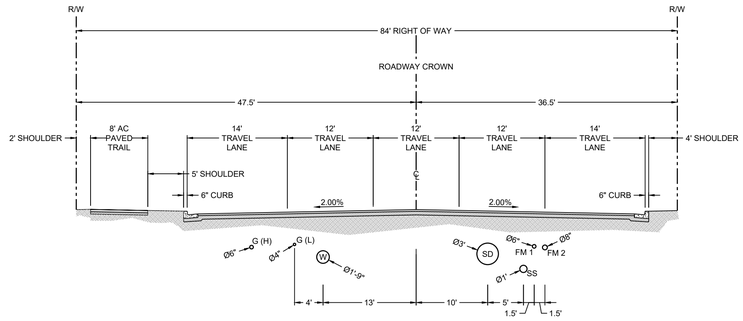
JOB NO.:	10067.008

L:\Apps\10067.008 - Victory Logistics Tentative Map\DWG\Sheets\10067008SITE.dwg,C2.1 PRELIMINARY SITE PLAN, 09/20/2023 09:23 am mshults

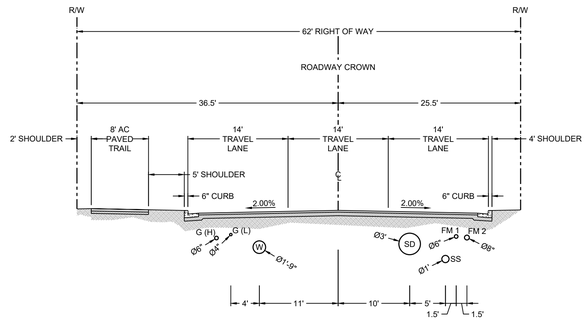


84' ROW STREET SECTION:

MINOR ARTERIAL - 35 MPH

GENERAL

1. THE 84' ROW IS ANTICIPATED TO HAVE UP TO 2 FORCE MAINS, STORM DRAIN, GRAVITY SEWER, WATER, AND UP TO 2 GAS MAINS (HIGH AND LOW PRESSURE ZONES)
2. UTILITIES SHOWN IN SECTION ARE WORST CASE SCENARIO SHOWING THAT ANY DOWNSIZING OR DELETION OF UTILITIES WILL ALLOW FOR MORE CLEARANCES

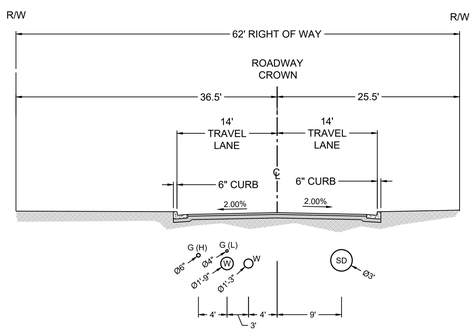


62' ROW STREET SECTION:

COLLECTOR - 30 MPH

GENERAL

1. THE 62' ROW IS ANTICIPATED TO HAVE UP TO 2 FORCE MAINS, STORM DRAIN, GRAVITY SEWER, WATER, AND UP TO 2 GAS MAINS (HIGH AND LOW PRESSURE ZONES)
2. UTILITIES SHOWN IN SECTION ARE WORST CASE SCENARIO SHOWING THAT ANY DOWNSIZING OR DELETION OF UTILITIES WILL ALLOW FOR MORE CLEARANCES

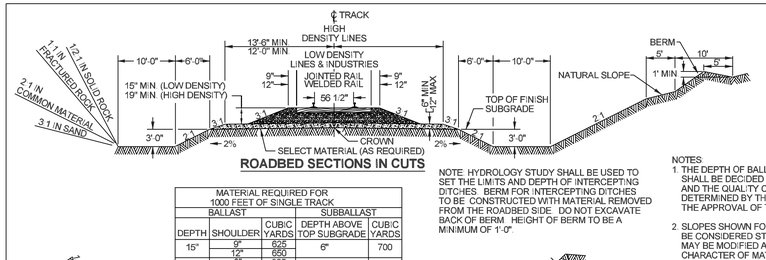


62' NDOT ROW STREET SECTION:

LOCAL - 25 MPH

GENERAL

1. THE 62' ROW IS ANTICIPATED TO HAVE STORM DRAIN, UP TO 2 WATER MAINS, AND UP TO 2 GAS MAINS (HIGH AND LOW PRESSURE ZONES)
2. UTILITIES SHOWN IN SECTION ARE WORST CASE SCENARIO SHOWING THAT ANY DOWNSIZING OR DELETION OF UTILITIES WILL ALLOW FOR MORE CLEARANCES

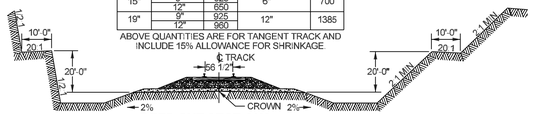


ROADBED SECTIONS IN CUTS

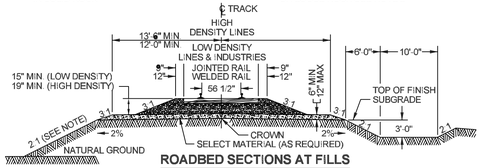
MATERIAL REQUIRED FOR 1000 FEET OF SINGLE TRACK				
BALLAST			SUBBALLAST	
DEPTH	SHOULDER	CUBIC YARDS	DEPTH ABOVE TOP SUBGRADE	CUBIC YARDS
15"	9"	625	6"	700
	12"	650		
19"	9"	925	12"	1385
	12"	960		

ABOVE QUANTITIES ARE FOR TANGENT TRACK AND INCLUDE 15% ALLOWANCE FOR SHRINKAGE.

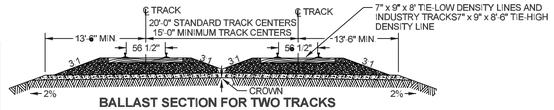
NOTE: HYDROLOGY STUDY SHALL BE USED TO SET THE LIMITS AND DEPTH OF INTERCEPTING DITCHES. BERM FOR INTERCEPTING DITCHES TO BE CONSTRUCTED WITH MATERIAL REMOVED FROM THE ROADBED SIDE. DO NOT EXCAVATE BACK OF BERM. HEIGHT OF BERM TO BE A MINIMUM OF 1'-0".



DEEP CUT SECTIONS



ROADBED SECTIONS AT FILLS



BALLAST SECTION FOR TWO TRACKS

NOTES:
1. THE DEPTH OF BALLAST AND DEPTH OF SELECTED MATERIAL SHALL BE DECIDED ON THE BASIS OF VOLUME OF TRAFFIC AND THE QUALITY OF SELECTED MATERIAL AND SUBGRADE DETERMINED BY THE RAILROAD'S ENGINEER SUBJECT TO THE APPROVAL OF THE AVP.
2. SLOPES SHOWN FOR BANKS IN CUTS AND ON FILLS SHALL BE CONSIDERED STANDARD AND GENERALLY USED, BUT MAY BE MODIFIED AS REQUIRED BY LOCAL CONDITIONS AND CHARACTER OF MATERIAL.
3. BALLAST MUST BE EQUALIZED IN ADVANCE OF DRESSING SO THAT FINAL SECTION WILL CONFORM TO SLOPE REQUIREMENTS AND CHARACTER OF MATERIAL.
4. WHERE OFF-TRACK ROADWAY IS TO BE PROVIDED, ADD 10'-0" ADDITIONAL WIDTH TO THE ROADBED SECTION AT TOP OF SELECTED MATERIAL ELEVATION.
5. ALL FILL SLOPES, BERMS AND OTHER DISTURBED AREAS SHALL BE FACED WITH COVER OF MATERIAL SUITABLE FOR GROWING GRASS AND HAVING A THICKNESS OF APPROXIMATELY 6 INCHES. THE OUTER SURFACE OF THIS COVER SHALL COINCIDE WITH THE DESIGN SLOPE OF THE EMBANKMENT. MATERIAL FOR THIS COVER MAY BE OBTAINED FROM STRIPPING. SEEDING SHALL CONFORM TO THE DEPARTMENT OF TRANSPORTATION SPECIFICATION FOR THAT STATE AND REGION.
6. FLOW LINE ON 0.2% MINIMUM GRADE DITCHES AND BENCHES.
7. FLAT BOTTOM DITCHES ARE REQUIRED FOR HIGH DENSITY LINES, HOWEVER A "V" DITCH IS ACCEPTABLE FOR INDUSTRY TRACKS WHEN RIGHT-OF-WAY IS LIMITED AND WHERE LOCAL CONDITIONS AND CHARACTER OF MATERIAL SO REQUIRE.

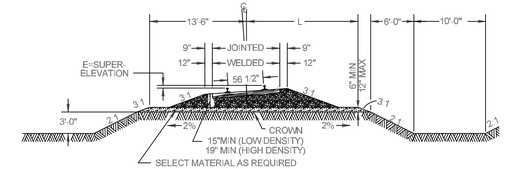
UNION PACIFIC RAILROAD ENGINEERING STANDARDS

ROADBED SECTION FOR WOOD TIE TRACK CONSTRUCTION

UNION PACIFIC

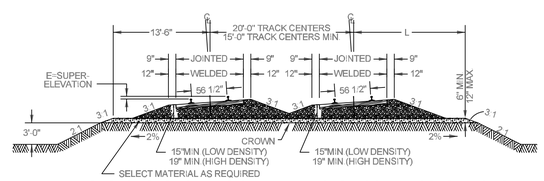
ADOPTED SEP. 21, 2020
REVISED
FILE NO. 0001

STD DWG **0001** PAGE 1 OF 2



BALLAST SECTIONS FOR SINGLE CURVED TRACK WOOD TIE CONSTRUCTION

E (IN.)	L MIN.
0	13'-6"
1	14'-0"
2	14'-6"
3	15'-0"
4	15'-6"
5 OR OVER	16'-0"



BALLAST SECTIONS FOR TWO CURVED TRACKS WOOD TIE CONSTRUCTION

NOTES:
1. SLOPES SHOWN FOR BANKS IN CUTS AND ON FILLS SHALL BE CONSIDERED STANDARD AND GENERALLY USED, BUT MAY BE MODIFIED AS REQUIRED BY LOCAL CONDITIONS AND CHARACTER OF MATERIAL.
2. BALLAST MUST BE EQUALIZED IN ADVANCE OF DRESSING SO THAT FINAL SECTION WILL CONFORM TO SLOPE REQUIREMENTS AND CHARACTER OF MATERIAL.

UNION PACIFIC RAILROAD ENGINEERING STANDARDS

ROADBED SECTION FOR WOOD TIE TRACK CONSTRUCTION

UNION PACIFIC

ADOPTED SEP. 21, 2020
REVISED
FILE NO. 0001

STD DWG **0001** PAGE 2 OF 2

MINIMUM COVER REQUIRED TO THE TOP OF CASING OR CARRIER PIPE:

MAINLINE TRACK - BELOW BASE OF RAIL

-WITH CASING - 5.5 FEET
-HDD INSTALLATION METHOD, WITH CASING - 12 FEET

INDUSTRY/SPUR TRACK - BELOW BASE OF RAIL

-WITH CASING - 4.5 FEET
-WITHOUT CASING - 10 FEET (STEEL CARRIER REQUIRED)
-HDD INSTALLATION METHOD, WITH OR WITHOUT CASING - 12 FEET (STEEL CARRIER REQUIRED WITHOUT CASING)

OTHER AREAS ON RAILROAD RIGHT OF WAY - BELOW GROUND LINE

-WITH CASING - 3 FEET
-WITHOUT CASING - 6 FEET (STEEL CARRIER REQUIRED)
-HDD INSTALLATION METHOD:
-WITH CASING - 5 FEET
-WITHOUT CASING - 6 FEET (STEEL CARRIER REQUIRED)

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PROFESSIONAL ENGINEER - STATE OF NEVADA
CAMILLE BUEHLER
Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY STREET SECTIONS

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY
		TENTATIVE MAP	

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N

0 250' 500'

22x34 SHEETS: 1" = 250'
11x17 SHEETS: 1" = 500'

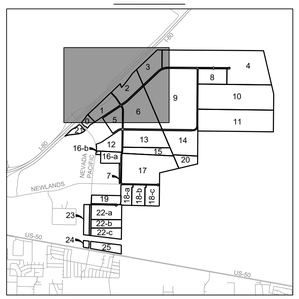
LEGEND

EXISTING AREAS >10% SLOPE

PROPOSED CHANNEL & DIRECTION

PROPOSED BUILDING PAD

KEYMAP



(E) WATER TANK

(P) WATER TANKS

INTERSTATE 80 (EXISTING/NDOT)

TRAPEZOIDAL CHANNEL 1

PAD ELEVATION = ±4108.50

PAD ELEVATION = ±4113.50

LOT 3

PAD ELEVATION = ±4108.00

DUFFY ROAD (PROPOSED/PUBLIC)

200' TRANSMISSION LINE EASEMENT (PER BLM RIGHT-OF-WAY NEV 065524)

200' POWER EASEMENT (PER DOC. 01312)

LOT 2

PAD ELEVATION = ±4124.00

PAD ELEVATION = ±4103.50

LOT 1

PAD ELEVATION = ±4153.00

CONNOR DRIVE (PROPOSED/PUBLIC)

LOT 6

PAD ELEVATION = ±4116.00

LOT 5

PAD ELEVATION = ±4132.00

PAD ELEVATION = ±4155.50

LOT 0

LOT 6

LUMOS & ASSOCIATES

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09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY GRADING PLAN

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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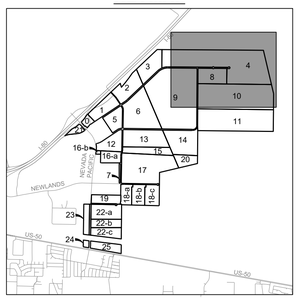

N

0 250' 500'

22x34 SHEETS: 1" = 250'
11x17 SHEETS: 1" = 500'

LEGEND

- EXISTING AREAS >10% SLOPE
- PROPOSED CHANNEL & DIRECTION
- PROPOSED BUILDING PAD

PAD ELEVATION = ±4108.50

PAD ELEVATION = ±4101.00

PAD ELEVATION = ±4093.50

PAD ELEVATION = ±4092.00

DUFFY ROAD (PROPOSED/PUBLIC)

DUFFY ROAD (PROPOSED/PUBLIC)

60'SD

LOT 4

PAD ELEVATION = ±4088.00
LOT 8

PAD ELEVATION = ±4092.00

PAD ELEVATION = ±4108.00

LOT 9

ROAD A (PROPOSED/PUBLIC)

POND ELEVATION = ±4062.00

TRAPEZOIDAL CHANNEL 2

LOT 10

PAD ELEVATION = ±4090.50

LOT 10

LOT 5

EMERGENCY OVERFLOW PIPE

PAD ELEVATION = ±4101.50

PAD ELEVATION = ±4095.00

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PRELIMINARY GRADING PLAN

FERNLEY — LYON COUNTY — NEVADA

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PRELIMINARY GRADING PLAN

FERNLEY — LYON COUNTY — NEVADA

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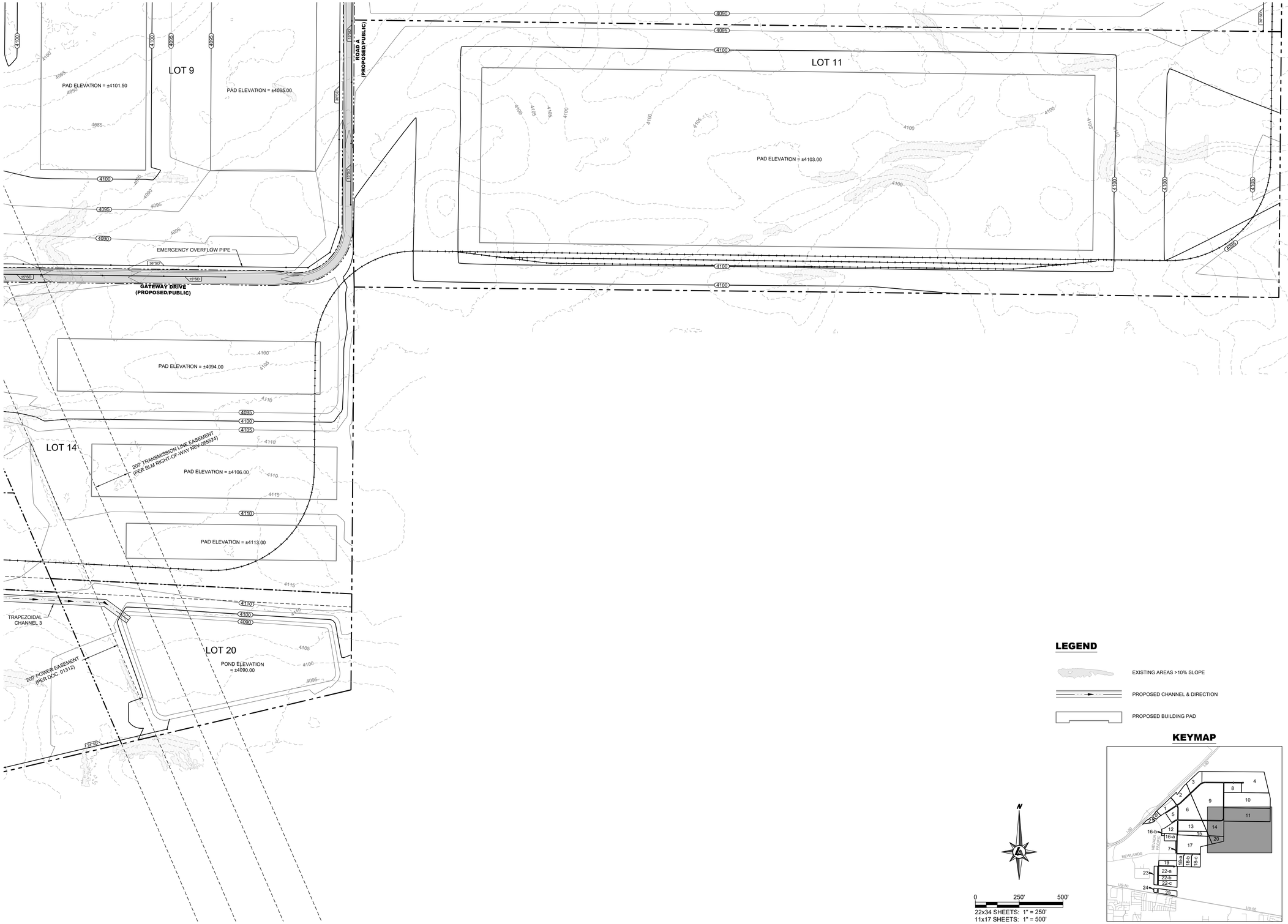

LEGEND

- EXISTING AREAS >10% SLOPE
- PROPOSED CHANNEL & DIRECTION
- PROPOSED BUILDING PAD

KEYMAP

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TENTATIVE MAP
PRELIMINARY GRADING PLAN

FERNLEY — LYON COUNTY — NEVADA

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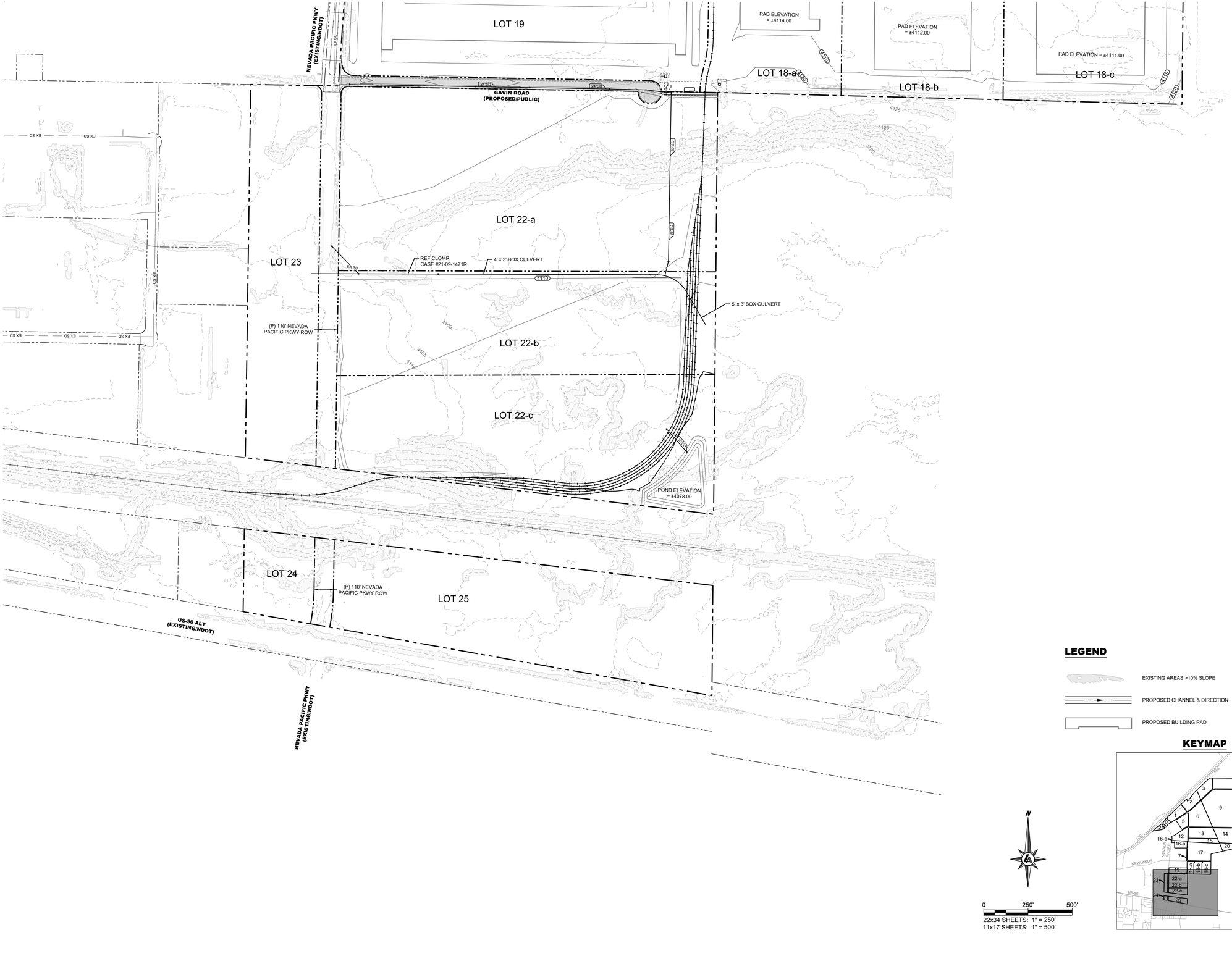

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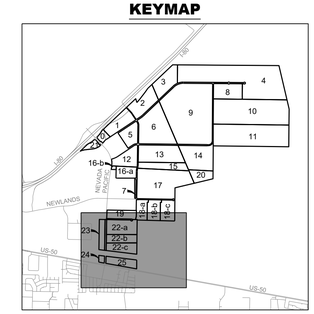

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FERNLEY — LYON COUNTY — NEVADA

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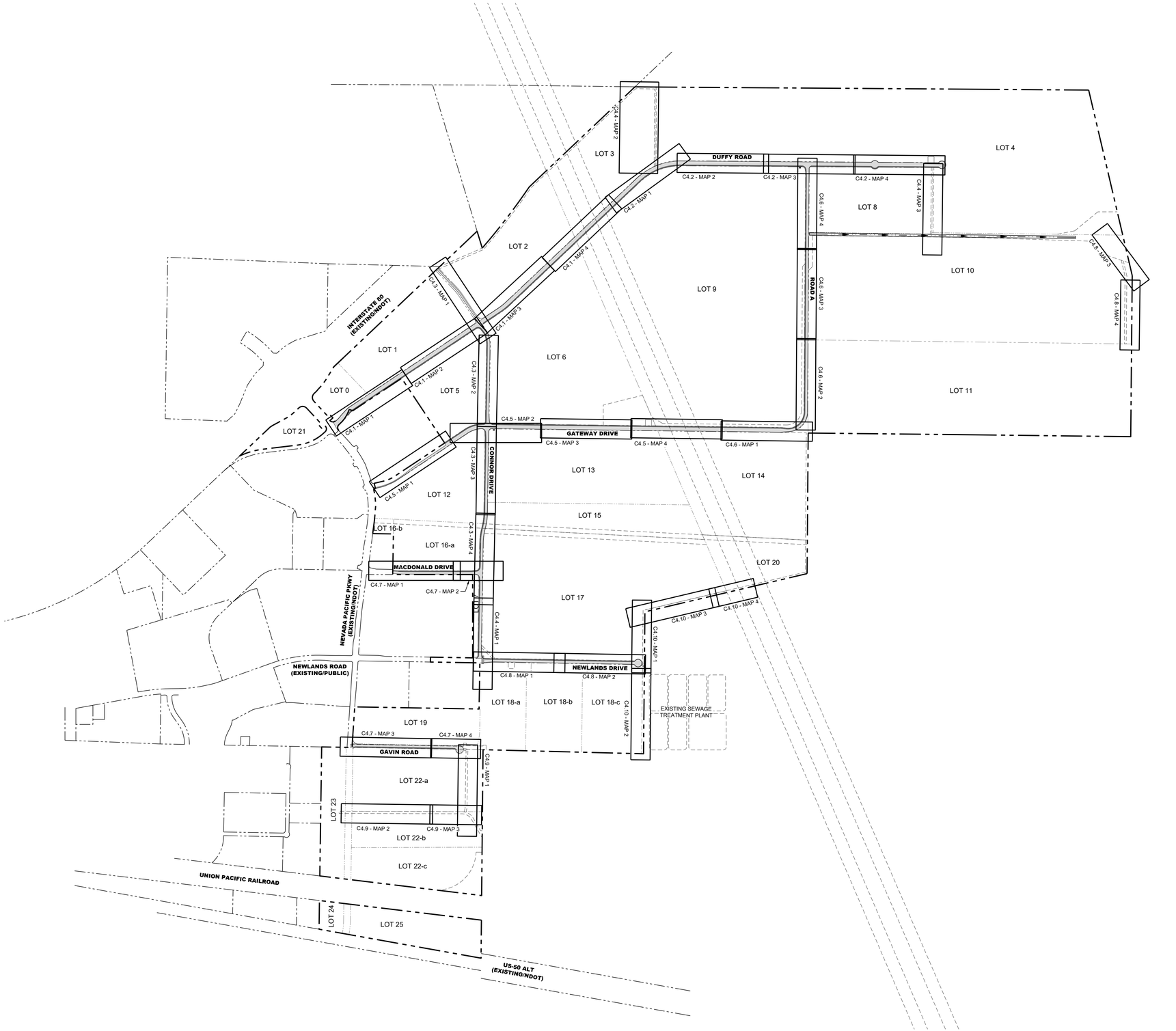

0 800' 1600'

22x34 SHEETS: 1" = 800'
11x17 SHEETS: 1" = 1600'

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09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY OVERALL UTILITY PLAN

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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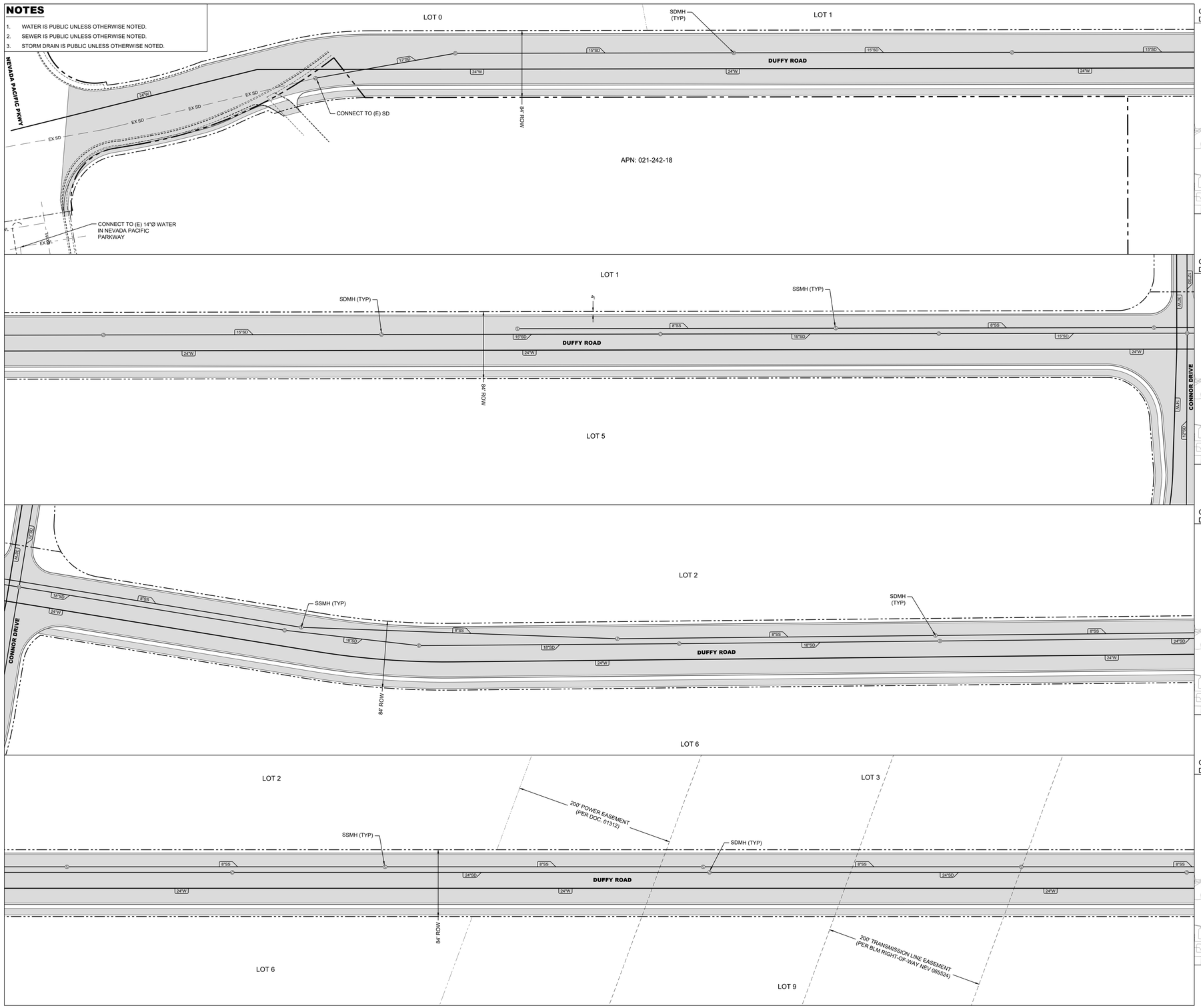
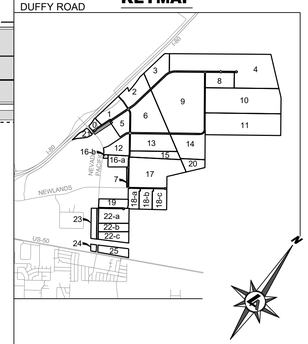
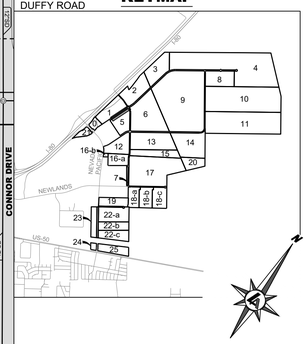
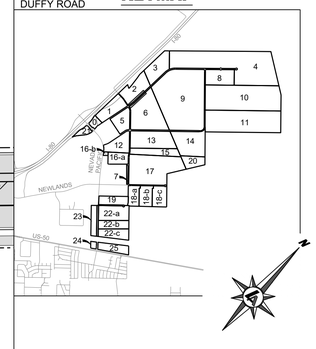


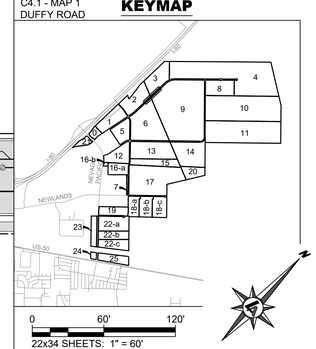
C4.1 - MAP 1
DUFFY ROAD

KEYMAP









0 60' 120'

22x34 SHEETS: 1" = 60'
11x17 SHEETS: 1" = 120'

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Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY UTILITY PLAN

FERNLEY — LYON COUNTY, NEVADA

REV	DATE	DESCRIPTION	BY

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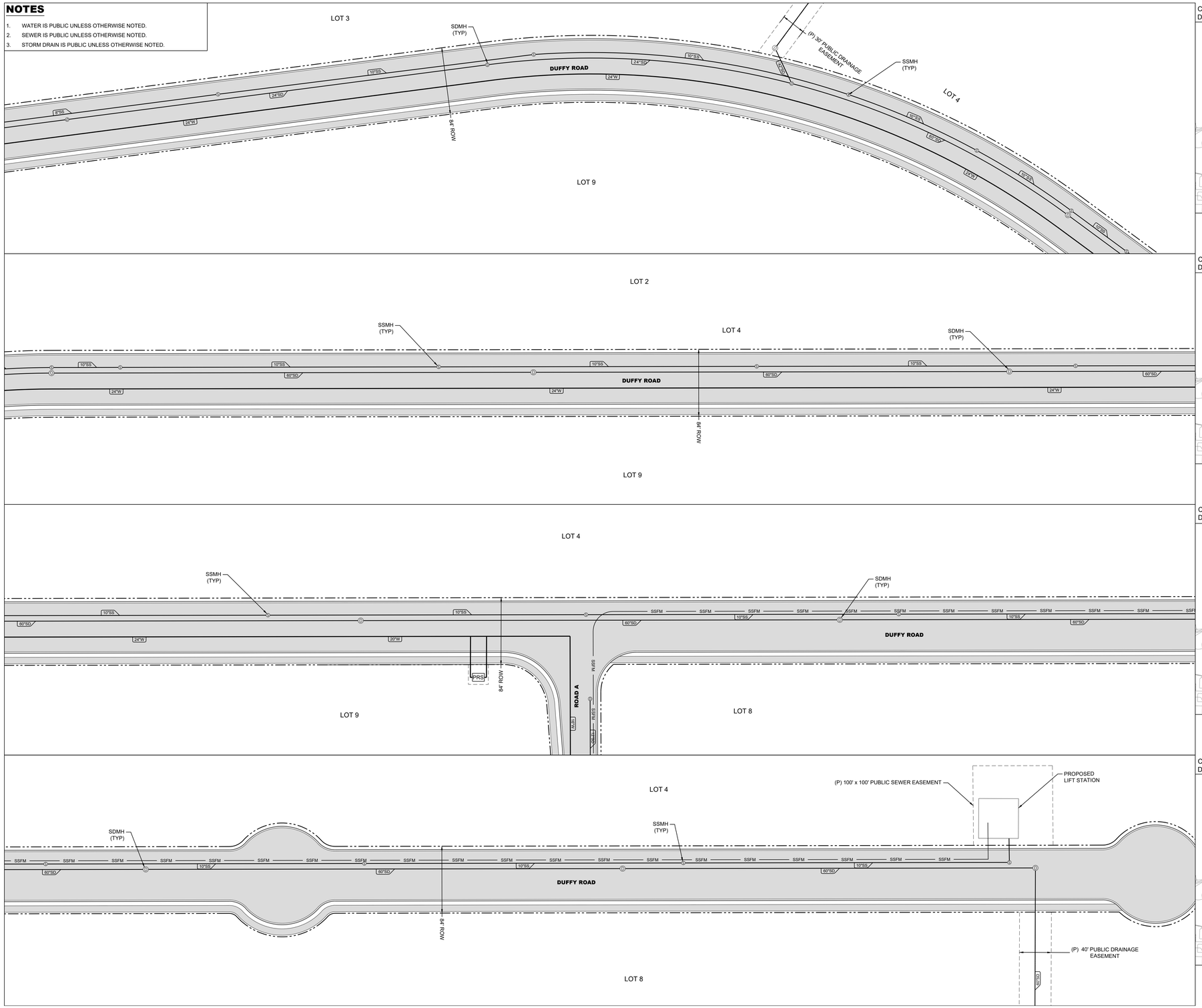
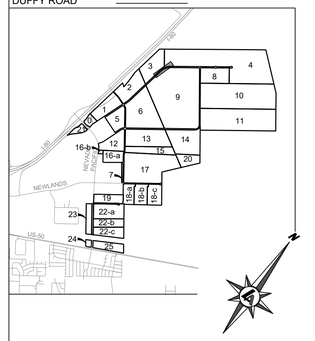


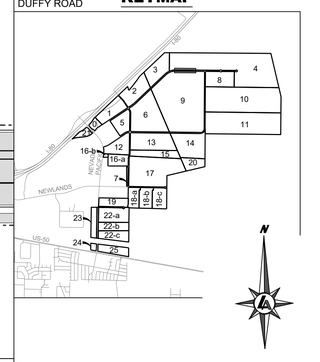
C4.2 - MAP 1
DUFFY ROAD

KEYMAP



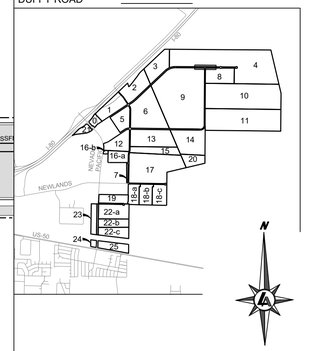
C4.2 - MAP 2
DUFFY ROAD

KEYMAP



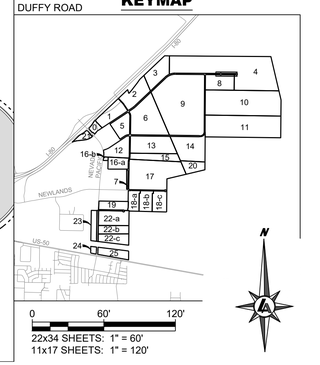
C4.2 - MAP 3
DUFFY ROAD

KEYMAP



C4.2 - MAP 4
DUFFY ROAD

KEYMAP



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PRELIMINARY UTILITY PLAN

FERNLEY — LYON COUNTY — NEVADA

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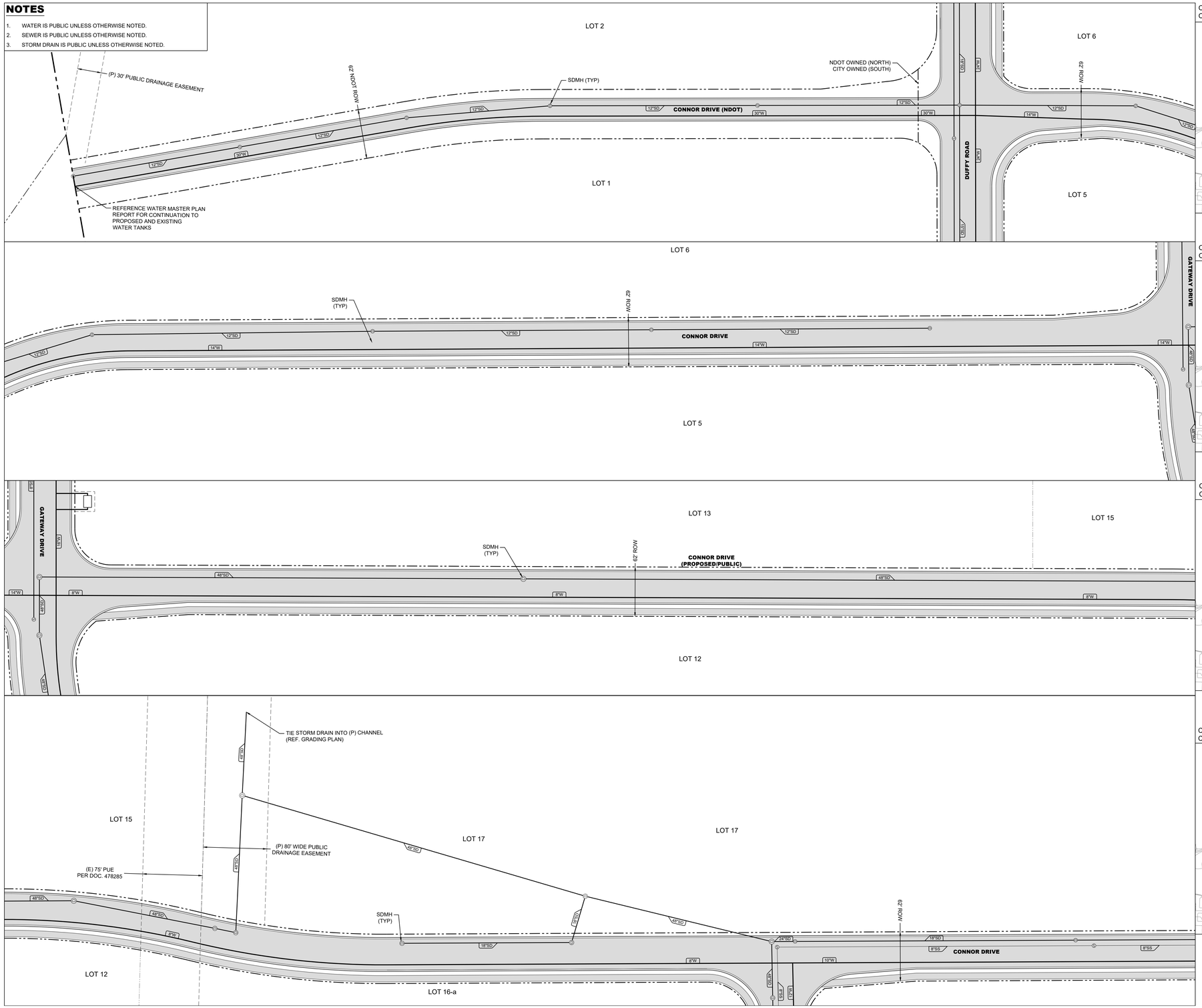
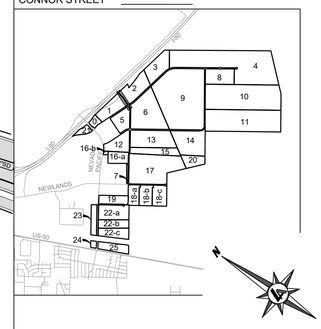
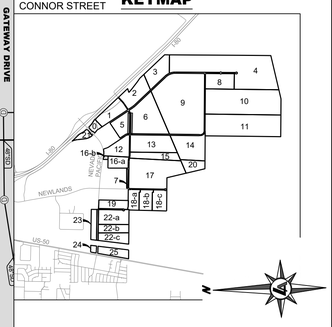


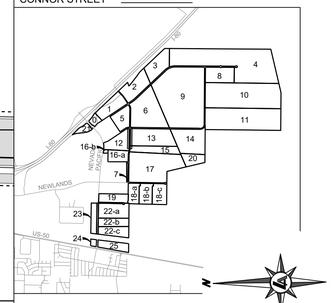
C4.3 - MAP 1
CONNOR STREET **KEYMAP**



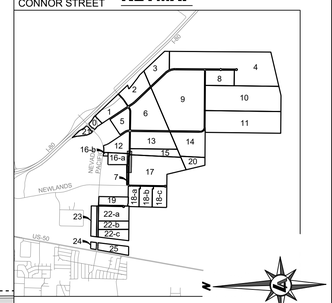
C4.3 - MAP 2
CONNOR STREET **KEYMAP**



C4.3 - MAP 3
CONNOR STREET **KEYMAP**



C4.3 - MAP 4
CONNOR STREET **KEYMAP**



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TENTATIVE MAP
PRELIMINARY UTILITY PLAN

FERNLEY LYON COUNTY NEVADA

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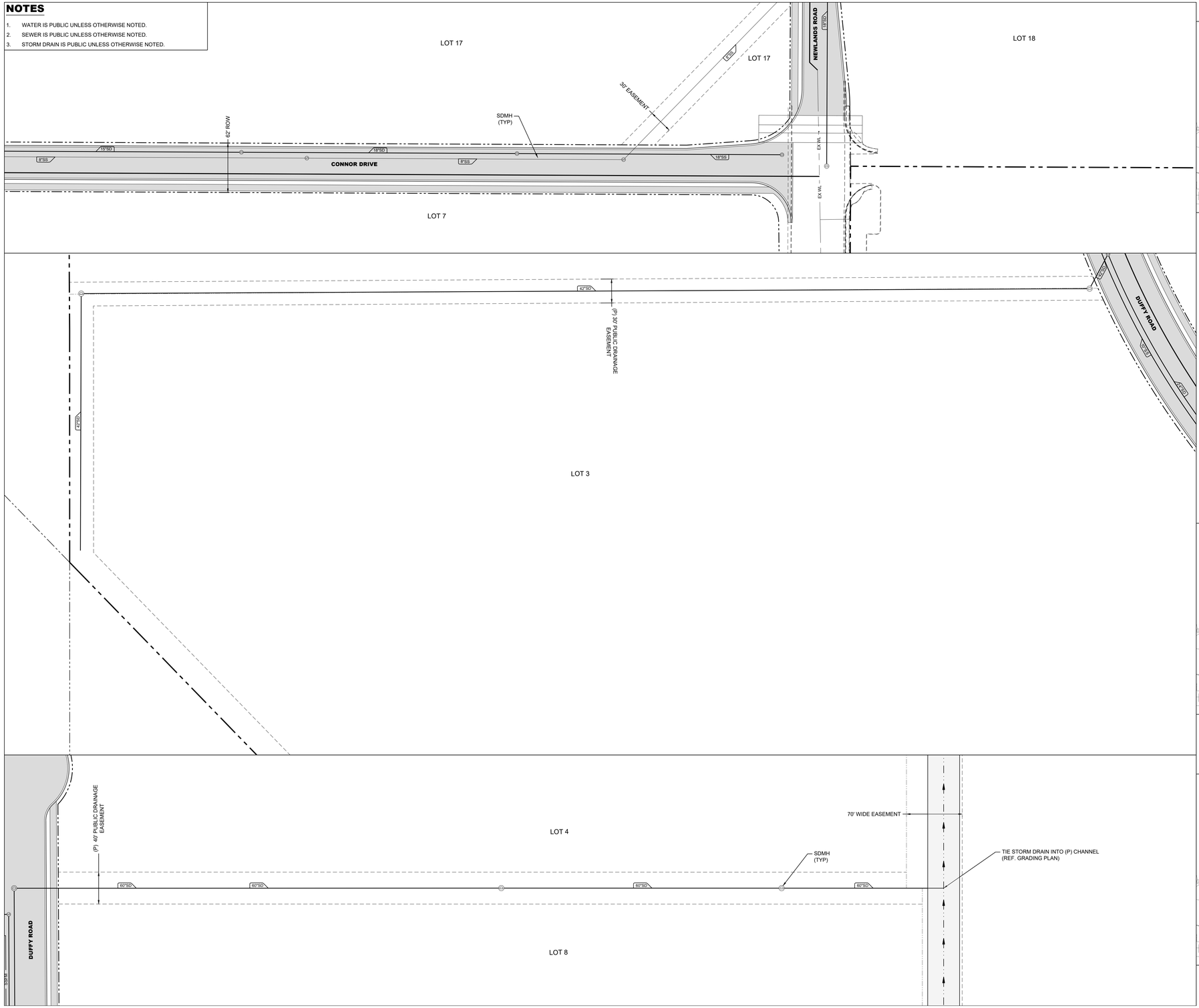
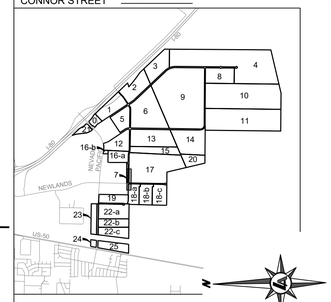


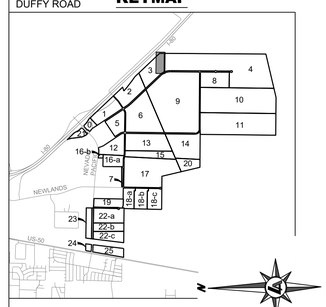
C4.4 - MAP 1
CONNOR STREET

KEYMAP



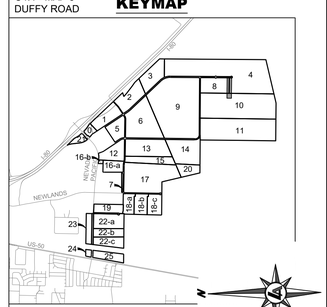
C4.4 - MAP 2
DUFFY ROAD

KEYMAP



C4.4 - MAP 3
DUFFY ROAD

KEYMAP



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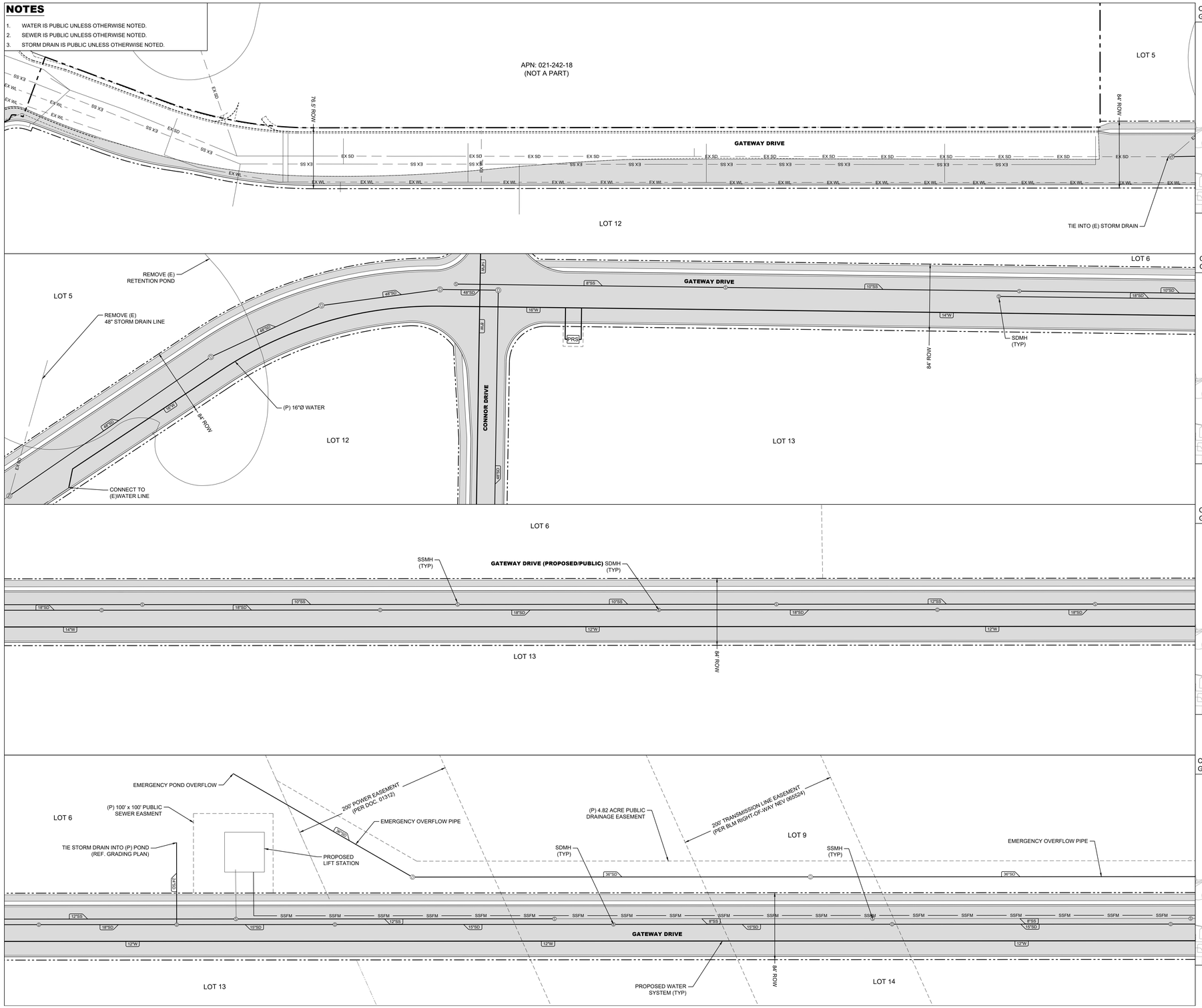
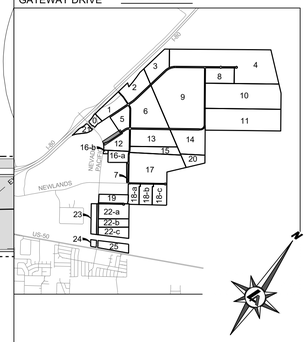


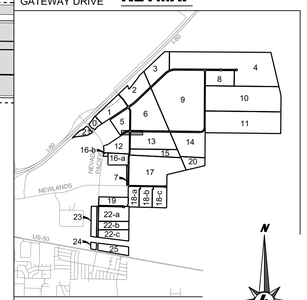
C4.5 - MAP 1
GATEWAY DRIVE

KEYMAP



C4.5 - MAP 2
GATEWAY DRIVE

KEYMAP



C4.5 - MAP 3
GATEWAY DRIVE

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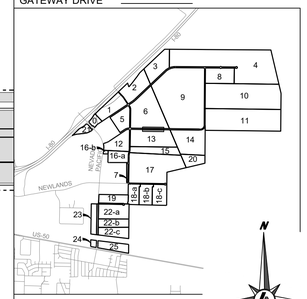

C4.5 - MAP 4
GATEWAY DRIVE

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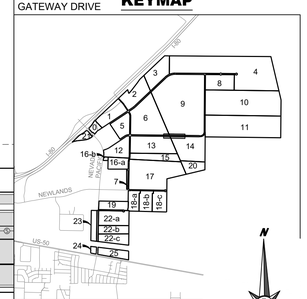

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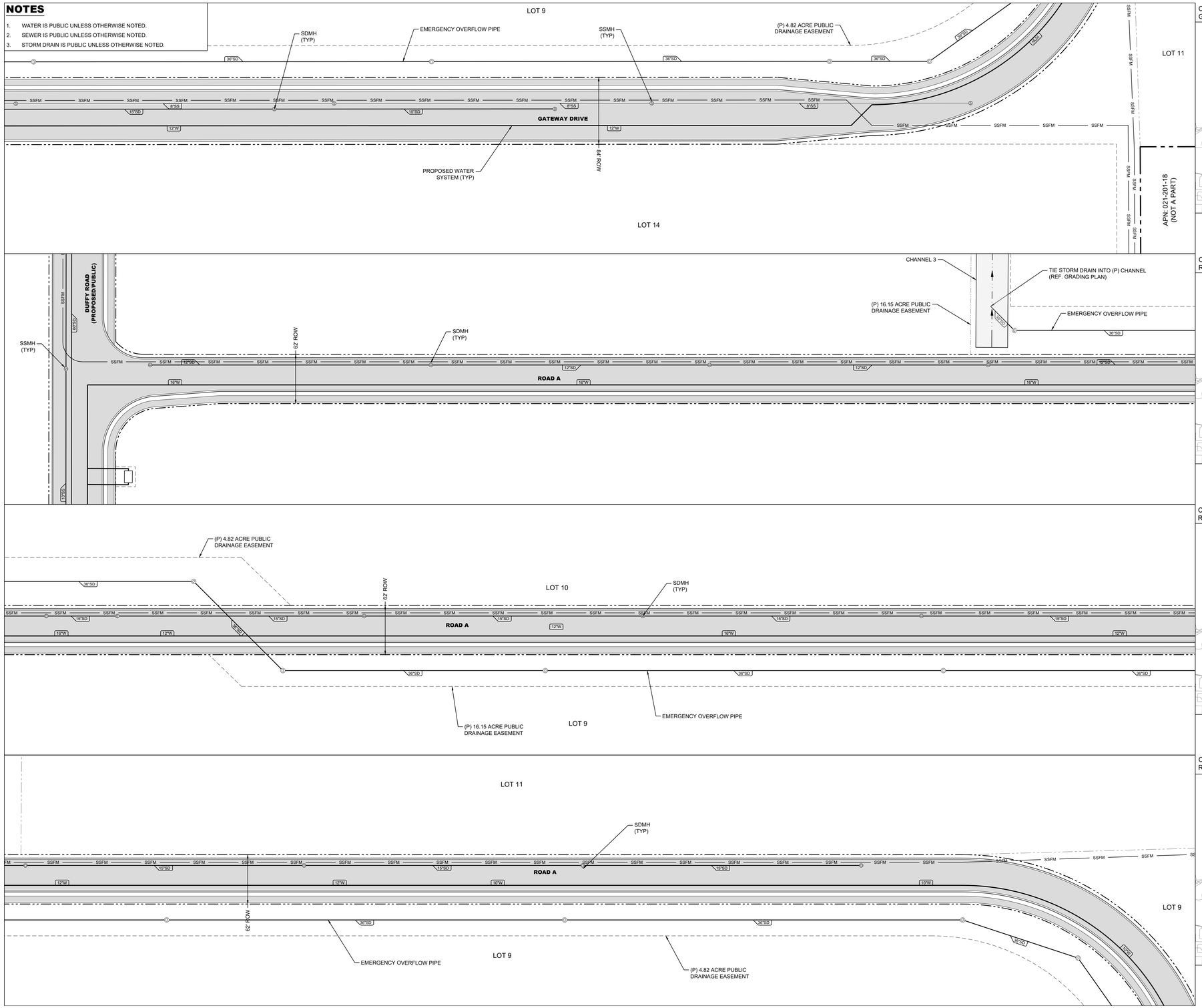


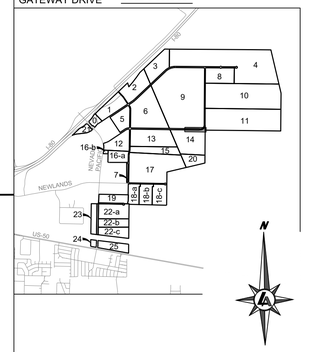
C4.6 - MAP 1
GATEWAY DRIVE

C4.6 - MAP 2
ROAD A

C4.6 - MAP 3
ROAD A

C4.6 - MAP 4
ROAD A

KEYMAP



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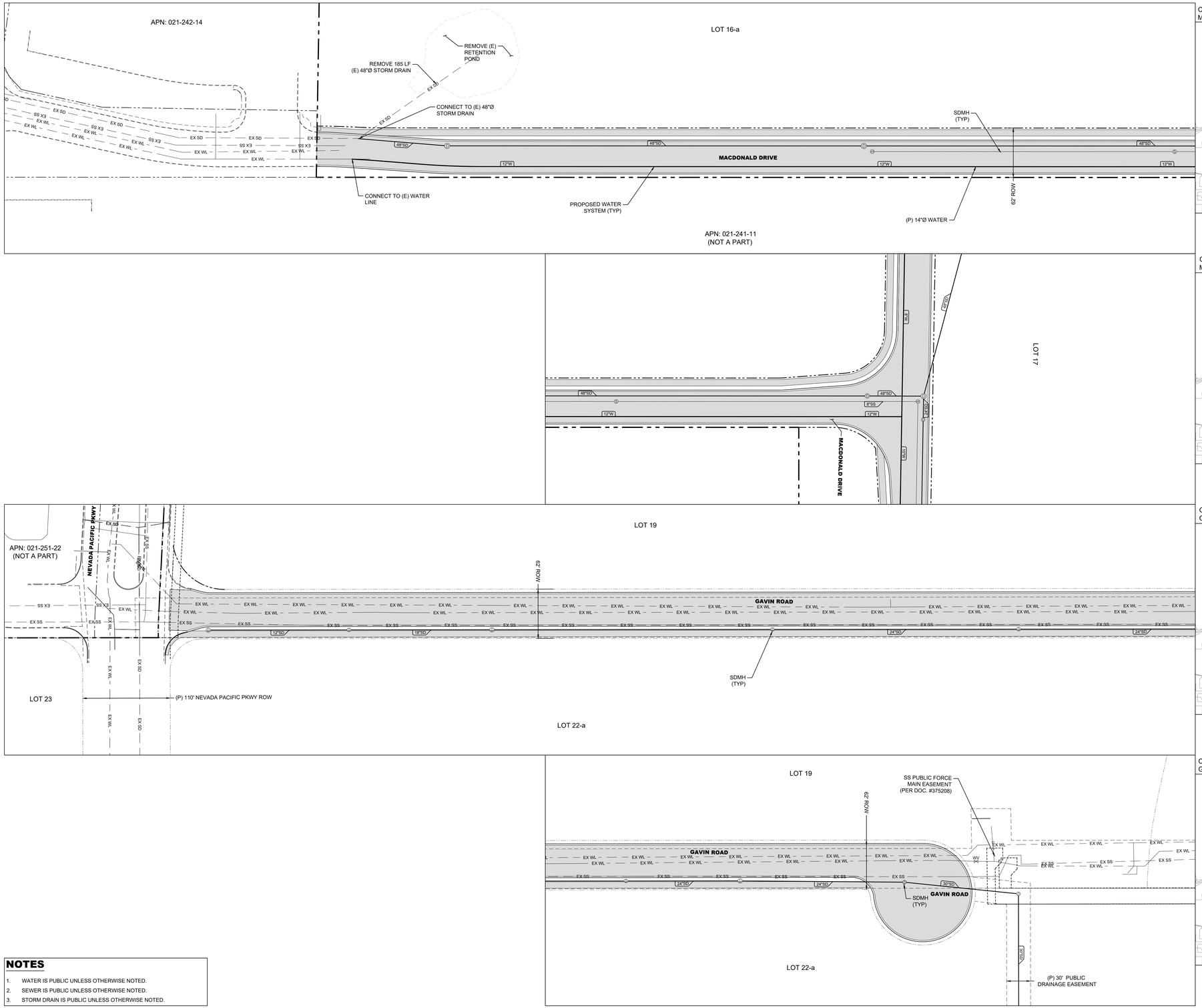
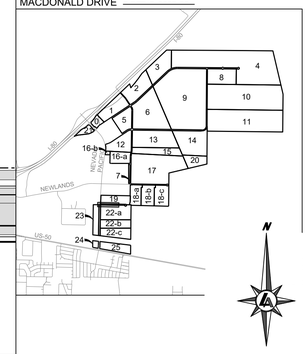


C4.7 - MAP 1
MACDONALD DRIVE

C4.7 - MAP 2
MACDONALD DRIVE

C4.7 - MAP 3
GAVIN ROAD

C4.7 - MAP 4
GAVIN ROAD



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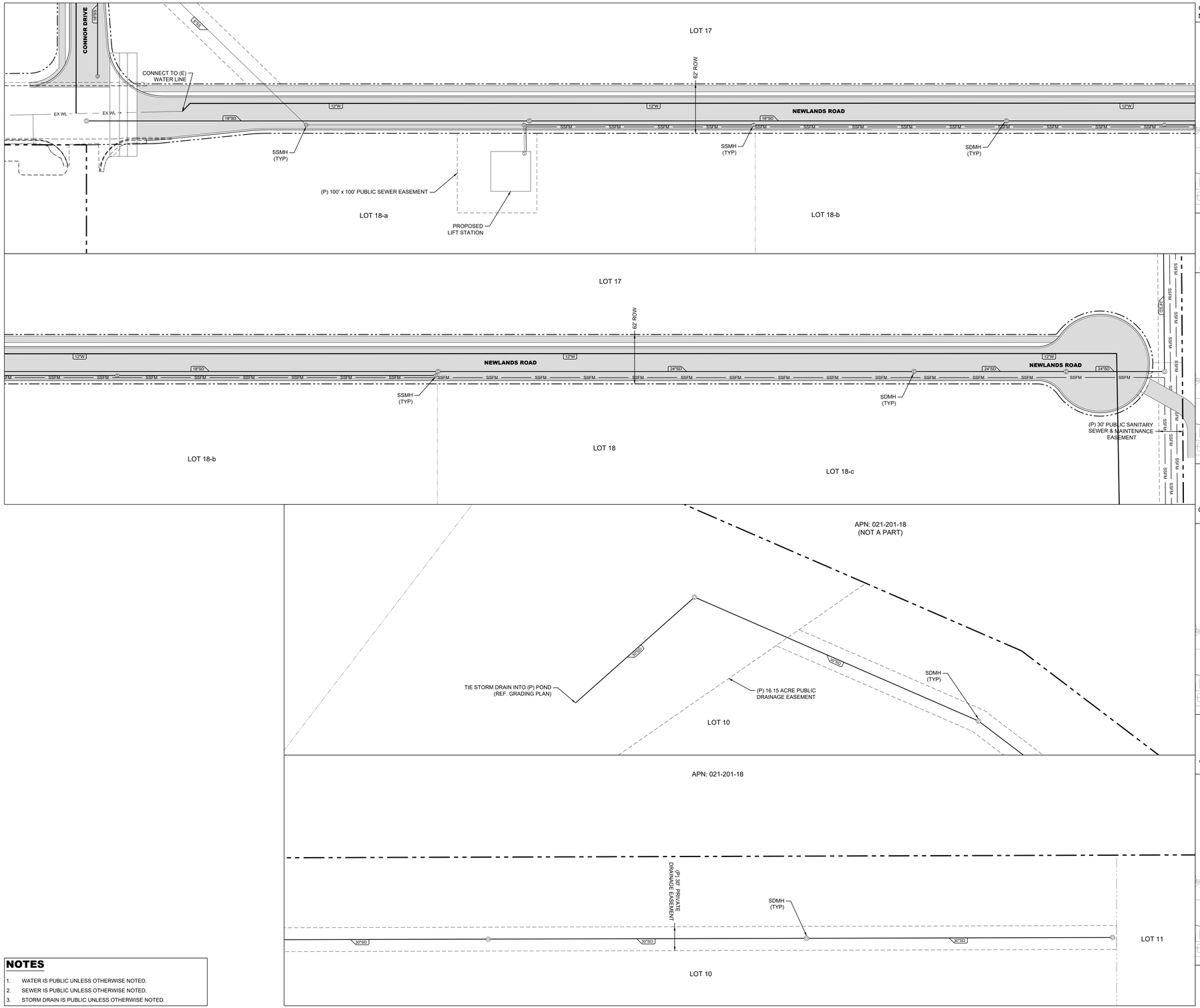
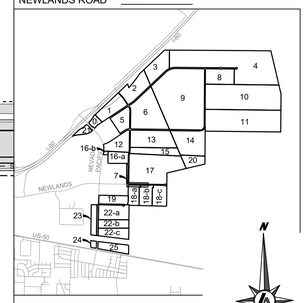


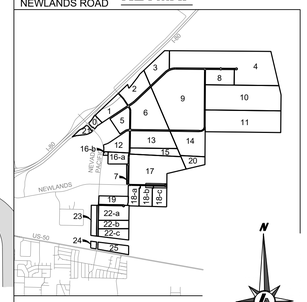
C4.8 - MAP 1
NEWLANDS ROAD

KEYMAP



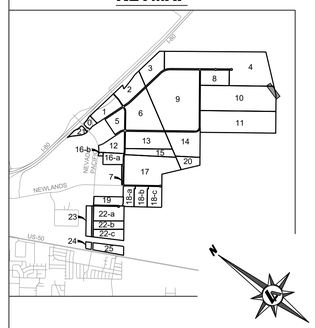
C4.8 - MAP 2
NEWLANDS ROAD

KEYMAP



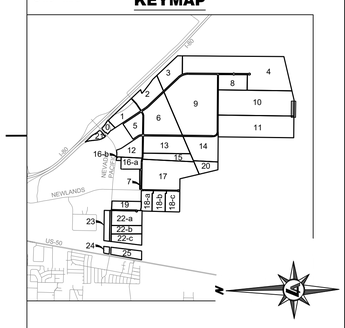
C4.8 - MAP 3

KEYMAP



C4.8 - MAP 4

KEYMAP



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3. STORM DRAIN IS PUBLIC UNLESS OTHERWISE NOTED.

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CAMILLE BUEHLER
Exp: 12-31-24
CIVIL
No. 26240

09/20/2023

M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY UTILITY PLAN

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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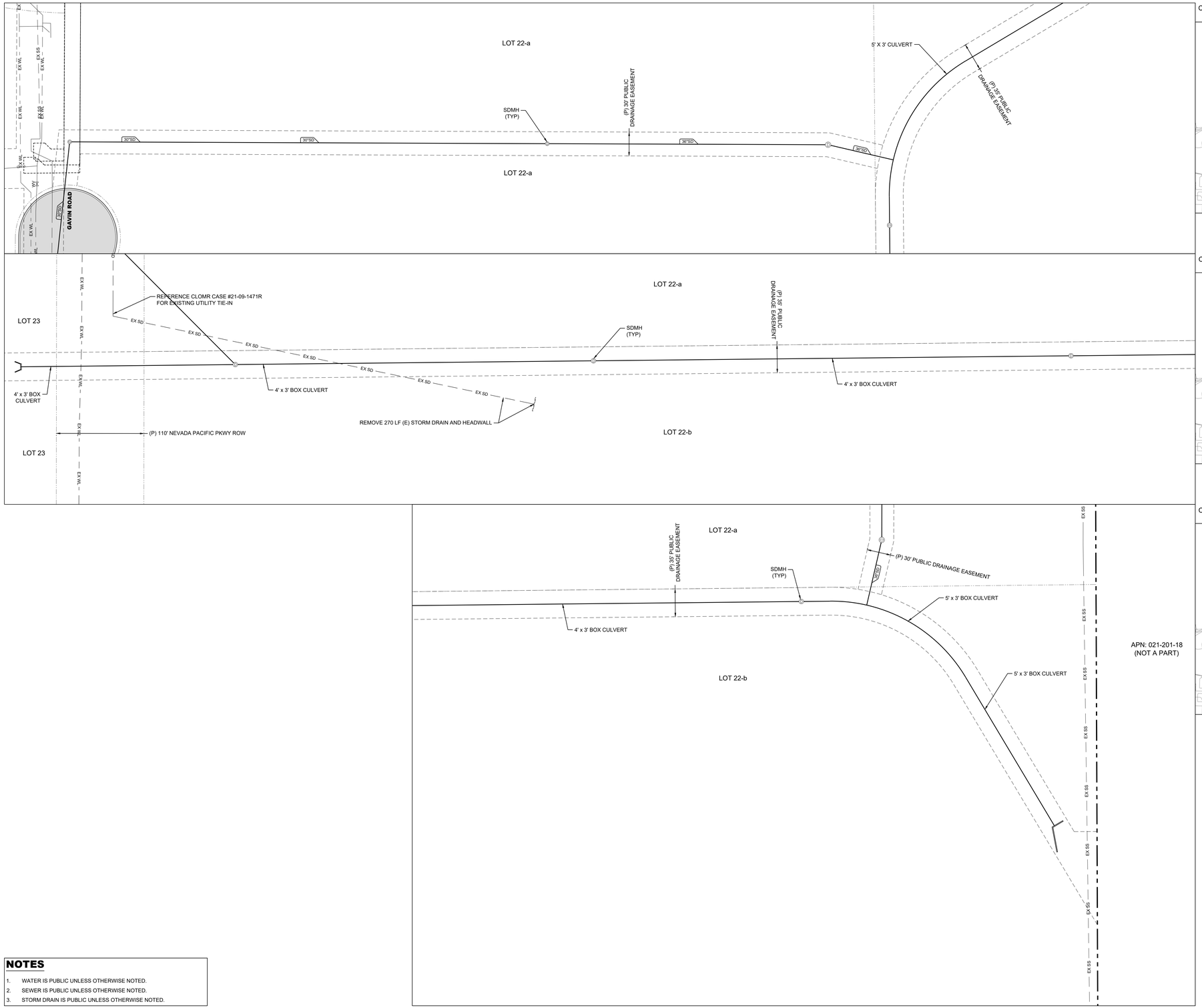
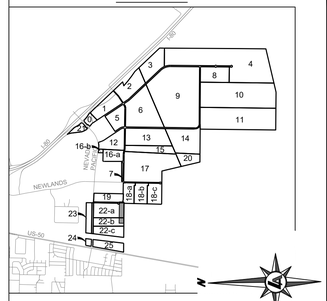


C4.9 - MAP 1

KEYMAP



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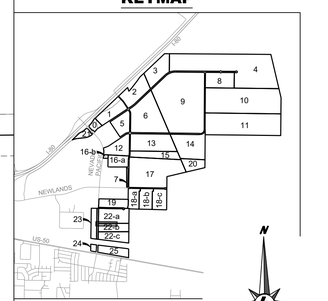

C4.9 - MAP 3

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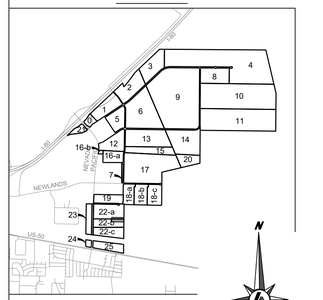

0 60' 120'

22x34 SHEETS: 1" = 60'
11x17 SHEETS: 1" = 120'

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VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY UTILITY PLAN

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

TENTATIVE MAP

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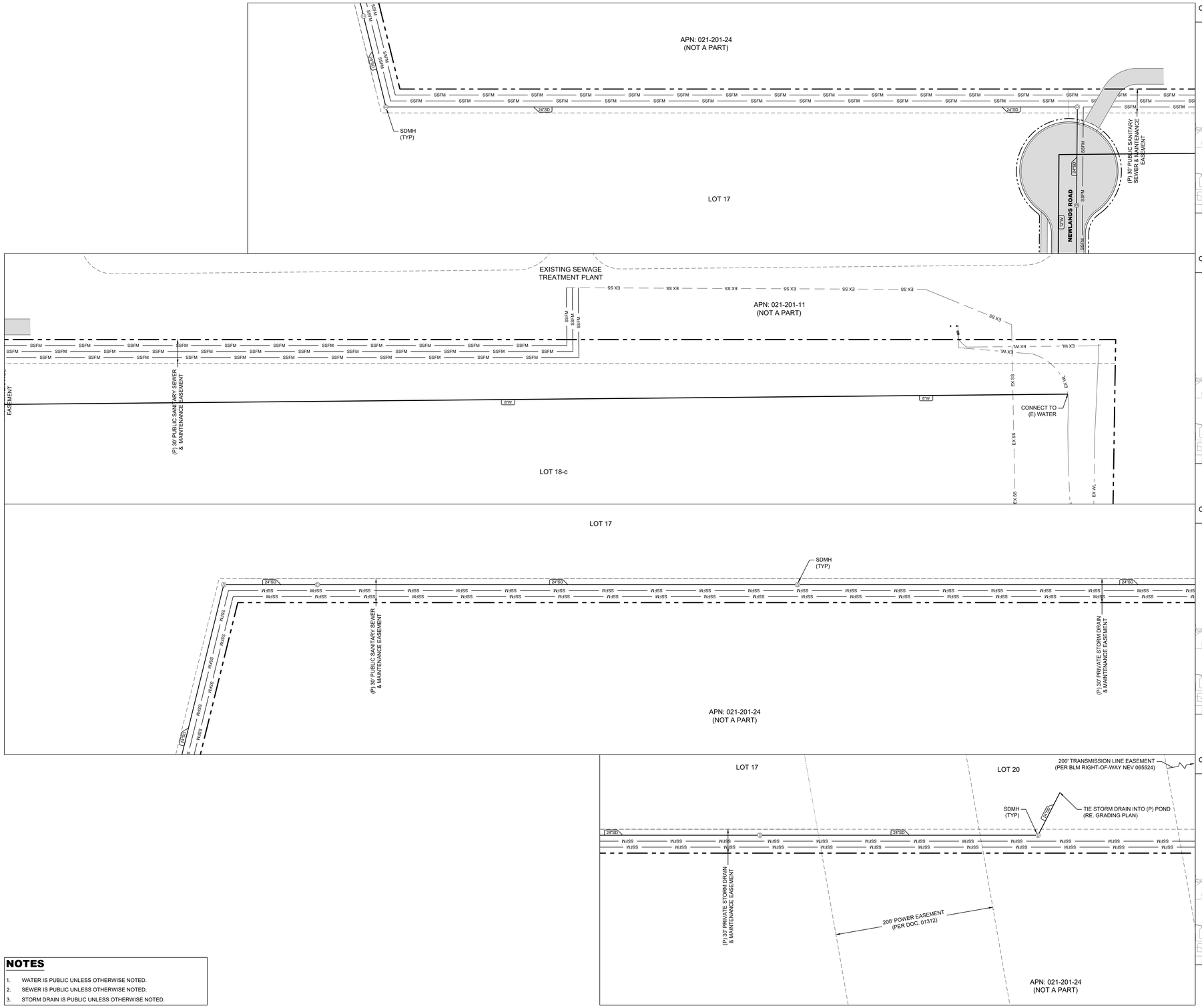
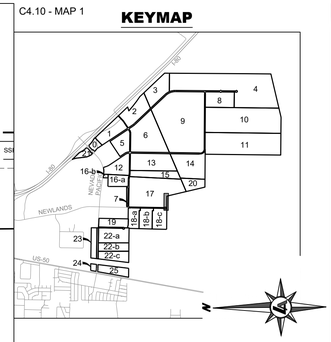


C4.10 - MAP 1



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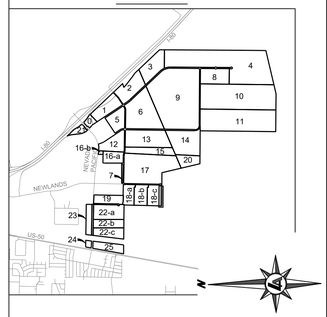

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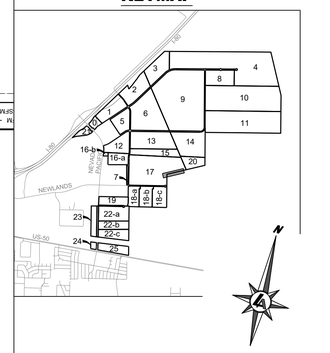
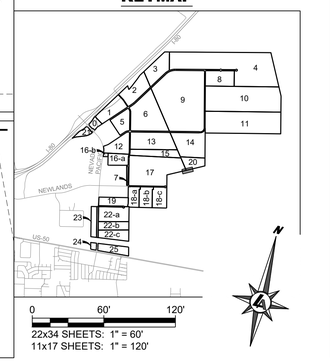


C4.10 - MAP 4



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VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PRELIMINARY UTILITY PLAN

FERNLEY — LYON COUNTY — NEVADA

REV	DATE	DESCRIPTION	BY

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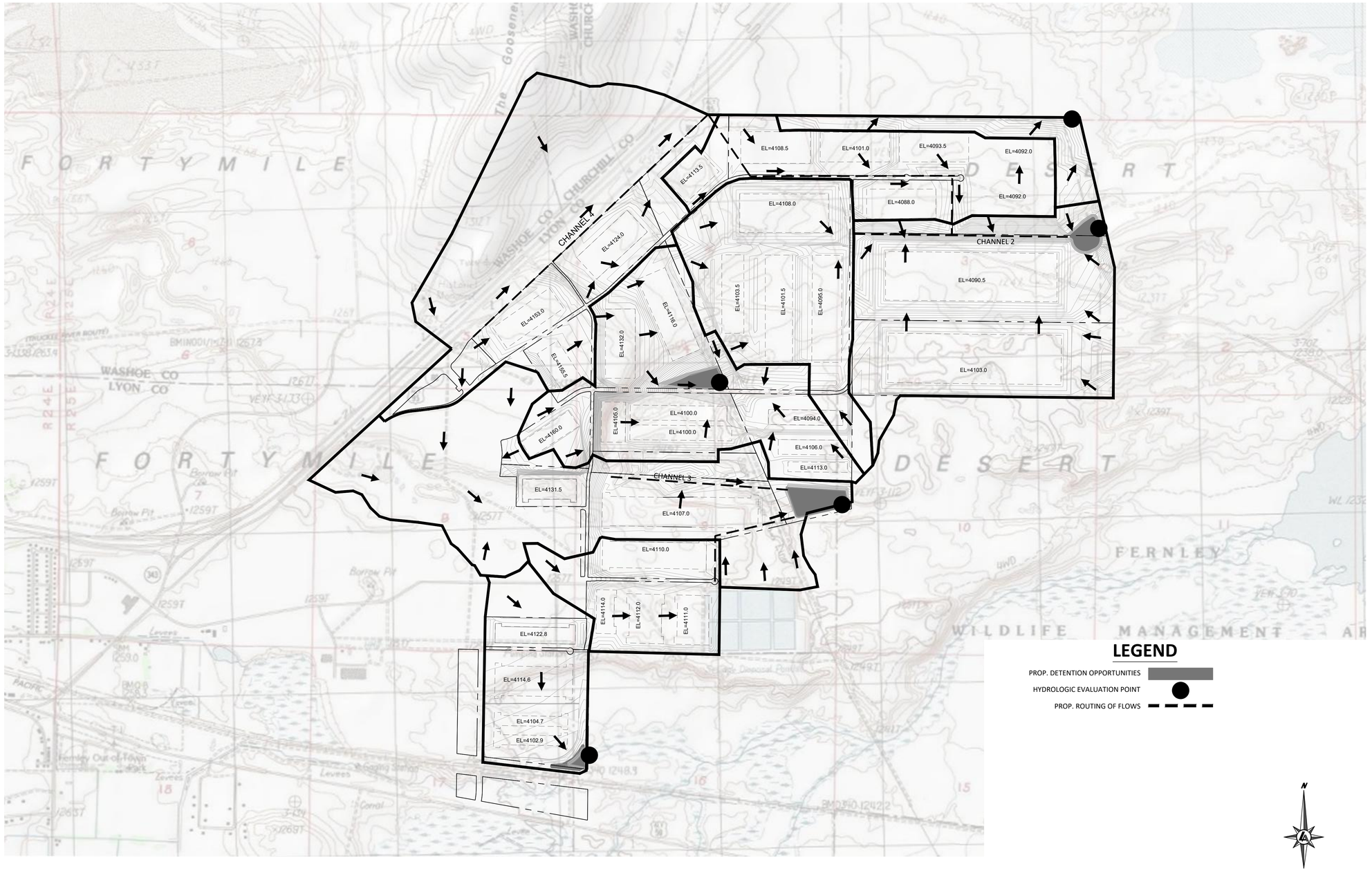

LEGEND

- PROP. DETENTION OPPORTUNITIES
- HYDROLOGIC EVALUATION POINT
- PROP. ROUTING OF FLOWS

N

0 1000' 2000'

22x34 SHEETS: 1" = 1000'
11x17 SHEETS: 1" = 2000

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VICTORY LOGISTICS DISTRICT
TENTATIVE MAP
PROPOSED HYDROLOGIC CONDITIONS

FERNLEY — LYON COUNTY — NEVADA

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LANDSCAPE SPECIFICATIONS

GENERAL

1. PLAN IS DIAGRAMMATIC ONLY. ALL LOCAL GOVERNING CODES SHALL BE MET. EXACT LOCATION OF TREES AND SHRUBS SHALL BE DETERMINED IN THE FIELD (INSTALL AS PER DETAILS) AND APPROVED BY THE OWNER'S REPRESENTATIVE.

2. A MINIMUM OF TWO WORKING DAYS BEFORE PERFORMING ANY DIGGING, CALL UNDERGROUND SERVICE ALERT FOR INFORMATION ON THE LOCATION OF NATURAL GAS LINES, ELECTRIC CABLES, TELEPHONE CABLES, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION AND PROTECTION OF ALL UTILITIES, AND REPAIR OF ANY DAMAGE RESULTING FROM HIS WORK AT NO ADDITIONAL COST TO THE OWNER.

3. DAMAGES: CONTRACTOR SHALL PROMPTLY REPAIR ALL DAMAGES TO EXISTING SITE AT NO COST TO OWNER.

4. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES (I.E., PAVING, PLUMBING, ELECTRICAL, ETC.)

5. THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION AND TO NOTIFY THE OWNER'S REPRESENTATIVE SHOULD CONDITIONS EXIST WHICH PREVENT CONSTRUCTION AS PER THESE PLANS. COMMENCEMENT OF WORK SHALL CONSTITUTE ACCEPTANCE OF CONDITIONS AND RESPONSIBILITY FOR CORRECTIONS.

6. CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR ASSUMES SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS AND CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE OWNER FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT.

PLANTING

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING THROUGHOUT ALL LANDSCAPE AREAS SUCH THAT THERE ARE NO HUMPS OR DEPRESSIONS AND POSITIVE DRAINAGE OCCURS THROUGHOUT. THE TOP 18" OF ALL PLANTING BEDS SHALL BE CLEAN NATIVE SOIL, FREE OF ALL CONSTRUCTION DEBRIS AND NATIVE ROCKS OVER 1" IN DIAMETER. THE CONTRACTOR SHALL AMEND THE PLANTING BED OR PLANTING HOLES PER PLANS AND SPECIFICATIONS. FINAL GRADE OF ALL PLANTERS (I.E. MULCH SURFACE) SHALL BE FLUSH WITH ADJACENT HARDSCAPE SURFACES.

8. SOIL TEST: CONTRACTOR SHALL PROVIDE SOIL TEST RESULTS FOR EXISTING SITE SOIL AS FOLLOWS:
- ANALYSIS PACKAGE LTP.4 BY SUNLAND ANALYTICAL (916)852-8557 (OAE).
- TEST RESULTS SHALL INCLUDE SOIL SATURATION PERCENT, SOIL TEXTURE, INFILTRATION RATE, pH, CONDUCTIVITY, TOTAL DISSOLVED SALTS, CATION EXCHANGE CAPACITY, POTASSIUM, SODIUM, CALCIUM, MAGNESIUM, NITRATE & PHOSPHORUS, SULFUR, CHLORIDE, BORON, COPPER, IRON, MANGANESE, ZINC & LIME REQUIREMENT OR GYPSUM REQUIREMENT, SODIUM ABSORPTION RATIO, EXCHANGEABLE SODIUM PERCENT & ORGANIC MATTER, ALONG WITH RECOMMENDATIONS FOR SOIL AMENDMENT BASED ON ANALYSIS RESULTS.
- CONTRACTOR SHALL FOLLOW RECOMMENDATIONS OF SOIL TEST.

9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TOTAL AND CONFIRM ALL MATERIAL QUANTITIES. ITEMS QUANTITIFIED BY AN AREA (I.E. SQUARE FEET - SF, SQUARE YARD - SY) OR VOLUME (CUBIC FEET - CU FT, CUBIC YARD - CU YD) SHALL BE CALCULATED AND CONFIRMED BY THE CONTRACTOR. THE QUANTITIES LISTED ON THE PLANT LIST ARE ESTIMATED. IN THE EVENT OF A DISCREPANCY BETWEEN THE TOTALS LISTED ON THE PLANT LIST AND THE QUANTITY OF GRAPHIC PLANT SYMBOLS DEPICTED ON THE DRAWINGS, THE GRAPHIC SYMBOLS ON THE PLANS SHALL GOVERN. THE ACTUAL TOTAL QUANTITIES SHALL BE DETERMINED BY THE CONTRACTOR.

10. SOIL AMENDMENT: UNLESS OTHERWISE INDICATED BY THE SOIL TEST, SOIL AMENDMENT SHALL BE HUMUS COMPOSED OF TOPSOIL, BARK HUMUS, AND COMPOST. SUBMIT TO OWNER'S REPRESENTATIVE FOR APPROVAL.

11. CONTRACTOR IS RESPONSIBLE FOR PROVIDING PLANT MATERIAL PER SYMBOLS AND SPACING INDICATED ON PLAN. SYMBOLS PREVAIL OVER NUMBERS ON PLANT LIST. NO SUBSTITUTIONS WILL BE ACCEPTED WITHOUT EXPRESSED WRITTEN CONSENT OF THE OWNER'S REPRESENTATIVE. SEE SUBMITTALS.

12. ALL PLANTS NOT MEETING OR EXCEEDING REQUIREMENTS AND RECOMMENDATIONS OF THE LATEST EDITION OF THE ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN SHALL BE REJECTED. CONTRACTOR SHALL RECEIVE ON-SITE APPROVAL OF PLANT MATERIAL BY OWNER'S REPRESENTATIVE PRIOR TO PLANTING. FAILURE TO RECEIVE PRIOR APPROVAL MAY RESULT IN REJECTION OF PLANT MATERIAL FOLLOWING INSTALLATION. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND EVALUATE PLANT MATERIAL THROUGHOUT THE CONSTRUCTION AND MAINTENANCE PERIOD.

13. ALL PLANTING BEDS SHALL RECEIVE TOP-DRESSING OF MULCH AS FOLLOWS:

- DECOMPOSED GRANITE (DG) - INSTALL 4" MIN. DEPTH OF 5/16" COARSE OXBORROW DG (OAE) - DO NOT INSTALL WEED FABRIC UNDER DG MULCH.
- FRACTURED ROCK (FR) - INSTALL 4" MIN. DEPTH OF 2" X 3" FRACTURED ROCK OVER LANDSCAPE FABRIC.
- LAVA ROCK (LR) - INSTALL 4" MIN. DEPTH OF 1-1/2" LAVA MOCHA ROCK OVER LANDSCAPE FABRIC.
- BLENDED RIVER ROCK (BR) - INSTALL 4" MIN. DEPTH OF BLENDED RIVER ROCK (40% 4" MINUS & 60% 1-1/2" MINUS) OVER LANDSCAPE FABRIC.
- RIVER ROCK (RR) - INSTALL 4" MIN. DEPTH OF 4" MINUS RIVER ROCK OVER LANDSCAPE FABRIC.
- WOOD MULCH (WM) - INSTALL 4" MIN. DEPTH OF PARTIALLY COMPOSTED WOOD MULCH (FULL CIRCLE OAE)
- WALK-ON BARK MULCH FOR WATERING WELLS - INSTALL WALK-ON' BARK MULCH (OAE) IN TREE AND SHRUB WATERING WELLS LOCATED WITHIN ROCK MULCH AREAS. - DO NOT INSTALL LANDSCAPE FABRIC UNDER BARK.
- LANDSCAPE FABRIC - 'DEWITT' PRO-5 WEED BARRIER (OAE), INSTALL IN ACCORDANCE WITH MFG'S SPECIFICATIONS.
- GRANULAR PRE-EMERGENT HERBICIDE - APPLY HERBICIDE TO CONTROL NUISANCE AND NOXIOUS WEEDS TO ALL PLANTING BEDS PER UNR COOPERATIVE EXTENSION'S LATEST RECOMMENDATIONS AND MFG'S SPECIFICATIONS.

DIGITAL PHOTOS OF ALL MULCH SAMPLES SHALL BE SUBMITTED TO OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL MIN. 48 HOURS PRIOR TO START OF ANY LANDSCAPE OR IRRIGATION WORK. IF UNACCEPTABLE MULCH IS INSTALLED WITHOUT APPROVAL IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT THE ISSUES AT HIS EXPENSE.

OBSERVATIONS/APPROVALS/SUBMITTALS

14. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING OWNER'S REPRESENTATIVE, A MINIMUM OF 48 HOURS IN ADVANCE, FOR THE FOLLOWING SITE OBSERVATIONS AND/OR MEETINGS:

A. PRECONSTRUCTION MEETING WITH ALL PARTIES
B. PLANT MATERIAL ON SITE, PRIOR TO INSTALLATION
C. FINAL PROJECT WALK-THROUGH
D. ADDITIONAL SITE OBSERVATIONS AS DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE.

15. SUBMIT AMENDMENT AND MULCH SAMPLES TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION. FAILURE TO COMPLY MAY RESULT IN REJECTION OF MULCH OR AMENDMENT PRIOR TO OR FOLLOWING INSTALLATION.

16. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PROVIDE PLANT MATERIAL AS SPECIFIED ON THIS PLAN. THE CONTRACTOR MAY SUBMIT A REQUEST TO PROVIDE SUBSTITUTIONS FOR THE SPECIFIED PLANT MATERIAL UNDER THE FOLLOWING CONDITIONS:

A. ANY SUBSTITUTIONS PROPOSED SHALL BE SUBMITTED TO THE PROJECT OWNER'S REPRESENTATIVE WITHIN TWO WEEKS OF THE AWARD OF CONTRACT. SUBSTITUTIONS MUST MEET EQUIVALENT DESIGN AND FUNCTIONAL GOALS OF THE ORIGINAL MATERIALS AS DETERMINED BY THE OWNER'S REPRESENTATIVE. ANY CHANGES MUST HAVE THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
B. THE REQUEST WILL BE ACCOMPANIED BY AT LEAST THREE NOTICES FROM PLANT MATERIAL SUPPLIERS THAT THE PLANT MATERIAL SPECIFIED IS NOT AVAILABLE AND WILL NOT BE AVAILABLE PRIOR TO CONSTRUCTION.

17. SUBMIT REQUIRED SOIL REPORT, AND SAMPLE OF PROPOSED SOIL AMENDMENTS TO OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

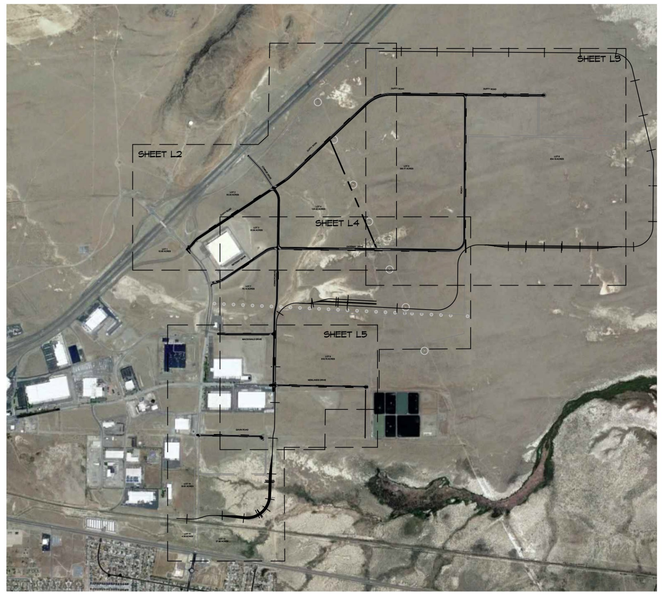
18. RECORD (AS-BUILT) DRAWINGS: FOLLOWING COMPLETION OF PROJECT INSTALLATION, AND PRIOR TO FINAL APPROVAL, CONTRACTOR SHALL PREPARE AND SUBMIT RECORD DRAWINGS DEPICTING A COMPLETE LANDSCAPE AND IRRIGATION INSTALLATION. PROCURE FROM OWNER DIGITAL COPIES OF CONTRACT DRAWINGS. CONSTRUCTION DRAWINGS SHALL BE ON THE PROJECT SITE AT ALL TIMES DURING INSTALLATION. CONTRACTOR SHALL MAKE A DAILY RECORD OF ALL WORK INSTALLED DURING EACH DAY. ACTUAL LOCATION OF TREES AND SHRUB BEDS, IRRIGATION VALVES, AND ALL IRRIGATION AND DRAINAGE PIPING SHALL BE SHOWN ON THE PRINTS BY DIMENSIONS FROM EASILY IDENTIFIED PERMANENT FEATURES, SUCH AS BUILDINS, CURBS, FENCES, WALKS, OR PROPERTY LINES. DRAWINGS SHALL SHOW MANUFACTURER'S NAME AND CATALOG NUMBER. THE DRAWINGS SHALL BE TO SCALE. ALL INFORMATION NOTED ON THE PRINT SHALL BE TRANSFERRED TO THE COPIES BY CONTRACTOR AND ALL INDICATIONS SHALL BE RECORDED IN A NEAT, ORDERLY WAY. THE RECORD COPIES SHALL BE TURNED OVER TO THE OWNER'S REPRESENTATIVE.

GUARANTEES/WARRANTY

20. ALL PLANTED AREAS SHALL BE MAINTAINED FOR A PERIOD OF SIXTY DAYS FOLLOWING WRITTEN ACCEPTANCE BY OWNER'S REPRESENTATIVE. LANDSCAPE CONTRACTOR WILL GUARANTEE ALL PLANT MATERIAL (INCLUDING BUT NOT LIMITED TO TREES, SHRUBS, GROUNDCOVER, AND GRASSES) FOR A PERIOD OF ONE FULL YEAR FOLLOWING FINAL ACCEPTANCE OF THE LANDSCAPE INSTALLATION BY THE OWNER'S AUTHORIZED REPRESENTATIVE. IN BIDDING AND INSTALLING THE PLANT MATERIAL SPECIFIED ON THESE PLANS, THE LANDSCAPE CONTRACTOR AGREES THAT THE PLANT MATERIAL SPECIFIED IS SUITABLE TO THE PROJECT SITE. FURTHERMORE, THE LANDSCAPE CONTRACTOR AGREES TO HONOR THE WARRANTY AND, IF NECESSARY, REPLACE SPECIES WITH A MORE HARDY PLANT TYPE IF DEEMED NECESSARY DUE TO EXCESSIVE DIE OUT. IF THE LANDSCAPE CONTRACTOR DOES NOT BELIEVE CERTAIN PLANT MATERIAL IS SUITABLE FOR THE SITE AND/OR ITS MICRO-CLIMATES, THE LANDSCAPE CONTRACTOR SHALL REQUEST TO MAKE PLANT MATERIAL SUBSTITUTIONS IN WRITING TO THE LANDSCAPE ARCHITECT PRIOR TO THE START OF INSTALLATION. PROPOSED SUBSTITUTIONS WILL RESULT IN NO ADDED COST.

LANDSCAPING IN PUBLIC RIGHT-OF-WAYS WITHIN THE CITY OF RENO

21. LANDSCAPING IN PUBLIC RIGHTS-OF-WAY (PARKWAY STRIPS, ETC.) WITHIN THE CITY OF RENO REQUIRE A TREE WORK PERMIT (TO BE OBTAINED BY THE LANDSCAPE CONTRACTOR) AND IS SUBJECT TO REVIEW AND APPROVAL BY THE CITY OF RENO'S URBAN FORESTER. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PERMIT AND THE CITY OF RENO'S URBAN FORESTER INCLUDING, BUT NOT LIMITED TO, IRRIGATION LAYOUT AND MATERIALS, MULCH TYPES, TREE CALIPERS, AND SHRUB SIZES. THE LANDSCAPE CONTRACTOR SHALL SUBMIT ALL SUBSTITUTIONS REQUESTS FOR MATERIALS WITHIN THE PUBLIC RIGHT-OF-WAY DIRECTLY TO THE CITY OF RENO URBAN FORESTER FOR CONSIDERATION. LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE OF ANY APPROVALS RECEIVED.



0 2,000 4,000 6,000

Scale in Feet

SHEET INDEX

L1 - COVER SHEET
L2 - LANDSCAPE PLAN
L3 - LANDSCAPE PLAN
L4 - LANDSCAPE PLAN
L5 - LANDSCAPE PLAN

LANDSCAPE DATA:

LOT PARAMETERS		
LOT #	AREA (Ac)	FRONTAGE (FT)
1	10.80 ACRES	2,256
2	55.30 ACRES	4,440
3	36.02 ACRES	3,898
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10	19.61 ACRES	2,934
11	4.39 ACRES	1,280
12	27.66 ACRES	4,849
TOTAL	2,106.59 ACRES	38,118

IRRIGATION SPECIFICATIONS

GENERAL

1. PLAN IS DIAGRAMMATIC ONLY. FINAL LOCATION OF LINES AND HEADS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE OWNER'S REPRESENTATIVE. LINES SHALL BE IN A COMMON TRENCH WHEREVER POSSIBLE. THE POINT-OF-CONNECTION SHALL BE AS INDICATED ON THE PLAN.

2. THE CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS AND ENSURE THAT ALL LOCAL CODES ARE MET.

3. THE CONTRACTOR SHALL APPLY AND PAY FOR ALL PERMITS REQUIRED FOR INSTALLATION OF THE IRRIGATION SYSTEM AS DEPICTED ON THESE PLANS.

4. CONTRACTOR SHALL VERIFY AVAILABLE FLOW AND PRESSURE DOWNSTREAM FROM THE POINT-OF-CONNECTION PRIOR TO SYSTEM INSTALLATION. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY IF AVAILABLE FLOW IS LESS THAN REQUIRED TO RUN THE LARGEST ZONE. CONTRACTOR SHALL NOT PROCEED ANY FURTHER WITH INSTALLATION OF THE SYSTEM UNTIL NECESSARY DESIGN REVISIONS HAVE BEEN DETERMINED BY OWNER'S REPRESENTATIVE.

5. THE CONTRACTOR SHALL NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR DIFFERENCES IN DIMENSIONS EXIST THAT MIGHT HAVE BEEN UNKNOWN DURING ENGINEERING. SUCH OBSTRUCTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY AT NO ADDITIONAL COST TO OWNER.

6. ALL SPRINKLER EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

7. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL SPRINKLER MATERIALS, INCLUDING PIPE, WITH THE LANDSCAPE DRAWINGS TO AVOID INTERFERING WITH THE PLANTING OF TREES, SHRUBS, OR OTHER PLANTINGS.

8. ALL VALVES ARE TO BE LOCATED IN PLANTING AREAS WHEREVER POSSIBLE.

9. ALL ELECTRICAL WIRE FROM CONTROLLER TO VALVES SHALL BE 12 GAUGE UL DIRECT BURIAL OR LARGER AS REQUIRED BY LENGTH PER MANUFACTURER'S SPECIFICATIONS.

10. BACKFILL FOR TRENCHING SHALL BE COMPACTED TO A DRY DENSITY EQUAL TO THE UNDISTURBED ADJACENT SOIL AND SHALL CONFORM TO ADJACENT GRADES WITHOUT DIPS, HUMPS, OR OTHER IRREGULARITIES.

11. A MINIMUM OF TWO WORKING DAYS PRIOR TO PERFORMING ANY DIGGING, CALL UNDERGROUND SERVICE ALERT FOR INFORMATION ON THE LOCATION OF NATURAL GAS LINES, ELECTRICAL CABLES, TELEPHONE CABLES, ETC.

12. CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.

13. INSTALL ALL PIPE AND CONTROL WIRES IN LANDSCAPE BEDS AND IN COMMON TRENCHES WHEREVER POSSIBLE.

14. INSTALL ALL PIPE AND CONTROL WIRE, WHICH RUNS UNDER PAVING, WITHIN SCH. 40 PVC SLEEVES 4" DIA. MINIMUM SIZE AS REQUIRED TO ALLOW INSTALLATION WITHOUT BINDING. PROVIDE (1) SLEEVE PER PIPE. PROVIDE SEPARATE SLEEVES FOR CONTROL WIRE.

15. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE FOR COMPLETE DRAINAGE OF THE MAINLINES BY INSTALLING MANUAL DRAINS AS INDICATED ON PLAN AND AT ALL SYSTEM LOW POINTS.

FLUSHING AND TESTING

16. PIPING SHALL BE COMPLETELY FLUSHED OF FOREIGN PARTICLES BEFORE ATTACHING IRRIGATION COMPONENTS AND DRAIN VALVES.

17. AFTER FLUSHING, AND WHEN ALL VALVES AND QUICK COUPLERS ARE IN PLACE, ALL MAIN SUPPLY LINES SHALL BE TESTED AT 100 POUNDS PER SQUARE INCH (100 PSI) WITH VALVES CLOSED. MAINTAIN PRESSURE FOR A PERIOD OF NOT LESS THAN (4) CONSECUTIVE HOURS. ALL JOINTS SHOWING LEAKS SHALL BE CLEANED, REMADE, AND TESTED.

18. AFTER FLUSHING, LATERAL PIPES SHALL BE TESTED WITH RISERS CAPPED AND DRAIN VALVES CLOSED. THE TEST SHALL BE MADE AT MAXIMUM OPERATING PRESSURE FOR A PERIOD OF NOT LESS THAN (1) HOUR. ALL JOINTS SHOWING LEAKS SHALL BE CLEANED, REMADE, AND TESTED. ALL TESTING SHALL BE DONE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE PRIOR TO BACKFILLING OVER PIPING.

19. OPERATIONAL TESTING: PERFORM OPERATIONAL TESTING AFTER HYDROSTATIC TESTING IS COMPLETED. DEMONSTRATE TO THE OWNER'S REPRESENTATIVE THAT THE SYSTEM MEETS COVERAGE REQUIREMENTS (100%) AND THAT AUTOMATIC CONTROLS FUNCTION PROPERLY.

20. AFTER COMPLETION OF GRADING AND SOD PLACEMENT, CAREFULLY ADJUST SPRINKLER HEADS TO MEET HEIGHT INDICATED ON DRAWINGS.

SUBMITTALS

21. MATERIALS LIST: WITHIN (15) DAYS AFTER AWARD OF CONTRACT, SUBMIT TO OWNER'S REPRESENTATIVE (3) COPIES OF A COMPLETE MATERIAL LIST (PARTIAL LIST NOT ACCEPTABLE) OF ALL MATERIALS TO BE USED ON THE PROJECT, SPECIFYING MANUFACTURER, GRADE, TRADE NAME, CATALOG NUMBER, SIZE, ETC. THIS SHALL IN NO WAY BE CONSTRUED AS ALLOWING A SUBSTITUTION FOR ANY ITEM SPECIFIED ON THE PLANS. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE MAY BE REJECTED AND THE CONTRACTOR REQUIRED TO REMOVE THE MATERIALS AT HIS OWN EXPENSE.

INSTALLATION AND PERFORMANCE OF APPROVED SUBSTITUTIONS ARE THE CONTRACTORS RESPONSIBILITY. ANY CHANGES REQUIRED FOR INSTALLATION OF ANY APPROVED SUBSTITUTION MUST BE MADE TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL COST TO OWNER.

22. PRIOR TO SYSTEM INSTALLATION CONTRACTOR SHALL VERIFY AND SUBMIT TO OWNER'S REPRESENTATIVE IN WRITING, AVAILABLE FLOW AND PRESSURE AT POINT-OF-CONNECTION AS DESCRIBED IN SPECIFICATION #4 ABOVE.

23. COMPLETE WARRANTY CARDS FOR AUTOMATIC CONTROLLER AND OTHER IRRIGATION MATERIAL (CONTROLLER KEYS, ETC.) SHALL BE DELIVERED TO OWNER.

24. CONTRACTOR SHALL PREPARE AND ISSUE TO THE OWNER (AT COMPLETION OF THE INSTALLATION) AN ANNUAL CHART INDICATING LOCATION, OPERATING DATES, CYCLES, AND TIME FOR EACH ZONE.

25. ASBUILT IRRIGATION DRAWINGS: CONTRACTOR SHALL FURNISH ASBUILTS OF THE COMPLETE IRRIGATION SYSTEM. PROCURE FROM OWNER'S REPRESENTATIVE DIGITAL COPIES OF CONTRACT DRAWINGS. CONSTRUCTION DRAWINGS SHALL BE ON THE CONSTRUCTION SITE AT ALL TIMES WHILE THE IRRIGATION SYSTEM IS BEING INSTALLED. CONTRACTOR SHALL MAKE A DAILY RECORD OF ALL WORK INSTALLED DURING EACH DAY. ACTUAL LOCATION OF VALVES AND ALL IRRIGATION AND DRAINAGE PIPING SHALL BE SHOWN ON THE PRINTS BY DIMENSIONS FROM EASILY IDENTIFIED PERMANENT FEATURES, SUCH AS BUILDINGS, CURBS, FENCES, WALKS OR PROPERTY LINES. DRAWINGS SHALL SHOW APPROVED MANUFACTURER'S NAME AND CATALOG NUMBER. THE DRAWINGS SHALL BE TO SCALE AND ALL INDICATIONS SHALL BE NEAT. ALL INFORMATION NOTED ON THE PRINT SHALL BE TRANSFERRED TO THE COPIES BY CONTRACTOR AND ALL INDICATIONS SHALL BE RECORDED IN A NEAT, ORDERLY WAY. THE RECORD COPIES SHALL BE TURNED OVER TO THE OWNER'S REPRESENTATIVE AT OR BEFORE FINAL ACCEPTANCE/APPROVAL OF THE PROJECT.

GUARANTEE/FINAL ACCEPTANCE

26. CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE THE IRRIGATION SYSTEM FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. MANUFACTURER WARRANTIES SHALL ONLY EXCEED THIS GUARANTEE AND CONTRACTOR SHALL BE LIABLE FOR REPAIRS/REPLACEMENT OF FAILED MATERIAL/WORKMANSHIP.

MAINTENANCE

27. AFTER SYSTEM IS INSTALLED AND APPROVED, INSTRUCT OWNER'S DESIGNATED PERSONNEL IN COMPLETE OPERATION AND MAINTENANCE PROCEDURES. DRAIN ENTIRE SYSTEM AT END OF FIRST WATERING SEASON FOLLOWING INSTALLATION. TRAIN OWNER'S DESIGNATED PERSONNEL BY HAVING THEM ASSIST IN WINTERIZING PROCEDURE.

1. AREA: +/- 2,102.78 AC/ 91,597,097
2. REQUIRED LANDSCAPE AREA CALCULATION 32.40.020(g).
   15% PARKING & CIRCULATION AREA = 91,597,097 SF X 0.15 = 13,739,565 SF (315.42 Ac)
   ARTERIAL FRONTAGE TREES @ 1:50 LF = 76,160 LF / 50 = 1523 TREES, TOTAL MIN.
3. A 10-FOOT WIDE BUFFER ALONG FRONTAGE PER 32.40.020 (n) SHALL BE PROVIDED

- ACTUAL TO BE DETERMINED AT FINAL MAP

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REGISTERED LANDSCAPE ARCHITECT
MARC CHAPELLE
622
Expires: 6/30/2024
8/15/2023
STATE OF NEVADA

Landscape and Irrigation Notes

M4 NEW FERNLEY TENTATIVE MAP

Mark IV Capital

Lyon Co. Nevada

Fernley

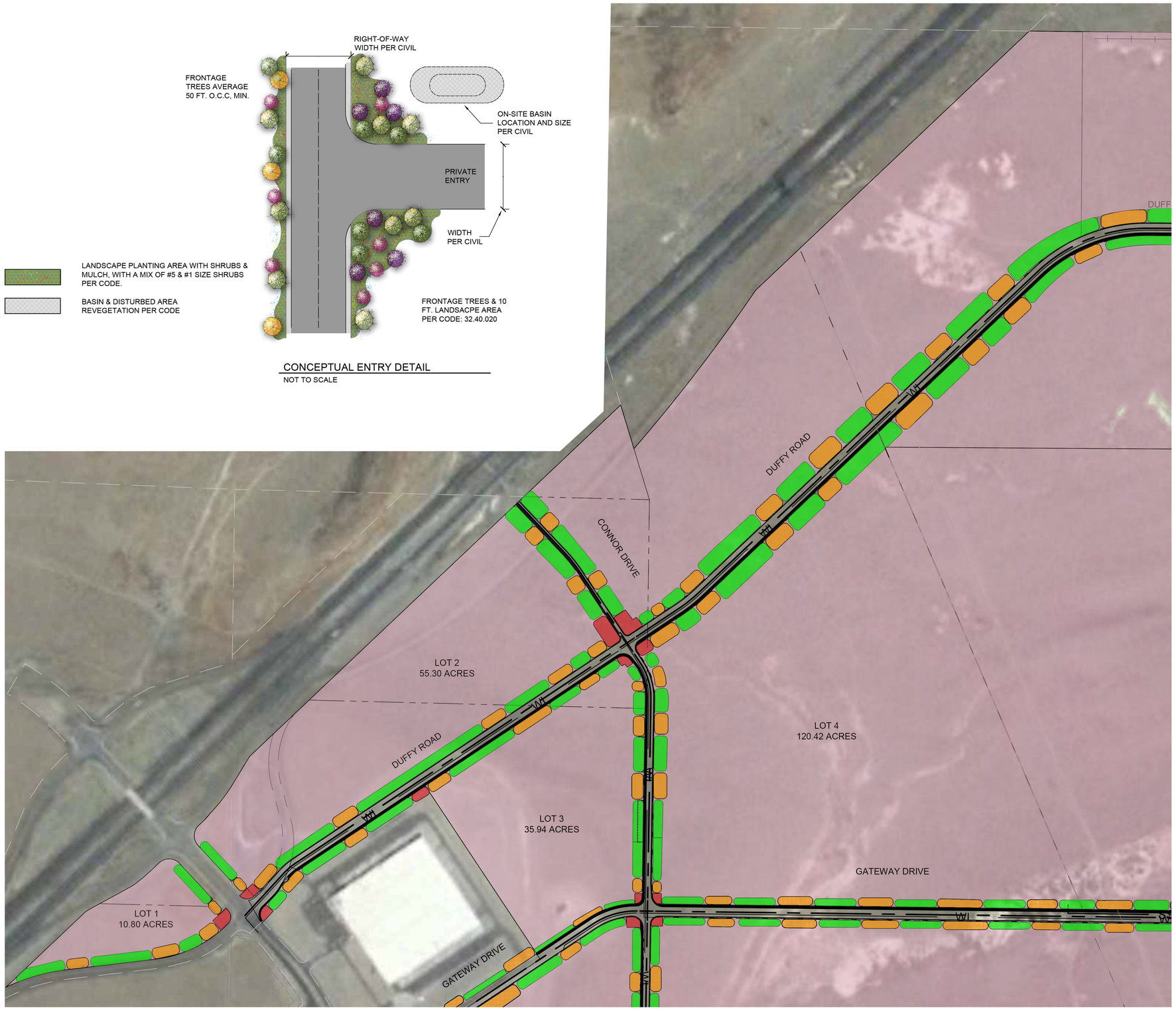
No.	Revision Date

LA No:	886-501-07-22
Designed:	APH
Drawn:	APH
Checked:	MAC
Date:	08/15/2023

Sheet L1 of 5

CONCEPTUAL ENTRY DETAIL

NOT TO SCALE



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   76,160 LF / 50 = +/- 1,523 TREES, MIN*.
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- ACTUAL TO BE DETERMINED AT FINAL MAP

LANDSCAPE NOTES:

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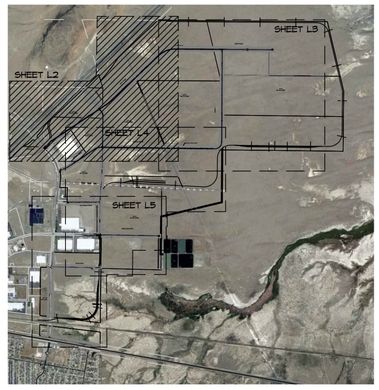
LANDSCAPE LEGEND:

ACCENT TREE - COURTYARD MIN. 24" BOX SIZE

DECIDUOUS TREES MIN. 24" BOX SIZE PER CODE

EVERGREEN TREES 5 FT. HEIGHT MIN.

ZONING - LEGS COLOR CODING FOR INDUSTRIAL, MANUFACTURING AND WASTE RELATED ACTIVITY.



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Scale in Feet

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REGISTERED LANDSCAPE ARCHITECT
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STATE OF NEVADA

Landscape Plan

M4 NEW FERNLEY TENTATIVE MAP

Mark IV Capital

Lyon Co. Nevada

Fernley

No.	Revision Date

LA No: 886-301-07-22
Designed: APH
Drawn: APH
Checked: MAC
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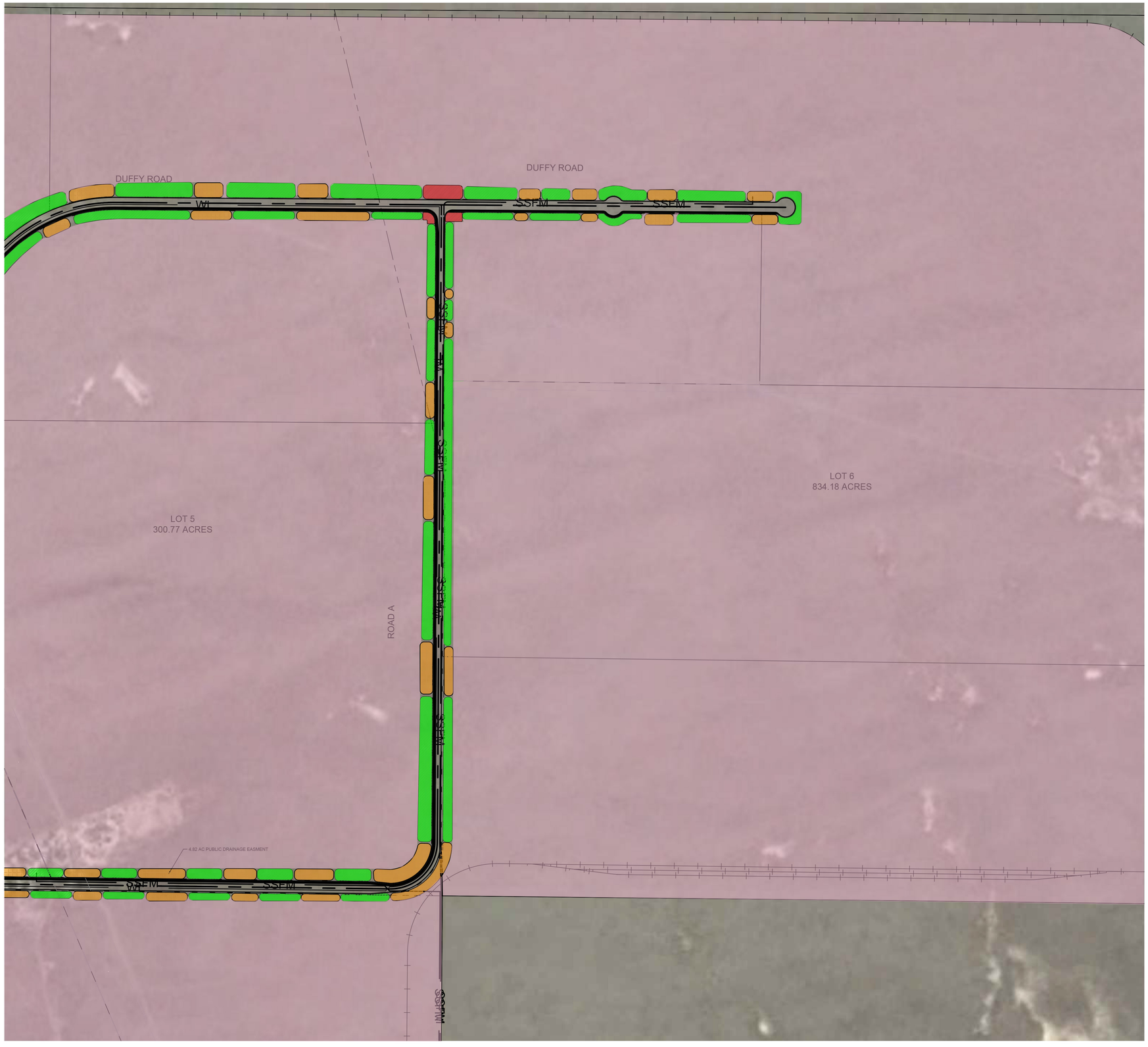
Sheet L2 of 5



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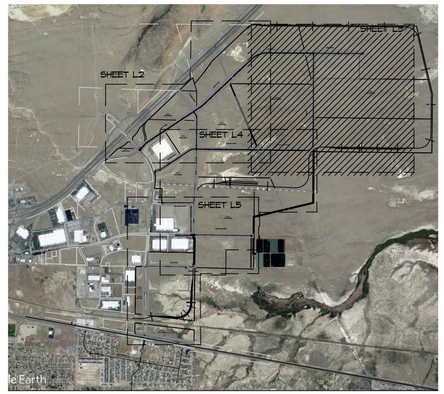

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Landscape Plan

M4 NEW FERNLEY TENTATIVE MAP

Mark IV Capital

Lyon Co. Nevada

Fernley

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Sheet L3 of 5

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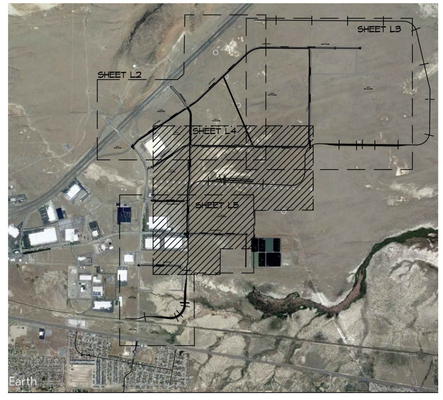
ZONING - LBCS COLOR CODING FOR INDUSTRIAL, MANUFACTURING AND WASTE RELATED ACTIVITY.

LANDSCAPE PLANTING AREA WITH SHRUBS & MULCH, WITH A MIX OF #5 & #1 SIZE SHRUBS PER CODE.

BASIN & DISTURBED AREA REVEGETATION PER CODE

CONCEPTUAL ENTRY DETAIL

NOT TO SCALE



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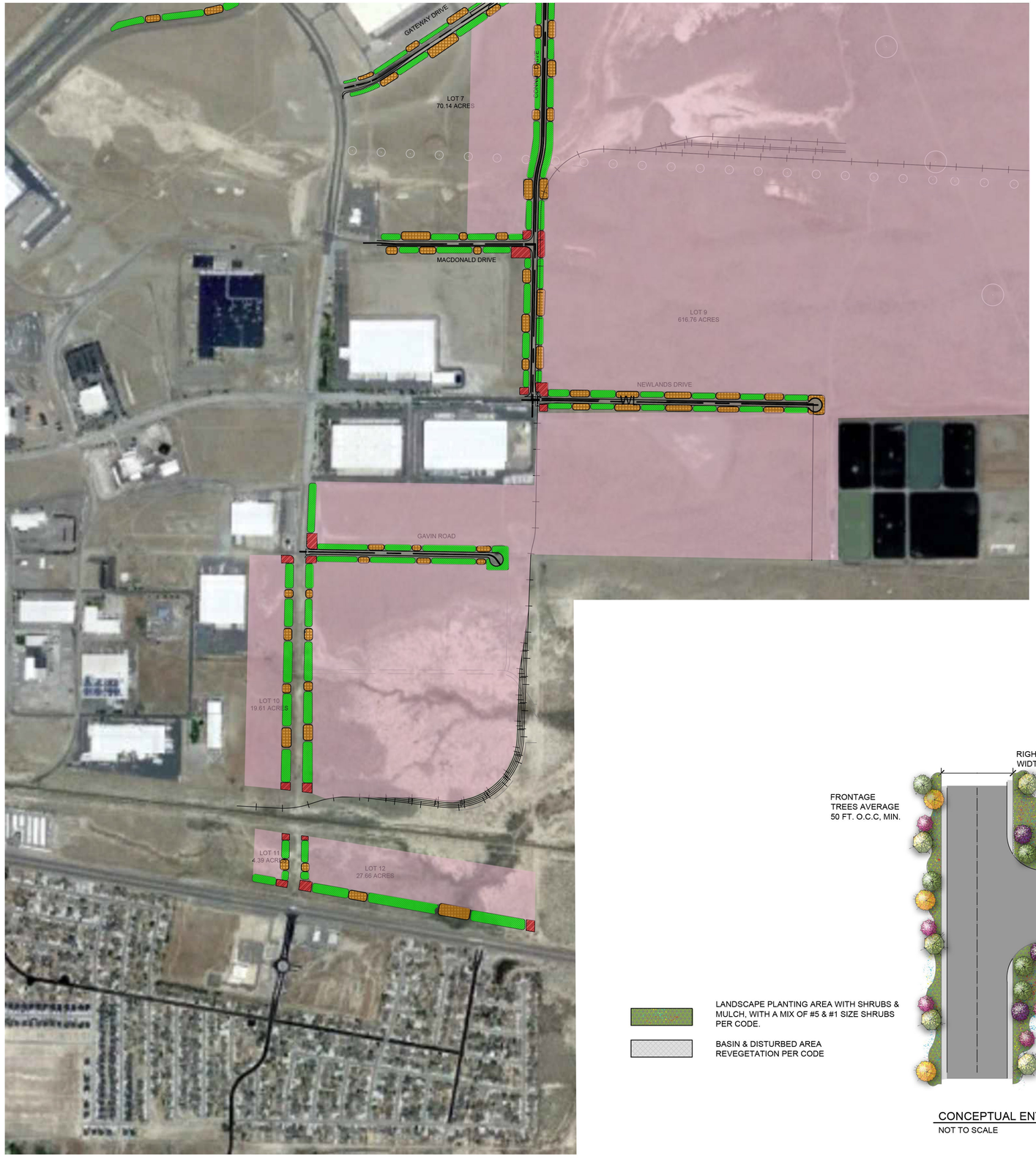
Sheet L4 of 5



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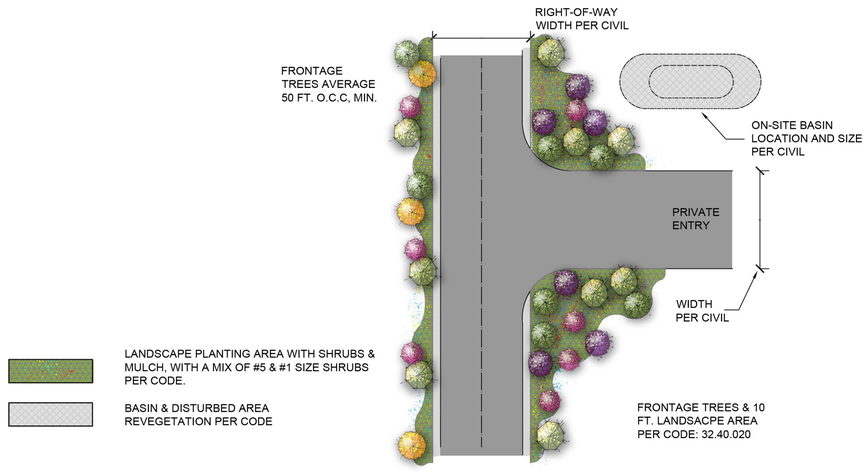
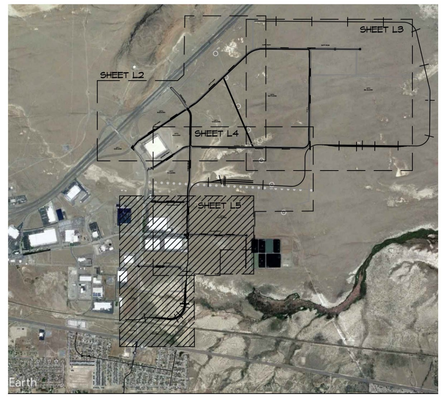


CONCEPTUAL ENTRY DETAIL

NOT TO SCALE



0' 300' 600' 900'

Scale in Feet

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REGISTERED LANDSCAPE ARCHITECT
MARC CHAPPELLE
622
Expires: 6/30/2024
8/15/2023
STATE OF NEVADA

Tentative Map
Mark IV Capital
Lyon Co. Nevada

M4 NEW FERNLEY TENTATIVE MAP

Fernley

No.	Revision Date

LA No: 886-501-07-22
Designed: AMH
Drawn: AMH
Checked: MAC
Date: 08/15/2023

Sheet L5 of 5

MARK IV CAPITAL

VICTORY LOGISTICS DISTRICT

INDUSTRIAL SUBDIVISION

Prepared by:

LUMOS & ASSOCIATES

EPS

cfa EST. 1981

HOLLAND&HART

HEADWAY TRANSPORTATION

FEBRUARY 15, 2022

RESUBMITTAL: SEPTEMBER 22, 2023

Table of Contents

Introduction 1
Project Location 1
Existing Conditions. 2
Request Description. 9
Tentative Map for an Industrial Subdivision. 9
Project Summary. 10
Phasing 12
Utilities 13
Drainage/Flood Zone 13
Traffic 17
Rail 17
Fernley Comprehensive Master Plan. 19
Request Findings. 23
Tentative Subdivision Map 23

List of Figures:

Figure 1 — Vicinity Map 1
Figure 2 — Comprehensive Master Plan Land Use 3
Figure 3 — Zoning. 4
Figure 4 — Existing Conditions – Site Photos 6
Figure 5 — Existing Conditions – Site Photos 7
Figure 6 — Existing Conditions – Site Photos 8
Figure 7 — Anticipated Land Use Exhibit 11
Figure 8 — Notice of Completion Map. 12
Figure 9 — Sewer Phasing 14
Figure 10- Water Phasing. 15
Figure 11 — Storm Phasing 16
Figure 12 – Industrial Rail Lead Phasing 18

List of Tables:

Table 1 — Victory Logistics Center Parcels 2
Table 2 — Land Use Summary. 5

Appendices:

City of Fernley Development Application
Letter of Authorization
Ownership Documentation
Tentative Subdivision Map Checklist
Non-Residential Project Data Sheet
Tax Receipts

Attachments:

Preliminary Engineering Plans and Reports (Lumos and Associates)
Preliminary Landscape Plans (LA Studio Nevada)
Preliminary Geotechnical Report (Lumos and Associates)
Preliminary Drainage Report (Lumos and Associates)
Water Report (Lumos and Associates)
Sewer Report Lumos and Associates)
Traffic Impact Analysis (Headway Transportation)
Fiscal Impact Analysis (EPS)
Preliminary Title Reports

Introduction

This application includes the following requests:

- **A tentative map for an Industrial Subdivision Map** covering 2,173.64± acres.

Project Location

Victory consists of 2,173.64± acres of the total 4,300 acres that make up Mark IV Capital's project known as Victory Logistics District. The Victory holdings are generally located south of Interstate 80, east of Nevada Pacific Pkwy, and north of US Highway 50. Approximately 10.9± acres of these land holdings are located on the south side of the 80 Fwy on the west side of Nevada Pacific Pkwy at the north/east bound exit. Figure 1 (below) depicts the project location.

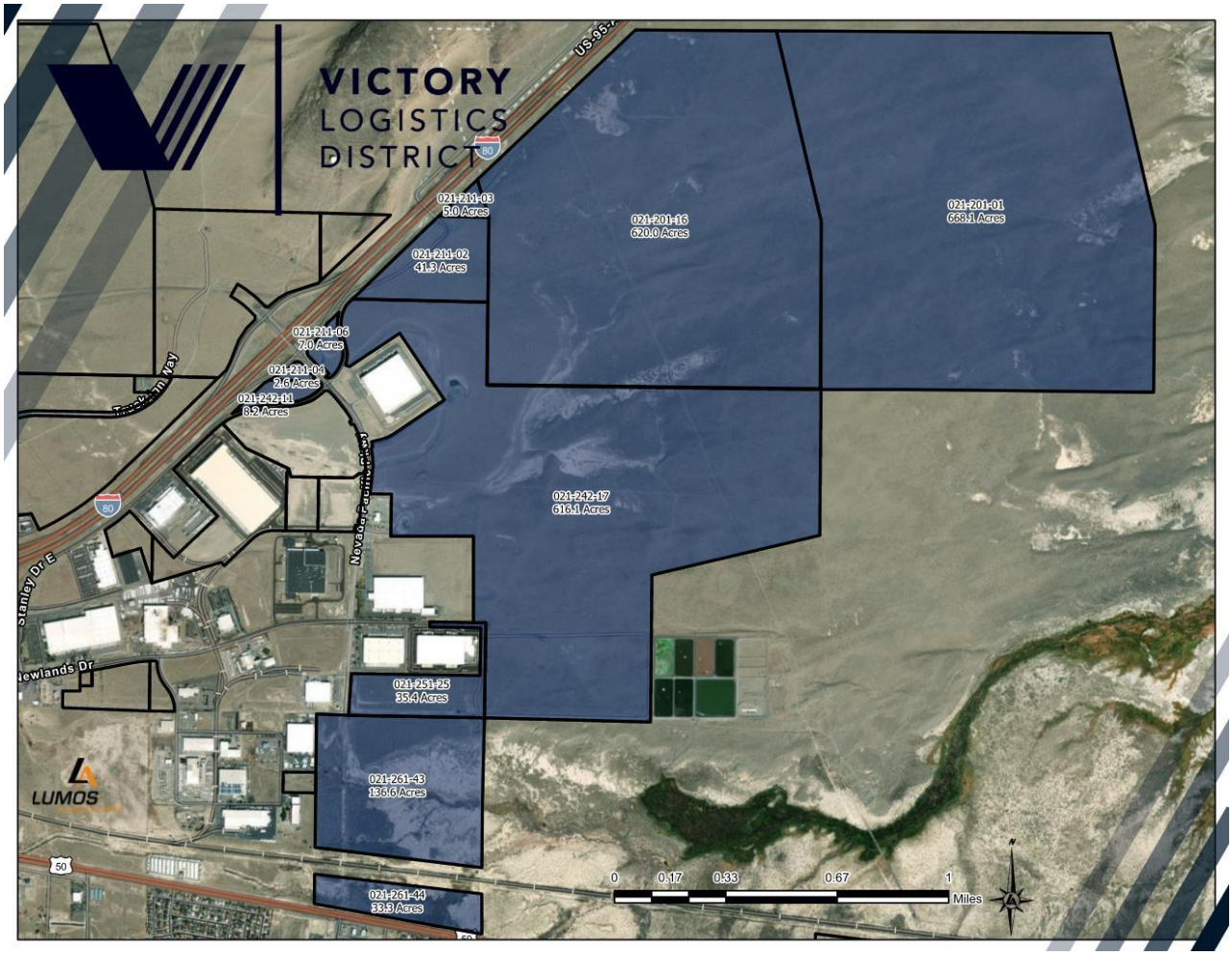


Figure 1 – Vicinity Map

The subject site consists of 11 parcels totaling 2,173.46± acres. Table 1 (below) provides a summary of the parcels included with the Industrial Subdivision request.

Table 1 – Victory Logistics District Parcels

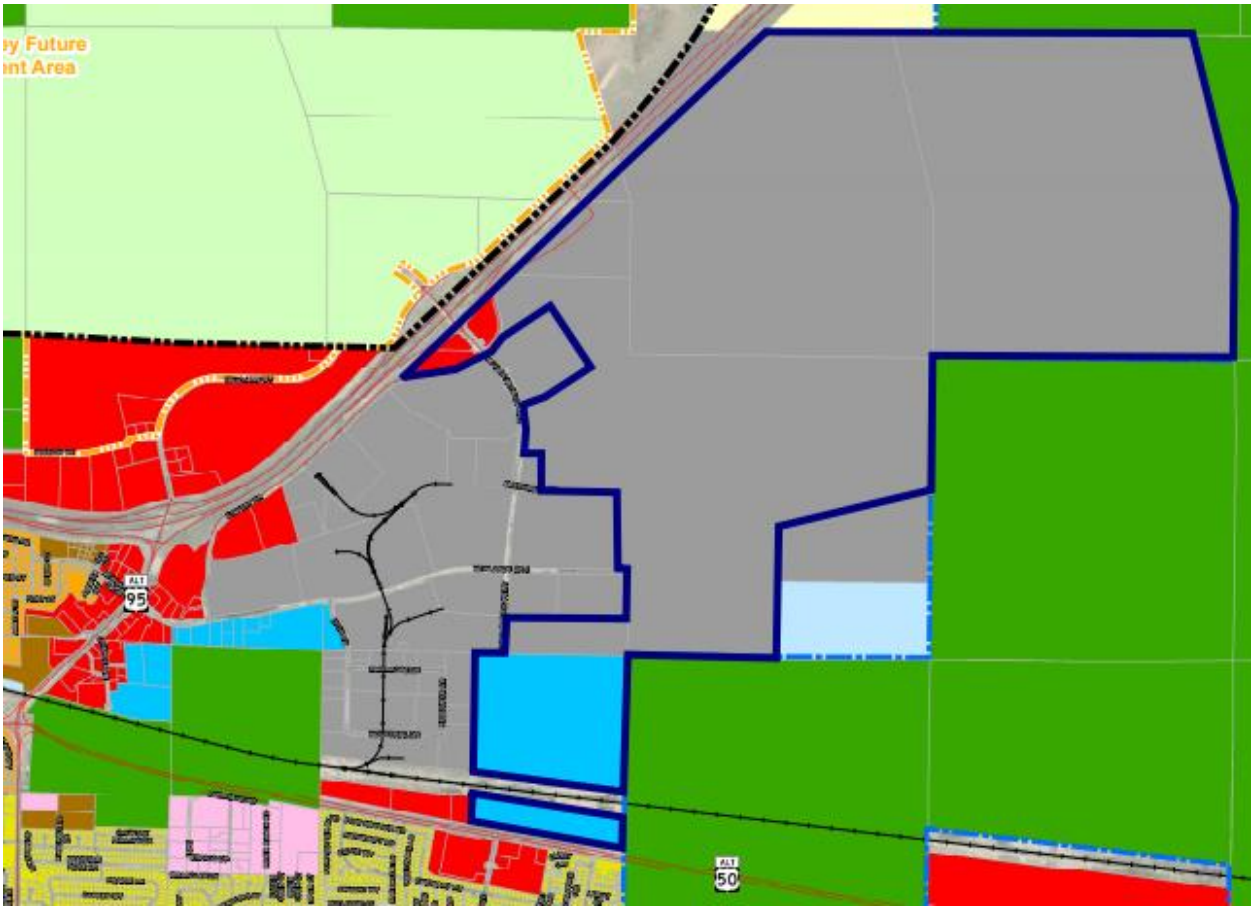
Assessor's Parcel Number (APN)	Area
021-201-01	668.12± acres
021-201-16	620± acres
021-211-02	41.27± acres
021-211-03	5.0± acres
021-211-04	2.57± acres
021-211-06	7.03± acres
021-242-11	8.19± acres
021-242-17	616.12± acres
021-251-25	35.41± acres
021-261-43	136.64± acres
021-261-44	33.29± acres
TOTAL	**2,173.64± acres**

Existing Conditions

The property included within Victory is currently vacant. The entire 2,173.64 acres of the project site is within the City of Fernley. Most of the site is designated as Industrial in the Fernley Comprehensive Master Plan, except for some Commercial at the north end of the site, near the Nevada Pacific Parkway interchange with I-80 and Mixed Employment at the southern end of the site, closer to US Hwy 50.

Zoning patterns generally mimic that of the Master Plan with primarily Industrial zoning. There is General Commercial zoning located at the Nevada Pacific Parkway/Interstate 80 interchange, north of Duffy Road.

Figures 2 and 3 (following pages) depict the existing Master Plan and zoning designations for Victory. Additionally, Table 2 (page 5) provides an overall breakdown of existing land use for each parcel included within the project.



Project boundary is outlined in blue.

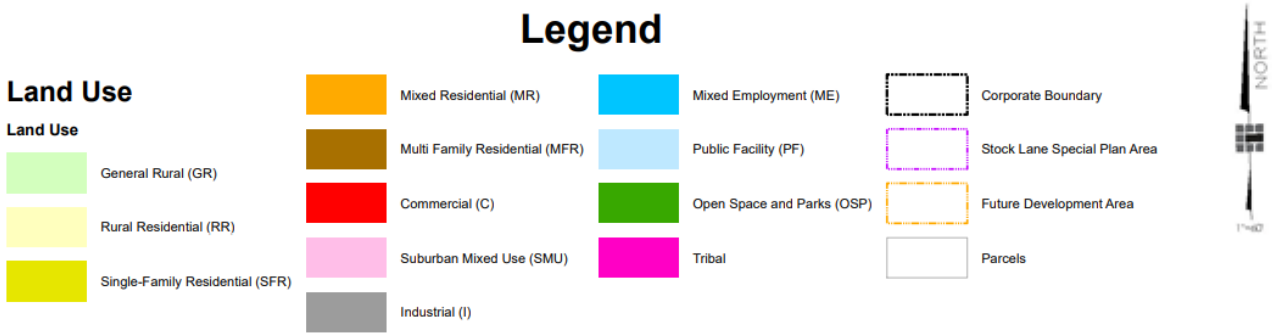
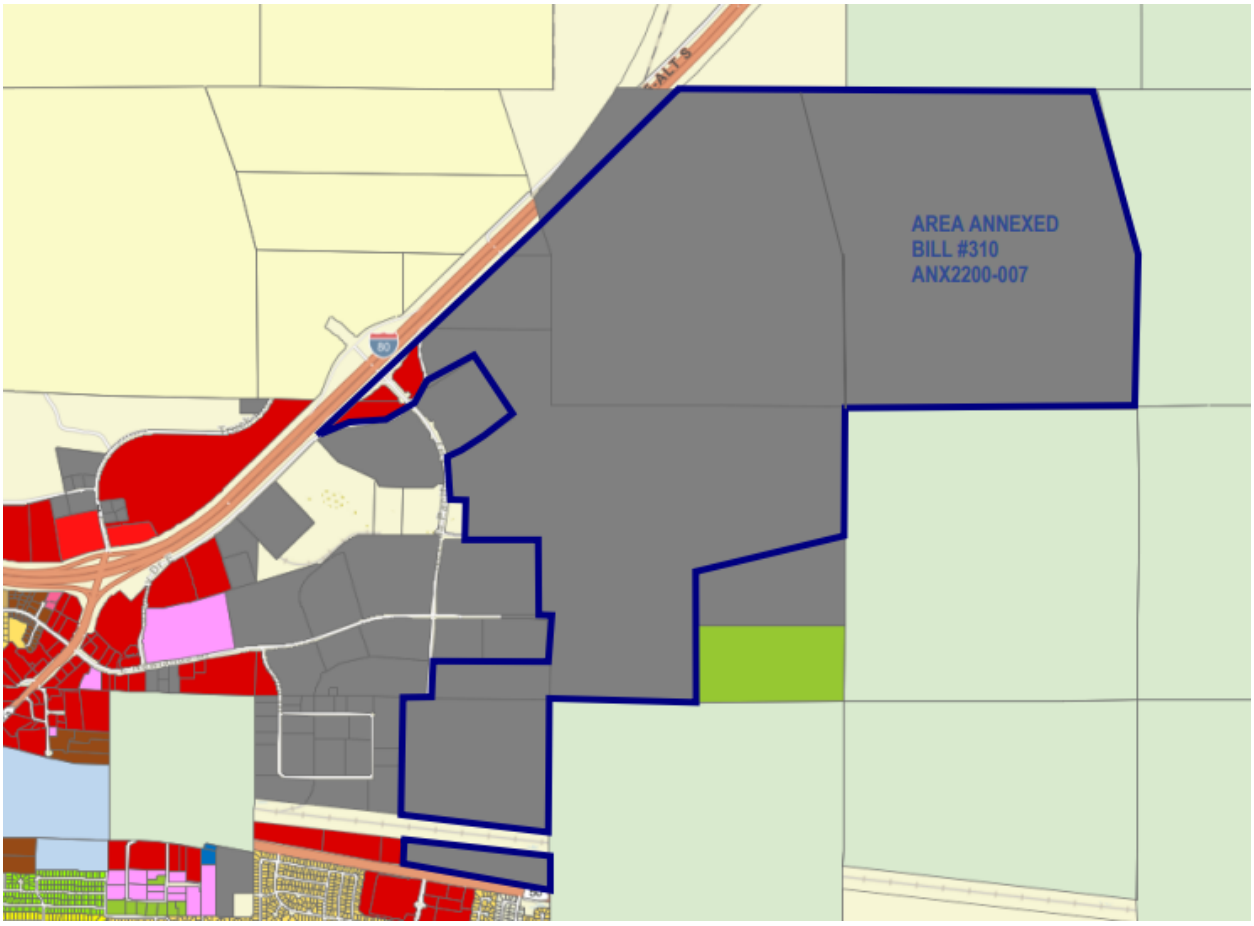


Figure 2 – Comprehensive Master Plan Land Use



Project boundary is outlined in blue.

Legend

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

NORTH

Figure 3 - Zoning

Table 2 –Land Use Summary

Assessor's Parcel Number (APN)	Area	Master Plan Designation	Zoning
021-201-01	668.12± acres	Industrial	I
021-201-16	620± acres	Industrial	I
021-211-02	41.27± acres	Commercial[2]	I
021-211-03	5± acres	Industrial	I
021-211-04	2.57± acres	Commercial	C2
021-211-06	7.03± acres	Commercial	C2
021-242-11	8.19± acres	Commercial	C2
021-242-17	616.12± acres	Industrial	I
021-251-25	35.41± acres	Industrial	I
021-261-43	136.64± acres	Mixed Employment	I
021-261-44	33.29± acres	Mixed Employment	I
TOTAL	**2,173.64± acres**		

1 – Translates to Industrial upon annexation

2 – Proposed Industrial (future application)

As noted, Victory is currently vacant land and is accessed via Nevada Pacific Parkway, East Newlands Drive, Duffy Road, and US Highway 50. Adjoining parcels are generally developed with industrial use types including warehousing and distribution, manufacturing, etc. Additionally, Southwest Gas operates a facility adjacent to the central portion of the project area. A Union Pacific rail line is located at the southern end of the site and rail infrastructure will be incorporated into the project (as described later in this narrative).

Figures 4 through 6 (following pages) depict the existing onsite conditions.

Figure 4 – Existing Conditions

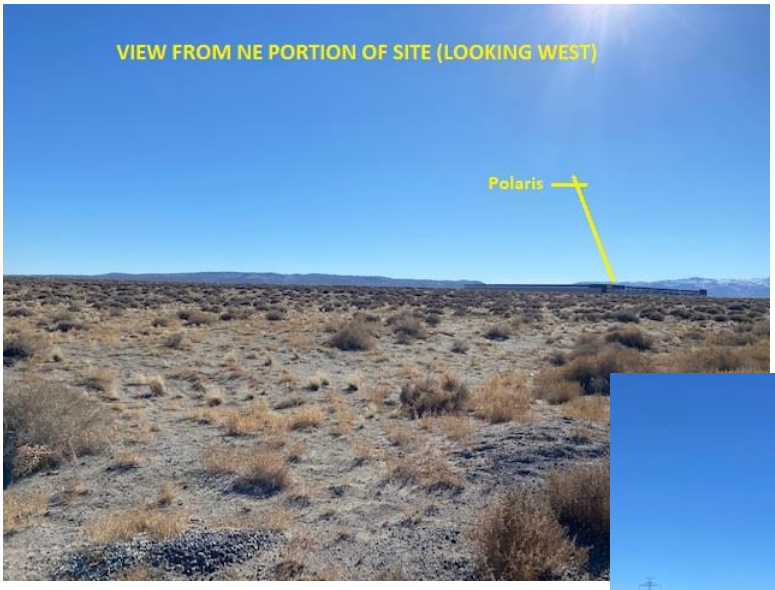


Figure 5 – Existing Conditions

Figure 6 – Existing Conditions

Request Description

The request of this application is described below:

- **A Tentative Map for an Industrial Subdivision**

The request for a Tentative Subdivision Map has been made to allow for the creation of an Industrial Subdivision that will include all the parcels previously identified and totaling 2,173.64+/- Acres. A Development Agreement has been prepared by Holland and Hart and is currently being reviewed and edited between the applicant's attorney and City of Fernley legal staff. Additionally, a Planned Unit Development (PUD) Handbook has been submitted and is in final edits and discussion with the applicant and city staff. These two document applications are running concurrently through City of Fernley review. These accompanying documents, along with applicable sections of the Fernley Municipal Code, NRS and CC&R's to be developed for the project, will guide development of Victory over the next 20+ years.

Unlike a traditional tentative map, the Industrial Subdivision requested with this application is not creating any new parcels at this time. Instead, parcels will be created as new user sites' building specifications and property size demands are identified and established. Individual or groupings of parcels for the project will be final mapped through a Record of Survey (as allowed under NRS 278.235) or other acceptable and advantageous formal mapping process allowed per NRS. The future final mapping must comply with the provisions, requirements, and processing procedures of the defined NRS and to be adopted in the Development Agreement and PUD Handbook.

The Development Agreement approach is advantageous to both the master developer (Mark IV Capital Properties, Inc.) and the City of Fernley. From the developer's perspective, increased flexibility in lotting and parcel configuration affords the ability to quickly adapt to new tenant needs and demands. Additionally, provisions of the Development Agreement and PUD Handbook will help to streamline the development review process to provide quicker parcel creation by the elimination or minimization of further discretionary, as prudent.

From the City's perspective, a Development Agreement and PUD Handbook are beneficial because they identify and define the anticipated level of improvements to be made by the developer for all phases of the project. This includes improvements such as roadway/traffic enhancements, sewer and storm drain systems, etc. The Development Agreement and PUD Handbook define critical project issues such as phasing, backbone infrastructure, financing of improvements, required development standards, etc.

The Development Agreement and PUD Handbook memorialize allowed uses, densities/intensities, public dedications to be made by the master developer. Covenants, conditions, and restrictions (CC&R's) will also be in place to guide the established rules set forth in the Development Agreement and PUD document.

The project Development Agreement and PUD Handbook include a variety of development topics, maps and exhibits that define the long-term development plan. This includes a notice of completion map with

projected timing, identification of development zones, sewer phasing, water phasing, storm drain/stormwater improvement phasing, and backbone roadway infrastructure phasing. The exhibits covering phasing of infrastructure are included as attachments to this application.

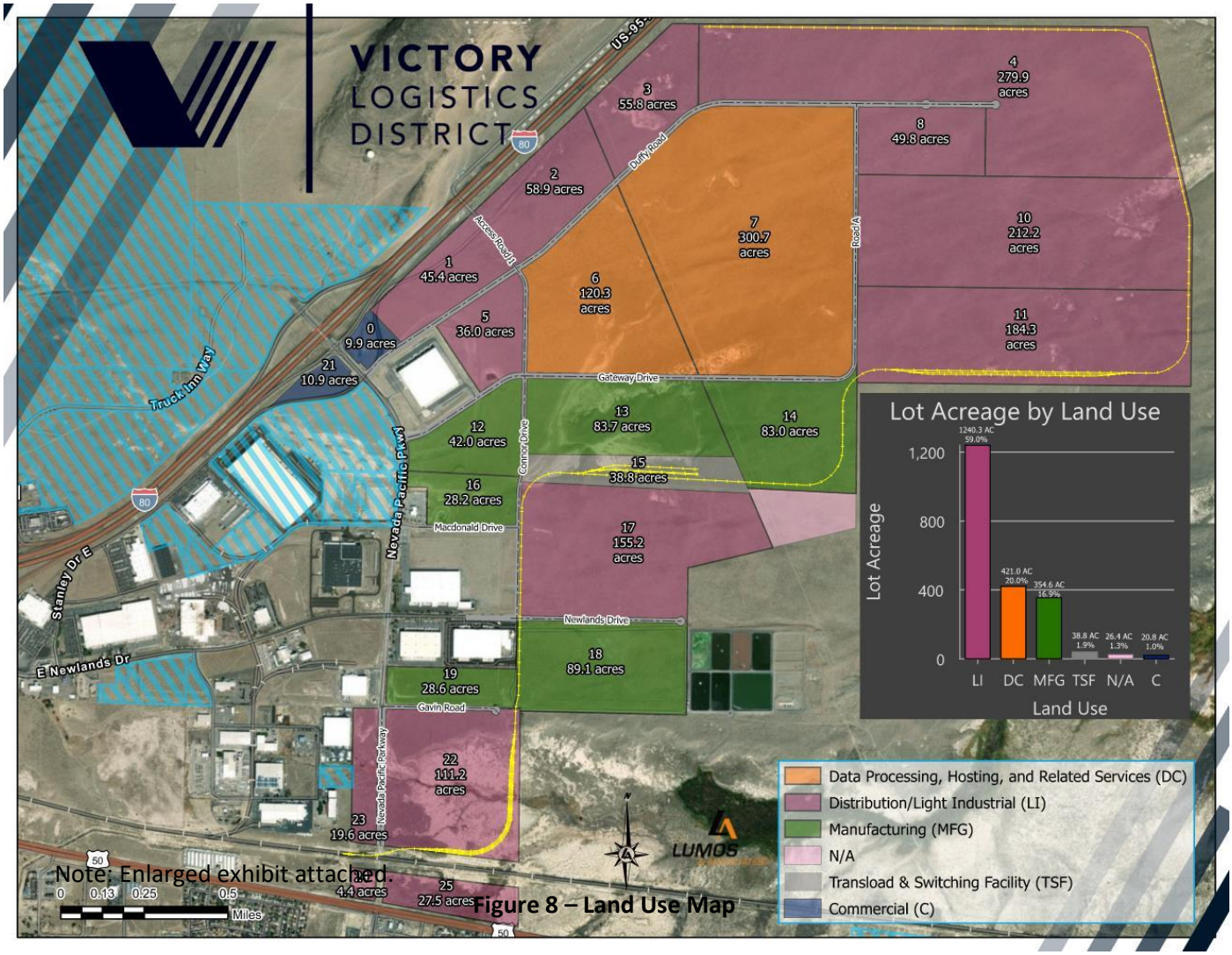
In summary, the Development Agreement and PUD document will guide the future growth, development, and uses within Victory. While the agreement and handbook will help to streamline future permitting and parceling within the project, it does not circumvent the requirements of the Fernley Municipal Code in terms of required improvements, etc. In fact, it more clearly defines the roles and responsibilities of both the developer and the City of Fernley based on detailed engineering, planning, and economic analysis.

Project Summary

As noted, the Tentative Map request included with this application is somewhat unique in that no new parcels are being proposed at this time. The preliminary mapping provided with this application anticipates that 31 future parcels may be necessary and would comprise the future buildout of the project, but the final and ultimate number of parcels is still to be determined. The use of the industrial subdivision process will provide certain flexibilities to the timing, location, size and shape of the future parcels within the development to meet market demands and provide for appropriate timing and phasing of roadways and infrastructure to meet the actual future demands. Future subdivisions and division of property within Victory will occur based on the provisions and requirements of the Development Agreement and PUD Handbook. The Tentative Map process is simply the regulatory mechanism needed for the establishment of the Development Agreement, PUD Handbook, and Industrial Subdivision.

The project tentative mapping provided with this application identifies the existing parcels, preliminary (envisioned) site plans, street sections, preliminary grading, preliminary utilities, preliminary proposed hydrologic conditions, and preliminary landscape plans.

With the Industrial Subdivision, a total of 5 predominant land uses types have been defined within Victory. The PUD Handbook defines all the various land uses that will be allowed within the project Industrial (V-I) land use and Commercial (V-C) land use but the 5 noted and specifically anticipated uses identified in Figure 8, below are expected to make up the lion's share of the project. It should be noted that use types may deviate from this anticipated arrangement as this anticipated land use arrangement was established to help estimate the various phased improvements that are foreseen as necessary to serve the project (as described in the following sections).



Note: Enlarged exhibit attached.

Figure 8 – Land Use Map

Figure 7 – Anticipated Land Use Exhibit

- **Phasing**

While the size and tenant interest in Victory makes it difficult to predict the future phasing of the project, the Phasing Map is the current road map to the buildout of the project and is memorialized within the PUD Handbook. Full buildout is expected to occur in the next 20± years, with infrastructure and improvements to be phased as necessary to support tenant demand/buildout. The intent of the Development Agreement for the subdivision will be to define infrastructure triggers that will adequately serve each tenant upon buildout. Figure 9 (below) depicts the Notice of Completion Map included within the Development Agreement. The map visually depicts the projected phasing of the overall project, but actual phasing will be based on future land use demands and market conditions.

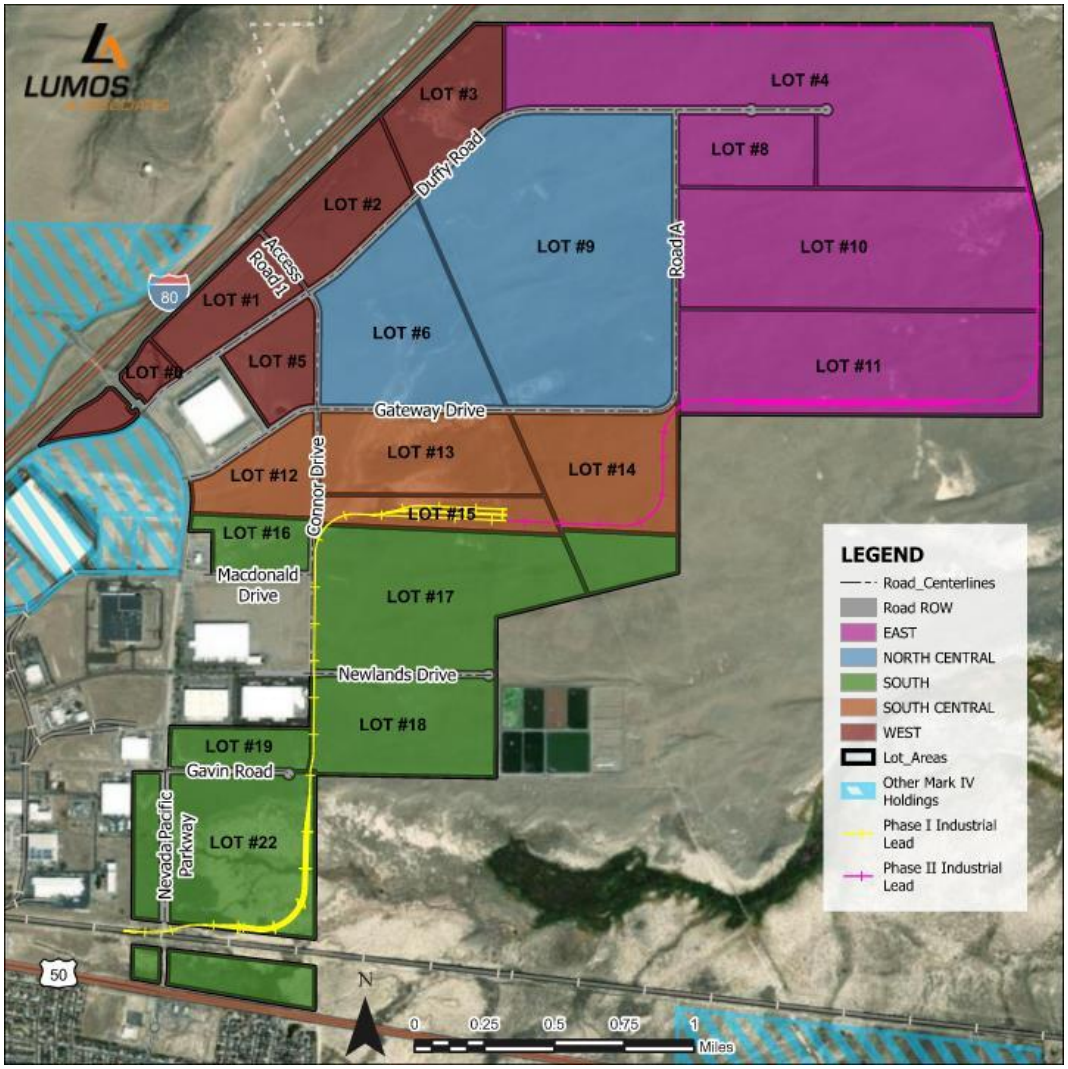


Figure 8 – Notice of Completion Map

- **Utilities**

Major utility infrastructure is anticipated with the development of Victory. A series of conditions have been set in place that trigger different phases of infrastructure for the sanitary sewer, domestic water, and storm drain infrastructure. As addressed in the PUD Handbook, utilities will be sized and installed as buildout occurs to serve final full buildout conditions. The Preliminary Sanitary Sewer Report, Preliminary Water Report, and Preliminary Hydrology Report (all provided with this application) go into more expansive detail about the phased build-out conditions for each utility. Dry utilities will be planned and phased as necessary as the various lots are developed.

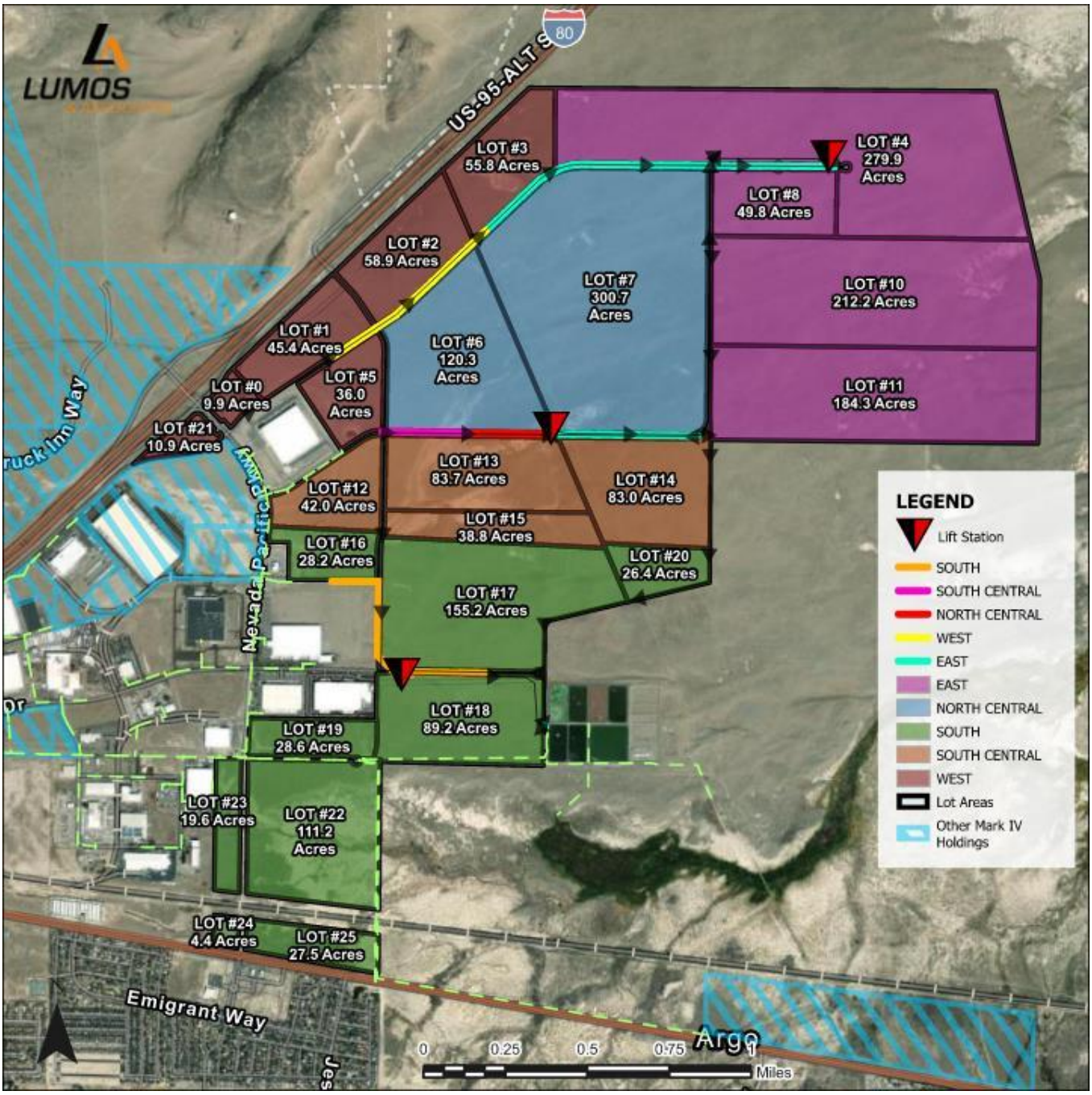
Figures 9 through 11 (following pages) provide a visual depiction of the utility phasing within Victory.

- **Drainage/Flood Zone**

The majority of the Industrial Subdivision is located within the FEMA designated Un-Shaded X Flood Hazard Zone. The southernmost 170 acres of Victory are bisected by a stretch of land which constitutes a Zone A Flood Hazard Zone. A conditional letter of map revision (CLOMR) has been approved by FEMA as Case #21-09-1471R. After undertaking the mitigation measures prescribed by the approved CLOMR, this portion of the Victory will be removed from the flood zone.

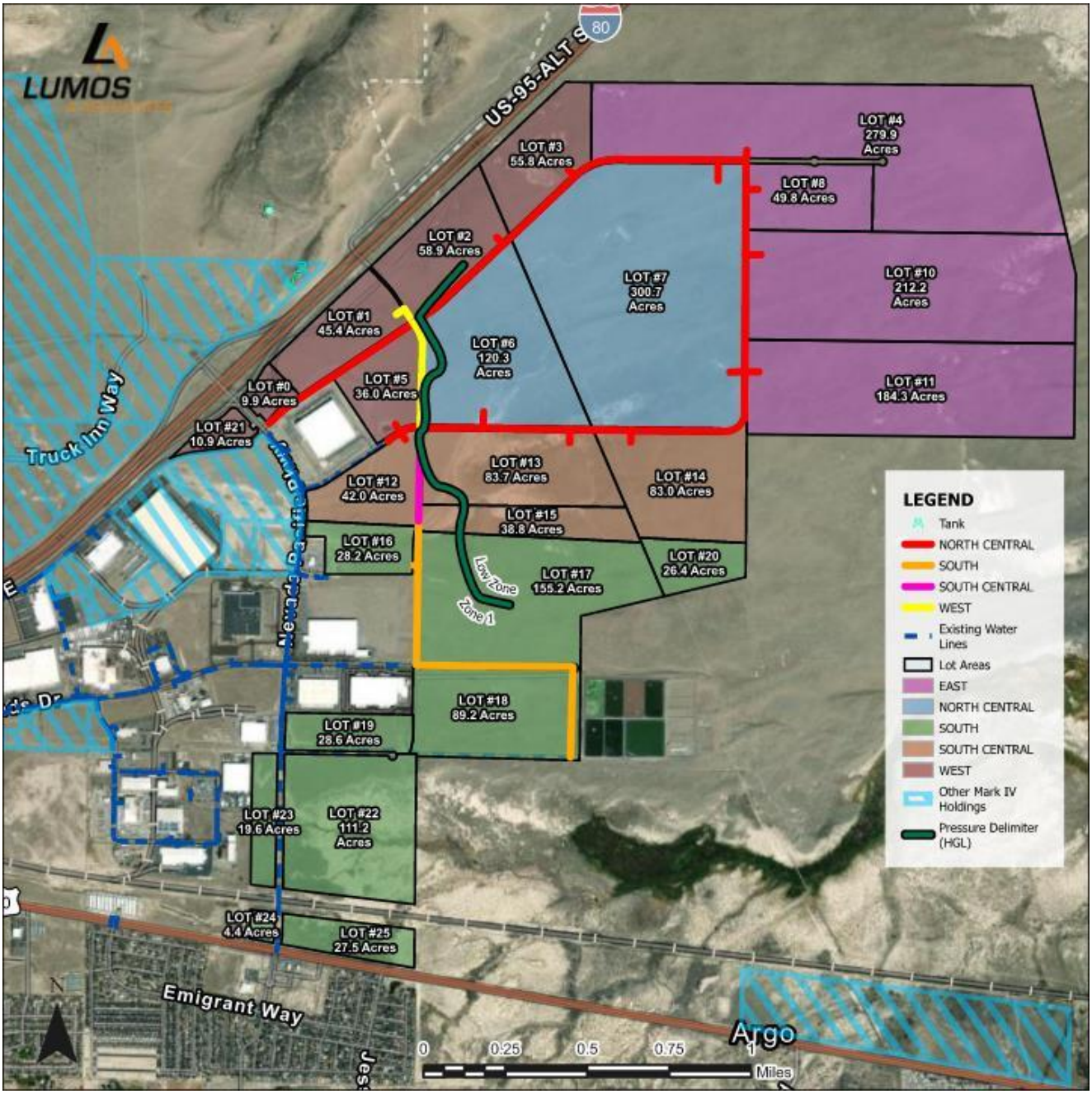
The Industrial Subdivision has been designed with local and major storm drain infrastructure. The local infrastructure is designed to capture runoff in the streets and portions of the lots to prevent localized road flooding. The major infrastructure is designed to mitigate regional flooding and convey offsite flows. Proposed drainage has been directed to one of four regional detention/retention facilities. Each facility has been designed to detain or retain the increase in runoff for the 25-Year 24-Hour storm event. Basin G, has been designed to retain the entire 100-Year 24-Hour storm event. All development will have the option of detaining/retaining onsite or contributing to the regional facilities.

A preliminary drainage study/report, complete with through stormwater analysis (prepared by Lumos and Associates) is included as an attachment to this report.



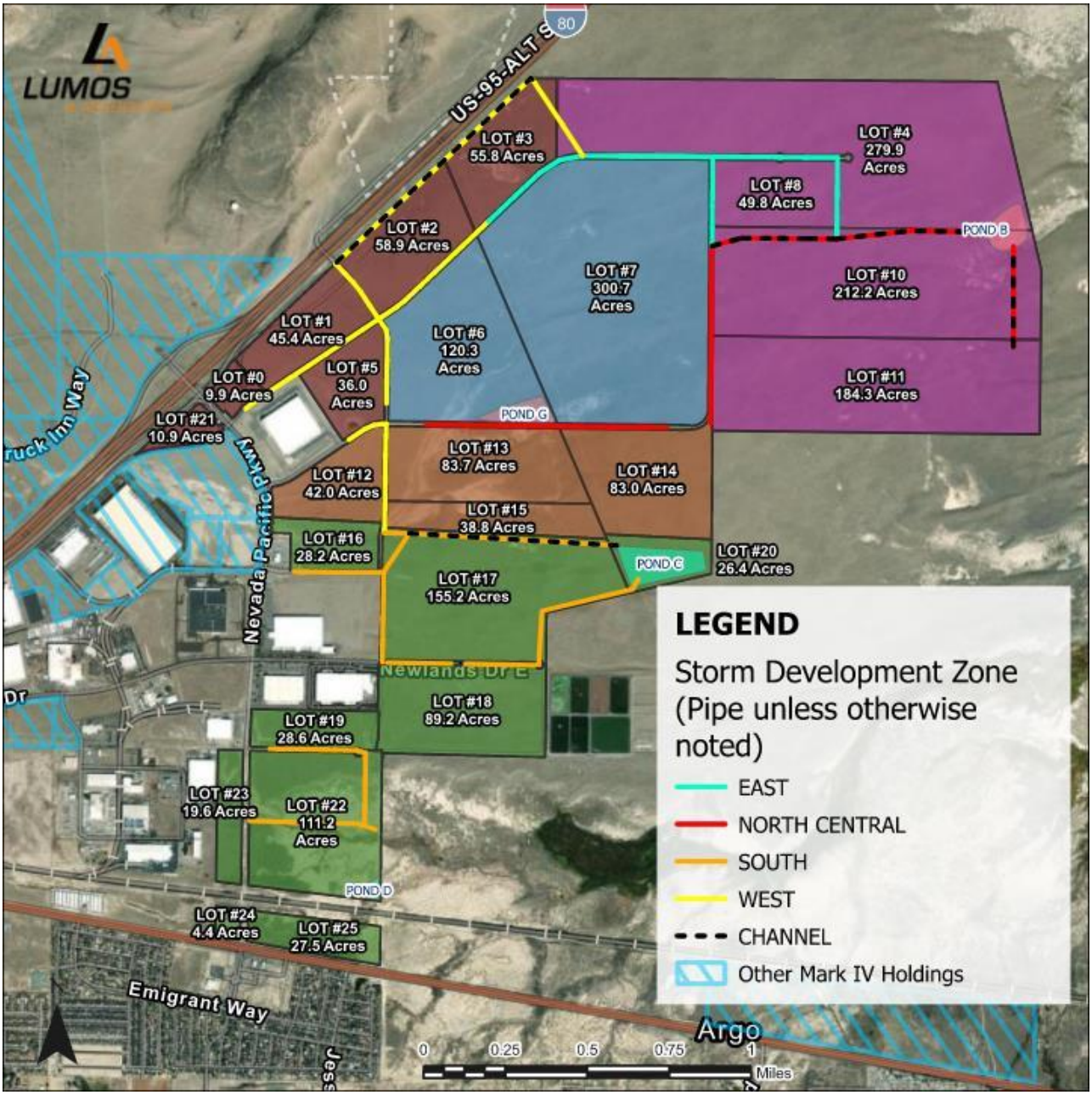
Note: Enlarged exhibit attached.

Figure 9 – Sewer Phasing



Note: Enlarged exhibit attached.

Figure 10 – Water Phasing



Note: Enlarged exhibit attached.

Figure 11 – Storm Phasing

- **Traffic**

Victory is proposing three new right-of-way (ROW) sections; a 62-foot ROW (local street/access road), a 62-foot ROW (collector), and an 84-foot ROW (minor arterial). Nevada Pacific Parkway will be a major arterial ROW and is already partially defined with existing development accessing and fronting this roadway. This major arterial will possess a 110-foot ROW. Each ROW section will have sufficient travel lanes for the anticipated traffic, including a middle turning lane to provide turning movements into tenant facilities. Direct access to Interstate 80 is provided via Nevada Pacific Parkway. As tenants build out the site, phasing of roadways will occur to allow for site accessibility and fire access.

Headway Transportation has completed a highly detailed traffic impact analysis that analyzes the cumulative impacts that Victory will have on the local and regional roadway network. At full buildout, Victory is anticipated to generate 46,347 average daily trips (ADT) with 3,654 am peak and 4,152 pm peak hour trips. While trip generation is significant, the Headway Transportation report (attached) defines improvements that must occur to maintain acceptable levels of service (LOS) on area roadways.

The attached traffic impact report summarizes the anticipated transportation improvements in a table format along with the traffic thresholds that will trigger the various upgrades, etc. These identified improvements and triggers are memorialized in the PUD Handbook, providing the City of Fernley with assurances as to how and when transportation improvements will occur during buildout of the Industrial Subdivision.

- **Rail**

Mark IV, the master developer, is proposing an industrial lead track within the park that will connect to the Union Pacific Railroad (UP) main line. This rail infrastructure, as shown in the attached site plan, will switch off the existing UP mainline on the south end of the project within the UP Right-of-Way. It will then continue northeast and parallel the UP track until it turns north along the eastern border with the Bureau of Reclamation (BOR) land and continue between the City's existing sewer lift station and the current location of Well 9. Plans to relocate Well 9 to a location 300 feet to the northeast are underway, and Mark IV has already completed the required test well in its efforts to relocate Well 9. The industrial lead track will then follow along the east side of the planned course of Connor Drive until it turns and follows along the north side of the Cyrq Energy 75-foot-wide transmission power easement to a switching and possible future transload facility location. Future phases of the industrial lead track will continue the lead to Victory's eastern border, where it is planned to turn north again and follow the eastern border of Victory along BOR land.

Proposed rail standards are included in the Tentative Map plans and the PUD Handbook that include typical design standards for the industrial lead, as well as depths of utilities and necessary cover for any crossings per UP guidelines. Mark IV will utilize UP railroad standards for the rail infrastructure being planned for Victory.

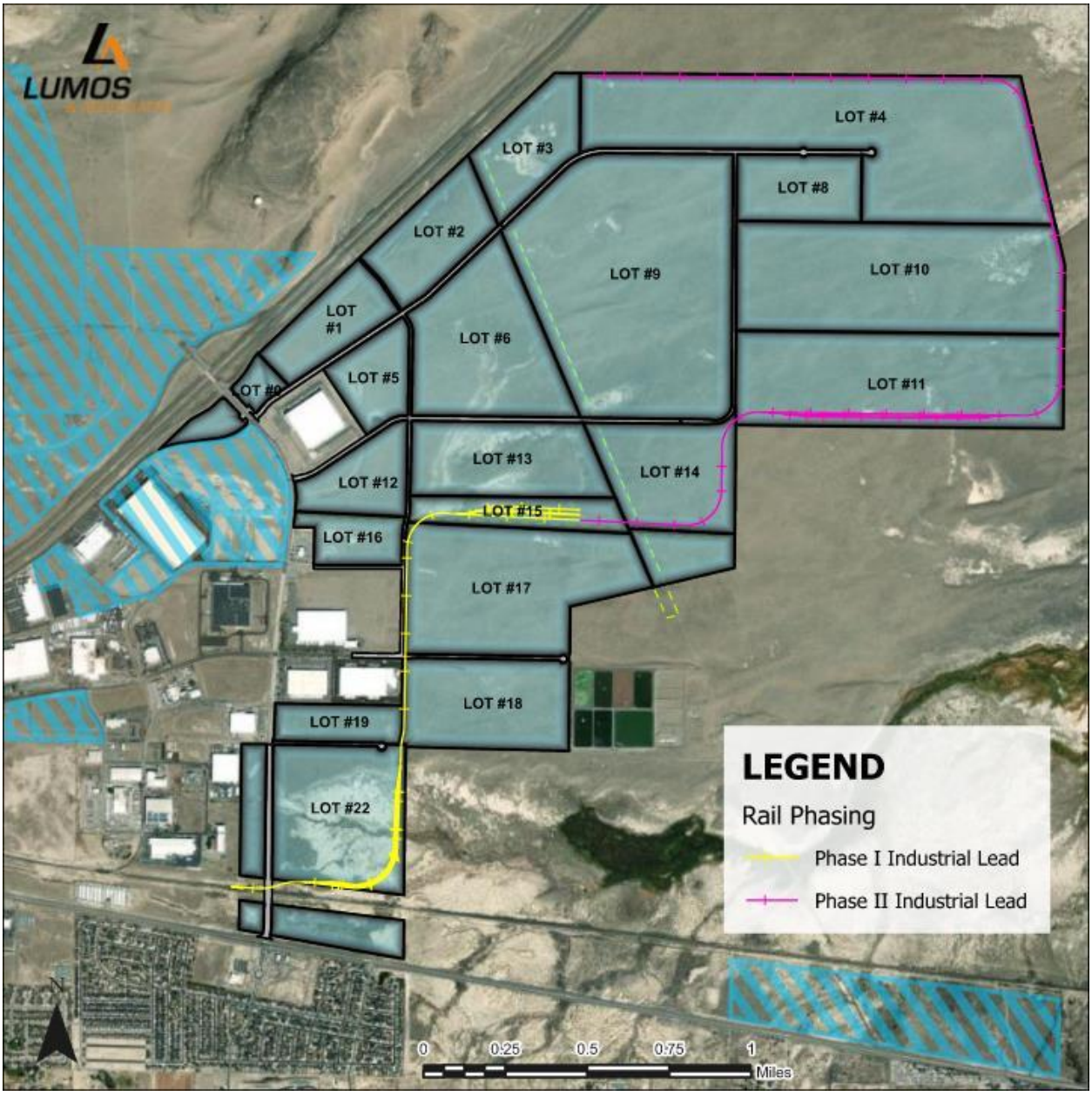


Figure 12 – Industrial Rail Lead Phasing

Fernley Comprehensive Master Plan

The City of Fernley Comprehensive Master Plan includes numerous goals and policies related to land use, transportation, infrastructure, and services, etc. Victory's master plan will be undertaken in a manner that is guided by and as consistent as possible in achieving the City's strategic plan and overall goals so as to best deliver the City's long-term vision for well managed growth over the next 20 years of build out within Victory.

Victory is consistent with or supports the following Master Plan policies. As the project develops, even more policies will be implemented with site-specific projects/uses.

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

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

LU.1.1.2 Encourage development of vacant or underutilized lands within the community core where adequate infrastructure and facilities currently exists.

LU.1.1.3 Require new development to provide certified, stamped studies demonstrating the impact proposed development will have on existing infrastructure and to provide improvements and/or funding in lieu of improvements in proportion to the impacts of the proposed projects on the city's roadway, sewer and water systems.

LU.1.2 Encourage new development to be in accordance with the Comprehensive Master Plan land use category, and other land use controls to accomplish community principles.

LU.1.2.1 Consistently monitor development applications that intend to utilize the underlying zoning. Modify the Fernley Development Code as necessary to ensure compatible development that reflects the community goals envisioned in the Comprehensive Master Plan.

LU.1.3 Provide a balanced distribution of employment and population.

LU.1.3.1 Encourage land uses and development, which maintains a balance of population, housing, and employment.

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

LU.1.4.2 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.

LU.1.4.4 Prohibit piecemeal parcelization through the parcel maps to subvert the subdivision map process.

LU.1.4.6 Review all projects in relation to their geographic location, impacts to adjacent communities, fiscal impact, and mitigation measures to protect natural and cultural resources. Apply specific conditions of approval tailored for each development proposal.

LU.1.4.7 Protect viable industrial areas from encroachment by potentially incompatible land uses or conversion to alternate uses.

LU.1.6 Create a growth pattern that assures flexible, feasible and efficient projects.

LU.1.6.1 Support for developmental approval of projects that provide an appropriate balance of population.

LU.1.6.2 The land use designations include minimum service standards that shall apply to proposed developments and land use changes.

LU.1.12 It is the intent of the City of Fernley to provide timely, orderly, and efficient arrangement of adequate public facilities and infrastructure that support existing and planned land use patterns and densities.

LU.1.12.1 Subdivision or intensification of land without adequate public facilities available to serve the new development as it occurs shall not be allowed.

LU.1.12.2 Any land use entitlement applications for subdivision or intensification of land shall also be required to submit a fiscal impact analysis to the approval of the City Manager or their designee.

LU.1.12.4 The City, landowner(s), and/or future developer(s) shall develop Area Plans for the Future Development Areas to efficiently plan for adequate public facilities and infrastructure to support future development of these areas.

T.1.1 Require that roadway facilities be maintained and constructed as needed to ensure high quality and safe travel on major streets and at major intersections.

T.1.1.1 The minimum Level of Service on all city-maintained roadways shall be LOS D. The city will work with representatives from NDOT to ensure timely improvements are planned when NDOT roadways are forecast to fall below LOS D.

T1.1.4 Develop regulations regarding setbacks, signage and right-of-way dedication, and other considerations which preserve and increase roadway capacity and safety.

T.1.1.5 Ensure development of the roadways planned in the Streets and Highways Plan of the Comprehensive Master Plan occurs in a timely manner and with the financial assistance from the

development community.

T.1.1.6 Require all new development to be consistent with the access right-of-way dedication and improvement standards as specified in the Public Works Design Manual and pursuant to the functional classification as defined in this chapter.

T.1.3 Implement Street design and access standards to provide for safe and efficient movement of goods and people.

T.1.3.4 Require proposed new development that intends to connect with an NDOT roadway to incorporate the NDOT Access Management System and Standards into the project design. These standards regulate access onto the roadway network in order to protect health, safety and welfare of the public, maintain the rights-of-way, and to preserve the functional classification level of the roadway network while meeting the needs of the motoring public. The access management standards address the location, spacing and frequency of access points on the roadway network.

T.1.4 Plan for a transportation system that combines a mix of transportation modes and system management techniques while minimizing the impacts upon the environment or upon adjacent development.

T.1.4.5 Work with Southern Pacific Railroad to plan new safe and effective lines and spurs through the city.

T.1.5 The City of Fernley will work with the Nevada Department of Transportation to obtain right-of-way along US 50, US 95A and I-80 for purposes of implementing a frontage road system to minimize direct access onto these state-owned roadways.

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

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

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

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

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

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

PSF.3.1 Develop a regional stormwater drainage system.

PSF.3.2 Ensure major utility lines, such as electric transmission or high pressure gas, are compatible with existing and future development.

PSF.3.2.1 Require that any new major utility lines be placed within existing transmission line corridors or in new corridors defined through a public planning process.

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

PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.

PSF.3.3.2 Consider the financial impacts in all growth management decisions.

PSF.3.11 Require large-scale developments to be within adequate fire service areas.

PSF.3.11.2 All development in the City (except for residential densities less than one residence per acre) shall be within a 4-7-minute response time of an existing or planned fire station.

PSF.3.11.3 New Development shall identify and fund facilities and infrastructure necessary to provide adequate fire protection.

PSF.3.11.5 Require water distribution systems to meet the Lyon County Fire District standards for all future development.

Request Findings

The City of Fernley Municipal Code includes findings that must be made by the Planning Commission and/or City Council to approve Tentative Map request. These findings are listed below and addressed in **bold face** type.

- **Tentative Subdivision Map**

Recommendations and decisions on tentative maps shall be based on consideration of all of the following criteria:

1. 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;

As detailed throughout the reports and plans submitted with this application, Victory complies with all applicable regulations related to health laws, water supply, sewerage, etc. Furthermore, the proposed Development Agreement provides a mechanism to ensure that compliance is maintained, and new facilities are brought online (as needed) throughout the course of development of the project.

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

As detailed in the attached engineering reports, plans, and Development Agreement, a comprehensive plan for water service, including phased improvements is included with Victory.

3. Availability and accessibility of utilities;

Comprehensive plans for infrastructure and utilities are included with the attached plans and reports. Additionally, the proposed Development Agreement establishes a mechanism to ensure that adequate facilities are provided throughout buildout of the project.

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

The project is in an area where City services such as police and fire are already occurring. Transportation improvements will occur as the project develops and are called out in the attached traffic report. The Development Agreement provides the long-term assurances as to how these improvements will be implemented and paid for.

5. Consistency with the zoning district regulations;

The project is in direct compliance with the underlying I, ME and GC zoning.

6. Conformity with the master streets and highways plan;

The proposed uses and intensities are consistent with the master streets and highways plan. The Headway Transportation study identifies improvements that will be required as the project develops over time. Triggers for these improvements and funding mechanisms will be memorialized in the Development Agreement.

7. Effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision;

The Headway Transportation study (attached) identifies upgrades and improvements to the transportation network that will be required to maintain acceptable levels of service as the project builds-out. The Development Agreement provides the City of Fernley that these improvements will occur, as necessary, at the appropriate times, ensuring full compliance with City policies.

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

The proposed land use is appropriate given the physical characteristics of the site. As noted, a CLOMR has been submitted to FEMA for review and approval. This will allow for that small stretch of land within Victory that is within a flood zone to be removed based on the planned infrastructure and drainage improvements.

9. Recommendations and comments of review bodies;

Recommendations and comments from reviewing agencies, boards, and citizens can be incorporated into conditions placed on this Tentative Map request and implemented with future development.

10. Conformity to the master sewer and water utility plan; and

With the improvements proposed and detailed in the attached engineering studies, Victory will comply with the master sewer and water utility plans. This is further reassured with the adoption of the Development Agreement.

11. Compliance with this Code and all other applicable regulations.

As presented and memorialized in the associated Development Agreement and PUD Handbook, Victory will comply with the standards and requirements set forth in those two documents as well as all applicable City codes and regulations.

APPENDICES

Planning Department
595 Silver Lace Blvd, Fernley, NV 89408
Development Application

APPLICATIONS, PLANS, AND/OR SUPPORTING DOCUMENTATION THAT ARE INCOMPLETE OR ILLEGIBLE WILL NOT BE ACCEPTED.
Please complete all sections that apply to you and/or your project. Various applications are only accepted on the application deadline dates. Please call before you submit to verify that someone will be available to assist you at (775) 784-9810.

☐ ADMINISTRATIVE REVIEW ..... (AR)	☐ APPEAL ..... (APP)
☐ ANNEXATION ..... (ANX)	☐ PLANNED DEVELOPMENT ..... (PD)
☐ CONDITIONAL USE PERMIT ..... (CUP)	☐ DEVELOPMENT AGREEMENT ..... (DA)
☐ MAJOR DEVIATION ..... (MJD)	☐ TEMPORARY USE PERMIT ..... (TUP)
☐ MASTER PLAN AMENDMENT ..... (MPA)	☐ VARIANCE ..... (VAR)
☐ MINOR DEVIATION ..... (MND)	☐ REASONABLE ACCOMMODATION ..... (RAD)
☐ ZONING MAP AMENDMENT ..... (ZMA)	☒ OTHER: Tentative Subdivision Map

Applicant's Name: Mark IV Capital	Signature	Primary Contact? Ross Pfautz
Company Name: Mark IV Capital		
Address: 200 S. Virginia St., Suite 850		
City: Reno	State: NV	Zip Code: 89501
Phone No.: (949) 293-4802	Cell No.: (949) 293-4802	Fax No.:

Property Owners Name: M4 New Fernley QOZB, LLC		Primary Contact? Ross Pfautz
Company Name: Mark IV Capital Prop, LLC		
Address: 4450 Macarthur Blvd., 2nd Floor		
City: Newport Beach	State: CA	Zip Code 92660
Phone No.: (949) 293-4802	Cell No.: (949) 293-4802	Fax No.:

Engineer / Representative: Lumos & Associates, Inc.		Primary Contact? Camille Buehler
Company Name: Lumos & Associates, Inc.		
Address: 9222 Prototype Dr.		
City: Reno	State: NV	Zip Code 89521
Phone No.: (7752) 827-6111	Cell No.: (775) 827-6111	Fax No.:

Brief Project Type/Description (Attach Detailed Project Type / Description):

This is a request for an Annexation of 668.12 acres along with an Industrial Subdivision Map covering 2,173.64 acres. Refer to attached report for a highly detailed project description.

Subdivision/Project Name And/Or Phase: Victory Logistics District

Project Location (Street Address): Refer to attached vicinity map

Assessor's Parcel Number(s): 021-201-01, 16, 021-211-02, 03, 04, 06, 021-242-11, 17, 021-251-25, 021-261-43, and 44 (see attached table)

Current Zoning: I, GC, RR-1, and M-1 | Comprehensive Plan Land Use Designation: I, C, and ME

		CITY UTILITIES	
Total Project Acreage: 2,173.64 acres	% Commercial: 100% Industrial or Commercial	*Water:*	*Sewer*
Number of Parcels Proposed: TBD	% Open Space: N/A	☐ Currently Served ☒ Proposed	☐ Currently Served ☒ Proposed

Previous Applications For This Site? ☐ Yes ☒ No
List Previous Application No(s) And Names:

2009 Flood Zone Designation: ☐ A ☐ AE ☐ AH ☐ AO See attached report | FEMA Map No.: See attached report

Application Filing Date:	**Office Use Only**	Application Fee:	
Application No.:	Development Review Meeting	Outsource Fee:	
Application Intake By:	Date:	Noticing Fee:	
Planner:	Time:	Total Due:	

LETTER OF AUTHORIZATION

This letter shall serve to notify and verify the I/we am/are the legal owner(s) of the property being considered under this application and do hereby authorize the above representative to file and represent my/our interest in this application.

I/we am/are the legal owner(s) of said property; have read the foregoing "Letter of Authorization" and know the contents thereof; and so hereby certify (or declare) under penalty of perjury under the laws of the State of Nevada that the information contained in this application is true and correct.

OWNER(S) OF RECORD: ***(Include all signatures-provide extra sheets if necessary)***

(Print Name)	(Signature)	(Date)
MARK IV CAPITAL INC B ROSS PFAUTZ		2-9-22

I certify under penalty of perjury that I am the applicant and that the foregoing statements and answers contained herein and the information herein submitted, are in all respects true and correct. I grant permission to City staff and officials to enter the property to conduct inspections/site visits necessary for the review of the project. I also certify that all plans and submittal requirements are in accordance with the Nevada Revised Statues and City Code, have been drawn to a standard engineering scale (e.g. 1"=20', 1"=50', 1"=100') or architectural scale (e.g. ¼"=1', 1/8"=1') that is appropriate to the project size, and clearly define and identify all of the required information.

APPLICANT:

(Print Name)	(Signature)	(Date)
B ROSS PFAUTZ		2-9-22

APPLICANT'S ENGINEER/REPRESENTATIVE:

(Print Name)	(Signature)	(Date)

City of Fernley Development Code, Section 32.03.030, Common Review Procedures: The City will not process incomplete applications. Review for completeness of application forms is solely to determine whether preliminary information required for submission with the application is sufficient to allow further processing. A determination of completeness shall not constitute a decision as to whether an application complies with the City's Development Code.

Note: Development review meetings are preliminary nature and comments expressed by staff should not be construed as being Conditions of Approval for any project application.

ENTITY INFORMATION

ENTITY INFORMATION

Entity Name:

M4 NEW FERNLEY QOZB, LLC

Entity Number:

E0259502019-6

Entity Type:

Domestic Limited-Liability Company (86)

Entity Status:

Active

Formation Date:

06/04/2019

NV Business ID:

NV20191418252

Termination Date:

Perpetual

Annual Report Due Date:

6/30/2022

Series LLC:

☐

Restricted LLC:

☐

REGISTERED AGENT INFORMATION

Name of Individual or Legal Entity:

CORPORATION SERVICE COMPANY

Status:

Active

CRA Agent Entity Type:

Registered Agent Type:

Commercial Registered Agent

NV Business ID:

NV20101844335

Office or Position:

Jurisdiction:

DELAWARE

Street Address:

112 NORTH CURRY STREET, Carson City, NV, 89703, USA

Mailing Address:

Individual with Authority to Act:

GEORGE MASSIH

Fictitious Website or Domain Name:

OFFICER INFORMATION

☐ **VIEW HISTORICAL DATA**

Title	Name	Address	Last Updated	Status
Manager	MARK IV CAPITAL PROPERTIES, INC.	4450 MACARTHUR BLVD., 2ND FLOOR, NEWPORT BEACH, CA, 92660, USA	06/04/2019	Active

Page 1 of 1, records 1 to 1 of 1

Filing History Name History Mergers/Conversions

PETITION

THE UNDERSIGNED, constituting one hundred percent (100%) of the property owners of the property described in the Exhibit attached hereto, marked EXHIBIT "A" and incorporated herein by reference do hereby petition the City Council of the City of Fernley for annexation of the property described in EXHIBIT "A", to the City of Fernley. Petitioners represent that property described in EXHIBIT "A" is held by the undersigned in fee ownership.

DATED this 18 day of JANUARY, 2022.

Name: B Ross Pfautz SRVP

Address: 2005 Virginia Ste 850

Reno NV 89501

Signature: [signature]

Name: _____

Address: _____

_____

Signature: _____

Name: _____

Address: _____

_____

Signature: _____

Name: _____

Address: _____

_____

Signature: _____

Name: _____

Address: _____

_____

Signature: _____

Name: _____

Address: _____

_____

Signature: _____

[signature]

Notary Public in and for said County and State

My commission expires: 01/18/22

CHRISTINE L. MILLER
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 92-0840-2 - Expires Jan. 18, 2022

ANNEXATION

APPLICATION CHECKLIST

City of Fernley, Nevada

The following items shall be submitted as a part of the Annexation application:

☒ 1. **Application Fee:** A check or money order payable to the "City of Fernley" for the application fee. **The application fee is due at the time of the application submittal**. See **FEE SCHEDULE** for correct amount.

☒ 2. **Proof of Ownership: Must be original signatures or the application may be rejected.** If the person signing the owner's affidavit is not listed as the property owner in the most recent records of the Lyon County Assessor, proof of ownership acceptable to the administrator must be submitted with the application. If the signer is an agent of the owner, written documentation of that fact acceptable to the administrator must be submitted. If in Corporate ownership, a list of all Corporate Officers must be provided.

☒ 3. **Review Packet: 1 (one) UNBOUND, original hardcopy containing the following:**

- ☒ a. Completed DEVELOPMENT APPLICATION form.
- ☒ b. Completed Petition for Annexation signed by all property owners included in the proposed Annexation area.
- ☒ c. A written description of the Annexation request.
- ☒ d. Written documentation addressing the following factors:
  - (1) Location of the property to be considered for Annexation;
  - (2) The logical extension of City limits;
  - (3) The need for the expansion to accommodate planned regional growth within seven years;
  - (4) The location of existing and planned water and sewer service;
  - (5) Acceptable level of services can be provided;
  - (6) City goals/policies that would be met by U1e proposed annexation;
  - (7) The efficient and cost-effective provision of service areas and capital facilities;
  - (8) Fiscal analysis regarding the proposed annexation demonstrating fiscally positive for 20 years;
  - (9) Whether there are any adopted a plans for the proposed annexation area;
  - (10)Whether the annexation creates any islands; and
  - (11)Any other factors concerning the proposed annexation deemed appropriate for consideration by the City Council.
- ☒ e. A wet-stamped legal description and boundary map (8½" x 11" with 1" margins).
- ☒ f. Two Annexation maps prepared by a registered Land Surveyor depicting the project boundary labeled with bearings, distances and curve data, the names of adjacent property owners, and the annexation dates of the adjacent properties.
  - Once the maps have been reviewed by the City Surveyor an original wet stamped Mylar is required prior to the City Clerk scheduling a 1st Reading of the Annexation.
- ☒ g. Please include a dimensioned site plan pictures of existing buildings, and any additional information that would be helpful to illustrate the existing use of the site. All plans shall be drawn to standard architectural or engineering scale and shall include a north arrow.
- ☒ h. Vicinity Map depicting the respective site and including surrounding roadways
- ☒ a. Property Tax Receipt.
- ☒ b. Preliminary Title Report.
- ☒ c. Miscellaneous, as requested, and all required items as outlined in Appendix A of the City of Fernley's Development Code.
- ☒ d. If drawings larger than 8½" x 11" are included with the application, one 8½" x 11" or 11" x 17" color reproduction of each must be provided.

☒ 4. Original PDF Original PDF documents of the application, broken down into individual sections, including all documents, maps, plans, and technical analyses, shall be provided on a USB flash drive or alternative method as determined by the Administrator. Please note scanned images of the submittal will not be accepted and may result in the delayed processing of the application.

NOTE: Applications filed under Chapter 32.03 of the City of Fernley's Development Code must include the information required by Appendix A of the same code and is not complete until all required items are submitted. The Planning Department or other reviewing departments or agencies may request that additional application materials be submitted depending on the specific project request. The application materials required above shall serve as the minimum requirements necessary to make application submittal to the City of Fernley Planning Department.

TENTATIVE SUBDIVISION MAP

APPLICATION CHECKLIST

City of Fernley, Nevada

The following items shall be submitted as a part of the Tentative Subdivision Map application:

☒ **1. Application Fee:** A check or money order payable to the "City of Fernley" for the application fee. **The application fee is due at the time of the application submittal**. See **FEE SCHEDULE** for correct amount.

☒ **2. Proof of Ownership: Must be original signatures or the application may be rejected.** If the person signing the owner's affidavit is not listed as the property owner in the most recent records of the Lyon County Assessor, proof of ownership acceptable to the administrator must be submitted with the application. If the signer is an agent of the owner, written documentation of that fact acceptable to the administrator must be submitted. If in Corporate ownership, a list of all Corporate Officers must be provided.

☒ **3. Review Packet: 1 (one) UNBOUND, original hardcopy containing the following:**

- ☒ a. Completed LAND DIVISION APPLICATION form
- ☒ b. Completed Residential or Non-Residential Project Data Sheet
- ☒ c. A Tentative Subdivision Map prepared to the attached specifications and in accordance with Development Code Section 32.03.060.
- ☒ d. **If drawings larger than 8½" x 11" are included with the application, one 8½" x 11" or 11" x 17". MUST be provided. Please fold oversized drawings - No rolled plans accepted.**
- ☒ e. Vicinity Map depicting the respective site and including surrounding roadways
- ☒ f. A copy of a preliminary Title Report, prepared within 30 days of application submittal, which includes the names and addresses of all property owners; a legal description of the property, and a description of all liens, easements, and deed restrictions.
- ☒ g. Legal Access
- N/A h. A letter of approval from the City of Fernley listing all street names shown on the Tentative Subdivision Map
- ☒ i. Demonstrate that city services can be provided at an acceptable service level.

☒ **4. Technical Analyses (Two (2) copies of each):** Items outlined in Appendix A-5 of the City of Fernley's Development Code in a form consistent with the adopted policies and design manuals.

- ☒ a. Traffic Study: A complete traffic study as required by the City Engineer.
- ☒ b. A preliminary hydrology and drainage report prepared by a Nevada registered Civil Engineer addressing the 5-year and 100-year return frequency storms and the 5-year and 100-year flows entering and leaving the site.
- ☒ c. A preliminary sewer report prepared by a Nevada registered Civil Engineer.
- ☒ d. A preliminary geotechnical report prepared by an Engineer licensed in the State of Nevada.
- ☒ e. All projects over 20 acres in size shall demonstrate the project is fiscally positive to the city for a period of at least 20 years.
- ☒ f. Any other report as may be necessary to enable the approving agency to determine that the application complies with the standards for approval

☒ **5. Original PDF documents of the application, broken down into individual sections, including all documents, maps, plans, and technical analyses, shall be provided on a USB flash drive or alternative method as determined by the Administrator. Please note scanned images of the submittal will not be accepted and may result in the delayed processing of the application.**

NOTE: Applications filed under Chapter 32.03 of the City of Fernley's Development Code must include the information required by Appendix A of the development code and is not complete until all required items are submitted. The Planning Department or other reviewing departments or agencies may request that additional application materials be submitted depending on the specific project request. The application materials required above shall serve as the minimum requirements necessary to make application submittal to the City of Fernley Planning Department.

NON-RESIDENTIAL PROJECT DATA SHEET
City of Fernley, Nevada

1. Site Area Breakdown

Building Coverage	+/-826 Ac.	+/-38 %
Landscaped Area	TBD Ac.	%
Paved Area	TBD Ac.	%
Undeveloped Area	TBD Ac.	%
Public Right-of-Way	57.23 Ac.	%
TOTAL	2,174.5 Ac.	%

2. Existing Building Information

#1 Description N/A
Floor Area N/A Sq.Ft Height N/A Feet
Type of Construction N/A
#2 Description N/A
Floor Area N/A Sq.Ft Height N/A Feet
Type of Construction N/A

3. Floor Area Ratio

Total Floor Area (Sq. Ft.)	/ Net Site Area (Sq. Ft.)	= Floor Area Ratio
		+/-.38

4. Description of Proposed Use

Industrial and Warehouse Uses.

5. Building Area Breakdown & Parking Calculations

Retail/Office/Financial	TBD Sq. Ft. / 250	=	TBD Spaces
Personal Service	TBD Sq. Ft. / 250	=	TBD Spaces
Veterinary Clinic	TBD Sq. Ft. / 250	=	TBD Spaces
Health Club	TBD Sq. Ft. / 300	=	TBD Spaces
Private Recreation Facility	TBD Sq. Ft. / 200	=	TBD Spaces
Gaming	TBD Sq. Ft. / 100	=	TBD Spaces
Restaurant/Bar	TBD Sq. Ft. / 100	=	TBD Spaces
General Industrial	TBD Sq. Ft. / 500	=	TBD Spaces
Light Industrial	TBD Sq. Ft. / 500	=	TBD Spaces
Food & Beverage Processing	TBD Sq. Ft. / 500	=	TBD Spaces
Vehicle Service Center	TBD Gas pumps x 1.0 + _____ service bays x 3	=	TBD Spaces
Overnight Lodging	TBD Rooms x 1.0 + _____ Rooms/15 + accessory uses	=	TBD Spaces
Theatre/Auditorium	TBD Seats/3 + _____ Employees x 1.0	=	TBD Spaces
Hospitals	TBD Beds x 1.5	=	TBD Spaces
Day Care Center, Large	TBD Children/8 + _____ Employees x 1.0	=	TBD Spaces
Educations Facility	TBD Classrooms x 10	=	TBD Spaces
High School	TBD Classrooms x 10	=	TBD Spaces
Middle School	TBD Classrooms x 3	=	TBD Spaces
Elementary School	TBD Classrooms x 3	=	TBD Spaces
Rest Home	TBD Beds x 0.33 + _____ Employees @ Shift x 1.0	=	TBD Spaces
Church	TBD Sq. Ft. / 30 + accessory uses	=	TBD Spaces

6. Outdoor Uses

Outdoor Storage ✔ Yes ___ No
Outdoor Processing ✔ Yes ___ No
Staging/Loading of Trucks ✔ Yes ___ No

7. Estimated Water Demand (Attach Calculations)

Domestic +/- 1,087 - +/- 7,868 AFY
Irrigation +/- 149 AFY
TOTAL +/- 1236 - +/- 8017 AFY
Source of water supply: Fernley

8. Traffic (Attach Calculations)

Average Daily Trips +/-46,347 Trips
Peak Hour Trips +/-3.654 Trips

9. Estimated Sewage to be Generated

+/- 1,879,180 GPD
(Attach Calculations)

10. Hazardous Materials

Will the use on this site involve the use of hazardous materials? ✔ Yes ___ No

11. Flood Hazard

Portion of site subject to inundation by 100 year flood:
+/-41.4 Ac. +/-1.9 %

12. Portion of Site within the Following Slope Categories:

0% - 10% +/-2161 Ac. +/-99.4 %
10% + +/-13.5 Ac. +/-.6 %

Lyon County
Nevada

Tax Account 021-201-01

Owners

M4 NEW FERNLEY LLC

Account Summary

Account ID	021-201-01
Account Type	Real Estate
Location	0 FERNLEY
Balance	$0.00
Currently Due	$0.00

No payment currently due.

This account has a balance of $0.00.
No payment can be made.

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$2,852.63
Total	$2,852.63
Paid	$2,852.63
Balance	$0.00
Due	$0.00
Ad Valorem Tax Rate	2.9409
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due
1	08/16/2021	08/27/2021	Paid	$713.30	$0.00	$713.30	$713.30	$0.00
2	10/04/2021	10/14/2021	Paid	$713.11	$0.00	$713.11	$713.11	$0.00
3	01/03/2022	01/14/2022	Paid	$713.11	$0.00	$713.11	$713.11	$0.00
4	03/07/2022	03/18/2022	Paid	$713.11	$0.00	$713.11	$713.11	$0.00

Past Years

Description	Original	Penalty	Paid	Balance	Due	Tax Rate
2020/2021 SECURED TAXES	$2,639.77	$0.00	$2,639.77	$0.00	$0.00	2.9395
2019/2020 SECURED TAXES	$2,474.03	$0.00	$2,474.03	$0.00	$0.00	2.9395
2018/2019 SECURED TAXES	$2,473.28	$0.00	$2,473.28	$0.00	$0.00	2.9395

Lyon County
Nevada

Tax Account 021-201-16

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-201-16
Account Type	Real Estate
Location	0 FERNLEY
Balance	$813.21
Currently Due	$813.21

$813.21 is due by March 07, 2022.

You can pay any amount up to $813.21 (the current balance).

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$3,252.99
Total	$3,327.74
Paid	$2,514.53
Balance	$813.21
Due	$813.21
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due	Pay Now
1	08/16/2021	08/27/2021	Paid	$813.36	$0.00	$813.36	$813.36	$0.00	
2	10/04/2021	10/14/2021	Paid	$813.21	$32.53	$813.21	$845.74	$0.00	
3	01/03/2022	01/14/2022	Paid	$813.21	$42.22	$813.21	$855.43	$0.00	
4	03/07/2022	03/18/2022	Due	$813.21	$0.00	$813.21	$0.00	$813.21	Pay $813.21 Now

Past Years

Lyon County
Nevada

Tax Account 021-211-02

Owners

M4 FERNLEY JACKSON LLC

Account Summary

Account ID	021-211-02
Account Type	Real Estate
Location	0 FERNLEY
Balance	$0.00
Currently Due	$0.00

No payment currently due.

This account has a balance of $0.00.
No payment can be made.

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$785.51
Total	$785.51
Paid	$785.51
Balance	$0.00
Due	$0.00
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due
1	08/16/2021	08/27/2021	Paid	$196.55	$0.00	$196.55	$196.55	$0.00
2	10/04/2021	10/14/2021	Paid	$196.32	$0.00	$196.32	$196.32	$0.00
3	01/03/2022	01/14/2022	Paid	$196.32	$0.00	$196.32	$196.32	$0.00
4	03/07/2022	03/18/2022	Paid	$196.32	$0.00	$196.32	$196.32	$0.00

Past Years

Description	Original	Penalty	Paid	Balance	Due	Tax Rate
2020/2021 SECURED TAXES	$783.28	$0.00	$783.28	$0.00	$0.00	3.6131
2019/2020 SECURED TAXES	$782.89	$0.00	$782.89	$0.00	$0.00	3.6131
2018/2019 SECURED TAXES	$782.50	$68.40	$850.90	$0.00	$0.00	3.6131

Lyon County
Nevada

Tax Account 021-211-03

Owners

JOHNSON, EMMA JANE

Account Summary

Account ID	021-211-03
Account Type	Real Estate
Location	0 FERNLEY
Balance	$0.00
Currently Due	$0.00

No payment currently due.

This account has a balance of $0.00.
No payment can be made.

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$229.84
Total	$229.84
Paid	$229.84
Balance	$0.00
Due	$0.00
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due
1	08/16/2021	08/27/2021	Paid	$57.58	$0.00	$57.58	$57.58	$0.00
2	10/04/2021	10/14/2021	Paid	$57.42	$0.00	$57.42	$57.42	$0.00
3	01/03/2022	01/14/2022	Paid	$57.42	$0.00	$57.42	$57.42	$0.00
4	03/07/2022	03/18/2022	Paid	$57.42	$0.00	$57.42	$57.42	$0.00

Past Years

Description	Original	Penalty	Paid	Balance	Due	Tax Rate
2020/2021 SECURED TAXES	$227.95	$2.40	$230.35	$0.00	$0.00	3.6131
2019/2020 SECURED TAXES	$227.83	$0.00	$227.83	$0.00	$0.00	3.6131
2018/2019 SECURED TAXES	$227.72	$2.39	$230.11	$0.00	$0.00	3.6131

Lyon County
Nevada

Tax Account 021-211-04

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-211-04
Account Type	Real Estate
Location	0 FERNLEY
Balance	$917.64
Currently Due	$917.64

$917.64 is due by March 07, 2022.

You can pay any amount up to $917.64 (the current balance).

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$3,670.79
Total	$3,755.15
Paid	$2,837.51
Balance	$917.64
Due	$917.64
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due	Pay Now
1	08/16/2021	08/27/2021	Paid	$917.87	$0.00	$917.87	$917.87	$0.00	
2	10/04/2021	10/14/2021	Paid	$917.64	$36.71	$917.64	$954.35	$0.00	
3	01/03/2022	01/14/2022	Paid	$917.64	$47.65	$917.64	$965.29	$0.00	
4	03/07/2022	03/18/2022	Due	$917.64	$0.00	$917.64	$0.00	$917.64	Pay $917.64 Now

Past Years

Lyon County
Nevada

Tax Account 021-211-06

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-211-06
Account Type	Real Estate
Location	0 FERNLEY
Balance	$2,230.62
Currently Due	$2,230.62

$2,230.62 is due by . 3/7/22

You can pay any amount up to $2,230.62 (the current balance).

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$8,922.66
Total	$9,127.70
Paid	$6,897.08
Balance	$2,230.62
Due	$2,230.62
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due	Pay Now
1	08/16/2021	08/27/2021	Paid	$2,230.80	$0.00	$2,230.80	$2,230.80	$0.00	
2	10/04/2021	10/14/2021	Paid	$2,230.62	$89.22	$2,230.62	$2,319.84	$0.00	
3	01/03/2022	01/14/2022	Paid	$2,230.62	$115.82	$2,230.62	$2,346.44	$0.00	
4	03/07/2022	03/18/2022	Due	$2,230.62	$0.00	$2,230.62	$0.00	$2,230.62	Pay $2,230.62 Now

Past Years

Lyon County
Nevada

Tax Account 021-242-11

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-242-11
Account Type	Real Estate
Location	0 FERNLEY
Balance	$0.00
Currently Due	$0.00

No payment currently due.

This account has a balance of $0.00.
No payment can be made.

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$438.99
Total	$438.99
Paid	$438.99
Balance	$0.00
Due	$0.00
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due
1	08/16/2021	08/27/2021	Paid	$109.89	$0.00	$109.89	$109.89	$0.00
2	10/04/2021	10/14/2021	Paid	$109.70	$0.00	$109.70	$109.70	$0.00
3	01/03/2022	01/14/2022	Paid	$109.70	$0.00	$109.70	$109.70	$0.00
4	03/07/2022	03/18/2022	Paid	$109.70	$0.00	$109.70	$109.70	$0.00

Past Years

Description	Original	Penalty	Paid	Balance	Due	Tax Rate
2020/2021 SECURED TAXES	$404.92	$0.00	$404.92	$0.00	$0.00	3.6131
2019/2020 SECURED TAXES	$379.51	$0.00	$379.51	$0.00	$0.00	3.6131
2018/2019 SECURED TAXES	$379.32	$0.00	$379.32	$0.00	$0.00	3.6131

Lyon County
Nevada

Tax Account 021-242-17

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-242-17
Account Type	Real Estate
Location	0 NEVADA PACIFIC PKWY FERNLEY
Balance	$9,258.37
Currently Due	$9,258.37

$9,258.37 is due by . 3/7/22

You can pay any amount up to $9,258.37 (the current balance).

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$37,033.57
Total	$37,884.62
Paid	$28,626.25
Balance	$9,258.37
Due	$9,258.37
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due	Pay Now
1	08/16/2021	08/27/2021	Paid	$9,258.46	$0.00	$9,258.46	$9,258.46	$0.00	
2	10/04/2021	10/14/2021	Paid	$9,258.37	$370.33	$9,258.37	$9,628.70	$0.00	
3	01/03/2022	01/14/2022	Paid	$9,258.37	$480.72	$9,258.37	$9,739.09	$0.00	
4	03/07/2022	03/18/2022	Due	$9,258.37	$0.00	$9,258.37	$0.00	$9,258.37	Pay $9,258.37 Now

Past Years

Lyon County
Nevada

Tax Account 021-251-25

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-251-25
Account Type	Real Estate
Location	0 NEWLANDS DR FERNLEY
Balance	$8,742.13
Currently Due	$8,742.13

$8,742.13 is due by . 3/7/22

You can pay any amount up to $8,742.13 (the current balance).

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$34,968.75
Total	$35,772.36
Paid	$27,030.23
Balance	$8,742.13
Due	$8,742.13
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due	Pay Now
1	08/16/2021	08/27/2021	Paid	$8,742.36	$0.00	$8,742.36	$8,742.36	$0.00	
2	10/04/2021	10/14/2021	Paid	$8,742.13	$349.69	$8,742.13	$9,091.82	$0.00	
3	01/03/2022	01/14/2022	Paid	$8,742.13	$453.92	$8,742.13	$9,196.05	$0.00	
4	03/07/2022	03/18/2022	Due	$8,742.13	$0.00	$8,742.13	$0.00	$8,742.13	Pay $8,742.13 Now

Past Years

Lyon County
Nevada

Tax Account 021-261-43

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-261-43
Account Type	Real Estate
Location	0 HWY 50A FERNLEY
Balance	$0.00
Currently Due	$0.00

No payment currently due.

This account has a balance of $0.00.
No payment can be made.

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$3,022.41
Total	$3,022.41
Paid	$3,022.41
Balance	$0.00
Due	$0.00
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due
1	08/16/2021	08/27/2021	Paid	$755.73	$0.00	$755.73	$755.73	$0.00
2	10/04/2021	10/14/2021	Paid	$755.56	$0.00	$755.56	$755.56	$0.00
3	01/03/2022	01/14/2022	Paid	$755.56	$0.00	$755.56	$755.56	$0.00
4	03/07/2022	03/18/2022	Paid	$755.56	$0.00	$755.56	$755.56	$0.00

Past Years

Description	Original	Penalty	Paid	Balance	Due	Tax Rate
2020/2021 SECURED TAXES	$2,798.54	$0.00	$2,798.54	$0.00	$0.00	3.6131
2019/2020 SECURED TAXES	$5,335.94	$0.00	$5,335.94	$0.00	$0.00	2.9395
2018/2019 SECURED TAXES	$5,334.30	$0.00	$5,334.30	$0.00	$0.00	2.9395

Lyon County
Nevada

Tax Account 021-261-44

Owners

M4 NEW FERNLEY QOZB LLC

Account Summary

Account ID	021-261-44
Account Type	Real Estate
Location	0 HWY 50A FERNLEY
Balance	$1,133.37
Currently Due	$1,133.37

$1,133.37 is due by . 3/7/22

You can pay any amount up to $1,133.37 (the current balance).

Current Year

Description	2021/2022 REAL ESTATE TAXES
Original	$4,533.63
Total	$4,637.81
Paid	$3,504.44
Balance	$1,133.37
Due	$1,133.37
Ad Valorem Tax Rate	3.6160
Tax Cap	100% High 8.0%

Current Year Installments

#	Due Date	Penalty Date	Status	Original Total	Penalty	Total	Paid	Total Due	Pay Now
1	08/16/2021	08/27/2021	Paid	$1,133.52	$0.00	$1,133.52	$1,133.52	$0.00	
2	10/04/2021	10/14/2021	Paid	$1,133.37	$45.33	$1,133.37	$1,178.70	$0.00	
3	01/03/2022	01/14/2022	Paid	$1,133.37	$58.85	$1,133.37	$1,192.22	$0.00	
4	03/07/2022	03/18/2022	Due	$1,133.37	$0.00	$1,133.37	$0.00	$1,133.37	Pay $1,133.37 Now

Past Years

PRELIMINARY WATER REPORT

For

VICTORY

LOGISTICS | DISTRICT

TENTATIVE INDUSTRIAL SUBDIVISION

Prepared For:
M4 New Fernley QOZB, LLC.
4450 MacArthur Boulevard, 2nd Floor
Newport Beach, CA 92660

Prepared By:

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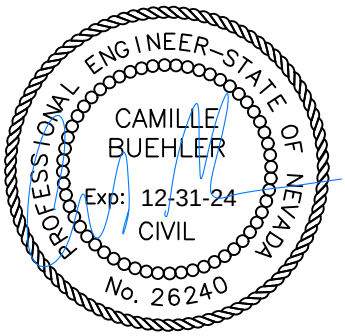


09/15/2023

JN 10067.008
AUGUST, 2023

TABLE OF CONTENTS

I. INTRODUCTION ***1***

II. DESCRIPTION OF DEVELOPMENT ***1***

A. Terrain 1

B. Mark IV Industrial Subdivision 1

III. EXISTING WATER SUPPLY FACILITIES ***2***

A. Municipal Water System 2

IV. WATER DEMAND ESTIMATES ***3***

A. Mark IV Industrial Demand 3

B. Summary of Total Demands 6

C. Water Rights 7

D. Fire Flow 7

V. DESIGN CRITERIA ***8***

A. On-Site Water System 8

VI. EVALUATION OF ON-SITE WATER SYSTEM ***9***

A. Supply 9

B. Storage 9

C. Distribution 10

VII. EVALUATION OF OFF-SITE WATER SYSTEM ***11***

VIII. CONCEPTUAL WATER SYSTEM RECOMMENDATIONS ***11***

A. System Description 11

B. Opinion of Probable Costs 11

C. Permitting Requirements 12

D. Construction Considerations 13

IX. CONCLUSIONS ***13***

X. REFERENCES ***14***

LIST OF TABLES

Table 1: Mark IV Industrial Land Use Demand Assumptions 3
Table 2: Mark IV Domestic Water Demand Estimates Based on Proposed Land Uses 5
Table 3: Mark IV Irrigation Demands 6
Table 4: Summary of Total Mark IV Demands 7
Table 5: Preliminary Tank Elevations 9
Table 6: Preliminary Storage Tank Requirements 10
Table 7: Pipeline Lengths for Backbone Distribution System 11
Table 8: Preliminary Opinion of Probable Construction Costs: On-Site System 12

LIST OF FIGURES

Figure 1: Preliminary Phasing 16
Figure 2: Preliminary Pressure Zones 17
Figure 3: Preliminary On-Site Water System 18

APPENDICES

Appendix A Water Model Results
Appendix B Shaw Engineering Technical Memorandum

I. INTRODUCTION

The Mark IV Industrial Subdivision is located south of I-80, north of US-50 Alt and adjacent to Nevada Pacific Parkway in Northeast Fernley, Nevada. The Mark IV Subdivision consists of approximately 2,174 acres comprised of the following parcels: 021-201-01, 021-201-16, 021-211-02, 021-211-04, 021-211-06, 021-242-11, 021-242-17, 021-251-25, 021-261-43, 021-261-44, and 021-211-03. The Mark IV properties reside within Sections 3, 4, 5, 6, 7, 8, 17, and 18, T20N, R25E in Fernley, Nevada.

The proposed Mark IV Industrial Subdivision consists of 31 proposed lots to be used for distribution/light industrial, manufacturing, data center/high tech, and retail purposes. As such, 26 Conceptual developable lots were utilized out for the purpose of conceptual connection points.

There is an existing water system adjacent to and within some areas of the subdivision. The proposed water system will tie into the existing system. The purpose of this report is to provide preliminary design recommendations for the conceptual an on-site water system.

Projected water demands and design recommendations presented in this report are at the conceptual level based on preliminary development areas, lot counts, and lot sizes. Water demands and infrastructure design will be updated as necessary during the final planning stages of each development area. The final water demands and design of all infrastructure will ultimately be reviewed by and coordinated with the City of Fernley Public Works Department prior to the issuance of any will-serves or approvals associated with water service/delivery to the project.

II. DESCRIPTION OF DEVELOPMENT

A. Terrain

The terrain of the project site varies from minimal and moderate slopes throughout the majority of the site to steep slopes in the west of the site. The terrain for the Mark IV project has been considered for strategic placement of storage tanks throughout the site.

B. Mark IV Industrial Subdivision

Mark IV is planned to be constructed in up to three possible scenarios, as illustrated in Figure 1. Due to the highly fluid nature of the project's lot development order, phases have been designated based on looping requirements.

Land use designations and preliminary lot sizes planned for the development are as follows:

- Manufacturing
- Light Industrial
- Distribution Center
- General Industrial
- Retail

The following triggers are based on developable area before an additional tank is required to be built. Along with each set of developable area, an associated additional water lines/laterals are to be constructed. All infrastructure is assumed to be a conceptual mixture of water demands, requiring a conceptual amount of storage, pipe sizes, and booster pumps. The nearest point of connection to significant storage is the existing 2.5 million gallon Northeast Tank. The northeast tank storage is available on a first come/first serve basis and is dedicated when will-serves are issued. It has been assumed that The Mark IV Industrial Subdivision will have full access to this tank, and has been included in the storage requirements.

Water Infrastructure – First Trigger

The first trigger of the water system for Mark IV will be constructed in order to provide fire storage for the first 342 acres (17%) of development. This phase ties into the existing 2.5 million gallon (MG) northeast storage tank and loops to a connection point at the intersection of Duffy Road and Nevada Pacific Parkway. This phase will be required for all lots that aren't tying directly into the existing system, regardless of which lot gets developed first, due to storage requirements. An existing storage tank is provided for storage and will be utilized with this portion (pending timing with other developments.) The storage tank has a base elevation of 4,310.65 feet, with a maximum depth of 36 feet, and a diameter of 110 feet.

Water Infrastructure – Second Trigger

The second trigger of the water system will serve an additional 320 acres (16%) of industrial development. This trigger requires the construction of an additional three-million gallon storage tank at an elevation of 4,310.65 feet, and a maximum level of 36'.

Water Infrastructure – Third Trigger

The third trigger of the Mark IV Industrial Subdivision is the final phase of the backbone water infrastructure and serves the additional 1,338 acres (67%) of development. This trigger serves the remaining 1338 acres of development. The third trigger requires the construction of two additional three-million gallon storage tanks. All tanks are constructed to serve the Pressure Zones and corresponding elevation listed in the 2008 Water Master Plan.

III. EXISTING WATER SUPPLY FACILITIES

The off-site facilities and capacities are described below.

A. Municipal Water System

The existing municipal water system is operated by the City of Fernley. Per the NAC 445A Design Report for Victory Logistics Mark IV Building C Phase II [6], The Fernley water system is made up of five storage tanks that provide 7.0 MG of storage, and six groundwater wells with an average day capacity of 8,020 gpm. The City of Fernley has an additional 2.5-million gallon raw water storage tank and a 1.4-million gallon treated storage tank. Based on historical data provided by the City of Fernley operations, the current maximum day demand is 6.5-million gallons per day

(MGD). Further information regarding the existing City of Fernley Water Distribution System will be provided as coordination with Shaw Engineering is conducted.

Two existing wells are located on the site. Well No. 9 has a finish floor of 4,118 ft, and an observed flow of 600 gpm. Well No. 9a has a finish floor of 4,118 ft, and an observed flow of 800 gpm.

The site falls within two pressure zones lined out in the 2008 City of Fernley Water Master Plan: Pressure Zone 1 and Low Zone. The site is anticipated and designed to be served within those two pressure zones without creating any additional.

Reference Appendix B for additional phasing requirements.

IV. WATER DEMAND ESTIMATES

Water demands based on land use were chosen based on the City of Fernley 2008 Water Master Plan, Table 6.17 [3]. The demand estimates are based on metered averages observed from developments in the City of Fernley. The following sections present a detailed methodology for the water demand estimates for use in the conceptual design of on-site and off-site water infrastructure.

Water demand assumptions and calculations for anticipated land uses can be found in Table 1. The Equivalent Residential Connections (ERCs) were utilized to estimate storage capacity requirements. The ERC factor was assumed at 1,000 gpd/ERC [3]. The ERC factor is related to the square footage of an assumed building, with each building being assumed at 38% of each lot area.

A. Mark IV Industrial Demand

Table 1: Mark IV Industrial Land Use Demand Assumptions

Land Use	Avg Day (gpd/SF)	Max Day (gpd/SF)	Peak Hour (gpd/SF)	MDD/ADD[1] (ratio)	PDD/MDD[1] (ratio)
Manufacturing	0.276	0.463	0.695	1.68	1.5
Light Industrial	0.270	0.457	0.686	1.69	1.5
Distribution Center	0.044	0.097	0.146	2.20	1.5
General Industrial	0.270	0.457	0.686	1.69	1.5
Retail	0.560	0.806	1.008	1.44	1.3
Source: 2008 Water Master Plan, Table 6.17					
[1] MDD/PDD Peaking factors back-calculated from 2008 Water Master Plan					

Tables 2 shows the estimated build-out water demand scenarios for the anticipated land uses.

The water demand land uses were chosen for their direct relevance to the 2008 Water Master Plan, Table 6.17. The land uses designated for the Victory Logistics PUD Handbook are correlated as such:

PUD Handbook Land Use	Water Land Use
Data Processing, Hosting, and Related Services (DC)	Distribution Center (DC)
Distribution/Light Industrial (LI)	Light Industrial (LI)
Manufacturing (MFG)	Manufacturing (MFG)
Transload & Switching Facility (TSF)	N/A
Commercial (C)	Retail (RETAIL)

Table 2: Mark IV Domestic Water Demand Estimates Based on Proposed Land Uses

Parcel	Land Use	Total Lot Area	Average Day		Max Day		Peak Hour	
	Code	(ac)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)
Lot #0	RETAIL	9.89	91,676.0	63.7	131,948.0	91.6	137,514.0	95.5
Lot #1	LI	45.38	202,814.8	140.8	343,282.9	238.4	514,924.3	357.6
Lot #2	LI	58.87	263,105.1	182.7	445,329.7	309.3	667,994.6	463.9
Lot #3	LI	55.83	249,518.6	173.3	422,333.3	293.3	633,499.9	439.9
Lot #4	LI	279.94	1,251,123.5	868.8	2,117,642.4	1,470.6	3,176,463.6	2,205.9
Lot #5	LI	36.00	160,893.2	111.7	272,326.7	189.1	408,490.0	283.7
Lot #6	DC	120.33	87,639.1	60.9	193,204.4	134.2	289,806.7	201.3
Lot #7	DC	204.60	149,014.9	103.5	328,510.2	228.1	492,765.3	342.2
Lot #8	LI	49.83	222,703.0	154.7	376,945.5	261.8	565,418.2	392.7
Lot #10	LI	212.24	948,554.9	658.7	1,605,517.0	1,114.9	2,408,275.5	1,672.4
Lot #11	LI	184.27	823,549.8	571.9	1,393,934.3	968.0	2,090,901.4	1,452.0
Lot #12	MFG	42.00	191,880.1	133.3	321,885.7	223.5	482,828.6	335.3
Lot #13	MFG	83.71	382,435.2	265.6	641,549.0	445.5	962,323.4	668.3
Lot #14	MFG	83.00	379,191.5	263.3	636,107.6	441.7	954,161.3	662.6
Lot #15	N/A	38.84	-	-	-	-	-	-
Lot #16	MFG	28.16	128,651.0	89.3	215,816.7	149.9	323,725.1	224.8
Lot #17	LI	155.20	693,628.5	481.7	1,174,030.5	815.3	1,761,045.8	1,222.9
Lot #18	DC	89.20	64,966.4	45.1	143,221.4	99.5	214,832.2	149.2
Lot #19	MFG	28.57	130,524.1	90.6	218,958.9	152.1	328,438.4	228.1
Lot #20	N/A	26.42	-	-	-	-	-	-
Lot #21	RETAIL	10.87	100,760.2	70.0	145,022.7	100.7	151,140.3	105.0
Lot #22	LI	111.18	496,891.9	345.1	841,035.5	584.1	1,261,553.3	876.1
Lot #23	N/A	19.61	-	-	-	-	-	-
Lot #24	N/A	4.38	-	-	-	-	-	-
Lot #25	N/A	27.47	-	-	-	-	-	-
Total		**2,006**	**7,019,522**	**4,875**	**11,968,603**	**8,312**	**17,826,102**	**12,379**
Assumes 38% of total lot area is building area								

Irrigation

Preliminary irrigation estimates have been calculated based on predicted landscape areas. Tree and shrub counts were estimated based on an assumed 17% landscape cover for each lot. Trees were assumed at one tree per every 500 square feet of landscaped area, and shrubs were assumed at one for every 50 square feet. The demands are based on total number of trees and shrubs with a factor of 2.8 and 1.4-GPD, respectively. The projected irrigation demands are provided in Table 3.

Table 3: Mark IV Irrigation Demands

Parcel	Total Lot Area	Trees	Shrubs	Irrigation Water Demand	
	(acres)	(Count)	(Count)	(gpm)	(gpd)
Lot #0	9.89	244	1,465	0.5	742.0
Lot #1	45.38	1,120	187	2.4	3,404.7
Lot #2	58.87	1,453	242	3.1	4,416.8
Lot #3	55.83	1,378	230	2.9	4,188.7
Lot #4	279.94	6,910	1,152	14.6	21,002.8
Lot #5	36.00	889	148	1.9	2,700.9
Lot #6	120.33	2,970	495	6.3	9,027.9
Lot #7	204.60	5,050	842	5.0	7,209.3
Lot #8	49.83	1,230	205	2.6	3,738.6
Lot #10	212.24	5,239	873	11.1	15,923.6
Lot #11	184.27	4,549	758	9.6	13,825.1
Lot #12	42.00	1,037	173	2.2	3,151.1
Lot #13	83.71	2,066	344	4.4	6,280.4
Lot #14	83.00	2,049	341	4.3	6,227.2
Lot #15	38.84	-	-	-	-
Lot #16	28.16	695	116	1.5	2,112.7
Lot #17	155.20	3,831	638	1.5	2,125.5
Lot #18	89.20	2,202	367	11.3	16,210.9
Lot #19	28.57	705	118	1.5	2,143.5
Lot #20	26.42	-	-	-	-
Lot #21	10.87	268	45	0.6	815.5
Lot #22	111.18	2,744	457	5.8	8,341.4
Lot #23	19.61	-	-	-	-
Lot #24	4.38	-	-	-	-
Lot #25	27.47	-	-	-	-
Total	**2,005.8**	**46,386**	**7,731**	**92.3**	**132,846.6**
Assumes 17% of total lot area is landscape area					

B. Summary of Total Demands

Total domestic (Table 2) and irrigation (Table 3) water demands for Mark IV are summarized in Table 4.

Table 4: Summary of Total Mark IV Demands

Item	ADD		MDD		PHD	
	(gpm)	(mgd)	(gpm)	(mgd)	(gpm)	(mgd)
Domestic	4,874.7	7.02	8,311.5	12.0	12,379.2	17.8
Irrigation	92.3	0.00	92.3	0.0	92.3	0.0
Total	**4,966.9**	**7.02**	**8,403.8**	**11.97**	**12,471.5**	**17.83**

C. Water Rights

The Mark IV development currently owns 2,380 acre-ft (2.1 MGD) of water rights. The site will require an estimated 7.02 MGD (Based on Average Day Demand), depending on water usage. Allocation to individual tenants is currently under discussion. A possible allocation method would be to allocate the water rights per acreage, or square footage of proposed building, and require the tenant to acquire the remaining water rights based on their usage.

D. Fire Flow

Construction type of the proposed buildings is anticipated to be Type IIIB and exceed the 138,301 square foot cap on IFC Table B105.1(2). It will be required that all Mark IV buildings have automatic sprinkler systems, allowing for a reduction of 50% in fire flow requirements. Therefore, the required fire flow is 4,000 gpm for four hours, resulting in a required 960,000 gallons of storage. Currently, the fire flow volume can be provided by the existing City of Fernley system, subject to change at time of dedication. Any additional storage is assumed to be provided on-site in storage tanks, which will be discussed in Section VI. Two pressure reducing stations are proposed onsite to prevent lower elevation areas from experiencing pressures exceeding 100 PSI. The pressure reducing stations will be constructed in a way to allow fire flow will be perpetuated through the lower pressure zone.

V. DESIGN CRITERIA

As the Mark IV water system will be connected to and served as part of an existing public water system, it falls under Nevada Administrative Code (NAC) 445A66.752 through 445A.66755. These sections of the NAC describe requirements for the existing water system. Recommended design criteria for the water system is outlined in the sections to follow.

A. On-Site Water System

Design criteria for the on-site water system is in conformance with the NAC and City of Fernley design standards [4] as follows:

- Supply capacity: Total system capacity (including storage) should be sufficient to meet the MDD and fire demand with all facilities in service per NAC 445A.6672. In addition, total system capacity should be sufficient to meet the ADD and fire demand with the most productive well out of service. Alternative pumping capacity and storage capacity can be considered as sources of supply per NAC 445A.66725.1.
  - A well or booster pump is considered alternative pumping capacity when equipped with a source of backup power (e.g. emergency generator).
- Storage capacity: Storage capacity will include operating storage, emergency reserve, and fire demand per NAC 445A.6674, 445A.66745, 445A.6675, and 445A.66755.
  - Operating Storage: Recommend eight hours of indoor PHD above MDD (on-site pumping and off-site water system will be designed to provide MDD).
  - Emergency Reserve: Recommend 24 hours of indoor and outdoor ADD.
  - Fire Demand: Largest fire storage requirement in each service area.
- Distribution system pressures (NAC 445A.6711):
  - Minimum pressure of 40 psi during MDD.
  - Minimum pressure of 20 psi during MDD + fire flow.
  - Minimum pressure of 30 psi during PHD.
  - Maximum static pressure of 100 psi.
- Distribution system main sizing [4]:
  - Minimum water main size of 8-inch diameter.
  - Maximum velocity of 8-feet per second (fps) during PHD.
  - Maximum velocity of 18 fps during MDD + fire flow.
  - Hazen Williams roughness coefficient ('C' Value) of 130 for pipe diameters greater than or equal to 14-inch diameter and 120 for pipe diameters less than 14-inch diameter.
- Minimum 10-feet horizontal and 18-inch vertical (water main above) separation from sewer, storm, and reclaimed water pipelines, unless approved otherwise with special construction per NAC 445A.6715.
- Isolation valves required at intervals not to exceed 500 ft, at intervals to isolate no more than (2) fire hydrants at any time, at all main intersections, and at tees/crosses.
- Air/vacuum valves required at high points along water pipelines per NAC 445A.67135.
- Fire hydrants spacing in accordance with fire department having jurisdiction.
- Individual pressure reducing valve (PRV) required when static pressure exceeds 80 psi.

VI. EVALUATION OF ON-SITE WATER SYSTEM

A. Supply

Two wells currently supply approximately 50% of the water supply to the City of Fernley. These wells are not directly supplying the Victory Logistics Project, but feed the City of Fernley's water distribution system, which Victory Logistics is connecting to. Mark IV has acquired dedicated water rights and will be served directly by the City of Fernley. Mark IV is in the process of determining the viability of re-drilling one of the wells located on site (Well 9) and relocating it approximately 300-feet NE of its current location. The relocated Well 9 will be tied into the existing City of Fernley water distribution system, but will not directly serve the project.

B. Storage

Four storage tanks will be required to provide operating storage, emergency reserves, and fire demand (as defined by NAC 445A.6674-.66755) for the built-out Mark IV development. One tank is already built and three tanks are proposed. Exact phasing and sizing of tanks will be determined by development needs at the time of final design. Preliminary tank elevations and hydraulic grade lines (HGLs) are summarized in Table 5. Storage tank locations and pressure zone delineations are shown on Figure 2. The existing (e)T5000 tank (Northeast Tank) has a maximum storage of 2.5 MG (per discussion with the City of Fernley.) All tanks are proposed to serve the Pressure Zone One and Low Zone.

Table 5: Preliminary Tank Elevations

Tank	Base Elevation (ft)	Max Height (ft)
(e)T5000	4,310.65	36.0
T5002	4,310.65	36.0
T5004	4,295.00	36.0
T5006	4,275.00	36.0

The operational storage is required at 33 percent MDD at 1,440-GPD per ERC [3]. The emergency reserves is required for the ADD at 720-GPD per ERC [3]. When combined, this can be simplified as 1,200-GPD per ERC. The estimated storage tanks sizes required for Mark IV considering operating storage, emergency reserve, and fire demand are shown in Table 6.

Table 6: Preliminary Storage Tank Requirements

Required Storage		Tank Size Required
Operational + Emergency Storage	Fire Demand	
1,200-gpd/ERC	4,000 gpm for 4 hours	
(gal)		(MG)
9,602,846	720,000	10.32

The storage requirements are based on the 2008 Water Master Plan [3] and will need to be updated to meet the updated City of Fernley Department of Public Works 2022 Water Master Plan during final design.

C. Distribution

Preliminary design of the distribution system considers minimum/maximum pressure and maximum velocity requirements outlined in the design criteria in Section V.A. The distribution system is planned to consist of C900 PVC and Ductile Iron pipe with diameters ranging from 10- to 30-inches. Pressures in the system are anticipated to be regulated via PRVs and tanks as necessary with the final layout and sizing to be determined during final design. Two pressure zones are proposed to be utilized in this development: Pressure Zone 1 and Low Zone.

Total pipeline lengths for the backbone distribution system are summarized in Table 7. The preliminary backbone distribution system is shown in Figure 3.

Table 7: Pipeline Lengths for Backbone Distribution System

Pipe Size (inches)	Pipe Length (LF)
10	11440
12	8800
14	880
16	4290
18	240
20	450
24	8750
30	400
Total	**35250**

[1] Preliminary Quantities are for preliminary distribution system only.

VII. EVALUATION OF OFF-SITE WATER SYSTEM

The Mark IV Industrial Subdivision's water supply has been assumed to be provided by the existing City of Fernley water system, but the majority of the storage and pressure has been provided onsite. Reference Appendix B for Shaw Engineering's Technical Memorandum outlining the required offsite upgrades for different trigger points. These trigger points are in conjunction with the triggers outlined in Section II. B.

VIII. CONCEPTUAL WATER SYSTEM RECOMMENDATIONS

A. System Description

The preliminary on-site water system includes a backbone distribution system with a minimum of two pressure zones, pipe diameters ranging from 10- to 30-inch diameter and three proposed water storage tanks. Additionally, the project anticipates moving Well No. 9 300 feet northwest in order to allow for proper clearances to the proposed transload facility.

B. Opinion of Probable Costs

A Class 5 Engineer's opinion of probable costs is presented in Table 8. The presented Engineer's opinion of probable costs are "whole" project estimates that include construction phase costs. It should be noted that the presented opinions of probable costs are strictly conceptual in nature and may differ significantly from actual construction costs. These costs reflect the Engineer's impression of material, equipment, labor, etc. at the time of the estimate based on experience

and judgement in applying presently available data. The engineer has no control over cost of labor, materials, equipment, competitive bidding practices, market conditions, tariffs, costs associated with funding packages, inflation, etc. Thus, the engineer cannot warrant that the actual project costs will not vary from the Engineer's opinion of probable cost.

Table 8: Preliminary Opinion of Probable Construction Costs: On-Site System

Item	Description	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization & Demobilization	LS	1	$ 1,000,000	$ 1,000,000
2	10-inch Pipeline[1]	LF	11440	$ 112	$ 1,281,280
3	12-inch Pipeline[1]	LF	8800	$ 125	$ 1,100,000
4	14-inch Pipeline[1]	LF	880	$ 150	$ 132,000
5	16-inch Pipeline[1]	LF	4290	$ 200	$ 858,000
6	18-inch Pipeline[1]	LF	240	$ 225	$ 54,000
7	20-inch Pipeline[1]	LF	450	$ 250	$ 112,500
8	24-inch Pipeline[1]	LF	8750	$ 250	$ 2,187,500
9	30-inch Pipeline[1]	LF	400	$ 300	$ 120,000
10	Fire Hydrants[1]	EA	104	$ 8,500	$ 884,000
11	Pressure Reducing Station	EA	2	$ 50,000	$ 100,000
12	Tank 1 - 3 MG Tank[2]	LS	1	$ 3,000,000	$ 3,000,000
13	Tank 2 - 3 MG Tank[2]	LS	1	$ 3,000,000	$ 3,000,000
14	Tank 3 - 3 MG Tank[2]	LS	1	$ 3,000,000	$ 3,000,000
15	Well & Well House	EA	1	$ 1,000,000	$ 1,000,000
				Subtotal	$ 17,829,280
				Contingency (15%)	$ 2,674,392
Total Project Costs					**$ 20,503,672**

[1] Quantities are for public distribution system only. Include air/vacuum valves, isolation valves, restrained joints, fittings, excavation, backfill.

[2] Includes tank foundation, tank accessories, on-site improvements/civil work, and on-site piping.

C. Permitting Requirements

Permits and approvals that may be required for design and construction of the on-site and off-site water systems include, but are not be limited to, the following:

- City Special Use Permits
- City Building Permits
- City SWPPP Permits
- City Erosion Control Permits
- City Encroachment Permit
- Nevada Division of Water Resources Water Right Permits
- Utility Environmental Protection Act (UEPA) Permit from Public Utilities Commission of Nevada (PUDN) for Transmission Main and Storage Tanks
- Nevada Department of Transportation (NDOT) Right-of-Way Occupancy Permit

- Nevada Division of Environmental Protection (NDEP) Bureau of Safe Drinking Water Application for Approval of a Water Project
- Review and Approvals by County, City, and GBWC

D. Construction Considerations

Considerations for design and construction of the on-site water facilities are summarized below:

- Utility conflicts: A thorough investigation of existing utilities along the water main alignments will need to be conducted during design including review of record drawings, coordination with utility companies, and potentially potholing.
- Special construction: Special construction (e.g. concrete encasement) may be required if minimum utility separations cannot be met within existing utility corridors.
- Connection to existing systems: Connection to the existing City of Fernley water mains will need to be coordinated and planned to minimize water service interruptions.
- Traffic control: Traffic control measures will need to be developed and implemented in accordance with the requirements of Fernley, NDOT, and the Manual on Uniform Traffic Control Devices.
- NDOT: Construction requirements and right-of-way occupancy permit terms will need to be incorporated into the design and considered for the project schedule.

IX. CONCLUSIONS

The preliminary water distribution system within the Mark IV Industrial Subdivision was designed using conservative land use estimates and sized to accommodate flows at all stages of development through build-out. The on-site system will connect to two existing pressure zones within the City of Fernley's distribution system (Pressue Zone 1 and Low Zone), will contain 10- to 30-inch diameter pipe, and will have four storage tanks (one existing and three proposed). Hydraulic modeling results and calculations show that the conceptual Mark IV water distribution system will be in compliance with all state and local regulations to meet required ADD, MDD, PHD, and fire flow scenarios. Exact phasing, sizing, and location of on-site infrastructure will be determined by development needs at the time of final design.

X. REFERENCES

[1] Office of Energy Efficiency & Renewable Energy, Federal Water Use Indices (Source: American Water Works Association 1996), May 2016. <http://energy.gov/eere/femp/federal-water-use-indices>

[2] Morales, Miguel A., Heaney, James P., Friedman, Kenneth R., and Martin, Jacqueline M. "*Estimating Commercial, Industrial, and Institutional Water Use on the Basis of Heated Building Area*." Journal American Water Works Association, June 2011, pp. 84-96.

[3] R. Brad Peters, "*City of Fernley Public Works Department 2008 Water Master Plan*", City of Fernley, June 2008

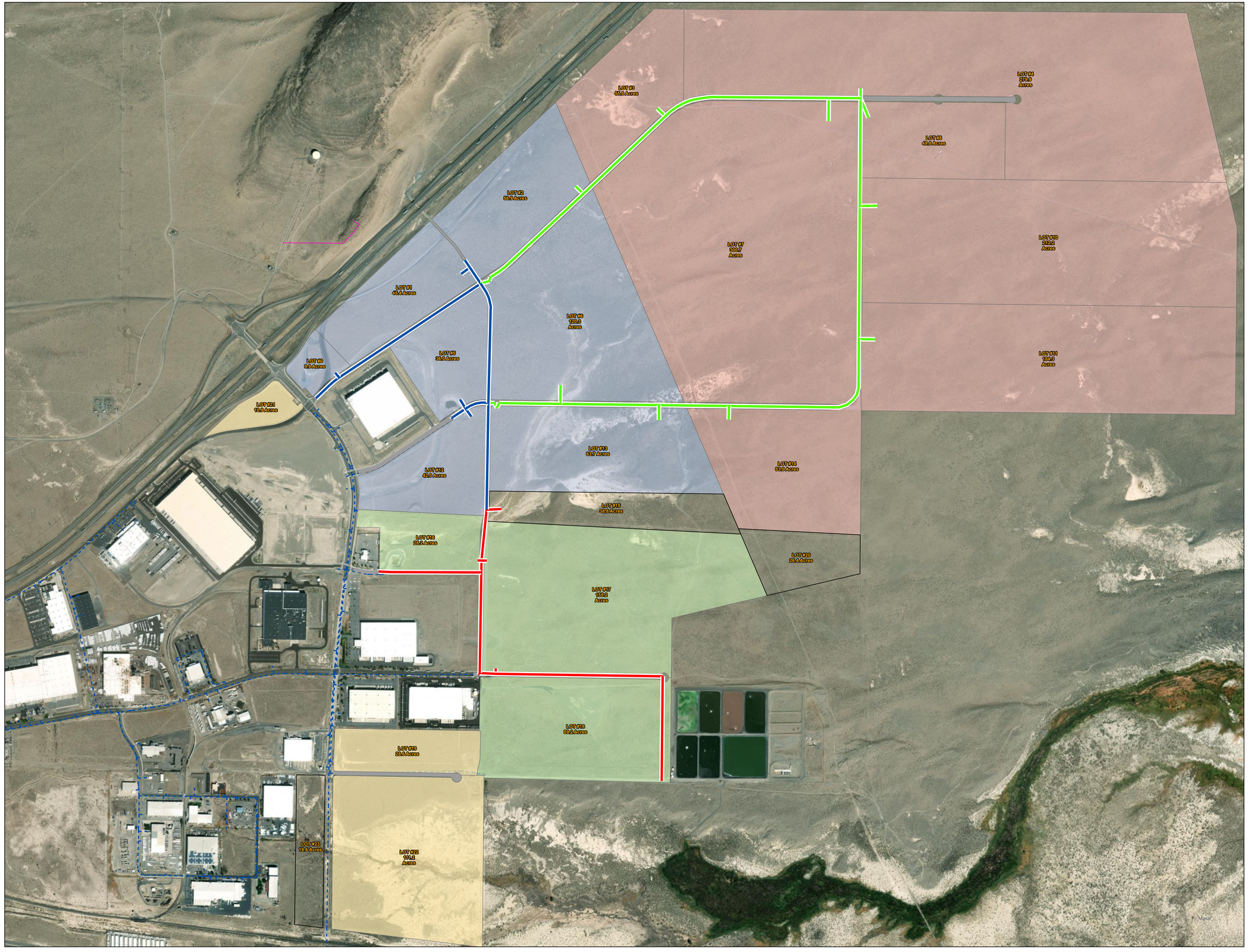
[4] City of Fernley Department of Public Works Design Standards, 4.0 – Potable Water System Distribution and Transmission Facilities, May 2008

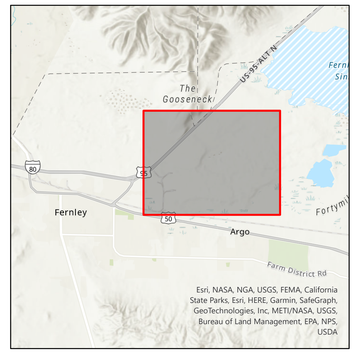
[5] City of Fernley Department of Public Works Design Standards, 7.0 – Water Storage Tanks, May 2008

[6] Cody R. Black, P.E., "NAC 445A Design Report – Victory Logistics Mark IV Building C Phase II", Shaw Engineering, May 2020

FIGURES

Figure 1: Preliminary Phasing





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PHASING MAP

VICTORY LOGISTICS TENTATIVE MAP

PAGE 1 OF 3

LEGEND

Water Pipelines
Scenario
- EAST
- SOUTH
- TANK
- WEST

Conceptual Lot Areas
Water Zone
- Northwest
- South
- Northeast
- Tie Into Existing
- No Water Demand
- Existing Water Infrastructure

N

Paper Size: 24" x 36"

0 600 1,200
Feet

Projection: Transverse Mercator
Grid: NAD 1983 StatePlane Nevada West FIPS 2703 Feet
Datum: North American 1983
Created by: imahaffey

Date:	8/7/2023
Project #:	10067.008
Revision:	

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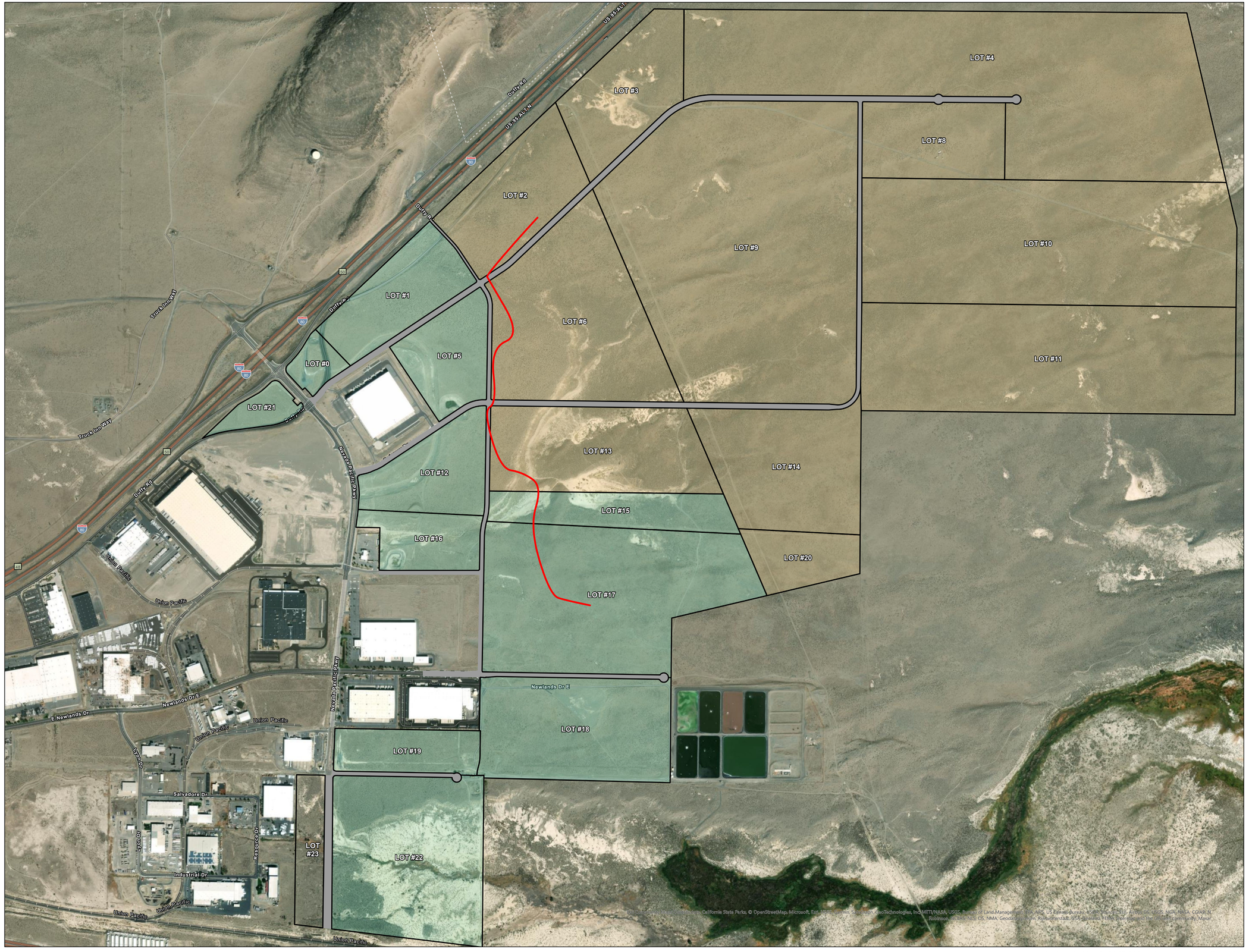
Figure 2: Preliminary Pressure Zones



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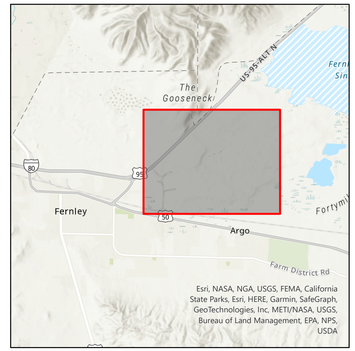

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PRELIMINARY PRESSURE ZONES MAP

VICTORY LOGISTICS TENTATIVE MAP

PAGE 2 OF 3

LEGEND

- Pressure Delimiter (HGL)
- Pump
  - Active
  - Inactive
- Reservoir
  - Active
  - Inactive
- Tank
  - Active
  - Inactive
- Valve
  - Active
  - Inactive
- Pipe
  - Active
  - Inactive
- Lot Assigned Pressure Zone
  - 1
  - 2
  - UNDETERMINED

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Paper Size: 24" x 36"

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Feet

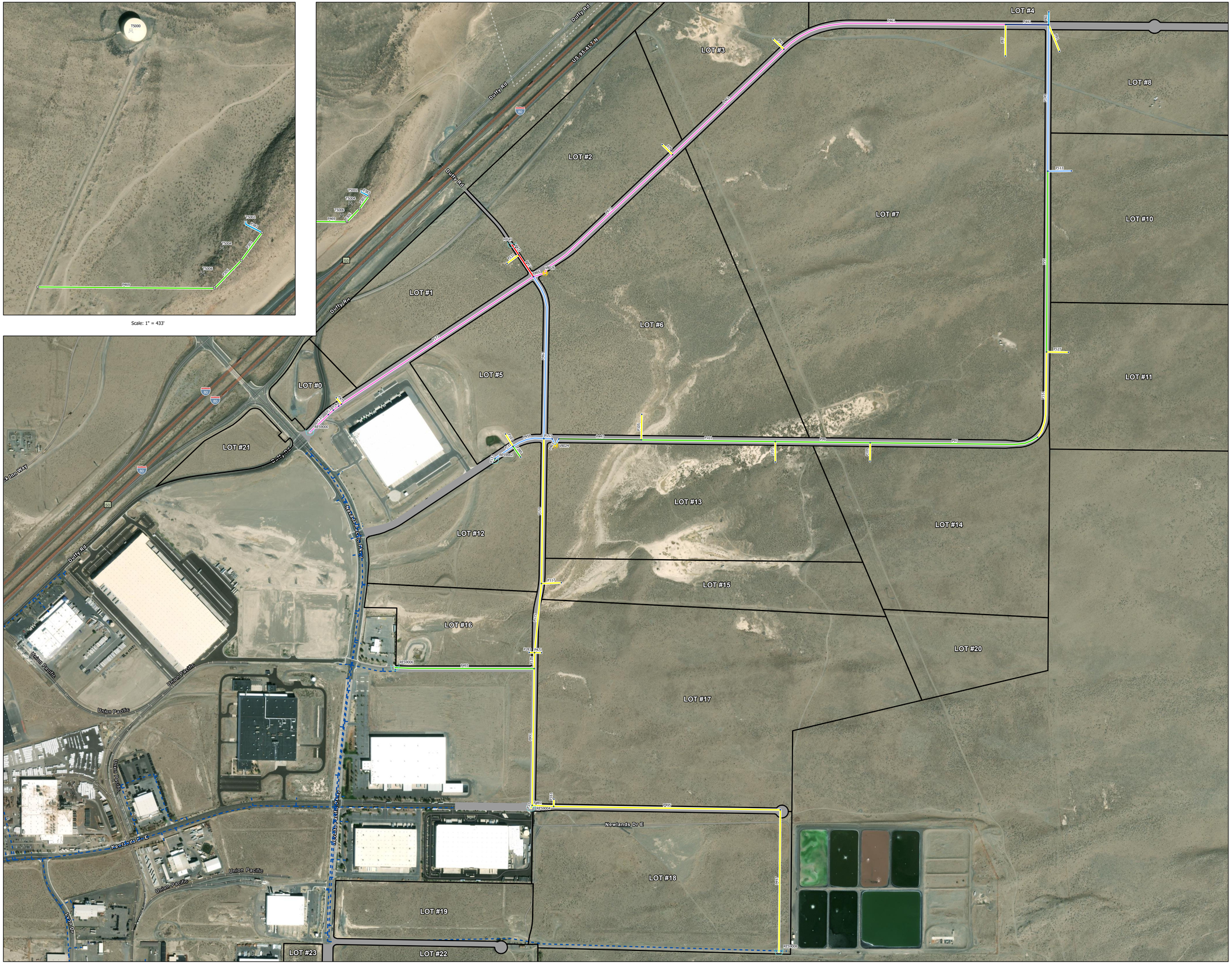
Projection: Transverse Mercator
Grid: NAD 1983 StatePlane Nevada West FIPS 2703 Feet
Datum: North American 1983
Created by: imahaffey

Date:	1/21/2022
Project #:	10067.008
Revision:	

Figure 3: Preliminary On-Site Water System

T5000
P469

Scale: 1" = 433'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Newlands Dr E
West Pads Cir E
Union Pacific
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APPENDICES

Appendix A

Water Model Results

ID	Length (ft)	Diameter (in)	Roughness Coefficient	Flow (gpm)	Velocity (fps)
P-3	69.46	24	120	7262.75	5.15
P-31	225	16	130	4287	6.8
P-4	69	24	120	7263	5.2
P-5	35	24	120	7263	5.2
P101	1392	12	130	1320	3.7
P103	151	10	120	290	1.2
P105	266	10	120	222	0.9
P107	212	10	120	683	2.8
P109	191	10	120	677	2.8
P113	247	16	120	1709	2.7
P115	722	10	120	126	0.5
P117	207	10	120	7	0.0
P127	228	10	120	1484	6.1
P131	151	10	120	365	1.5
P133	21	14	130	4287	8.9
P135	166	10	120	-1354	5.5
P137	265	24	120	7263	5.2
P149	1520	16	130	3233	5.2
P151	904	10	130	40	0.2
P157	88	16	130	1542	2.5
P159	1505	10	120	132	0.5
P161	76	10	120	-165	0.7
P173	2395	24	120	7166	5.1
P283	56	10	120	-230	0.9
P285	137	12	120	-343	1.0
P37	32	10	120	-626	2.6
P441	448	20	130	5889	6.0
P447	859	14	130	1542	3.2
P449	75	16	130	1542	2.5
P451	76	16	130	1542	2.5
P457	273	30	130	-1956	0.9
P459	339	16	130	3654	5.8
P461	2375	24	130	6266	4.4
P463	1593	24	130	6716	4.8
P465	128	24	130	7190	5.1
P467	1718	16	100	-1980	3.2
P471	74	10	100	1250	5.1
P473	126	30	130	1590	0.7
P475	86	10	120	-97	0.4
P477	1763	24	130	7190	5.1
P479	54	24	120	7190	5.1
P481	224	10	120	110	0.5
P491	1420	10	120	-515	2.1
P493	1448	12	120	838	2.4

INFOWATER PIPE REPORT

ID	Length (ft)	Diameter (in)	Roughness Coefficient	Flow (gpm)	Velocity (fps)
P495	2356	10	120	-54	0.2
P497	1475	10	120	-54	0.2
P79	153	10	120	474	1.9
P81	157	10	120	450	1.8
P83	137	18	120	2254	2.8
P87	327	10	120	378	1.5
P91	297	10	120	401	1.6
P95	1878	12	130	1524	4.3
P97	1756	12	120	-40	0.1
P99	986	12	130	637	1.8

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J100	0.00	4,086.49	4,246.25	69.23
J104	0.00	4,076.11	4,247.34	74.19
J108	0.00	4,115.98	4,253.23	59.47
J112	0.00	4,153.91	4,326.22	74.66
J120	0.00	4,152.72	4,328.55	76.19
J124	0.00	4,154.09	4,330.63	76.49
J128	0.00	4,124.76	4,325.96	87.18
J132	0.00	4,124.67	4,330.90	89.36
J148	0.00	4,140.16	4,320.01	77.93
J150	0.00	4,123.51	4,325.85	87.67
J24	0.00	4,145.72	4,320.04	75.53
J276	0.00	4,154.49	4,326.09	74.35
J278	0.00	4,154.82	4,255.53	43.64
J282	0.00	4,145.00	4,284.26	60.34
J284	0.00	4,111.06	4,330.95	95.28
J288	0.00	4,123.43	4,330.88	89.89
J296	0.00	4,123.63	4,327.93	88.52
J30	0.00	4,161.41	4,329.27	72.73
J32	0.00	4,161.41	4,329.40	72.79
J34	0.00	4,161.41	4,329.68	72.91
J36	0.00	4,160.04	4,329.95	73.62
J42	0.00	4,116.44	4,278.37	70.16
J58	0.00	4,109.81	4,273.67	71.00
J74	0.00	4,095.48	4,267.52	74.55
J78	0.00	4,092.64	4,265.00	74.68
J88	0.00	4,068.94	4,256.67	81.34
J92	0.00	4,094.80	4,246.28	65.64
J98	0.00	4,102.17	4,246.27	62.43
LOT0	97.21	4,161.00	4,329.26	72.91
LOT1	365.45	4,144.19	4,319.84	76.11
LOT10	1,709.16	4,070.58	4,256.18	80.42
LOT11	1,483.91	4,094.55	4,242.89	64.28
LOT12	342.57	4,151.00	4,328.49	76.91
LOT13	682.77	4,104.17	4,246.59	61.71
LOT14	676.98	4,090.51	4,245.59	67.20
LOT15	6.72	4,127.00	4,325.96	86.21
LOT16	229.69	4,124.40	4,325.82	87.28
LOT17	1,249.82	4,124.40	4,324.73	86.80
LOT18	164.63	4,120.00	4,330.86	91.37
LOT2	474.08	4,121.54	4,278.09	67.83
LOT3	449.60	4,111.37	4,273.42	70.21
LOT4	2,254.35	4,089.65	4,264.75	75.87
LOT5	289.90	4,153.93	4,328.44	75.62
LOT6	222.08	4,119.95	4,253.12	57.70
LOT7	377.62	4,102.00	4,267.13	71.55
LOT8	401.28	4,090.68	4,264.61	75.36

ID	Length (ft)	Diameter (in)	Roughness Coefficient	Flow (gpm)	Velocity (fps)
P-3	69.46	24	120	7218.75	5.12
P-31	224.5	16	130	3267.88	5.21
P-4	69.45	24	120	7218.75	5.12
P-5	34.73	24	120	7218.75	5.12
P101	1392.18	12	130	423.36	1.2
P103	151.16	10	120	195.35	0.8
P105	265.53	10	120	155	0.63
P107	212.01	10	120	460.01	1.88
P109	191.11	10	120	456.11	1.86
P113	247.39	16	120	1151.69	1.84
P115	721.56	10	120	-4.68	0.02
P117	207.32	10	120	6.72	0.03
P127	228.27	10	120	999.91	4.08
P131	150.67	10	120	246.25	1.01
P133	21.14	14	130	3267.88	6.81
P135	166.08	10	120	-1001.6	4.09
P137	265.41	24	120	7218.75	5.12
P149	1520.18	16	130	2644.36	4.22
P151	903.54	10	130	492.76	2.01
P157	87.64	16	130	578.36	0.92
P159	1504.83	10	120	2.04	0.01
P161	76.02	10	120	-114.9	0.47
P173	2394.75	24	120	7125.41	5.05
P283	55.87	10	120	-154.75	0.63
P285	137.14	12	120	-230.8	0.65
P37	32.41	10	120	-457.18	1.87
P441	448.13	20	130	4433.82	4.53
P447	859.19	14	130	578.36	1.21
P449	74.61	16	130	578.36	0.92
P451	75.61	16	130	578.36	0.92
P457	273.25	30	130	-4066.97	1.85
P459	339.16	16	130	2841.73	4.53
P461	2374.59	24	130	4697.37	3.33
P463	1592.83	24	130	5000.33	3.55
P465	128	24	130	5319.77	3.77
P467	1718.18	16	100	-2261.34	3.61
P471	74.06	10	100	842.17	3.44
P473	125.78	30	130	3820.72	1.73
P475	85.87	10	120	-93.34	0.38
P477	1762.53	24	130	5319.77	3.77
P479	54.38	24	120	5319.77	3.77
P481	223.93	10	120	75.75	0.31
P491	1420.3	10	120	-381.43	1.56
P493	1448	12	120	620.17	1.76

INFOWATER PIPE REPORT

ID	Length (ft)	Diameter (in)	Roughness Coefficient	Flow (gpm)	Velocity (fps)
P495	2355.97	10	120	-39.15	0.16
P497	1475.14	10	120	-39.15	0.16
P79	152.87	10	120	319.45	1.3
P81	157.1	10	120	302.96	1.24
P83	136.54	18	120	1519.06	1.92
P87	327.07	10	120	263.55	1.08
P91	297.43	10	120	270.4	1.1

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J100	0.00	4,086.49	4,254.53	72.81
J104	0.00	4,076.11	4,254.52	77.30
J108	0.00	4,115.98	4,255.24	60.34
J112	0.00	4,153.91	4,328.05	75.46
J120	0.00	4,152.72	4,329.52	76.61
J124	0.00	4,154.09	4,330.77	76.56
J128	0.00	4,124.76	4,328.05	88.09
J132	0.00	4,124.67	4,330.95	89.38
J148	0.00	4,140.16	4,320.04	77.94
J150	0.00	4,123.51	4,328.05	88.63
J24	0.00	4,145.72	4,320.15	75.58
J276	0.00	4,154.49	4,328.03	75.19
J278	0.00	4,154.82	4,255.61	43.67
J282	0.00	4,145.00	4,284.35	60.38
J284	0.00	4,111.06	4,330.97	95.29
J288	0.00	4,123.43	4,330.93	89.91
J296	0.00	4,123.63	4,329.24	89.09
J30	0.00	4,161.41	4,329.28	72.74
J32	0.00	4,161.41	4,329.42	72.80
J34	0.00	4,161.41	4,329.69	72.92
J36	0.00	4,160.04	4,329.96	73.63
J42	0.00	4,116.44	4,280.98	71.29
J58	0.00	4,109.81	4,278.26	72.99
J74	0.00	4,095.48	4,274.65	77.64
J78	0.00	4,092.64	4,273.16	78.22
J88	0.00	4,068.94	4,267.42	86.00
J92	0.00	4,094.80	4,257.42	70.47
J98	0.00	4,102.17	4,255.92	66.62
LOT0	93.34	4,161.00	4,329.28	72.91
LOT1	246.25	4,144.19	4,319.96	76.16
LOT10	1,151.69	4,070.58	4,267.18	85.19
LOT11	999.91	4,094.55	4,255.79	69.86
LOT12	230.80	4,151.00	4,329.49	77.34
LOT13	460.01	4,104.17	4,254.16	64.99
LOT14	456.11	4,090.51	4,254.21	70.93
LOT15	6.72	4,127.00	4,328.05	87.12
LOT16	154.75	4,124.40	4,328.04	88.24
LOT17	842.17	4,124.40	4,327.51	88.01
LOT18	114.90	4,120.00	4,330.92	91.39
LOT2	319.45	4,121.54	4,280.85	69.03
LOT3	302.96	4,111.37	4,278.14	72.26
LOT4	1,519.06	4,089.65	4,273.04	79.46
LOT5	195.35	4,153.93	4,329.46	76.06
LOT6	155.00	4,119.95	4,255.18	58.60
LOT7	263.55	4,102.00	4,274.45	74.72

ID	Length (ft)	Diameter (in)	Roughness Coefficient	Flow (gpm)	Velocity (fps)
P-3	69.46	24	120	7138.29	5.06
P-31	224.5	16	130	2539.44	4.05
P-4	69.45	24	120	7138.29	5.06
P-5	34.73	24	120	7138.29	5.06
P101	1392.18	12	130	-81.7	0.23
P103	151.16	10	120	117.96	0.48
P105	265.53	10	120	81.69	0.33
P107	212.01	10	120	280.07	1.14
P109	191.11	10	120	277.7	1.13
P113	247.39	16	120	695.47	1.11
P115	721.56	10	120	-120.32	0.49
P117	207.32	10	120	6.72	0.03
P127	228.27	10	120	603.81	2.47
P131	150.67	10	120	148.7	0.61
P133	21.14	14	130	2539.44	5.29
P135	166.08	10	120	-723.1	2.95
P137	265.41	24	120	7138.29	5.06
P149	1520.18	16	130	1938.74	3.09
P151	903.54	10	130	639.46	2.61
P157	87.64	16	130	0	0
P159	1504.83	10	120	-113.6	0.46
P161	76.02	10	120	-60.56	0.25
P173	2394.75	24	120	7072.91	5.02
P283	55.87	10	120	-94.22	0.38
P285	137.14	12	120	-140.52	0.4
P37	32.41	10	120	-310.8	1.27
P441	448.13	20	130	3019.33	3.08
P447	859.19	14	130	0	0
P449	74.61	16	130	0	0
P451	75.61	16	130	0	0
P457	273.25	30	130	-5933.39	2.69
P459	339.16	16	130	2280.96	3.64
P461	2374.59	24	130	3158.23	2.24
P463	1592.83	24	130	3341.18	2.37
P465	128	24	130	3534.08	2.51
P467	1718.18	16	100	-2394.56	3.82
P471	74.06	10	100	508.56	2.08
P473	125.78	30	130	5784.69	2.63
P475	85.87	10	120	-65.37	0.27
P477	1762.53	24	130	3534.08	2.51
P479	54.38	24	120	3534.08	2.51
P481	223.93	10	120	35.13	0.14
P491	1420.3	10	120	-275.68	1.13
P493	1448	12	120	447.42	1.27

INFOWATER PIPE REPORT

ID	Length (ft)	Diameter (in)	Roughness Coefficient	Flow (gpm)	Velocity (fps)
P495	2355.97	10	120	-25.43	0.1
P497	1475.14	10	120	-25.43	0.1
P79	152.87	10	120	192.9	0.79
P81	157.1	10	120	182.95	0.75
P83	136.54	18	120	917.31	1.16
P87	327.07	10	120	138.9	0.57
P91	297.43	10	120	163.28	0.67
P95	1878.02	12	130	1243.27	3.53

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J100	0.00	4,086.49	4,264.04	76.93
J104	0.00	4,076.11	4,263.66	81.26
J108	0.00	4,115.98	4,263.63	63.98
J112	0.00	4,153.91	4,329.10	75.91
J120	0.00	4,152.72	4,330.07	76.85
J124	0.00	4,154.09	4,330.86	76.60
J128	0.00	4,124.76	4,329.29	88.62
J132	0.00	4,124.67	4,330.97	89.39
J148	0.00	4,140.16	4,320.09	77.97
J150	0.00	4,123.51	4,329.39	89.21
J24	0.00	4,145.72	4,320.31	75.65
J276	0.00	4,154.49	4,329.10	75.65
J278	0.00	4,154.82	4,263.63	47.15
J282	0.00	4,145.00	4,284.42	60.41
J284	0.00	4,111.06	4,330.99	95.29
J288	0.00	4,123.43	4,330.97	89.93
J296	0.00	4,123.63	4,330.04	89.44
J30	0.00	4,161.41	4,329.32	72.76
J32	0.00	4,161.41	4,329.45	72.81
J34	0.00	4,161.41	4,329.72	72.93
J36	0.00	4,160.04	4,329.98	73.64
J42	0.00	4,116.44	4,282.83	72.10
J58	0.00	4,109.81	4,281.55	74.41
J74	0.00	4,095.48	4,279.81	79.87
J78	0.00	4,092.64	4,279.08	80.79
J88	0.00	4,068.94	4,275.85	89.66
J92	0.00	4,094.80	4,268.73	75.36
J98	0.00	4,102.17	4,266.29	71.11
LOT0	65.37	4,161.00	4,329.32	72.93
LOT1	148.70	4,144.19	4,320.06	76.21
LOT10	695.47	4,070.58	4,275.76	88.90
LOT11	603.81	4,094.55	4,268.09	75.19
LOT12	140.52	4,151.00	4,330.06	77.59
LOT13	280.07	4,104.17	4,263.52	69.04
LOT14	277.70	4,090.51	4,263.91	75.14
LOT15	6.72	4,127.00	4,329.29	87.65
LOT16	94.22	4,124.40	4,329.38	88.82
LOT17	508.56	4,124.40	4,329.18	88.73
LOT18	60.56	4,120.00	4,330.97	91.41
LOT2	192.90	4,121.54	4,282.78	69.86
LOT3	182.95	4,111.37	4,281.50	73.72
LOT4	917.31	4,089.65	4,279.04	82.06
LOT5	117.96	4,153.93	4,330.05	76.31
LOT6	81.69	4,119.95	4,263.61	62.25
LOT7	138.90	4,102.00	4,279.75	77.02
LOT8	163.28	4,090.68	4,279.01	81.60

Appendix B

Shaw Engineering Technical Memorandum

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Technical Memorandum

TO: Camille Buehler, P.E., P.L.S

THRU: Derek Starkey, P.E.

FROM: Cody Black, P.E. CB

Owen Wurgler, E.I. OW

RE: Mark IV Industrial Water and Sewer Master Planning Memo

Background

Mark IV Industrial Park is a planned commercial development located North of the existing Wastewater Treatment Plan and east of Nevada Pacific Parkway in Fernley, Nevada. The detailed occupancy of the Industrial Park is estimated to be a mixture of industrial manufacturing, industrial warehouses and limited general commercial. Mark IV Industrial Park is planned to be served by Fernley's Water and Sewer Systems. Offsite infrastructure will be required to accommodate the development and is the subject of this memorandum.

Purpose

The objective of this report is to determine the required onsite and offsite infrastructure required for phased construction and ultimate buildout. This memorandum will accompany sewer and water discoveries under a separate cover. This report elaborates on the plan for the buildout of the offsite infrastructure described in the aforementioned documents.

Discussion

Water System Infrastructure

The City of Fernley currently operates six groundwater wells with a firm production capacity of 8.65 MGD and total production capacity of 12.32 MGD. The groundwater is then conveyed to the City's Water Treatment Plant which has an operating capacity of 20 MGD with the option to upgrade to 30 MGD with the construction of a surface water diversion structure from the TCID Canal and additional treatment facility improvements. The treated water is then stored in 4 tanks totaling 7.0 MG of storage. The City's existing average day demand and maximum day demand are 3.09 MGD and 6.50 MGD, respectively. Utilizing production and storage capacity design criteria from the City of Fernley 2020 Draft Water Master Plan, the required capacity for critical system infrastructure have been calculated and listed in Table 1.

Table 1: Existing Water System Capacity

Item	Existing	Required
Firm Production Capacity	8.65 MGD	MDD = 6.50 MGD
*Total Production Capacity**	12.32 MGD	-
Storage Capacity	7.0 MG	5.475 MG
Treatment Capacity	20 MGD	MDD=6.50 MGD

Mark IV Offsite Phase 1W: Existing System Mark IV Buildout (6% Supply of Manufacturing Scenario)

Mark IV Offsite Phase 1W includes the initial construction Mark IV onsite facilities with no improvements to public infrastructure other than the distribution mains required to serve the buildings. Capacity of the existing system is limited by storage in the tanks and distribution system capacity. The City of Fernley has enough storage capacity to provide service to approximately 411 Equivalent Residential Connections (ERC's). In order to develop without offsite water improvements, the demand of the first phase of buildings must not exceed the fixture unit equivalent of 411 ERC's (600 GPM MDD). Demand of the buildings will depend upon occupancy type and size. Despite having the minimum required storage across the system, The Mark IV Industrial Park is heavily reliant, and therefore restricted by the ability to fill the Northeast Tank which, at this moment, does not have a high pressure main with a PRV nearby to help tank levels recover. Phase 1W correlates with Figure 1 and Report 1 included as attachments. Table 2 below lists the available infrastructure capacity and the required infrastructure capacity after the construction of 411 ERC's.

Table 2: Phase 1W Water System Capacity

Item	Phase 1W System Capacity	Existing System Demand	Excess Capacity	Phase 1W Project Demand	Remaining Capacity
Firm Production Capacity	8.65 MGD	6.50 MGD	2.15 MGD	0.86 MGD	1.26 MGD
Total Production Capacity	12.32 MGD	6.50 MGD	5.82 MGD	0.86 MGD	4.96 MGD
Storage Capacity	7.0 MG	5.48 MG	1.52 MG	1.41 MG	0.11 MG
Treatment Capacity	20 MGD	6.50 MGD	13.5 MG	0.86 MGD	12.64 MG

1) Available capacity must be more than required capacity

Mark IV Offsite Phase 2Wa: High Pressure Main Extension and Water Supply (23% to 33% Supply of Manufacturing Scenario)

Mark IV Offsite Phase 2Wa includes the construction of a high-pressure main extension. In order to increase maximum day demand and fire flow capacities to the Mark IV Industrial Park, the City's high-pressure main must be extended from upstream of the Mesa PRV to Mission Way. This will provide anywhere from 1,250 additional ERC's (1,822 GPM MDD) to 2,000 additional ERC's (2,916 GPM MDD) to the existing system depending on the extent of the high pressure main and distribution main upgrades/extensions. To serve the larger demands, The high-pressure main can be extended to connect directly into the Mark IV industrial Park through a PRV which will provide the additional capacity and allow storage tanks to recover quickly. Should the timing of Phase 2Wa and 2Wb not correlate with the expansion of the Water Treatment Plant, additional groundwater wells will need to be drilled or alternative means of water supply will need to be explored in order to meet the demand of the development and the system.

Mark IV Offsite Phase 2Wb: Mark IV Storage Tanks (23% to 33% Supply of Manufacturing Scenario)

Mark IV Offsite Phase 2Wb includes the construction of multiple storage tanks with phased construction timelines. The extension of the High-Pressure Main is essential to supply the Mark IV Industrial Park; however, the Draft 2020 Water Master Plan dictates minimum storage requirements for the system. The system currently has 0.8 MG of surplus storage which is approximately 475 ERC's.

To meet storage requirements for the system Mark IV must construct Storage Tanks as new services come online. Construction of all storage tanks to supply build-out demand immediately is not required; however, it should be considered by both the City and developer when deciding tank locations and sizes. Phase 2Wa and 2Wb correlates with Figure 2 and Report 2 included as attachments.

Table 3: Phase 2W Water System Capacity

Item	Phase 2W System Capacity	Phase 1W System Demand	Excess Capacity	Phase 2W Project Demand	Remaining Capacity
Firm Production Capacity	8.65 MGD	7.36 MGD	1.29 MGD	4.20 MGD	-2.91 MGD
Total Production Capacity	12.32 MGD	7.36 MGD	4.96 MGD	4.20 MGD	0.76 MGD
Storage Capacity	10.5 MG	6.89 MG	3.61 MG	3.39 MG	0.22 MG
Treatment Capacity	20 MGD	7.36 MGD	12.64 MGD	4.20 MGD	8.44 MGD

1) Available capacity must be more than required capacity

Mark IV Offsite Phase 3W: Water Treatment Plant Surface Water Intake and Treatment Upgrades (100% Supply of Manufacturing Scenario)

The City of Fernley Water Treatment Plant was designed for an operating capacity of 20 MGD, the complete build-out of the Mark IV Industrial Park with 100% manufacturing occupancy would exceed this capacity. When the water treatment plant was designed and constructed, it was planned to be able to be upgraded to 30 MGD in the future. Upgrades to the WTP have been reported on previous studies to include the construction of a surface water intake from the TCID Canal, three additional flocculation and sedimentation basins, four additional microfiltration trains, 2 additional solids handling ponds with a clarifier and thickening unit, an additional clear well tank, and two additional high service pumps. The City is currently constructing a surface water intake from the TCID Canal and work is beginning on updated analysis for treating surface water at the plant. There are many factors which may change in the coming years which will impact the plants ability to both treat surface water as well as treat flow up to and in excess of 20 MGD. It is reasonable to assume there will be some improvements required to the water treatment plant for 100% manufacturing in the Mark IV Industrial Park. Due to current well and surface water delivery plans, additional water resources will also likely be required to meet these higher manufacturing occupancy demands.

Table 4: Phase 3W Water System Capacity

Item	Phase 3W System Capacity	Phase 2W System Demand	Excess Capacity	Phase 3W Project Demand	Remaining Capacity
Intake and Diversion Capacity	30 MGD	11.56 MGD	18.44 MGD	9.57 MGD	8.87 MGD
Storage Capacity	18 MG	11.56 MG	6.44 MG	6.44 MG	0 MG
Treatment Capacity	30 MGD	11.56 MGD	18.44 MGD	9.57 MGD	8.87 MGD

1) Available capacity must be more than required capacity

Sewer System Infrastructure

The City of Fernley currently operates multiple Lift Stations and the City's East Wastewater Treatment Plant. The existing wastewater treatment plant inflow is approximately 1.55 MGD and its maximum

treatment capacity is 3.05 MGD. Per the 2009 Sewer Master Plan, the wastewater treatment plant must begin expansion design once its inflow reaches 2.29 MGD or 75% of design capacity and begin construction once inflow reaches 2.59 MGD or 85% design capacity. The Mark IV Industrial Park will not rely on any existing lift stations for service with the exception of a small portion located south of Newlands Drive which will gravity to the East Lift Station and subsequently the East Wastewater Treatment Plant.

Mark IV Offsite Phase 1S: Existing System (8% of Average Day Flow)

In its current state, the system can provide service to area of the Mark IV industrial Park which can be served via gravity. Lumos and Associates estimated the average day flow via gravity to be 104 gpm (0.15 MGD).

Mark IV Offsite Phase 2S: Lift Station Construction (55% of Average Day Flow)

To serve a majority of the Mark IV Industrial Park, multiple lift stations will need to be constructed. It appears a majority of the Mark IV Industrial Park can be served by 2 or 3 lift stations. The buildout of the Lift Stations and subsequently the Mark IV Industrial Park is dependent on the available capacity of the wastewater treatment Plant. The existing wastewater treatment plant can accommodate an inflow of 514 gpm or 0.74 MGD before the expansion design needs to begin, and construction will need to begin when the Industrial Park reaches an inflow of 722 gpm or 1.04 MGD.

Mark IV Offsite Phase 3S: WWTP Expansion and Lift Station Completion (100% of Average Day Flow)

To accommodate the Average Day Flow from the Mark IV Industrial Park, the East Wastewater Treatment Plant must expand to a minimum capacity of 3.50 MGD. This expansion does not include the construction of any other large developments within the City. Expansion capacity will be determined during the design phase after the inflow has reached 2.29 MGD.

As part of the current sewer master plan update, the City is reviewing potential expansion options for the East Wastewater Treatment Plant. Initially, an expansion of the lagoon treatment ponds appears to be the most cost effective, however options for transitioning to a mechanical plant are also being reviewed.

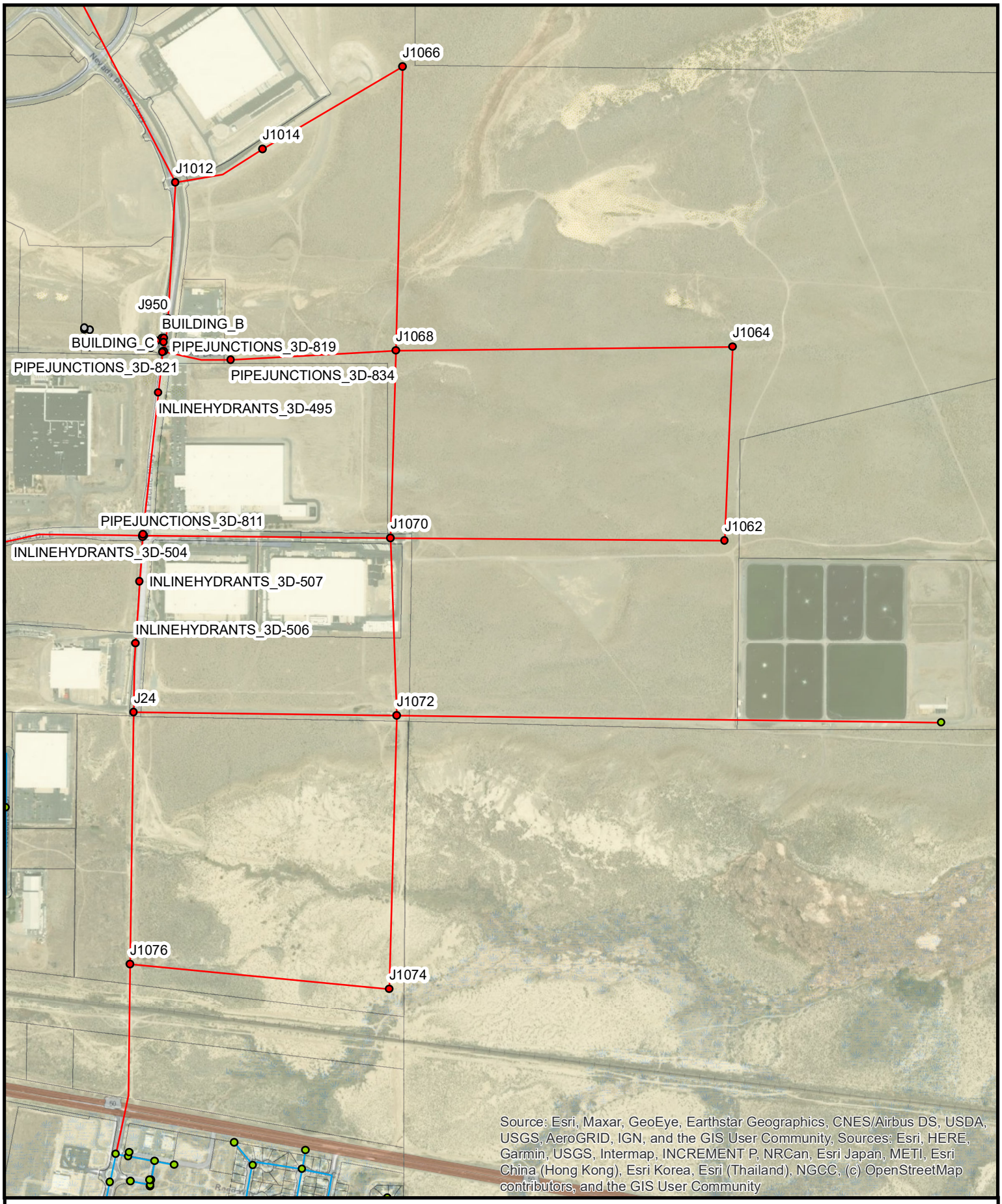
Attachments:

Figure 1: Mark IV Industrial Park 600 GPM Interim Modeling

Figure 2: Mark IV Industrial Park Full Build out Modeling

Report 1: Mark IV Industrial Park 600 GPM Results

Report 2: Mark IV Industrial Park Full Build Out Results



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N

1 " = 1,000 '

Figure 1: Mark IV Industrial Park 600 GPM Interim Modeling

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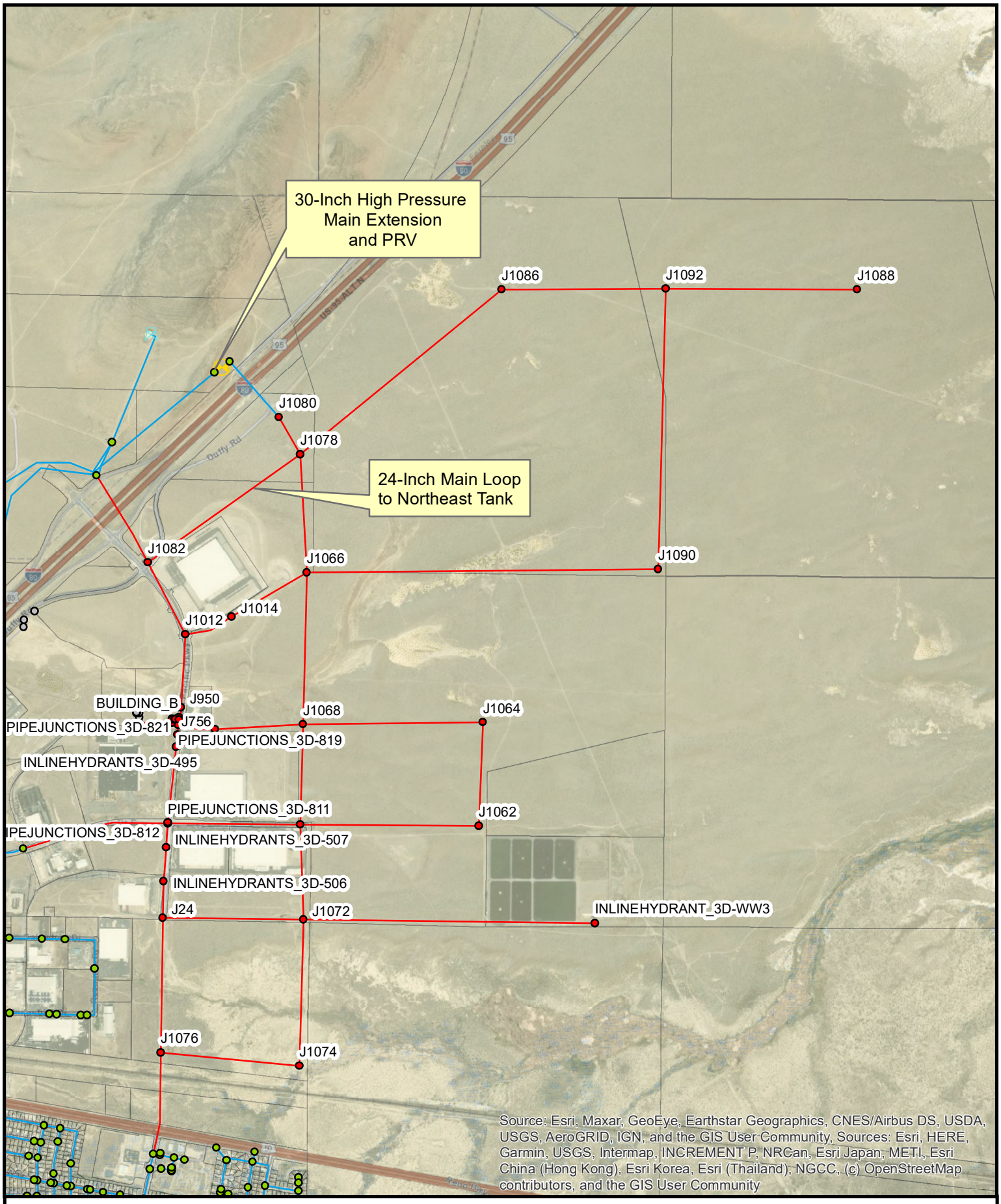

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1 " = 1,868 '

Figure 2: Mark IV Industrial Park Build Out Modeling

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Table 1: Mark IV Industrial Park 600 GPM Interim Build out- MDD+FF					
ID	Static Demand (gpm)	Static Pressure (psi)	Fire-Flow Demand (gpm)	Residual Pressure (psi)	Hydrant Available Flow (gpm)
INLINEHYDRANTS_3D-495	0	88.04	1,000.00	86.17	12,995.29
INLINEHYDRANTS_3D-502	0	88.24	1,000.00	86.38	13,017.85
INLINEHYDRANTS_3D-504	0	89.06	1,000.00	87.18	13,291.25
INLINEHYDRANTS_3D-505	0	88.84	1,000.00	86.96	13,270.05
INLINEHYDRANTS_3D-506	0	91.39	1,000.00	89.4	12,968.75
INLINEHYDRANTS_3D-507	0	90.55	1,000.00	88.62	13,184.92
J1012	0	84.31	1,000.00	82.55	12,799.68
J1062	99.99	92.97	4,000.00	55.55	6,026.73
J1064	99.99	89.51	4,000.00	52.05	5,857.21
J1066	99.99	74.12	4,000.00	48.7	6,368.17
J1068	99.99	88.31	4,000.00	72.07	9,851.74
J1072	99.99	91.47	4,000.00	71.85	8,916.24
J1074	99.99	99.7	4,000.00	71.82	7,575.23

Table 2: Mark IV Industrial Park Build Out-MDD+FF					
ID	Static Demand (gpm)	Static Pressure (psi)	Fire-Flow Demand (gpm)	Residual Pressure (psi)	Hydrant Available Flow (gpm)
INLINEHYDRANTS_3D-495	0	79.59	1,000.00	77.44	15,082.77
INLINEHYDRANTS_3D-502	0	79.81	1,000.00	77.67	15,222.69
INLINEHYDRANTS_3D-504	0	80.49	1,000.00	78.29	14,983.55
INLINEHYDRANTS_3D-505	0	80.28	1,000.00	78.08	14,964.10
INLINEHYDRANTS_3D-506	0	82.7	1,000.00	80.31	14,110.33
INLINEHYDRANTS_3D-507	0	81.93	1,000.00	79.65	14,624.98
INLINEHYDRANT_3D-WW3	2.2	80.93	1,500.00	54.09	2,406.95
J1012	0	77.74	1,000.00	76.22	18,359.42
J1062	675.27	81.9	4,000.00	52.77	7,355.11
J1064	675.27	78.46	4,000.00	49.46	7,121.72
J1066	675.27	67.09	4,000.00	58.44	14,075.23
J1068	675.27	78.73	4,000.00	65.96	12,763.84
J1070	675.27	76.36	4,000.00	62.00	11,551.58
J1072	675.27	81.26	4,000.00	62.96	10,027.14
J1074	675.27	89.56	4,000.00	66.28	9,049.32
J1076	675.27	83.93	4,000.00	69.46	12,521.11
J1078	675.27	78.73	4,000.00	77.73	34,321.27
J1080	675.27	84.25	4,000.00	83.68	35,475.38
J1082	675.27	77.94	4,000.00	76.67	38,542.24
J1086	675.27	87.55	4,000.00	76.84	14,055.01
J1088	675.27	93.44	4,000.00	32.77	5,188.37
J1090	675.27	90.66	4,000.00	62.50	7,844.01
J1092	675.27	97.36	4,000.00	82.98	12,665.67

PRELIMINARY SEWER REPORT

for

VICTORY

LOGISTICS | DISTRICT

TENTATIVE INDUSTRIAL SUBDIVISION

Prepared For:
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Prepared By:

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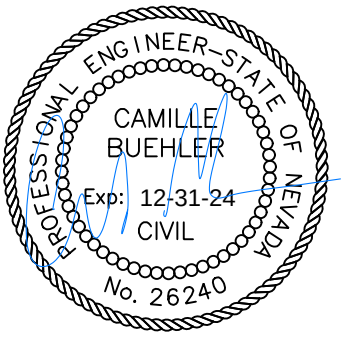

09/15/2023

JN 10067.008
AUGUST 2023

TABLE OF CONTENTS

I. INTRODUCTION ***1***
II. EXISTING SEWER SYSTEM ***1***
III. SEWER FLOWS ***1***
A. Sewer Generation Factors 1
B. Projected Sewer Flows 2
IV. DESIGN CRITERIA ***3***
A. Gravity Sewer System 3
B. Lift Station 4
C. Sewer Force Main 5
V. EVALUATION OF SEWER FACILITIES ***5***
A. Gravity Sewer System 5
B. Wet Well Location and Sizing 6
C. Sewer Force Main Alignment 6
D. Pump and Force Main Sizing 7
E. City of Fernley Waste Water Treatment Plant 7
VI. CONCEPTUAL SEWER SYSTEM RECOMMENDATIONS ***8***
A. System Description 8
B. Opinion of Probable Costs 8
C. Permitting Requirements 9
D. Construction Considerations 9
VII. CONCLUSIONS ***10***
VIII. REFERENCES ***11***

APPENDICES

Appendix A Sewer Model Output

LIST OF TABLES

Table 1: Projected Sewer Flows 3
Table 2: Preliminary Pipeline Lengths for Backbone Gravity Sewer Network 6
Table 3: Preliminary Pipeline Lengths for Force Mains 6
Table 4: Preliminary Pump and Force Main Sizing Summary 7
Table 5: Preliminary Opinion of Probable Project Costs 9

LIST OF FIGURES

Figure 1: Preliminary Sewer Phasing Map 13
Figure 2: Preliminary Sanitary Sewer Layout 14

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September 14, 2023

I. INTRODUCTION

The Mark IV Industrial Subdivision is located south of I-80, north of US-50 Alt and east of Nevada Pacific Parkway in Northeast Fernley, Nevada. The Master Developer, M4 New Fernley QOZB, LLC, holds property between I-80 and US-50 Alt. The Mark IV Subdivision consists of approximately 2,174 acres comprised of the following parcels: 021-201-01, 021-201-16, 021-211-02, 021-211-04, 021-211-06, 021-242-11, 021-242-17, 021-251-25, 021-261-43, 021-261-44, and 021-211-03. The Mark IV properties reside within Sections 3, 4, 5, 6, 7, 8, 17, and 18, T20N, R25E in Fernley, Nevada.

The proposed Mark IV Industrial Subdivision consists of 31 proposed lots to be used for distribution/light industrial, manufacturing, data center/high tech, and retail purposes. As such, 26 Conceptual developable lots were utilized out for the purpose of conceptual connection points.

Wastewater generated from Mark IV will be collected through a network of gravity sewer pipelines to 3 public lift stations and ultimately conveyed to the City of Fernley East Wastewater Treatment Facility (EWWTP) on East Newlands Road. The purpose of this report is to provide tentative map design recommendations for the conceptual on-site sewer system.

Projected sewer flows and design recommendations presented in this report are at the conceptual level based on preliminary development areas, lot counts, and lot sizes. Sewer flows and infrastructure design will be updated as necessary during the final planning stages of each development area. The final sewer flows and design of all infrastructure will ultimately be reviewed by and coordinated with the City of Fernley Department of Public Works prior to the issuance of any will-serves or approvals associated with sewer service for the project.

II. EXISTING SEWER SYSTEM

The City of Fernley currently has a network of sewer mains, trunk mains, sewer interceptors, and lift stations that all flow to the City's EWWTP. The EWWTP has a total capacity of 3.05 MGD. The plant currently operates at an average peak flow of 1.70 MGD.

The only location anticipated to tie into the existing gravity system is in the proposed Gavin Road extension. At this location, a 42 inch interceptor runs from west to east. The 42 inch interceptor is discharged into the East Lift Station. The remaining lots will discharge to proposed lift stations, which will eventually discharge and tie into the EWWTP influent splitter box.

III. SEWER FLOWS

Preliminary flow projections to be used in designing the on-site sewer system are described below.

A. Sewer Generation Factors

The Mark IV Industrial Subdivision is in the City of Fernley. Recommended design criteria for sewer generation and peaking factors are based upon the City of Fernley Sewer Master Plan [4] as follows:

- Industrial Average Daily Flow (ADF): 1,000 gallons per day (gpd)/acre
- Gravity System Peaking factor: 2.1 (applied to ADF to establish peak flows for gravity sewer)

1,000 gallon per day per acre is the City of Fernley recommendation for industrial sewer generation, and is therefore utilized at this time. Lumos recognizes that this value is generalized and could lead to under or over estimates of sewer generations. During final design, better estimates should be provided based on land use anticipation. Sewer generation can typically be estimated at 60-80% of the actual water demands. With future information on tenants and building size, this methodology can be utilized to better estimate sewer generation.

Peaking factors from 1.5 to 2.1 were observed based on Industrial flow monitoring provided by Shaw Engineering. 2.1 was chosen to be conservative.

B. Projected Sewer Flows

Projected sewer flows by phase are summarized in Table 1. The total peak flow is estimated at 3.9 million gallons per day (mgd) for the gravity system using a peaking factor of 2.1.

Table 1: Projected Sewer Flows

Lot	Area	Average Flow		Peak Flow		Downstream Connection
	(acres)	(gpd)	(gpm)	(gpd)	(gpm)	
Lot #0	9.89	9,890	6.9	20,769	14.4	Lift Station #1
Lot #1	45.38	45,380	31.5	95,298	66.2	Lift Station #1
Lot #2	58.87	58,870	40.9	123,627	85.9	Lift Station #1
Lot #3	55.83	55,830	38.8	117,243	81.4	Lift Station #1
Lot #4	279.94	279,940	194.4	587,874	408.2	Lift Station #1
Lot #5	36.00	36,000	25.0	75,600	52.5	Lift Station #1
Lot #6	120.33	120,330	83.6	252,693	175.5	Lift Station #2
Lot #7	204.60	204,600	142.1	429,660	298.4	Lift Station #2
Lot #8	49.83	49,830	34.6	104,643	72.7	Lift Station #1
Lot #10	212.24	212,240	147.4	445,704	309.5	Lift Station #1
Lot #11	184.27	184,270	128.0	386,967	268.7	Lift Station #2
Lot #12	42.00	42,000	29.2	88,200	61.3	Lift Station #2
Lot #13	83.71	83,710	58.1	175,791	122.1	Lift Station #2
Lot #14	83.00	83,000	57.6	174,300	121.0	Lift Station #2
Lot #15*	38.84	-	-	-	-	N/A
Lot #16	28.16	28,160	19.6	59,136	41.1	Lift Station #3
Lot #17	155.20	155,200	107.8	325,920	226.3	Lift Station #3
Lot #18	89.20	89,200	61.9	187,320	130.1	Lift Station #3
Lot #19	28.57	28,570	19.8	59,997	41.7	Gravity
Lot #20*	26.42	-	-	-	-	N/A
Lot #21	10.87	10,870	7.5	22,827	15.9	Gravity
Lot #22	111.18	111,180	77.2	233,478	162.1	Private Lift Station
Lot #23*	19.61	-	-	-	-	N/A
Lot #24*	4.38	-	-	-	-	N/A
Lot #25*	27.47	-	-	-	-	N/A
Total	**1,995.90**	**1,879,180**	**1,305.0**	**3,946,278**	**2,740.5**	
*Does not have any sewer generation due being undeveloped (ie. Rail transload)						

IV. DESIGN CRITERIA

A. Gravity Sewer System

The City of Fernley and Mark IV are planning to enter into an agreement whereby the Mark IV on-site gravity sewer system will be owned and maintained by the City of Fernley. For this reason, design criteria for the on-site gravity system are based upon CFDPW Standards [1] as summarized below. In addition to the CFDPW Standards, recommendations in the Ten State Standards will also be considered (e.g. minimum pipeline slopes) [3].

Gravity Pipelines

- Pipe sizing: peak flows for gravity system
- Minimum pipeline diameter: 8-inch

- Minimum velocity: 2.0 feet per second (fps) when flowing half full
- Manning's roughness coefficient "n": 0.012
- Pipe material: SDR 35 PVC pipe
- Maximum depth of flow (depth/diameter: d/D): 0.75

Manholes

- Placed at all intersections, angle points, and grade changes
- Maximum spacing of 400 feet (ft) on straight line runs for pipes 12-inches or less
- Maximum spacing of 500 ft on straight line runs for pipes over 12-inches
- Type and size:
  - 48-inch diameter Type 1 for sewer pipes equal to less than 15-inch diameter at depths less than 18 ft
  - 60-inch diameter Type IA for sewer pipes between 18-inch diameter and greater at depths greater than 5 ft
- Invert elevation (IE):
  - Exit IE should be 0.1 ft below entrance IE(s) for same diameter pipe sizes
  - Crown elevations should match for pipes of different diameter intersecting at a manhole

B. Lift Station

Recommended design criteria for the on-site lift station based on CFDPW Standards [1] and industry standards are provided below:

- Lift station sizing: peak flows for pressure system
- Minimum number of pumps: 2 (1 duty + 1 standby), each designed to pump 100% of peak flow
- Pump type: submersible
- Minimum cycle time between pump starts: 6-10 minutes
- Filling time of wet well: maximum of 30 minutes per 10 State Standards [4]
- Wet well cross-section: to be determined

Additional Lift Station Notes:

- Central Screening at the EWWTP
- Variable Frequency Drives at all lift stations to allow for operational flexibility.
- 2 hours minimum of peak emergency storage in all lift station collection systems.
- Bypass pump connections.
- Generators with ATS at each lift station with Level III sound attenuating enclosures for all generators.
- Odor control systems where warranted.
- Fenced / secure sites with screening (CMU wall or landscaping).
- Cranes systems for pump lift-out for any stations with large pumps/motors
- Materials of construction per City standards and public works director requirements.
- Mixers are required for all lift stations.

C. Sewer Force Main

Recommended design criteria for the off-site sewer force main based on CFDPW [1] and industry standards are provided below:

- Force main sizing: peak flow for pressure system
- Minimum depth of cover: 48-inches
- Velocity: 3 fps minimum / 8 fps maximum
- Pipe material: HDPE or epoxy lined and coated DIP (per City requirements)
- Hazen-Williams roughness coefficient, "C": 140 (HDPE)
- Assumed discharge elevation at City of Fernley Wastewater Treatment Plant: 4,122.8 ft

D. Additional Notes

All interceptor manholes and force main discharge structures shall be lined or otherwise designed to combat hydrogen sulfide attached (lining material shall be to the satisfaction of the Public Works Director.)

V. EVALUATION OF SEWER FACILITIES

A. Gravity Sewer System

The backbone gravity sewer network was designed given preliminary road alignments and finish grades within the Mark IV Development. To size the gravity sewer pipelines, the conceptual network was modeled using Innovyze InfoSWMM Software. Input to the sewer model included physical data (pipe lengths, alignments, and grade elevations) and sanitary loads (peak flows) for each sewer contribution area. The model generated minimum required pipeline sizes and slopes using the design criteria outlined in Section III.A (roughness coefficients, maximum depth of flow, minimum velocities, and minimum depths of cover). The preliminary, on-site, gravity sewer network is presented in Figure 2. In addition, sewer model output is provided in Appendix A. The gravity sewer system will be phased to match the growth of the development; however, all downstream sewer infrastructure will be required to be built out to full-build-out sizes, instead of a reduced/temporary condition. The phasing is shown in Figure 1.

Total preliminary pipeline lengths for the backbone gravity sewer network are summarized in Table 2.

Table 2: Preliminary Pipeline Lengths for Backbone Gravity Sewer Network

Pipe Size (inches)	Pipe Length[1] (LF)
8	8930
10	7990
12	1310
15	50
18[2]	10

[1] Preliminary Quantities for backbone collection system only.
[2] The short length of 18 inch pipe is the anticipated pipe that collects all three lift stations flows and discharges into the EWWTP Splitter.

B. Wet Well Location and Sizing

The preliminary location for the on-site lift stations are within the Mark IV boundary as shown on Figures 1 and 2. Any proposed lift stations located near or within the 100-year flood zone will have the top of the structure and electrical components built above the 100-year flood elevation to mitigate flooding hazards as required by Nevada Division of Environmental Protection (NDEP).

The lift stations will be sized to handle buildout flows from the Mark IV development. Sizing of the lift station wet wells are a factor of the minimum cycle time between pump starts, reserve volume, minimum pump submergence, pump spacing requirements, and the IEs of incoming gravity sewer pipelines. During final design, wet well dimensions will be verified and coordinated with the pump manufacturer (e.g. minimum spacing requirements between pumps could result in larger wet well than anticipated). Ultimate sizing for emergency conditions or backup power/pumping will be coordinated with City of Fernley prior to final design.

C. Sewer Force Main Alignment

Wastewater collected at the on-site lift stations will be pumped to The City of Fernley Wastewater Treatment Plant via force main for distances listed in Table 3. The preliminary force main alignments are presented in Figure 2 and described in Paragraph D below:

Table 3: Preliminary Pipeline Lengths for Force Mains

Pipe Size (inches)	Pipe Length (LF)
4	5,870
6	31,560
8	12,980

D. Pump and Force Main Sizing

Preliminary pump and force main sizing calculations were performed using total pressure system peak flows anticipated for the development. System curves were generated for various combinations of force main diameters and compared with pump curves. A preliminary pump and force main sizing summary is presented in Table 4. Lift Stations 1-3 will have 1 to 2 force mains with 2-3 pumps. The advantage of multiple force mains and duty pumps is to provide operational flexibility in handling a range of sewer flows as each lot is developed. Further variations of the lift station pump arrangement may also be evaluated during the final design to ensure the most efficient and economical pump arrangement.

Table 4: Preliminary Pump and Force Main Sizing Summary

Reference Section IV.A for future pump and force main design requirements.

Initial sewer flows will be significantly lower than total flows projected at full build out due to the Mark IV Industrial Subdivision being developed in phases. To avoid oversized pumps/wet well and high operating costs for initial sewer flows, smaller initial pumping systems and/or interim lift stations will be considered. An upstream manhole could be used as an interim lift station in conjunction with smaller pump(s), or the lift station wet wells could be partitioned to optimize time between pump starts. Additional smaller diameter force mains and the phasing are shown during different phases of peak flow of the development in Table 4.

Additionally, several private lift stations may be necessary based on site layout and actual demands. The private lift stations will be constructed, maintained, and operated privately. Private lift stations are intended to serve single properties, have duplex pumps where each pump is capable of pumping peak flows, backup generators, and emergency storage if gravity overflow isn't available.

E. City of Fernley Waste Water Treatment Plant

The City of Fernley Waste Water Treatment Plant has a total capacity of 3.05 MGD. The plant currently operates at an average peak flow of 1.70 MGD.

The City of Fernley is required to begin planning the expansion of the treatment plant at 85% capacity, which is at 2.59 MPG total average peak flow. In industrial zoning, that is approximately 576 acres of additional development before the planning of the expansion is required. It should be noted that this value is contingent on tenant generation, land use, and building size per lot. The capacity of the EWWTP will be evaluated at each subsequent phase of the development to determine the required steps at the time.

The expansion of the plant will be coordinated with The City of Fernley.

VI. CONCEPTUAL SEWER SYSTEM RECOMMENDATIONS

A. System Description

The on-site backbone sewer system will consist of approximately 3.3 miles of gravity sewer pipeline ranging from 8-inch to 18-inch diameter. Buildout peak flows for the gravity system are estimated at 3.95 mgd. Preliminary options for the lift stations include a square or rectangular wet wells. Final wet well dimensions and shape will be determined during design. A duplex pump system (1 duty + 1 standby) to triplex pump system (2 duty + 1 standby) is proposed with the various lift stations, with preliminary motor sizes ranging from 5 to 60 horsepower (hp) each.

As design of the overall system is furthered, there will need to be additional alternatives for phasing buildout and efficient use of infrastructure. Mark IV is dedicated to providing adequate utility buildout for any tenant, and will work with the City of Fernley to provide infrastructure that is capable of expanding with tenant growth while reducing maintenance and overall costs.

B. Opinion of Probable Costs

A Class 5 Engineer's opinion of probable costs is presented in Table 5. The presented Engineer's opinion of probable costs are "whole" project estimates that include construction phase costs. It should be noted that the presented opinions of probable costs are strictly conceptual in nature and may differ significantly from actual construction costs. These costs reflect the Engineer's impression of material, equipment, labor, etc. at the time of the estimate based on experience and judgement in applying presently available data. The engineer has no control over cost of labor, materials, equipment, competitive bidding practices, market conditions, tariffs, costs associated with funding packages, inflation, etc. Thus, the engineer cannot warrant that the actual project costs will not vary from the Engineer's opinion of probable cost.

Table 5: Preliminary Opinion of Probable Construction Costs

Item	Description	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization and Demobilization	LS	1	$ 500,000	$ 500,000
2	8-inch Gravity Pipeline	LF	8,930	$ 100	$ 893,000
3	10-inch Gravity Pipeline[1]	LF	7,990	$ 112	$ 894,880
4	12-inch Gravity Pipeline[1]	LF	1,310	$ 125	$ 163,750
5	15-inch Gravity Pipeline[1]	LF	50	$ 150	$ 7,500
6	18-inch Gravity Pipeline[1]	LF	10	$ 200	$ 2,000
7	Manholes[1]	EA	56	$ 7,000	$ 392,000
8	Lift Station #1	LS	1	$ 1,500,000	$ 1,500,000
9	Lift Station #2	LS	1	$ 1,300,000	$ 1,300,000
10	Lift Station #3	LS	1	$ 1,000,000	$ 1,000,000
11	4-inch Force Main[2]	LF	5,868	$ 70	$ 410,760
12	6-inch Force Main[2]	LF	31,554	$ 80	$ 2,524,320
13	8-inch Force Main[2]	LF	12,972	$ 100	$ 1,297,200
				Subtotal Sewer	$ 10,885,410
				Contingency (15%)	$ 1,632,812
				Total	**$ 12,518,222**

[1] Quantities are for backbone collection system only. Includes fittings, excavation, backfill, restoration to finish grade, connection to structures.

[2] Includes restrained joints, fittings, excavation, backfill, restoration to finish grade/pavement replacement, traffic control.

C. Permitting Requirements

Permits and approvals that may be required for construction of the on-site and off-site sewer system will include, but not be limited to, the following:

- City Special Use Permits
- City Building Permits
- City SWPPP Permits
- City Erosion Control Permits
- City Encroachment Permit

D. Construction Considerations

Considerations for design and construction of the on-site and off-site sewer system are summarized below:

- Phasing: Sewer infrastructure will be phased to match the growth of the development, with the lift stations planned for construction with the initial phase.
- Easements: Utility easements will need to be obtained for any portions of the force main alignment through public property.
- Utility conflicts: A thorough investigation of existing utilities along the force main alignment will need to be conducted during design including review of record drawings, coordination with utility companies, and potentially potholing.

- Connection at EFWWTP: Available capacity and discharge location at the EWWTP will need to be coordinated with The City of Fernley.
- Traffic control: Traffic control measures will need to be developed and implemented in accordance with the requirements of City of Fernley, and the Manual on Uniform Traffic Control Devices.
- NDOT: Construction requirements and right-of-way occupancy permit terms will need to be incorporated into the design and considered for the project schedule.

VII. CONCLUSIONS

Wastewater generated from The Mark IV Industrial Subdivision will be collected by a gravity sewer network and conveyed to several on-site lift stations. From the on-site lift stations, wastewater will be conveyed to EWWTP, just east of the southern portion of the project via various force mains during different phases of the project. Sewer infrastructure will be phased to match the growth of the development, with the lift stations sized with initial phases. The final layout and sizing of sewer infrastructure will be determined during final design. Future expansion of the existing EWWTP will be required with the development of this project, as well as coordination with the City of Fernley.

VIII. REFERENCES

[1] City of Fernley Department of Public Works, *Design Standards & Review Guidelines,* May 2008.
< https://www.cityoffernley.org/DocumentCenter/View/2017/08-Sanitary-Sewer-System >

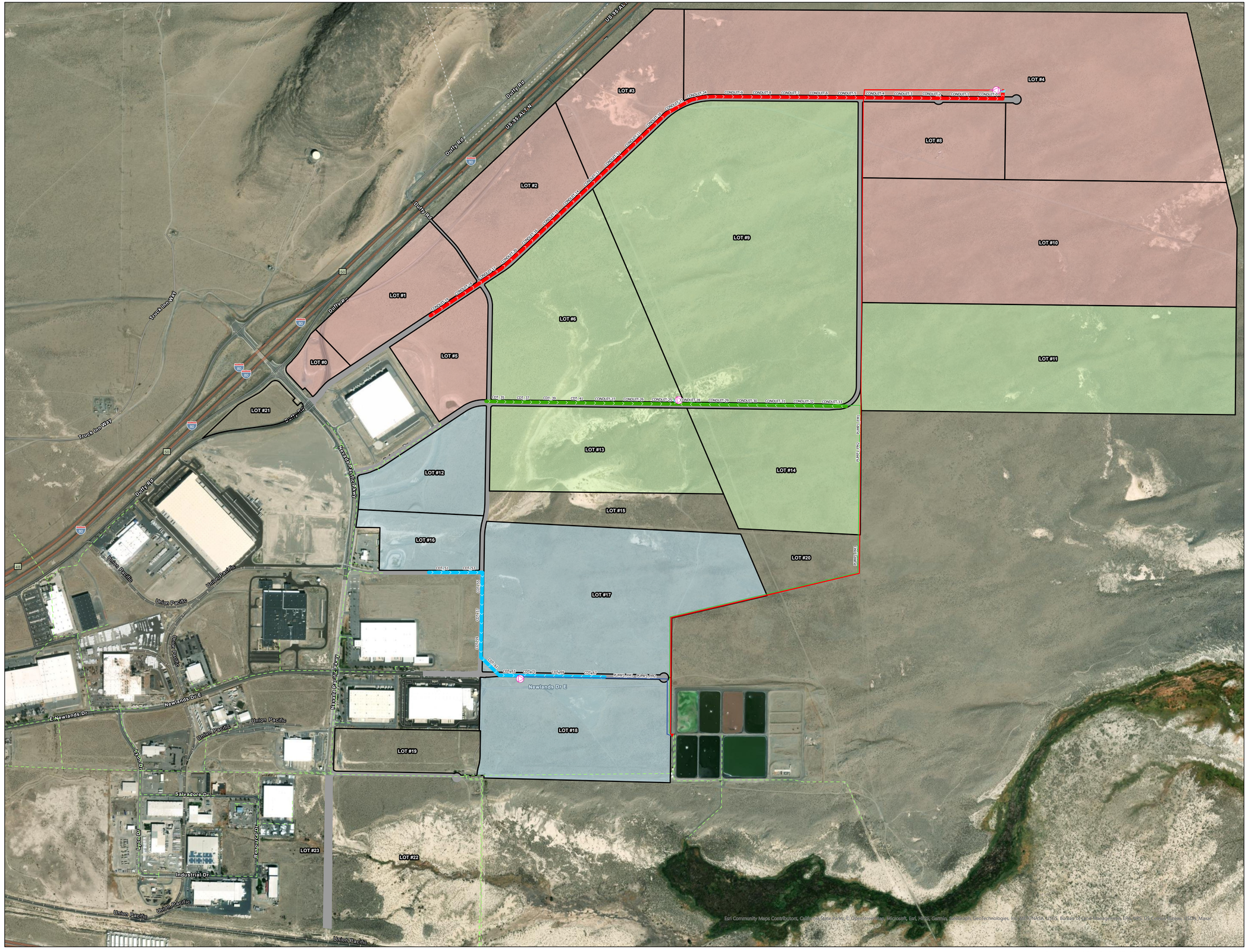
[2] Metcalf & Eddy, *Wastewater Engineering: Treatment and Resource Recovery,* 2014.

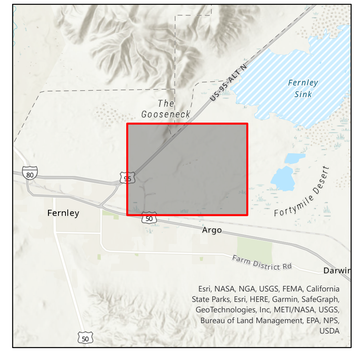
[3] Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, *Recommended Standards for Wastewater Facilities (10 State Standards)*, Health Research, Inc., 2014.

[4] City of Fernley Department of Public Works, 2009 Sewer Master Plan, February 2009

FIGURES

Figure 1: Preliminary Sewer Phasing Map





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PHASING MAP

VICTORY LOGISTICS TENTATIVE MAP

LEGEND

- Sewer Outfall
- Sewer Lift Station
- Sewer Storage

Sewer Alignments

Sewer Grouped Scenarios

- Central Lift Station - Gravity
- Central Lift Station - FM
- North Lift Station - Gravity
- North Lift Station - FM
- South Lift Station - Gravity
- South Lift Station - FM
- Existing Sewer Lines

Sewer Lot Phasing

- North Lift Station
- Central Lift Station
- South Lift Station
- Tie into Existing Gravity

N

Paper Size: 24" x 36"

0 250 500

Feet

Projection: Transverse Mercator
Grid: NAD 1983 StatePlane Nevada West FIPS 2703 Feet
Datum: North American 1983
Created by: imahaffey

Date:	Aug, 2023
Project #:	10067.008
Revision:	

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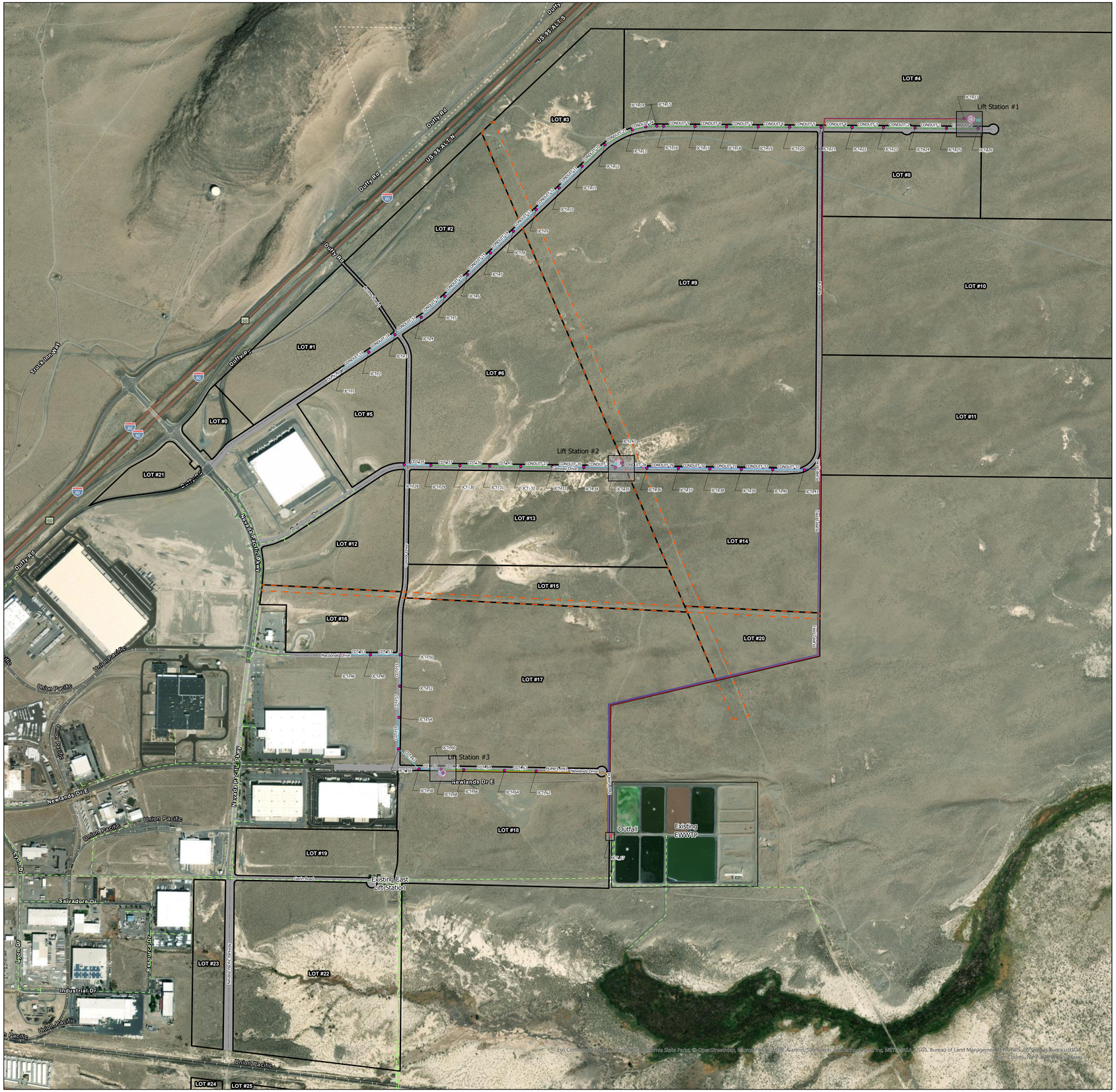
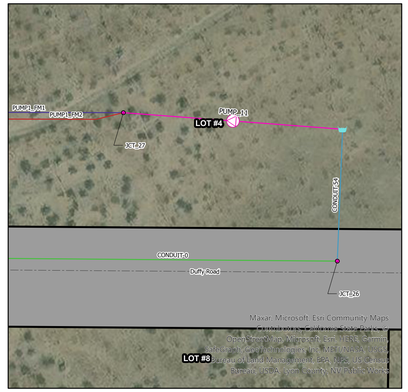
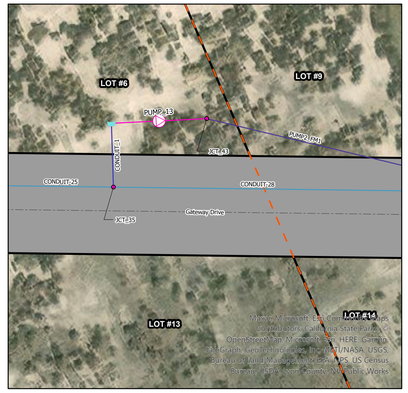
Figure 2: Preliminary Sanitary Sewer Layout





Lift Station #1
Scale: 1" = 60'



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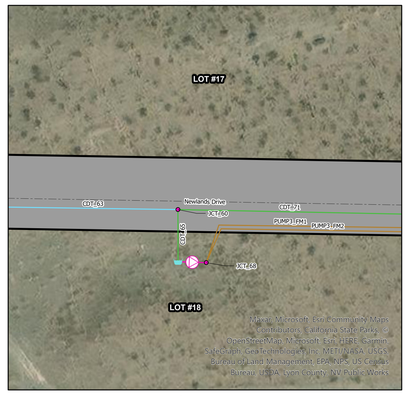

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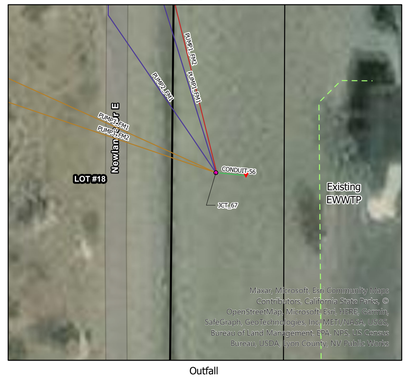

Outfall
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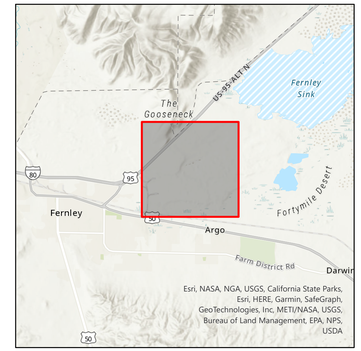

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PRELIMINARY SANITARY SEWER LAYOUT MAP

VICTORY LOGISTICS TENTATIVE MAP

LEGEND

- 8" Gravity
- 10" Gravity
- 12" Gravity
- 15" Gravity
- 18" Gravity
- 4" Force Main
- 6" Force Main
- 8" Force Main

Lot Areas
- Lot Areas
- Easements
- Sewer Outfall
- Sewer Storage
- Sewer Lift Station
- Existing Sewer Lines
- Road_Centerlines

N

Paper Size: 24" x 36"

0 600 1,200
Feet

Projection: Transverse Mercator
Grid: NAD 1983 StatePlane Nevada West FIPS 2703 Feet
Datum: North American 1983
Created by: imahaffey

Date:	Aug, 2023
Project #:	10067.008
Revision:	

Path: L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\Sewer\Workmap\10067002_SewerModel\Sewer_Exhibits.aprx

APPENDICES

Appendix A

Sewer Model Output

Mark IV Tentative Map

INFOSWMM Output

ID	Length (ft)	Slope (%)	Flow (cfs)	Velocity (ft/s)	Capacity d/D
CDT_35	339	4.0	0.1	4.0	0.16
CDT_37	369	4.0	0.1	3.7	0.12
CDT_39	375	4.0	0.1	3.7	0.12
CDT_41	396	4.0	0.1	1.4	0.24
CDT_51	379	0.5	0.1	1.8	0.22
CDT_53	379	0.5	0.1	1.6	0.22
CDT_55	399	0.5	0.1	1.6	0.22
CDT_57	397	0.5	0.1	1.6	0.23
CDT_59	400	0.5	0.1	1.9	0.20
CDT_61	364	1.9	0.1	2.7	0.15
CDT_63	281	3.0	0.1	2.0	0.19
CDT_65	44	24.5	0.9	2.6	0.60
CDT_67	401	0.5	0.8	3.2	0.51
CDT_69	517	0.5	0.8	2.9	0.55
CDT_71	287	0.5	0.8	4.0	0.39
CONDUIT_1	53	1.0	2.3	4.8	0.42
CONDUIT-0	400	0.4	0.7	2.6	0.48
CONDUIT-1	400	0.4	0.7	2.5	0.49
CONDUIT-10	400	0.4	0.5	2.1	0.44
CONDUIT-11	400	0.4	0.5	2.5	0.55
CONDUIT-12	400	0.4	0.5	2.3	0.58
CONDUIT-13	400	0.4	0.5	2.4	0.57
CONDUIT-14	400	0.4	0.5	2.4	0.57
CONDUIT-15	400	0.6	0.5	2.5	0.54
CONDUIT-16	400	2.5	0.3	2.4	0.39
CONDUIT-17	400	2.9	0.3	4.2	0.26
CONDUIT-18	400	0.9	0.3	3.2	0.31
CONDUIT-19	400	0.5	0.3	2.5	0.39
CONDUIT-2	400	0.4	0.7	2.6	0.48
CONDUIT-20	400	2.9	0.3	4.2	0.26
CONDUIT-21	400	0.4	0.7	2.5	0.49
CONDUIT-22	87	0.6	0.7	2.7	0.46
CONDUIT-23	140	0.4	0.7	2.7	0.47
CONDUIT-24	173	0.4	0.7	2.5	0.50
CONDUIT-25	399	0.5	0.4	1.4	0.40
CONDUIT-26	401	0.5	0.4	2.4	0.27
CONDUIT-27	400	0.5	0.4	2.5	0.34
CONDUIT-28	400	1.2	1.5	4.2	0.48
CONDUIT-29	400	1.3	0.6	3.0	0.55
CONDUIT-3	400	0.4	0.7	2.6	0.48
CONDUIT-30	400	1.3	0.6	3.9	0.46
CONDUIT-31	400	1.0	0.6	3.6	0.48
CONDUIT-32	399	0.4	0.6	2.7	0.61
CONDUIT-33	401	0.4	0.8	4.2	0.69
CONDUIT-4	393	0.4	0.7	2.6	0.48

Mark IV Tentative Map

INFOSWMM Output

ID	Length (ft)	Slope (%)	Flow (cfs)	Velocity (ft/s)	Capacity d/D
CONDUIT-5	400	0.4	0.7	2.6	0.48
CONDUIT-54	110	5.0	2.4	8.9	0.38
CONDUIT-56	8	2.4	4.6	5.8	0.47
CONDUIT-6	400	0.4	0.7	2.5	0.49
CONDUIT-7	400	0.4	0.7	2.5	0.49
CONDUIT-8	400	0.4	0.7	2.5	0.49
CONDUIT-9	400	0.4	0.7	2.5	0.49
PUMP1_FM1	12998	0.3	0.6	3.1	1.00
PUMP1_FM2	12973	0.3	1.3	3.7	1.00
PUMP2_FM1	9292	0.7	1.9	4.8	1.00
PUMP3_FM1	2934	1.3	0.4	5.1	1.00

TRAFFIC IMPACT STUDY

FOR

VICTORY

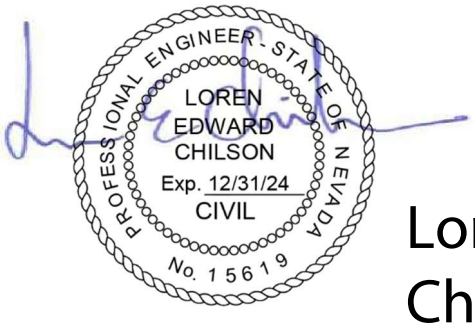
August 3, 2023

PREPARED FOR:

Mark IV Capital, Inc.

PREPARED BY:

HEADWAY TRANSPORTATION



Loren E Chilson

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Date: 2023.08.03 19:25:07 -07'00'

Headway Transportation, LLC
5482 Longley Lane, Suite B, Reno, Nevada 89511
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YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Victory tentative map project in Fernley, Nevada. This study of potential transportation impacts was undertaken for planning purposes and to assist in determining what traffic controls or mitigations may be needed to reduce potential impacts.

What does the project consist of?

For the purposes of the traffic impact study, the project consists of approximately:

- 574 acres of Manufacturing
- 39 acres of Transload and Switching Facility
- 1,129 acres of Distribution/Fulfillment Center
- 288 acres of Data Center
- 16 acres of Retail/Commercial
- 5 acres of Gas Station

The project is anticipated to be constructed in phases over a 20 year period.

How much traffic will the project generate?

The project is expected to generate up to 46,347 Daily, 3,654 AM peak hour, and 4,152 PM peak hour net new trips to the adjacent roadway network. It should be noted that the land use mix, quantities, and location of specific uses will change as this large scale project develops over roughly 20 years. Any mix of land uses/quantities generating less than the number of peak hour trips above is considered equivalent from a traffic impact perspective.

What improvements will be needed?

The following **Improvement List & Timing Table**, and **Figures 14 through 16**, list the traffic improvements needed for build-out of the tentative map area, the timing of the recommended improvements, and the funding category for each. The recommended lane configurations and controls at the study intersections are shown on **Figure 11** and the number of lanes and roadway configuration for Nevada Pacific Parkway are shown on **Figures 12A** and **12B**.

Several roadways will be constructed and/or widened with the project. Adequate right-of-way width should be dedicated within the tentative map boundaries to accommodate anticipated improvements. The project roadways should be built with the right-of-way widths and classifications shown on **Figure 13**. Note that additional right-of-way will be necessary at intersections for turn lanes and on specific segments of Nevada Pacific Parkway for the lane configurations shown on **Figures 11, 12A,** and **12B**.

Victory: Traffic System Phasing Plan

ID	Location	Improvement	Trigger	Funding Category
1	US 95A/US 50A/Main St (Roundabout)	Construct traffic signal and the lane configurations shown in Exhibit 2	When constructed by NDOT	Excluded (NDOT)
2	Nevada Pacific Parkway/ I-80 WB Ramps	Construct traffic signal	When warranted and approved by NDOT	Regional
3	Nevada Pacific Parkway/ Duffy Road	Construct traffic signal	When warranted and approved by NDOT	
4	Nevada Pacific Parkway/ Gateway Drive	Construct traffic signal	Prior to exceeding LOS D, subject to warrants being met	
5	Nevada Pacific Parkway/ E. Newlands Drive	Construct traffic signal	Prior to exceeding LOS D, subject to warrants being met	
6	Nevada Pacific Parkway Extension – between E. Newlands Drive and US 50A	Complete connector road with 110 feet of right-of-way to include 3 through lanes in each direction plus left- and right-turn lanes per cross sections provided in **Appendix G**	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips)	
7	Nevada Pacific Parkway/ US 50A	Construct intersection including the following lane configurations: - NB – 2 left-turn lanes, 1 through lane, 1 right-turn lane - SB – 2 left-turn lanes (1 pocket), 1 through lane, 1 free right-turn lane - EB – 2 left-turn lanes, 2 through lanes, 1 right-turn lane - WB – 1 left-turn lane, 2 through lanes, 1 free right-turn lane	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips) This improvement is anticipated to occur with construction of the Nevada Pacific Parkway Extension	
8	Nevada Pacific Parkway/ E. Newlands Drive	Add a northbound lane transitioning to a drop right-turn lane at Newlands	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips) This improvement is anticipated to occur with construction of the Nevada Pacific Parkway Extension	
9	Nevada Pacific Parkway/ Gavin Road	Construct the following lane configurations: - NB 1 left-turn lane, 2 through lanes, 1 shared through/right-turn lane - SB – 1 left-turn pocket, 2 through lane, 1 shared through/right-turn lane - EB – 1 left-turn lane, 1 shared through/right-turn lane - WB – 1 left-turn lane, 1 shared through/right-turn lane	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips) This improvement is anticipated to occur with construction of the Nevada Pacific Parkway Extension	
10	US 95A/E. Newlands Drive	Add overlap phasing for the northbound right-turn movement and optimize signal timing	Prior to intersection exceeding LOS D	

ID	Location	Improvement	Trigger	Funding Category
11	US 95A/Fremont Street	Add a southbound right-turn pocket	When constructed by NDOT	Excluded (NDOT)
12	Nevada Pacific Parkway/ I-80 WB Ramps (east half of bridge)	Construct second bridge at interchange Add second northbound left-turn lane and northbound through lane across the I-80 bridge	When constructed by NDOT, ideally prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
13	Nevada Pacific Parkway/ I-80 EB Ramps	Construct traffic signal	When warranted and approved by NDOT	Regional
14	Nevada Pacific Parkway I-80 EB Ramps to Duffy Rd	Add a second northbound through lane	After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
15	Nevada Pacific Parkway/ Duffy Road	Add a second southbound left-turn lane Add a southbound right-turn pocket Add a second westbound left-turn lane Add a channelized (yield controlled) westbound right-turn lane	After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
16	Nevada Pacific Parkway Duffy Rd to Gateway Dr	Add a third northbound through lane	After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
17	Nevada Pacific Parkway/ Gavin Road	Construct traffic signal	Prior to exceeding LOS D, subject to warrants being met	
18	Nevada Pacific Parkway/ Gateway Drive	Add a second southbound left-turn lane Add a second westbound left-turn lane Add a channelized (yield controlled) westbound right-turn lane Add an eastbound left-turn lane	Prior to exceeding LOS D or PM peak hour trip generation of 2,300 project trips	
19	Connor Drive/Duffy Road	Construct traffic signal	If/when signal warrant criteria is met	Required
20	Connor Drive/Gateway Drive	Construct traffic signal	If/when signal warrant criteria is met	
21	Duffy Road	Construct / Widen Roadway Nevada Pacific Pkwy to Connor Drive	With adjacent development	Regional
22	Duffy Road	Construct Roadway East of Connor Drive	With adjacent development	Required
23	Gateway Drive	Construct / Widen Roadway Nevada Pacific Pkwy to Connor Drive	With adjacent development	Regional
24	Gateway Drive	Construct Roadway East of Connor Drive	With adjacent development	Required
25	MacDonald Drive	Construct / Widen Roadway Nevada Pacific Pkwy to Connor Drive	With adjacent development	Regional
26	E. Newlands Drive	Construct Roadway East of Connor Drive	With adjacent development	Required
27	Gavin Road	Construct Roadway East of Nevada Pacific Parkway	With adjacent development	Required
28	Access Road 1	Roadway Improvements - Realigned Duffy Road to Victory property line R/W to remain NDOT's	Concurrent with Duffy Road realignment	Regional
29	Connor Drive	Construct Roadway Duffy Rd to E. Newlands Drive	With adjacent development	Required
30	Road A	Construct Roadway Duffy Road to Gateway Drive	With adjacent development	Required

LIST OF FIGURES

1. Project Location
2. Conceptual Land Use Plan
3. Baseline Traffic Volumes
4. Baseline Lane Configurations & Controls
5. Trip Distribution
6. Baseline Plus Project Traffic Volumes
7. Future Year Traffic Volumes
8. Future Year Lane Configurations & Controls
9. Project Trips – Future Year Plus Project
10. Future Year Plus Project Traffic Volumes
11. Ultimate Intersection Lane Configurations & Controls
12. Number of Lanes and Roadway Configuration – Nevada Pacific Parkway
13. Roadway Classification & Right-of-Way Width
14. Required Roadway Infrastructure
15. Regional Roadway Infrastructure
16. Excluded Roadway Infrastructure

LIST OF APPENDICES

A. Baseline LOS Calculations
B. Trip Generation Calculations
C. Anticipated Notice of Completion Map
D. Baseline Plus Project LOS Calculations
E. Future Year LOS Calculations
F. Future Year Plus Project LOS Calculations
G. Roadway Cross Sections

INTRODUCTION

This report presents the findings of a Traffic Impact Study completed to assess the potential traffic impacts on local intersections associated with the Victory tentative map project in Fernley, Nevada. This traffic impact study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, document findings, and make recommendations to mitigate impacts. The location of the project is shown on **Figure 1** and the conceptual land use plan is shown on **Figure 2**.

Study Area and Evaluated Scenarios

The tentative map area consists of 2,174 acres of which 2,050 acres is parcels anticipated to be developed with data center, distribution/fulfillment center, warehousing/manufacturing, and commercial uses. The project is located east and west of Nevada Pacific Parkway, south of Interstate 80 (I-80), and north of US 50A. The study intersections were identified as the locations most likely to be impacted by project traffic and are shown on **Figure 1**. The following intersections are included in this study:

- US 95A/I-80 Westbound Ramps
- US 95A/I-80 Eastbound Ramps
- US 95A/E. Newlands Drive
- US 95A/Fremont Street
- US 95A/US 50A/Main Street
- E. Newlands Drive/Stanley Drive
- Nevada Pacific Parkway/I-80 Westbound Ramps
- Nevada Pacific Parkway/I-80 Eastbound Ramps
- Nevada Pacific Parkway/Duffy Road
- Nevada Pacific Parkway/Gateway Drive
- Nevada Pacific Parkway/MacDonald Drive
- Nevada Pacific Parkway/E. Newlands Drive
- Nevada Pacific Parkway/Gavin Road
- Nevada Pacific Parkway/US 50A
- Connor Drive/Duffy Road *(plus project only)*
- Connor Drive/Gateway Drive *(plus project only)*

This study includes analysis of 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:

- Baseline Conditions – includes existing traffic volumes plus traffic generated by approved/in process, but not yet built projects described in the following reports:
  - *Traffic Impact Study for Victory Logistics District Phase 1 (Buildings A, B, & C)*, Headway Transportation, January 2020
  - *Traffic Impact Study for Victory Logistics District Building D-2,* Headway Transportation, December 2021

- *Traffic Impact Study for 1200 Fremont Street Apartments,* Headway Transportation, July 2021
- *Traffic Impact Study for Nevada Pacific Boulevard Commercial Development,* Headway Transportation, January 2022 (south of US 50A)

- Baseline Plus Project Conditions
- Future Year Conditions (20-year horizon) – assumes completion of the Nevada Pacific Parkway extension from E. Newlands Drive to US 50A
- Future Year 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

The complete methodology for intersection level of service analysis is established in the *Highway Capacity Manual (HCM), 6th Edition*, published by the Transportation Research Board (TRB). **Table 1** presents the delay thresholds for each level of service grade at signalized and unsignalized intersections.

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, 6th Edition*

Level of service calculations were performed for the study intersections using the Synchro 11 software package with analysis and results reported in accordance with *HCM* methodology.

Level of Service Policy

City of Fernley

The *City of Fernley Comprehensive Master Plan* (August 15, 2018) includes the following level of service policy:

The minimum Level of Service on all city maintained roadways shall be LOS D. The City will work with representatives from NDOT to ensure timely improvements are planned when NDOT roadways are forecast to fall below LOS D.

Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) *Traffic Impact Study Requirements* publication states:

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

Hence, LOS "D" was used as the threshold criteria for this analysis. Note, this policy is not specific to side street movements, as traffic engineering practitioners recognize that LOS E/F conditions for a side street approach, during peak hour(s), do not necessarily indicate an intersection failure or the need for mitigation. Context of the volumes and intersection location are important in these cases.

EXISTING CONDITIONS

Roadway Facilities

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

Interstate 80 (I-80) is an east-west interstate highway with four lanes through Fernley. There are three existing interchanges in Fernley, at W. Main Street (Exit 46), US 95A (Exit 48), and Nevada Pacific Parkway (Exit 50). The posted speed limit in the project area is 70 miles per hour (mph).

Nevada Pacific Parkway is generally a north-south, four-lane roadway. Between Duffy Road and MacDonald Drive, the northbound and southbound lanes are separated by a median island. South of MacDonald Drive, Nevada Pacific Parkway has a two-way left-turn lane. NDOT classifies Nevada Pacific Parkway as a Minor Arterial. The posted speed limit is 35 mph.

US 95A is a north-south roadway that connects I-80 to US 50A in Fernley. NDOT classifies US 95A as Minor Arterial. Between I-80 and US 50A, US 95A has four lanes and traffic signals at E. Newlands Drive and Fremont Street. The posted speed limit is 35 mph.

US 50A is an east-west highway that connects US 95A in Fernley to US 50 west of Fallon, NV. In the project area, US 50A is a four-lane separated roadway with a posted speed limit of 65 mph. NDOT classifies US 50A as a Minor Arterial.

Duffy Road is a two-lane roadway that is owned by NDOT and classified as a Frontage Road (FRLY01). Duffy Road generally parallels the south side of I-80 east and west of Nevada Pacific Parkway. Duffy Road has a two-way left-turn lane east of Nevada Pacific Parkway for approximately 1,450 feet, and west of Nevada Pacific Parkway for approximately 2,700 feet (including along the project frontage). The posted speed limit is 35 mph. South/west of the Walmart and Lowe's stores, the name changes to Stanley Drive.

E. Newlands Drive is generally a five-lane roadway with two lanes in each direction with a two-way left-turn lane (TWLTL) east of Stanley Drive. West of Stanley Drive, E. Newlands Drive has four lanes (no TWLTL). NDOT classifies E. Newlands Drive as a Minor Arterial. The posted speed limit is 35 mph.

Bicycle & Pedestrian Facilities

Bicycle and pedestrian facilities exist along the project frontage on Nevada Pacific Parkway, including bicycle lanes and sidewalks along both sides of the roadway from Duffy Road to MacDonald Drive. Currently bicycle lanes and sidewalks do not exist on Nevada Pacific Parkway south of MacDonald Drive or on Duffy Road.

Bicycle and pedestrian facilities on E. Newlands Drive are limited. Sidewalks exist on both sides of E. Newlands Drive west of Stanley Drive, but there are no bicycle lanes. There are no bicycle lanes or sidewalks east of Stanley Drive.

Crash History

Vehicle crash data is available from NDOT and includes information from the 2015 to 2019 five-year period (the most current data available). Crashes are summarized below based on intersection location (not including those on I-80) and crash severity. Crashes between intersection are summarized with the nearest intersection.

- US 95A/I-80 Interchange – 17 Property Damage Only (PDO), 8 Injury
- US 95A/E. Newlands Drive – 35 PDO, 18 Injury, 1 Fatality
- US 95A/Fremont Street – 47 PDO, 23 Injury
- US 95A/US 50A/Main Street – 31 PDO, 6 Injury
- E. Newlands Drive/Stanley Drive – 9 PDO, 2 Injury
- Nevada Pacific Parkway/I-80 Interchange – 1 PDO
- Nevada Pacific Parkway/Duffy Road – 3 Injury
- Nevada Pacific Parkway/E. Newlands Drive – 2 PDO

The crash data is shown in **Exhibit 1** (crashes in the same location overlap on the image). None of the study intersections have a significant number of crashes (all locations have less than 10 crashes per year) or repetitive accident types that would indicate a need for modifications.

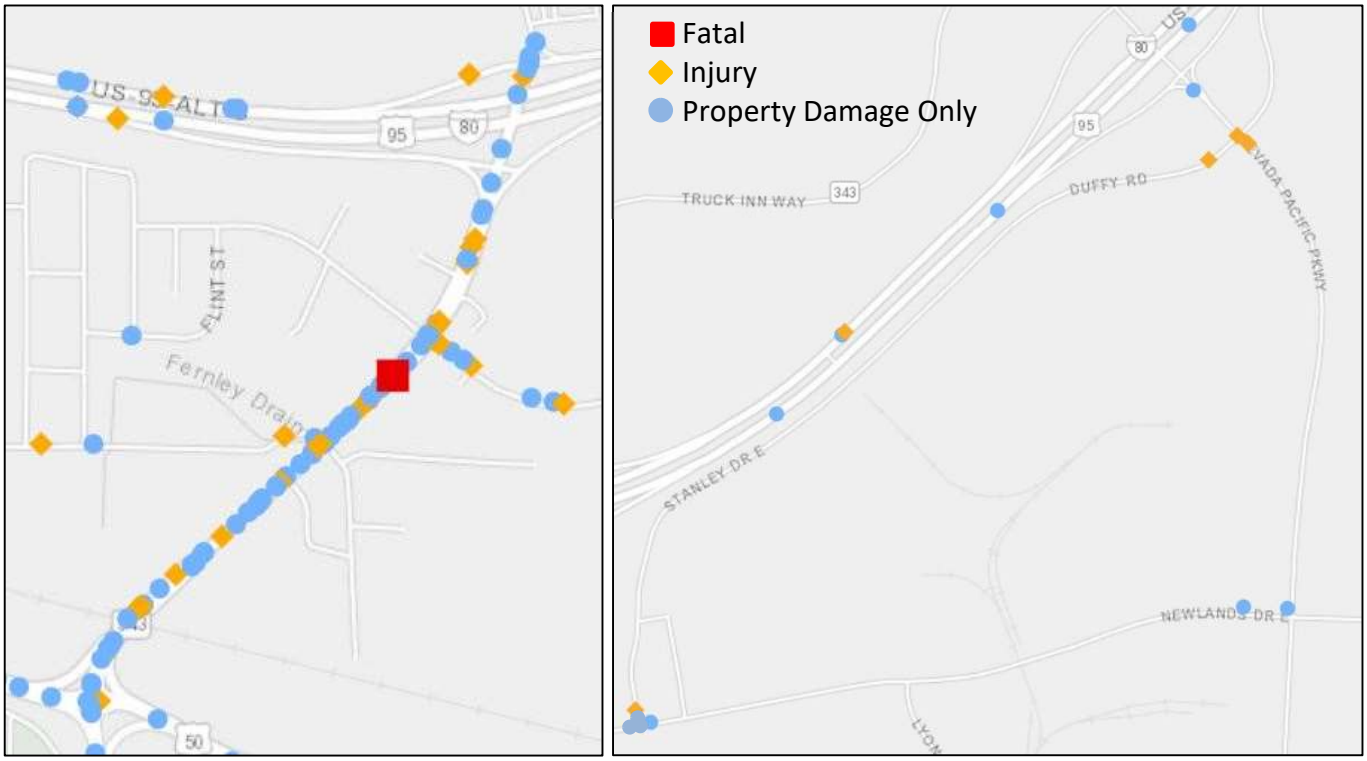


Exhibit 1: NDOT Crash Data (2015 – 2019)

BASELINE CONDITIONS

The Baseline conditions analysis includes existing traffic volumes plus traffic generated by approved/in process, but not yet built projects described in the following reports:

- *Traffic Impact Study for Victory Logistics District Phase 1 (Buildings A, B, & C)*, Headway Transportation, January 2020
- *Traffic Impact Study for Victory Logistics District Building D-2,* Headway Transportation, December 2021
- *Traffic Impact Study for 1200 Fremont Street Apartments,* Headway Transportation, July 2021
- *Traffic Impact Study for Nevada Pacific Boulevard Commercial Development,* Headway Transportation, January 2022

Traffic Volumes

The Baseline conditions AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hour traffic volumes build upon the analysis conducted for Buildings A, B, & C (Phase 1) and Building D-2. Traffic volumes were collected for the Phase 1 project in January 2020. New AM and PM peak hour turning movement counts

were collected at the study intersections in October 2021 and December 2021. The highest volumes from the three count sources were used as the existing traffic volumes and balanced between intersections. A review of NDOT's Annual Traffic Reports including the *2018 Seasonal Growth Factors* and *2020 Seasonal Growth Factors* reports show that traffic volumes in January and December tend to be lower than the annual average. Therefore, seasonality factors were applied to increase the traffic volumes as appropriate (by about 10 percent).

For the Baseline conditions analysis, traffic generated by Victory Logistics Buildings A, B, & C (currently being constructed), Building D-2, the 1200 Fremont Street Apartments, and the Nevada Pacific Boulevard Development were added to the adjusted existing traffic volumes at the study intersections. **Figure 3** shows the Baseline conditions traffic volumes.

Intersection Level of Service Analysis

AM and PM peak hour intersection level of service analysis was performed using the Synchro 11 software package, with results reported based on *HCM* methodology. The existing intersection lane configurations and controls were assumed at all of the study intersections except for the US 95A/Fremont Street and US 50A/Nevada Pacific Parkway intersections. Improvements have been conditioned at the US 95A/Fremont Street intersection as part of another project and include an eastbound right-turn lane and permitted plus overlap right-turn signal phasing for the eastbound right-turn movement. A traffic signal is planned for construction at the US 50A/Nevada Pacific Parkway intersection in 2022. The intersection lane configurations and controls used in the analysis are shown on **Figure 4**. **Table 2** shows the Baseline conditions level of service results. The technical calculations are provided in **Appendix A**.

Table 2: Baseline Intersection Level of Service

Intersection	Control	AM		PM	
		Delay[1] (v/c Ratio[2])	LOS	Delay[1] (v/c Ratio[2])	LOS
US 95A/I-80 WB Ramps	Side Street Stop				
Westbound Approach		15	B	16	C
Southbound Approach		20	C	18	C
US 95A/I-80 EB Ramps	Side Street Stop				
Eastbound Approach		17	C	17	C
Southbound Left		9	A	9	A
US 95A/E. Newlands Dr	Signal				
Overall		25	C	34	C
US 95A/Fremont St	Signal				
Overall		22	C	38	D
US 95A/US 50A/Main St	RAB				
Northbound Approach		**47 (0.91)**	**E**	**93 (1.07)**	**F**
Southbound Approach		5 (0.45)	A	**83 (1.22)**	**F**
Eastbound Approach		19 (0.74)	C	**90 (1.15)**	**F**
Westbound Approach		4 (0.40)	A	3 (0.36)	A
E. Newlands Dr/Stanley Dr	Signal				
Overall		11	B	18	B
Nevada Pacific Pkwy/I-80 WB Ramps					

Table 2: Baseline Intersection Level of Service

Intersection	Control	AM		PM	
		Delay[1] (v/c Ratio[2])	LOS	Delay[1] (v/c Ratio[2])	LOS
Westbound Approach	Side Street Stop	10	A	13	B
Northbound Left		8	A	8	A
Nevada Pacific Pkwy /I-80 EB Ramps	Side Street Stop				
Eastbound Approach		9	A	10	B
Southbound Left		8	A	8	A
Nevada Pacific Pkwy/Duffy Rd	Side Street Stop				
Eastbound Approach		12	B	12	B
Westbound Approach		13	B	11	B
Northbound Left		8	A	8	A
Southbound Left		8	A	8	A
Nevada Pacific Pkwy/Gateway Dr	Side Street Stop				
Eastbound Approach		10	A	10	A
Westbound Approach		10	A	10	A
Northbound Left		8	A	8	A
Southbound Left		8	A	8	A
Nevada Pacific Pkwy/MacDonald Dr	Side Street Stop				
Eastbound Approach		10	A	10	A
Westbound Approach		9	A	9	A
Northbound Left		8	A	8	A
Southbound Left		7	A	7	A
Nevada Pacific Pkwy/E. Newlands Dr[3]	All way Stop				
Overall		10	A	10	B
Nevada Pacific Pkwy/Gavin Rd[4]	Side Street Stop				
Eastbound Approach		9	A	9	A
Westbound Approach		0	A	0	A
Northbound Left		0	A	0	A
Southbound Left		0	A	0	A
US 50A/Nevada Pacific Pkwy	Signal				
Overall		9	A	10	B

Notes: RAB = roundabout
1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
2. v/c Ratio = volume-to-capacity ratio (for roundabout intersections only).
3. This intersection was analyzed with a shared left-turn/through lane and a shared through/right-turn lane on each approach because *HCM* does not allow analysis of stop controlled intersections with more than two lanes on each approach.
4. Reported based on *HCM 2000* methodology.
Source: Headway Transportation, 2022

As shown in the table, the US 95A/US 50A/Main Street roundabout intersection is expected to operate at LOS F with volume-to-capacity ratios above 1.0 (over capacity) during the PM peak hour under Baseline conditions (without the project). The *City of Fernley TMP* identifies a need for improvements at this location in the 5-year timeframe. The other study intersections are expected to operate at LOS C or better.

PROJECT CONDITIONS

Trip Generation

Trip generation estimates for the 2,050 acres of developable parcels were calculated using trip rates from the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition*. The project is anticipated to consist of a variety of uses including data center, distribution/fulfillment center, warehousing/manufacturing, and commercial uses (shown on **Figure 2**). Trip generation estimates were calculated using a floor area ratio (FAR) of 0.25 for each land use. **Table 3** shows the Daily, AM peak hour, and PM peak hour trip generation estimates for the project including pass-by trips for the retail and gas station uses.

Table 3: Trip Generation Estimates

Land Use (ITE Code)	Size	Trips[1]				
		Daily	AM	AM In/Out	PM	PM In/Out
Manufacturing (150)	6,254 ksf	10,694	1,062	818 / 244	1,125	315 / 810
Transload & Switching Facility (154)	421 ksf	590	34	26 / 8	42	12 / 30
Distribution (155)	12,298 ksf	22,261	1,846	1,496 / 350	1,968	768 / 1,200
Data Center (160)	3,132 ksf	3,101	345	190 / 155	282	85 / 197
Retail (821)	178 ksf	11,985	307	190 / 117	921	451 / 470
Gas Station (945)	14 pumps	4,841	442	221 / 221	376	188 / 188
Total Trips		**53,472**	**4,036**	**2,941 / 1,095**	**4,714**	**1,819 / 2,895**
Pass-By Trips (Retail & Gas Station)		*7,125*	*382*	*191 / 191*	*562*	*281 / 281*
Net New Trips		***46,347***	***3,654***	***2,750 / 904***	***4,152***	***1,538 / 2,614***

Notes: ksf = 1,000 square feet
1. Detailed trip generation calculations are provided in **Appendix B**.
Source: Headway Transportation, 2022

As shown in the table, the project is expected to generate approximately 46,347 Daily, 3,654 AM peak hour, and 4,152 PM peak hour net new trips to the adjacent roadway network. It should be noted that the land use mix, quantities, and location of specific uses will change as this large scale project develops over roughly 20 years. Any mix of land uses/quantities generating less than the number of peak hour trips above is considered equivalent from a traffic impact perspective.

Trip Distribution

Project generated traffic was distributed to the surrounding roadway network based on existing traffic volumes and travel patterns and the location of the project in relation to complimentary land uses, major activity centers, and local roadway connections. The following trip distribution percentages were used (shown on **Figure 5**):

- 40% to/from the west on Interstate 80 (I-80)
- 10% to/from the east on Interstate 80 (I-80)
- 20% to/from the west to downtown Fernley
- 15% to/from the south on Farm District Road
- 15% to/from the east on US 50A

BASELINE PLUS PROJECT CONDITIONS

The Baseline and Baseline Plus Project conditions analyses assume the Nevada Pacific Parkway connection to US 50A would not yet be complete and regional traffic will continue to use US 95A and the US 95A/US 50A/Main Street roundabout intersection to travel between I-80 and US 50A. Additionally, the US 95A/US 50A/Main Street roundabout intersection is currently over capacity (operating at LOS F) and the addition of project traffic would exacerbate conditions. Therefore, improvements are needed (as outlined in the *City of Fernley Transportation Master Plan)* and were assumed to be in place for the Baseline Plus Project conditions analysis. A two-lane roundabout with right-turn bypass lanes on each leg was analyzed but found to operate at LOS F (volume-to-capacity greater than 1.0). A traffic signal with the lane configurations shown in **Exhibit 2** was assumed in the analysis as this the configuration that will provide acceptable level of service in the Future Year Plus Project conditions.

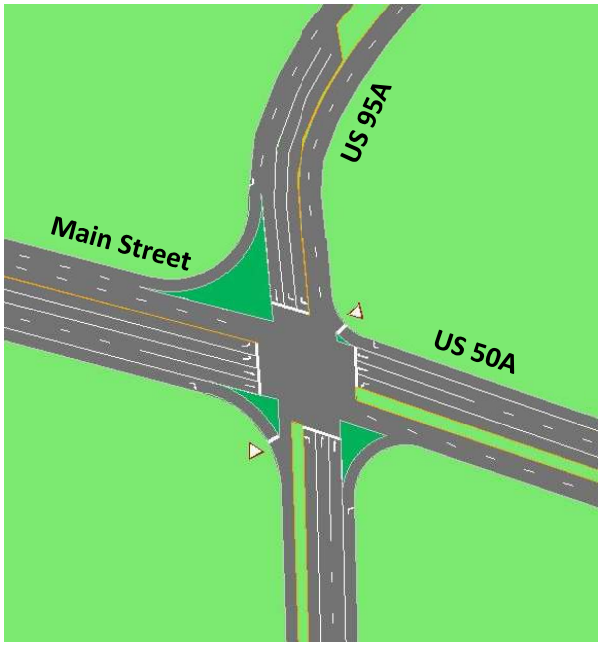


Exhibit 2: US 95A/US 50A/Main Street (Traffic Signal)

Connor Drive and the extension of Duffy Road and Gateway Drive would also be built with the project as needed to serve the project phases. The analysis includes five lanes (two lanes in each direction and a two-way left-turn lane) on Duffy Road and Gateway Drive and three lanes (one lane in each direction and a two-way left-turn lane) on Connor Drive.

Traffic Volumes

The Baseline Plus Project conditions analysis was initially conducted using the trip generation of the full tentative map project, but the results showed that the Baseline conditions roadway network (shown on **Figure 4**) does not have the capacity to handle the full project without the Nevada Pacific Parkway connection to US 50A. Therefore, the Baseline Plus Project conditions analysis was conducted at varying levels to determine how much of the project could be built prior to the completion of the Nevada Pacific Parkway connection. The US 95A/I-80 Westbound Ramps, 95A/E. Newlands Drive, and US 95A/Fremont Street intersections were found to be the controlling intersections. Approximately 35 percent of the project, or a land use amount that generates up to 1,480 PM peak hour trips, could be built before the Nevada Pacific Parkway connection is needed. **Figure 6** shows the Baseline Plus Project conditions traffic volumes with approximately 35 percent of the project trips.

Intersection Level of Service Analysis

Table 4 shows the AM and PM peak hour level of service results assuming approximately 35 percent of the project trips. The analysis uses the lane configurations shown on **Figure 4** for all of the intersections except the US 95A/US 50A/Main Street intersection which was analyzed based on the lane configurations and control shown in **Exhibit 2** and **Figure 8**. The technical calculations are provided in **Appendix D**.

Table 4: Baseline Plus Project Intersection Level of Service

Intersection	Control	Baseline				Baseline Plus Project (with 35% of project trips)			
		AM		PM		AM		PM	
		Delay[1] (v/c[2])	LOS	Delay[1] (v/c[2])	LOS	Delay[1] (v/c[2])	LOS	Delay[1] (v/c[2])	LOS
US 95A/I-80 WB Ramps	Side Street Stop								
Westbound Approach		15	B	16	C	22	C	38	E
Southbound Approach		20	C	18	C	20	C	18	C
US 95A/I-80 EB Ramps	Side Street Stop								
Eastbound Approach		17	C	17	C	18	C	21	C
Southbound Left		9	A	9	A	9	A	9	A
US 95A/E. Newlands Dr	Signal								
Overall		25	C	21	C	30	C	33	C
US 95A/Fremont St	Signal								
Overall		21	C	26	C	21	C	38	D
US 95A/US 50A/Main St	RAB								
Northbound Approach		**47 (0.91)**	**E**	**93 (1.07)**	**F**	LOS F (v/c > 1.0)			
Southbound Approach		5 (0.45)	A	**83 (1.22)**	**F**				
Eastbound Approach		19 (0.74)	C	**90 (1.15)**	**F**				
Westbound Approach		4 (0.40)	A	3 (0.36)	A				
US 95A/US 50A/Main St	Signal								
Overall		NA				20	C	24	C
E. Newlands Dr/Stanley Dr	Signal								
Overall		11	B	18	B	12	B	21	C
Nevada Pacific Pkwy/I-80 WB Ramps	Side Street Stop								
Westbound Approach		10	A	13	B	31	D	**>500**	**F**
Northbound Left		8	A	8	A	9	A	11	B
Nevada Pacific Pkwy /I-80 EB Ramps	Side Street Stop								
Eastbound Approach		9	A	10	B	13	B	19	C
Southbound Left		8	A	8	A	8	A	10	B
Nevada Pacific Pkwy/Duffy Rd	Side Street Stop								
Eastbound Approach		12	B	12	B	**>500**	**F**	**>500**	**F**
Westbound Approach		13	B	11	B	**100**	**F**	33	D
Northbound Left		8	A	8	A	15	C	10	A
Southbound Left		8	A	8	A	9	A	10	B
Nevada Pacific Pkwy/Gateway Dr	Side Street Stop								
Eastbound Approach		10	A	10	A	**61**	**F**	15	C
Westbound Approach		10	A	10	A	**92**	**F**	19	C
Northbound Left		8	A	8	A	10	B	8	A
Southbound Left		8	A	8	A	11	B	10	A

Table 4: Baseline Plus Project Intersection Level of Service

Intersection	Control	Baseline				Baseline Plus Project (with 35% of project trips)			
		AM		PM		AM		PM	
		Delay[1] (v/c[2])	LOS	Delay[1] (v/c[2])	LOS	Delay[1] (v/c[2])	LOS	Delay[1] (v/c[2])	LOS
Nevada Pacific Pkwy/ MacDonald Dr	Side Street Stop								
Eastbound Approach		10	A	10	A	26	D	16	C
Westbound Approach		9	A	9	A	13	B	11	B
Northbound Left		8	A	8	A	8	A	8	A
Southbound Left		7	A	7	A	9	A	8	A
Nevada Pacific Pkwy/E. Newlands Dr[3]	All way Stop								
Overall		10	A	10	B	22	C	**63**	**F**
Nevada Pacific Pkwy/Gavin Rd	Side Street Stop								
Eastbound Approach		9	A	9	A	13	B	11	B
Westbound Approach		0	A	0	A	9	A	9	A
Northbound Left		0	A	0	A	0	A	0	A
Southbound Left		0	A	0	A	8	A	7	A
US 50A/Nevada Pacific Pkwy	Signal								
Overall		9	A	10	B	11	B	11	B
Connor Dr/Duffy Rd	Side Street Stop								
Northbound Approach		NA				NA[4]			
Southbound Approach									
Eastbound Left									
Westbound Left									
Connor Dr/Gateway Dr	Side Street Stop								
Northbound Approach		NA				10	B	10	A
Southbound Approach						10	A	9	A
Eastbound Left						7	A	7	A
Westbound Left						8	A	7	A

Notes: RAB = roundabout; 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
2. v/c Ratio = volume-to-capacity ratio (for roundabout intersections only).
3. This intersection was analyzed with a shared left-turn/through lane and a shared through/right-turn lane on each approach because *HCM* does not allow analysis of stop controlled intersections with more than two lanes on each approach.
4. The Connor Drive/Duffy Road intersection would not have any significant traffic with approximately 35 percent of the project.
Source: Headway Transportation, 2022

As shown in the table, four study intersections on Nevada Pacific Parkway are expected to degrade to LOS F during the AM and/or PM peak hours with approximately 35 percent of the project traffic. All other study intersections would operate within policy level of service at 35 percent build out trip generation.

A traffic signal at each of the following intersections is recommended:

- Nevada Pacific Parkway/I-80 Westbound Ramps (NDOT)
- Nevada Pacific Parkway/Duffy Road (NDOT)
- Nevada Pacific Parkway/Gateway Drive

- Nevada Pacific Parkway/E. Newlands Drive

With signalization and the lane configurations shown on **Figure 4** and **Exhibit 2**, the study intersections on Nevada Pacific Parkway are expected to operate at LOS C or better during the AM and PM peak hours. **Table 5** shows the level of service results and the technical calculations are provided in **Appendix D**.

Table 5: Baseline Plus Project Intersection Level of Service (with Mitigation)

Intersection	Control	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
Nevada Pacific Pkwy/I-80 WB Ramps	Signal				
Overall		13	B	12	B
Nevada Pacific Pkwy/Duffy Rd	Signal				
Overall		31	C	26	C
Nevada Pacific Pkwy/Gateway Dr	Signal				
Overall		12	B	8	A
Nevada Pacific Pkwy/E. Newlands Dr	Signal				
Overall		16	B	30	C

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections.
Source: Headway Transportation, 2022

FUTURE YEAR CONDITIONS

The Future Year analysis evaluates the 20-year horizon and assumes the Nevada Pacific Parkway connection to US 50A is complete.

Planned Roadway Improvements

The *City of Fernley Comprehensive Master Plan* and *City of Fernley Transportation Master Plan (TMP)* outline planned future roadway facilities. The following roadway projects are planned within the project vicinity:

Comprehensive Master Plan

- North Industrial Connector – Provide connectivity from Main Street north of I-80 to the Nevada Pacific Parkway Interchange, providing access to planned industrial centers in the north
- Nevada Pacific Parkway – Extend existing Nevada Pacific Parkway south over the UPRR railroad to existing US 50A to provide additional north/south and I-80 connectivity

Transportation Master Plan

5-Year Improvements

- Nevada Pacific Parkway – Roadway Improvement: extension of Nevada Pacific Parkway between E. Newlands Drive and US 50A (same as above)
- Nevada Pacific Parkway/US 50A ICE – Intersection Control Evaluation. However, NDOT is in the process of constructing a traffic signal at this location.

- US 95A/US 50A Improvements – Roadway Capacity and Safety
- US 95A/US 50A/Main Street Intersection – Roundabout Improvements. However, this analysis shows that a traffic signal is needed for the intersection to function within policy level of service thresholds.

20-Year Improvements

- North Fernley Roadway – New Roadway: connecting Main Street north of I-80 to Nevada Pacific Parkway (same as North Industrial Connector above)

The Nevada Pacific Parkway extension, US 95A/US 50A improvements, and US 95A/US 50A/Main Street intersection improvements are assumed in the Future Year conditions analysis. The North Industrial Connector timing and adjacent land uses are unknown and will be evaluated in future studies. This study includes a 2 percent annual traffic volume growth rate per the Comprehensive Master Plan to address regional growth north of I-80.

Traffic Volumes

Future Year (20-year horizon) traffic volumes were developed using regional growth rates and considering traffic redistribution assuming Nevada Pacific Parkway would be connected to US 50A south of the project site. When the Nevada Pacific Parkway connection is complete, it is expected that some traffic travelling between US 50A to the east and I-80 will shift from US 95A to Nevada Pacific Parkway. For analysis purposes, it was assumed that approximately 40 percent of the existing traffic on US 50A east of Nevada Pacific Parkway would use Nevada Pacific Parkway rather than US 95A. This re-routed traffic (approximately 5,080 daily trips) was assumed on Nevada Pacific Parkway in the Future Year forecasts.

Historical traffic volume data in the project area was used to develop a regional background annual growth rate. **Table 6** shows the historical traffic volume data.

Table 6: NDOT Historical Traffic Volume Data

Roadway – Location	Annual Average Daily Traffic (AADT) Volumes										Annual Growth Rate
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
US 50A – East of NPP[1]	9,100	9,000	11,000	10,500	11,000	12,000	12,000	12,700	13,000	12,500	4.2%
US 95A – North of US 50A	25,000	24,500	25,000	25,500	28,000	29,000	28,000	32,500	31,000	29,900	2.2%
Farm District Rd – South of US 50A	9,500	8,900	9,200	9,100	7,800	7,700	8,300	10,300	9,900	9,200	-0.4%
										Average	***2.0%***

Notes: 1. NPP = Nevada Pacific Parkway
Source: Headway Transportation, 2022

As shown in the table, the historical average annual growth rate is approximately 2 percent per year, which is consistent with the annual growth rate used in the *Comprehensive Master Plan* and the *Transportation Master Plan*.

Future Year traffic volumes were developed by factoring the existing traffic volumes (plus the shift in volume from the connection of Nevada Pacific Parkway) up by 2 percent per year. Traffic from other development projects, as described in the following studies, was also added to the Future Year forecasts for background conditions:

- *Traffic Impact Study for Victory Logistics District Phase 1 (Buildings A, B, & C)*, Headway Transportation, January 2020
- *Traffic Impact Study for Victory Logistics District Building D-2,* Headway Transportation, December 2021
- *Traffic Impact Study for 1200 Fremont Street Apartments,* Headway Transportation, July 2021
- *Traffic Impact Study for Nevada Pacific Boulevard Commercial Development,* Headway Transportation, January 2022

Figure 7 shows the Future Year (20-year horizon) background traffic volumes at the study intersections.

Intersection Level of Service Analysis

Future Year intersection level of service analysis was performed using the Synchro 11 software package, with results reported based on *HCM* methodology. The Future Year intersection lane configurations and controls (without the project) are shown on **Figure 8**. **Table 7** shows the Future Year conditions level of service results. The technical calculations are provided in **Appendix E**.

Table 7: Future Year Intersection Level of Service

Intersection	Control	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
US 95A/I-80 WB Ramps	Side Street Stop				
Westbound Approach		19	C	25	C
Southbound Approach		36	E	33	D
US 95A/I-80 EB Ramps	Side Street Stop				
Eastbound Approach		22	C	24	C
Southbound Left		10	B	10	A
US 95A/E. Newlands Dr	Signal				
Overall		25	C	48	D
US 95A/Fremont St	Signal				
Overall		42	D	**93**	**F**
US 95A/US 50A/Main St	Signal/ Reconfigured				
Overall		19	B	29	C
E. Newlands Dr/Stanley Dr	Signal				
Overall		11	B	20	C
Nevada Pacific Pkwy/I-80 WB Ramps	Side Street Stop				
Westbound Approach		29	D	**56**	**F**
Northbound Left		9	A	9	A
Nevada Pacific Pkwy /I-80 EB Ramps	Side Street Stop				
Eastbound Approach		12	B	14	B
Southbound Left		9	A	9	A
Nevada Pacific Pkwy/Duffy Rd	Side Street Stop				
Eastbound Approach		19	C	27	D
Westbound Approach		26	D	20	C
Northbound Left		9	A	9	A
Southbound Left		9	A	9	A
Nevada Pacific Pkwy/Gateway Dr	Side Street Stop				
Eastbound Approach		14	B	17	C
Westbound Approach		16	C	17	C
Northbound Left		8	A	9	A
Southbound Left		9	A	9	A
Nevada Pacific Pkwy/MacDonald Dr	Side Street Stop				
Eastbound Approach		15	B	19	C
Westbound Approach		18	C	18	C
Northbound Left		8	A	9	A
Southbound Left		9	A	9	A
Nevada Pacific Pkwy/E. Newlands Dr[2]	All way Stop				
Overall		14	B	15	B
Nevada Pacific Pkwy/Gavin Rd	Side Street Stop				
Eastbound Approach		15	C	18	C
Westbound Approach		15	B	16	C

Table 7: Future Year Intersection Level of Service

Intersection	Control	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
Northbound Left		8	A	9	A
Southbound Left		9	A	9	A
US 50A/Nevada Pacific Pkwy	Signal				
Overall		18	B	21	B

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
2. This intersection was analyzed with a shared left-turn/through lane and a shared through/right-turn lane on each approach because *HCM* does not allow analysis of stop controlled intersections with more than two lanes on each approach.
Source: Headway Transportation, 2022

As shown in the table, the US 95A/Fremont Street and Nevada Pacific Parkway/I-80 Westbound Ramps intersections are expected to operate at LOS F during the PM peak hour without the project. The other study intersections are expected to operate within policy level of service thresholds under Future Year (20-year horizon) conditions.

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

With the connection of Nevada Pacific Parkway to US 50A, project traffic would change travel routes compared to Baseline Plus Project conditions, with fewer drivers using E. Newlands Drive and US 95A, and more continuing south on Nevada Pacific Parkway to US 50A. While the overall project trip distribution (shown on **Figure 5**) would not change, the project travel routes and trip assignment would change. Future Year conditions project generated trips (**Figure 9**) were added to the Future Year background traffic volumes at the study intersections (**Figure 7**) to develop Future Year Plus Project traffic volumes at the study intersections, shown on **Figure 10**.

Intersection Level of Service Analysis

Table 8 shows the Future Year Plus Project intersection level of service results at the study intersections. The analysis assumes the lane configurations and controls shown on **Figure 8**. The lane configurations and controls at the Connor Drive/Duffy Road and Connor Drive/Gateway Drive intersections were determined based on the analysis and capacity needs and are shown on **Figure 11**. The technical calculations are provided in **Appendix F**.

Table 8: Future Year Plus Project Intersection Level of Service

Intersection	Control	Future Year				Future Year Plus Project			
		AM		PM		AM		PM	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
US 95A/I-80 WB Ramps	Side Street Stop								
Westbound Approach		19	C	25	C	19	C	29	D
Southbound Approach		36	E	33	D	37	E	34	D
US 95A/I-80 EB Ramps	Side Street Stop								
Eastbound Approach		22	C	24	C	22	C	25	C
Southbound Left		10	B	10	A	10	B	10	A
US 95A/E. Newlands Dr	Signal								
Overall		25	C	48	D	43	D	**102**	**F**
US 95A/Fremont St	Signal								
Overall		42	D	**93**	**F**	43	D	**130**	**F**
US 95A/US 50A/Main St	Signal								
Overall		19	B	29	C	30	C	53	D
E. Newlands Dr/Stanley Dr	Signal								
Overall		11	B	20	C	12	B	31	C
Nevada Pacific Pkwy/I-80 WB Ramps	Side Street Stop								
Westbound Approach		29	D	**56**	**F**	**>500**	**F**	**>500**	**F**
Northbound Left		9	A	9	A	11	B	**80**	**F**
Nevada Pacific Pkwy/I-80 EB Ramps	Side Street Stop								
Eastbound Approach		12	B	14	B	25	C	**62**	**F**
Southbound Left		9	A	9	A	10	B	16	C
Nevada Pacific Pkwy/Duffy Rd	Side Street Stop								
Eastbound Approach		19	C	27	D	**>500**	**F**	**>500**	**F**
Westbound Approach		26	D	20	C	**>500**	**F**	**>500**	**F**
Northbound Left		9	A	9	A	14	B	14	B
Southbound Left		9	A	9	A	**375**	**F**	**99**	**F**
Nevada Pacific Pkwy/Gateway Dr	Side Street Stop								
Eastbound Approach		14	B	17	C	**>500**	**F**	**>500**	**F**
Westbound Approach		16	C	17	C	**>500**	**F**	**>500**	**F**
Northbound Left		8	A	9	A	10	B	12	B
Southbound Left		9	A	9	A	**260**	**F**	**36**	**E**
Nevada Pacific Pkwy/ MacDonald Dr	Side Street Stop								
Eastbound Approach		15	B	19	C	**406**	**F**	**>500**	**F**
Westbound Approach		18	C	18	C	**>500**	**F**	**>500**	**F**
Northbound Left		8	A	9	A	11	B	18	C
Southbound Left		9	A	9	A	31	D	14	B
Nevada Pacific Pkwy/E. Newlands Dr[2]	All way Stop								
Overall		14	B	15	B	**265**	**F**	**370**	**F**
Nevada Pacific Pkwy/Gavin Rd	Side Street Stop								
Eastbound Approach		15	C	18	C	**165**	**F**	**366**	**F**
Westbound Approach		15	B	16	C	**>500**	**F**	**>500**	**F**
Northbound Left		8	A	9	A	10	A	16	B
Southbound Left		9	A	9	A	19	C	12	B
US 50A/Nevada Pacific Pkwy	Signal								
Overall		18	B	21	C	29	C	37	D
Connor Dr/Duffy Rd									
Northbound Approach		NA				**72**	**F**	**37**	**E**

Table 8: Future Year Plus Project Intersection Level of Service

Intersection	Control	Future Year				Future Year Plus Project			
		AM		PM		AM		PM	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
Southbound Approach	Side Street Stop					11	B	12	B
Eastbound Left						8	A	9	A
Westbound Left						12	B	8	A
Connor Dr/Gateway Dr									
Northbound Approach	Side Street Stop	NA				26	D	**78**	**F**
Southbound Approach						11	B	14	B
Eastbound Left						8	A	10	B
Westbound Left						10	A	9	A

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
2. This intersection was analyzed with a shared left-turn/through lane and a shared through/right-turn lane on each approach because *HCM* does not allow analysis of stop controlled intersections with more than two lanes on each approach.
Source: Headway Transportation, 2022

As shown in the table, eleven study intersections are expected to operate at LOS F during the AM and PM peak hours. The other study intersections would operate within policy level of service thresholds during the AM and PM peak hours under Future Year Plus Project conditions.

Although the side street approaches of the Nevada Pacific Parkway/MacDonald Drive intersection are expected to operate at LOS F during the peak hours, the anticipated traffic volumes are not expected to meet signal warrant criteria. Traffic signals are recommended at the upstream and downstream intersections (Gateway Drive and E. Newlands Drive) that drivers would be able to access during peak hours. It is not appropriate to signalize every intersection along the Nevada Pacific Parkway corridor and the LOS F condition on the side streets is manageable at the MacDonald Drive intersection with alternate routes and access points available. Improvements are not recommended at the Nevada Pacific Parkway/MacDonald Drive intersection.

IMPROVEMENTS LIST & PHASING

As shown in **Table 8**, intersection and roadway improvements are needed for full project build out. Based on the Anticipated Notice of Completion Map (provided in **Appendix C**), it will take approximately 20 years for the project to be fully completed. Hence, the capacity of the transportation network should also be improved/increased in incremental phases. Roadway and intersection improvements should be built in stages in accordance with the amount of traffic generated by the project through those various phases. **Table 9 and Figures 14 through 16** list phasing, timing recommendations, and funding category for all the proposed improvements generally based on the development sequence shown in **Appendix C**. **Figure 11** shows the recommended lane configurations and controls at the study intersections and **Figures 12A** and **12B** show the number of lanes and roadway configuration for Nevada Pacific Parkway.

Table 9: Traffic System Phasing Plan

ID	Location	Improvement	Trigger	Funding Category
1	US 95A/US 50A/Main St (Roundabout)	Construct traffic signal and the lane configurations shown in Exhibit 2	When constructed by NDOT	Excluded (NDOT)
2	Nevada Pacific Parkway/ I-80 WB Ramps	Construct traffic signal	When warranted and approved by NDOT	Regional
3	Nevada Pacific Parkway/ Duffy Road	Construct traffic signal	When warranted and approved by NDOT	
4	Nevada Pacific Parkway/ Gateway Drive	Construct traffic signal	Prior to exceeding LOS D, subject to warrants being met	
5	Nevada Pacific Parkway/ E. Newlands Drive	Construct traffic signal	Prior to exceeding LOS D, subject to warrants being met	
6	Nevada Pacific Parkway Extension – between E. Newlands Drive and US 50A	Complete connector road with 110 feet of right-of-way to include 3 through lanes in each direction plus left- and right-turn lanes per cross sections provided in **Appendix G**	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips)	
7	Nevada Pacific Parkway/ US 50A	Construct intersection including the following lane configurations: - NB – 2 left-turn lanes, 1 through lane, 1 right-turn lane - SB – 2 left-turn lanes (1 pocket), 1 through lane, 1 free right-turn lane - EB – 2 left-turn lanes, 2 through lanes, 1 right-turn lane - WB – 1 left-turn lane, 2 through lanes, 1 free right-turn lane	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips) This improvement is anticipated to occur with construction of the Nevada Pacific Parkway Extension	
8	Nevada Pacific Parkway/ E. Newlands Drive	Add a northbound lane transitioning to a drop right-turn lane at Newlands	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips) This improvement is anticipated to occur with construction of the Nevada Pacific Parkway Extension	
9	Nevada Pacific Parkway/ Gavin Road	Construct the following lane configurations: - NB 1 left-turn lane, 2 through lanes, 1 shared through/right-turn lane - SB – 1 left-turn pocket, 2 through lane, 1 shared through/right-turn lane - EB – 1 left-turn lane, 1 shared through/right-turn lane - WB – 1 left-turn lane, 1 shared through/right-turn lane	Prior to exceeding PM peak hour project trip generation of 1,480 trips (approximately 35 percent of the total project trips) This improvement is anticipated to occur with construction of the Nevada Pacific Parkway Extension	
10	US 95A/E. Newlands Drive	Add overlap phasing for the northbound right-turn movement and optimize signal timing	Prior to intersection exceeding LOS D	

ID	Location	Improvement	Trigger	Funding Category
11	US 95A/Fremont Street	Add a southbound right-turn pocket	When constructed by NDOT	Excluded (NDOT)
12	Nevada Pacific Parkway/ I-80 WB Ramps (east half of bridge)	Construct second bridge at interchange Add second northbound left-turn lane and northbound through lane across the I-80 bridge	When constructed by NDOT, ideally prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
13	Nevada Pacific Parkway/ I-80 EB Ramps	Construct traffic signal	When warranted and approved by NDOT	Regional
14	Nevada Pacific Parkway I-80 EB Ramps to Duffy Rd	Add a second northbound through lane	After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
15	Nevada Pacific Parkway/ Duffy Road	Add a second southbound left-turn lane Add a southbound right-turn pocket Add a second westbound left-turn lane Add a channelized (yield controlled) westbound right-turn lane	After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
16	Nevada Pacific Parkway Duffy Rd to Gateway Dr	Add a third northbound through lane	After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding LOS D or PM peak hour trip generation of 1,480 project trips	
17	Nevada Pacific Parkway/ Gavin Road	Construct traffic signal	Prior to exceeding LOS D, subject to warrants being met	
18	Nevada Pacific Parkway/ Gateway Drive	Add a second southbound left-turn lane Add a second westbound left-turn lane Add a channelized (yield controlled) westbound right-turn lane Add an eastbound left-turn lane	Prior to exceeding LOS D or PM peak hour trip generation of 2,300 project trips	
19	Connor Drive/Duffy Road	Construct traffic signal	If/when signal warrant criteria is met	Required
20	Connor Drive/Gateway Drive	Construct traffic signal	If/when signal warrant criteria is met	
21	Duffy Road	Construct / Widen Roadway Nevada Pacific Pkwy to Connor Drive	With adjacent development	Regional
22	Duffy Road	Construct Roadway East of Connor Drive	With adjacent development	Required
23	Gateway Drive	Construct / Widen Roadway Nevada Pacific Pkwy to Connor Drive	With adjacent development	Regional
24	Gateway Drive	Construct Roadway East of Connor Drive	With adjacent development	Required
25	MacDonald Drive	Construct / Widen Roadway Nevada Pacific Pkwy to Connor Drive	With adjacent development	Regional
26	E. Newlands Drive	Construct Roadway East of Connor Drive	With adjacent development	Required
27	Gavin Road	Construct Roadway East of Nevada Pacific Parkway	With adjacent development	Required
28	Access Road 1	Roadway Improvements - Realigned Duffy Road to Victory property line R/W to remain NDOT's	Concurrent with Duffy Road realignment	Regional
29	Connor Drive	Construct Roadway Duffy Rd to E. Newlands Drive	With adjacent development	Required
30	Road A	Construct Roadway Duffy Road to Gateway Drive	With adjacent development	Required

Table **10** shows the AM and PM peak hour level of service results with the improvements listed in **Table 9**.

Table 10: Future Year Plus Project Intersection Level of Service (with Mitigation)

Intersection	Control	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
US 95A/E. Newlands Dr	Signal				
Overall		40	D	41	D
US 95A/Fremont St	Signal				
Overall		42	D	49	D
Nevada Pacific Pkwy/I-80 WB Ramps	Signal				
Overall		10	A	16	B
Nevada Pacific Pkwy /I-80 EB Ramps	Signal				
Overall		5	A	5	A
Nevada Pacific Pkwy/Duffy Rd	Signal				
Overall		32	C	48	D
Nevada Pacific Pkwy/Gateway Dr	Signal				
Overall		29	C	28	C
Nevada Pacific Pkwy/E. Newlands Dr	Signal				
Overall		46	D	20	B
Nevada Pacific Pkwy/Gavin Rd	Signal				
Eastbound Approach		13	B	12	B
Connor Drive/Duffy Road	Signal				
Overall		12	B	19	B
Connor Drive/Gateway Dr	Signal				
Overall		10	A	12	B

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized.
Source: Headway Transportation, 2022

As shown in the table, the study intersections are expected to operate within policy level of service thresholds with the improvements listed in **Table 9**.

ROADWAY CLASSIFICATION & RIGHT-OF-WAY WIDTH

Several roadways will be constructed and/or widened with the project. Adequate right-of-way width should be dedicated within the tentative map boundaries to accommodate anticipated improvements. The project roadways should be built with the following right-of-way widths and classifications (also shown on **Figure 13**):

- Nevada Pacific Parkway – Major Arterial with 110 foot minimum right-of-way, 7-lane roadway with three lanes in each direction plus turn lanes at intersections (per **Figures 12A** and **12B**)
- Duffy Road – Minor Arterial with 84 foot right-of-way, 5-lane roadway with two lanes in each direction and a two-way left-turn lane
- Gateway Drive – Minor Arterial with 84 foot right-of-way, 5-lane roadway with two lanes in each direction and a two-way left-turn lane
- MacDonald Drive – Industrial Collector with 62 foot right-of-way, 3-lane roadway with one lane in each direction and a two-way left-turn lane

- E. Newlands Drive (east of Connor Drive) – Industrial Collector with 62 foot right-of-way, 3-lane roadway with one lane in each direction and a two-way left-turn lane
- Gavin Road – Industrial Collector with 62 foot right-of-way, 3-lane roadway with one lane in each direction and a two-way left-turn lane
- Connor Drive – Industrial Collector with 62 foot right-of-way, 3-lane roadway with one lane in each direction and a two-way left-turn lane
- Road A – Industrial Collector with 62 foot right-of-way, 3-lane roadway with one lane in each direction and a two-way left-turn lane
- Access Road 1 north of Duffy Road to north property line – Local Street with 37 foot right-of-way/width and 2 lanes

Typical cross sections for each roadway type are provided in **Appendix G**. Note that additional right-of-way will be necessary at intersections and in specific segments of Nevada Pacific Parkway for turn lanes and additional lanes as shown on **Figures 11, 12A,** and **12B**.

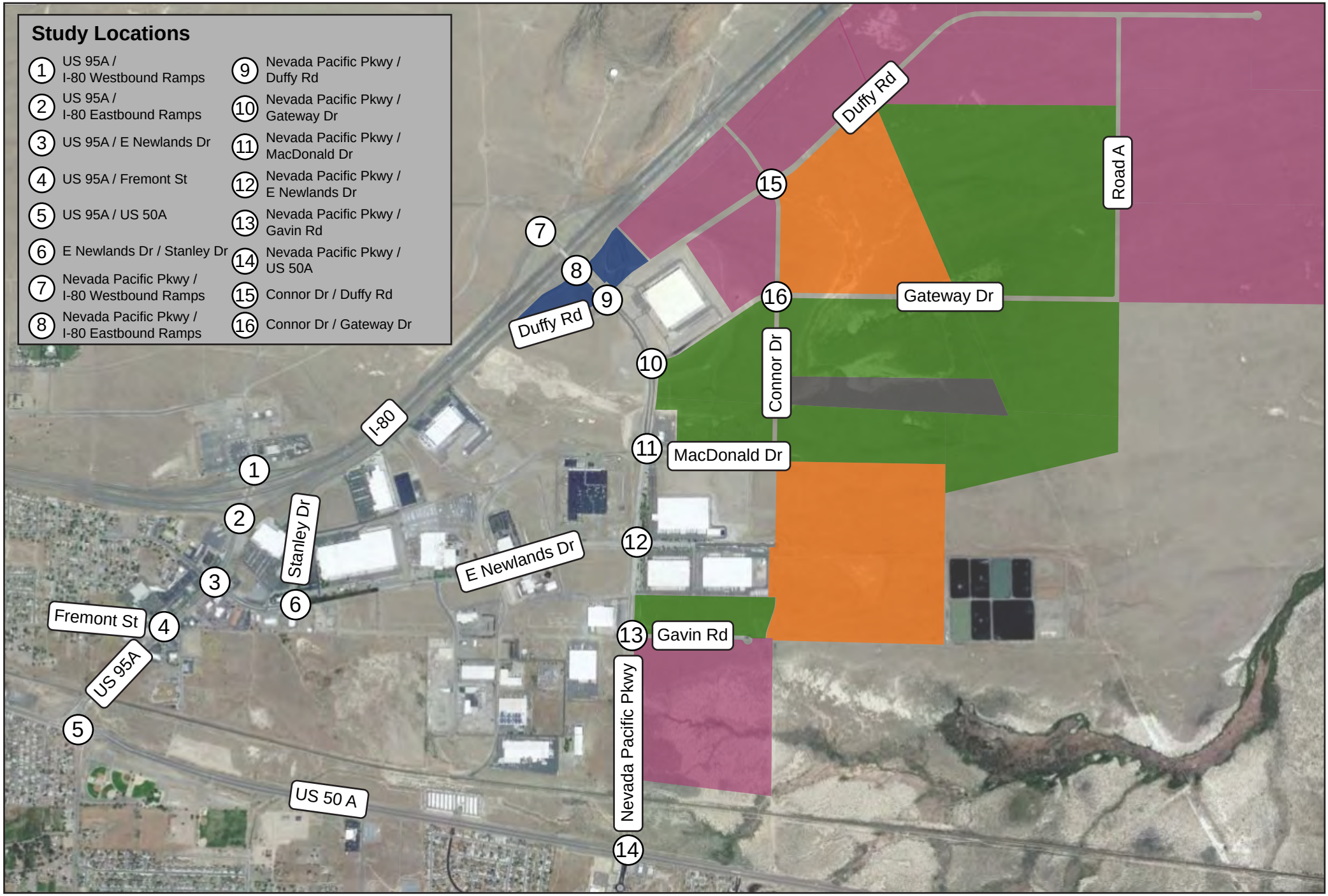
CONCLUSIONS & RECOMMENDATIONS

The Victory tentative map consists of 2,174 acres including public right-of-way. The total area includes 2,050 acres of development parcels for industrial uses, including less than 21 acres of retail/commercial zoned property. The following is a list of the key study findings:

- The project will be constructed incrementally over a 20-year period. Accordingly, the capacity of the transportation network should also be improved/increased in incremental phases.
- The US 95A/US 50A/Main Street roundabout intersection is currently over capacity (operating at LOS F). Preliminary analysis shows that the roundabout would continue to operate at LOS F with increased capacity (modifying it to a two-lane roundabout with right-turn bypass lanes on all approaches). Therefore, a traffic signal is recommended at the intersection with the lane configurations shown in **Exhibit 2**. This improvement is deemed NDOT's responsibility as resolution of an existing deficiency.
- Under Baseline Plus Project conditions (with roughly 35 percent of the project trips), traffic signals are recommended at the following intersections and should be constructed when warrants are met and NDOT approval is granted for locations within NDOT jurisdiction:
  - Nevada Pacific Parkway/I-80 Westbound Ramps (NDOT)
  - Nevada Pacific Parkway/Duffy Road (NDOT)
  - Nevada Pacific Parkway/Gateway Drive
  - Nevada Pacific Parkway/E. Newlands Drive
- The Baseline conditions roadway network (existing conditions plus the signals listed above plus the traffic signal at US 95A/US 50A/Main Street) is expected to accommodate approximately 35 percent of the estimated PM peak hour project trips (1,480 peak hour trips) before the Nevada Pacific Parkway Extension is needed. The intersection improvements at the Nevada Pacific Parkway/E. Newlands Drive, Nevada Pacific Parkway/Gavin Road, and US

50A/Nevada Pacific Parkway intersections are anticipated to be constructed in conjunction with the Nevada Pacific Parkway extension.

- A second northbound left-turn lane and northbound through lane at the Nevada Pacific Parkway/I-80 Westbound Ramps intersection across the I-80 bridge will be needed. Completion of the interchange is deemed an NDOT responsibility for accommodation of background/regional traffic and timing is dependent on NDOT.
- Prior to build out of the project and exceeding LOS D, the following capacity improvements are expected to be needed on US 95A:
  - US 95A/E. Newlands Drive: add overlap phasing for the northbound right-turn movement and optimize signal timing
  - US 95A/Fremont Street: add a southbound right-turn pocket. This is deemed a NDOT responsibility for resolution of poor operations in future years unrelated to the project.
- After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding a PM peak hour trip generation of 1,480 project trips, intersections improvements should be constructed at the following intersections (see **Table 9**):
  - Nevada Pacific Parkway/I-80 Eastbound Ramps
  - Nevada Pacific Parkway/Duffy Road
  - Nevada Pacific Parkway/Gavin Road
- After the Nevada Pacific Parkway Extension is constructed, then prior to exceeding a PM peak hour trip generation of 2,300 project trips, intersections improvements should be constructed at the following intersections (see **Table 9**):
  - Nevada Pacific Parkway/Gateway Drive
- Traffic signals should be installed at the Connor Drive/Duffy Road and Connor Drive/Gateway Drive intersection if/when signal warrant criteria are met.
- New roadways within the tentative map area will generally be constructed concurrently with development of the adjacent parcels.



HEADWAY TRANSPORTATION

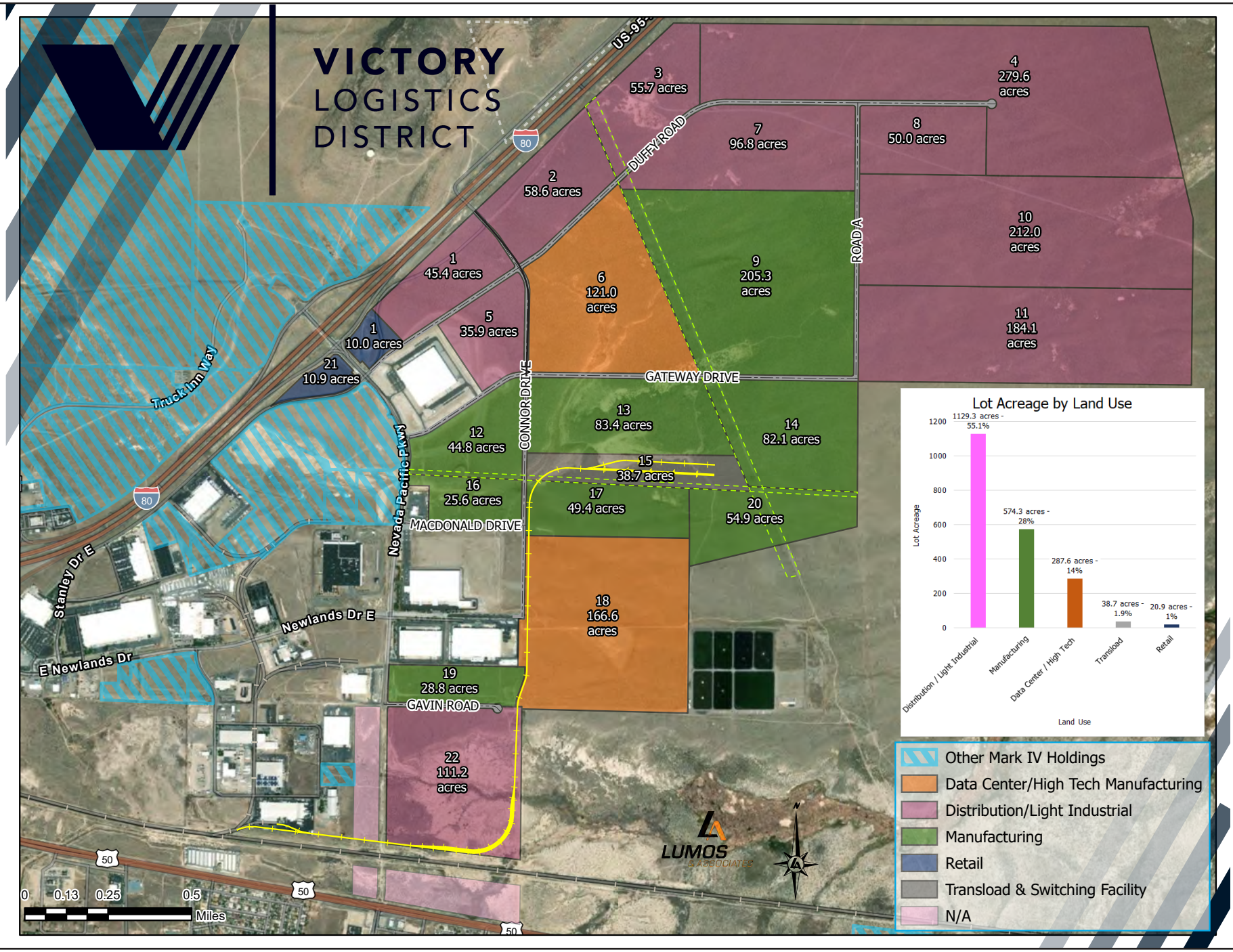
NO SCALE

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

(#) - Study Intersection

Figure 1

Victory
Traffic Impact Study
Project Location
Page 1 of 16



HEADWAY TRANSPORTATION

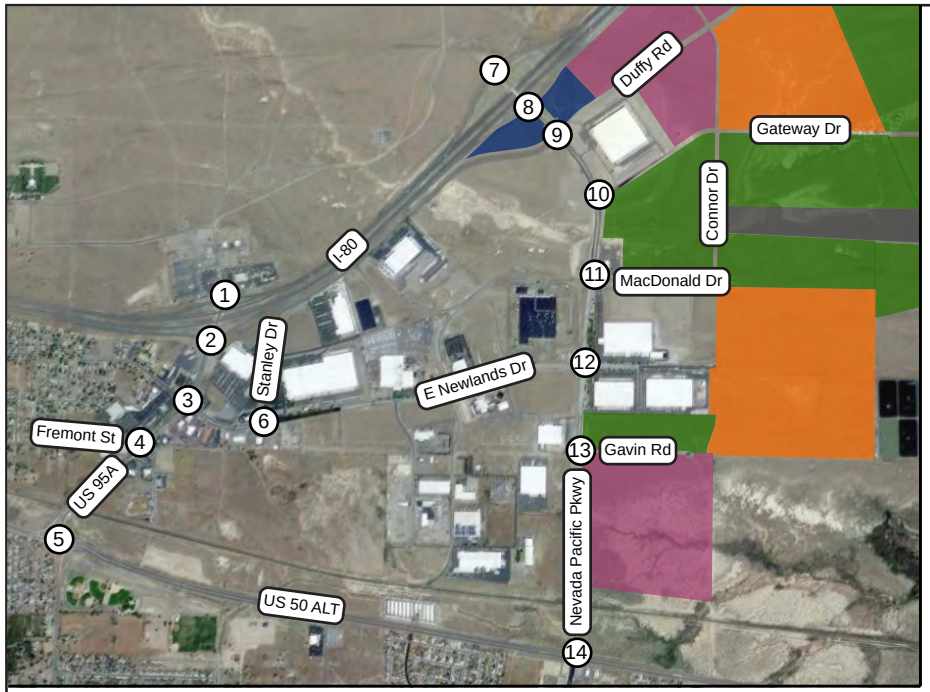
NO SCALE

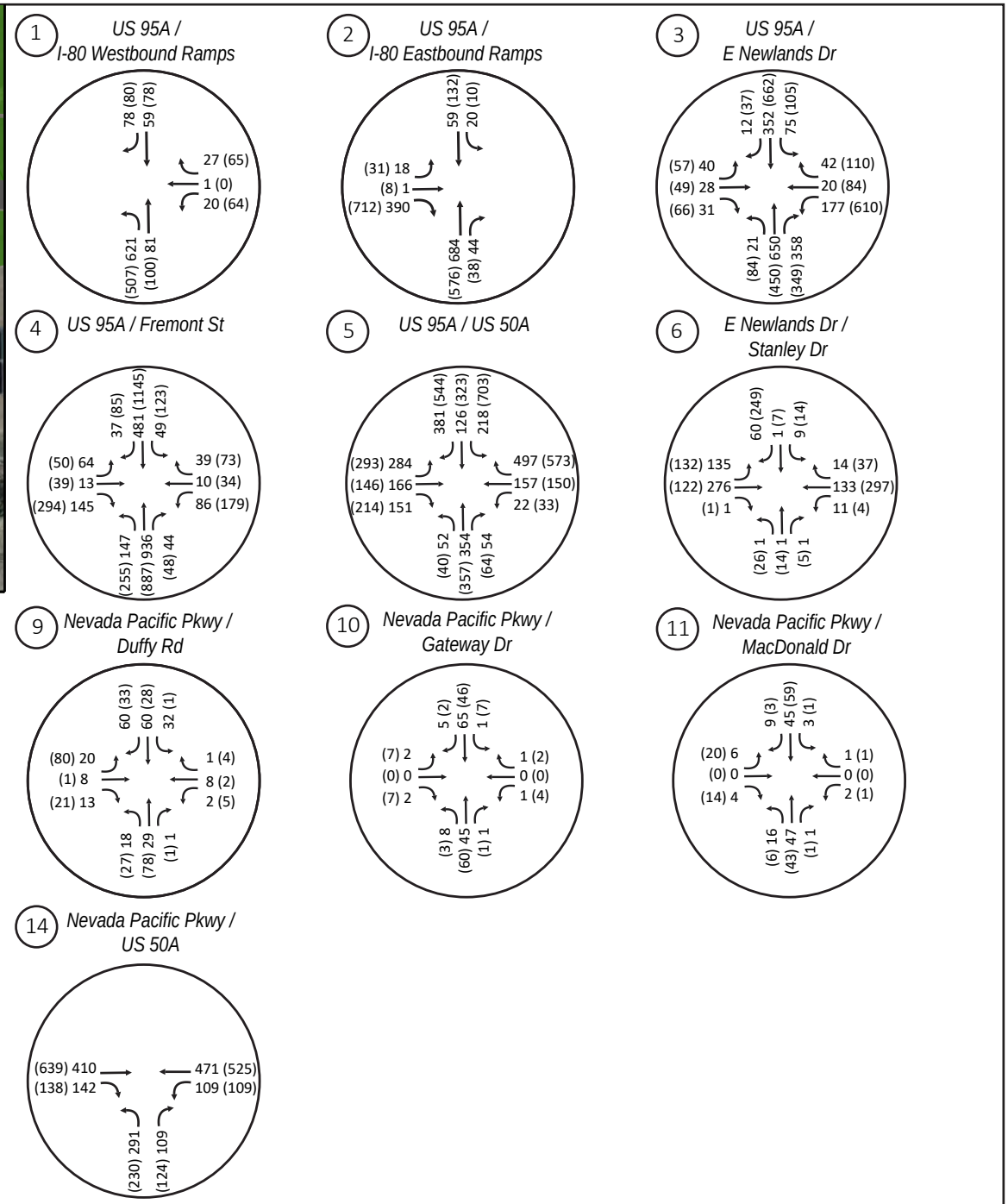
Figure 2

Victory

Traffic Impact Study

Conceptual Land Use Plan





HEADWAY TRANSPORTATION

AM (PM) Turning Movement Volumes

NO SCALE

- Project Location by Land Use*

*refer to Figure 2 - Land Use Plan

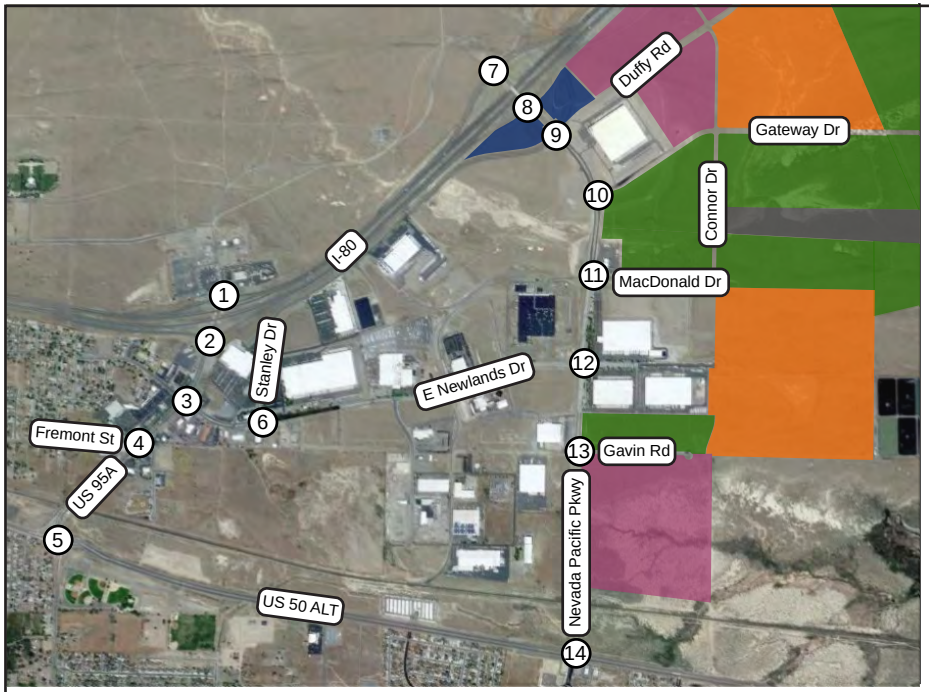
- Study Intersection

Figure 3

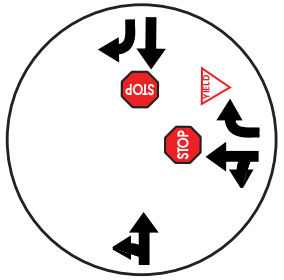
Victory

Traffic Impact Study

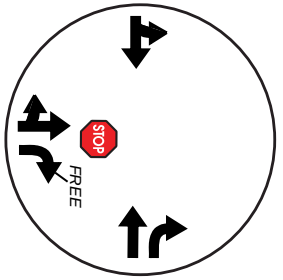
Baseline Traffic Volumes



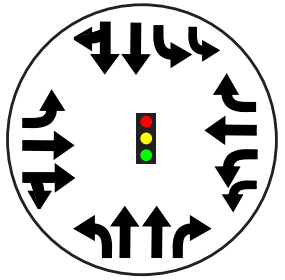
1 US 95A / I-80 Westbound Ramps



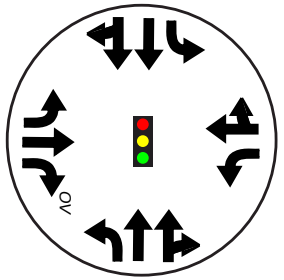
2 US 95A / I-80 Eastbound Ramps



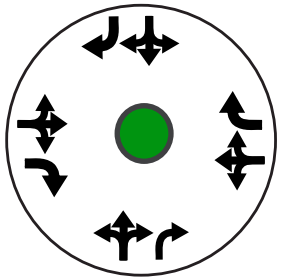
3 US 95A / E Newlands Dr



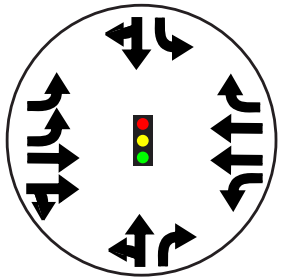
4 US 95A / Fremont St



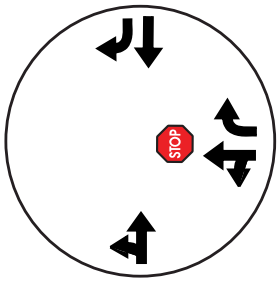
5 US 95A / US 50A



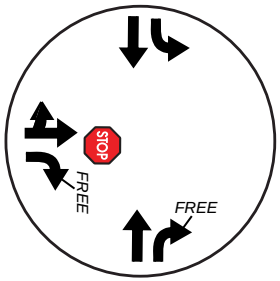
6 E Newlands Dr / Stanley Dr



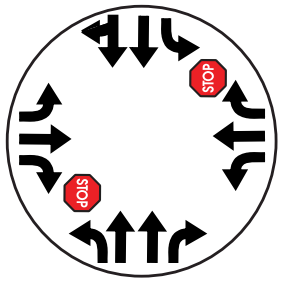
7 Nevada Pacific Pkwy / I-80 Westbound Ramps



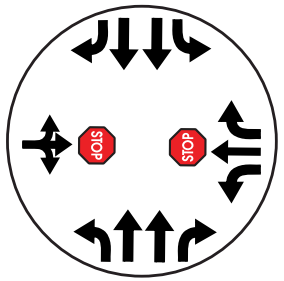
8 Nevada Pacific Pkwy / I-80 Eastbound Ramps



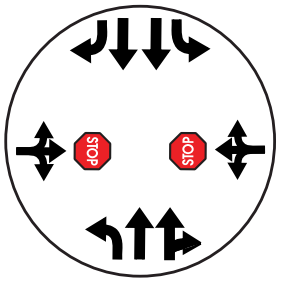
9 Nevada Pacific Pkwy / Duffy Rd



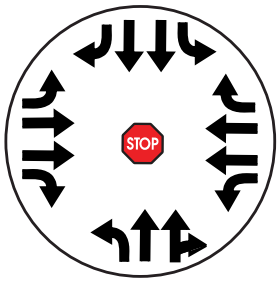
10 Nevada Pacific Pkwy / Gateway Dr



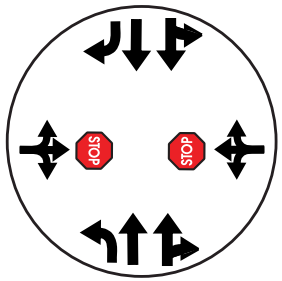
11 Nevada Pacific Pkwy / MacDonald Dr



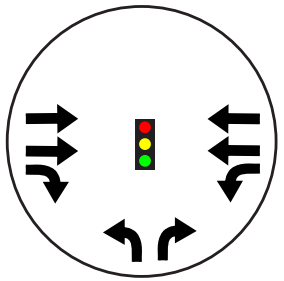
12 Nevada Pacific Pkwy / E Newlands Dr



13 Nevada Pacific Pkwy / Gavin Rd



14 Nevada Pacific Pkwy / US 50A



HEADWAY TRANSPORTATION

NO SCALE

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

- Roundabout

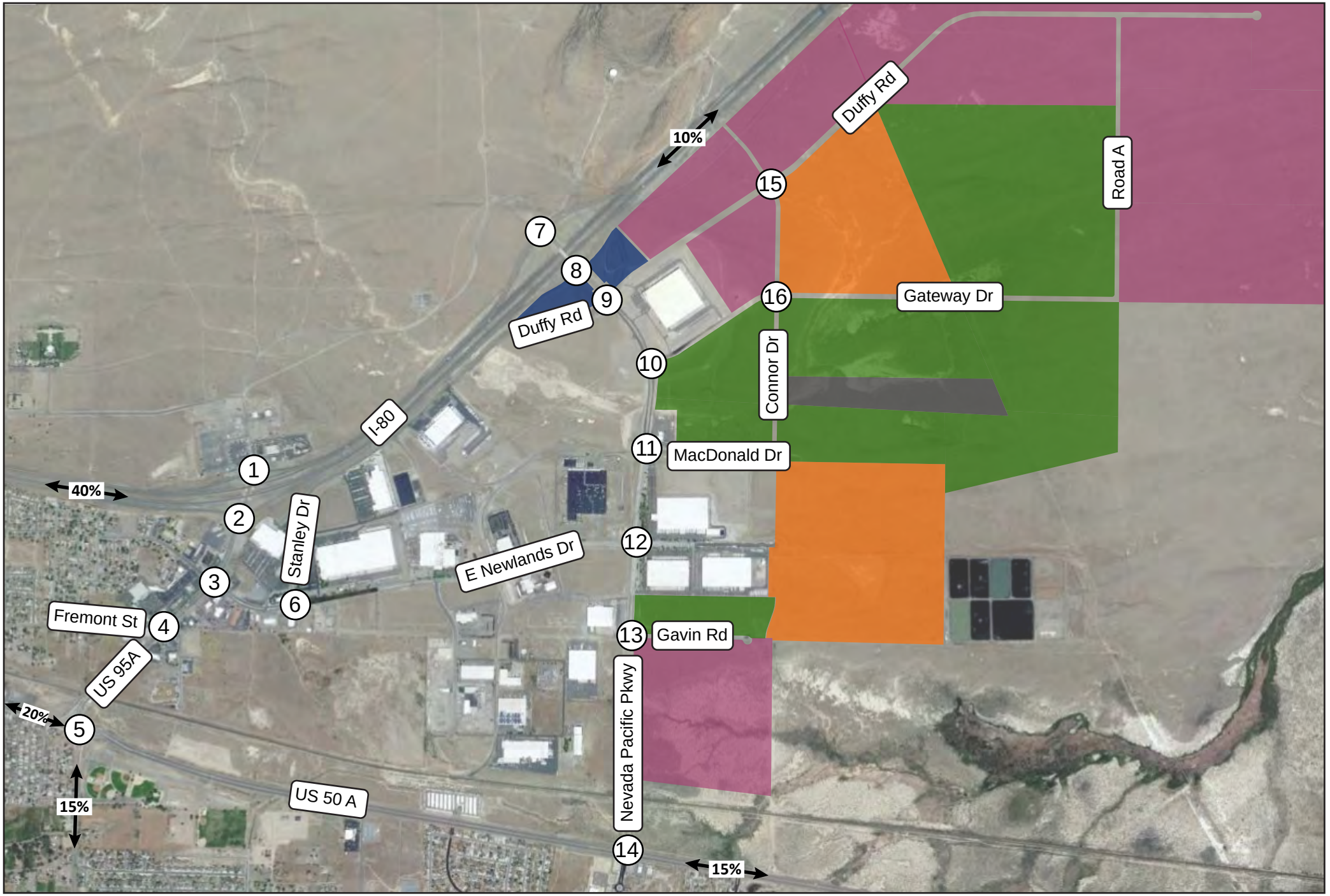
- Stop

- Study Intersection

- Signal

Figure 4

Victory
Traffic Impact Study
Baseline Lane Configurations & Controls



HEADWAY TRANSPORTATION

NO SCALE

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

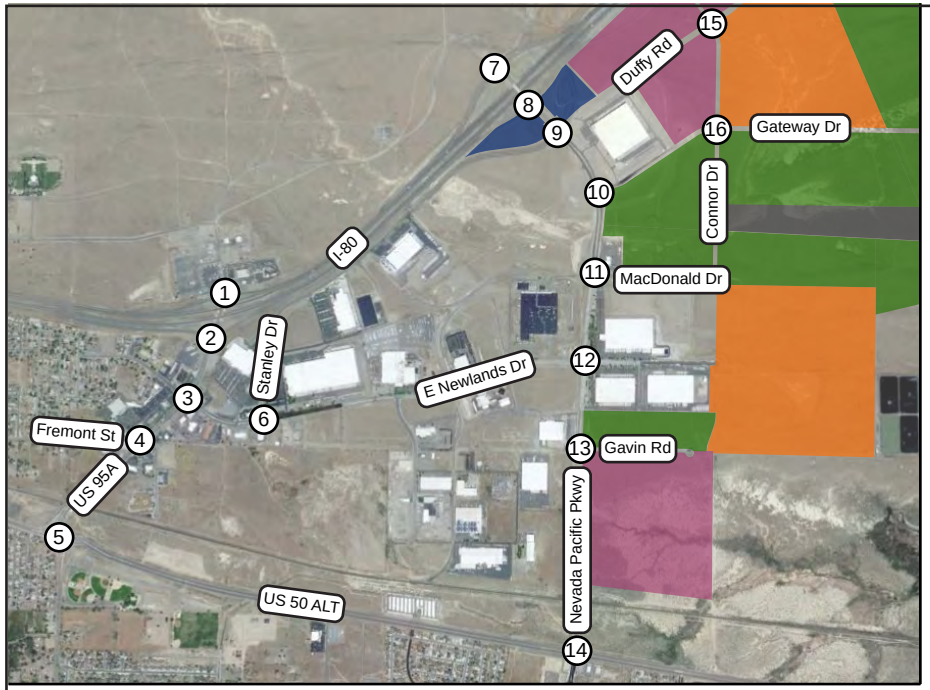
(#) - Study Intersection

XX% - Trip Distribution

Figure 5

Victory
Traffic Impact Study

Trip Distribution



1 US 95A / I-80 Westbound Ramps

78 (80)
59 (78)
27 (65)
2 (4)
88 (247)
(512) 624
(100) 81

2 US 95A / I-80 Eastbound Ramps

127 (315)
20 (10)
(31) 18
(8) 1
(715) 396
(581) 687
(139) 213

3 US 95A / E Newlands Dr

12 (37)
420 (845)
81 (108)
(57) 40
(54) 37
(66) 31
45 (115)
24 (94)
304 (903)
(84) 21
(551) 819
(503) 652

4 US 95A / Fremont St

37 (85)
676 (1595)
49 (123)
(50) 64
(39) 13
(294) 145
39 (73)
10 (34)
86 (179)
(255) 147
(1142) 1400
(48) 44

5 US 95A / US 50A

456 (728)
183 (459)
281 (859)
(392) 464
(146) 166
(214) 151
649 (655)
157 (150)
22 (33)
(40) 52
(431) 486
(64) 54

6 E Newlands Dr / Stanley Dr

72 (269)
1 (7)
9 (14)
(152) 150
(264) 571
(1) 1
14 (37)
255 (585)
11 (4)
(26) 1
(14) 1
(5) 1

7 Nevada Pacific Pkwy / I-80 Westbound Ramps

0 (0)
0 (0)
0 (0)
1 (6)
112 (63)
(716) 271
(0) 0

8 Nevada Pacific Pkwy / I-80 Eastbound Ramps

111 (62)
1 (1)
(1) 1
(1) 1
(359) 676
(715) 270
(105) 44

9 Nevada Pacific Pkwy / Duffy Rd

165 (172)
591 (248)
32 (1)
(222) 103
(1) 8
(43) 25
1 (4)
8 (2)
2 (5)
(48) 34
(595) 210
(1) 1

10 Nevada Pacific Pkwy / Gateway Dr

5 (2)
430 (218)
180 (77)
(7) 2
(0) 0
(7) 2
51 (170)
0 (0)
35 (116)
(3) 8
(430) 191
(44) 112

11 Nevada Pacific Pkwy / MacDonald Dr

9 (3)
217 (254)
229 (91)
(20) 6
(0) 0
(14) 4
77 (228)
0 (0)
12 (20)
(6) 16
(221) 227
(8) 19

12 Nevada Pacific Pkwy / E Newlands Dr

104 (317)
110 (53)
20 (19)
(113) 292
(25) 64
(55) 115
18 (31)
52 (52)
2 (1)
(92) 41
(97) 38
(1) 1

13 Nevada Pacific Pkwy / Gavin Rd

15 (6)
31 (15)
154 (75)
(6) 14
(0) 0
(0) 0
52 (135)
0 (0)
0 (0)
(0) 0
(26) 8
(0) 0

14 Nevada Pacific Pkwy / US 50A

(785) 470
(148) 145
613 (603)
109 (109)
(234) 302
(124) 109

15 Connor Dr / Duffy Rd

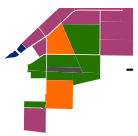
N/A

16 Connor Dr / Gateway Dr

0 (0)
0 (0)
0 (0)
(0) 0
(56) 143
(36) 94
0 (0)
43 (143)
0 (0)
(94) 28
(0) 0
(0) 0

AM (PM) Turning Movement Volumes (*with approximately 35% of project trips)*

NO SCALE

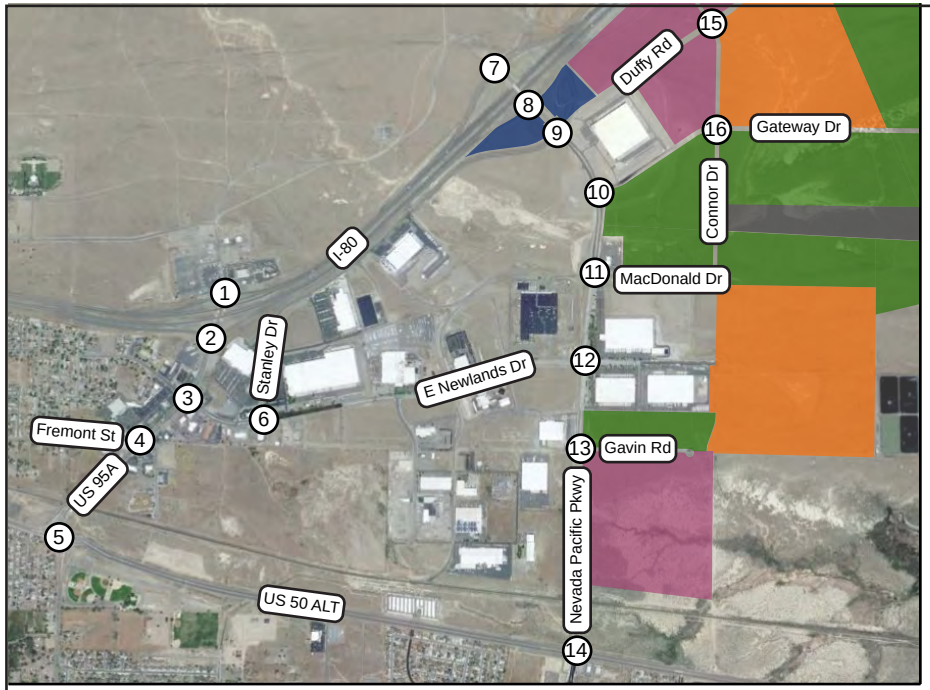


- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

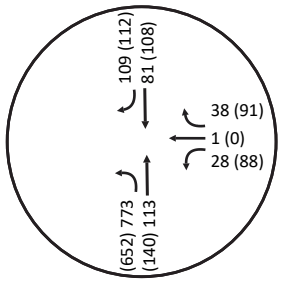
(#) - Study Intersection

Figure 6

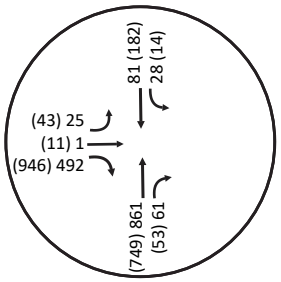
Victory
Traffic Impact Study
Baseline Plus Project Traffic Volumes



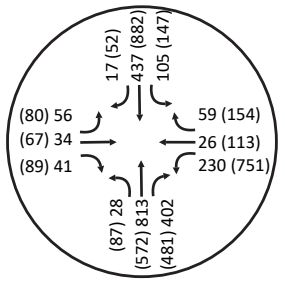
1 US 95A / I-80 Westbound Ramps



2 US 95A / I-80 Eastbound Ramps



3 US 95A / E Newlands Dr



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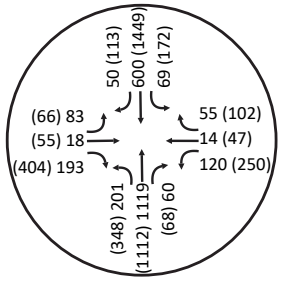
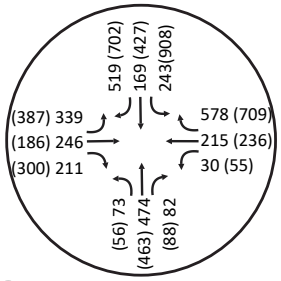
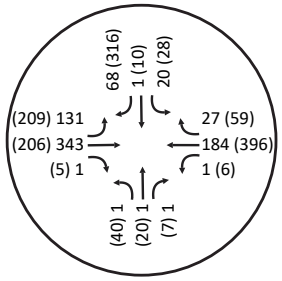


5 US 95A / US 50A



6 E Newlands Dr / Stanley Dr



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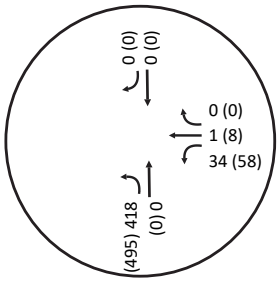

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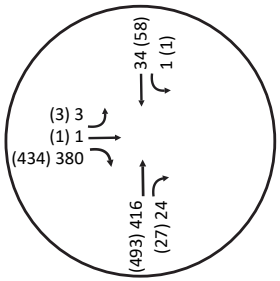
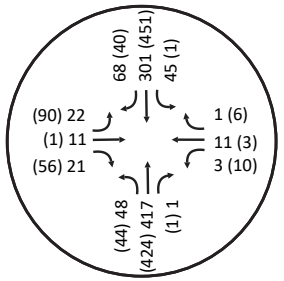
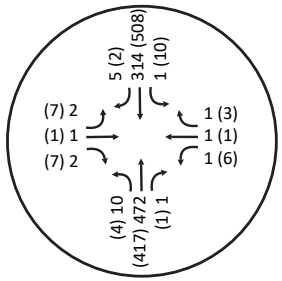


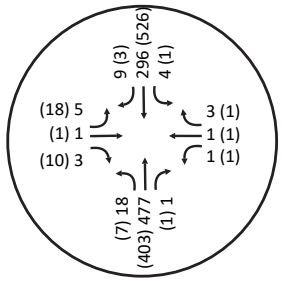
9 Nevada Pacific Pkwy / Duffy Rd



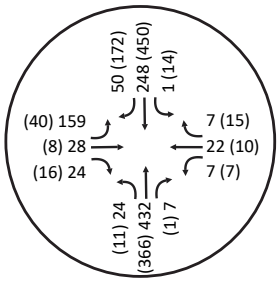
10 Nevada Pacific Pkwy / Gateway Dr



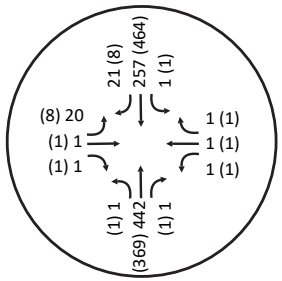
11 Nevada Pacific Pkwy / MacDonald Dr



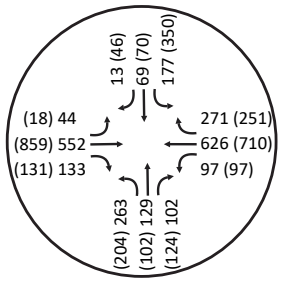
12 Nevada Pacific Pkwy / E Newlands Dr



13 Nevada Pacific Pkwy / Gavin Rd



14 Nevada Pacific Pkwy / US 50A



HEADWAY TRANSPORTATION

NO SCALE

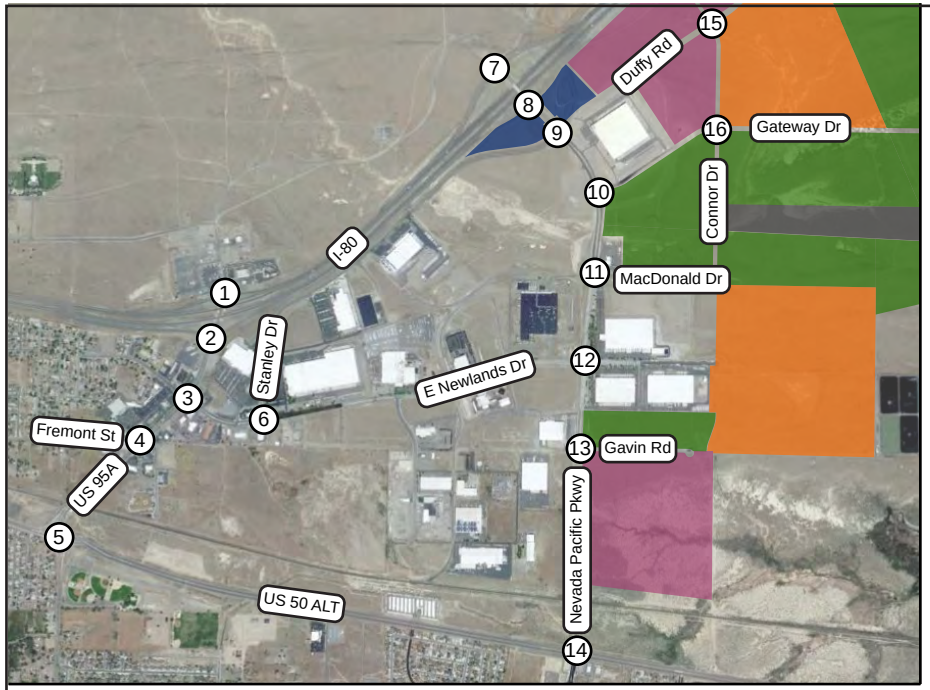
AM (PM) Turning Movement Volumes

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

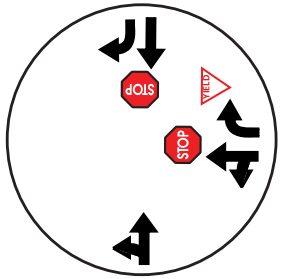
(#) - Study Intersection

Figure 7

Victory
Traffic Impact Study
Future Year Traffic Volumes



1 US 95A / I-80 Westbound Ramps



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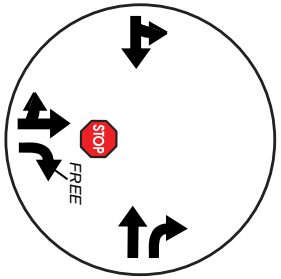
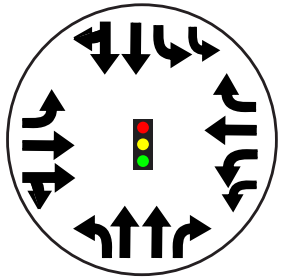


3 US 95A / E Newlands Dr



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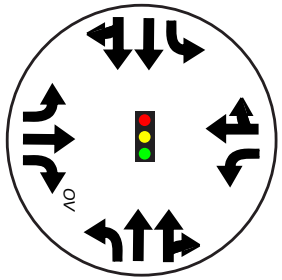

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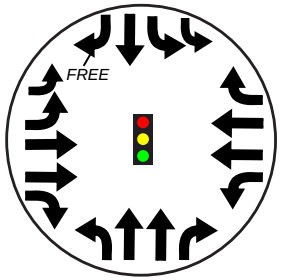
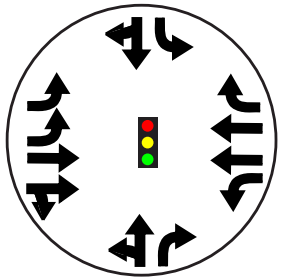
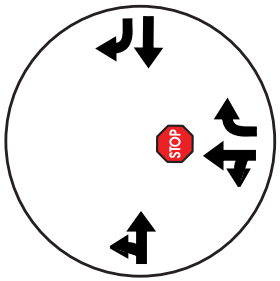


6 E Newlands Dr / Stanley Dr



7 Nevada Pacific Pkwy / I-80 Westbound Ramps



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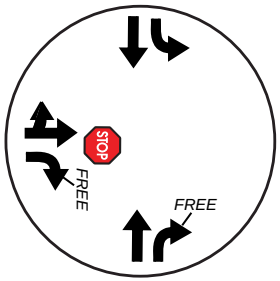
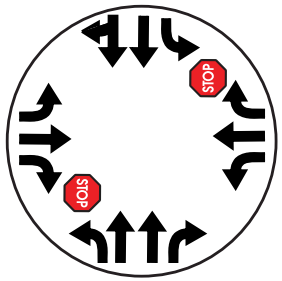
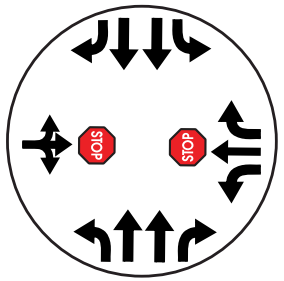


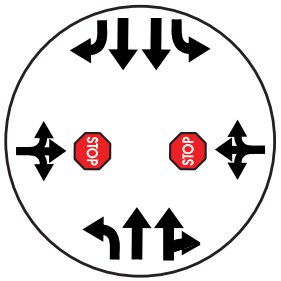
9 Nevada Pacific Pkwy / Duffy Rd



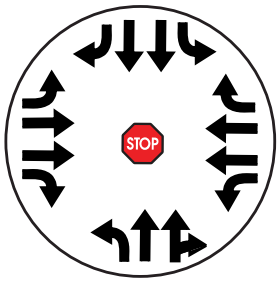
10 Nevada Pacific Pkwy / Gateway Dr



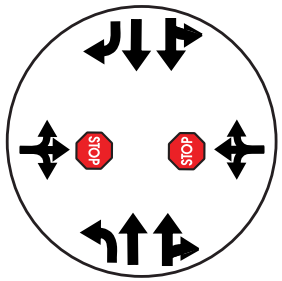
11 Nevada Pacific Pkwy / MacDonald Dr



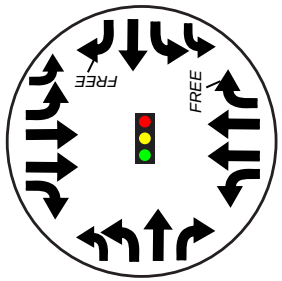
12 Nevada Pacific Pkwy / E Newlands Dr



13 Nevada Pacific Pkwy / Gavin Rd



14 Nevada Pacific Pkwy / US 50A



HEADWAY TRANSPORTATION

NO SCALE

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

(#) - Study Intersection

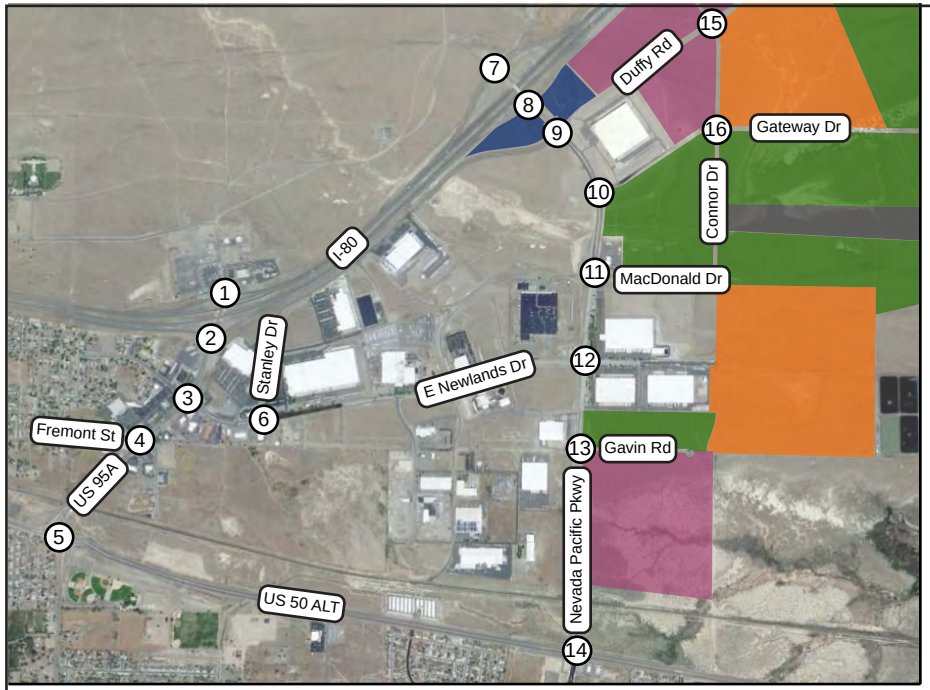
STOP - Stop

- Signal

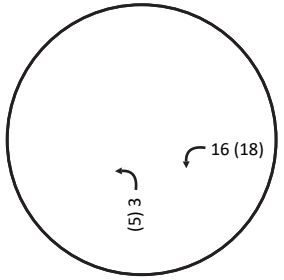
Figure 8

Victory
Traffic Impact Study

Future Year Lane Configurations & Controls



1 US 95A / I-80 Westbound Ramps



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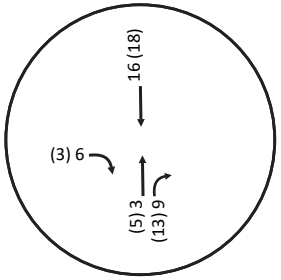
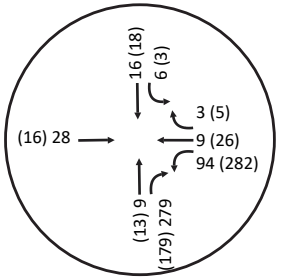


3 US 95A / E Newlands Dr



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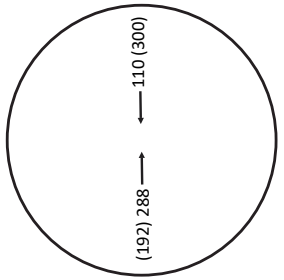
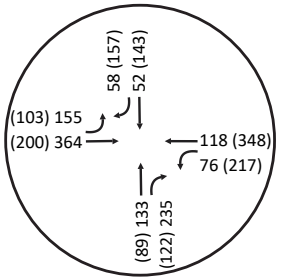
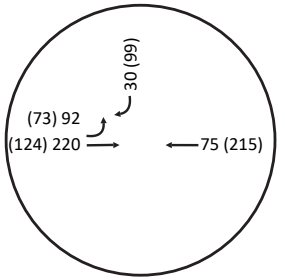


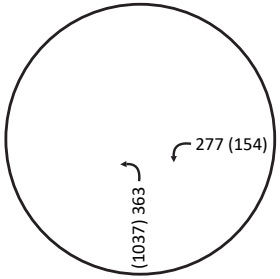
5 US 95A / US 50A



6 E Newlands Dr / Stanley Dr



7 Nevada Pacific Pkwy / I-80 Westbound Ramps



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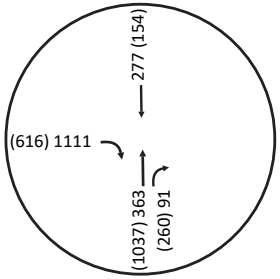
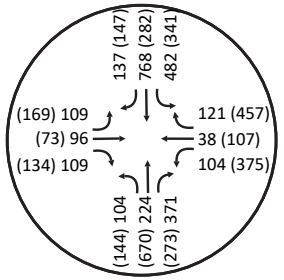
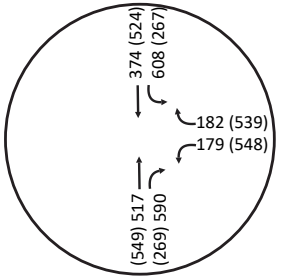


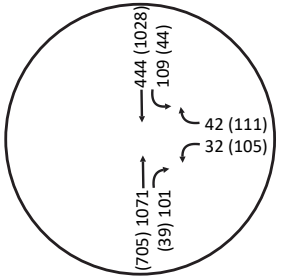
9 Nevada Pacific Pkwy / Duffy Rd



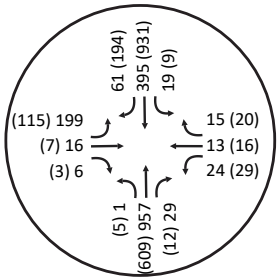
10 Nevada Pacific Pkwy / Gateway Dr



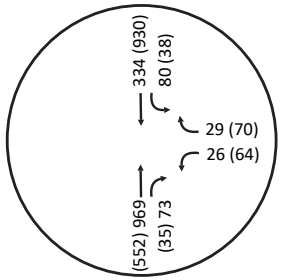
11 Nevada Pacific Pkwy / MacDonald Dr



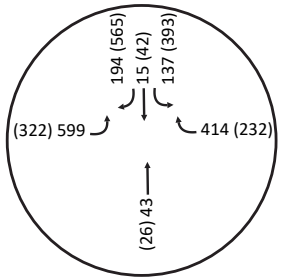
12 Nevada Pacific Pkwy / E Newlands Dr



13 Nevada Pacific Pkwy / Gavin Rd



14 Nevada Pacific Pkwy / US 50A



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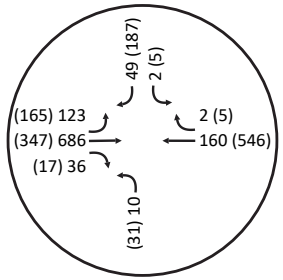
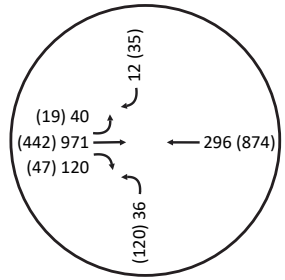
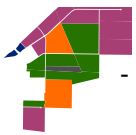


16 Connor Dr / Gateway Dr



HEADWAY TRANSPORTATION

NO SCALE



AM (PM) Turning Movement Volumes

- Project Location by Land Use*

*refer to Figure 2 - Land Use Plan

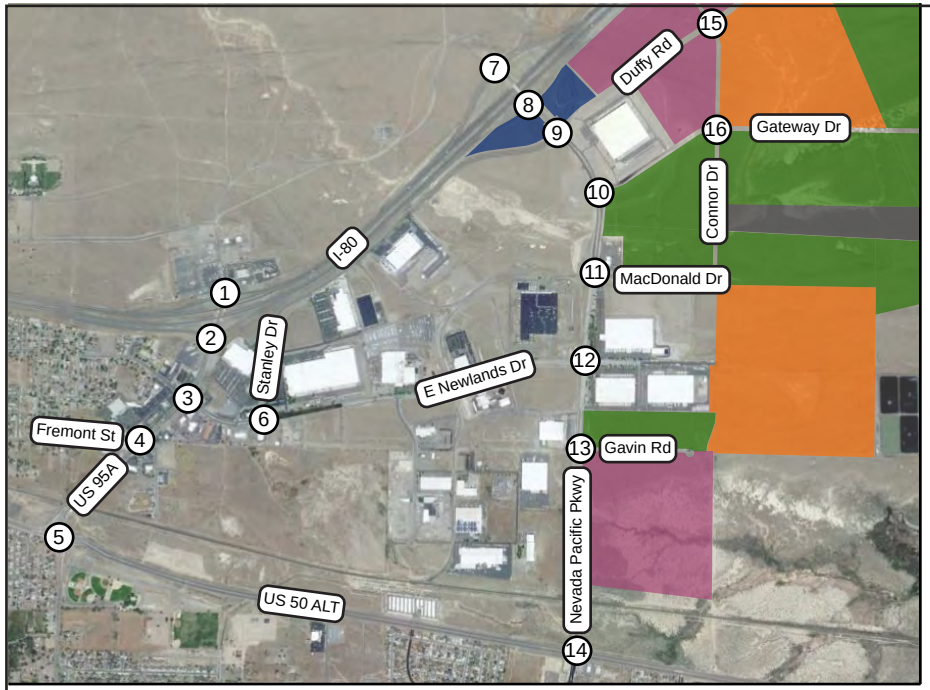
(#) - Study Intersection

Figure 9

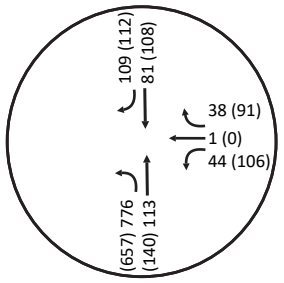
Victory

Traffic Impact Study

Project Trips - Future Year Plus Project



1 US 95A / I-80 Westbound Ramps



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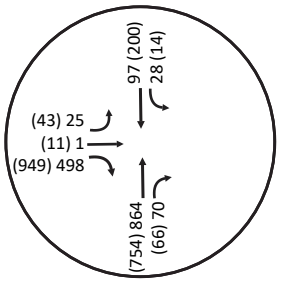

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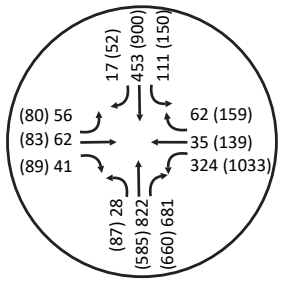
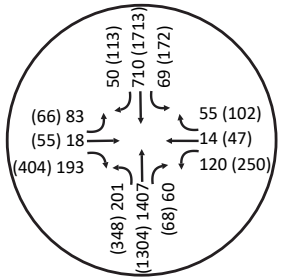
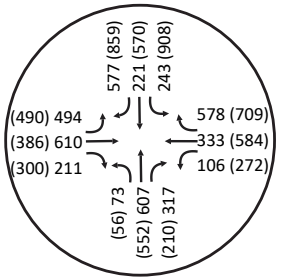


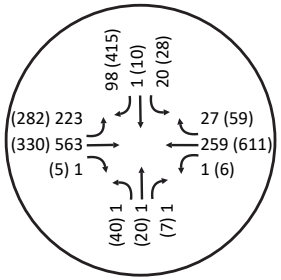
4 US 95A / Fremont St



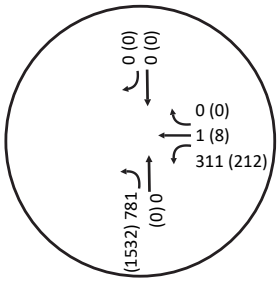
5 US 95A / US 50A



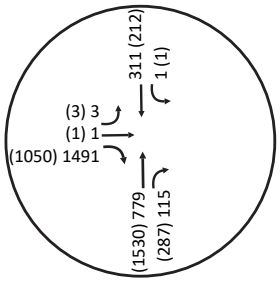
6 E Newlands Dr / Stanley Dr



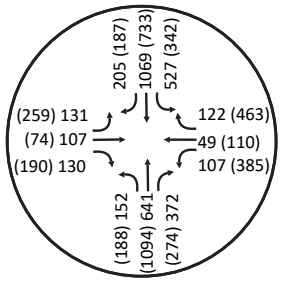
7 Nevada Pacific Pkwy / I-80 Westbound Ramps



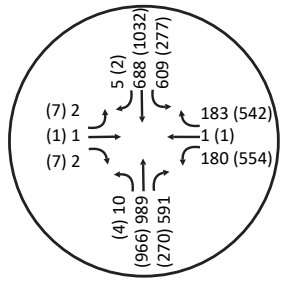
8 Nevada Pacific Pkwy / I-80 Eastbound Ramps



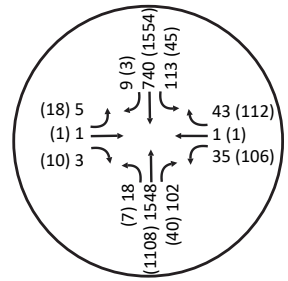
9 Nevada Pacific Pkwy / Duffy Rd



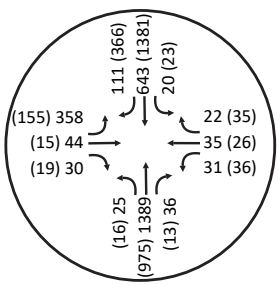
10 Nevada Pacific Pkwy / Gateway Dr



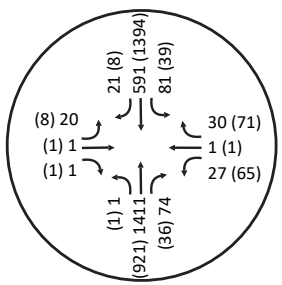
11 Nevada Pacific Pkwy / MacDonald Dr



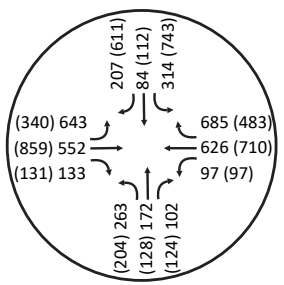
12 Nevada Pacific Pkwy / E Newlands Dr



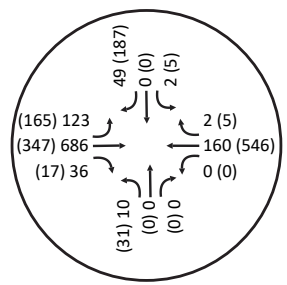
13 Nevada Pacific Pkwy / Gavin Rd



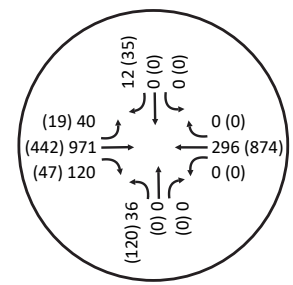
14 Nevada Pacific Pkwy / US 50A



15 Connor Dr / Duffy Rd



16 Connor Dr / Gateway Dr



AM (PM) Turning Movement Volumes

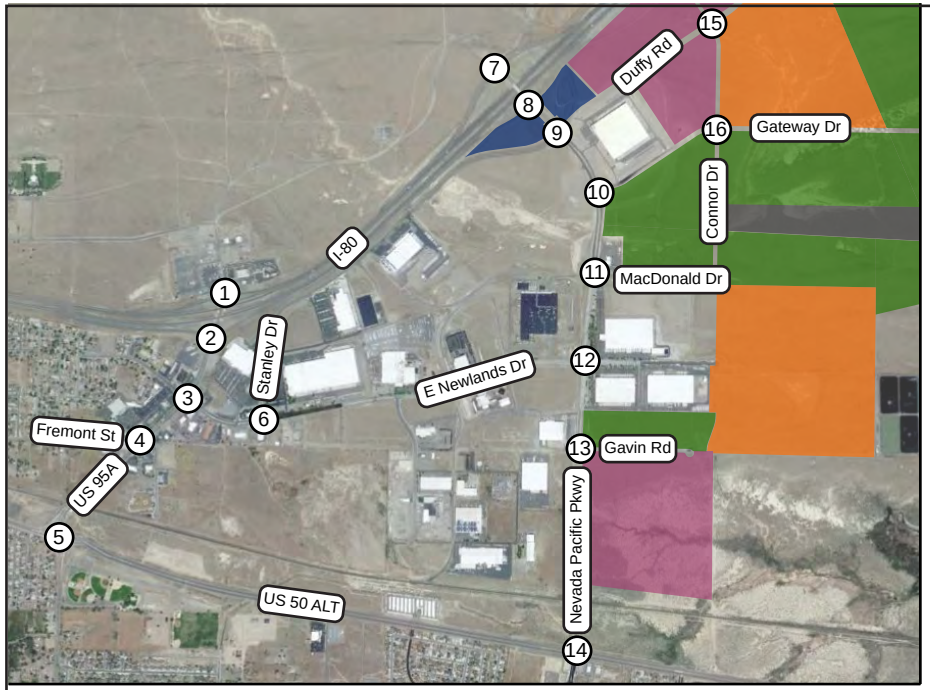
NO SCALE

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

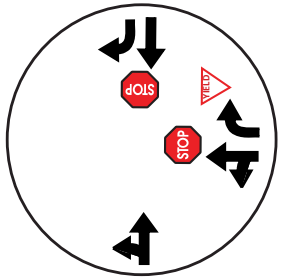
(#) - Study Intersection

Figure 10

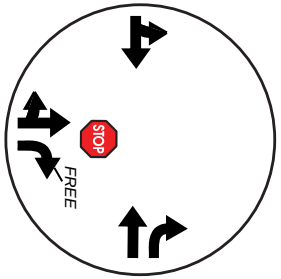
Victory
Traffic Impact Study
Future Year Plus Project Traffic Volumes



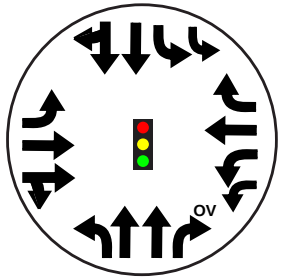
1 US 95A / I-80 Westbound Ramps



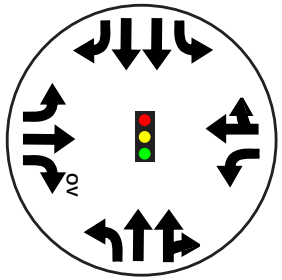
2 US 95A / I-80 Eastbound Ramps



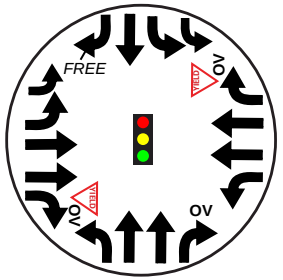
3 US 95A / E Newlands Dr



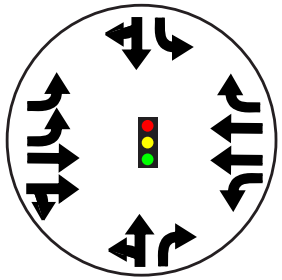
4 US 95A / Fremont St



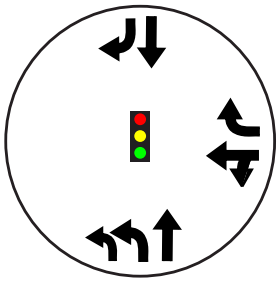
5 US 95A / US 50A



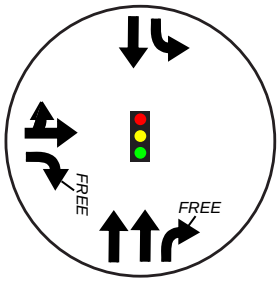
6 E Newlands Dr / Stanley Dr



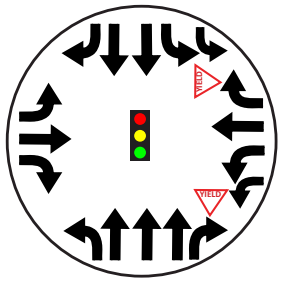
7 Nevada Pacific Pkwy / I-80 Westbound Ramps



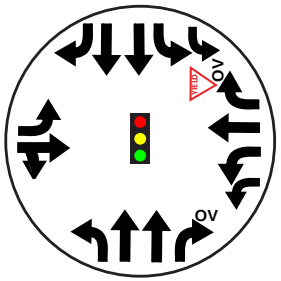
8 Nevada Pacific Pkwy / I-80 Eastbound Ramps



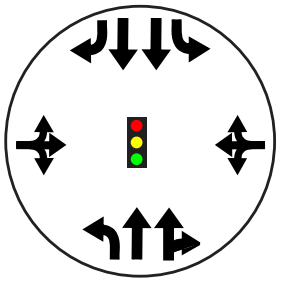
9 Nevada Pacific Pkwy / Duffy Rd



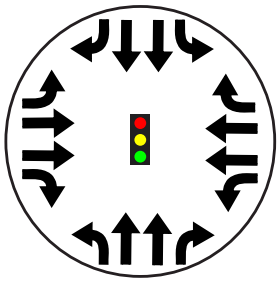
10 Nevada Pacific Pkwy / Gateway Dr



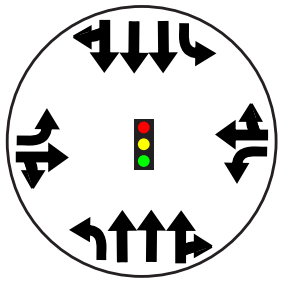
11 Nevada Pacific Pkwy / MacDonald Dr



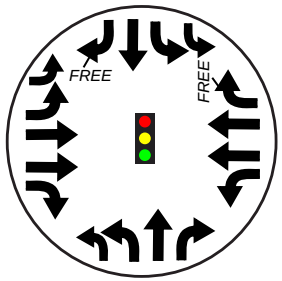
12 Nevada Pacific Pkwy / E Newlands Dr



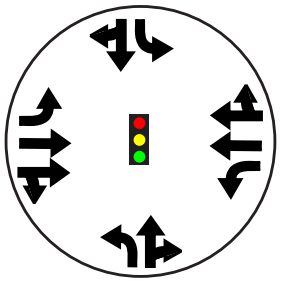
13 Nevada Pacific Pkwy / Gavin Rd



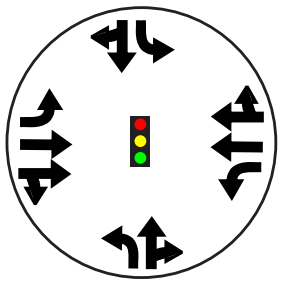
14 Nevada Pacific Pkwy / US 50A



15 Connor Dr / Duffy Rd



16 Connor Dr / Gateway Dr



HEADWAY TRANSPORTATION

NO SCALE

- Project Location by Land Use*
*refer to Figure 2 - Land Use Plan

(#) - Study Intersection

OV - Right Turn Overlap Phase

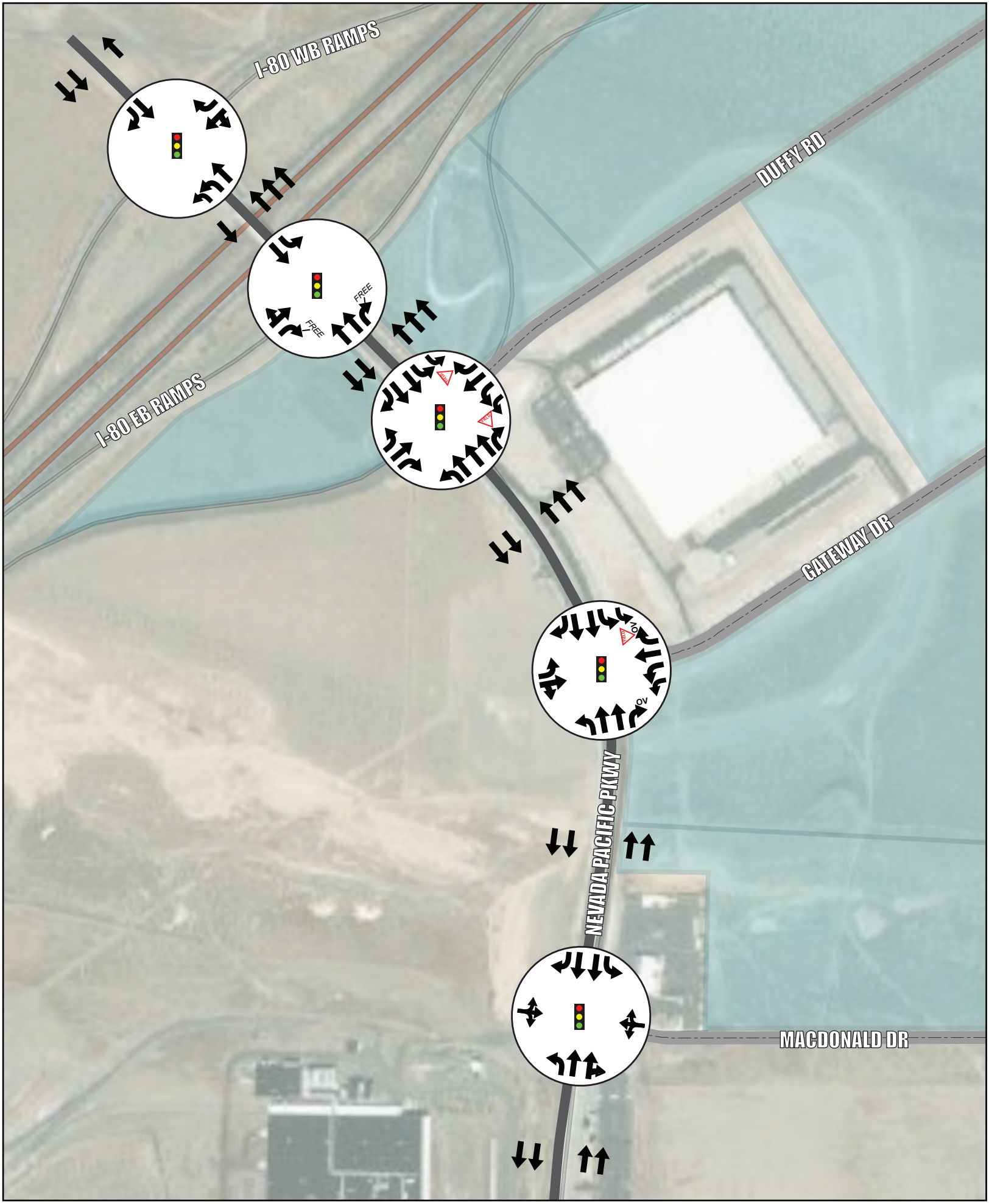
STOP - Stop

- Signal

Figure 11

Victory
Traffic Impact Study

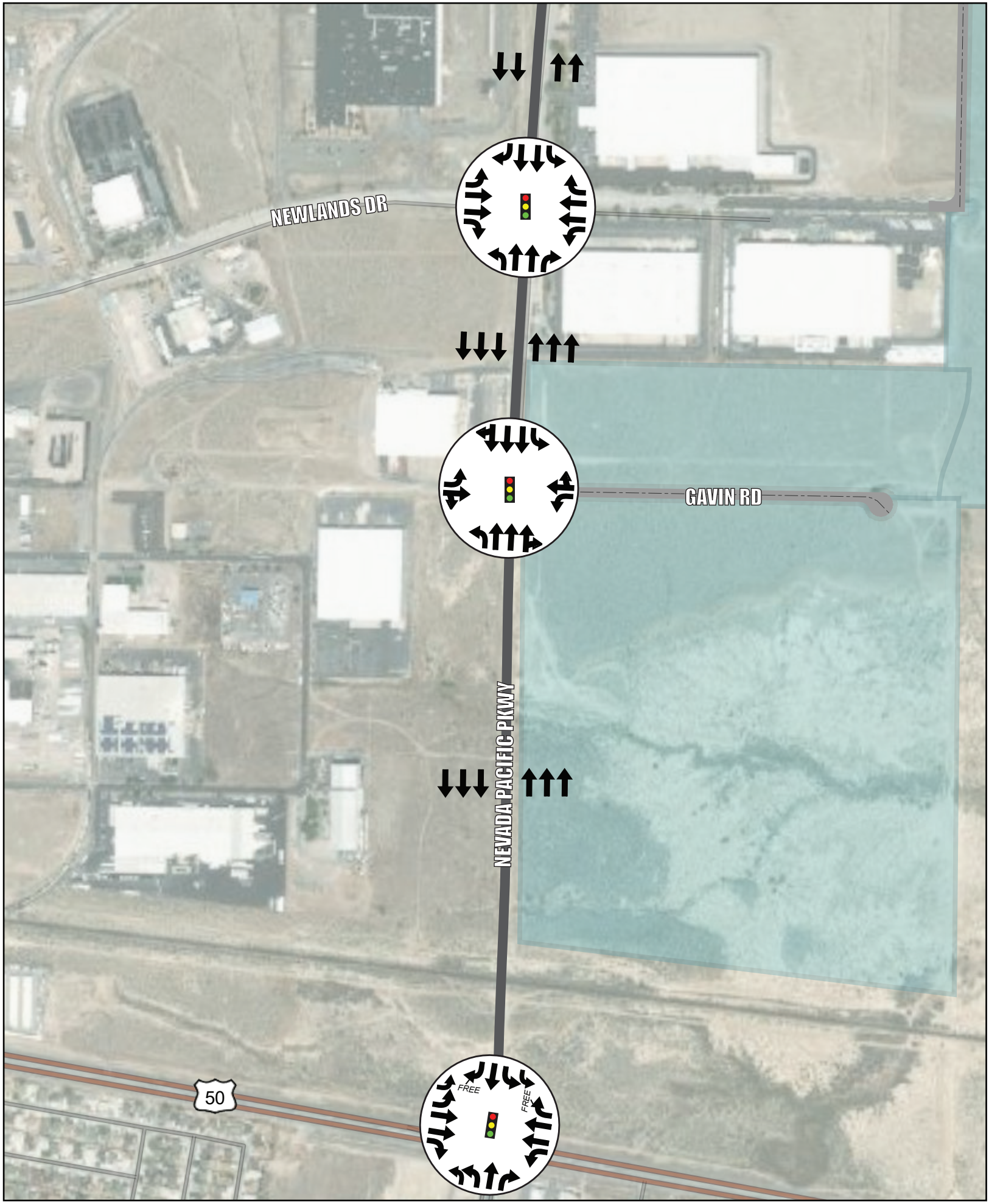
Ultimate Intersection Lane Configurations & Controls



NO SCALE

Figure 12A
Victory
Traffic Impact Study
Page 488 of 856

Number of Lanes and Roadway Configuration – Nevada Pacific Parkway

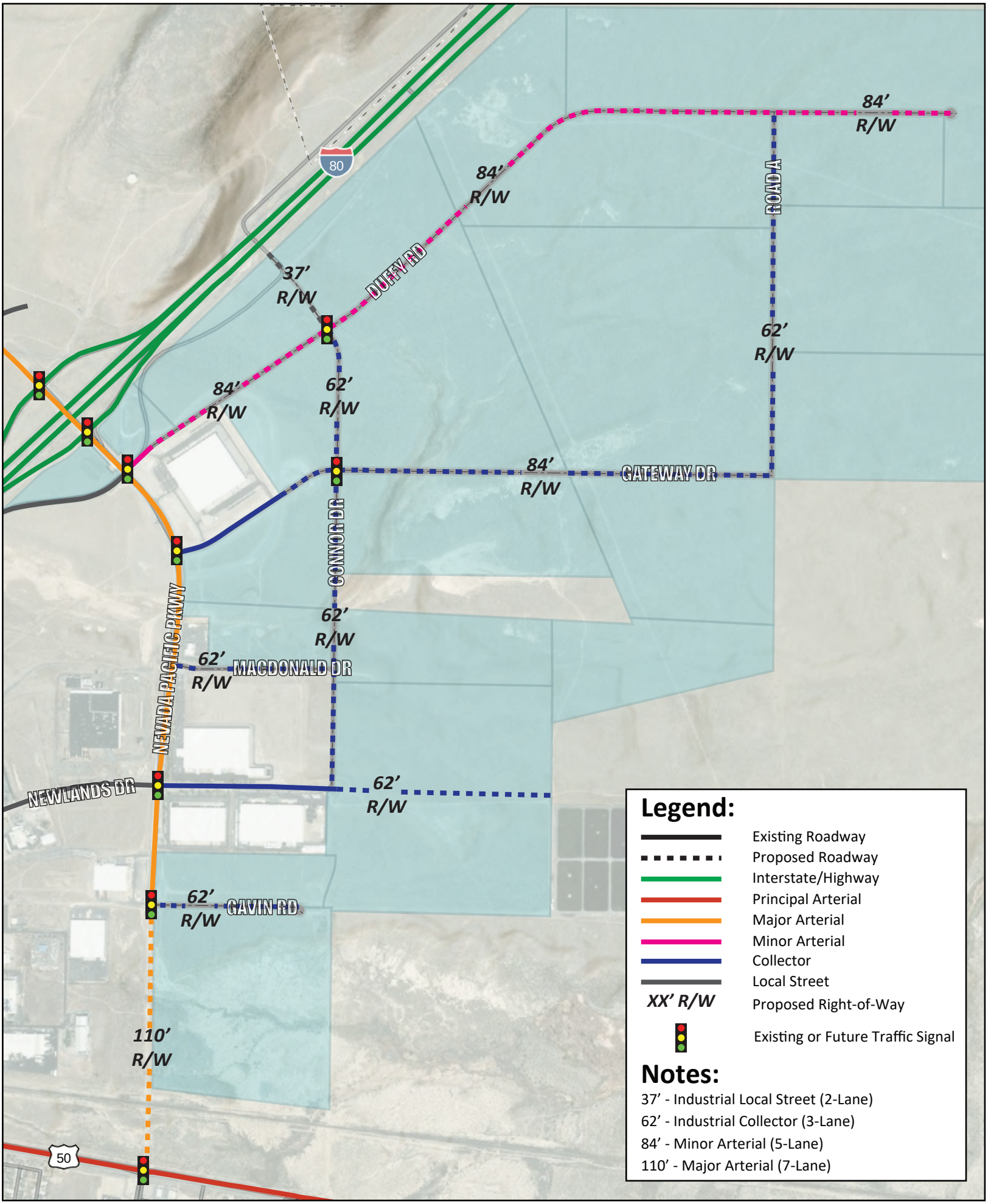


HEADWAY TRANSPORTATION

NO SCALE

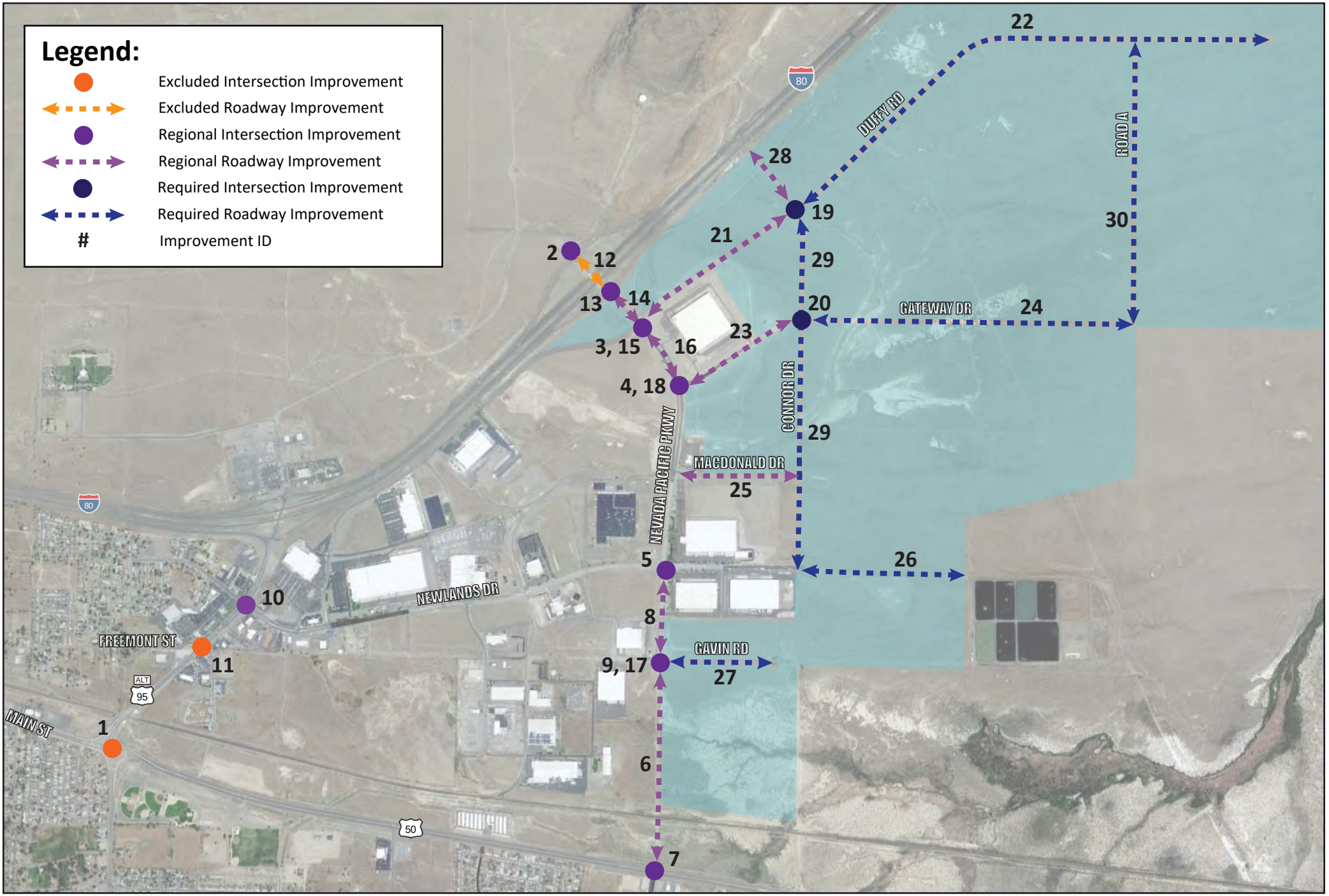
Figure 12B
Victory
Traffic Impact Study
Page 489 of 856

Number of Lanes and Roadway Configuration – Nevada Pacific Parkway



NO SCALE

Figure 13
Victory Logistics Tentative Map
Traffic Impact Study
Page 490 of 856
Roadway Classification & Right-of-Way Width



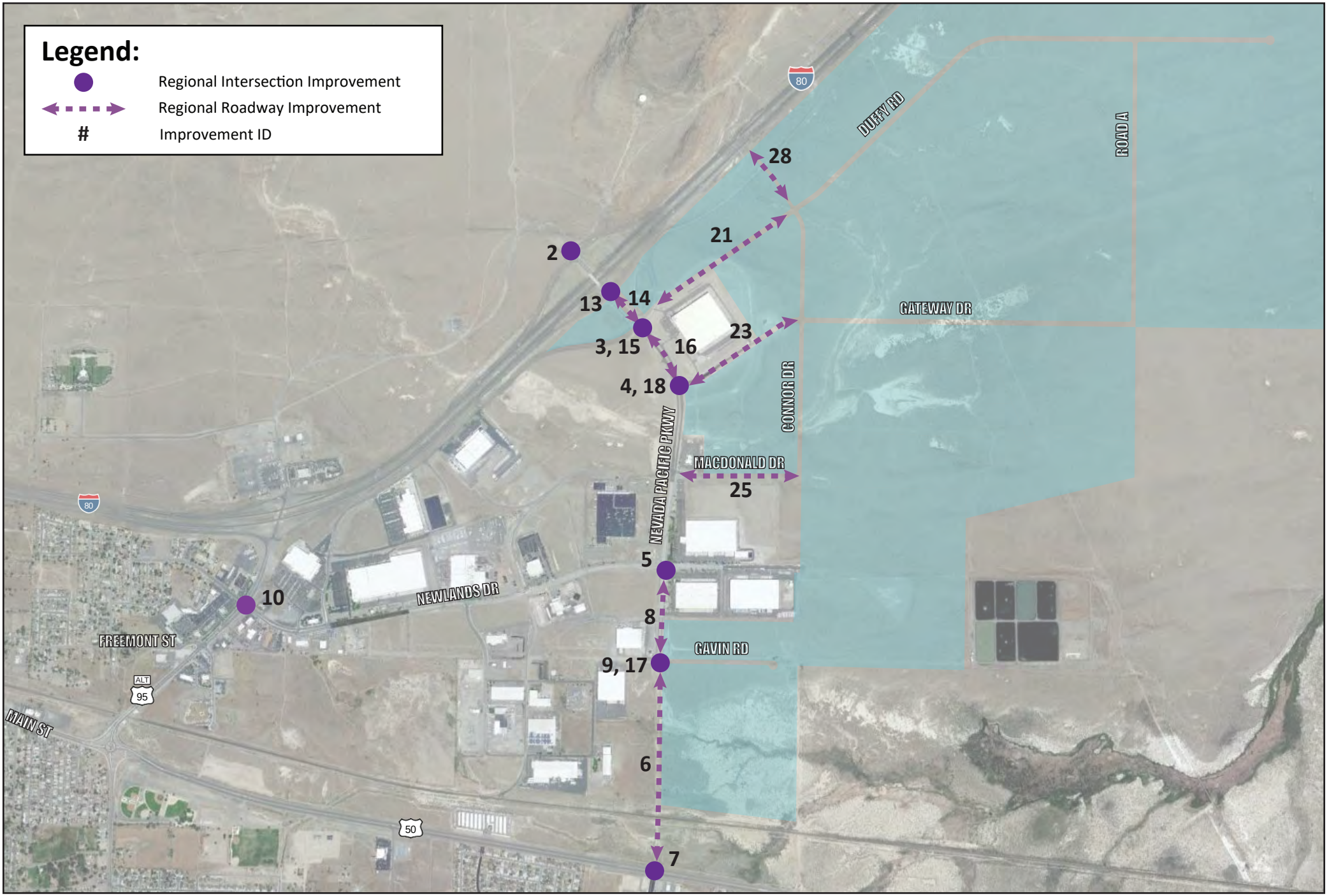
NO SCALE

Figure 14

Victory

Traffic Impact Study

Required Roadway Infrastructure



HEADWAY TRANSPORTATION

NO SCALE

Figure 15

Victory

Traffic Impact Study

Regional Roadway Infrastructure

HEADWAY TRANSPORTATION

NO SCALE

Figure 16

Victory

Traffic Impact Study

Excluded Roadway Infrastructure

Appendix A
Baseline LOS Calculations

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.176

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	621	81	0	0	59	78	0	0	0	20	1	27
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 [%]	13.00	13.00	2.00	2.00	13.00	13.00	2.00	2.00	2.00	13.00	13.00	13.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	621	81	0	0	59	78	0	0	0	20	1	27
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	163	21	0	0	16	21	0	0	0	5	0	7
Total Analysis Volume [veh/h]	654	85	0	0	62	82	0	0	0	21	1	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.18	0.19	0.00	0.00	0.00	0.08	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	20.57	18.84	0.00	0.00	0.00	19.49	19.42	11.16
Movement LOS	A	A			C	C				C	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	1.67	1.67	0.00	0.00	0.00	0.26	0.26	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	41.78	41.78	0.00	0.00	0.00	6.58	6.58	3.58
d_A, Approach Delay [s/veh]	0.00			19.59			0.00			14.82		
Approach LOS	A			C			A			B		
d_I, Intersection Delay [s/veh]	3.82											
Intersection LOS	C											

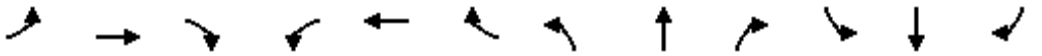
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	1	390	0	0	0	0	684	44	20	59	0
Future Vol, veh/h	18	1	390	0	0	0	0	684	44	20	59	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	19	1	406	0	0	0	0	713	46	21	61	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	816	816	-	-	0	0	713	0	0
Stage 1	103	103	-	-	-	-	-	-	-
Stage 2	713	713	-	-	-	-	-	-	-
Critical Hdwy	6.49	6.59	-	-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.49	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.49	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.081	-	-	-	-	2.281	-	-
Pot Cap-1 Maneuver	337	304	0	0	-	-	855	-	0
Stage 1	904	796	0	0	-	-	-	-	0
Stage 2	473	425	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	329	0	-	-	-	-	855	-	-
Mov Cap-2 Maneuver	329	0	-	-	-	-	-	-	-
Stage 1	904	0	-	-	-	-	-	-	-
Stage 2	461	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	329	-	855	-
HCM Lane V/C Ratio	-	-	0.06	-	0.024	-
HCM Control Delay (s)	-	-	16.6	0	9.3	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	28	31	177	20	42	21	650	358	75	352	12
Future Volume (veh/h)	40	28	31	177	20	42	21	650	358	75	352	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	43	30	33	190	22	45	23	699	385	81	378	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	66	119	105	246	189	159	46	2332	1039	156	2367	81
Arrive On Green	0.04	0.07	0.07	0.07	0.10	0.10	0.02	0.45	0.45	0.05	0.70	0.70
Sat Flow, veh/h	1725	1721	1521	3346	1811	1526	1725	3441	1534	3346	3394	116
Grp Volume(v), veh/h	43	30	33	190	22	45	23	699	385	81	191	200
Grp Sat Flow(s),veh/h/ln	1725	1721	1521	1673	1811	1526	1725	1721	1534	1673	1721	1790
Q Serve(g_s), s	3.0	2.0	2.5	6.7	1.3	3.3	1.6	15.4	19.8	2.8	4.5	4.6
Cycle Q Clear(g_c), s	3.0	2.0	2.5	6.7	1.3	3.3	1.6	15.4	19.8	2.8	4.5	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	66	119	105	246	189	159	46	2332	1039	156	1200	1248
V/C Ratio(X)	0.65	0.25	0.31	0.77	0.12	0.28	0.50	0.30	0.37	0.52	0.16	0.16
Avail Cap(c_a), veh/h	158	588	520	307	619	521	158	2332	1039	307	1200	1248
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	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	52.9	53.2	54.6	48.7	49.6	58.1	14.8	16.0	55.9	6.2	6.2
Incr Delay (d2), s/veh	10.5	1.1	1.7	9.2	0.3	1.0	7.2	0.3	0.9	2.7	0.3	0.3
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(50%),veh/ln	1.5	0.9	1.0	3.1	0.6	1.3	0.8	6.7	7.8	1.3	1.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	54.0	54.8	63.9	49.0	50.5	65.3	15.1	16.9	58.5	6.5	6.5
LnGrp LOS	E	D	D	E	D	D	E	B	B	E	A	A
Approach Vol, veh/h		106			257			1107			472	
Approach Delay, s/veh		59.7			60.3			16.7			15.4	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	85.3	12.8	12.3	7.2	87.7	8.6	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	41.0	11.0	41.0	11.0	41.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	4.8	21.8	8.7	4.5	3.6	6.6	5.0	5.3
Green Ext Time (p_c), s	0.1	6.3	0.1	0.3	0.0	2.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	13	145	86	10	39	147	936	44	49	481	37
Future Volume (veh/h)	64	13	145	86	10	39	147	936	44	49	481	37
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	68	14	154	91	11	41	156	996	47	52	512	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	87	196	331	113	41	154	185	2179	103	71	1896	144
Arrive On Green	0.05	0.11	0.11	0.07	0.12	0.12	0.11	0.65	0.65	0.08	1.00	1.00
Sat Flow, veh/h	1725	1811	1535	1725	335	1250	1725	3345	158	1725	3240	246
Grp Volume(v), veh/h	68	14	154	91	0	52	156	512	531	52	271	280
Grp Sat Flow(s),veh/h/ln	1725	1811	1535	1725	0	1586	1725	1721	1782	1725	1721	1766
Q Serve(g_s), s	4.7	0.8	10.5	6.2	0.0	3.6	10.6	17.7	17.7	3.5	0.0	0.0
Cycle Q Clear(g_c), s	4.7	0.8	10.5	6.2	0.0	3.6	10.6	17.7	17.7	3.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.79	1.00		0.09	1.00		0.14
Lane Grp Cap(c), veh/h	87	196	331	113	0	196	185	1121	1161	71	1007	1033
V/C Ratio(X)	0.78	0.07	0.47	0.80	0.00	0.27	0.84	0.46	0.46	0.73	0.27	0.27
Avail Cap(c_a), veh/h	302	468	562	158	0	278	374	1121	1161	158	1007	1033
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	0.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	56.3	48.1	41.0	55.3	0.0	47.7	52.5	10.4	10.4	54.4	0.0	0.0
Incr Delay (d2), s/veh	13.7	0.2	1.0	18.0	0.0	0.7	9.8	1.3	1.3	13.1	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(50%),veh/ln	2.4	0.4	4.1	3.3	0.0	1.5	5.1	6.8	7.0	1.7	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	48.2	42.0	73.2	0.0	48.4	62.3	11.7	11.7	67.5	0.6	0.6
LnGrp LOS	E	D	D	E	A	D	E	B	B	E	A	A
Approach Vol, veh/h		236			143			1199			603	
Approach Delay, s/veh		50.5			64.2			18.3			6.4	
Approach LOS		D			E			B			A	

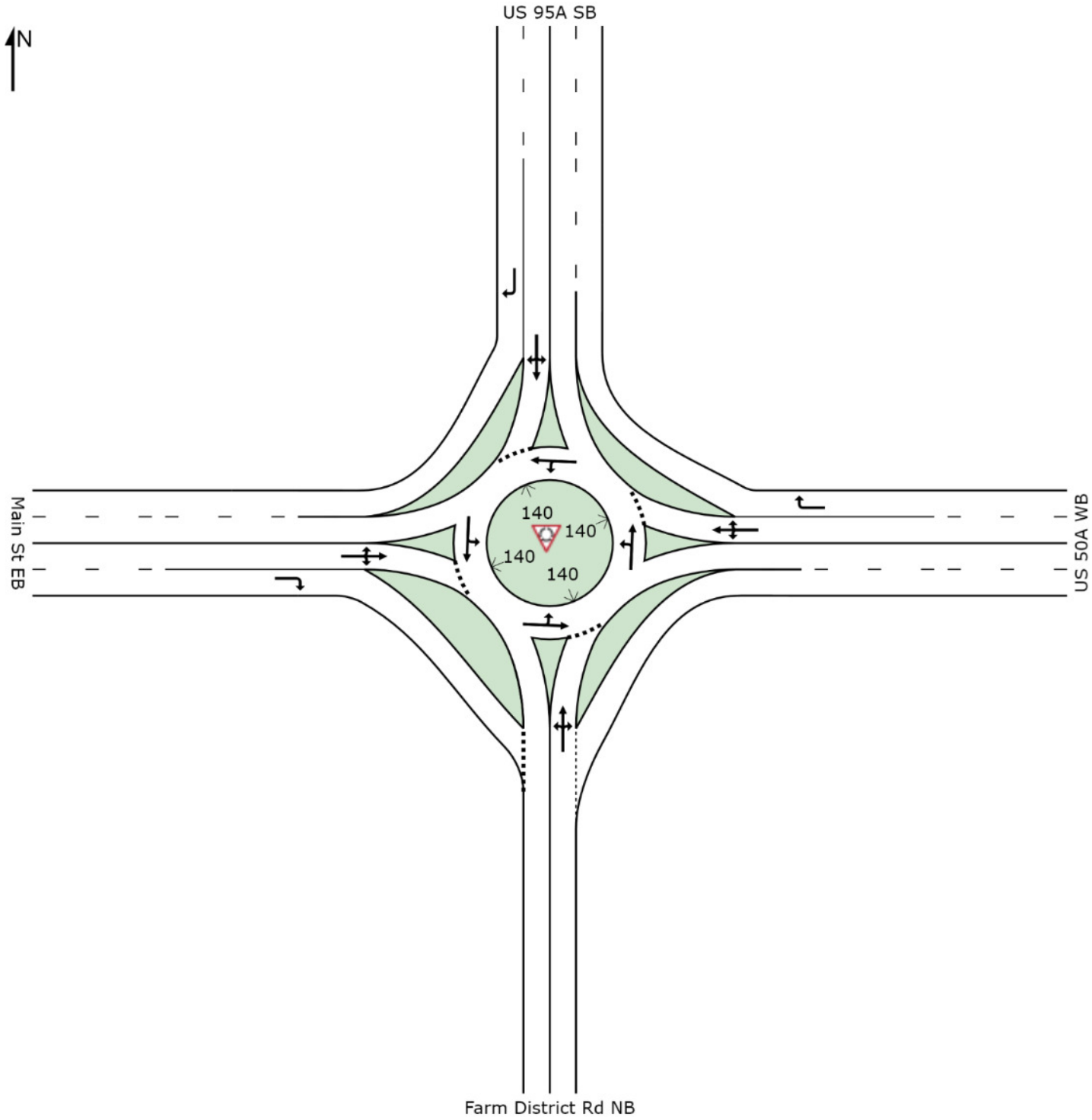
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	82.2	11.9	17.0	16.9	74.2	10.1	18.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	51.0	11.0	31.0	26.0	36.0	21.0	21.0
Max Q Clear Time (g_c+I1), s	5.5	19.7	8.2	12.5	12.6	2.0	6.7	5.6
Green Ext Time (p_c), s	0.0	8.2	0.0	0.5	0.3	3.7	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

SITE LAYOUT

Site: US 95A/US 50A/Main Street/Farm District Rd

Baseline Conditions
AM Peak
Roundabout



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MOVEMENT SUMMARY

Site: US 95A/US 50A/Main Street/Farm District Rd

Baseline Conditions
AM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Farm District Rd NB											
3	L2	56	6.0	0.911	47.0	LOS E	11.4	298.9	1.00	1.40	21.8
8	T1	381	6.0	0.911	47.0	LOS E	11.4	298.9	1.00	1.40	21.7
18	R2	58	6.0	0.911	47.0	LOS E	11.4	298.9	1.00	1.40	21.3
Approach		495	6.0	0.911	47.0	LOS E	11.4	298.9	1.00	1.40	21.7
East: US 50A WB											
1	L2	24	6.0	0.396	14.2	LOS B	1.6	40.7	0.67	0.71	31.6
6	T1	169	6.0	0.396	14.2	LOS B	1.6	40.7	0.67	0.71	31.4
16	R2	534	6.0	0.338	0.1	LOS A	0.0	0.0	0.00	0.00	37.7
Approach		727	6.0	0.396	3.8	LOS A	1.6	40.7	0.18	0.19	35.8
North: US 95A SB											
7	L2	234	6.0	0.451	10.2	LOS B	2.1	54.9	0.50	0.43	31.9
4	T1	135	6.0	0.451	10.2	LOS B	2.1	54.9	0.50	0.43	31.7
14	R2	410	6.0	0.259	0.0	LOS A	0.0	0.0	0.00	0.00	37.8
Approach		780	6.0	0.451	4.9	LOS A	2.1	54.9	0.24	0.20	34.6
West: Main St EB											
5	L2	305	6.0	0.738	21.8	LOS C	5.9	154.6	0.78	0.90	27.6
2	T1	178	6.0	0.738	21.8	LOS C	5.9	154.6	0.78	0.90	27.5
12	R2	162	6.0	0.738	9.0	LOS A	5.9	154.6	0.43	0.37	32.3
Approach		646	6.0	0.738	18.6	LOS C	5.9	154.6	0.69	0.77	28.6
All Vehicles		2647	6.0	0.911	15.8	LOS C	11.4	298.9	0.47	0.56	30.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SIDRA INTERSECTION 6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	276	1	11	133	14	1	1	1	9	1	60
Future Volume (veh/h)	135	276	1	11	133	14	1	1	1	9	1	60
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	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693
Adj Flow Rate, veh/h	152	310	1	12	149	16	1	1	1	10	1	67
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	14	14	14	14	14	14	14	14	14	14	14	14
Cap, veh/h	381	915	3	26	555	247	3	3	6	130	2	114
Arrive On Green	0.12	0.28	0.28	0.02	0.17	0.17	0.00	0.00	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3127	3288	11	1612	3216	1434	826	826	1434	1612	21	1416
Grp Volume(v), veh/h	152	152	159	12	149	16	2	0	1	10	0	68
Grp Sat Flow(s),veh/h/ln	1564	1608	1691	1612	1608	1434	1651	0	1434	1612	0	1438
Q Serve(g_s), s	1.3	2.2	2.2	0.2	1.2	0.3	0.0	0.0	0.0	0.2	0.0	1.3
Cycle Q Clear(g_c), s	1.3	2.2	2.2	0.2	1.2	0.3	0.0	0.0	0.0	0.2	0.0	1.3
Prop In Lane	1.00		0.01	1.00		1.00	0.50		1.00	1.00		0.99
Lane Grp Cap(c), veh/h	381	448	471	26	555	247	7	0	6	130	0	116
V/C Ratio(X)	0.40	0.34	0.34	0.47	0.27	0.06	0.29	0.00	0.17	0.08	0.00	0.59
Avail Cap(c_a), veh/h	1025	1970	2071	278	3440	1534	1795	0	1559	1669	0	1488
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	8.3	8.3	14.1	10.4	10.0	14.4	0.0	14.4	12.3	0.0	12.9
Incr Delay (d2), s/veh	0.7	0.4	0.4	12.7	0.3	0.1	22.3	0.0	13.0	0.3	0.0	4.7
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(50%),veh/ln	0.4	0.5	0.5	0.1	0.3	0.1	0.1	0.0	0.0	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	8.8	8.8	26.9	10.7	10.1	36.7	0.0	27.4	12.6	0.0	17.5
LnGrp LOS	B	A	A	C	B	B	D	A	C	B	A	B
Approach Vol, veh/h		463			177			3			78	
Approach Delay, s/veh		10.0			11.7			33.6			16.9	
Approach LOS		A			B			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	4.6	5.0	12.6	6.8	8.0	9.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	2.0	2.2	4.2	3.3	3.3	3.2
Green Ext Time (p_c), s	0.0	0.0	1.8	0.4	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	17	1	0	47	0	0	0	0	0
Future Vol, veh/h	0	0	0	17	1	0	47	0	0	0	0	0
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	-	-	Yield	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	53	53	53	53	53	53	53	53	53	53	53	53
Mvmt Flow	0	0	0	20	1	0	57	0	0	0	0	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	115	115	0	1	0	-	-	-	0
Stage 1	114	114	-	-	-	-	-	-	-
Stage 2	1	1	-	-	-	-	-	-	-
Critical Hdwy	6.93	7.03	6.73	4.63	-	-	-	-	-
Critical Hdwy Stg 1	5.93	6.03	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.93	6.03	-	-	-	-	-	-	-
Follow-up Hdwy	3.977	4.477	3.777	2.677	-	-	-	-	-
Pot Cap-1 Maneuver	773	689	-	1344	-	0	0	-	0
Stage 1	798	713	-	-	-	0	0	-	0
Stage 2	904	803	-	-	-	0	0	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	741	0	-	1344	-	-	-	-	-
Mov Cap-2 Maneuver	741	0	-	-	-	-	-	-	-
Stage 1	764	0	-	-	-	-	-	-	-
Stage 2	904	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	7.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	1344	-	741	-	-
HCM Lane V/C Ratio	0.042	-	0.029	-	-
HCM Control Delay (s)	7.8	0	10	0	-
HCM Lane LOS	A	A	B	A	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	136	0	0	0	0	46	4	1	16	0
Future Vol, veh/h	1	1	136	0	0	0	0	46	4	1	16	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	23	23	23	23	23	23	23	23	23	23	23	23
Mvmt Flow	1	1	194	0	0	0	0	66	6	1	23	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	91	91	-	-	0	-	66	0	0
Stage 1	25	25	-	-	-	-	-	-	-
Stage 2	66	66	-	-	-	-	-	-	-
Critical Hdwy	6.63	6.73	-	-	-	-	4.33	-	-
Critical Hdwy Stg 1	5.63	5.73	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.73	-	-	-	-	-	-	-
Follow-up Hdwy	3.707	4.207	-	-	-	-	2.407	-	-
Pot Cap-1 Maneuver	860	761	0	0	-	0	1412	-	0
Stage 1	946	834	0	0	-	0	-	-	0
Stage 2	906	800	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	859	0	-	-	-	-	1412	-	-
Mov Cap-2 Maneuver	859	0	-	-	-	-	-	-	-
Stage 1	946	0	-	-	-	-	-	-	-
Stage 2	905	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	859	-	1412	-
HCM Lane V/C Ratio	-	0.003	-	0.001	-
HCM Control Delay (s)	-	9.2	0	7.6	-
HCM Lane LOS	-	A	A	A	-
HCM 95th %tile Q(veh)	-	0	-	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	8	13	2	8	1	18	29	1	32	60	60
Future Vol, veh/h	20	8	13	2	8	1	18	29	1	32	60	60
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	170	-	170	325	-	-	250	-	250	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	34	14	22	3	14	2	31	49	2	54	102	102

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	355	374	102	277	423	25	204	0	0	51	0	0
Stage 1	261	261	-	111	111	-	-	-	-	-	-	-
Stage 2	94	113	-	166	312	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.12	7.52	8.12	7.12	7.52	4.72	-	-	4.72	-	-
Critical Hdwy Stg 1	7.12	6.12	-	7.12	6.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.12	-	7.12	6.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.81	4.31	3.61	3.81	4.31	3.61	2.51	-	-	2.51	-	-
Pot Cap-1 Maneuver	509	495	848	584	461	958	1178	-	-	1365	-	-
Stage 1	645	624	-	804	739	-	-	-	-	-	-	-
Stage 2	824	737	-	742	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	471	463	848	529	431	958	1178	-	-	1365	-	-
Mov Cap-2 Maneuver	471	463	-	529	431	-	-	-	-	-	-	-
Stage 1	628	599	-	783	720	-	-	-	-	-	-	-
Stage 2	786	718	-	678	565	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	12.8	3.1	1.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	471	463	848	529	431	958	1365	-	-
HCM Lane V/C Ratio	0.026	-	-	0.072	0.029	0.026	0.006	0.031	0.002	0.04	-	-
HCM Control Delay (s)	8.1	-	-	13.2	13	9.4	11.8	13.6	8.8	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0.1	0	0.1	0	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	2	1	0	1	8	45	1	1	65	5
Future Vol, veh/h	2	0	2	1	0	1	8	45	1	1	65	5
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	-	-	225	-	250	200	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	32	32	32	32	32	32	32	32	32	32	32	32
Mvmt Flow	3	0	3	2	0	2	14	76	2	2	110	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	180	220	55	163	226	38	118	0	0	78	0	0
Stage 1	114	114	-	104	104	-	-	-	-	-	-	-
Stage 2	66	106	-	59	122	-	-	-	-	-	-	-
Critical Hdwy	8.14	7.14	7.54	8.14	7.14	7.54	4.74	-	-	4.74	-	-
Critical Hdwy Stg 1	7.14	6.14	-	7.14	6.14	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	6.14	-	7.14	6.14	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.32	3.62	3.82	4.32	3.62	2.52	-	-	2.52	-	-
Pot Cap-1 Maneuver	689	613	911	710	608	936	1274	-	-	1325	-	-
Stage 1	798	734	-	810	742	-	-	-	-	-	-	-
Stage 2	856	741	-	865	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	681	605	911	701	600	936	1274	-	-	1325	-	-
Mov Cap-2 Maneuver	681	605	-	701	600	-	-	-	-	-	-	-
Stage 1	789	733	-	801	734	-	-	-	-	-	-	-
Stage 2	845	733	-	860	727	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.5	1.2	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1274	-	-	779	701	-	936	1325	-	-
HCM Lane V/C Ratio	0.011	-	-	0.009	0.002	-	0.002	0.001	-	-
HCM Control Delay (s)	7.9	-	-	9.7	10.1	0	8.9	7.7	-	-
HCM Lane LOS	A	-	-	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	-	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	4	2	0	1	16	47	1	3	45	9
Future Vol, veh/h	6	0	4	2	0	1	16	47	1	3	45	9
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	-	-	-	-	-	-	50	-	-	100	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	25	2	25	2	2	2	25	25	2	2	25	25
Mvmt Flow	9	0	6	2	0	1	23	67	1	3	64	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	150	184	32	152	197	34	77	0	0	68	0	0
Stage 1	70	70	-	114	114	-	-	-	-	-	-	-
Stage 2	80	114	-	38	83	-	-	-	-	-	-	-
Critical Hdwy	8	6.54	7.4	7.54	6.54	6.94	4.6	-	-	4.14	-	-
Critical Hdwy Stg 1	7	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.02	3.55	3.52	4.02	3.32	2.45	-	-	2.22	-	-
Pot Cap-1 Maneuver	743	709	965	801	697	1032	1367	-	-	1531	-	-
Stage 1	869	836	-	879	800	-	-	-	-	-	-	-
Stage 2	856	800	-	972	825	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	732	696	965	785	684	1032	1367	-	-	1531	-	-
Mov Cap-2 Maneuver	732	696	-	785	684	-	-	-	-	-	-	-
Stage 1	854	834	-	864	786	-	-	-	-	-	-	-
Stage 2	841	786	-	964	823	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.2	1.9	0.3
HCM LOS	A	A		

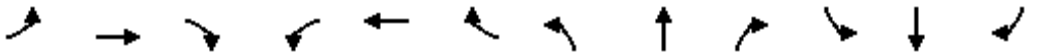
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1367	-	-	810	853	1531	-	-
HCM Lane V/C Ratio	0.017	-	-	0.018	0.004	0.002	-	-
HCM Control Delay (s)	7.7	-	-	9.5	9.2	7.4	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	146	20	10	2	16	3	11	2	1	1	3	48
Future Vol, veh/h	146	20	10	2	16	3	11	2	1	1	3	48
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	203	28	14	3	22	4	15	3	1	1	4	67
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.4	7.9	8.8	8
HCM LOS	B	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	92%	0%	94%	0%	20%	0%	40%	0%
Vol Thru, %	8%	50%	6%	50%	80%	73%	60%	3%
Vol Right, %	0%	50%	0%	50%	0%	27%	0%	97%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	2	156	20	10	11	3	50
LT Vol	11	0	146	0	2	0	1	0
Through Vol	1	1	10	10	8	8	2	2
RT Vol	0	1	0	10	0	3	0	48
Lane Flow Rate	17	3	217	28	14	15	3	69
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.028	0.004	0.329	0.036	0.02	0.021	0.005	0.092
Departure Headway (Hd)	6.002	5.189	5.462	4.642	5.279	4.987	5.692	4.809
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	598	691	663	776	679	719	631	747
Service Time	3.722	2.909	3.162	2.342	3.001	2.708	3.409	2.526
HCM Lane V/C Ratio	0.028	0.004	0.327	0.036	0.021	0.021	0.005	0.092
HCM Control Delay	8.9	7.9	10.8	7.5	8.1	7.8	8.4	8
HCM Lane LOS	A	A	B	A	A	A	A	A
HCM 95th-tile Q	0.1	0	1.4	0.1	0.1	0.1	0	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	0	0	0	0	0	0	0	0	0	15
Future Volume (Veh/h)	14	0	0	0	0	0	0	0	0	0	0	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	15	0	0	0	0	0	0	0	0	0	0	16
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	0	0	0	0	16	0	16			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	16	0	16			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1084	1023	878	1084	1600			1622		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	15	0	0	0	0	0	16
Volume Left	15	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	16
cSH	1023	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	8.6	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A					
Approach Delay (s)	8.6	0.0	0.0		0.0		
Approach LOS	A	A					

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	6.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	410	142	109	471	291	109
Future Volume (veh/h)	410	142	109	471	291	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	466	161	124	535	331	124
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8
Cap, veh/h	899	401	484	1613	458	408
Arrive On Green	0.27	0.27	0.08	0.48	0.27	0.27
Sat Flow, veh/h	3474	1510	1697	3474	1697	1510
Grp Volume(v), veh/h	466	161	124	535	331	124
Grp Sat Flow(s),veh/h/ln	1692	1510	1697	1692	1697	1510
Q Serve(g_s), s	3.7	2.8	1.5	3.1	5.6	2.1
Cycle Q Clear(g_c), s	3.7	2.8	1.5	3.1	5.6	2.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	899	401	484	1613	458	408
V/C Ratio(X)	0.52	0.40	0.26	0.33	0.72	0.30
Avail Cap(c_a), veh/h	1716	765	556	2573	967	861
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	9.9	9.5	6.5	5.1	10.4	9.2
Incr Delay (d2), s/veh	0.5	0.6	0.3	0.1	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.7	0.3	0.6	1.6	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.3	10.2	6.8	5.3	12.6	9.6
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	627			659	455	
Approach Delay, s/veh	10.3			5.5	11.8	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	12.5	6.7	12.4	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	4.0	16.0	24.0
Max Q Clear Time (g_c+I1), s	7.6	3.5	5.7	5.1
Green Ext Time (p_c), s	1.1	0.0	2.7	3.5

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBT] is excluded from calculations of the approach delay and intersection delay.

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	507	100	0	0	78	80	0	0	0	64	1	65
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 [%]	11.00	11.00	2.00	2.00	11.00	11.00	2.00	2.00	2.00	11.00	11.00	11.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	507	100	0	0	78	80	0	0	0	64	1	65
Peak Hour Factor	0.9400	0.9400	1.0000	1.0000	0.9400	0.9400	1.0000	1.0000	1.0000	0.9400	0.9400	0.9400
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]	135	27	0	0	21	21	0	0	0	17	0	17
Total Analysis Volume [veh/h]	539	106	0	0	83	85	0	0	0	68	1	69
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.20	0.17	0.00	0.00	0.00	0.22	0.00	0.11
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	18.66	17.17	0.00	0.00	0.00	20.21	20.36	11.22
Movement LOS	A	A			C	C				C	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	1.73	1.73	0.00	0.00	0.00	0.85	0.85	0.36
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	43.30	43.30	0.00	0.00	0.00	21.30	21.30	8.90
d_A, Approach Delay [s/veh]	0.00			17.91			0.00			15.72		
Approach LOS	A			C			A			C		
d_I, Intersection Delay [s/veh]	5.44											
Intersection LOS	C											

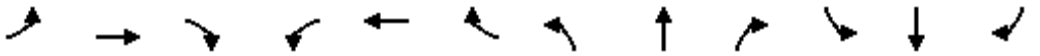
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	8	712	0	0	0	0	576	38	10	132	0
Future Vol, veh/h	31	8	712	0	0	0	0	576	38	10	132	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	34	9	782	0	0	0	0	633	42	11	145	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	800	800	-	-	0	0	633	0	0
Stage 1	167	167	-	-	-	-	-	-	-
Stage 2	633	633	-	-	-	-	-	-	-
Critical Hdwy	6.46	6.56	-	-	-	-	4.16	-	-
Critical Hdwy Stg 1	5.46	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.46	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	-	-	-	-	2.254	-	-
Pot Cap-1 Maneuver	349	314	0	0	-	-	931	-	0
Stage 1	853	753	0	0	-	-	-	-	0
Stage 2	522	467	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	344	0	-	-	-	-	931	-	-
Mov Cap-2 Maneuver	344	0	-	-	-	-	-	-	-
Stage 1	853	0	-	-	-	-	-	-	-
Stage 2	515	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	344	-	931	-
HCM Lane V/C Ratio	-	-	0.125	-	0.012	-
HCM Control Delay (s)	-	-	16.9	0	8.9	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	49	66	610	84	110	84	450	349	105	662	37
Future Volume (veh/h)	57	49	66	610	84	110	84	450	349	105	662	37
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	60	52	69	642	88	116	88	474	367	111	697	39
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	77	112	100	685	408	346	108	1997	890	161	1873	105
Arrive On Green	0.04	0.06	0.06	0.20	0.22	0.22	0.12	1.00	1.00	0.05	0.55	0.55
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	1767	3526	1571	3428	3394	190
Grp Volume(v), veh/h	60	52	69	642	88	116	88	474	367	111	362	374
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1767	1763	1571	1714	1763	1821
Q Serve(g_s), s	4.4	3.7	5.6	24.0	5.0	8.1	6.3	0.0	0.0	4.1	15.0	15.1
Cycle Q Clear(g_c), s	4.4	3.7	5.6	24.0	5.0	8.1	6.3	0.0	0.0	4.1	15.0	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	77	112	100	685	408	346	108	1997	890	161	973	1005
V/C Ratio(X)	0.78	0.46	0.69	0.94	0.22	0.34	0.81	0.24	0.41	0.69	0.37	0.37
Avail Cap(c_a), veh/h	150	556	496	686	799	677	122	1997	890	237	973	1005
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	0.91	0.91	0.91	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.5	58.7	59.6	51.2	41.5	42.7	56.3	0.0	0.0	61.0	16.4	16.4
Incr Delay (d2), s/veh	15.3	2.9	8.1	19.1	0.2	0.5	27.1	0.2	1.3	5.2	1.1	1.1
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	2.3	1.7	2.5	12.1	2.4	3.2	3.5	0.1	0.3	1.9	6.3	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.9	61.6	67.7	70.3	41.8	43.2	83.4	0.2	1.3	66.2	17.5	17.5
LnGrp LOS	E	E	E	E	D	D	F	A	A	E	B	B
Approach Vol, veh/h		181			846			929			847	
Approach Delay, s/veh		69.0			63.6			8.5			23.9	
Approach LOS		E			E			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	77.6	30.0	12.3	12.0	75.8	9.7	32.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	38.0	26.0	41.0	9.0	38.0	11.0	56.0
Max Q Clear Time (g_c+I1), s	6.1	2.0	26.0	7.6	8.3	17.1	6.4	10.1
Green Ext Time (p_c), s	0.1	5.1	0.0	0.7	0.0	4.7	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	39	294	179	34	73	255	887	48	123	1119	85
Future Volume (veh/h)	50	39	294	179	34	73	255	887	48	123	1119	85
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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	40	303	185	35	75	263	914	49	127	1154	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	344	548	151	121	260	291	1800	97	149	1491	114
Arrive On Green	0.04	0.18	0.18	0.08	0.23	0.23	0.16	0.52	0.52	0.17	0.89	0.89
Sat Flow, veh/h	1781	1870	1577	1781	529	1133	1781	3430	184	1781	3346	255
Grp Volume(v), veh/h	52	40	303	185	0	110	263	473	490	127	612	630
Grp Sat Flow(s),veh/h/ln	1781	1870	1577	1781	0	1661	1781	1777	1837	1781	1777	1824
Q Serve(g_s), s	3.8	2.3	20.2	11.0	0.0	7.1	18.8	22.4	22.4	9.0	15.7	15.8
Cycle Q Clear(g_c), s	3.8	2.3	20.2	11.0	0.0	7.1	18.8	22.4	22.4	9.0	15.7	15.8
Prop In Lane	1.00		1.00	1.00		0.68	1.00		0.10	1.00		0.14
Lane Grp Cap(c), veh/h	70	344	548	151	0	381	291	933	964	149	792	813
V/C Ratio(X)	0.75	0.12	0.55	1.23	0.00	0.29	0.91	0.51	0.51	0.85	0.77	0.77
Avail Cap(c_a), veh/h	151	446	635	151	0	396	356	933	964	151	792	813
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	0.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	61.8	44.3	34.3	59.5	0.0	41.4	53.4	20.0	20.0	53.3	4.8	4.8
Incr Delay (d2), s/veh	14.6	0.1	0.9	147.2	0.0	0.4	22.8	2.0	1.9	27.9	5.6	5.5
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(50%),veh/ln	2.0	1.1	7.9	11.1	0.0	3.0	10.3	9.7	10.0	4.9	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.4	44.4	35.2	206.7	0.0	41.8	76.2	22.0	21.9	81.2	10.4	10.3
LnGrp LOS	E	D	D	F	A	D	E	C	C	F	B	B
Approach Vol, veh/h		395			295			1226			1369	
Approach Delay, s/veh		41.6			145.2			33.6			16.9	
Approach LOS		D			F			C			B	

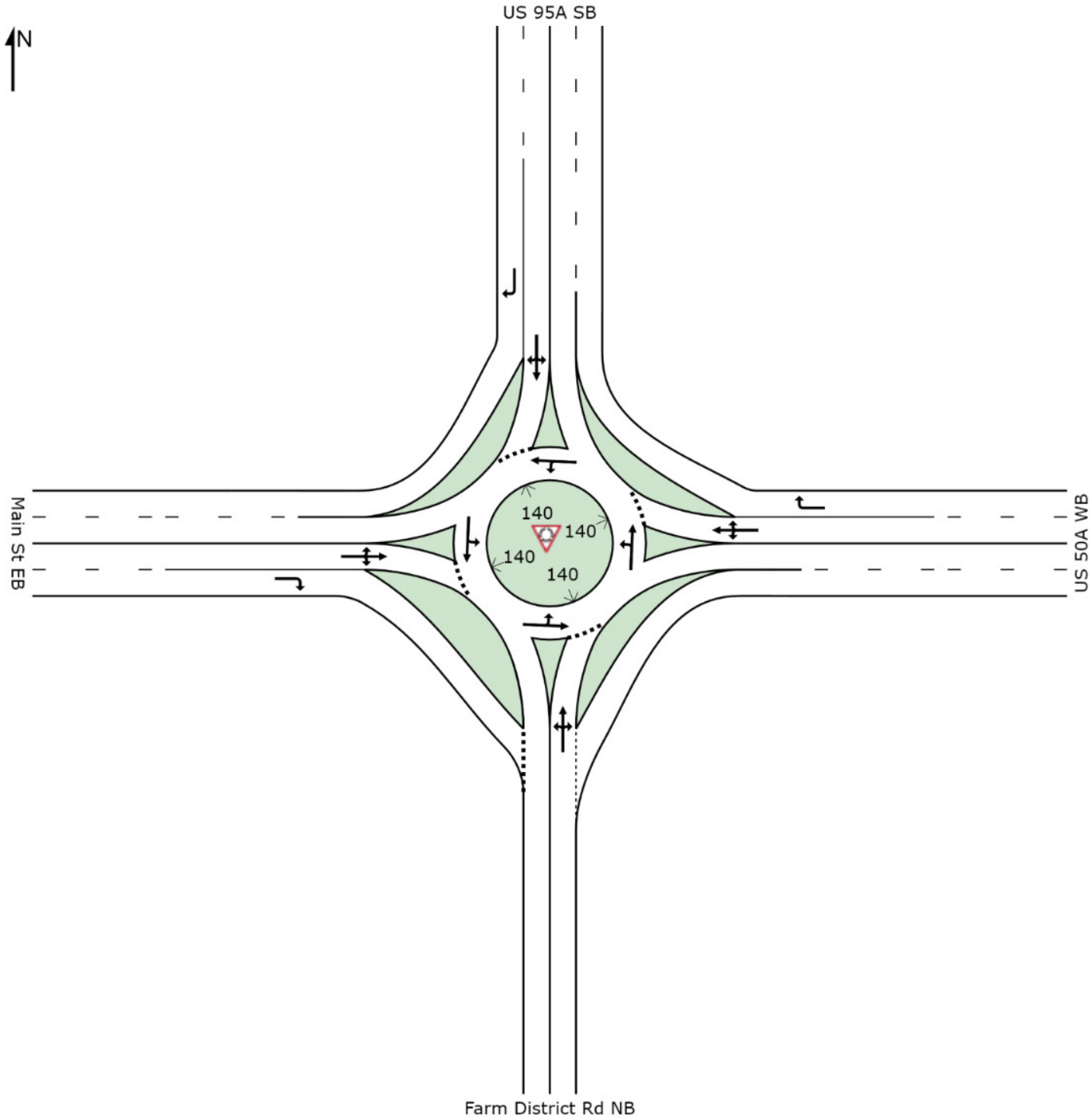
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	72.2	15.0	27.9	25.2	61.9	9.1	33.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	61.0	11.0	31.0	26.0	46.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	11.0	24.4	13.0	22.2	20.8	17.8	5.8	9.1
Green Ext Time (p_c), s	0.0	7.6	0.0	0.9	0.4	10.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

SITE LAYOUT

Site: US 95A/US 50A/Main Street/Farm District Rd

Baseline Conditions
Roundabout



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MOVEMENT SUMMARY

Site: US 95A/US 50A/Main Street/Farm District Rd - PM

Baseline Conditions
PM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Farm District Rd NB											
3	L2	42	2.0	1.070	92.7	LOS F	22.4	568.2	1.00	2.03	15.2
8	T1	372	2.0	1.070	92.7	LOS F	22.4	568.2	1.00	2.03	15.2
18	R2	67	2.0	1.070	92.7	LOS F	22.4	568.2	1.00	2.03	15.0
Approach		480	2.0	1.070	92.7	LOS F	22.4	568.2	1.00	2.03	15.2
East: US 50A WB											
1	L2	34	2.0	0.356	11.6	LOS B	1.4	36.4	0.63	0.65	32.8
6	T1	156	2.0	0.356	11.6	LOS B	1.4	36.4	0.63	0.65	32.5
16	R2	597	2.0	0.356	0.3	LOS A	1.4	36.4	0.01	0.01	37.7
Approach		787	2.0	0.356	3.0	LOS A	1.4	36.4	0.16	0.17	36.2
North: US 95A SB											
7	L2	732	2.0	1.219	126.9	LOS F	85.2	2162.8	1.00	2.77	12.4
4	T1	336	2.0	1.219	126.9	LOS F	85.2	2162.8	1.00	2.77	12.3
14	R2	567	2.0	0.345	0.1	LOS A	0.0	0.0	0.00	0.00	37.8
Approach		1635	2.0	1.219	82.9	LOS F	85.2	2162.8	0.65	1.81	15.9
West: Main St EB											
5	L2	305	2.0	1.146	118.8	LOS F	30.1	763.9	1.00	2.48	12.9
2	T1	152	2.0	1.146	118.8	LOS F	30.1	763.9	1.00	2.48	12.9
12	R2	223	2.0	1.146	29.7	LOS F	30.1	763.9	0.57	0.83	25.0
Approach		680	2.0	1.146	89.6	LOS F	30.1	763.9	0.86	1.94	15.2
All Vehicles		3583	2.0	1.219	68.0	LOS F	85.2	2162.8	0.63	1.50	17.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SIDRA INTERSECTION 6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	122	1	4	297	37	26	14	5	14	7	249
Future Volume (veh/h)	132	122	1	4	297	37	26	14	5	14	7	249
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	163	151	1	5	367	46	32	17	6	17	9	307
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	316	985	7	12	665	297	63	33	84	466	12	404
Arrive On Green	0.09	0.28	0.28	0.01	0.19	0.19	0.05	0.05	0.05	0.27	0.27	0.27
Sat Flow, veh/h	3346	3504	23	1725	3441	1535	1145	608	1535	1725	44	1498
Grp Volume(v), veh/h	163	74	78	5	367	46	49	0	6	17	0	316
Grp Sat Flow(s),veh/h/ln	1673	1721	1807	1725	1721	1535	1754	0	1535	1725	0	1542
Q Serve(g_s), s	2.2	1.5	1.5	0.1	4.5	1.2	1.3	0.0	0.2	0.3	0.0	8.7
Cycle Q Clear(g_c), s	2.2	1.5	1.5	0.1	4.5	1.2	1.3	0.0	0.2	0.3	0.0	8.7
Prop In Lane	1.00		0.01	1.00		1.00	0.65		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	316	484	508	12	665	297	96	0	84	466	0	416
V/C Ratio(X)	0.52	0.15	0.15	0.43	0.55	0.16	0.51	0.00	0.07	0.04	0.00	0.76
Avail Cap(c_a), veh/h	685	1315	1381	186	2297	1025	1190	0	1041	1114	0	996
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	12.5	12.5	23.0	16.9	15.6	21.3	0.0	20.8	12.5	0.0	15.6
Incr Delay (d2), s/veh	1.3	0.1	0.1	23.3	0.7	0.2	4.2	0.0	0.4	0.0	0.0	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	0.8	0.5	0.5	0.1	1.6	0.4	0.6	0.0	0.1	0.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	12.7	12.7	46.3	17.6	15.8	25.5	0.0	21.2	12.5	0.0	18.4
LnGrp LOS	C	B	B	D	B	B	C	A	C	B	A	B
Approach Vol, veh/h		315			418			55			333	
Approach Delay, s/veh		17.1			17.8			25.0			18.1	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	7.0	4.8	17.5	17.0	8.9	13.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	3.3	2.1	3.5	10.7	4.2	6.5
Green Ext Time (p_c), s	0.2	0.0	0.8	2.0	0.2	2.5

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	11	6	1	154	1	0	0	1	2
Future Vol, veh/h	0	0	0	11	6	1	154	1	0	0	1	2
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	-	-	Yield	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	22	22	22	22	22	22	22	22	22	22	22	22
Mvmt Flow	0	0	0	16	9	1	220	1	0	0	1	3

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	442	442	1	1	0	-	-	-	0
Stage 1	441	441	-	-	-	-	-	-	-
Stage 2	1	1	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.72	6.42	4.32	-	-	-	-	-
Critical Hdwy Stg 1	5.62	5.72	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.72	-	-	-	-	-	-	-
Follow-up Hdwy	3.698	4.198	3.498	2.398	-	-	-	-	-
Pot Cap-1 Maneuver	537	481	1028	1500	-	0	0	-	0
Stage 1	608	544	-	-	-	0	0	-	0
Stage 2	972	857	-	-	-	0	0	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	458	0	1028	1500	-	-	-	-	-
Mov Cap-2 Maneuver	458	0	-	-	-	-	-	-	-
Stage 1	519	0	-	-	-	-	-	-	-
Stage 2	972	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	7.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	1500	-	458	1028	-
HCM Lane V/C Ratio	0.147	-	0.053	0.001	-
HCM Control Delay (s)	7.8	0	13.3	8.5	-
HCM Lane LOS	A	A	B	A	-
HCM 95th %tile Q(veh)	0.5	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	52	0	0	0	0	153	9	1	11	0
Future Vol, veh/h	2	1	52	0	0	0	0	153	9	1	11	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	21	21	21	21	21	21	21	21	21	21	21	21
Mvmt Flow	3	1	74	0	0	0	0	219	13	1	16	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	237	237	-	-	0	-	219	0	0
Stage 1	18	18	-	-	-	-	-	-	-
Stage 2	219	219	-	-	-	-	-	-	-
Critical Hdwy	6.61	6.71	-	-	-	-	4.31	-	-
Critical Hdwy Stg 1	5.61	5.71	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	5.71	-	-	-	-	-	-	-
Follow-up Hdwy	3.689	4.189	-	-	-	-	2.389	-	-
Pot Cap-1 Maneuver	711	632	0	0	-	0	1246	-	0
Stage 1	958	844	0	0	-	0	-	-	0
Stage 2	774	688	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	710	0	-	-	-	-	1246	-	-
Mov Cap-2 Maneuver	710	0	-	-	-	-	-	-	-
Stage 1	958	0	-	-	-	-	-	-	-
Stage 2	773	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	710	-	1246	-
HCM Lane V/C Ratio	-	0.006	-	0.001	-
HCM Control Delay (s)	-	10.1	0	7.9	-
HCM Lane LOS	-	B	A	A	-
HCM 95th %tile Q(veh)	-	0	-	0	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	1	21	5	2	4	27	78	1	1	28	34
Future Vol, veh/h	80	1	21	5	2	4	27	78	1	1	28	34
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	170	-	170	325	-	-	250	-	250	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	29	29	29	29	29	29	29	29	29	29	29	29
Mvmt Flow	127	2	33	8	3	6	43	124	2	2	44	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	225	287	49	237	312	62	98	0	0	126	0	0
Stage 1	75	75	-	210	210	-	-	-	-	-	-	-
Stage 2	150	212	-	27	102	-	-	-	-	-	-	-
Critical Hdwy	8.08	7.08	7.48	8.08	7.08	7.48	4.68	-	-	4.68	-	-
Critical Hdwy Stg 1	7.08	6.08	-	7.08	6.08	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.08	6.08	-	7.08	6.08	-	-	-	-	-	-	-
Follow-up Hdwy	3.79	4.29	3.59	3.79	4.29	3.59	2.49	-	-	2.49	-	-
Pot Cap-1 Maneuver	644	563	928	631	544	909	1316	-	-	1282	-	-
Stage 1	852	773	-	701	665	-	-	-	-	-	-	-
Stage 2	765	664	-	914	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	620	543	928	591	525	909	1316	-	-	1282	-	-
Mov Cap-2 Maneuver	620	543	-	591	525	-	-	-	-	-	-	-
Stage 1	824	771	-	678	643	-	-	-	-	-	-	-
Stage 2	731	642	-	878	749	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	10.5	2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1316	-	-	620	543	928	591	525	909	1282	-	-
HCM Lane V/C Ratio	0.033	-	-	0.205	0.003	0.036	0.013	0.006	0.007	0.001	-	-
HCM Control Delay (s)	7.8	-	-	12.3	11.6	9	11.2	11.9	9	7.8	-	-
HCM Lane LOS	A	-	-	B	B	A	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0	0.1	0	0	0	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	7	4	0	2	3	60	1	7	46	2
Future Vol, veh/h	7	0	7	4	0	2	3	60	1	7	46	2
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	-	-	225	-	250	200	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	45	45	45	45	45	45	45	45	45	45	45	45
Mvmt Flow	8	0	8	5	0	2	3	68	1	8	52	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	108	143	26	116	144	34	54	0	0	69	0	0
Stage 1	68	68	-	74	74	-	-	-	-	-	-	-
Stage 2	40	75	-	42	70	-	-	-	-	-	-	-
Critical Hdwy	8.4	7.4	7.8	8.4	7.4	7.8	5	-	-	5	-	-
Critical Hdwy Stg 1	7.4	6.4	-	7.4	6.4	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.4	6.4	-	7.4	6.4	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.95	4.45	3.75	2.65	-	-	2.65	-	-
Pot Cap-1 Maneuver	751	658	920	740	657	908	1286	-	-	1266	-	-
Stage 1	822	747	-	815	742	-	-	-	-	-	-	-
Stage 2	858	741	-	855	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	744	653	920	729	652	908	1286	-	-	1266	-	-
Mov Cap-2 Maneuver	744	653	-	729	652	-	-	-	-	-	-	-
Stage 1	820	743	-	813	741	-	-	-	-	-	-	-
Stage 2	854	740	-	842	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.7	0.4	1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1286	-	-	823	729	-	908	1266	-	-
HCM Lane V/C Ratio	0.003	-	-	0.019	0.006	-	0.003	0.006	-	-
HCM Control Delay (s)	7.8	-	-	9.5	10	0	9	7.9	-	-
HCM Lane LOS	A	-	-	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	0	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	14	1	0	1	6	43	1	1	59	3
Future Vol, veh/h	20	0	14	1	0	1	6	43	1	1	59	3
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	-	-	-	-	-	-	50	-	-	100	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	92	85	92	92	92	85	85	92	92	85	85
Heavy Vehicles, %	30	2	30	2	2	2	30	30	2	2	30	30
Mvmt Flow	24	0	16	1	0	1	7	51	1	1	69	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	111	137	35	103	141	26	73	0	0	52	0	0
Stage 1	71	71	-	66	66	-	-	-	-	-	-	-
Stage 2	40	66	-	37	75	-	-	-	-	-	-	-
Critical Hdwy	8.1	6.54	7.5	7.54	6.54	6.94	4.7	-	-	4.14	-	-
Critical Hdwy Stg 1	7.1	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4.02	3.6	3.52	4.02	3.32	2.5	-	-	2.22	-	-
Pot Cap-1 Maneuver	782	753	946	866	749	1044	1343	-	-	1552	-	-
Stage 1	855	835	-	937	839	-	-	-	-	-	-	-
Stage 2	894	839	-	974	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	777	748	946	847	745	1044	1343	-	-	1552	-	-
Mov Cap-2 Maneuver	777	748	-	847	745	-	-	-	-	-	-	-
Stage 1	851	834	-	932	835	-	-	-	-	-	-	-
Stage 2	888	835	-	956	831	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	8.9	0.9	0.1
HCM LOS	A	A		

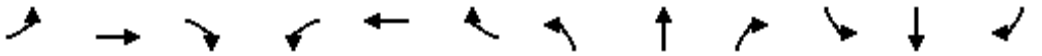
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	839	935	1552	-	-
HCM Lane V/C Ratio	0.005	-	-	0.048	0.002	0.001	-	-
HCM Control Delay (s)	7.7	-	-	9.5	8.9	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	6	4	1	7	11	1	4	1	10	1	164
Future Vol, veh/h	41	6	4	1	7	11	1	4	1	10	1	164
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Heavy Vehicles, %	26	26	26	26	26	26	26	26	26	26	26	26
Mvmt Flow	79	12	8	2	13	21	2	8	2	19	2	315
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.9	8.5	8.4	10.5
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	0%	93%	0%	22%	0%	95%	0%
Vol Thru, %	67%	67%	7%	43%	78%	24%	5%	0%
Vol Right, %	0%	33%	0%	57%	0%	76%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	3	44	7	5	15	11	165
LT Vol	1	0	41	0	1	0	10	0
Through Vol	2	2	3	3	4	4	1	1
RT Vol	0	1	0	4	0	11	0	164
Lane Flow Rate	6	6	85	13	9	28	20	316
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.009	0.009	0.148	0.02	0.014	0.042	0.033	0.409
Departure Headway (Hd)	5.811	5.408	6.291	5.42	6.026	5.38	5.836	4.659
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	616	662	570	660	593	664	615	775
Service Time	3.544	3.142	4.028	3.157	3.768	3.121	3.555	2.378
HCM Lane V/C Ratio	0.01	0.009	0.149	0.02	0.015	0.042	0.033	0.408
HCM Control Delay	8.6	8.2	10.1	8.3	8.9	8.4	8.8	10.6
HCM Lane LOS	A	A	B	A	A	A	A	B
HCM 95th-tile Q	0	0	0.5	0.1	0	0.1	0.1	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	0	0	0	0	0	0	0	0	0	6
Future Volume (Veh/h)	6	0	0	0	0	0	0	0	0	0	0	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	7	0	0	0	0	0	0	0	0	0	0	7
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	0	0	0	0	7	0	7			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	0	0	0	7	0	7			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	1023	896	1084	1023	888	1084	1612			1622		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	7	0	0	0	0	0	7
Volume Left	7	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	7
cSH	1023	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	8.5	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A					
Approach Delay (s)	8.5	0.0	0.0		0.0		
Approach LOS	A	A					

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	6.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	410	142	109	471	291	109
Future Volume (veh/h)	410	142	109	471	291	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	466	161	124	535	331	124
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8
Cap, veh/h	899	401	484	1613	458	408
Arrive On Green	0.27	0.27	0.08	0.48	0.27	0.27
Sat Flow, veh/h	3474	1510	1697	3474	1697	1510
Grp Volume(v), veh/h	466	161	124	535	331	124
Grp Sat Flow(s),veh/h/ln	1692	1510	1697	1692	1697	1510
Q Serve(g_s), s	3.7	2.8	1.5	3.1	5.6	2.1
Cycle Q Clear(g_c), s	3.7	2.8	1.5	3.1	5.6	2.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	899	401	484	1613	458	408
V/C Ratio(X)	0.52	0.40	0.26	0.33	0.72	0.30
Avail Cap(c_a), veh/h	1716	765	556	2573	967	861
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	9.9	9.5	6.5	5.1	10.4	9.2
Incr Delay (d2), s/veh	0.5	0.6	0.3	0.1	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.7	0.3	0.6	1.6	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.3	10.2	6.8	5.3	12.6	9.6
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	627			659	455	
Approach Delay, s/veh	10.3			5.5	11.8	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		12.5	6.7	12.4		19.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s		18.0	4.0	16.0		24.0
Max Q Clear Time (g_c+I1), s		7.6	3.5	5.7		5.1
Green Ext Time (p_c), s		1.1	0.0	2.7		3.5

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

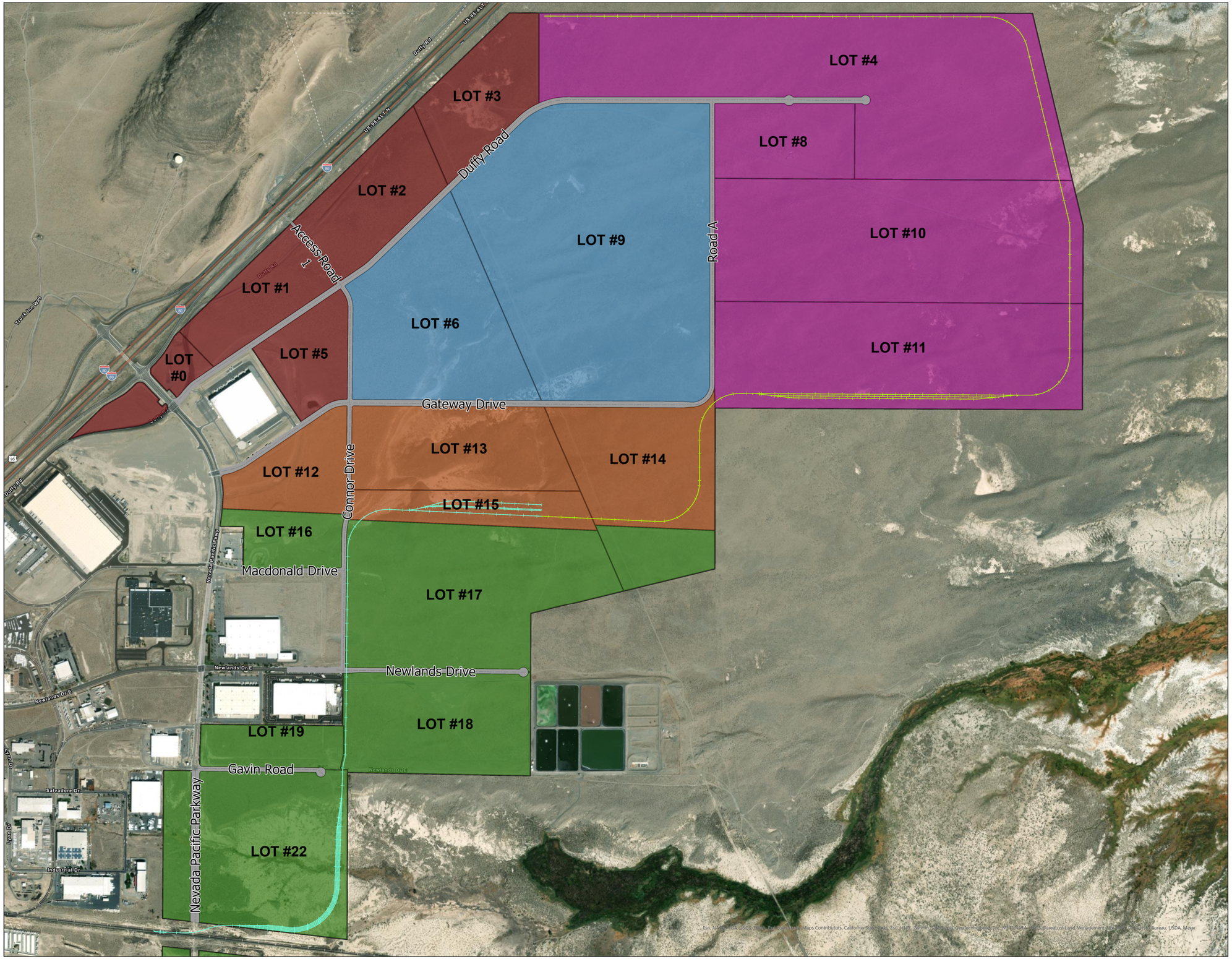
Unsignalized Delay for [WBT] is excluded from calculations of the approach delay and intersection delay.

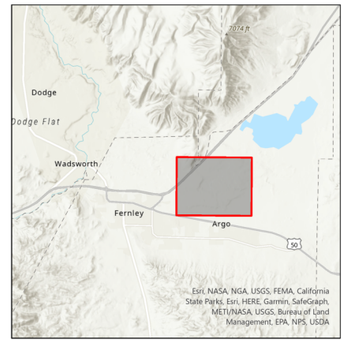
Appendix B
Trip Generation Calculations

			FAR	0.25														
Parcel	Land Use	ITE Land Use	Size (acres)	Size (ksf)	Trip Rates							Trips						
					Daily	AM	AM In	AM Out	PM	PM In	PM Out	Daily	AM	AM In	AM Out	PM	PM In	PM Out
1	Retail	821	10	108.90	67.52	1.73	1.07	0.66	5.19	2.54	2.65	7353	188	117	72	565	277	288
1	Distribution	155	45.4	494.41	1.81	0.15	0.12	0.03	0.16	0.06	0.10	895	74	60	14	79	31	48
2	Distribution	155	58.6	638.15	1.81	0.15	0.12	0.03	0.16	0.06	0.10	1155	96	78	18	102	40	62
3	Distribution	155	55.7	606.57	1.81	0.15	0.12	0.03	0.16	0.06	0.10	1098	91	74	17	97	38	59
4	Distribution	155	279.6	3044.84	1.81	0.15	0.12	0.03	0.16	0.06	0.10	5511	457	370	87	487	190	297
5	Distribution	155	35.9	390.95	1.81	0.15	0.12	0.03	0.16	0.06	0.10	708	59	48	11	63	24	38
6	Data Center	160	121	1317.69	0.99	0.11	0.06	0.05	0.09	0.03	0.06	1305	145	80	65	119	36	83
7	Distribution	155	96.8	1054.15	1.81	0.15	0.12	0.03	0.16	0.06	0.10	1908	158	128	30	169	66	103
8	Distribution	155	50	544.50	1.81	0.15	0.12	0.03	0.16	0.06	0.10	986	82	66	16	87	34	53
9	Manufacturing	150	205.3	2235.72	1.71	0.17	0.13	0.04	0.18	0.05	0.13	3823	380	293	87	402	113	290
10	Distribution	155	212	2308.68	1.81	0.15	0.12	0.03	0.16	0.06	0.10	4179	346	281	66	369	144	225
11	Distribution	155	184.1	2004.85	1.81	0.15	0.12	0.03	0.16	0.06	0.10	3629	301	244	57	321	125	196
12	Manufacturing	150	44.8	487.87	1.71	0.17	0.13	0.04	0.18	0.05	0.13	834	83	64	19	88	25	63
13	Manufacturing	150	83.4	908.23	1.71	0.17	0.13	0.04	0.18	0.05	0.13	1553	154	119	36	163	46	118
14	Manufacturing	150	82.1	894.07	1.71	0.17	0.13	0.04	0.18	0.05	0.13	1529	152	117	35	161	45	116
15	Transload & Switching Facility	154	38.7	421.44	1.40	0.08	0.06	0.02	0.10	0.03	0.07	590	34	26	8	42	12	30
16	Manufacturing	150	25.6	278.78	1.71	0.17	0.13	0.04	0.18	0.05	0.13	477	47	36	11	50	14	36
17	Manufacturing	150	49.4	537.97	1.71	0.17	0.13	0.04	0.18	0.05	0.13	920	91	70	21	97	27	70
18	Data Center	160	166.6	1814.27	0.99	0.11	0.06	0.05	0.09	0.03	0.06	1796	200	110	90	163	49	114
19	Manufacturing	150	28.8	313.63	1.71	0.17	0.13	0.04	0.18	0.05	0.13	536	53	41	12	56	16	41
20	Manufacturing	150	54.9	597.86	1.71	0.17	0.13	0.04	0.18	0.05	0.13	1022	102	78	23	108	30	77
21	Gas Station	945	4.6	14.00	345.75	31.6	15.8	15.8	26.9	13.45	13.45	4841	442	221	221	377	188	188
21	Retail	821	6.3	68.61	67.52	1.73	1.07	0.66	5.19	2.54	2.65	4632	119	74	45	356	174	182
22	Distribution	155	111.2	1210.97	1.81	0.15	0.12	0.03	0.16	0.06	0.10	2192	182	147	35	194	76	118

Raw Total	**53472**	**4036**	**2942**	**1096**	**4715**	**1820**	**2895**
Pass-By Trips (Gas Station)	*3050*	*278*	*139*	*139*	*249*	*124*	*124*
Pass-By Trips (Retail)	*4075*	*104*	*52*	*52*	*313*	*157*	*157*
Net New Trips	***46347***	***3654***	***2751***	***905***	***4153***	***1540***	***2615***

Appendix C
Anticipated Notice of Completion Map





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NOTICE OF COMPLETION MAP

MARK IV
MASTER PLAN

PAGE 1 OF 1

LEGEND

Proposed Railroad
Phase
- PHASE 1 RAIL
- PHASE 2 RAIL
- Road_Centerlines

Development Zone
- EAST
- NORTH CENTRAL
- SOUTH
- SOUTH CENTRAL
- WEST

N

Paper Size: 24" x 36"

0 800 1,600
Feet

Projection: Mercator Auxiliary Sphere
Grid: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984
Created by: mshults

Date:	8/1/2023
Project #:	10067.008
Revision:	XX

Path: L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\GIS\Workmap\10067010_Workmap.aprx

Appendix D
Baseline Plus Project LOS Calculations

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.345

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	624	81	0	0	59	78	0	0	0	88	1	27
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 [%]	13.00	13.00	2.00	2.00	13.00	13.00	2.00	2.00	2.00	13.00	13.00	13.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	624	81	0	0	59	78	0	0	0	88	1	27
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	164	21	0	0	16	21	0	0	0	23	0	7
Total Analysis Volume [veh/h]	657	85	0	0	62	82	0	0	0	93	1	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.18	0.19	0.00	0.00	0.00	0.35	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	20.67	18.93	0.00	0.00	0.00	25.38	25.31	11.17
Movement LOS	A	A			C	C				D	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	1.68	1.68	0.00	0.00	0.00	1.51	1.51	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	42.02	42.02	0.00	0.00	0.00	37.65	37.65	3.59
d_A, Approach Delay [s/veh]	0.00			19.68			0.00			22.12		
Approach LOS	A			C			A			C		
d_I, Intersection Delay [s/veh]	5.49											
Intersection LOS	D											

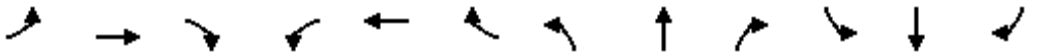
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↑	↱		↰	
Traffic Vol, veh/h	18	1	396	0	0	0	0	687	213	20	127	0
Future Vol, veh/h	18	1	396	0	0	0	0	687	213	20	127	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	19	1	413	0	0	0	0	716	222	21	132	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	890	890	-	-	0	0	716	0	0
Stage 1	174	174	-	-	-	-	-	-	-
Stage 2	716	716	-	-	-	-	-	-	-
Critical Hdwy	6.49	6.59	-	-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.49	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.49	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.081	-	-	-	-	2.281	-	-
Pot Cap-1 Maneuver	305	275	0	0	-	-	853	-	0
Stage 1	840	742	0	0	-	-	-	-	0
Stage 2	472	424	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	297	0	-	-	-	-	853	-	-
Mov Cap-2 Maneuver	297	0	-	-	-	-	-	-	-
Stage 1	840	0	-	-	-	-	-	-	-
Stage 2	459	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	297	-	853	-
HCM Lane V/C Ratio	-	-	0.067	-	0.024	-
HCM Control Delay (s)	-	-	18	0	9.3	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	37	31	304	24	45	21	819	652	81	420	12
Future Volume (veh/h)	40	37	31	304	24	45	21	819	652	81	420	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	43	40	33	327	26	48	23	881	701	87	452	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	66	130	95	307	222	187	46	2266	1010	158	2320	67
Arrive On Green	0.04	0.07	0.07	0.09	0.12	0.12	0.03	0.66	0.66	0.05	0.68	0.68
Sat Flow, veh/h	1725	1888	1381	3346	1811	1527	1725	3441	1534	3346	3416	98
Grp Volume(v), veh/h	43	36	37	327	26	48	23	881	701	87	227	238
Grp Sat Flow(s),veh/h/ln	1725	1721	1548	1673	1811	1527	1725	1721	1534	1673	1721	1793
Q Serve(g_s), s	3.0	2.4	2.7	11.0	1.5	3.4	1.6	14.1	34.5	3.1	5.9	5.9
Cycle Q Clear(g_c), s	3.0	2.4	2.7	11.0	1.5	3.4	1.6	14.1	34.5	3.1	5.9	5.9
Prop In Lane	1.00		0.89	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	66	119	107	307	222	187	46	2266	1010	158	1168	1218
V/C Ratio(X)	0.65	0.30	0.35	1.07	0.12	0.26	0.50	0.39	0.69	0.55	0.19	0.20
Avail Cap(c_a), veh/h	158	588	529	307	619	522	158	2266	1010	307	1168	1218
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	0.97	0.97	0.97	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	53.1	53.3	54.5	46.9	47.7	57.6	9.4	12.9	55.9	7.1	7.1
Incr Delay (d2), s/veh	10.5	1.4	1.9	69.2	0.2	0.7	5.7	0.4	2.8	3.0	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	1.5	1.1	1.1	7.6	0.7	1.3	0.8	5.1	11.7	1.4	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	54.5	55.2	123.7	47.1	48.4	63.3	9.7	15.6	58.9	7.5	7.5
LnGrp LOS	E	D	E	F	D	D	E	A	B	E	A	A
Approach Vol, veh/h		116			401			1605			552	
Approach Delay, s/veh		59.5			109.7			13.1			15.6	
Approach LOS		E			F			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	83.0	15.0	12.3	7.2	85.5	8.6	18.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	41.0	11.0	41.0	11.0	41.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	5.1	36.5	13.0	4.7	3.6	7.9	5.0	5.4
Green Ext Time (p_c), s	0.1	3.3	0.0	0.4	0.0	3.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	13	145	86	10	39	147	1400	44	49	676	37
Future Volume (veh/h)	64	13	145	86	10	39	147	1400	44	49	676	37
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	68	14	154	91	11	41	156	1489	47	52	719	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	87	196	331	113	41	154	185	2218	70	71	1942	105
Arrive On Green	0.05	0.11	0.11	0.07	0.12	0.12	0.11	0.65	0.65	0.05	0.78	0.78
Sat Flow, veh/h	1725	1811	1535	1725	335	1250	1725	3405	107	1725	3319	180
Grp Volume(v), veh/h	68	14	154	91	0	52	156	751	785	52	373	385
Grp Sat Flow(s),veh/h/ln	1725	1811	1535	1725	0	1586	1725	1721	1791	1725	1721	1778
Q Serve(g_s), s	4.7	0.8	10.5	6.2	0.0	3.6	10.6	32.4	32.6	3.6	8.1	8.1
Cycle Q Clear(g_c), s	4.7	0.8	10.5	6.2	0.0	3.6	10.6	32.4	32.6	3.6	8.1	8.1
Prop In Lane	1.00		1.00	1.00		0.79	1.00		0.06	1.00		0.10
Lane Grp Cap(c), veh/h	87	196	331	113	0	196	185	1121	1167	71	1007	1041
V/C Ratio(X)	0.78	0.07	0.47	0.80	0.00	0.27	0.84	0.67	0.67	0.73	0.37	0.37
Avail Cap(c_a), veh/h	302	468	562	158	0	278	374	1121	1167	158	1007	1041
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	0.00	1.00	0.44	0.44	0.44	0.91	0.91	0.91
Uniform Delay (d), s/veh	56.3	48.1	41.0	55.3	0.0	47.7	52.5	12.9	13.0	56.1	6.4	6.4
Incr Delay (d2), s/veh	13.7	0.2	1.0	18.0	0.0	0.7	4.6	1.4	1.4	12.4	1.0	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	2.4	0.4	4.1	3.3	0.0	1.5	4.8	12.1	12.7	1.8	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	48.2	42.0	73.2	0.0	48.4	57.1	14.4	14.3	68.4	7.4	7.3
LnGrp LOS	E	D	D	E	A	D	E	B	B	E	A	A
Approach Vol, veh/h		236			143			1692			810	
Approach Delay, s/veh		50.5			64.2			18.3			11.3	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	82.2	11.9	17.0	16.9	74.2	10.1	18.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	51.0	11.0	31.0	26.0	36.0	21.0	21.0
Max Q Clear Time (g_c+I1), s	5.6	34.6	8.2	12.5	12.6	10.1	6.7	5.6
Green Ext Time (p_c), s	0.0	10.1	0.0	0.5	0.3	5.2	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	464	166	151	22	157	649	52	486	54	281	183	456
Future Volume (veh/h)	464	166	151	22	157	649	52	486	54	281	183	456
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	488	175	0	23	165	0	55	512	0	296	193	0
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	641	907		47	343		93	768		447	549	
Arrive On Green	0.19	0.26	0.00	0.03	0.10	0.00	0.05	0.22	0.00	0.13	0.30	0.00
Sat Flow, veh/h	3374	3469	1547	1739	3469	1547	1739	3469	1547	3374	1826	1547
Grp Volume(v), veh/h	488	175	0	23	165	0	55	512	0	296	193	0
Grp Sat Flow(s),veh/h/ln	1687	1735	1547	1739	1735	1547	1739	1735	1547	1687	1826	1547
Q Serve(g_s), s	6.9	2.0	0.0	0.7	2.3	0.0	1.6	6.8	0.0	4.2	4.2	0.0
Cycle Q Clear(g_c), s	6.9	2.0	0.0	0.7	2.3	0.0	1.6	6.8	0.0	4.2	4.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	641	907		47	343		93	768		447	549	
V/C Ratio(X)	0.76	0.19		0.48	0.48		0.59	0.67		0.66	0.35	
Avail Cap(c_a), veh/h	837	1721		190	1239		245	1267		877	884	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.3	14.5	0.0	24.2	21.5	0.0	23.3	17.9	0.0	20.8	13.8	0.0
Incr Delay (d2), s/veh	3.0	0.1	0.0	7.4	1.0	0.0	5.9	1.0	0.0	1.7	0.4	0.0
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(50%),veh/ln	2.7	0.7	0.0	0.3	0.9	0.0	0.7	2.5	0.0	1.6	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	14.6	0.0	31.6	22.5	0.0	29.3	18.9	0.0	22.5	14.2	0.0
LnGrp LOS	C	B		C	C		C	B		C	B	
Approach Vol, veh/h		663	A		188	A		567	A		489	A
Approach Delay, s/veh		20.3			23.6			19.9			19.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	15.7	5.9	17.7	7.2	19.7	14.1	9.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.1	18.4	5.5	25.0	7.1	24.4	12.5	18.0
Max Q Clear Time (g_c+I1), s	6.2	8.8	2.7	4.0	3.6	6.2	8.9	4.3
Green Ext Time (p_c), s	0.6	2.4	0.0	1.0	0.0	0.9	0.7	0.7

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	571	1	11	255	14	1	1	1	9	1	72
Future Volume (veh/h)	150	571	1	11	255	14	1	1	1	9	1	72
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	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693
Adj Flow Rate, veh/h	169	642	1	12	287	16	1	1	1	10	1	81
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	14	14	14	14	14	14	14	14	14	14	14	14
Cap, veh/h	375	1136	2	25	774	345	3	3	6	139	2	123
Arrive On Green	0.12	0.34	0.34	0.02	0.24	0.24	0.00	0.00	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3127	3294	5	1612	3216	1434	826	826	1434	1612	18	1419
Grp Volume(v), veh/h	169	313	330	12	287	16	2	0	1	10	0	82
Grp Sat Flow(s),veh/h/ln	1564	1608	1692	1612	1608	1434	1651	0	1434	1612	0	1437
Q Serve(g_s), s	1.6	5.2	5.2	0.2	2.4	0.3	0.0	0.0	0.0	0.2	0.0	1.8
Cycle Q Clear(g_c), s	1.6	5.2	5.2	0.2	2.4	0.3	0.0	0.0	0.0	0.2	0.0	1.8
Prop In Lane	1.00		0.00	1.00		1.00	0.50		1.00	1.00		0.99
Lane Grp Cap(c), veh/h	375	554	583	25	774	345	7	0	6	139	0	124
V/C Ratio(X)	0.45	0.57	0.57	0.47	0.37	0.05	0.29	0.00	0.17	0.07	0.00	0.66
Avail Cap(c_a), veh/h	906	1741	1831	246	3040	1356	1586	0	1378	1475	0	1315
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	8.7	8.7	16.0	10.4	9.6	16.3	0.0	16.3	13.8	0.0	14.5
Incr Delay (d2), s/veh	0.9	0.9	0.9	12.9	0.3	0.1	22.4	0.0	13.0	0.2	0.0	5.8
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	0.5	1.2	1.3	0.2	0.6	0.1	0.1	0.0	0.0	0.1	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	9.7	9.6	28.9	10.7	9.6	38.6	0.0	29.3	14.0	0.0	20.3
LnGrp LOS	B	A	A	C	B	A	D	A	C	B	A	C
Approach Vol, veh/h		812			315			3			92	
Approach Delay, s/veh		10.6			11.3			35.5			19.7	
Approach LOS		B			B			D			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	4.6	5.0	15.8	7.3	8.4	12.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	2.0	2.2	7.2	3.8	3.6	4.4
Green Ext Time (p_c), s	0.0	0.0	4.1	0.4	0.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	112	1	0	271	0	0	0	0	0
Future Vol, veh/h	0	0	0	112	1	0	271	0	0	0	0	0
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	-	-	Yield	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	53	53	53	53	53	53	53	53	53	53	53	53
Mvmt Flow	0	0	0	135	1	0	327	0	0	0	0	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	655	655	0	1	0	-	-	-	0
Stage 1	654	654	-	-	-	-	-	-	-
Stage 2	1	1	-	-	-	-	-	-	-
Critical Hdwy	6.93	7.03	6.73	4.63	-	-	-	-	-
Critical Hdwy Stg 1	5.93	6.03	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.93	6.03	-	-	-	-	-	-	-
Follow-up Hdwy	3.977	4.477	3.777	2.677	-	-	-	-	-
Pot Cap-1 Maneuver	360	327	-	1344	-	0	0	-	0
Stage 1	433	393	-	-	-	0	0	-	0
Stage 2	904	803	-	-	-	0	0	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	273	0	-	1344	-	-	-	-	-
Mov Cap-2 Maneuver	273	0	-	-	-	-	-	-	-
Stage 1	328	0	-	-	-	-	-	-	-
Stage 2	904	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.6	8.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	1344	-	273	-	-
HCM Lane V/C Ratio	0.243	-	0.499	-	-
HCM Control Delay (s)	8.5	0	30.6	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	1	-	2.6	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	676	0	0	0	0	270	44	1	111	0
Future Vol, veh/h	1	1	676	0	0	0	0	270	44	1	111	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	23	23	23	23	23	23	23	23	23	23	23	23
Mvmt Flow	1	1	966	0	0	0	0	386	63	1	159	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	547	547	-	-	0	-	386	0	0
Stage 1	161	161	-	-	-	-	-	-	-
Stage 2	386	386	-	-	-	-	-	-	-
Critical Hdwy	6.63	6.73	-	-	-	-	4.33	-	-
Critical Hdwy Stg 1	5.63	5.73	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.73	-	-	-	-	-	-	-
Follow-up Hdwy	3.707	4.207	-	-	-	-	2.407	-	-
Pot Cap-1 Maneuver	464	417	0	0	-	0	1067	-	0
Stage 1	819	727	0	0	-	0	-	-	0
Stage 2	644	575	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	464	0	-	-	-	-	1067	-	-
Mov Cap-2 Maneuver	464	0	-	-	-	-	-	-	-
Stage 1	819	0	-	-	-	-	-	-	-
Stage 2	643	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	464	-	1067	-
HCM Lane V/C Ratio	-	0.006	-	0.001	-
HCM Control Delay (s)	-	12.8	0	8.4	-
HCM Lane LOS	-	B	A	A	-
HCM 95th %tile Q(veh)	-	0	-	0	-

Intersection	
Int Delay, s/veh	162.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	8	25	2	8	1	34	210	1	32	590	165
Future Vol, veh/h	103	8	25	2	8	1	34	210	1	32	590	165
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	170	-	170	325	-	-	250	-	250	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	175	14	42	3	14	2	58	356	2	54	1000	280

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1549	1722	640	1087	1860	178	1280	0	0	358	0	0
Stage 1	1248	1248	-	472	472	-	-	-	-	-	-	-
Stage 2	301	474	-	615	1388	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.12	7.52	8.12	7.12	7.52	4.72	-	-	4.72	-	-
Critical Hdwy Stg 1	7.12	6.12	-	7.12	6.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.12	-	7.12	6.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.81	4.31	3.61	3.81	4.31	3.61	2.51	-	-	2.51	-	-
Pot Cap-1 Maneuver	~ 58	65	355	137	53	751	405	-	-	1014	-	-
Stage 1	~ 144	193	-	472	490	-	-	-	-	-	-	-
Stage 2	608	489	-	381	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 38	53	355	83	43	751	405	-	-	1014	-	-
Mov Cap-2 Maneuver	~ 38	53	-	83	43	-	-	-	-	-	-	-
Stage 1	~ 123	183	-	405	420	-	-	-	-	-	-	-
Stage 2	503	419	-	294	153	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	1394.8	99.8	2.1	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	405	-	-	38	53	355	83	43	751	1014	-	-
HCM Lane V/C Ratio	0.142	-	-	4.594	0.256	0.119	0.041	0.315	0.002	0.053	-	-
HCM Control Delay (s)	15.4	-	-	$ 1830.3	94.8	16.5	50.2	123.4	9.8	8.8	-	-
HCM Lane LOS	C	-	-	F	F	C	F	F	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	20.3	0.9	0.4	0.1	1.1	0	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	2	35	0	51	8	191	112	180	430	5
Future Vol, veh/h	2	0	2	35	0	51	8	191	112	180	430	5
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	-	-	225	-	250	200	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	32	32	32	32	32	32	32	32	32	32	32	32
Mvmt Flow	3	0	3	59	0	86	14	324	190	305	729	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1529	1881	365	1327	1699	162	737	0	0	514	0	0
Stage 1	1339	1339	-	352	352	-	-	-	-	-	-	-
Stage 2	190	542	-	975	1347	-	-	-	-	-	-	-
Critical Hdwy	8.14	7.14	7.54	8.14	7.14	7.54	4.74	-	-	4.74	-	-
Critical Hdwy Stg 1	7.14	6.14	-	7.14	6.14	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	6.14	-	7.14	6.14	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.32	3.62	3.82	4.32	3.62	2.52	-	-	2.52	-	-
Pot Cap-1 Maneuver	60	50	553	87	67	768	693	-	-	865	-	-
Stage 1	124	171	-	562	561	-	-	-	-	-	-	-
Stage 2	714	450	-	219	169	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	38	32	553	62	42	768	693	-	-	865	-	-
Mov Cap-2 Maneuver	38	32	-	62	42	-	-	-	-	-	-	-
Stage 1	122	111	-	551	550	-	-	-	-	-	-	-
Stage 2	621	441	-	141	109	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	61	92.3	0.3	3.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	693	-	-	71	62	-	768	865	-	-
HCM Lane V/C Ratio	0.02	-	-	0.095	0.957	-	0.113	0.353	-	-
HCM Control Delay (s)	10.3	-	-	61	211.8	0	10.3	11.4	-	-
HCM Lane LOS	B	-	-	F	F	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	4.6	-	0.4	1.6	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	4	12	0	77	16	227	19	229	217	9
Future Vol, veh/h	6	0	4	12	0	77	16	227	19	229	217	9
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	-	-	-	-	-	-	50	-	-	100	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	25	2	25	2	2	2	25	25	2	2	25	25
Mvmt Flow	9	0	6	13	0	84	23	324	21	249	310	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1016	1199	155	1034	1202	173	323	0	0	345	0	0
Stage 1	808	808	-	381	381	-	-	-	-	-	-	-
Stage 2	208	391	-	653	821	-	-	-	-	-	-	-
Critical Hdwy	8	6.54	7.4	7.54	6.54	6.94	4.6	-	-	4.14	-	-
Critical Hdwy Stg 1	7	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.02	3.55	3.52	4.02	3.32	2.45	-	-	2.22	-	-
Pot Cap-1 Maneuver	163	184	795	186	183	840	1083	-	-	1211	-	-
Stage 1	295	392	-	613	612	-	-	-	-	-	-	-
Stage 2	713	606	-	423	387	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	122	143	795	153	142	840	1083	-	-	1211	-	-
Mov Cap-2 Maneuver	122	143	-	153	142	-	-	-	-	-	-	-
Stage 1	289	311	-	600	599	-	-	-	-	-	-	-
Stage 2	628	593	-	334	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.2	13.4	0.5	3.8
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1083	-	-	184	523	1211	-	-
HCM Lane V/C Ratio	0.021	-	-	0.078	0.185	0.206	-	-
HCM Control Delay (s)	8.4	-	-	26.2	13.4	8.7	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.7	0.8	-	-

Intersection	
Intersection Delay, s/veh	21.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	292	64	115	2	52	18	41	38	1	20	110	104
Future Vol, veh/h	292	64	115	2	52	18	41	38	1	20	110	104
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	13	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	406	89	160	3	72	25	57	53	1	28	153	144
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	28.9	10.7	12	13.4
HCM LOS	D	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	68%	0%	90%	0%	7%	0%	27%	0%
Vol Thru, %	32%	95%	10%	22%	93%	59%	73%	35%
Vol Right, %	0%	5%	0%	78%	0%	41%	0%	65%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	20	324	147	28	44	75	159
LT Vol	41	0	292	0	2	0	20	0
Through Vol	19	19	32	32	26	26	55	55
RT Vol	0	1	0	115	0	18	0	104
Lane Flow Rate	83	28	450	204	39	61	104	221
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.182	0.058	0.848	0.328	0.079	0.118	0.21	0.408
Departure Headway (Hd)	7.872	7.487	6.786	5.776	7.271	6.941	7.26	6.658
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	453	476	531	621	490	513	493	539
Service Time	5.66	5.274	4.543	3.532	5.059	4.729	5.032	4.43
HCM Lane V/C Ratio	0.183	0.059	0.847	0.329	0.08	0.119	0.211	0.41
HCM Control Delay	12.4	10.7	36.8	11.4	10.7	10.7	12	14
HCM Lane LOS	B	B	E	B	B	B	B	B
HCM 95th-tile Q	0.7	0.2	8.9	1.4	0.3	0.4	0.8	2

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	0	0	0	52	0	8	0	154	31	15
Future Vol, veh/h	14	0	0	0	0	52	0	8	0	154	31	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	-	-	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	0	0	0	57	0	9	0	167	34	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	373	377	17	360	393	5	50	0	0	9	0	0
Stage 1	368	368	-	9	9	-	-	-	-	-	-	-
Stage 2	5	9	-	351	384	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	559	553	1058	571	542	1076	1555	-	-	1609	-	-
Stage 1	624	620	-	1011	888	-	-	-	-	-	-	-
Stage 2	1016	888	-	639	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	486	494	1058	524	484	1076	1555	-	-	1609	-	-
Mov Cap-2 Maneuver	486	494	-	524	484	-	-	-	-	-	-	-
Stage 1	624	554	-	1011	888	-	-	-	-	-	-	-
Stage 2	963	888	-	571	545	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	8.5	0	5.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	486	1076	1609	-	-
HCM Lane V/C Ratio	-	-	-	0.031	0.053	0.104	-	-
HCM Control Delay (s)	0	-	-	12.6	8.5	7.5	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.3	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	470	145	109	613	302	109
Future Volume (veh/h)	470	145	109	613	302	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	534	165	124	697	343	124
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8
Cap, veh/h	927	414	164	1662	455	405
Arrive On Green	0.27	0.27	0.10	0.49	0.27	0.27
Sat Flow, veh/h	3474	1510	1697	3474	1697	1510
Grp Volume(v), veh/h	534	165	124	697	343	124
Grp Sat Flow(s),veh/h/ln	1692	1510	1697	1692	1697	1510
Q Serve(g_s), s	5.1	3.3	2.7	4.9	6.9	2.4
Cycle Q Clear(g_c), s	5.1	3.3	2.7	4.9	6.9	2.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	927	414	164	1662	455	405
V/C Ratio(X)	0.58	0.40	0.75	0.42	0.75	0.31
Avail Cap(c_a), veh/h	1629	727	386	2806	907	807
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	11.7	11.1	16.5	6.1	12.6	10.9
Incr Delay (d2), s/veh	0.6	0.6	6.9	0.2	2.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.9	1.2	1.1	2.3	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	11.7	23.3	6.3	15.1	11.3
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	699			821	467	
Approach Delay, s/veh	12.1			8.8	14.1	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.5	8.1	14.7		22.9
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		20.0	8.5	18.0		31.0
Max Q Clear Time (g_c+I1), s		8.9	4.7	7.1		6.9
Green Ext Time (p_c), s		1.2	0.1	3.2		5.1

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBT] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	143	94	1	43	1	28	1	1	1	1	1
Future Vol, veh/h	1	143	94	1	43	1	28	1	1	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	155	102	1	47	1	30	1	1	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	257	0	0	234	258	129	130	309	24
Stage 1	-	-	-	-	-	-	208	208	-	50	50	-
Stage 2	-	-	-	-	-	-	26	50	-	80	259	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1557	-	-	1305	-	-	701	645	897	830	604	1047
Stage 1	-	-	-	-	-	-	775	729	-	957	853	-
Stage 2	-	-	-	-	-	-	988	853	-	919	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1557	-	-	1305	-	-	699	644	897	827	603	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	699	644	-	827	603	-
Stage 1	-	-	-	-	-	-	774	728	-	956	852	-
Stage 2	-	-	-	-	-	-	985	852	-	916	691	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	10.4	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	699	750	1557	-	-	1305	-	-	827	765
HCM Lane V/C Ratio	0.044	0.003	0.001	-	-	0.001	-	-	0.001	0.003
HCM Control Delay (s)	10.4	9.8	7.3	-	-	7.8	-	-	9.4	9.7
HCM Lane LOS	B	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0	0

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	46.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	512	100	0	0	78	80	0	0	0	214	1	65
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 [%]	11.00	11.00	2.00	2.00	11.00	11.00	2.00	2.00	2.00	11.00	11.00	11.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	512	100	0	0	78	80	0	0	0	214	1	65
Peak Hour Factor	0.9400	0.9400	1.0000	1.0000	0.9400	0.9400	1.0000	1.0000	1.0000	0.9400	0.9400	0.9400
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]	136	27	0	0	21	21	0	0	0	57	0	17
Total Analysis Volume [veh/h]	545	106	0	0	83	85	0	0	0	228	1	69
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.21	0.17	0.00	0.00	0.00	0.75	0.00	0.11
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	18.83	17.33	0.00	0.00	0.00	46.22	46.35	11.25
Movement LOS	A	A			C	C				E	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	1.75	1.75	0.00	0.00	0.00	5.75	5.75	0.36
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	43.80	43.80	0.00	0.00	0.00	143.87	143.87	8.94
d_A, Approach Delay [s/veh]	0.00			18.07			0.00			38.12		
Approach LOS	A			C			A			E		
d_I, Intersection Delay [s/veh]	12.89											
Intersection LOS	E											

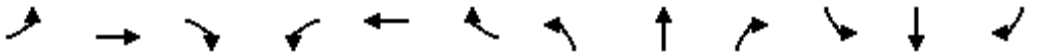
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↑	↱		↰	
Traffic Vol, veh/h	31	8	715	0	0	0	0	581	139	10	315	0
Future Vol, veh/h	31	8	715	0	0	0	0	581	139	10	315	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	34	9	786	0	0	0	0	638	153	11	346	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1006	1006	-	-	0	0	638	0	0
Stage 1	368	368	-	-	-	-	-	-	-
Stage 2	638	638	-	-	-	-	-	-	-
Critical Hdwy	6.46	6.56	-	-	-	-	4.16	-	-
Critical Hdwy Stg 1	5.46	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.46	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	-	-	-	-	2.254	-	-
Pot Cap-1 Maneuver	263	237	0	0	-	-	927	-	0
Stage 1	691	614	0	0	-	-	-	-	0
Stage 2	519	465	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	259	0	-	-	-	-	927	-	-
Mov Cap-2 Maneuver	259	0	-	-	-	-	-	-	-
Stage 1	691	0	-	-	-	-	-	-	-
Stage 2	511	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.6	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	259	-	927	-
HCM Lane V/C Ratio	-	-	0.165	-	0.012	-
HCM Control Delay (s)	-	-	21.6	0	8.9	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.6	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	54	66	903	94	115	84	551	503	108	845	37
Future Volume (veh/h)	57	54	66	903	94	115	84	551	503	108	845	37
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	60	57	69	951	99	121	88	580	529	114	889	39
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	127	113	1088	628	533	216	1332	593	209	1089	48
Arrive On Green	0.05	0.07	0.07	0.32	0.34	0.34	0.12	0.38	0.38	0.06	0.32	0.32
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	1767	3526	1570	3428	3440	151
Grp Volume(v), veh/h	60	57	69	951	99	121	88	580	529	114	456	472
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1767	1763	1570	1714	1763	1828
Q Serve(g_s), s	3.1	2.9	4.0	24.4	3.5	5.1	4.3	11.4	29.5	3.0	22.2	22.2
Cycle Q Clear(g_c), s	3.1	2.9	4.0	24.4	3.5	5.1	4.3	11.4	29.5	3.0	22.2	22.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	90	127	113	1088	628	533	216	1332	593	209	558	579
V/C Ratio(X)	0.67	0.45	0.61	0.87	0.16	0.23	0.41	0.44	0.89	0.54	0.82	0.82
Avail Cap(c_a), veh/h	190	776	692	1399	1374	1165	216	1476	657	221	719	746
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	41.4	41.9	30.0	21.5	22.1	37.8	21.6	27.2	42.5	29.3	29.3
Incr Delay (d2), s/veh	8.3	2.5	5.2	5.2	0.1	0.2	1.2	0.2	13.6	2.5	5.7	5.5
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(50%),veh/ln	1.6	1.3	1.7	10.5	1.5	1.9	1.9	4.6	12.8	1.3	10.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	43.9	47.1	35.3	21.6	22.3	39.0	21.8	40.8	44.9	35.0	34.8
LnGrp LOS	D	D	D	D	C	C	D	C	D	D	D	C
Approach Vol, veh/h		186			1171			1197			1042	
Approach Delay, s/veh		47.6			32.8			31.5			36.0	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	39.2	33.6	10.7	15.4	33.5	8.7	35.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	39.0	38.0	41.0	7.0	38.0	10.0	69.0
Max Q Clear Time (g_c+I1), s	5.0	31.5	26.4	6.0	6.3	24.2	5.1	7.1
Green Ext Time (p_c), s	0.0	3.6	3.1	0.7	0.0	5.1	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	39	294	179	34	73	255	1142	48	123	1595	85
Future Volume (veh/h)	50	39	294	179	34	73	255	1142	48	123	1595	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	40	303	185	35	75	263	1177	49	127	1644	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	134	367	211	78	168	286	2043	85	155	1763	94
Arrive On Green	0.04	0.07	0.07	0.12	0.15	0.15	0.16	0.59	0.59	0.09	0.51	0.51
Sat Flow, veh/h	1781	1870	1565	1781	528	1131	1781	3477	145	1781	3432	183
Grp Volume(v), veh/h	52	40	303	185	0	110	263	601	625	127	847	885
Grp Sat Flow(s),veh/h/ln	1781	1870	1565	1781	0	1659	1781	1777	1844	1781	1777	1837
Q Serve(g_s), s	3.4	2.4	4.3	12.1	0.0	7.2	17.2	24.9	25.0	8.3	52.3	53.4
Cycle Q Clear(g_c), s	3.4	2.4	4.3	12.1	0.0	7.2	17.2	24.9	25.0	8.3	52.3	53.4
Prop In Lane	1.00		1.00	1.00		0.68	1.00		0.08	1.00		0.10
Lane Grp Cap(c), veh/h	74	134	367	211	0	246	286	1044	1084	155	913	944
V/C Ratio(X)	0.70	0.30	0.83	0.88	0.00	0.45	0.92	0.58	0.58	0.82	0.93	0.94
Avail Cap(c_a), veh/h	136	301	506	211	0	337	286	1044	1084	256	932	964
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	52.1	23.6	51.3	0.0	45.9	48.9	15.2	15.2	53.1	26.7	27.0
Incr Delay (d2), s/veh	11.4	1.2	7.8	31.4	0.0	1.3	32.7	0.8	0.8	10.2	14.8	15.9
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	1.8	1.2	6.5	7.2	0.0	3.0	10.2	9.9	10.3	4.1	24.9	26.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	53.3	31.5	82.6	0.0	47.2	81.6	16.0	16.0	63.2	41.5	42.9
LnGrp LOS	E	D	C	F	A	D	F	B	B	E	D	D
Approach Vol, veh/h		395			295			1489			1859	
Approach Delay, s/veh		38.4			69.4			27.6			43.7	
Approach LOS		D			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	73.5	18.0	12.5	23.0	64.8	8.9	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	64.0	14.0	19.0	19.0	62.0	9.0	24.0
Max Q Clear Time (g_c+I1), s	10.3	27.0	14.1	6.3	19.2	55.4	5.4	9.2
Green Ext Time (p_c), s	0.2	10.9	0.0	1.0	0.0	5.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	392	146	214	33	150	655	40	431	64	859	459	728
Future Volume (veh/h)	392	146	214	33	150	655	40	431	64	859	459	728
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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	408	152	0	34	156	0	42	449	0	895	478	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	706		63	297		73	642		1054	832	
Arrive On Green	0.15	0.20	0.00	0.04	0.08	0.00	0.04	0.18	0.00	0.31	0.44	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	408	152	0	34	156	0	42	449	0	895	478	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1585	1728	1870	1585
Q Serve(g_s), s	7.3	2.3	0.0	1.2	2.7	0.0	1.5	7.6	0.0	15.6	12.2	0.0
Cycle Q Clear(g_c), s	7.3	2.3	0.0	1.2	2.7	0.0	1.5	7.6	0.0	15.6	12.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	520	706		63	297		73	642		1054	832	
V/C Ratio(X)	0.78	0.22		0.54	0.53		0.57	0.70		0.85	0.57	
Avail Cap(c_a), veh/h	619	1295		169	996		178	1051		1265	1051	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.3	21.5	0.0	30.5	28.2	0.0	30.2	24.7	0.0	20.9	13.3	0.0
Incr Delay (d2), s/veh	5.6	0.2	0.0	7.0	1.4	0.0	6.9	1.4	0.0	4.9	0.6	0.0
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(50%),veh/ln	3.2	0.9	0.0	0.6	1.2	0.0	0.8	3.1	0.0	6.5	4.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	21.7	0.0	37.4	29.6	0.0	37.2	26.1	0.0	25.8	13.9	0.0
LnGrp LOS	C	C		D	C		D	C		C	B	
Approach Vol, veh/h		560	A		190	A		491	A		1373	A
Approach Delay, s/veh		29.1			31.0			27.0			21.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	16.1	6.8	17.2	7.1	33.1	14.2	9.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.5	19.0	6.1	23.4	6.4	36.1	11.5	18.0
Max Q Clear Time (g_c+I1), s	17.6	9.6	3.2	4.3	3.5	14.2	9.3	4.7
Green Ext Time (p_c), s	2.0	2.0	0.0	0.8	0.0	3.1	0.4	0.7

Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	264	1	4	585	37	26	14	5	14	7	269
Future Volume (veh/h)	152	264	1	4	585	37	26	14	5	14	7	269
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	188	326	1	5	722	46	32	17	6	17	9	332
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	290	1310	4	11	1006	449	57	30	77	469	11	408
Arrive On Green	0.09	0.37	0.37	0.01	0.29	0.29	0.05	0.05	0.05	0.27	0.27	0.27
Sat Flow, veh/h	3346	3519	11	1725	3441	1535	1145	608	1535	1725	41	1500
Grp Volume(v), veh/h	188	159	168	5	722	46	49	0	6	17	0	341
Grp Sat Flow(s),veh/h/ln	1673	1721	1809	1725	1721	1535	1754	0	1535	1725	0	1541
Q Serve(g_s), s	3.3	3.9	3.9	0.2	11.3	1.3	1.6	0.0	0.2	0.4	0.0	12.4
Cycle Q Clear(g_c), s	3.3	3.9	3.9	0.2	11.3	1.3	1.6	0.0	0.2	0.4	0.0	12.4
Prop In Lane	1.00		0.01	1.00		1.00	0.65		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	290	640	673	11	1006	449	88	0	77	469	0	419
V/C Ratio(X)	0.65	0.25	0.25	0.44	0.72	0.10	0.56	0.00	0.08	0.04	0.00	0.81
Avail Cap(c_a), veh/h	473	886	932	143	1572	701	903	0	791	860	0	768
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	13.1	13.1	29.8	19.1	15.5	27.9	0.0	27.3	16.1	0.0	20.5
Incr Delay (d2), s/veh	2.4	0.2	0.2	23.8	1.0	0.1	5.5	0.0	0.4	0.0	0.0	3.9
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	1.3	1.3	1.4	0.1	4.1	0.4	0.8	0.0	0.1	0.2	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	13.3	13.3	53.6	20.1	15.6	33.4	0.0	27.7	16.1	0.0	24.3
LnGrp LOS	C	B	B	D	C	B	C	A	C	B	A	C
Approach Vol, veh/h		515			773			55			358	
Approach Delay, s/veh		19.0			20.0			32.8			23.9	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	7.5	4.9	26.9	20.9	9.7	22.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.0	5.0	31.0	30.0	8.5	27.5
Max Q Clear Time (g_c+I1), s	3.6	2.2	5.9	14.4	5.3	13.3
Green Ext Time (p_c), s	0.2	0.0	1.8	2.0	0.2	4.3

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	106

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	54	6	0	637	0	0	0	0	0
Future Vol, veh/h	0	0	0	54	6	0	637	0	0	0	0	0
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	-	-	Yield	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	22	22	22	22	22	22	22	22	22	22	22	22
Mvmt Flow	0	0	0	77	9	0	910	0	0	0	0	0

Major/Minor	Minor1			Major1			Major2			
Conflicting Flow All	1821	1821	0	1	0	-	-	-	0
Stage 1	1820	1820	-	-	-	-	-	-	-
Stage 2	1	1	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.72	6.42	4.32	-	-	-	-	-
Critical Hdwy Stg 1	5.62	5.72	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.72	-	-	-	-	-	-	-
Follow-up Hdwy	3.698	4.198	3.498	2.398	-	-	-	-	-
Pot Cap-1 Maneuver	~ 76	69	-	1500	-	0	0	-	0
Stage 1	126	115	-	-	-	0	0	-	0
Stage 2	972	857	-	-	-	0	0	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	~ 30	0	-	1500	-	-	-	-	-
Mov Cap-2 Maneuver	~ 30	0	-	-	-	-	-	-	-
Stage 1	~ 50	0	-	-	-	-	-	-	-
Stage 2	972	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 1116.3	11	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	1500	-	30	-	-
HCM Lane V/C Ratio	0.607	-	2.857	-	-
HCM Control Delay (s)	11	-	$ 1116.3	0	-
HCM Lane LOS	B	A	F	A	-
HCM 95th %tile Q(veh)	4.4	-	10.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	328	0	0	0	0	636	94	1	53	0
Future Vol, veh/h	1	1	328	0	0	0	0	636	94	1	53	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	21	21	21	21	21	21	21	21	21	21	21	21
Mvmt Flow	1	1	469	0	0	0	0	909	134	1	76	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	987	987	-	-	0	-	909	0	0
Stage 1	78	78	-	-	-	-	-	-	-
Stage 2	909	909	-	-	-	-	-	-	-
Critical Hdwy	6.61	6.71	-	-	-	-	4.31	-	-
Critical Hdwy Stg 1	5.61	5.71	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	5.71	-	-	-	-	-	-	-
Follow-up Hdwy	3.689	4.189	-	-	-	-	2.389	-	-
Pot Cap-1 Maneuver	253	230	0	0	-	0	676	-	0
Stage 1	899	794	0	0	-	0	-	-	0
Stage 2	364	329	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	253	0	-	-	-	-	676	-	-
Mov Cap-2 Maneuver	253	0	-	-	-	-	-	-	-
Stage 1	899	0	-	-	-	-	-	-	-
Stage 2	364	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	253	-	676	-
HCM Lane V/C Ratio	-	0.011	-	0.002	-
HCM Control Delay (s)	-	19.4	0	10.3	-
HCM Lane LOS	-	C	A	B	-
HCM 95th %tile Q(veh)	-	0	-	0	-

Intersection	
Int Delay, s/veh	142.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	222	1	43	5	2	4	48	504	1	1	208	172
Future Vol, veh/h	222	1	43	5	2	4	48	504	1	1	208	172
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	170	-	170	325	-	-	250	-	250	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	29	29	29	29	29	29	29	29	29	29	29	29
Mvmt Flow	352	2	68	8	3	6	76	800	2	2	330	273

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1025	1425	302	1122	1559	400	603	0	0	802	0	0
Stage 1	471	471	-	952	952	-	-	-	-	-	-	-
Stage 2	554	954	-	170	607	-	-	-	-	-	-	-
Critical Hdwy	8.08	7.08	7.48	8.08	7.08	7.48	4.68	-	-	4.68	-	-
Critical Hdwy Stg 1	7.08	6.08	-	7.08	6.08	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.08	6.08	-	7.08	6.08	-	-	-	-	-	-	-
Follow-up Hdwy	3.79	4.29	3.59	3.79	4.29	3.59	2.49	-	-	2.49	-	-
Pot Cap-1 Maneuver	~ 156	106	620	130	86	530	807	-	-	664	-	-
Stage 1	477	495	-	231	281	-	-	-	-	-	-	-
Stage 2	422	280	-	743	423	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 138	96	620	106	78	530	807	-	-	664	-	-
Mov Cap-2 Maneuver	~ 138	96	-	106	78	-	-	-	-	-	-	-
Stage 1	432	494	-	209	255	-	-	-	-	-	-	-
Stage 2	373	254	-	657	422	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 645.2	32.9	0.9	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	138	96	620	106	78	530	664	-	-
HCM Lane V/C Ratio	0.094	-	-	2.553	0.017	0.11	0.075	0.041	0.012	0.002	-	-
HCM Control Delay (s)	9.9	-	-	$ 770.7	43.1	11.5	41.7	53.1	11.9	10.4	-	-
HCM Lane LOS	A	-	-	F	E	B	E	F	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	31.1	0.1	0.4	0.2	0.1	0	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	7	90	0	129	3	381	34	58	197	2
Future Vol, veh/h	7	0	7	90	0	129	3	381	34	58	197	2
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	-	-	225	-	250	200	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	45	45	45	45	45	45	45	45	45	45	45	45
Mvmt Flow	8	0	8	102	0	147	3	433	39	66	224	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	579	834	112	683	797	217	226	0	0	472	0	0
Stage 1	356	356	-	439	439	-	-	-	-	-	-	-
Stage 2	223	478	-	244	358	-	-	-	-	-	-	-
Critical Hdwy	8.4	7.4	7.8	8.4	7.4	7.8	5	-	-	5	-	-
Critical Hdwy Stg 1	7.4	6.4	-	7.4	6.4	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.4	6.4	-	7.4	6.4	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.95	4.45	3.75	2.65	-	-	2.65	-	-
Pot Cap-1 Maneuver	319	233	798	263	247	670	1077	-	-	835	-	-
Stage 1	530	531	-	466	480	-	-	-	-	-	-	-
Stage 2	650	458	-	629	530	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	234	214	798	244	227	670	1077	-	-	835	-	-
Mov Cap-2 Maneuver	234	214	-	244	227	-	-	-	-	-	-	-
Stage 1	528	489	-	465	479	-	-	-	-	-	-	-
Stage 2	506	457	-	574	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	19.3	0.1	2.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1077	-	-	362	244	-	670	835	-	-
HCM Lane V/C Ratio	0.003	-	-	0.044	0.419	-	0.219	0.079	-	-
HCM Control Delay (s)	8.4	-	-	15.4	30	0	11.9	9.7	-	-
HCM Lane LOS	A	-	-	C	D	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.9	-	0.8	0.3	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	14	20	0	179	6	211	8	70	228	3
Future Vol, veh/h	20	0	14	20	0	179	6	211	8	70	228	3
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	-	-	-	-	-	-	50	-	-	100	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	92	85	92	92	92	85	85	92	92	85	85
Heavy Vehicles, %	30	2	30	2	2	2	30	30	2	2	30	30
Mvmt Flow	24	0	16	22	0	195	7	248	9	76	268	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	558	691	134	553	691	129	272	0	0	257	0	0
Stage 1	420	420	-	267	267	-	-	-	-	-	-	-
Stage 2	138	271	-	286	424	-	-	-	-	-	-	-
Critical Hdwy	8.1	6.54	7.5	7.54	6.54	6.94	4.7	-	-	4.14	-	-
Critical Hdwy Stg 1	7.1	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4.02	3.6	3.52	4.02	3.32	2.5	-	-	2.22	-	-
Pot Cap-1 Maneuver	357	366	808	416	366	897	1108	-	-	1305	-	-
Stage 1	512	588	-	715	687	-	-	-	-	-	-	-
Stage 2	775	684	-	697	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	266	343	808	388	343	897	1108	-	-	1305	-	-
Mov Cap-2 Maneuver	266	343	-	388	343	-	-	-	-	-	-	-
Stage 1	509	554	-	711	683	-	-	-	-	-	-	-
Stage 2	603	680	-	643	551	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	11.2	0.2	1.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	368	793	1305	-	-
HCM Lane V/C Ratio	0.006	-	-	0.109	0.273	0.058	-	-
HCM Control Delay (s)	8.3	-	-	16	11.2	7.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	63.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	25	55	1	52	31	92	97	1	19	53	291
Future Vol, veh/h	103	25	55	1	52	31	92	97	1	19	53	291
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Heavy Vehicles, %	26	26	26	26	26	26	26	26	26	26	26	26
Mvmt Flow	198	48	106	2	100	60	177	187	2	37	102	560
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	19.5	14.6	22.2	118.2
HCM LOS	C	B	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	65%	0%	89%	0%	4%	0%	42%	0%
Vol Thru, %	35%	98%	11%	19%	96%	46%	58%	8%
Vol Right, %	0%	2%	0%	81%	0%	54%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	50	116	68	27	57	46	318
LT Vol	92	0	103	0	1	0	19	0
Through Vol	49	49	13	13	26	26	27	27
RT Vol	0	1	0	55	0	31	0	291
Lane Flow Rate	270	95	222	130	52	110	88	611
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.628	0.212	0.542	0.28	0.129	0.26	0.194	1.204
Departure Headway (Hd)	8.823	8.47	9.35	8.295	9.552	9.135	7.969	7.097
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	413	426	389	436	377	396	448	507
Service Time	6.523	6.17	7.05	5.995	7.252	6.835	5.765	4.892
HCM Lane V/C Ratio	0.654	0.223	0.571	0.298	0.138	0.278	0.196	1.205
HCM Control Delay	25.3	13.4	22.6	14.2	13.7	15	12.7	133.3
HCM Lane LOS	D	B	C	B	B	B	B	F
HCM 95th-tile Q	4.2	0.8	3.1	1.1	0.4	1	0.7	22.7

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	0	0	0	135	0	26	0	75	15	6
Future Vol, veh/h	6	0	0	0	0	135	0	26	0	75	15	6
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	-	-	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	0	0	0	147	0	28	0	82	16	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	194	208	8	200	215	14	23	0	0	28	0	0
Stage 1	180	180	-	28	28	-	-	-	-	-	-	-
Stage 2	14	28	-	172	187	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	748	688	1072	741	682	1062	1591	-	-	1584	-	-
Stage 1	804	749	-	985	871	-	-	-	-	-	-	-
Stage 2	1004	871	-	813	744	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	619	652	1072	711	647	1062	1591	-	-	1584	-	-
Mov Cap-2 Maneuver	619	652	-	711	647	-	-	-	-	-	-	-
Stage 1	804	710	-	985	871	-	-	-	-	-	-	-
Stage 2	865	871	-	771	705	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	8.9	0	5.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	619	1062	1584	-	-
HCM Lane V/C Ratio	-	-	-	0.011	0.138	0.051	-	-
HCM Control Delay (s)	0	-	-	10.9	8.9	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0.2	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	470	145	109	613	302	109
Future Volume (veh/h)	470	145	109	613	302	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	534	165	124	697	343	124
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8
Cap, veh/h	927	414	164	1662	455	405
Arrive On Green	0.27	0.27	0.10	0.49	0.27	0.27
Sat Flow, veh/h	3474	1510	1697	3474	1697	1510
Grp Volume(v), veh/h	534	165	124	697	343	124
Grp Sat Flow(s),veh/h/ln	1692	1510	1697	1692	1697	1510
Q Serve(g_s), s	5.1	3.3	2.7	4.9	6.9	2.4
Cycle Q Clear(g_c), s	5.1	3.3	2.7	4.9	6.9	2.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	927	414	164	1662	455	405
V/C Ratio(X)	0.58	0.40	0.75	0.42	0.75	0.31
Avail Cap(c_a), veh/h	1629	727	386	2806	907	807
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	11.7	11.1	16.5	6.1	12.6	10.9
Incr Delay (d2), s/veh	0.6	0.6	6.9	0.2	2.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.9	1.2	1.1	2.3	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	11.7	23.3	6.3	15.1	11.3
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	699			821	467	
Approach Delay, s/veh	12.1			8.8	14.1	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.5	8.1	14.7		22.9
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		20.0	8.5	18.0		31.0
Max Q Clear Time (g_c+I1), s		8.9	4.7	7.1		6.9
Green Ext Time (p_c), s		1.2	0.1	3.2		5.1

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBT] is excluded from calculations of the approach delay and intersection delay.

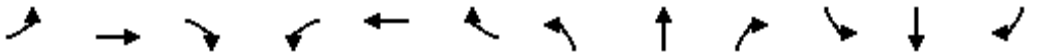
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	38	25	1	103	1	67	1	1	1	1	1
Future Vol, veh/h	1	38	25	1	103	1	67	1	1	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	41	27	1	112	1	73	1	1	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	68	0	0	116	172	34	138	185	57
Stage 1	-	-	-	-	-	-	57	57	-	115	115	-
Stage 2	-	-	-	-	-	-	59	115	-	23	70	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1474	-	-	1531	-	-	848	720	1032	819	708	997
Stage 1	-	-	-	-	-	-	948	847	-	877	799	-
Stage 2	-	-	-	-	-	-	946	799	-	992	836	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1531	-	-	845	719	1032	817	707	997
Mov Cap-2 Maneuver	-	-	-	-	-	-	845	719	-	817	707	-
Stage 1	-	-	-	-	-	-	947	846	-	876	798	-
Stage 2	-	-	-	-	-	-	943	798	-	989	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	9.7	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	845	848	1474	-	-	1531	-	-	817	827
HCM Lane V/C Ratio	0.086	0.003	0.001	-	-	0.001	-	-	0.001	0.003
HCM Control Delay (s)	9.7	9.3	7.4	-	-	7.4	-	-	9.4	9.4
HCM Lane LOS	A	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0	-	-	0	0



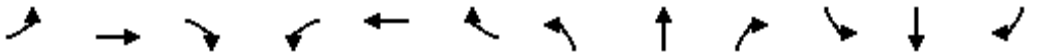
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	112	1	0	271	0	0	0	0	0
Future Volume (veh/h)	0	0	0	112	1	0	271	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1115	1115	1115	1115	1115	0	0	1115	1115
Adj Flow Rate, veh/h				135	1	0	327	0	0	0	0	0
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				53	53	53	53	53	0	0	53	53
Cap, veh/h				147	1		711	0	0	0	547	
Arrive On Green				0.14	0.14	0.00	0.49	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1054	8	945	845	0	0	0	1115	945
Grp Volume(v), veh/h				136	0	0	327	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1062	0	945	845	0	0	0	1115	945
Q Serve(g_s), s				3.1	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				3.1	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				148	0		711	0	0	0	547	
V/C Ratio(X)				0.92	0.00		0.46	0.00	0.00	0.00	0.00	
Avail Cap(c_a), veh/h				791	0		1440	0	0	0	1509	
HCM Platoon Ratio				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	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				10.3	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				19.7	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.0	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				C	A		A	A	A	A	A	
Approach Vol, veh/h					136	A		327			0	A
Approach Delay, s/veh					30.0			5.6			0.0	
Approach LOS					C			A				

Timer - Assigned Phs	2			6		8						
Phs Duration (G+Y+Rc), s	16.4			16.4		7.9						
Change Period (Y+Rc), s	4.5			4.5		4.5						
Max Green Setting (Gmax), s	32.9			32.9		18.1						
Max Q Clear Time (g_c+I1), s	9.8			0.0		5.1						
Green Ext Time (p_c), s	2.1			0.0		0.6						

Intersection Summary		
HCM 6th Ctrl Delay	12.8	
HCM 6th LOS	B	

Notes

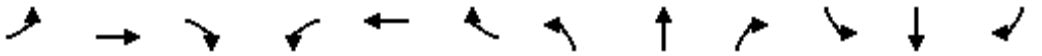
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	8	25	2	8	1	34	210	1	32	590	165
Future Volume (veh/h)	103	8	25	2	8	1	34	210	1	32	590	165
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	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	175	14	42	3	14	2	58	356	2	54	1000	280
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	202	280	237	6	73	62	67	1449	646	62	1112	310
Arrive On Green	0.15	0.19	0.19	0.00	0.05	0.05	0.05	0.53	0.53	0.05	0.53	0.53
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	1372	2737	1221	1372	2114	589
Grp Volume(v), veh/h	175	14	42	3	14	2	58	356	2	54	646	634
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1372	1369	1221	1372	1369	1335
Q Serve(g_s), s	9.9	0.6	2.3	0.2	0.7	0.1	3.3	5.6	0.1	3.1	33.6	34.1
Cycle Q Clear(g_c), s	9.9	0.6	2.3	0.2	0.7	0.1	3.3	5.6	0.1	3.1	33.6	34.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	202	280	237	6	73	62	67	1449	646	62	720	702
V/C Ratio(X)	0.86	0.05	0.18	0.54	0.19	0.03	0.87	0.25	0.00	0.87	0.90	0.90
Avail Cap(c_a), veh/h	233	481	408	86	327	277	92	1449	646	187	780	760
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	26.0	26.7	39.4	36.1	35.8	37.5	10.1	8.8	37.7	16.9	17.0
Incr Delay (d2), s/veh	24.5	0.1	0.4	63.6	1.2	0.2	44.2	0.1	0.0	28.7	12.5	13.5
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(50%),veh/ln	4.5	0.2	0.7	0.2	0.3	0.0	1.9	1.5	0.0	1.5	11.8	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	26.1	27.0	103.1	37.3	36.0	81.7	10.2	8.8	66.4	29.4	30.5
LnGrp LOS	E	C	C	F	D	D	F	B	A	E	C	C
Approach Vol, veh/h		231			19			416			1334	
Approach Delay, s/veh		50.1			47.6			20.2			31.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	46.5	4.8	19.9	8.3	46.2	16.2	8.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.8	39.7	5.0	26.5	5.3	45.2	13.5	18.0
Max Q Clear Time (g_c+I1), s	5.1	7.6	2.2	4.3	5.3	36.1	11.9	2.7
Green Ext Time (p_c), s	0.0	2.5	0.0	0.1	0.0	5.7	0.1	0.0

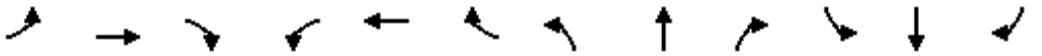
Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	2	35	0	51	8	191	112	180	430	5
Future Volume (veh/h)	2	0	2	35	0	51	8	191	112	180	430	5
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	1426	1426	1426	1426	1426	1426	1426	1426	1426	1426	1426	1426
Adj Flow Rate, veh/h	3	0	3	59	0	86	14	324	190	305	729	8
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Percent Heavy Veh, %	32	32	32	32	32	32	32	32	32	32	32	32
Cap, veh/h	185	27	63	316	154	130	25	683	305	364	1360	607
Arrive On Green	0.11	0.00	0.11	0.11	0.00	0.11	0.02	0.25	0.25	0.27	0.50	0.50
Sat Flow, veh/h	339	248	588	1078	1426	1208	1358	2709	1208	1358	2709	1208
Grp Volume(v), veh/h	6	0	0	59	0	86	14	324	190	305	729	8
Grp Sat Flow(s),veh/h/ln	1175	0	0	1078	1426	1208	1358	1354	1208	1358	1354	1208
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	2.5	0.4	3.7	5.1	7.7	6.7	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.8	0.0	2.5	0.4	3.7	5.1	7.7	6.7	0.1
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	0	0	316	154	130	25	683	305	364	1360	607
V/C Ratio(X)	0.02	0.00	0.00	0.19	0.00	0.66	0.57	0.47	0.62	0.84	0.54	0.01
Avail Cap(c_a), veh/h	701	0	0	734	707	600	187	1344	600	580	2128	949
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	0.0	0.0	15.2	0.0	15.5	17.7	11.5	12.0	12.5	6.2	4.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	5.6	19.0	0.5	2.1	6.1	0.3	0.0
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(50%),veh/ln	0.0	0.0	0.0	0.4	0.0	0.7	0.2	0.9	1.2	2.3	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	0.0	0.0	15.5	0.0	21.2	36.6	12.0	14.1	18.6	6.5	4.5
LnGrp LOS	B	A	A	B	A	C	D	B	B	B	A	A
Approach Vol, veh/h		6			145			528			1042	
Approach Delay, s/veh		14.5			18.9			13.4			10.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	13.7		8.4	5.2	22.7		8.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	15.5	18.0		18.0	5.0	28.5		18.0				
Max Q Clear Time (g_c+I1), s	9.7	7.1		2.1	2.4	8.7		4.5				
Green Ext Time (p_c), s	0.5	2.1		0.0	0.0	5.0		0.4				

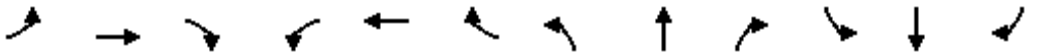
Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	64	115	2	52	18	41	38	1	20	110	104
Future Volume (veh/h)	292	64	115	2	52	18	41	38	1	20	110	104
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	1707	1707	1707	1707	1707	1707	1707	1707	1707	1707	1707	1707
Adj Flow Rate, veh/h	406	89	160	3	72	25	57	53	1	28	153	144
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	13	13	13	13	13	13	13	13	13	13	13	13
Cap, veh/h	482	1306	583	7	358	160	92	514	10	53	434	623
Arrive On Green	0.30	0.40	0.40	0.00	0.11	0.11	0.06	0.16	0.16	0.03	0.13	0.13
Sat Flow, veh/h	1626	3244	1447	1626	3244	1447	1626	3257	61	1626	3244	1447
Grp Volume(v), veh/h	406	89	160	3	72	25	57	26	28	28	153	144
Grp Sat Flow(s),veh/h/ln	1626	1622	1447	1626	1622	1447	1626	1622	1696	1626	1622	1447
Q Serve(g_s), s	10.5	0.8	3.3	0.1	0.9	0.7	1.5	0.6	0.6	0.8	1.9	2.8
Cycle Q Clear(g_c), s	10.5	0.8	3.3	0.1	0.9	0.7	1.5	0.6	0.6	0.8	1.9	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	482	1306	583	7	358	160	92	256	268	53	434	623
V/C Ratio(X)	0.84	0.07	0.27	0.45	0.20	0.16	0.62	0.10	0.10	0.52	0.35	0.23
Avail Cap(c_a), veh/h	746	2431	1084	182	1306	582	182	671	702	182	1342	1028
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	8.2	9.0	22.2	18.1	18.0	20.6	16.1	16.1	21.3	17.6	8.1
Incr Delay (d2), s/veh	5.3	0.0	0.3	41.2	0.3	0.5	6.6	0.2	0.2	7.7	0.5	0.2
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(50%),veh/ln	3.9	0.2	0.8	0.1	0.3	0.2	0.7	0.2	0.2	0.4	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	8.2	9.2	63.4	18.4	18.5	27.2	16.3	16.3	29.0	18.1	8.2
LnGrp LOS	C	A	A	E	B	B	C	B	B	C	B	A
Approach Vol, veh/h		655			100			111			325	
Approach Delay, s/veh		15.8			19.7			21.9			14.7	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	11.6	4.7	22.5	7.0	10.5	17.8	9.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	33.5	5.0	18.5	20.5	18.0
Max Q Clear Time (g_c+I1), s	2.8	2.6	2.1	5.3	3.5	4.8	12.5	2.9
Green Ext Time (p_c), s	0.0	0.1	0.0	1.1	0.0	1.2	0.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B



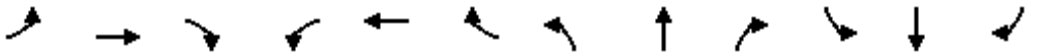
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	54	6	0	637	0	0	0	0	0
Future Volume (veh/h)	0	0	0	54	6	0	637	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1574	1574	1574	1574	1574	0	0	1574	1574
Adj Flow Rate, veh/h				77	9	0	910	0	0	0	0	0
Peak Hour Factor				0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %				22	22	22	22	22	0	0	22	22
Cap, veh/h				97	11		1057	0	0	0	1262	
Arrive On Green				0.07	0.07	0.00	0.80	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1349	158	1334	1193	0	0	0	1574	1334
Grp Volume(v), veh/h				86	0	0	910	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1507	0	1334	1193	0	0	0	1574	1334
Q Serve(g_s), s				4.0	0.0	0.0	45.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				4.0	0.0	0.0	45.4	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.90		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				108	0		1057	0	0	0	1262	
V/C Ratio(X)				0.79	0.00		0.86	0.00	0.00	0.00	0.00	
Avail Cap(c_a), veh/h				381	0		1660	0	0	0	2056	
HCM Platoon Ratio				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	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				32.5	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				12.2	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				44.7	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				D	A		A	A	A	A	A	
Approach Vol, veh/h					86	A		910			0	A
Approach Delay, s/veh					44.7			8.8			0.0	
Approach LOS					D			A				

Timer - Assigned Phs	2			6		8						
Phs Duration (G+Y+Rc), s	61.6			61.6		9.6						
Change Period (Y+Rc), s	4.5			4.5		4.5						
Max Green Setting (Gmax), s	93.0			93.0		18.0						
Max Q Clear Time (g_c+I1), s	47.4			0.0		6.0						
Green Ext Time (p_c), s	9.6			0.0		0.3						

Intersection Summary		
HCM 6th Ctrl Delay	11.9	
HCM 6th LOS	B	

Notes

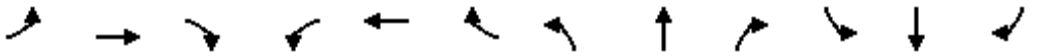
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	1	43	5	2	4	48	504	1	1	208	172
Future Volume (veh/h)	222	1	43	5	2	4	48	504	1	1	208	172
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	1470	1470	1470	1470	1470	1470	1470	1470	1470	1470	1470	1470
Adj Flow Rate, veh/h	352	2	68	8	3	6	76	800	2	2	330	273
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Percent Heavy Veh, %	29	29	29	29	29	29	29	29	29	29	29	29
Cap, veh/h	396	494	419	15	93	79	88	984	439	4	428	347
Arrive On Green	0.28	0.34	0.34	0.01	0.06	0.06	0.06	0.35	0.35	0.00	0.29	0.29
Sat Flow, veh/h	1400	1470	1246	1400	1470	1246	1400	2793	1246	1400	1465	1188
Grp Volume(v), veh/h	352	2	68	8	3	6	76	800	2	2	314	289
Grp Sat Flow(s),veh/h/ln	1400	1470	1246	1400	1470	1246	1400	1397	1246	1400	1397	1256
Q Serve(g_s), s	14.5	0.1	2.3	0.3	0.1	0.3	3.2	15.7	0.1	0.1	12.4	12.7
Cycle Q Clear(g_c), s	14.5	0.1	2.3	0.3	0.1	0.3	3.2	15.7	0.1	0.1	12.4	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	396	494	419	15	93	79	88	984	439	4	408	367
V/C Ratio(X)	0.89	0.00	0.16	0.55	0.03	0.08	0.86	0.81	0.00	0.52	0.77	0.79
Avail Cap(c_a), veh/h	522	865	733	116	439	372	193	1227	547	116	537	483
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	13.3	14.1	29.7	26.5	26.6	28.0	17.7	12.7	30.1	19.5	19.6
Incr Delay (d2), s/veh	13.8	0.0	0.2	28.6	0.1	0.4	20.5	3.5	0.0	80.9	4.9	6.3
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(50%),veh/ln	5.7	0.0	0.6	0.2	0.0	0.1	1.5	4.8	0.0	0.1	4.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	13.3	14.2	58.3	26.6	27.0	48.5	21.2	12.7	111.0	24.5	25.9
LnGrp LOS	C	B	B	E	C	C	D	C	B	F	C	C
Approach Vol, veh/h		422			17			878			605	
Approach Delay, s/veh		31.2			41.6			23.6			25.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	25.8	5.1	24.8	8.3	22.1	21.6	8.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	26.5	5.0	35.5	8.3	23.2	22.5	18.0
Max Q Clear Time (g_c+I1), s	2.1	17.7	2.3	4.3	5.2	14.7	16.5	2.3
Green Ext Time (p_c), s	0.0	3.6	0.0	0.2	0.0	2.5	0.6	0.0

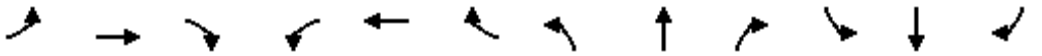
Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	7	90	0	129	3	381	34	58	197	2
Future Volume (veh/h)	7	0	7	90	0	129	3	381	34	58	197	2
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	1233	1233	1233	1233	1233	1233	1233	1233	1233	1233	1233	1233
Adj Flow Rate, veh/h	8	0	8	102	0	147	3	433	39	66	224	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	45	45	45	45	45	45	45	45	45	45	45	45
Cap, veh/h	226	30	96	399	242	205	585	1255	560	476	1255	560
Arrive On Green	0.20	0.00	0.20	0.20	0.00	0.20	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	334	154	488	928	1233	1045	761	2343	1045	608	2343	1045
Grp Volume(v), veh/h	16	0	0	102	0	147	3	433	39	66	224	2
Grp Sat Flow(s),veh/h/ln	976	0	0	928	1233	1045	761	1171	1045	608	1171	1045
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	4.4	0.1	3.5	0.6	2.3	1.6	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	3.2	0.0	4.4	1.7	3.5	0.6	5.9	1.6	0.0
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	0	0	399	242	205	585	1255	560	476	1255	560
V/C Ratio(X)	0.05	0.00	0.00	0.26	0.00	0.72	0.01	0.34	0.07	0.14	0.18	0.00
Avail Cap(c_a), veh/h	664	0	0	714	661	560	585	1255	560	476	1255	560
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	12.1	0.0	12.6	4.4	4.4	3.8	6.1	4.0	3.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	4.6	0.0	0.8	0.2	0.6	0.3	0.0
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(50%),veh/ln	0.1	0.0	0.0	0.5	0.0	1.0	0.0	0.5	0.1	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	0.0	0.0	12.4	0.0	17.3	4.5	5.2	4.0	6.7	4.3	3.6
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		16			249			475			292	
Approach Delay, s/veh		11.1			15.3			5.1			4.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		11.1		22.5		11.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		5.5		2.4		7.9		6.4				
Green Ext Time (p_c), s		2.4		0.0		1.4		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			7.6									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	25	55	1	52	31	92	97	1	19	53	291
Future Volume (veh/h)	103	25	55	1	52	31	92	97	1	19	53	291
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	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515
Adj Flow Rate, veh/h	198	48	106	2	100	60	177	187	2	37	102	560
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Percent Heavy Veh, %	26	26	26	26	26	26	26	26	26	26	26	26
Cap, veh/h	235	710	317	4	249	111	211	1220	13	55	893	608
Arrive On Green	0.16	0.25	0.25	0.00	0.09	0.09	0.15	0.42	0.42	0.04	0.31	0.31
Sat Flow, veh/h	1443	2878	1284	1443	2878	1284	1443	2917	31	1443	2878	1284
Grp Volume(v), veh/h	198	48	106	2	100	60	177	92	97	37	102	560
Grp Sat Flow(s),veh/h/ln	1443	1439	1284	1443	1439	1284	1443	1439	1509	1443	1439	1284
Q Serve(g_s), s	8.2	0.8	4.2	0.1	2.0	2.7	7.3	2.4	2.4	1.6	1.6	19.0
Cycle Q Clear(g_c), s	8.2	0.8	4.2	0.1	2.0	2.7	7.3	2.4	2.4	1.6	1.6	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	235	710	317	4	249	111	211	602	631	55	893	608
V/C Ratio(X)	0.84	0.07	0.33	0.51	0.40	0.54	0.84	0.15	0.15	0.67	0.11	0.92
Avail Cap(c_a), veh/h	318	1246	556	118	846	377	271	602	631	167	893	608
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	17.7	18.9	30.5	26.5	26.8	25.4	11.1	11.1	29.1	15.1	15.1
Incr Delay (d2), s/veh	14.0	0.0	0.6	75.8	1.0	4.0	16.6	0.1	0.1	13.3	0.1	19.7
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(50%),veh/ln	3.5	0.2	1.2	0.1	0.7	0.9	3.3	0.7	0.7	0.7	0.5	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	17.7	19.5	106.3	27.5	30.8	42.0	11.2	11.2	42.4	15.1	34.7
LnGrp LOS	D	B	B	F	C	C	D	B	B	D	B	C
Approach Vol, veh/h		352			162			366			699	
Approach Delay, s/veh		30.1			29.7			26.1			32.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	30.1	4.7	19.6	13.4	23.5	14.5	9.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.1	23.4	5.0	26.5	11.5	19.0	13.5	18.0
Max Q Clear Time (g_c+I1), s	3.6	4.4	2.1	6.2	9.3	21.0	10.2	4.7
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6	0.1	0.0	0.2	0.6

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Appendix E
Future Year LOS Calculations

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	773	113	0	0	81	109	0	0	0	28	1	38
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 [%]	13.00	13.00	2.00	2.00	13.00	13.00	2.00	2.00	2.00	13.00	13.00	13.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	773	113	0	0	81	109	0	0	0	28	1	38
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	203	30	0	0	21	29	0	0	0	7	0	10
Total Analysis Volume [veh/h]	814	119	0	0	85	115	0	0	0	29	1	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.31	0.34	0.00	0.00	0.00	0.16	0.01	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	37.54	35.32	0.00	0.00	0.00	27.96	27.38	12.40
Movement LOS	A	A			E	E				D	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	4.26	4.26	0.00	0.00	0.00	0.56	0.56	0.25
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	106.46	106.46	0.00	0.00	0.00	13.96	13.96	6.15
d_A, Approach Delay [s/veh]	0.00			36.26			0.00			19.06		
Approach LOS	A			E			A			C		
d_I, Intersection Delay [s/veh]	7.14											
Intersection LOS	E											

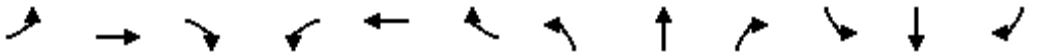
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	1	492	0	0	0	0	861	61	28	81	0
Future Vol, veh/h	25	1	492	0	0	0	0	861	61	28	81	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	26	1	513	0	0	0	0	897	64	29	84	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1039	1039	-	-	0	0	897	0	0
Stage 1	142	142	-	-	-	-	-	-	-
Stage 2	897	897	-	-	-	-	-	-	-
Critical Hdwy	6.49	6.59	-	-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.49	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.49	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.081	-	-	-	-	2.281	-	-
Pot Cap-1 Maneuver	248	224	0	0	-	-	728	-	0
Stage 1	868	766	0	0	-	-	-	-	0
Stage 2	387	349	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	238	0	-	-	-	-	728	-	-
Mov Cap-2 Maneuver	238	0	-	-	-	-	-	-	-
Stage 1	868	0	-	-	-	-	-	-	-
Stage 2	371	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.1	0	2.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	238	-	728	-
HCM Lane V/C Ratio	-	-	0.114	-	0.04	-
HCM Control Delay (s)	-	-	22.1	0	10.2	0
HCM Lane LOS	-	-	C	A	B	A
HCM 95th %tile Q(veh)	-	-	0.4	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	34	41	230	26	59	28	813	402	105	437	17
Future Volume (veh/h)	56	34	41	230	26	59	28	813	402	105	437	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	60	37	44	247	28	63	30	874	432	113	470	18
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	77	119	105	299	207	174	55	2265	1010	166	2286	87
Arrive On Green	0.04	0.07	0.07	0.09	0.11	0.11	0.03	0.66	0.66	0.05	0.68	0.68
Sat Flow, veh/h	1725	1721	1521	3346	1811	1527	1725	3441	1534	3346	3379	129
Grp Volume(v), veh/h	60	37	44	247	28	63	30	874	432	113	239	249
Grp Sat Flow(s),veh/h/ln	1725	1721	1521	1673	1811	1527	1725	1721	1534	1673	1721	1788
Q Serve(g_s), s	4.1	2.5	3.3	8.7	1.7	4.6	2.1	14.0	16.1	4.0	6.3	6.3
Cycle Q Clear(g_c), s	4.1	2.5	3.3	8.7	1.7	4.6	2.1	14.0	16.1	4.0	6.3	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	77	119	105	299	207	174	55	2265	1010	166	1164	1209
V/C Ratio(X)	0.78	0.31	0.42	0.83	0.14	0.36	0.55	0.39	0.43	0.68	0.21	0.21
Avail Cap(c_a), veh/h	158	588	520	307	619	522	158	2265	1010	307	1164	1209
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	0.99	0.99	0.99	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	53.1	53.5	53.7	47.8	49.1	57.3	9.4	9.7	56.1	7.3	7.3
Incr Delay (d2), s/veh	15.7	1.5	2.6	16.2	0.3	1.2	6.6	0.4	1.0	4.8	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	2.1	1.1	1.3	4.3	0.8	1.8	1.0	5.1	5.4	1.8	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	54.6	56.2	69.9	48.1	50.4	63.9	9.8	10.8	60.9	7.7	7.7
LnGrp LOS	E	D	E	E	D	D	E	A	B	E	A	A
Approach Vol, veh/h		141			338			1336			601	
Approach Delay, s/veh		62.7			64.5			11.3			17.7	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	83.0	14.7	12.3	7.8	85.2	9.3	17.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	41.0	11.0	41.0	11.0	41.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	6.0	18.1	10.7	5.3	4.1	8.3	6.1	6.6
Green Ext Time (p_c), s	0.1	8.6	0.0	0.4	0.0	3.2	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	18	193	120	14	55	201	1119	60	69	600	50
Future Volume (veh/h)	83	18	193	120	14	55	201	1119	60	69	600	50
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	88	19	205	128	15	59	214	1190	64	73	638	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	110	242	422	129	47	183	244	1369	74	423	1661	138
Arrive On Green	0.06	0.13	0.13	0.08	0.14	0.14	0.14	0.41	0.41	0.25	0.52	0.52
Sat Flow, veh/h	1725	1811	1535	1725	321	1263	1725	3320	178	1725	3216	267
Grp Volume(v), veh/h	88	19	205	128	0	74	214	616	638	73	341	350
Grp Sat Flow(s),veh/h/ln	1725	1811	1535	1725	0	1584	1725	1721	1778	1725	1721	1762
Q Serve(g_s), s	6.0	1.1	13.4	8.9	0.0	5.0	14.6	39.3	39.4	4.0	14.3	14.4
Cycle Q Clear(g_c), s	6.0	1.1	13.4	8.9	0.0	5.0	14.6	39.3	39.4	4.0	14.3	14.4
Prop In Lane	1.00		1.00	1.00		0.80	1.00		0.10	1.00		0.15
Lane Grp Cap(c), veh/h	110	242	422	129	0	230	244	709	733	423	889	910
V/C Ratio(X)	0.80	0.08	0.49	0.99	0.00	0.32	0.88	0.87	0.87	0.17	0.38	0.38
Avail Cap(c_a), veh/h	187	468	613	129	0	356	359	832	859	423	889	910
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	0.00	1.00	0.60	0.60	0.60	0.94	0.94	0.94
Uniform Delay (d), s/veh	55.4	45.5	36.4	55.5	0.0	46.0	50.5	32.3	32.3	35.7	17.5	17.5
Incr Delay (d2), s/veh	12.2	0.1	0.9	75.7	0.0	0.8	9.9	8.8	8.6	0.2	1.2	1.2
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(50%),veh/ln	3.0	0.5	5.1	6.6	0.0	2.0	7.0	17.8	18.4	1.7	5.9	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	45.6	37.2	131.2	0.0	46.8	60.4	41.0	40.9	35.9	18.7	18.7
LnGrp LOS	E	D	D	F	A	D	E	D	D	D	B	B
Approach Vol, veh/h		312			202			1468			764	
Approach Delay, s/veh		46.3			100.3			43.8			20.3	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	53.5	13.0	20.1	21.0	66.0	11.7	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	58.0	9.0	31.0	25.0	39.0	13.0	27.0
Max Q Clear Time (g_c+I1), s	10.0	41.4	10.9	15.4	16.6	16.4	8.0	7.0
Green Ext Time (p_c), s	0.0	8.0	0.0	0.7	0.4	4.5	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	246	211	30	215	578	73	474	82	243	169	519
Future Volume (veh/h)	339	246	211	30	215	578	73	474	82	243	169	519
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	357	259	0	32	226	0	77	499	0	256	178	0
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	521	844		63	434		117	771		408	504	
Arrive On Green	0.15	0.24	0.00	0.04	0.13	0.00	0.07	0.22	0.00	0.12	0.28	0.00
Sat Flow, veh/h	3374	3469	1547	1739	3469	1547	1739	3469	1547	3374	1826	1547
Grp Volume(v), veh/h	357	259	0	32	226	0	77	499	0	256	178	0
Grp Sat Flow(s),veh/h/ln	1687	1735	1547	1739	1735	1547	1739	1735	1547	1687	1826	1547
Q Serve(g_s), s	4.8	2.9	0.0	0.9	2.9	0.0	2.1	6.2	0.0	3.4	3.7	0.0
Cycle Q Clear(g_c), s	4.8	2.9	0.0	0.9	2.9	0.0	2.1	6.2	0.0	3.4	3.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	521	844		63	434		117	771		408	504	
V/C Ratio(X)	0.69	0.31		0.51	0.52		0.66	0.65		0.63	0.35	
Avail Cap(c_a), veh/h	884	1818		200	1309		259	1338		926	934	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.1	14.8	0.0	22.6	19.5	0.0	21.7	16.9	0.0	20.0	13.9	0.0
Incr Delay (d2), s/veh	1.6	0.2	0.0	6.2	1.0	0.0	6.2	0.9	0.0	1.6	0.4	0.0
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(50%),veh/ln	1.8	1.0	0.0	0.4	1.1	0.0	1.0	2.3	0.0	1.3	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	15.0	0.0	28.8	20.5	0.0	28.0	17.8	0.0	21.5	14.3	0.0
LnGrp LOS	C	B		C	C		C	B		C	B	
Approach Vol, veh/h		616	A		258	A		576	A		434	A
Approach Delay, s/veh		18.3			21.5			19.1			18.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	15.1	6.2	16.1	7.7	17.7	11.9	10.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.1	18.4	5.5	25.0	7.1	24.4	12.5	18.0
Max Q Clear Time (g_c+I1), s	5.4	8.2	2.9	4.9	4.1	5.7	6.8	4.9
Green Ext Time (p_c), s	0.5	2.4	0.0	1.5	0.0	0.9	0.7	1.1

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	343	1	1	184	27	1	1	1	20	1	68
Future Volume (veh/h)	131	343	1	1	184	27	1	1	1	20	1	68
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	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693
Adj Flow Rate, veh/h	142	373	1	1	200	29	1	1	1	22	1	74
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, %	14	14	14	14	14	14	14	14	14	14	14	14
Cap, veh/h	366	942	3	6	549	245	3	3	6	150	2	132
Arrive On Green	0.12	0.29	0.29	0.00	0.17	0.17	0.00	0.00	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3127	3290	9	1612	3216	1434	826	826	1434	1612	19	1418
Grp Volume(v), veh/h	142	182	192	1	200	29	2	0	1	22	0	75
Grp Sat Flow(s),veh/h/ln	1564	1608	1691	1612	1608	1434	1651	0	1434	1612	0	1437
Q Serve(g_s), s	1.2	2.7	2.7	0.0	1.6	0.5	0.0	0.0	0.0	0.4	0.0	1.5
Cycle Q Clear(g_c), s	1.2	2.7	2.7	0.0	1.6	0.5	0.0	0.0	0.0	0.4	0.0	1.5
Prop In Lane	1.00		0.01	1.00		1.00	0.50		1.00	1.00		0.99
Lane Grp Cap(c), veh/h	366	461	484	6	549	245	7	0	6	150	0	134
V/C Ratio(X)	0.39	0.40	0.40	0.18	0.36	0.12	0.29	0.00	0.17	0.15	0.00	0.56
Avail Cap(c_a), veh/h	1015	1950	2051	275	3406	1519	1777	0	1543	1652	0	1473
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	8.4	8.4	14.6	10.7	10.3	14.5	0.0	14.5	12.2	0.0	12.7
Incr Delay (d2), s/veh	0.7	0.6	0.5	15.1	0.4	0.2	22.3	0.0	13.0	0.4	0.0	3.6
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(50%),veh/ln	0.3	0.6	0.7	0.0	0.4	0.1	0.1	0.0	0.0	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	9.0	8.9	29.6	11.1	10.5	36.8	0.0	27.5	12.6	0.0	16.3
LnGrp LOS	B	A	A	C	B	B	D	A	C	B	A	B
Approach Vol, veh/h		516			230			3			97	
Approach Delay, s/veh		10.0			11.1			33.7			15.5	
Approach LOS		A			B			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	4.6	4.5	12.9	7.2	7.9	9.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	4.7	3.5	3.2	3.6
Green Ext Time (p_c), s	0.0	0.0	2.2	0.4	0.2	1.3

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	35	1	0	419	0	0	0	0	0
Future Vol, veh/h	0	0	0	35	1	0	419	0	0	0	0	0
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	-	-	Yield	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	0	0	0	38	1	0	455	0	0	0	0	0

Major/Minor	Minor1			Major1			Major2			
Conflicting Flow All	911	911	0	1	0	-	-	-	0
Stage 1	910	910	-	-	-	-	-	-	-
Stage 2	1	1	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.75	6.45	4.35	-	-	-	-	-
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	3.525	2.425	-	-	-	-	-
Pot Cap-1 Maneuver	277	251	-	1483	-	0	0	-	0
Stage 1	358	324	-	-	-	0	0	-	0
Stage 2	965	851	-	-	-	0	0	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	192	0	-	1483	-	-	-	-	-
Mov Cap-2 Maneuver	192	0	-	-	-	-	-	-	-
Stage 1	248	0	-	-	-	-	-	-	-
Stage 2	965	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.5	8.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	1483	-	192	-	-
HCM Lane V/C Ratio	0.307	-	0.204	-	-
HCM Control Delay (s)	8.5	0	28.5	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	1.3	-	0.7	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	380	0	0	0	0	416	24	1	34	0
Future Vol, veh/h	3	1	380	0	0	0	0	416	24	1	34	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	3	1	413	0	0	0	0	452	26	1	37	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	491	491	-	-	0	-	452	0	0
Stage 1	39	39	-	-	-	-	-	-	-
Stage 2	452	452	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.75	-	-	-	-	4.35	-	-
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	-	-	-	-	2.425	-	-
Pot Cap-1 Maneuver	498	446	0	0	-	0	997	-	0
Stage 1	928	819	0	0	-	0	-	-	0
Stage 2	595	533	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	498	0	-	-	-	-	997	-	-
Mov Cap-2 Maneuver	498	0	-	-	-	-	-	-	-
Stage 1	928	0	-	-	-	-	-	-	-
Stage 2	594	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	498	-	997	-
HCM Lane V/C Ratio	-	0.009	-	0.001	-
HCM Control Delay (s)	-	12.3	0	8.6	-
HCM Lane LOS	-	B	A	A	-
HCM 95th %tile Q(veh)	-	0	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	11	21	3	11	1	48	417	1	45	301	68
Future Vol, veh/h	22	11	21	3	11	1	48	417	1	45	301	68
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	170	-	170	325	-	-	250	-	250	225	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	24	12	23	3	12	1	52	453	1	49	327	74

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	799	1020	201	825	1056	227	401	0	0	454	0	0
Stage 1	462	462	-	557	557	-	-	-	-	-	-	-
Stage 2	337	558	-	268	499	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	240	201	740	229	190	710	1006	-	-	956	-	-
Stage 1	493	509	-	428	457	-	-	-	-	-	-	-
Stage 2	591	456	-	653	488	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	210	181	740	195	171	710	1006	-	-	956	-	-
Mov Cap-2 Maneuver	210	181	-	195	171	-	-	-	-	-	-	-
Stage 1	467	483	-	406	433	-	-	-	-	-	-	-
Stage 2	544	432	-	586	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	25.7	0.9	1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1006	-	-	210	181	740	195	171	710	956	-	-
HCM Lane V/C Ratio	0.052	-	-	0.114	0.066	0.031	0.017	0.07	0.002	0.051	-	-
HCM Control Delay (s)	8.8	-	-	24.3	26.3	10	23.8	27.6	10.1	9	-	-
HCM Lane LOS	A	-	-	C	D	B	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.2	0.1	0.1	0.2	0	0.2	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	2	1	1	1	10	472	1	1	314	5
Future Vol, veh/h	2	1	2	1	1	1	10	472	1	1	314	5
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	-	-	225	-	250	200	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	2	1	2	1	1	1	11	513	1	1	341	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	622	879	171	708	883	257	346	0	0	514	0	0
Stage 1	343	343	-	535	535	-	-	-	-	-	-	-
Stage 2	279	536	-	173	348	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	327	246	775	281	245	677	1060	-	-	903	-	-
Stage 1	586	582	-	442	468	-	-	-	-	-	-	-
Stage 2	643	468	-	749	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	322	243	775	277	242	677	1060	-	-	903	-	-
Mov Cap-2 Maneuver	322	243	-	277	242	-	-	-	-	-	-	-
Stage 1	580	581	-	438	463	-	-	-	-	-	-	-
Stage 2	634	463	-	745	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	16.1	0.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1060	-	-	387	277	242	677	903	-	-
HCM Lane V/C Ratio	0.01	-	-	0.014	0.004	0.004	0.002	0.001	-	-
HCM Control Delay (s)	8.4	-	-	14.4	18	19.9	10.3	9	-	-
HCM Lane LOS	A	-	-	B	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	3	3	1	1	18	477	1	4	296	9
Future Vol, veh/h	5	1	3	3	1	1	18	477	1	4	296	9
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	-	-	-	-	-	-	50	-	-	100	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	5	1	3	3	1	1	20	518	1	4	322	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	630	889	161	729	899	260	332	0	0	519	0	0
Stage 1	330	330	-	559	559	-	-	-	-	-	-	-
Stage 2	300	559	-	170	340	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	323	243	788	271	239	674	1074	-	-	899	-	-
Stage 1	597	590	-	427	456	-	-	-	-	-	-	-
Stage 2	624	456	-	753	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	316	237	788	264	234	674	1074	-	-	899	-	-
Mov Cap-2 Maneuver	316	237	-	264	234	-	-	-	-	-	-	-
Stage 1	586	588	-	419	447	-	-	-	-	-	-	-
Stage 2	610	447	-	745	582	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	17.6	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	377	292	899	-	-
HCM Lane V/C Ratio	0.018	-	-	0.026	0.019	0.005	-	-
HCM Control Delay (s)	8.4	-	-	14.8	17.6	9	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	159	28	24	7	22	7	24	432	7	1	248	50
Future Vol, veh/h	159	28	24	7	22	7	24	432	7	1	248	50
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
Heavy Vehicles, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	173	30	26	8	24	8	26	470	8	1	270	54
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14.6	10.9	14.5	12.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	10%	0%	92%	0%	39%	0%	1%	0%
Vol Thru, %	90%	97%	8%	37%	61%	61%	99%	71%
Vol Right, %	0%	3%	0%	63%	0%	39%	0%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	223	173	38	18	18	125	174
LT Vol	24	0	159	0	7	0	1	0
Through Vol	216	216	14	14	11	11	124	124
RT Vol	0	7	0	24	0	7	0	50
Lane Flow Rate	261	242	188	41	20	20	136	189
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.47	0.432	0.403	0.078	0.043	0.041	0.253	0.341
Departure Headway (Hd)	6.486	6.413	7.712	6.794	7.949	7.471	6.695	6.487
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	556	560	466	526	449	477	535	552
Service Time	4.238	4.165	5.469	4.55	5.727	5.248	4.453	4.245
HCM Lane V/C Ratio	0.469	0.432	0.403	0.078	0.045	0.042	0.254	0.342
HCM Control Delay	14.9	14	15.6	10.1	11.1	10.6	11.7	12.6
HCM Lane LOS	B	B	C	B	B	B	B	B
HCM 95th-tile Q	2.5	2.2	1.9	0.3	0.1	0.1	1	1.5

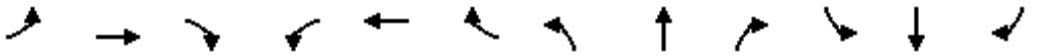
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	1	1	1	1	1	442	1	1	257	21
Future Vol, veh/h	20	1	1	1	1	1	1	442	1	1	257	21
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	-	-	-	-	-	-	250	-	-	250	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	22	1	1	1	1	1	1	480	1	1	279	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	536	776	151	625	787	241	302	0	0	481	0	0
Stage 1	293	293	-	483	483	-	-	-	-	-	-	-
Stage 2	243	483	-	142	304	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	381	286	800	326	282	694	1105	-	-	932	-	-
Stage 1	630	615	-	478	497	-	-	-	-	-	-	-
Stage 2	677	497	-	784	607	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	379	285	800	324	281	694	1105	-	-	932	-	-
Mov Cap-2 Maneuver	379	285	-	324	281	-	-	-	-	-	-	-
Stage 1	629	614	-	478	497	-	-	-	-	-	-	-
Stage 2	674	497	-	781	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.1	14.8	0	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1105	-	-	382	371	932	-	-
HCM Lane V/C Ratio	0.001	-	-	0.063	0.009	0.001	-	-
HCM Control Delay (s)	8.3	-	-	15.1	14.8	8.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	552	133	97	626	271	263	129	102	177	69	13
Future Volume (veh/h)	44	552	133	97	626	271	263	129	102	177	69	13
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	48	600	145	105	680	0	286	140	111	192	75	0
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	161	981	437	133	1082		430	248	210	318	187	
Arrive On Green	0.05	0.29	0.29	0.08	0.32	0.00	0.13	0.14	0.14	0.10	0.11	0.00
Sat Flow, veh/h	3237	3328	1485	1668	3328	1485	3237	1752	1485	3237	1752	1485
Grp Volume(v), veh/h	48	600	145	105	680	0	286	140	111	192	75	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1668	1664	1485	1618	1752	1485	1618	1752	1485
Q Serve(g_s), s	0.7	7.2	3.6	2.9	8.1	0.0	3.9	3.5	3.2	2.7	1.9	0.0
Cycle Q Clear(g_c), s	0.7	7.2	3.6	2.9	8.1	0.0	3.9	3.5	3.2	2.7	1.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	981	437	133	1082		430	248	210	318	187	
V/C Ratio(X)	0.30	0.61	0.33	0.79	0.63		0.67	0.56	0.53	0.60	0.40	
Avail Cap(c_a), veh/h	1352	2018	900	454	1533		749	732	620	797	758	
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.4	14.2	12.9	21.1	13.4	0.0	19.3	18.7	18.6	20.2	19.4	0.0
Incr Delay (d2), s/veh	1.0	0.6	0.4	9.8	0.6	0.0	1.8	2.0	2.0	1.8	1.4	0.0
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(50%),veh/ln	0.3	2.4	1.1	1.4	2.6	0.0	1.4	1.4	1.1	1.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	14.8	13.3	30.9	14.0	0.0	21.0	20.7	20.6	22.0	20.8	0.0
LnGrp LOS	C	B	B	C	B		C	C	C	C	C	
Approach Vol, veh/h		793			785	A		537			267	A
Approach Delay, s/veh		15.0			16.2			20.9			21.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	11.1	8.2	18.3	10.7	9.5	6.8	19.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	19.5	12.7	28.3	10.8	20.2	19.5	21.5
Max Q Clear Time (g_c+I1), s	4.7	5.5	4.9	9.2	5.9	3.9	2.7	10.1
Green Ext Time (p_c), s	0.3	0.9	0.1	4.5	0.4	0.2	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	36.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.454

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	652	140	0	0	107	112	0	0	0	88	1	91
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 [%]	11.00	11.00	2.00	2.00	11.00	11.00	2.00	2.00	2.00	11.00	11.00	11.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	652	140	0	0	107	112	0	0	0	88	1	91
Peak Hour Factor	0.9400	0.9400	1.0000	1.0000	0.9400	0.9400	1.0000	1.0000	1.0000	0.9400	0.9400	0.9400
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]	173	37	0	0	28	30	0	0	0	23	0	24
Total Analysis Volume [veh/h]	694	149	0	0	114	119	0	0	0	94	1	97
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.35	0.31	0.00	0.00	0.00	0.45	0.00	0.18
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	34.12	32.21	0.00	0.00	0.00	36.38	36.12	12.91
Movement LOS	A	A			D	D				E	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	4.51	4.51	0.00	0.00	0.00	2.20	2.20	0.63
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	112.71	112.71	0.00	0.00	0.00	55.03	55.03	15.82
d_A, Approach Delay [s/veh]	0.00			33.15			0.00			24.52		
Approach LOS	A			D			A			C		
d_I, Intersection Delay [s/veh]	9.80											
Intersection LOS	E											

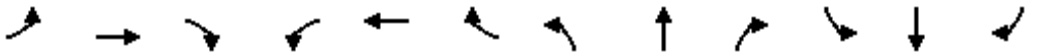
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↑	↱		↰	
Traffic Vol, veh/h	43	11	946	0	0	0	0	749	53	14	181	0
Future Vol, veh/h	43	11	946	0	0	0	0	749	53	14	181	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	47	12	1028	0	0	0	0	814	58	15	197	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1041	1041	-	-	0	0	814	0	0
Stage 1	227	227	-	-	-	-	-	-	-
Stage 2	814	814	-	-	-	-	-	-	-
Critical Hdwy	6.46	6.56	-	-	-	-	4.16	-	-
Critical Hdwy Stg 1	5.46	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.46	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	-	-	-	-	2.254	-	-
Pot Cap-1 Maneuver	250	226	0	0	-	-	796	-	0
Stage 1	801	709	0	0	-	-	-	-	0
Stage 2	429	386	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	245	0	-	-	-	-	796	-	-
Mov Cap-2 Maneuver	245	0	-	-	-	-	-	-	-
Stage 1	801	0	-	-	-	-	-	-	-
Stage 2	420	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.3	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	245	-	796	-
HCM Lane V/C Ratio	-	-	0.24	-	0.019	-
HCM Control Delay (s)	-	-	24.3	0	9.6	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.9	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	67	89	751	113	154	87	572	481	147	882	52
Future Volume (veh/h)	80	67	89	751	113	154	87	572	481	147	882	52
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	71	94	791	119	162	92	602	506	155	928	55
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	105	144	128	686	412	349	113	1888	841	206	1798	107
Arrive On Green	0.06	0.08	0.08	0.20	0.22	0.22	0.13	1.00	1.00	0.06	0.53	0.53
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	1767	3526	1571	3428	3381	200
Grp Volume(v), veh/h	84	71	94	791	119	162	92	602	506	155	484	499
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1767	1763	1571	1714	1763	1819
Q Serve(g_s), s	6.1	5.0	7.6	26.0	6.9	11.6	6.6	0.0	0.0	5.8	23.0	23.0
Cycle Q Clear(g_c), s	6.1	5.0	7.6	26.0	6.9	11.6	6.6	0.0	0.0	5.8	23.0	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	105	144	128	686	412	349	113	1888	841	206	937	967
V/C Ratio(X)	0.80	0.49	0.73	1.15	0.29	0.46	0.82	0.32	0.60	0.75	0.52	0.52
Avail Cap(c_a), veh/h	150	556	496	686	799	677	122	1888	841	237	937	967
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	0.85	0.85	0.85	0.73	0.73	0.73	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.4	57.1	58.3	52.0	42.1	43.9	56.0	0.0	0.0	60.1	19.6	19.6
Incr Delay (d2), s/veh	17.6	2.6	7.9	83.1	0.3	0.8	24.5	0.3	2.3	11.0	2.0	2.0
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(50%),veh/ln	3.3	2.3	3.3	19.1	3.2	4.6	3.6	0.1	0.5	2.8	9.9	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.0	59.8	66.2	135.1	42.4	44.7	80.4	0.3	2.3	71.2	21.7	21.6
LnGrp LOS	E	E	E	F	D	D	F	A	A	E	C	C
Approach Vol, veh/h		249			1072			1200			1138	
Approach Delay, s/veh		68.3			111.1			7.3			28.4	
Approach LOS		E			F			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	73.6	30.0	14.6	12.3	73.1	11.7	32.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	38.0	26.0	41.0	9.0	38.0	11.0	56.0
Max Q Clear Time (g_c+I1), s	7.8	2.0	28.0	9.6	8.6	25.0	8.1	13.6
Green Ext Time (p_c), s	0.1	7.2	0.0	1.0	0.0	5.3	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	48.4
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	55	404	250	47	102	348	1112	68	172	1413	113
Future Volume (veh/h)	66	55	404	250	47	102	348	1112	68	172	1413	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	57	416	258	48	105	359	1146	70	177	1457	116
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	166	694	151	65	142	623	2106	129	151	1180	93
Arrive On Green	0.05	0.09	0.09	0.08	0.12	0.12	0.35	0.62	0.62	0.17	0.71	0.71
Sat Flow, veh/h	1781	1870	1569	1781	520	1136	1781	3402	208	1781	3335	264
Grp Volume(v), veh/h	68	57	416	258	0	153	359	598	618	177	773	800
Grp Sat Flow(s),veh/h/ln	1781	1870	1569	1781	0	1656	1781	1777	1833	1781	1777	1823
Q Serve(g_s), s	4.9	3.7	5.4	11.0	0.0	11.6	21.3	25.1	25.2	11.0	46.0	46.0
Cycle Q Clear(g_c), s	4.9	3.7	5.4	11.0	0.0	11.6	21.3	25.1	25.2	11.0	46.0	46.0
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.11	1.00		0.14
Lane Grp Cap(c), veh/h	87	166	694	151	0	206	623	1100	1134	151	629	645
V/C Ratio(X)	0.78	0.34	0.60	1.71	0.00	0.74	0.58	0.54	0.54	1.17	1.23	1.24
Avail Cap(c_a), veh/h	151	446	928	151	0	395	623	1100	1134	151	629	645
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	0.00	1.00	0.49	0.49	0.49	0.51	0.51	0.51
Uniform Delay (d), s/veh	61.1	55.7	14.2	59.5	0.0	54.9	34.4	14.2	14.2	54.0	19.0	19.0
Incr Delay (d2), s/veh	14.0	1.2	0.8	346.8	0.0	5.2	0.6	1.0	0.9	108.2	110.3	115.3
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(50%),veh/ln	2.6	1.8	6.4	19.5	0.0	5.1	9.4	10.1	10.4	9.0	29.5	31.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	56.9	15.1	406.3	0.0	60.1	35.1	15.2	15.2	162.2	129.3	134.3
LnGrp LOS	E	E	B	F	A	E	D	B	B	F	F	F
Approach Vol, veh/h		541			411			1575			1750	
Approach Delay, s/veh		27.0			277.4			19.7			134.9	
Approach LOS		C			F			B			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	84.5	15.0	15.5	49.5	50.0	10.4	20.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	61.0	11.0	31.0	26.0	46.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	13.0	27.2	13.0	7.4	23.3	48.0	6.9	13.6
Green Ext Time (p_c), s	0.0	10.5	0.0	1.9	0.3	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	92.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	186	300	55	236	709	56	463	88	908	427	702
Future Volume (veh/h)	387	186	300	55	236	709	56	463	88	908	427	702
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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	403	194	0	57	246	0	58	482	0	946	445	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	500	736		85	390		86	653		1062	829	
Arrive On Green	0.14	0.21	0.00	0.05	0.11	0.00	0.05	0.18	0.00	0.31	0.44	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	403	194	0	57	246	0	58	482	0	946	445	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1585	1728	1870	1585
Q Serve(g_s), s	8.0	3.2	0.0	2.2	4.7	0.0	2.3	9.1	0.0	18.5	12.3	0.0
Cycle Q Clear(g_c), s	8.0	3.2	0.0	2.2	4.7	0.0	2.3	9.1	0.0	18.5	12.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	736		85	390		86	653		1062	829	
V/C Ratio(X)	0.81	0.26		0.67	0.63		0.68	0.74		0.89	0.54	
Avail Cap(c_a), veh/h	562	1175		154	904		161	954		1148	954	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.3	23.5	0.0	33.2	30.1	0.0	33.1	27.3	0.0	23.4	14.4	0.0
Incr Delay (d2), s/veh	7.6	0.2	0.0	8.9	1.7	0.0	9.0	1.7	0.0	8.5	0.5	0.0
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(50%),veh/ln	3.7	1.3	0.0	1.1	2.0	0.0	1.2	3.8	0.0	8.2	4.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	23.7	0.0	42.0	31.8	0.0	42.1	29.0	0.0	31.9	14.9	0.0
LnGrp LOS	D	C		D	C		D	C		C	B	
Approach Vol, veh/h		597	A		303	A		540	A		1391	A
Approach Delay, s/veh		32.6			33.7			30.4			26.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.2	17.5	7.9	19.1	7.9	35.8	14.7	12.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.5	19.0	6.1	23.4	6.4	36.1	11.5	18.0
Max Q Clear Time (g_c+I1), s	20.5	11.1	4.2	5.2	4.3	14.3	10.0	6.7
Green Ext Time (p_c), s	1.3	1.9	0.0	1.0	0.0	2.8	0.3	1.1

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	206	5	6	396	59	40	20	7	28	10	316
Future Volume (veh/h)	209	206	5	6	396	59	40	20	7	28	10	316
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	227	224	5	7	430	64	43	22	8	30	11	343
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	348	1038	23	16	711	317	72	37	95	499	14	432
Arrive On Green	0.10	0.30	0.30	0.01	0.21	0.21	0.06	0.06	0.06	0.29	0.29	0.29
Sat Flow, veh/h	3346	3441	77	1725	3441	1535	1160	593	1535	1725	48	1494
Grp Volume(v), veh/h	227	112	117	7	430	64	65	0	8	30	0	354
Grp Sat Flow(s),veh/h/ln	1673	1721	1797	1725	1721	1535	1753	0	1535	1725	0	1542
Q Serve(g_s), s	3.5	2.6	2.6	0.2	6.0	1.8	1.9	0.0	0.3	0.7	0.0	11.3
Cycle Q Clear(g_c), s	3.5	2.6	2.6	0.2	6.0	1.8	1.9	0.0	0.3	0.7	0.0	11.3
Prop In Lane	1.00		0.04	1.00		1.00	0.66		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	348	519	542	16	711	317	109	0	95	499	0	446
V/C Ratio(X)	0.65	0.22	0.22	0.44	0.60	0.20	0.60	0.00	0.08	0.06	0.00	0.79
Avail Cap(c_a), veh/h	597	1147	1198	162	2004	894	1037	0	908	972	0	869
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	13.9	13.9	26.2	19.1	17.5	24.3	0.0	23.5	13.7	0.0	17.5
Incr Delay (d2), s/veh	2.1	0.2	0.2	17.9	0.8	0.3	5.2	0.0	0.4	0.0	0.0	3.3
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(50%),veh/ln	1.3	0.9	0.9	0.2	2.2	0.6	0.9	0.0	0.1	0.2	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.0	14.1	14.1	44.1	20.0	17.8	29.5	0.0	23.9	13.7	0.0	20.7
LnGrp LOS	C	B	B	D	B	B	C	A	C	B	A	C
Approach Vol, veh/h		456			501			73			384	
Approach Delay, s/veh		19.5			20.0			28.9			20.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	7.8	5.0	20.6	19.9	10.0	15.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	3.9	2.2	4.6	13.3	5.5	8.0
Green Ext Time (p_c), s	0.3	0.0	1.3	2.2	0.3	3.0

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	14.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	59	8	0	496	0	0	0	0	0
Future Vol, veh/h	0	0	0	59	8	0	496	0	0	0	0	0
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	-	-	Yield	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	0	0	0	64	9	0	539	0	0	0	0	0

Major/Minor	Minor1			Major1			Major2			
Conflicting Flow All	1079	1079	0	1	0	-	-	-	0	
Stage 1	1078	1078	-	-	-	-	-	-	-	
Stage 2	1	1	-	-	-	-	-	-	-	
Critical Hdwy	6.65	6.75	6.45	4.35	-	-	-	-	-	
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-	
Follow-up Hdwy	3.725	4.225	3.525	2.425	-	-	-	-	-	
Pot Cap-1 Maneuver	219	199	-	1483	-	0	0	-	0	
Stage 1	295	268	-	-	-	0	0	-	0	
Stage 2	965	851	-	-	-	0	0	-	0	
Platoon blocked, %					-			-		
Mov Cap-1 Maneuver	140	0	-	1483	-	-	-	-	-	
Mov Cap-2 Maneuver	140	0	-	-	-	-	-	-	-	
Stage 1	188	0	-	-	-	-	-	-	-	
Stage 2	965	0	-	-	-	-	-	-	-	

Approach	WB	NB	SB
HCM Control Delay, s	55.7	8.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	1483	-	140	-	-
HCM Lane V/C Ratio	0.364	-	0.52	-	-
HCM Control Delay (s)	8.8	0	55.7	0	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	1.7	-	2.5	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	434	0	0	0	0	493	27	1	58	0
Future Vol, veh/h	3	1	434	0	0	0	0	493	27	1	58	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	3	1	472	0	0	0	0	536	29	1	63	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	601	601	-	-	0	-	536	0	0
Stage 1	65	65	-	-	-	-	-	-	-
Stage 2	536	536	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.75	-	-	-	-	4.35	-	-
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	-	-	-	-	2.425	-	-
Pot Cap-1 Maneuver	428	385	0	0	-	0	925	-	0
Stage 1	902	798	0	0	-	0	-	-	0
Stage 2	543	488	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	428	0	-	-	-	-	925	-	-
Mov Cap-2 Maneuver	428	0	-	-	-	-	-	-	-
Stage 1	902	0	-	-	-	-	-	-	-
Stage 2	542	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	428	-	925	-
HCM Lane V/C Ratio	-	0.01	-	0.001	-
HCM Control Delay (s)	-	13.5	0	8.9	-
HCM Lane LOS	-	B	A	A	-
HCM 95th %tile Q(veh)	-	0	-	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	1	56	10	3	6	44	424	1	1	451	40
Future Vol, veh/h	90	1	56	10	3	6	44	424	1	1	451	40
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	170	-	170	325	-	-	250	-	250	225	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	98	1	61	11	3	7	48	461	1	1	490	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	842	1072	267	805	1092	231	533	0	0	462	0	0
Stage 1	514	514	-	557	557	-	-	-	-	-	-	-
Stage 2	328	558	-	248	535	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	222	186	666	237	180	705	887	-	-	949	-	-
Stage 1	456	480	-	428	457	-	-	-	-	-	-	-
Stage 2	599	456	-	673	468	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	208	176	666	205	170	705	887	-	-	949	-	-
Mov Cap-2 Maneuver	208	176	-	205	170	-	-	-	-	-	-	-
Stage 1	431	480	-	405	432	-	-	-	-	-	-	-
Stage 2	557	431	-	609	468	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.9	19.8	0.9	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	887	-	-	208	176	666	205	170	705	949	-	-
HCM Lane V/C Ratio	0.054	-	-	0.47	0.006	0.091	0.053	0.019	0.009	0.001	-	-
HCM Control Delay (s)	9.3	-	-	36.8	25.6	10.9	23.5	26.6	10.2	8.8	-	-
HCM Lane LOS	A	-	-	E	D	B	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.3	0	0.3	0.2	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1	7	6	1	3	4	417	1	10	508	2
Future Vol, veh/h	7	1	7	6	1	3	4	417	1	10	508	2
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	-	-	225	-	250	200	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	8	1	8	7	1	3	4	453	1	11	552	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	809	1036	276	760	1037	227	554	0	0	454	0	0
Stage 1	574	574	-	461	461	-	-	-	-	-	-	-
Stage 2	235	462	-	299	576	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	235	196	657	257	196	710	869	-	-	956	-	-
Stage 1	418	448	-	493	509	-	-	-	-	-	-	-
Stage 2	685	509	-	625	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	230	193	657	250	193	710	869	-	-	956	-	-
Mov Cap-2 Maneuver	230	193	-	250	193	-	-	-	-	-	-	-
Stage 1	416	443	-	491	506	-	-	-	-	-	-	-
Stage 2	677	506	-	609	442	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	17.3	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	324	250	193	710	956	-	-
HCM Lane V/C Ratio	0.005	-	-	0.05	0.026	0.006	0.005	0.011	-	-
HCM Control Delay (s)	9.2	-	-	16.7	19.8	23.8	10.1	8.8	-	-
HCM Lane LOS	A	-	-	C	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	1	10	1	1	1	7	403	1	1	526	3
Future Vol, veh/h	18	1	10	1	1	1	7	403	1	1	526	3
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	-	-	-	-	-	-	50	-	-	100	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	20	1	11	1	1	1	8	438	1	1	572	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	810	1029	286	744	1032	220	575	0	0	439	0	0
Stage 1	574	574	-	455	455	-	-	-	-	-	-	-
Stage 2	236	455	-	289	577	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	235	198	646	264	197	718	852	-	-	970	-	-
Stage 1	418	448	-	498	513	-	-	-	-	-	-	-
Stage 2	684	513	-	634	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	232	196	646	256	195	718	852	-	-	970	-	-
Mov Cap-2 Maneuver	232	196	-	256	195	-	-	-	-	-	-	-
Stage 1	414	448	-	494	508	-	-	-	-	-	-	-
Stage 2	675	508	-	621	446	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.7	17.6	0.2	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	852	-	-	295	288	970	-	-
HCM Lane V/C Ratio	0.009	-	-	0.107	0.011	0.001	-	-
HCM Control Delay (s)	9.3	-	-	18.7	17.6	8.7	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	8	16	7	10	15	11	366	1	14	450	172
Future Vol, veh/h	40	8	16	7	10	15	11	366	1	14	450	172
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
Heavy Vehicles, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	43	9	17	8	11	16	12	398	1	15	489	187
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	11.3	10.5	12.2	16.5
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	91%	0%	58%	0%	6%	0%
Vol Thru, %	94%	99%	9%	20%	42%	25%	94%	57%
Vol Right, %	0%	1%	0%	80%	0%	75%	0%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	194	184	44	20	12	20	239	397
LT Vol	11	0	40	0	7	0	14	0
Through Vol	183	183	4	4	5	5	225	225
RT Vol	0	1	0	16	0	15	0	172
Lane Flow Rate	211	200	48	22	13	22	260	432
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.362	0.341	0.107	0.042	0.029	0.043	0.425	0.666
Departure Headway (Hd)	6.178	6.146	8.046	7.01	7.991	7.156	5.892	5.557
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	584	586	446	511	448	500	616	656
Service Time	3.908	3.875	5.786	4.75	5.733	4.897	3.592	3.257
HCM Lane V/C Ratio	0.361	0.341	0.108	0.043	0.029	0.044	0.422	0.659
HCM Control Delay	12.4	12	11.8	10.1	11	10.2	12.9	18.6
HCM Lane LOS	B	B	B	B	B	B	B	C
HCM 95th-tile Q	1.6	1.5	0.4	0.1	0.1	0.1	2.1	5

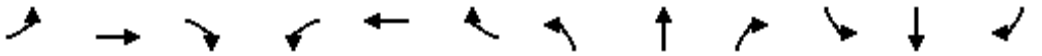
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	1	1	1	1	1	1	369	1	1	464	8
Future Vol, veh/h	8	1	1	1	1	1	1	369	1	1	464	8
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	-	-	-	-	-	-	250	-	-	250	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	9	1	1	1	1	1	1	401	1	1	504	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	714	915	257	659	919	201	513	0	0	402	0	0
Stage 1	511	511	-	404	404	-	-	-	-	-	-	-
Stage 2	203	404	-	255	515	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	278	234	677	307	232	740	904	-	-	1005	-	-
Stage 1	458	481	-	536	543	-	-	-	-	-	-	-
Stage 2	718	543	-	666	479	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	276	234	677	305	232	740	904	-	-	1005	-	-
Mov Cap-2 Maneuver	276	234	-	305	232	-	-	-	-	-	-	-
Stage 1	458	481	-	535	542	-	-	-	-	-	-	-
Stage 2	715	542	-	663	479	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	15.8	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	904	-	-	288	336	1005	-	-
HCM Lane V/C Ratio	0.001	-	-	0.038	0.01	0.001	-	-
HCM Control Delay (s)	9	-	-	18	15.8	8.6	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	859	131	97	710	251	204	102	124	350	70	46
Future Volume (veh/h)	18	859	131	97	710	251	204	102	124	350	70	46
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	20	934	142	105	772	0	222	111	135	380	76	0
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	80	1196	534	134	1381		334	237	201	501	327	
Arrive On Green	0.02	0.34	0.34	0.08	0.40	0.00	0.10	0.13	0.13	0.15	0.18	0.00
Sat Flow, veh/h	3374	3469	1547	1739	3469	1547	3374	1826	1547	3374	1826	1547
Grp Volume(v), veh/h	20	934	142	105	772	0	222	111	135	380	76	0
Grp Sat Flow(s),veh/h/ln	1687	1735	1547	1739	1735	1547	1687	1826	1547	1687	1826	1547
Q Serve(g_s), s	0.3	14.5	4.0	3.6	10.3	0.0	3.8	3.4	5.0	6.5	2.1	0.0
Cycle Q Clear(g_c), s	0.3	14.5	4.0	3.6	10.3	0.0	3.8	3.4	5.0	6.5	2.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	1196	534	134	1381		334	237	201	501	327	
V/C Ratio(X)	0.25	0.78	0.27	0.79	0.56		0.66	0.47	0.67	0.76	0.23	
Avail Cap(c_a), veh/h	281	1417	632	188	1504		568	594	503	647	636	
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.8	17.6	14.2	27.2	14.0	0.0	26.1	24.2	24.9	24.5	21.1	0.0
Incr Delay (d2), s/veh	1.6	2.4	0.3	13.3	0.4	0.0	2.3	1.4	3.9	3.9	0.4	0.0
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(50%),veh/ln	0.2	5.5	1.3	1.9	3.6	0.0	1.5	1.5	1.9	2.7	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	20.1	14.4	40.5	14.4	0.0	28.3	25.6	28.7	28.4	21.4	0.0
LnGrp LOS	C	C	B	D	B		C	C	C	C	C	
Approach Vol, veh/h		1096			877	A		468			456	A
Approach Delay, s/veh		19.5			17.5			27.8			27.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	12.3	9.1	25.2	10.4	15.3	5.9	28.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	19.5	6.5	24.5	10.1	20.9	5.0	26.0
Max Q Clear Time (g_c+I1), s	8.5	7.0	5.6	16.5	5.8	4.1	2.3	12.3
Green Ext Time (p_c), s	0.4	0.8	0.0	4.2	0.3	0.3	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Appendix F

Future Year Plus Project LOS Calculations

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	37.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.308

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	776	113	0	0	81	109	0	0	0	28	1	38
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 [%]	13.00	13.00	2.00	2.00	13.00	13.00	2.00	2.00	2.00	13.00	13.00	13.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	776	113	0	0	81	109	0	0	0	28	1	38
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	204	30	0	0	21	29	0	0	0	7	0	10
Total Analysis Volume [veh/h]	817	119	0	0	85	115	0	0	0	29	1	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.31	0.35	0.00	0.00	0.00	0.16	0.01	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	37.86	35.63	0.00	0.00	0.00	28.09	27.49	12.42
Movement LOS	A	A			E	E				D	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	4.29	4.29	0.00	0.00	0.00	0.56	0.56	0.25
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	107.22	107.22	0.00	0.00	0.00	14.04	14.04	6.16
d_A, Approach Delay [s/veh]	0.00			36.57			0.00			19.13		
Approach LOS	A			E			A			C		
d_I, Intersection Delay [s/veh]	7.18											
Intersection LOS	E											

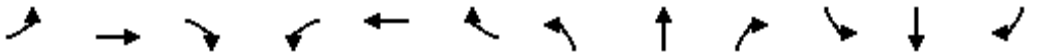
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	1	498	0	0	0	0	864	61	28	81	0
Future Vol, veh/h	25	1	498	0	0	0	0	864	61	28	81	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	26	1	519	0	0	0	0	900	64	29	84	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1042	1042	-	-	0	0	900	0	0
Stage 1	142	142	-	-	-	-	-	-	-
Stage 2	900	900	-	-	-	-	-	-	-
Critical Hdwy	6.49	6.59	-	-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.49	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.49	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.081	-	-	-	-	2.281	-	-
Pot Cap-1 Maneuver	247	223	0	0	-	-	726	-	0
Stage 1	868	766	0	0	-	-	-	-	0
Stage 2	386	348	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	237	0	-	-	-	-	726	-	-
Mov Cap-2 Maneuver	237	0	-	-	-	-	-	-	-
Stage 1	868	0	-	-	-	-	-	-	-
Stage 2	370	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.1	0	2.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	237	-	726	-
HCM Lane V/C Ratio	-	-	0.114	-	0.04	-
HCM Control Delay (s)	-	-	22.1	0	10.2	0
HCM Lane LOS	-	-	C	A	B	A
HCM 95th %tile Q(veh)	-	-	0.4	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	61	41	357	35	62	28	813	781	111	437	17
Future Volume (veh/h)	56	61	41	357	35	62	28	813	781	111	437	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	60	66	44	384	38	67	30	874	840	119	470	18
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	77	152	93	307	220	186	55	2233	996	173	2261	86
Arrive On Green	0.04	0.07	0.07	0.09	0.12	0.12	0.03	0.65	0.65	0.05	0.67	0.67
Sat Flow, veh/h	1725	2048	1247	3346	1811	1527	1725	3441	1534	3346	3379	129
Grp Volume(v), veh/h	60	54	56	384	38	67	30	874	840	119	239	249
Grp Sat Flow(s),veh/h/ln	1725	1721	1575	1673	1811	1527	1725	1721	1534	1673	1721	1788
Q Serve(g_s), s	4.1	3.6	4.1	11.0	2.3	4.8	2.1	14.3	51.0	4.2	6.4	6.4
Cycle Q Clear(g_c), s	4.1	3.6	4.1	11.0	2.3	4.8	2.1	14.3	51.0	4.2	6.4	6.4
Prop In Lane	1.00		0.79	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	77	128	117	307	220	186	55	2233	996	173	1151	1196
V/C Ratio(X)	0.78	0.43	0.47	1.25	0.17	0.36	0.55	0.39	0.84	0.69	0.21	0.21
Avail Cap(c_a), veh/h	158	588	538	307	619	522	158	2233	996	307	1151	1196
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	0.94	0.94	0.94	0.63	0.63	0.63	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	53.1	53.3	54.5	47.3	48.4	57.3	9.9	16.3	55.9	7.6	7.6
Incr Delay (d2), s/veh	15.7	2.2	3.0	136.2	0.3	1.1	5.4	0.3	5.7	4.8	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	2.1	1.6	1.7	10.4	1.0	1.9	1.0	5.3	17.9	1.9	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	55.3	56.3	190.7	47.6	49.5	62.6	10.2	22.0	60.7	8.0	8.0
LnGrp LOS	E	E	E	F	D	D	E	B	C	E	A	A
Approach Vol, veh/h		170			489			1744			607	
Approach Delay, s/veh		61.7			160.2			16.8			18.4	
Approach LOS		E			F			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	81.9	15.0	12.9	7.8	84.3	9.3	18.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	41.0	11.0	41.0	11.0	41.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	6.2	53.0	13.0	6.1	4.1	8.4	6.1	6.8
Green Ext Time (p_c), s	0.1	0.0	0.0	0.6	0.0	3.2	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	43.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	18	193	120	14	55	201	1498	60	69	727	50
Future Volume (veh/h)	83	18	193	120	14	55	201	1498	60	69	727	50
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	88	19	205	128	15	59	214	1594	64	73	773	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	110	242	422	129	47	183	244	1630	65	301	1687	116
Arrive On Green	0.06	0.13	0.13	0.08	0.14	0.14	0.14	0.48	0.48	0.17	0.52	0.52
Sat Flow, veh/h	1725	1811	1535	1725	321	1263	1725	3372	135	1725	3267	224
Grp Volume(v), veh/h	88	19	205	128	0	74	214	811	847	73	407	419
Grp Sat Flow(s),veh/h/ln	1725	1811	1535	1725	0	1584	1725	1721	1786	1725	1721	1770
Q Serve(g_s), s	6.0	1.1	13.4	8.9	0.0	5.0	14.6	55.2	56.0	4.4	18.0	18.0
Cycle Q Clear(g_c), s	6.0	1.1	13.4	8.9	0.0	5.0	14.6	55.2	56.0	4.4	18.0	18.0
Prop In Lane	1.00		1.00	1.00		0.80	1.00		0.08	1.00		0.13
Lane Grp Cap(c), veh/h	110	242	422	129	0	230	244	832	863	301	889	914
V/C Ratio(X)	0.80	0.08	0.49	0.99	0.00	0.32	0.88	0.97	0.98	0.24	0.46	0.46
Avail Cap(c_a), veh/h	187	468	613	129	0	356	359	832	863	301	889	914
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	0.00	1.00	0.41	0.41	0.41	0.86	0.86	0.86
Uniform Delay (d), s/veh	55.4	45.5	36.4	55.5	0.0	46.0	50.5	30.3	30.5	42.7	18.4	18.4
Incr Delay (d2), s/veh	12.2	0.1	0.9	75.7	0.0	0.8	7.1	14.9	15.7	0.4	1.5	1.4
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	3.0	0.5	5.1	6.6	0.0	2.0	6.8	25.4	26.9	1.9	7.4	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	45.6	37.2	131.2	0.0	46.8	57.6	45.2	46.2	43.1	19.8	19.8
LnGrp LOS	E	D	D	F	A	D	E	D	D	D	B	B
Approach Vol, veh/h		312			202			1872			899	
Approach Delay, s/veh		46.3			100.3			47.0			21.7	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.9	62.0	13.0	20.1	21.0	66.0	11.7	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	58.0	9.0	31.0	25.0	39.0	13.0	27.0
Max Q Clear Time (g_c+I1), s	16.4	58.0	10.9	15.4	16.6	20.0	8.0	7.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.4	5.2	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	572	211	92	323	578	73	657	269	243	230	585
Future Volume (veh/h)	535	572	211	92	323	578	73	657	269	243	230	585
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	563	602	0	97	340	0	77	692	0	256	242	0
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	661	913		125	483		99	1102		360	671	
Arrive On Green	0.20	0.26	0.00	0.07	0.14	0.00	0.06	0.32	0.00	0.11	0.37	0.00
Sat Flow, veh/h	3374	3469	1547	1739	3469	1547	1739	3469	1547	3374	1826	1547
Grp Volume(v), veh/h	563	602	0	97	340	0	77	692	0	256	242	0
Grp Sat Flow(s),veh/h/ln	1687	1735	1547	1739	1735	1547	1739	1735	1547	1687	1826	1547
Q Serve(g_s), s	12.0	11.6	0.0	4.1	7.0	0.0	3.3	12.7	0.0	5.5	7.2	0.0
Cycle Q Clear(g_c), s	12.0	11.6	0.0	4.1	7.0	0.0	3.3	12.7	0.0	5.5	7.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	661	913		125	483		99	1102		360	671	
V/C Ratio(X)	0.85	0.66		0.78	0.70		0.78	0.63		0.71	0.36	
Avail Cap(c_a), veh/h	744	1095		253	835		232	1102		699	671	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	24.6	0.0	34.1	30.7	0.0	34.8	21.7	0.0	32.3	17.2	0.0
Incr Delay (d2), s/veh	8.6	1.1	0.0	10.0	1.9	0.0	12.4	2.7	0.0	2.6	1.5	0.0
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(50%),veh/ln	5.5	4.7	0.0	2.0	3.0	0.0	1.7	5.3	0.0	2.3	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	25.7	0.0	44.1	32.6	0.0	47.2	24.5	0.0	34.9	18.7	0.0
LnGrp LOS	D	C		D	C		D	C		C	B	
Approach Vol, veh/h		1165	A		437	A		769	A		498	A
Approach Delay, s/veh		31.5			35.2			26.7			27.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	28.3	9.9	24.2	8.7	32.0	19.1	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	22.0	10.9	23.6	10.0	27.5	16.5	18.0
Max Q Clear Time (g_c+I1), s	7.5	14.7	6.1	13.6	5.3	9.2	14.0	9.0
Green Ext Time (p_c), s	0.5	2.7	0.1	2.9	0.1	1.3	0.6	1.4

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	648	1	1	286	27	1	1	1	20	1	105
Future Volume (veh/h)	238	648	1	1	286	27	1	1	1	20	1	105
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	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693	1693
Adj Flow Rate, veh/h	259	704	1	1	311	29	1	1	1	22	1	114
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, %	14	14	14	14	14	14	14	14	14	14	14	14
Cap, veh/h	421	1194	2	5	737	329	3	3	6	183	1	162
Arrive On Green	0.13	0.36	0.36	0.00	0.23	0.23	0.00	0.00	0.00	0.11	0.11	0.11
Sat Flow, veh/h	3127	3295	5	1612	3216	1434	826	826	1434	1612	12	1424
Grp Volume(v), veh/h	259	344	361	1	311	29	2	0	1	22	0	115
Grp Sat Flow(s),veh/h/ln	1564	1608	1692	1612	1608	1434	1651	0	1434	1612	0	1436
Q Serve(g_s), s	2.7	6.0	6.0	0.0	2.9	0.6	0.0	0.0	0.0	0.4	0.0	2.7
Cycle Q Clear(g_c), s	2.7	6.0	6.0	0.0	2.9	0.6	0.0	0.0	0.0	0.4	0.0	2.7
Prop In Lane	1.00		0.00	1.00		1.00	0.50		1.00	1.00		0.99
Lane Grp Cap(c), veh/h	421	583	613	5	737	329	7	0	6	183	0	163
V/C Ratio(X)	0.62	0.59	0.59	0.22	0.42	0.09	0.29	0.00	0.17	0.12	0.00	0.71
Avail Cap(c_a), veh/h	856	1645	1730	232	2872	1281	1499	0	1302	1393	0	1241
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	9.0	9.0	17.3	11.4	10.5	17.2	0.0	17.2	13.8	0.0	14.8
Incr Delay (d2), s/veh	1.5	1.0	0.9	21.7	0.4	0.1	22.4	0.0	13.0	0.3	0.0	5.5
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(50%),veh/ln	0.8	1.5	1.6	0.0	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	9.9	9.9	38.9	11.8	10.6	39.6	0.0	30.3	14.1	0.0	20.3
LnGrp LOS	B	A	A	D	B	B	D	A	C	B	A	C
Approach Vol, veh/h		964			341			3			137	
Approach Delay, s/veh		11.4			11.8			36.5			19.3	
Approach LOS		B			B			D			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	4.6	4.5	17.1	8.4	9.2	12.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	8.0	4.7	4.7	4.9
Green Ext Time (p_c), s	0.0	0.0	4.6	0.7	0.4	2.1

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1076.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	310	1	0	781	0	0	0	0	0
Future Vol, veh/h	0	0	0	310	1	0	781	0	0	0	0	0
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	-	-	Yield	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	0	0	0	337	1	0	849	0	0	0	0	0

Major/Minor	Minor1			Major1			Major2			
Conflicting Flow All	1699	1699	0	1	0	-	-	-	0	
Stage 1	1698	1698	-	-	-	-	-	-	-	
Stage 2	1	1	-	-	-	-	-	-	-	
Critical Hdwy	6.65	6.75	6.45	4.35	-	-	-	-	-	
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-	
Follow-up Hdwy	3.725	4.225	3.525	2.425	-	-	-	-	-	
Pot Cap-1 Maneuver	~ 89	81	-	1483	-	0	0	-	-	
Stage 1	~ 143	131	-	-	-	0	0	-	-	
Stage 2	965	851	-	-	-	0	0	-	-	
Platoon blocked, %					-			-	-	
Mov Cap-1 Maneuver	~ 38	0	-	1483	-	-	-	-	-	
Mov Cap-2 Maneuver	~ 38	0	-	-	-	-	-	-	-	
Stage 1	~ 61	0	-	-	-	-	-	-	-	
Stage 2	965	0	-	-	-	-	-	-	-	

Approach	WB	NB	SB
HCM Control Delay, s	$ 3756.6	10.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1483	-	38	-	-	-
HCM Lane V/C Ratio	0.572	-	8.896	-	-	-
HCM Control Delay (s)	10.6	$	3756.6	0	-	-
HCM Lane LOS	B	A	F	A	-	-
HCM 95th %tile Q(veh)	3.8	-	40.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	1468	0	0	0	0	778	116	1	309	0
Future Vol, veh/h	3	1	1468	0	0	0	0	778	116	1	309	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	3	1	1596	0	0	0	0	846	126	1	336	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1184	1184	-	-	0	-	846	0	0
Stage 1	338	338	-	-	-	-	-	-	-
Stage 2	846	846	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.75	-	-	-	-	4.35	-	-
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	-	-	-	-	2.425	-	-
Pot Cap-1 Maneuver	188	171	0	0	-	0	701	-	0
Stage 1	674	602	0	0	-	0	-	-	0
Stage 2	384	348	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	188	0	-	-	-	-	701	-	-
Mov Cap-2 Maneuver	188	0	-	-	-	-	-	-	-
Stage 1	674	0	-	-	-	-	-	-	-
Stage 2	384	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	188	-	701	-
HCM Lane V/C Ratio	-	0.023	-	0.002	-
HCM Control Delay (s)	-	24.6	0	10.1	-
HCM Lane LOS	-	C	A	B	-
HCM 95th %tile Q(veh)	-	0.1	-	0	-

Intersection	
Int Delay, s/veh	76.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	105	66	144	37	194	101	622	506	734	910	133
Future Vol, veh/h	78	105	66	144	37	194	101	622	506	734	910	133
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	170	-	170	325	-	-	250	-	250	225	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	85	114	72	157	40	211	110	676	550	798	989	145

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3236	4104	567	3044	3626	338	1134	0	0	1226	0	0
Stage 1	2658	2658	-	896	896	-	-	-	-	-	-	-
Stage 2	578	1446	-	2148	2730	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	~ 3	~ 1	413	~ 4	~ 3	595	495	-	-	~ 452	-	-
Stage 1	~ 16	~ 33	-	259	308	-	-	-	-	-	-	-
Stage 2	415	159	-	~ 37	~ 30	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	413	-	0	595	495	-	-	~ 452	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 12	0	-	202	240	-	-	-	-	-	-	-
Stage 2	173	124	-	-	0	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1.2	154.8
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	495	-	-	-	-	413	-	-	595	~ 452	-	-
HCM Lane V/C Ratio	0.222	-	-	-	-	0.174	-	-	0.354	1.765	-	-
HCM Control Delay (s)	14.3	-	-	-	-	15.5	-	-	14.3	$ 374.7	-	-
HCM Lane LOS	B	-	-	-	-	C	-	-	B	F	-	-
HCM 95th %tile Q(veh)	0.8	-	-	-	-	0.6	-	-	1.6	49.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	33.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	2	138	1	111	10	1124	453	375	735	5
Future Vol, veh/h	2	1	2	138	1	111	10	1124	453	375	735	5
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	-	-	225	-	250	200	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	2	1	2	150	1	121	11	1222	492	408	799	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2249	3351	400	2460	2864	611	804	0	0	1714	0	0
Stage 1	1615	1615	-	1244	1244	-	-	-	-	-	-	-
Stage 2	634	1736	-	1216	1620	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	17	5	539	~ 11	11	385	683	-	-	~ 279	-	-
Stage 1	86	129	-	152	203	-	-	-	-	-	-	-
Stage 2	382	110	-	159	128	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	539	-	0	385	683	-	-	~ 279	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	85	0	-	150	200	-	-	-	-	-	-	-
Stage 2	257	108	-	-	0	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.1	87.6
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	683	-	-	-	-	-	385	~ 279	-	-
HCM Lane V/C Ratio	0.016	-	-	-	-	-	0.313	1.461	-	-
HCM Control Delay (s)	10.4	-	-	-	-	-	18.6	260.3	-	-
HCM Lane LOS	B	-	-	-	-	-	C	F	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	1.3	22.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	96.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	3	35	1	43	18	1546	102	113	745	9
Future Vol, veh/h	5	1	3	35	1	43	18	1546	102	113	745	9
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	-	-	-	-	-	-	50	-	-	100	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	5	1	3	38	1	47	20	1680	111	123	810	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1937	2887	405	2428	2842	896	820	0	0	1791	0	0
Stage 1	1056	1056	-	1776	1776	-	-	-	-	-	-	-
Stage 2	881	1831	-	652	1066	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	30	11	535	~ 12	12	242	672	-	-	258	-	-
Stage 1	203	255	-	67	105	-	-	-	-	-	-	-
Stage 2	265	98	-	372	252	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	13	6	535	~ 6	6	242	672	-	-	258	-	-
Mov Cap-2 Maneuver	13	6	-	~ 6	6	-	-	-	-	-	-	-
Stage 1	197	133	-	65	102	-	-	-	-	-	-	-
Stage 2	205	95	-	192	132	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 406.3	$ 3096.8	0.1	4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	672	-	-	16	13	258	-	-
HCM Lane V/C Ratio	0.029	-	-	0.611	6.605	0.476	-	-
HCM Control Delay (s)	10.5	-	-	$ 406.3	$ 3096.8	31	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	11.8	2.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	264.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	442	44	30	31	35	22	25	1303	36	20	622	138
Future Vol, veh/h	442	44	30	31	35	22	25	1303	36	20	622	138
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
Heavy Vehicles, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	480	48	33	34	38	24	27	1416	39	22	676	150
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	211.8	14.9	398	94
HCM LOS	F	B	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	4%	0%	95%	0%	64%	0%	6%	0%
Vol Thru, %	96%	95%	5%	42%	36%	44%	94%	69%
Vol Right, %	0%	5%	0%	58%	0%	56%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	677	688	464	52	49	40	331	449
LT Vol	25	0	442	0	31	0	20	0
Through Vol	652	652	22	22	18	18	311	311
RT Vol	0	36	0	30	0	22	0	138
Lane Flow Rate	735	747	504	57	53	43	360	488
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.802	1.82	1.409	0.144	0.159	0.121	0.887	1.17
Departure Headway (Hd)	9.774	9.717	12.074	11.172	10.884	10.057	8.709	8.456
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	381	308	323	334	359	417	434
Service Time	7.474	7.417	9.774	8.872	8.501	7.757	6.409	6.156
HCM Lane V/C Ratio	1.924	1.961	1.636	0.176	0.159	0.12	0.863	1.124
HCM Control Delay	394.1	401.9	233.8	15.7	15.5	14.1	50.2	126.3
HCM Lane LOS	F	F	F	C	C	B	F	F
HCM 95th-tile Q	42.7	43.8	22.3	0.5	0.6	0.4	9.2	18.9

Intersection	
Int Delay, s/veh	16.1

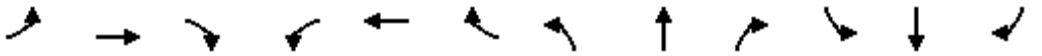
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	1	27	1	30	1	1324	74	81	570	21
Future Vol, veh/h	20	1	1	27	1	30	1	1324	74	81	570	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	22	1	1	29	1	33	1	1439	80	88	620	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1530	2329	322	1968	2300	760	643	0	0	1519	0	0
Stage 1	808	808	-	1481	1481	-	-	-	-	-	-	-
Stage 2	722	1521	-	487	819	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	64	27	611	~ 28	28	302	798	-	-	338	-	-
Stage 1	295	342	-	106	152	-	-	-	-	-	-	-
Stage 2	336	145	-	475	337	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	44	20	611	~ 21	21	302	798	-	-	338	-	-
Mov Cap-2 Maneuver	44	20	-	~ 21	21	-	-	-	-	-	-	-
Stage 1	295	253	-	106	152	-	-	-	-	-	-	-
Stage 2	297	145	-	349	249	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	164.7	$ 508.6	0	2.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	798	-	-	43	40	338	-	-
HCM Lane V/C Ratio	0.001	-	-	0.556	1.576	0.26	-	-
HCM Control Delay (s)	9.5	-	-	164.7	$ 508.6	19.4	-	-
HCM Lane LOS	A	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	2	6.5	1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	558	552	133	97	626	684	263	172	102	316	85	183
Future Volume (veh/h)	558	552	133	97	626	684	263	172	102	316	85	183
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	607	600	145	105	680	0	286	187	111	343	92	0
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	719	1308	583	133	835		377	251	213	434	282	
Arrive On Green	0.22	0.39	0.39	0.08	0.25	0.00	0.12	0.14	0.14	0.13	0.16	0.00
Sat Flow, veh/h	3237	3328	1485	1668	3328	1485	3237	1752	1485	3237	1752	1485
Grp Volume(v), veh/h	607	600	145	105	680	0	286	187	111	343	92	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1668	1664	1485	1618	1752	1485	1618	1752	1485
Q Serve(g_s), s	12.9	9.6	4.7	4.5	13.9	0.0	6.2	7.4	5.0	7.4	3.4	0.0
Cycle Q Clear(g_c), s	12.9	9.6	4.7	4.5	13.9	0.0	6.2	7.4	5.0	7.4	3.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	719	1308	583	133	835		377	251	213	434	282	
V/C Ratio(X)	0.84	0.46	0.25	0.79	0.81		0.76	0.74	0.52	0.79	0.33	
Avail Cap(c_a), veh/h	875	1308	583	294	992		485	474	401	516	491	
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.8	16.2	14.7	32.6	25.4	0.0	30.9	29.6	28.6	30.2	26.8	0.0
Incr Delay (d2), s/veh	6.4	0.3	0.2	9.8	4.6	0.0	5.1	4.3	2.0	6.9	0.7	0.0
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(50%),veh/ln	5.4	3.4	1.5	2.1	5.7	0.0	2.6	3.2	1.8	3.1	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	16.5	14.9	42.4	30.0	0.0	36.0	34.0	30.6	37.2	27.5	0.0
LnGrp LOS	C	B	B	D	C		D	C	C	D	C	
Approach Vol, veh/h		1352			785	A		584			435	A
Approach Delay, s/veh		23.9			31.7			34.3			35.1	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	14.8	10.3	32.8	12.9	16.1	20.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	19.5	12.7	28.3	10.8	20.2	19.5	21.5
Max Q Clear Time (g_c+I1), s	9.4	9.4	6.5	11.6	8.2	5.4	14.9	15.9
Green Ext Time (p_c), s	0.3	1.0	0.1	4.3	0.3	0.3	1.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	1051	43	1	273	1	13	1	1	1	1	39
Future Vol, veh/h	106	1051	43	1	273	1	13	1	1	1	1	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	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, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	115	1142	47	1	297	1	14	1	1	1	1	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	298	0	0	1189	0	0	1547	1696	595	1102	1719	149
Stage 1	-	-	-	-	-	-	1396	1396	-	300	300	-
Stage 2	-	-	-	-	-	-	151	300	-	802	1419	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.7	6.7	7.1	7.7	6.7	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.7	5.7	-	6.7	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.7	-	6.7	5.7	-
Follow-up Hdwy	2.3	-	-	2.3	-	-	3.6	4.1	3.4	3.6	4.1	3.4
Pot Cap-1 Maneuver	1204	-	-	540	-	-	72	84	428	156	82	846
Stage 1	-	-	-	-	-	-	138	192	-	662	645	-
Stage 2	-	-	-	-	-	-	813	645	-	327	187	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	540	-	-	63	76	428	142	74	846
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	76	-	142	74	-
Stage 1	-	-	-	-	-	-	125	174	-	598	644	-
Stage 2	-	-	-	-	-	-	770	644	-	293	169	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	72.1	11.2
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	63	129	1204	-	-	540	-	-	142	671
HCM Lane V/C Ratio	0.224	0.017	0.096	-	-	0.002	-	-	0.008	0.065
HCM Control Delay (s)	78	33.4	8.3	-	-	11.7	-	-	30.5	10.7
HCM Lane LOS	F	D	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	0.8	0.1	0.3	-	-	0	-	-	0	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	600	120	1	183	1	36	1	1	1	1	12
Future Vol, veh/h	40	600	120	1	183	1	36	1	1	1	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	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, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	43	652	130	1	199	1	39	1	1	1	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	200	0	0	782	0	0	905	1005	391	615	1070	100
Stage 1	-	-	-	-	-	-	803	803	-	202	202	-
Stage 2	-	-	-	-	-	-	102	202	-	413	868	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.7	6.7	7.1	7.7	6.7	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.7	5.7	-	6.7	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.7	-	6.7	5.7	-
Follow-up Hdwy	2.3	-	-	2.3	-	-	3.6	4.1	3.4	3.6	4.1	3.4
Pot Cap-1 Maneuver	1313	-	-	781	-	-	219	227	586	359	207	911
Stage 1	-	-	-	-	-	-	326	376	-	758	714	-
Stage 2	-	-	-	-	-	-	870	714	-	566	350	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1313	-	-	781	-	-	209	219	586	348	200	911
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	219	-	348	200	-
Stage 1	-	-	-	-	-	-	315	364	-	733	713	-
Stage 2	-	-	-	-	-	-	855	713	-	545	338	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	25.7	10.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	209	319	1313	-	-	781	-	-	348	715
HCM Lane V/C Ratio	0.187	0.007	0.033	-	-	0.001	-	-	0.003	0.02
HCM Control Delay (s)	26.2	16.4	7.8	-	-	9.6	-	-	15.4	10.1
HCM Lane LOS	D	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	0.1	-	-	0	-	-	0	0.1

Intersection Level Of Service Report
Intersection 1: US 95A/I-80 WB Ramps

Control Type:	Two-way stop	Delay (sec / veh):	42.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.551

Intersection Setup

Name	US 95A			US 95A						I-80 WB Ramps		
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	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	US 95A			US 95A						I-80 WB Ramps		
Base Volume Input [veh/h]	657	140	0	0	107	112	0	0	0	106	1	91
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 [%]	11.00	11.00	2.00	2.00	11.00	11.00	2.00	2.00	2.00	11.00	11.00	11.00
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	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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
Total Hourly Volume [veh/h]	657	140	0	0	107	112	0	0	0	106	1	91
Peak Hour Factor	0.9400	0.9400	1.0000	1.0000	0.9400	0.9400	1.0000	1.0000	1.0000	0.9400	0.9400	0.9400
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]	175	37	0	0	28	30	0	0	0	28	0	24
Total Analysis Volume [veh/h]	699	149	0	0	114	119	0	0	0	113	1	97
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.36	0.31	0.00	0.00	0.00	0.55	0.00	0.18
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	34.61	32.69	0.00	0.00	0.00	42.48	42.20	12.94
Movement LOS	A	A			D	D				E	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	4.56	4.56	0.00	0.00	0.00	2.97	2.97	0.64
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	114.11	114.11	0.00	0.00	0.00	74.35	74.35	15.88
d_A, Approach Delay [s/veh]	0.00			33.63			0.00			28.90		
Approach LOS	A			D			A			D		
d_I, Intersection Delay [s/veh]	10.78											
Intersection LOS	E											

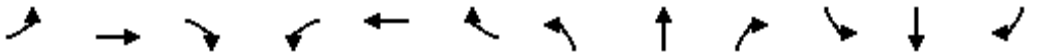
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	11	949	0	0	0	0	754	66	14	199	0
Future Vol, veh/h	43	11	949	0	0	0	0	754	66	14	199	0
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	-	-	Free	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	250	-	-	-	-	-	0	-	-	-
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	47	12	1032	0	0	0	0	820	72	15	216	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1066	1066	-	-	0	0	820	0	0
Stage 1	246	246	-	-	-	-	-	-	-
Stage 2	820	820	-	-	-	-	-	-	-
Critical Hdwy	6.46	6.56	-	-	-	-	4.16	-	-
Critical Hdwy Stg 1	5.46	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.46	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	-	-	-	-	2.254	-	-
Pot Cap-1 Maneuver	242	219	0	0	-	-	792	-	0
Stage 1	786	695	0	0	-	-	-	-	0
Stage 2	426	383	0	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	237	0	-	-	-	-	792	-	-
Mov Cap-2 Maneuver	237	0	-	-	-	-	-	-	-
Stage 1	786	0	-	-	-	-	-	-	-
Stage 2	417	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.1	0	0.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	237	-	792	-
HCM Lane V/C Ratio	-	-	0.248	-	0.019	-
HCM Control Delay (s)	-	-	25.1	0	9.6	0
HCM Lane LOS	-	-	D	A	A	A
HCM 95th %tile Q(veh)	-	-	0.9	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	83	89	1033	139	159	87	585	660	150	900	52
Future Volume (veh/h)	80	83	89	1033	139	159	87	585	660	150	900	52
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	87	94	1087	146	167	92	616	695	158	947	55
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	105	145	129	686	413	350	113	1882	838	209	1797	104
Arrive On Green	0.06	0.08	0.08	0.20	0.22	0.22	0.11	0.89	0.89	0.06	0.53	0.53
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	1767	3526	1571	3428	3386	197
Grp Volume(v), veh/h	84	87	94	1087	146	167	92	616	695	158	493	509
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1767	1763	1571	1714	1763	1820
Q Serve(g_s), s	6.1	6.2	7.6	26.0	8.6	12.0	6.6	3.5	23.9	5.9	23.7	23.7
Cycle Q Clear(g_c), s	6.1	6.2	7.6	26.0	8.6	12.0	6.6	3.5	23.9	5.9	23.7	23.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	105	145	129	686	413	350	113	1882	838	209	936	966
V/C Ratio(X)	0.80	0.60	0.73	1.59	0.35	0.48	0.81	0.33	0.83	0.76	0.53	0.53
Avail Cap(c_a), veh/h	150	556	496	686	799	677	122	1882	838	237	936	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.4	57.6	58.2	52.0	42.6	44.0	57.3	3.5	4.6	60.1	19.9	19.9
Incr Delay (d2), s/veh	17.6	4.0	7.6	268.4	0.4	0.7	20.5	0.3	5.8	11.5	2.1	2.1
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	2.9	3.3	36.7	4.0	4.8	3.5	1.1	3.9	2.9	10.2	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.0	61.5	65.8	320.4	43.0	44.7	77.8	3.8	10.4	71.6	22.0	21.9
LnGrp LOS	E	E	E	F	D	D	E	A	B	E	C	C
Approach Vol, veh/h		265			1400			1403			1160	
Approach Delay, s/veh		68.3			258.6			11.9			28.7	
Approach LOS		E			F			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	73.4	30.0	14.7	12.3	73.0	11.7	32.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	38.0	26.0	41.0	9.0	38.0	11.0	56.0
Max Q Clear Time (g_c+I1), s	7.9	25.9	28.0	9.6	8.6	25.7	8.1	14.0
Green Ext Time (p_c), s	0.1	5.7	0.0	1.1	0.0	5.2	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	101.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	55	404	250	47	102	348	1304	68	172	1713	113
Future Volume (veh/h)	66	55	404	250	47	102	348	1304	68	172	1713	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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	57	416	258	48	105	359	1344	70	177	1766	116
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	423	674	151	136	298	356	1656	86	151	1241	81
Arrive On Green	0.05	0.23	0.23	0.08	0.26	0.26	0.20	0.48	0.48	0.17	0.73	0.73
Sat Flow, veh/h	1781	1870	1579	1781	521	1140	1781	3436	179	1781	3387	220
Grp Volume(v), veh/h	68	57	416	258	0	153	359	694	720	177	918	964
Grp Sat Flow(s),veh/h/ln	1781	1870	1579	1781	0	1661	1781	1777	1838	1781	1777	1831
Q Serve(g_s), s	4.9	3.2	26.7	11.0	0.0	9.7	26.0	43.2	43.4	11.0	47.6	47.6
Cycle Q Clear(g_c), s	4.9	3.2	26.7	11.0	0.0	9.7	26.0	43.2	43.4	11.0	47.6	47.6
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.10	1.00		0.12
Lane Grp Cap(c), veh/h	87	423	674	151	0	435	356	856	886	151	651	671
V/C Ratio(X)	0.78	0.13	0.62	1.71	0.00	0.35	1.01	0.81	0.81	1.17	1.41	1.44
Avail Cap(c_a), veh/h	151	446	693	151	0	435	356	856	886	151	651	671
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	0.00	1.00	0.38	0.38	0.38	0.09	0.09	0.09
Uniform Delay (d), s/veh	61.1	40.2	29.1	59.5	0.0	39.0	52.0	28.6	28.7	54.0	17.4	17.4
Incr Delay (d2), s/veh	14.0	0.1	1.6	346.8	0.0	0.5	31.3	3.3	3.2	85.1	185.5	197.4
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	2.6	1.5	10.4	19.5	0.0	4.1	14.7	18.8	19.5	8.0	43.0	46.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	40.3	30.7	406.3	0.0	39.5	83.3	31.9	31.9	139.1	202.9	214.8
LnGrp LOS	E	D	C	F	A	D	F	C	C	F	F	F
Approach Vol, veh/h		541			411			1773			2059	
Approach Delay, s/veh		37.3			269.8			42.3			203.0	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	66.6	15.0	33.4	30.0	51.6	10.4	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	61.0	11.0	31.0	26.0	46.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	13.0	45.4	13.0	28.7	28.0	49.6	6.9	11.7
Green Ext Time (p_c), s	0.0	8.9	0.0	0.5	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	130.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	386	300	272	584	709	56	552	210	908	570	859
Future Volume (veh/h)	490	386	300	272	584	709	56	552	210	908	570	859
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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	510	402	0	283	608	0	58	575	0	946	594	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	547	605		303	648		75	728		991	841	
Arrive On Green	0.16	0.17	0.00	0.17	0.18	0.00	0.04	0.20	0.00	0.29	0.45	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	510	402	0	283	608	0	58	575	0	946	594	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1585	1728	1870	1585
Q Serve(g_s), s	15.7	11.4	0.0	16.8	18.1	0.0	3.5	16.5	0.0	28.9	27.5	0.0
Cycle Q Clear(g_c), s	15.7	11.4	0.0	16.8	18.1	0.0	3.5	16.5	0.0	28.9	27.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	547	605		303	648		75	728		991	841	
V/C Ratio(X)	0.93	0.66		0.93	0.94		0.77	0.79		0.95	0.71	
Avail Cap(c_a), veh/h	547	605		303	648		171	1145		991	959	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.6	41.7	0.0	43.9	43.3	0.0	50.9	40.5	0.0	37.6	23.8	0.0
Incr Delay (d2), s/veh	23.1	2.7	0.0	34.4	21.4	0.0	15.4	2.0	0.0	18.6	2.0	0.0
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(50%),veh/ln	8.4	5.2	0.0	10.3	9.8	0.0	1.9	7.3	0.0	14.5	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	44.4	0.0	78.3	64.7	0.0	66.3	42.5	0.0	56.2	25.9	0.0
LnGrp LOS	E	D		E	E		E	D		E	C	
Approach Vol, veh/h		912	A		891	A		633	A		1540	A
Approach Delay, s/veh		57.4			69.0			44.7			44.5	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.3	26.5	22.8	22.8	9.0	52.8	21.5	24.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.8	34.6	18.3	18.3	10.3	55.1	17.0	19.6
Max Q Clear Time (g_c+I1), s	30.9	18.5	18.8	13.4	5.5	29.5	17.7	20.1
Green Ext Time (p_c), s	0.0	3.5	0.0	1.1	0.0	4.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	330	5	6	611	59	40	20	7	28	10	415
Future Volume (veh/h)	282	330	5	6	611	59	40	20	7	28	10	415
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	307	359	5	7	664	64	43	22	8	30	11	451
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	390	1272	18	16	889	397	61	31	81	576	12	502
Arrive On Green	0.12	0.37	0.37	0.01	0.26	0.26	0.05	0.05	0.05	0.33	0.33	0.33
Sat Flow, veh/h	3346	3475	48	1725	3441	1535	1160	593	1535	1725	37	1504
Grp Volume(v), veh/h	307	178	186	7	664	64	65	0	8	30	0	462
Grp Sat Flow(s),veh/h/ln	1673	1721	1802	1725	1721	1535	1753	0	1535	1725	0	1540
Q Serve(g_s), s	6.8	5.5	5.5	0.3	13.4	2.4	2.8	0.0	0.4	0.9	0.0	21.6
Cycle Q Clear(g_c), s	6.8	5.5	5.5	0.3	13.4	2.4	2.8	0.0	0.4	0.9	0.0	21.6
Prop In Lane	1.00		0.03	1.00		1.00	0.66		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	390	630	660	16	889	397	93	0	81	576	0	515
V/C Ratio(X)	0.79	0.28	0.28	0.45	0.75	0.16	0.70	0.00	0.10	0.05	0.00	0.90
Avail Cap(c_a), veh/h	420	807	846	114	1410	629	730	0	639	684	0	611
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.5	17.0	17.0	37.3	25.8	21.7	35.3	0.0	34.1	17.1	0.0	24.0
Incr Delay (d2), s/veh	9.0	0.2	0.2	18.9	1.3	0.2	9.3	0.0	0.5	0.0	0.0	14.4
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	8.1	2.1	2.2	0.2	5.3	0.9	1.4	0.0	0.1	0.3	0.0	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	17.2	17.2	56.2	27.0	21.9	44.5	0.0	34.6	17.1	0.0	38.4
LnGrp LOS	D	B	B	E	C	C	D	A	C	B	A	D
Approach Vol, veh/h		671			735			73			492	
Approach Delay, s/veh		28.3			26.9			43.4			37.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.5	5.2	32.2	29.8	13.3	24.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	5.0	35.5	30.0	9.5	31.0
Max Q Clear Time (g_c+I1), s	4.8	2.3	7.5	23.6	8.8	15.4
Green Ext Time (p_c), s	0.3	0.0	2.1	1.7	0.1	4.1

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	69.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	212	8	1	1532	1	0	0	1	3
Future Vol, veh/h	0	0	0	212	8	1	1532	1	0	0	1	3
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	-	-	Yield	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	0	0	0	230	9	1	1665	1	0	0	1	3

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	3332	3332	1	1	0	-	-	-	0
Stage 1	3331	3331	-	-	-	-	-	-	-
Stage 2	1	1	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.75	6.45	4.35	-	-	-	-	-
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	3.525	2.425	-	-	-	-	-
Pot Cap-1 Maneuver	~ 7	~ 7	1020	~ 1483	-	0	0	-	-
Stage 1	~ 18	17	-	-	-	0	0	-	-
Stage 2	965	851	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	0	0	1020	~ 1483	-	-	-	-	-
Mov Cap-2 Maneuver	0	0	-	-	-	-	-	-	-
Stage 1	0	0	-	-	-	-	-	-	-
Stage 2	965	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		79.6	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	~ 1483	-	-	1020	-	-
HCM Lane V/C Ratio	1.123	-	-	0.001	-	-
HCM Control Delay (s)	79.7	0	-	8.5	-	-
HCM Lane LOS	F	A	-	A	-	-
HCM 95th %tile Q(veh)	38.9	-	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	1050	0	0	0	0	1530	287	1	212	0
Future Vol, veh/h	3	1	1050	0	0	0	0	1530	287	1	212	0
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	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	415	-	-	-	-	-	0	115	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	3	1	1141	0	0	0	0	1663	312	1	230	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1895	1895	-	-	0	-	1663	0	0
Stage 1	232	232	-	-	-	-	-	-	-
Stage 2	1663	1663	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.75	-	-	-	-	4.35	-	-
Critical Hdwy Stg 1	5.65	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	-	-	-	-	2.425	-	-
Pot Cap-1 Maneuver	67	61	0	0	-	0	331	-	0
Stage 1	755	672	0	0	-	0	-	-	0
Stage 2	149	136	0	0	-	0	-	-	0
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	67	0	-	-	-	-	331	-	-
Mov Cap-2 Maneuver	67	0	-	-	-	-	-	-	-
Stage 1	755	0	-	-	-	-	-	-	-
Stage 2	149	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	62.4	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	67	-	331	-
HCM Lane V/C Ratio	-	0.065	-	0.003	-
HCM Control Delay (s)	-	62.4	0	15.9	-
HCM Lane LOS	-	F	A	C	-
HCM 95th %tile Q(veh)	-	0.2	-	0	-

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	181	56	131	355	84	443	116	1193	248	310	822	130
Future Vol, veh/h	181	56	131	355	84	443	116	1193	248	310	822	130
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	170	-	170	325	-	-	250	-	250	225	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	197	61	142	386	91	482	126	1297	270	337	893	141

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2584	3457	517	2700	3257	649	1034	0	0	1567	0	0
Stage 1	1638	1638	-	1549	1549	-	-	-	-	-	-	-
Stage 2	946	1819	-	1151	1708	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	~ 9	~ 4	447	~ 7	~ 6	~ 362	546	-	-	~ 323	-	-
Stage 1	~ 83	125	-	~ 95	140	-	-	-	-	-	-	-
Stage 2	240	99	-	~ 176	114	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	447	-	0	~ 362	546	-	-	~ 323	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 64	0	-	~ 73	108	-	-	-	-	-	-	-
Stage 2	-	76	-	-	0	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			1	24.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	546	-	-	-	-	447	-	-	362	~ 323	-	-
HCM Lane V/C Ratio	0.231	-	-	-	-	0.319	-	-	1.33	1.043	-	-
HCM Control Delay (s)	13.6	-	-	-	-	16.8	-	-	196.3	98.9	-	-
HCM Lane LOS	B	-	-	-	-	C	-	-	F	F	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-	-	1.4	-	-	22.8	12.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	10481.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1	7	554	1	542	4	966	270	277	1032	2
Future Vol, veh/h	7	1	7	554	1	542	4	966	270	277	1032	2
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	-	-	225	-	250	200	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	8	1	8	602	1	589	4	1050	293	301	1122	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2258	3075	561	2222	2784	525	1124	0	0	1343	0	0
Stage 1	1724	1724	-	1058	1058	-	-	-	-	-	-	-
Stage 2	534	1351	-	1164	1726	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	17	8	417	~ 18	13	~ 442	500	-	-	403	-	-
Stage 1	72	112	-	~ 202	254	-	-	-	-	-	-	-
Stage 2	443	178	-	~ 172	112	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	2	417	~ 4	3	~ 442	500	-	-	403	-	-
Mov Cap-2 Maneuver	-	2	-	~ 4	3	-	-	-	-	-	-	-
Stage 1	71	28	-	~ 200	252	-	-	-	-	-	-	-
Stage 2	-	177	-	~ 41	28	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 34988.8	0	7.6
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	500	-	-	-	4	3	442	403	-	-
HCM Lane V/C Ratio	0.009	-	-	1	50.543	0.362	1.333	0.747	-	-
HCM Control Delay (s)	12.3	-	-	$ 69093.3	$ 1526.5	190.5	36	-	-	
HCM Lane LOS	B	-	-	-	F	F	F	E	-	-
HCM 95th %tile Q(veh)	0	-	-	-	77.7	0.5	26.7	6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	291.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	1	10	106	1	112	7	1108	40	45	1554	3
Future Vol, veh/h	18	1	10	106	1	112	7	1108	40	45	1554	3
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	-	-	-	-	-	-	50	-	-	100	-	250
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	20	1	11	115	1	122	8	1204	43	49	1689	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2406	3050	845	2185	3032	624	1692	0	0	1247	0	0
Stage 1	1787	1787	-	1242	1242	-	-	-	-	-	-	-
Stage 2	619	1263	-	943	1790	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	~ 12	8	263	~ 19	9	377	285	-	-	443	-	-
Stage 1	66	103	-	153	204	-	-	-	-	-	-	-
Stage 2	391	199	-	241	103	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	7	263	~ 14	8	377	285	-	-	443	-	-
Mov Cap-2 Maneuver	~ 7	7	-	~ 14	8	-	-	-	-	-	-	-
Stage 1	64	92	-	149	198	-	-	-	-	-	-	-
Stage 2	256	193	-	203	92	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	1525.5	$ 3800.2	0.1	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	285	-	-	11	27	443	-	-
HCM Lane V/C Ratio	0.027	-	-	2.866	8.816	0.11	-	-
HCM Control Delay (s)	18	-	-	$ 1525.5	$ 3800.2	14.1	-	-
HCM Lane LOS	C	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5	29.4	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	369.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	155	15	19	36	26	35	16	975	13	23	1381	366
Future Vol, veh/h	155	15	19	36	26	35	16	975	13	23	1381	366
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
Heavy Vehicles, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	168	16	21	39	28	38	17	1060	14	25	1501	398
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	28.8	17.6	143	554
HCM LOS	D	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	3%	0%	95%	0%	73%	0%	3%	0%
Vol Thru, %	97%	97%	5%	28%	27%	27%	97%	65%
Vol Right, %	0%	3%	0%	72%	0%	73%	0%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	504	501	163	27	49	48	714	1057
LT Vol	16	0	155	0	36	0	23	0
Through Vol	488	488	8	8	13	13	691	691
RT Vol	0	13	0	19	0	35	0	366
Lane Flow Rate	547	544	177	29	53	52	776	1148
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.218	1.206	0.498	0.073	0.152	0.136	1.726	2.474
Departure Headway (Hd)	8.727	8.692	14.476	13.482	13.158	12.263	8.344	8.079
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	424	251	268	274	294	442	459
Service Time	6.427	6.392	12.176	11.182	10.858	9.963	6.044	5.779
HCM Lane V/C Ratio	1.299	1.283	0.705	0.108	0.193	0.177	1.756	2.501
HCM Control Delay	145.3	140.6	30.7	17.2	18.2	16.9	356.5	687.4
HCM Lane LOS	F	F	D	C	C	C	F	F
HCM 95th-tile Q	20.5	20	2.6	0.2	0.5	0.5	45.3	86.9

Intersection	
Int Delay, s/veh	46.9

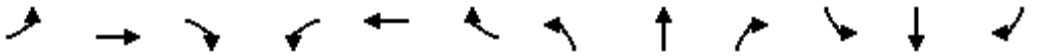
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	1	1	65	1	71	1	921	36	39	1394	8
Future Vol, veh/h	8	1	1	65	1	71	1	921	36	39	1394	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Mvmt Flow	9	1	1	71	1	77	1	1001	39	42	1515	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2107	2646	762	1865	2631	520	1524	0	0	1040	0	0
Stage 1	1604	1604	-	1023	1023	-	-	-	-	-	-	-
Stage 2	503	1042	-	842	1608	-	-	-	-	-	-	-
Critical Hdwy	8	7	7.4	8	7	7.4	4.6	-	-	4.6	-	-
Critical Hdwy Stg 1	7	6	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	6	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.75	4.25	3.55	3.75	4.25	3.55	2.45	-	-	2.45	-	-
Pot Cap-1 Maneuver	22	16	301	~ 35	17	445	337	-	-	543	-	-
Stage 1	87	130	-	214	265	-	-	-	-	-	-	-
Stage 2	464	259	-	280	130	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	16	15	301	~ 31	16	445	337	-	-	543	-	-
Mov Cap-2 Maneuver	16	15	-	~ 31	16	-	-	-	-	-	-	-
Stage 1	87	120	-	213	264	-	-	-	-	-	-	-
Stage 2	381	258	-	255	120	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 365.5	$ 841.2	0	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	337	-	-	18	59	543	-	-
HCM Lane V/C Ratio	0.003	-	-	0.604	2.524	0.078	-	-
HCM Control Delay (s)	15.7	-	-	-$ 365.5	$ 841.2	12.2	-	-
HCM Lane LOS	C	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	15	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	859	131	97	710	483	204	128	124	743	112	611
Future Volume (veh/h)	340	859	131	97	710	483	204	128	124	743	112	611
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	370	934	142	105	772	0	222	139	135	808	122	0
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	448	1068	476	133	872		311	220	187	894	536	
Arrive On Green	0.13	0.31	0.31	0.08	0.25	0.00	0.09	0.12	0.12	0.26	0.29	0.00
Sat Flow, veh/h	3374	3469	1547	1739	3469	1547	3374	1826	1547	3374	1826	1547
Grp Volume(v), veh/h	370	934	142	105	772	0	222	139	135	808	122	0
Grp Sat Flow(s),veh/h/ln	1687	1735	1547	1739	1735	1547	1687	1826	1547	1687	1826	1547
Q Serve(g_s), s	8.4	19.9	5.5	4.6	16.8	0.0	5.0	5.7	6.6	18.1	4.0	0.0
Cycle Q Clear(g_c), s	8.4	19.9	5.5	4.6	16.8	0.0	5.0	5.7	6.6	18.1	4.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	1068	476	133	872		311	220	187	894	536	
V/C Ratio(X)	0.83	0.87	0.30	0.79	0.89		0.71	0.63	0.72	0.90	0.23	
Avail Cap(c_a), veh/h	453	1100	491	138	910		479	451	382	936	698	
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.0	25.6	20.6	35.5	28.2	0.0	34.5	32.7	33.1	27.8	20.9	0.0
Incr Delay (d2), s/veh	11.9	7.9	0.3	25.4	10.1	0.0	3.0	3.0	5.2	11.7	0.2	0.0
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(50%),veh/ln	4.1	8.9	1.9	2.9	7.9	0.0	2.1	2.6	2.7	8.4	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	33.5	21.0	60.9	38.3	0.0	37.5	35.7	38.3	39.5	21.1	0.0
LnGrp LOS	D	C	C	E	D		D	D	D	D	C	
Approach Vol, veh/h		1446			877	A		496			930	A
Approach Delay, s/veh		35.2			41.0			37.2			37.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	13.9	10.5	28.6	11.7	27.4	14.9	24.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.7	19.3	6.2	24.8	11.1	29.9	10.5	20.5
Max Q Clear Time (g_c+I1), s	20.1	8.6	6.6	21.9	7.0	6.0	10.4	18.8
Green Ext Time (p_c), s	0.6	0.9	0.0	1.8	0.3	0.6	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	352	17	1	551	1	31	1	1	1	1	144
Future Vol, veh/h	122	352	17	1	551	1	31	1	1	1	1	144
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	133	383	18	1	599	1	34	1	1	1	1	157

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	600	0	0	401	0	0	960	1260	201	1060	1269	300
Stage 1	-	-	-	-	-	-	658	658	-	602	602	-
Stage 2	-	-	-	-	-	-	302	602	-	458	667	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.6	6.6	7	7.6	6.6	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.6	-	6.6	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.6	-	6.6	5.6	-
Follow-up Hdwy	2.25	-	-	2.25	-	-	3.55	4.05	3.35	3.55	4.05	3.35
Pot Cap-1 Maneuver	953	-	-	1133	-	-	207	165	797	174	163	687
Stage 1	-	-	-	-	-	-	413	452	-	446	480	-
Stage 2	-	-	-	-	-	-	674	480	-	544	448	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	953	-	-	1133	-	-	142	142	797	154	140	687
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	142	-	154	140	-
Stage 1	-	-	-	-	-	-	355	389	-	384	480	-
Stage 2	-	-	-	-	-	-	519	480	-	466	385	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	37	12.1
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	142	241	953	-	-	1133	-	-	154	669
HCM Lane V/C Ratio	0.237	0.009	0.139	-	-	0.001	-	-	0.007	0.236
HCM Control Delay (s)	38.1	20.1	9.4	-	-	8.2	-	-	28.5	12
HCM Lane LOS	E	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.9	0	0.5	-	-	0	-	-	0	0.9

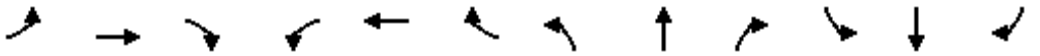
Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	442	47	1	874	1	120	1	1	1	1	35
Future Vol, veh/h	19	442	47	1	874	1	120	1	1	1	1	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	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, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	21	480	51	1	950	1	130	1	1	1	1	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	951	0	0	531	0	0	1026	1501	266	1236	1526	476
Stage 1	-	-	-	-	-	-	548	548	-	953	953	-
Stage 2	-	-	-	-	-	-	478	953	-	283	573	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.6	6.6	7	7.6	6.6	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.6	-	6.6	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.6	-	6.6	5.6	-
Follow-up Hdwy	2.25	-	-	2.25	-	-	3.55	4.05	3.35	3.55	4.05	3.35
Pot Cap-1 Maneuver	700	-	-	1012	-	-	185	117	723	129	113	527
Stage 1	-	-	-	-	-	-	481	508	-	273	329	-
Stage 2	-	-	-	-	-	-	529	329	-	692	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	700	-	-	1012	-	-	166	113	723	125	109	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	113	-	125	109	-
Stage 1	-	-	-	-	-	-	467	493	-	265	329	-
Stage 2	-	-	-	-	-	-	489	329	-	669	480	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	77.5	13.8
HCM LOS			F	B

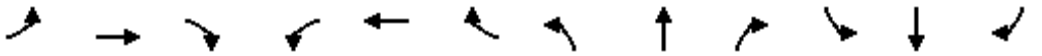
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	166	195	700	-	-	1012	-	-	125	476
HCM Lane V/C Ratio	0.786	0.011	0.03	-	-	0.001	-	-	0.009	0.082
HCM Control Delay (s)	78.4	23.7	10.3	-	-	8.6	-	-	34.1	13.2
HCM Lane LOS	F	C	B	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	5.1	0	0.1	-	-	0	-	-	0	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	61	41	357	35	62	28	813	781	111	437	17
Future Volume (veh/h)	56	61	41	357	35	62	28	813	781	111	437	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	60	66	44	384	38	67	30	874	840	119	470	18
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	77	152	93	307	220	186	55	2233	1136	173	2261	86
Arrive On Green	0.04	0.07	0.07	0.09	0.12	0.12	0.03	0.65	0.65	0.05	0.67	0.67
Sat Flow, veh/h	1725	2048	1247	3346	1811	1527	1725	3441	1534	3346	3379	129
Grp Volume(v), veh/h	60	54	56	384	38	67	30	874	840	119	239	249
Grp Sat Flow(s),veh/h/ln	1725	1721	1575	1673	1811	1527	1725	1721	1534	1673	1721	1788
Q Serve(g_s), s	4.1	3.6	4.1	11.0	2.3	4.8	2.1	14.3	37.7	4.2	6.4	6.4
Cycle Q Clear(g_c), s	4.1	3.6	4.1	11.0	2.3	4.8	2.1	14.3	37.7	4.2	6.4	6.4
Prop In Lane	1.00		0.79	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	77	128	117	307	220	186	55	2233	1136	173	1151	1196
V/C Ratio(X)	0.78	0.43	0.47	1.25	0.17	0.36	0.55	0.39	0.74	0.69	0.21	0.21
Avail Cap(c_a), veh/h	158	588	538	307	619	522	158	2233	1136	307	1151	1196
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	0.94	0.94	0.94	0.63	0.63	0.63	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	53.1	53.3	54.5	47.3	48.4	57.3	9.9	8.9	55.9	7.6	7.6
Incr Delay (d2), s/veh	15.7	2.2	3.0	136.2	0.3	1.1	5.4	0.3	2.8	4.8	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	2.1	1.6	1.7	10.4	1.0	1.9	1.0	5.3	11.5	1.9	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	55.3	56.3	190.7	47.6	49.5	62.6	10.2	11.7	60.7	8.0	8.0
LnGrp LOS	E	E	E	F	D	D	E	B	B	E	A	A
Approach Vol, veh/h		170			489			1744			607	
Approach Delay, s/veh		61.7			160.2			11.8			18.4	
Approach LOS		E			F			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	81.9	15.0	12.9	7.8	84.3	9.3	18.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	41.0	11.0	41.0	11.0	41.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	6.2	39.7	13.0	6.1	4.1	8.4	6.1	6.8
Green Ext Time (p_c), s	0.1	1.1	0.0	0.6	0.0	3.2	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D



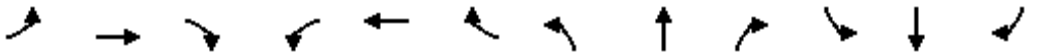
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	18	193	120	14	55	201	1498	60	69	727	50
Future Volume (veh/h)	83	18	193	120	14	55	201	1498	60	69	727	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	88	19	0	128	15	59	214	1594	64	73	773	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	110	98		129	21	82	244	1630	65	439	2052	913
Arrive On Green	0.06	0.05	0.00	0.08	0.07	0.07	0.14	0.48	0.48	0.25	0.60	0.60
Sat Flow, veh/h	1725	1811	1535	1725	321	1263	1725	3372	135	1725	3441	1531
Grp Volume(v), veh/h	88	19	0	128	0	74	214	811	847	73	773	53
Grp Sat Flow(s),veh/h/ln	1725	1811	1535	1725	0	1584	1725	1721	1786	1725	1721	1531
Q Serve(g_s), s	6.0	1.2	0.0	8.9	0.0	5.5	14.6	55.2	56.0	4.0	14.0	1.7
Cycle Q Clear(g_c), s	6.0	1.2	0.0	8.9	0.0	5.5	14.6	55.2	56.0	4.0	14.0	1.7
Prop In Lane	1.00		1.00	1.00		0.80	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	110	98		129	0	103	244	832	863	439	2052	913
V/C Ratio(X)	0.80	0.19		0.99	0.00	0.72	0.88	0.97	0.98	0.17	0.38	0.06
Avail Cap(c_a), veh/h	187	468		129	0	356	359	832	863	439	2052	913
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	0.00	1.00	0.00	1.00	0.40	0.40	0.40	0.93	0.93	0.93
Uniform Delay (d), s/veh	55.4	54.3	0.0	55.5	0.0	55.0	50.5	30.3	30.5	34.8	12.6	10.1
Incr Delay (d2), s/veh	12.2	1.0	0.0	75.7	0.0	9.0	6.9	14.6	15.5	0.2	0.5	0.1
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	3.0	0.6	0.0	6.6	0.0	2.5	6.8	25.4	26.9	1.7	5.4	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	55.2	0.0	131.2	0.0	64.0	57.4	44.9	46.0	35.0	13.1	10.2
LnGrp LOS	E	E		F	A	E	E	D	D	C	B	B
Approach Vol, veh/h		107	A		202			1872			899	
Approach Delay, s/veh		65.4			106.6			46.8			14.7	
Approach LOS		E			F			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.5	62.0	13.0	10.5	21.0	75.6	11.7	11.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	58.0	9.0	31.0	25.0	39.0	13.0	27.0
Max Q Clear Time (g_c+I1), s	6.0	58.0	10.9	3.2	16.6	16.0	8.0	7.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.4	5.9	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	311	1	0	782	0	0	0	0	0
Future Volume (veh/h)	0	0	0	311	1	0	782	0	0	0	0	0
Initial Q (Qb), veh				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
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1530	1530	1530	1530	1530	0	0	1530	1530
Adj Flow Rate, veh/h				338	1	0	850	0	0	0	0	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				25	25	25	25	25	0	0	25	25
Cap, veh/h				451	1		1177	637	0	0	5	
Arrive On Green				0.31	0.31	0.00	0.42	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1453	4	1296	2826	1530	0	0	-68828	1296
Grp Volume(v), veh/h				339	0	0	850	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1457	0	1296	1413	1530	0	0	1530	1296
Q Serve(g_s), s				6.9	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				6.9	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				453	0		1177	637	0	0	5	
V/C Ratio(X)				0.75	0.00		0.72	0.00	0.00	0.00	0.00	
Avail Cap(c_a), veh/h				1038	0		2570	1391	0	0	1067	
HCM Platoon Ratio				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	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				10.2	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				2.5	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				12.7	0.0	0.0	8.9	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				B	A		A	A	A	A	A	
Approach Vol, veh/h					339	A		850			0	A
Approach Delay, s/veh					12.7			8.9			0.0	
Approach LOS					B			A				

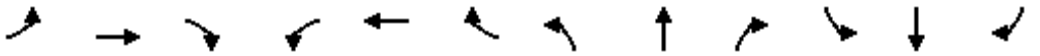
Timer - Assigned Phs	2			6		8						
Phs Duration (G+Y+Rc), s	18.2			0.0		14.7						
Change Period (Y+Rc), s	4.5			4.5		4.5						
Max Green Setting (Gmax), s	30.0			23.0		23.5						
Max Q Clear Time (g_c+I1), s	10.3			0.0		8.9						
Green Ext Time (p_c), s	3.5			0.0		1.8						

Intersection Summary		
HCM 6th Ctrl Delay		10.0
HCM 6th LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



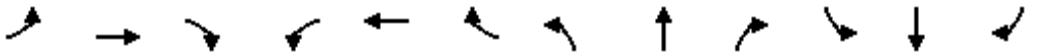
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	1491	0	0	0	0	779	115	1	310	0
Future Volume (veh/h)	3	1	1491	0	0	0	0	779	115	1	310	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1530	1530	1530				0	1530	1530	1530	1530	0
Adj Flow Rate, veh/h	3	1	0				0	847	0	1	337	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	25	25				0	25	25	25	25	0
Cap, veh/h	6	2					0	1416		5	1005	0
Arrive On Green	0.01	0.01	0.00				0.00	0.49	0.00	0.00	0.66	0.00
Sat Flow, veh/h	1106	369	1296				0	2983	1296	1457	1530	0
Grp Volume(v), veh/h	4	0	0				0	847	0	1	337	0
Grp Sat Flow(s),veh/h/ln	1474	0	1296				0	1453	1296	1457	1530	0
Q Serve(g_s), s	0.1	0.0	0.0				0.0	5.6	0.0	0.0	2.6	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0				0.0	5.6	0.0	0.0	2.6	0.0
Prop In Lane	0.75		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	8	0					0	1416		5	1005	0
V/C Ratio(X)	0.50	0.00					0.00	0.60		0.18	0.34	0.00
Avail Cap(c_a), veh/h	1050	0					0	2450		273	1834	0
HCM Platoon Ratio	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	0.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	0.0				0.0	5.0	0.0	13.3	2.0	0.0
Incr Delay (d2), s/veh	40.2	0.0	0.0				0.0	0.4	0.0	15.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0				0.0	0.6	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	0.0	0.0				0.0	5.4	0.0	28.6	2.2	0.0
LnGrp LOS	D	A					A	A		C	A	A
Approach Vol, veh/h		4	A					847	A		338	
Approach Delay, s/veh		53.5						5.4			2.3	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.5	17.5		4.6		22.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	5.0	22.5		19.0		32.0
Max Q Clear Time (g_c+I1), s	2.0	7.6		2.1		4.6
Green Ext Time (p_c), s	0.0	5.4		0.0		2.2

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



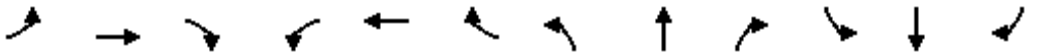
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	107	130	107	49	122	152	641	372	527	1069	205
Future Volume (veh/h)	131	107	130	107	49	122	152	641	372	527	1069	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	142	116	141	116	53	0	165	697	0	573	1162	223
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	167	212	179	169	128		192	1562		668	1390	620
Arrive On Green	0.11	0.14	0.14	0.06	0.08	0.00	0.13	0.37	0.00	0.24	0.48	0.48
Sat Flow, veh/h	1457	1530	1296	2826	1530	1296	1457	4176	1296	2826	2906	1296
Grp Volume(v), veh/h	142	116	141	116	53	0	165	697	0	573	1162	223
Grp Sat Flow(s),veh/h/ln	1457	1530	1296	1413	1530	1296	1457	1392	1296	1413	1453	1296
Q Serve(g_s), s	9.0	6.7	9.9	3.8	3.1	0.0	10.4	11.8	0.0	18.3	32.7	10.2
Cycle Q Clear(g_c), s	9.0	6.7	9.9	3.8	3.1	0.0	10.4	11.8	0.0	18.3	32.7	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	212	179	169	128		192	1562		668	1390	620
V/C Ratio(X)	0.85	0.55	0.79	0.68	0.42		0.86	0.45		0.86	0.84	0.36
Avail Cap(c_a), veh/h	214	687	582	345	650		255	1721		1033	1750	781
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	37.8	39.2	43.4	41.0	0.0	40.0	22.1	0.0	34.4	21.3	15.5
Incr Delay (d2), s/veh	21.7	2.2	7.4	4.8	2.1	0.0	19.4	0.2	0.0	4.6	3.0	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	4.2	2.6	3.4	1.4	1.2	0.0	4.7	3.7	0.0	6.6	11.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	40.0	46.6	48.2	43.1	0.0	59.4	22.3	0.0	39.0	24.3	15.8
LnGrp LOS	E	D	D	D	D		E	C		D	C	B
Approach Vol, veh/h		399			169	A		862	A		1958	
Approach Delay, s/veh		50.4			46.6			29.4			27.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.7	39.7	10.1	17.5	16.9	49.5	15.3	12.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	34.4	38.8	11.5	42.3	16.5	56.7	13.8	40.0
Max Q Clear Time (g_c+I1), s	20.3	13.8	5.8	11.9	12.4	34.7	11.0	5.1
Green Ext Time (p_c), s	2.0	5.1	0.1	1.1	0.2	10.3	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



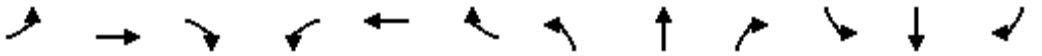
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	2	180	1	183	10	989	591	609	688	5
Future Volume (veh/h)	2	1	2	180	1	183	10	989	591	609	688	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	2	1	2	196	1	0	11	1075	642	662	748	5
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	9	3	6	262	142		19	1372	732	728	2083	929
Arrive On Green	0.01	0.01	0.01	0.09	0.09	0.00	0.01	0.47	0.47	0.26	0.72	0.72
Sat Flow, veh/h	1457	455	910	2826	1530	1296	1457	2906	1296	2826	2906	1296
Grp Volume(v), veh/h	2	0	3	196	1	0	11	1075	642	662	748	5
Grp Sat Flow(s),veh/h/ln	1457	0	1366	1413	1530	1296	1457	1453	1296	1413	1453	1296
Q Serve(g_s), s	0.1	0.0	0.2	7.1	0.1	0.0	0.8	32.6	44.9	23.9	10.3	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.2	7.1	0.1	0.0	0.8	32.6	44.9	23.9	10.3	0.1
Prop In Lane	1.00		0.67	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	0	9	262	142		19	1372	732	728	2083	929
V/C Ratio(X)	0.21	0.00	0.34	0.75	0.01		0.58	0.78	0.88	0.91	0.36	0.01
Avail Cap(c_a), veh/h	194	0	182	993	537		69	1394	742	819	2098	936
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	52.1	46.6	43.4	0.0	51.7	23.3	19.7	37.9	5.7	4.2
Incr Delay (d2), s/veh	10.8	0.0	21.2	4.2	0.0	0.0	24.8	3.0	11.4	13.2	0.1	0.0
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(50%),veh/ln	0.1	0.0	0.1	2.6	0.0	0.0	0.4	11.1	18.0	9.4	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	73.3	50.8	43.4	0.0	76.4	26.2	31.2	51.0	5.8	4.2
LnGrp LOS	E	A	E	D	D		E	C	C	D	A	A
Approach Vol, veh/h		5			197	A		1728			1415	
Approach Delay, s/veh		69.1			50.8			28.4			27.0	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.6	54.2		5.2	5.9	80.0		14.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.5	50.5		14.0	5.0	76.0		37.0				
Max Q Clear Time (g_c+I1), s	25.9	46.9		2.2	2.8	12.3		9.1				
Green Ext Time (p_c), s	1.2	2.8		0.0	0.0	6.3		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		29.2
HCM 6th LOS		C

Notes

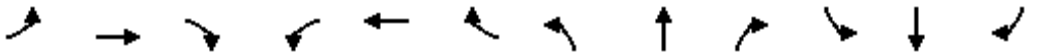
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	44	30	31	35	22	25	1389	36	20	643	111
Future Volume (veh/h)	358	44	30	31	35	22	25	1389	36	20	643	111
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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	389	48	33	34	38	24	27	1510	39	22	699	121
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	360	760	339	42	126	56	37	1545	689	32	1536	685
Arrive On Green	0.25	0.26	0.26	0.03	0.04	0.04	0.03	0.53	0.53	0.02	0.53	0.53
Sat Flow, veh/h	1457	2906	1296	1457	2906	1296	1457	2906	1296	1457	2906	1296
Grp Volume(v), veh/h	389	48	33	34	38	24	27	1510	39	22	699	121
Grp Sat Flow(s),veh/h/ln	1457	1453	1296	1457	1453	1296	1457	1453	1296	1457	1453	1296
Q Serve(g_s), s	28.5	1.4	2.2	2.7	1.5	2.1	2.1	58.4	1.7	1.7	17.2	5.6
Cycle Q Clear(g_c), s	28.5	1.4	2.2	2.7	1.5	2.1	2.1	58.4	1.7	1.7	17.2	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	760	339	42	126	56	37	1545	689	32	1536	685
V/C Ratio(X)	1.08	0.06	0.10	0.81	0.30	0.43	0.74	0.98	0.06	0.69	0.46	0.18
Avail Cap(c_a), veh/h	360	1313	585	106	806	360	95	1549	691	63	1536	685
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	32.0	32.3	55.7	53.5	53.8	55.8	26.3	13.0	56.0	16.9	14.1
Incr Delay (d2), s/veh	70.7	0.0	0.1	29.6	1.3	5.1	24.8	17.6	0.0	23.1	0.2	0.1
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	17.2	0.5	0.7	1.3	0.6	0.8	1.0	22.5	0.5	0.8	5.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.2	32.0	32.4	85.3	54.8	58.9	80.7	44.0	13.1	79.1	17.1	14.3
LnGrp LOS	F	C	C	F	D	E	F	D	B	E	B	B
Approach Vol, veh/h		470			96			1576			842	
Approach Delay, s/veh		100.0			66.6			43.8			18.3	
Approach LOS		F			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	65.8	7.8	34.7	7.4	65.5	33.0	9.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	61.5	8.4	52.1	7.5	59.0	28.5	32.0
Max Q Clear Time (g_c+I1), s	3.7	60.4	4.7	4.2	4.1	19.2	30.5	4.1
Green Ext Time (p_c), s	0.0	0.9	0.0	0.4	0.0	6.4	0.0	0.2

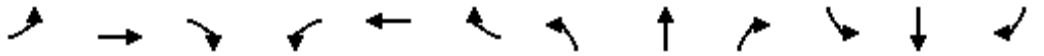
Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1	1	27	1	30	1	1411	74	81	591	21
Future Volume (veh/h)	20	1	1	27	1	30	1	1411	74	81	591	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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	22	1	1	29	1	33	1	1534	80	88	642	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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	38	38	38	48	2	76	3	2062	108	104	2389	85
Arrive On Green	0.03	0.05	0.05	0.03	0.06	0.06	0.00	0.51	0.51	0.07	0.58	0.58
Sat Flow, veh/h	1457	702	702	1457	38	1264	1457	4063	212	1457	4139	148
Grp Volume(v), veh/h	22	0	2	29	0	34	1	1051	563	88	431	234
Grp Sat Flow(s),veh/h/ln	1457	0	1403	1457	0	1302	1457	1392	1491	1457	1392	1503
Q Serve(g_s), s	0.8	0.0	0.1	1.1	0.0	1.4	0.0	16.1	16.1	3.2	4.2	4.2
Cycle Q Clear(g_c), s	0.8	0.0	0.1	1.1	0.0	1.4	0.0	16.1	16.1	3.2	4.2	4.2
Prop In Lane	1.00		0.50	1.00		0.97	1.00		0.14	1.00		0.10
Lane Grp Cap(c), veh/h	38	0	76	48	0	79	3	1413	757	104	1607	868
V/C Ratio(X)	0.58	0.00	0.03	0.61	0.00	0.43	0.37	0.74	0.74	0.85	0.27	0.27
Avail Cap(c_a), veh/h	138	0	472	138	0	438	135	1683	901	171	1750	945
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	24.1	25.7	0.0	24.4	26.8	10.5	10.5	24.7	5.7	5.7
Incr Delay (d2), s/veh	13.2	0.0	0.1	11.9	0.0	3.7	67.8	1.5	2.8	18.5	0.1	0.2
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(50%),veh/ln	0.4	0.0	0.0	0.5	0.0	0.5	0.1	3.9	4.4	1.5	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	24.2	37.6	0.0	28.1	94.6	12.0	13.3	43.2	5.8	5.9
LnGrp LOS	D	A	C	D	A	C	F	B	B	D	A	A
Approach Vol, veh/h		24			63			1615			753	
Approach Delay, s/veh		37.9			32.4			12.5			10.2	
Approach LOS		D			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	31.8	6.3	7.4	4.6	35.5	5.9	7.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.3	32.5	5.1	18.1	5.0	33.8	5.1	18.1
Max Q Clear Time (g_c+I1), s	5.2	18.1	3.1	2.1	2.0	6.2	2.8	3.4
Green Ext Time (p_c), s	0.0	9.2	0.0	0.0	0.0	4.6	0.0	0.1

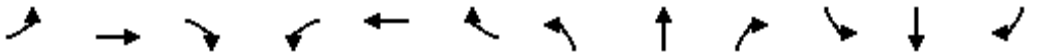
Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	686	36	1	160	2	10	1	1	2	1	49
Future Volume (veh/h)	123	686	36	1	160	2	10	1	1	2	1	49
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	134	746	39	1	174	2	11	1	1	2	1	53
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, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	181	1173	61	5	869	10	24	60	60	5	2	92
Arrive On Green	0.11	0.36	0.36	0.00	0.26	0.26	0.01	0.07	0.07	0.00	0.06	0.06
Sat Flow, veh/h	1668	3218	168	1668	3370	39	1668	804	804	1668	28	1461
Grp Volume(v), veh/h	134	386	399	1	86	90	11	0	2	2	0	54
Grp Sat Flow(s),veh/h/ln	1668	1664	1722	1668	1664	1745	1668	0	1607	1668	0	1489
Q Serve(g_s), s	2.5	6.2	6.2	0.0	1.3	1.3	0.2	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	2.5	6.2	6.2	0.0	1.3	1.3	0.2	0.0	0.0	0.0	0.0	1.1
Prop In Lane	1.00		0.10	1.00		0.02	1.00		0.50	1.00		0.98
Lane Grp Cap(c), veh/h	181	607	628	5	429	450	24	0	120	5	0	93
V/C Ratio(X)	0.74	0.64	0.64	0.19	0.20	0.20	0.45	0.00	0.02	0.39	0.00	0.58
Avail Cap(c_a), veh/h	310	978	1012	258	926	971	258	0	895	258	0	829
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	8.5	8.5	16.1	9.4	9.4	15.8	0.0	13.9	16.1	0.0	14.7
Incr Delay (d2), s/veh	5.9	1.1	1.1	17.3	0.2	0.2	12.6	0.0	0.1	41.5	0.0	5.5
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(50%),veh/ln	1.0	1.5	1.5	0.0	0.3	0.4	0.2	0.0	0.0	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	9.6	9.6	33.4	9.6	9.6	28.4	0.0	13.9	57.6	0.0	20.3
LnGrp LOS	B	A	A	C	A	A	C	A	B	E	A	C
Approach Vol, veh/h		919			177			13			56	
Approach Delay, s/veh		11.1			9.7			26.2			21.6	
Approach LOS		B			A			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	6.9	4.5	16.3	5.0	6.5	8.0	12.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	19.0	5.0	18.0	6.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	2.0	8.2	2.2	3.1	4.5	3.3
Green Ext Time (p_c), s	0.0	0.0	0.0	3.6	0.0	0.2	0.0	0.7

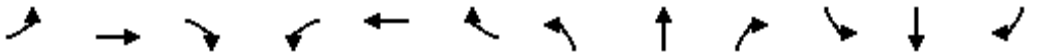
Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	971	120	1	296	1	36	1	1	1	1	12
Future Volume (veh/h)	40	971	120	1	296	1	36	1	1	1	1	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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	43	1055	130	1	322	1	39	1	1	1	1	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, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	79	1472	181	4	1524	5	73	51	51	4	2	30
Arrive On Green	0.05	0.49	0.49	0.00	0.45	0.45	0.04	0.06	0.06	0.00	0.02	0.02
Sat Flow, veh/h	1668	2983	367	1668	3404	11	1668	804	804	1668	107	1394
Grp Volume(v), veh/h	43	588	597	1	157	166	39	0	2	1	0	14
Grp Sat Flow(s),veh/h/ln	1668	1664	1686	1668	1664	1750	1668	0	1607	1668	0	1501
Q Serve(g_s), s	1.0	11.3	11.4	0.0	2.4	2.4	0.9	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	1.0	11.3	11.4	0.0	2.4	2.4	0.9	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		0.22	1.00		0.01	1.00		0.50	1.00		0.93
Lane Grp Cap(c), veh/h	79	822	832	4	745	784	73	0	103	4	0	32
V/C Ratio(X)	0.55	0.72	0.72	0.25	0.21	0.21	0.53	0.00	0.02	0.25	0.00	0.43
Avail Cap(c_a), veh/h	265	1143	1157	208	1086	1141	208	0	734	208	0	686
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.1	8.1	8.1	20.4	6.9	6.9	19.2	0.0	18.0	20.4	0.0	19.8
Incr Delay (d2), s/veh	5.8	1.3	1.3	28.6	0.1	0.1	5.9	0.0	0.1	28.6	0.0	9.0
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(50%),veh/ln	0.5	2.7	2.8	0.0	0.6	0.6	0.4	0.0	0.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	9.4	9.4	49.0	7.0	7.0	25.1	0.0	18.0	49.0	0.0	28.7
LnGrp LOS	C	A	A	D	A	A	C	A	B	D	A	C
Approach Vol, veh/h		1228			324			41			15	
Approach Delay, s/veh		10.0			7.2			24.8			30.1	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	7.1	4.6	24.7	6.3	5.4	6.4	22.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	18.7	5.1	28.1	5.1	18.7	6.5	26.7
Max Q Clear Time (g_c+I1), s	2.0	2.0	2.0	13.4	2.9	2.4	3.0	4.4
Green Ext Time (p_c), s	0.0	0.0	0.0	6.8	0.0	0.0	0.0	1.7

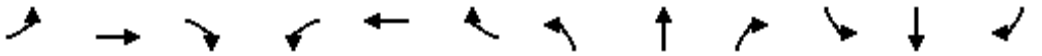
Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	83	89	1033	139	159	87	585	660	150	900	52
Future Volume (veh/h)	80	83	89	1033	139	159	87	585	660	150	900	52
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	87	94	1087	146	167	92	616	695	158	947	55
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	105	139	124	1148	657	556	114	1418	1158	210	1350	78
Arrive On Green	0.06	0.08	0.08	0.33	0.35	0.35	0.04	0.27	0.27	0.06	0.40	0.40
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	1767	3526	1570	3428	3386	197
Grp Volume(v), veh/h	84	87	94	1087	146	167	92	616	695	158	493	509
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1767	1763	1570	1714	1763	1820
Q Serve(g_s), s	6.1	6.2	7.6	40.1	7.2	10.0	6.7	18.8	26.3	5.9	30.4	30.4
Cycle Q Clear(g_c), s	6.1	6.2	7.6	40.1	7.2	10.0	6.7	18.8	26.3	5.9	30.4	30.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	105	139	124	1148	657	556	114	1418	1158	210	703	726
V/C Ratio(X)	0.80	0.63	0.76	0.95	0.22	0.30	0.81	0.43	0.60	0.75	0.70	0.70
Avail Cap(c_a), veh/h	163	258	230	1187	742	629	122	1418	1158	264	703	726
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	0.72	0.72	0.72	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.3	58.0	58.7	42.1	29.5	30.4	61.4	35.3	9.7	60.0	32.6	32.6
Incr Delay (d2), s/veh	13.9	4.6	9.1	11.7	0.1	0.2	19.6	0.6	1.4	9.0	5.8	5.6
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(50%),veh/ln	3.1	3.0	3.4	18.7	3.3	3.9	3.7	8.6	10.0	2.8	14.0	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	62.6	67.8	53.8	29.6	30.6	81.0	35.8	11.1	69.0	38.4	38.2
LnGrp LOS	E	E	E	D	C	C	F	D	B	E	D	D
Approach Vol, veh/h		265			1400			1403			1160	
Approach Delay, s/veh		68.1			48.5			26.6			42.5	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	56.3	47.5	14.2	12.4	55.8	11.8	50.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	40.0	45.0	19.0	9.0	41.0	12.0	52.0
Max Q Clear Time (g_c+I1), s	7.9	28.3	42.1	9.6	8.7	32.4	8.1	12.0
Green Ext Time (p_c), s	0.1	5.6	1.4	0.6	0.0	4.1	0.1	1.5

Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D



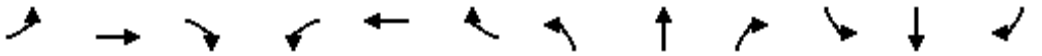
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	55	404	250	47	102	348	1304	68	172	1713	113
Future Volume (veh/h)	66	55	404	250	47	102	348	1304	68	172	1713	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	57	0	258	48	105	359	1344	70	177	1766	116
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	142		151	58	127	356	2171	113	151	1835	819
Arrive On Green	0.05	0.08	0.00	0.08	0.11	0.11	0.20	0.63	0.63	0.17	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	519	1136	1781	3436	179	1781	3554	1585
Grp Volume(v), veh/h	68	57	0	258	0	153	359	694	720	177	1766	116
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1655	1781	1777	1838	1781	1777	1585
Q Serve(g_s), s	4.9	3.8	0.0	11.0	0.0	11.8	26.0	30.7	30.8	11.0	0.0	0.0
Cycle Q Clear(g_c), s	4.9	3.8	0.0	11.0	0.0	11.8	26.0	30.7	30.8	11.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	87	142		151	0	185	356	1123	1161	151	1835	819
V/C Ratio(X)	0.78	0.40		1.71	0.00	0.83	1.01	0.62	0.62	1.17	0.96	0.14
Avail Cap(c_a), veh/h	151	446		151	0	395	356	1123	1161	151	1835	819
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	0.00	1.00	0.00	1.00	0.38	0.38	0.38	0.39	0.39	0.39
Uniform Delay (d), s/veh	61.1	57.3	0.0	59.5	0.0	56.5	52.0	14.5	14.5	54.0	0.0	0.0
Incr Delay (d2), s/veh	14.0	1.8	0.0	346.8	0.0	9.1	31.3	1.0	1.0	102.5	6.9	0.1
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	2.6	1.9	0.0	19.5	0.0	5.4	14.7	12.2	12.6	8.8	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	59.1	0.0	406.3	0.0	65.6	83.3	15.4	15.4	156.5	6.9	0.1
LnGrp LOS	E	E		F	A	E	F	B	B	F	A	A
Approach Vol, veh/h		125	A		411			1773			2059	
Approach Delay, s/veh		67.8			279.5			29.2			19.4	
Approach LOS		E			F			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	86.1	15.0	13.9	30.0	71.1	10.4	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	61.0	11.0	31.0	26.0	46.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	13.0	32.8	13.0	5.8	28.0	2.0	6.9	13.8
Green Ext Time (p_c), s	0.0	12.3	0.0	0.2	0.0	23.4	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	49.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



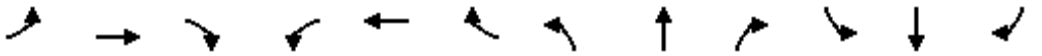
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	213	8	0	1533	0	0	0	0	0
Future Volume (veh/h)	0	0	0	213	8	0	1533	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1530	1530	1530	1530	1530	0	0	1530	1530
Adj Flow Rate, veh/h				232	9	0	1666	0	0	0	0	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				25	25	25	25	25	0	0	25	25
Cap, veh/h				275	11		1867	1011	0	0	2	
Arrive On Green				0.20	0.20	0.00	0.66	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1405	54	1296	2826	1530	0	0	-68828	1296
Grp Volume(v), veh/h				241	0	0	1666	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1459	0	1296	1413	1530	0	0	1530	1296
Q Serve(g_s), s				10.0	0.0	0.0	30.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				10.0	0.0	0.0	30.6	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.96		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				286	0		1867	1011	0	0	2	
V/C Ratio(X)				0.84	0.00		0.89	0.00	0.00	0.00	0.00	
Avail Cap(c_a), veh/h				372	0		2501	1354	0	0	122	
HCM Platoon Ratio				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	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				24.3	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				12.9	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	0.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.2	0.0	0.0	12.3	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				D	A		B	A	A	A	A	
Approach Vol, veh/h					241	A		1666			0	A
Approach Delay, s/veh					37.2			12.3			0.0	
Approach LOS					D			B				

Timer - Assigned Phs	2			6		8						
Phs Duration (G+Y+Rc), s	45.9			0.0		16.8						
Change Period (Y+Rc), s	4.5			4.5		4.5						
Max Green Setting (Gmax), s	55.5			5.0		16.0						
Max Q Clear Time (g_c+I1), s	32.6			0.0		12.0						
Green Ext Time (p_c), s	8.9			0.0		0.5						

Intersection Summary		
HCM 6th Ctrl Delay	15.5	
HCM 6th LOS	B	

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	1050	0	0	0	0	1530	287	1	212	0
Future Volume (veh/h)	3	1	1050	0	0	0	0	1530	287	1	212	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1530	1530	1530				0	1530	1530	1530	1530	0
Adj Flow Rate, veh/h	3	1	0				0	1663	0	1	230	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	25	25				0	25	25	25	25	0
Cap, veh/h	6	2					0	2137		3	1258	0
Arrive On Green	0.01	0.01	0.00				0.00	0.74	0.00	0.00	0.82	0.00
Sat Flow, veh/h	1106	369	1296				0	2983	1296	1457	1530	0
Grp Volume(v), veh/h	4	0	0				0	1663	0	1	230	0
Grp Sat Flow(s),veh/h/ln	1474	0	1296				0	1453	1296	1457	1530	0
Q Serve(g_s), s	0.1	0.0	0.0				0.0	18.5	0.0	0.0	1.6	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0				0.0	18.5	0.0	0.0	1.6	0.0
Prop In Lane	0.75		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	8	0					0	2137		3	1258	0
V/C Ratio(X)	0.50	0.00					0.00	0.78		0.36	0.18	0.00
Avail Cap(c_a), veh/h	535	0					0	2913		139	1810	0
HCM Platoon Ratio	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	0.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.0	0.0	0.0				0.0	4.3	0.0	26.1	1.0	0.0
Incr Delay (d2), s/veh	41.7	0.0	0.0				0.0	1.0	0.0	64.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0				0.0	2.2	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	0.0	0.0				0.0	5.2	0.0	90.3	1.0	0.0
LnGrp LOS	E	A					A	A		F	A	A
Approach Vol, veh/h		4	A					1663	A		231	
Approach Delay, s/veh		67.6						5.2			1.4	
Approach LOS		E						A			A	

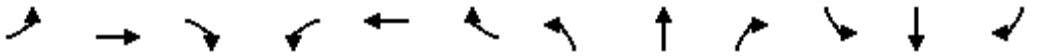
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.6	43.0		4.8		47.6
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	5.0	52.5		19.0		62.0
Max Q Clear Time (g_c+I1), s	2.0	20.5		2.1		3.6
Green Ext Time (p_c), s	0.0	18.0		0.0		1.5

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



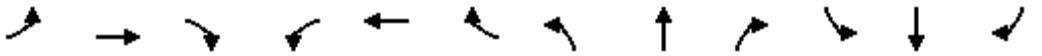
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	74	190	385	110	463	188	1095	274	342	733	187
Future Volume (veh/h)	259	74	190	385	110	463	188	1095	274	342	733	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	282	80	207	418	120	0	204	1190	0	372	797	203
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	307	280	238	483	219		228	1391		424	949	423
Arrive On Green	0.21	0.18	0.18	0.17	0.14	0.00	0.16	0.33	0.00	0.15	0.33	0.33
Sat Flow, veh/h	1457	1530	1296	2826	1530	1296	1457	4176	1296	2826	2906	1296
Grp Volume(v), veh/h	282	80	207	418	120	0	204	1190	0	372	797	203
Grp Sat Flow(s),veh/h/ln	1457	1530	1296	1413	1530	1296	1457	1392	1296	1413	1453	1296
Q Serve(g_s), s	21.0	5.0	17.2	15.9	8.1	0.0	15.2	29.4	0.0	14.3	28.2	13.8
Cycle Q Clear(g_c), s	21.0	5.0	17.2	15.9	8.1	0.0	15.2	29.4	0.0	14.3	28.2	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	280	238	483	219		228	1391		424	949	423
V/C Ratio(X)	0.92	0.29	0.87	0.86	0.55		0.90	0.86		0.88	0.84	0.48
Avail Cap(c_a), veh/h	362	576	488	659	553		257	1547		472	1051	469
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	38.9	43.9	44.6	44.0	0.0	45.8	34.4	0.0	46.0	34.6	29.7
Incr Delay (d2), s/veh	25.5	0.6	9.5	8.9	2.1	0.0	28.6	4.6	0.0	15.8	5.7	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	9.6	1.9	6.0	6.1	3.2	0.0	7.2	10.2	0.0	5.9	10.5	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	39.5	53.4	53.5	46.2	0.0	74.4	39.0	0.0	61.8	40.3	30.6
LnGrp LOS	E	D	D	D	D		E	D		E	D	C
Approach Vol, veh/h		569			538	A		1394	A		1372	
Approach Delay, s/veh		58.8			51.9			44.2			44.7	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	41.3	23.4	24.8	21.8	40.6	27.8	20.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	41.0	25.8	41.7	19.5	40.0	27.5	40.0
Max Q Clear Time (g_c+I1), s	16.3	31.4	17.9	19.2	17.2	30.2	23.0	10.1
Green Ext Time (p_c), s	0.3	5.4	1.0	1.1	0.1	4.5	0.4	0.6

Intersection Summary	
HCM 6th Ctrl Delay	47.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



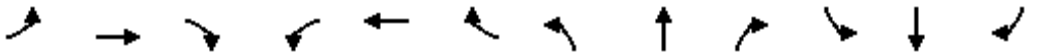
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	7	554	1	542	4	966	270	277	1032	2
Future Volume (veh/h)	7	1	7	554	1	542	4	966	270	277	1032	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	8	1	8	602	1	0	4	1050	293	301	1122	2
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	28	3	22	697	377		8	1218	863	362	1575	702
Arrive On Green	0.02	0.02	0.02	0.25	0.25	0.00	0.01	0.42	0.42	0.13	0.54	0.54
Sat Flow, veh/h	1457	147	1172	2826	1530	1296	1457	2906	1296	2826	2906	1296
Grp Volume(v), veh/h	8	0	9	602	1	0	4	1050	293	301	1122	2
Grp Sat Flow(s),veh/h/ln	1457	0	1319	1413	1530	1296	1457	1453	1296	1413	1453	1296
Q Serve(g_s), s	0.5	0.0	0.6	19.6	0.0	0.0	0.3	31.6	9.4	10.0	27.7	0.1
Cycle Q Clear(g_c), s	0.5	0.0	0.6	19.6	0.0	0.0	0.3	31.6	9.4	10.0	27.7	0.1
Prop In Lane	1.00		0.89	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	28	0	25	697	377		8	1218	863	362	1575	702
V/C Ratio(X)	0.29	0.00	0.36	0.86	0.00		0.52	0.86	0.34	0.83	0.71	0.00
Avail Cap(c_a), veh/h	212	0	192	1088	589		76	1394	941	438	1693	755
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	0.0	46.6	34.7	27.3	0.0	47.7	25.4	6.9	40.9	16.4	10.1
Incr Delay (d2), s/veh	5.6	0.0	8.5	4.6	0.0	0.0	45.5	5.2	0.2	11.0	1.3	0.0
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(50%),veh/ln	0.2	0.0	0.3	6.9	0.0	0.0	0.2	11.1	4.8	4.0	8.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	0.0	55.1	39.2	27.3	0.0	93.2	30.6	7.2	51.9	17.8	10.1
LnGrp LOS	D	A	E	D	C		F	C	A	D	B	B
Approach Vol, veh/h		17			603	A		1347			1425	
Approach Delay, s/veh		53.7			39.2			25.7			25.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	44.8		6.3	5.0	56.6		28.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.9	46.1		14.0	5.0	56.0		37.0				
Max Q Clear Time (g_c+I1), s	12.0	33.6		2.6	2.3	29.7		21.6				
Green Ext Time (p_c), s	0.3	6.7		0.0	0.0	9.3		2.1				

Intersection Summary			
HCM 6th Ctrl Delay		27.9	
HCM 6th LOS		C	

Notes

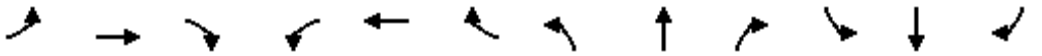
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	15	19	36	26	35	16	975	13	23	1381	366
Future Volume (veh/h)	155	15	19	36	26	35	16	975	13	23	1381	366
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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	168	16	21	39	28	38	17	1060	14	25	1501	398
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	194	437	195	48	146	65	27	1776	792	36	1795	800
Arrive On Green	0.13	0.15	0.15	0.03	0.05	0.05	0.02	0.61	0.61	0.03	0.62	0.62
Sat Flow, veh/h	1457	2906	1296	1457	2906	1296	1457	2906	1296	1457	2906	1296
Grp Volume(v), veh/h	168	16	21	39	28	38	17	1060	14	25	1501	398
Grp Sat Flow(s),veh/h/ln	1457	1453	1296	1457	1453	1296	1457	1453	1296	1457	1453	1296
Q Serve(g_s), s	11.3	0.5	1.4	2.7	0.9	2.9	1.2	22.3	0.4	1.7	40.8	16.9
Cycle Q Clear(g_c), s	11.3	0.5	1.4	2.7	0.9	2.9	1.2	22.3	0.4	1.7	40.8	16.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	437	195	48	146	65	27	1776	792	36	1795	800
V/C Ratio(X)	0.86	0.04	0.11	0.81	0.19	0.59	0.62	0.60	0.02	0.69	0.84	0.50
Avail Cap(c_a), veh/h	257	1131	505	156	931	415	73	2179	972	109	2251	1004
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	36.3	36.7	48.0	45.5	46.4	48.7	11.9	7.6	48.3	15.1	10.5
Incr Delay (d2), s/veh	20.3	0.0	0.2	26.2	0.6	8.1	20.6	0.3	0.0	20.3	2.4	0.5
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(50%),veh/ln	5.1	0.2	0.5	1.3	0.3	1.1	0.6	6.5	0.1	0.8	12.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.7	36.3	36.9	74.2	46.2	54.6	69.3	12.2	7.6	68.6	17.5	11.0
LnGrp LOS	E	D	D	E	D	D	E	B	A	E	B	B
Approach Vol, veh/h		205			105			1091			1924	
Approach Delay, s/veh		58.0			59.6			13.0			16.8	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	65.6	7.8	19.5	6.4	66.2	17.8	9.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	74.9	10.7	38.9	5.0	77.4	17.6	32.0
Max Q Clear Time (g_c+I1), s	3.7	24.3	4.7	3.4	3.2	42.8	13.3	4.9
Green Ext Time (p_c), s	0.0	10.1	0.0	0.1	0.0	18.9	0.2	0.2

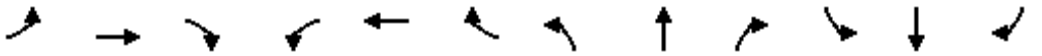
Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	1	65	1	71	1	921	36	39	1394	8
Future Volume (veh/h)	8	1	1	65	1	71	1	921	36	39	1394	8
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	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530
Adj Flow Rate, veh/h	9	1	1	71	1	77	1	1001	39	42	1515	9
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, %	25	25	25	25	25	25	25	25	25	25	25	25
Cap, veh/h	17	49	49	91	2	155	3	1928	75	64	2185	13
Arrive On Green	0.01	0.07	0.07	0.06	0.12	0.12	0.00	0.47	0.47	0.04	0.51	0.51
Sat Flow, veh/h	1457	702	702	1457	17	1282	1457	4124	160	1457	4283	25
Grp Volume(v), veh/h	9	0	2	71	0	78	1	675	365	42	985	539
Grp Sat Flow(s),veh/h/ln	1457	0	1403	1457	0	1299	1457	1392	1501	1457	1392	1525
Q Serve(g_s), s	0.3	0.0	0.1	2.4	0.0	2.8	0.0	8.6	8.7	1.4	13.6	13.6
Cycle Q Clear(g_c), s	0.3	0.0	0.1	2.4	0.0	2.8	0.0	8.6	8.7	1.4	13.6	13.6
Prop In Lane	1.00		0.50	1.00		0.99	1.00		0.11	1.00		0.02
Lane Grp Cap(c), veh/h	17	0	99	91	0	157	3	1301	701	64	1420	778
V/C Ratio(X)	0.53	0.00	0.02	0.78	0.00	0.50	0.35	0.52	0.52	0.65	0.69	0.69
Avail Cap(c_a), veh/h	147	0	502	164	0	480	147	1694	913	213	1820	997
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	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	21.9	23.4	0.0	20.8	25.2	9.5	9.5	23.8	9.4	9.4
Incr Delay (d2), s/veh	22.8	0.0	0.1	13.5	0.0	2.4	59.8	0.3	0.6	10.7	0.8	1.5
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(50%),veh/ln	0.2	0.0	0.0	1.1	0.0	0.9	0.1	2.1	2.3	0.6	3.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	0.0	22.0	36.8	0.0	23.2	85.0	9.8	10.1	34.6	10.2	10.8
LnGrp LOS	D	A	C	D	A	C	F	A	B	C	B	B
Approach Vol, veh/h		11			149			1041			1566	
Approach Delay, s/veh		43.0			29.7			10.0			11.1	
Approach LOS		D			C			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	28.2	7.7	8.1	4.6	30.3	5.1	10.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.4	30.8	5.7	18.1	5.1	33.1	5.1	18.7
Max Q Clear Time (g_c+I1), s	3.4	10.7	4.4	2.1	2.0	15.6	2.3	4.8
Green Ext Time (p_c), s	0.0	7.3	0.0	0.0	0.0	10.3	0.0	0.3

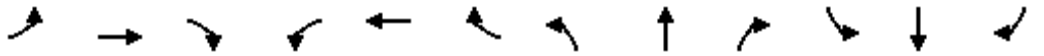
Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	347	17	1	546	5	31	1	1	5	1	187
Future Volume (veh/h)	165	347	17	1	546	5	31	1	1	5	1	187
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	179	377	18	1	593	5	34	1	1	5	1	203
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	217	1269	60	4	892	8	67	174	174	12	1	271
Arrive On Green	0.12	0.38	0.38	0.00	0.25	0.25	0.04	0.21	0.21	0.01	0.18	0.18
Sat Flow, veh/h	1739	3371	160	1739	3525	30	1739	838	838	1739	8	1541
Grp Volume(v), veh/h	179	193	202	1	292	306	34	0	2	5	0	204
Grp Sat Flow(s),veh/h/ln	1739	1735	1797	1739	1735	1821	1739	0	1675	1739	0	1549
Q Serve(g_s), s	4.4	3.5	3.5	0.0	6.7	6.7	0.8	0.0	0.0	0.1	0.0	5.5
Cycle Q Clear(g_c), s	4.4	3.5	3.5	0.0	6.7	6.7	0.8	0.0	0.0	0.1	0.0	5.5
Prop In Lane	1.00		0.09	1.00		0.02	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	217	653	676	4	439	461	67	0	348	12	0	272
V/C Ratio(X)	0.83	0.30	0.30	0.25	0.66	0.66	0.51	0.00	0.01	0.43	0.00	0.75
Avail Cap(c_a), veh/h	217	727	753	197	708	743	197	0	702	197	0	649
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.8	9.7	9.7	22.0	14.8	14.8	20.8	0.0	13.9	21.8	0.0	17.3
Incr Delay (d2), s/veh	22.3	0.3	0.2	30.7	1.7	1.7	5.8	0.0	0.0	22.7	0.0	4.1
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	2.9	1.1	1.1	0.0	2.4	2.5	0.4	0.0	0.0	0.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	9.9	9.9	52.7	16.5	16.5	26.6	0.0	13.9	44.6	0.0	21.4
LnGrp LOS	D	A	A	D	B	B	C	A	B	D	A	C
Approach Vol, veh/h		574			599			36			209	
Approach Delay, s/veh		19.6			16.6			25.9			21.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	13.7	4.6	21.1	6.2	12.3	10.0	15.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	2.1	2.0	2.0	5.5	2.8	7.5	6.4	8.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.9	0.0	0.9	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B



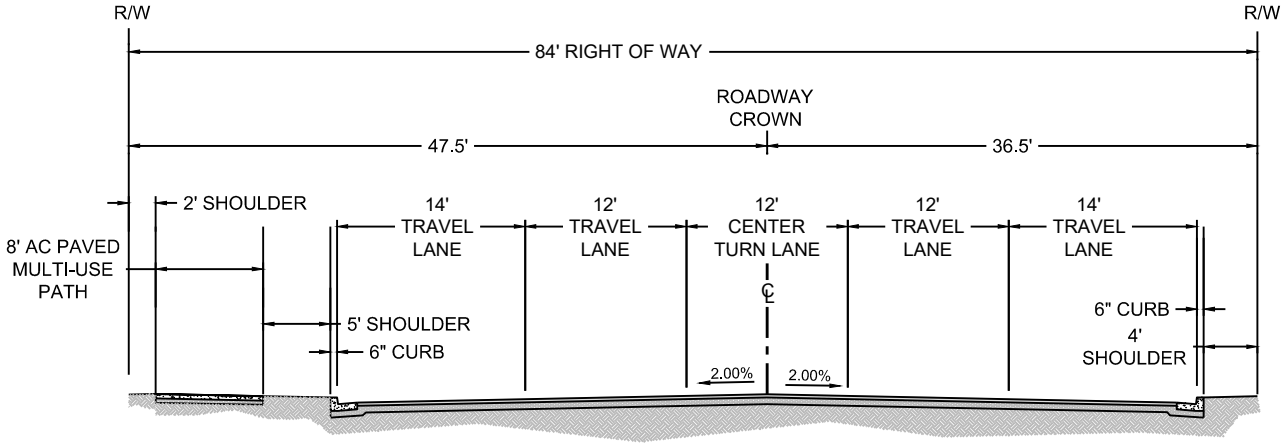
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	442	47	1	874	1	120	1	1	1	1	35
Future Volume (veh/h)	19	442	47	1	874	1	120	1	1	1	1	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	21	480	51	1	950	1	130	1	1	1	1	38
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, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	45	1296	137	4	1368	1	166	118	118	4	2	70
Arrive On Green	0.03	0.41	0.41	0.00	0.38	0.38	0.10	0.14	0.14	0.00	0.05	0.05
Sat Flow, veh/h	1739	3165	335	1739	3556	4	1739	838	838	1739	40	1514
Grp Volume(v), veh/h	21	262	269	1	463	488	130	0	2	1	0	39
Grp Sat Flow(s),veh/h/ln	1739	1735	1766	1739	1735	1825	1739	0	1675	1739	0	1553
Q Serve(g_s), s	0.5	4.2	4.3	0.0	9.0	9.0	2.9	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.5	4.2	4.3	0.0	9.0	9.0	2.9	0.0	0.0	0.0	0.0	1.0
Prop In Lane	1.00		0.19	1.00		0.00	1.00		0.50	1.00		0.97
Lane Grp Cap(c), veh/h	45	710	723	4	667	702	166	0	235	4	0	72
V/C Ratio(X)	0.46	0.37	0.37	0.23	0.69	0.69	0.79	0.00	0.01	0.23	0.00	0.54
Avail Cap(c_a), veh/h	216	927	944	216	927	975	281	0	854	216	0	734
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	8.3	8.3	20.0	10.4	10.4	17.8	0.0	14.9	20.0	0.0	18.8
Incr Delay (d2), s/veh	7.2	0.3	0.3	25.2	1.3	1.2	7.9	0.0	0.0	25.2	0.0	6.1
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	0.3	1.2	1.2	0.0	2.8	2.9	1.4	0.0	0.0	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	8.6	8.6	45.3	11.7	11.6	25.7	0.0	14.9	45.3	0.0	24.9
LnGrp LOS	C	A	A	D	B	B	C	A	B	D	A	C
Approach Vol, veh/h		552			952			132			40	
Approach Delay, s/veh		9.3			11.7			25.6			25.4	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	10.1	4.6	21.0	8.3	6.4	5.5	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	20.5	5.0	21.5	6.5	19.0	5.0	21.5
Max Q Clear Time (g_c+I1), s	2.0	2.0	2.0	6.3	4.9	3.0	2.5	11.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.8	0.0	0.1	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

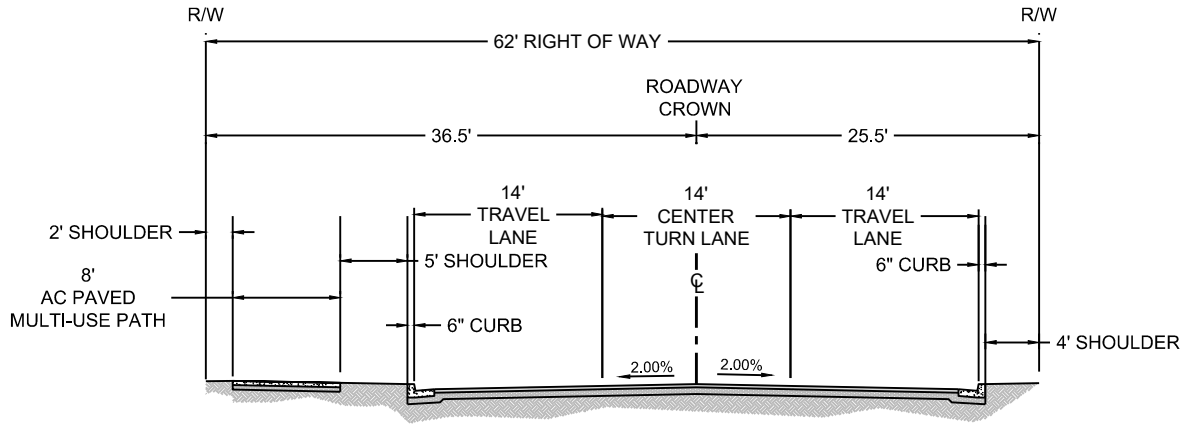
Appendix G
Roadway Cross Sections

84' ROW STREET SECTION:
MINOR ARTERIAL



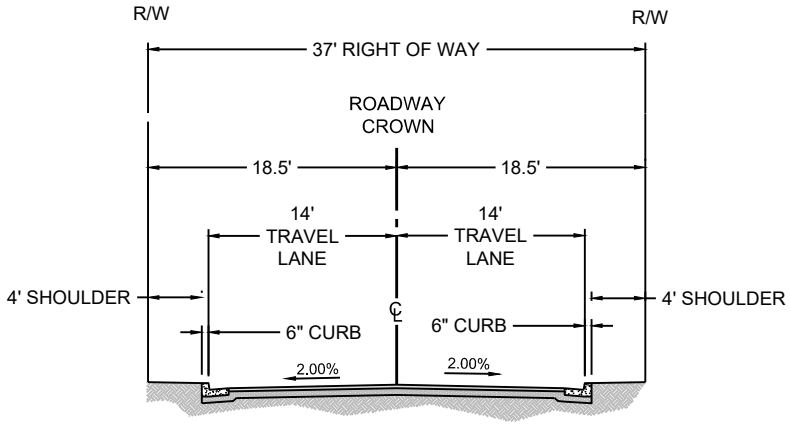
DUFFY ROAD, GATEWAY DRIVE

62' ROW STREET SECTION:
COLLECTOR



CONNOR DRIVE, ROAD A, MACDONALD DRIVE,
GAVIN ROAD, NEWLANDS DRIVE

37' ROW STREET SECTION:
ACCESS ROAD



ACCESS ROAD 1

DRAINAGE REPORT
For

VICTORY

LOGISTICS | DISTRICT

A TENTATIVE MAP FOR AN INDUSTRIAL SUBDIVISION

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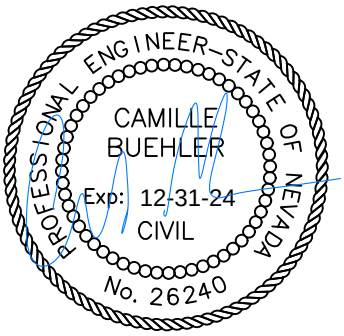

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Table of Contents

I. Introduction 1
A. Project Location 1
B. Existing Site Description 1
C. FEMA Mapping of Project Area 2
D. Previous Studies & Data 2
II. Hydrologic Modeling Methodology 2
A. Criteria 2
III. Existing Conditions Analysis 3
A. Existing Basin Delineation 3
B. Existing Peak Flowrates 4
C. Existing Peak Runoff Volumes 4
IV. Proposed Conditions Overview 5
A. Development Description 5
B. Piping & Open Channel Flow 6
C. Detention System 6
D. Streets 6
V. Proposed Drainage System 6
A. Proposed Flow Routing 6
B. Proposed Peak Runoff Volume Calculations (Sub-Basin and Basin) 10
C. Proposed Retention/Detention Volume Requirements 10
VI. Lot Specifc Release Rates and Volumes 13
VII. Opinion of Probable Costs 14
VIII. Conclusions 15
A. Benefits 15
B. Adverse Effects with Solutions 15
VIII. References 16

Table of Appendices

APPENDIX A

FIGURE 1 – SITE OVERVIEW

FIGURE 2 – BASIN FLOWRATES EXHIBIT (Existing Conditions)

FIGURE 3 – SUB-BASIN FLOWRATES EXHIBIT (Existing Conditions)

FIGURE 4 – BASIN FLOWRATES EXHIBIT (Proposed Conditions)

FIGURE 5 – SUB-BASIN FLOWRATES EXHIBIT (Proposed Conditions)

FIGURE 6 – BASIN RETENTION VOLUME EXHIBIT

FIGURE 7 – SUB-BASIN RETENTION VOLUME EXHIBIT

FIGURE 8 – PRELIMINARY LOCAL STORM DRAIN PLAN

FIGURE 9 – DOWNSTREAM CONNECTION PLAN

FIGURE 10 – LOTS & REGIONAL BASINS

FIGURE 11 – HYDROLOGIC SOIL GROUP EXHIBIT (Existing Conditions)

APPENDIX B

ATTACH 1 – NOAA PRECIPITATION FREQUENCY ESTIMATES

ATTACH 2 – FEMA FIRM PANELS

ATTACH 3 – CN DETERMINATION CRITERIA (Input Data)

ATTACH 4 – HYDRAFLOW MODELING (Output Data)

I. INTRODUCTION

A. Project Location

The Mark IV Industrial Subdivision is located south of U.S. Interstate 80 (I-80), north of U.S. Highway 50 Alternate (US-50 Alt), and primarily east of Nevada Pacific Parkway (NPP) in Northeast Fernley, Nevada. The Master Developer, M4 New Fernley QOZB, LLC, holds property between I-80 and US-50 Alt. The Mark IV Subdivision consists of approximately 2,174 acres comprised of the following parcels: 021-201-01, 021-201-16, 021-211-02, 021-211-04, 021-211-06, 021-242-11, 021-242-17, 021-251-25, 021-261-43, 021-261-44, and 021-211-03. The Mark IV properties reside within Sections 3, 4, 5, 6, 7, 8, 17, and 18, T20N, R25E in Fernley, Nevada.

The proposed Mark IV Industrial Subdivision consists of 31 lots to be used for distribution/light industrial, manufacturing, data center/high tech, and retail purposes.

B. Existing Site Description

The Mark IV Industrial Subdivision is located south of I-80 and north of US-50 Alt. The southern portion of the project is bound by an existing main line railroad that is owned and maintained by Union Pacific (UPRR). Also within the site are two main power lines: one within a 200-ft easement and the other within a 75-ft easement. Please refer to Figure 1 of Appendix A for the Site Overview Exhibit.

The topography of the project area ranges from flat to mildly sloping. Offsite flow generation originates at I-80 and from above the interstate along the northern-most portion of the project. In the north half of the project, runoff generally sweeps from the northwest to the southeast across the project area, and finally to the northeast at an average grade of 1.0% across poorly defined and discontinuous channels. This northern portion of the project is delineated as Basins A, B, and G shown in Figures 2 and 3 of Appendix A. The south half of the project area generally drains from northwest to southeast, also at an average grade of 1.0% and is shown as runoff Basins C through D in Figures 2 and 3 of Appendix A.

Runoff reaching the project area, including runoff generated from within the Mark IV Industrial Subdivision, totals just over 3,000 acres. Most of this drainage area is undeveloped with groundcover consisting of medium-density, native, desert shrubs, along with low-growing native desert weeds and grasses. There are a few lots within the contributing drainage area which are presently developed, as well. These lots are primarily comprised of industrial, manufacturing, and warehouse facilities.

C. FEMA Mapping of Project Area

Historical drainage conditions are based on FEMA FIRM Panels 32019C0110E, 32019C0050E, and 32019C0105E, which are included in this report in Attachment 2, Appendix B.

The majority of the project is located in Zone X, defined by FEMA as "areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood."

The single exception to this zoning is the southern portion of the project, being located within Zone A designated as an area of special flood hazard that is subject to the 1% annual chance flood (100-year flood), also known as the base flood, and without base flood elevations determined.

A FEMA application for a Conditional Letter of Map Revision (CLOMR) for the lots within drainage Basin D was submitted in May of 2020. This application proposes to intercept flows entering on the western edge of drainage Basin D and discharge them at the downstream eastern edge of this drainage basin.

D. Previous Studies & Data

An updated Storm Drain Master Plan for Fernley, Lyon County, NV was prepared by Lumos & Associates in September 2013. This report shows the storm drains, retention ponds, and related features along Nevada Pacific Parkway.

Topographic information used to generate the existing surface of the project area is based on LiDAR surface data obtained from CFA and supplemented with Lumos & Associates LiDAR data. In addition, a topographic survey of nearby existing drainage facilities to determine locations, inverts, and lengths was obtained from CFA. The remaining existing facilities and corresponding locations were obtained from the City of Fernley GIS database.

II. HYDROLOGIC MODELING METHODOLOGY

A. Criteria

According to the drainage guidelines for City of Fernley Department of Public Works Design Standards, the following guidelines for methodologies and criteria apply to Mark IV Industrial Subdivision development:

- The SCS method, SCS TR-55 "Urban Hydrology for Small Watersheds", HEC-1/HEC-HMS, or the methods outlined in the City of Fernley Design Standards shall be used for larger watersheds (Section 10.3.2)

- Time of concentration (T_c) was evaluated based on the SCS TR-55 methodology for the following flow classifications: sheet flow, shallow concentrated flow and channel flow.

- 24-hour storm intensities and depths for the 5-year, 25-year, and 100-year storm events were used. The rainfall time-intensity-frequency curves used are assumed identical throughout the zone and based on the point rainfall at the centroid of the entire project site. Reference NOAA Atlas.

The calculations have been performed for the 5, 25, and 100-year, 24-hour storm events using the Autodesk Hydraflow Hydrographs extension for AutoCad Civil 3D 2022 computer program. This computer program is based upon the Soils Conservation Service (SCS) TR-20 and TR-55 computer models and uses the SCS Curvilinear Unit rainfall distribution.

The maximum drainage area recommended for analysis using this methodology is 25 square miles, and the minimum time of concentration is 0.1 hours. As such, all drainage basins computed within the Mark IV Industrial Subdivision fall within appropriate limits of use for this methodology.

Rainfall intensity frequency estimates were obtained from National Oceanic and Atmospheric Administration (NOAA) Atlas 14. The rainfall depth used in the Hydrology Model was determined by obtaining the point rainfall at the centroid of the entire project model for the case of a 5, 25, and 100-year, 24-hour storm event. The latitude and longitude of the point was used as the input value to NOAA's data set for the intensity or total rainfall at that point. The selected NOAA data for the study is found in Attachment 1 of Appendix B.

Curve numbers were developed with reference to the NRCS Soil Map Units (refer to Figure 11 of Appendix A) and their corresponding Hydrologic Soil Groups (refer to Figure 12 of Appendix A). Weighted averages of each Sub-Basin were calculated based on the curve numbers listed in the TR-55 "Urban Hydrology for Small Watersheds". Attachment 3 is the curve number development and assumptions for the proposed conditions. The site's soils are primarily mapped as hydrologic soil group A with the exception of the offsite runoff contribution north of I-80 and the soils located in Basin D.

III. EXISTING CONDITIONS ANALYSIS

A. Existing Basin Delineation

As depicted in Figures 2 & 3 of Appendix A, drainage Basins A, B, and G combine downstream of the project area to flow through various undulated paths that lead directly to the Fernley Sink, whereas drainage Basins C and D combine downstream of the project area to flow to the wash south of the project area. This southern wash also drains to the Fernley Sink.

B. Existing Peak Flowrates

Several existing facilities within the project area currently have their own onsite detention facilities in various stages of condition. For simplicity, consistency, and to be conservative, these existing onsite flow attenuation facilities have been eliminated from the existing conditions analysis of the report. This enables the capability of including these facilities in the proposed overall solution for detention on a regional level as discussed in Section V-D of this report.

Hydraflow results for the existing conditions analysis can be found in Attachment 4 of Appendix B. Resulting flowrates for the 5-year, 25-year, and 100-year 24-hour storm events of the existing condition analysis are summarized as follows:

Table 1. Existing Peak Flowrates

BASIN	SUB-BASIN	AREA	CN	PEAK FLOWRATE PER SUB-BASIN			PEAK FLOWRATE PER BASIN		
				5-YR	25-YR	100-YR	5-YR	25-YR	100-YR
		(acres)		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
A	XA1	66	55	0.00	0.05	0.34	0.00	0.05	0.34
B	XB1	440	55	0.00	0.30	2.21	0.03	3.47	18.96
	XB2	255	55	0.00	0.16	1.26			
	XB3	303	55	0.00	0.21	1.52			
	XB4	546	62	0.03	2.81	13.97			
C	XC1	509	55	0.00	0.34	2.50	0.00	0.45	3.32
	XC2	161	55	0.00	0.11	0.82			
D	XD1	178	72	1.40	13.35	35.72	1.40	13.35	35.72
G	XG1	364	55	0.00	0.25	1.85	0.00	0.25	1.85

C. Existing Peak Runoff Volumes

Corresponding runoff volumes for the 5-year, 25-year, and 100-year, 24-hour storm events were generated using Hydraflow and are summarized as follows:

Table 2. Existing Peak Runoff Volumes

BASIN	SUB-BASIN	AREA	RUNOFF VOLUME PER SUB-BASIN			RUNOFF VOLUME PER BASIN		
			5-YR	25-YR	100-YR	5-YR	25-YR	100-YR
		(acres)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)
A	XA1	66	0.0	0.0	0.3	0.0	0.0	0.3
B	XB1	440	0.0	0.1	1.8	0.0	2.4	11.1
	XB2	255	0.0	0.1	1.0			
	XB3	303	0.0	0.1	1.2			
	XB4	546	0.0	2.2	7.1			
C	XC1	509	0.0	0.1	2.1	0.0	0.1	2.7
	XC2	161	0.0	0.0	0.6			
D	XD1	178	0.8	3.1	6.3	0.8	3.1	6.3
H	XG1	364	0.0	0.1	1.5	0.0	0.1	1.5

IV. PROPOSED CONDITIONS OVERVIEW

A. Development Description

The project area consists of 31 lots on approximately 2,174 acres. As such, 25 conceptual developable lots were utilized out for the purpose of conceptual connection points to the proposed basins and channels. Proposed lot development will maintain the natural attributes of the site as closely as possible. Also maintained in the proposed developed condition is the general drainage from west to east and ultimate discharge of runoff to the Fernley Sink.

Developers will have the option to detain differences in peak flow generated by the 25-year, 24-hour storm event either locally or utilizing a combination of local and regional facilities. If regional detention is chosen, individual lots will contribute a portion of regional mitigation required based on sub-basin increase in runoff. All detention facilities will incorporate emergency overflows for the 100-year, 24-hour event to the eastern edge of the Mark IV development which will ultimately drain to the Fernley Sink. Final discharge of each Sub-Basin system which eventually reaches the Fernley Sink shall be discharged within the property limits of the Mark IV subdivision and sufficient land shall be provided to dissipate the energy and return flows to their existing conditions regime prior to exiting Mark IV project boundaries. See Figure 4 for proposed flowrates per Basin and Figure 5 for the proposed flowrates per Sub-Basin.

B. Piping & Open Channel Flow

The SCS method was used to size all storm drain piping for the Mark IV development to convey the 25-yr, 24-hour event. The majority of onsite piping will be located within the proposed public right-of-way, generally beginning near the highpoints and gravity feeding toward low points and leaving the piped system. Storm drain capacity was sized based on the runoff in the right-of-way and 50% of contributing lots at each corresponding tie-in point.

A number of channels will also be proposed to capture offsite drainage as well as convey runoff to detention ponds.

C. Detention System

The Master Plan groups proposed lots into regions (or Sub-Basins) enabling manageable flow mitigation to occur per Basin. These regions are depicted as drainage Basins A-G as illustrated in Figures 4-7 of Appendix A. When feasible based on location and phasing, lots may release up to 50% of runoff into major storm drain infrastructure (referred to in this report as a regional detention or retention basin). The remaining storm water will be detained/retained onsite (referred to in this report as localized detention or retention basins). All retention facilities proposed are to be owned and maintained by the property owner. Reference Section VI for specific lot requirements.

D. Streets

The preliminary design shall feature a storm drain system located within public right-of-way to convey flows generated on within the right-of-way and discharge to regional detention/retention facilities.

V. PROPOSED DRAINAGE SYSTEM

A. Proposed Flow Routing

As depicted in Figures 4 and 5 of Appendix A, drainage Basins A and B combine downstream of the project area to flow through various undulated paths that lead to the Fernley Sink, whereas drainage Basins C and D combine downstream of the project area to flow to the wash south of the project area. This southern wash also drains to the Fernley Sink. Basin G does not drain to the Fernley Sink and is instead mitigated through onsite retention of the full proposed 100-year, 24-hour storm event.

Lots within these drainage basins will have the option of handling the increase in peak flow on either the local or a combination of regional and local level, as long as the sum of those efforts amount to flow attenuation as shown in Table 6 of this report.

Five sections of local storm drain are proposed to tie into the regional storm drain system. Sections B-1 and B-2 both drain into Channel 2, which terminates at Pond B. Section G discharges directly into Pond G. Section C ties into existing storm drain at Macdonald and Gateway Drive and conveys storm water to Channel 3 which terminates at Pond C. Section D starts within the proposed Gavin Road section and conveys runoff to the CLOMR pipe and Pond D. Reference Figure 8.

Each section of storm drain shall be built to full build out capacity where permanent infrastructure is being placed, or phased where an interim condition can meet the requirements set forth in the latest City of Fernley Drainage Manual for the current and proposed development. For any pipe infrastructure being placed in roadways, full buildout sizing and design must be followed. Detention and retention basins could be sized in an interim condition to handle only developed flow with each tenant build if approved by the City of Fernley and Mark IV.

Existing interim conditions for retention currently exist around the perimeter of the Mark IV holdings. Entering the site on Gateway Drive is an existing 48" concrete pipe that discharges into a private retention facility. This 48" pipe will be extended further into the project area at Section C and the interim retention basin removed. Design flows entering the system from this segment were not readily available, so the capacity of the upstream storm drain was used to size the extension. The 48" pipe will be continued through Section G and tied into Channel 3 with a termination point in Pond C. On Macdonald Drive, there is also an existing 48" pipe that discharges into a private retention facility. This pipe will also be extended at Section C. Based on "Victory Logistics- Building A, B and C Final Drainage Report" by CFA, dated August 2020, the pipe has a flow of approximately 60 cfs for the 100-year, 6-hour storm. The interim retention basin will be removed, and flow will ultimately release into Pond C.

There is an existing 30" pipe east of the Nevada Pacific Parkway/Duffy Road intersection that will be continued east under the proposed Duffy Road to tie into the proposed system.

The preliminary drainage plan will require flows entering the site from the northwest corner to be conveyed in a channel along the northern edge of the project. This channel (Channel 1) intercepts flows perpetuated under I-80 and will route these flows along the edge of the project area to discharge to its historic destination (the Fernley Sink).

Channel 2 conveys runoff from the storm drain in eastern Duffy Road, Road A, and portions of Lot 2 to Pond B. Channel 3 conveys runoff from the storm drain for Gateway Drive, Macdonald Drive, Connor Drive and adjacent drainage in Lot 6 Pond C.

There is a 36" HDPE pipe proposed to act as an emergency overflow path for Pond G designed to avoid flooding adjacent lots in case of a storm event larger than the 100-year.

Table 3. Proposed Channels[1]

Channel	Shape	Side Slopes	Bottom Width (ft)	Total Depth (ft)	Velocity (ft/s)	Freeboard (ft)
1	Trapezoidal	3:1	4	3	3.87	1.12
2	Trapezoidal	3:1	9	4	6.54	1.32
3	Trapezoidal	3:1	5	4	3.9	1.28

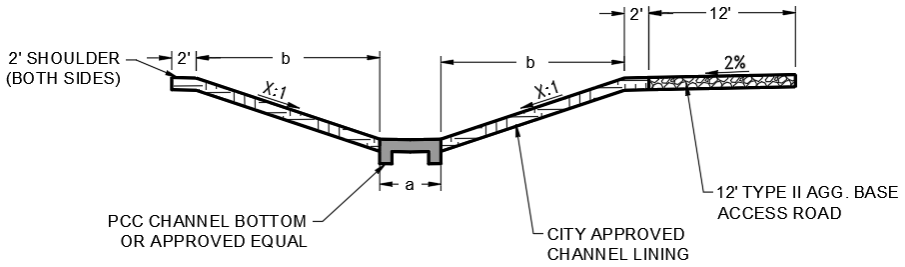
Note 1: Preliminary channel sections - subject to change with final design.

The proposed catch basins were spaced at intervals to intake the peak flow for the 5-year storm with a spread not exceeding half of the adjacent lane per the City of Fernley design standards. The Rational Method was used, and it was assumed that the right-of-way would drain to the catch basins. The lots will tie in to local storm drain at designated points. The spacing varied from 250' to 700', based on factors including right-of-way width and slope.

Additional storm drain infrastructure including channels, swales, inlets, and underground storm drain will be required on-site for each lot as individual mass grading and design is completed.

Figure 1 is a proposed typical cross section for a major drainage channel within the planned unit development. The channel cross section implements a concrete bottom, and a city approved side slope lining for slope stabilization and scour protection. The side slope protection will be designed on a case by case basis for adequate resistance to shear stress. A 12 foot wide access road is provided for maintenance.

Figure 1: Typical Channel Cross Section



TYPICAL CHANNEL CROSS SECTION

Proposed Peak Flowrates

Hydraflow results for the proposed conditions analysis can be viewed in Attachment 4 of Appendix B. Resulting flowrates for the 5-year, 25-year, and 100-year storm, 24-hour events of the proposed condition analysis are as follows:

Table 4. Proposed Peak Flowrates

BASIN	SUB-BASIN	AREA	CN	PEAK FLOWRATE PER SUB-BASIN			PEAK FLOWRATE PER BASIN		
				5-YR	25-YR	100-YR	5-YR	25-YR	100-YR
		(acres)		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
A	PA1	66	81	2.76	8.10	14.64	2.76	8.10	14.64
B	PB1	440	81	17.30	50.41	90.91	47.02	156.86	298.54
	PB2	255	81	20.56	64.40	116.66			
	PB3	303	81	15.67	47.27	85.80			
	PB4	546	73	4.82	29.56	70.15			
C	PC1	509	81	19.39	56.32	101.46	26.94	78.13	139.76
	PC2	161	81	8.75	26.52	48.17			
D	PD1	178	86	19.14	44.02	70.52	19.14	44.02	70.52
G	PG1	364	81	26.90	83.94	152.12	26.90	83.94	152.12

Drainage Basins A-G were analyzed for future buildout using assumptions that can be found in Attachment 3, Appendix B. Reference Table 7 for allowable peak flow release rates into downstream connections.

B. Proposed Peak Runoff Volume Calculations (Sub-Basin and Basin)

Hydraflow results for the proposed conditions analysis can be viewed in Attachment 4 of Appendix B. Resulting flowrates for the 5-year, 25-year, and 100-year, 24-hour storm events of the proposed condition analysis are as follows:

Table 5. Proposed Peak Runoff Volumes

BASIN	SUB-BASIN	AREA	RUNOFF VOLUME PER SUB-BASIN			RUNOFF VOLUME PER BASIN		
			5-YR	25-YR	100-YR	5-YR	25-YR	100-YR
		(acres)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)
A	PA1	66	1.1	2.6	4.4	1.1	2.6	4.4
B	PB1	440	7.2	17.5	29.2	19.1	50.2	87.1
	PB2	255	4.2	10.2	17.1			
	PB3	303	4.9	12.0	20.1			
	PB4	546	2.8	10.5	20.7			
C	PC1	509	8.3	20.1	33.7	10.9	26.6	44.4
	PC2	161	2.6	6.4	10.7			
D	PD1	178	5.0	10.4	16.0	5.0	10.4	16.0
G	PG1	364	5.9	14.4	24.1	5.9	14.4	24.1

See Figure 6 and 7 for proposed volume.

C. Proposed Retention/Detention Volume Requirements

The runoff volumes have been computed in order to compare them to the fully developed condition volumes generated through the proposed conditions analysis. The resulting flow increase due to development shall be retained or detained in order to maintain these existing runoff conditions. Potential regional detention/retention facility locations/footprints are depicted in Figures 6 and 7 of Appendix A on both a Basin and Sub-Basin level respectively, and were selected as the best possible location based on safety and the capability of receiving flows requiring mitigation. Regional detention facility footprints are depicted at a size adequate to detain half of the 25-year, 24-hour event and bypass the 100-year, 24-hour event except in the case of Basin G, which shows a regional retention facility capable of retaining the entire 100-year/24-hour event. Since the timing and specific final layout of each lot will vary as development takes place within the Mark IV Industrial Subdivision, individual lots undergoing buildout will have to contribute to detention requirements on a sub-Basin level. As such, depending on which Basin the current construction is taking place within, the developer will be responsible for one of the following options:

1. Local Detention: Provide detention for 50% to 100% of the 25-yr, 24-hr storm event within the bounds of the lot itself. Each constructed local basin shall include an emergency overflow to either the regional facility or the final outfall of the sub-Basin system. Emergency overflows shall be sized for the 100-year, 24-hour event and the system's final discharge shall take place within the property bounds of the Mark IV Industrial Subdivision.

2. Regional Detention: Contribute up to 50% of proposed runoff of the 25-year, 24-hr to the corresponding regional basin. The remainder of increase in volume must be detained on site within the lot. Regional detention facilities shall be sized for the 50% of 25-year, 24-hour event unless otherwise noted. Regional detention facilities shall contain emergency overflows that shall be constructed and sized for the 100-year, 24-hour event. The system's final discharge shall take place within the property bounds of the Mark IV Industrial Subdivision.

   Contribution to the construction of a regional facility will occur from downstream to upstream. Land for the entire regional basin's maximum anticipated footprint shall be allocated until all development upstream has taken place. The regional facility's emergency overflow shall be constructed such that expansion to its maximum capacity is possible as lots continue to be developed, including energy dissipation for the full build-out condition. See Figures 6 and 7 in Appendix A for Runoff Volume requirements per Basin and Sub-Basin, respectively.

3. Local Retention – Basin G Only: Provide retention for 0 to 100% of the 100-yr, 24-hr storm runoff event within the bounds of the lot. The entire volume will need to be considered, not just the increase.

4. Regional Retention – Basin G Only: Contribute to the overall detention required within Basin G in an amount proportional (0 to 100%) to the lot's contribution of impervious surface in the developed condition. Because this facility does not have an outfall, the regional detention facility shall be sized for the entire 100-year, 24-hour event.

Land for the entire regional basin's maximum anticipated footprint shall be allocated until all development upstream has taken place. Regardless of the selection of localized versus regional solutions to attenuating flow, individual volumes must add up to the required retention/detention volumes as discussed in this report and illustrated in Figures 6 and 7 of Appendix A.

Two existing retention ponds will be removed. The first pond is located near the northeast corner of the Gateway Drive and Nevada Pacific Parkway intersection and the second pond is located just west of the Gateway Drive and Connor Drive intersection. Both existing ponds are located in Basin C. Reference Figure 1 for the two existing pond locations. The volume analysis considered existing conditions prior to any development, and the proposed conditions included industrial area outside the Mark IV development for the increase in runoff. Therefore, the required volume from these two ponds will be replaced with the construction of Pond C.

The following volumes area that are required to be retained/detained are as follows:

Table 6. Regional Retention/Detention Volume Requirements

BASIN	SUB-BASIN	SUB-BASIN (ac-ft)	REQUIRED POND VOLUME (ac-ft)	STORM EVENT	DETENTION/ RETENTION
A	PA1	1.3	1.3	50% of 25-yr/24-hr	DETENTION
B	PB1 PB2 PB3 PB4	8.7 5.05 5.95 4.2	23.9	50% of 25-yr/24-hr	DETENTION
C	PC1 PC2	10 3.2	13.25	50% of 25-yr/24-hr	DETENTION
D	PD1	3.65	3.65	50% of 25-yr/24-hr	DETENTION
G	PG1	24.1	24.1	100% of 100-yr/24-hr	RETENTION

All storm drain improvements will be private until construction is complete, and then dedicated to the City of Fernley at time of completion.

VI. LOT SPECIFC RELEASE RATES AND VOLUMES

Individual lots will have the option to release up to 50% of the increase in runoff. Lots within Basin G may release up to 100%. Details of the maximum use of regional facilities by lot are as follows:

Table 7. Allowable Release Flow and Volume for Each Lot

Lot	Downstream Connection Point	Percentage of Site Allowed to Discharge Downstream	Mitigation Requirement	Allowable Peak Flow Release Rate (cfs)	Allowable Volume Release (ac-ft)	Curve Number
1	30" SD - Duffy Road	50%	Detention	17.87	1.13	81
2	Channel 1	50%	Detention	17.16	1.09	81
3	Channel 1	50%	Detention	17.96	1.14	81
4	Pond B	50%	Detention	49.89	5.62	81
5	18" SD - Connor Drive	50%	Detention	11.59	0.74	81
6*	Pond G	100%	Retention	67.14	7.83	81
7	Channel 2	50%	Detention	22.17	1.96	81
8	60" SD - Duffy Road/Channel 2	50%	Detention	13.87	0.97	81
10	Pond B	50%	Detention	48.54	4.28	81
11	Lot 10	50%	Detention	46.29	3.65	81
12	48" SD - Connor Drive	50%	Detention	14.46	0.92	81
13*	18" SD - Gateway Drive	100%	Retention	38.17	5.63	81
14*	18" SD - Gateway Drive	100%	Retention	41.30	5.45	81
15	Channel 3	50%	Detention	20.65	1.63	81
16	48" SD - Connor Drive	50%	Detention	8.27	0.53	81
17	Channel 3	50%	Detention	7.13	1.54	81
18	Channel 3	50%	Detention	44.77	3.25	81
19	12" SD - Gavin Road	50%	Detention	9.30	0.59	81
20	Pond C	50%	Detention	8.52	0.54	81
21	18" SD - Duffy Road	50%	Detention	3.48	0.22	81
22	Pond D	50%	Detention	55.01	3.97	81

1. All lots without the * were designed with the 25-year, 24-hour storm event.
*These lots were designed with the 100-year, 24-hour storm event.

Flows for all lots are based on the 25-year, 24-hour storm event. Volumes are also based on the 25-year 24-hour storm, except for Lots 6, 13, and 14 (Basin G) volumes are based on the 100-year, 24-hour storm event. Reference Figure 10.

Lots 23-25 have not been included in the regional analysis. Lot 23 will drain to the proposed CLOMR pipe and will not include detention. Lots 24 and 25 are located adjacent to an existing drainage way. Any necessary mitigation will be determined in a future analysis once land uses are determined. Reference Figure 10 for preliminary flow rates based on the 25-year, 24-hour storm event.

VII. OPINION OF PROBABLE COSTS

A Class 5 Engineer's opinion of probable costs is presented in Table 8. The presented Engineer's opinion of probable costs are "whole" project estimates that include construction phase costs. It should be noted that the presented opinions of probable costs are strictly conceptual in nature and may differ significantly from actual construction costs. These costs reflect the Engineer's impression of material, equipment, labor, etc. at the time of the estimate based on experience and judgement in applying presently available data. The engineer has no control over cost of labor, materials, equipment, competitive bidding practices, market conditions, tariffs, costs associated with funding packages, inflation, etc. Thus, the engineer cannot warrant that the actual project costs will not vary from the Engineer's opinion of probable cost.

Table 8. Preliminary Opinion of Probable Construction Costs: On-site System

Item	Description	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization and Demobilization	LS	1	$500,000	$500,000
2	12-inch PVC	LF	3696	$125	$462,000
3	15-inch PVC	LF	4790	$150	$718,500
4	18-inch PVC	LF	5524	$200	$1,104,800
5	24-inch PVC	LF	4966	$260	$1,291,160
6	30-inch PVC	LF	5215	$300	$1,564,500
7	36-inch RCP	LF	4319	$350	$1,511,650
8	48-inch RCP	LF	8942	$400	$3,576,800
9	60-inch RCP	LF	5678	$600	$3,406,800
10	36-inch HDPE	LF	5667	$390	$2,210,130
11	48" Manhole	EA	66	$8,000	$528,000
12	60" Manhole	EA	33	$10,000	$330,000
13	72" Manhole	EA	24	$13,000	$312,000
14	Rip-Rap Lined Channel	LF	12375	$800	$9,900,000
15	Rip-Rap Lined Detention Pond	EA	4	$1,000,000	$4,000,000
				Subtotal Storm	$31,416,340
				Contingency (15%)	$4,712,451
				Total	**$36,128,791**

[1] Quantities are for backbone collection system only. Includes fittings, excavation, backfill, restoration to finish grade, connection to structures.

[2] Includes restrained joints, fittings, excavation, backfill, restoration to finish grade/pavement replacement, traffic control.

VIII. CONCLUSIONS

A. Benefits

The development, as proposed, will allow for the construction of an industrial subdivision. Drainage improvements to the site shall convey anticipated onsite flows throughout the project area via a network of pipes, drainage channels, catch basins, and detention basins. Offsite flows will be intercepted, detained, and released downstream of the project area to its original destination (the Fernley Sink). The plan will provide an adequate drainage and storage system for the 5-year, 25-year, and 100-year storm, 24-hour events to ensure no adverse effects occur downstream or to onsite facilities.

B. Adverse Effects with Solutions

The design and hydrologic analysis of the proposed development are conducted in compliance with the drainage guidelines for the City of Fernley, as well as the standard engineering practices as outlined in the USDA NRCS National Engineering Handbook, Part 630. Adverse effects to the drainage system due to increased storm runoff generated from the construction of this industrial development are mitigated through the construction of regional detention and retention facilities that capture the increase in runoff volumes indicated in this report.

VIII. REFERENCES

- U.S. Department of Commerce, National Oceanic and Atmospheric Administration NOAA Atlas 14 Precipitation-Frequency Atlas of the Western United States: Semiarid Southwest, Volume 1, Version 5.0, Silver Spring, Maryland, 2011.

- Federal Emergency Management Agency (FEMA), FIRM Panels 32019C0110E, 32019C0105E, and 32019C0050E.

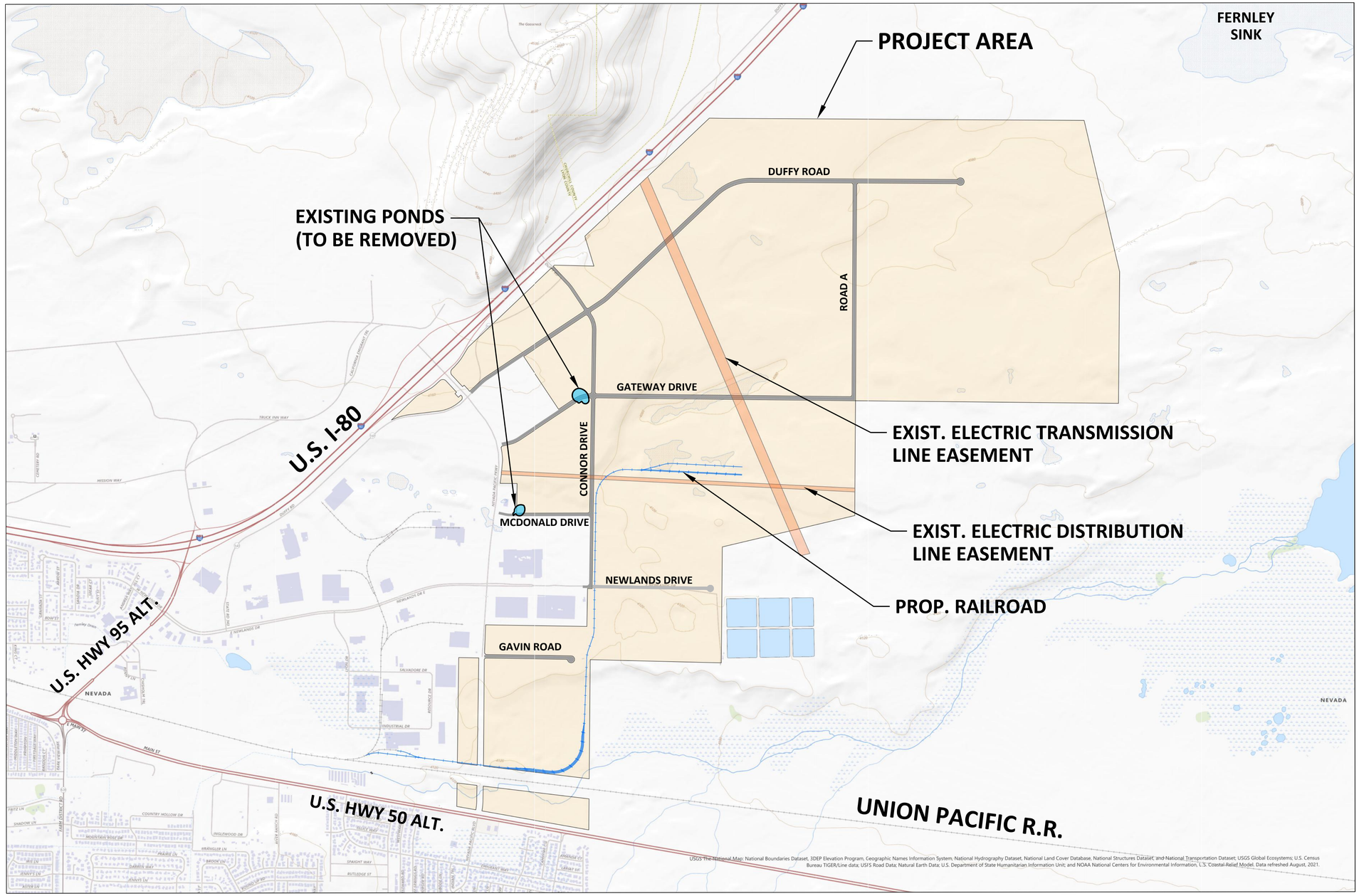
- USDA Natural Resource Conservation Service Win TR-55 Watershed Hydrology with Win TR-20, Version 1.00.10.

- City of Fernley Public Works Design Standards & Review Guidelines for Streets, Potable Water, Sewer, Storm Drains & Alternative Water, May 2008.

Appendix A

FIGURES

SITE OVERVIEW EXHIBIT:



N

N.T.S.

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M4 NEW FERNLEY QOZB, LLC

VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

SITE OVERVIEW

FERNLEY LYON NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1000'

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FIG-1

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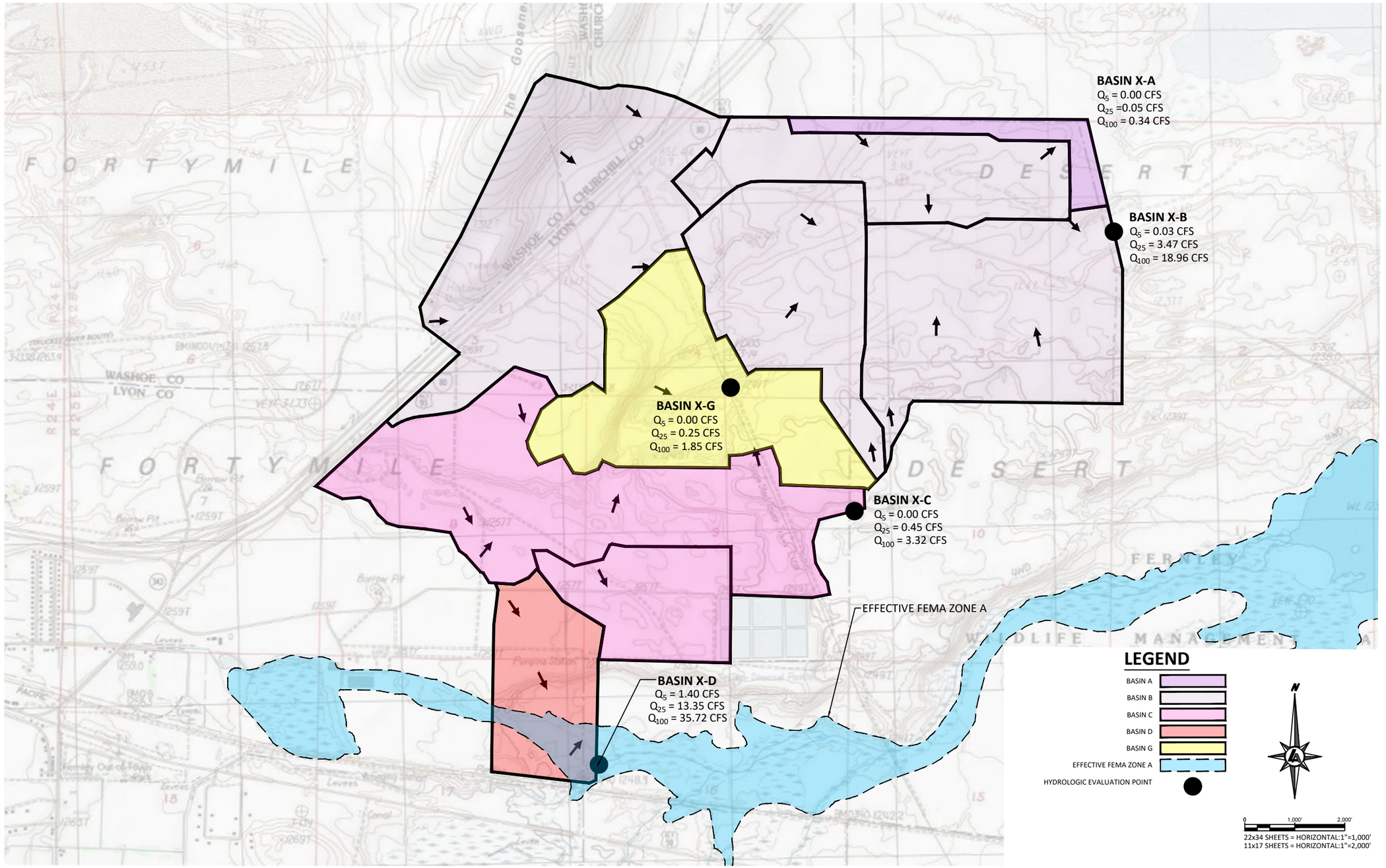
L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\Hydrology\DWG\Master Plan\10067002_Hydro-FLOWS.dwg,FIG-1, 08/11/2023 10:16 am mshults

EXISTING CONDITIONS EXHIBIT - BASIN FLOW RATES:



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VICTORY LOGISTICS
TENTATIVE MAP - DRAINAGE
EXISTING CONDITIONS EXHIBIT - BASIN FLOW RATES

FERNLEY LYON NEVADA

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FIG-2

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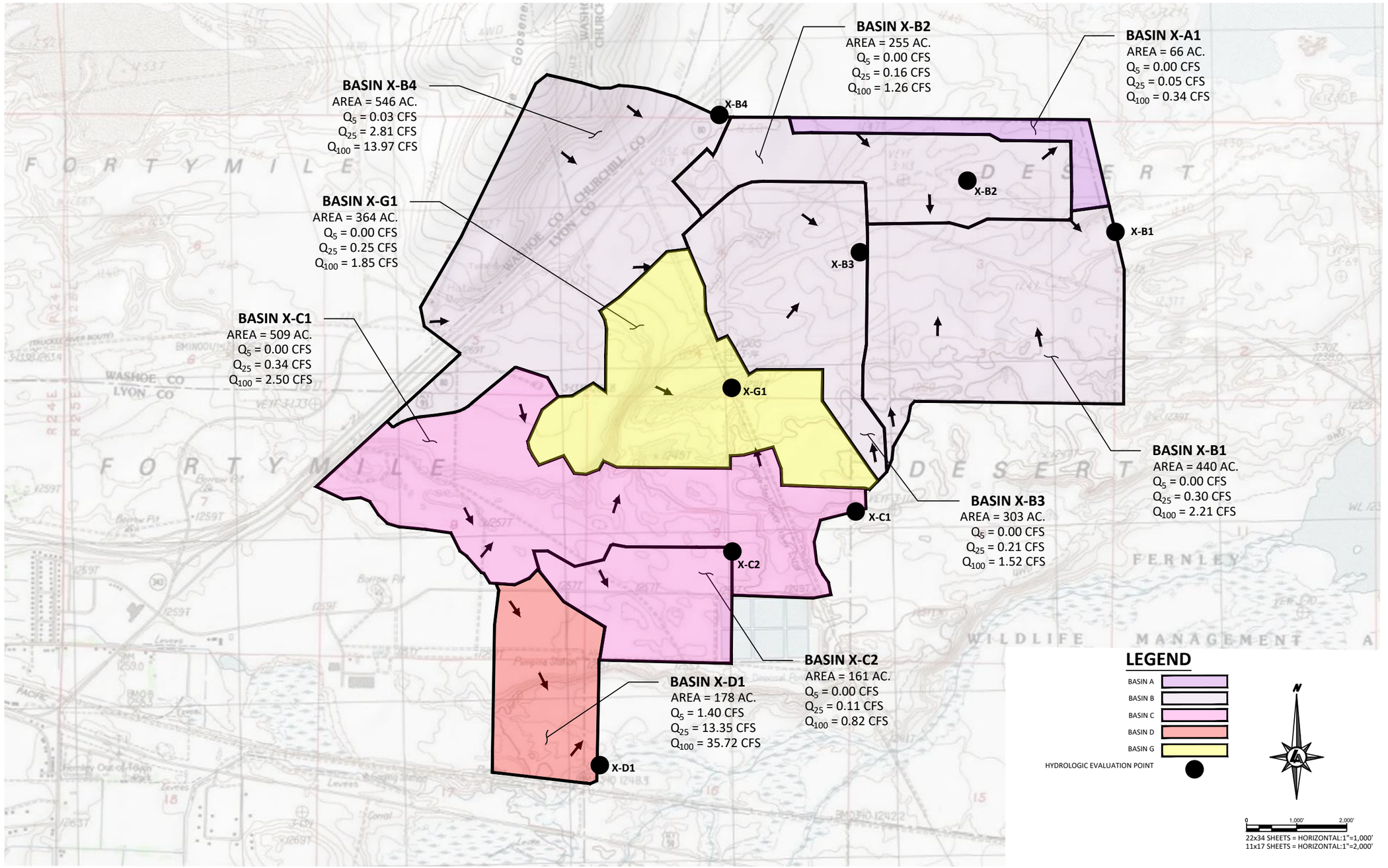
EXISTING CONDITIONS EXHIBIT - SUBBASIN FLOW RATES:



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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

EXISTING CONDITIONS EXHIBIT - SUBBASIN FLOW RATES

LYON NEVADA FERNLEY

REV	DATE	DESCRIPTION	BY

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FIG-3

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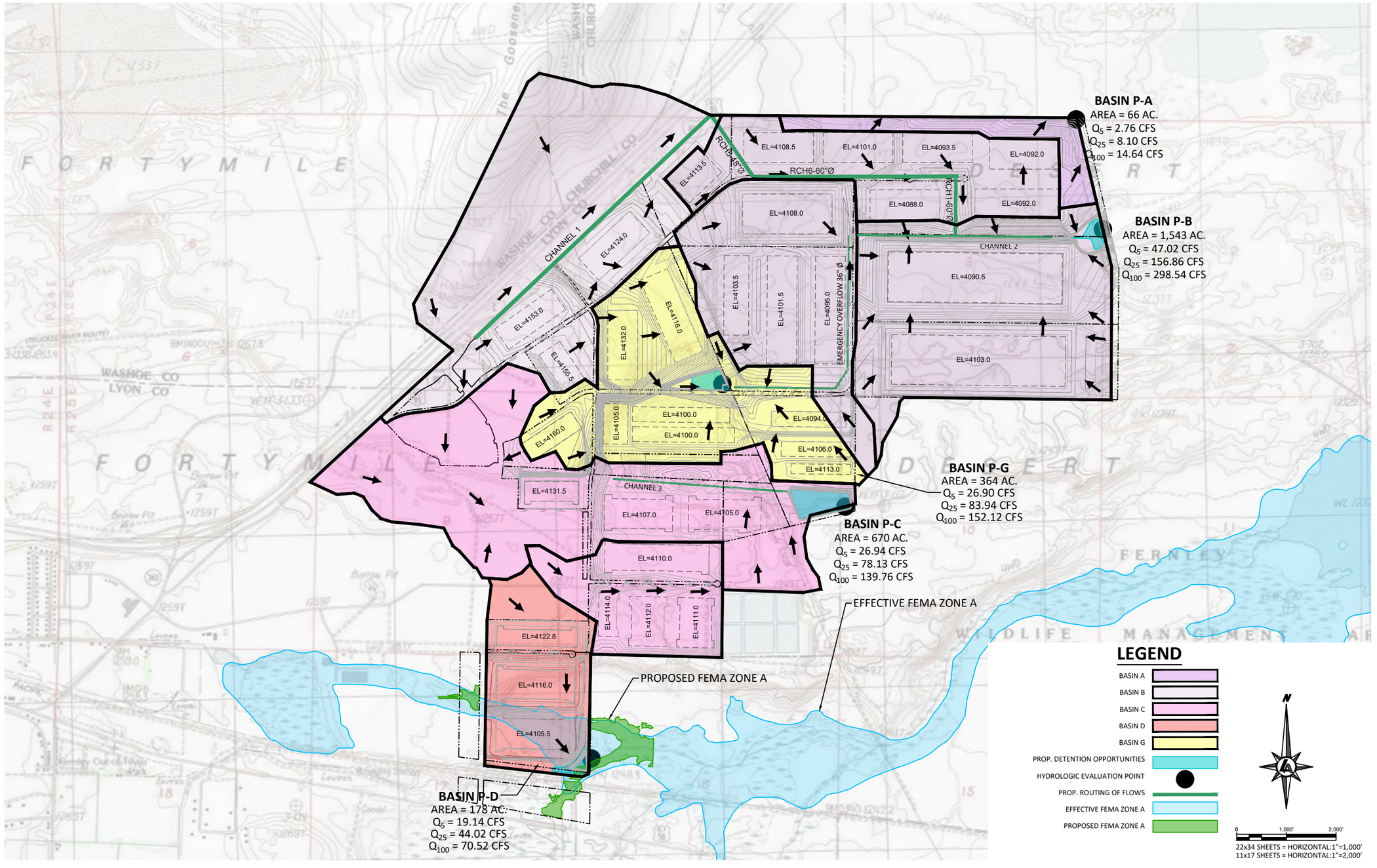
PROPOSED CONDITIONS EXHIBIT - BASIN FLOW RATES:



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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

PROPOSED CONDITIONS EXHIBIT - FLOW RATES

LYON COUNTY, NEVADA

FERNLEY

REV	DATE	DESCRIPTION	BY

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FIG-4

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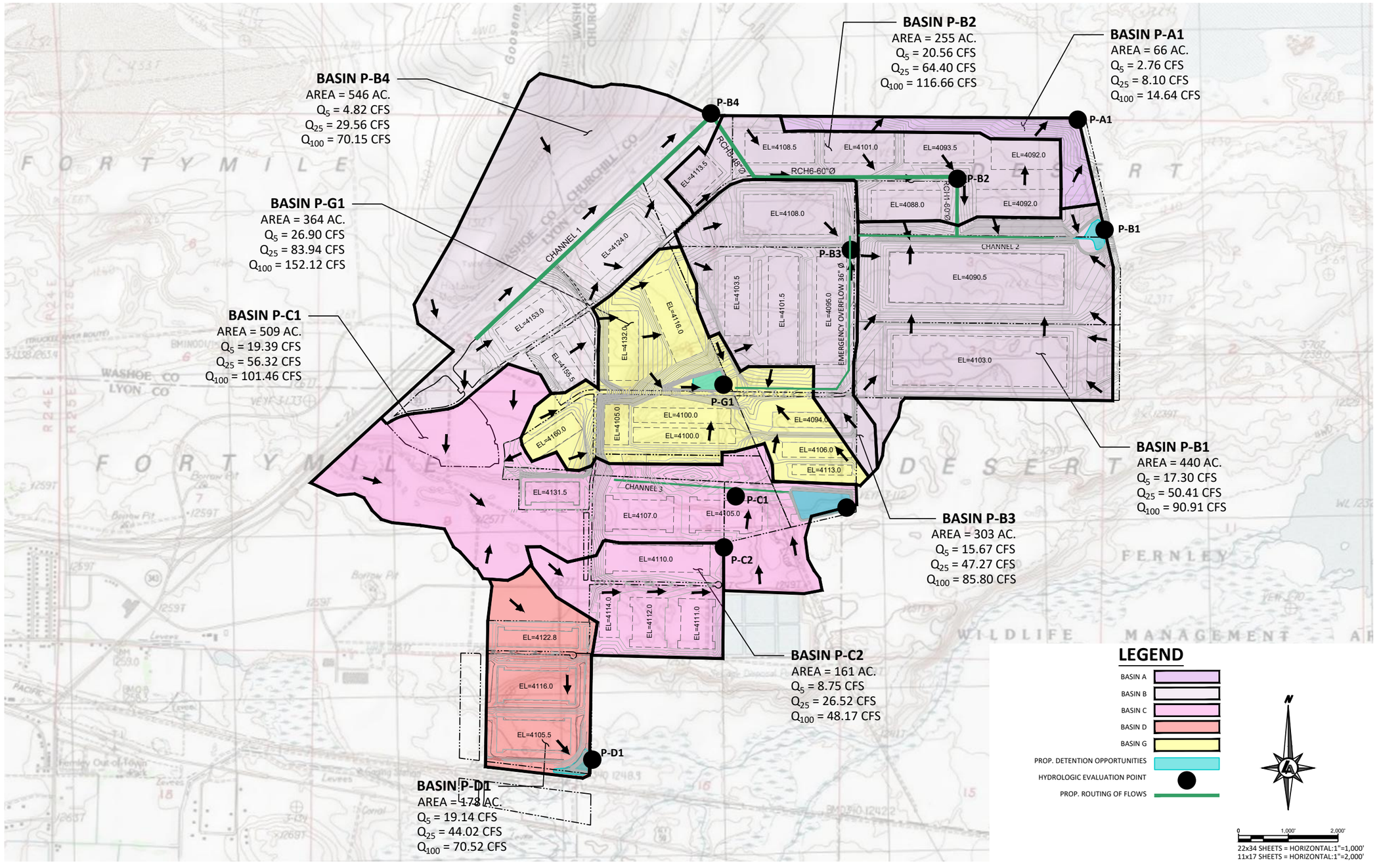
PROPOSED CONDITIONS - SUBBASIN FLOW RATES:



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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

PROPOSED CONDITIONS - SUBBASIN FLOW RATES

LYON COUNTY, NEVADA

FERNLEY

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FIG-5

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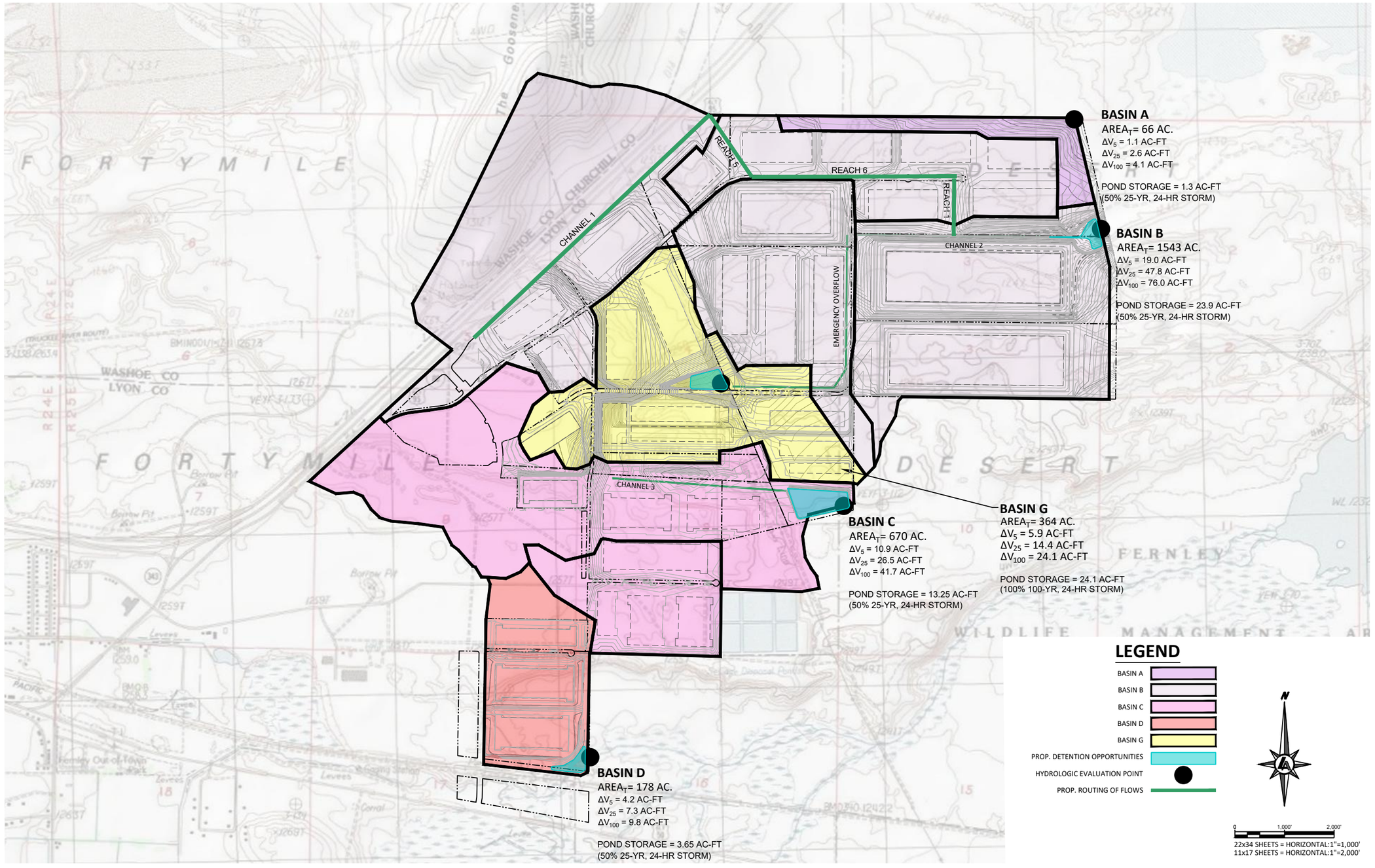
BASIN RETENTION VOLUME REQUIREMENTS:



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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

BASIN RETENTION VOLUME REQUIREMENTS

FERNLEY LYON NEVADA

REV	DATE	DESCRIPTION	BY

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FIG-6

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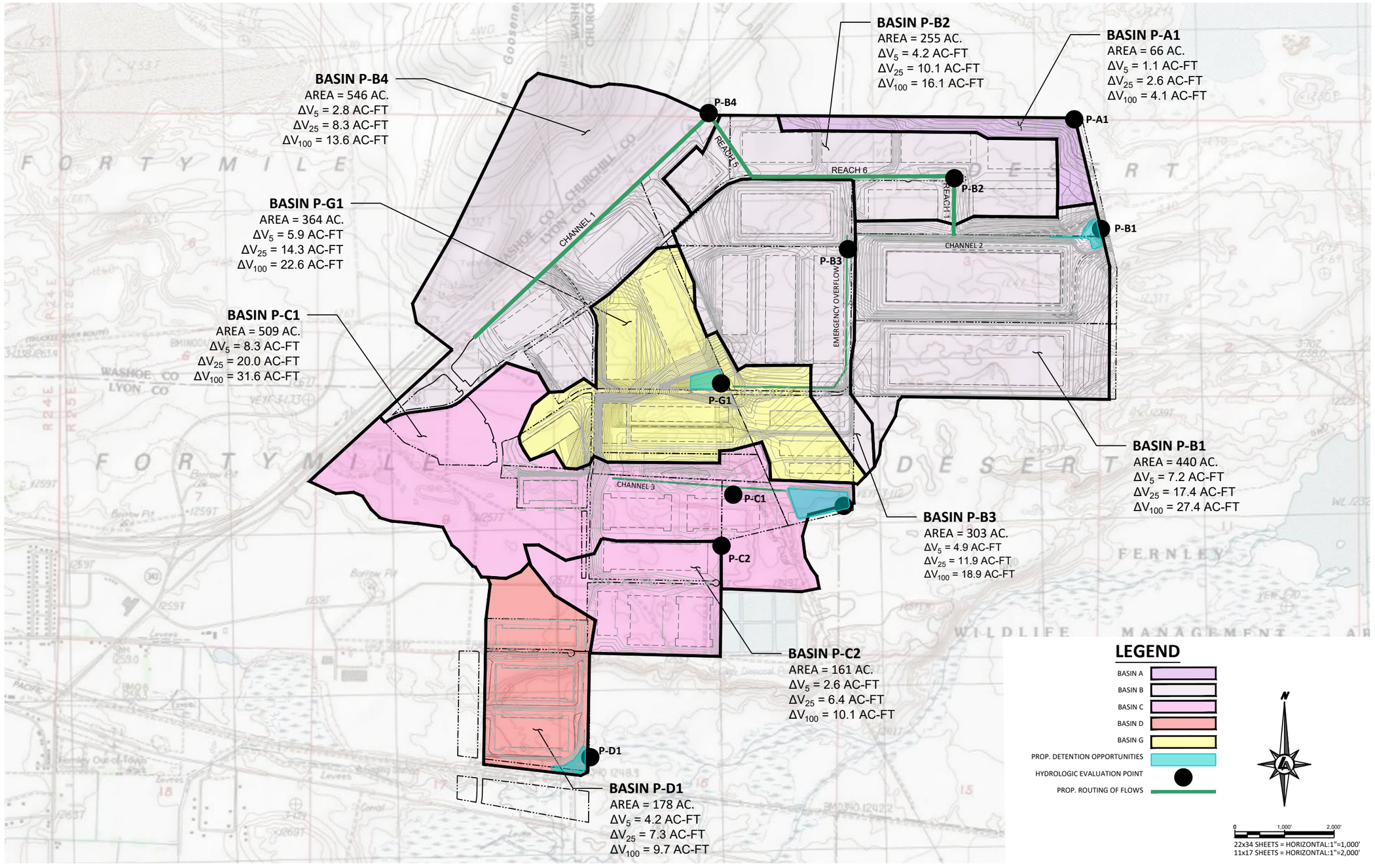
SUBBASIN RETENTION VOLUME REQUIREMENTS:



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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

SUBBASIN RETENTION VOLUME REQUIREMENTS

FERNLEY LYON NEVADA

REV	DATE	DESCRIPTION	BY
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FIG-7

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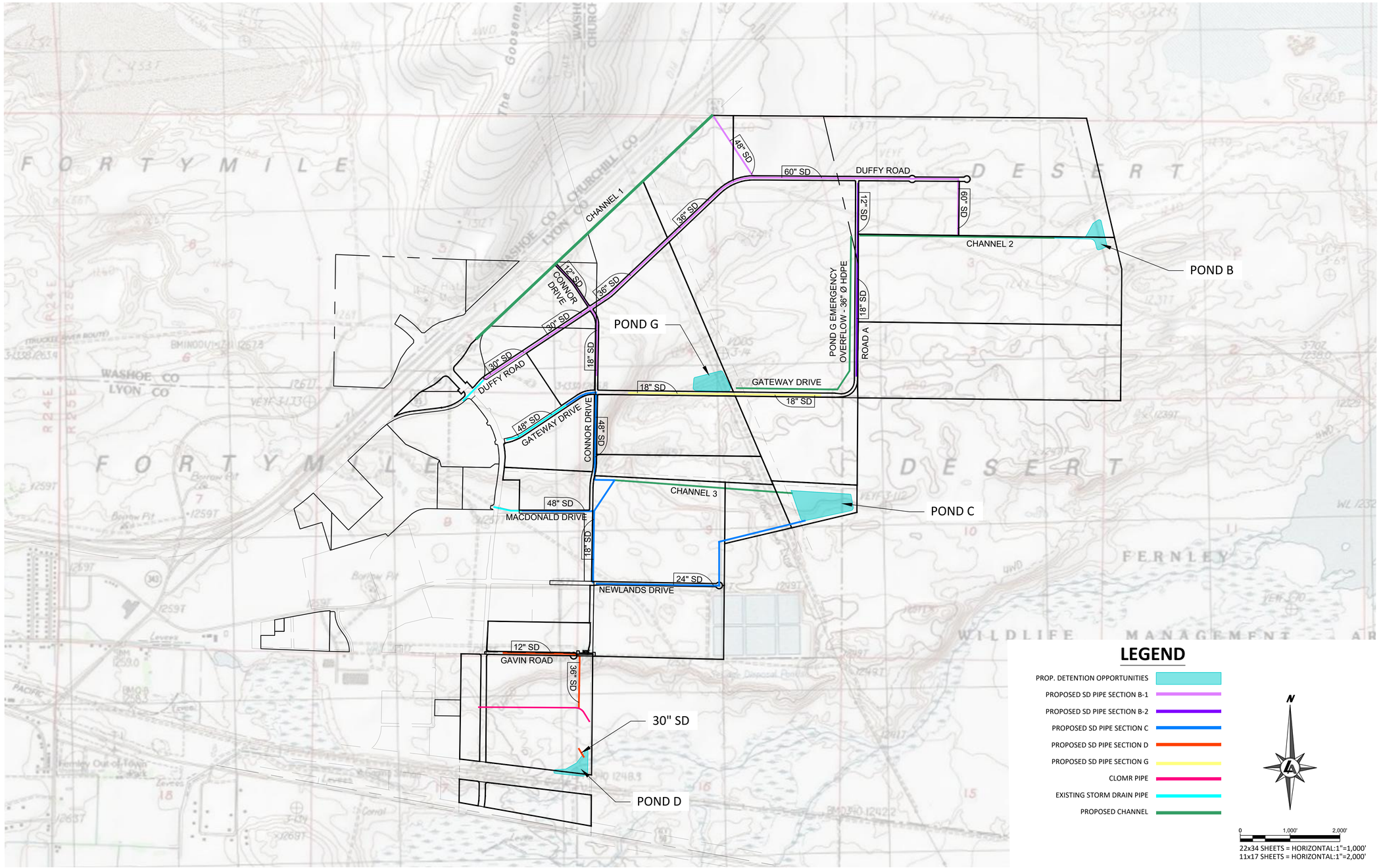
L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\Hydrology\DWG\Master Plan\10067002_Hydro-VOLUMES.dwg,FIG-7, 08/02/2023 01:11 pm cpynes

PRELIMINARY LOCAL STORM DRAIN PLAN:



LEGEND

- PROP. DETENTION OPPORTUNITIES
- PROPOSED SD PIPE SECTION B-1
- PROPOSED SD PIPE SECTION B-2
- PROPOSED SD PIPE SECTION C
- PROPOSED SD PIPE SECTION D
- PROPOSED SD PIPE SECTION G
- CLOMR PIPE
- EXISTING STORM DRAIN PIPE
- PROPOSED CHANNEL

N

0 1,000' 2,000'

22x34 SHEETS = HORIZONTAL:1"=1,000'
11x17 SHEETS = HORIZONTAL:1"=2,000'

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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

PRELIMINARY LOCAL STORM DRAIN PLAN

FERNLEY LYON NEVADA

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FIG-8

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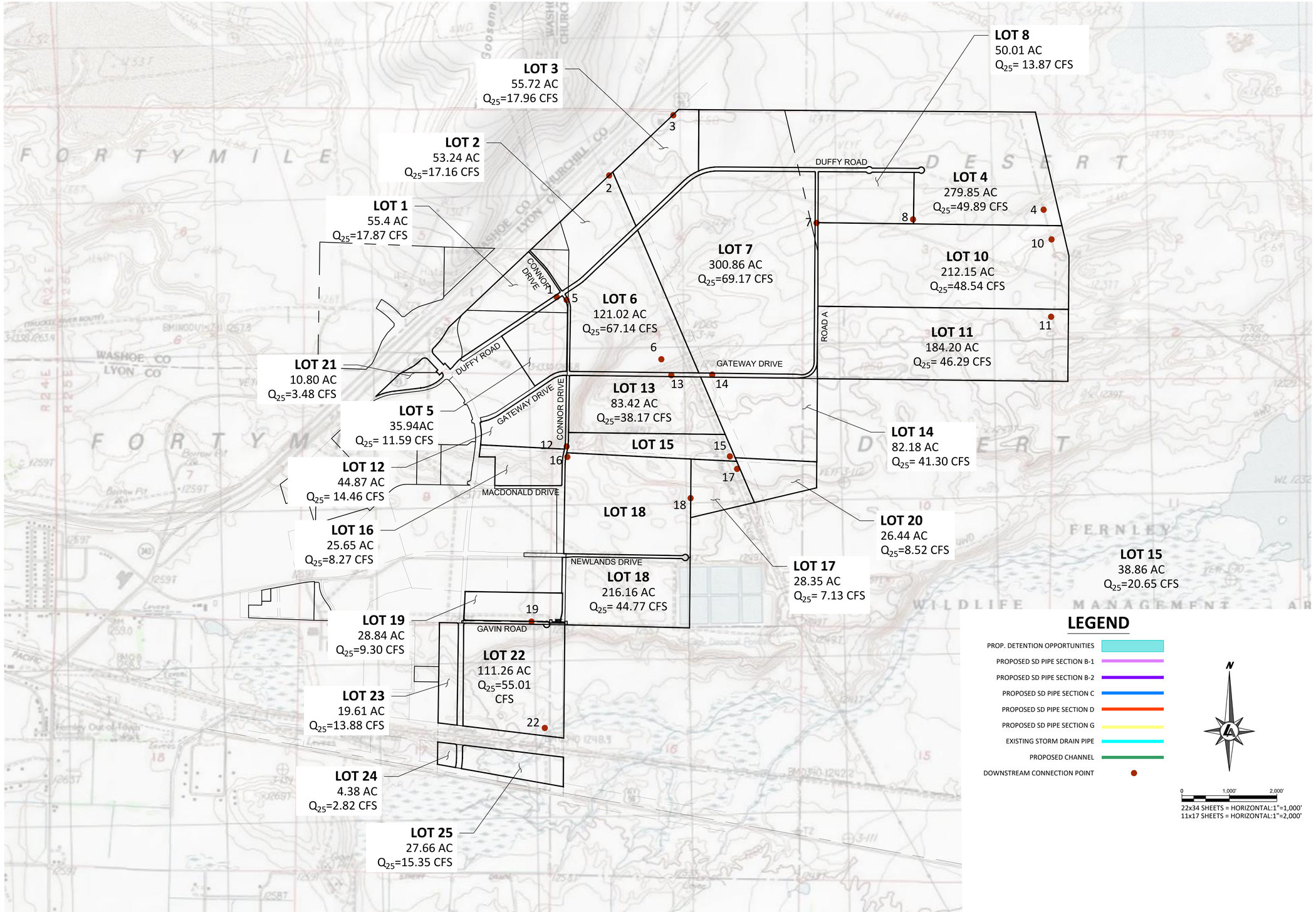
L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\Hydrology\DWG\FIGURE 10 & 11_REVISED.dwg,FIG-8, 08/11/2023 10:36 am mshults

DOWNSTREAM CONNECTION PLAN:



LEGEND

- PROP. DETENTION OPPORTUNITIES
- PROPOSED SD PIPE SECTION B-1
- PROPOSED SD PIPE SECTION B-2
- PROPOSED SD PIPE SECTION C
- PROPOSED SD PIPE SECTION D
- PROPOSED SD PIPE SECTION G
- EXISTING STORM DRAIN PIPE
- PROPOSED CHANNEL
- DOWNSTREAM CONNECTION POINT

N

0 1,000' 2,000'

22x34 SHEETS = HORIZONTAL:1"=1,000'
11x17 SHEETS = HORIZONTAL:1"=2,000'

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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

DOWNSTREAM CONNECTION PLAN

FERNLEY LYON NEVADA

REV	DATE	DESCRIPTION	BY

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FIG-9

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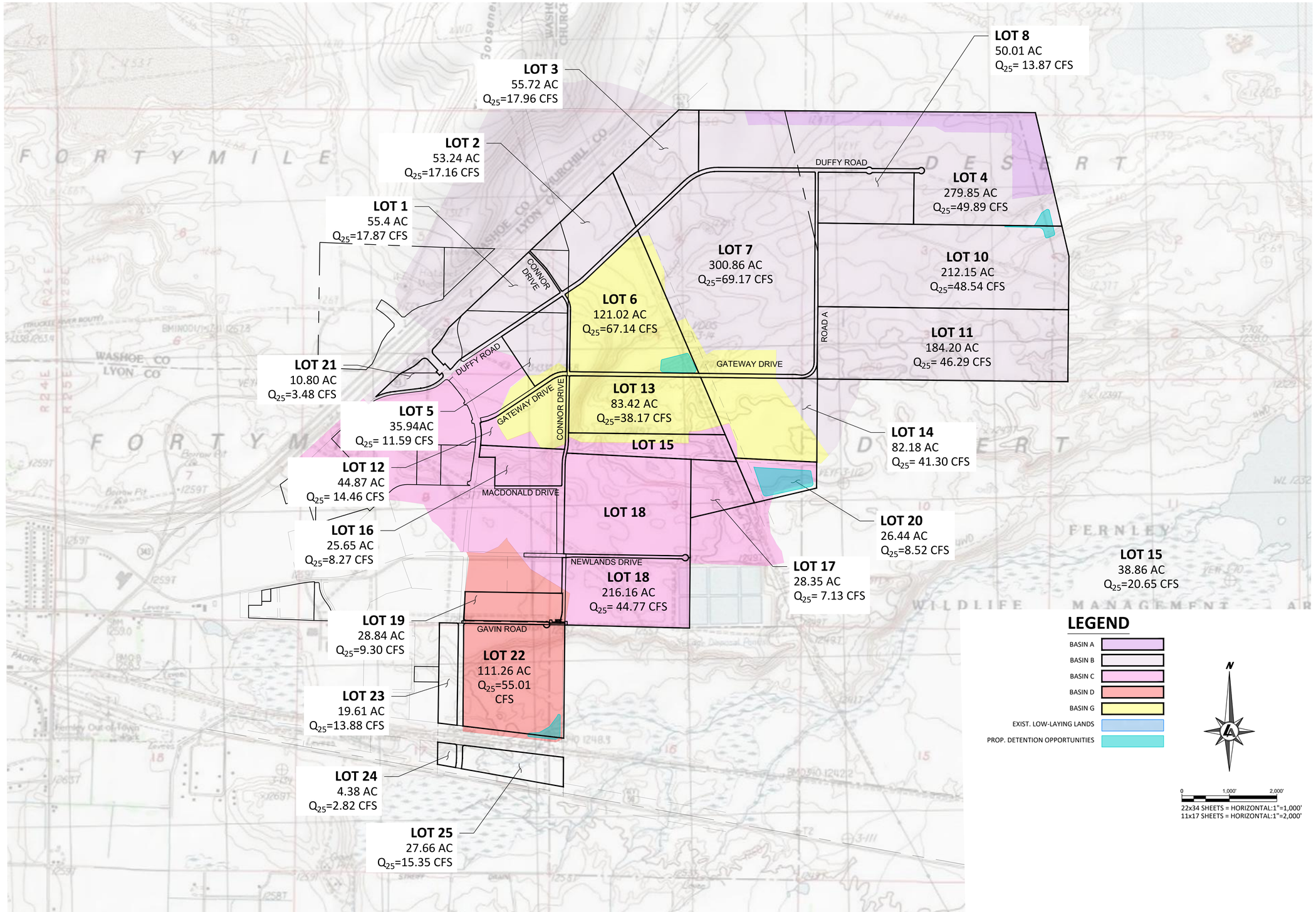
L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\Hydrology\DWG\FIGURE 10 & 11_REVISED.dwg,FIG-9, 09/14/2023 04:40 pm mshults

LOTS & REGIONAL BASINS:



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VICTORY LOGISTICS

TENTATIVE MAP - DRAINAGE

LOTS & REGIONAL BASINS

LYON COUNTY, NEVADA

FERNLEY

REV	DATE	DESCRIPTION	BY

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FIG-10

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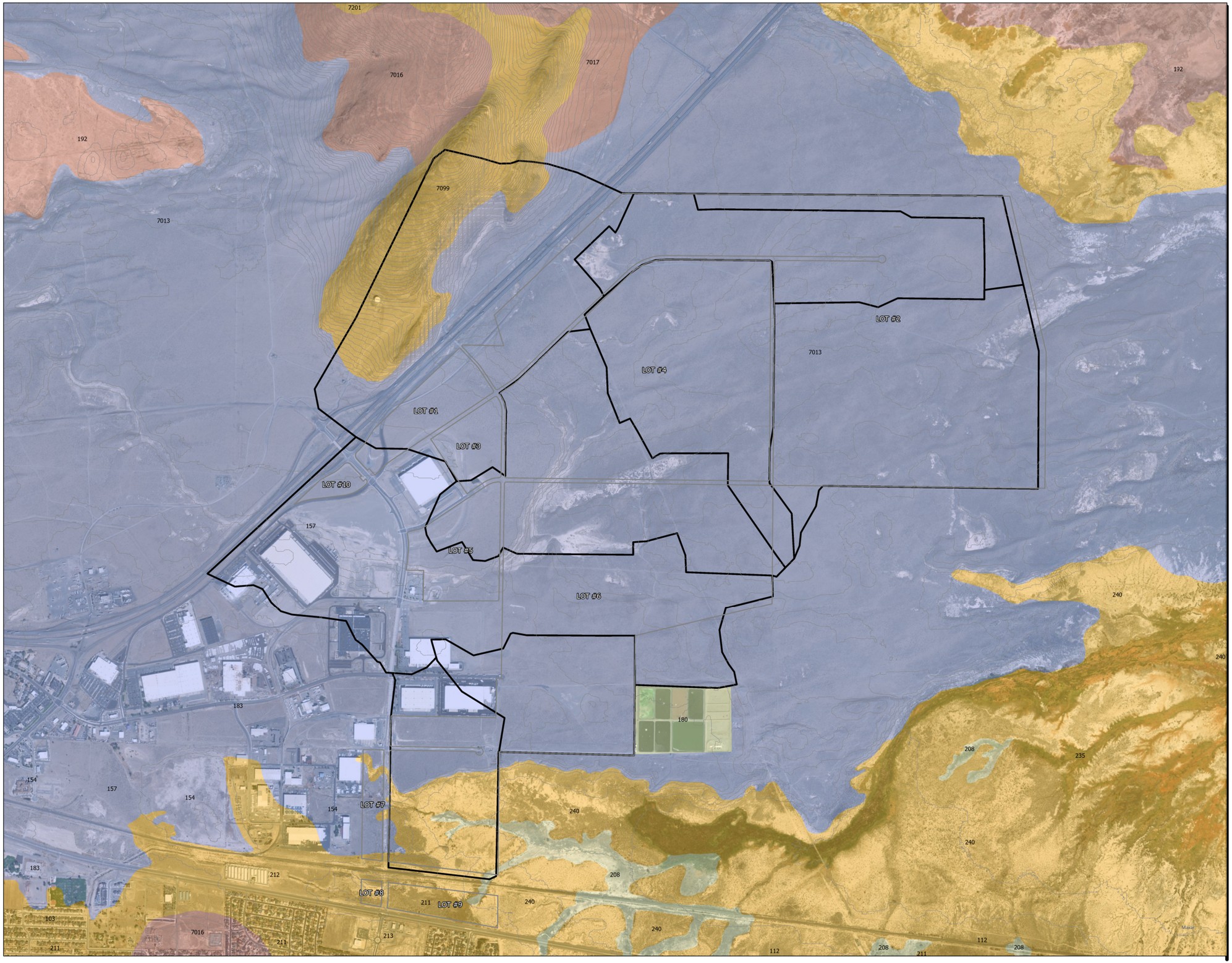
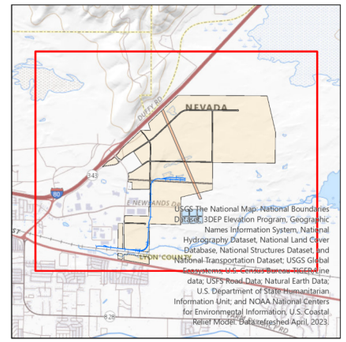
L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\Hydrology\DWG\FIGURE 10 & 11_REVISED.dwg,FIG-10, 09/14/2023 04:41 pm mshults





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HYDROLOGIC SOIL GROUPS
VICTORY LOGISTICS
TENTATIVE MAP

FIG. 11

LEGEND

- USGS_Contours
- TM_Lots
- Hydrologic Basins

FernleySoil

HYDROLOGICAL SOIL GROUP

- GROUP A
- GROUP B
- GROUP C
- GROUP D

N

Paper Size: 24" x 36"

Projection: Transverse Mercator
Grid: NAD 1983 StatePlane Nevada West FIPS 2703 Feet
Datum: North American 1983
Created by: mshults

Date:	AUG. 2023
Project #:	10067.008
Revision:	XX

Path: L:\LAProj\10067.008 - Victory Logistics Tentative Map\Civil\GIS\Workmap\STORM DRAIN EXHIBIT.aprx

Appendix B

ATTACHMENTS

ATTACH 1

NOAA Atlas 14, Volume 1, Version 5
Location name: Fernley, Nevada, USA*
Latitude: 39.6167°, Longitude: -119.1864°
Elevation: 4117.12 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.101** (0.082-0.121)	**0.126** (0.103-0.153)	**0.170** (0.139-0.207)	**0.209** (0.170-0.255)	**0.273** (0.216-0.337)	**0.332** (0.255-0.413)	**0.401** (0.299-0.502)	**0.483** (0.346-0.618)	**0.613** (0.416-0.813)	**0.731** (0.473-0.989)
10-min	**0.153** (0.125-0.185)	**0.192** (0.157-0.233)	**0.258** (0.212-0.315)	**0.318** (0.258-0.389)	**0.416** (0.328-0.513)	**0.506** (0.389-0.628)	**0.610** (0.454-0.764)	**0.735** (0.527-0.940)	**0.932** (0.634-1.24)	**1.11** (0.720-1.51)
15-min	**0.190** (0.155-0.229)	**0.238** (0.194-0.289)	**0.320** (0.262-0.391)	**0.394** (0.320-0.481)	**0.515** (0.407-0.636)	**0.627** (0.482-0.778)	**0.756** (0.564-0.947)	**0.911** (0.654-1.17)	**1.16** (0.786-1.53)	**1.38** (0.892-1.87)
30-min	**0.256** (0.209-0.309)	**0.321** (0.262-0.389)	**0.431** (0.353-0.526)	**0.531** (0.431-0.649)	**0.694** (0.548-0.856)	**0.844** (0.649-1.05)	**1.02** (0.759-1.28)	**1.23** (0.880-1.57)	**1.56** (1.06-2.07)	**1.86** (1.20-2.51)
60-min	**0.317** (0.259-0.382)	**0.397** (0.324-0.482)	**0.534** (0.437-0.651)	**0.657** (0.534-0.803)	**0.859** (0.678-1.06)	**1.05** (0.803-1.30)	**1.26** (0.939-1.58)	**1.52** (1.09-1.94)	**1.93** (1.31-2.56)	**2.30** (1.49-3.11)
2-hr	**0.395** (0.332-0.482)	**0.494** (0.417-0.602)	**0.641** (0.534-0.784)	**0.765** (0.631-0.937)	**0.954** (0.765-1.18)	**1.12** (0.879-1.39)	**1.32** (1.01-1.66)	**1.57** (1.17-2.00)	**1.97** (1.40-2.58)	**2.34** (1.60-3.14)
3-hr	**0.450** (0.380-0.541)	**0.563** (0.479-0.680)	**0.716** (0.602-0.863)	**0.838** (0.700-1.02)	**1.01** (0.834-1.23)	**1.17** (0.944-1.43)	**1.37** (1.08-1.69)	**1.61** (1.24-2.01)	**2.00** (1.50-2.61)	**2.35** (1.72-3.17)
6-hr	**0.555** (0.472-0.660)	**0.697** (0.593-0.835)	**0.883** (0.749-1.06)	**1.03** (0.866-1.24)	**1.23** (1.02-1.48)	**1.37** (1.12-1.66)	**1.53** (1.24-1.87)	**1.76** (1.39-2.18)	**2.12** (1.64-2.66)	**2.44** (1.85-3.20)
12-hr	**0.645** (0.557-0.751)	**0.817** (0.704-0.957)	**1.05** (0.904-1.23)	**1.23** (1.05-1.44)	**1.47** (1.24-1.73)	**1.66** (1.39-1.97)	**1.85** (1.52-2.22)	**2.04** (1.65-2.48)	**2.31** (1.82-2.85)	**2.59** (1.99-3.25)
24-hr	**0.771** (0.686-0.868)	**0.975** (0.868-1.10)	**1.25** (1.12-1.41)	**1.47** (1.31-1.66)	**1.79** (1.57-2.00)	**2.03** (1.77-2.28)	**2.29** (1.98-2.58)	**2.55** (2.19-2.89)	**2.92** (2.47-3.32)	**3.21** (2.69-3.68)
2-day	**0.855** (0.757-0.964)	**1.08** (0.956-1.22)	**1.40** (1.24-1.57)	**1.64** (1.44-1.84)	**1.99** (1.74-2.23)	**2.26** (1.97-2.54)	**2.54** (2.20-2.87)	**2.84** (2.42-3.22)	**3.24** (2.73-3.71)	**3.56** (2.97-4.12)
3-day	**0.920** (0.819-1.04)	**1.16** (1.04-1.31)	**1.51** (1.34-1.70)	**1.78** (1.57-1.99)	**2.15** (1.89-2.42)	**2.45** (2.14-2.76)	**2.76** (2.40-3.12)	**3.09** (2.65-3.50)	**3.54** (2.99-4.05)	**3.90** (3.25-4.49)
4-day	**0.986** (0.882-1.11)	**1.25** (1.12-1.41)	**1.62** (1.44-1.82)	**1.91** (1.70-2.15)	**2.32** (2.05-2.60)	**2.64** (2.31-2.97)	**2.99** (2.60-3.37)	**3.34** (2.88-3.78)	**3.84** (3.24-4.38)	**4.23** (3.52-4.87)
7-day	**1.14** (1.01-1.29)	**1.44** (1.27-1.64)	**1.86** (1.65-2.12)	**2.20** (1.94-2.50)	**2.67** (2.34-3.04)	**3.04** (2.64-3.46)	**3.43** (2.96-3.92)	**3.84** (3.28-4.39)	**4.40** (3.70-5.08)	**4.85** (4.03-5.63)
10-day	**1.25** (1.10-1.44)	**1.60** (1.41-1.83)	**2.08** (1.83-2.38)	**2.45** (2.14-2.80)	**2.96** (2.57-3.39)	**3.35** (2.90-3.84)	**3.77** (3.23-4.32)	**4.19** (3.56-4.84)	**4.76** (4.00-5.55)	**5.21** (4.31-6.12)
20-day	**1.48** (1.31-1.68)	**1.89** (1.66-2.15)	**2.43** (2.15-2.76)	**2.85** (2.51-3.23)	**3.40** (2.97-3.86)	**3.82** (3.32-4.34)	**4.24** (3.66-4.83)	**4.66** (4.00-5.33)	**5.22** (4.43-6.02)	**5.65** (4.74-6.55)
30-day	**1.65** (1.46-1.87)	**2.09** (1.86-2.38)	**2.70** (2.39-3.07)	**3.15** (2.78-3.58)	**3.75** (3.29-4.26)	**4.20** (3.66-4.78)	**4.66** (4.04-5.32)	**5.12** (4.40-5.87)	**5.72** (4.87-6.59)	**6.17** (5.21-7.15)
45-day	**1.92** (1.70-2.16)	**2.44** (2.16-2.75)	**3.14** (2.77-3.52)	**3.66** (3.22-4.10)	**4.33** (3.80-4.86)	**4.83** (4.22-5.43)	**5.32** (4.63-6.00)	**5.80** (5.01-6.56)	**6.41** (5.49-7.29)	**6.84** (5.83-7.81)
60-day	**2.18** (1.94-2.45)	**2.79** (2.47-3.13)	**3.58** (3.17-4.01)	**4.15** (3.67-4.64)	**4.87** (4.29-5.45)	**5.39** (4.73-6.05)	**5.88** (5.15-6.62)	**6.35** (5.54-7.17)	**6.93** (6.01-7.85)	**7.34** (6.33-8.36)

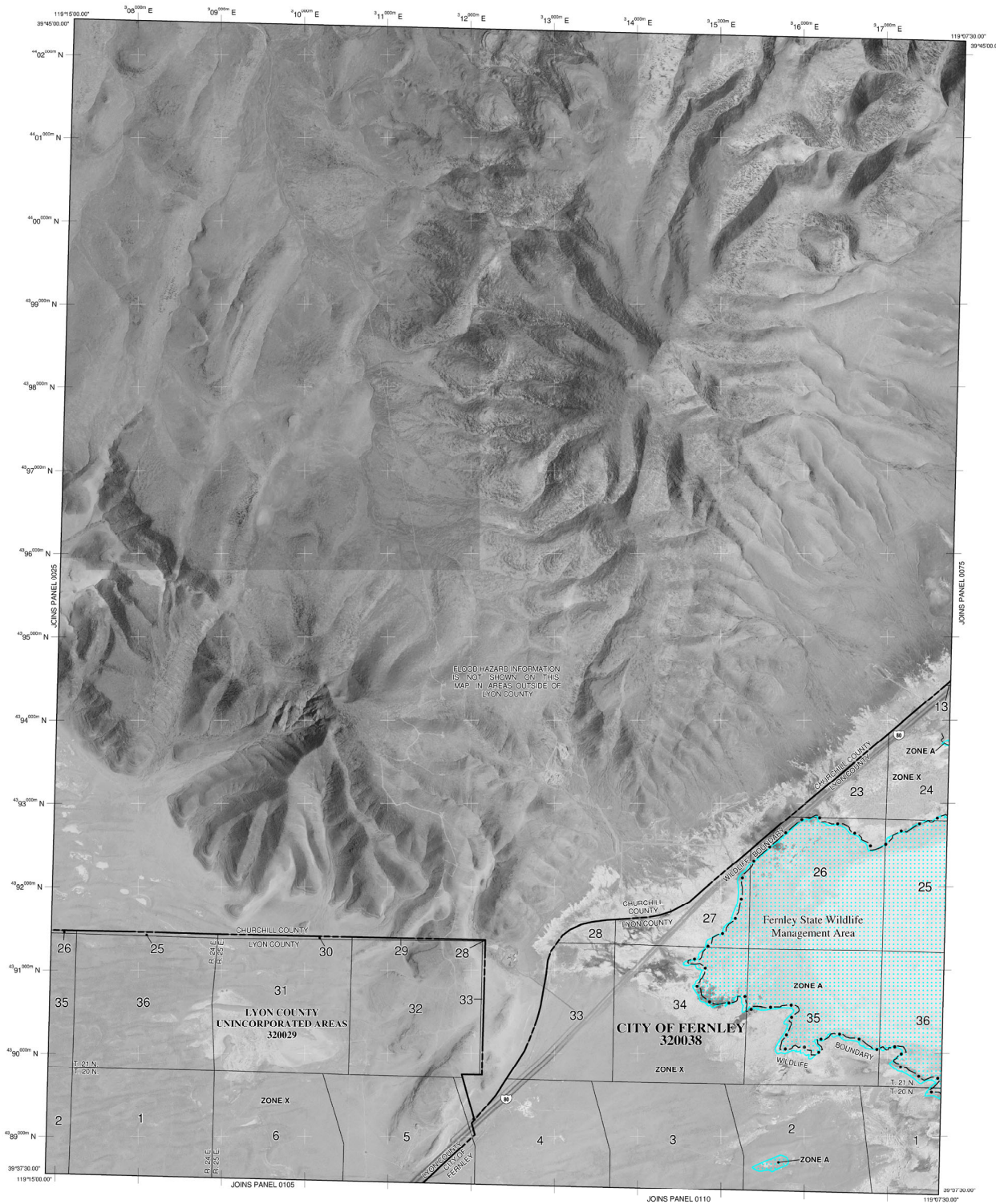
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°07'30", 39°37'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4378000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 16, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
300 0 600 1200 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0050E

FIRM
FLOOD INSURANCE RATE MAP
LYON COUNTY, NEVADA
AND INCORPORATED AREAS

PANEL 50 OF 1375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LYON COUNTY	320029	0050	E
FERNLEY, CITY OF	320038	0050	E

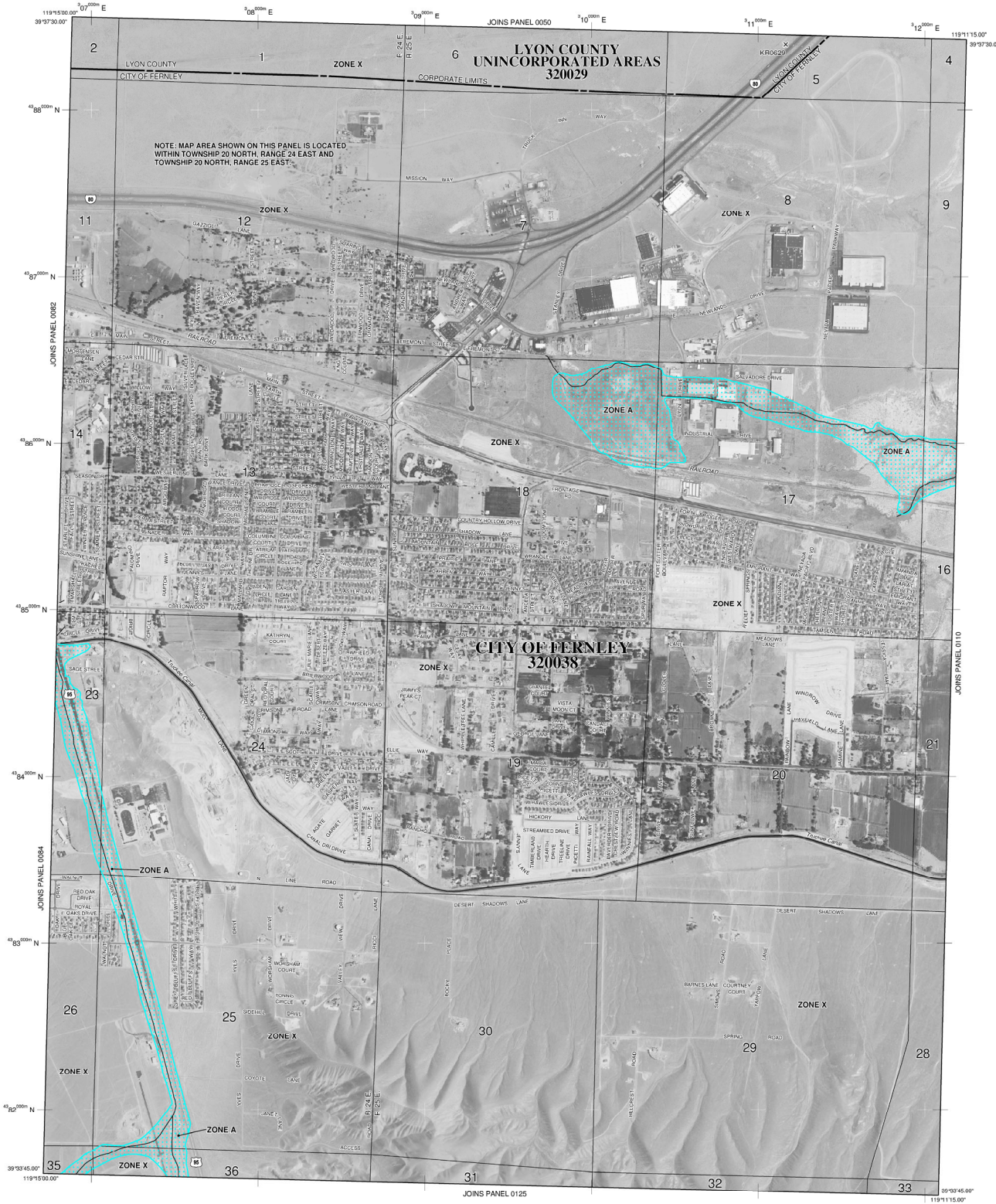
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32019C0050E

EFFECTIVE DATE
JANUARY 16, 2009

Federal Emergency Management Agency

ATTACH 2



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

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- 23–23 — Transect line
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- 4275000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 16, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0105E

FIRM
FLOOD INSURANCE RATE MAP
LYON COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 105 OF 1375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

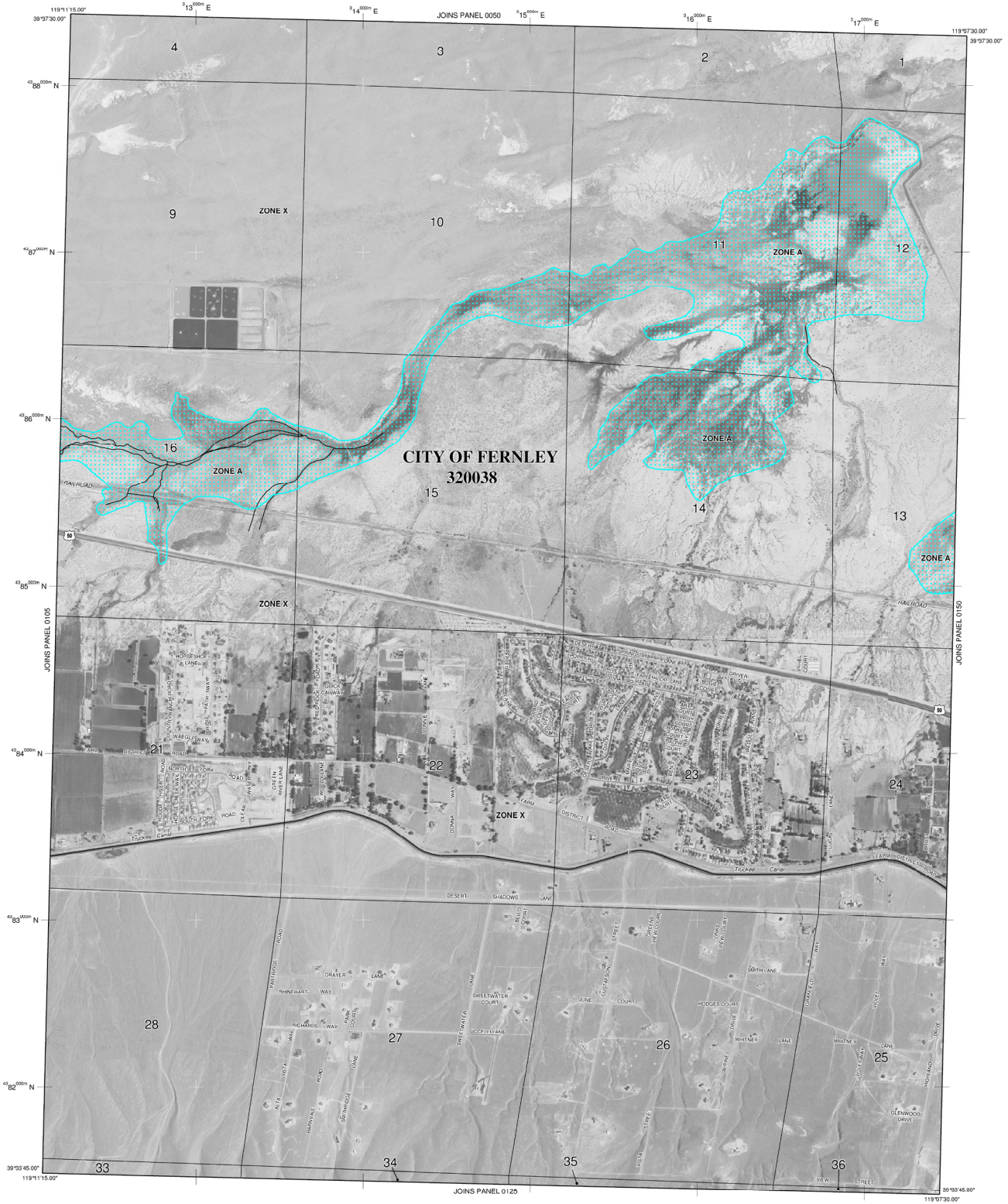
COMMUNITY	NUMBER	PANEL	SUFFIX
LYON COUNTY	320029	0105	E
FERNLEY, CITY OF	320038	0105	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32019C0105E

EFFECTIVE DATE
JANUARY 16, 2009

Federal Emergency Management Agency



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
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ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
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ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
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- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 16, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110E

FIRM
FLOOD INSURANCE RATE MAP

LYON COUNTY, NEVADA
AND INCORPORATED AREAS

PANEL 110 OF 1375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FERNLEY, CITY OF	320038	0110	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32019C0110E

EFFECTIVE DATE
JANUARY 16, 2009

Federal Emergency Management Agency

CURVE NUMBER DEVELOPMENT – EXISTING CONDITIONS

Basin A
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55

Basin B1-B3
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55

Basin B4
Open Space North of I-80: Fair Soil Desert Shrub Table Table 2.2d (Soil Group A) = 55
Open Space North of I-80: Fair Soil Desert Shrub Table Table 2.2d (Soil Group C) = 81
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55

Basin C1
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55

Basin C2
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55

Basin D
Existing Industrial: Table 2.2a (Soil Group A) = 81
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group C) = 81
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group D) = 86

Basin G
Fair Soil Desert Shrub: Table Table 2.2d (Soil Group A) = 55

CURVE NUMBER DEVELOPMENT – PROPOSED CONDITIONS

Basin A
Industrial: Table 2.2a (Soil Group A) = 81

Basin B1-B3
Industrial: Table 2.2a (Soil Group A) = 81

Basin B4
Open Space North of I-80: Fair Soil Desert Shrub Table Table 2.2d (Soil Group A) = 55
Open Space North of I-80: Fair Soil Desert Shrub Table Table 2.2d (Soil Group C) = 81
Industrial South of I-80: Table 2.2a (Soil Group A) = 81

Basin C1
Industrial: Table 2.2a (Soil Group A) = 81

Basin C2
Industrial: Table 2.2a (Soil Group A) = 81

Basin D
Industrial: Table 2.2a (Soil Group A) = 81
Industrial: Table 2.2a (Soil Group C) = 91
Industrial: Table 2.2a (Soil Group D) = 93

Basin G
Industrial: Table 2.2a (Soil Group A) = 81

Hydrograph Report

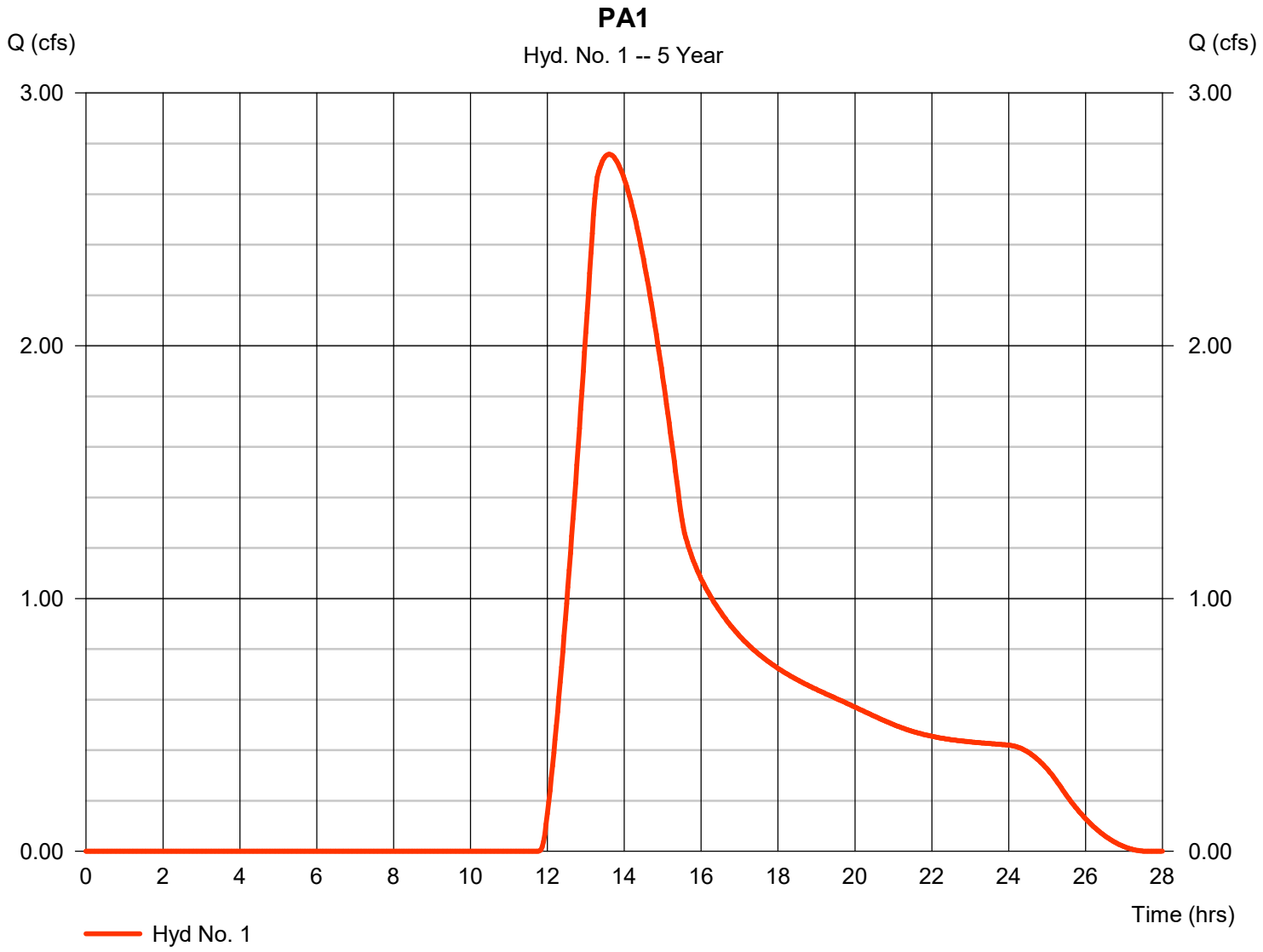
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Tuesday, 01 / 25 / 2022

Hyd. No. 1

PA1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.758 cfs
Storm frequency	= 5 yrs	Time to peak	= 13.60 hrs
Time interval	= 2 min	Hyd. volume	= 46,581 cuft
Drainage area	= 66.000 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 137.10 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(66.000 x 63)] / 66.000



Hydrograph Report

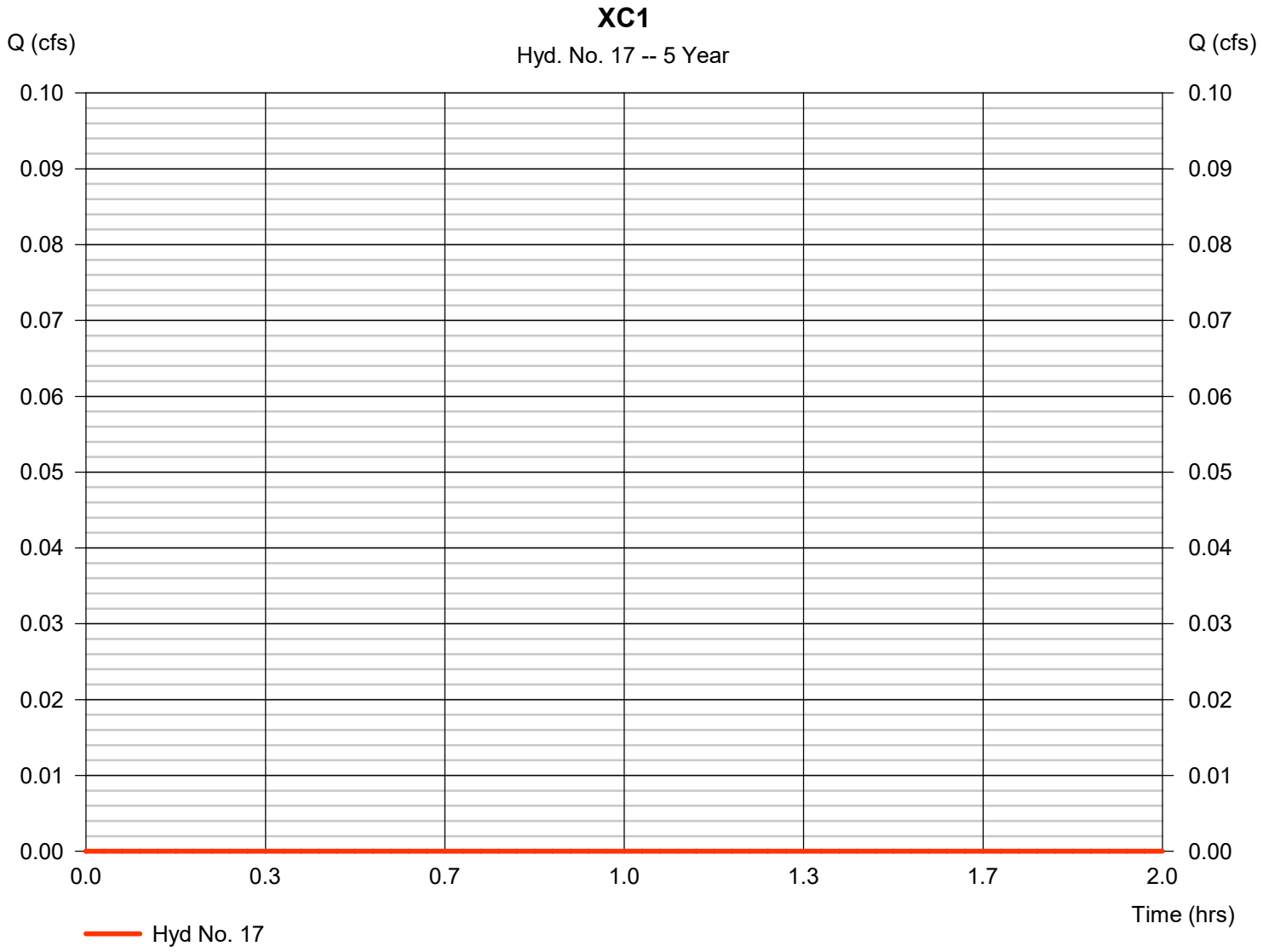
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Tuesday, 07 / 26 / 2022

Hyd. No. 17

XC1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0.000 acft
Drainage area	= 509.000 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 162.10 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(10.600 x 81) + (455.800 x 55) + (42.600 x 81)] / 509.000



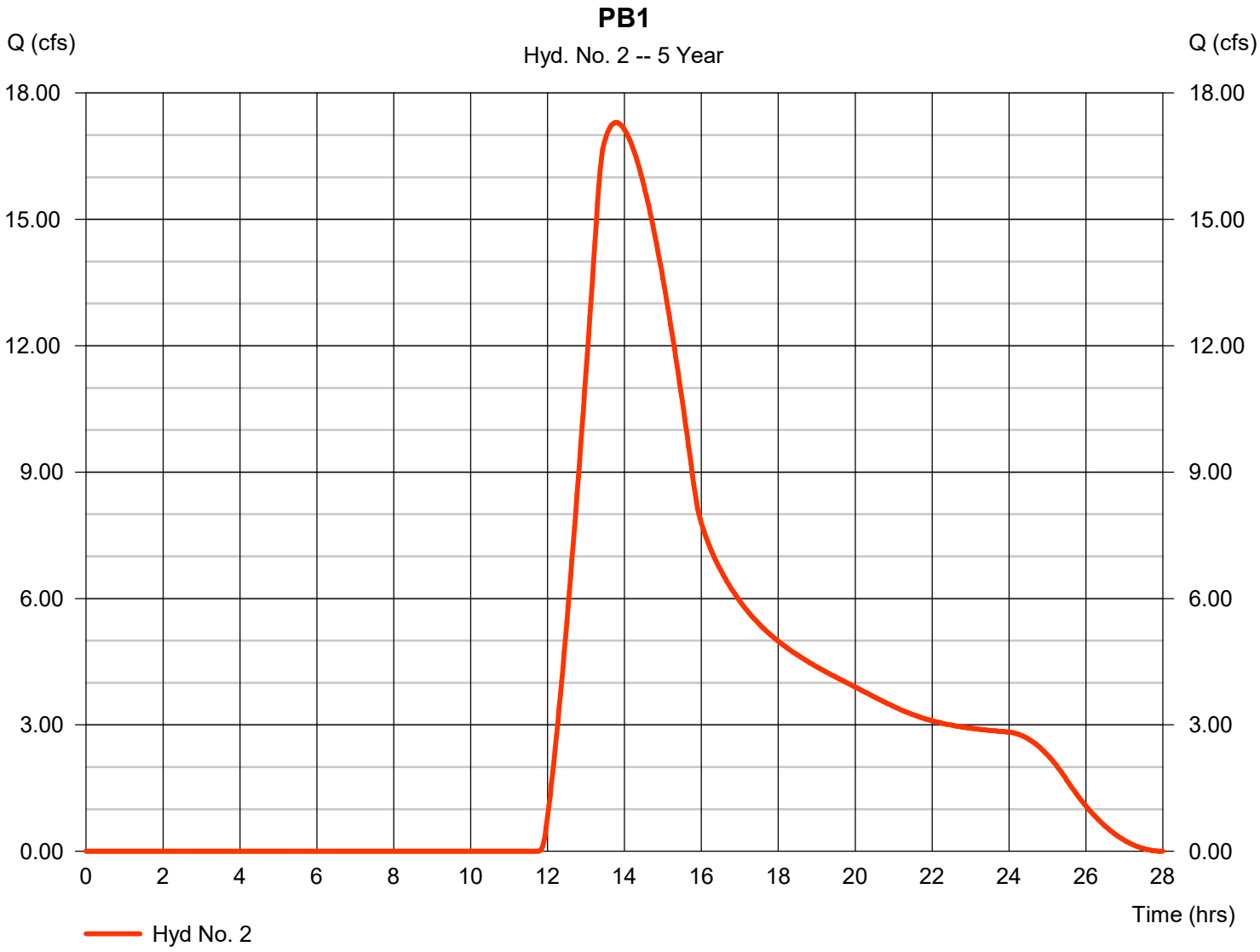
Hydrograph Report

Hyd. No. 2

PB1

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.30 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.80 hrs
Time interval	=	2 min	Hyd. volume	=	311,987 cuft
Drainage area	=	440.700 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	150.30 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(211.500 x 98) + (229.300 x 63)] / 440.700



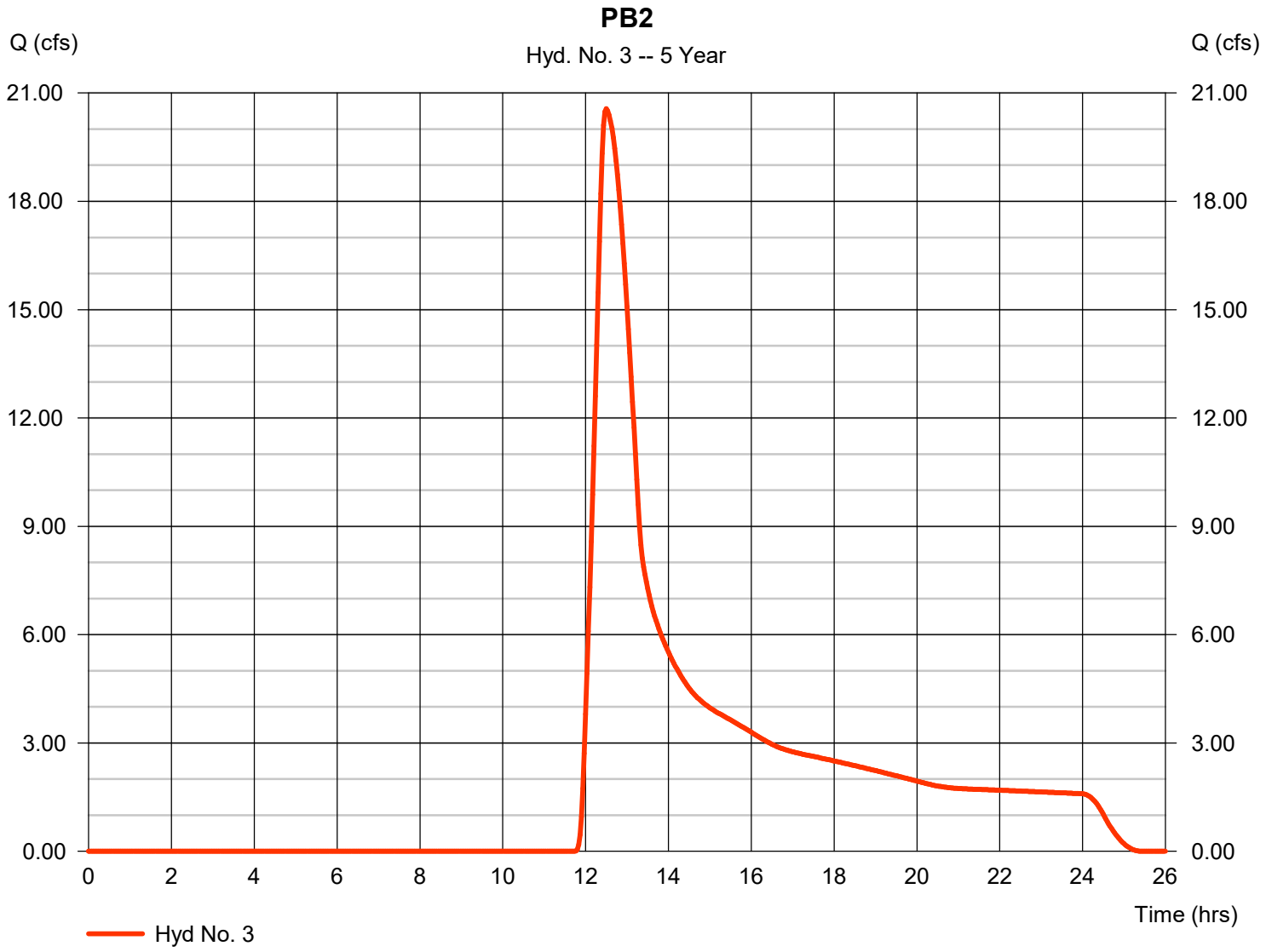
Hydrograph Report

Hyd. No. 3

PB2

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.56 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.50 hrs
Time interval	=	2 min	Hyd. volume	=	182,148 cuft
Drainage area	=	255.300 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	51.20 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(162.900 x 98) + (92.400 x 63)] / 255.300



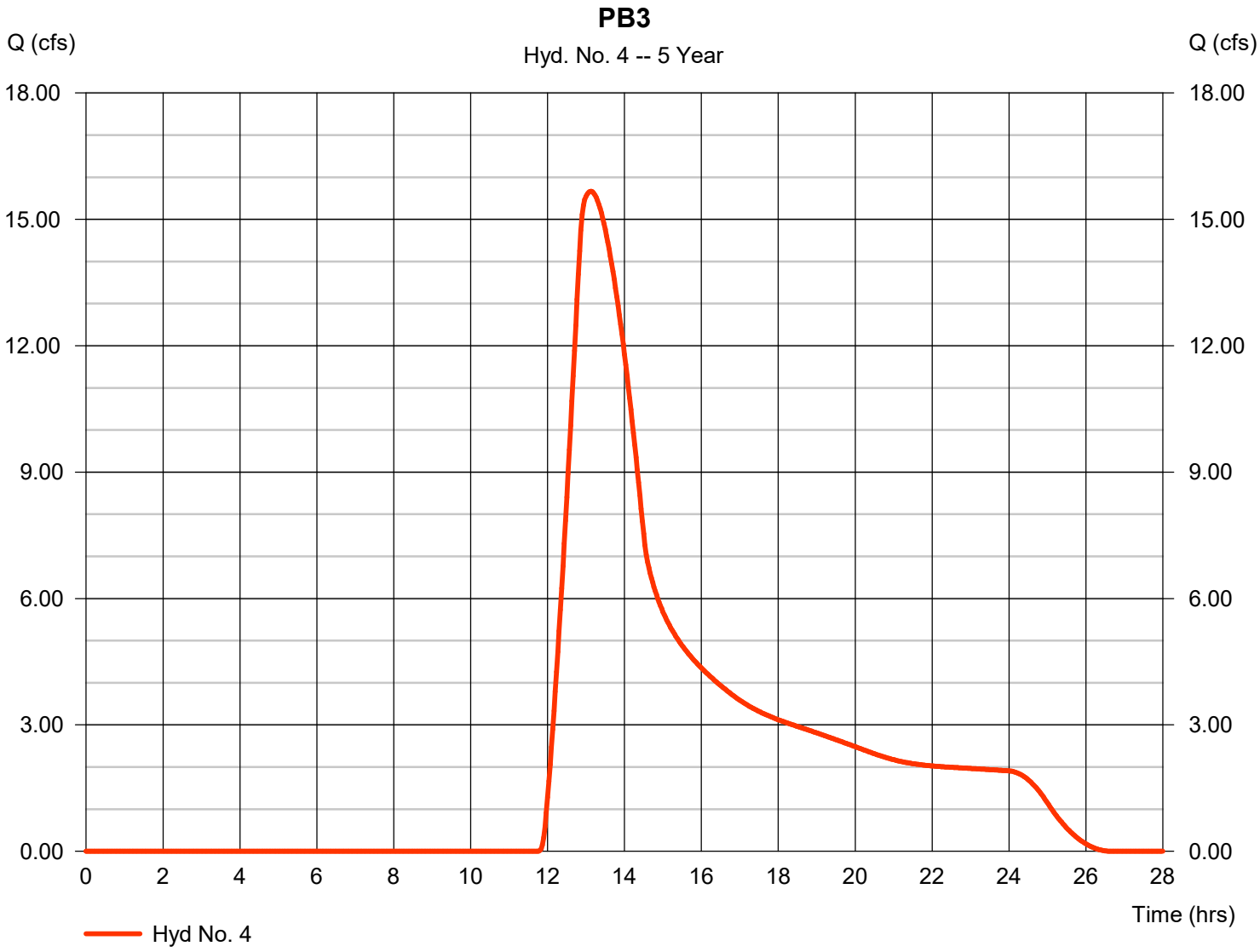
Hydrograph Report

Hyd. No. 4

PB3

Hydrograph type	=	SCS Runoff	Peak discharge	=	15.67 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.13 hrs
Time interval	=	2 min	Hyd. volume	=	214,504 cuft
Drainage area	=	303.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	99.90 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(136.200 x 98) + (166.800 x 63)] / 303.000



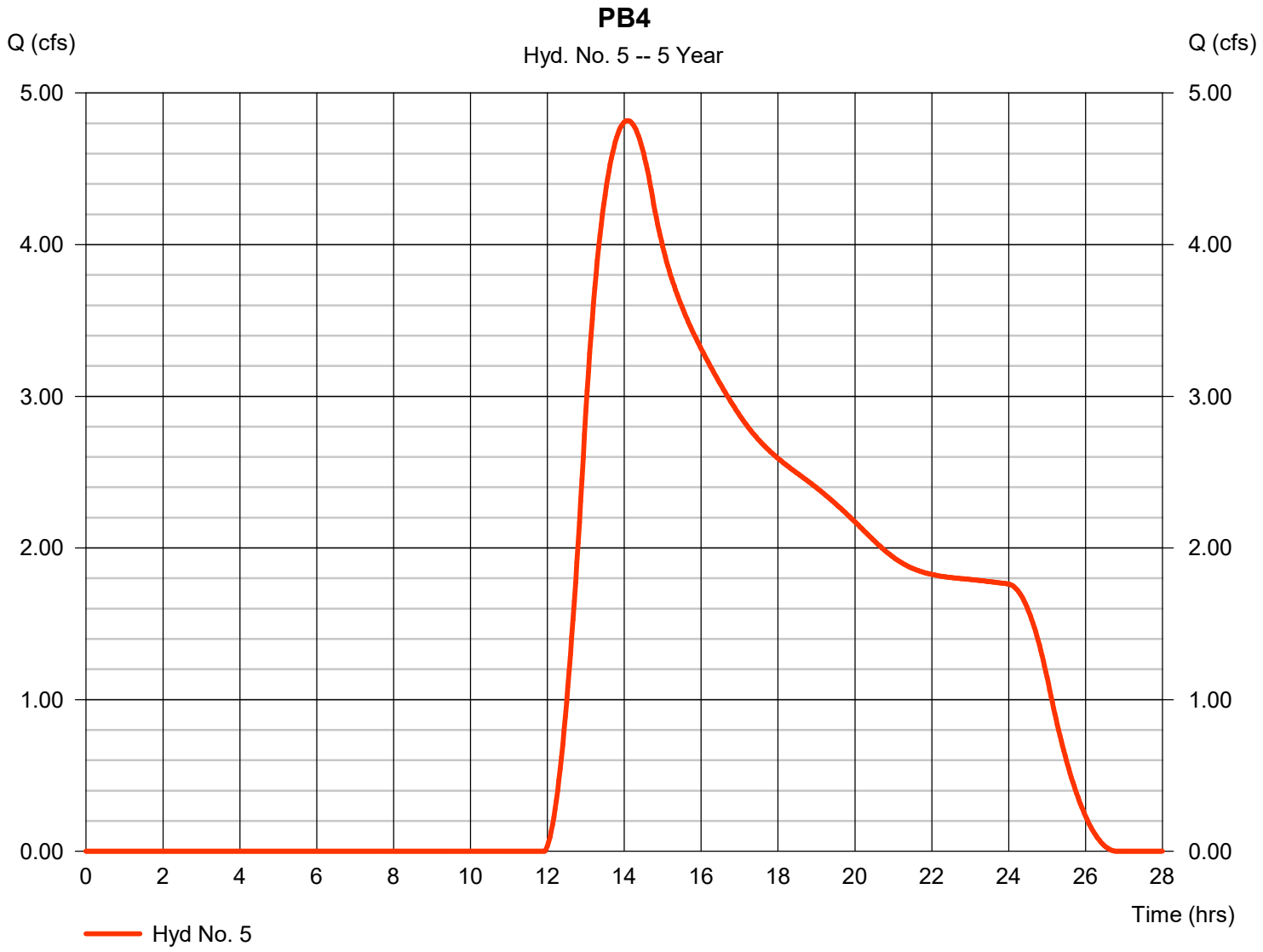
Hydrograph Report

Hyd. No. 5

PB4

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.818 cfs
Storm frequency	=	5 yrs	Time to peak	=	14.10 hrs
Time interval	=	2 min	Hyd. volume	=	121,607 cuft
Drainage area	=	545.800 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	108.30 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(93.800 x 98) + (131.300 x 63) + (173.700 x 55) + (147.000 x 81)] / 545.800

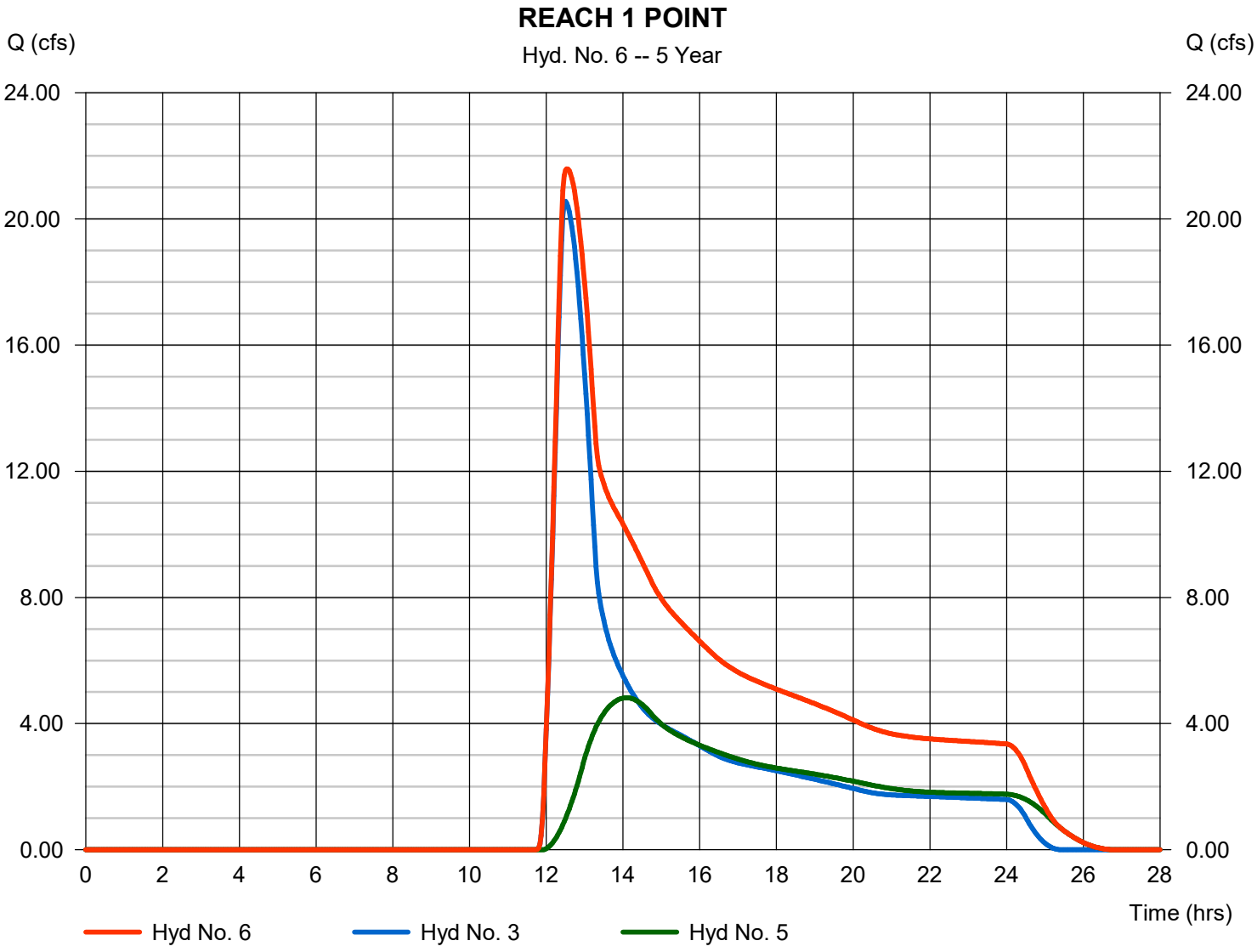


Hydrograph Report

Hyd. No. 6

REACH 1 POINT

Hydrograph type	= Combine	Peak discharge	= 21.59 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.53 hrs
Time interval	= 2 min	Hyd. volume	= 303,755 cuft
Inflow hyds.	= 3, 5	Contrib. drain. area	= 801.100 ac



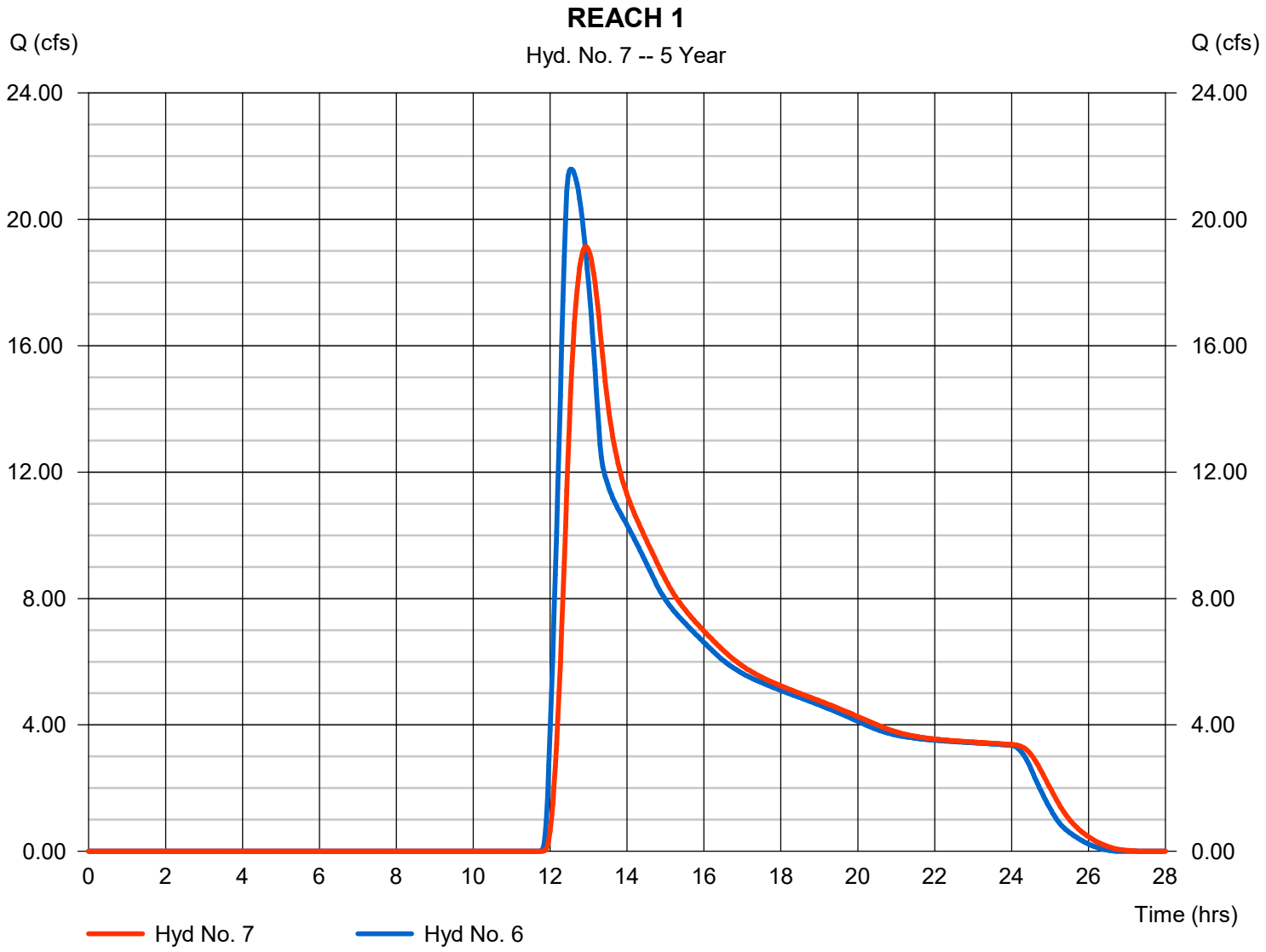
Hydrograph Report

Hyd. No. 7

REACH 1

Hydrograph type	=	Reach	Peak discharge	=	19.14 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.93 hrs
Time interval	=	2 min	Hyd. volume	=	303,745 cuft
Inflow hyd. No.	=	6 - REACH 1 POINT	Section type	=	Circular
Reach length	=	1318.0 ft	Channel slope	=	0.4 %
Manning's n	=	0.013	Bottom width	=	5.0 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	5.115	Rating curve m	=	1.250
Ave. velocity	=	1.10 ft/s	Routing coeff.	=	0.1178

Modified Att-Kin routing method used.



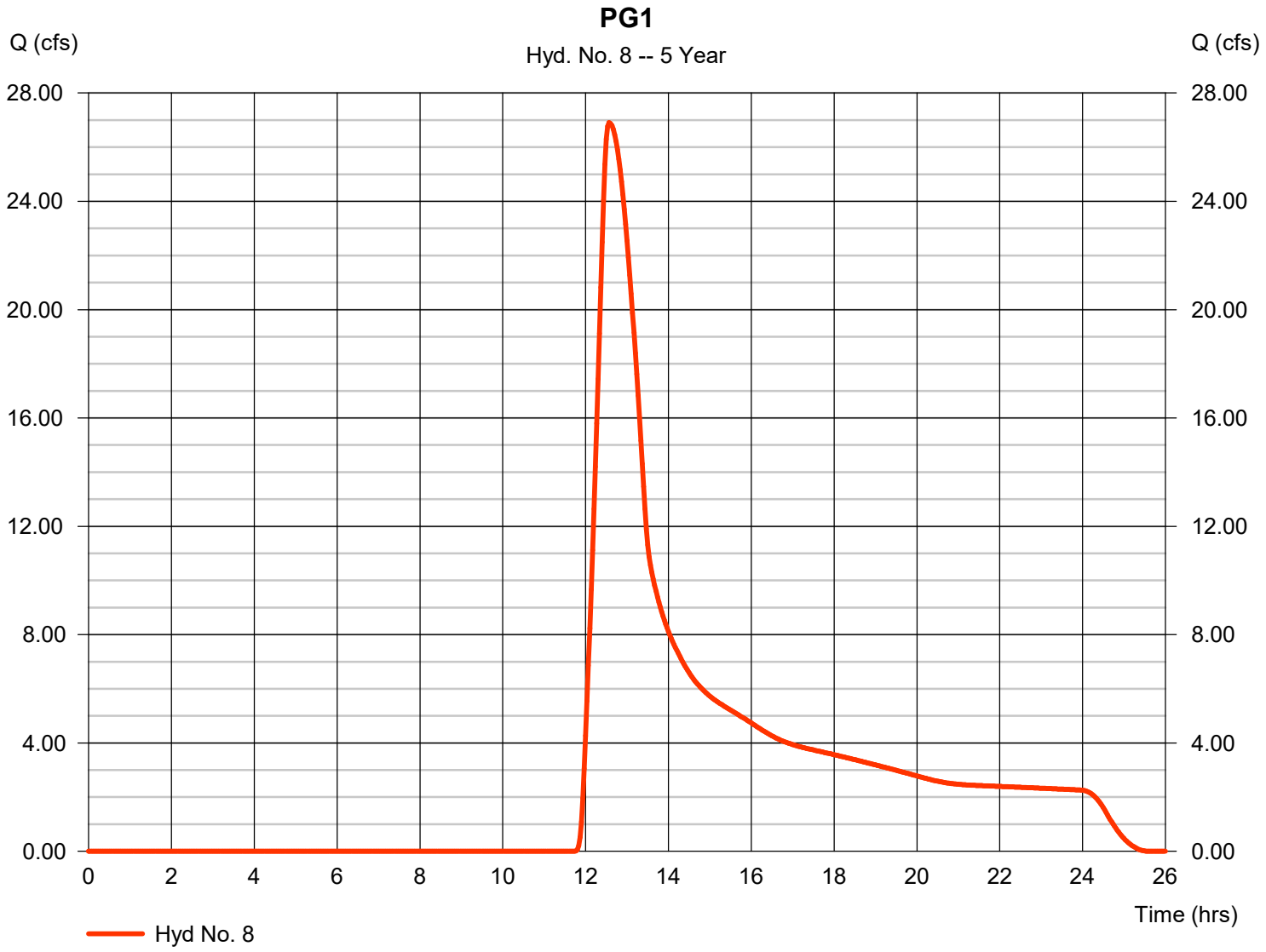
Hydrograph Report

Hyd. No. 8

PG1

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.90 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.57 hrs
Time interval	=	2 min	Hyd. volume	=	257,617 cuft
Drainage area	=	363.900 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	59.50 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(132.600 x 98) + (231.300 x 63)] / 363.900



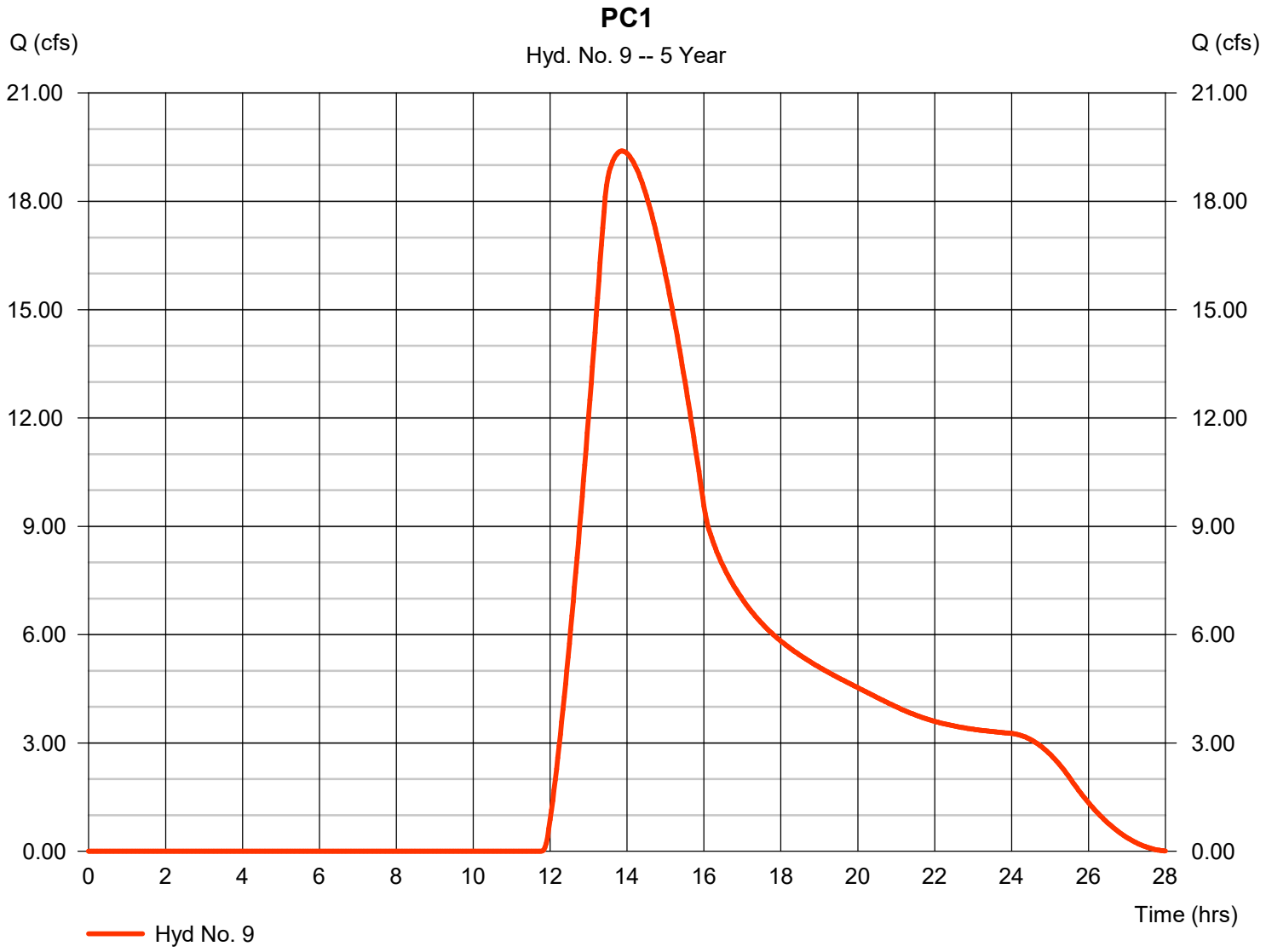
Hydrograph Report

Hyd. No. 9

PC1

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.39 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.87 hrs
Time interval	=	2 min	Hyd. volume	=	359,381 cuft
Drainage area	=	509.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	156.50 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(423.800 x 98) + (85.200 x 63)] / 509.000



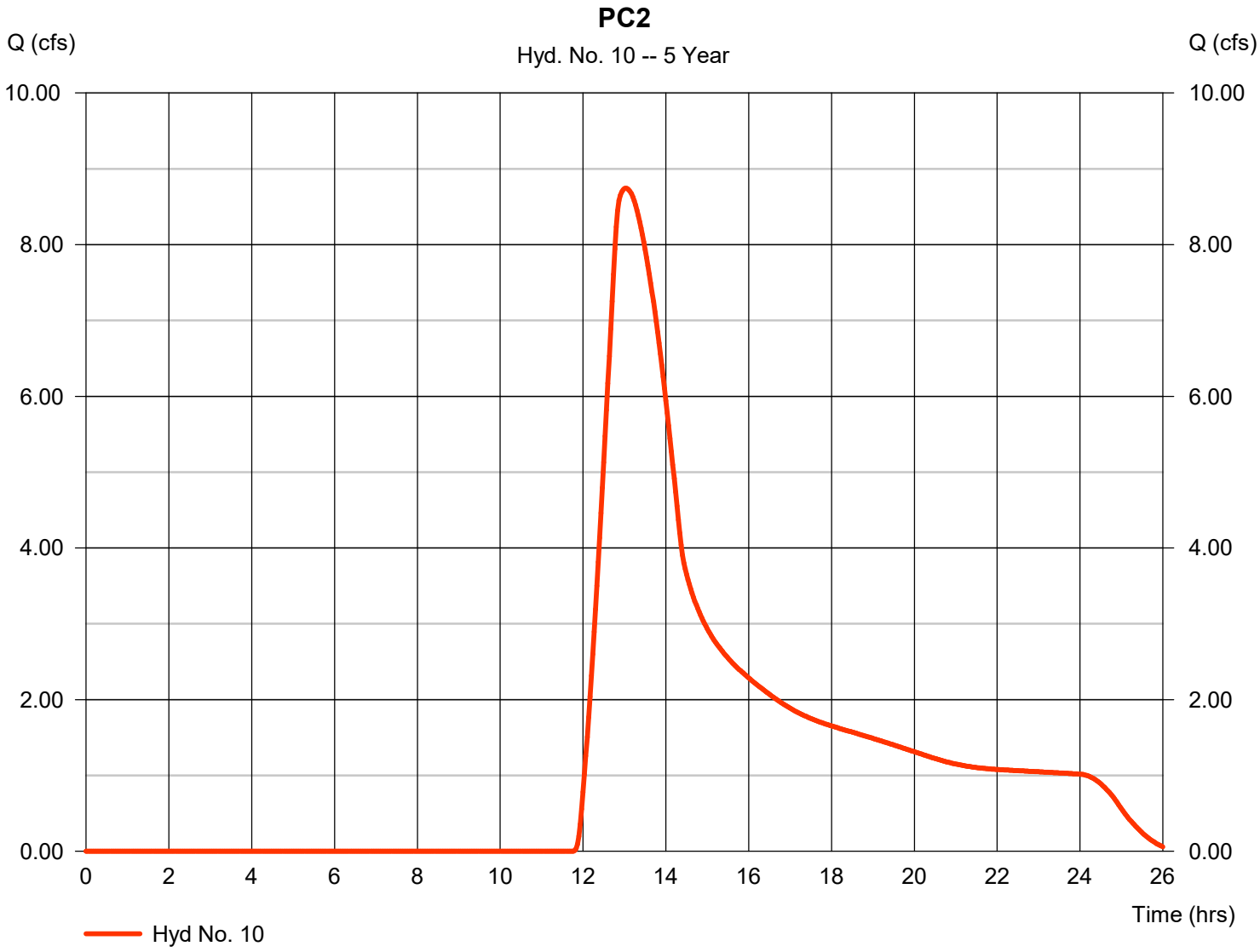
Hydrograph Report

Hyd. No. 10

PC2

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.745 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.03 hrs
Time interval	=	2 min	Hyd. volume	=	114,629 cuft
Drainage area	=	161.200 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	92.10 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(152.700 x 98) + (8.500 x 63)] / 161.200



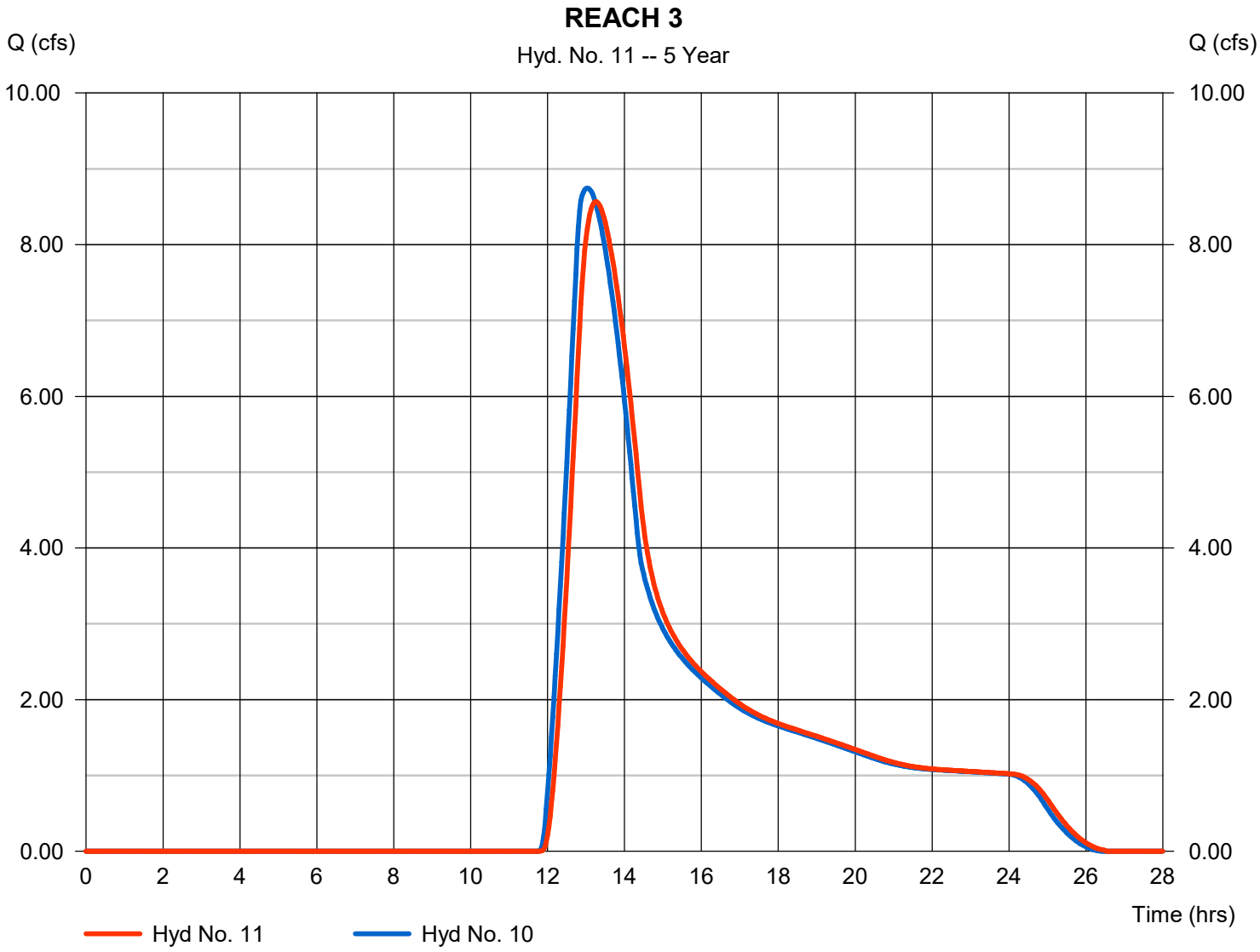
Hydrograph Report

Hyd. No. 11

REACH 3

Hydrograph type	=	Reach	Peak discharge	=	8.567 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.27 hrs
Time interval	=	2 min	Hyd. volume	=	114,623 cuft
Inflow hyd. No.	=	10 - PC2	Section type	=	Circular
Reach length	=	1197.0 ft	Channel slope	=	0.5 %
Manning's n	=	0.013	Bottom width	=	2.5 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	5.095	Rating curve m	=	1.250
Ave. velocity	=	1.78 ft/s	Routing coeff.	=	0.2008

Modified Att-Kin routing method used.

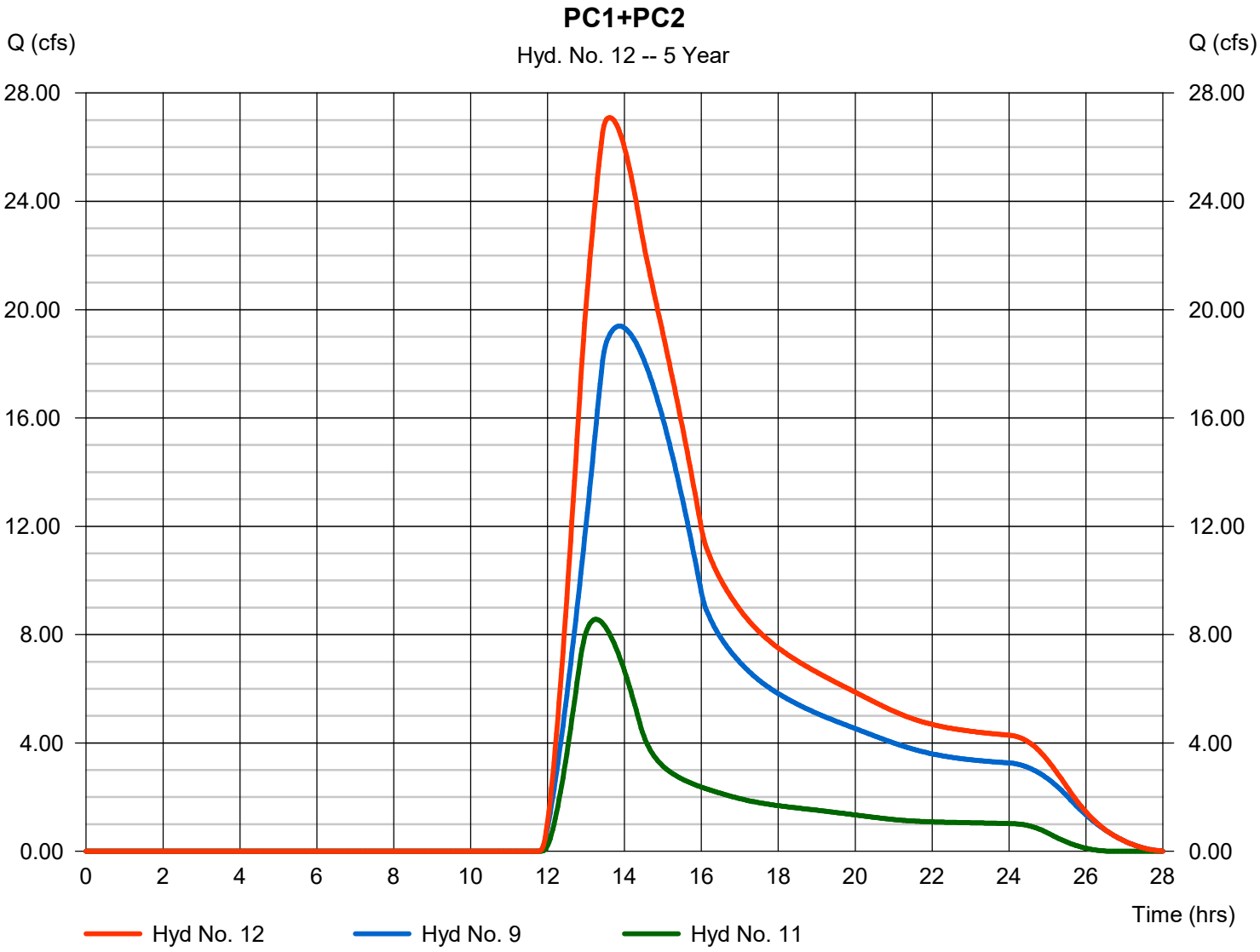


Hydrograph Report

Hyd. No. 12

PC1+PC2

Hydrograph type	= Combine	Peak discharge	= 27.09 cfs
Storm frequency	= 5 yrs	Time to peak	= 13.60 hrs
Time interval	= 2 min	Hyd. volume	= 474,004 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 509.000 ac



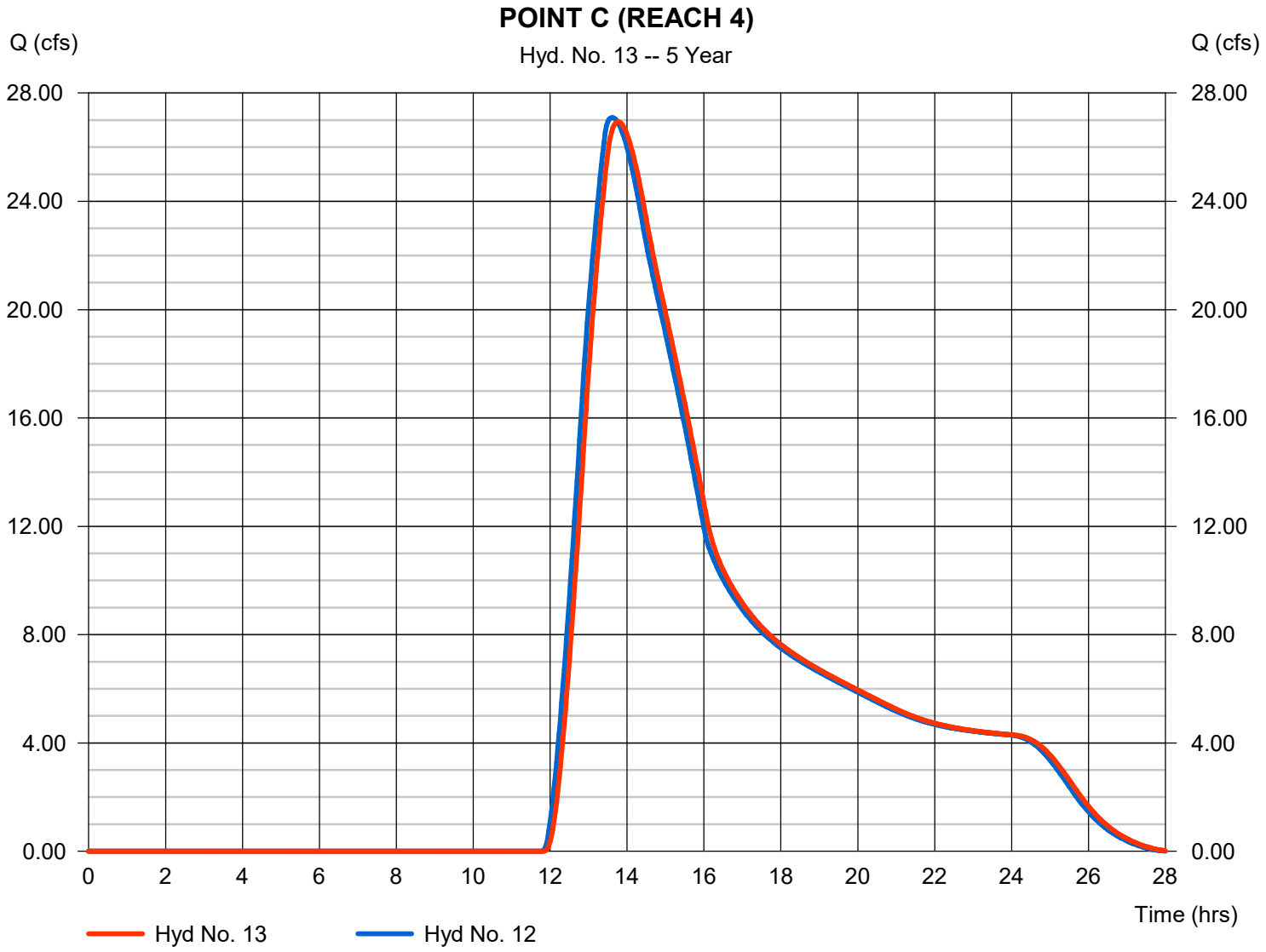
Hydrograph Report

Hyd. No. 13

POINT C (REACH 4)

Hydrograph type	= Reach	Peak discharge	= 26.94 cfs
Storm frequency	= 5 yrs	Time to peak	= 13.77 hrs
Time interval	= 2 min	Hyd. volume	= 474,000 cuft
Inflow hyd. No.	= 12 - PC1+PC2	Section type	= Trapezoidal
Reach length	= 1010.0 ft	Channel slope	= 0.5 %
Manning's n	= 0.035	Bottom width	= 9.0 ft
Side slope	= 3.0:1	Max. depth	= 3.5 ft
Rating curve x	= 0.695	Rating curve m	= 1.394
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.2792

Modified Att-Kin routing method used.



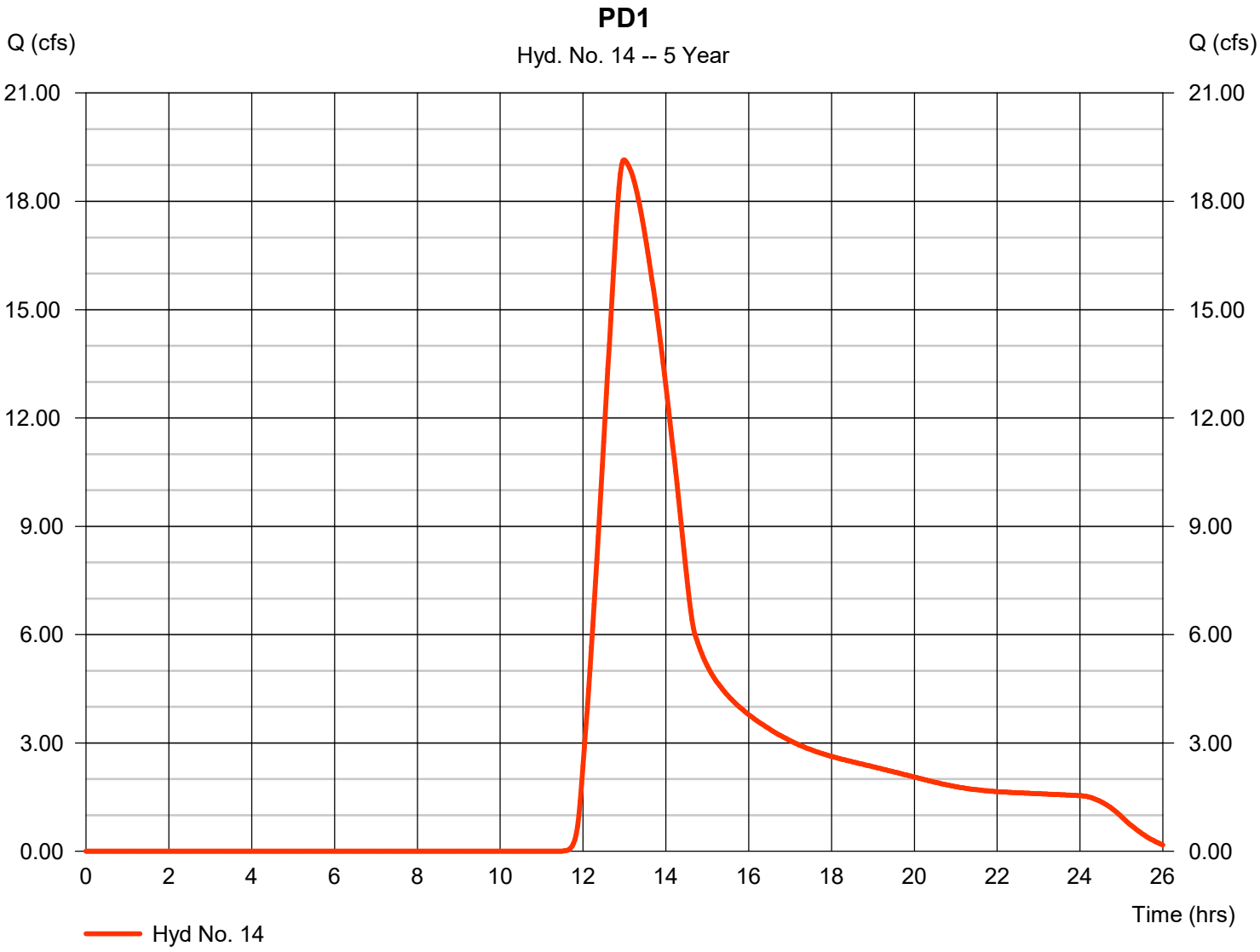
Hydrograph Report

Hyd. No. 14

PD1

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.14 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.00 hrs
Time interval	=	2 min	Hyd. volume	=	217,574 cuft
Drainage area	=	178.300 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	104.50 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(92.300 x 81) + (80.000 x 91) + (5.800 x 93)] / 178.300



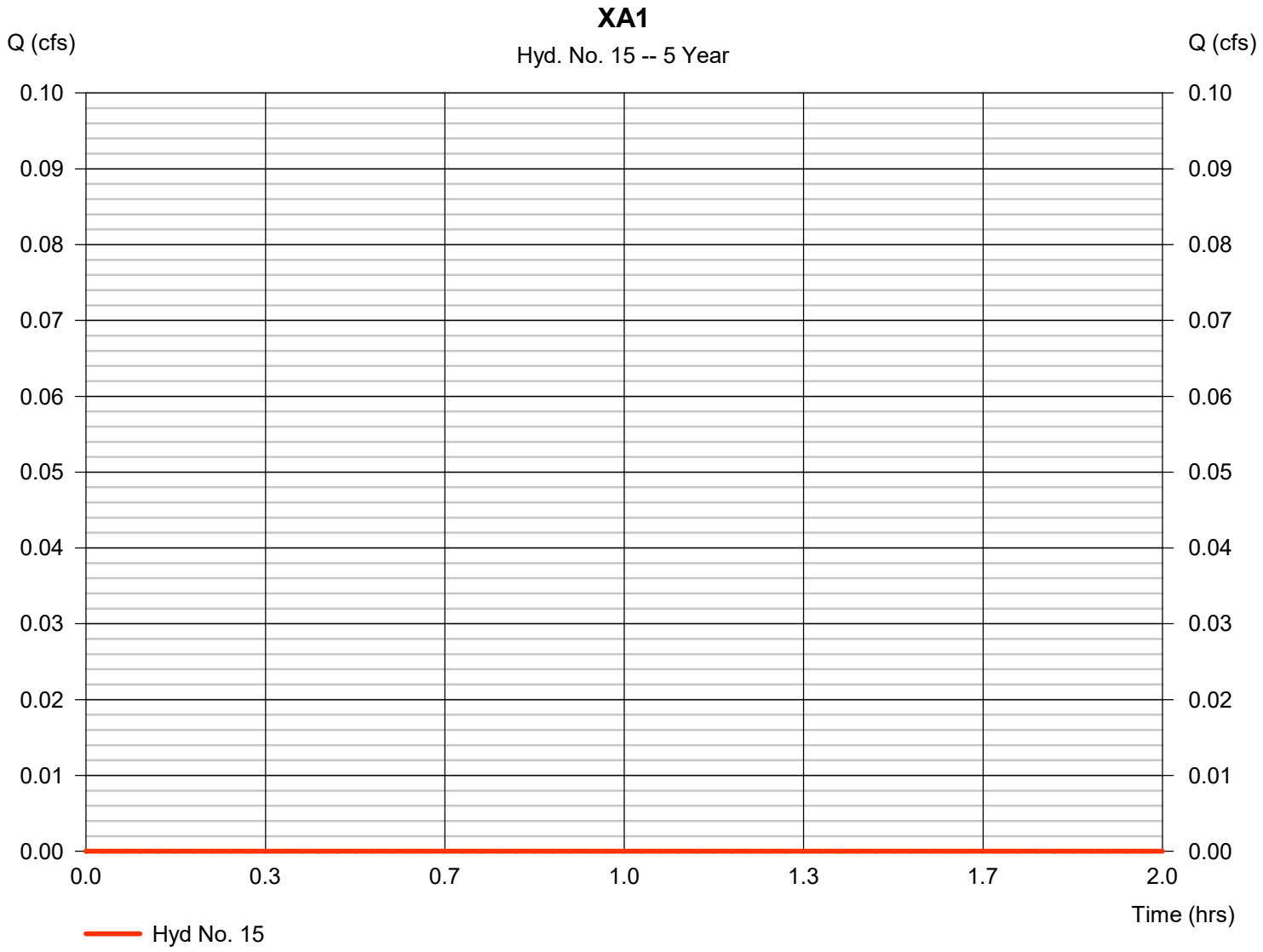
Hydrograph Report

Hyd. No. 15

XA1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 66.000 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 52.60 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(66.000 x 55)] / 66.000



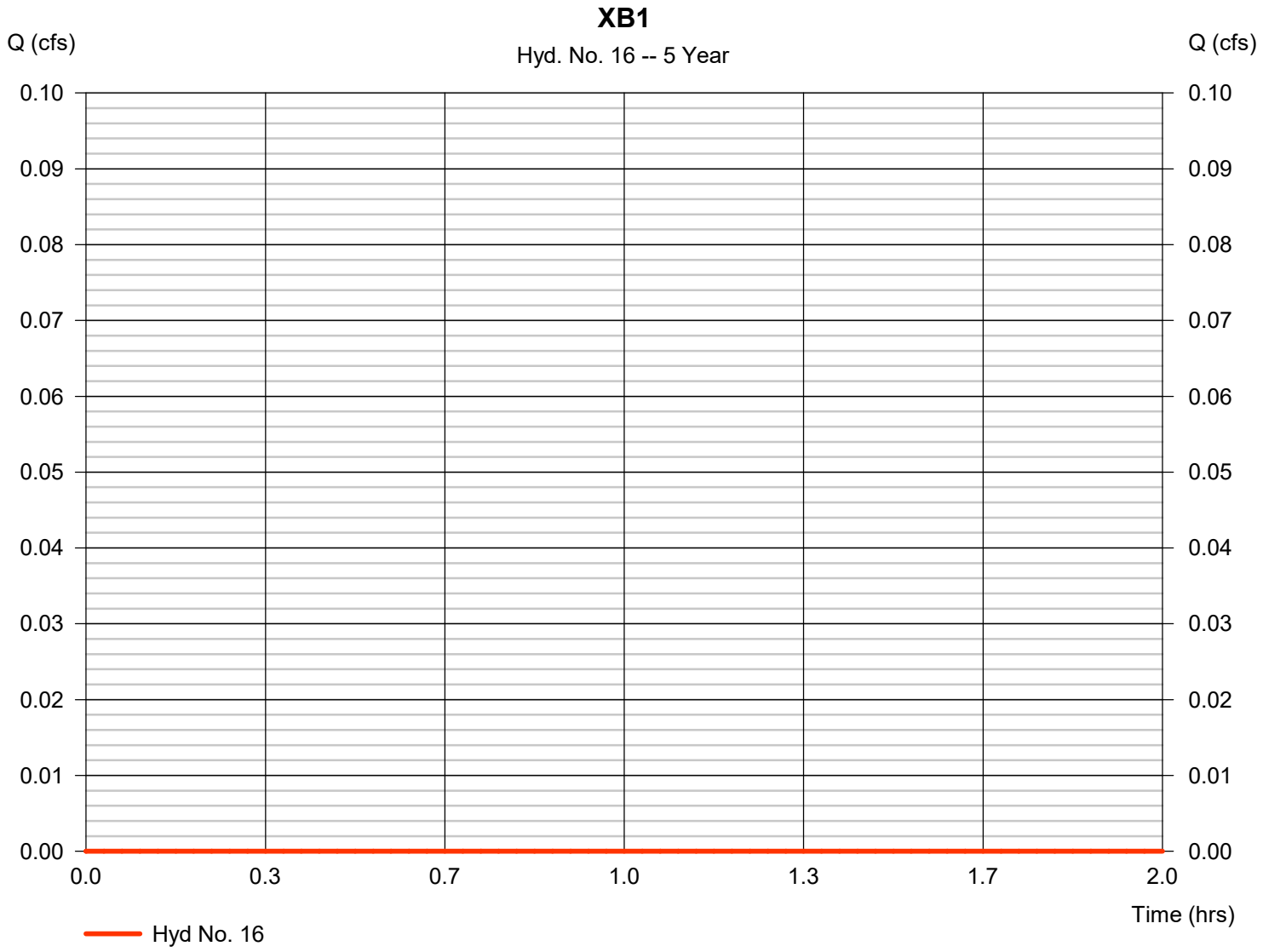
Hydrograph Report

Hyd. No. 16

XB1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 440.700 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 64.80 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(440.700 x 55)] / 440.700



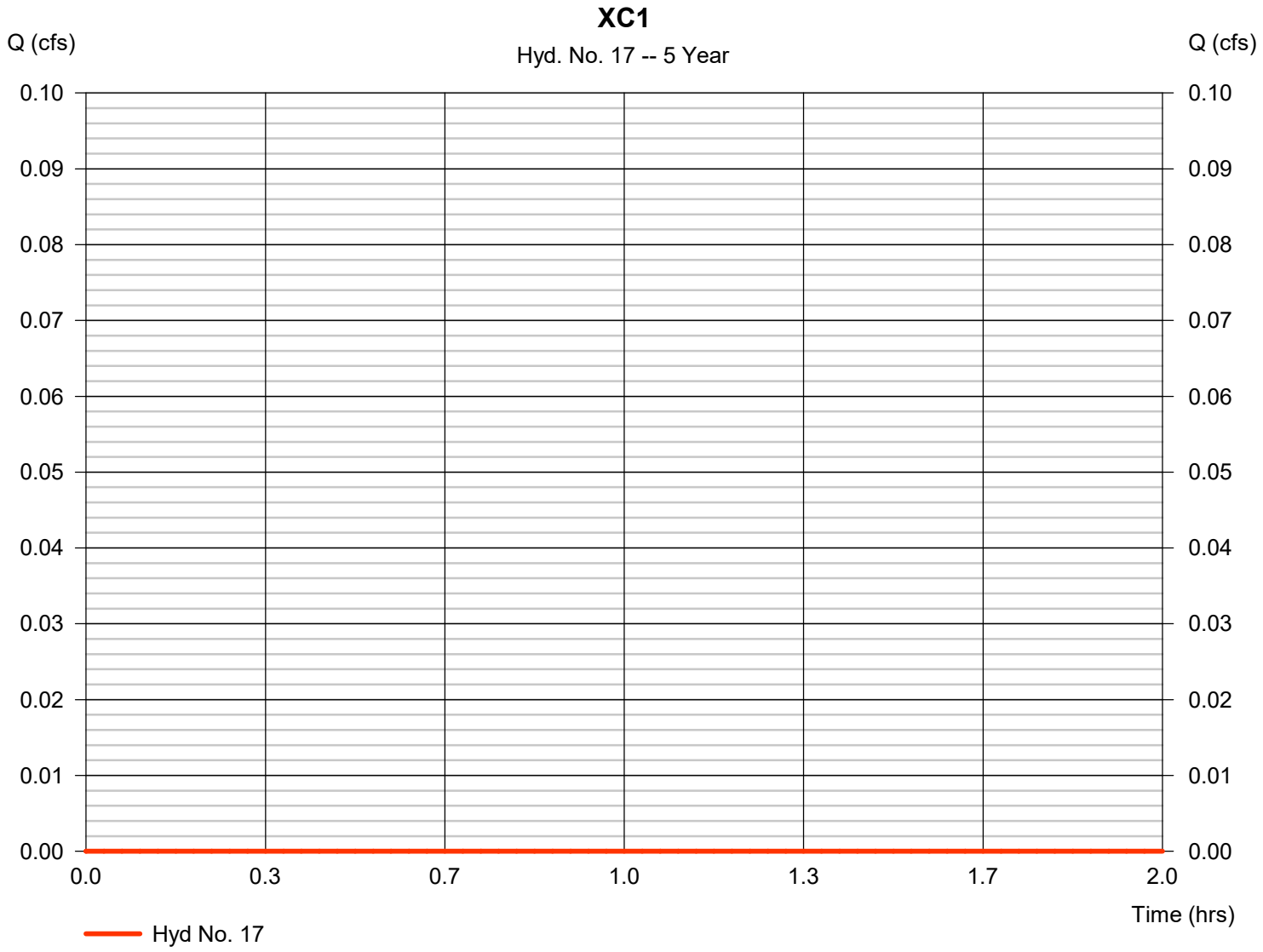
Hydrograph Report

Hyd. No. 17

XC1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 509.000 ac	Curve number	= 58*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 162.10 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(10.600 x 81) + (455.800 x 55) + (42.600 x 81)] / 509.000



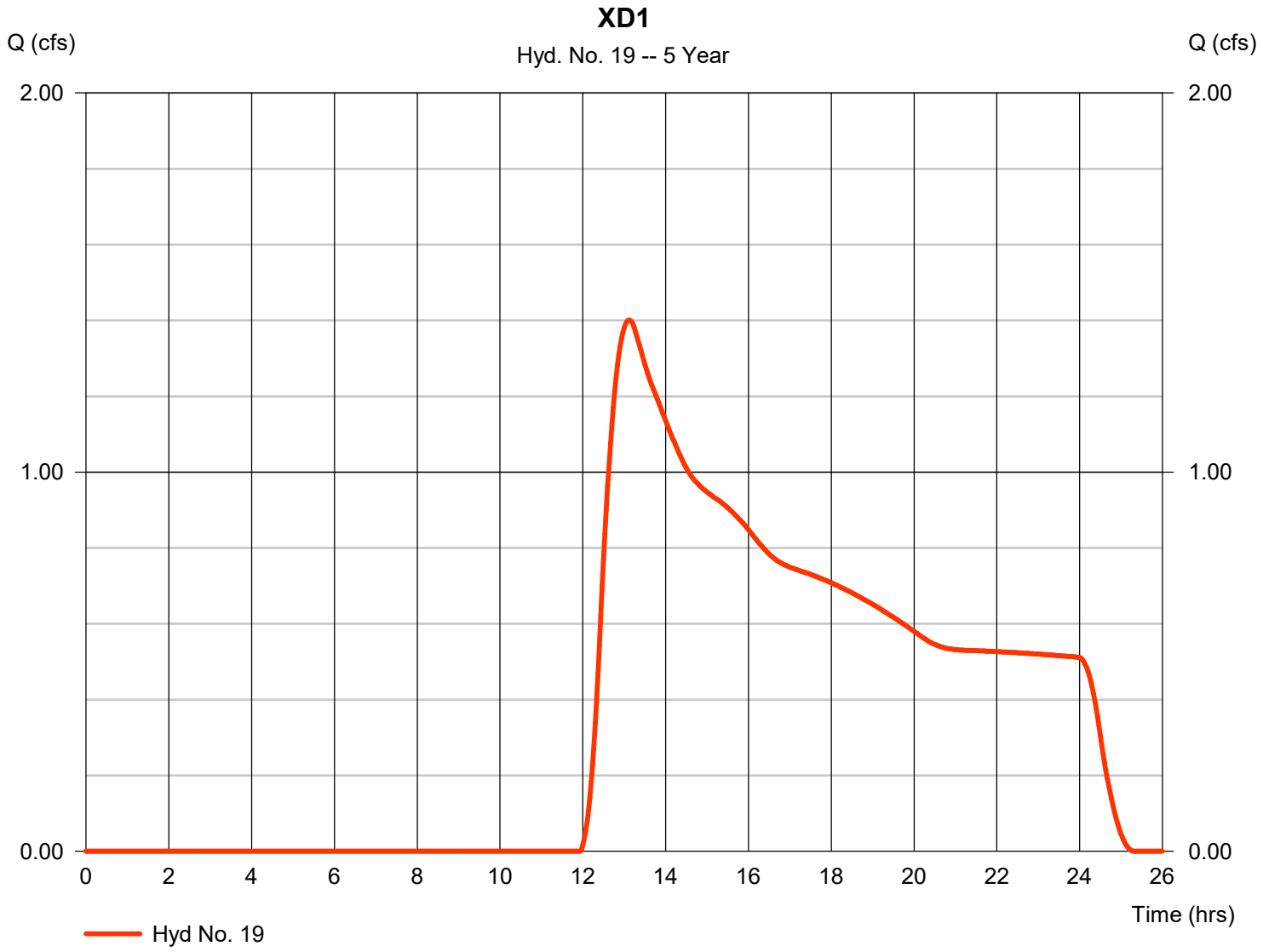
Hydrograph Report

Hyd. No. 19

XD1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.401 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.13 hrs
Time interval	=	2 min	Hyd. volume	=	33,029 cuft
Drainage area	=	178.000 ac	Curve number	=	72*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	50.10 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(24.800 x 81) + (6.200 x 81) + (62.000 x 55) + (80.000 x 81) + (5.000 x 86)] / 178.000



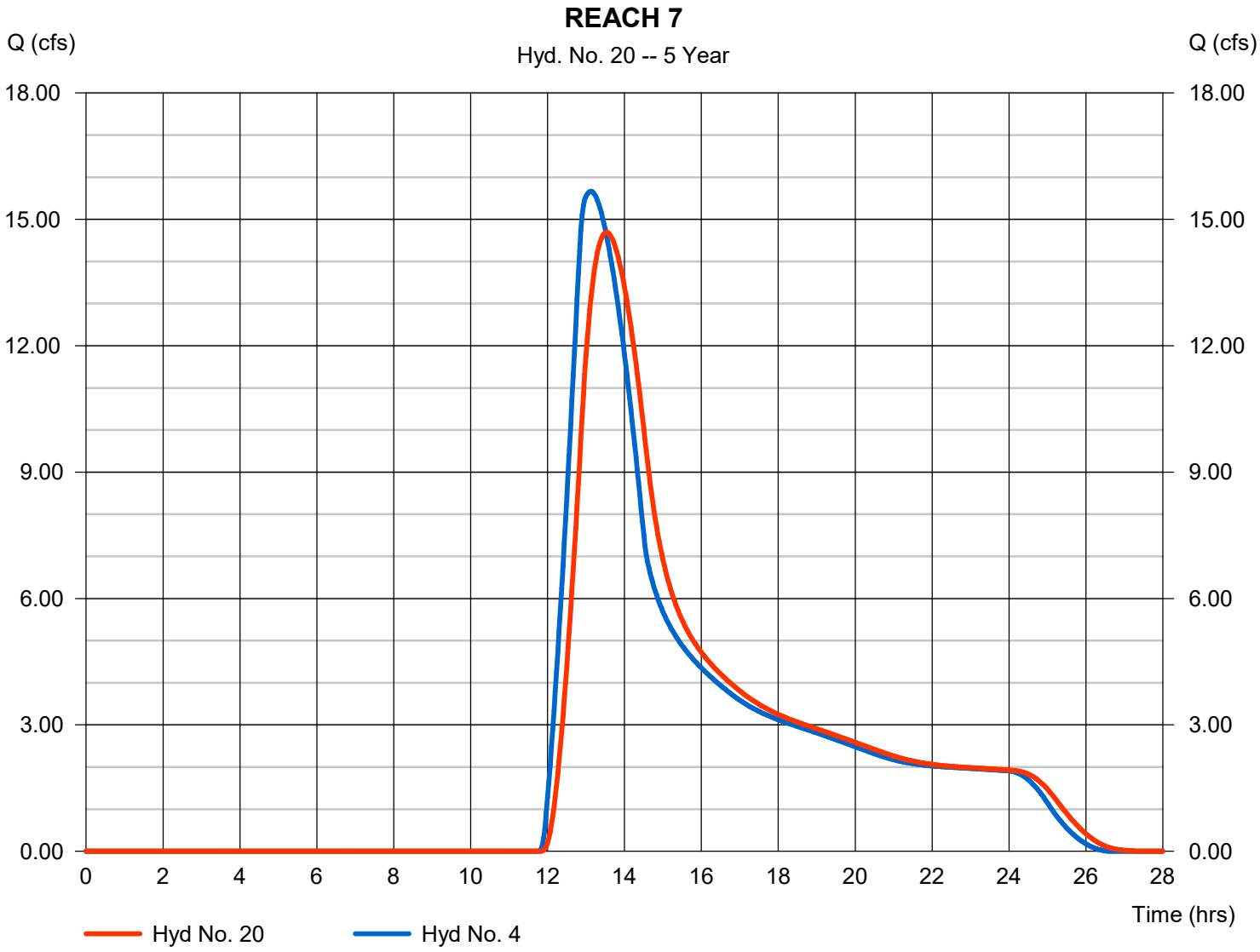
Hydrograph Report

Hyd. No. 20

REACH 7

Hydrograph type	=	Reach	Peak discharge	=	14.69 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.53 hrs
Time interval	=	2 min	Hyd. volume	=	214,494 cuft
Inflow hyd. No.	=	4 - PB3	Section type	=	Circular
Reach length	=	2153.0 ft	Channel slope	=	0.4 %
Manning's n	=	0.013	Bottom width	=	3.5 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	4.820	Rating curve m	=	1.250
Ave. velocity	=	1.63 ft/s	Routing coeff.	=	0.1073

Modified Att-Kin routing method used.

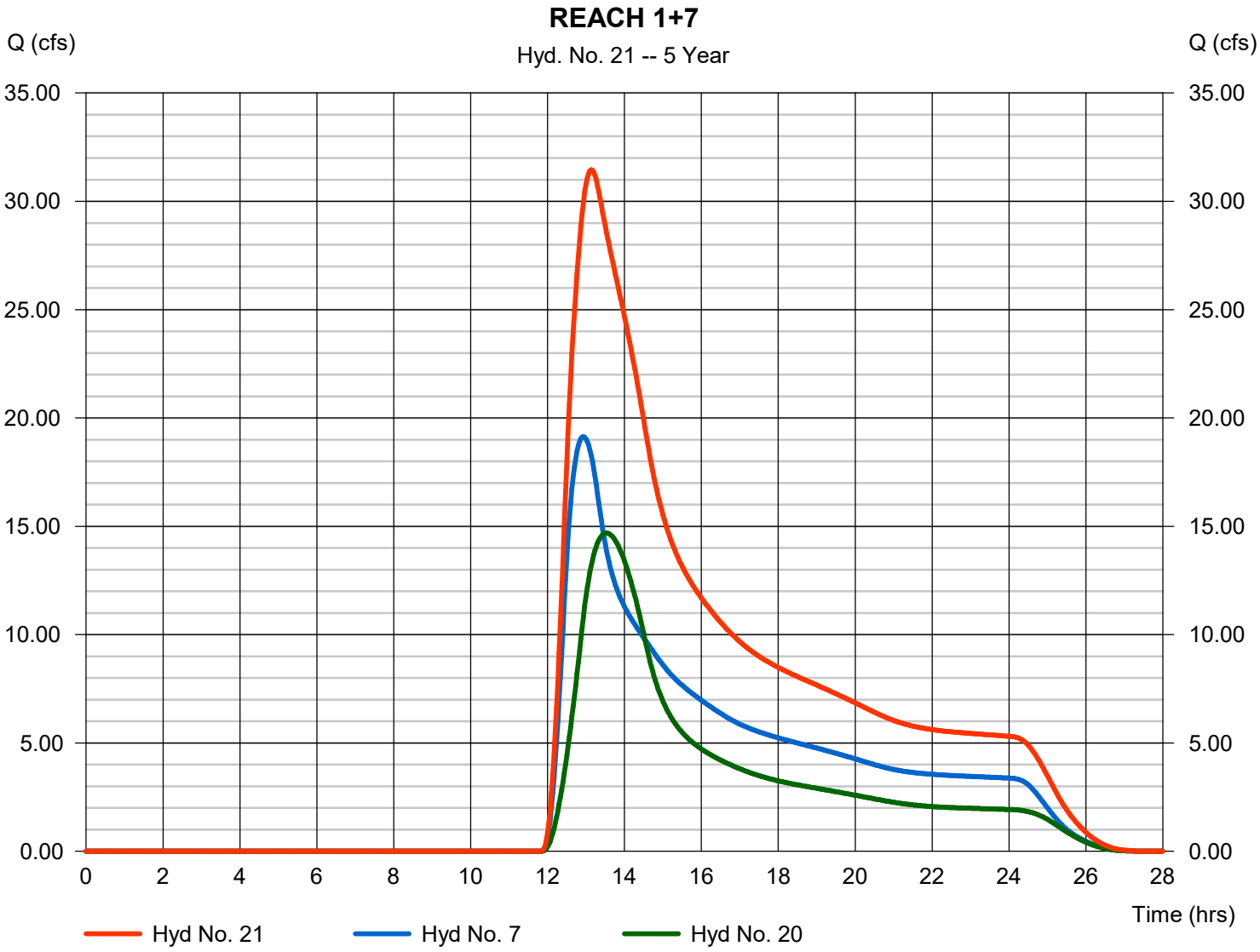


Hydrograph Report

Hyd. No. 21

REACH 1+7

Hydrograph type	= Combine	Peak discharge	= 31.45 cfs
Storm frequency	= 5 yrs	Time to peak	= 13.13 hrs
Time interval	= 2 min	Hyd. volume	= 518,239 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 0.000 ac



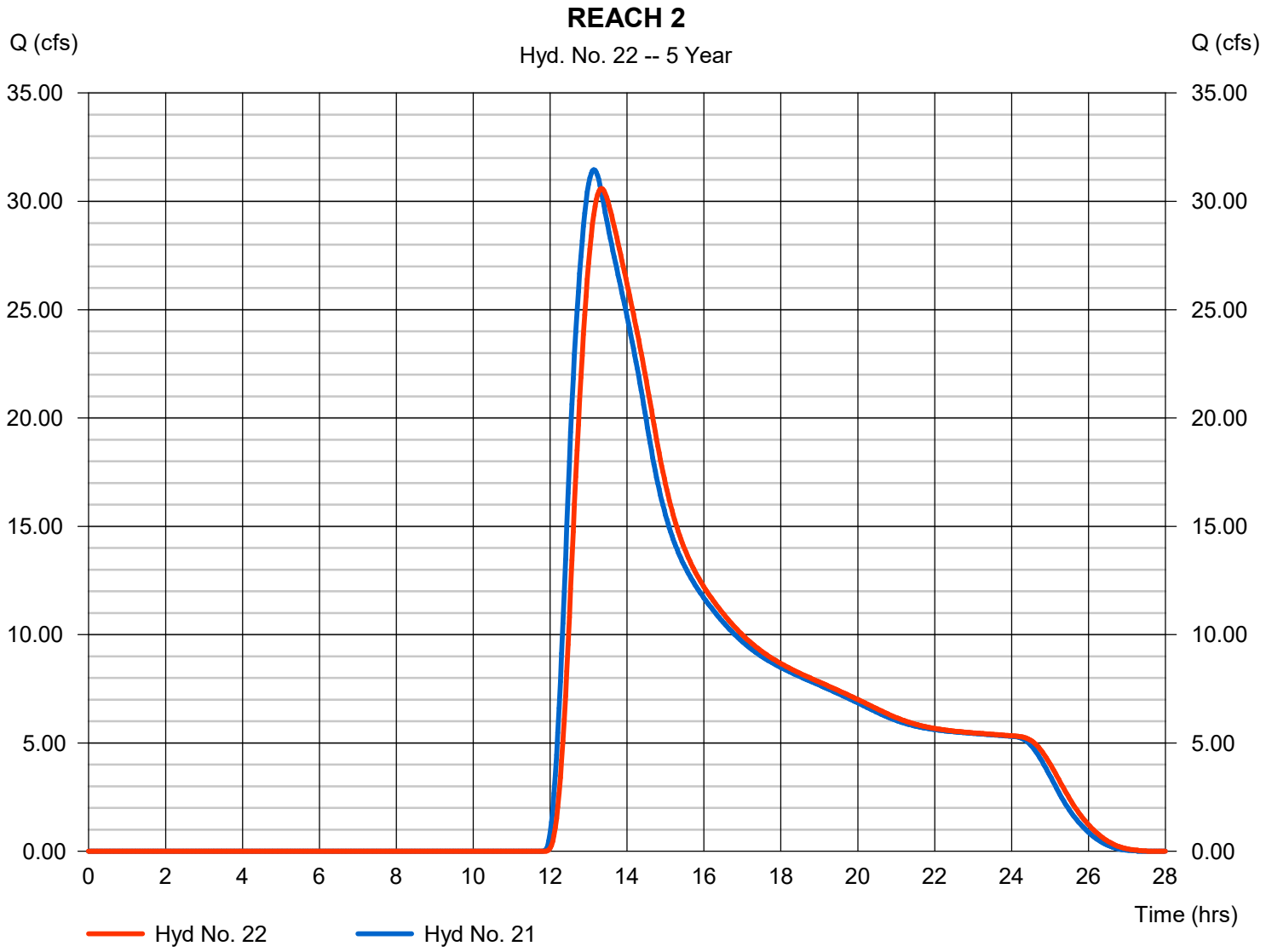
Hydrograph Report

Hyd. No. 22

REACH 2

Hydrograph type	=	Reach	Peak discharge	=	30.59 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.33 hrs
Time interval	=	2 min	Hyd. volume	=	518,233 cuft
Inflow hyd. No.	=	21 - REACH 1+7	Section type	=	Trapezoidal
Reach length	=	2187.0 ft	Channel slope	=	1.0 %
Manning's n	=	0.035	Bottom width	=	9.0 ft
Side slope	=	3.0:1	Max. depth	=	3.5 ft
Rating curve x	=	0.983	Rating curve m	=	1.394
Ave. velocity	=	2.62 ft/s	Routing coeff.	=	0.1822

Modified Att-Kin routing method used.

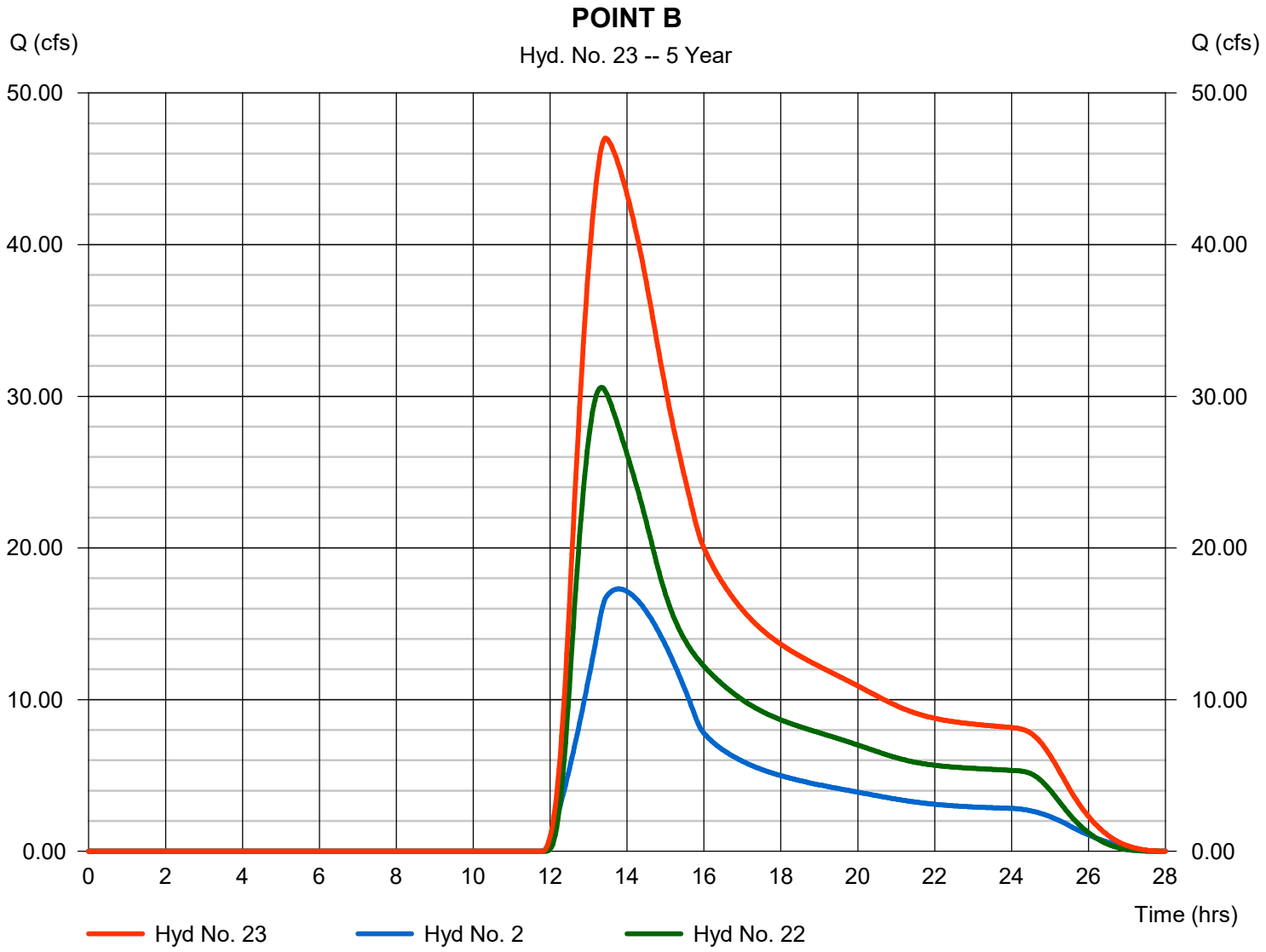


Hydrograph Report

Hyd. No. 23

POINT B

Hydrograph type	= Combine	Peak discharge	= 47.02 cfs
Storm frequency	= 5 yrs	Time to peak	= 13.43 hrs
Time interval	= 2 min	Hyd. volume	= 830,220 cuft
Inflow hyds.	= 2, 22	Contrib. drain. area	= 440.700 ac



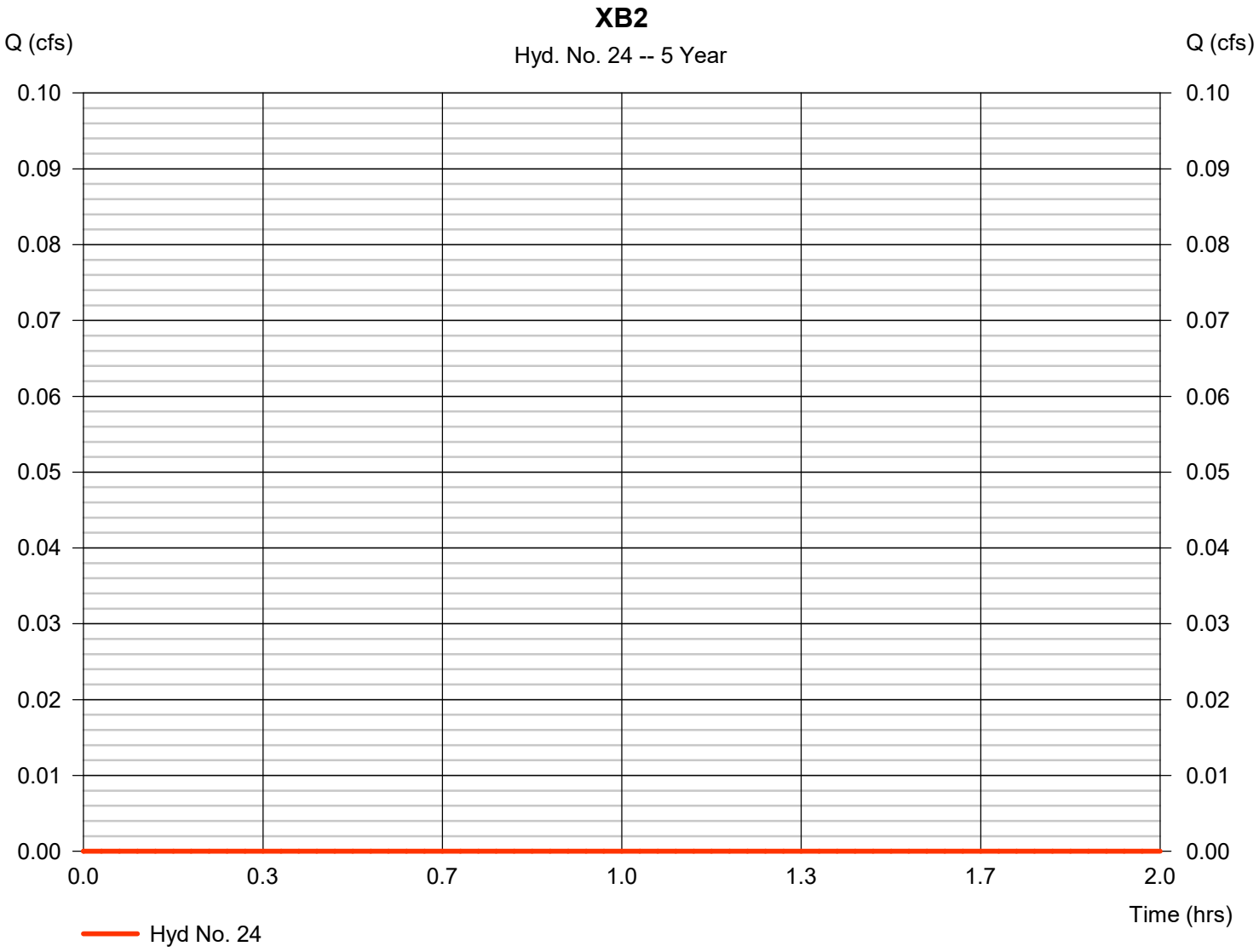
Hydrograph Report

Hyd. No. 24

XB2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 255.200 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 150.60 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(255.200 x 55)] / 255.200



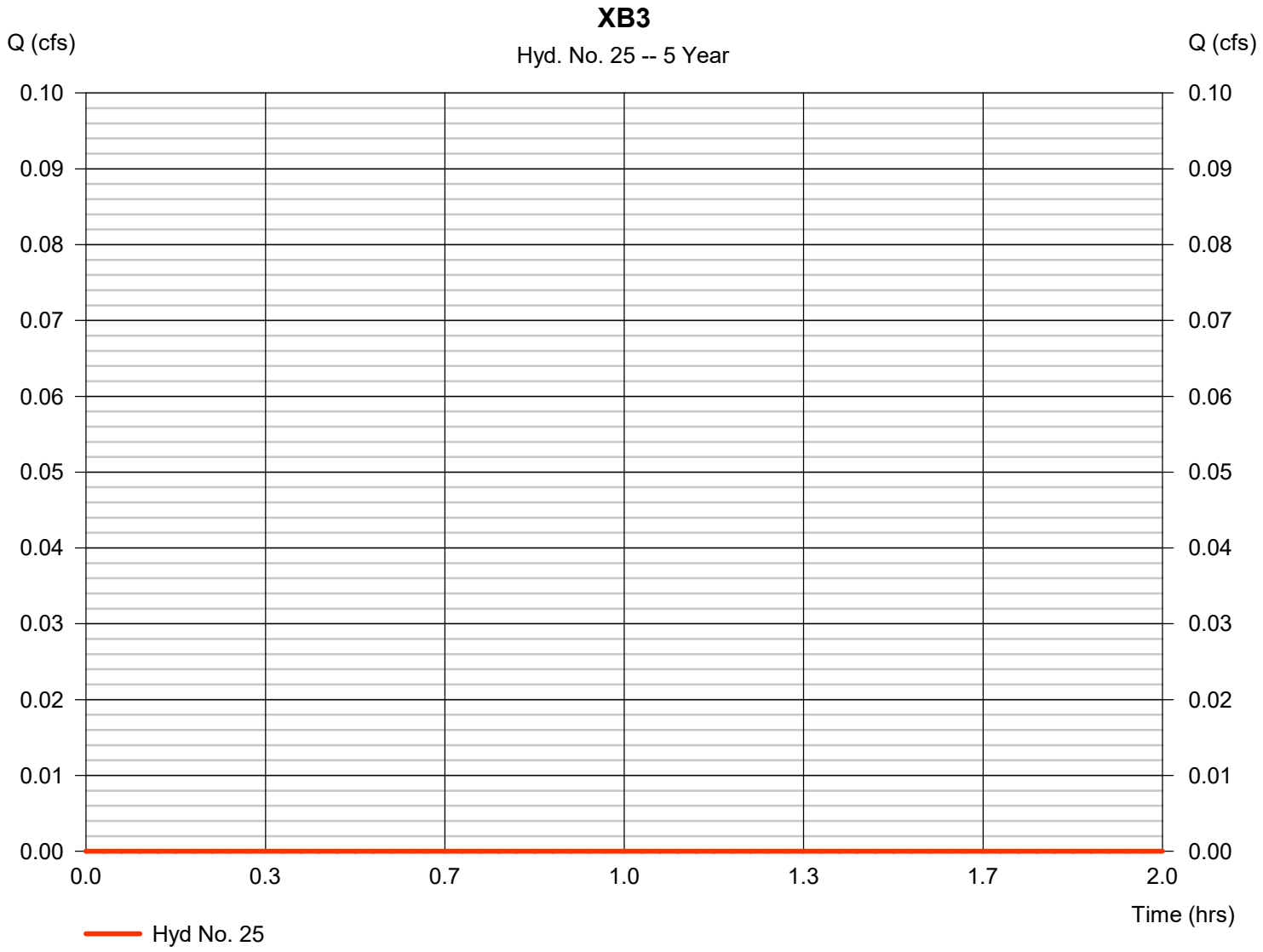
Hydrograph Report

Hyd. No. 25

XB3

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 302.900 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 56.10 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(302.900 x 55)] / 302.900



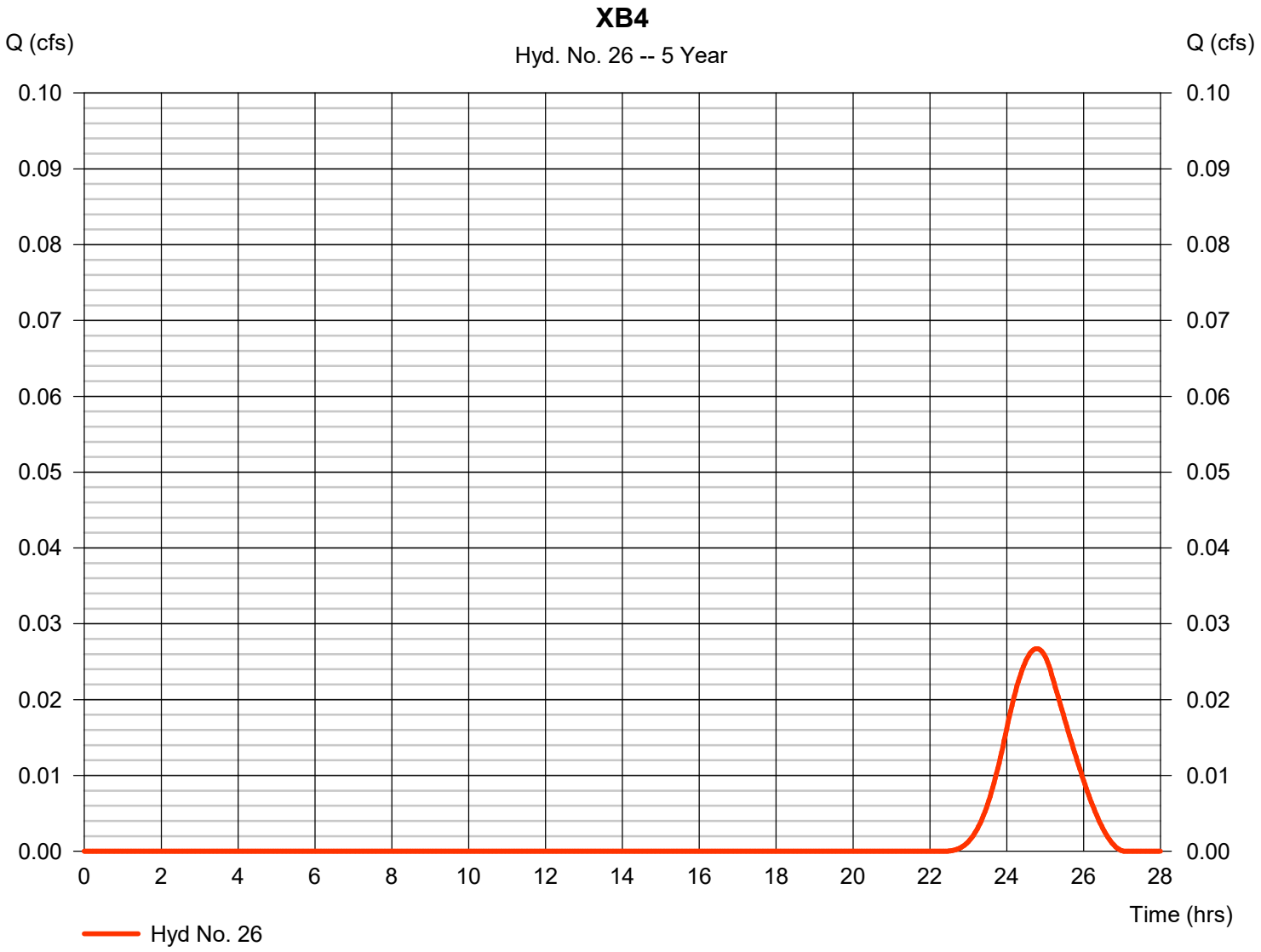
Hydrograph Report

Hyd. No. 26

XB4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.027 cfs
Storm frequency	=	5 yrs	Time to peak	=	24.77 hrs
Time interval	=	2 min	Hyd. volume	=	188 cuft
Drainage area	=	545.900 ac	Curve number	=	62*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	117.20 min
Total precip.	=	1.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(224.200 x 55) + (173.700 x 55) + (147.000 x 81) + (0.800 x 81) + (0.200 x 81)] / 545.900

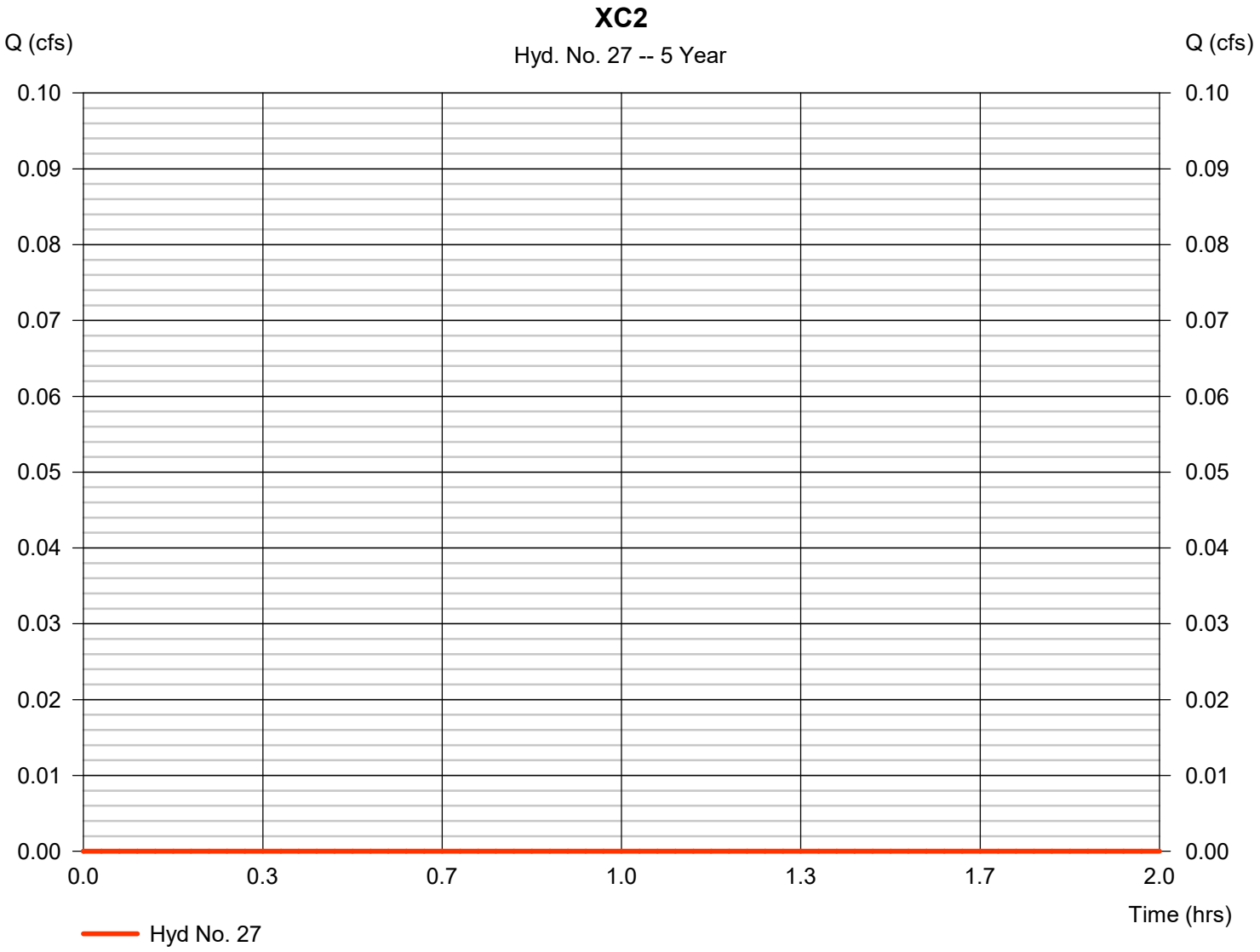


Hydrograph Report

Hyd. No. 27

XC2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 161.100 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 57.80 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



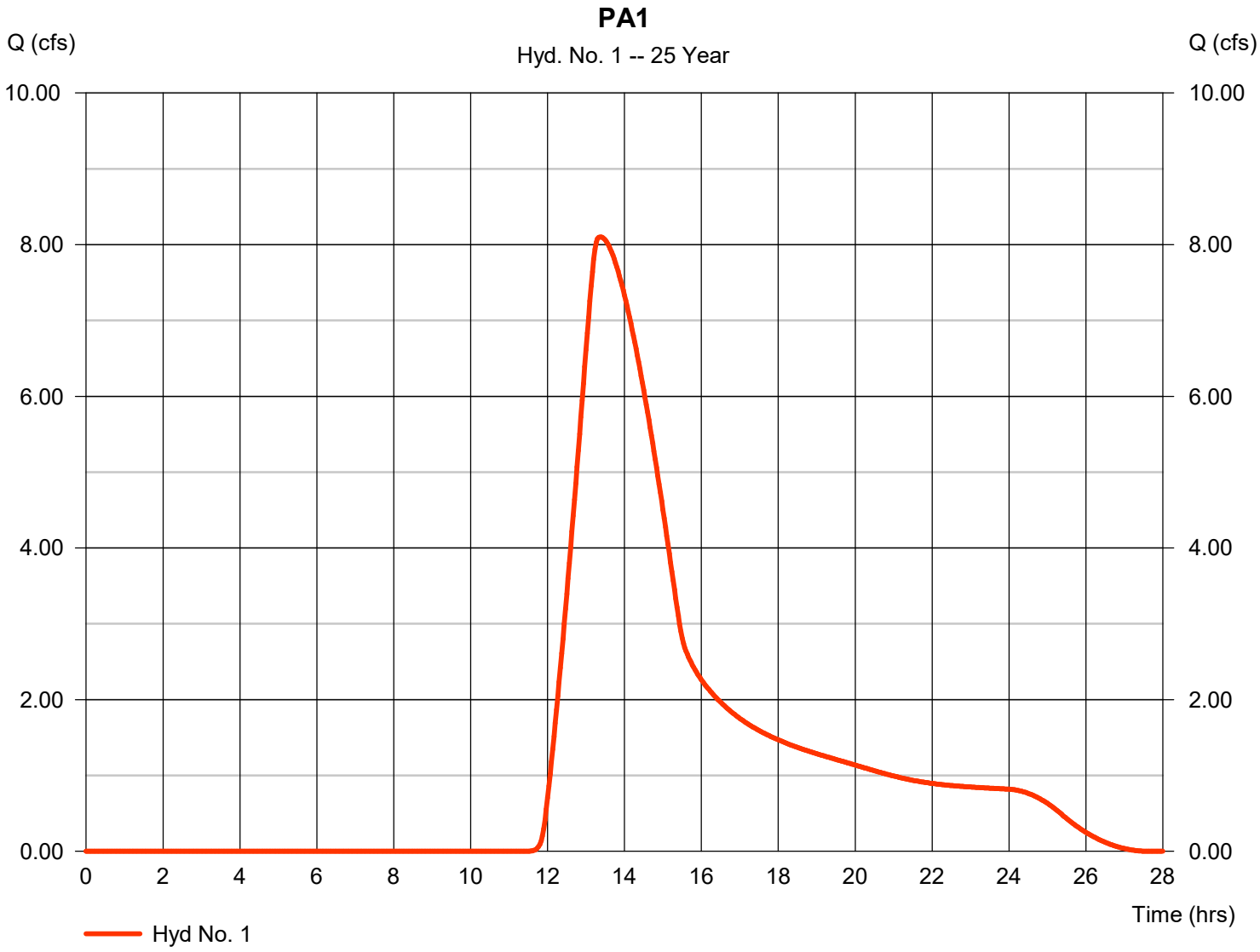
Hydrograph Report

Hyd. No. 1

PA1

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.102 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.37 hrs
Time interval	=	2 min	Hyd. volume	=	113,653 cuft
Drainage area	=	66.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	137.10 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(66.000 x 63)] / 66.000



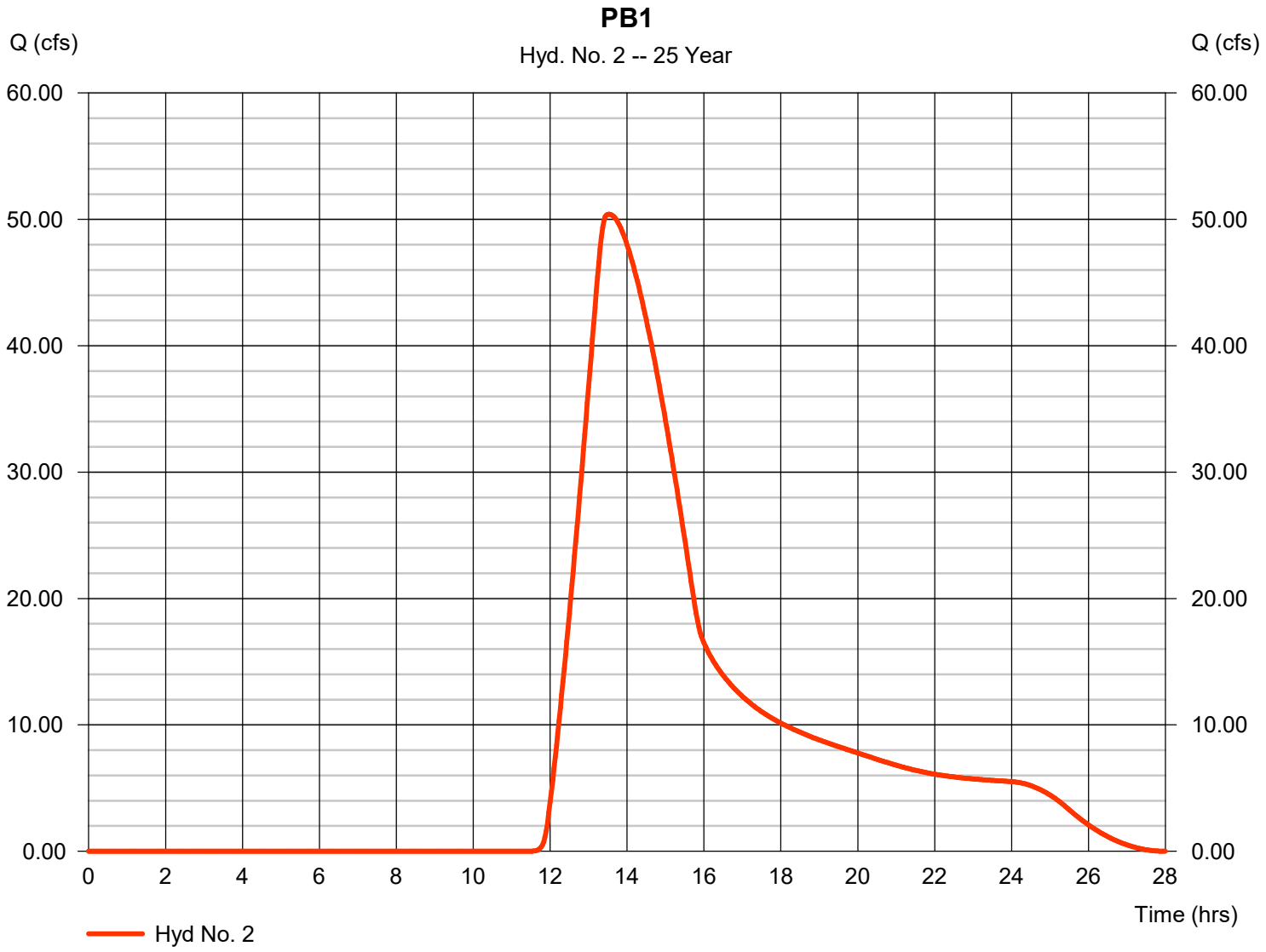
Hydrograph Report

Hyd. No. 2

PB1

Hydrograph type	=	SCS Runoff	Peak discharge	=	50.41 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.53 hrs
Time interval	=	2 min	Hyd. volume	=	761,215 cuft
Drainage area	=	440.700 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	150.30 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(211.500 x 98) + (229.300 x 63)] / 440.700



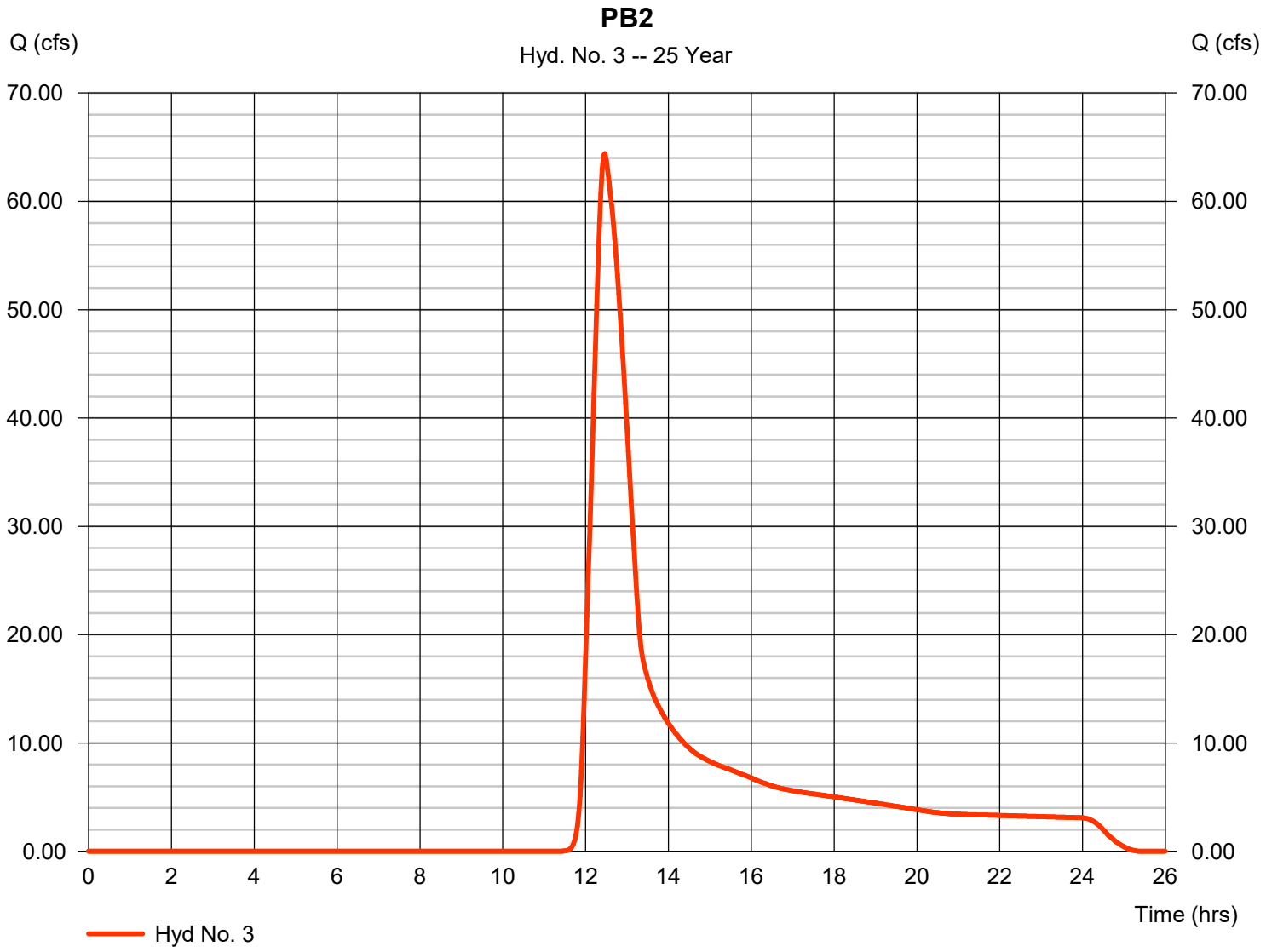
Hydrograph Report

Hyd. No. 3

PB2

Hydrograph type	=	SCS Runoff	Peak discharge	=	64.40 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.47 hrs
Time interval	=	2 min	Hyd. volume	=	444,421 cuft
Drainage area	=	255.300 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	51.20 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(162.900 x 98) + (92.400 x 63)] / 255.300



Hydrograph Report

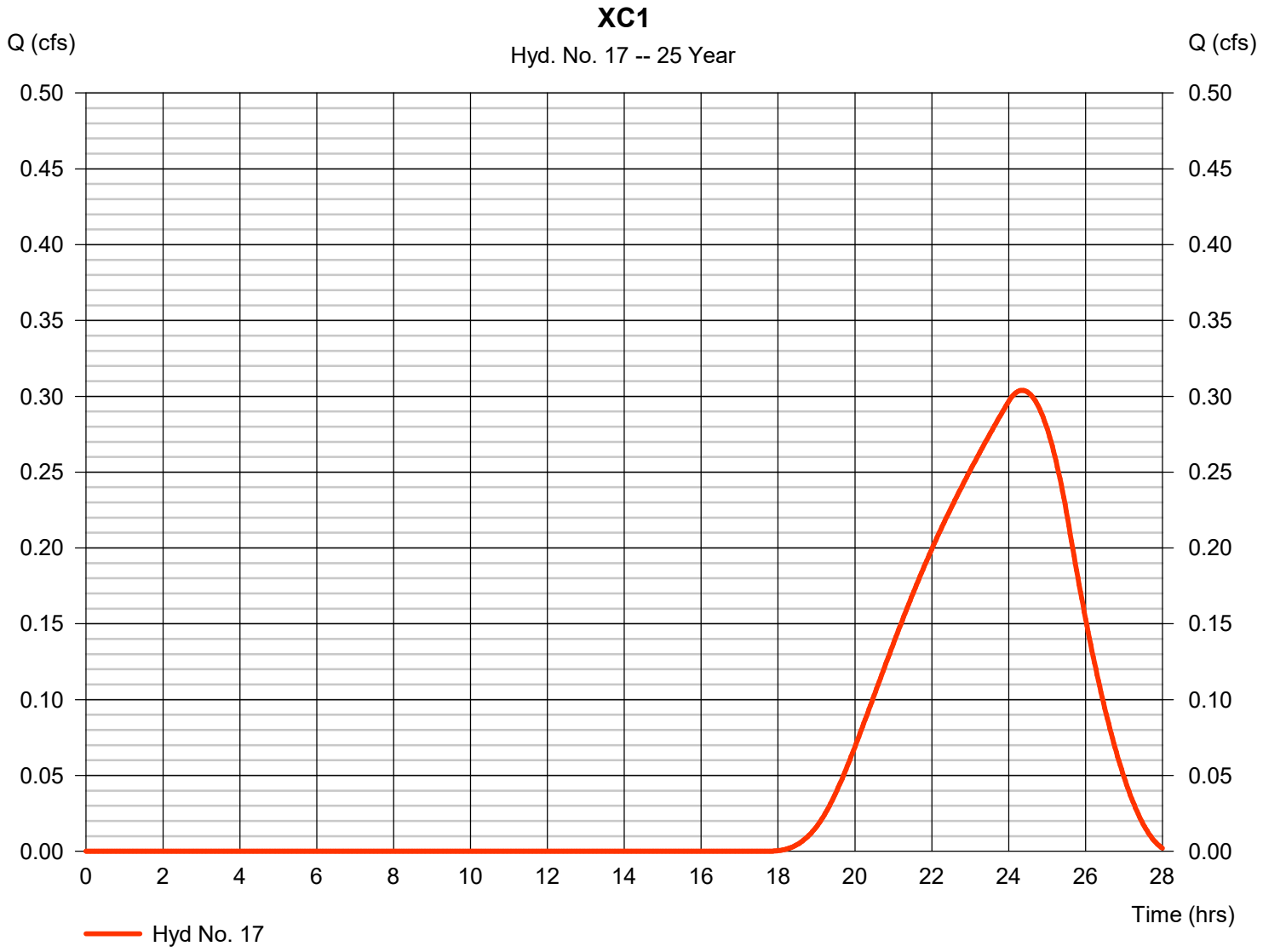
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Tuesday, 07 / 26 / 2022

Hyd. No. 17

XC1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.304 cfs
Storm frequency	= 25 yrs	Time to peak	= 24.37 hrs
Time interval	= 2 min	Hyd. volume	= 0.120 acft
Drainage area	= 509.000 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 162.10 min
Total precip.	= 1.79 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(10.600 x 81) + (455.800 x 55) + (42.600 x 81)] / 509.000



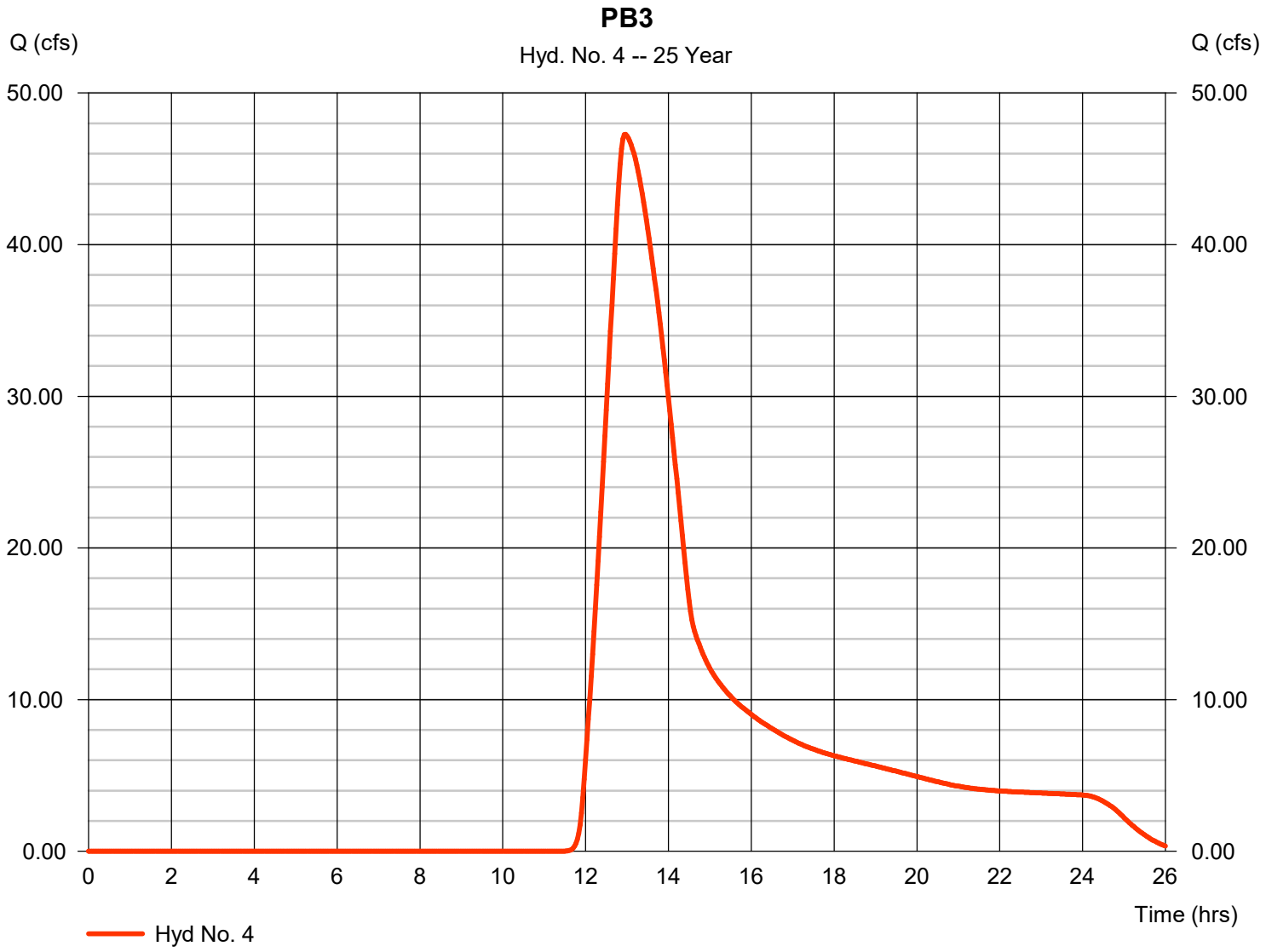
Hydrograph Report

Hyd. No. 4

PB3

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.27 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.97 hrs
Time interval	=	2 min	Hyd. volume	=	523,368 cuft
Drainage area	=	303.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	99.90 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(136.200 x 98) + (166.800 x 63)] / 303.000



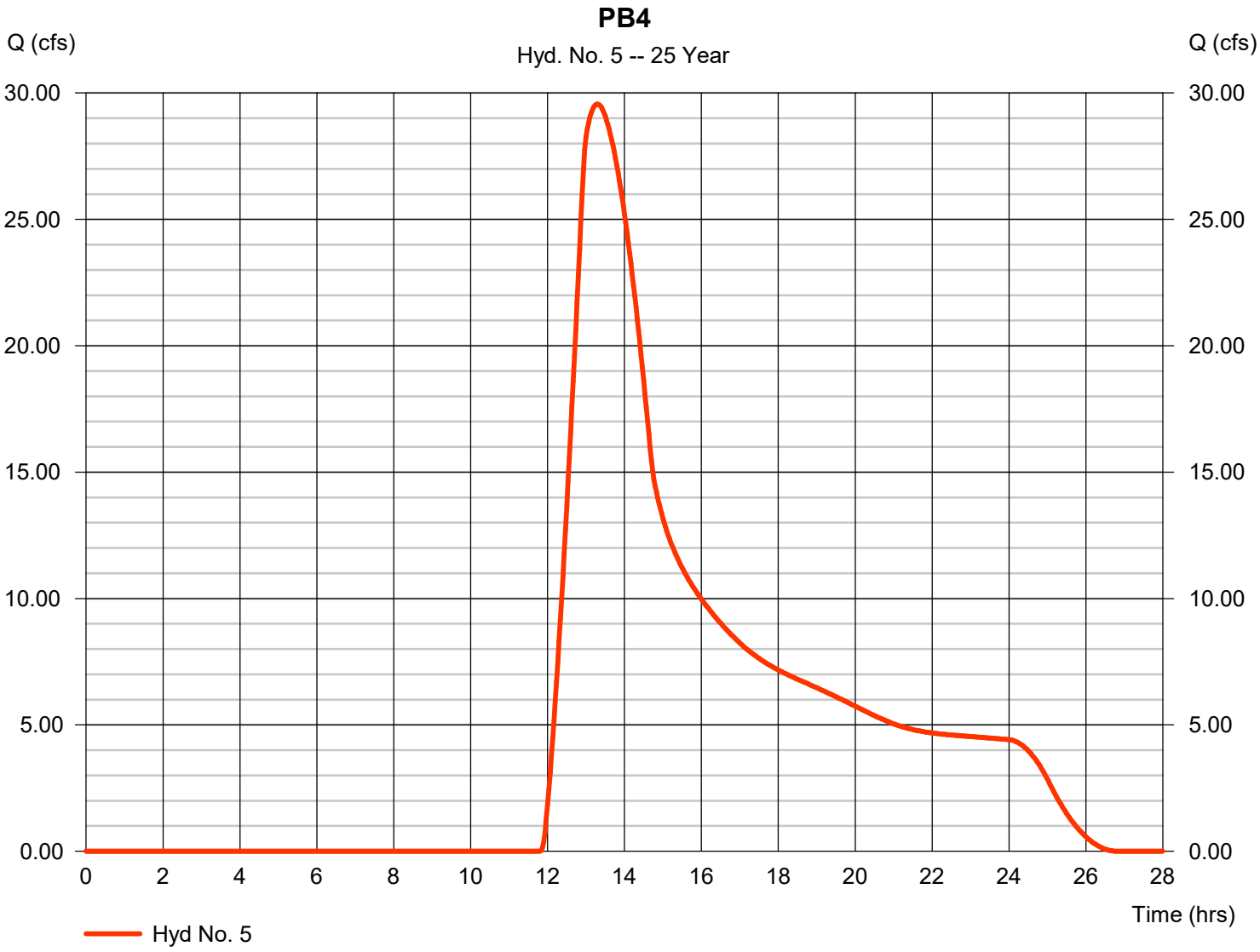
Hydrograph Report

Hyd. No. 5

PB4

Hydrograph type	=	SCS Runoff	Peak discharge	=	29.56 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.30 hrs
Time interval	=	2 min	Hyd. volume	=	458,091 cuft
Drainage area	=	545.800 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	108.30 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(93.800 x 98) + (131.300 x 63) + (173.700 x 55) + (147.000 x 81)] / 545.800

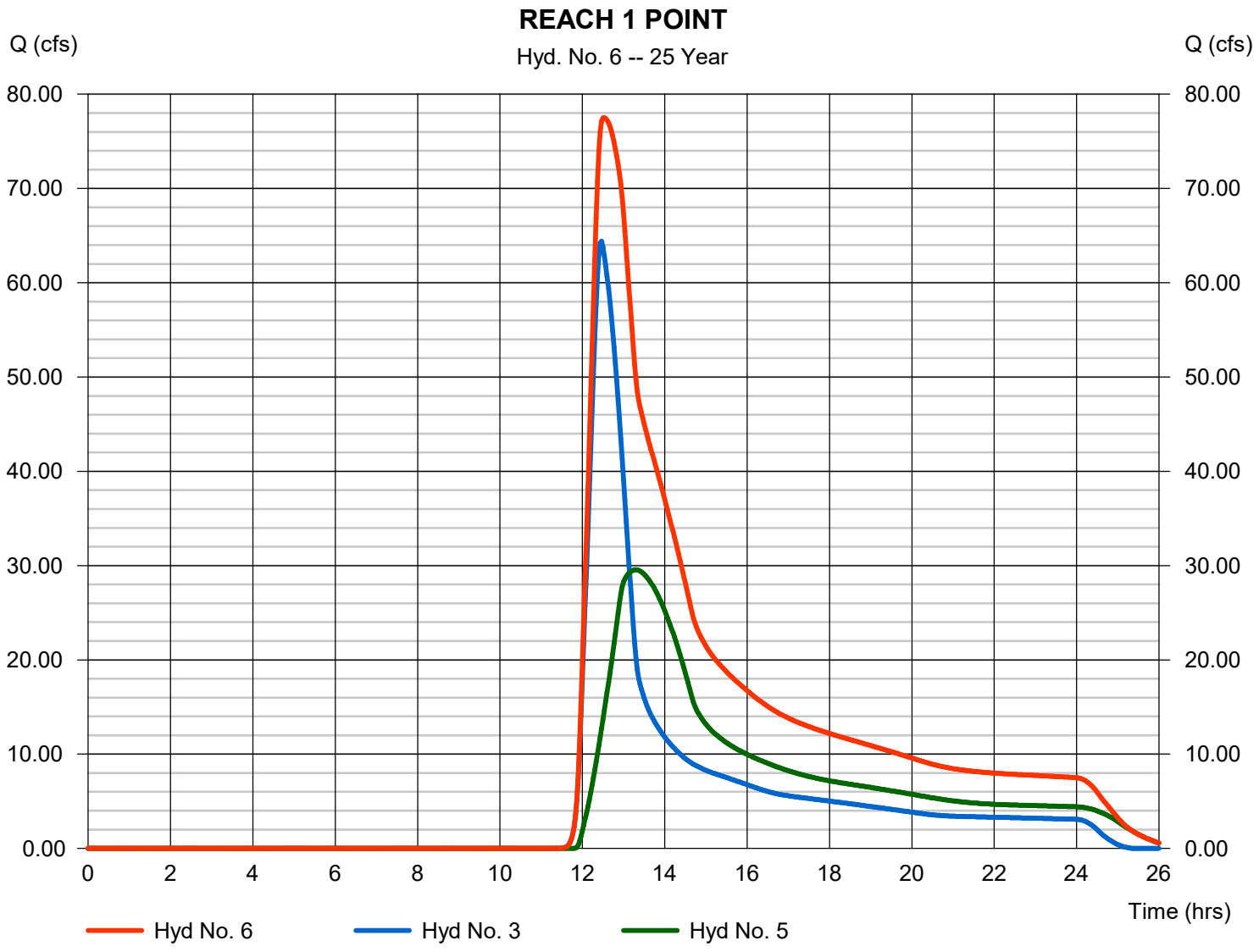


Hydrograph Report

Hyd. No. 6

REACH 1 POINT

Hydrograph type	=	Combine	Peak discharge	=	77.51 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.53 hrs
Time interval	=	2 min	Hyd. volume	=	902,512 cuft
Inflow hyds.	=	3, 5	Contrib. drain. area	=	801.100 ac



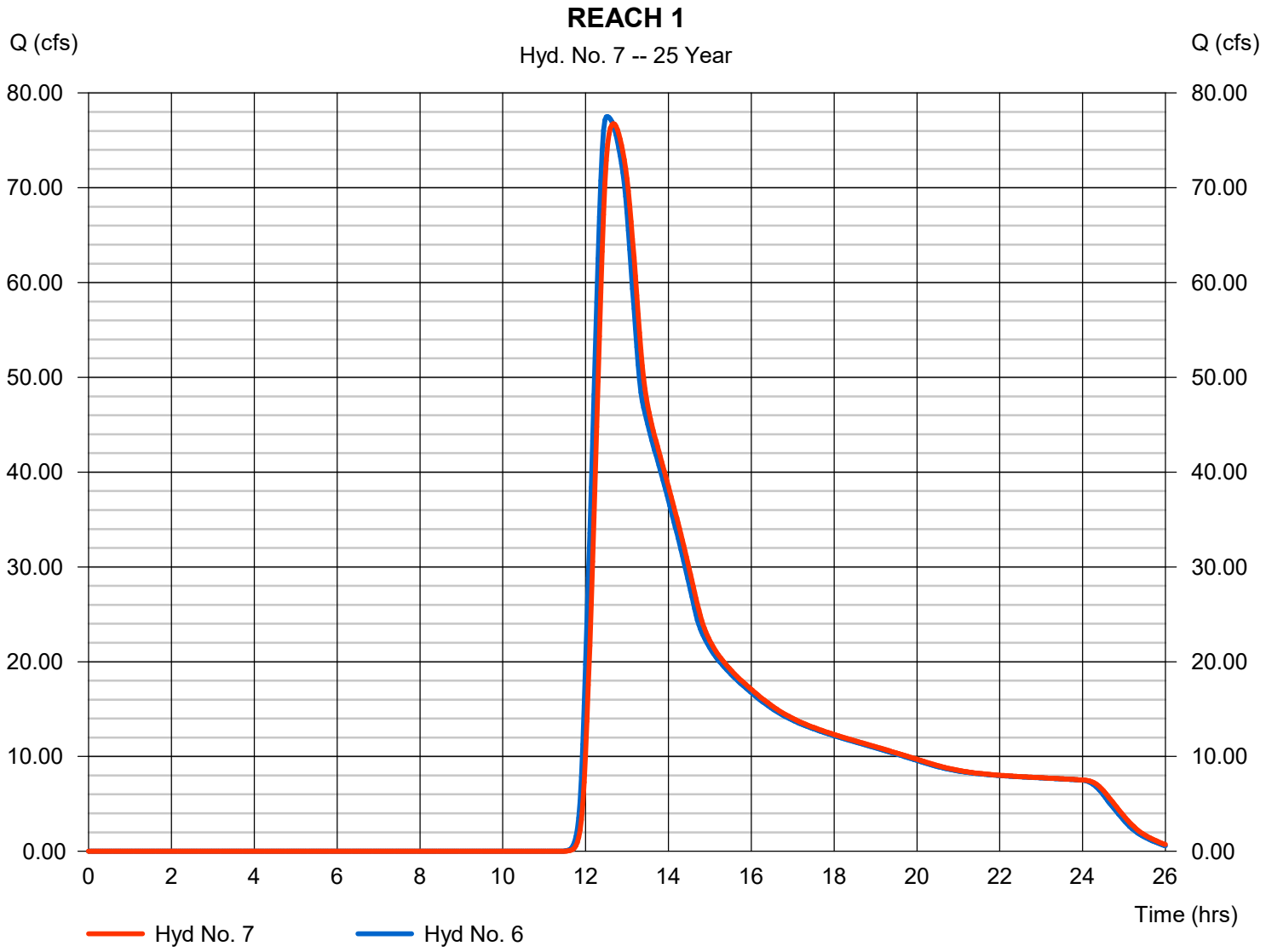
Hydrograph Report

Hyd. No. 7

REACH 1

Hydrograph type	=	Reach	Peak discharge	=	76.77 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.67 hrs
Time interval	=	2 min	Hyd. volume	=	902,508 cuft
Inflow hyd. No.	=	6 - REACH 1 POINT	Section type	=	Circular
Reach length	=	1318.0 ft	Channel slope	=	0.4 %
Manning's n	=	0.013	Bottom width	=	5.0 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	5.115	Rating curve m	=	1.250
Ave. velocity	=	3.95 ft/s	Routing coeff.	=	0.3669

Modified Att-Kin routing method used.



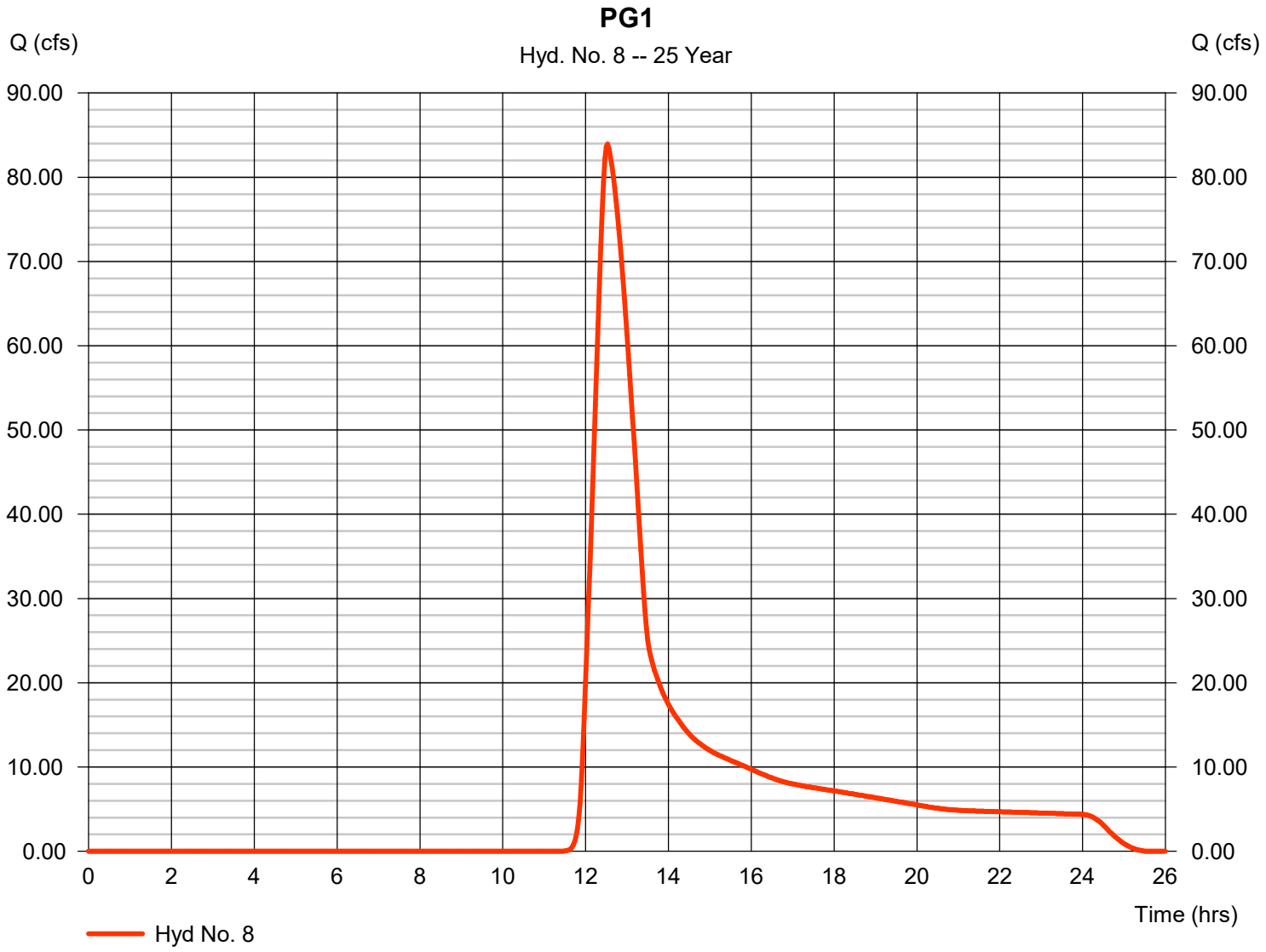
Hydrograph Report

Hyd. No. 8

PG1

Hydrograph type	=	SCS Runoff	Peak discharge	=	83.94 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.53 hrs
Time interval	=	2 min	Hyd. volume	=	628,560 cuft
Drainage area	=	363.900 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	59.50 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(132.600 x 98) + (231.300 x 63)] / 363.900



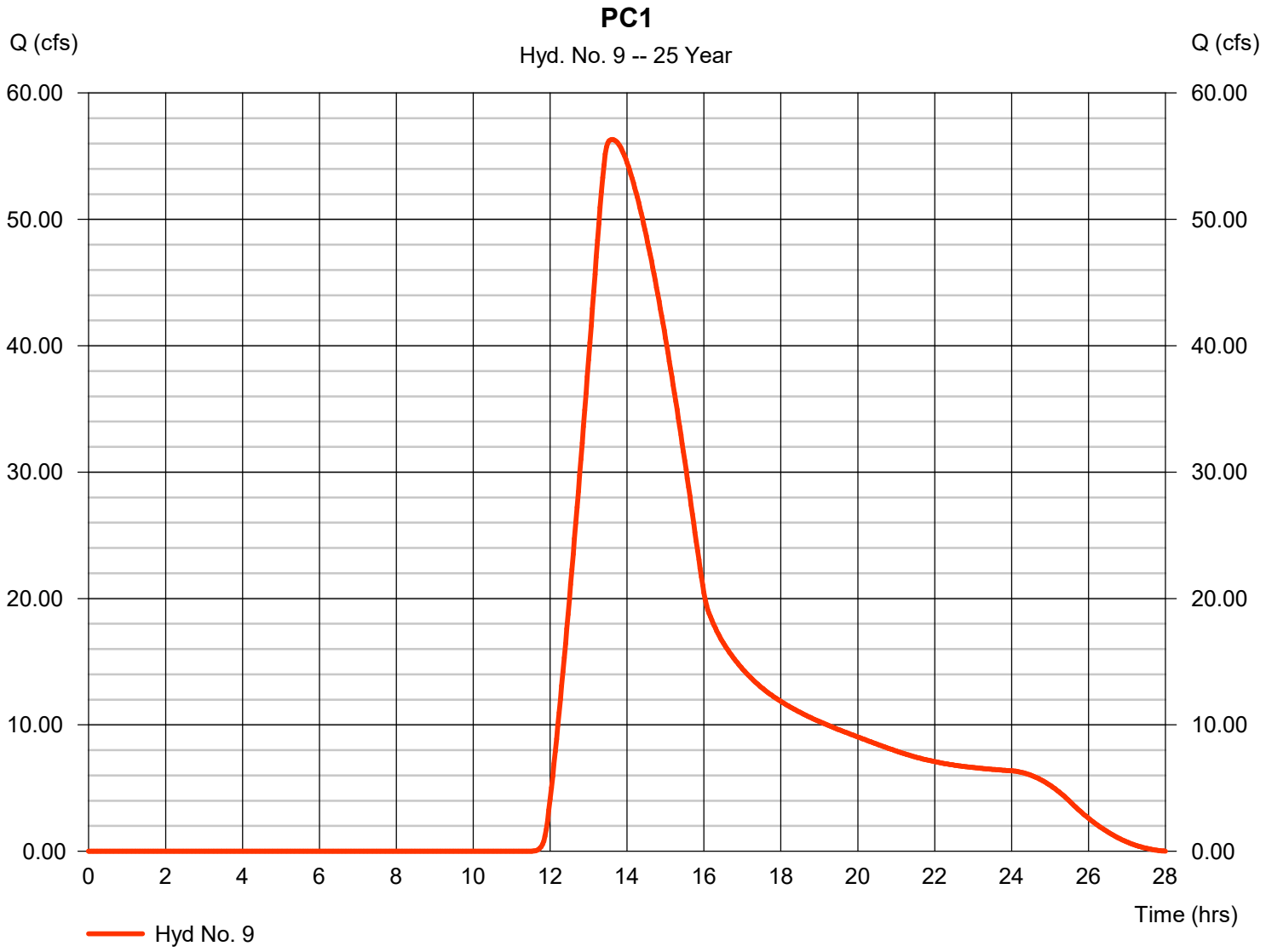
Hydrograph Report

Hyd. No. 9

PC1

Hydrograph type	=	SCS Runoff	Peak discharge	=	56.32 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.60 hrs
Time interval	=	2 min	Hyd. volume	=	876,850 cuft
Drainage area	=	509.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	156.50 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(423.800 x 98) + (85.200 x 63)] / 509.000



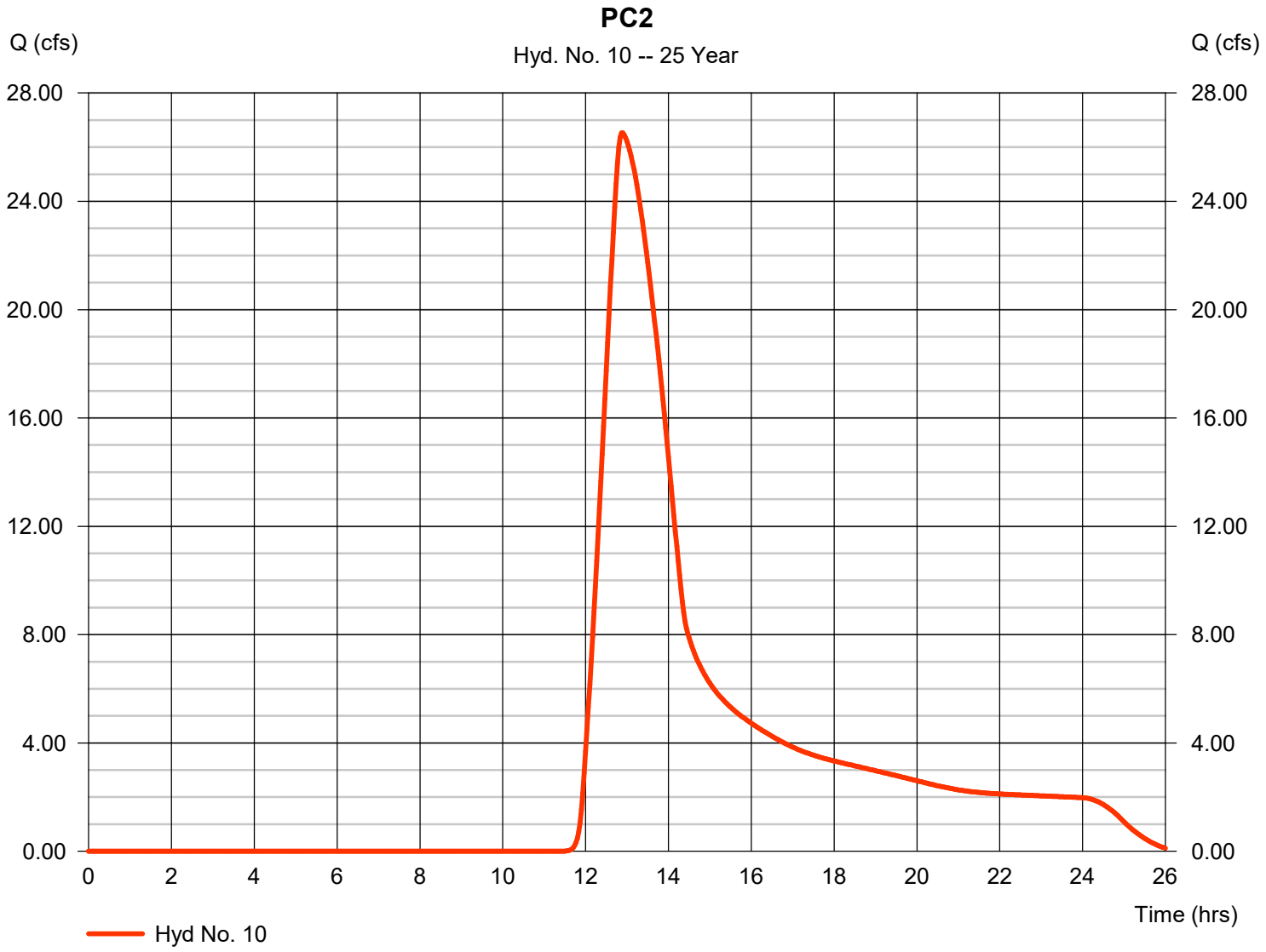
Hydrograph Report

Hyd. No. 10

PC2

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.52 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.87 hrs
Time interval	=	2 min	Hyd. volume	=	279,682 cuft
Drainage area	=	161.200 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	92.10 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(152.700 x 98) + (8.500 x 63)] / 161.200



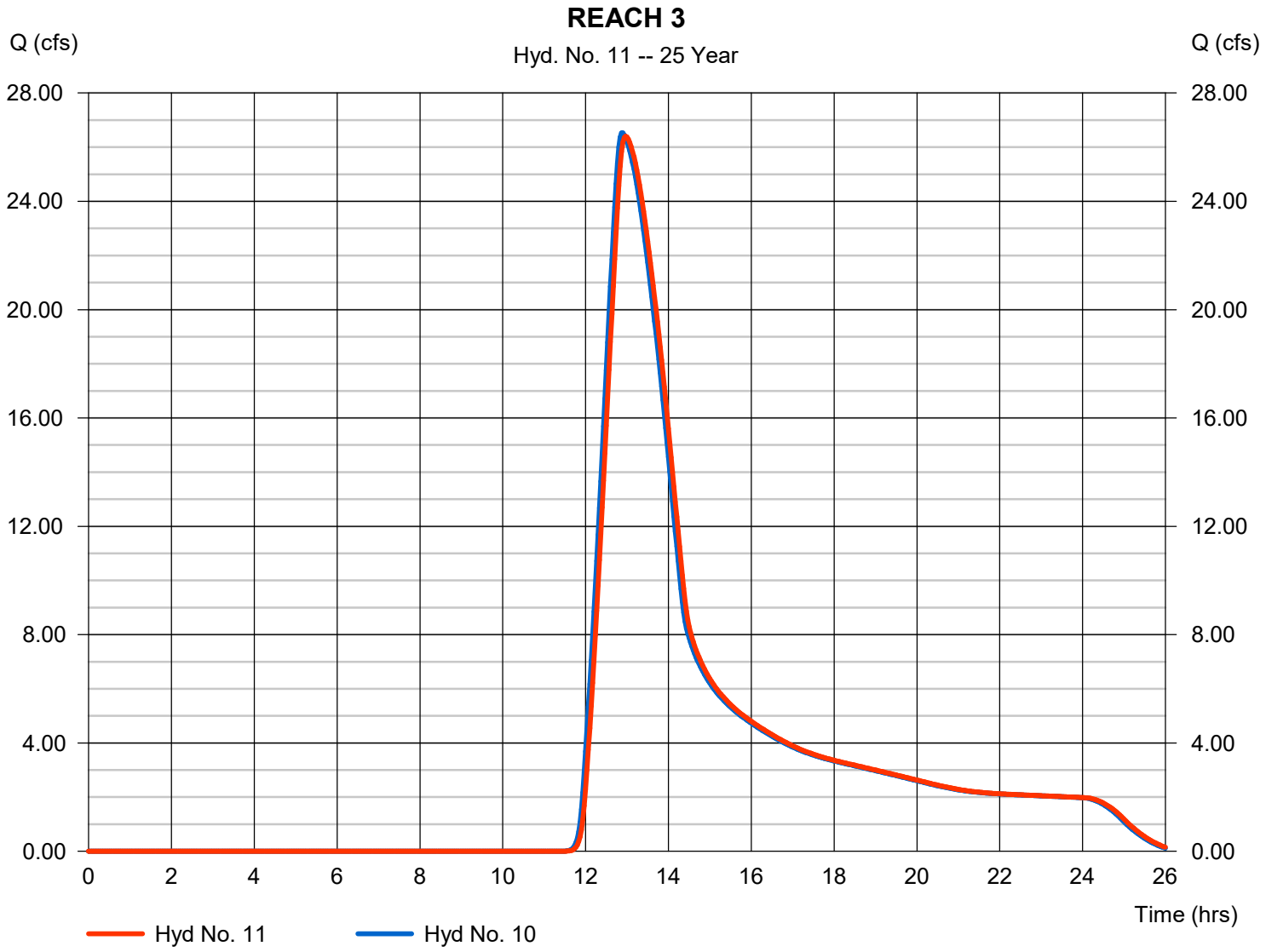
Hydrograph Report

Hyd. No. 11

REACH 3

Hydrograph type	=	Reach	Peak discharge	=	26.40 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.97 hrs
Time interval	=	2 min	Hyd. volume	=	279,680 cuft
Inflow hyd. No.	=	10 - PC2	Section type	=	Circular
Reach length	=	1197.0 ft	Channel slope	=	0.5 %
Manning's n	=	0.013	Bottom width	=	2.5 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	5.095	Rating curve m	=	1.250
Ave. velocity	=	5.40 ft/s	Routing coeff.	=	0.5059

Modified Att-Kin routing method used.

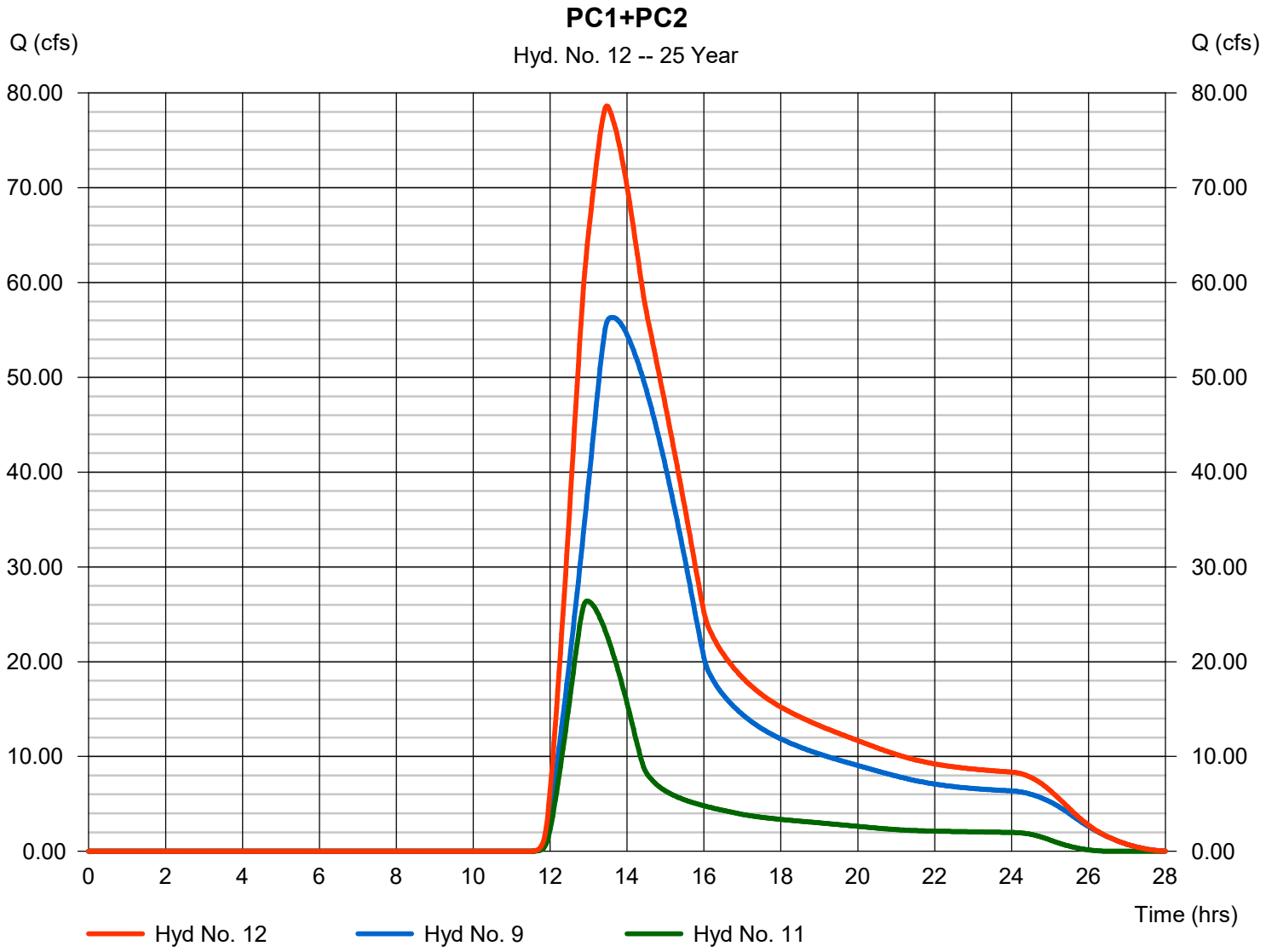


Hydrograph Report

Hyd. No. 12

PC1+PC2

Hydrograph type	= Combine	Peak discharge	= 78.64 cfs
Storm frequency	= 25 yrs	Time to peak	= 13.47 hrs
Time interval	= 2 min	Hyd. volume	= 1,156,531 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 509.000 ac



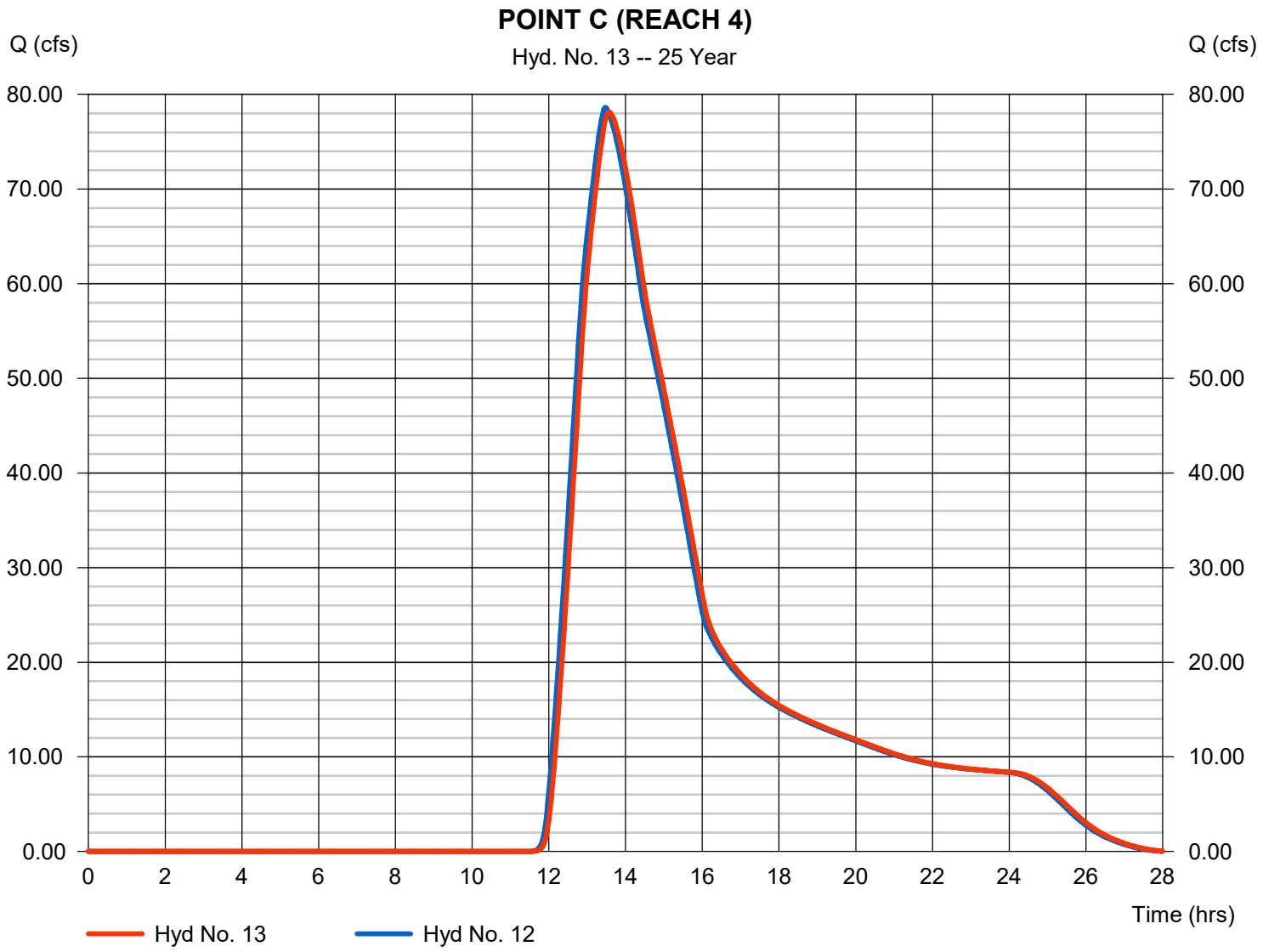
Hydrograph Report

Hyd. No. 13

POINT C (REACH 4)

Hydrograph type	=	Reach	Peak discharge	=	78.13 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.57 hrs
Time interval	=	2 min	Hyd. volume	=	1,156,528 cuft
Inflow hyd. No.	=	12 - PC1+PC2	Section type	=	Trapezoidal
Reach length	=	1010.0 ft	Channel slope	=	0.5 %
Manning's n	=	0.035	Bottom width	=	9.0 ft
Side slope	=	3.0:1	Max. depth	=	3.5 ft
Rating curve x	=	0.695	Rating curve m	=	1.394
Ave. velocity	=	0.00 ft/s	Routing coeff.	=	0.3597

Modified Att-Kin routing method used.



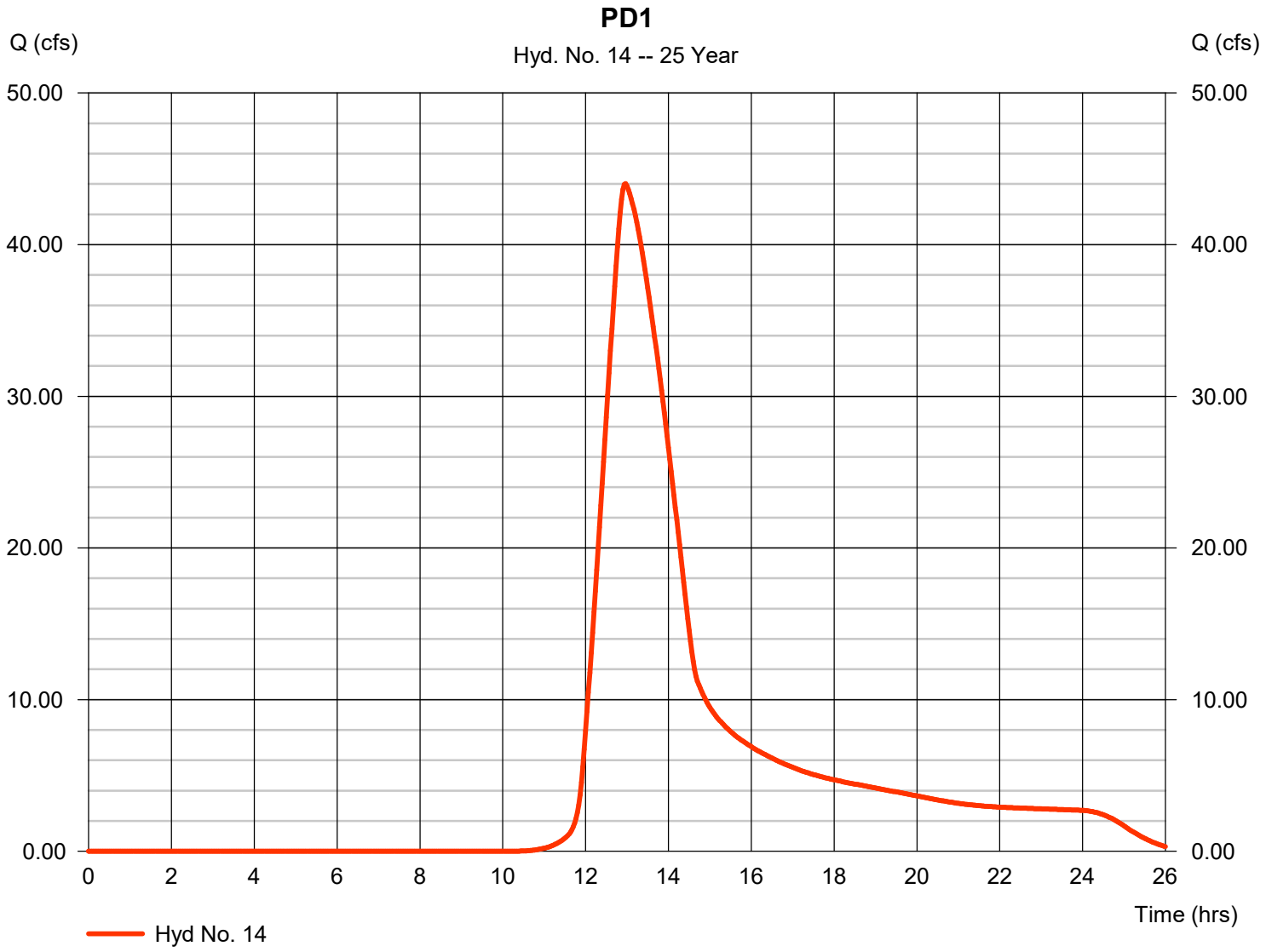
Hydrograph Report

Hyd. No. 14

PD1

Hydrograph type	= SCS Runoff	Peak discharge	= 44.02 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.97 hrs
Time interval	= 2 min	Hyd. volume	= 450,662 cuft
Drainage area	= 178.300 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 104.50 min
Total precip.	= 1.79 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(92.300 x 81) + (80.000 x 91) + (5.800 x 93)] / 178.300



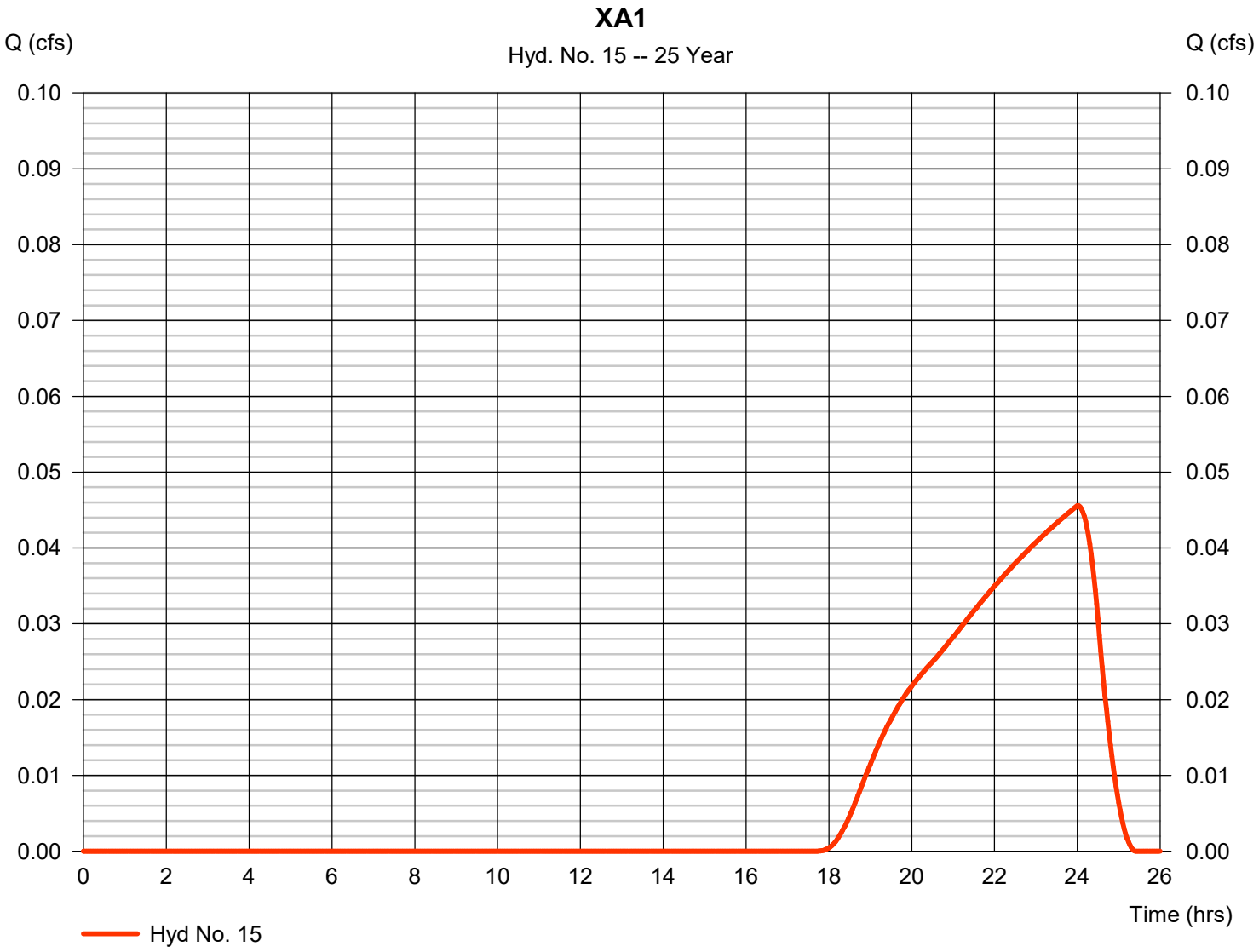
Hydrograph Report

Hyd. No. 15

XA1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.046 cfs
Storm frequency	=	25 yrs	Time to peak	=	24.03 hrs
Time interval	=	2 min	Hyd. volume	=	684 cuft
Drainage area	=	66.000 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	52.60 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(66.000 x 55)] / 66.000



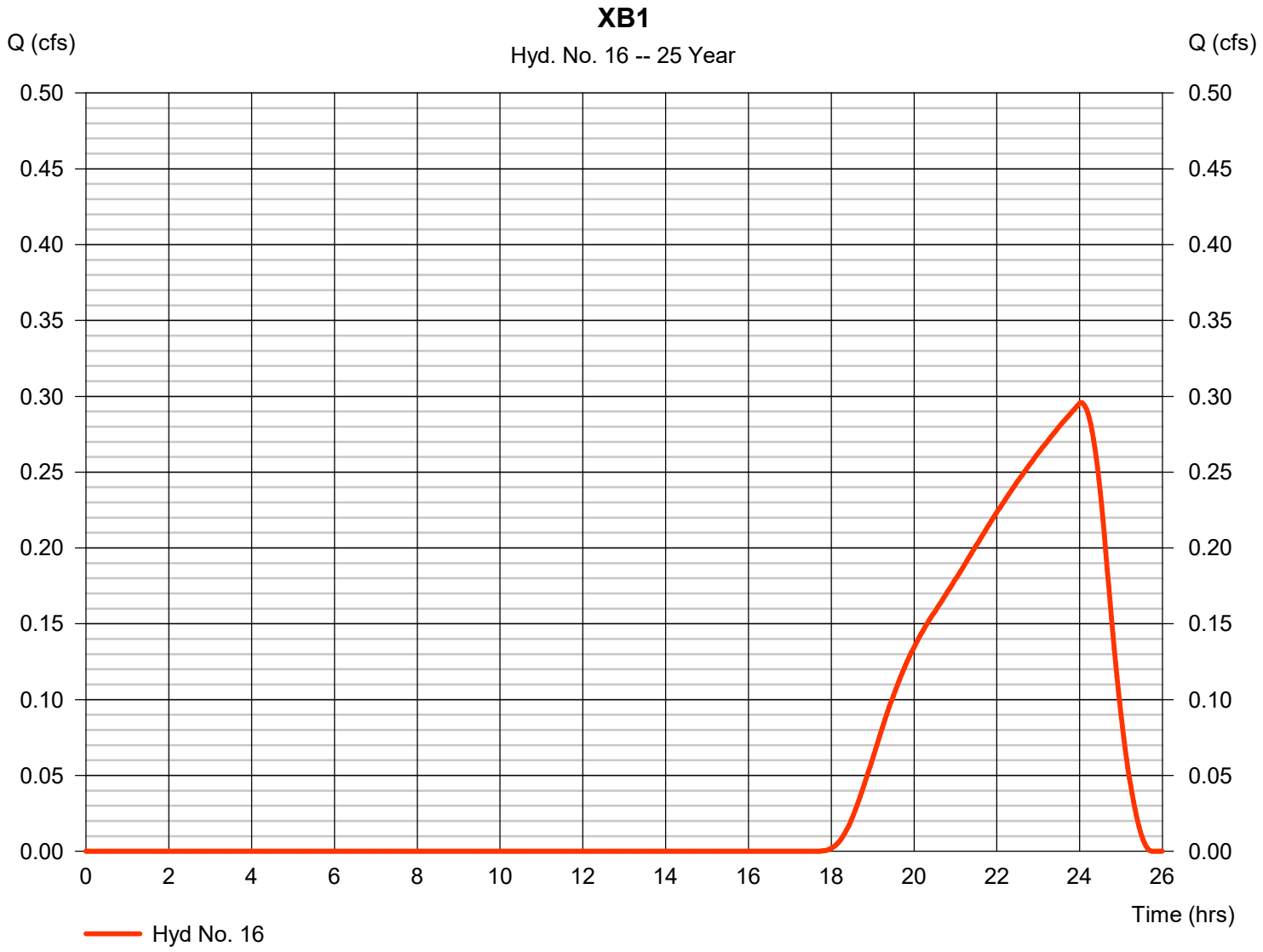
Hydrograph Report

Hyd. No. 16

XB1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.296 cfs
Storm frequency	= 25 yrs	Time to peak	= 24.03 hrs
Time interval	= 2 min	Hyd. volume	= 4,502 cuft
Drainage area	= 440.700 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 64.80 min
Total precip.	= 1.79 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(440.700 x 55)] / 440.700



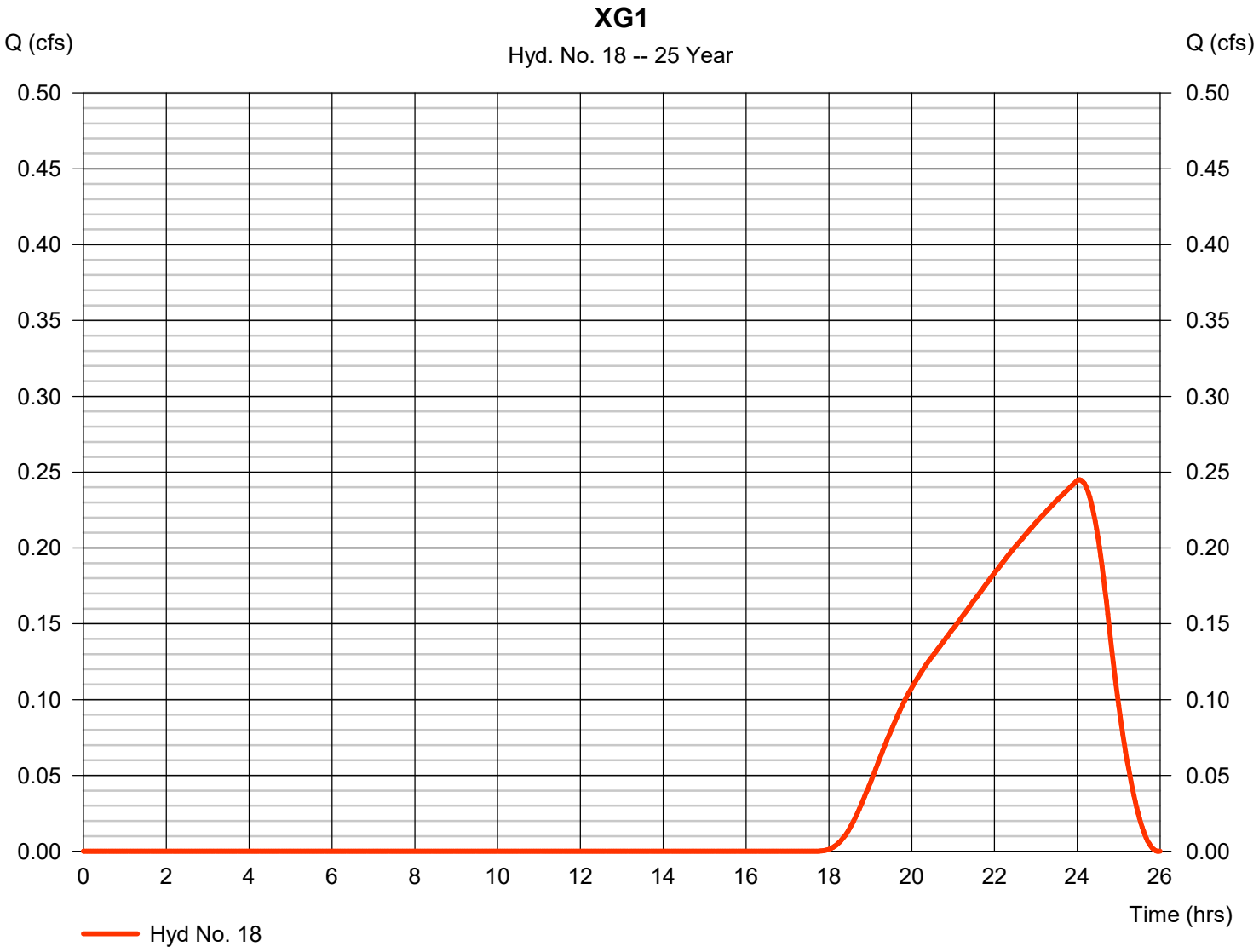
Hydrograph Report

Hyd. No. 18

XG1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.245 cfs
Storm frequency	=	25 yrs	Time to peak	=	24.07 hrs
Time interval	=	2 min	Hyd. volume	=	3,762 cuft
Drainage area	=	363.900 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	71.10 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(4.600 x 81) + (1.100 x 81) + (358.200 x 55)] / 363.900



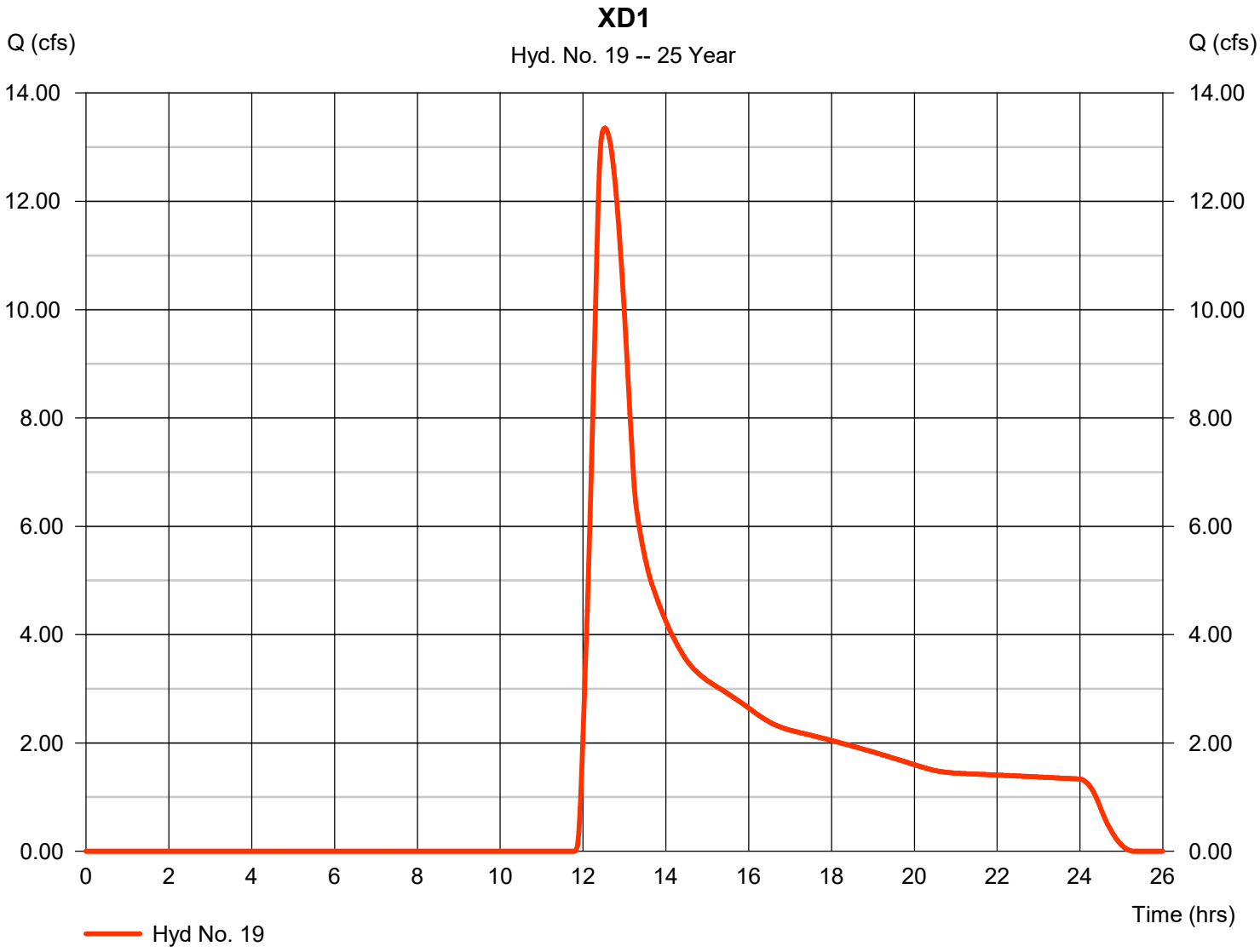
Hydrograph Report

Hyd. No. 19

XD1

Hydrograph type	=	SCS Runoff	Peak discharge	=	13.35 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.53 hrs
Time interval	=	2 min	Hyd. volume	=	135,070 cuft
Drainage area	=	178.000 ac	Curve number	=	72*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	50.10 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(24.800 x 81) + (6.200 x 81) + (62.000 x 55) + (80.000 x 81) + (5.000 x 86)] / 178.000



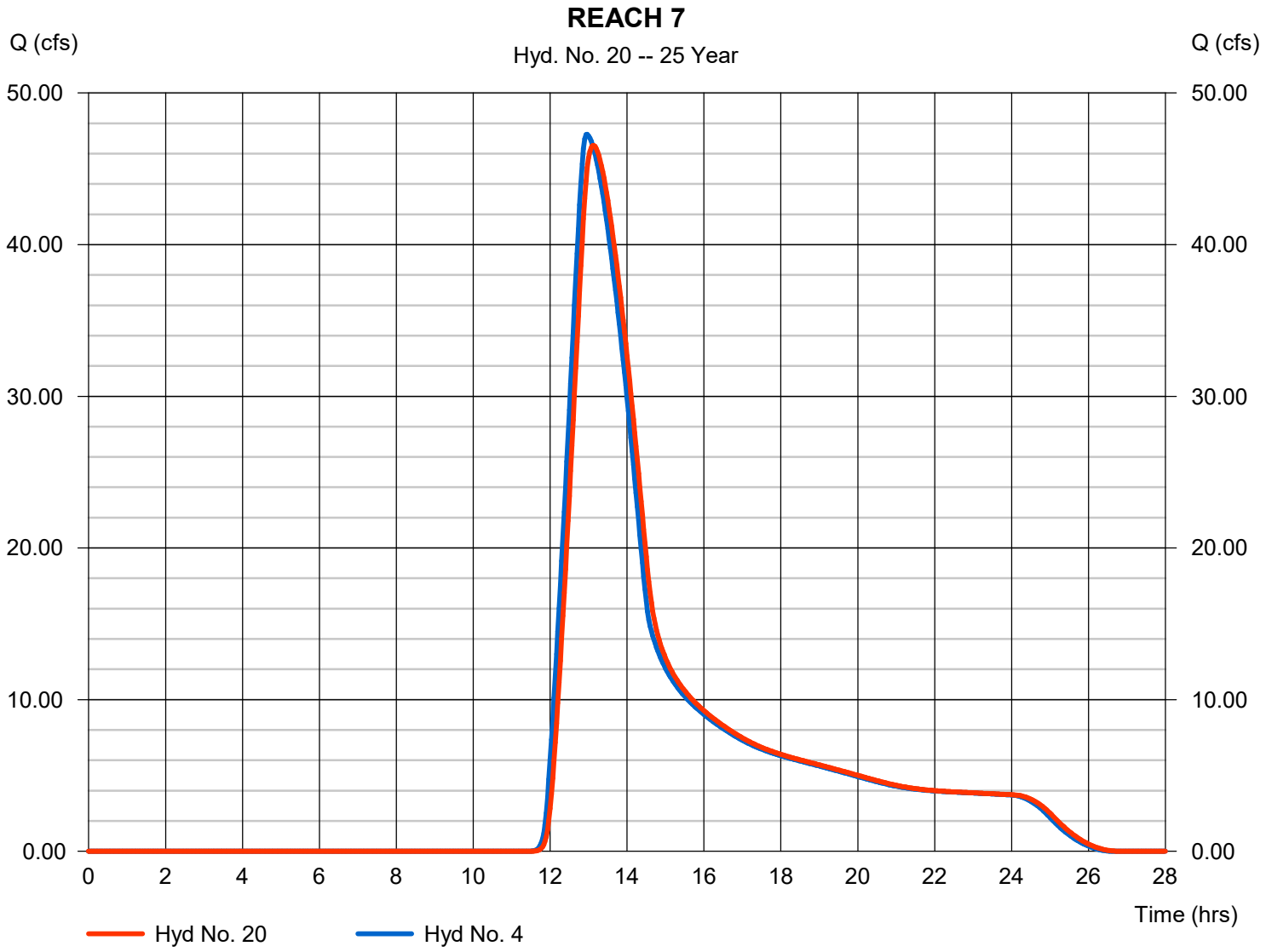
Hydrograph Report

Hyd. No. 20

REACH 7

Hydrograph type	= Reach	Peak discharge	= 46.55 cfs
Storm frequency	= 25 yrs	Time to peak	= 13.13 hrs
Time interval	= 2 min	Hyd. volume	= 523,365 cuft
Inflow hyd. No.	= 4 - PB3	Section type	= Circular
Reach length	= 2153.0 ft	Channel slope	= 0.4 %
Manning's n	= 0.013	Bottom width	= 3.5 ft
Side slope	= 0.0:1	Max. depth	= 0.0 ft
Rating curve x	= 4.820	Rating curve m	= 1.250
Ave. velocity	= 4.91 ft/s	Routing coeff.	= 0.2923

Modified Att-Kin routing method used.

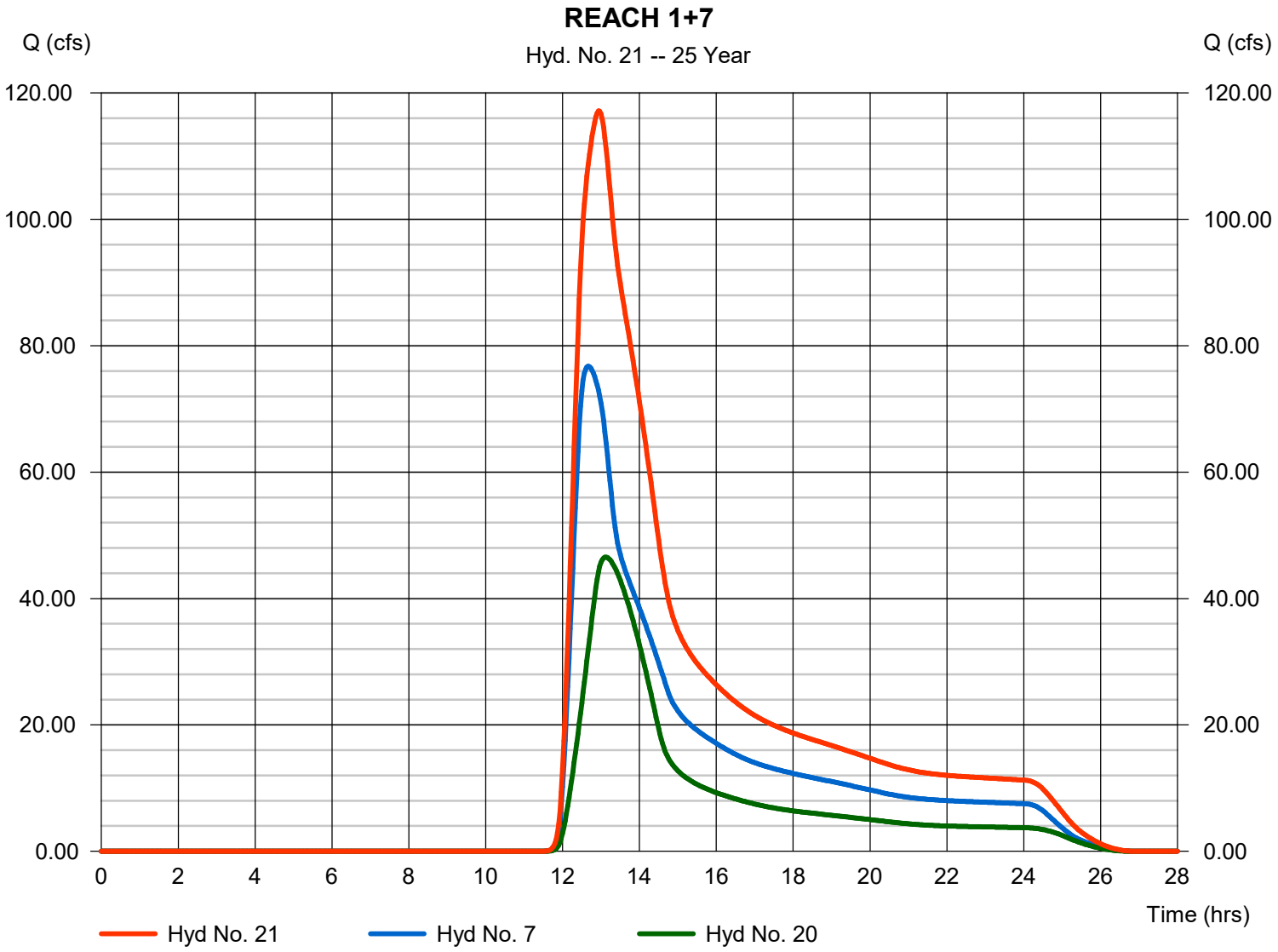


Hydrograph Report

Hyd. No. 21

REACH 1+7

Hydrograph type	= Combine	Peak discharge	= 117.18 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,425,874 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 0.000 ac



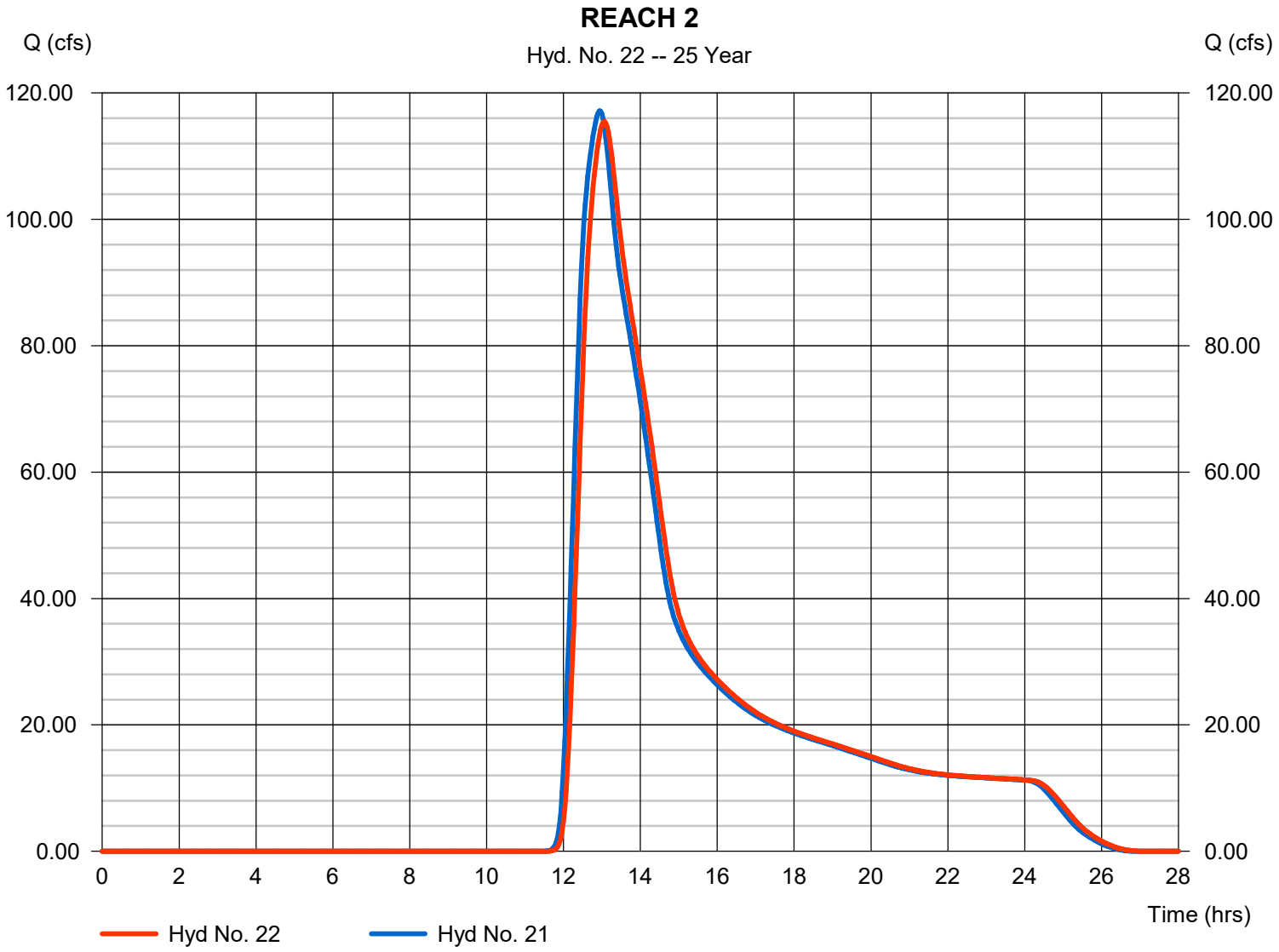
Hydrograph Report

Hyd. No. 22

REACH 2

Hydrograph type	=	Reach	Peak discharge	=	115.50 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.07 hrs
Time interval	=	2 min	Hyd. volume	=	1,425,870 cuft
Inflow hyd. No.	=	21 - REACH 1+7	Section type	=	Trapezoidal
Reach length	=	2187.0 ft	Channel slope	=	1.0 %
Manning's n	=	0.035	Bottom width	=	9.0 ft
Side slope	=	3.0:1	Max. depth	=	3.5 ft
Rating curve x	=	0.983	Rating curve m	=	1.394
Ave. velocity	=	3.80 ft/s	Routing coeff.	=	0.2538

Modified Att-Kin routing method used.

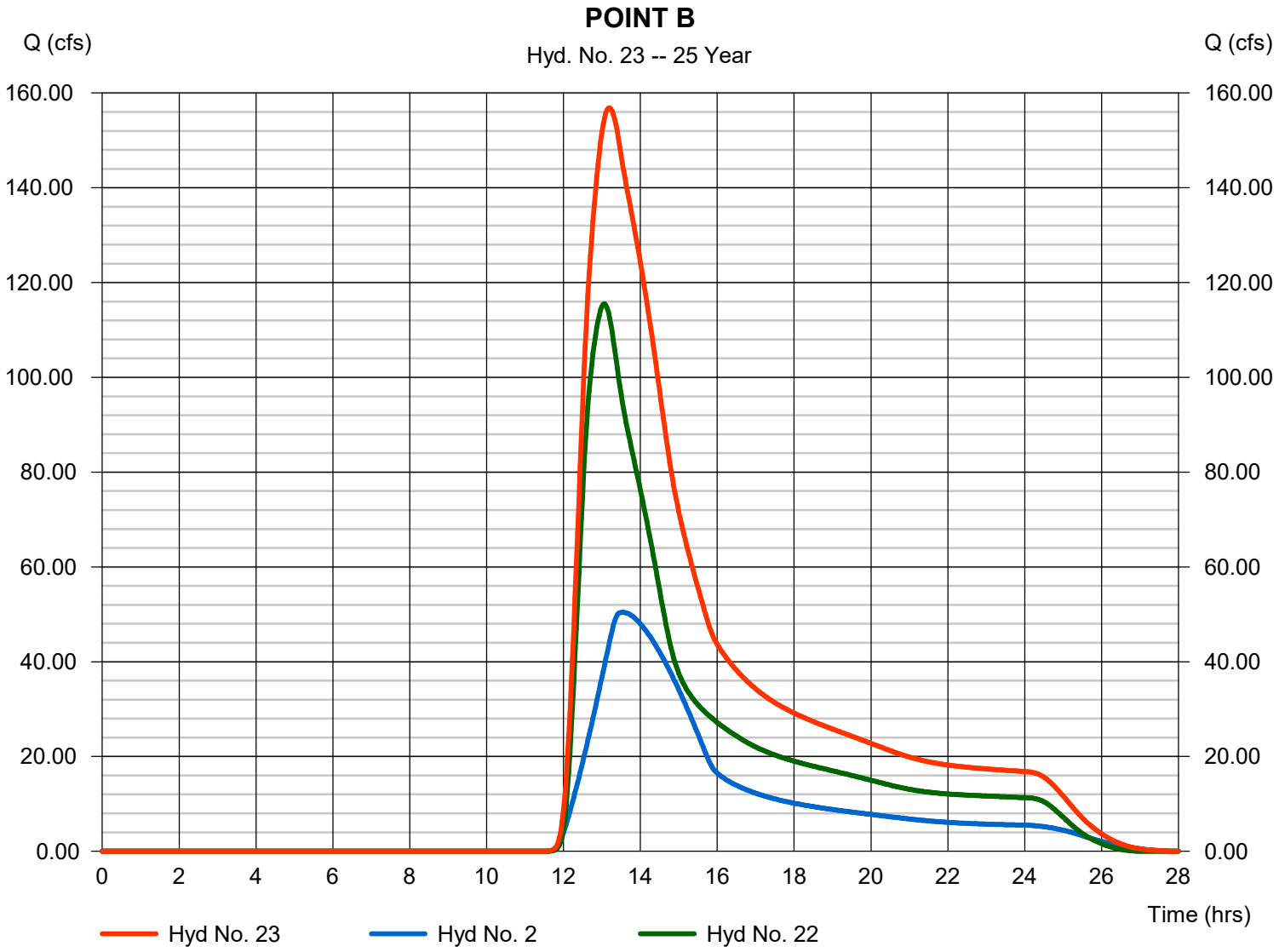


Hydrograph Report

Hyd. No. 23

POINT B

Hydrograph type	=	Combine	Peak discharge	=	156.86 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.20 hrs
Time interval	=	2 min	Hyd. volume	=	2,187,085 cuft
Inflow hyds.	=	2, 22	Contrib. drain. area	=	440.700 ac



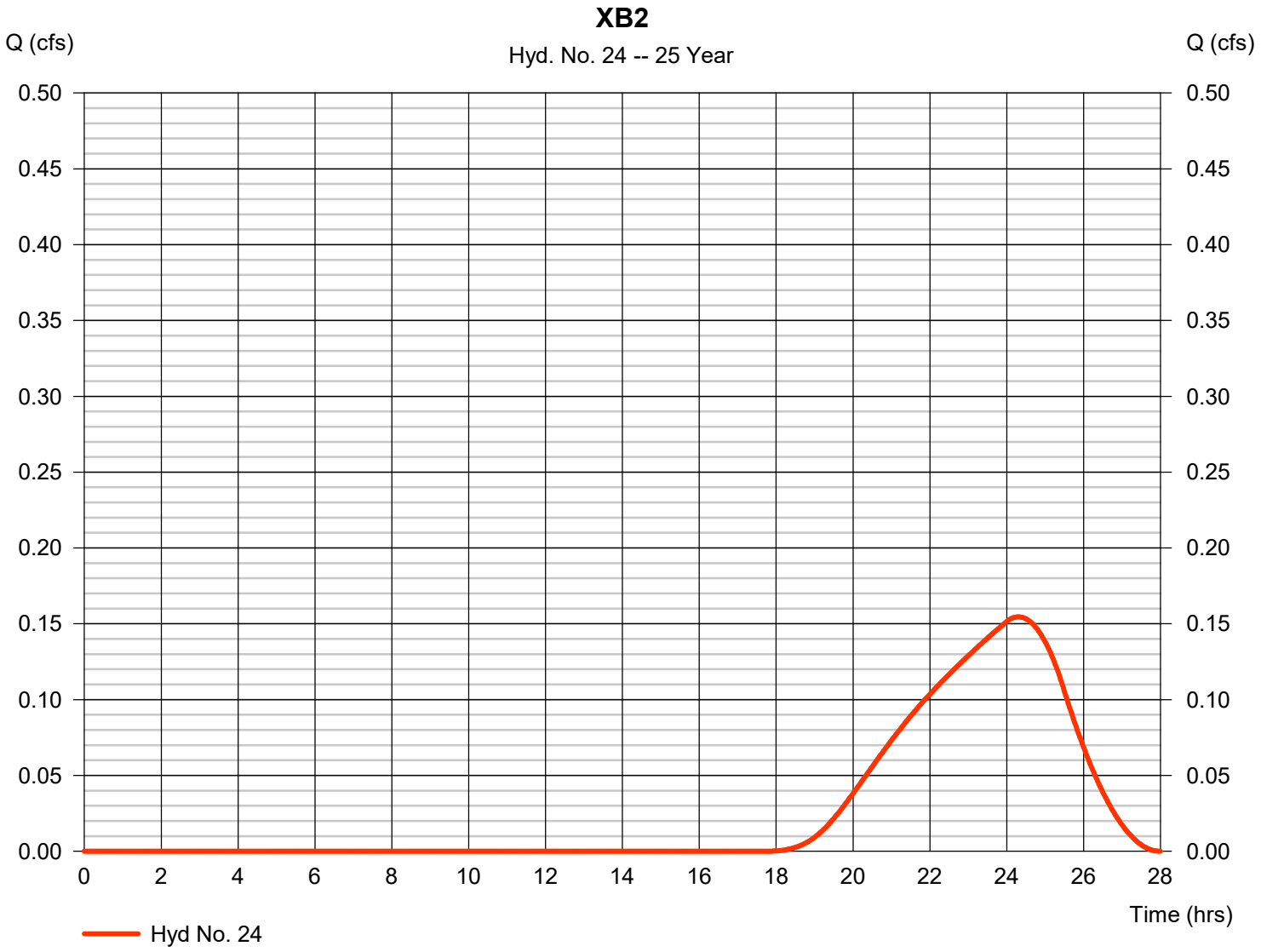
Hydrograph Report

Hyd. No. 24

XB2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.155 cfs
Storm frequency	=	25 yrs	Time to peak	=	24.30 hrs
Time interval	=	2 min	Hyd. volume	=	2,623 cuft
Drainage area	=	255.200 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	150.60 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(255.200 x 55)] / 255.200



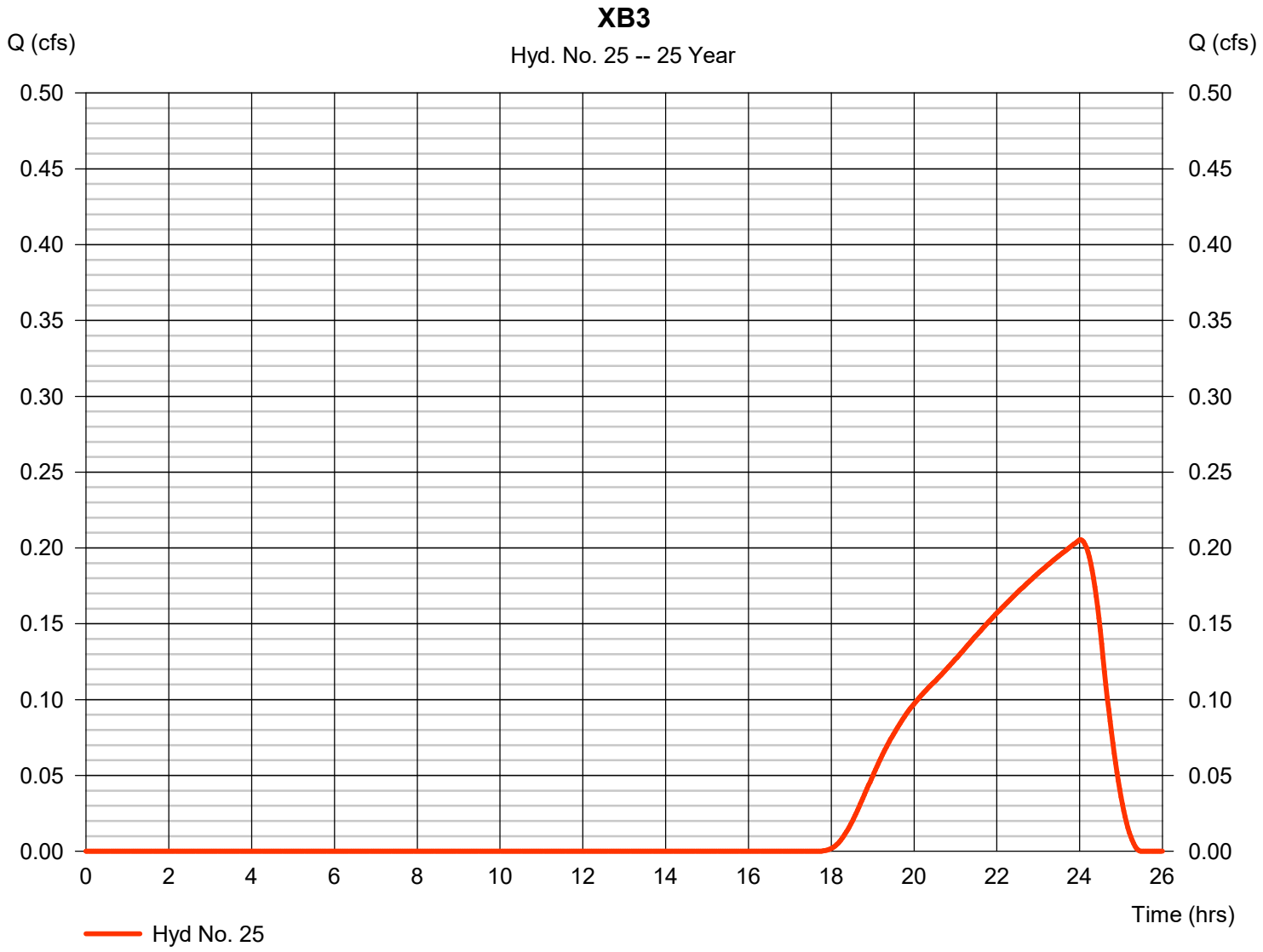
Hydrograph Report

Hyd. No. 25

XB3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.205 cfs
Storm frequency	=	25 yrs	Time to peak	=	24.03 hrs
Time interval	=	2 min	Hyd. volume	=	3,091 cuft
Drainage area	=	302.900 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	56.10 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(302.900 x 55)] / 302.900



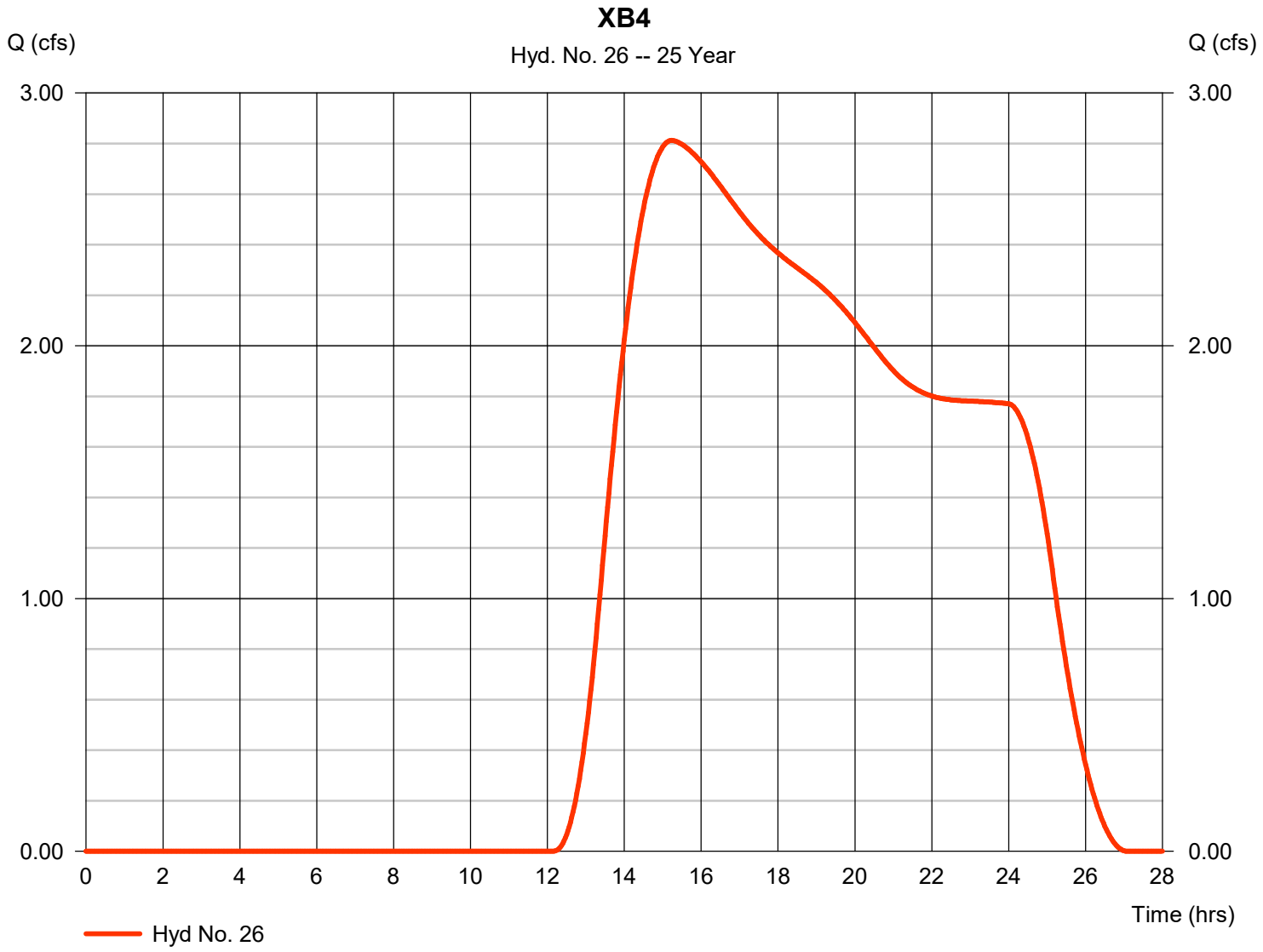
Hydrograph Report

Hyd. No. 26

XB4

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.813 cfs
Storm frequency	=	25 yrs	Time to peak	=	15.23 hrs
Time interval	=	2 min	Hyd. volume	=	93,896 cuft
Drainage area	=	545.900 ac	Curve number	=	62*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	117.20 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(224.200 x 55) + (173.700 x 55) + (147.000 x 81) + (0.800 x 81) + (0.200 x 81)] / 545.900

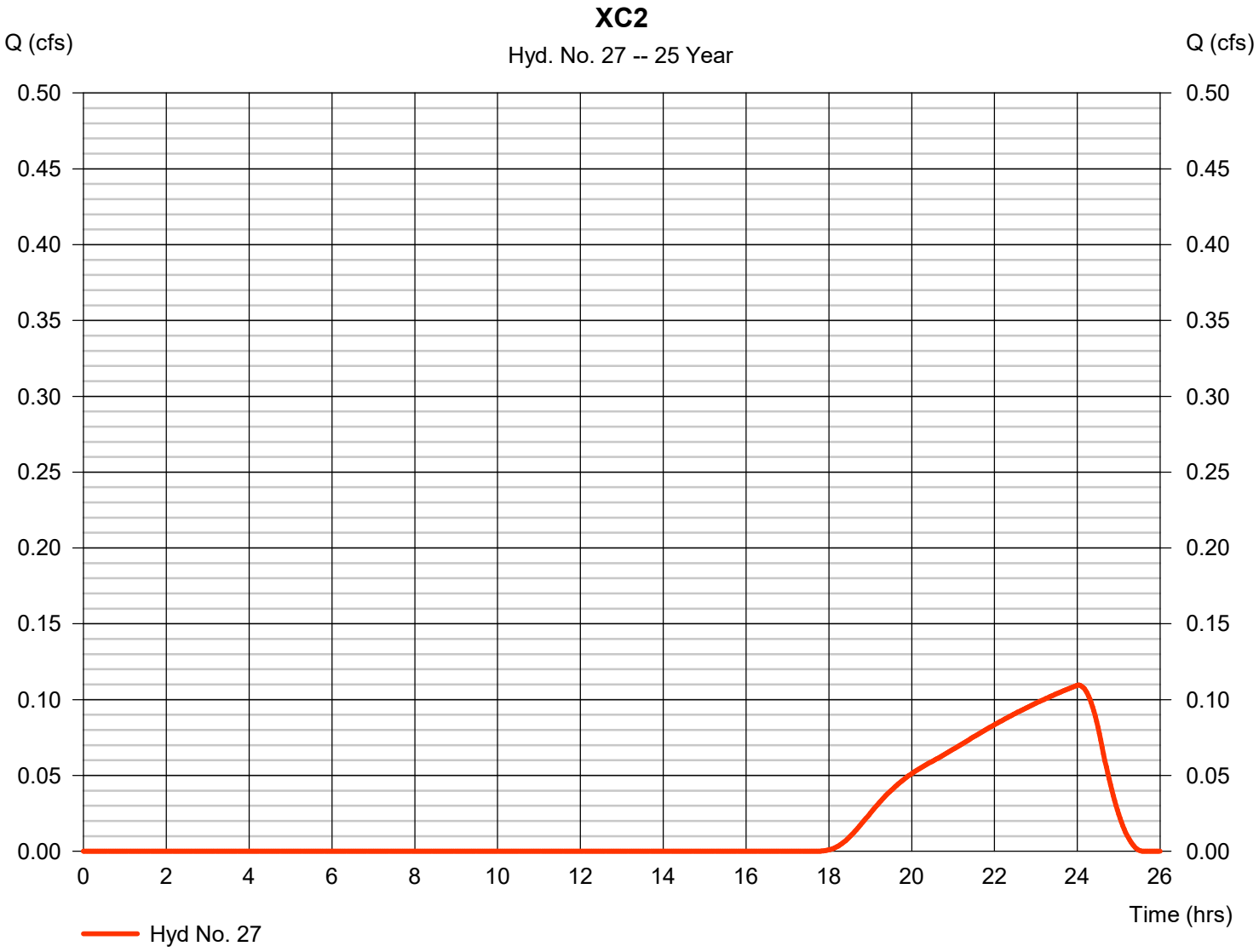


Hydrograph Report

Hyd. No. 27

XC2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.110 cfs
Storm frequency	=	25 yrs	Time to peak	=	24.03 hrs
Time interval	=	2 min	Hyd. volume	=	1,656 cuft
Drainage area	=	161.100 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	57.80 min
Total precip.	=	1.79 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

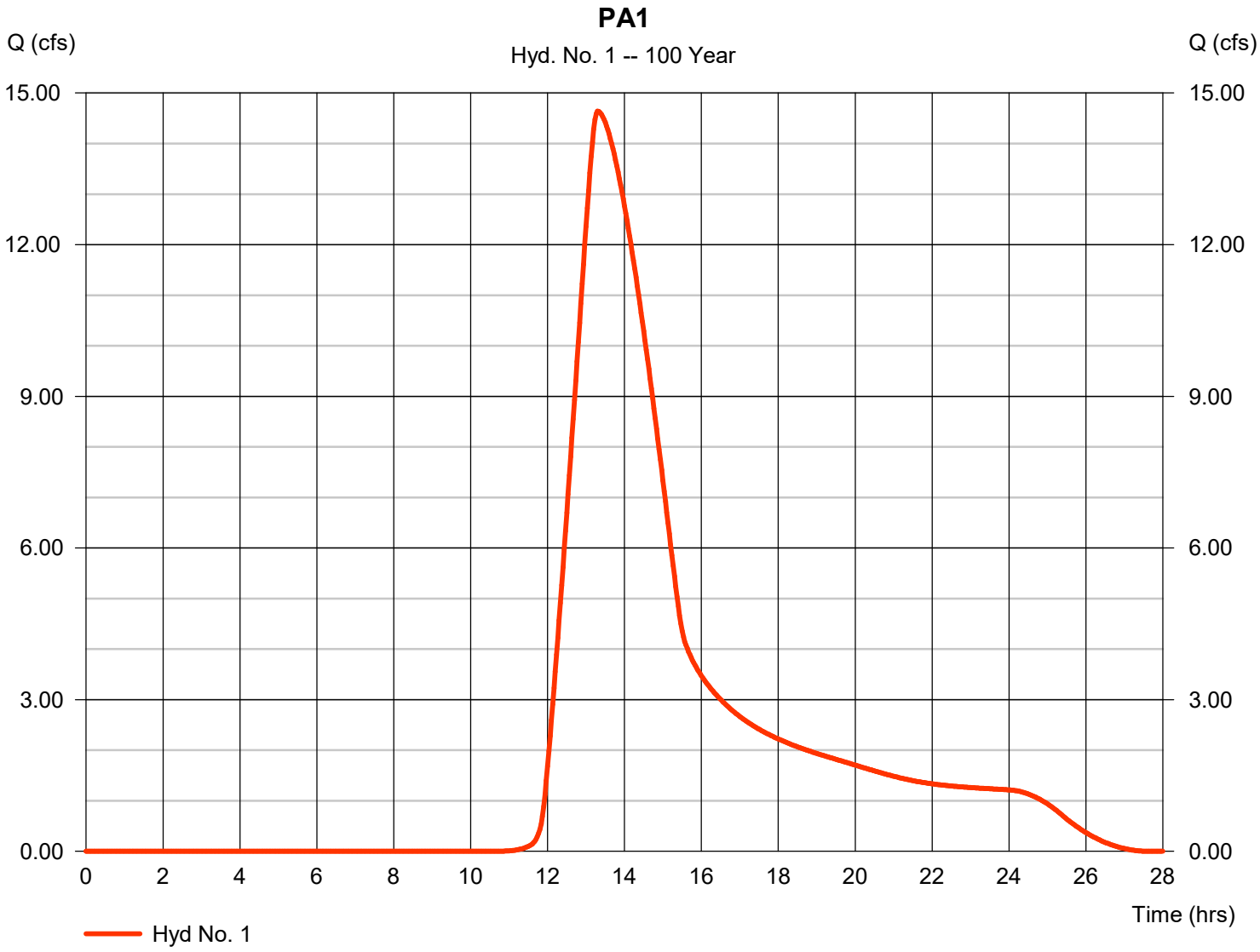
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Tuesday, 01 / 25 / 2022

Hyd. No. 1

PA1

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.64 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.30 hrs
Time interval	=	2 min	Hyd. volume	=	190,065 cuft
Drainage area	=	66.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	137.10 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(66.000 x 63)] / 66.000



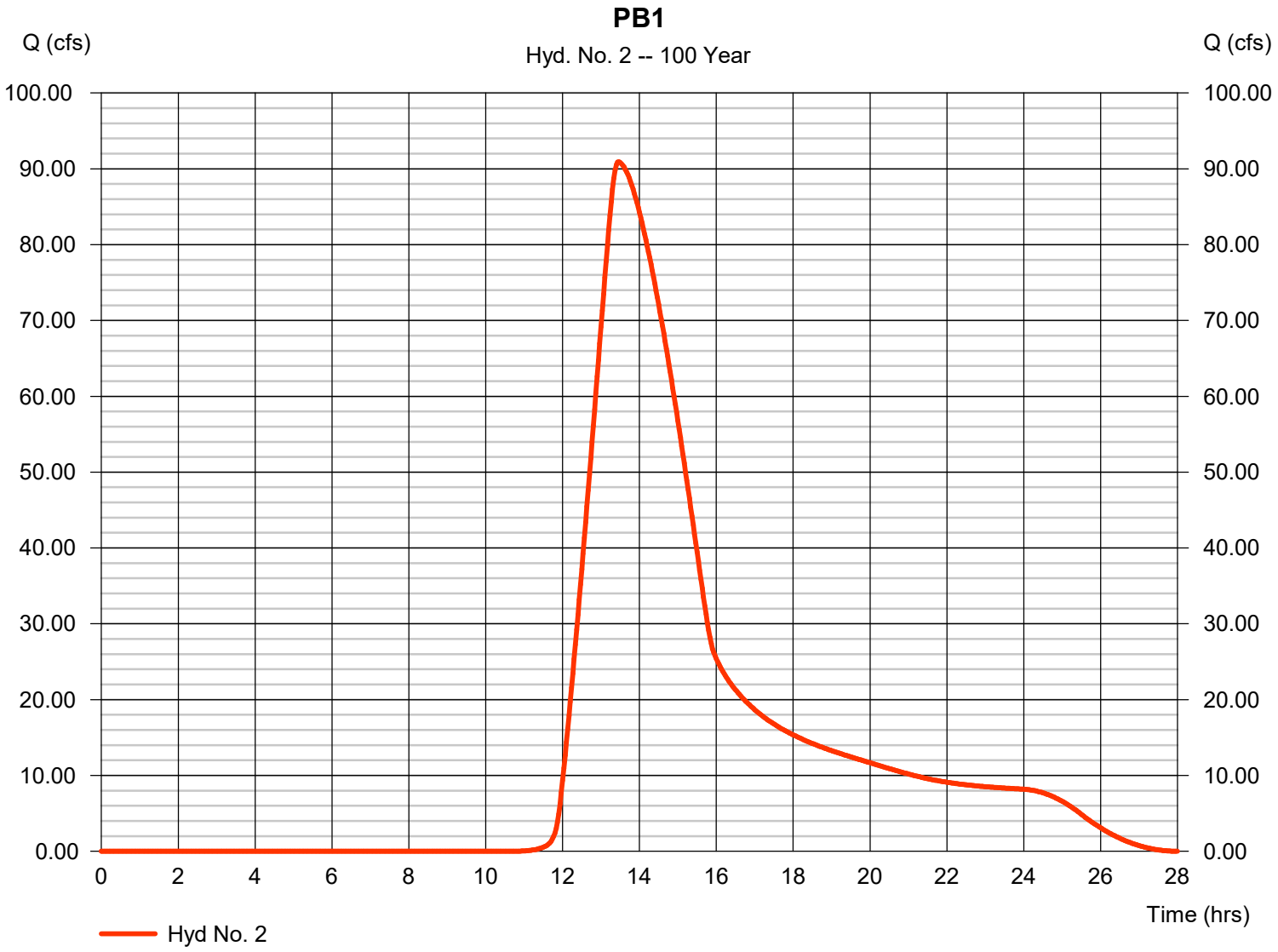
Hydrograph Report

Hyd. No. 2

PB1

Hydrograph type	=	SCS Runoff	Peak discharge	=	90.91 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.47 hrs
Time interval	=	2 min	Hyd. volume	=	1,272,999 cuft
Drainage area	=	440.700 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	150.30 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(211.500 x 98) + (229.300 x 63)] / 440.700



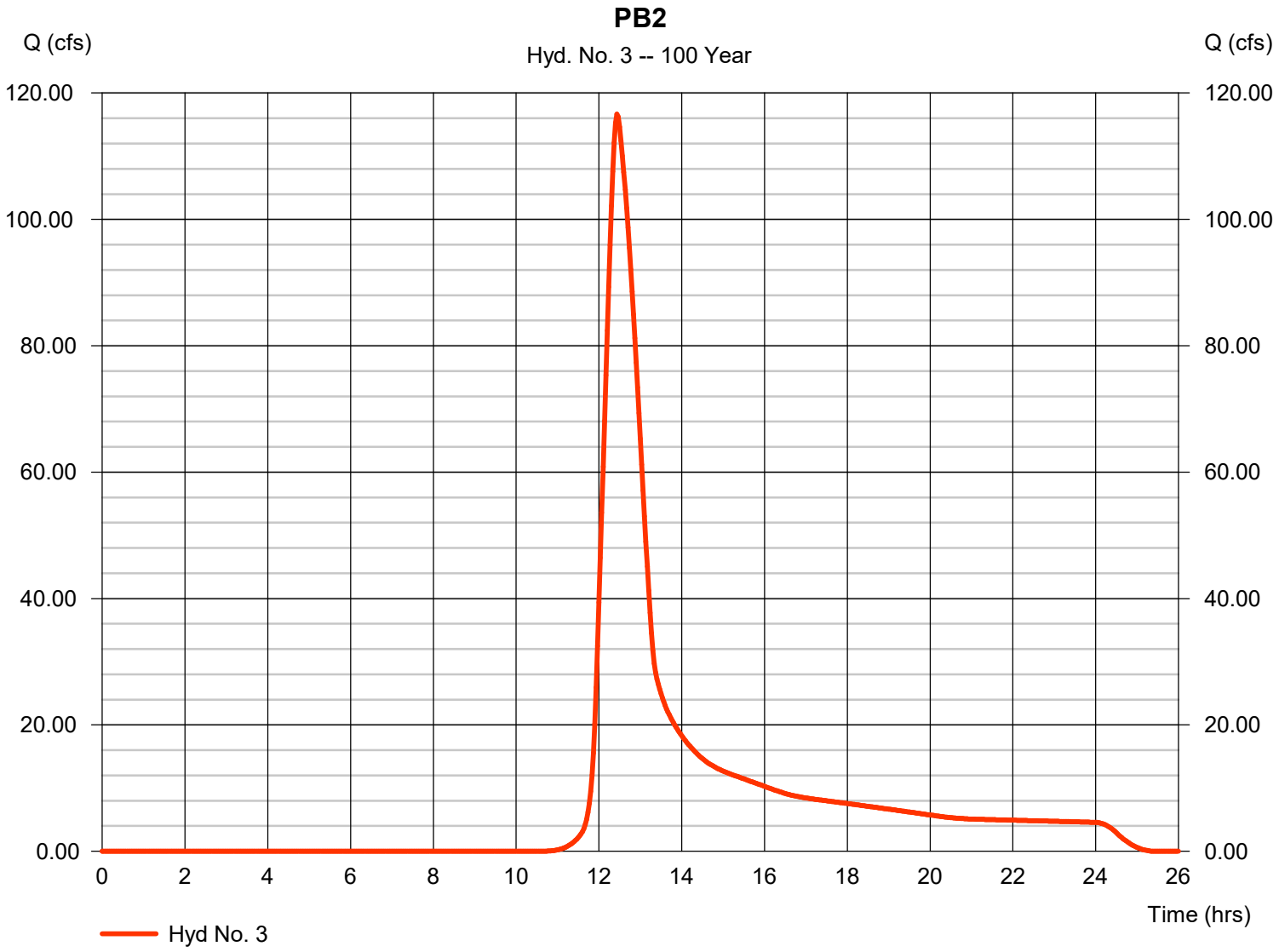
Hydrograph Report

Hyd. No. 3

PB2

Hydrograph type	=	SCS Runoff	Peak discharge	=	116.66 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.43 hrs
Time interval	=	2 min	Hyd. volume	=	743,217 cuft
Drainage area	=	255.300 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	51.20 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(162.900 x 98) + (92.400 x 63)] / 255.300



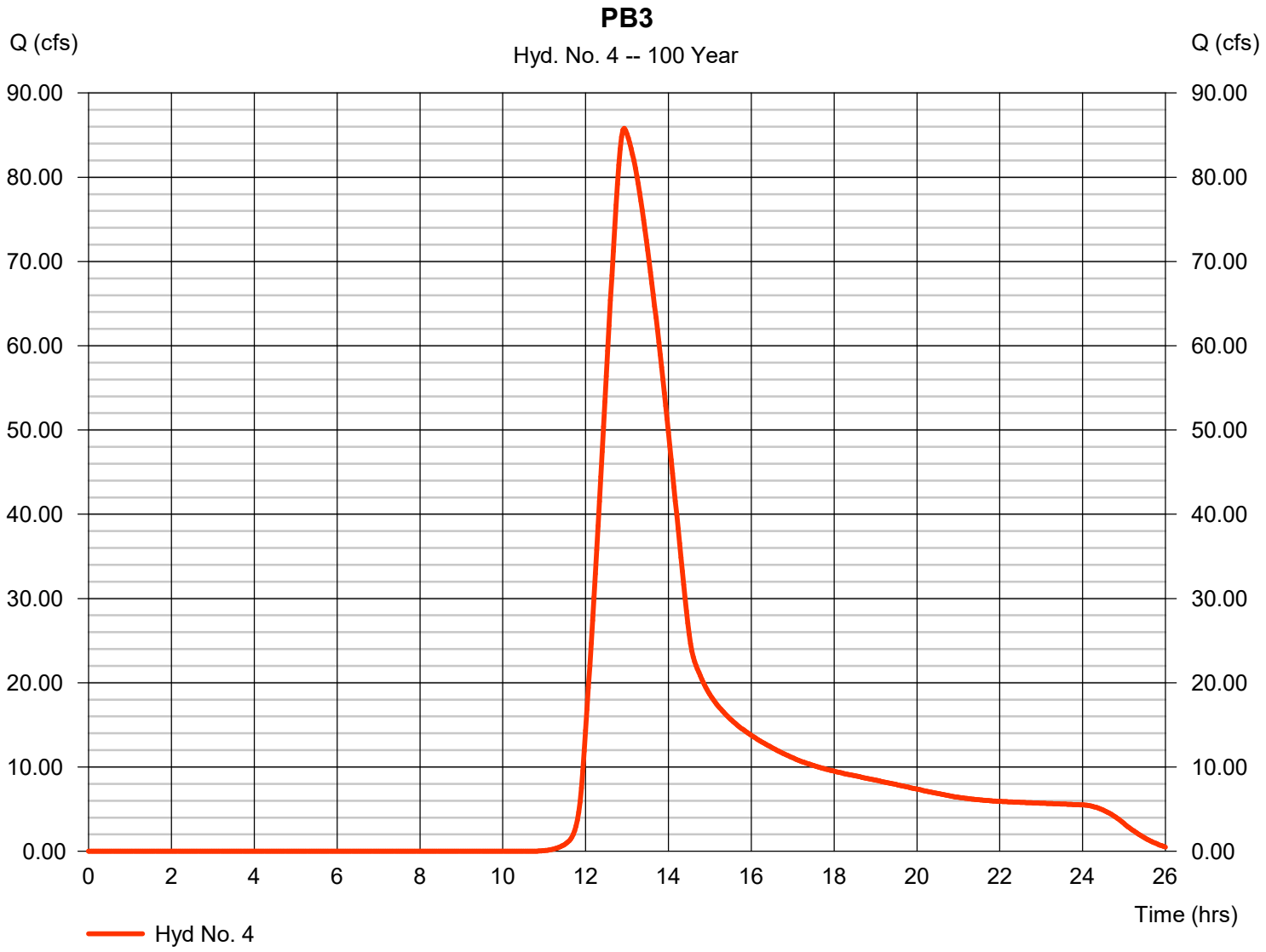
Hydrograph Report

Hyd. No. 4

PB3

Hydrograph type	=	SCS Runoff	Peak discharge	=	85.80 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.93 hrs
Time interval	=	2 min	Hyd. volume	=	875,241 cuft
Drainage area	=	303.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	99.90 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(136.200 x 98) + (166.800 x 63)] / 303.000



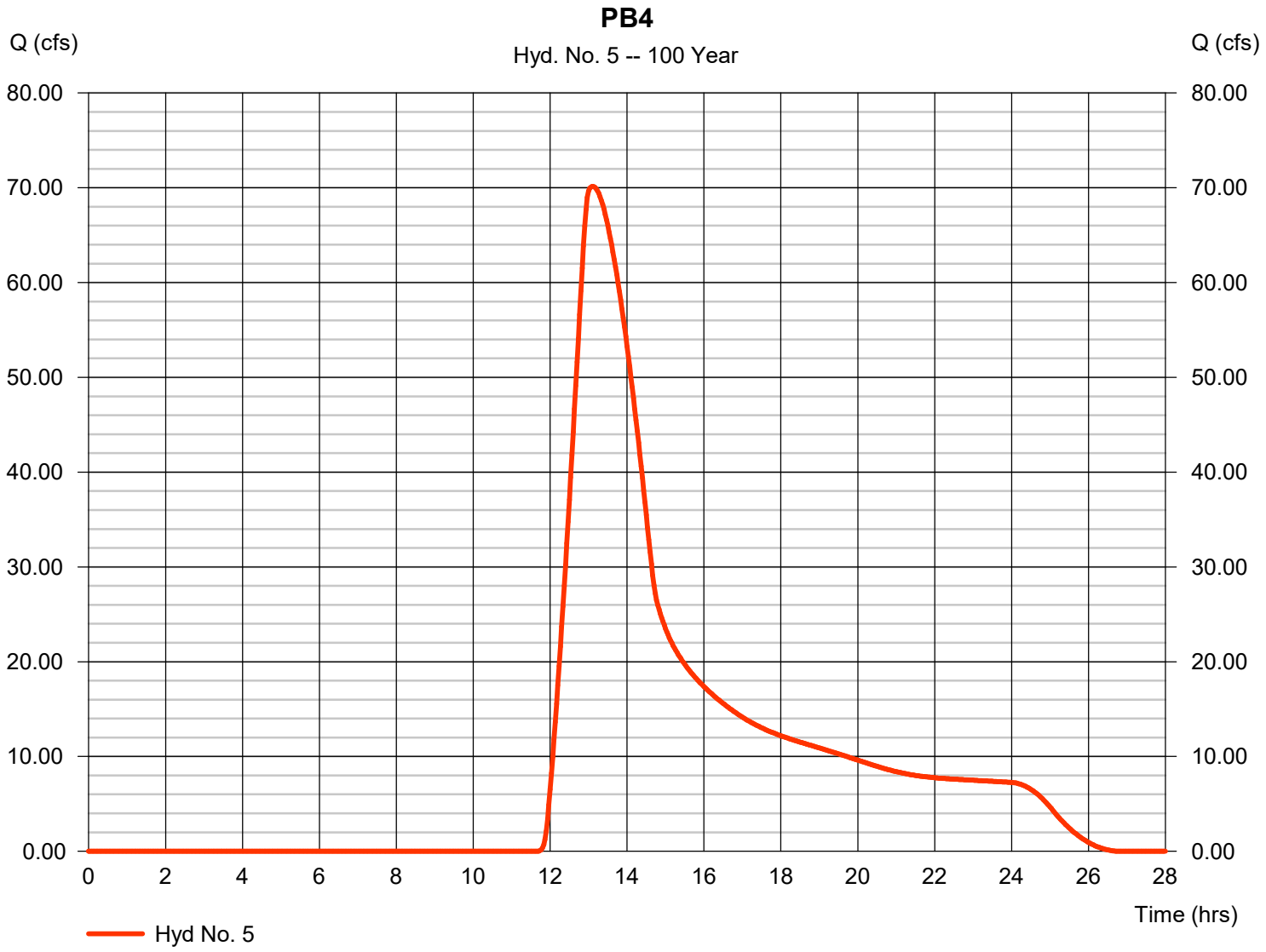
Hydrograph Report

Hyd. No. 5

PB4

Hydrograph type	=	SCS Runoff	Peak discharge	=	70.15 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.10 hrs
Time interval	=	2 min	Hyd. volume	=	903,601 cuft
Drainage area	=	545.800 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	108.30 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(93.800 x 98) + (131.300 x 63) + (173.700 x 55) + (147.000 x 81)] / 545.800

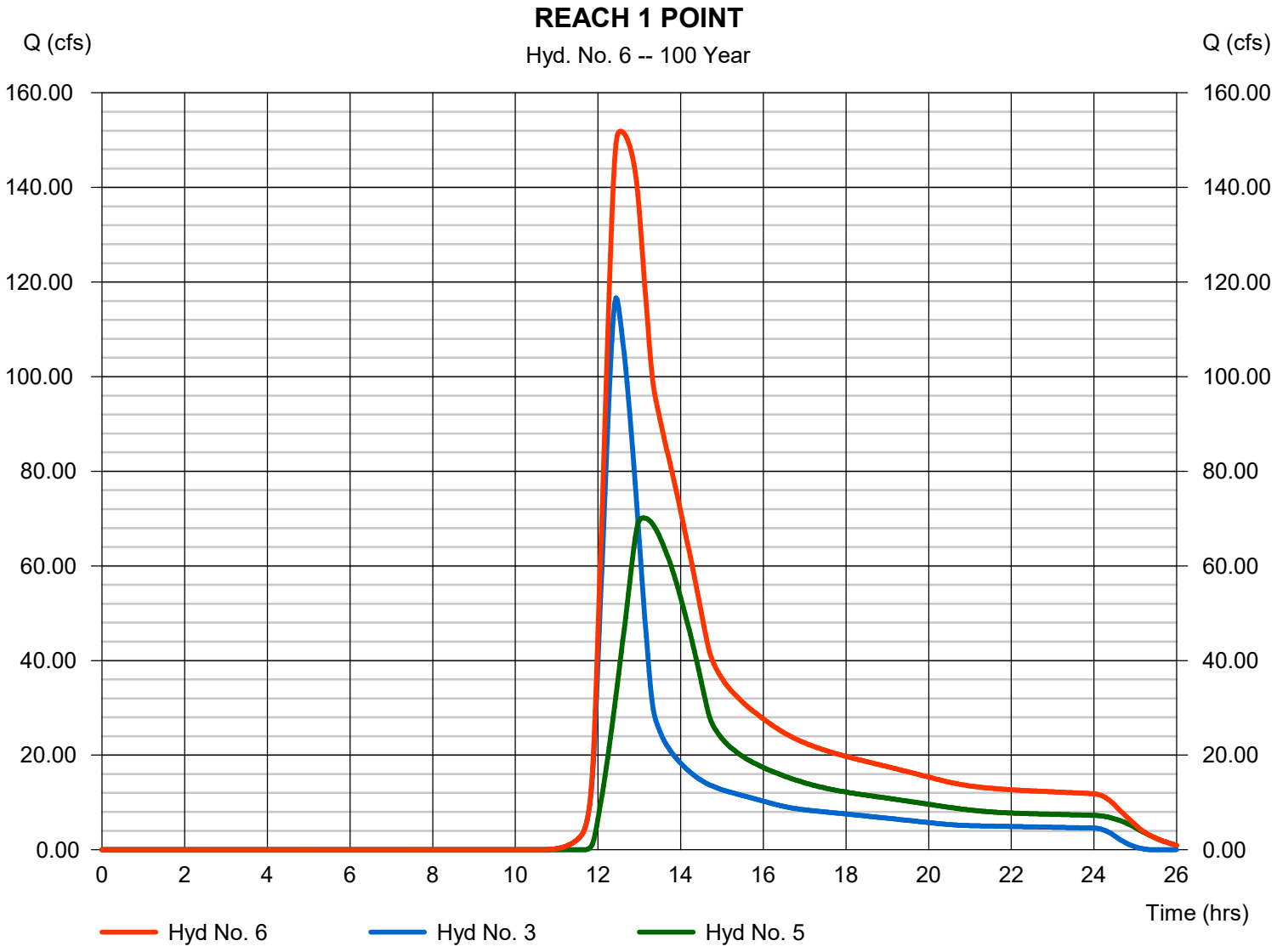


Hydrograph Report

Hyd. No. 6

REACH 1 POINT

Hydrograph type	= Combine	Peak discharge	= 151.86 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.53 hrs
Time interval	= 2 min	Hyd. volume	= 1,646,817 cuft
Inflow hyds.	= 3, 5	Contrib. drain. area	= 801.100 ac



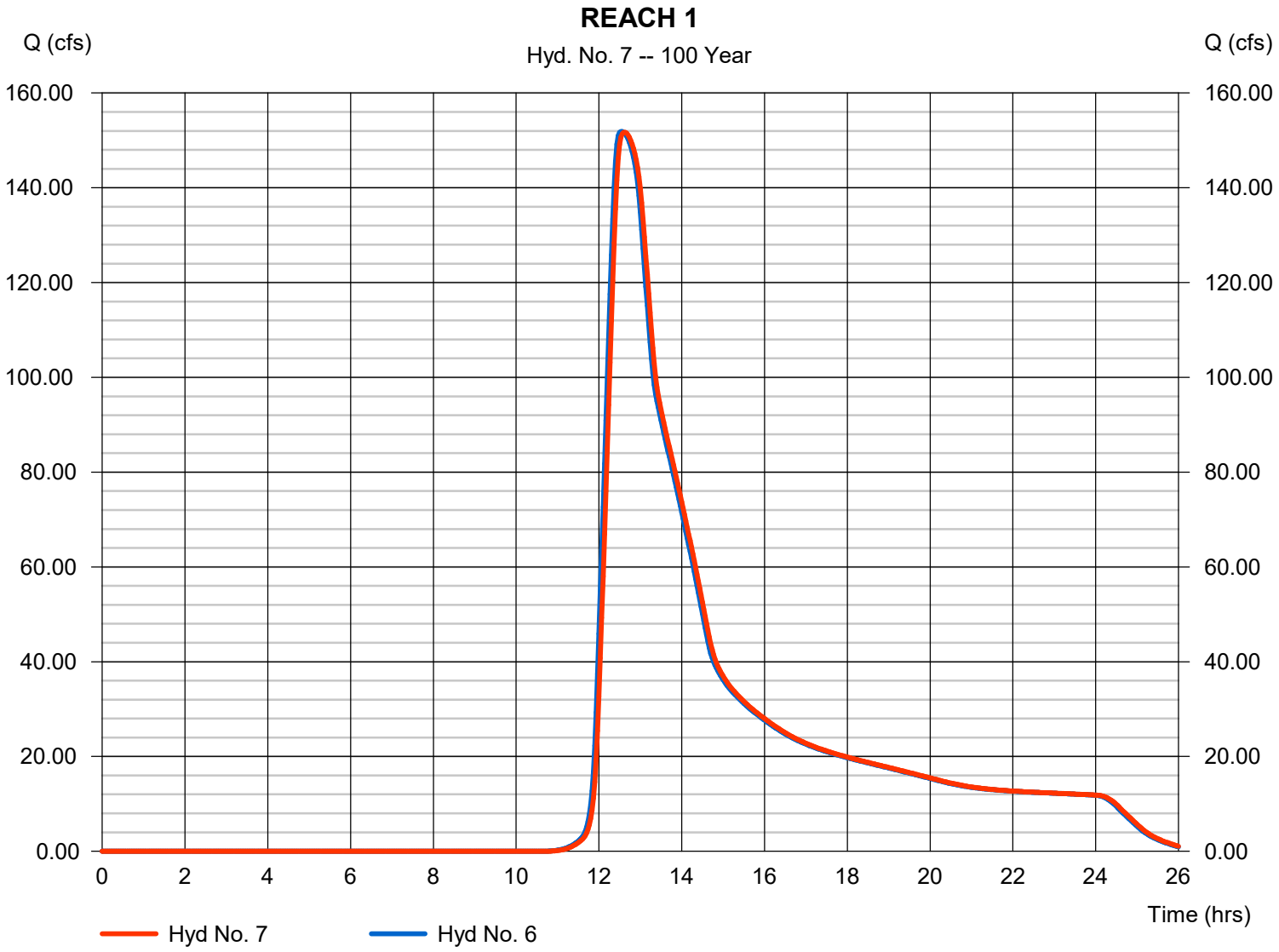
Hydrograph Report

Hyd. No. 7

REACH 1

Hydrograph type	=	Reach	Peak discharge	=	151.69 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.63 hrs
Time interval	=	2 min	Hyd. volume	=	1,646,817 cuft
Inflow hyd. No.	=	6 - REACH 1 POINT	Section type	=	Circular
Reach length	=	1318.0 ft	Channel slope	=	0.4 %
Manning's n	=	0.013	Bottom width	=	5.0 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	5.115	Rating curve m	=	1.250
Ave. velocity	=	7.73 ft/s	Routing coeff.	=	0.6112

Modified Att-Kin routing method used.



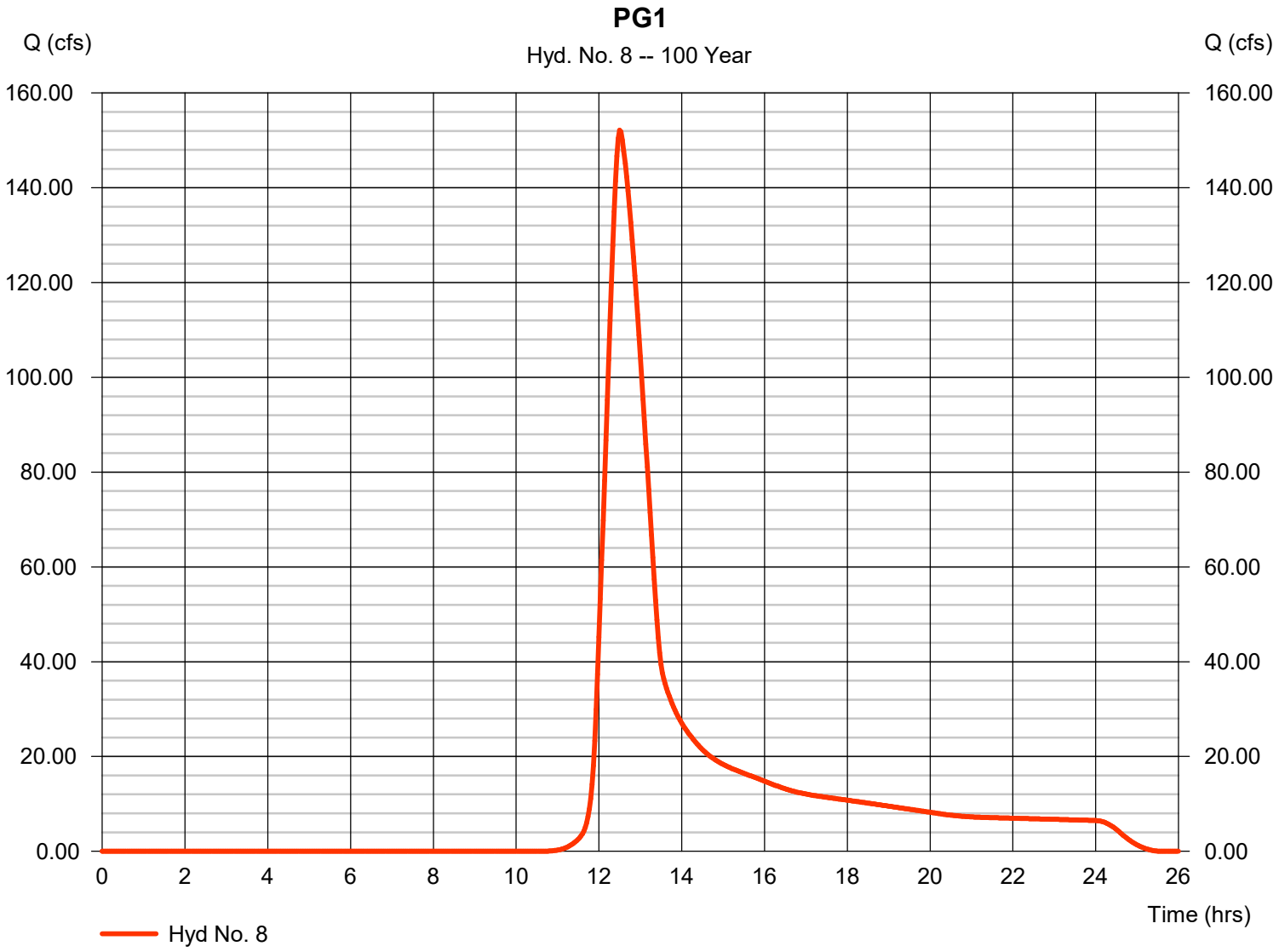
Hydrograph Report

Hyd. No. 8

PG1

Hydrograph type	=	SCS Runoff	Peak discharge	=	152.12 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.50 hrs
Time interval	=	2 min	Hyd. volume	=	1,051,156 cuft
Drainage area	=	363.900 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	59.50 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(132.600 x 98) + (231.300 x 63)] / 363.900



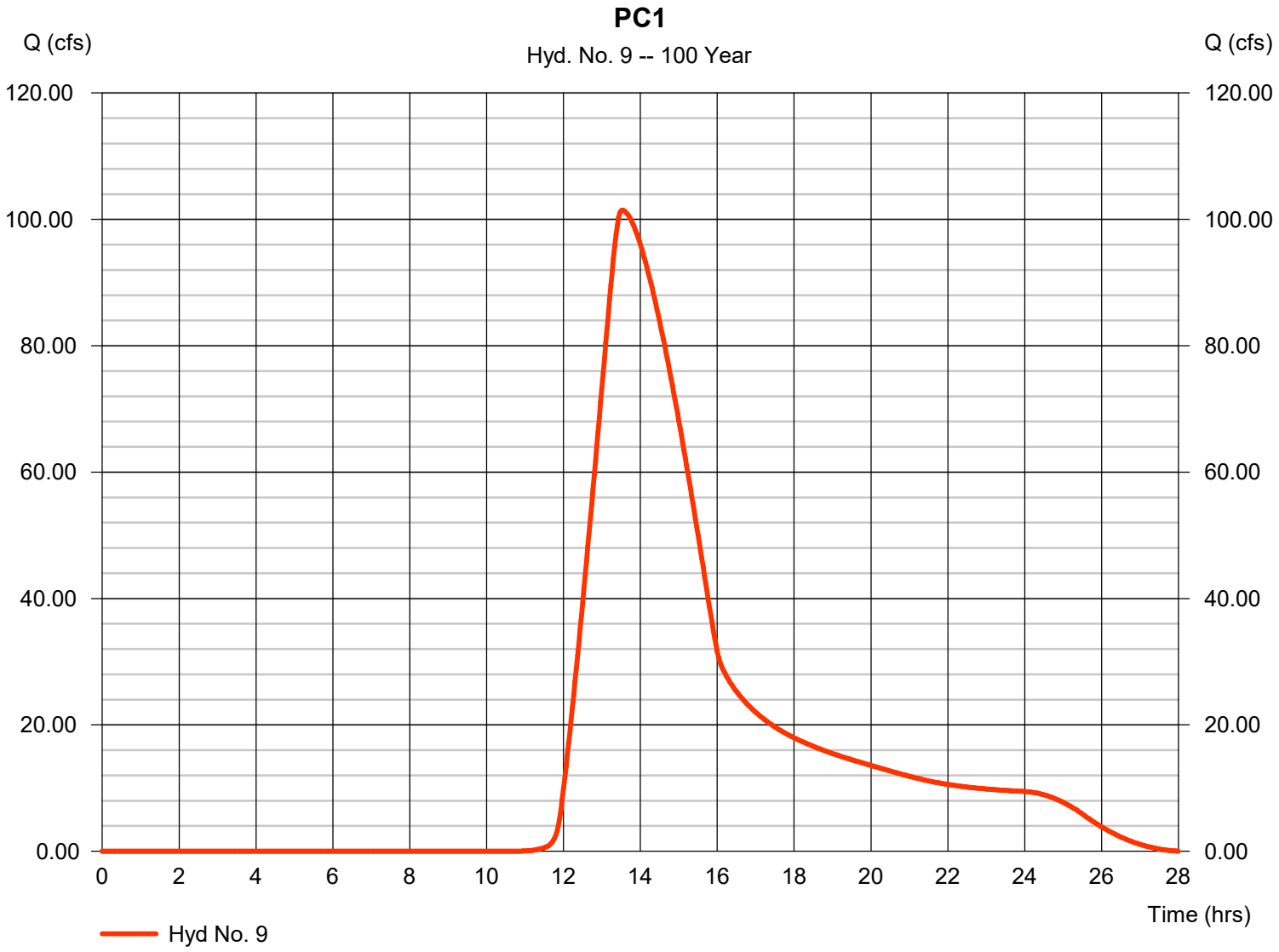
Hydrograph Report

Hyd. No. 9

PC1

Hydrograph type	=	SCS Runoff	Peak discharge	=	101.46 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.53 hrs
Time interval	=	2 min	Hyd. volume	=	1,466,379 cuft
Drainage area	=	509.000 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	156.50 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(423.800 x 98) + (85.200 x 63)] / 509.000



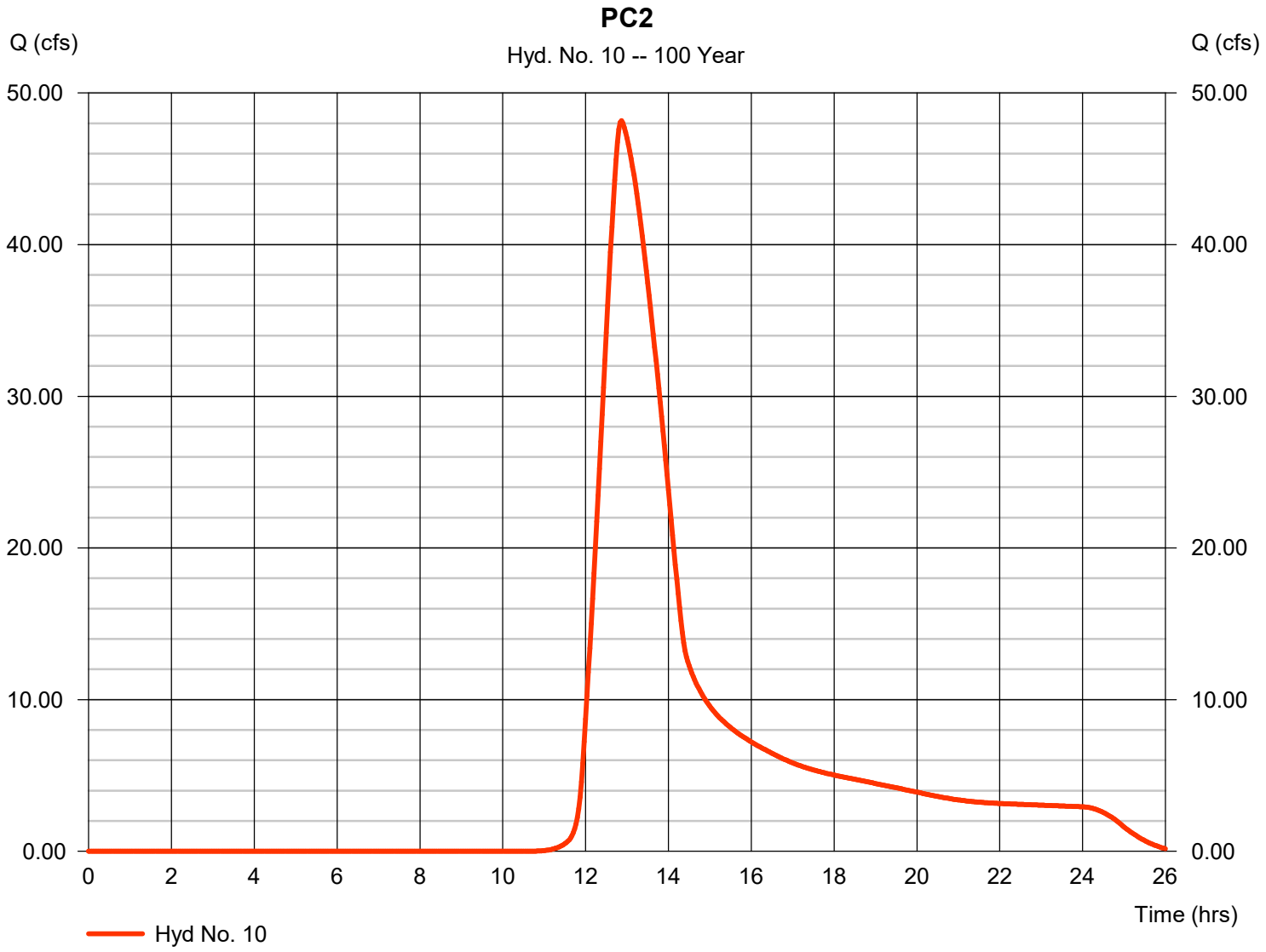
Hydrograph Report

Hyd. No. 10

PC2

Hydrograph type	=	SCS Runoff	Peak discharge	=	48.17 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.87 hrs
Time interval	=	2 min	Hyd. volume	=	467,718 cuft
Drainage area	=	161.200 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	92.10 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(152.700 x 98) + (8.500 x 63)] / 161.200



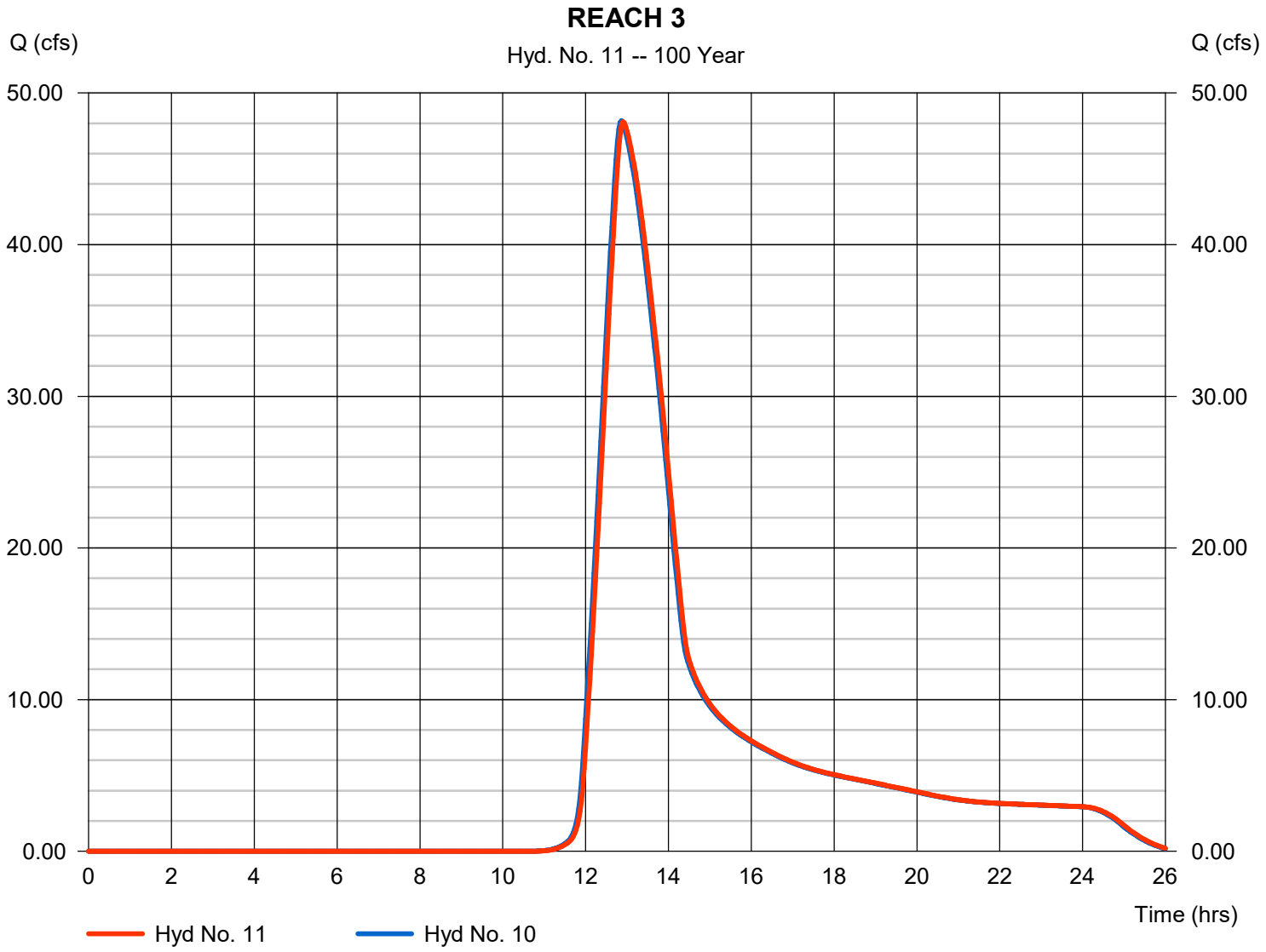
Hydrograph Report

Hyd. No. 11

REACH 3

Hydrograph type	=	Reach	Peak discharge	=	48.10 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.90 hrs
Time interval	=	2 min	Hyd. volume	=	467,717 cuft
Inflow hyd. No.	=	10 - PC2	Section type	=	Circular
Reach length	=	1197.0 ft	Channel slope	=	0.5 %
Manning's n	=	0.013	Bottom width	=	2.5 ft
Side slope	=	0.0:1	Max. depth	=	0.0 ft
Rating curve x	=	5.095	Rating curve m	=	1.250
Ave. velocity	=	9.81 ft/s	Routing coeff.	=	0.7615

Modified Att-Kin routing method used.

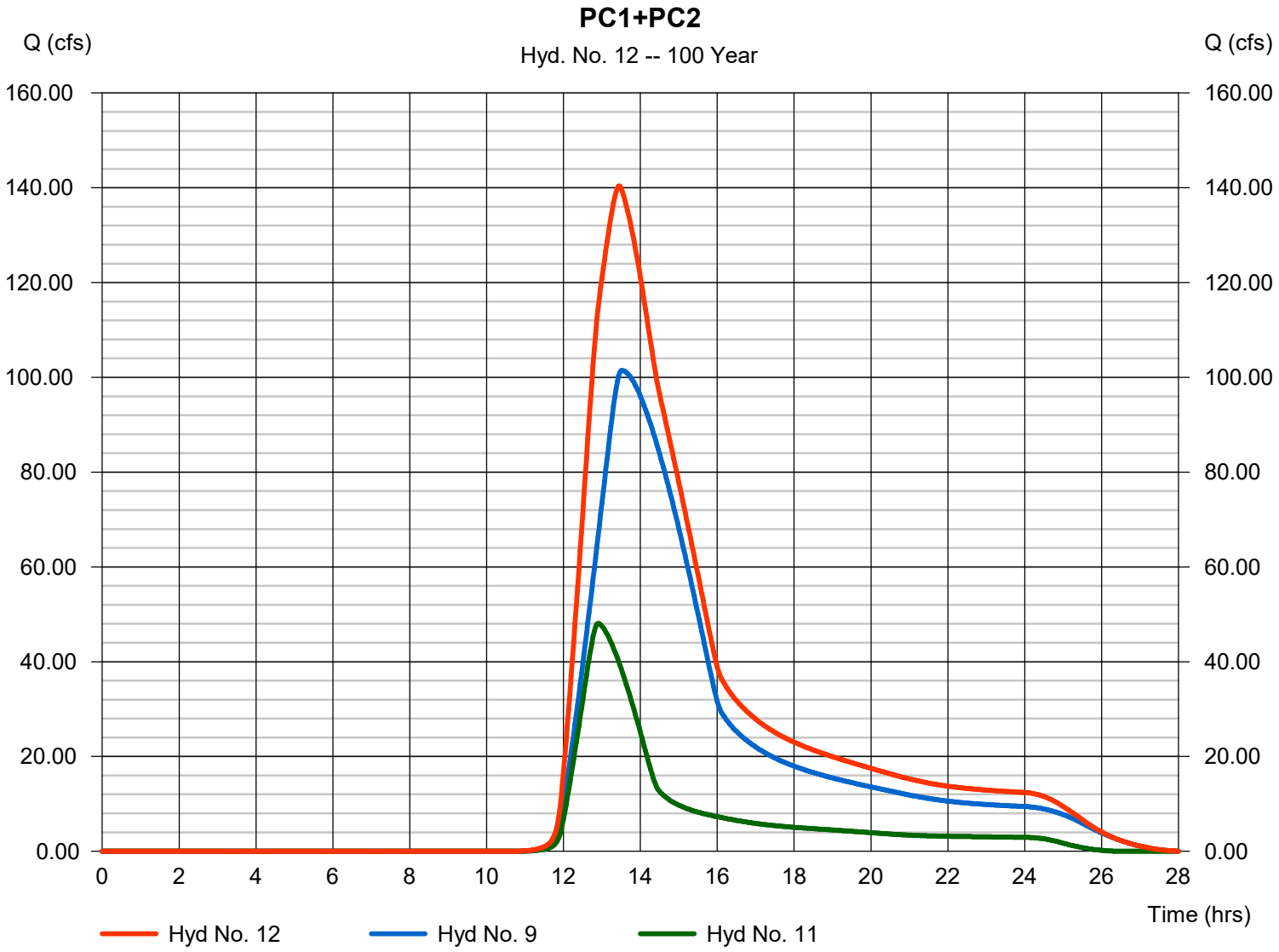


Hydrograph Report

Hyd. No. 12

PC1+PC2

Hydrograph type	=	Combine	Peak discharge	=	140.36 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.47 hrs
Time interval	=	2 min	Hyd. volume	=	1,934,096 cuft
Inflow hyds.	=	9, 11	Contrib. drain. area	=	509.000 ac



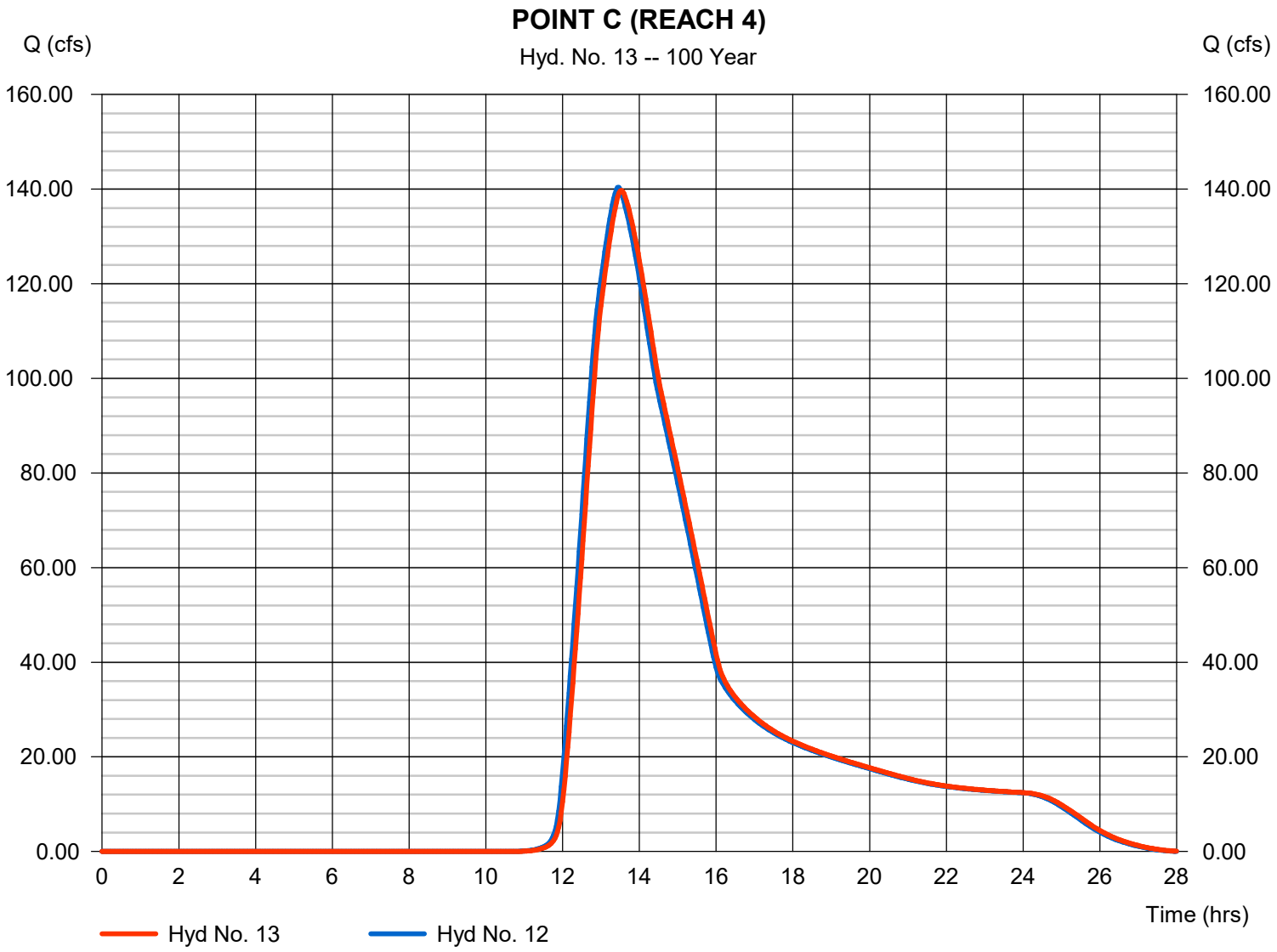
Hydrograph Report

Hyd. No. 13

POINT C (REACH 4)

Hydrograph type	=	Reach	Peak discharge	=	139.76 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.53 hrs
Time interval	=	2 min	Hyd. volume	=	1,934,095 cuft
Inflow hyd. No.	=	12 - PC1+PC2	Section type	=	Trapezoidal
Reach length	=	1010.0 ft	Channel slope	=	0.5 %
Manning's n	=	0.035	Bottom width	=	9.0 ft
Side slope	=	3.0:1	Max. depth	=	3.5 ft
Rating curve x	=	0.695	Rating curve m	=	1.394
Ave. velocity	=	0.00 ft/s	Routing coeff.	=	0.4106

Modified Att-Kin routing method used.



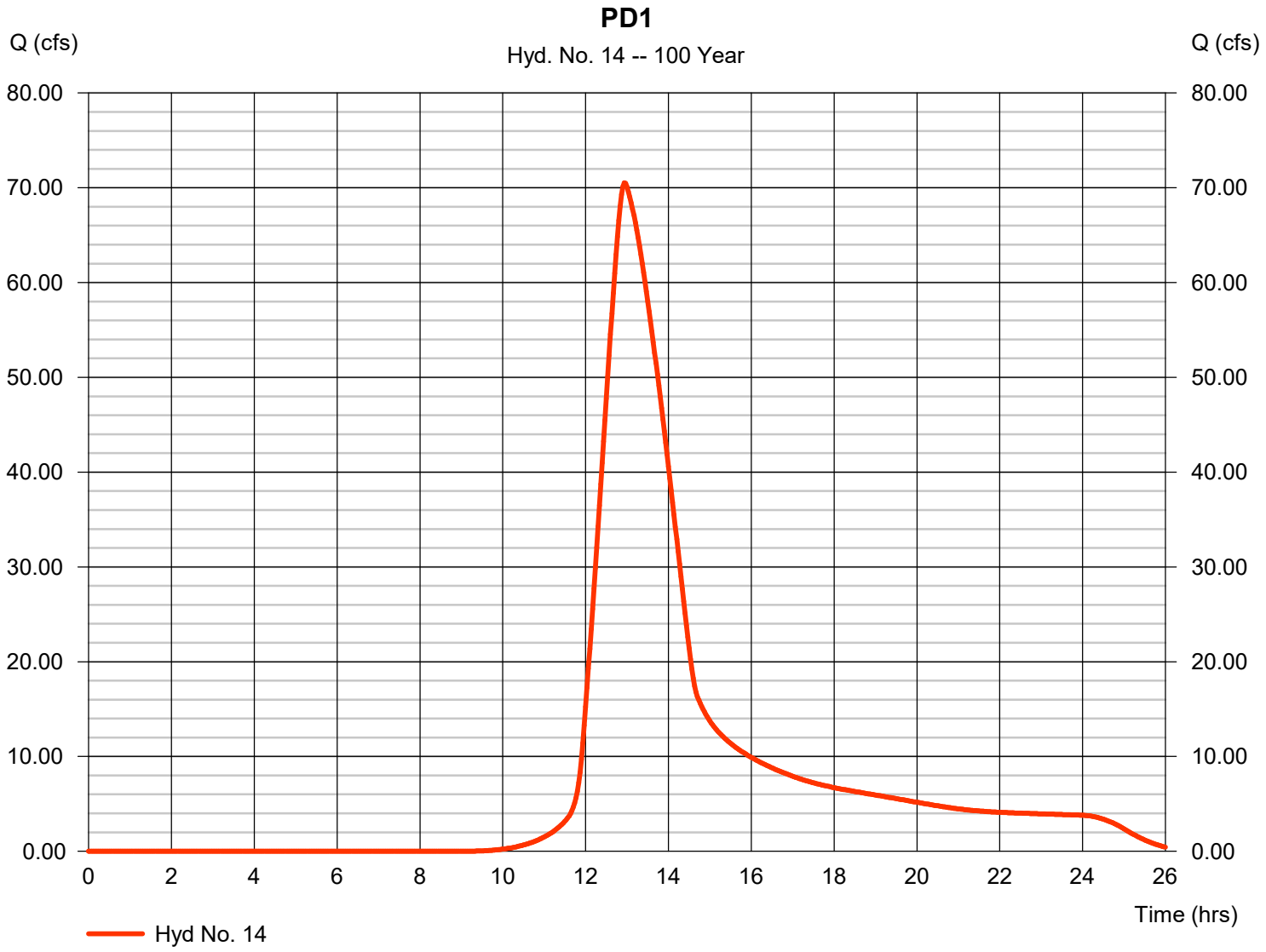
Hydrograph Report

Hyd. No. 14

PD1

Hydrograph type	=	SCS Runoff	Peak discharge	=	70.52 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.93 hrs
Time interval	=	2 min	Hyd. volume	=	698,068 cuft
Drainage area	=	178.300 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	104.50 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(92.300 x 81) + (80.000 x 91) + (5.800 x 93)] / 178.300



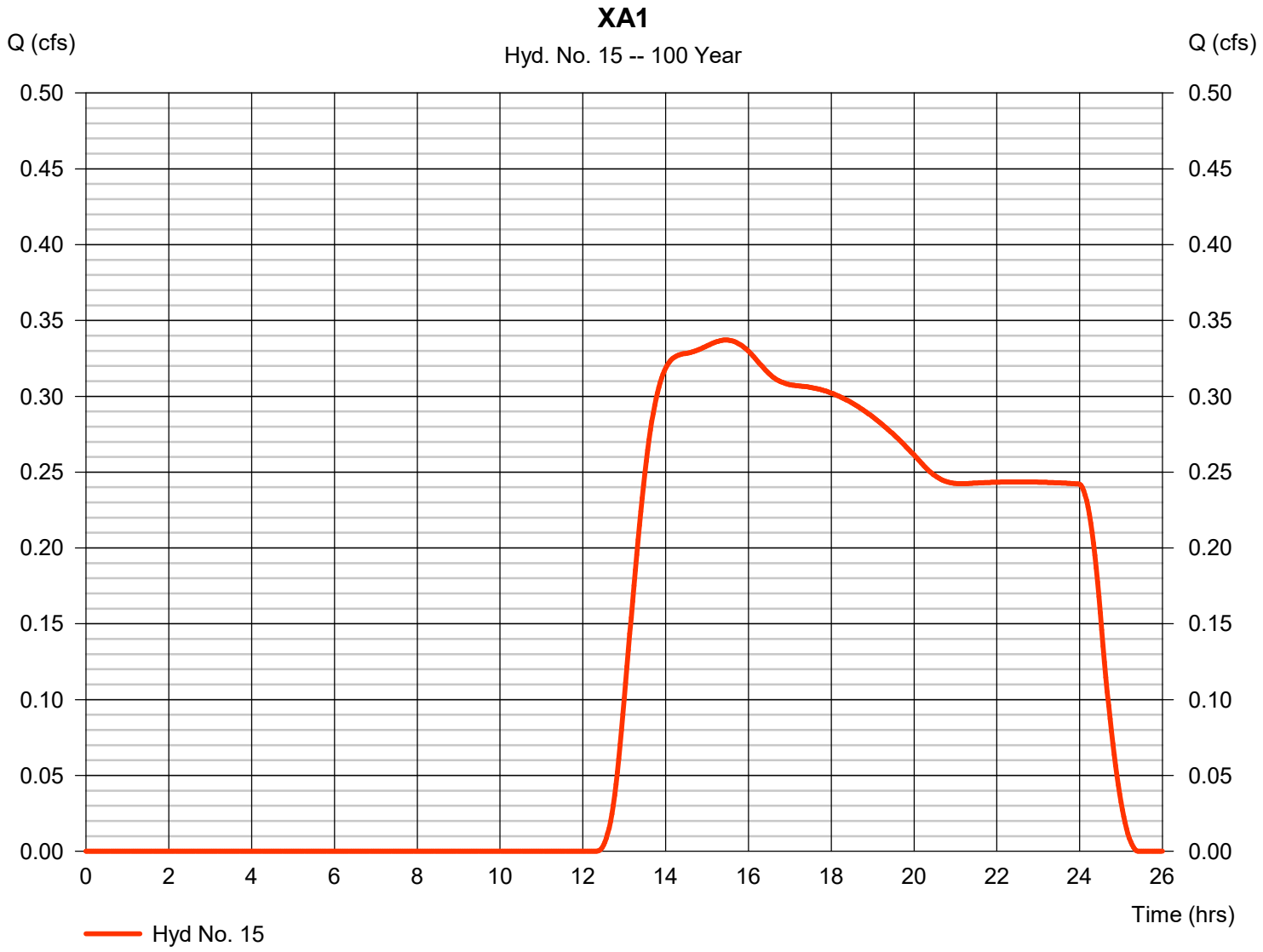
Hydrograph Report

Hyd. No. 15

XA1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.337 cfs
Storm frequency	=	100 yrs	Time to peak	=	15.47 hrs
Time interval	=	2 min	Hyd. volume	=	11,675 cuft
Drainage area	=	66.000 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	52.60 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(66.000 x 55)] / 66.000



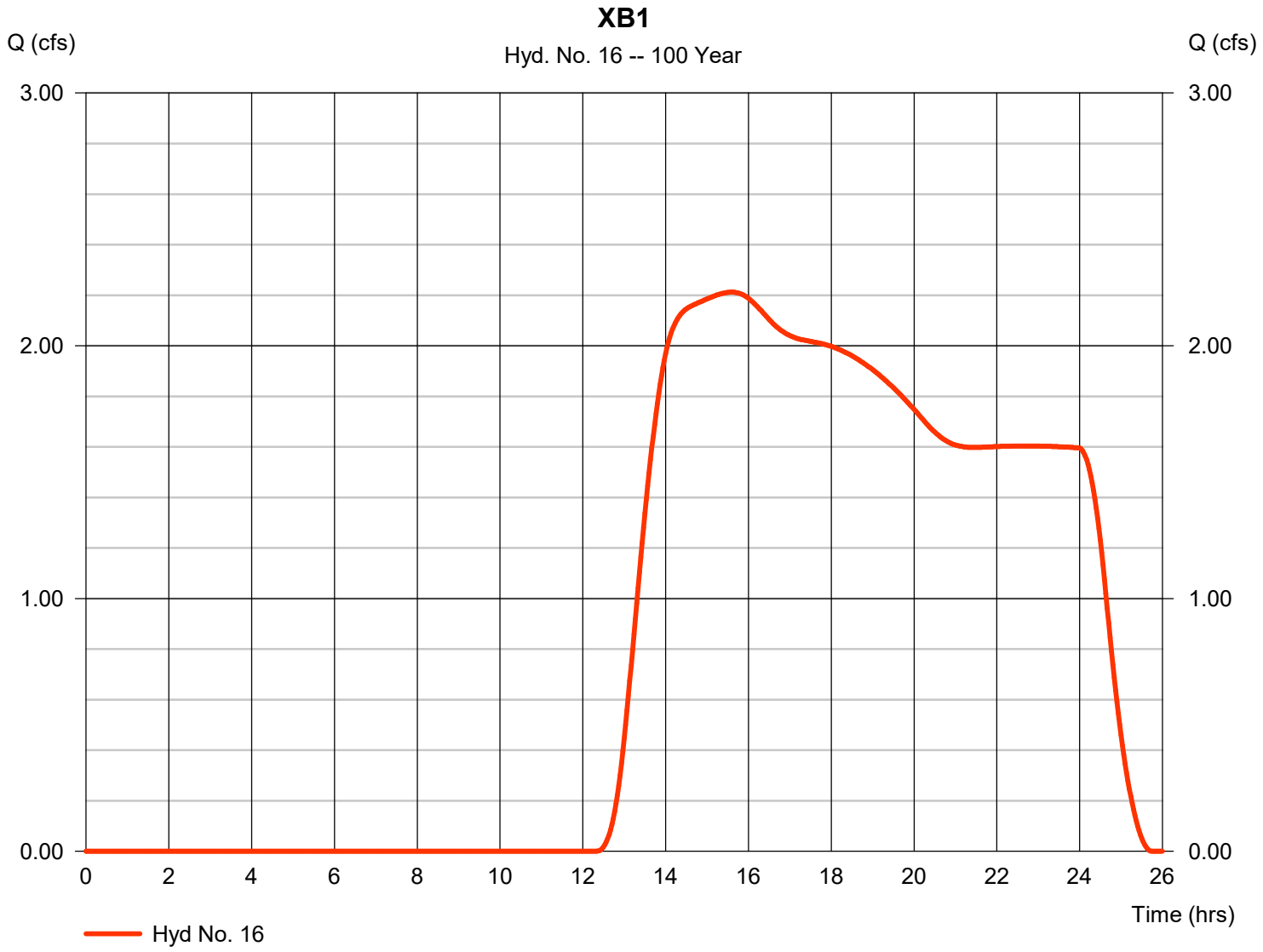
Hydrograph Report

Hyd. No. 16

XB1

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.212 cfs
Storm frequency	=	100 yrs	Time to peak	=	15.60 hrs
Time interval	=	2 min	Hyd. volume	=	76,870 cuft
Drainage area	=	440.700 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	64.80 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(440.700 x 55)] / 440.700



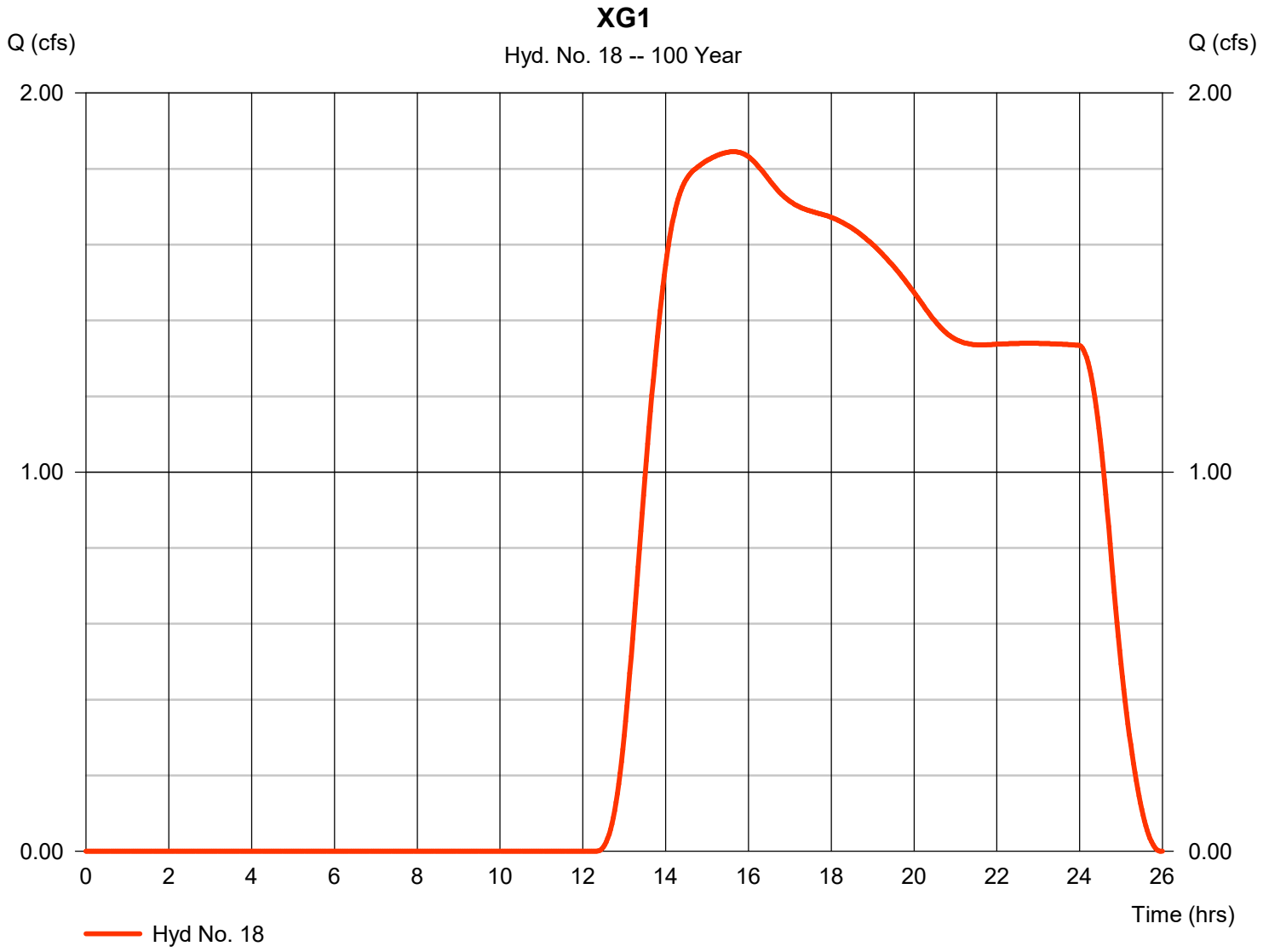
Hydrograph Report

Hyd. No. 18

XG1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.845 cfs
Storm frequency	=	100 yrs	Time to peak	=	15.63 hrs
Time interval	=	2 min	Hyd. volume	=	64,236 cuft
Drainage area	=	363.900 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	71.10 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(4.600 x 81) + (1.100 x 81) + (358.200 x 55)] / 363.900



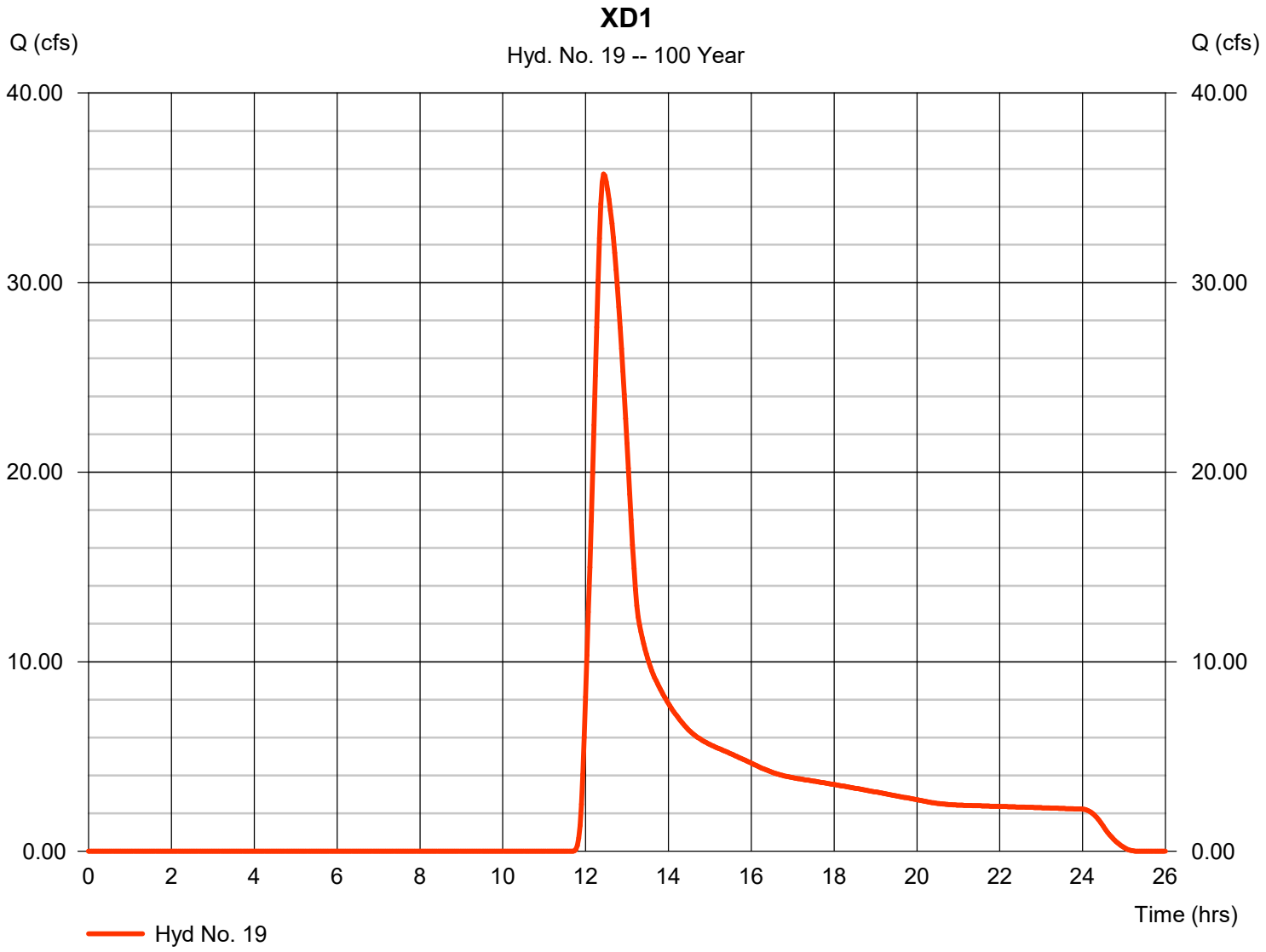
Hydrograph Report

Hyd. No. 19

XD1

Hydrograph type	=	SCS Runoff	Peak discharge	=	35.72 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.43 hrs
Time interval	=	2 min	Hyd. volume	=	273,562 cuft
Drainage area	=	178.000 ac	Curve number	=	72*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	50.10 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(24.800 x 81) + (6.200 x 81) + (62.000 x 55) + (80.000 x 81) + (5.000 x 86)] / 178.000



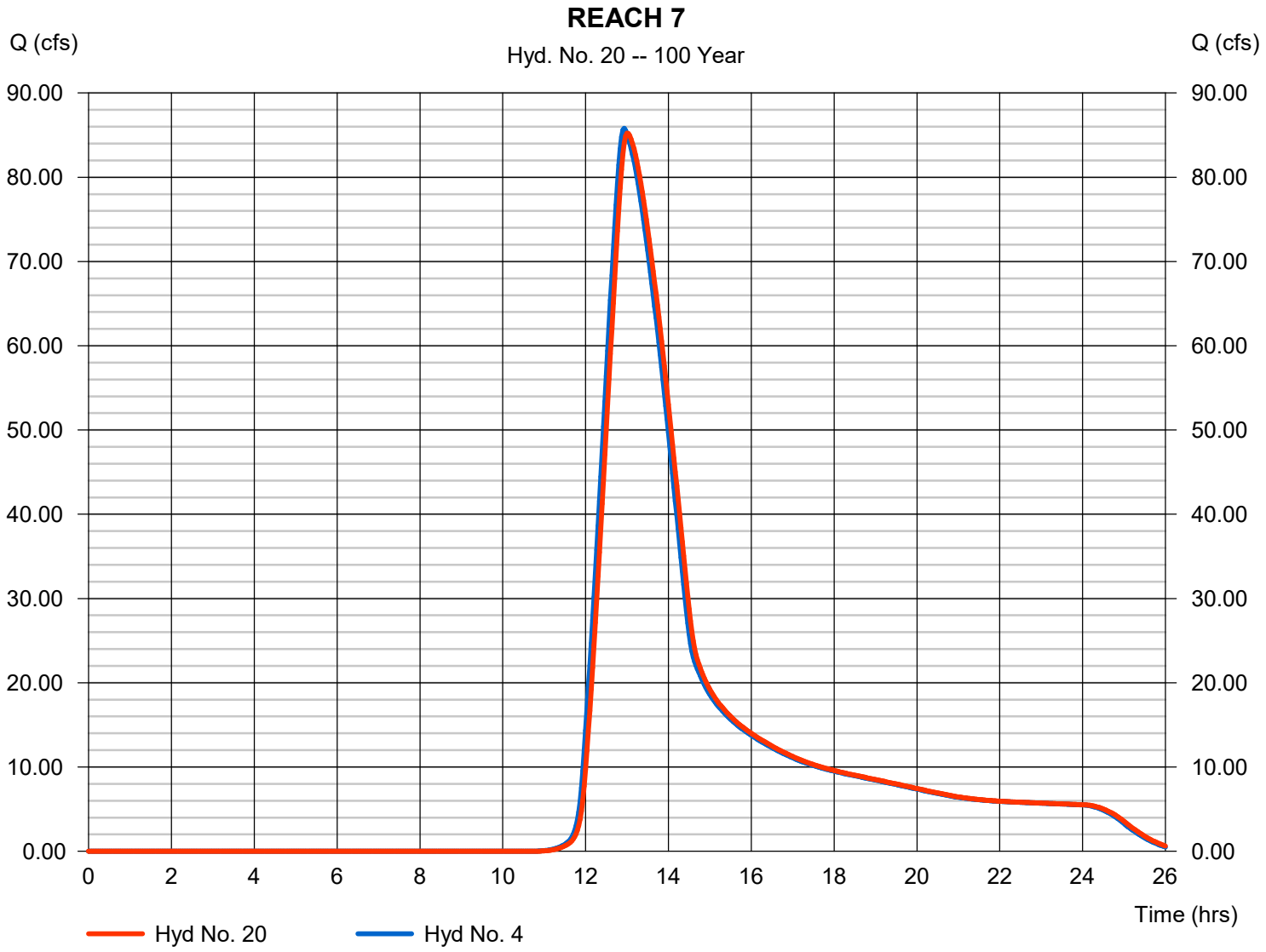
Hydrograph Report

Hyd. No. 20

REACH 7

Hydrograph type	= Reach	Peak discharge	= 85.22 cfs
Storm frequency	= 100 yrs	Time to peak	= 13.00 hrs
Time interval	= 2 min	Hyd. volume	= 875,239 cuft
Inflow hyd. No.	= 4 - PB3	Section type	= Circular
Reach length	= 2153.0 ft	Channel slope	= 0.4 %
Manning's n	= 0.013	Bottom width	= 3.5 ft
Side slope	= 0.0:1	Max. depth	= 0.0 ft
Rating curve x	= 4.820	Rating curve m	= 1.250
Ave. velocity	= 8.92 ft/s	Routing coeff.	= 0.4740

Modified Att-Kin routing method used.

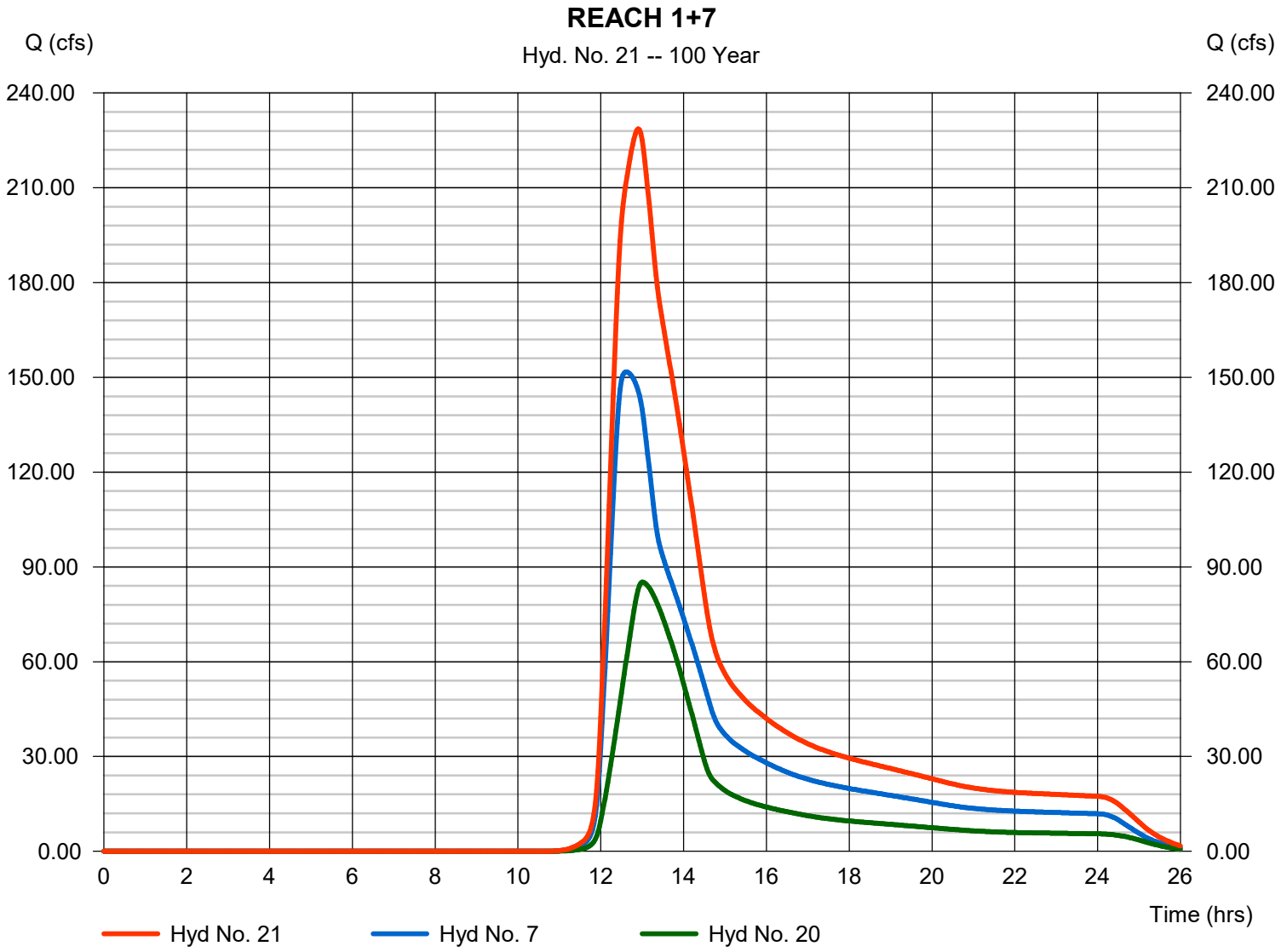


Hydrograph Report

Hyd. No. 21

REACH 1+7

Hydrograph type	= Combine	Peak discharge	= 228.63 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.90 hrs
Time interval	= 2 min	Hyd. volume	= 2,522,055 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 0.000 ac



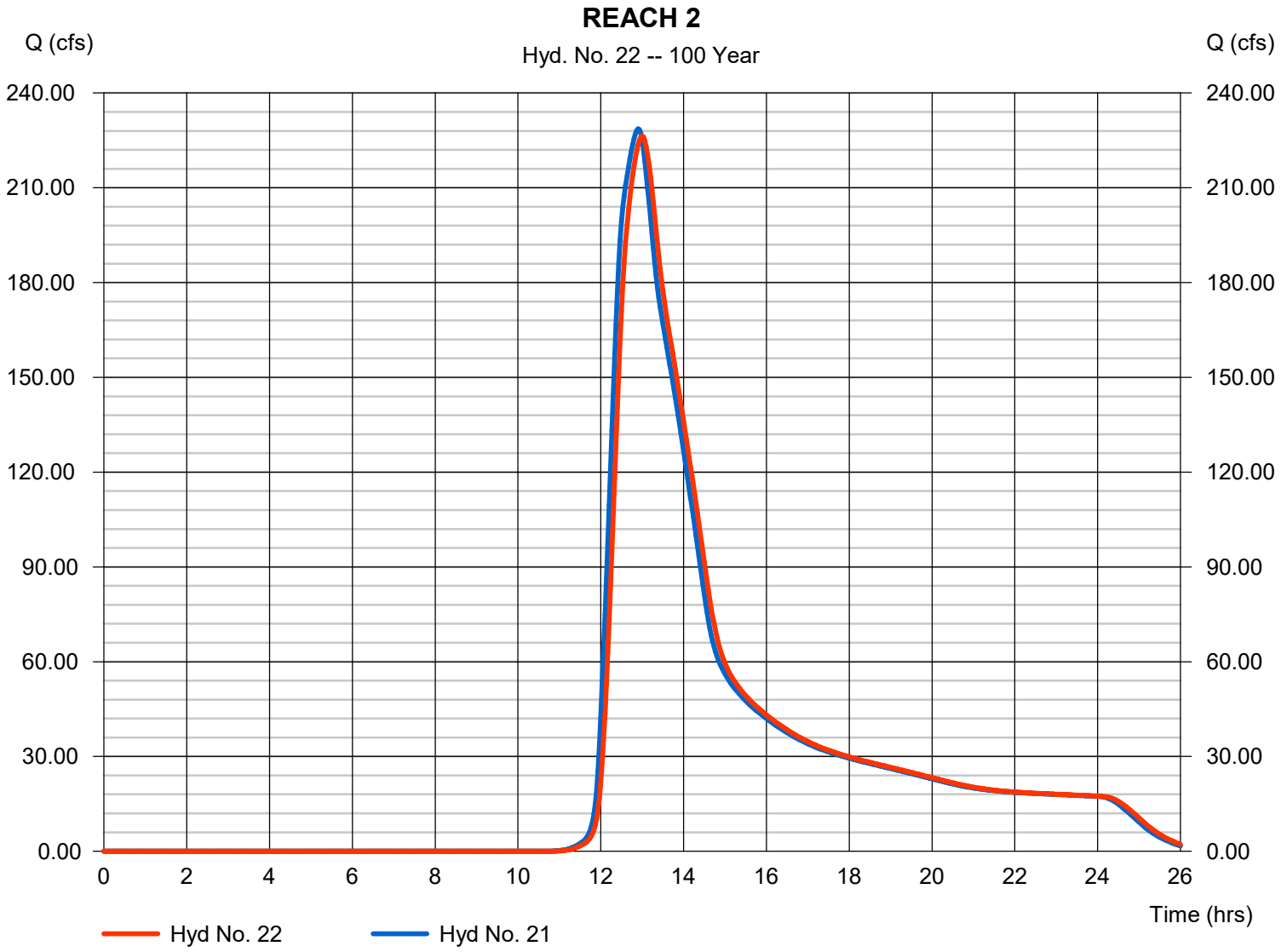
Hydrograph Report

Hyd. No. 22

REACH 2

Hydrograph type	=	Reach	Peak discharge	=	226.42 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.00 hrs
Time interval	=	2 min	Hyd. volume	=	2,522,053 cuft
Inflow hyd. No.	=	21 - REACH 1+7	Section type	=	Trapezoidal
Reach length	=	2187.0 ft	Channel slope	=	1.0 %
Manning's n	=	0.035	Bottom width	=	9.0 ft
Side slope	=	3.0:1	Max. depth	=	3.5 ft
Rating curve x	=	0.983	Rating curve m	=	1.394
Ave. velocity	=	4.59 ft/s	Routing coeff.	=	0.2987

Modified Att-Kin routing method used.

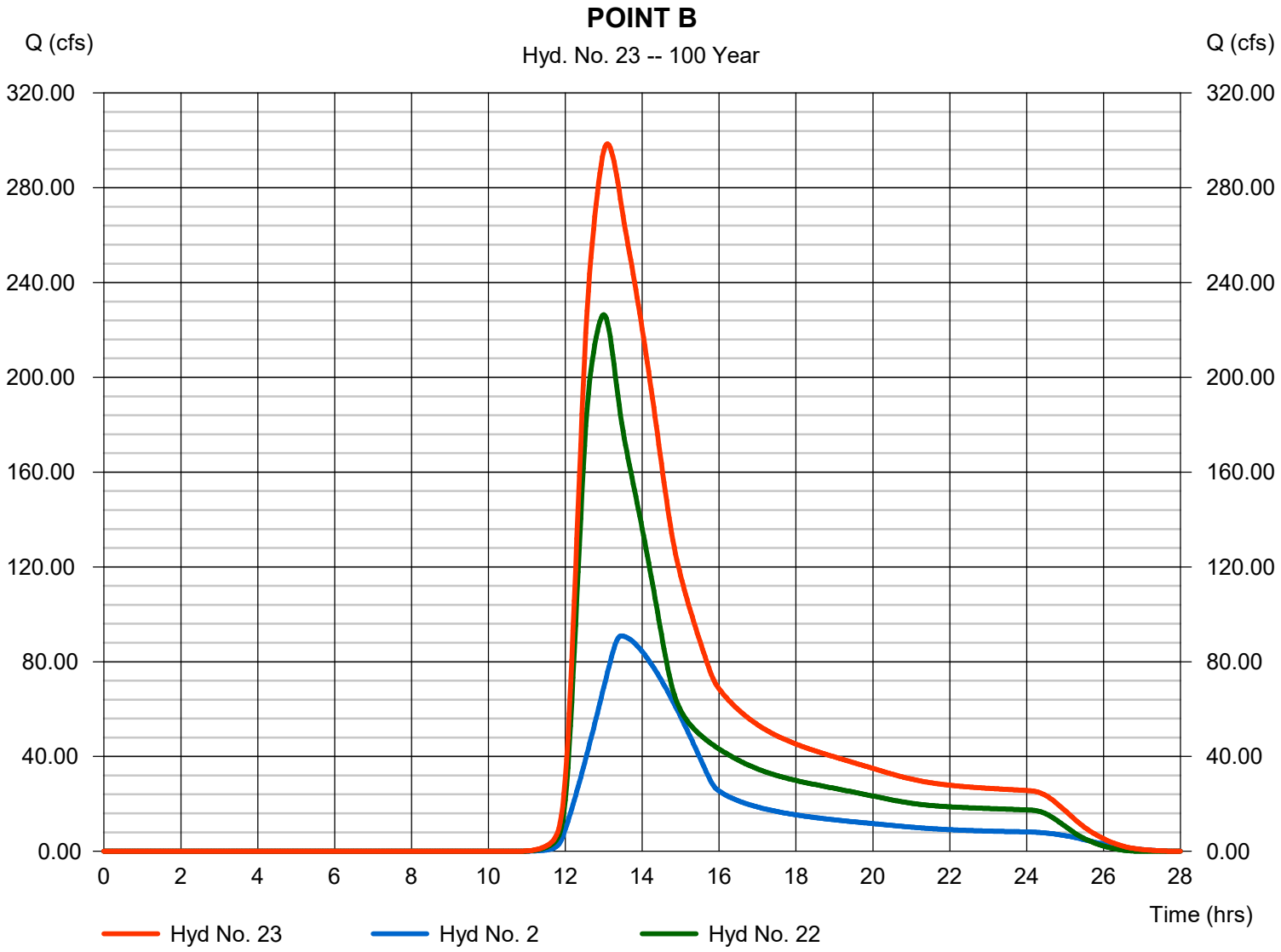


Hydrograph Report

Hyd. No. 23

POINT B

Hydrograph type	=	Combine	Peak discharge	=	298.54 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.10 hrs
Time interval	=	2 min	Hyd. volume	=	3,795,051 cuft
Inflow hyds.	=	2, 22	Contrib. drain. area	=	440.700 ac



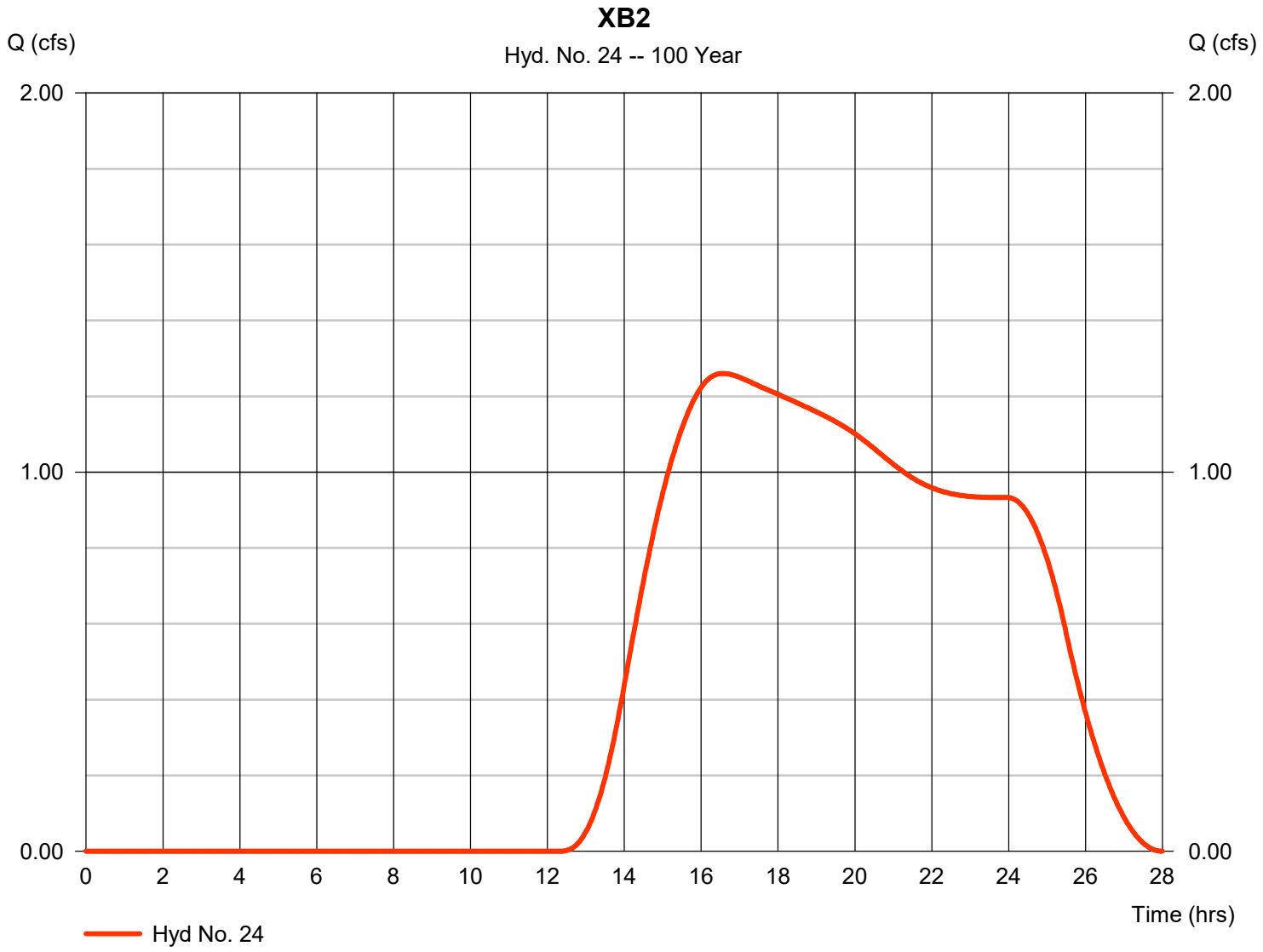
Hydrograph Report

Hyd. No. 24

XB2

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.260 cfs
Storm frequency	=	100 yrs	Time to peak	=	16.57 hrs
Time interval	=	2 min	Hyd. volume	=	44,794 cuft
Drainage area	=	255.200 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	150.60 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(255.200 x 55)] / 255.200



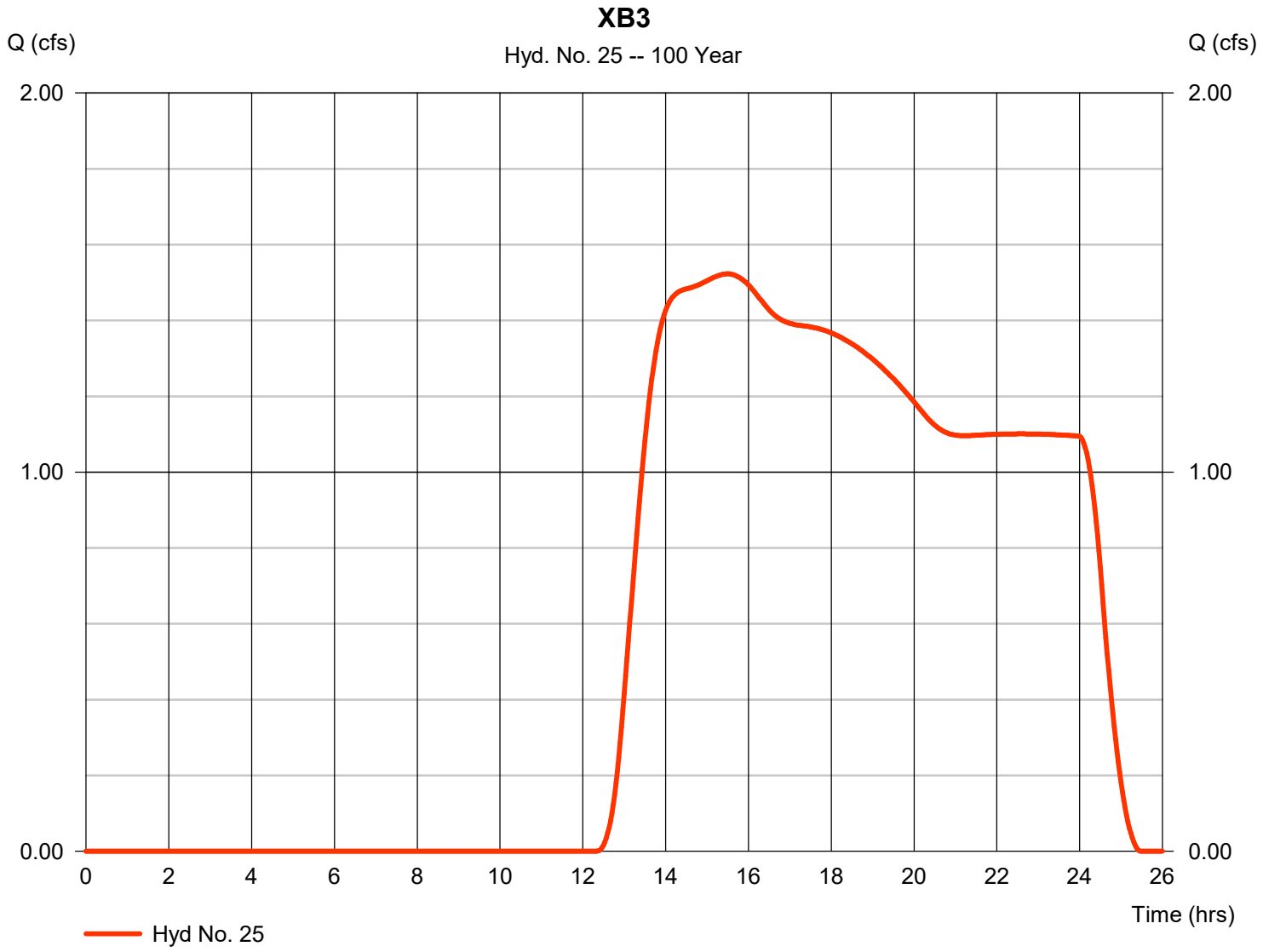
Hydrograph Report

Hyd. No. 25

XB3

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.523 cfs
Storm frequency	=	100 yrs	Time to peak	=	15.50 hrs
Time interval	=	2 min	Hyd. volume	=	52,775 cuft
Drainage area	=	302.900 ac	Curve number	=	55*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	56.10 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(302.900 x 55)] / 302.900



Hydrograph Report

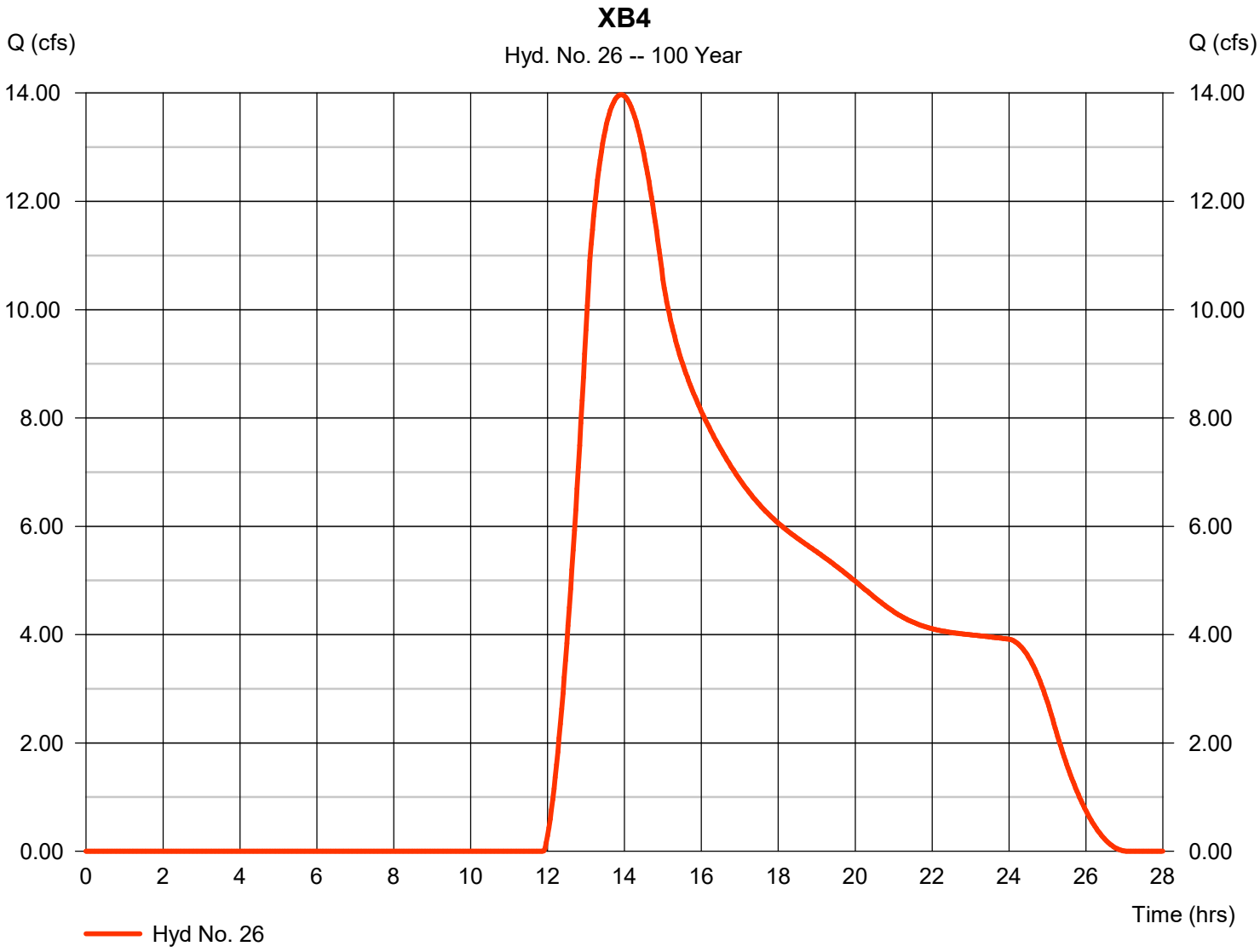
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Tuesday, 01 / 25 / 2022

Hyd. No. 26

XB4

Hydrograph type	=	SCS Runoff	Peak discharge	=	13.97 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.90 hrs
Time interval	=	2 min	Hyd. volume	=	310,158 cuft
Drainage area	=	545.900 ac	Curve number	=	62*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	117.20 min
Total precip.	=	2.29 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(224.200 x 55) + (173.700 x 55) + (147.000 x 81) + (0.800 x 81) + (0.200 x 81)] / 545.900



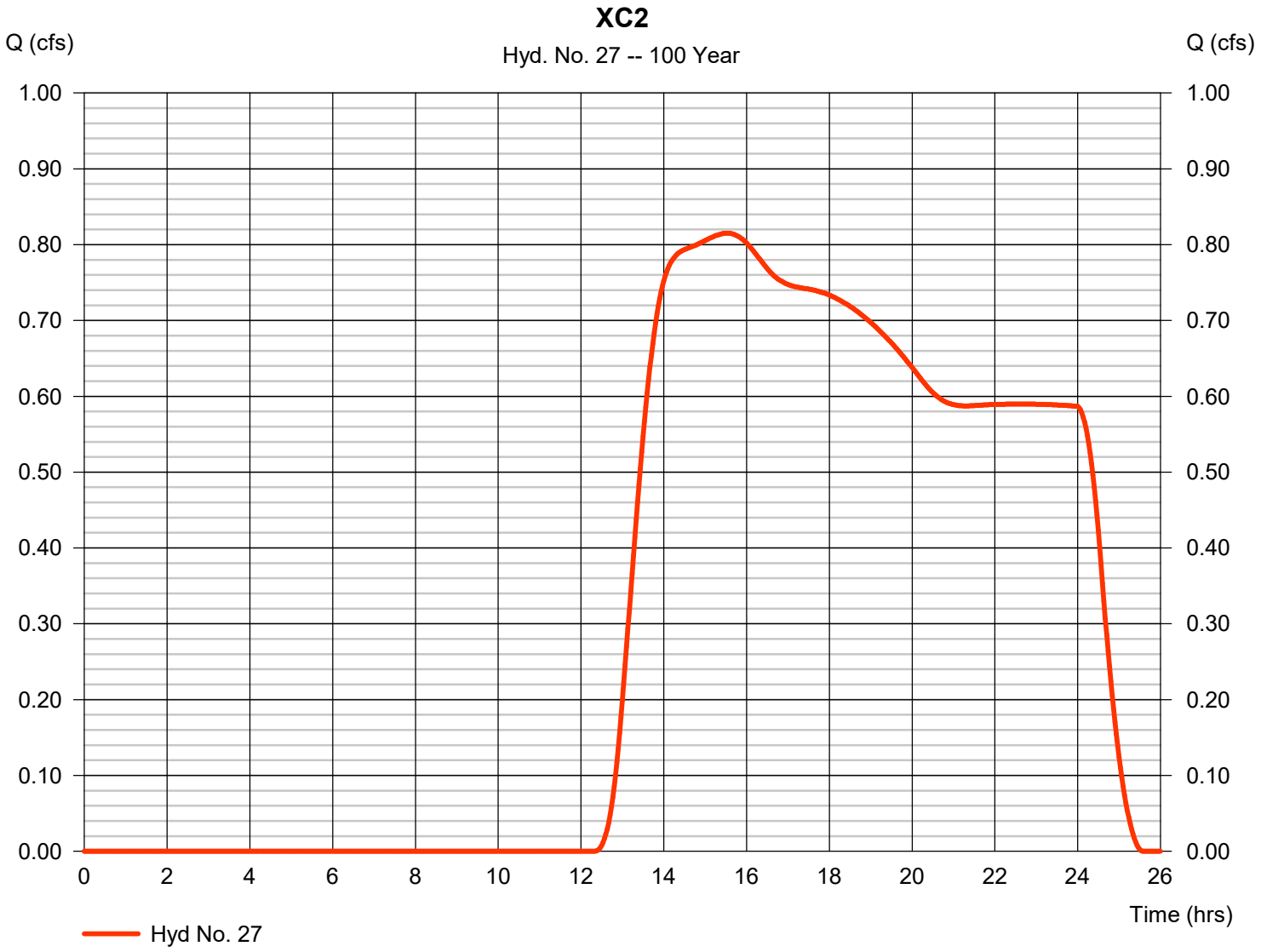
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Tuesday, 01 / 25 / 2022

Hyd. No. 27

XC2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.815 cfs
Storm frequency	= 100 yrs	Time to peak	= 15.53 hrs
Time interval	= 2 min	Hyd. volume	= 28,277 cuft
Drainage area	= 161.100 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 57.80 min
Total precip.	= 2.29 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



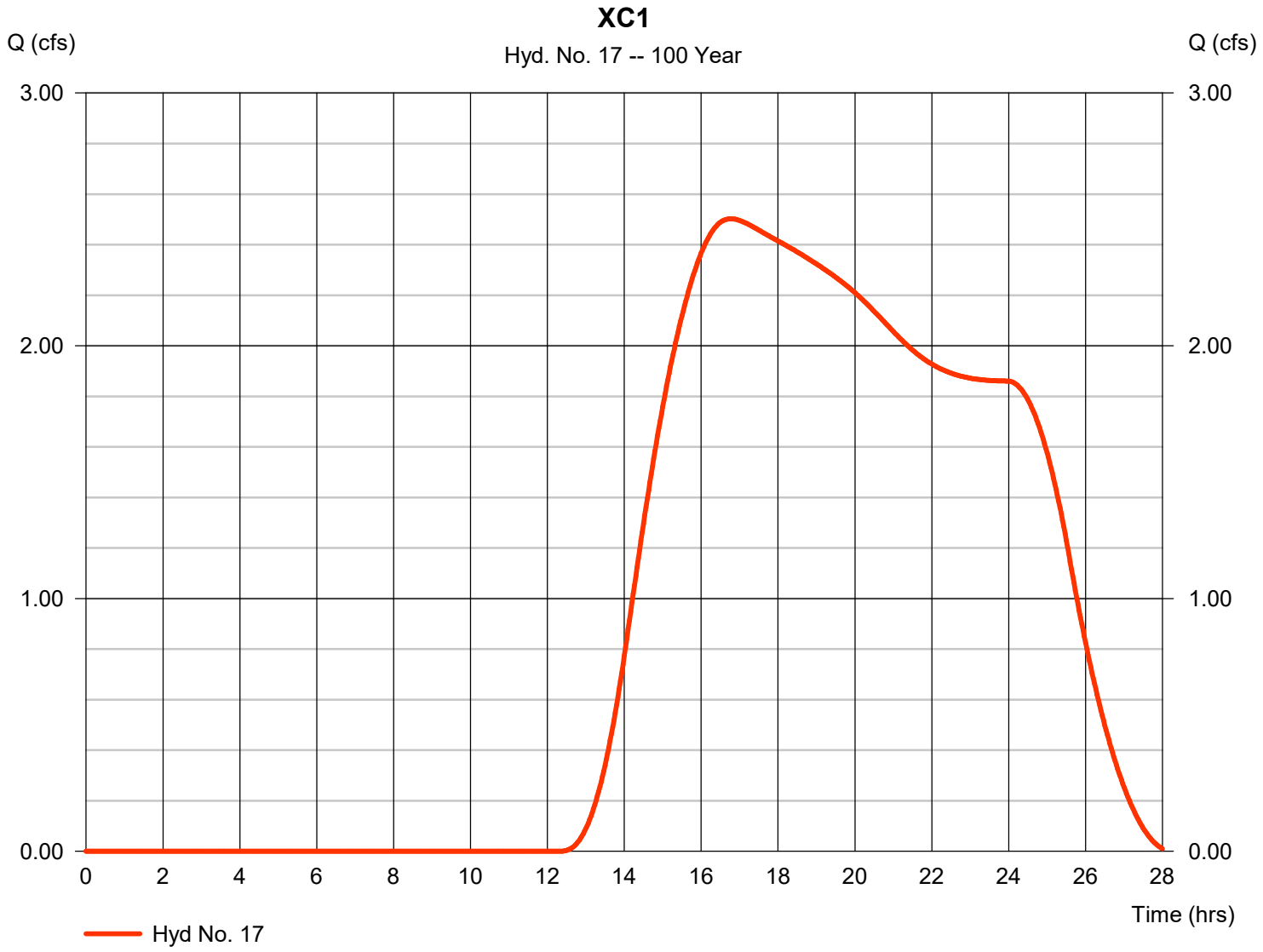
Hydrograph Report

Hyd. No. 17

XC1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.502 cfs
Storm frequency	= 100 yrs	Time to peak	= 16.77 hrs
Time interval	= 2 min	Hyd. volume	= 2.051 acft
Drainage area	= 509.000 ac	Curve number	= 55*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 162.10 min
Total precip.	= 2.29 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(10.600 x 81) + (455.800 x 55) + (42.600 x 81)] / 509.000



FINAL MEMORANDUM

To: Ross Pfautz, Mark IV Capital, Inc.

From: Amy Lapin and Sean Fisher

Subject: Victory Master Planned Area
Fiscal Impact Analysis; EPS #222167

Date: August 11, 2023

Introduction

Mark IV Capital, Inc. (Mark IV Capital) retained Economic & Planning Systems, Inc. (EPS) to prepare a fiscal impact analysis (Analysis) of the proposed Victory Master Planned Area project (Project), a large-scale employment center proposed in northern Nevada. The Project is located in the City of Fernley (City), an incorporated city of approximately 24,000 residents in Lyon County (County) in the Reno-Sparks metropolitan area. The 2,173-acre Project is proposed to contain 28.6 million building square feet of new industrial and commercial land uses, with construction of infrastructure to support the Project expected to begin in 2023 and vertical construction starting in 2025 with full buildout anticipated by 2041.

This fiscal impact analysis (Analysis) examines the Project's estimated fiscal impact on the City's General Fund budget. Specifically, the Analysis estimates whether projected revenues from the Project will adequately cover the costs of delivering citywide services (e.g., general government, facilities, and street maintenance) to the Project. The Analysis is based on the assumption that the City will provide the same municipal services to the Project as the City currently provides to City residents and businesses.

The fiscal impacts of the proposed Project are summarized in the body of this memorandum. The data, assumptions, and detailed calculations underlying the Analysis are provided in **Appendices A** through **C**.

The Economics of Land Use

Economic & Planning Systems, Inc.
455 Capitol Mall, Suite 701
Sacramento, CA 95814
916 649 8010 tel
916 649 2070 fax

Oakland
Sacramento
Denver
Los Angeles

www.epsys.com

Project Overview

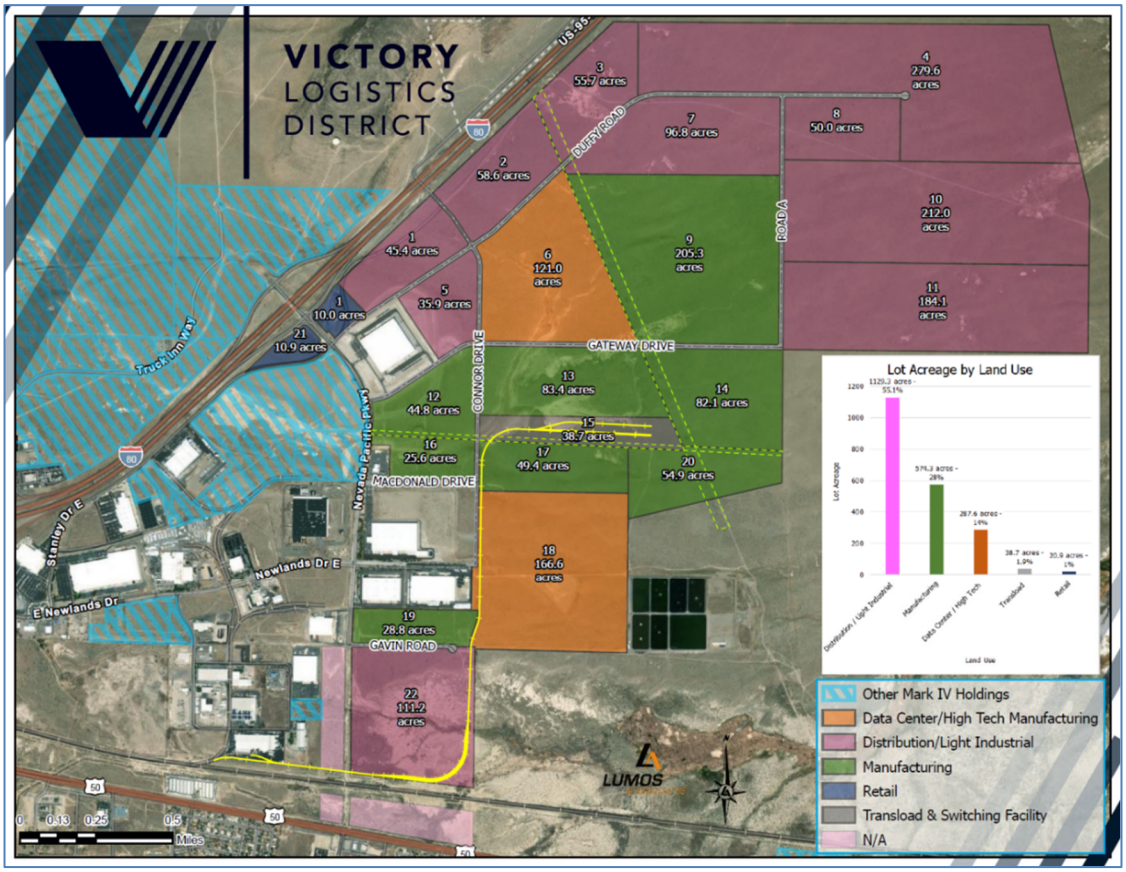
The Project is part of Mark IV Capital's larger, approximately 4,300-acre project known as the Victory Logistics District. It is located south of Interstate-80 (I-80), north of U.S. Highway 50 (Hwy 50), and east of Nevada Pacific Parkway in the City of Fernley, Nevada. The City is an incorporated city of approximately 24,000 residents and is located in Lyon County in the Greater Region approximately 30 miles east of the cities of Reno and Sparks, Nevada. See **Map 1** for the Project's context within the Greater Region.

Map 1. Proposed Project and Greater Regional Context

The Project is envisioned to be constructed as a world-class employment center designed to attract a premier tenant base of industrial, manufacturing, data center and other high technology, transload/switching service, and ancillary retail users. See **Map 2** for the Project's proposed land uses.

The proposed Project will offer synergies with existing, recently constructed, and approved industrial uses to the west and south of proposed Project land uses in Fernley, as well as the strong and growing industrial market of the Greater Region. The Project's location along I-80 and adjacent to U.S. Hwy 50 provides visibility along two major transcontinental transportation corridors, with easy accessibility via the I-80 Nevada Pacific Parkway interchange. In addition, the Project is served by a rail spur that connect to both the Union Pacific Railroad and BNSF Railways lines that serve major cities in the western United States.

Map 2. Proposed Victory Logistics District Land Uses



Project Land Uses

At full buildout, the 2,173-acre Project is planned to contain 28.6 million gross building square feet of industrial and commercial uses, accommodating approximately 16,600 ongoing jobs onsite. The first buildings constructed within the Project are anticipated to develop in 2025 with full buildout by 2041. Refer to **Table 1** for details regarding gross building space and employment for planned land uses at buildout. See **Tables A-2** and **A-3** in **Appendix A** for a summary of the Project land uses on an annual and cumulative basis, respectively. Annual and cumulative employment is shown in **Table A-4** in **Appendix A**.

Table 1. Summary of Project Land Uses and Employment at Buildout

Land Use	Gross Building Sq. Ft.	Direct Jobs Onsite
Distribution/Light Industrial	15,242,000	7,049
Manufacturing	7,962,000	4,910
Data Center/High Technology	4,484,000	4,148
Transload/Switching	674,000	12
Retail	273,000	492
Total	**28,636,000**	**16,611**

Source: Mark IV Capital, Inc; EPS.

Overview of Results

The Analysis estimates the fiscal revenues and expenditures generated by the Project on an annual basis from Fiscal Year (FY) 2022-23 through FY 2041-42. The results of the Analysis are presented at two periods of time, the initial years of development (through FY 2031-32) and Buildout (through FY 2041-42). The Analysis yields the following results as summarized in **Table 2**. **Tables 3** and **4** provide a detailed line-item listing of City General Fund revenues and expenditures resulting from the Project on an annual and cumulative basis.

- **The Project is estimated to yield an annual net fiscal surplus for the City's General Fund after the initial years of development and at buildout.** The Project is estimated to generate a net annual General Fund surplus ranging from approximately $5.9 million, after the initial years (FY 2031-32), to $16.3 million at buildout (FY 2041-42). By FY 2031-32, the Project is estimated to generate about $7.8 million in net new City General Fund revenues and will require $1.8 million in annual City General Fund service expenditures. At buildout, the Analysis estimates the Project will generate about $19.1 million in net, new recurring City General Fund revenues and will require about $2.7 million in annual City General Fund service costs annually.

- **The Project is estimated to result in a temporary annual net fiscal deficit in the first year of development followed by a substantial increase in annual net fiscal surpluses to the City's General Fund by the third year of development.** In the first year of the Project, this Analysis estimates an annual net fiscal deficit in the first year of vertical development (FY 2024-25), followed by a break-even net fiscal impact in the subsequent fiscal year and substantial net fiscal surpluses for all subsequent years evaluated. The primary drivers of this initial annual net fiscal deficit include an assumed one-year lag related to property tax revenues received by the City and annual streets and storm drains maintenance costs assumed to begin in that same year. It should be noted that this Analysis uses a conservative approach to estimating annual maintenance expenditures and actual maintenance expenditures in this initial year of development may be significantly less than these estimates. Refer to **Figure 1** for a graphical representation of estimated City General Fund revenues and expenditures and later sections of this memorandum for more details regarding property tax revenue and streets and storm drains maintenance costs.

- **The largest recurring source of revenue generated by the Project is Property Tax.** As shown in **Table 3**, the Project is estimated to generate annual property tax revenue of $5.5 million by FY 2031-32 and $13.9 million at buildout, accounting for about 73 percent of all recurring annual Project revenues at buildout.

- **The Project is anticipated to result in a cumulative net fiscal surplus of $136.1 million through FY 2041-42.** As shown in **Table 4**, at buildout, the Project is estimated to generate cumulative net General Fund revenues of $172.1 million. At buildout, the Project is estimated to require approximately $36.0 million in cumulative City General Fund service costs.

- **In addition to recurring annual revenues, the Project is estimated to generate $30.6 million in one-time permit and plan check fee revenues at buildout.** As shown in **Table 5**, by FY 2031-32, the Project is estimated to generate $12.1 million in one-time fee revenues, and $30.6 million in one-time fee revenues at buildout. These one-time fee revenues are anticipated to be mostly or entirely offset by direct expenditures related to reviewing and processing Project development permits and are excluded from net fiscal impact totals.

Table 2. City of Fernley General Fund Fiscal Impact Analysis Summary (Rounded) (2022$)

Item	Fiscal Impact (Rounded) Initial Years *FY 31-32*	Buildout *FY 41-42*
Fiscal Impacts to City of Fernley General Fund		
Annual Net Fiscal Impacts	*FY 2031-32*	*FY 2041-42*
Total Annual Revenues	$7,752,000	$19,077,000
Total Annual Expenditures	$1,832,000	$2,747,000
Net Annual Surplus/(Deficit)	**$5,920,000**	**$16,330,000**
Cumulative Net Fiscal Impacts	*FY 22-23 through FY 31-32*	*FY 22-23 through FY 41-42*
Total Cumulative Revenues	$42,559,000	$172,140,000
Total Cumulative Expenditures	$12,968,000	$35,995,000
Net Cumulative Surplus/(Deficit)	**$29,591,000**	**$136,145,000**

Source: EPS.

Note: Values are rounded to nearest $1,000.

Figure 1. Annual Estimated Net Fiscal Impacts (2022$)

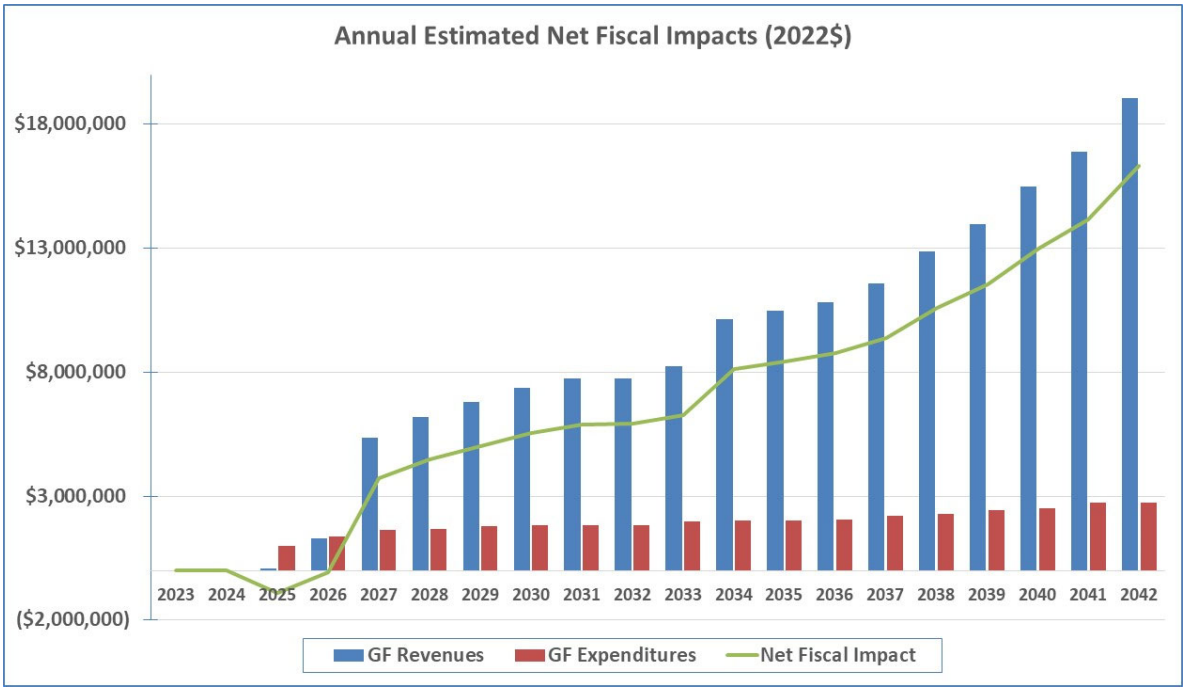


Table 3. Annual Estimated Project Revenues and Expenditures by Period (2022$)

Item	Annual Fiscal Impact by Period (Rounded) [1]		Buildout Percent of Total
	Initial Years *FY 2031-32*	Buildout *FY 2041-42*	
Annual General Fund Revenues			
Property Taxes	$5,477,000	$13,927,000	73.00%
Business License Fees	$1,257,000	$2,846,000	14.92%
Franchise Fees	$219,000	$496,000	2.60%
Consolidated Tax (CTX)	$34,000	$78,000	0.41%
Motor Vehicle Fuel Tax (Gas Tax)	$59,000	$133,000	0.70%
RTC Shared Revenue	$651,000	$1,474,000	7.73%
County Roads	$26,000	$58,000	0.30%
Penalties/Fines Municipal Court	$28,000	$64,000	0.34%
Interest Earnings	$1,000	$1,000	0.01%
Total Annual General Fund Revenues	**$7,752,000**	**$19,077,000**	**100.00%**
Annual General Fund Expenditures			
Mayor/Council	$16,000	$37,000	1.35%
Office of City Manager	$73,000	$166,000	6.04%
IT	$19,000	$43,000	1.57%
Animal Control	$11,000	$25,000	0.91%
Office of City Attorney	$71,000	$162,000	5.90%
Finance	$21,000	$48,000	1.75%
City Clerk	$38,000	$85,000	3.09%
Municipal Court	$60,000	$135,000	4.91%
Building & Safety	$78,000	$177,000	6.44%
Planning	$122,000	$277,000	10.08%
City Engineer	$96,000	$217,000	7.90%
Facilities	$64,000	$145,000	5.28%
Vector Control	$12,000	$27,000	0.98%
Cemetery	$0	$0	0.00%
Streets & Storm Drains	$1,078,000	$1,078,000	39.24%
Parks	$0	$0	0.00%
Fleet	$20,000	$45,000	1.64%
Subtotal Annual General Fund Expenditures	**$1,779,000**	**$2,667,000**	**97.09%**
Contingency [2]	$53,000	$80,000	2.91%
Total Annual General Fund Expenditures	**$1,832,000**	**$2,747,000**	**100.00%**
Annual Net Fiscal Impacts			
Total Annual Revenues	$7,752,000	$19,077,000	-
Total Annual Expenditures	$1,832,000	$2,747,000	-
Net Annual Surplus/(Deficit)	**$5,920,000**	**$16,330,000**	**-**

Source: Mark IV Capital; EPS.

[1] Annual revenues include recurring revenues only. In addition, the Project will generate building and permit fee revenues over the Project's buildout. Refer to Table 5 for a summary of one-time permit and plan check fee revenues.

[2] The City budget includes a 2.6 percent contingency on all non-contingency General Fund expenditures based on the maximum contingency level allowed by the State of Nevada of 3 percent. This analysis includes a 3 percent contingency on all costs (excluding the contingency cost), consistent with the State maximum.

Table 4. Cumulative Estimated Project Revenues and Expenditures by Period (2022$)

Item	Cumulative Fiscal Impact by Period (Rounded)		Buildout Percent of Total
	Initial Years *FY 22-23 through FY 31-32*	Buildout *FY 22-23 through FY 41-42*	
Cumulative General Fund Revenues			
Property Taxes	$28,800,000	$120,821,000	70.19%
Business License Fees	$7,604,000	$28,360,000	16.47%
Franchise Fees	$1,325,000	$4,941,000	2.87%
Consolidated Tax (CTX)	$207,000	$773,000	0.45%
Motor Vehicle Fuel Tax (Gas Tax)	$355,000	$1,325,000	0.77%
RTC Shared Revenue	$3,938,000	$14,688,000	8.53%
County Roads	$155,000	$577,000	0.34%
Penalties/Fines Municipal Court	$172,000	$642,000	0.37%
Interest Earnings	$3,000	$13,000	0.01%
Total Cumulative General Fund Revenues	**$42,559,000**	**$172,140,000**	**100.00%**
Cumulative General Fund Expenditures			
Mayor/Council	$98,000	$367,000	1.02%
Office of City Manager	$444,000	$1,654,000	4.60%
IT	$114,000	$426,000	1.18%
Animal Control	$67,000	$251,000	0.70%
Office of City Attorney	$432,000	$1,611,000	4.48%
Finance	$128,000	$476,000	1.32%
City Clerk	$227,000	$848,000	2.36%
Municipal Court	$360,000	$1,342,000	3.73%
Building & Safety	$474,000	$1,768,000	4.91%
Planning	$739,000	$2,757,000	7.66%
City Engineer	$581,000	$2,166,000	6.02%
Facilities	$387,000	$1,442,000	4.01%
Vector Control	$72,000	$267,000	0.74%
Cemetery	$0	$0	0.00%
Streets & Storm Drains	$8,348,000	$19,127,000	53.14%
Parks	$0	$0	0.00%
Fleet	$119,000	$445,000	1.24%
Subtotal Annual General Fund Expenditures	**$12,590,000**	**$34,947,000**	**97.09%**
Contingency [1]	$378,000	$1,048,000	2.91%
Total Annual General Fund Expenditures	**$12,968,000**	**$35,995,000**	**100.00%**
Cumulative Net Fiscal Impact			
Total Cumulative Revenues	$42,559,000	$172,140,000	-
Total Cumulative Expenditures	$12,968,000	$35,995,000	-
Net Fiscal Surplus/(Deficit)	**$29,591,000**	**$136,145,000**	**-**

Source: Mark IV Capital; EPS.

[1] The City budget includes a 2.6 percent contingency on all non-contingency General Fund expenditures based on the maximum contingency level allowed by the State of Nevada of 3 percent. This analysis includes a 3 percent contingency on all costs (excluding the contingency cost), consistent with the State maximum.

Table 5. One-Time Estimated Fee Revenues (2022$)

Item	Cumulative Fee Revenues (Rounded) Initial Years *FY 31-32*	Buildout *FY 41-42*
One-Time Fee Revenues [1]		
Building and Civil Permit Fees	$7,329,000	$18,555,000
Planning and Zoning Fees	$4,764,000	$12,061,000
Total Cumulative One-Time Fee Revenues	**$12,093,000**	**$30,616,000**

Source: EPS.

Note: Values are rounded to nearest $1,000.

[1] Reflects the cumulative total of one-time fee revenues (e.g., building and civil permit fees and plan check fees) collected by the City at building permit. These one-time fee revenues will be mostly or entirely offset by direct expenditures related to Project development. Refer to Table B-6 for details.

Methodology and Assumptions

This section details the underlying methodology and assumptions used to estimate the fiscal impact of the Project on the City. It describes assumptions concerning municipal service delivery, land development, and General Fund budgeting. In addition, it details the methodology used to forecast the Project's General Fund revenues and expenditures at buildout and on an annual basis.

Municipal Service Provision

This Analysis examines the Project's ability to generate adequate revenues to cover the City's costs of providing public services to the Project. The services analyzed in this Analysis comprise General Fund services (e.g., general government, streets and storm drains maintenance).

The Analysis excludes any services that may be funded privately and excludes any services that are provided through existing agreements with other public agencies. For example, the City does not currently provide public safety services to City residents and businesses. Based on an agreement between the City and County, the Lyon County Sheriff Department provides police protection services to the City. Likewise, based on agreements between the City and North Lyon Fire District, the fire district will continue providing fire protection and emergency services to the City. The City does not envision any changes to these agreements

because of development of the proposed Project.[1] Thus, the fiscal impacts of public safety services are not included in the Analysis.

In addition, this Analysis does not address activities budgeted in other City Funds (e.g., Special Revenue Funds, Proprietary Funds) nor does it include an evaluation of capital facilities or the funding of capital facilities needed to serve new development.

General Assumptions

The Analysis is based on the City's General Fund Budget for FY 2022–23, tax regulations and statutes current as of August 2023, and other general assumptions discussed herein. Each revenue item is estimated based on current State of Nevada (State) legislation and current City practices. Therefore, the Analysis reflects the current State-local fiscal relationship as it exists at the time the Analysis was completed. Future changes by either State legislation or City practices may affect the revenues and expenditures estimated in this Analysis. All costs and revenues are shown in constant 2022 dollars. General fiscal and demographic assumptions are detailed in **Table A-1** in **Appendix A**. Assumptions related to the proposed land uses, including estimated appraised values (real property and personal property values)per building square foot, employment densities, and vacancy rates, are shown in **Table A-2** in **Appendix A**.

EPS consulted the City's budget documents to develop forecasting methodologies for specific revenues and expenditures affected by new development in the proposed Project. In addition, EPS consulted with City staff to clarify budget data and review assumptions and Analysis results. This Analysis also used information from the following sources: Project Applicant (Mark IV Capital), County Assessor and Auditor-Controller, the U.S. Bureau of Labor Statistics (BLS), and subscription-based data sources (e.g., CoStar, IMPLAN).

The actual fiscal impacts of new development in the Project will vary from those presented in this Analysis if development plans or other assumptions (e.g., assessed valuations) vary from those presented in this Analysis.

General Fund Revenue- and Expenditure-Estimating Assumptions

This Analysis considers only General Fund revenues that will be generated by the Project. Departmental revenues and costs not affected by development are excluded from this Analysis. Calculations to estimate annual revenues are shown in **Table B-1** in **Appendix B**. Calculations to estimate annual expenditures are shown in **Table C-1** in **Appendix C**.

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[1] Email communication with City of Fernley, dated July 26, 2023.

Development Assumptions

Listed below are summaries of land use and other development-related assumptions used in the Analysis:

- **Land Use:** The Project is envisioned to accommodate a combination of nonresidential uses, including industrial, data center and other high technology, transload/switching service, and ancillary retail uses. Anticipated gross and occupied building square feet by land use are shown in **Table A-3** and **A-4** in **Appendix A** on an annual and cumulative basis, respectively. For all land use categories, except transload, a vacancy rate is assumed on all square footage ranging from 7.5 to 10 percent. Vacancy rates are a conservative assumption derived from an evaluation of CoStar market performance data by real estate sector, as of March 2023.

- **Employee Estimates:** Total employment estimates are based on an assumed employment density and occupied building square feet for each land use proposed in the Project. At full buildout, the Project is estimated to support about 16,600 employees. In estimating certain annual revenues and expenditures (service demands) related to the Project, EPS developed a "persons-served" population estimate to approximate the impacts of an employee in the Project relative to a Project resident. EPS uses a factor of 0.5 employees to derive the Project's persons-served population.[2] **Table A-5** in **Appendix A** shows the estimated employees and persons served generated by the Project. **Table A-2** in **Appendix A** shows the employment density assumptions used to estimate the Project employment.

- **Project Appraised Value:** The estimated appraised valuation of Project land uses is based on appraised value assumptions per gross building square foot obtained from the February 2023 International Code Council (ICC) Building Valuation data for all land uses except for the data center and transload use categories. Lyon County typically uses ICC Building Valuation data to estimate the appraised value of new construction. However, data center uses are not specifically included in the ICC Building Valuation. As such, the Analysis deviates from the standard County methodology and uses data collected from several sources, including Jones Lang LaSalle Incorporated (JLL), RSMeans data from Gordian, and the U.S. Chamber Technology Engagement Center (CTEC) to estimate a reasonable estimated appraised value.[3]

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[2] As the Project contains no residential uses, persons served is equal to one half of employees.

[3] Comparable data center value data include data obtained from RSMeans, current as of March, 2023, Sales and transactions data obtained from Costar Online, accessed February 21, 2023, the report titled "Data Centers: Jobs and Opportunities in Communities Nationwide" published by CTEC, published May 2017, and "Data centers: expensive to build, but worth every penny" published by JLL, accessed online February 17, 2023.

Transload appraised value is based on a conservative estimate of appraised values provided by Mark IV Capital, current as of April 2023, consistent with the previously completed Infrastructure Financing Challenges and Solutions, prepared by GCI Advisors, dated December 15, 2022. As a conservative assumption, this Analysis does not assume any value attributable to personal property for any uses except the data center use, which includes a personal property value per building square foot assumption based on publicly available assessment data pertaining to existing and planned data center uses throughout California and Nevada.[4] Our review of sources indicated a wide variance in potential real and personal property values for data center uses; this Analysis errs on the side of assigning a conservative total appraised value for this use. Actual appraised values may be considerably higher, thus generating a greater amount of property tax revenue for the City than estimated in this Analysis. This Analysis assumes there is a one-year lag between vertical construction and value added to the County tax roll to account for the process of assessment and tax collection. Total Annual and Cumulative Project Appraised values are shown in **Table A-6** in **Appendix A**. Appraised values per gross building square foot for each land use are shown in **Table A-2** in **Appendix A**.

- **Net Building Appreciation of Appraised Values:** Appraised values include both land and improvement (building and personal property) values. The allocation of appraised values of new development is based on an estimated allocation of 10 percent land value and 90 percent building and personal property value. This generalized allocation assumption is based on an evaluation of Lyon County assessor records for similar land uses although the allocation may vary for individual uses in the Project. This Analysis assumes that appraised values of improvements escalate by an annual rate of 1.93 percent to account for the annual growth of ICC Building Values, adjusted for inflation to continue to reflect current 2022$. In addition, for each year following the development of improvements, the current replacement value is decreased by 1.5 percent to reflect depreciation as defined by the Nevada Department of Taxation based on State law. Land values are not assumed to be subject to net appreciation factors in this Analysis. **Table A-7** in **Appendix A** shows the annual appraised value of land and improvements, and the cumulative appraised property values including annual net building appreciation. **Table A-1** in **Appendix A** shows the net building appreciation factors used in this Analysis.

[4] Data center personal property estimates based on value rolls provided by the County Assessors offices for the California counties of San Mateo, Sacramento, Yolo, Contra Costa, and Orange assessors offices and appraised/replacement value data provided online by Nevada's Storey County assessors office.

- **Project Assessed Value:** Based on State law, annual property values used to estimate property tax revenue are estimated to be 35 percent of its current taxable (replacement) value. Cumulative Project assessed values are shown in **Table A-8** in **Appendix A.**

Revenue-Estimating Methodology

EPS used either a marginal-revenue case-study approach or an average-revenue approach to estimate Project-related revenues.

The marginal-revenue case-study approach simulates actual revenue generation resulting from new development. The case-study approach for estimating property tax revenues, for instance, forecasts Project assessed values and applies the City's General Fund Mill Levy Rate to estimate annual property tax revenues generated by the Project. Case studies used in this Analysis are discussed in greater detail later in this section.

The average-revenue approach uses the City's FY 2022-23 final General Fund budgeted revenue amounts on a citywide per employee or persons served basis to forecast revenues derived from estimated employees of the Project.[5]

Revenue sources *not* expected to increase as a result of development are excluded from this Analysis. These sources of revenue are not affected by development because they are either one-time revenue sources not guaranteed to be available in the future or there is no direct relation between increased employment growth and increased revenue.

A listing of all included City revenue sources and the corresponding estimating procedure used to forecast future Project revenues is shown in **Table B-1** in **Appendix B**. A summary of estimated annual General Fund revenues generated by the Project after the initial years and buildout on an annual basis is provided in **Table B-2** and on a cumulative basis in **Table B-3**. Annual revenues generated by the Project for all years are shown in **Table B-4**.

Property Tax

Estimated annual property tax revenue resulting from development in the Project is presented in **Table B-5** in **Appendix B**. Annual property tax revenues are estimated by applying the City General Fund Mill Levy Rate per $100 of assessed value of 0.67 percent to the total assessed value of the Project, including land, real property, and personal property values.

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[5] A *per-persons-served* basis of estimating revenues is used to take into account that businesses (and their employees) have a fiscal impact on many City revenues but at a lower level than residential development's impact. As the Project does not include residential land uses, the persons served is equal to one half Project employees.

In addition, although not included in the net fiscal impact totals, this Analysis provides an estimate of revenues generated for the North Lyon Fire District, which has a Mill Levy Rate per $1000 of assessed value of 0.31 percent, as shown in **Table B-5**.

One-Time Fee Revenues

In addition to recurring annual revenues, the Analysis includes an estimate of one-time fee revenues generated by development of the Project, including building permit and plan check fees. Building permit fees are estimated by applying the building permit fee amounts included in the posted Building Permit Fee Schedule to the Project's appraised value at the time of development. Based on guidance provided by the Project Applicant, It is assumed that each new value entry for each land use represents development of a separate building, requiring an individual building permit. The building permit value year is estimated based on the assessed value per square foot assumptions shown in **Table A-2** in **Appendix A** and is assumed to be created in the year of development with no lag year. Based on the posted City's Building Permit Fee Schedule, Plan Check Fees are estimated as 65% of total building permit fees. Estimated building permit and plan check fees are shown in **Table B-6** in **Appendix B.**

Expenditure-Estimating Methodology

Expenditure estimates are based on the City's FY 2022-23 budget and supplemental information from City staff. This Analysis estimates General Fund expenditures attributable to the Project. With the exception of the Streets and Storm Drains category, General Fund department expenditures expected to be affected by the Project are forecasted using an average-cost approach. The average-cost approach uses the City's FY 2022-23 General Fund budgeted expenditures on a citywide per-persons-served or per capita basis to forecast expenditures required to serve new development. Streets and Storm Drains expenditures are estimated using a case study methodology.

A listing of all City General Fund expenditures and the corresponding estimating procedure used to forecast future Project expenditures is shown in **Table C-1** in **Appendix C**. A summary of estimated annual expenditures required to serve the Project at buildout is provided in **Table C-2**. A summary of estimated annual General Fund expenditures required to serve the Project after the initial years and at buildout on an annual basis is provided in **Table C-2** and on a cumulative basis in **Table C-3**. Annual expenditures required to serve the Project for all years are shown in **Table C-4.**

Average-Cost Expenditures

Expenditures that are affected by Project employees are projected using a *per-person-served* average cost multiplier. These expenditures include all departmental expenditures, except cemetery and park expenditures, which are estimated using a *per capita* average cost multiplier because these services

generally are demanded by residential development only. As the Project contains no residential uses, these per capita expenditure categories are not expected to grow with Project development.

For general government expenditures, a variable cost adjustment of 25 percent is included to account for fixed costs not expected to grow with Project development.[6]

Streets and Storm Drains Maintenance

As the Project is anticipated to result in a sizable increase in roadways to be publicly maintained, street and storm drainage expenditures required to serve the Project are estimated using a case study methodology.

Streets Maintenance Costs

Annual street maintenance costs are estimated by applying annual per-square-yard cost assumptions to the total number of square yards of publicly maintained roadways, as provided by the Project applicant. The annual per square yard cost assumptions were provided by Lumos and Associates and reflect the anticipated maintenance cost and schedule for street maintenance in the City, current as of February 2023 and include slurry/micro surface maintenance, pavement crack sealing, corrective maintenance, and pavement rehabilitation or reconstruction.

Storm Drains Maintenance Costs

Annual storm drains maintenance costs are estimated based on an assumed per acre-foot annual maintenance cost applied to the total acre-feet of detention basin within the Project. Annual storm drainage cost per acre foot was estimated based on the budgeted FY 2022-23 City storm drainage maintenance costs divided by the estimated total acre feet of existing drainage basins within the City. Based on data provided by Lumos and Associates, 64.5 acre-feet of detention basins are anticipated to be developed within the Project, with 16.9 acre-feet developed in 2024 and the remaining 47.6 developed in 2026.[7]

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6 Variable cost adjustment assumption on General Government expenditures was confirmed by City staff in a telephone conversation on July 6, 2023.

7 Email communication with Lumos and Associates, dated August 3, 2023.

Technical Appendices

The technical calculations used in this Analysis are shown in **Appendices A** through **C** (**Tables A-1** through **C-5**):

- **Appendix A** indicates the proposed land uses and general assumptions used in this Analysis.
- **Appendix B** identifies the projected revenues that will be generated by the Project for the City's General Fund.
- **Appendix C** details the estimated expenditures for the City to provide General Fund services to the Project.

APPENDICES:

Appendix A: General Assumptions

Appendix B: Revenue Estimating Tables

Appendix C: Expenditure Estimating Tables

APPENDIX A:

General Assumptions

Table A-1 General Assumptions A-1

Table A-2 Land Use Assumptions A-2

Table A-3 Annual Gross and Occupied Project Land Uses (2 pages) A-3

Table A-4 Cumulative Gross and Occupied Project Land Uses (2 pages) A-5

Table A-5 Annual and Cumulative Service Population (2 pages) A-7

Table A-6 Annual and Cumulative Appraised Value (2 pages) A-9

Table A-7 Annual and Cumulative Appraised Values Incl. Net Building Appreciation (2 pages) A-11

Table A-8 Cumulative Assessed Value (2 pages) A-13

Table A-1
Victory Master Planned Area
Fiscal Impact Analysis
General Assumptions

Item	Assumption	Source
General Assumptions		
Budget Analysis Assumptions [1]	FY 2022-23	City of Fernley FY 2022-23 Final Budget
Dollar Year of Fiscal Impacts	2022$	-
Fernley Demographic Characteristics (2022)		
Residential Population [2]	23,393	Esri 2022 Business Summary by NAICS
Employee Population [2]	4,816	Esri 2022 Business Summary by NAICS
Persons Served [3]	25,801	
Fernley Property Tax Factors		
Mill Levy Rate per $100 of Assessed Value		
Fernley General Fund	0.006735	City of Fernley FY 2022-23 Final Budget
North Lyon Fire District	0.003055	City of Fernley FY 2022-23 Final Budget
Assessed Value (% of Appraised Value)	35.0%	Nevada Department of Taxation
Annual Property Value Change		
Annual Building Depreciation Rate	1.5%	Nevada Department of Taxation
Annual ICC Appreciation Rate [4]	4.9%	International Code Council
Inflation Adjustment	3.0%	Bureau of Labor Statistics

pop

Source: City of Fernley Fiscal Year 2022-23 Final Budget; Esri; Nevada Department of Taxation; International Code Council; Bureau of Labor Statistics; EPS.

[1] Reflects City of Fernley FY 2022-23 Final Budget. Revenues and expenses are in 2022 dollars.
[2] City of Fernley residential and employee populations obtained from Esri's Business Summary report reflecting data as of January 2022.
[3] Persons Served is defined as total residents plus 50% of total employees. This figure is used to estimate specific revenues and expenditures that are assumed to be impacted by growth of both residential and employment populations combined. The percentage of 50% of employees assumes that an employee has half the impact on service demands as a resident (e.g., generally, a resident is home for 16 hours/day while an employee is at work for 8 hours/day).
[4] Annual ICC appreciation rate based on the average annual growth in national building construction costs estimates provided by the International Code Council for industrial uses from February 2013 through 2022.

Table A-2
Victory Master Planned Area
Fiscal Impact Analysis
Land Use Assumptions

Land Use	ICC Group [1]	Appraised Value (Rounded) Real Property [2]	Personal Property [3]	Total	Employment Density [4]	Vacancy Rate [5]
Project Land Uses		*Per Sq. Ft.*			*Sq. Ft./Employee*	
Distribution/Light Industrial	F-2	$125	$0	$125	2,000	7.5%
Manufacturing	F-2	$125	$0	$125	1,500	7.5%
Data Center/High Tech [6]	NA	$250	$150	$400	1,000	7.5%
Transload/Switching	NA	$1	$0	$1	56,000	0.0%
Retail	M	$165	$0	$165	500	10.0%

Source: Mark IV Capital; International Code Council; U.S. Energy Information Administration; U.S. Chamber of Commerce; CoStar; EPS.

[1] ICC Group refers to the Building Group most closely related to each included land use as defined in the 2019 International Building Code.
[2] Appraised value of real property is assumed to be consistent with the Building Valuation Data estimates provided by the International Code Council, current as of February 2023.
[3] As a conservative assumption, this analysis does not assume any value attributable to personal property for any uses except Data Center, which includes a conservative assumption of personal property based on publicly available assessment data pertaining to existing and planned data center uses throughout California and Nevada. The actual appraised value for this personal property may vary from estimates shown in this Analysis.
[4] Employment density assumptions based on a review of typical employment densities for proposed land uses. Sources used to inform these assumptions include:
Distribution/Light Industrial, Manufacturing, and Retail Uses: U.S. Energy Information Administration CBECS Survey Data.
Data Center/High Tech Uses: U.S. Chamber of Commerce.
[5] Vacancy rates are a conservative assumption derived from an evaluation of CoStar market performance data by real estate sector, as of March 2023. Actual vacancy rates may vary.
[6] Lyon County typically uses ICC Building Valuation data to estimate the appraised value of new construction. However, data center uses are not specifically included and EPS has not found appraised values for recently-constructed comparable data center uses. As such, this Analysis deviates from the standard County methodology and uses data collected from several sources, including JLL, RS Means, and CTEC, to estimate a reasonable estimated appraised value. The actual appraised value for this use may vary from estimates shown in this Analysis.

Table A-3
Victory Master Planned Area
Fiscal Impact Analysis
Annual Gross and Occupied Project Land Uses

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Annual Gross Project Building Sq. Ft. [1]											
Distribution/Light Industrial	15,242,080	0	0	0	968,775	968,774	0	0	0	0	0
Manufacturing	7,962,159	0	0	0	1,317,951	990,337	990,337	990,337	990,337	0	0
Data Center/High Tech	4,484,064	0	0	0	2,902,836	0	0	0	0	0	0
Transload/Switching	674,309	0	0	674,309	0	0	0	0	0	0	0
Retail	273,121	0	0	142,441	0	0	0	130,680	0	0	0
Total Land Uses	**28,635,733**	**0**	**0**	**816,750**	**5,189,562**	**1,959,111**	**990,337**	**1,121,017**	**990,337**	**0**	**0**
Annual Occupied Project Building Sq. Ft. [2]											
Distribution/Light Industrial	14,098,924	0	0	0	896,117	896,116	0	0	0	0	0
Manufacturing	7,364,997	0	0	0	1,219,105	916,062	916,062	916,062	916,062	0	0
Data Center/High Tech	4,147,759	0	0	0	2,685,123	0	0	0	0	0	0
Transload/Switching	674,309	0	0	674,309	0	0	0	0	0	0	0
Retail	245,809	0	0	128,197	0	0	0	117,612	0	0	0
Total Land Uses	**26,531,798**	**0**	**0**	**802,506**	**4,800,345**	**1,812,178**	**916,062**	**1,033,674**	**916,062**	**0**	**0**

Source: Mark IV Capital; CoStar; EPS.

[1] Based on gross building square feet anticipated to be constructed, provided by Mark IV Capital based on data current as of December 2022.
[2] Based on the vacancy rate assumptions included in Table A-2.

Table A-3
Victory Master Planned Area
Fiscal Impact Analysis
Annual Gross and Occupied Project Land Uses

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Annual Gross Project Building Sq. Ft. [1]										
Distribution/Light Industrial	0	609,404	609,404	609,405	0	1,575,021	3,150,042	1,575,020	5,176,235	0
Manufacturing	0	0	0	0	2,682,860	0	0	0	0	0
Data Center/High Tech	1,581,228	0	0	0	0	0	0	0	0	0
Transload/Switching	0	0	0	0	0	0	0	0	0	0
Retail	0	0	0	0	0	0	0	0	0	0
Total Land Uses	**1,581,228**	**609,404**	**609,404**	**609,405**	**2,682,860**	**1,575,021**	**3,150,042**	**1,575,020**	**5,176,235**	**0**
Annual Occupied Project Building Sq. Ft. [2]										
Distribution/Light Industrial	0	563,699	563,699	563,700	0	1,456,894	2,913,789	1,456,894	4,788,017	0
Manufacturing	0	0	0	0	2,481,646	0	0	0	0	0
Data Center/High Tech	1,462,636	0	0	0	0	0	0	0	0	0
Transload/Switching	0	0	0	0	0	0	0	0	0	0
Retail	0	0	0	0	0	0	0	0	0	0
Total Land Uses	**1,462,636**	**563,699**	**563,699**	**563,700**	**2,481,646**	**1,456,894**	**2,913,789**	**1,456,894**	**4,788,017**	**0**

Source: Mark IV Capital; CoStar; EPS.

[1] Based on gross building square feet anticipated to be constructed, provided by Mark IV Capital based on data current as of December 2022.
[2] Based on the vacancy rate assumptions included in Table A-2.

Table A-4
Victory Master Planned Area
Fiscal Impact Analysis
Cumulative Gross and Occupied Project Land Uses

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Cumulative Gross Project Building Sq. Ft.											
Distribution/Light Industrial	15,242,080	0	0	0	968,775	1,937,549	1,937,549	1,937,549	1,937,549	1,937,549	1,937,549
Manufacturing	7,962,159	0	0	0	1,317,951	2,308,288	3,298,625	4,288,962	5,279,299	5,279,299	5,279,299
Data Center/High Tech	4,484,064	0	0	0	2,902,836	2,902,836	2,902,836	2,902,836	2,902,836	2,902,836	2,902,836
Transload/Switching	674,309	0	0	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309
Retail	273,121	0	0	142,441	142,441	142,441	142,441	273,121	273,121	273,121	273,121
Total Land Uses	**28,635,733**	**0**	**0**	**816,750**	**6,006,312**	**7,965,423**	**8,955,760**	**10,076,777**	**11,067,114**	**11,067,114**	**11,067,114**
Cumulative Occupied Project Building Sq. Ft. [1]											
Distribution/Light Industrial	14,098,924	0	0	0	896,117	1,792,233	1,792,233	1,792,233	1,792,233	1,792,233	1,792,233
Manufacturing	7,364,997	0	0	0	1,219,105	2,135,166	3,051,228	3,967,290	4,883,352	4,883,352	4,883,352
Data Center/High Tech	4,147,759	0	0	0	2,685,123	2,685,123	2,685,123	2,685,123	2,685,123	2,685,123	2,685,123
Transload/Switching	674,309	0	0	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309
Retail	245,809	0	0	128,197	128,197	128,197	128,197	245,809	245,809	245,809	245,809
Total Land Uses	**26,531,798**	**0**	**0**	**802,506**	**5,602,851**	**7,415,028**	**8,331,090**	**9,364,764**	**10,280,826**	**10,280,826**	**10,280,826**

Source: Mark IV Capital; CoStar; EPS.

[1] Based on the vacancy rate assumptions included in Table A-2.

Table A-4
Victory Master Planned Area
Fiscal Impact Analysis
Cumulative Gross and Occupied Project Land Uses

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Cumulative Gross Project Building Sq. Ft.										
Distribution/Light Industrial	1,937,549	2,546,953	3,156,357	3,765,762	3,765,762	5,340,783	8,490,825	10,065,845	15,242,080	15,242,080
Manufacturing	5,279,299	5,279,299	5,279,299	5,279,299	7,962,159	7,962,159	7,962,159	7,962,159	7,962,159	7,962,159
Data Center/High Tech	4,484,064	4,484,064	4,484,064	4,484,064	4,484,064	4,484,064	4,484,064	4,484,064	4,484,064	4,484,064
Transload/Switching	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309
Retail	273,121	273,121	273,121	273,121	273,121	273,121	273,121	273,121	273,121	273,121
Total Land Uses	**12,648,342**	**13,257,746**	**13,867,150**	**14,476,555**	**17,159,415**	**18,734,436**	**21,884,478**	**23,459,498**	**28,635,733**	**28,635,733**
Cumulative Occupied Project Building Sq. Ft. [1]										
Distribution/Light Industrial	1,792,233	2,355,932	2,919,630	3,483,330	3,483,330	4,940,224	7,854,013	9,310,907	14,098,924	14,098,924
Manufacturing	4,883,352	4,883,352	4,883,352	4,883,352	7,364,997	7,364,997	7,364,997	7,364,997	7,364,997	7,364,997
Data Center/High Tech	4,147,759	4,147,759	4,147,759	4,147,759	4,147,759	4,147,759	4,147,759	4,147,759	4,147,759	4,147,759
Transload/Switching	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309	674,309
Retail	245,809	245,809	245,809	245,809	245,809	245,809	245,809	245,809	245,809	245,809
Total Land Uses	**11,743,462**	**12,307,160**	**12,870,859**	**13,434,559**	**15,916,204**	**17,373,098**	**20,286,887**	**21,743,781**	**26,531,798**	**26,531,798**

Source: Mark IV Capital; CoStar; EPS.

[1] Based on the vacancy rate assumptions included in Table A-2.

Table A-5
Victory Master Planned Area
Fiscal Impact Analysis
Annual and Cumulative Service Population

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Annual Employment [1]											
Distribution/Light Industrial	7,049	0	0	0	448	448	0	0	0	0	0
Manufacturing	4,910	0	0	0	813	611	611	611	611	0	0
Data Center/High Tech	4,148	0	0	0	2,685	0	0	0	0	0	0
Transload/Switching	12	0	0	12	0	0	0	0	0	0	0
Retail	492	0	0	256	0	0	0	235	0	0	0
Total Employment	**16,611**	**0**	**0**	**268**	**3,946**	**1,059**	**611**	**846**	**611**	**0**	**0**
Annual Persons Served [2]	**8,305**	**0**	**0**	**134**	**1,973**	**529**	**305**	**423**	**305**	**0**	**0**
Cumulative Employment [1]											
Distribution/Light Industrial	7,049	0	0	0	448	896	896	896	896	896	896
Manufacturing	4,910	0	0	0	813	1,423	2,034	2,645	3,256	3,256	3,256
Data Center/High Tech	4,148	0	0	0	2,685	2,685	2,685	2,685	2,685	2,685	2,685
Transload/Switching	12	0	0	12	12	12	12	12	12	12	12
Retail	492	0	0	256	256	256	256	492	492	492	492
Total Employment	**16,611**	**0**	**0**	**268**	**4,214**	**5,273**	**5,884**	**6,730**	**7,340**	**7,340**	**7,340**
Cumulative Persons Served [2]	**8,305**	**0**	**0**	**134**	**2,107**	**2,637**	**2,942**	**3,365**	**3,670**	**3,670**	**3,670**

Source: Mark IV Capital; CoStar; EPS.

[1] Based on occupied land uses shown in Table A-3 and employment density assumptions shown in Table A-2.
[2] Persons Served defined as 50 percent of total Project employees. This figure represents an employee-to-resident equivalency and assumes that an employee's impact is about half of the impact of a resident.

Table A-5
Victory Master Planned Area
Fiscal Impact Analysis
Annual and Cumulative Service Population

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Annual Employment [1]										
Distribution/Light Industrial	0	282	282	282	0	728	1,457	728	2,394	0
Manufacturing	0	0	0	0	1,654	0	0	0	0	0
Data Center/High Tech	1,463	0	0	0	0	0	0	0	0	0
Transload/Switching	0	0	0	0	0	0	0	0	0	0
Retail	0	0	0	0	0	0	0	0	0	0
Total Employment	**1,463**	**282**	**282**	**282**	**1,654**	**728**	**1,457**	**728**	**2,394**	**0**
Annual Persons Served [2]	**731**	**141**	**141**	**141**	**827**	**364**	**728**	**364**	**1,197**	**0**
Cumulative Employment [1]										
Distribution/Light Industrial	896	1,178	1,460	1,742	1,742	2,470	3,927	4,655	7,049	7,049
Manufacturing	3,256	3,256	3,256	3,256	4,910	4,910	4,910	4,910	4,910	4,910
Data Center/High Tech	4,148	4,148	4,148	4,148	4,148	4,148	4,148	4,148	4,148	4,148
Transload/Switching	12	12	12	12	12	12	12	12	12	12
Retail	492	492	492	492	492	492	492	492	492	492
Total Employment	**8,803**	**9,085**	**9,367**	**9,649**	**11,303**	**12,032**	**13,488**	**14,217**	**16,611**	**16,611**
Cumulative Persons Served [2]	**4,402**	**4,542**	**4,683**	**4,824**	**5,652**	**6,016**	**6,744**	**7,108**	**8,305**	**8,305**

Source: Mark IV Capital; CoStar; EPS.

[1] Based on occupied land uses shown in Table A-3 and employment density assumptions shown in Table A-2.
[2] Persons Served defined as 50 percent of total Project employees. This figure represents an employee-to-resident equivalency and assumes that an employee's impact is about half of the impact of a resident.

Table A-6
Victory Master Planned Area
Fiscal Impact Analysis
Annual and Cumulative Appraised Value (2022$)

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Annual Appraised Value [1]											
Distribution/Light Industrial	$1,900,992,218	$0	$0	$0	$0	$120,825,618	$120,825,493	$0	$0	$0	$0
Manufacturing	$993,040,470	$0	$0	$0	$0	$164,374,849	$123,514,831	$123,514,831	$123,514,831	$123,514,831	$0
Data Center/High Tech	$1,793,625,600	$0	$0	$0	$0	$1,161,134,400	$0	$0	$0	$0	$0
Transload/Switching	$674,309	$0	$0	$0	$674,309	$0	$0	$0	$0	$0	$0
Retail	$45,018,534	$0	$0	$0	$23,478,550	$0	$0	$0	$21,539,984	$0	$0
Total Appraised Value	**$4,733,351,132**	**$0**	**$0**	**$0**	**$24,152,859**	**$1,446,334,867**	**$244,340,324**	**$123,514,831**	**$145,054,815**	**$123,514,831**	**$0**
Cumulative Appraised Value											
Distribution/Light Industria	$1,900,992,218	$0	$0	$0	$0	$120,825,618	$241,651,111	$241,651,111	$241,651,111	$241,651,111	$241,651,111
Manufacturing	$993,040,470	$0	$0	$0	$0	$164,374,849	$287,889,679	$411,404,510	$534,919,341	$658,434,171	$658,434,171
Data Center/High Tech	$1,793,625,600	$0	$0	$0	$0	$1,161,134,400	$1,161,134,400	$1,161,134,400	$1,161,134,400	$1,161,134,400	$1,161,134,400
Transload/Switching	$674,309	$0	$0	$0	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309
Retail	$45,018,534	$0	$0	$0	$23,478,550	$23,478,550	$23,478,550	$23,478,550	$45,018,534	$45,018,534	$45,018,534
Total Appraised Value	**$4,733,351,132**	**$0**	**$0**	**$0**	**$24,152,859**	**$1,470,487,726**	**$1,714,828,050**	**$1,838,342,880**	**$1,983,397,695**	**$2,106,912,526**	**$2,106,912,526**

Source: Mark IV Capital; CoStar; EPS.

Note: There is a one year lag between vertical construction and value added to the County tax roll, which accounts for assessment and tax collection.

[1] Based on gross building sq. ft. shown in Table A-3 and appraised values per square foot by land use shown in Table A-2.

Table A-6
Victory Master Planned Area
Fiscal Impact Analysis
Annual and Cumulative Appraised Value (2022$)

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Annual Appraised Value [1]										
Distribution/Light Industrial	$0	$0	$76,004,867	$76,004,867	$76,004,992	$0	$196,436,619	$392,873,238	$196,436,494	$645,580,029
Manufacturing	$0	$0	$0	$0	$0	$334,606,299	$0	$0	$0	$0
Data Center/High Tech	$0	$632,491,200	$0	$0	$0	$0	$0	$0	$0	$0
Transload/Switching	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retail	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Appraised Value	**$0**	**$632,491,200**	**$76,004,867**	**$76,004,867**	**$76,004,992**	**$334,606,299**	**$196,436,619**	**$392,873,238**	**$196,436,494**	**$645,580,029**
Cumulative Appraised Value										
Distribution/Light Industria	$241,651,111	$241,651,111	$317,655,978	$393,660,845	$469,665,837	$469,665,837	$666,102,456	$1,058,975,694	$1,255,412,188	$1,900,992,218
Manufacturing	$658,434,171	$658,434,171	$658,434,171	$658,434,171	$658,434,171	$993,040,470	$993,040,470	$993,040,470	$993,040,470	$993,040,470
Data Center/High Tech	$1,161,134,400	$1,793,625,600	$1,793,625,600	$1,793,625,600	$1,793,625,600	$1,793,625,600	$1,793,625,600	$1,793,625,600	$1,793,625,600	$1,793,625,600
Transload/Switching	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309	$674,309
Retail	$45,018,534	$45,018,534	$45,018,534	$45,018,534	$45,018,534	$45,018,534	$45,018,534	$45,018,534	$45,018,534	$45,018,534
Total Appraised Value	**$2,106,912,526**	**$2,739,403,726**	**$2,815,408,593**	**$2,891,413,460**	**$2,967,418,451**	**$3,302,024,751**	**$3,498,461,370**	**$3,891,334,608**	**$4,087,771,102**	**$4,733,351,132**

Source: Mark IV Capital; CoStar; EPS.

Note: There is a one year lag between vertical construction and value added to the County tax roll, which accounts for assessment and tax collection.

[1] Based on gross building sq. ft. shown in Table A-3 and appraised values per square foot by land use shown in Table A-2.

Table A-7
Victory Master Planned Area
Fiscal Impact Analysis
Annual and Cumulative Appraised Values Incl. Net Building Appreciation (2022$)

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Annual Appraised Value - Land [1]	*10% of total*										
Distribution/Light Industrial	$190,099,222	$0	$0	$0	$0	$12,082,562	$12,082,549	$0	$0	$0	$0
Manufacturing	$99,304,047	$0	$0	$0	$0	$16,437,485	$12,351,483	$12,351,483	$12,351,483	$12,351,483	$0
Data Center/High Tech	$179,362,560	$0	$0	$0	$0	$116,113,440	$0	$0	$0	$0	$0
Transload/Switching	$67,431	$0	$0	$0	$67,431	$0	$0	$0	$0	$0	$0
Retail	$4,501,853	$0	$0	$0	$2,347,855	$0	$0	$0	$2,153,998	$0	$0
Total Appraised Value	**$473,335,113**	**$0**	**$0**	**$0**	**$2,415,286**	**$144,633,487**	**$24,434,032**	**$12,351,483**	**$14,505,482**	**$12,351,483**	**$0**
Annual Appraised Value - Improvements [1]	*90% of total*										
Distribution/Light Industrial	$1,710,892,996	$0	$0	$0	$0	$108,743,056	$108,742,944	$0	$0	$0	$0
Manufacturing	$893,736,423	$0	$0	$0	$0	$147,937,364	$111,163,348	$111,163,348	$111,163,348	$111,163,348	$0
Data Center/High Tech	$1,614,263,040	$0	$0	$0	$0	$1,045,020,960	$0	$0	$0	$0	$0
Transload/Switching	$606,878	$0	$0	$0	$606,878	$0	$0	$0	$0	$0	$0
Retail	$40,516,681	$0	$0	$0	$21,130,695	$0	$0	$0	$19,385,986	$0	$0
Total Appraised Value	**$4,260,016,018**	**$0**	**$0**	**$0**	**$21,737,573**	**$1,301,701,380**	**$219,906,292**	**$111,163,348**	**$130,549,334**	**$111,163,348**	**$0**
Total Appraised Value (Land + Improvements)	**$4,733,351,132**	**$0**	**$0**	**$0**	**$24,152,859**	**$1,446,334,867**	**$244,340,324**	**$123,514,831**	**$145,054,815**	**$123,514,831**	**$0**
Cumulative Appraised Value - Land											
Distribution/Light Industrial	$190,099,222	$0	$0	$0	$0	$12,082,562	$24,165,111	$24,165,111	$24,165,111	$24,165,111	$24,165,111
Manufacturing	$99,304,047	$0	$0	$0	$0	$16,437,485	$28,788,968	$41,140,451	$53,491,934	$65,843,417	$65,843,417
Data Center/High Tech	$179,362,560	$0	$0	$0	$0	$116,113,440	$116,113,440	$116,113,440	$116,113,440	$116,113,440	$116,113,440
Transload/Switching	$67,431	$0	$0	$0	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431
Retail	$4,501,853	$0	$0	$0	$2,347,855	$2,347,855	$2,347,855	$2,347,855	$4,501,853	$4,501,853	$4,501,853
Total Appraised Value	**$473,335,113**	**$0**	**$0**	**$0**	**$2,415,286**	**$147,048,773**	**$171,482,805**	**$183,834,288**	**$198,339,770**	**$210,691,253**	**$210,691,253**
Cumulative Appraised Value - Improvements Incl. Net Appreciation [2] [3]											
Distribution/Light Industrial	$2,345,831,100	$0	$0	$0	$0	$117,393,831	$237,562,944	$238,589,434	$239,620,359	$240,655,738	$241,695,591
Manufacturing	$1,110,137,166	$0	$0	$0	$0	$159,706,142	$282,721,520	$408,631,874	$537,495,377	$669,371,334	$672,263,631
Data Center/High Tech	$1,930,801,226	$0	$0	$0	$0	$1,128,154,925	$1,133,029,587	$1,137,925,312	$1,142,842,191	$1,147,780,316	$1,152,739,778
Transload/Switching	$688,643	$0	$0	$0	$642,738	$645,516	$648,305	$651,106	$653,920	$656,745	$659,583
Retail	$47,319,465	$0	$0	$0	$22,379,305	$22,476,004	$22,573,121	$22,670,657	$44,933,447	$45,127,601	$45,322,593
Total Appraised Value	**$5,434,777,601**	**$0**	**$0**	**$0**	**$23,022,043**	**$1,428,376,418**	**$1,676,535,477**	**$1,808,468,384**	**$1,965,545,293**	**$2,103,591,734**	**$2,112,681,176**
Cumulative Total Appraised Value - Land + Impr. Incl. Net Appreciation											
Distribution/Light Industrial	$2,535,930,322	$0	$0	$0	$0	$129,476,393	$261,728,056	$262,754,545	$263,785,470	$264,820,849	$265,860,702
Manufacturing	$1,209,441,213	$0	$0	$0	$0	$176,143,627	$311,510,488	$449,772,325	$590,987,311	$735,214,751	$738,107,048
Data Center/High Tech	$2,110,163,786	$0	$0	$0	$0	$1,244,268,365	$1,249,143,027	$1,254,038,752	$1,258,955,631	$1,263,893,756	$1,268,853,218
Transload/Switching	$756,074	$0	$0	$0	$710,169	$712,947	$715,736	$718,537	$721,350	$724,176	$727,014
Retail	$51,821,318	$0	$0	$0	$24,727,160	$24,823,859	$24,920,976	$25,018,512	$49,435,301	$49,629,454	$49,824,447
Total Appraised Value	**$5,908,112,714**	**$0**	**$0**	**$0**	**$25,437,329**	**$1,575,425,190**	**$1,848,018,282**	**$1,992,302,672**	**$2,163,885,063**	**$2,314,282,987**	**$2,323,372,429**

Source: Lyon County; Nevada Department of Taxation; International Code Council; EPS.

[1] The proportion of land to improvement value as a percentage of total appraised value is a generalized estimate based on an evaluation of Lyon County assessor records for similar land uses. Actual proportions may vary from these estimates.
[2] Appraised values for improvements have been escalated by 1.9% annually to account for annual growth of ICC Building Values, adjusted for inflation. For details on the annual escalation rate, refer to Table A-1.
[3] Beginning the year following development, appraised values of improvements are assumed to depreciate at a rate of 1.50% annually. Refer to Table A-1 for details.

Table A-7
Victory Master Planned Area
Fiscal Impact Analysis
Annual and Cumulative Appraised Values Incl. Net Building Appreciation (2022$)

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Annual Appraised Value - Land [1]										
Distribution/Light Industrial	$0	$0	$7,600,487	$7,600,487	$7,600,499	$0	$19,643,662	$39,287,324	$19,643,649	$64,558,003
Manufacturing	$0	$0	$0	$0	$0	$33,460,630	$0	$0	$0	$0
Data Center/High Tech	$0	$63,249,120	$0	$0	$0	$0	$0	$0	$0	$0
Transload/Switching	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retail	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Appraised Value	**$0**	**$63,249,120**	**$7,600,487**	**$7,600,487**	**$7,600,499**	**$33,460,630**	**$19,643,662**	**$39,287,324**	**$19,643,649**	**$64,558,003**
Annual Appraised Value - Improvements [1]										
Distribution/Light Industrial	$0	$0	$68,404,380	$68,404,380	$68,404,492	$0	$176,792,957	$353,585,914	$176,792,845	$581,022,026
Manufacturing	$0	$0	$0	$0	$0	$301,145,669	$0	$0	$0	$0
Data Center/High Tech	$0	$569,242,080	$0	$0	$0	$0	$0	$0	$0	$0
Transload/Switching	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retail	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Appraised Value	**$0**	**$569,242,080**	**$68,404,380**	**$68,404,380**	**$68,404,492**	**$301,145,669**	**$176,792,957**	**$353,585,914**	**$176,792,845**	**$581,022,026**
Total Appraised Value (Land + Impr.)	**$0**	**$632,491,200**	**$76,004,867**	**$76,004,867**	**$76,004,992**	**$334,606,299**	**$196,436,619**	**$392,873,238**	**$196,436,494**	**$645,580,029**
Cumulative Appraised Value - Land										
Distribution/Light Industrial	$24,165,111	$24,165,111	$31,765,598	$39,366,085	$46,966,584	$46,966,584	$66,610,246	$105,897,569	$125,541,219	$190,099,222
Manufacturing	$65,843,417	$65,843,417	$65,843,417	$65,843,417	$65,843,417	$99,304,047	$99,304,047	$99,304,047	$99,304,047	$99,304,047
Data Center/High Tech	$116,113,440	$179,362,560	$179,362,560	$179,362,560	$179,362,560	$179,362,560	$179,362,560	$179,362,560	$179,362,560	$179,362,560
Transload/Switching	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431	$67,431
Retail	$4,501,853	$4,501,853	$4,501,853	$4,501,853	$4,501,853	$4,501,853	$4,501,853	$4,501,853	$4,501,853	$4,501,853
Total Appraised Value	**$210,691,253**	**$273,940,373**	**$281,540,859**	**$289,141,346**	**$296,741,845**	**$330,202,475**	**$349,846,137**	**$389,133,461**	**$408,777,110**	**$473,335,113**
Cumulative Appraised Value - Improvements Incl. Net Appreciation [2] [3]										
Distribution/Light Industrial	$242,739,937	$243,788,796	$330,904,921	$420,060,278	$511,295,953	$513,505,220	$755,850,443	$1,248,648,156	$1,503,538,275	$2,345,831,100
Manufacturing	$675,168,426	$678,085,771	$681,015,723	$683,958,334	$686,913,660	$1,091,155,419	$1,095,870,210	$1,100,605,372	$1,105,360,995	$1,110,137,166
Data Center/High Tech	$1,157,720,669	$1,865,337,874	$1,873,397,842	$1,881,492,635	$1,889,622,406	$1,897,787,305	$1,905,987,483	$1,914,223,094	$1,922,494,291	$1,930,801,226
Transload/Switching	$662,433	$665,295	$668,170	$671,057	$673,956	$676,869	$679,793	$682,731	$685,681	$688,643
Retail	$45,518,428	$45,715,110	$45,912,641	$46,111,026	$46,310,267	$46,510,370	$46,711,337	$46,913,173	$47,115,881	$47,319,465
Total Appraised Value	**$2,121,809,893**	**$2,833,592,846**	**$2,931,899,296**	**$3,032,293,330**	**$3,134,816,243**	**$3,549,635,182**	**$3,805,099,267**	**$4,311,072,526**	**$4,579,195,122**	**$5,434,777,601**
Cumulative Total Appraised Value - Land + Impr. Incl. Net Appreciation										
Distribution/Light Industrial	$266,905,048	$267,953,907	$362,670,519	$459,426,363	$558,262,537	$560,471,803	$822,460,689	$1,354,545,725	$1,629,079,494	$2,535,930,322
Manufacturing	$741,011,843	$743,929,189	$746,859,140	$749,801,751	$752,757,077	$1,190,459,466	$1,195,174,257	$1,199,909,419	$1,204,665,042	$1,209,441,213
Data Center/High Tech	$1,273,834,109	$2,044,700,434	$2,052,760,402	$2,060,855,195	$2,068,984,966	$2,077,149,865	$2,085,350,043	$2,093,585,654	$2,101,856,851	$2,110,163,786
Transload/Switching	$729,864	$732,726	$735,601	$738,488	$741,387	$744,299	$747,224	$750,162	$753,112	$756,074
Retail	$50,020,282	$50,216,963	$50,414,494	$50,612,879	$50,812,121	$51,012,224	$51,213,191	$51,415,027	$51,617,735	$51,821,318
Total Appraised Value	**$2,332,501,146**	**$3,107,533,219**	**$3,213,440,155**	**$3,321,434,676**	**$3,431,558,088**	**$3,879,837,657**	**$4,154,945,404**	**$4,700,205,987**	**$4,987,972,232**	**$5,908,112,714**

Source: Lyon County; Nevada Department of Taxation; EPS.

[1] The proportion of land to improvement value as a percentage of total appraised value is a generalized estimate based on an evaluation of Lyon County assessor records for similar land uses. Actual proportions may vary from these estimates.
[2] Appraised values for improvements have been escalated by 1.9% annually to account for annual growth of ICC Building Values, adjusted for inflation. For details on the annual escalation rate, refer to Table A-1.
[3] Beginning the year following development, appraised values of improvements are assumed to depreciate at a rate of 1.50% annually. Refer to Table A-1 for details.

Table A-8
Victory Master Planned Area
Fiscal Impact Analysis
Cumulative Assessed Value (2022$)

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Cumulative Assessed Value [1]											
Distribution/Light Industria	$887,575,613	$0	$0	$0	$0	$45,316,738	$91,604,819	$91,964,091	$92,324,914	$92,687,297	$93,051,246
Manufacturing	$423,304,425	$0	$0	$0	$0	$61,650,269	$109,028,671	$157,420,314	$206,845,559	$257,325,163	$258,337,467
Data Center/High Tech	$738,557,325	$0	$0	$0	$0	$435,493,928	$437,200,059	$438,913,563	$440,634,471	$442,362,815	$444,098,626
Transload/Switching	$264,626	$0	$0	$0	$248,559	$249,531	$250,508	$251,488	$252,473	$253,462	$254,455
Retail	$18,137,461	$0	$0	$0	$8,654,506	$8,688,351	$8,722,341	$8,756,479	$17,302,355	$17,370,309	$17,438,556
Total Appraised Value	**$2,067,839,450**	**$0**	**$0**	**$0**	**$8,903,065**	**$551,398,817**	**$646,806,399**	**$697,305,935**	**$757,359,772**	**$809,999,045**	**$813,180,350**

Source: Nevada Department of Taxation; EPS.

[1] Annual assessed value used to estimate property tax revenue based on Nevada State law which requires all property be assessed at 35 percent of its taxable replacement value. This analysis assumes this value is equal to the total escalated appraised value shown in Table A-7.

Table A-8
Victory Master Planned Area
Fiscal Impact Analysis
Cumulative Assessed Value (2022$)

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Cumulative Assessed Value [1]										
Distribution/Light Industria	$93,416,767	$93,783,868	$126,934,682	$160,799,227	$195,391,888	$196,165,131	$287,861,241	$474,091,004	$570,177,823	$887,575,613
Manufacturing	$259,354,145	$260,375,216	$261,400,699	$262,430,613	$263,464,977	$416,660,813	$418,310,990	$419,968,297	$421,632,765	$423,304,425
Data Center/High Tech	$445,841,938	$715,645,152	$718,466,141	$721,299,318	$724,144,738	$727,002,453	$729,872,515	$732,754,979	$735,649,898	$738,557,325
Transload/Switching	$255,452	$256,454	$257,460	$258,471	$259,486	$260,505	$261,528	$262,557	$263,589	$264,626
Retail	$17,507,099	$17,575,937	$17,645,073	$17,714,508	$17,784,242	$17,854,278	$17,924,617	$17,995,259	$18,066,207	$18,137,461
Total Appraised Value	**$816,375,401**	**$1,087,636,627**	**$1,124,704,054**	**$1,162,502,137**	**$1,201,045,331**	**$1,357,943,180**	**$1,454,230,891**	**$1,645,072,095**	**$1,745,790,281**	**$2,067,839,450**

Source: Nevada Department of Taxation; EPS.

[1] Annual assessed value used to estimate property tax revenue based on Nevada State law which requires all property be assessed at 35 percent of its taxable replacement value. This analysis assumes this value is equal to the total escalated appraised value shown in Table A-7.

APPENDIX B:

Revenue Estimating Tables

Table B-1	Revenue Estimating Procedures	B-1
Table B-2	Annual Estimated Project Revenues Summary	B-2
Table B-3	Cumulative Estimated Project Revenues Summary	B-3
Table B-4	Annual Estimated Project Revenues by Fiscal Year (2 pages)	B-4
Table B-5	Annual Estimated Project Property Tax Revenue by Fiscal Year Case Study (2 pages)	B-6
Table B-6	Annual Building Permit and Plan Check Fee Revenue Case Study (2 pages)	B-8

Table B-1
Victory Master Planned Area
Fiscal Impact Analysis
Revenue Estimating Procedures (2022$)

Item	Estimating Procedure	Case Study Reference	FY 2022-23 Final Budget Revenues	Percent of Total	Service Population [1]	Revenue Multiplier
General Fund						
Property Taxes	Case Study	Table B-5	$3,933,950	28.2%	-	-
Property Taxes-Delinquent	NA [2]	-	$20,000	0.1%	-	-
Business License Fees	Employee Multiplier	-	$825,000	5.9%	4,816	$171.30
Franchise Fees	Persons Served Multiplier	-	$1,540,000	11.0%	25,801	$59.69
Liquor License Fees	NA [2]	-	$38,000	0.3%	-	-
Gaming License Fees	NA [2]	-	$120,000	0.9%	-	-
Licenses-Animal	NA [2]	-	$6,500	0.0%	-	-
Passport Fees	NA [2]	-	$10,500	0.1%	-	-
Building and Civil Permit Fees	Case Study [3]	Table B-6	$933,052	6.7%	-	-
Permit Processing Fee	NA [2]	-	$0	0.0%	-	-
Planning and Zoning Fees	Case Study [3]	Table B-6	$310,000	2.2%	-	-
Public Works/Civil Fees	NA [2]	-	$135,000	1.0%	-	-
PublicWorks/Civil Inspect Fees	NA [2]	-	$90,000	0.6%	-	-
Other Fees (eg. Copies etc)	NA [2]	-	$400	0.0%	-	-
Consolidated Tax (CTX)	Persons Served Multiplier	-	$240,870	1.7%	25,801	$9.34
Motor Veh Fuel Tax (Gas Tax)	Persons Served Multiplier	-	$413,119	3.0%	25,801	$16.01
RTC Shared Revenue	Persons Served Multiplier	-	$4,578,000	32.8%	25,801	$177.43
County Parks Agreement	NA [2]	-	$60,000	0.4%	-	-
County Roads	Persons Served Multiplier	-	$180,000	1.3%	25,801	$6.98
Administration Fees	NA [2]	-	$2,500	0.0%	-	-
Marijuana Sales Tax	NA [2]	-	$21,500	0.2%	-	-
Penalties/Fines Municipal Court	Persons Served Multiplier	-	$200,000	1.4%	25,801	$7.75
Community Service Fee	NA [2]	-	$1,000	0.0%	-	-
Muni Court Misc Fees	NA [2]	-	$600	0.0%	-	-
Interest Earnings	Persons Served Multiplier	-	$10,000	0.1%	-	-
Cemetery Burial/Cremation Fee	NA [2]	-	$4,000	0.0%	25,801	$0.16
Cemetery Plot Fees	NA [2]	-	$0	0.0%	-	-
Donation-City Sponsored Events	NA [2]	-	$1,500	0.0%	-	-
Miscellaneous Revenue	NA [2]	-	$45,000	0.3%	-	-
Credit Card Fee - Gen Svcs	NA [2]	-	$13,745	0.1%	-	-
Sale of Assets	NA [2]	-	$0	0.0%	-	-
Total General			**$13,734,236**	**98.5%**		
Parks Facilities Fund [4]						
Interest Earnings	NA	-	$250	0.0%	-	-
Park Rental Fees	NA	-	$7,500	0.1%	-	-
Facility Rental Fees	NA	-	$5,000	0.0%	-	-
Total Parks Facilities			**$12,750**	**0.1%**		
Res. Construction Tax Fund [4]						
Residential Construction Tax	NA	-	$200,000	1.4%	-	-
Interest Earnings	NA	-	$1,000	0.0%	-	-
Total RCT			**$201,000**	**1.4%**		
Total General Fund Revenues			**$13,947,986**	**100.0%**		

Source: City of Fernley FY 2022-2023 Final Budget; EPS.

[1] Refer to Table A-1 for details.
[2] Based on information provided in the City budget, It is not anticipated that the Project will generate revenues for this category.
[3] Reflects one-time fee revenues generated by Project development permitting. It is assumed that one-time fee revenues will be mostly or entirely offset by direct expenditures related to reviewing and processing permits for Project development. One-time fee revenues have been estimated for reference but are excluded from net fiscal impact totals.
[4] While labeled a fund, this revenue category does not meet the definition of a fund and is included in the City's General Fund. Based on the nonresidential land uses in the project, proposed development is not anticipated to generate revenues for this category.

Table B-2
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Revenues Summary (2022$)

Item	Annual Revenues at End of Period [1]	
	Initial Years	**Buildout**
	FY 2031-32	*FY 2041-42*
Annual General Fund Revenues		
Property Taxes	$5,476,770	$13,926,899
Business License Fees	$1,257,451	$2,845,510
Franchise Fees	$219,067	$495,732
Consolidated Tax (CTX)	$34,264	$77,537
Motor Vehicle Fuel Tax (Gas Tax)	$58,767	$132,985
RTC Shared Revenue	$651,228	$1,473,675
County Roads	$25,605	$57,943
Penalties/Fines Municipal Court	$28,450	$64,381
Interest Earnings	$569	$1,288
Total Annual General Fund Revenues	**$7,752,172**	**$19,075,948**
Total General Fund Annual Revenues	**$7,752,172**	**$19,075,948**

Source: Mark IV Capital; EPS.

[1] Annual revenues include recurring revenues only. In addition to the recurring revenues shown here, the Project will generate building and permit fee revenues over the Project's buildout. Refer to Table B-6 for an estimate of one-time permit and plan check fee revenues.

Table B-3
Victory Master Planned Area
Fiscal Impact Analysis
Cumulative Estimated Project Revenues Summary (2022$)

Item	Cumulative Revenues by Period Initial Years *FY 22-23 through FY 31-32*	 Buildout *FY 22-23 through FY 41-42*
Cumulative General Fund Revenues		
Property Taxes	$28,799,799	$120,821,043
Business License Fees	$7,604,337	$28,360,413
Franchise Fees	$1,324,793	$4,940,823
Consolidated Tax (CTX)	$207,210	$772,790
Motor Vehicle Fuel Tax (Gas Tax)	$355,388	$1,325,421
RTC Shared Revenue	$3,938,249	$14,687,718
County Roads	$154,846	$577,499
Penalties/Fines Municipal Court	$172,051	$641,665
Interest Earnings	$3,441	$12,833
Total Cumulative General Fund Revenues	**$42,560,113**	**$172,140,203**
Cumulative One-Time Fee Revenues		
Building and Civil Permit Fees	$7,328,674	$18,554,893
Planning and Zoning Fees	$4,763,638	$12,060,681
Subtotal Cumulative One-Time Fee Revenues	**$12,092,312**	**$30,615,574**

Source: Mark IV Capital; EPS.

Table B-4
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Revenues by Fiscal Year (2022$)

Item	Estimated Annual Revenues (2022$)										
	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Annual General Fund Revenues											
Property Taxes	$120,821,043	$0	$0	$0	$600	$3,713,671	$4,356,241	$4,696,355	$5,100,818	$5,455,344	$5,476,770
Business License Fees	$28,360,413	$0	$0	$45,984	$721,936	$903,306	$1,007,923	$1,152,834	$1,257,451	$1,257,451	$1,257,451
Franchise Fees	$4,940,823	$0	$0	$8,011	$125,772	$157,370	$175,596	$200,842	$219,067	$219,067	$219,067
Consolidated Tax (CTX)	$772,790	$0	$0	$1,253	$19,672	$24,614	$27,465	$31,413	$34,264	$34,264	$34,264
Motor Vehicle Fuel Tax (Gas Tax)	$1,325,421	$0	$0	$2,149	$33,740	$42,216	$47,105	$53,878	$58,767	$58,767	$58,767
RTC Shared Revenue	$14,687,718	$0	$0	$23,815	$373,887	$467,818	$521,998	$597,047	$651,228	$651,228	$651,228
County Roads	$577,499	$0	$0	$936	$14,701	$18,394	$20,524	$23,475	$25,605	$25,605	$25,605
Penalties/Fines Municipal Cour	$641,665	$0	$0	$1,040	$16,334	$20,438	$22,805	$26,083	$28,450	$28,450	$28,450
Interest Earnings	$12,833	$0	$0	$21	$327	$409	$456	$522	$569	$569	$569
Total Annual General Fund Revenues	**$172,140,203**	**$0**	**$0**	**$83,210**	**$1,306,967**	**$5,348,235**	**$6,180,113**	**$6,782,450**	**$7,376,220**	**$7,730,746**	**$7,752,172**

Source: Mark IV Capital; EPS.

Table B-4
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Revenues (2022$)

Item	Estimated Annual Revenues (2022$)									
	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Annual General Fund Revenues										
Property Taxes	$5,498,288	$7,325,233	$7,574,882	$7,829,452	$8,089,040	$9,145,747	$9,794,245	$11,079,561	$11,757,898	$13,926,899
Business License Fees	$1,508,007	$1,556,288	$1,604,570	$1,652,852	$1,936,263	$2,061,049	$2,310,621	$2,435,406	$2,845,510	$2,845,510
Franchise Fees	$262,718	$271,130	$279,541	$287,952	$337,327	$359,067	$402,546	$424,285	$495,732	$495,732
Consolidated Tax (CTX)	$41,091	$42,407	$43,723	$45,038	$52,761	$56,161	$62,962	$66,362	$77,537	$77,537
Motor Vehicle Fuel Tax (Gas Tax)	$70,477	$72,733	$74,989	$77,246	$90,491	$96,323	$107,987	$113,818	$132,985	$132,985
RTC Shared Revenue	$780,989	$805,994	$830,999	$856,004	$1,002,781	$1,067,407	$1,196,659	$1,261,285	$1,473,675	$1,473,675
County Roads	$30,707	$31,690	$32,674	$33,657	$39,428	$41,969	$47,051	$49,592	$57,943	$57,943
Penalties/Fines Municipal Cour	$34,119	$35,212	$36,304	$37,396	$43,809	$46,632	$52,279	$55,102	$64,381	$64,381
Interest Earnings	$682	$704	$726	$748	$876	$933	$1,046	$1,102	$1,288	$1,288
Total Annual General Fund Revenues	**$8,227,079**	**$10,141,391**	**$10,478,408**	**$10,820,346**	**$11,592,776**	**$12,875,287**	**$13,975,394**	**$15,486,514**	**$16,906,947**	**$19,075,948**

Source: Mark IV Capital; EPS.

Table B-5
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Property Tax Revenue by Fiscal Year Case Study (2022$)

Item	Assumptions / Source	Estimated Property Tax Revenues (2022$)									
		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Estimated Annual Property Tax Revenue											
Estimated Cumulative Assessed Value [1]	**Table A-8**	**$0**	**$0**	**$0**	**$8,903,065**	**$551,398,817**	**$646,806,399**	**$697,305,935**	**$757,359,772**	**$809,999,045**	**$813,180,350**
Mill Levy Rate per $100 of Assessed Value											
Fernley General Fund	**0.6735%**	**$0**	**$0**	**$0**	**$600**	**$3,713,671**	**$4,356,241**	**$4,696,355**	**$5,100,818**	**$5,455,344**	**$5,476,770**
North Lyon Fire District	0.3055%	$0	$0	$0	$272	$1,684,523	$1,975,994	$2,130,270	$2,313,734	$2,474,547	$2,484,266
Total Property Tax Levy	**0.9790%**	**$0**	**$0**	**$0**	**$872**	**$5,398,194**	**$6,332,235**	**$6,826,625**	**$7,414,552**	**$7,929,891**	**$7,961,036**

Source: Mark IV Capital; EPS.

[1] Estimated Annual Assessed Value includes the value of land, and net appreciated values of real and personal property.

Table B-5
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Property Tax Revenue by Fiscal Year Case Study (2022$)

Item	Estimated Property Tax Revenues (2022$)									
	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Estimated Annual Property Tax Revenue										
Estimated Cumulative Assessed Value [1]	**$816,375,401**	**$1,087,636,627**	**$1,124,704,054**	**$1,162,502,137**	**$1,201,045,331**	**$1,357,943,180**	**$1,454,230,891**	**$1,645,072,095**	**$1,745,790,281**	**$2,067,839,450**
Mill Levy Rate per $100 of Assessed Value										
Fernley General Fund	**$5,498,288**	**$7,325,233**	**$7,574,882**	**$7,829,452**	**$8,089,040**	**$9,145,747**	**$9,794,245**	**$11,079,561**	**$11,757,898**	**$13,926,899**
North Lyon Fire District	$2,494,027	$3,322,730	$3,435,971	$3,551,444	$3,669,193	$4,148,516	$4,442,675	$5,025,695	$5,333,389	$6,317,250
Total Property Tax Levy	**$7,992,315**	**$10,647,963**	**$11,010,853**	**$11,380,896**	**$11,758,234**	**$13,294,264**	**$14,236,920**	**$16,105,256**	**$17,091,287**	**$20,244,148**

Source: Mark IV Capital; EPS.

[1] Estimated Annual Assessed Value includes the value of land, and net appreciated values of real and personal property.

Table B-6
Victory Master Planned Area
Fiscal Impact Analysis
Annual Building Permit and Plan Check Fee Revenue Case Study (2022$

Item	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Annual Building Permit Value [1]											
Distribution/Light Industrial	$2,523,699,528	$0	$0	$0	$127,965,186	$130,437,456	$0	$0	$0	$0	$0
Manufacturing	$1,160,516,829	$0	$0	$0	$174,087,734	$133,340,737	$135,917,002	$138,543,043	$141,219,821	$0	$0
Data Center/High Tech	$1,995,631,154	$0	$0	$0	$1,229,745,660	$0	$0	$0	$0	$0	$0
Transload/Switching	$700,617	$0	$0	$700,617	$0	$0	$0	$0	$0	$0	$0
Retail	$48,555,351	$0	$0	$24,394,569	$0	$0	$0	$24,160,783	$0	$0	$0
Total Building Permit Value	**$5,729,103,479**	**$0**	**$0**	**$25,095,186**	**$1,531,798,580**	**$263,778,192**	**$135,917,002**	**$162,703,825**	**$141,219,821**	**$0**	**$0**
Building Permit Fees [2]											
Distribution/Light Industria	$8,174,220	$0	$0	$0	$415,847	$423,832	$0	$0	$0	$0	$0
Manufacturing	$3,763,583	$0	$0	$0	$564,822	$433,210	$441,531	$450,013	$458,659	$0	$0
Data Center/High Tech	$6,450,927	$0	$0	$0	$3,974,597	$0	$0	$0	$0	$0	$0
Transload/Switching	$4,292	$0	$0	$4,292	$0	$0	$0	$0	$0	$0	$0
Retail	$161,872	$0	$0	$81,313	$0	$0	$0	$80,558	$0	$0	$0
Total Building Permit Fees	**$18,554,893**	**$0**	**$0**	**$85,605**	**$4,955,266**	**$857,042**	**$441,531**	**$530,571**	**$458,659**	**$0**	**$0**
Plan Check Fees [3]											
Distribution/Light Industria	$5,313,243	$0	$0	$0	$270,300	$275,491	$0	$0	$0	$0	$0
Manufacturing	$2,446,329	$0	$0	$0	$367,135	$281,586	$286,995	$292,508	$298,128	$0	$0
Data Center/High Tech	$4,193,102	$0	$0	$0	$2,583,488	$0	$0	$0	$0	$0	$0
Transload/Switching	$2,790	$0	$0	$2,790	$0	$0	$0	$0	$0	$0	$0
Retail	$105,217	$0	$0	$52,854	$0	$0	$0	$52,363	$0	$0	$0
Total Plan Check Fees	**$12,060,681**	**$0**	**$0**	**$55,643**	**$3,220,923**	**$557,077**	**$286,995**	**$344,871**	**$298,128**	**$0**	**$0**
Total One-Time Fee Revenue	**$30,615,574**	**$0**	**$0**	**$141,248**	**$8,176,189**	**$1,414,118**	**$728,526**	**$875,443**	**$756,787**	**$0**	**$0**

Source: Mark IV Capital; EPS.

[1] Based on guidance provided by the Project Applicant, It is assumed that each new value entry for each land use represents development of a separate building. Building permit value year is estimated based on the assessed value per square foot assumptions shown on Table A-2 escalated by 1.93% annually to account for the average annual growth in ICC Building Valuation Data, adjusted for inflation and is assumed to be created in the year of development with no lag year.
[2] Based on the posted Building Permit Fee Schedule, Building permit fees are estimated based on the Building Valuation Data published by the International Code Council, titled "Square Foot Construction Costs."
[3] Based on the posted City's Building Permit Fee Schedule, Plan Check Fees are estimated as 65% of total building permit fees.

Table B-6
Victory Master Planned Area
Fiscal Impact Analysis
Annual Building Permit and Plan Check Fees (2022$)

Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Annual Building Permit Value [1]										
Distribution/Light Industrial	$0	$93,812,713	$95,625,260	$97,472,988	$0	$261,749,876	$533,614,247	$271,961,909	$911,059,893	$0
Manufacturing	$0	$0	$0	$0	$437,408,493	$0	$0	$0	$0	$0
Data Center/High Tech	$765,885,493	$0	$0	$0	$0	$0	$0	$0	$0	$0
Transload/Switching	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retail	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Building Permit Value	**$765,885,493**	**$93,812,713**	**$95,625,260**	**$97,472,988**	**$437,408,493**	**$261,749,876**	**$533,614,247**	**$271,961,909**	**$911,059,893**	**$0**
Building Permit Fees [2]										
Distribution/Light Industria	$0	$305,534	$311,389	$317,357	$0	$847,971	$1,726,093	$880,956	$2,945,242	$0
Manufacturing	$0	$0	$0	$0	$1,415,348	$0	$0	$0	$0	$0
Data Center/High Tech	$2,476,329	$0	$0	$0	$0	$0	$0	$0	$0	$0
Transload/Switching	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retail	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Building Permit Fees	**$2,476,329**	**$305,534**	**$311,389**	**$317,357**	**$1,415,348**	**$847,971**	**$1,726,093**	**$880,956**	**$2,945,242**	**$0**
Plan Check Fees [3]										
Distribution/Light Industria	$0	$198,597	$202,403	$206,282	$0	$551,181	$1,121,960	$572,621	$1,914,408	$0
Manufacturing	$0	$0	$0	$0	$919,976	$0	$0	$0	$0	$0
Data Center/High Tech	$1,609,614	$0	$0	$0	$0	$0	$0	$0	$0	$0
Transload/Switching	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Retail	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Plan Check Fees	**$1,609,614**	**$198,597**	**$202,403**	**$206,282**	**$919,976**	**$551,181**	**$1,121,960**	**$572,621**	**$1,914,408**	**$0**
Total One-Time Fee Revenue	**$4,085,943**	**$504,131**	**$513,791**	**$523,639**	**$2,335,325**	**$1,399,152**	**$2,848,053**	**$1,453,577**	**$4,859,650**	**$0**

Source: Mark IV Capital; EPS.

[1] Based on guidance provided by the Project Applicant, It is assumed that each new value entry for each land use represents development of a separate building. Building permit value year is estimated based on the assessed value per square foot assumptions shown on Table A-2 escalated by 1.93% annually to account for the average annual growth in ICC Building Valuation Data, adjusted for inflation and is assumed to be created in the year of development with no lag year.
[2] Based on the posted Building Permit Fee Schedule, Building permit fees are estimated based on the Building Valuation Data published by the International Code Council, titled "Square Foot Construction Costs".
[3] Based on the posted City's Building Permit Fee Schedule, Plan Check Fees are estimated as 65% of total building permit fees.

APPENDIX C:

Expenditure Estimating Tables

Table C-1 Expenditure Estimating Procedures C-1

Table C-2 Annual Estimated Project Expenditures Summary C-2

Table C-3 Cumulative Estimated Project Expenditures Summary C-3

Table C-4 Annual Estimated Project Expenditures by Fiscal Year (2 pages) C-4

Table C-5 Streets and Storm Drains Expenditures Case Study C-6

Table C-1
Victory Master Planned Area
Fiscal Impact Analysis
Expenditure Estimating Procedures (2022$)

Item	Estimating Procedure	Case Study Reference	FY 2022-23 Final Budget Expenditures	Percent of Total	Service Population	Expenditure Multiplier	Variable Cost Adjustment	Net Expenditure Multiplier
General Fund								
Mayor/Council	Persons Served Multiplier	-	$152,456	0.8%	25,801	$5.91	25.0%	$4.43
Office of City Manager	Persons Served Multiplier	-	$687,398	3.6%	25,801	$26.64	25.0%	$19.98
IT	Persons Served Multiplier	-	$176,919	0.9%	25,801	$6.86	25.0%	$5.14
Animal Control	Persons Served Multiplier	-	$104,242	0.5%	25,801	$4.04	25.0%	$3.03
Office of City Attorney	Persons Served Multiplier	-	$669,641	3.5%	25,801	$25.95	25.0%	$19.47
Finance	Persons Served Multiplier	-	$197,754	1.0%	25,801	$7.66	25.0%	$5.75
Contingency	Pct of Subtotal GF Exp.	-	$455,000	2.4%	-	-	-	-
Debt Service	NA	-	-	-	-	-	-	-
City Clerk	Persons Served Multiplier	-	$352,602	1.8%	25,801	$13.67	25.0%	$10.25
Municipal Court	Persons Served Multiplier	-	$557,882	2.9%	25,801	$21.62	25.0%	$16.22
Building & Safety	Persons Served Multiplier	-	$551,122	2.9%	25,801	$21.36	0.0%	$21.36
Planning	Persons Served Multiplier	-	$859,295	4.5%	25,801	$33.30	0.0%	$33.30
City Engineer	Persons Served Multiplier	-	$674,988	3.5%	25,801	$26.16	0.0%	$26.16
Facilities	Persons Served Multiplier	-	$449,480	2.3%	25,801	$17.42	0.0%	$17.42
Vector Control	Persons Served Multiplier	-	$83,354	0.4%	25,801	$3.23	0.0%	$3.23
Cemetery	Per Resident Multiplier	-	$132,000	0.7%	23,393	$5.64	0.0%	$5.64
Streets & Storm Drains	Case Study	Table C-5	$10,859,493	56.4%	-	-	-	-
Parks	Per Resident Multiplier	-	$1,162,175	6.0%	23,393	$49.68	0.0%	$49.68
Fleet	Persons Served Multiplier	-	$138,702	0.7%	25,801	$5.38	0.0%	$5.38
Total General Fund	-	-	**$18,264,503**	**94.8%**	-	-	-	-
Parks Facilities Fund [1]								
Total Parks Facilities	NA	-	-	-	-	-	-	-
Res. Construction Tax Fund [2]								
Total RCT	NA	-	$1,000,000	5.2%	-	-	-	-
Total General Fund	-	-	**$19,264,503**	**100.0%**	-	-	-	-
Revenues Less Expenditures								
Excess/(Deficit)		-	($5,316,517)	-	-	-	-	-
Funds reserved for streets, parks capital projects or major maintenance		-	$5,318,953	-	-	-	-	-
Revenues less expenditures plus committed fund balance		-	$2,436	-	-	-	-	-

Source: City of Fernley FY 2022-2023 Final Budget; EPS.

[1] The Parks Facilities Fund does not include any current expenditures. Thus, this analysis assumes the Project will not generate any expenditures in this category.
[2] The Fernley City Council adopted the residential construction tax (RCT), which is outlined in Fernley Municipal Code Section 26.02.01. The RCT applies solely to new residential dwelling units, apartment houses, and development of mobile home lots. Because the project does not include residential development, this analysis assumes no expenditures will be incurred.

Table C-2
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Expenditures Summary (2022$)

Item	Annual Expenditures at End of Period Initial Years 2032	 Buildout 2042
General Fund Annual Expenditures [1]		
Mayor/Council	$16,265	$36,807
Office of City Manager	$73,338	$165,957
IT	$18,875	$42,713
Animal Control	$11,121	$25,167
Office of City Attorney	$71,443	$161,670
Finance	$21,098	$47,743
City Clerk	$37,619	$85,128
Municipal Court	$59,520	$134,688
Building & Safety	$78,398	$177,408
Planning	$122,236	$276,610
City Engineer	$96,018	$217,281
Facilities	$63,939	$144,689
Vector Control	$11,857	$26,832
Cemetery	$0	$0
Streets & Storm Drains	$1,077,928	$1,077,928
Parks	$0	$0
Fleet	$19,731	$44,649
Subtotal General Fund Annual Expenditures	**$1,779,386**	**$2,665,271**
Contingency (3%) [2]	$53,382	$79,958
Total General Fund Annual Expenditures	**$1,832,768**	**$2,745,229**

Source: Mark IV Capital; EPS.

[1] Pubic safety services are provided the Lyon County Sheriff's Office and North Lyon Fire Protection District through agreements with the City. Based on feedback provided by the City, it is assumed that development of the Project will not result in a change to the funding structure for public safety services. Annual expenditures related to fire and police services are not included in the City General Fund Budget and have not been estimated in this Analysis.

[2] The City budget includes a 2.6 percent contingency on all non-contingency General Fund expenditures based on the maximum contingency level allowed by the State of Nevada of 3 percent. This analysis includes a 3 percent contingency on all costs (excluding the contingency cost), consistent with the State maximum.

Table C-3
Victory Master Planned Area
Fiscal Impact Analysis
Cumulative Estimated Project Expenditures Summary (2022$)

Item	Cumulative Expenditures by Period Initial Years 2023-2032	 Buildout 2023-2042
Cumulative General Fund Expenditures [1]		
Mayor/Council	$98,363	$366,846
Office of City Manager	$443,503	$1,654,048
IT	$114,147	$425,710
Animal Control	$67,256	$250,832
Office of City Attorney	$432,047	$1,611,320
Finance	$127,589	$475,845
City Clerk	$227,496	$848,447
Municipal Court	$359,941	$1,342,401
Building & Safety	$474,106	$1,768,179
Planning	$739,213	$2,756,899
City Engineer	$580,662	$2,165,582
Facilities	$386,668	$1,442,079
Vector Control	$71,706	$267,427
Cemetery	$0	$0
Streets & Storm Drains	$8,347,536	$19,126,812
Parks	$0	$0
Fleet	$119,319	$445,001
Total Cumulative General Fund Expenditures	**$12,589,551**	**$34,947,427**
Contingency (3%) [2]	$377,687	$1,048,423
Total Cumulative General Fund Expenditures	**$12,967,237**	**$35,995,849**

Source: Mark IV Capital; EPS.

[1] Pubic safety services are provided the Lyon County Sheriff's Office and North Lyon Fire Protection District through agreements with the City. Based on feedback provided by the City, it is assumed that development of the Project will not result in a change to the funding structure for public safety services. Annual expenditures related to fire and police services are not included in the City General Fund Budget and have not been estimated in this Analysis.

[2] The City budget includes a 2.6 percent contingency on all non-contingency General Fund expenditures based on the maximum contingency level allowed by the State of Nevada of 3 percent. This analysis includes a 3 percent contingency on all costs (excluding the contingency cost), consistent with the State maximum.

Table C-4
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Expenditures by Fiscal Year (2022$)

Item	Estimated Annual Expenditures (2022$)										
	Buildout	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
General Fund Expenditures [1]											
Mayor/Council	$36,807	$0	$0	$595	$9,338	$11,684	$13,038	$14,912	$16,265	$16,265	$16,265
Office of City Manager	$165,957	$0	$0	$2,682	$42,105	$52,683	$58,785	$67,236	$73,338	$73,338	$73,338
IT	$42,713	$0	$0	$690	$10,837	$13,559	$15,130	$17,305	$18,875	$18,875	$18,875
Animal Control	$25,167	$0	$0	$407	$6,385	$7,989	$8,915	$10,196	$11,121	$11,121	$11,121
Office of City Attorney	$161,670	$0	$0	$2,613	$41,017	$51,322	$57,266	$65,499	$71,443	$71,443	$71,443
Finance	$47,743	$0	$0	$772	$12,113	$15,156	$16,911	$19,343	$21,098	$21,098	$21,098
City Clerk	$85,128	$0	$0	$1,376	$21,598	$27,024	$30,154	$34,489	$37,619	$37,619	$37,619
Municipal Court	$134,688	$0	$0	$2,177	$34,172	$42,757	$47,709	$54,568	$59,520	$59,520	$59,520
Building & Safety	$177,408	$0	$0	$2,867	$45,010	$56,318	$62,841	$71,875	$78,398	$78,398	$78,398
Planning	$276,610	$0	$0	$4,470	$70,179	$87,810	$97,980	$112,066	$122,236	$122,236	$122,236
City Engineer	$217,281	$0	$0	$3,511	$55,127	$68,976	$76,964	$88,030	$96,018	$96,018	$96,018
Facilities	$144,689	$0	$0	$2,338	$36,709	$45,932	$51,251	$58,620	$63,939	$63,939	$63,939
Vector Control	$26,832	$0	$0	$434	$6,808	$8,518	$9,504	$10,871	$11,857	$11,857	$11,857
Cemetery	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Streets & Storm Drains	$1,077,928	$0	$0	$939,986	$939,986	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928
Parks	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fleet	$44,649	$0	$0	$722	$11,328	$14,174	$15,815	$18,089	$19,731	$19,731	$19,731
Subtotal General Fund Expenditures	**$2,665,271**	**$0**	**$0**	**$965,637**	**$1,342,711**	**$1,581,829**	**$1,640,189**	**$1,721,026**	**$1,779,386**	**$1,779,386**	**$1,779,386**
Contingency (3%) [2]	$79,958	$0	$0	$28,969	$40,281	$47,455	$49,206	$51,631	$53,382	$53,382	$53,382
Total General Fund Expenditures	**$2,745,229**	**$0**	**$0**	**$994,606**	**$1,382,992**	**$1,629,284**	**$1,689,394**	**$1,772,657**	**$1,832,768**	**$1,832,768**	**$1,832,768**

Source: Mark IV Capital; EPS.

[1] Pubic safety services are provided the Lyon County Sheriff's Office and North Lyon Fire Protection District through agreements with the City. Based on feedback provided by the City, it is assumed that development of the Project will not result in a change to the funding structure for public safety services. Annual expenditures related to fire and police services are not included in the City General Fund Budget and have not been estimated in this Analysis.

[2] The City budget includes a 2.6 percent contingency on all non-contingency General Fund expenditures based on the maximum contingency level allowed by the State of Nevada of 3 percent. This analysis includes a 3 percent contingency on all costs (excluding the contingency cost), consistent with the State maximum.

Table C-4
Victory Master Planned Area
Fiscal Impact Analysis
Annual Estimated Project Revenues (2022$)

Item	Estimated Annual Expenditures (2022$)									
	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Year	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
General Fund Expenditures [1]										
Mayor/Council	$19,506	$20,131	$20,755	$21,380	$25,046	$26,660	$29,888	$31,502	$36,807	$36,807
Office of City Manager	$87,951	$90,767	$93,582	$96,398	$112,928	$120,205	$134,761	$142,039	$165,957	$165,957
IT	$22,636	$23,361	$24,086	$24,811	$29,065	$30,938	$34,684	$36,557	$42,713	$42,713
Animal Control	$13,337	$13,764	$14,192	$14,619	$17,125	$18,229	$20,436	$21,540	$25,167	$25,167
Office of City Attorney	$85,679	$88,422	$91,165	$93,908	$110,010	$117,100	$131,280	$138,370	$161,670	$161,670
Finance	$25,302	$26,112	$26,922	$27,732	$32,488	$34,581	$38,769	$40,862	$47,743	$47,743
City Clerk	$45,114	$46,559	$48,003	$49,448	$57,926	$61,660	$69,126	$72,859	$85,128	$85,128
Municipal Court	$71,379	$73,665	$75,950	$78,235	$91,650	$97,557	$109,370	$115,277	$134,688	$134,688
Building & Safety	$94,019	$97,030	$100,040	$103,050	$120,720	$128,500	$144,060	$151,840	$177,408	$177,408
Planning	$146,592	$151,286	$155,979	$160,673	$188,223	$200,353	$224,614	$236,744	$276,610	$276,610
City Engineer	$115,150	$118,837	$122,524	$126,211	$147,852	$157,380	$176,437	$185,966	$217,281	$217,281
Facilities	$76,680	$79,135	$81,590	$84,045	$98,456	$104,801	$117,491	$123,836	$144,689	$144,689
Vector Control	$14,220	$14,675	$15,130	$15,586	$18,258	$19,435	$21,788	$22,965	$26,832	$26,832
Cemetery	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Streets & Storm Drains	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928	$1,077,928
Parks	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fleet	$23,662	$24,420	$25,177	$25,935	$30,382	$32,340	$36,256	$38,214	$44,649	$44,649
Subtotal General Fund Expenditures	**$1,919,156**	**$1,946,090**	**$1,973,023**	**$1,999,957**	**$2,158,055**	**$2,227,666**	**$2,366,888**	**$2,436,498**	**$2,665,271**	**$2,665,271**
Contingency (3%) [2]	$57,575	$58,383	$59,191	$59,999	$64,742	$66,830	$71,007	$73,095	$79,958	$79,958
Total General Fund Expenditures	**$1,976,731**	**$2,004,473**	**$2,032,214**	**$2,059,956**	**$2,222,797**	**$2,294,496**	**$2,437,894**	**$2,509,593**	**$2,745,229**	**$2,745,229**

Source: Mark IV Capital; EPS.

[1] Pubic safety services are provided the Lyon County Sheriff's Office and North Lyon Fire Protection District through agreements with the City. Based on feedback provided by the City, it is assumed that development of the Project will not result in a change to the funding structure for public safety services. Annual expenditures related to fire and police services are not included in the City General Fund Budget and have not been estimated in this Analysis.

[2] The City budget includes a 2.6 percent contingency on all non-contingency General Fund expenditures based on the maximum contingency level allowed by the State of Nevada of 3 percent. This analysis includes a 3 percent contingency on all costs (excluding the contingency cost), consistent with the State maximum.

Table C-5
Victory Master Planned Area
Fiscal Impact Analysis
Streets and Storm Drains Expenditures Case Study (2022$)

Streets and Storm Drainage Expenditures

Item	Assumption/ Recurrence	Total Cost Estimate (per Recurrence Interval)	Annual Cost Estimate	Estimated Annual Expenditures (Rounded)
Annual Streets Maintenance Cost [1]				
Slurry/Micro Surface	15 Years	$13.80 per Sq. Yd.	$0.92 per Sq. Yd.	
Pavement Crack Sealing	15 Years	$2.70 per Sq. Yd.	$0.18 per Sq. Yd.	
Corrective Maintenance	21 Years	$22.00 per Sq. Yd.	$1.05 per Sq. Yd.	
Pavement Rehabilitation or Full Depth Reconstruction	33 Years	$76.50 per Sq. Yd.	$2.32 per Sq. Yd.	
Total Annual Street Maintenance Cost			**$4.47 per Sq. Yd.**	
Annual Project Streets Maintenance Cost	*Square Yards*			
Publicly Maintained Roads in Project [2]	199,474			
Total Annual Streets Maintenance Cost				**$891,000**
Annual Storm Drains Cost per Acre-Foot				
FY 2022-23 per Basin Storm Drains Maintenance Costs (Existing Basins) [3	$2,000			
Existing City Storm Basins Acre-Feet [4]	0.69			
Cost per Acre-Foot	**$2,899**			
Planned Basins in Project [4]				
Basin Acre-Feet Developed in 2024	16.90			
Basin Acre-Feet Developed in 2026	47.59			
Total Planned Basin Acre-Feet in Project	**64.49**			
Annual Project Storm Drains Maintenance Cost				
Annual Costs beginning FY 2024-25				$48,986
Annual Costs beginning FY 2026-27				$186,928
Total Annual Streets and Storm Drains Maintenance Costs				
Annual Costs beginning FY 2024-25				**$939,986**
Annual Costs beginning FY 2026-27				**$1,077,928**

Source: Mark IV Capital; Lumos and Associates; California Department of Transportation 2015 Concrete Pavement Guide; City of Fernley; EPS.

[1] Cost assumption provided by Lumos and Associates and reflects the anticipated maintenance cost and schedule for street maintenance in the City of Fernley, current as of February 2023.
[2] Total square yards of roadway in the project are based on information provided by Lumos and Associates, current as of July 2023.
[3] Cost assumptions were provided by the City, current as of August 2023.
[4] Quantity of existing and planned basin acre-feet and timing provided by Lumos and Associates, current as of August 2023.

City of Fernley

Fiscal Year 2024-2025 Budget Calendar

December 14, 2023	City Council Strategic Planning work session
December 31, 2023	Budget forms distributed to departments
January 26, 2024	Department budget requests submitted to Finance
February 5 – 16, 2024	Review budget requests with Department, Finance and City Manager
March 1, 2024	Finance revenue analysis and projections
March 27, 2024	State reports on tax schedules, valuations
April 3 & 4, 2024	City Council budget work sessions – review of preliminary budget
May 10 & 11, 2024	City Council budget work sessions - final review of draft budget
May 15, 2024	City Council approval of FY2024-2025 Budget

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Gavin Henderson**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:X	No:	Yes:	No: X	100-475-320 510-810-430 520-810-430

ACTION REQUESTED: Resolution

AGENDA ITEM:

Discussion and possible action to approve resolution 24-001 to accept the public improvements including roadway, water, and sewer infrastructure for the Donner Trails 12B subdivision.

AGENDA ITEM BRIEF:

Staff is seeking Council approval of a resolution to accept the roadways and utility infrastructure for the **Donner Trails 12B Subdivision.** The new roadways are a new portion of Mifflin Street and Langdon Street. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

RECOMMENDED MOTION:

"I move to approve resolution 24-001 to accept the public improvements including roadway, water, and sewer infrastructure for Donner Trails 12B."

BUSINESS IMPACT (per NRS Chapter 237):

N/A

See attached report for background, analysis, alternatives.

ALTERNATIVES:

Staff does not recommend City Council choose to not accept the improvements.

BACKGROUND:

Staff is seeking Council approval of a resolution to accept the roadways and utility infrastructure for the **Donner Trails 12B Subdivision.** The new roadways are a new portion of Mifflin Street and Langdon Street. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

Donner Trails Phase 12B is construction of 105-lot single family residential subdivision (Donner Trails 12B) and public infrastructure (roadways, water main/apparatuses, and sewer main) on a site approximately 20.88 acres in size in the NR-1 zoning district (Single-Family, Non-Rural Residential) with a land use designation of SFR (Single-Family-Residential), generally located east of Spur Way, south of Rutledge Street, and west of Endeavor Lane, Fernley, NV. (APN: 021-201-57).

RELEVANT LAWS, STATUTES, AND REGULATIONS:

NRS 278 sets the state laws for planning and zoning. The City of Fernley Development Code and Design Standards sets the laws for the development in the City of Fernley.

FINANCIAL IMPLICATIONS:

The added value of the new improvements will be added to the City's financial records. The ongoing cost of maintenance will be absorbed into the current budget for streets, water and sewer. The additional homes created by the map and constructed with the improvements will supplement the City's water and sewer revenues with additional service accounts.

ATTACHMENTS:

1. 2023.06.02 Donner Trails 12B Vicinity Map
2. 2023.06.2 Donner Trails 12B Acceptance Memo to Finance
3. Donner Trails 12B Public Infrastructure acceptance

MIFFLIN ST
021-201-57
FORT SUTTER BLVD
022-585-03
022-585-04
022-585-05
022-585-06
022-585-07
022-585-08

CITY OF FERNLEY
Engineering Department

Water Treatment/Distribution
Wastewater
Streets/Storm Drain
Parks
Facilities &
Vector Control

To: **Finance Department**

Cc: **City Manager Office**
Gavin Henderson, Associate Engineer

From: **Derek Starkey, City Engineer**

Date: **June 21, 2023**

Subject: **Acceptance of Donner Trails 12B Public Infrastructure**

This memo is to inform you of the estimated value of new infrastructure recently accepted by the City of Fernley.

On **February 7, 2023**, the engineering department issued a notice of completion for: **Donner Trails 12B.**

The new utility quantities and values are included with the engineer's estimate included with this memorandum.

Streets	$306,791.25
Sanitary Sewer	$63,805.00
Storm Drain	$0.00
Water	$132,375.00
Total:	**$502,971.25**

To keep the C.A.F.R. up to date we have included the following quantities for this project:

Total new miles of streets: 0.36 mi
Total new miles of water line: 0.34 mi
Total new hydrants: 2
Total new miles of sewer main: 0.13 mi
Total new manholes: 2

Please let us know if additional information is needed.

Lyon County APN:

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley NV 89408

Main Recorded Documents to:
City of Fernley
595 Silver Lace Blvd
Fernley NV 89408

RESOLUTION #24-001 FOR ACCEPTING DONNER TRAILS 12B SUBDIVISION, PUBLIC IMPROVEMENTS THAT INCLUDES ROADWAYS, WATER, SEWER, AND STORM DRAINS

FINAL MAP OF DONNER TRAILS 12B RECORDED AUGUST 1, 2023, DOCUMENT NUMBER 672422.

WHEREAS, it is a function of the City of Fernley to operate and maintain public roads and public water, sewer, and storm drain infrastructure; and

WHEREAS, Mifflin Street and Langdon Street, were offered for dedication by Final Map of Donner Trails 12B Subdivision, Document Number 672422, recorded on August 1, 2023 (the "Final Map"); and

WHEREAS, NRS 278.390 specifically provides that if at the time a final map is approved but the associated streets are rejected, the offer of dedication shall remain open and the governing body or planning commission may by resolution at a later date, and without further action by the subdivider, rescind its action and accept and open the streets for public use; and

WHEREAS, said streets have been constructed and meet current City standards; and

WHEREAS, The City Council finds that it is in the best interest of the public to accept said streets and public water, sewer, and storm drain infrastructure.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Fernley, pursuant to the authority of NRS 278.390, that Mifflin and Langdon Street as shown on the Final Map are hereby accepted, and the Public Works Department is directed to open the roads for public use and maintenance.

BE IT FURTHER RESOLVED, and hereby ordered, that the City of Fernley, Public Works Department shall record this resolution in the Office of the Lyon County Recorder.

PASSED, APPROVED, AND ADOPTED this 3rd day of January 2024, by the following vote of the Council:

AYES:___ NAYS:___ ABSTENTIONS:___ ABSENT:___

FERNLEY CITY COUNCIL

Date: January 3, 2024

By: _____
Neal E. McIntyre, Mayor

Attest: _____
City Clerk, Kim Swanson

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Gavin Henderson**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:X	No:	Yes:	No: X	100-475-320 510-810-430 520-810-430

ACTION REQUESTED: Resolution

AGENDA ITEM:

Discussion and possible action to approve resolution #24-002 to accept the public improvements including roadway, water, sewer, and storm drain infrastructure for the Friendly Five Village 1 subdivision

AGENDA ITEM BRIEF:

Staff is seeking Council approval of a resolution to accept the roadways and utility infrastructure for the Friendly 5 Village 1 Subdivision. The new roadways are Hendrix Drive, Bennett Lane, Megs Drive, Eleanor Way, Payton Way, Shell Court, and Hadley Street. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

RECOMMENDED MOTION:

"I move to approve resolution 24-002 to accept the public improvements including roadway, water, storm drain and sewer infrastructure for Friendly 5 Village 1 Subdivision."

BUSINESS IMPACT (per NRS Chapter 237):

N/AA 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:

N/A

BACKGROUND:

Staff is seeking Council approval of a resolution to accept the roadways and utility infrastructure for the Friendly 5 Village 1 Subdivision. The new roadways are Hendrix Drive, Bennett Lane, Megs Drive, Eleanor Way, Payton Way, Shell Court, and Hadley Street. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

Friendly 5 Village 1 is a 75-lot single family subdivision on a site ± 133.16 acres in size and generally located north of Farm District Road, east of Jessica Lane, west of Country Ranch Road, and south of US 50 Alternate on APNs: 021-303-47 and 021-303-49 and public infrastructure (roadways, water main/appurtenances, retention basins, storm drain main and sewer main/appurtenances) associated with the project.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

NRS 278 sets the state laws for planning and zoning. The City of Fernley Development Code and Design Standards sets the laws for the development in the City of Fernley.

FINANCIAL IMPLICATIONS:

The added value of the new improvements will be added to the City's financial records. The ongoing cost of maintenance will be absorbed into the current budget for streets, water and sewer. The additional homes created by the map and constructed with the improvements will supplement the City's water and sewer revenues with additional service accounts.

ATTACHMENTS:

1. 2023.12.01 Friendly 5 Ranch Sewer Main Extension Acceptance Memo to Finance
2. 2023.12.01 Friendly 5 Village 1 Acceptance Memo to Finance
3. 2023.12.06 Friendly 5 Village 1 Vicinity Map
4. Friendly 5 Village 1 Infrastructure acceptance

CITY OF FERNLEY
Engineering Department

Water Treatment/Distribution
Wastewater
Streets/Storm Drain
Parks
Facilities &
Vector Control

To: **Finance Department**

Cc: **City Manager Office**
Gavin Henderson, Associate Engineer

From: **Derek Starkey, City Engineer**

Date: **December 1, 2023**

Subject: **Acceptance of Friendly 5 Ranch Sewer Extension**

This memo is to inform you of the estimated value of new infrastructure recently accepted by the City of Fernley.

On **November 29, 2023**, the engineering department issued a notice of completion for: **Friendly 5 Ranch Sewer Main Extension.**

The new utility quantities and values are included with the engineer's estimate included with this memorandum.

Streets	$0.00
Sanitary Sewer	$321,400.00
Storm Drain	$0.00
Water	$0.00
Total:	**$321,400.00**

To keep the C.A.F.R. up to date we have included the following quantities for this project:

Total new miles of streets: 0.0 mi
Total new miles of water line: 0.0 mi
Total new hydrants: 0
Total new miles of sewer main: 0.87 mi
Total new sanitary sewer manholes: 18
Total new miles of storm drain main: 0.0
Total new storm drain manholes: 0

Please let us know if additional information is needed.

CITY OF FERNLEY
Engineering Department

Water Treatment/Distribution
Wastewater
Streets/Storm Drain
Parks
Facilities &
Vector Control

To: **Finance Department**

Cc: **City Manager Office**
Gavin Henderson, Associate Engineer

From: **Derek Starkey, City Engineer**

Date: **December 1, 2023**

Subject: **Acceptance of Friendly 5 – Village 1 Public Infrastructure**

This memo is to inform you of the estimated value of new infrastructure recently accepted by the City of Fernley.

On **November 29, 2023**, the engineering department issued a notice of completion for: **Friendly 5 – Village 1 Public Improvements.**

The new utility quantities and values are included with the engineer's estimate included with this memorandum.

Streets	$1,292,640.00
Sanitary Sewer	$477,200.00
Storm Drain	$267,390.00
Water	$550,700.00
Total:	**$2,587,930.00**

To keep the C.A.F.R. up to date we have included the following quantities for this project:

Total new miles of streets: 1.1 mi
Total new miles of water line: 1.16 mi
Total new hydrants: 13
Total new miles of sewer main: 1.01 mi
Total new sanitary sewer manholes: 28
Total new miles of storm drain main: 0.43
Total new storm drain manholes: 18

Please let us know if additional information is needed.

18" C900
18" C900

Lyon County APN:

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley NV 89408

Main Recorded Documents to:
City of Fernley
595 Silver Lace Blvd
Fernley NV 89408

RESOLUTION #24-002 FOR ACCEPTING FRIENDLY 5 RANCH VILLAGE 1 SUBDIVISION, PUBLIC IMPROVEMENTS THAT INCLUDES ROADWAYS, WATER, SEWER, AND STORM DRAINS

FINAL MAP OF Friendly 5 Ranch Village 1 Subdivision RECORDED FEBRUARY 3, 2023, DOCUMENT NUMBER 666558.

WHEREAS, it is a function of the City of Fernley to operate and maintain public roads and public water, sewer, and storm drain infrastructure; and

WHEREAS, Hendrix Drive, Bennett Lane, Megs Drive, Eleanor Way, Payton Way, Shell Court, and Hadley Street, were offered for dedication by Final Map of Friendly 5 Ranch Village 1 Subdivision, Document Number 666558, recorded on February 3, 2023 (the "Final Map"); and

WHEREAS, NRS 278.390 specifically provides that if at the time a final map is approved but the associated streets are rejected, the offer of dedication shall remain open and the governing body or planning commission may by resolution at a later date, and without further action by the subdivider, rescind its action and accept and open the streets for public use; and

WHEREAS, said streets have been constructed and meet current City standards; and

WHEREAS, The City Council finds that it is in the best interest of the public to accept said streets and public water, sewer, and storm drain infrastructure.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Fernley, pursuant to the authority of NRS 278.390, that , Hendrix Drive, Bennett Lane, Megs Drive, Eleanor Way, Payton Way, Shell Court, and Hadley Street as shown on the Final Map are hereby accepted, and the Public Works Department is directed to open the roads for public use and maintenance.

BE IT FURTHER RESOLVED, and hereby ordered, that the City of Fernley, Public Works Department shall record this resolution in the Office of the Lyon County Recorder.

PASSED, APPROVED, AND ADOPTED this 3rd day of January 2024, by the following vote of the Council:

AYES:___ NAYS:___ ABSTENTIONS:___ ABSENT:___

FERNLEY CITY COUNCIL

Date: January 3, 2023

By: _____
Neal E. McIntyre, Mayor

Attest: _____
City Clerk, Kim Swanson

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Gavin Henderson**

FINANCIAL IMPACT:		**CURRENTLY BUDGETED:**		**FUND/ACCOUNT:**
Yes:X	No:	Yes:	No: X	100-475-320 510-810-430 520-810-430

ACTION REQUESTED: Resolution

AGENDA ITEM:

Discussion and possible action to approve resolution 24-003 to accept the public improvements including roadway, water, storm drain and sewer infrastructure for the Cook Ranch Phase 3 subdivision.

AGENDA ITEM BRIEF:

Staff is seeking Council approval of a resolution to accept the roadways and utility infrastructure for the **Cook Ranch PH 3 Subdivision.** The new roadways are a new portion of Natalie, Anthony, and Brierwood Lane. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

RECOMMENDED MOTION:

"I move to approve resolution 24-003 to accept the public improvements including roadway, water, storm drain and sewer infrastructure for Cook Ranch PH 3."

BUSINESS IMPACT (per NRS Chapter 237):

N/AA 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:

N/A

BACKGROUND:

Staff is seeking Council approval of a resolution to accept the roadways and utility infrastructure for the **Cook Ranch PH 3 Subdivision.** The new roadways are a new portion of Natalie, Anthony, and Brierwood Lane. The improvements were completed and are currently under a one-year warranty period. NRS 278.390 requires the local planning commission or the governing body to accept roadway right of way improvements by resolution.

Cook Ranch Phase 3 is the construction of 76 single family residential lots generally located south of Cottonwood Lane, north of Crimson Road, west of Jill Marie Lane, Fernley, NV (APN(s) 021-171-52) and the associated water, sewer, storm drain, and roadway infrastructure.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

NRS 278 sets the state laws for planning and zoning. The City of Fernley Development Code and Design Standards sets the laws for the development in the City of Fernley.

FINANCIAL IMPLICATIONS:

The added value of the new improvements will be added to the City's financial records. The ongoing cost of maintenance will be absorbed into the current budget for streets, water and sewer. The additional homes created by the map and constructed with the improvements will supplement the City's water and sewer revenues with additional service accounts.

ATTACHMENTS:

1. 2023.12.01 Cook Ranch PH3 Acceptance Memo to Finance
2. 2023.12.12 Cook Ranch PH 3 Vicinity Map
3. Cook Ranch PH3 Public Infrastructure acceptance

CITY OF FERNLEY
Engineering Department

Water Treatment/Distribution
Wastewater
Streets/Storm Drain
Parks
Facilities &
Vector Control

To: **Finance Department**

Cc: **City Manager Office**
Gavin Henderson, Associate Engineer

From: **Derek Starkey, City Engineer**

Date: **December 1, 2023**

Subject: **Acceptance of Cook Ranch PH 3 Public Infrastructure**

This memo is to inform you of the estimated value of new infrastructure recently accepted by the City of Fernley.

On **July 5, 2023**, the engineering department issued a notice of completion for: **Cook Ranch Phase 3 Public Improvements.**

The new utility quantities and values are included with the engineer's estimate included with this memorandum.

Streets	$685,922.50
Sanitary Sewer	$239,700.00
Storm Drain	$159,595.00
Water	$253,040.00
Total:	**$1,338,257.50**

To keep the C.A.F.R. up to date we have included the following quantities for this project:

Total new miles of streets: 0.60 mi
Total new miles of water line: 0.56 mi
Total new hydrants: 8
Total new miles of sewer main: 0.55 mi
Total new sanitary sewer manholes: 11
Total new miles of storm drain main: 0.28 mi
Total new storm drain manholes: 6

Please let us know if additional information is needed.

595 Silver Lace Boulevard ♦ Fernley, NV 89408 ♦ Telephone: 775-784-9910 ♦ Fax: 775-784-9848
www.cityoffernley.org

COOK WY
JONES WY
DESERT BREEZE WY
JILL MARIE LN
KATHRYN CT
ROSEWOOD DR
ANTHONY LN
BRIERWOOD LN
NATALIE LN
COTTONWOOD LN

Lyon County APN:

RECORDING REQUESTED BY:
City of Fernley
595 Silver Lace Blvd
Fernley NV 89408

Main Recorded Documents to:
City of Fernley
595 Silver Lace Blvd
Fernley NV 89408

RESOLUTION #24-003 FOR ACCEPTING COOK RANCH PHASE 3 SUBDIVISION, PUBLIC IMPROVEMENTS THAT INCLUDES ROADWAYS, WATER, SEWER, AND STORM DRAINS

FINAL MAP OF COOK RANCH PHASE 3 RECORDED OCTOBER 7, 2022, DOCUMENT NUMBER 663002.

WHEREAS, it is a function of the City of Fernley to operate and maintain public roads and public water, sewer, and storm drain infrastructure; and

WHEREAS, Natalie, Anthony, and Brierwood Lane, were offered for dedication by Final Map of Cook Ranch Phase 3 Subdivision, Document Number 663002, recorded on October 7, 2022 (the "Final Map"); and

WHEREAS, NRS 278.390 specifically provides that if at the time a final map is approved but the associated streets are rejected, the offer of dedication shall remain open and the governing body or planning commission may by resolution at a later date, and without further action by the subdivider, rescind its action and accept and open the streets for public use; and

WHEREAS, said streets have been constructed and meet current City standards; and

WHEREAS, The City Council finds that it is in the best interest of the public to accept said streets and public water, sewer, and storm drain infrastructure.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Fernley, pursuant to the authority of NRS 278.390, that Natalie, Anthony, and Brierwood Lane as shown on the Final Map are hereby accepted, and the Public Works Department is directed to open the roads for public use and maintenance.

BE IT FURTHER RESOLVED, and hereby ordered, that the City of Fernley, Public Works Department shall record this resolution in the Office of the Lyon County Recorder.

PASSED, APPROVED, AND ADOPTED this 3rd day of January 2024, by the following vote of the Council:

AYES:___ NAYS:___ ABSTENTIONS:___ ABSENT:___

FERNLEY CITY COUNCIL

Date: January 3, 2024

By: _____
Neal E. McIntyre, Mayor

Attest: _____
City Clerk, Kim Swanson

CITY OF FERNLEY

City Council
AGENDA REPORT

Meeting Date: January 17, 2024

REPORT TO:	Mayor and City Council
REPORT FROM:	**Shay League**

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

ACTION REQUESTED: Motion

AGENDA ITEM:

(For possible action) Consideration of a type I vacation request (T1V23002) and associated order of abandonment by Phelps Engineering Services on behalf of Richard Jackson to abandon the right-of-way known as "Hartsock Avenue", located at approximately 590 West Main Street (APN: 021-171-02).

AGENDA ITEM BRIEF:

Due to a previous mapping anomaly, a portion of the intended "Hartsock Avenue" is perceived as possibly being a public right-of-way. The developer is requesting we abandon this right-of-way, so they may develop this and the neighboring parcel.

RECOMMENDED MOTION:

Approval
"I move to adopt finding T1V(1) and approve the type 1 vacation request and order of abandonment associated with T1V23002."

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

"After reviewing the written materials and public comment on this matter, I believe the public will be materially injured by the proposed vacation because _____. Therefore, I move to deny the type 1 vacation request and order of abandonment associated with T1V23002."

Note: Though no other motion language has been provided, all motions that conform with City Council parliamentary procedure are appropriate.

BACKGROUND:

In September 1946, J.M. Hartsock filed an official plat to subdivide their land, which is now known as 590 and 600 West Main Street (APNs: 021-071-02 and 021-071-03), into approximately 61 parcels. In 1978, Betty and David Jackson filed a new record-of-survey indicating the recombination of all the parcels and streets, excepting lots 8, 9, and 10 of the "B" block and the length of Hartsock Avenue alongside parcel 10. This portion of Hartsock Avenue is approximately 6,223 square feet. By another mechanism, lots 8 and 9 were recombined with the parcel addressed as 600 West Main Street. This leaves parcel 10, which still contains that remnant of Hartsock Avenue. The trust of Ms. Jackson still owns both 590 and 600 West Main Street and wishes to develop them into a project with the working title "600 West Main Street".

The existence of Hartsock Avenue has encumbered the title of 590 West Main Street. Though the right-of-way for Hartsock Avenue was never formally dedicated to or accepted by City of Fernley (which was then the Town of Fernley), the applicant needs us to specify that we are not interested in trying to establish a public right-of-way there.

FINDING:
T1V(1) The public will not be materially injured by the proposed vacation.
Staff has determined that the proposed benefit will not materially injure the public. There is no public road constructed on the right-of-way; further, staff does not believe we would have the legal authority to construct a public road on this right-of-way. The existence of this remnant of a very old map is preventing a project that will benefit the public from moving forward.

RELEVANT LAWS, STATUTES, AND REGULATIONS:

General
Nevada Revised Statutes (NRS), Chapter 278 - Planning and Zoning
Fernley Municipal Code (FMC), Title 32 - Development Code

Specific
NRS 278.479 - 278.480 - Vacation or Abandonment of Streets, Easements on Maps
FMC Section 32.03.080 (a) - Type I vacations

Note: The references provided are for convenience and not all-inclusive. City of Fernley Planning Department will continue to monitor links until the 01/17/2024 Council meeting, but cannot guarantee applicability and/or accuracy after that date.

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. T1V23002 Order of Abadonment
2. Hartsock Subdivision Official Plat - 1946
3. Jackson Record of Survey - 1978

APN: 021-071-02, 021-071-03

Recording requested by:
When recorded, return to:
Phelps Engineering Services
10651 Professional Circle
Suite "A", Reno, NV 89521

Notice Per NRS 239B.030, this document does not contain personal information as defined in NRS 603A.040

ORDER OF ABANDONMENT
Undeeded portion of Hartsock Avenue Right-Of-Way per Parcel Map 53963M

WHEREAS:

A) A petition to vacate or abandon a public right-of-way was filed with the City Clerk of the City of Fernley by the owner of all the real property containing the road offer of dedication further described in **Exhibit "A"** & graphically depicted on **Exhibit "A1"**;

B) A duly noticed public hearing was held by the City Council for the City of Fernley on _____, 2022, for the purposes of considering the proposed vacation and abandonment, and it was duly moved, seconded & passed by the City Council of the City of Fernley that the public road offer of dedication described in **Exhibit "A",** & graphically depicted on **Exhibit "A1",** be vacated & abandoned;

C) Based on information received in the written staff report & at the public hearing, this Council finds that the abandonment will not result in a material injury to the public;

NOW, THEREFORE, IT IS HEREBY ORDERED by the City Council of the City of Fernley

1) That the public right away more particularly described in **Exhibit "A"**, & graphically depicted on **Exhibit "A1"**, hereto vacated & abandoned pursuant to the laws of the State of Nevada & title to said property shall revert & vest in the abutting property owner. Abutting properties owner being **Betty M. Jackson Trust**, owner of Lots 8, 9 & 10, Block "B", as shown on the Official Plat of HARTSOCK SUBDIVISION, filed in the Office of the County Recorder of Lyon County, State of Nevada, on September 16th, 1946, as Document No. 53963M, Official Records, also known as APN 021-071-02, and that certain 27.26 acre parcel depicted in the Record of Survey for DAVID D. AND BETTY M. JACKSON, filed in the Office of the County Recorder of Lyon County, State of Nevada, on February 8th, 1978, as Document No. 35908, Official Records, also known as APN 021-071-03.

RESERVING THEREFROM, over, under, across & through the abandoned area, a blanket public utilities & access easement for the benefit of all public utilities for the operation, maintenance, repair & reconstruction & upgrade of existing public utility facilities, & access thereto. Such easements are relocatable & resizable with future development & approval of the

impacted utility & the City Engineer.

2) This Order shall be recorded in the County Recorder's office, Lyon County, Nevada.

DATED: This day of _____day of_____, 2022.

City of Fernley, a municipal corporation

By: _____
Roy Edgington Jr., Mayor

STATE OF NEVADA }
}SS Acknowledgement in a representative capacity
}

This instrument was acknowledged before me on_____, 2022
By Roy Edgington Jr. as Mayor of the City of Fernley.

_____
Notary Public

EXHIBIT "A"
VACATION OF UNDEEDED PORTION OF HARTSOCK AVENUE
Affected APNs: 021-071-02 & 021-071-03

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

BEGINNING AT THE EASTERLY MOST SOUTHEAST CORNER OF THAT CERTAIN 27.26 ACRE PARCEL DEPICTED IN THE RECORD OF SURVEY FOR DAVID D. AND BETTY M. JACKSON, RECORDED IN DOCUMENT No. 35908, PUBLIC RECORDS OF LYON COUNTY, NEVADA; **THENCE** SOUTH 12°14'47" EAST ALONG THE WEST LINE OF PARCEL 1 (ADJUSTED), FOUND IN THE RECORD OF SURVEY / BOUNDARY LINE ADJUSTMENT FOR **"HOLLYWOOD INVESTMENT COMPANY, LLC, LAUREL LEE ELLISON, TODD ANDREW BANKOFIER, & JONNE ELIZABETH MATKOVICH"** SHOWN IN DOCUMENT No. 210358, PUBLIC RECORDS OF LYON COUNTY, NEVADA, TO A POINT ON A CURVE CONCAVE TO THE NORTH, HAVING A RADIUS OF 1450.00 FEET, AND A RADIAL BEARING OF NORTH 02°33'33" EAST; **THENCE** DEPARTING SAID WEST LINE, RUN WESTERLY, ALONG THE NORTH BOUNDARY OF U.S. HIGHWAY 40, AND THE ARC OF SAID CURVE, HAVING A CENTRAL ANGLE OF 03°16'04", AND AN ARC DISTANCE OF 82.70 FEET TO A POINT OF CUSP; **THENCE** DEPARTING SAID NORTH BOUNDARY, EASTERLY THRU NORTHERLY, ALONG THE EAST BOUNDARY OF LOT 10, BLOCK "B" OF **"HARTSOCK SUBDIVISION"** FILED AS DOCUMENT No. 53963M, PUBLIC RECORDS OF LYON COUNTY, NEVADA, AND ALONG THE ARC OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 30.00 FEET, A CENTRAL ANGLE OF 108°04'24", AND AN ARC DISTANCE OF 56.59 FEET, TO A POINT OF TANGENCY; **THENCE** CONTINUE ALONG SAID EAST BOUNDARY, NORTH 12°14'47 EAST, A DISTANCE OF 105.93 FEET TO A POINT ON A CURVE CONCAVE TO THE NORTH, HAVING A RADIUS OF 1310.00 FEET AND A RADIAL BEARING OF NORTH 06°01'01" EAST; **THENCE** DEPARTING SAID EAST BOUNDARY, RUN EASTERLY, ALONG THE SOUTH BOUNDARY OF SAID 27.26 ACRE PARCEL, AND ALONG THE ARC OF SAID CURVE, HAVING A CENTRAL ANGLE OF 01°49'59", AND AN ARC DISTANCE OF 41.91 FEET TO THE **POINT OF BEGINNING**;

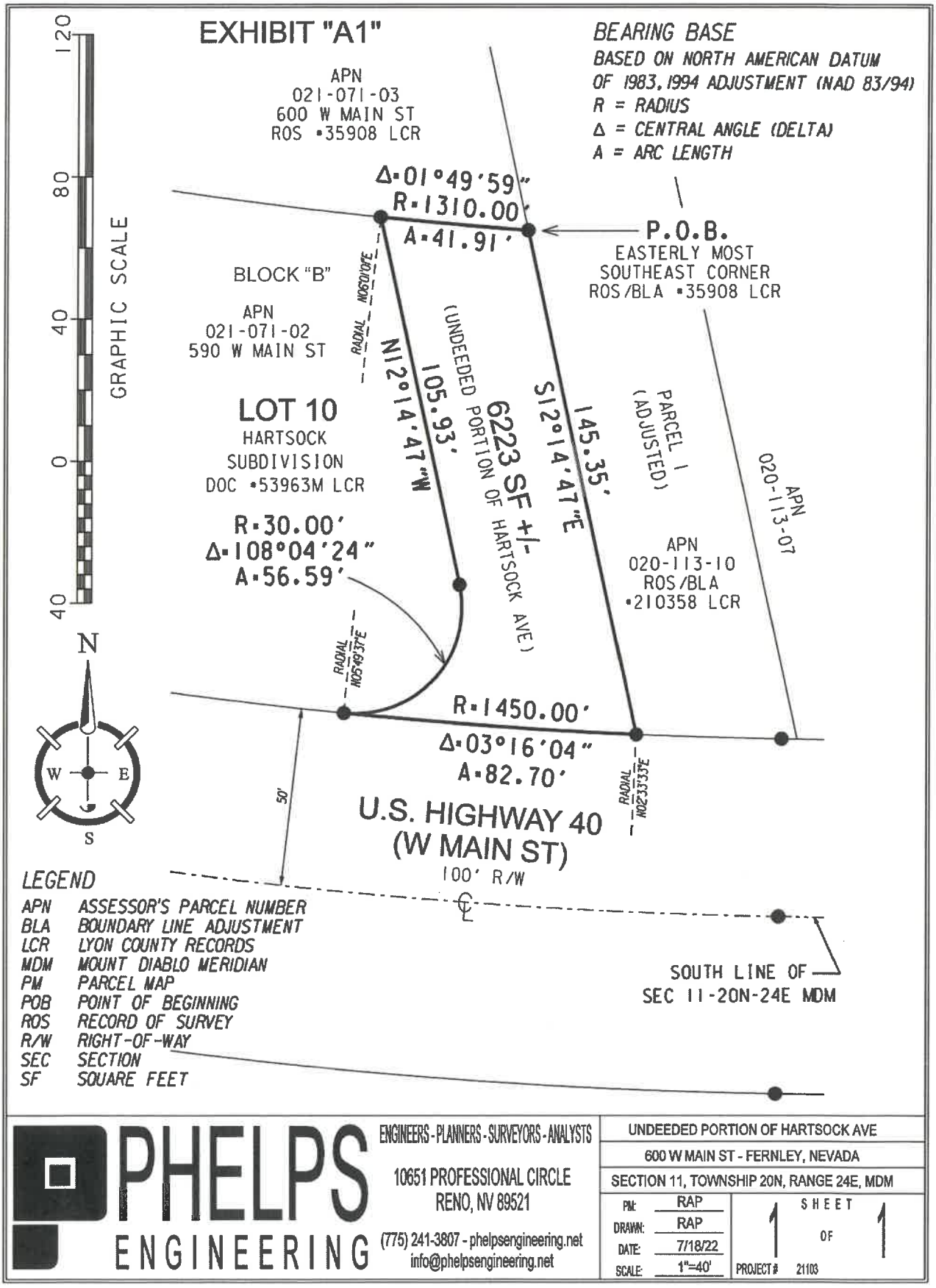
CONTAINING 6,223 SQUARE FEET, MORE OR LESS.

BASIS OF BEARINGS: THE NORTH AMERICAN DATUM OF 1983, 1994 ADJUSTMENT (NAD 83/94), NEVADA STATE PLANE WEST COORDINATE SYSTEM (2703). GRID BEARINGS FROM **THE UTAH REFERENCE NETWORK (TURN)** GLOBAL POSITIONING SYSTEM (GPS), COMBINED SCALE FACTOR OF 1.000258.

PHELPS ENGINEERING
DESIGN & DEVELOPMENT SERVICES

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

10651 Professional Circle, Ste. "A"
Reno, NV 89521



PHELPS ENGINEERING

ENGINEERS - PLANNERS - SURVEYORS - ANALYSTS

10651 PROFESSIONAL CIRCLE
RENO, NV 89521

(775) 241-3807 - phelpsengineering.net
info@phelpsengineering.net

UNDEEDED PORTION OF HARTSOCK AVE
600 W MAIN ST - FERNLEY, NEVADA
SECTION 11, TOWNSHIP 20N, RANGE 24E, MDM

PM:	RAP
DRAWN:	RAP
DATE:	7/18/22
SCALE:	1"=40'

SHEET 1 OF 1

PROJECT # 21103

9/16/46 #53963
HARTSOCK SUBDIVISION
SW¼ OF SEC. 11, T. 20N., R. 24E.

State of Nevada S.S.
County of Washoe

I, John E. Curran, being first duly sworn do hereby certify that this plat is a true and accurate map of the lands represented thereon, surveyed by me and laid out into blocks, lots, streets and public places at the instance of J.M. Hartsock, that the locations of said blocks, lots, streets and public places have been definitely established and perpetuated in accordance with the law and as shown hereon; that the blocks, lots, streets and public places shown hereon are situated wholly within the S.W. ¼ of section 11, T. 20N., R. 24E. M. D. B. & M. and that the survey was completed on the ~~14th~~ 9th day of September 1946.

John E. Curran
Reg. Prof. Engineer #258

Subscribed and sworn to before me this 9th day of Sept. 1946.
Elizabeth Davis
Notary Public in and for Washoe County, Nevada.
My Commission expires Sept 25 1947

State of Nevada S.S.
County of Washoe

This is to certify that the undersigned, J.M. Hartsock is the owner of the tract of land represented on this map or plat and that the same is hereby executed in compliance with and subject to the provisions of "An Act of the Legislature of the State of Nevada authorizing owners of land to lay out and plat such lands into blocks, lots and streets and providing for the approval and filing of Maps or plats thereof, approved March 19th, 1905, as amended in 1921 and 1925."

In witness whereof, the said J.M. Hartsock has hereunto set his signature this 9 day of September 1946.

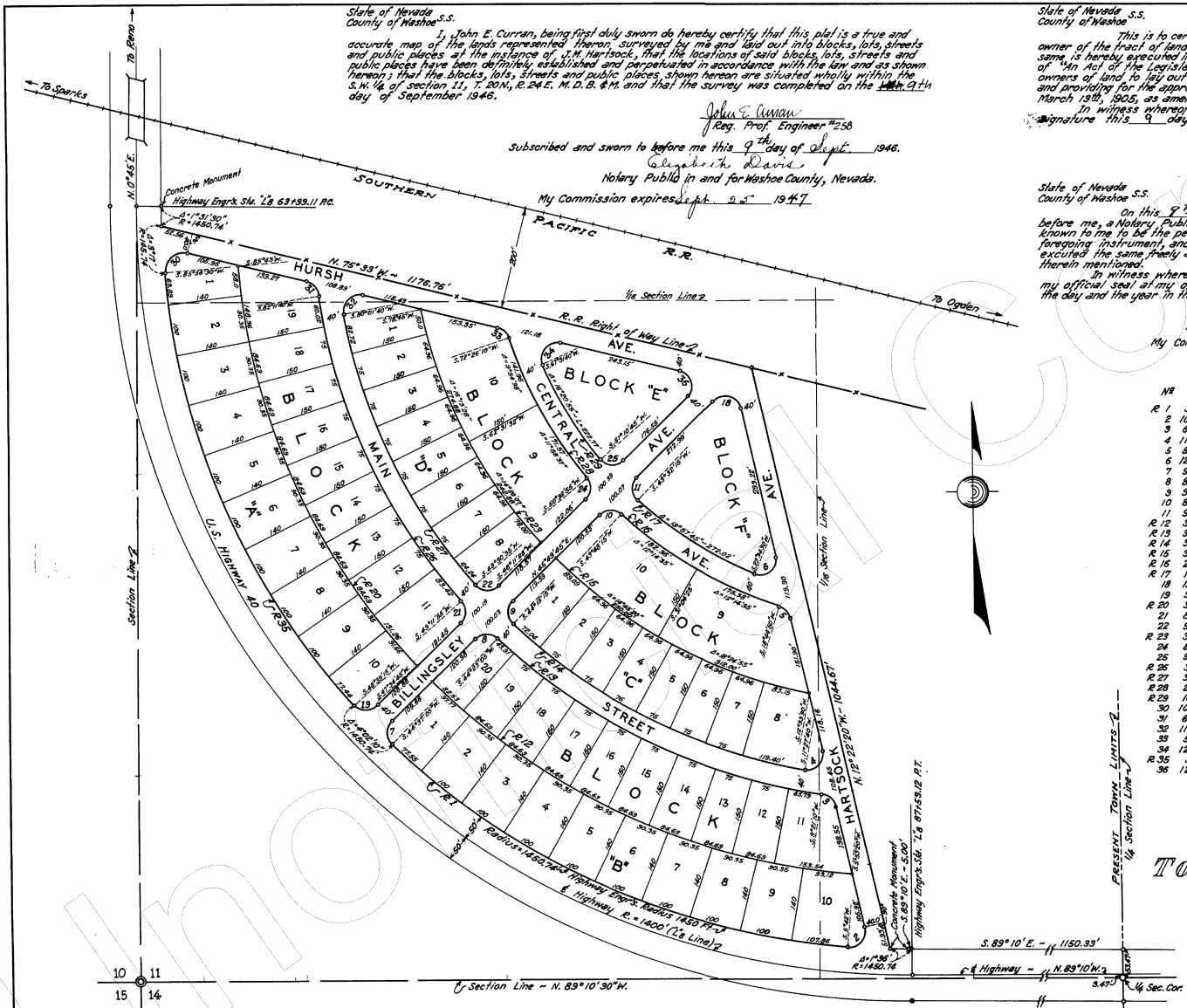
J.M. Hartsock

State of Nevada S.S.
County of Washoe

On this 9th day of Sept. 1946, Personally appeared before me, a Notary Public in and for Washoe, Nevada, J.M. Hartsock known to me to be the person described in and who executed the foregoing instrument, and upon oath did depose and say that he executed the same freely and voluntarily and for uses and purposes therein mentioned.

In witness whereof, I have hereunto set my hand and affixed my official seal at my office in the County of Washoe, State of Nevada the day and the year in this certificate first above written.

Notary Public in and for Washoe County, Nevada
My Commission expires Apr. 1 '47 1947



CURVE DATA

№	ANGLE	RADIUS	LENGTH	TANGENT
R 1	38°55'05"	1450.74	985.42	512.55
2	108°04'20"	30.00	56.58	41.34
3	68°16'30"	30.00	35.74	20.35
4	113°50'00"	30.00	59.60	46.05
5	58°47'50"	30.00	30.79	16.90
6	125°56'30"	30.00	65.95	58.80
7	91°12'40"	30.00	47.76	30.64
8	88°33'20"	30.00	46.36	29.27
9	91°34'30"	30.00	47.95	30.83
10	87°58'30"	30.00	46.07	28.96
11	92°17'30"	30.00	48.33	31.29
R 12	39°56'25"	1310.74	913.70	476.30
R 13	35°01'55"	1160.74	709.70	366.33
R 14	32°47'35"	1120.74	641.45	329.97
R 15	33°10'15"	970.74	562.00	289.08
R 16	24°58'25"	820.74	357.74	181.76
R 17	19°57'45"	780.74	272.08	137.39
18	121°47'55"	30.00	63.77	52.89
19	92°49'30"	30.00	48.61	31.51
R 20	38°08'15"	1310.74	872.45	453.03
21	86°37'50"	30.00	45.36	28.30
22	93°40'50"	30.00	49.05	31.99
R 23	30°33'35"	970.74	517.76	265.26
24	85°16'50"	30.00	44.65	27.63
25	95°21'00"	30.00	49.93	32.94
R 26	32°59'45"	1160.74	668.45	343.77
R 27	30°91'05"	1120.74	596.95	305.72
R 28	21°53'15"	820.74	313.53	158.71
R 29	16°20'55"	780.74	222.77	112.16
30	108°30'30"	30.00	56.82	41.67
31	67°44'40"	30.00	35.47	20.14
32	114°25'20"	30.00	59.91	46.57
33	57°59'10"	30.00	30.36	16.62
34	126°55'20"	30.00	66.45	60.07
R 35	37°17'15"	1450.74	944.13	489.64
36	121°22'45"	30.00	63.56	53.44

TOWN OF FERNLEY

#53963 9/16/46 #2

OFFICIAL PLAT

HARTSOCK SUBDIVISION

FERNLEY, NEVADA

C.V. Taylor ~ John E. Curran
Engineers
203 Title Insurance Bldg., Reno, Nev.

Sept. 1946 Scale 1 in. = 100 ft.

Approved by the County Commissioners of Lyon County, Nevada.
J.R. McCulloch
Chairman

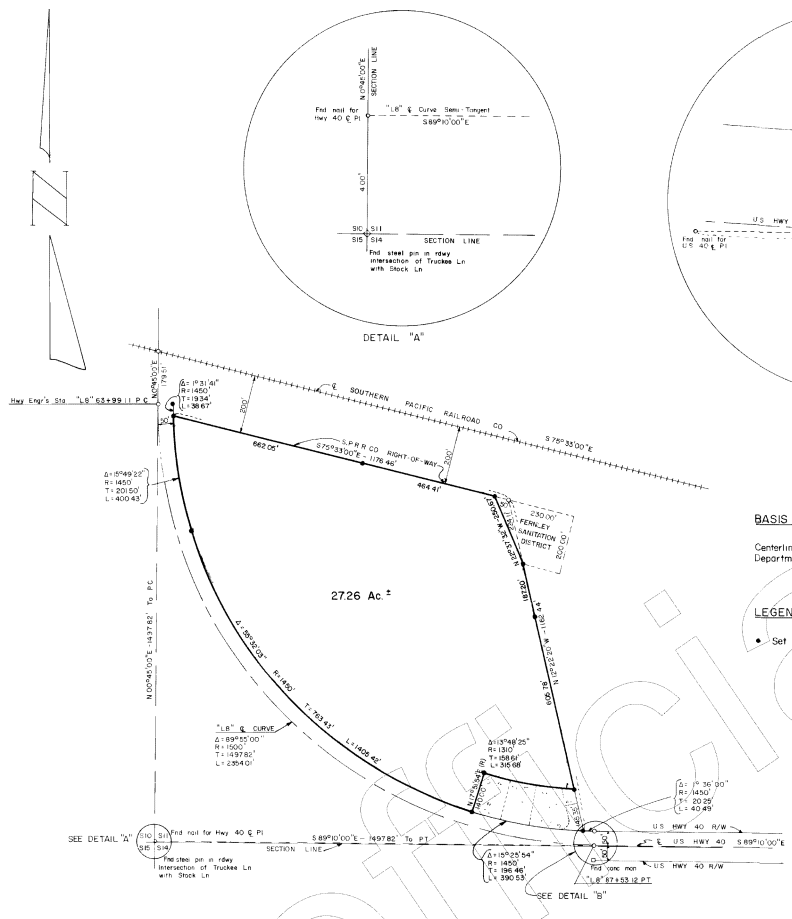
Attest, Walter Whitacre
County Clerk and Clerk of the Board

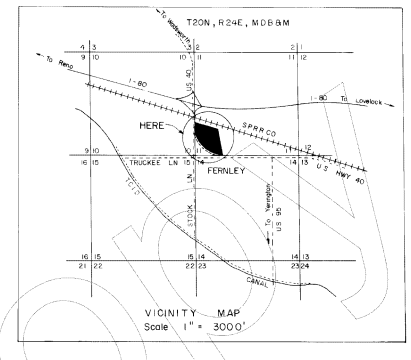
THIS DOCUMENT HAS BEEN MICROFILMED

*See Order Vacating Portion of Plat in Miscellaneous B.K. R, pg. 233 recorded 9/19/47

Uncontrolled Copy

2/8/78 RECORD OF SURVEY 435908
JACKSON, DAVID D., ET UX
PORT. OF SW1/4, T20N, R24E





BASIS OF BEARINGS

Centerline of US Highway 40 from Nev State Highway Department records

LEGEND

- Set 5/8" steel pin with alum cap stamped R.L.S. 2371

OWNER'S CERTIFICATE

The undersigned do hereby certify they are the owners of the tract of land shown hereon, and hereby consent to the preparation and recordation of this map

David D. Jackson — Betty M. Jackson

State of Nevada
County of Lyon SS

On this 30 day of January, 1978, David D Jackson and Betty M Jackson did personally appear before me a Notary Public, who upon oath did depose and say that they executed the foregoing certificate freely and voluntarily for the purposes stated hereon.

Richard C. Jackson
Notary Public

SURVEYOR'S CERTIFICATE

I, Fred L. Petersen, a Registered Land Surveyor in the State of Nevada, certify that

1. This is a true and accurate representation of the land surveyed under my supervision at the instance of David D. Jackson.
2. The lands surveyed lie within Section 11, T.20N., R.24E., M.D.B.&M. and the survey was completed on October 22, 1977.
3. This plat complies with the applicable state statutes and any local ordinances
4. The monuments are of the character shown and occupy the positions indicated

10-26-77 — Date
Fred L. Petersen
Registered Land Surveyor No 2371

RECORDER'S CERTIFICATE

File No 35708
Filed for record at the request of Fred L. Petersen on this 8th day of February, 1978 at 19 minutes past 1 o'clock P. M. in the Official Records of Lyon County, Nevada
FEE $ 5.00

County Recorder

2/8/78 #35908

RECORD OF SURVEY
OF
A PORTION OF THE S.W. 1/4, SECTION 11,
T.20N., R.24E., M.D.B.&M.,
IN LYON COUNTY, NEVADA
FOR
DAVID D. & BETTY M. JACKSON

FRED L PETERSEN, R.L.S 2371	October, 1977
ROUTE 1 BOX 138B	Scale 1" = 200'
FERNLEY, NEVADA 89408	Sheet 1 of 1

#650

Unofficial Copy