



## **COMPREHENSIVE PLAN AMENDMENT**

Application submittals must include all documents on this checklist as well as this page. Please use the reference guide (pg. 2) included in this packet for more information on each submittal item.

All applications shall be submitted electronically to [epermitcenter@adcogov.org](mailto:epermitcenter@adcogov.org). If the submittal is too large to email as an attachment, the application may be sent as an unlocked OneDrive link. Alternatively, the application may be delivered on a flash drive to the One-Stop Customer Service Center. All documents should be combined in a single PDF. Once a complete application has been received, fees will be invoiced and payable online at <https://permits.adcogov.org/CitizenAccess/>.

- ☒ 1. Development Application Form (pg. 3)
- ☐ 2. Application Fees (see table)
- ☒ 3. Written Explanation of the Proposed Amendment, including:
  - Proposed Text Changes
  - Proposed Map Changes
- ☒ 4. Site Plan Showing Proposed Development
- ☒ 5. Regional Traffic Study
- ☐ 6. Neighborhood Meeting Summary
- ☒ 7. Legal Description
- ☒ 8. Certificate of Taxes Paid
- ☐ 9. Certificate of Notice to Mineral Estate Owners/and Lessees(pg. 5)
- ☐ 10. Certificate of Surface Development (pg. 6)

Application Fees	Amount	Due
Comprehensive Plan Amendment	\$1,600	After complete application received

# Comprehensive Plan Amendment - Guide to Development Application Submittal

The submittal documents for all Land Use/Development Applications are listed below. Detailed explanations of the submittal documents are also provided.

All development application submittals shall comprise of one (1) electronic copy (emailed or delivered on a USB).

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### 3. Written Explanation of the Project:

- A clear and concise, yet thorough, description of the proposal. Please include, if applicable, timeframe, purpose of project, and improvements that will be made to the site

### 4. Site Plan Showing Proposed Development:

- A detailed drawing of existing and proposed improvements
- Including:
  - Streets, roads, and intersections
  - Driveways, access points, and parking areas
  - Existing and proposed structures, wells, and septic systems,
  - Easements, utility lines, and no build or hazardous areas
  - Scale, north arrow, and date of preparation
- An Improvement Location Certificate or Survey may be required during the official review

### 5. Regional Traffic Study:

- Addresses mobility concerns in the region associated with population growth and increased development that will be generated because of the change in the future land use designation

### 6. Neighborhood Meeting Summary:

- Please refer to Section 2-01-02 of the Adams County Development Standards and Regulations for the specific requirements regarding time, location, and notice
- A written summary shall be prepared including the materials submittal presented at the meeting, any issues identified at the meeting, and how those issues have been addressed

### 7. Legal Description:

- Geographical description used to locate and identify a property
- Visit <http://gisapp.adcogov.org/quicksearch/> to find the legal description for your property

### 8. Certificate of Taxes Paid:

- All taxes on the subject property must be paid in full. Please contact the Adams County Treasurer's Office
- Or <https://adcotax.com/treasurer/web/>

### 9-10. Certificate of Notice to Mineral Estate Owners/ Certificate of Surface Development:

- The State of Colorado requires notification to mineral rights owners of applications for surface development (i.e. zoning, plats, etc.)
- Mineral or Surface right owners may be found in the title commitment for the subject property
- You may also search the Office of the Clerk and Recorder for any recorded deeds, easements, or other documents.



### Application Type:

<input type="checkbox"/> Conceptual Review	<input type="checkbox"/> Preliminary PUD	<input type="checkbox"/> Temporary Use
<input type="checkbox"/> Subdivision, Preliminary	<input type="checkbox"/> Final PUD	<input type="checkbox"/> Variance
<input type="checkbox"/> Subdivision, Final	<input type="checkbox"/> Rezone	<input type="checkbox"/> Conditional Use
<input type="checkbox"/> Plat Correction/ Vacation	<input type="checkbox"/> Special Use	<input type="checkbox"/> Other: _____

**PROJECT NAME:**

### APPLICANT

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### OWNER

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### TECHNICAL REPRESENTATIVE (Consultant, Engineer, Surveyor, Architect, etc.)

Name:  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

## DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor  
Parcel Number

Existing  
Zoning:

Existing Land  
Use:

Proposed Land  
Use:

Have you attended a Conceptual Review? YES ☐ NO ☐

If Yes, please list PRE#:

I hereby certify that I am making this application as owner of the above described property or acting under the authority of the owner (attached authorization, if not owner). I am familiar with all pertinent requirements, procedures, and fees of the County. I understand that the Application Review Fee is non-refundable. All statements made on this form and additional application materials are true to the best of my knowledge and belief.

Name:

Date:

Owner's Printed Name

Name:

Owner's Signature



### **Purpose**

The purpose of this application is to adjust the Comprehensive Plan from Residential Medium to Residential High to allow for 168 market-rate, for-rent, multifamily units in an area of the County that is experiencing growth. The intent is to meet a market demand for new, safe, and reasonably priced housing for working families.

### **Opportunity Zone Encourages Investment**

The site is located in an Opportunity Zone, as designated by Congress six years ago, with the objective of attracting private investment into underperforming areas. Opportunity zones generally represent economically distressed communities in need of revitalization.

*Opportunity Zones are an economic development tool that allows people to invest in distressed areas in the United States. Their purpose is to spur economic growth and job creation in low-income communities while providing tax benefits to investors. Opportunity Zones were created under the Tax Cuts and Jobs Act of 2017 (Public Law No. 115-97). Internal Revenue Service*

### **Existing Conditions are an Odd Mix**

The three lots, totaling more than five acres, are mostly vacant. One small single family home, previously the office for a general contractor, Colorado Builders Corp.

<https://coloradobuilderscorp.com> is the only structure on the site. Oddly, 3107 W 63rd Ave is a vacant lot in a suburban style neighborhood of single family homes. The plan is for this lot to continue having very little impact on the neighborhood because it will serve as underground detention, a sanitary sewer main connection to W 63<sup>rd</sup> Ave and a resident's garden with raised planter beds. There is no risk of displacement of existing residence.

The Comprehensive Plan and zoning identify the area as primarily residential, but that doesn't exactly match what's happening on the ground. There are a mix of uses, including residential, commercial, manufacturing, industrial, and outdoor storage in the immediate vicinity.

- Jesse Lee's Auto Upholstery, 3280 W 64th Ave  
<https://www.facebook.com/jesseleesautoupholstery/>
- Spero Winery, 3316 W 64th Ave  
<https://sperowinery.biz/>
- Standard Industries and Standard Restaurant Supply, 6337 Federal Blvd  
<https://www.yelp.com/biz/standard-restaurant-supply-denver-2>

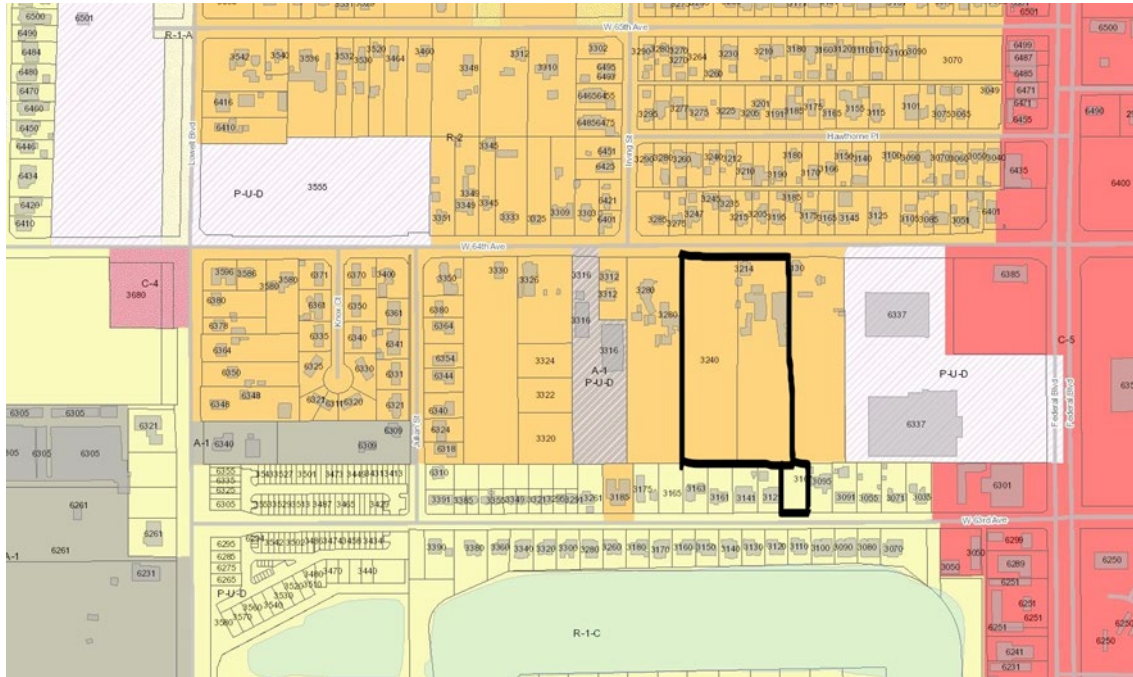
## Comprehensive Plan Map



### Advancing Adams Future Land Use

Agriculture Large Scale	Industrial Medium	Parks Open Space	Public
Agriculture Small Scale	Institutional	Plan - CASP	Residential High
Commercial	Mixed Use	Plan - Splendid Valley	Residential Low
Industrial High	Mixed Use Commercial	Plan - Square Lakes	Residential Medium
Industrial Low	Mixed Use Commercial*	Plan - Welby	

## Zoning Map



### Compatible, But Not the Same

This Comprehensive Plan Amendment should be compatible, but doesn't need to be the same as the surrounding land uses. In this location, it would be challenging to match the mix of existing uses. This application seeks to meet the County's housing priorities for varying densities, sizes, and price points to provide residents with the widest possible variety of housing choices to reflect their needs.

### Change is Underway

Southwest Adams County's access to more places via two RTD transit stations and outdoor recreational amenities are enormous public investments that were planned and delivered over two decades. They are among the reasons there is an increased demand for supply and types of housing in this area. This trend is illustrated by the following communities that are built or approved for changes in use, intensity and height to allow for more residential units.

- Baker School Apartments, 3555 W 64th Ave, 142 for rent units, completed in 2019
- Berkely Shores, 6300 Lowell Blvd, 89 for sale single family and townhomes, completed in 2022
- Clear Creek Valley, 6501 Lowell Blvd, PUD for 124 for sale paired homes, approved in 2022
- Clear Creek Transit Village, 6001 Federal Blvd, PUD, for 215 for rent multifamily units, approved in 2015

### **Housing Policies Support More Units and Diversity**

The Comprehensive Plan describes the housing policies for future development and growth areas. In order to achieve these goals, a shift from Residential Medium (maximum of 20 dwelling units per acre) to Residential High (maximum of 35 dwelling units per acre) is needed for this redevelopment to be economically viable. The Comprehensive Plan also contemplates the need to be responsive to economic conditions to encourage sustainable and equitable housing growth to meet the needs of Adams County residents now and in the future.

This application is consistent with the intent of the Plan's policies and goals listed below. Moreover, this applicant is in a position to achieve them in the near-term, as soon as 2025.

#### *Chapter 3, Page 21*

*Adams County endeavors to provide housing that works for people on all paths of life. A central topic raised throughout the community engagement process was access to housing for all residents. Adams County residents expressed a need to support a broad spectrum of opportunities beyond the current predominantly single-family detached homes including manufactured housing, apartments, and townhomes.*

#### *Chapter 3, Page 22*

*In matters of market-rate private housing development, the County seeks to promote diversity of housing types, a variety of neighborhood scales, accessibility for a range of ages and abilities, and proximity to amenities and services.*

#### *Chapter 3, Page 24*

*Currently, 69% of homes in Adams County are single-family dwellings. To support future population growth, both increases in diversity of unit types and densities, including missing-middle, multi-family, and mixed-use developments, in some areas will be important. A substantial amount of housing growth may be anticipated to occur within incorporated areas of the county.*

#### *Chapter 3, Page 26*

*Goal COH 2: Increase housing opportunities throughout Adams County by taking a proactive role in addressing housing affordability, diversity, and supply through land use regulations.*

*Policy COH 2.1: Adams County's policy is to support a diverse and inclusive community. This is achieved by offering a range of housing options that include opportunities for homeownership and rental, a variety of housing types and price ranges, and housing that is designed to meet the needs of all ages and ability levels.*

*Strategy COH 2.1.01: Support diversity of housing types through updates to the Adams County Development Standards & Regulations and by aligning zoning with future land uses.*

*Chapter 5, Page 47*

*Policy BEC 2.2: Adams County's policy is to expand access to safe and reliable housing, transportation, service destinations, recreation, and commuting choices in the county.*

*Executive Summary, Page 4*

*The current housing stock consists primarily of single-family detached homes, which accounts for 62.4 percent of housing units; this housing type is what is typically being developed today. There are additional opportunities for housing type diversity to be added to the stock to support the growing population.*

*Overview, Page 15*

*Community and Housing*

*A key topic that was raised throughout engagement opportunities was access to housing for all residents of Adams County. Participants identified opportunities to ensure current housing types remain in Adams County, particularly mobile homes, as well as diversifying the housing stock to include more multi-family options.*

**Not Enough Housing**

The Housing Needs Assessment found the County does not have enough housing based on population projections and average household size. The assessment found the current availability of housing units does not meet the needs of households at all income levels in Adams County. With millennials, baby boomers, young professionals and new families growing to account for more and more of the County's population each year, the demand will almost certainly continue to rise.

**More Infill**

The Balanced Housing Plan also supports the proposed change in the Comprehensive Plan designation the following ways:

- Improve and support housing opportunities for all residents in Adams County.
- Foster an environment that promotes balanced housing.
- Integrate development practices that promote infill development and increase diversity in housing stock.

## Community Amenities are Close

Key community amenities and services are close by. Many within a mile.

### PUBLIC TRANSPORTATION

- 1 - Westminster Station  
6995 Grove St  
Westminster, CO  
0.8 miles
- 2 - North + South Bound Bus  
Federal Blvd + W 64th Ave  
0.2 miles
- 3 - Clear Creek/Federal  
Station  
2870 W 60th Ave  
Denver, CO  
0.7 miles

### PARKS + RECREATION

- 4 - Splashland Aquatics  
3365 W 67th Ave  
Denver, CO  
0.5 miles
- 5 - Sports Complex  
3735 W 66th Ave  
Denver, CO  
0.6 miles
- 6 - Nature Play Park + Clear  
Creek Trailhead  
Westminster, CO  
0.93 miles
- 7 - Little Dry Creek  
Dog Park  
3655 W 69th Pl  
Westminster, CO  
1.0 miles

### PARKS + RECREATION

- 8 - Tennyson Knolls Park  
4505 W 61st Pl  
Arvada, CO  
1.2 miles
- 9 - Clear Creek Valley Park  
3700 W 58th Pl  
Arvada, CO  
1.6 miles

### FIRE

- 10 - Adams County  
Fire Rescue Station 12  
3365 W 65th Ave  
Denver, CO  
0.28 miles

### PUBLIC SCHOOLS

- 11 - Josephine Hodgkins  
Leadership Academy K-8  
3475 W 67th Ave  
Denver, CO  
.05 miles
- 12 - Tennyson Knolls  
Preparatory School PK-8  
6330 Tennyson St  
Arvada, CO  
1 mile
- 13 - Westminster High School  
6933 Raleigh St  
Westminster, CO  
1.9 miles

\*1 MILE RADIUS IS DENOTED BY WHITE CIRCLE\*



## No Traffic Impacts

The Traffic Impact Study indicates the proposed redevelopment creates virtually no impacts.



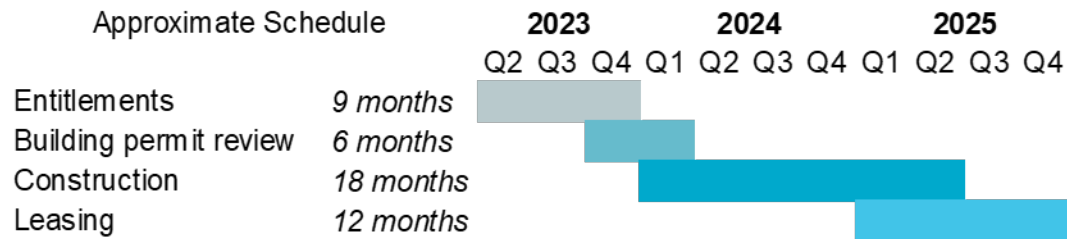
Intersection Lane Groups	Level of Service					
	2023		2025		2043	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Lowell Blvd/W 64th Ave (signalized)	B	C	B	C	B	C
Federal Blvd/W 64th Ave (signalized)	C	C	C	C	C	C

*Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system (page 20).*

The proposed two access points on W 64<sup>th</sup> Ave show near and long-term operations at a level of service A during peak traffic periods. This is the best possible level.

### Timeframe

The schedule is an estimate based on the best available information to date.



501-23-041 Legal Desc for Minor Subdivision Plat

**Inner Circle Capital Subdivision**

ALL OF LOT 15 OF CLEAR CREEK GARDENS SUBDIVISION, COUNTY OF ADAMS, STATE OF COLORADO.

TOGETHER WITH THE FOLLOWING:

THAT PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 50 RODS (825 FEET) WEST OF THE NORTHEAST CORNER OF SAID NORTHWEST 1/4; THENCE DUE WEST ALONG SAID SECTION LINE, 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE SOUTH 40 RODS (660 FEET); THENCE AT RIGHT ANGLES DUE EAST 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE NORTH 40 RODS (660 FEET) TO THE PLACE OF BEGINNING.

EXCEPT THE NORTH 30 FEET THEREOF FOR ROAD PURPOSES, AND EXCEPT THAT PORTION OF LAND CONVEYED TO THE COUNTY OF ADAMS, STATE OF COLORADO IN THE DEED RECORDED JUNE 24, 2005 UNDER RECEPTION NO. 20050624000665580, COUNTY OF ADAMS, STATE OF COLORADO.

ALSO TOGETHER WITH THE FOLLOWING:

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 UNDER RECEPTION NO. 20051017001136790, COUNTY OF ADAMS, STATE OF COLORADO

CONTAINING 218,396 TOTAL SQUARE FEET OR 5.014 TOTAL ACRES OF LAND, MORE OR LESS.



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[Redemption Certificate](#)  
[Account Balance](#)  
[Statement Of Taxes Due](#)  
[Summary of Taxes Due](#)

**Account Links**

[Account Summary](#)  
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**External Links**

[Change of Address Form](#)

**Payment Receipts**

[Receipt from Jan 23, 2023](#)  
[Receipt from Jun 7, 2022](#)  
[Receipt from Mar 10, 2022](#)  
[Receipt from May 3, 2021](#)  
[Receipt from Mar 4, 2021](#)  
[Receipt from Feb 19, 2020](#)  
[Receipt from Jun 10, 2019](#)  
[Receipt from Feb 4, 2019](#)  
[Receipt from May 23, 2018](#)  
[Receipt from Feb 20, 2018](#)  
[Receipt from Mar 31, 2017](#)  
[Receipt from Feb 25, 2017](#)  
[Receipt from Feb 19, 2016](#)  
[Receipt from Feb 23, 2015](#)  
[Receipt from Feb 7, 2014](#)

The amount of taxes due on this page are based on last year's property value assessments.  
 For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103054
Parcel Number	0182508200017
Owners	ICC 64TH 1 LLC
Address	8200 S KELLERMAN CIR AURORA, CO 80016-7399
Situs Address	3214 W 64TH AVE
Legal	SECT,TWN,RNG:8-3-68 DESC: BEG 50 RODS W OF NE COR NW4 TH W 10 RODS TH S 40 RODS TH E 10 RODS TH N 40 RODS TO BEG EXC RD 2/386A


**DUE DATES:**  
 First Half Payment Due March 1  
 Second Half Payment Due June 15  
 OR  
 Full Payment Due April 30

If paying or corresponding by mail, please use the following addresses:

PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869

CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601

**Inquiry**

As Of

Payment Type ☐ First ☒ Full

Total Due \$0.00

Value		
Area Id	Mill Levy	
495 - 495		122.4710000
	Actual	Assessed
RES IMPRV LAND - 1112	192,500	13,380
SINGLE FAMILY RES - 1212	320,892	22,300
<b>Total Value</b>	<b>513,392</b>	<b>35,680</b>
<b>Taxes</b>		<b>\$4,369.76</b>

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**External Links**

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**Payment Receipts**

[Receipt from Jan 23, 2023](#)  
[Receipt from Sep 6, 2022](#)  
[Receipt from Apr 14, 2022](#)  
[Receipt from Feb 19, 2022](#)  
[Receipt from Mar 31, 2021](#)  
[Receipt from May 9, 2017](#)  
[Receipt from Jun 30, 2016](#)  
[Receipt from Jan 20, 2016](#)  
[Receipt from Mar 30, 2015](#)  
[Receipt from May 28, 2014](#)  
[Receipt from Nov 26, 2013](#)

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For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103062
Parcel Number	0182508200033
Owners	ICC 64TH 1 LLC
Address	3240 W 64TH AVE DENVER, CO 80221-2160
Situs Address	3240 W 64TH AVE
Legal	SECT,TWN,RNG:8-3-68 DESC: E2 OF THE FOL BEG AT A PT ON N LN OF SEC 8 60 RODS W OF NE COR NW4 TH W 20 RODS TH S 40 RODS TH E 20 RODS TH N 40 RODS TO BEG M/L EXC RDS 2/3224A

 **DUE DATES:**  
*First Half Payment Due March 1*  
*Second Half Payment Due June 15*  
**OR**  
*Full Payment Due April 30*

*If paying or corresponding by mail, please use the following addresses:*

**PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869**

**CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601**

**Inquiry**

As Of

Payment Type ☐ First  
☒ Full

Total Due \$0.00

Value		
Area Id		Mill Levy
495 - 495		122.4710000
	Actual	Assessed
UNIM LND 1-4.99 AC - 0520	192,500	55,830
Taxes		\$6,837.56



Print Forms

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[Account Balance](#)  
[Statement Of Taxes Due](#)  
[Summary of Taxes Due](#)

Account Links

[Account Summary](#)  
[Account Value](#)  
[Transaction Detail](#)  
[Verify My Email](#)

External Links

[Change of Address Form](#)

Payment Receipts

[Receipt from Jan 23, 2023](#)  
[Receipt from Nov 14, 2022](#)  
[Receipt from Dec 11, 2021](#)  
[Receipt from Apr 22, 2020](#)  
[Receipt from Oct 26, 2018](#)  
[Receipt from Sep 5, 2017](#)  
[Receipt from Aug 26, 2016](#)  
[Receipt from Sep 29, 2015](#)  
[Receipt from Aug 29, 2014](#)  
[Receipt from Aug 12, 2013](#)

The amount of taxes due on this page are based on last year's property value assessments.  
For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103092
Parcel Number	0182508202015
Owners	ICC 64TH I LLC
Address	8200 S KELLERMAN CIR AURORA, CO 80016-7399
Situs Address	3107 W 63RD AVE
Legal	SUB: CLEAR CREEK GARDENS SUBD DESC: PLOT 15



**DUE DATES:**  
**First Half Payment Due March 1**  
**Second Half Payment Due June 15**  
**OR**  
**Full Payment Due April 30**


*If paying or corresponding by mail, please use the following addresses:*

**PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869**

**CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601**

Inquiry

As Of



Payment Type

☐ First  
☒ Full

Total Due

\$0.00

Value		
Area Id	Mill Levy	
495 - 495	122.4710000	
	Actual	Assessed
VACANT RESIDENTIAL - 0100	70,000	20,300
Taxes		\$2,486.16



## CHANGE IN USE

ADDRESS: 3214-3240 W 64TH AVE, DENVER, CO

Note: front stall & back stall are each counted as 1 tandem stall.

## SHEET 2 OF 17





# TRAFFIC IMPACT STUDY

For

**64<sup>th</sup> Avenue Apartments  
Adams County, Colorado**

February 2023

Prepared for:

ICC 64<sup>th</sup> 1 LLC  
8200 S Kellerman Circle  
Aurora, Colorado 80016

Prepared by:



**SM ROCHA, LLC**  
TRAFFIC AND TRANSPORTATION CONSULTANTS

8700 Turnpike Drive, Suite 240  
Westminster, Colorado 80031  
(303) 458-9798

6 South Tejon Street, Suite 515  
Colorado Springs, Colorado 80903  
(719) 203-6639

Project Engineer:  
Brandon Wilson, EIT  
Megan Bock, EIT

Engineer in Responsible Charge:  
Fred Lantz, PE



23-011814

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## I. Introduction

### Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled 64<sup>th</sup> Avenue Apartments.

This proposed development consists of a multifamily residential community. The development is located near the southeast corner of W 64<sup>th</sup> Avenue and Irving Street in Adams County, Colorado.

### Study Area Boundaries

The study area to be examined in this analysis encompasses the W 64<sup>th</sup> Avenue intersections with Federal Boulevard and Lowell Boulevard as well as the proposed site accesses.

Figure 1 illustrates location of the site and study intersections.

### Site Description

Land for the development within the eastern lot is occupied by a single-family residential use, while the western lot is vacant. However, aerial imagery indicates the western lot may be currently used as outdoor storage from adjacent lots. The proposed development area is surrounded by a mix of residential and commercial land uses.

The proposed development is understood to entail the new construction of a four-building multifamily residential community supporting a total of 168 dwelling units with associated amenities.

Proposed access to the development is provided via two full-movement accesses onto W 64<sup>th</sup> Avenue (referred to as Access A and Access B).

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2025.

General site and access locations are shown on Figure 1.

A conceptual site plan, as prepared by Brown Collective Architecture, is shown on Figure 2. This plan is provided for illustrative purposes only.



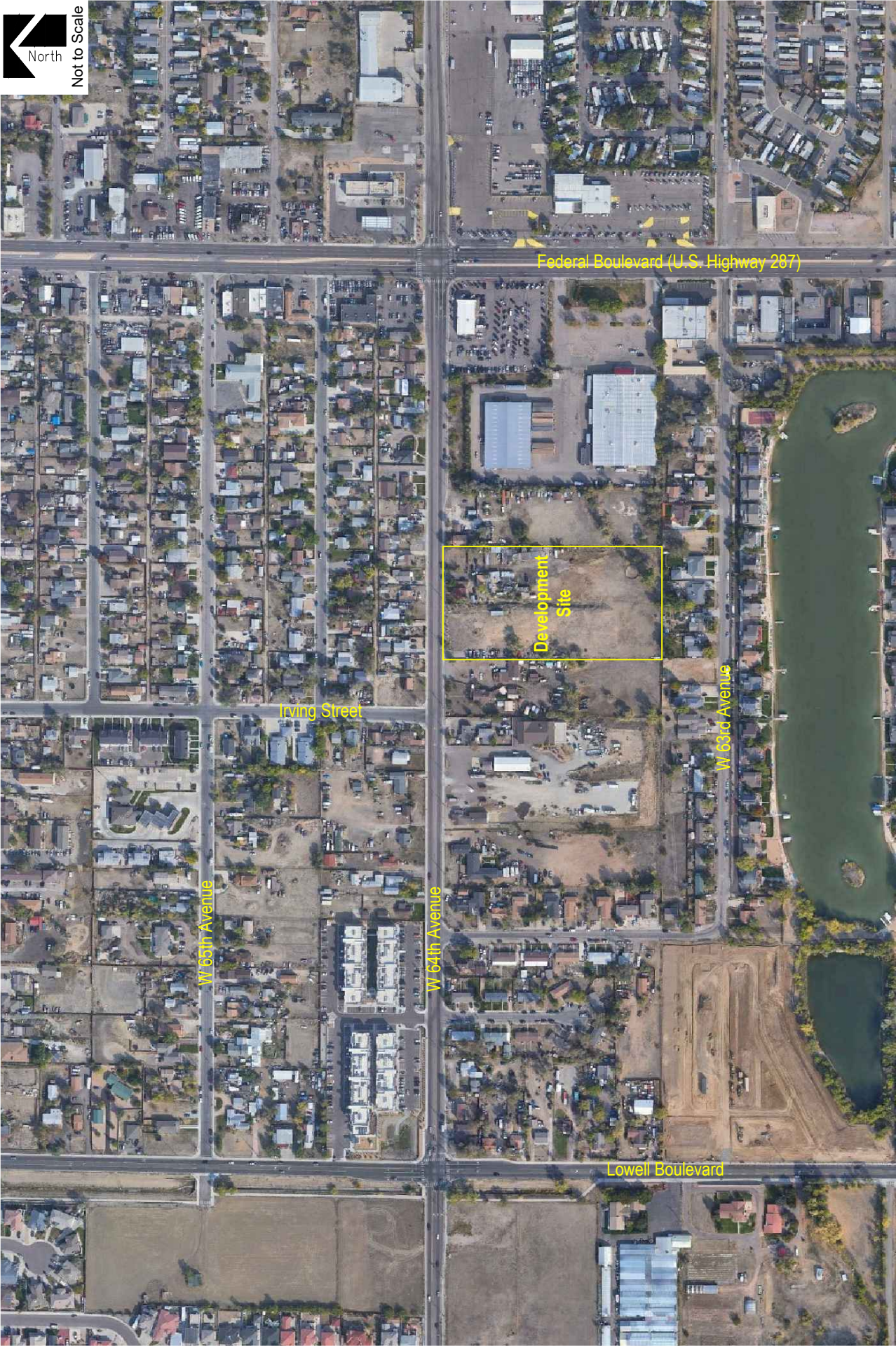
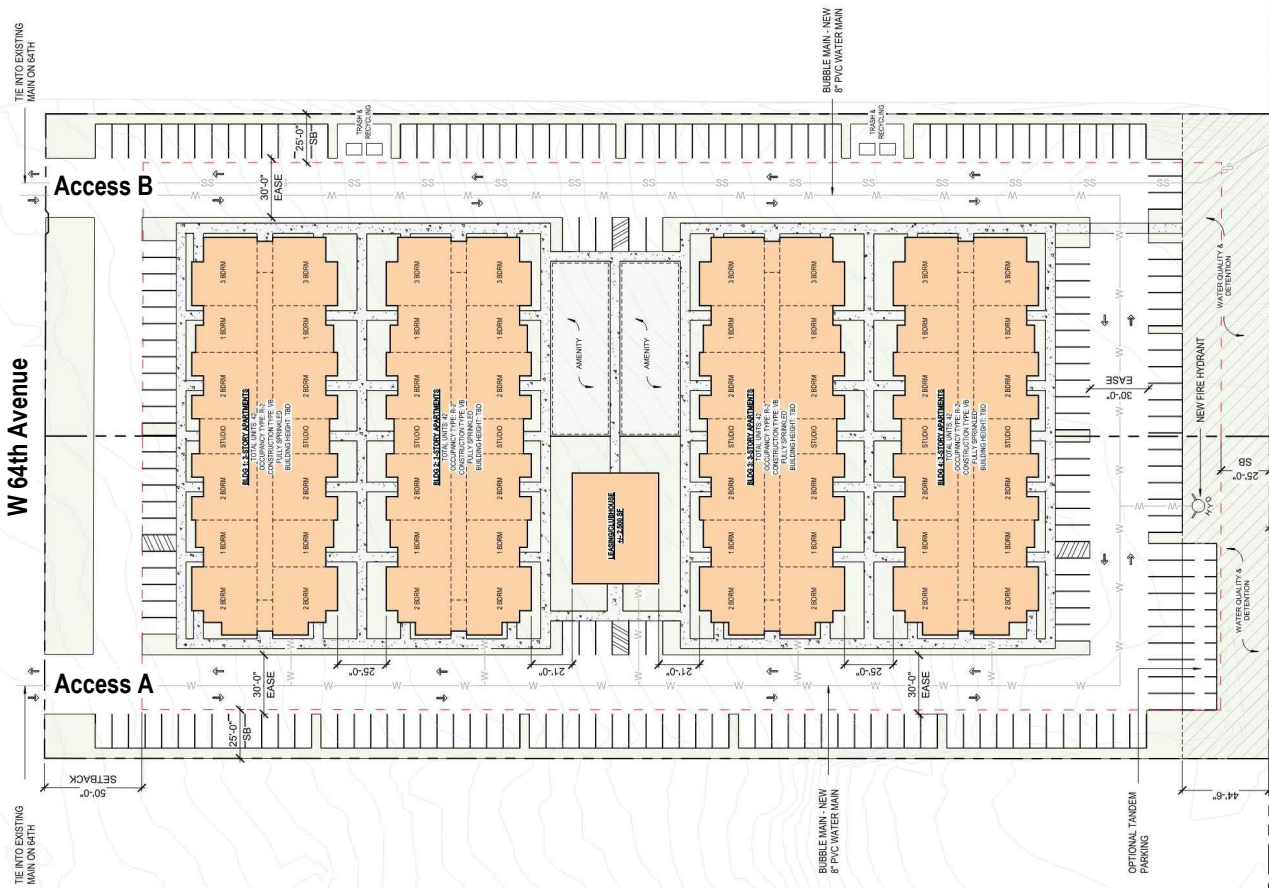


Figure 1  
SITE LOCATION







## Existing and Committed Surface Transportation Network

Within the study area, W 64<sup>th</sup> Avenue is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include Lowell Boulevard and Federal Boulevard. A brief description of each roadway, based on the County's Transportation Master Plan<sup>1</sup>, is provided below:

W 64<sup>th</sup> Avenue is an east-west collector roadway having two through lanes (one lane in each direction) with exclusive turn lanes at the intersections within the study area. W 64<sup>th</sup> Avenue provides a posted speed limit of 30 MPH.

Lowell Boulevard is a north-south collector roadway having two through lanes (one lane in each direction) with exclusive turn lanes at the intersection within the study area. Lowell Boulevard provides a posted speed limit of 30 MPH.

Federal Boulevard is a north-south principal arterial roadway having six through lanes (three lanes in each direction) with a combination of shared and exclusive turn lanes at the intersection within the study area. The Colorado Department of Transportation (CDOT) categorizes the adjacent segment of Federal Boulevard (U.S. Highway 287) as a Non-Rural Principal Highway (NR-A) and provides a posted speed limit of 45 MPH.

The study intersections of W 64<sup>th</sup> Avenue with Lowell Boulevard and Federal Boulevard are signalized. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

No regional or specific improvements for the above-described roadways are known to be planned or committed at this time. The study area roadways appear to be built to their ultimate cross-sections.

---

<sup>1</sup> Advancing Adams Transportation Master Plan, Fehr & Peers, April 2022.

## II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of W 64<sup>th</sup> Avenue with Federal Boulevard and Lowell Boulevard. Average daily traffic (ADT) volumes were collected over a 24-hour period on W 64<sup>th</sup> Avenue. Counts were collected on Wednesday, January 25, 2023, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

Existing volumes and intersection geometry are shown on Figure 3. Traffic count data is included for reference in Appendix A.

Existing signal timing parameters for W 64<sup>th</sup> Avenue and Federal Boulevard were obtained from CDOT and used throughout this study to the best extent possible in order to remain consistent with existing signal coordination plans. Signal timing information received is included for reference in Appendix B.

Existing signal timing parameters for W 64<sup>th</sup> Avenue and Lowell Boulevard were assumed based on the existing signal head configuration and allowable movements, and pursuant to typical signal timing data described within the County's Development Standards & Regulations<sup>2</sup>. Timings were used throughout this study to the best extent possible in order to remain consistent with typical County signal coordination plans.

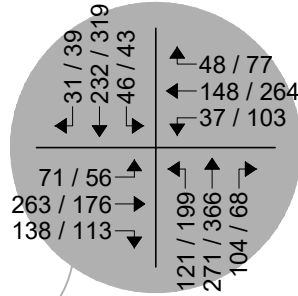
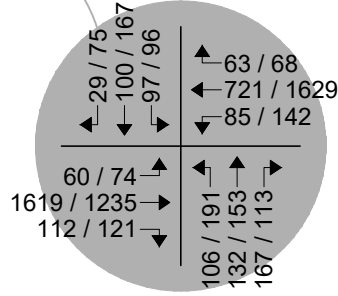
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<sup>2</sup> Adams County Development Standards and Regulations, Adams County, July 2021.

Federal Boulevard



(10,150)



Lowell Boulevard

W 64th Avenue

**LEGEND**

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 3**  
**EXISTING TRAFFIC**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



**SM ROCHA, LLC**

Traffic and Transportation Consultants

### Peak Hour Intersection Levels of Service – Existing Traffic

The Signalized and Unsignalized Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM), 6<sup>th</sup> Edition, by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing and future traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix C and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix D.

**Table 1 – Intersection Capacity Analysis Summary – Existing Traffic**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.2)	C (20.9)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (20.9)	C (26.4)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)

### Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS C during both peak traffic hours.

### **III. Future Traffic Conditions Without Proposed Development**

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Years 2025 and 2043, a compounded annual growth rate was determined using historical traffic data for the surrounding area provided by CDOT's Online Transportation Information System (OTIS) along the adjacent segment of Federal Boulevard (U.S. Highway 287), which anticipates a 20-year growth rate of less than one percent. Therefore, in order to provide for a conservative analysis, a growth rate of one percent was applied to existing traffic volumes. This annual growth rate provides for a conservative analysis and is assumed to account for regional growth projections and the level of in-fill development expected within the area.

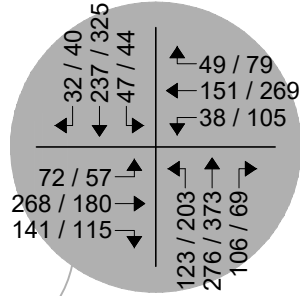
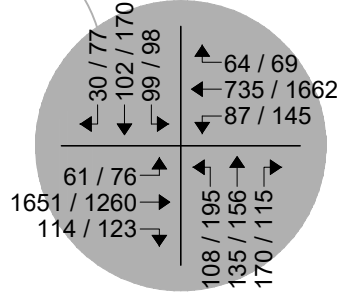
Pursuant to the non-committed area roadway improvements discussed in Section I, Year 2025 and Year 2043 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. This assumption provides for a conservative analysis. Year 2043 assumes existing signal timing parameters for the W 64<sup>th</sup> Avenue intersections with Lowell Boulevard and Federal Boulevard with optimized intersection splits in effort to better long-term intersection performance.

Projected background traffic volumes and intersection geometry for Years 2025 and 2043 are shown on Figure 4 and Figure 5, respectively.

Federal Boulevard



(10,355)



Lowell Boulevard

W 64th Avenue

**LEGEND**

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 4**  
**BACKGROUND TRAFFIC - YEAR 2025**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



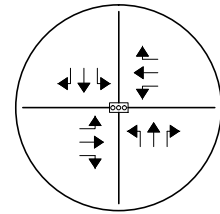
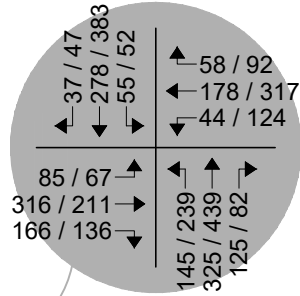
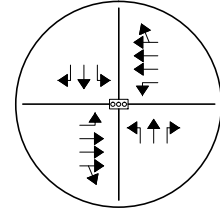
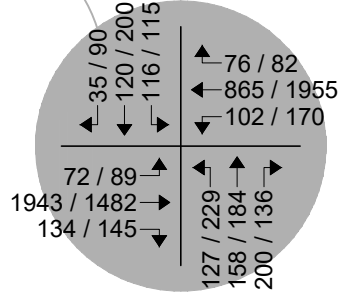
**SM ROCHA, LLC**  
Traffic and Transportation Consultants



Federal Boulevard



(12,180)



Lowell Boulevard

W 64th Avenue

**LEGEND**

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 5**  
**BACKGROUND TRAFFIC - YEAR 2043**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



**SM ROCHA, LLC**  
Traffic and Transportation Consultants

### Peak Hour Intersection Levels of Service – Background Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2025 are listed in Table 2. Year 2043 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix C. Intersection capacity worksheets are provided in Appendix D.

**Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2025**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.2)	C (21.4)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (21.4)	C (27.1)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)

### Background Traffic Analysis Results – Year 2025

Year 2025 background traffic analysis indicates that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the AM peak traffic hour and LOS C during the PM peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

**Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2043**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.5)	C (24.0)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (25.2)	C (33.4)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)

### Background Traffic Analysis Results – Year 2043

By Year 2043 and without the proposed development, the study intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue experiences LOS B operations during the AM peak traffic hour and LOS C operations during the PM peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

## IV. Proposed Project Traffic

### Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11<sup>th</sup> Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use code 220 (Multifamily Housing (Low-Rise)) was used for estimating trip generation because of its conservative rates and best fit to the proposed land use description.

Trip generation rates used in this study are presented in Table 4.

**Table 4 – Trip Generation Rates**

ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

**Table 5 – Trip Generation Summary**

ITE CODE	LAND USE	SIZE		TOTAL TRIPS GENERATED						
				24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
					ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	168 DU		1,132	16	51	67	54	32	86
<i>Total:</i>				1,132	16	51	67	54	32	86

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 1,132 daily vehicle trips with 67 of those occurring during the morning peak hour and 86 during the afternoon peak hour.

### **Adjustments to Trip Generation Rates**

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

### **Trip Distribution**

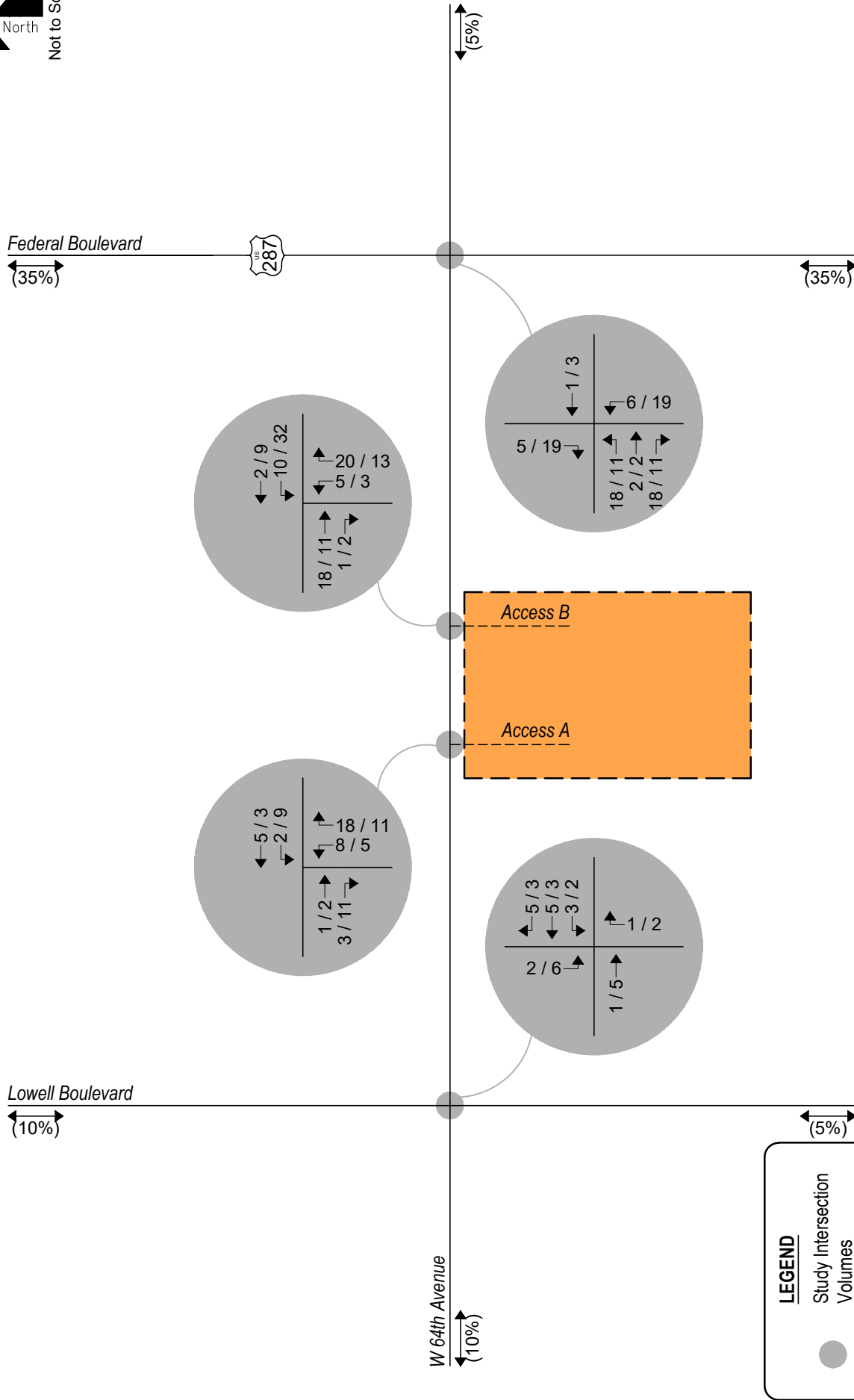
The overall directional distribution of site-generated traffic was determined based on the location of the development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and in reference to historical traffic count data provided by the Denver Regional Council of Governments (DRCOG).

Overall trip distribution patterns for the development are shown on Figure 6.

### **Trip Assignment**

Trip assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.



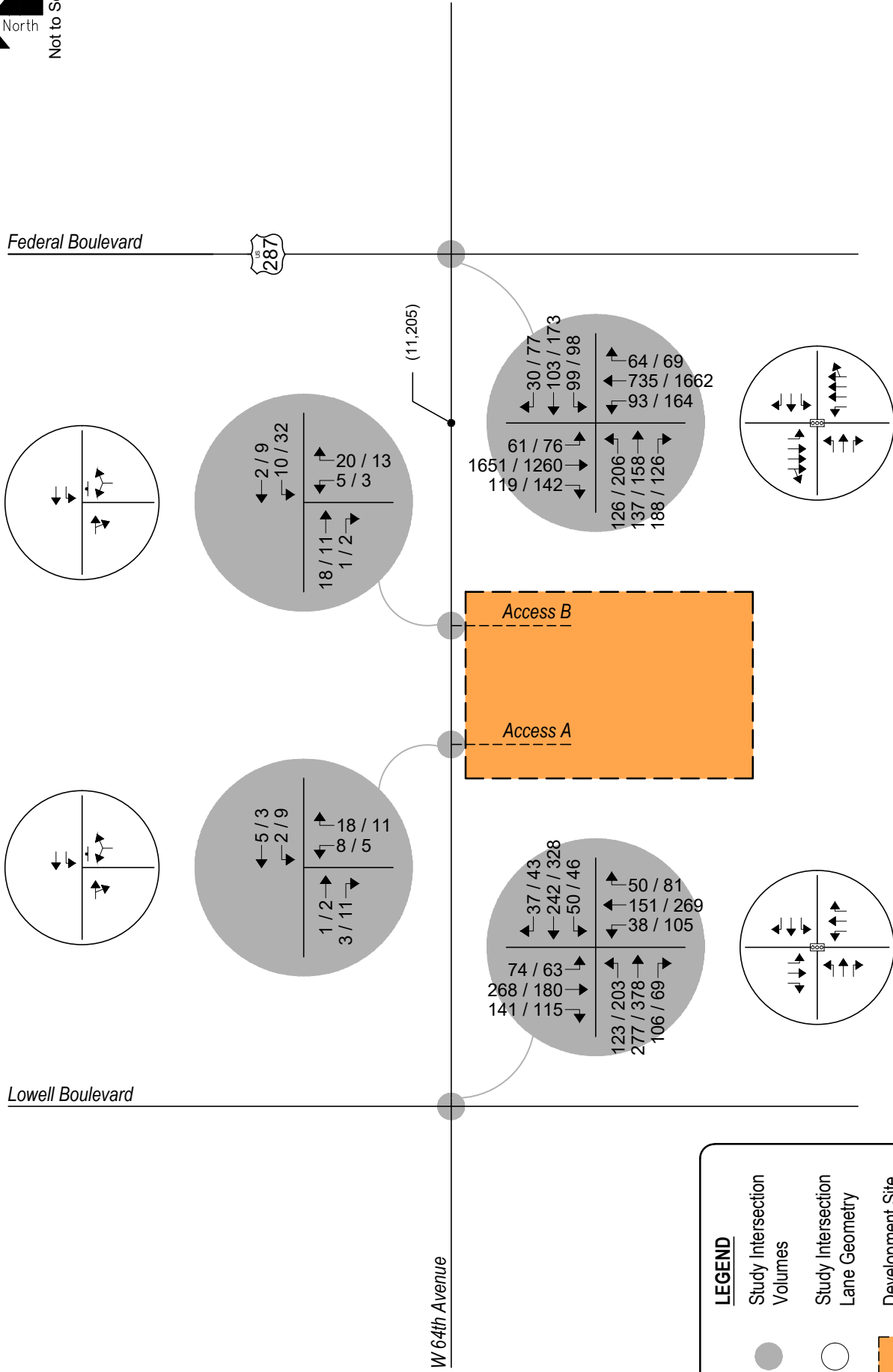
## **V. Future Traffic Conditions With Proposed Developments**

Total traffic is the traffic projected to be on area roadways with consideration of the proposed development. Total traffic includes background traffic projections for Years 2025 and 2043 with consideration of site-generated traffic. For analysis purposes, it was assumed that development construction would be completed by end of Year 2025.

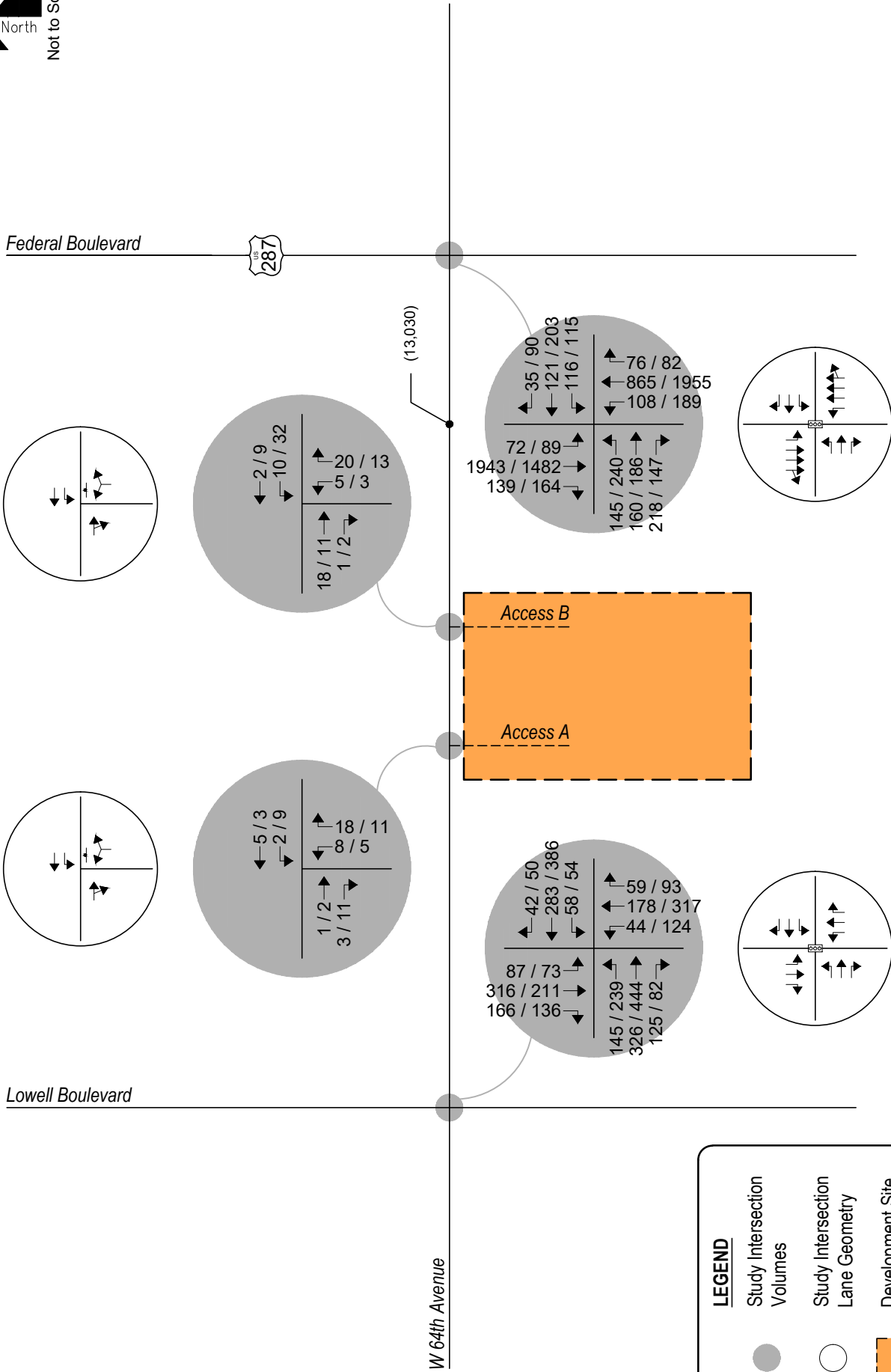
Pursuant to area roadway improvement discussions provided in Section III, Year 2025 and Year 2043 total traffic conditions assume no roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

Projected Year 2025 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2043.



**Figure 7**  
**TOTAL TRAFFIC - YEAR 2025**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic



**Figure 8**  
**TOTAL TRAFFIC - YEAR 2043**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic





## VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the latest HCM and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

### Peak Hour Intersection Levels of Service – Total Traffic

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2025 and 2043 are summarized in Table 6 and Table 7, respectively.

Definitions of levels of service are given in Appendix C. Intersection capacity worksheets are provided in Appendix D.

**Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2025**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64th Avenue (Signalized)	B (18.2)	C (21.4)
Federal Boulevard / W 64th Avenue (Signalized)	C (22.3)	C (28.0)
Access A / W 64th Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A
Access B / W 64th Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)  
Stop-Controlled Intersection: Level of Service

**Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2043**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.5)	C (24.1)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (26.2)	C (34.6)
Access A / W 64 <sup>th</sup> Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A
Access B / W 64 <sup>th</sup> Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)  
 Stop-Controlled Intersection: Level of Service

### Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2043 and upon development build-out, the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue shows an overall LOS B operation during the morning peak traffic hour and LOS C operation during the afternoon peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

The stop-controlled intersections of W 64<sup>th</sup> Avenue with Access A and Access B are projected to have turning movement operations at LOS A for both peak traffic hours.

Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersections. These intersection operations are similar to background conditions.

## VII. Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled W 64<sup>th</sup> Avenue Apartments. This proposed residential development consists of an apartment community. The development is located near the southeast corner of W 64<sup>th</sup> Avenue and Irving Street in Adams County, Colorado.

The study area examined in this analysis encompassed the W 64<sup>th</sup> Avenue intersections with Federal Boulevard and Lowell Boulevard as well as the proposed site accesses.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2025 and Year 2043 background traffic conditions, and Year 2025 and Year 2043 total traffic conditions.

Analysis of existing traffic conditions indicates that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour. The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS C during both peak traffic hours.

Without the proposed development, Year 2025 background operational analysis shows that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the AM peak traffic hour and LOS C during the PM peak traffic hour. The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

By Year 2043 and without the proposed development, the Lowell Boulevard and W 64<sup>th</sup> Avenue intersection has overall projected operations at LOS B for the morning peak traffic hour and LOS C during the afternoon peak traffic hour. The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2043 background traffic conditions. Proposed site accesses have long-term operations at LOS A during peak traffic periods and upon build-out.

## **APPENDIX A**

### **Traffic Count Data**



(303) 216-2439  
www.alltrafficdata.net

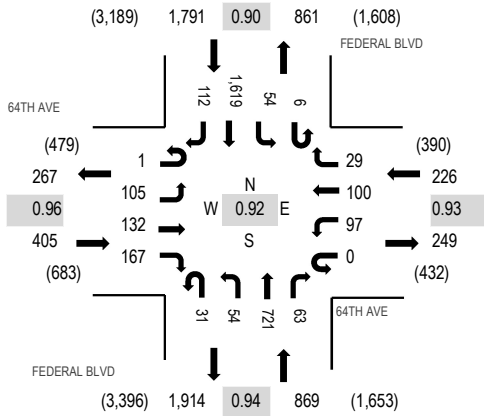
**Location:** 1 FEDERAL BLVD & 64TH AVE AM

**Date:** Wednesday, January 25, 2023

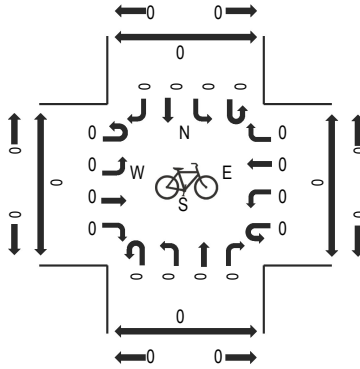
**Peak Hour:** 07:15 AM - 08:15 AM

**Peak 15-Minutes:** 07:30 AM - 07:45 AM

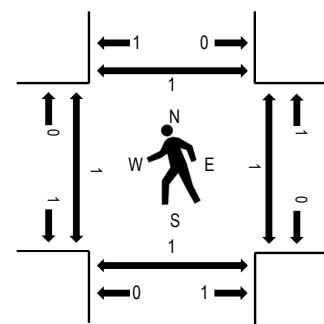
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				FEDERAL BLVD Northbound				FEDERAL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	15	29	29	0	17	21	3	2	14	117	9	1	5	346	12	620	3,151	0	0	0	0
7:15 AM	0	23	27	47	0	26	25	3	2	9	169	14	1	10	407	10	773	3,291	0	0	0	0
7:30 AM	1	26	38	38	0	22	30	9	12	14	196	17	3	12	442	39	899	3,258	0	0	0	0
7:45 AM	0	25	43	38	0	26	22	10	9	21	199	13	0	19	396	38	859	2,997	0	1	0	0
8:00 AM	0	31	24	44	0	23	23	7	8	10	157	19	2	13	374	25	760	2,764	1	0	1	1
8:15 AM	0	13	14	29	0	15	17	7	7	16	208	14	3	12	357	28	740		0	0	0	0
8:30 AM	0	17	19	34	0	14	17	4	4	15	160	19	2	12	300	21	638		0	0	0	1
8:45 AM	0	19	32	28	0	23	18	8	6	19	166	8	4	10	271	14	626		0	0	0	0
Count Total	1	169	226	287	0	166	173	51	50	118	1,372	113	16	93	2,893	187	5,915		1	1	1	2
Peak Hour	1	105	132	167	0	97	100	29	31	54	721	63	6	54	1,619	112	3,291		1	1	1	1



(303) 216-2439  
www.alltrafficdata.net

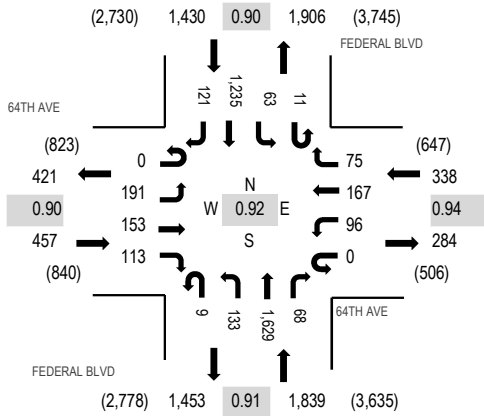
**Location:** 1 FEDERAL BLVD & 64TH AVE PM

**Date:** Wednesday, January 25, 2023

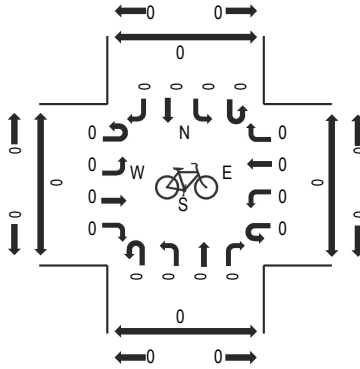
**Peak Hour:** 04:00 PM - 05:00 PM

**Peak 15-Minutes:** 04:00 PM - 04:15 PM

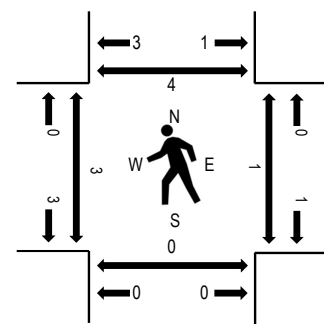
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				FEDERAL BLVD Northbound				FEDERAL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	51	42	28	0	25	38	21	3	31	454	16	3	19	340	37	1,108	4,064	3	0	0	3
4:15 PM	0	41	38	24	0	26	40	10	0	38	392	20	5	18	258	24	934	3,972	0	0	0	1
4:30 PM	0	46	32	28	0	22	43	24	4	29	435	18	1	12	344	27	1,065	3,987	0	1	0	0
4:45 PM	0	53	41	33	0	23	46	20	2	35	348	14	2	14	293	33	957	3,897	0	0	0	0
5:00 PM	0	47	36	26	0	17	51	29	0	34	411	12	3	4	317	29	1,016	3,788	0	3	0	0
5:15 PM	0	42	36	25	0	22	48	20	2	32	366	14	5	12	299	26	949		1	2	0	2
5:30 PM	0	37	23	20	0	15	29	20	2	46	421	26	0	8	301	27	975		0	0	1	0
5:45 PM	0	40	26	25	0	18	30	10	0	31	385	14	3	11	236	19	848		1	1	1	1
Count Total	0	357	274	209	0	168	325	154	13	276	3,212	134	22	98	2,388	222	7,852		5	7	2	7
Peak Hour	0	191	153	113	0	96	167	75	9	133	1,629	68	11	63	1,235	121	4,064		3	1	0	4





(303) 216-2439  
www.alltrafficdata.net

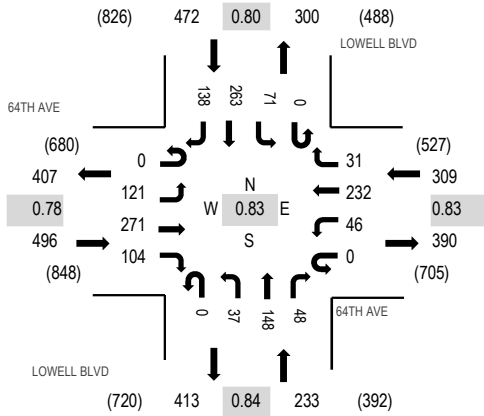
**Location:** 2 LOWELL BLVD & 64TH AVE AM

**Date:** Wednesday, January 25, 2023

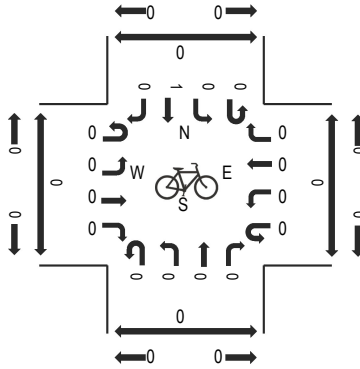
**Peak Hour:** 07:30 AM - 08:30 AM

**Peak 15-Minutes:** 07:45 AM - 08:00 AM

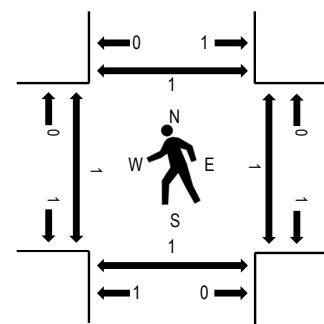
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				LOWELL BLVD Northbound				LOWELL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	15	55	20	0	13	45	2	0	2	16	11	0	15	47	26	267	1,405	0	1	0	0
7:15 AM	0	20	57	17	0	14	35	7	0	7	25	9	0	12	68	27	298	1,477	0	0	0	0
7:30 AM	0	27	77	21	0	11	58	7	0	14	40	15	0	13	69	32	384	1,510	0	0	0	0
7:45 AM	0	36	86	36	0	17	66	10	0	8	38	10	0	21	74	54	456	1,405	0	0	0	0
8:00 AM	0	33	56	29	0	11	49	7	0	6	30	13	0	17	58	30	339	1,188	0	1	0	1
8:15 AM	0	25	52	18	0	7	59	7	0	9	40	10	0	20	62	22	331		1	0	1	0
8:30 AM	0	20	50	18	0	13	26	10	0	6	27	10	0	13	46	40	279		0	0	0	0
8:45 AM	0	12	54	14	0	9	36	8	0	5	26	15	0	14	28	18	239		0	0	0	0
Count Total	0	188	487	173	0	95	374	58	0	57	242	93	0	125	452	249	2,593		1	2	1	1
Peak Hour	0	121	271	104	0	46	232	31	0	37	148	48	0	71	263	138	1,510		1	1	1	1



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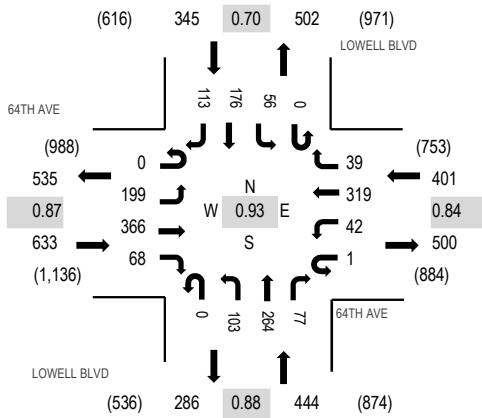
**Location:** 2 LOWELL BLVD & 64TH AVE PM

**Date:** Wednesday, January 25, 2023

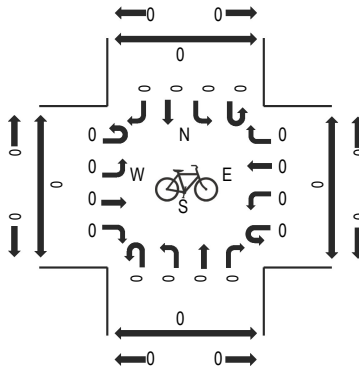
**Peak Hour:** 04:00 PM - 05:00 PM

**Peak 15-Minutes:** 04:00 PM - 04:15 PM

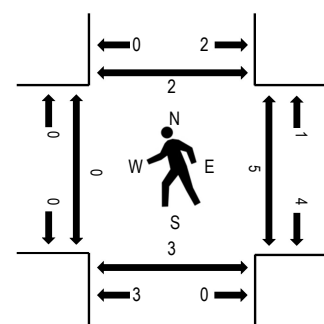
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				LOWELL BLVD Northbound				LOWELL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	46	104	19	0	14	73	6	0	23	69	15	0	21	57	45	492	1,823	0	0	0	2
4:15 PM	0	48	69	17	1	10	98	12	0	24	54	19	0	10	35	29	426	1,732	0	4	3	0
4:30 PM	0	58	107	17	0	10	71	12	0	25	69	17	0	13	37	22	458	1,746	0	1	0	0
4:45 PM	0	47	86	15	0	8	77	9	0	31	72	26	0	12	47	17	447	1,658	0	0	0	0
5:00 PM	0	33	87	16	0	11	72	16	0	22	55	16	0	8	38	27	401	1,556	0	0	0	0
5:15 PM	0	50	80	15	0	9	65	17	0	33	83	16	0	6	43	23	440		0	0	0	0
5:30 PM	0	33	62	15	0	8	68	8	0	19	76	15	0	7	32	27	370		0	0	0	0
5:45 PM	0	26	69	17	0	8	64	6	0	13	66	16	0	2	38	20	345		0	0	0	0
Count Total	0	341	664	131	1	78	588	86	0	190	544	140	0	79	327	210	3,379		0	5	3	2
Peak Hour	0	199	366	68	1	42	319	39	0	103	264	77	0	56	176	113	1,823		0	5	3	2

Start Time	25-Jan-23 Wed	EB	WB	Total
12:00 AM		47	59	106
01:00		43	45	88
02:00		37	39	76
03:00		18	32	50
04:00		68	44	112
05:00		110	132	242
06:00		252	156	408
07:00		379	256	635
08:00		304	223	527
09:00		301	205	506
10:00		236	241	477
11:00		221	241	462
12:00 PM		241	272	513
01:00		248	317	565
02:00		292	338	630
03:00		330	386	716
04:00		457	421	878
05:00		383	402	785
06:00		334	288	622
07:00		281	273	554
08:00		231	238	469
09:00		150	197	347
10:00		111	122	233
11:00		72	77	149
Total		5146	5004	10150
Percent		50.7%	49.3%	
AM Peak	-	07:00	07:00	-
Vol.	-	379	256	-
PM Peak	-	16:00	16:00	-
Vol.	-	457	421	-
Grand Total		5146	5004	10150
Percent		50.7%	49.3%	
ADT		ADT 10,150	ADT 10,150	

## **APPENDIX B**

### **Signal Timing Information**

CDOT

Administration

MaxTime Timing Shee

Federal and 64th Ave

Cross Black\_White.jpg

Unit Information

Controller ID	0
Main St.	SH 287
Side St.	64th Ave

Adapter	IP Address	Subnet Mask	Default Gateway	ARP	DHCP
1	10.11.79.214	255.255.255.0	10.11.79.1	Disable	
2	10.20.70.51	255.255.255.0	0.0.0.0	Disable	

Serial Ports:

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux_P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Flash	0	Auto Ped Clr	Enable	Red Revert	4.0	Backup Time	600	Ext Mode	Enable
All Red Exit	6	Grn Flash Freq.	60	Yel Flash Freq.	60	MCE Enable	Enable	Free Seq.	1
MCE Seq.	1	Start Yellow	0.0	Start Red	0.0	Start Clear Hold	6		

Phase Parameters

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Walk Time	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	28	0	32	0	27	0	30	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	3	5	3	4	3	5	3	4	0	0	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	4.5	5.0	1.5	1.5	1.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	12	30	30	22	22	30	10	22	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	8	20	8	15	10	20	8	15	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	1.5	5.0	1.5	1.5	1.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr																				
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Walk Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr																				
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Options**

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Enable	X	X	X	X	X	X	X	X												
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II					X	X	X													
Non Lock Mem	X	X	X		X	X	X													
Min Veh Recall																				
Max Veh Recall		X				X														
Ped Recall																				
Soft Veh Recall																				
Dual Entry				X				X												
Sim Gap Dis																				
Guaranteed Pass																				
Act Rest Walk																				
Cond Service																				
Add Initial																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Enable																				
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II																				
Non Lock Mem																				
Min Veh Recall																				
Max Veh Recall																				
Ped Recall																				
Soft Veh Recall																				
Dual Entry																				
Sim Gap Dis																				
Guaranteed Pass																				

Act Rest Walk																			
---------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Cond Service																			
Add Initial																			

**Additional Phase Options**

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

**Phase Configuration**

Ph.	Startup	Ring	Concurrent	No Served Phases	Startup Mir	Description
1	Phase Not On	1	5,6		0	SBLT
2	Green No Walk	1	5,6		0	NBT
3	Phase Not On	1	7,8		0	
4	Phase Not On	1	7,8		0	EBT
5	Phase Not On	2	1,2		0	NBLT
6	Green No Walk	2	1,2		0	SBT
7	Phase Not On	2	3,4		0	
8	Phase Not On	2	3,4		0	WBT
9	None	0			0	
10	None	0			0	
11	None	0			0	
12	None	0			0	
13	None	0			0	
14	None	0			0	
15	None	0			0	
16	None	0			0	
17	None	0			0	

18	None	0			0	
----	------	---	--	--	---	--

19	None	0			0	
20	None	0			0	
21	None	0			0	
22	None	0			0	
23	None	0			0	
24	None	0			0	
25	None	0			0	
26	None	0			0	
27	None	0			0	
28	None	0			0	
29	None	0			0	
30	None	0			0	
31	None	0			0	
32	None	0			0	
33	None	0			0	
34	None	0			0	
35	None	0			0	
36	None	0			0	
37	None	0			0	
38	None	0			0	
39	None	0			0	
40	None	0			0	

Sequence Configuration

Sequence 1

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 2

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 3

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 4

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 5

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 6

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 7

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 8

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 9

Sequence 10

Sequence 11

Sequence 12

Ring	Phases
------	--------

Ring	Phases
------	--------

Ring	Phases
------	--------

Ring	Phases
------	--------

1	1,2,a,3,4,b	1	2,1,a,3,4,b	1	1,2,a,3,4,b	1	1,2,a,3,4,b
2	5,6,a,8,7,b	2	5,6,a,8,7,b	2	5,6,a,7,8,b	2	5,6,a,7,8,b
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	
7		7		7		7	
8		8		8		8	
9		9		9		9	
10		10		10		10	
11		11		11		11	
12		12		12		12	
13		13		13		13	
14		14		14		14	
15		15		15		15	
16		16		16		16	

Sequence 13

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 14

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 15

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 16

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 13

11	
12	
13	
14	
15	
16	

Sequence 14

11	
12	
13	
14	
15	
16	

Sequence 15

11	
12	
13	
14	
15	
16	

Sequence 16

11	
12	
13	
14	
15	
16	

Sequence 17

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 18

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 19

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 20

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Vehicle Detection Parameters

Det.	Call Phs	Call Ovl	Additional Call Phase	Switch Phase	Delay	Extend	Queue Limit	No Activity	Max Presence	Erratic Counts	Failed Time	Description
1	1	0		0	0.0	0.0	0	0	0	0	0	
2	2	0		0	0.0	0.0	0	0	0	0	0	
3	2	0		0	0.0	0.0	0	0	0	0	0	

4	2	0		0	0,0	0,0	0	0	0	0	0	
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5	2	0		0	0,0	0,0	0	0	0	0	0	
6	2	0		0	0,0	0,0	0	0	0	0	0	
7	3	0		0	0,0	0,0	0	0	0	0	0	
8	4	0		0	0,0	0,0	0	0	0	0	0	
9	4	0		0	0,0	0,0	0	0	0	0	0	
10	4	0		0	0,0	0,0	0	0	0	0	0	
11	4	0		0	0,0	0,0	0	0	0	0	0	
12	4	0		0	0,0	0,0	0	0	0	0	0	
13	1	0		0	0,0	0,0	0	0	0	0	0	
14	3	0		0	0,0	0,0	0	0	0	0	0	
15	5	0		0	0,0	0,0	0	0	0	0	0	
16	6	0		0	0,0	0,0	0	0	0	0	0	
17	6	0		0	0,0	0,0	0	0	0	0	0	
18	6	0		0	0,0	0,0	0	0	0	0	0	
19	6	0		0	0,0	0,0	0	0	0	0	0	
20	6	0		0	0,0	0,0	0	0	0	0	0	
21	7	0		0	0,0	0,0	0	0	0	0	0	
22	8	0		0	0,0	0,0	0	0	0	0	0	
23	8	0		0	0,0	0,0	0	0	0	0	0	
24	8	0		0	0,0	0,0	0	0	0	0	0	
25	8	0		0	0,0	0,0	0	0	0	0	0	
26	8	0		0	0,0	0,0	0	0	0	0	0	
27	5	0		0	0,0	0,0	0	0	0	0	0	
28	7	0		0	0,0	0,0	0	0	0	0	0	
29	0	0		0	0,0	0,0	0	0	0	0	0	
30	0	0		0	0,0	0,0	0	0	0	0	0	
31	0	0		0	0,0	0,0	0	0	0	0	0	
32	0	0		0	0,0	0,0	0	0	0	0	0	
33	0	0		0	0,0	0,0	0	0	0	0	0	
34	0	0		0	0,0	0,0	0	0	0	0	0	
35	0	0		0	0,0	0,0	0	0	0	0	0	
36	0	0		0	0,0	0,0	0	0	0	0	0	
37	0	0		0	0,0	0,0	0	0	0	0	0	
38	0	0		0	0,0	0,0	0	0	0	0	0	
39	0	0		0	0,0	0,0	0	0	0	0	0	
40	0	0		0	0,0	0,0	0	0	0	0	0	
41	0	0		0	0,0	0,0	0	0	0	0	0	
42	0	0		0	0,0	0,0	0	0	0	0	0	
43	0	0		0	0,0	0,0	0	0	0	0	0	
44	0	0		0	0,0	0,0	0	0	0	0	0	
45	0	0		0	0,0	0,0	0	0	0	0	0	
46	0	0		0	0,0	0,0	0	0	0	0	0	
47	0	0		0	0,0	0,0	0	0	0	0	0	
48	0	0		0	0,0	0,0	0	0	0	0	0	
49	0	0		0	0,0	0,0	0	0	0	0	0	
50	0	0		0	0,0	0,0	0	0	0	0	0	
51	0	0		0	0,0	0,0	0	0	0	0	0	
52	0	0		0	0,0	0,0	0	0	0	0	0	
53	0	0		0	0,0	0,0	0	0	0	0	0	
54	0	0		0	0,0	0,0	0	0	0	0	0	
55	0	0		0	0,0	0,0	0	0	0	0	0	
56	0	0		0	0,0	0,0	0	0	0	0	0	
57	0	0		0	0,0	0,0	0	0	0	0	0	
58	0	0		0	0,0	0,0	0	0	0	0	0	
59	0	0		0	0,0	0,0	0	0	0	0	0	
60	0	0		0	0,0	0,0	0	0	0	0	0	
61	0	0		0	0,0	0,0	0	0	0	0	0	
62	0	0		0	0,0	0,0	0	0	0	0	0	
63	0	0		0	0,0	0,0	0	0	0	0	0	
64	0	0		0	0,0	0,0	0	0	0	0	0	
65	0	0		0	0,0	0,0	0	0	0	0	0	
66	0	0		0	0,0	0,0	0	0	0	0	0	
67	0	0		0	0,0	0,0	0	0	0	0	0	

68	0	0		0	0.0	0.0	0	0	0	0	0	
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69	0	0		0	0.0	0.0	0	0	0	0	0	
70	0	0		0	0.0	0.0	0	0	0	0	0	
71	0	0		0	0.0	0.0	0	0	0	0	0	
72	0	0		0	0.0	0.0	0	0	0	0	0	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Occupancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow Lock Call				X																
Red Lock call				X																
Passage	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	
Queue																				
Call	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		X
Terminate																				

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector	X	X	X	X	X	X	X	X												
Occupancy	X	X	X	X	X	X	X	X												
Yellow Lock Call				X																
Red Lock call			X																	
Passage	X	X	X	X	X	X	X	X												
Queue																				
Call	X	X	X	X	X	X	X	X												
Terminate																				

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Passage																				
Queue																				
Call																				
Terminate																				

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector												
Occupancy												
Yellow Lock Call												
Red Lock call												
Passage												
Queue												
Call												
Terminate												

Data Collection Period	60
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Pedestrian Detectors

	Call	Call	No	Max	
Det	Phase	Ovlp	Act	Presence	Erratic Count
1	0	0	0	0	0
2	2	0	0	0	0
3	0	0	0	0	0
4	4	0	0	0	0
5	0	0	0	0	0
6	6	0	0	0	0
7	0	0	0	0	0
8	8	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0

	Call	Call	No	Max	
Det	Phase	Ovlp	Act	Presence	Erratic Count
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	0	0	0	0
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	0	0	0	0	0
31	0	0	0	0	0
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0

15	0	0	0	0	0
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35	0	0	0	0	0
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16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	0	0	0	0

36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0

Overlaps

OLP	Type	Included Phases	Modifier Phases	Trail	Trail	Trail	Walk	Ped	Walk	Ped	Delay	Flash	Descriptions
				GRN	YEL	RED	1	Clr 1	2	Clr 2			
1	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
2	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
3	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
4	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
5	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
6	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
7	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
8	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
9	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
10	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
11	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
12	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
13	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
14	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
15	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
16	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
17	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
18	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
19	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
20	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
21	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
22	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
23	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
24	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
25	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
26	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
27	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
28	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
29	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
30	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
31	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
32	Off			0	0.0	0.0	0	0	0	0	0.0	Off	

Coordination Parameters

Operational Mode	Correction Mode	Maximum Mode	Force Mode
Automatic	Shortway (Auto)	Per Pattern	Per Pattern

Patterns

Patt.	Cycle	Offset 1	Offset 2	Offset 2	Split	Sequence	Ref. Color	Max Mode	Phs	Det	Ped
									Pln	Pln	Pln
1	100	13	0	0	1	1	Yel	Inh	1	1	1
2	120	22	0	0	2	2	Yel	Inh	1	1	1
3	120	64	0	0	3	3	Yel	Inh	1	1	1
4	100	26	0	0	4	4	Yel	Inh	1	1	1
5	0	0	0	0	0	0	Yel	Inh	1	1	1
6	0	0	0	0	0	0	Yel	Inh	1	1	1
7	0	0	0	0	0	0	Yel	Inh	1	1	1
8	0	0	0	0	0	0	Yel	Inh	1	1	1
9	0	0	0	0	0	0	Yel	Inh	1	1	1
10	0	0	0	0	0	0	Yel	Inh	1	1	1
11	100	13	0	0	11	11	Yel	Inh	2	1	1
12	120	22	0	0	12	12	Yel	Inh	2	1	1
13	120	64	0	0	13	13	Yel	Inh	2	1	1
14	100	26	0	0	14	14	Yel	Inh	2	1	1
15	0	0	0	0	0	0	Yel	Inh	1	1	1
16	0	0	0	0	0	0	Yel	Inh	1	1	1

17	0	0	0	0	0	0	Yel	Inh	1	1	1
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18	0	0	0	0	0	0	Yel	Inh	1	1	1
19	0	0	0	0	19	19	Yel	Max2	2	1	1
20	0	0	0	0	20	20	Yel	Max2	1	1	1
21	0	0	0	0	0	0	Yel	Inh	1	1	1
22	0	0	0	0	0	0	Yel	Inh	1	1	1
23	0	0	0	0	0	0	Yel	Inh	1	1	1
24	0	0	0	0	0	0	Yel	Inh	1	1	1
25	0	0	0	0	0	0	Yel	Inh	1	1	1
26	0	0	0	0	0	0	Yel	Inh	1	1	1
27	0	0	0	0	0	0	Yel	Inh	1	1	1
28	0	0	0	0	0	0	Yel	Inh	1	1	1
29	0	0	0	0	0	0	Yel	Inh	1	1	1
30	0	0	0	0	0	0	Yel	Inh	1	1	1
31	0	0	0	0	0	0	Yel	Inh	1	1	1
32	0	0	0	0	0	0	Yel	Inh	1	1	1
33	0	0	0	0	0	0	Yel	Inh	1	1	1
34	0	0	0	0	0	0	Yel	Inh	1	1	1
35	0	0	0	0	0	0	Yel	Inh	1	1	1
36	0	0	0	0	0	0	Yel	Inh	1	1	1
37	0	0	0	0	0	0	Yel	Inh	1	1	1
38	0	0	0	0	0	0	Yel	Inh	1	1	1
39	0	0	0	0	0	0	Yel	Inh	1	1	1
40	0	0	0	0	0	0	Yel	Inh	1	1	1
41	0	0	0	0	0	0	Yel	Inh	1	1	1
42	0	0	0	0	0	0	Yel	Inh	1	1	1
43	0	0	0	0	0	0	Yel	Inh	1	1	1
44	0	0	0	0	0	0	Yel	Inh	1	1	1
45	0	0	0	0	0	0	Yel	Inh	1	1	1
46	0	0	0	0	0	0	Yel	Inh	1	1	1
47	0	0	0	0	0	0	Yel	Inh	1	1	1
48	0	0	0	0	0	0	Yel	Inh	1	1	1
49	0	0	0	0	0	0	Yel	Inh	1	1	1
50	0	0	0	0	0	0	Yel	Inh	1	1	1
51	0	0	0	0	0	0	Yel	Inh	1	1	1
52	0	0	0	0	0	0	Yel	Inh	1	1	1
53	0	0	0	0	0	0	Yel	Inh	1	1	1
54	0	0	0	0	0	0	Yel	Inh	1	1	1
55	0	0	0	0	0	0	Yel	Inh	1	1	1
56	0	0	0	0	0	0	Yel	Inh	1	1	1
57	0	0	0	0	0	0	Yel	Inh	1	1	1
58	0	0	0	0	0	0	Yel	Inh	1	1	1
59	0	0	0	0	0	0	Yel	Inh	1	1	1
60	0	0	0	0	0	0	Yel	Inh	1	1	1
61	0	0	0	0	0	0	Yel	Inh	1	1	1
62	0	0	0	0	0	0	Yel	Inh	1	1	1
63	0	0	0	0	0	0	Yel	Inh	1	1	1
64	0	0	0	0	0	0	Yel	Inh	1	1	1
65	0	0	0	0	0	0	Yel	Inh	1	1	1
66	0	0	0	0	0	0	Yel	Inh	1	1	1
67	0	0	0	0	0	0	Yel	Inh	1	1	1
68	0	0	0	0	0	0	Yel	Inh	1	1	1
69	0	0	0	0	0	0	Yel	Inh	1	1	1
70	0	0	0	0	0	0	Yel	Inh	1	1	1
71	0	0	0	0	0	0	Yel	Inh	1	1	1
72	0	0	0	0	0	0	Yel	Inh	1	1	1
73	0	0	0	0	0	0	Yel	Inh	1	1	1
74	0	0	0	0	0	0	Yel	Inh	1	1	1
75	0	0	0	0	0	0	Yel	Inh	1	1	1
76	0	0	0	0	0	0	Yel	Inh	1	1	1
77	0	0	0	0	0	0	Yel	Inh	1	1	1
78	0	0	0	0	0	0	Yel	Inh	1	1	1
79	0	0	0	0	0	0	Yel	Inh	1	1	1
80	0	0	0	0	0	0	Yel	Inh	1	1	1

81	0	0	0	0	0	0	Yel	Inh	1	1	1
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82	0	0	0	0	0	0	Yel	Inh	1	1	1
83	0	0	0	0	0	0	Yel	Inh	1	1	1
84	0	0	0	0	0	0	Yel	Inh	1	1	1
85	0	0	0	0	0	0	Yel	Inh	1	1	1
86	0	0	0	0	0	0	Yel	Inh	1	1	1
87	0	0	0	0	0	0	Yel	Inh	1	1	1
88	0	0	0	0	0	0	Yel	Inh	1	1	1
89	0	0	0	0	0	0	Yel	Inh	1	1	1
90	0	0	0	0	0	0	Yel	Inh	1	1	1
91	0	0	0	0	0	0	Yel	Inh	1	1	1
92	0	0	0	0	0	0	Yel	Inh	1	1	1
93	0	0	0	0	0	0	Yel	Inh	1	1	1
94	0	0	0	0	0	0	Yel	Inh	1	1	1
95	0	0	0	0	0	0	Yel	Inh	1	1	1
96	0	0	0	0	0	0	Yel	Inh	1	1	1
97	0	0	0	0	0	0	Yel	Inh	1	1	1
98	0	0	0	0	0	0	Yel	Inh	1	1	1
99	0	0	0	0	0	0	Yel	Inh	1	1	1
100	0	0	0	0	0	0	Yel	Inh	1	1	1
101	0	0	0	0	0	0	Yel	Inh	1	1	1
102	0	0	0	0	0	0	Yel	Inh	1	1	1
103	0	0	0	0	0	0	Yel	Inh	1	1	1
104	0	0	0	0	0	0	Yel	Inh	1	1	1
105	0	0	0	0	0	0	Yel	Inh	1	1	1
106	0	0	0	0	0	0	Yel	Inh	1	1	1
107	0	0	0	0	0	0	Yel	Inh	1	1	1
108	0	0	0	0	0	0	Yel	Inh	1	1	1
109	0	0	0	0	0	0	Yel	Inh	1	1	1
110	0	0	0	0	0	0	Yel	Inh	1	1	1
111	0	0	0	0	0	0	Yel	Inh	1	1	1
112	0	0	0	0	0	0	Yel	Inh	1	1	1
113	0	0	0	0	0	0	Yel	Inh	1	1	1
114	0	0	0	0	0	0	Yel	Inh	1	1	1
115	0	0	0	0	0	0	Yel	Inh	1	1	1
116	0	0	0	0	0	0	Yel	Inh	1	1	1
117	0	0	0	0	0	0	Yel	Inh	1	1	1
118	0	0	0	0	0	0	Yel	Inh	1	1	1
119	0	0	0	0	0	0	Yel	Inh	1	1	1
120	0	0	0	0	0	0	Yel	Inh	1	1	1
121	0	0	0	0	0	0	Yel	Inh	1	1	1
122	0	0	0	0	0	0	Yel	Inh	1	1	1
123	0	0	0	0	0	0	Yel	Inh	1	1	1
124	0	0	0	0	0	0	Yel	Inh	1	1	1
125	0	0	0	0	0	0	Yel	Inh	1	1	1
126	0	0	0	0	0	0	Yel	Inh	1	1	1
127	0	0	0	0	0	0	Yel	Inh	1	1	1
128	0	0	0	0	0	0	Yel	Inh	1	1	1

**Split Parameters**

Split 1		Coord	Ref	Mode
PH.	Time	PH	PH	
1	15			None
2	49	X	X	None
3	14			None
4	22			Min Rcl
5	17			None
6	47	X	X	None
7	14			None
8	22			Min Rcl
9	0			None
10	0			None
11	0			None
12	0			None

Split 2		Coord	Ref	Mode
PH.	Time	PH	PH	
1	13			None
2	74	X	X	None
3	12			None
4	21			None
5	13			None
6	74	X	X	None
7	12			None
8	21			Min Rcl
9	0			None
10	0			None
11	0			None
12	0			None

13	0			None
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13	0			None
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14	0			None
15	0			None
16	0			None

14	0			None
15	0			None
16	0			None

Split 3		Coord	Ref	Mode
PH.	Time	PH	PH	
1	15			None
2	66	X	X	None
3	29			None
4	10			None
5	24			None
6	57	X	X	None
7	14			None
8	25			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 4		Coord	Ref	Mode
PH.	Time	PH	PH	
1	13			None
2	53	X	X	None
3	12			None
4	22			None
5	20			None
6	46	X	X	None
7	15			None
8	19			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 5		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0	X	X	None
3	0			None
4	0			None
5	0			None
6	0	X	X	None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 6		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 7		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 8		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 9		Coord	Ref	Mode
PH.	Time	PH	PH	

Split 10		Coord	Ref	Mode
PH.	Time	PH	PH	

1	0			None
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1	0			None
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2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

Split 9		Coord	Ref	
PH.	Time	PH	PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 10		Coord	Ref	
PH.	Time	PH	PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 11		Coord	Ref	
PH.	Time	PH	PH	Mode
1	15			None
2	49	X	X	None
3	14			None
4	22			None
5	17			None
6	47	X	X	None
7	14			None
8	22			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 12		Coord	Ref	
PH.	Time	PH	PH	Mode
1	13			None
2	74	X	X	None
3	12			None
4	21			None
5	13			None
6	74	X	X	None
7	12			None
8	21			Min Rcl
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 13		Coord	Ref	
PH.	Time	PH	PH	Mode
1	15			None
2	66	X	X	None
3	29			None
4	10			None
5	24			None
6	57	X	X	None
7	14			None
8	25			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 14		Coord	Ref	
PH.	Time	PH	PH	Mode
1	13			None
2	53	X	X	None
3	12			None
4	22			None
5	20			None
6	46	X	X	None
7	15			None
8	19			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 15		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None

Split 16		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None

5	0			None
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5	0			None
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6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 17		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 18		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 19		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 20		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 19		Coord	Ref	Mode
PH.	Time	PH	PH	
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 20		Coord	Ref	Mode
PH.	Time	PH	PH	
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Ring	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Offset																

Day Plan		1																														
Month of Year					Days of Week							Days of Month																				
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			





Day Plan

2

Month of Year		Days of Week							Days of Month																			
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

3

Month of Year		Days of Week							Days of Month																			
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

4

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X					X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

5

Month of Year					Days of Week							Days of Month																		
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			

Day Plan

6

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

7

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

8

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

9

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

10

Month of Year					Days of Week							Days of Month																		
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			



Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan12

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan13

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan14

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan15

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan1

Event	Hour	Min.	Act
1	5	0	1
2	6	0	2
3	8	30	1
4	15	0	3
5	18	30	1

Day Plan2

Event	Hour	Min.	Act
1	6	0	4
2	23	0	20
3	0	0	
4	0	0	
5	0	0	

Day Plan3

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan4

Event	Hour	Min.	Act
1	7	5	2
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan1

Event	Hour	Min.	Act
6	22	0	20
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan2

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan3

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan4

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan5

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan6

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan7

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan8

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan	9	
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Day Plan	10	
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Day Plan	11	
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Day Plan	12	
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Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan		13		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		14		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		15		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		16		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		17		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		18		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		19		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		20		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											
11	None											
12	None											
13	None											
14	None											
15	None											
16	None											
17	None											
18	None											
19	None											
20	Pattern 20											
21	None											
22	None											
23	None											

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
33	None											
34	None											
35	None											
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											
51	None											
52	None											
53	None											
54	None											
55	None											

24	None																		
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56	None																		
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25	None								
26	None								
27	None								
28	None								
29	None								
30	None								
31	None								
32	None								

57	None								
58	None								
59	None								
60	None								
61	None								
62	None								
63	None								
64	None								

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Link	0	0	0	0	0	0	0	0
Delay	0	1	0	0	0	0	0	0
Min Duration	0	0	0	0	0	0	0	0
Min Green	0	0	0	0	0	0	0	0
Min Walk	0	0	0	0	0	0	0	0
Ent. Ped Clear	0	255	255	255	255	255	255	255
Track Green	15	0	0	0	0	0	0	0
Dwell Green	0	0	0	0	0	0	0	0
Max Presence	0	0	0	0	0	0	0	0
Enter Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Ent. Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Track Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Ped Clear	255	255	255	255	255	255	255	255
Exit Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Preempt	1	2	3	4	5	6	7	8
Non Lock Mem								
Not Override Flash								
NotOverrideNextPre								
Flash Dwell								

Preemption Configuration

Preempt	1	2	3	4	5	6	7	8
Track phase								
Dwell Phase			2,5	4,7	1,6	3,8		
Dwell Ped								
Exit Phase								
Track Overlap								
Dwell overlap								
Cycling phase								
Cycling Ped								
Cycling Overlap								

IO Modules

IO Mod	TYPE
1	Caltrans 332
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None

Channel Configuration

Chan	Ctrl Type	Source
1	Phs Veh	1
2	Phs Veh	2
3	Phs Veh	3
4	Phs Veh	4
5	Phs Veh	5
6	Phs Veh	6
7	Phs Veh	7
8	Phs Veh	8
9	None	1
10	None	2

Chan	Ctrl Type	Source
11	None	3
12	None	4
13	Phs Ped	2
14	Phs Ped	4
15	Phs Ped	6
16	Phs Ped	8
17	None	5
18	None	6
19	None	0
20	None	0

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow																
Flash Red	X	X	X	X	X	X	X	X								
Alt Flash	X			X	X			X								
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flash Yellow																
Flash Red																
Alt Flash																

Startup Clearance Hold Type

1=off, 2=On, 3=Flash and 4= Alt Flash

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Red																
Yellow																
Green																

Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
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Red															
Yellow															
Green															

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	notActive	On	Off	Off	Red
2	dltGrn	On	Off	Off	Red
3	PreGrn	Off	Off	On	Green
4	minGrn	Off	Off	On	Green
5	grnExt	Off	Off	On	Green
6	grnDwell	Off	Off	On	Green
7	preClear	Off	Off	On	Green
8	yelChange	Off	On	Off	Yellow
9	redClear	On	Off	Off	Red
10	redDwell	On	Off	Off	Red
11	Barrier	On	Off	Off	Red
12					

Pedestrian Intervals

Interval	Description	DWK	CLR	Wlk	Type
1	notActive	On	Off	Off	Dont Walk
2	dltPed	On	Off	Off	Dont Walk
3	walk	Off	Off	On	Walk
4	walkDwell	Off	Off	On	Walk
5	flashDtWlk	Flash	Off	Off	Ped Clear
6	dWalk	On	Off	Off	Dont Walk
7					
8					

Countdown Display

Display	Addr	Phase	Time
1			
2			
3			
4			
5			
6			
7			
8			

Display	Addr	Phase	Time
9			
10			
11			
12			
13			
14			
15			
16			

Display	Addr	Phase	Time
17			
18			
19			
20			
21			
22			
23			
24			

Display	Addr	Phase	Time
25			
26			
27			
28			
29			
30			
31			
32			

Manual Control Phase Groups

Grp 1		Grp 2		Grp 3		Grp 4		Grp 5		Grp 6		Grp 7		Grp 8	
Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph
1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0
11	0	11	0	11	0	11	0	11	0	11	0	11	0	11	0
12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0
13	0	13	0	13	0	13	0	13	0	13	0	13	0	13	0
14	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0
15	0	15	0	15	0	15	0	15	0	15	0	15	0	15	0
16	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0

Prioritor Settings

Prioritor	Priority Ph	Output Dly
1		0
2		0
3		0
4		0
5		0
6		0
7		0
8		0

Enabled	Lock Out Time
No	0

Loopback Functions

Func	Result Function Type	Index	Source Function Type	Index	Func	Result Function Type	Index	Source Function Type	Index
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1				
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51				
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Peer Configuration

Ctrl	Peer ID	IP address	SNMP Port	Hot Port	Serial Port	Serial Addr.	Master Sect.	P2P TO	Description
1	0		161	80	0	0	0	15	
2	0		161	80	0	0	0	15	
3	0		161	80	0	0	0	15	
4	0		161	80	0	0	0	15	
5	0		161	80	0	0	0	15	
6	0		161	80	0	0	0	15	
7	0		161	80	0	0	0	15	
8	0		161	80	0	0	0	15	
9	0		161	80	0	0	0	15	
10	0		161	80	0	0	0	15	

11	0		161	80	0	0	0	15	
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12	0		161	80	0	0	0	15	
13	0		161	80	0	0	0	15	
14	0		161	80	0	0	0	15	
15	0		161	80	0	0	0	15	
16	0		161	80	0	0	0	15	
17	0		161	80	0	0	0	15	
18	0		161	80	0	0	0	15	
19	0		161	80	0	0	0	15	
20	0		161	80	0	0	0	15	
21	0		161	80	0	0	0	15	
22	0		161	80	0	0	0	15	
23	0		161	80	0	0	0	15	
24	0		161	80	0	0	0	15	
25	0		161	80	0	0	0	15	
26	0		161	80	0	0	0	15	
27	0		161	80	0	0	0	15	
28	0		161	80	0	0	0	15	
29	0		161	80	0	0	0	15	
30	0		161	80	0	0	0	15	
31	0		161	80	0	0	0	15	
32	0		161	80	0	0	0	15	
33	0		161	80	0	0	0	15	
34	0		161	80	0	0	0	15	
35	0		161	80	0	0	0	15	
36	0		161	80	0	0	0	15	
37	0		161	80	0	0	0	15	
38	0		161	80	0	0	0	15	
39	0		161	80	0	0	0	15	
40	0		161	80	0	0	0	15	
41	0		161	80	0	0	0	15	
42	0		161	80	0	0	0	15	
43	0		161	80	0	0	0	15	
44	0		161	80	0	0	0	15	
45	0		161	80	0	0	0	15	
46	0		161	80	0	0	0	15	
47	0		161	80	0	0	0	15	
48	0		161	80	0	0	0	15	
49	0		161	80	0	0	0	15	
50	0		161	80	0	0	0	15	
51	0		161	80	0	0	0	15	
52	0		161	80	0	0	0	15	
53	0		161	80	0	0	0	15	
54	0		161	80	0	0	0	15	
55	0		161	80	0	0	0	15	
56	0		161	80	0	0	0	15	
57	0		161	80	0	0	0	15	
58	0		161	80	0	0	0	15	
59	0		161	80	0	0	0	15	
60	0		161	80	0	0	0	15	
61	0		161	80	0	0	0	15	
62	0		161	80	0	0	0	15	
63	0		161	80	0	0	0	15	
64	0		161	80	0	0	0	15	
65	0		161	80	0	0	0	15	
66	0		161	80	0	0	0	15	
67	0		161	80	0	0	0	15	
68	0		161	80	0	0	0	15	
69	0		161	80	0	0	0	15	
70	0		161	80	0	0	0	15	
71	0		161	80	0	0	0	15	
72	0		161	80	0	0	0	15	
73	0		161	80	0	0	0	15	
74	0		161	80	0	0	0	15	

75	0		161	80	0	0	0	15	
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76	0		161	80	0	0	0	15	
77	0		161	80	0	0	0	15	
78	0		161	80	0	0	0	15	
79	0		161	80	0	0	0	15	
80	0		161	80	0	0	0	15	
81	0		161	80	0	0	0	15	
82	0		161	80	0	0	0	15	
83	0		161	80	0	0	0	15	
84	0		161	80	0	0	0	15	
85	0		161	80	0	0	0	15	
86	0		161	80	0	0	0	15	
87	0		161	80	0	0	0	15	
88	0		161	80	0	0	0	15	
89	0		161	80	0	0	0	15	
90	0		161	80	0	0	0	15	
91	0		161	80	0	0	0	15	
92	0		161	80	0	0	0	15	
93	0		161	80	0	0	0	15	
94	0		161	80	0	0	0	15	
95	0		161	80	0	0	0	15	
96	0		161	80	0	0	0	15	
97	0		161	80	0	0	0	15	
98	0		161	80	0	0	0	15	
99	0		161	80	0	0	0	15	
100	0		161	80	0	0	0	15	
101	0		161	80	0	0	0	15	
102	0		161	80	0	0	0	15	
103	0		161	80	0	0	0	15	
104	0		161	80	0	0	0	15	
105	0		161	80	0	0	0	15	
106	0		161	80	0	0	0	15	
107	0		161	80	0	0	0	15	
108	0		161	80	0	0	0	15	
109	0		161	80	0	0	0	15	
110	0		161	80	0	0	0	15	
111	0		161	80	0	0	0	15	
112	0		161	80	0	0	0	15	
113	0		161	80	0	0	0	15	
114	0		161	80	0	0	0	15	
115	0		161	80	0	0	0	15	
116	0		161	80	0	0	0	15	
117	0		161	80	0	0	0	15	
118	0		161	80	0	0	0	15	
119	0		161	80	0	0	0	15	
120	0		161	80	0	0	0	15	
121	0		161	80	0	0	0	15	
122	0		161	80	0	0	0	15	
123	0		161	80	0	0	0	15	
124	0		161	80	0	0	0	15	
125	0		161	80	0	0	0	15	
126	0		161	80	0	0	0	15	
127	0		161	80	0	0	0	15	
128	0		161	80	0	0	0	15	
129	0		161	80	0	0	0	15	
130	0		161	80	0	0	0	15	
131	0		161	80	0	0	0	15	
132	0		161	80	0	0	0	15	
133	0		161	80	0	0	0	15	
134	0		161	80	0	0	0	15	
135	0		161	80	0	0	0	15	
136	0		161	80	0	0	0	15	
137	0		161	80	0	0	0	15	
138	0		161	80	0	0	0	15	

139	0		161	80	0	0	0	15	
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140	0		161	80	0	0	0	15	
141	0		161	80	0	0	0	15	
142	0		161	80	0	0	0	15	
143	0		161	80	0	0	0	15	
144	0		161	80	0	0	0	15	
145	0		161	80	0	0	0	15	
146	0		161	80	0	0	0	15	
147	0		161	80	0	0	0	15	
148	0		161	80	0	0	0	15	
149	0		161	80	0	0	0	15	
150	0		161	80	0	0	0	15	
151	0		161	80	0	0	0	15	
152	0		161	80	0	0	0	15	
153	0		161	80	0	0	0	15	
154	0		161	80	0	0	0	15	
155	0		161	80	0	0	0	15	
156	0		161	80	0	0	0	15	
157	0		161	80	0	0	0	15	
158	0		161	80	0	0	0	15	
159	0		161	80	0	0	0	15	
160	0		161	80	0	0	0	15	
161	0		161	80	0	0	0	15	
162	0		161	80	0	0	0	15	
163	0		161	80	0	0	0	15	
164	0		161	80	0	0	0	15	
165	0		161	80	0	0	0	15	
166	0		161	80	0	0	0	15	
167	0		161	80	0	0	0	15	
168	0		161	80	0	0	0	15	
169	0		161	80	0	0	0	15	
170	0		161	80	0	0	0	15	
171	0		161	80	0	0	0	15	
172	0		161	80	0	0	0	15	
173	0		161	80	0	0	0	15	
174	0		161	80	0	0	0	15	
175	0		161	80	0	0	0	15	
176	0		161	80	0	0	0	15	
177	0		161	80	0	0	0	15	
178	0		161	80	0	0	0	15	
179	0		161	80	0	0	0	15	
180	0		161	80	0	0	0	15	
181	0		161	80	0	0	0	15	
182	0		161	80	0	0	0	15	
183	0		161	80	0	0	0	15	
184	0		161	80	0	0	0	15	
185	0		161	80	0	0	0	15	
186	0		161	80	0	0	0	15	
187	0		161	80	0	0	0	15	
188	0		161	80	0	0	0	15	
189	0		161	80	0	0	0	15	
190	0		161	80	0	0	0	15	
191	0		161	80	0	0	0	15	
192	0		161	80	0	0	0	15	
193	0		161	80	0	0	0	15	
194	0		161	80	0	0	0	15	
195	0		161	80	0	0	0	15	
196	0		161	80	0	0	0	15	
197	0		161	80	0	0	0	15	
198	0		161	80	0	0	0	15	
199	0		161	80	0	0	0	15	
200	0		161	80	0	0	0	15	
201	0		161	80	0	0	0	15	
202	0		161	80	0	0	0	15	

203	0		161	80	0	0	0	15	
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204	0		161	80	0	0	0	15	
205	0		161	80	0	0	0	15	
206	0		161	80	0	0	0	15	
207	0		161	80	0	0	0	15	
208	0		161	80	0	0	0	15	
209	0		161	80	0	0	0	15	
210	0		161	80	0	0	0	15	
211	0		161	80	0	0	0	15	
212	0		161	80	0	0	0	15	
213	0		161	80	0	0	0	15	
214	0		161	80	0	0	0	15	
215	0		161	80	0	0	0	15	
216	0		161	80	0	0	0	15	
217	0		161	80	0	0	0	15	
218	0		161	80	0	0	0	15	
219	0		161	80	0	0	0	15	
220	0		161	80	0	0	0	15	
221	0		161	80	0	0	0	15	
222	0		161	80	0	0	0	15	
223	0		161	80	0	0	0	15	
224	0		161	80	0	0	0	15	
225	0		161	80	0	0	0	15	
226	0		161	80	0	0	0	15	
227	0		161	80	0	0	0	15	
228	0		161	80	0	0	0	15	
229	0		161	80	0	0	0	15	
230	0		161	80	0	0	0	15	
231	0		161	80	0	0	0	15	
232	0		161	80	0	0	0	15	
233	0		161	80	0	0	0	15	
234	0		161	80	0	0	0	15	
235	0		161	80	0	0	0	15	
236	0		161	80	0	0	0	15	
237	0		161	80	0	0	0	15	
238	0		161	80	0	0	0	15	
239	0		161	80	0	0	0	15	
240	0		161	80	0	0	0	15	
241	0		161	80	0	0	0	15	
242	0		161	80	0	0	0	15	
243	0		161	80	0	0	0	15	
244	0		161	80	0	0	0	15	
245	0		161	80	0	0	0	15	
246	0		161	80	0	0	0	15	
247	0		161	80	0	0	0	15	
248	0		161	80	0	0	0	15	
249	0		161	80	0	0	0	15	
250	0		161	80	0	0	0	15	
251	0		161	80	0	0	0	15	
252	0		161	80	0	0	0	15	
253	0		161	80	0	0	0	15	
254	0		161	80	0	0	0	15	
255	0		161	80	0	0	0	15	

### Section Configuration

Section	Control	Poll	Req #	Fail Time	Algorithm Period	Description
1	None	60	1	300	240	
2	None	60	1	300	240	
3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	

9	None	60	1	300	240	
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10	None	60	1	300	240	
11	None	60	1	300	240	
12	None	60	1	300	240	
13	None	60	1	300	240	
14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	
2	
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9	
10	
11	
12	
13	
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## **APPENDIX C**

### **Level of Service Definitions**

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016:  
Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

### **Automobile Level of Service (LOS) for Signalized Intersections**

Levels of service are defined to represent reasonable ranges in control delay.

#### **LOS A**

Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

#### **LOS B**

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

#### **LOS C**

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

#### **LOS D**

Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

#### **LOS E**

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

#### **LOS F**

Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

### **Level of Service (LOS) for Unsignalized TWSC Intersections**

Level of Service ( $v/c \leq 1.0$ )	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

























## **APPENDIX D**

### **Capacity Worksheets**



Timings  
1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	271	104	46	232	31	37	148	48	71	263	138
Future Volume (vph)	121	271	104	46	232	31	37	148	48	71	263	138
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.309			0.580			0.584			0.564		
Satd. Flow (perm)	576	1863	1583	1080	1863	1583	1088	1863	1583	1051	1863	1583
Satd. Flow (RTOR)			113			164			164			150
Lane Group Flow (vph)	132	295	113	50	252	34	40	161	52	77	286	150
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	13.0	42.0	42.0	29.0	29.0	29.0	26.0	26.0	26.0	12.0	38.0	38.0
Total Split (%)	16.3%	52.5%	52.5%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	15.0%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.7	26.7	26.7	16.3	16.3	16.3	33.1	33.1	33.1	43.3	43.3	43.3
Actuated g/C Ratio	0.33	0.33	0.33	0.20	0.20	0.20	0.41	0.41	0.41	0.54	0.54	0.54
v/c Ratio	0.43	0.47	0.19	0.23	0.66	0.08	0.09	0.21	0.07	0.12	0.28	0.16
Control Delay	21.3	22.3	3.9	27.6	37.6	0.3	21.0	20.5	0.2	12.0	12.9	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	22.3	3.9	27.6	37.6	0.3	21.0	20.5	0.2	12.0	12.9	2.9
LOS	C	C	A	C	D	A	C	C	A	B	B	A
Approach Delay		18.2			32.3			16.4			9.8	
Approach LOS		B			C			B			A	
Queue Length 50th (ft)	45	109	0	21	117	0	13	55	0	18	78	0
Queue Length 95th (ft)	73	156	27	47	176	0	40	117	0	46	148	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	311	861	792	324	558	589	449	770	750	637	1007	925
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.34	0.14	0.15	0.45	0.06	0.09	0.21	0.07	0.12	0.28	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
AM Peak Hour

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 18.2







Intersection LOS: B

Intersection Capacity Utilization 53.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

























 Ø1	 Ø2 (R)	 Ø4
12 s	26 s	42 s
 Ø6 (R)	 Ø7	 Ø8
38 s	13 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

### Existing Traffic Conditions

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	132	167	97	100	29	85	721	63	30	1619	112
Future Volume (vph)	106	132	167	97	100	29	85	721	63	30	1619	112
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.593			0.461			0.068			0.318		
Satd. Flow (perm)	1105	1863	1583	859	1863	1583	127	5024	0	592	5034	0
Satd. Flow (RTOR)			148			118		19			15	
Lane Group Flow (vph)	115	143	182	105	109	32	92	852	0	33	1882	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	20.6	13.6	13.6	20.6	13.6	13.6	82.1	76.5		78.4	71.2	
Actuated g/C Ratio	0.17	0.11	0.11	0.17	0.11	0.11	0.68	0.64		0.65	0.59	
v/c Ratio	0.50	0.68	0.59	0.53	0.52	0.11	0.50	0.27		0.07	0.63	
Control Delay	48.2	67.2	20.5	49.5	58.6	0.8	20.1	10.5		6.5	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.2	67.2	20.5	49.5	58.6	0.8	20.1	10.5		6.5	17.3	
LOS	D	E	C	D	E	A	C	B		A	B	
Approach Delay		42.9			47.2			11.4			17.1	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	75	107	24	68	80	0	20	108		7	331	
Queue Length 95th (ft)	128	175	96	117	138	0	62	141		18	400	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	228	248	339	200	248	313	196	3207		474	2994	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.50	0.58	0.54	0.53	0.44	0.10	0.47	0.27		0.07	0.63	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Existing Traffic Conditions  
AM Peak Hour

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 20.9









Intersection LOS: C

Intersection Capacity Utilization 68.3%

ICU Level of Service C

























Analysis Period (min) 15

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	74 s	12 s	21 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	74 s	12 s	21 s

Timings  
1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	366	68	43	319	39	103	264	77	56	176	113
Future Volume (vph)	199	366	68	43	319	39	103	264	77	56	176	113
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.227			0.527			0.637			0.400		
Satd. Flow (perm)	423	1863	1583	982	1863	1583	1187	1863	1583	745	1863	1583
Satd. Flow (RTOR)			95			164			164			123
Lane Group Flow (vph)	216	398	74	47	347	42	112	287	84	61	191	123
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.3	34.3	34.3	19.5	19.5	19.5	29.1	29.1	29.1	35.7	35.7	35.7
Actuated g/C Ratio	0.43	0.43	0.43	0.24	0.24	0.24	0.36	0.36	0.36	0.45	0.45	0.45
v/c Ratio	0.62	0.50	0.10	0.20	0.77	0.08	0.26	0.42	0.12	0.15	0.23	0.16
Control Delay	22.4	18.4	2.1	24.4	39.5	0.3	24.0	24.7	0.4	15.5	15.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	18.4	2.1	24.4	39.5	0.3	24.0	24.7	0.4	15.5	15.9	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		17.9			34.1			20.3			11.9	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	67	137	0	19	160	0	44	120	0	17	58	0
Queue Length 95th (ft)	102	193	14	44	236	0	92	204	1	43	111	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	349	908	820	294	558	589	431	676	679	410	832	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.44	0.09	0.16	0.62	0.07	0.26	0.42	0.12	0.15	0.23	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions

PM Peak Hour

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 20.9







Intersection LOS: C

Intersection Capacity Utilization 62.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

























 Ø1	 Ø2 (R)	 Ø4
10 s	26 s	44 s
 Ø6 (R)	 Ø7	 Ø8
36 s	15 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

### Existing Traffic Conditions

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	153	113	96	167	75	142	1629	68	74	1235	121
Future Volume (vph)	191	153	113	96	167	75	142	1629	68	74	1235	121
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5019	0
Flt Permitted	0.488			0.416			0.102			0.068		
Satd. Flow (perm)	909	1863	1583	775	1863	1583	190	5055	0	127	5019	0
Satd. Flow (RTOR)			209			164		7			17	
Lane Group Flow (vph)	208	166	123	104	182	82	154	1845	0	80	1474	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	14.0	10.0	10.0	29.0	25.0	25.0	24.0	66.0		15.0	57.0	
Total Split (%)	11.7%	8.3%	8.3%	24.2%	20.8%	20.8%	20.0%	55.0%		12.5%	47.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	27.1	18.1	18.1	30.7	20.0	20.0	74.8	64.5		67.7	59.0	
Actuated g/C Ratio	0.23	0.15	0.15	0.26	0.17	0.17	0.62	0.54		0.56	0.49	
v/c Ratio	0.77	0.59	0.30	0.36	0.59	0.20	0.59	0.68		0.45	0.60	
Control Delay	58.2	58.0	1.8	36.7	54.8	1.2	21.1	22.5		22.5	23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.2	58.0	1.8	36.7	54.8	1.2	21.1	22.5		22.5	23.3	
LOS	E	E	A	D	D	A	C	C		C	C	
Approach Delay		44.2			37.7			22.4			23.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	131	121	0	61	132	0	44	379		22	283	
Queue Length 95th (ft)	#209	#233	0	109	210	0	96	456		62	368	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	269	281	416	418	310	400	370	2719		211	2477	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.77	0.59	0.30	0.25	0.59	0.20	0.42	0.68		0.38	0.60	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Existing Traffic Conditions  
PM Peak Hour

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 26.4

Intersection LOS: C

Intersection Capacity Utilization 74.0%











ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

























 Ø1	 Ø2 (R)		 Ø3	 Ø4
15 s	66 s		29 s	10 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
24 s	57 s		14 s	25 s



# Timings

## 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	276	106	47	237	32	38	151	49	72	268	141
Future Volume (vph)	123	276	106	47	237	32	38	151	49	72	268	141
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.300			0.577			0.582			0.558		
Satd. Flow (perm)	559	1863	1583	1075	1863	1583	1084	1863	1583	1039	1863	1583
Satd. Flow (RTOR)			115			164			164			153
Lane Group Flow (vph)	134	300	115	51	258	35	41	164	53	78	291	153
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	13.0	42.0	42.0	29.0	29.0	29.0	26.0	26.0	26.0	12.0	38.0	38.0
Total Split (%)	16.3%	52.5%	52.5%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	15.0%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	29.0	29.0	29.0	16.3	16.3	16.3	30.8	30.8	30.8	41.0	41.0	41.0
Actuated g/C Ratio	0.36	0.36	0.36	0.20	0.20	0.20	0.38	0.38	0.38	0.51	0.51	0.51
v/c Ratio	0.42	0.44	0.18	0.23	0.68	0.08	0.10	0.23	0.07	0.13	0.31	0.17
Control Delay	20.4	20.8	3.7	27.5	38.3	0.3	21.2	21.0	0.2	12.2	13.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	20.8	3.7	27.5	38.3	0.3	21.2	21.0	0.2	12.2	13.6	3.0
LOS	C	C	A	C	D	A	C	C	A	B	B	A
Approach Delay		17.1			32.8			16.8			10.3	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	45	111	0	22	120	0	14	57	0	19	80	0
Queue Length 95th (ft)	74	157	27	47	179	0	41	119	0	47	152	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	323	861	793	322	558	589	416	716	709	602	953	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.35	0.15	0.16	0.46	0.06	0.10	0.23	0.07	0.13	0.31	0.17

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

## Background Traffic Conditions

AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 18.2







Intersection LOS: B

Intersection Capacity Utilization 54.2%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø4
12 s	26 s	42 s
 Ø6 (R)	 Ø7	 Ø8
38 s	13 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	135	170	99	102	30	87	735	64	61	1651	114
Future Volume (vph)	108	135	170	99	102	30	87	735	64	61	1651	114
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.586			0.448			0.065			0.302		
Satd. Flow (perm)	1092	1863	1583	835	1863	1583	121	5024	0	563	5034	0
Satd. Flow (RTOR)			146			118		20			15	
Lane Group Flow (vph)	117	147	185	108	111	33	95	869	0	66	1919	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	20.7	13.7	13.7	20.7	13.7	13.7	80.6	73.5		78.9	71.0	
Actuated g/C Ratio	0.17	0.11	0.11	0.17	0.11	0.11	0.67	0.61		0.66	0.59	
v/c Ratio	0.51	0.69	0.60	0.55	0.52	0.12	0.53	0.28		0.15	0.64	
Control Delay	48.5	67.8	21.5	50.4	58.6	0.8	23.6	11.7		6.9	17.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.5	67.8	21.5	50.4	58.6	0.8	23.6	11.7		6.9	17.6	
LOS	D	E	C	D	E	A	C	B		A	B	
Approach Delay		43.7			47.5			12.8			17.3	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	76	110	28	70	81	0	21	113		15	345	
Queue Length 95th (ft)	129	179	101	121	140	0	70	146		30	412	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	228	248	337	198	248	313	191	3086		455	2986	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.51	0.59	0.55	0.55	0.45	0.11	0.50	0.28		0.15	0.64	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 21.4











Intersection LOS: C

Intersection Capacity Utilization 69.3%

ICU Level of Service C

























Analysis Period (min) 15

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
13 s	74 s		12 s	21 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
13 s	74 s		12 s	21 s

Timings  
1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	373	69	44	325	40	105	269	79	57	180	115
Future Volume (vph)	203	373	69	44	325	40	105	269	79	57	180	115
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.222			0.524			0.634			0.381		
Satd. Flow (perm)	414	1863	1583	976	1863	1583	1181	1863	1583	710	1863	1583
Satd. Flow (RTOR)			95			164			164			125
Lane Group Flow (vph)	221	405	75	48	353	43	114	292	86	62	196	125
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.5	34.5	34.5	19.6	19.6	19.6	26.6	26.6	26.6	35.5	35.5	35.5
Actuated g/C Ratio	0.43	0.43	0.43	0.24	0.24	0.24	0.33	0.33	0.33	0.44	0.44	0.44
v/c Ratio	0.64	0.50	0.10	0.20	0.77	0.08	0.29	0.47	0.14	0.16	0.24	0.16
Control Delay	23.0	18.4	2.1	24.4	39.6	0.3	25.5	26.7	0.5	15.6	16.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	18.4	2.1	24.4	39.6	0.3	25.5	26.7	0.5	15.6	16.0	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		18.1			34.2			21.8			12.0	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	68	139	0	19	162	0	45	124	0	18	60	0
Queue Length 95th (ft)	105	197	15	44	240	0	93	208	2	43	113	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	347	908	820	292	558	589	393	620	636	395	827	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.45	0.09	0.16	0.63	0.07	0.29	0.47	0.14	0.16	0.24	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.4

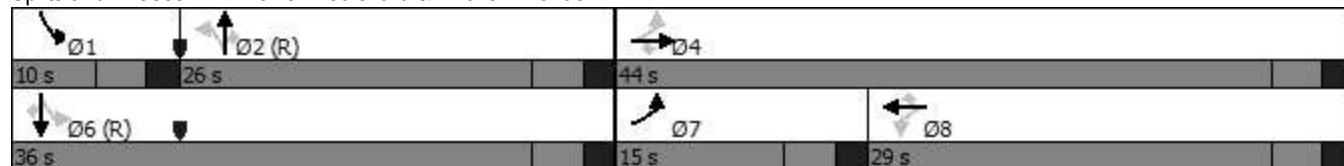
Intersection LOS: C

Intersection Capacity Utilization 63.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



























# Timings

## 2: Federal Boulevard & W 64th Avenue

# Background Traffic Conditions

PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	156	115	98	170	77	145	1662	69	76	1260	123
Future Volume (vph)	195	156	115	98	170	77	145	1662	69	76	1260	123
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5019	0
Flt Permitted	0.485			0.398			0.096			0.068		
Satd. Flow (perm)	903	1863	1583	741	1863	1583	179	5055	0	127	5019	0
Satd. Flow (RTOR)			209			164		7			17	
Lane Group Flow (vph)	212	170	125	107	185	84	158	1882	0	83	1504	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	14.0	10.0	10.0	29.0	25.0	25.0	24.0	66.0		15.0	57.0	
Total Split (%)	11.7%	8.3%	8.3%	24.2%	20.8%	20.8%	20.0%	55.0%		12.5%	47.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	26.9	17.9	17.9	30.8	20.0	20.0	75.0	64.4		67.4	58.6	
Actuated g/C Ratio	0.22	0.15	0.15	0.26	0.17	0.17	0.62	0.54		0.56	0.49	
v/c Ratio	0.79	0.61	0.30	0.38	0.60	0.21	0.60	0.69		0.47	0.61	
Control Delay	60.6	59.1	1.9	37.1	55.2	1.2	23.2	22.9		23.7	23.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.6	59.1	1.9	37.1	55.2	1.2	23.2	22.9		23.7	23.9	
LOS	E	E	A	D	E	A	C	C		C	C	
Approach Delay		45.6			38.0			22.9			23.9	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	134	125	0	63	134	0	46	392		23	295	
Queue Length 95th (ft)	#222	#243	0	111	212	0	106	470		65	382	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	267	278	414	415	310	400	365	2717		210	2460	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.61	0.30	0.26	0.60	0.21	0.43	0.69		0.40	0.61	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

## Timings

### 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 27.1

Intersection LOS: C

Intersection Capacity Utilization 75.1%











ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
15 s	56 s		29 s	10 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
24 s	57 s		14 s	25 s



























# Timings

## 1: Lowell Boulevard & W 64th Avenue

# Background Traffic Conditions

AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	325	125	55	278	37	44	178	58	85	316	166
Future Volume (vph)	145	325	125	55	278	37	44	178	58	85	316	166
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.268			0.550			0.555			0.512		
Satd. Flow (perm)	499	1863	1583	1025	1863	1583	1034	1863	1583	954	1863	1583
Satd. Flow (RTOR)			136			164			164			180
Lane Group Flow (vph)	158	353	136	60	302	40	48	193	63	92	343	180
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	14.0	44.0	44.0	30.0	30.0	30.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	17.5%	55.0%	55.0%	37.5%	37.5%	37.5%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	31.9	31.9	31.9	18.3	18.3	18.3	28.3	28.3	28.3	38.1	38.1	38.1
Actuated g/C Ratio	0.40	0.40	0.40	0.23	0.23	0.23	0.35	0.35	0.35	0.48	0.48	0.48
v/c Ratio	0.47	0.48	0.19	0.26	0.71	0.08	0.13	0.29	0.09	0.18	0.39	0.21
Control Delay	19.4	19.3	3.1	26.2	37.4	0.3	23.1	23.2	0.3	14.5	16.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	19.3	3.1	26.2	37.4	0.3	23.1	23.2	0.3	14.5	16.5	3.3
LOS	B	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		15.9			32.0			18.4			12.4	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	50	126	0	25	140	0	17	73	0	24	106	0
Queue Length 95th (ft)	77	169	27	51	200	0	46	137	0	59	199	37
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	342	908	841	320	582	607	366	660	666	523	886	847
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.39	0.16	0.19	0.52	0.07	0.13	0.29	0.09	0.18	0.39	0.21

## Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 18.5

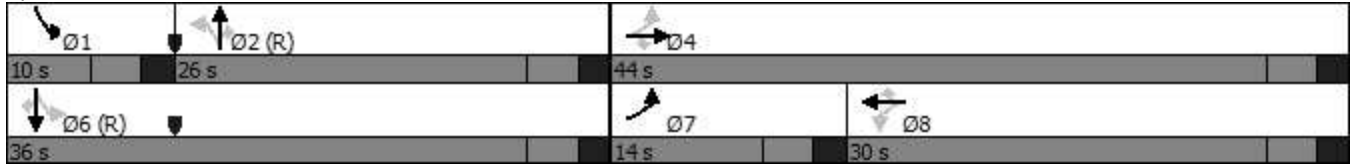
Intersection LOS: B

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



























# Timings

## 2: Federal Boulevard & W 64th Avenue

### Background Traffic Conditions

AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	158	200	116	120	35	102	865	76	72	1943	134
Future Volume (vph)	127	158	200	116	120	35	102	865	76	72	1943	134
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.526			0.376			0.056			0.248		
Satd. Flow (perm)	980	1863	1583	700	1863	1583	104	5024	0	462	5034	0
Satd. Flow (RTOR)			131			118		20			15	
Lane Group Flow (vph)	138	172	217	126	130	38	111	1023	0	78	2258	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	21.6	14.6	14.6	21.6	14.6	14.6	79.8	72.5		78.0	69.9	
Actuated g/C Ratio	0.18	0.12	0.12	0.18	0.12	0.12	0.66	0.60		0.65	0.58	
v/c Ratio	0.62	0.76	0.71	0.67	0.58	0.13	0.64	0.34		0.21	0.77	
Control Delay	53.7	72.4	33.5	58.4	60.1	0.9	37.0	12.6		7.6	21.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	53.7	72.4	33.5	58.4	60.1	0.9	37.0	12.6		7.6	21.4	
LOS	D	E	C	E	E	A	D	B		A	C	
Approach Delay		51.5			51.7			15.0			20.9	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	89	129	62	81	95	0	33	144		18	476	
Queue Length 95th (ft)	150	#220	149	#144	161	0	#105	176		34	540	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	221	248	324	188	248	313	180	3043		390	2940	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.62	0.69	0.67	0.67	0.52	0.12	0.62	0.34		0.20	0.77	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 25.2

Intersection LOS: C

Intersection Capacity Utilization 78.4%











ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

























Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
13 s	74 s		12 s	21 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
13 s	74 s		12 s	21 s

# Timings

## 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	439	82	52	383	47	124	317	92	69	211	136
Future Volume (vph)	239	439	82	52	383	47	124	317	92	69	211	136
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.175			0.490			0.616			0.300		
Satd. Flow (perm)	326	1863	1583	913	1863	1583	1147	1863	1583	559	1863	1583
Satd. Flow (RTOR)			95			164			164			148
Lane Group Flow (vph)	260	477	89	57	416	51	135	345	100	75	229	148
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.5	36.5	36.5	21.5	21.5	21.5	25.0	25.0	25.0	33.5	33.5	33.5
Actuated g/C Ratio	0.46	0.46	0.46	0.27	0.27	0.27	0.31	0.31	0.31	0.42	0.42	0.42
v/c Ratio	0.79	0.56	0.12	0.23	0.83	0.09	0.38	0.59	0.16	0.24	0.29	0.20
Control Delay	33.3	18.5	2.8	24.4	42.9	0.3	27.8	30.3	1.6	17.3	17.5	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	18.5	2.8	24.4	42.9	0.3	27.8	30.3	1.6	17.3	17.5	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		21.5			36.7			24.8			13.0	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	76	160	0	21	189	0	56	156	0	23	76	0
Queue Length 95th (ft)	#173	241	20	51	#314	0	110	#252	9	50	131	34
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	328	908	820	273	558	589	359	583	608	319	780	749
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.53	0.11	0.21	0.75	0.09	0.38	0.59	0.16	0.24	0.29	0.20

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

## Timings

### 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 24.0

Intersection LOS: C

Intersection Capacity Utilization 70.9%

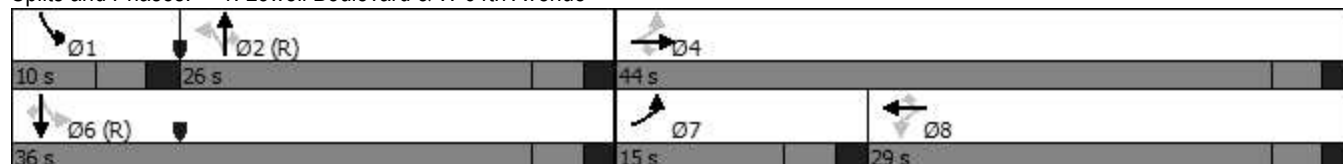
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



























# Timings

## 2: Federal Boulevard & W 64th Avenue

# Background Traffic Conditions

PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	184	136	115	200	90	170	1955	82	89	1482	145
Future Volume (vph)	229	184	136	115	200	90	170	1955	82	89	1482	145
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5019	0
Flt Permitted	0.221			0.590			0.065			0.071		
Satd. Flow (perm)	412	1863	1583	1099	1863	1583	121	5055	0	132	5019	0
Satd. Flow (RTOR)			164			209		8			18	
Lane Group Flow (vph)	249	200	148	125	217	98	185	2214	0	97	1769	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	19.0	29.0	29.0	13.0	23.0	23.0	18.0	67.0		11.0	60.0	
Total Split (%)	15.8%	24.2%	24.2%	10.8%	19.2%	19.2%	15.0%	55.8%		9.2%	50.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	35.9	22.9	22.9	24.8	16.9	16.9	73.3	61.9		63.7	56.5	
Actuated g/C Ratio	0.30	0.19	0.19	0.21	0.14	0.14	0.61	0.52		0.53	0.47	
v/c Ratio	0.89	0.56	0.34	0.46	0.83	0.24	0.79	0.85		0.63	0.75	
Control Delay	67.0	50.5	6.9	38.7	75.5	1.4	50.2	29.2		36.6	28.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	67.0	50.5	6.9	38.7	75.5	1.4	50.2	29.2		36.6	28.6	
LOS	E	D	A	D	E	A	D	C		D	C	
Approach Delay		46.6			48.6			30.8			29.0	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	155	140	0	72	164	0	89	529		29	412	
Queue Length 95th (ft)	#272	218	44	123	#283	0	#193	601		#99	475	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	281	372	447	272	279	415	253	2609		155	2371	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.89	0.54	0.33	0.46	0.78	0.24	0.73	0.85		0.63	0.75	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 33.4

Intersection LOS: C

Intersection Capacity Utilization 85.2%









ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

























Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11 s	67 s	13 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	60 s	19 s	23 s



Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	277	106	50	242	37	38	151	50	74	268	141
Future Volume (vph)	123	277	106	50	242	37	38	151	50	74	268	141
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.295			0.577			0.582			0.557		
Satd. Flow (perm)	550	1863	1583	1075	1863	1583	1084	1863	1583	1038	1863	1583
Satd. Flow (RTOR)			115			164			164			153
Lane Group Flow (vph)	134	301	115	54	263	40	41	164	54	80	291	153
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	13.0	42.0	42.0	29.0	29.0	29.0	26.0	26.0	26.0	12.0	38.0	38.0
Total Split (%)	16.3%	52.5%	52.5%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	15.0%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	29.2	29.2	29.2	16.5	16.5	16.5	30.6	30.6	30.6	40.8	40.8	40.8
Actuated g/C Ratio	0.36	0.36	0.36	0.21	0.21	0.21	0.38	0.38	0.38	0.51	0.51	0.51
v/c Ratio	0.42	0.44	0.18	0.24	0.69	0.09	0.10	0.23	0.08	0.13	0.31	0.17
Control Delay	20.3	20.6	3.7	27.6	38.3	0.4	21.3	21.1	0.2	12.4	13.7	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	20.6	3.7	27.6	38.3	0.4	21.3	21.1	0.2	12.4	13.7	3.0
LOS	C	C	A	C	D	A	C	C	A	B	B	A
Approach Delay		17.0			32.5			16.8			10.4	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	45	111	0	23	122	0	14	57	0	19	80	0
Queue Length 95th (ft)	73	157	27	49	182	0	41	119	0	48	153	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	323	861	793	322	558	589	414	712	706	599	949	881
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.35	0.15	0.17	0.47	0.07	0.10	0.23	0.08	0.13	0.31	0.17

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.2







Intersection LOS: B

Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø4
12 s	26 s	42 s
 Ø6 (R)	 Ø7	 Ø8
38 s	13 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	137	188	99	103	30	93	735	64	61	1651	119
Future Volume (vph)	126	137	188	99	103	30	93	735	64	61	1651	119
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.583			0.442			0.064			0.303		
Satd. Flow (perm)	1086	1863	1583	823	1863	1583	119	5024	0	564	5034	0
Satd. Flow (RTOR)			145			118		20			16	
Lane Group Flow (vph)	137	149	204	108	112	33	101	869	0	66	1924	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	20.8	13.8	13.8	20.8	13.8	13.8	80.6	73.5		78.8	70.9	
Actuated g/C Ratio	0.17	0.12	0.12	0.17	0.12	0.12	0.67	0.61		0.66	0.59	
v/c Ratio	0.60	0.70	0.66	0.55	0.53	0.12	0.56	0.28		0.15	0.65	
Control Delay	52.7	68.3	26.8	50.6	58.7	0.8	26.6	11.7		6.9	17.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	52.7	68.3	26.8	50.6	58.7	0.8	26.6	11.7		6.9	17.8	
LOS	D	E	C	D	E	A	C	B		A	B	
Approach Delay		46.7			47.7			13.2			17.4	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	90	112	42	70	82	0	23	113		15	349	
Queue Length 95th (ft)	149	181	123	121	141	0	78	146		30	413	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	228	248	336	197	248	313	190	3084		456	2981	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.60	0.60	0.61	0.55	0.45	0.11	0.53	0.28		0.14	0.65	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 22.3











Intersection LOS: C

Intersection Capacity Utilization 69.9%

ICU Level of Service C




Analysis Period (min) 15

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
13 s	74 s		12 s	21 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
13 s	74 s		12 s	21 s





HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	5	8	18
Future Vol, veh/h	1	3	2	5	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	2	5	9	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	4	0	12	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1618	-	1008	1081
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1618	-	1007	1081
Mov Cap-2 Maneuver	-	-	-	-	923	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1013	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1027	-	-	1618	-	
HCM Lane V/C Ratio	0.028	-	-	0.001	-	
HCM Control Delay (s)	8.6	-	-	7.2	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

























HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	1	10	2	5	20
Future Vol, veh/h	18	1	10	2	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	11	2	5	22
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	21	0	45	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	965	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	958	1056
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	992	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	6.1		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1019	-	-	1595	-	
HCM Lane V/C Ratio	0.027	-	-	0.007	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	378	69	46	328	43	105	269	81	63	180	115
Future Volume (vph)	203	378	69	46	328	43	105	269	81	63	180	115
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.219			0.521			0.634			0.380		
Satd. Flow (perm)	408	1863	1583	970	1863	1583	1181	1863	1583	708	1863	1583
Satd. Flow (RTOR)			95			164			164			125
Lane Group Flow (vph)	221	411	75	50	357	47	114	292	88	68	196	125
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.6	34.6	34.6	19.8	19.8	19.8	26.5	26.5	26.5	35.4	35.4	35.4
Actuated g/C Ratio	0.43	0.43	0.43	0.25	0.25	0.25	0.33	0.33	0.33	0.44	0.44	0.44
v/c Ratio	0.64	0.51	0.10	0.21	0.78	0.09	0.29	0.47	0.14	0.17	0.24	0.16
Control Delay	23.0	18.4	2.1	24.5	39.7	0.3	25.6	26.8	0.7	15.8	16.1	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	18.4	2.1	24.5	39.7	0.3	25.6	26.8	0.7	15.8	16.1	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		18.1			34.0			21.9			12.1	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	68	141	0	20	165	0	45	124	0	19	60	0
Queue Length 95th (ft)	105	201	15	45	243	0	93	208	3	47	113	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	346	908	820	291	558	589	391	616	633	393	824	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.45	0.09	0.17	0.64	0.08	0.29	0.47	0.14	0.17	0.24	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 21.4

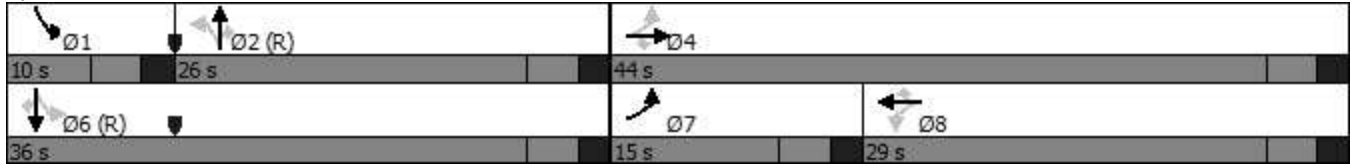
Intersection LOS: C

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue





























# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	158	126	98	173	77	164	1662	69	76	1260	142
Future Volume (vph)	206	158	126	98	173	77	164	1662	69	76	1260	142
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5009	0
Flt Permitted	0.476			0.393			0.090			0.070		
Satd. Flow (perm)	887	1863	1583	732	1863	1583	168	5055	0	130	5009	0
Satd. Flow (RTOR)			209			164		7			20	
Lane Group Flow (vph)	224	172	137	107	188	84	178	1882	0	83	1524	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	14.0	10.0	10.0	29.0	25.0	25.0	24.0	66.0		15.0	57.0	
Total Split (%)	11.7%	8.3%	8.3%	24.2%	20.8%	20.8%	20.0%	55.0%		12.5%	47.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	26.9	17.9	17.9	30.8	20.0	20.0	75.4	64.4		66.2	57.5	
Actuated g/C Ratio	0.22	0.15	0.15	0.26	0.17	0.17	0.63	0.54		0.55	0.48	
v/c Ratio	0.85	0.62	0.33	0.38	0.61	0.21	0.65	0.69		0.47	0.63	
Control Delay	67.1	59.5	2.8	37.1	55.6	1.2	28.2	22.9		24.1	25.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	67.1	59.5	2.8	37.1	55.6	1.2	28.2	22.9		24.1	25.1	
LOS	E	E	A	D	E	A	C	C		C	C	
Approach Delay		48.1			38.3			23.3			25.0	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	143	126	0	63	136	0	58	392		23	308	
Queue Length 95th (ft)	#247	#248	6	111	216	0	130	470		66	400	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	265	278	414	415	310	400	360	2717		211	2409	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.85	0.62	0.33	0.26	0.61	0.21	0.49	0.69		0.39	0.63	

### Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 75.9%











ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
15 s	56 s		29 s	10 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
24 s	57 s		14 s	25 s





HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰		↰	↱	↰↱	
Traffic Vol, veh/h	2	11	9	3	5	11
Future Vol, veh/h	2	11	9	3	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	10	3	5	12
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	14	0	31	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	983	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	977	1074
Mov Cap-2 Maneuver	-	-	-	-	903	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	994	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		5.4		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.006	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

























HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	5.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	2	32	9	3	13
Future Vol, veh/h	11	2	32	9	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	35	10	3	14
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	14	0	93	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	80	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	907	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	887	1067
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	922	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		5.7		8.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.022	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	326	125	58	283	42	44	178	59	87	316	166
Future Volume (vph)	145	326	125	58	283	42	44	178	59	87	316	166
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.263			0.549			0.555			0.510		
Satd. Flow (perm)	490	1863	1583	1023	1863	1583	1034	1863	1583	950	1863	1583
Satd. Flow (RTOR)			136			164			164			180
Lane Group Flow (vph)	158	354	136	63	308	46	48	193	64	95	343	180
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	14.0	44.0	44.0	30.0	30.0	30.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	17.5%	55.0%	55.0%	37.5%	37.5%	37.5%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	32.2	32.2	32.2	18.5	18.5	18.5	28.1	28.1	28.1	37.8	37.8	37.8
Actuated g/C Ratio	0.40	0.40	0.40	0.23	0.23	0.23	0.35	0.35	0.35	0.47	0.47	0.47
v/c Ratio	0.47	0.47	0.19	0.27	0.72	0.09	0.13	0.30	0.10	0.18	0.39	0.21
Control Delay	19.3	19.1	3.0	26.3	37.4	0.4	23.3	23.4	0.3	14.6	16.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	19.1	3.0	26.3	37.4	0.4	23.3	23.4	0.3	14.6	16.7	3.3
LOS	B	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		15.8			31.7			18.6			12.5	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	50	126	0	26	142	0	17	74	0	26	107	0
Queue Length 95th (ft)	77	169	27	53	203	0	46	137	0	61	200	37
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	341	908	841	319	582	607	362	654	662	520	881	843
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.39	0.16	0.20	0.53	0.08	0.13	0.30	0.10	0.18	0.39	0.21

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

# Total Traffic Conditions

AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 18.5

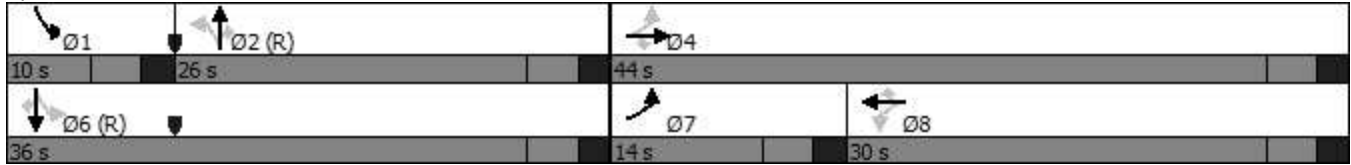
Intersection LOS: B

Intersection Capacity Utilization 60.4%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	160	218	116	121	35	108	865	76	72	1943	139
Future Volume (vph)	145	160	218	116	121	35	108	865	76	72	1943	139
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.519			0.369			0.056			0.248		
Satd. Flow (perm)	967	1863	1583	687	1863	1583	104	5024	0	462	5034	0
Satd. Flow (RTOR)			131			118		20			15	
Lane Group Flow (vph)	158	174	237	126	132	38	117	1023	0	78	2263	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	21.6	14.6	14.6	21.6	14.6	14.6	79.7	72.4		77.9	69.8	
Actuated g/C Ratio	0.18	0.12	0.12	0.18	0.12	0.12	0.66	0.60		0.65	0.58	
v/c Ratio	0.71	0.77	0.77	0.68	0.58	0.13	0.67	0.34		0.21	0.77	
Control Delay	60.2	72.7	39.7	58.8	60.2	0.9	40.1	12.7		7.6	21.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.2	72.7	39.7	58.8	60.2	0.9	40.1	12.7		7.6	21.6	
LOS	E	E	D	E	E	A	D	B		A	C	
Approach Delay		55.5			52.0			15.5			21.1	
Approach LOS		E			D			B			C	
Queue Length 50th (ft)	104	131	78	81	97	0	38	144		18	477	
Queue Length 95th (ft)	#180	#225	#189	#146	163	0	#118	176		34	543	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	221	248	324	186	248	313	180	3040		390	2933	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.71	0.70	0.73	0.68	0.53	0.12	0.65	0.34		0.20	0.77	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

## Timings

### 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 79.0%









ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.




Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	74 s	12 s	21 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	74 s	12 s	21 s







HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	5	8	18
Future Vol, veh/h	1	3	2	5	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	2	5	9	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	4	0	12	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1618	-	1008	1081
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1618	-	1007	1081
Mov Cap-2 Maneuver	-	-	-	-	923	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1013	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1027	-	-	1618	-	
HCM Lane V/C Ratio	0.028	-	-	0.001	-	
HCM Control Delay (s)	8.6	-	-	7.2	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

























HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	1	10	2	5	20
Future Vol, veh/h	18	1	10	2	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	11	2	5	22
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	21	0	45	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	965	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	958	1056
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	992	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	6.1		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1019	-	-	1595	-	
HCM Lane V/C Ratio	0.027	-	-	0.007	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	444	82	54	386	50	124	317	93	73	211	136
Future Volume (vph)	239	444	82	54	386	50	124	317	93	73	211	136
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.172			0.488			0.616			0.299		
Satd. Flow (perm)	320	1863	1583	909	1863	1583	1147	1863	1583	557	1863	1583
Satd. Flow (RTOR)			95			164			164			148
Lane Group Flow (vph)	260	483	89	59	420	54	135	345	101	79	229	148
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.6	36.6	36.6	21.6	21.6	21.6	25.0	25.0	25.0	33.4	33.4	33.4
Actuated g/C Ratio	0.46	0.46	0.46	0.27	0.27	0.27	0.31	0.31	0.31	0.42	0.42	0.42
v/c Ratio	0.80	0.57	0.11	0.24	0.84	0.10	0.38	0.59	0.17	0.25	0.29	0.20
Control Delay	33.8	18.5	2.8	24.5	43.2	0.4	27.8	30.4	1.6	17.5	17.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	18.5	2.8	24.5	43.2	0.4	27.8	30.4	1.6	17.5	17.6	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		21.6			36.8			24.8			13.1	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	76	162	0	22	191	0	56	156	0	24	77	0
Queue Length 95th (ft)	#175	245	20	53	#319	0	110	#252	10	52	131	34
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	327	908	820	272	558	589	358	581	606	317	778	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.53	0.11	0.22	0.75	0.09	0.38	0.59	0.17	0.25	0.29	0.20

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 24.1

Intersection LOS: C

Intersection Capacity Utilization 71.1%

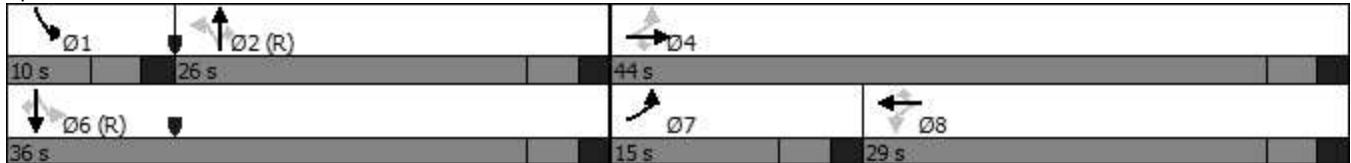
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	186	147	115	203	90	189	1955	82	89	1482	164
Future Volume (vph)	240	186	147	115	203	90	189	1955	82	89	1482	164
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5009	0
Flt Permitted	0.214			0.584			0.066			0.072		
Satd. Flow (perm)	399	1863	1583	1088	1863	1583	123	5055	0	134	5009	0
Satd. Flow (RTOR)			164			209		8			20	
Lane Group Flow (vph)	261	202	160	125	221	98	205	2214	0	97	1789	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	19.0	29.0	29.0	13.0	23.0	23.0	18.0	67.0		11.0	60.0	
Total Split (%)	15.8%	24.2%	24.2%	10.8%	19.2%	19.2%	15.0%	55.8%		9.2%	50.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	36.0	23.0	23.0	25.0	17.0	17.0	73.5	61.8		63.0	55.8	
Actuated g/C Ratio	0.30	0.19	0.19	0.21	0.14	0.14	0.61	0.52		0.52	0.46	
v/c Ratio	0.94	0.57	0.37	0.46	0.84	0.24	0.85	0.85		0.63	0.76	
Control Delay	76.3	50.5	8.3	38.7	76.5	1.4	57.5	29.2		36.8	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	76.3	50.5	8.3	38.7	76.5	1.4	57.5	29.2		36.8	29.4	
LOS	E	D	A	D	E	A	E	C		D	C	
Approach Delay		50.5			49.3			31.6			29.8	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	164	142	0	72	167	0	105	529		29	419	
Queue Length 95th (ft)	#298	221	55	123	#291	0	#231	601		#98	483	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	279	372	447	272	279	415	254	2607		154	2341	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.94	0.54	0.36	0.46	0.79	0.24	0.81	0.85		0.63	0.76	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

## Timings

### 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 34.6

Intersection LOS: C

Intersection Capacity Utilization 86.0%









ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.





Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11 s	67 s	13 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	60 s	19 s	23 s





HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	11	9	3	5	11
Future Vol, veh/h	2	11	9	3	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	10	3	5	12
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	14	0	31	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	983	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	977	1074
Mov Cap-2 Maneuver	-	-	-	-	903	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	994	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	5.4		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.006	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	5.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	2	32	9	3	13
Future Vol, veh/h	11	2	32	9	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	35	10	3	14
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	14	0	93	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	80	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	907	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	887	1067
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	922	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	5.7		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.022	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	



April 21, 2023

Layla Bajelan  
Adams County  
Community and Economic Development  
4430 S. Adams County Parkway  
1st Floor, Suite W2000A  
Brighton, CO 80601

VIA EMAIL: [epermitcenter@adcogov.org](mailto:epermitcenter@adcogov.org)

### **Concurrent Applications**

The applicant for 64th Avenue Apartments submits the following applications for your consideration:

- Comprehensive Plan Amendment
- Rezoning (Zone Map Amendment) from R-2 and R-1-C to R-4
- Subdivision-Minor/Final
- Subdivision Improvement Agreement
- Change In Use Permit

### **Location**

The applications encompass three lots on a combined 5.014 acres located in southwest Adams County on 64th Ave between Federal and Lowell Blvds. The addresses are 3214 & 3240 West 64th Avenue & 3107 W 63rd Avenue, Denver, CO 80221.

### **Community Overview**

The intent of the applications is to allow for the creation of 168 new market rate, for rent, multifamily units in four three-story buildings.

### **Submittal Items**

The applications include the following documents and plans:

- Development Application Forms for the five types of applications
- Written Explanation for Comprehensive Plan Amendment
- Written Explanation for Rezoning (Zone Map Amendment)

- Written Explanation for Subdivision-Minor/Final and Subdivision Improvement Agreement
- Written Explanation for Change In Use Permit
- Will Serve Letter from Crestview Water and Sanitation District
- Proof of Service from Xcel
- Certificate of Taxes Paid
- Title Commitments
- Proof of Ownership
- ALTA Survey
- Legal Description
- Traffic Impact Study
- Site Plan
- Parking Plan
- Landscape Plan
- Lighting Plan
- Architectural Plans
- Final Plat
- Construction/Engineering Design Plans
- Erosion and Sediment Control Plans
- Level 3 Storm Drainage Study

The following items will be forwarded to the county in the near-term:

- A neighborhood meeting is slated for Wednesday, May 17, 2023, at 6 PM at Tennyson Knolls Prep, 6330 Tennyson St, Arvada, CO 80003. Invitations will be mailed to ~ 375 residents who resided within 750 feet of the site no later than 10 days prior to the meeting. A summary of the meeting will be provided shortly thereafter.
- Research on identifying any severed mineral estate owners is underway by TCO Land Services and Compliance. This work is expected to be completed before the end of April. A Certificate of Notice to Mineral Estate Owners/and Lessees and Certificate of Surface Development will be completed at that time, if required.

## **Applicant**

The applicant team include the following professionals:

### Owner and Applicant

ICC 64th 1 LLC  
 Jaideep Chadha  
 jaideep@innercirclecap.com  
 (484) 868-8383  
 2 West Dry Creek Circle, Suite 100  
 Littleton, Colorado 80120

### Entitlements & Owner's Rep

Sky to Ground  
 Nanci Kerr  
 nkerr@skytoground.com  
 (303) 592-1122  
 1550 Larimer St, Suite 605  
 Denver, CO 80202

Architect

Brown Collective  
Ryan Brown  
ryan@browncollectivearch.com  
(720) 481-8173  
1111 Washington Ave, Suite 200  
Golden, CO 80401

Civil Engineer

Raptor Civil Engineering  
Eric Burtzlaff  
eric@raptor-civil.com  
(720) 774-7736  
8620 Wolff Ct, Suite 105B  
Westminster, CO, 80031

Landscape Architect

Galloway  
Troy Noser  
troynoser@gallowayus.com  
(303) 770-8884  
5500 Greenwood Plaza Blvd, Suite 200  
Greenwood Village, CO 80111

Transportation Engineer

SM Rocha  
Fred Lantz  
fred@smrocha.com  
(303) 458-9798  
8700 Turnpike Dr, Suite 240  
Westminster, Colorado 80031

Surveyor

Power Surveying Company Inc.  
Richard B. Gabriel  
rgabriel@powersurveying.com  
303-702-1617  
6911 Broadway  
Denver, CO 80221

Thank you for your time and attention. Please let me know if you have any questions.



Nanci Kerr  
President



## **SUBDIVISION-MINOR / FINAL**

Application submittals must include all documents on this checklist as well as this page. Please use the reference guide (pg. 3) included in this packet for more information on each submittal item.

All applications shall be submitted electronically to [epermitcenter@adcogov.org](mailto:epermitcenter@adcogov.org). If the submittal is too large to email as an attachment, the application may be sent as an unlocked OneDrive link. Alternatively, the application may be delivered on a flash drive to the One-Stop Customer Service Center. All documents should be combined in a single PDF. Once a complete application has been received, fees will be invoiced and payable online at <https://permits.adcogov.org/CitizenAccess/>.

- ☐ 1. Development Application Form (pg. 5)
- ☒ 2. Application Fees (pg. 2)
- ☒ 3. Written Explanation of the Project
- ☒ 4. Site Plan Showing Proposed Development
- ☒ 5. Copy of Plat prepared by Registered Land Surveyor (pg. 7)
- ☒ 6. Subdivision Improvement Agreement (SIA) Application
- ☐ 7. School Impact Analysis (contact applicable District)
- ☐ 8. Fire Protection Report (required prior to public hearing)
- ☒ 9. Proof of Ownership
- ☒ 10. Proof of Water and Sewer Services
- ☒ 11. Proof of Utilities
- ☒ 12. Legal Description
- ☒ 13. Statement of Taxes Paid
- ☐ 14. Certificate of Notice to Mineral Estate Owners/and Lessees (pg. 12)
- ☐ 15. Certificate of Surface Development (pg. 13)
- ☐ 16. Subdivision Engineering Review application (**2 hard copies**)

*continued on next page...*



### Application Type:

<input type="checkbox"/> Conceptual Review	<input type="checkbox"/> Preliminary PUD	<input type="checkbox"/> Temporary Use
<input type="checkbox"/> Subdivision, Preliminary	<input type="checkbox"/> Final PUD	<input type="checkbox"/> Variance
<input type="checkbox"/> Subdivision, Final	<input type="checkbox"/> Rezone	<input type="checkbox"/> Conditional Use
<input type="checkbox"/> Plat Correction/ Vacation	<input type="checkbox"/> Special Use	<input type="checkbox"/> Other: _____

**PROJECT NAME:**

### APPLICANT

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### OWNER

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### TECHNICAL REPRESENTATIVE (Consultant, Engineer, Surveyor, Architect, etc.)

Name:  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

## DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor  
Parcel Number

Existing  
Zoning:

Existing Land  
Use:

Proposed Land  
Use:

Have you attended a Conceptual Review? YES ☐ NO ☐

If Yes, please list PRE#:

I hereby certify that I am making this application as owner of the above described property or acting under the authority of the owner (attached authorization, if not owner). I am familiar with all pertinent requirements, procedures, and fees of the County. I understand that the Application Review Fee is non-refundable. All statements made on this form and additional application materials are true to the best of my knowledge and belief.

Name:

Date:

Owner's Printed Name

Name:

Owner's Signature

April 21, 2023

Layla Bajelan  
Adams County  
Community and Economic Development  
4430 S. Adams County Parkway  
1st Floor, Suite W2000A  
Brighton, CO 80601

VIA EMAIL: [epermitcenter@adcogov.org](mailto:epermitcenter@adcogov.org)

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The applicant team include the following professionals:

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#### Entitlements & Owner's Rep

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 Nanci Kerr  
 nkerr@skytoground.com  
 (303) 592-1122  
 1550 Larimer St, Suite 605  
 Denver, CO 80202



Architect

Brown Collective  
Ryan Brown  
ryan@browncollectivearch.com  
(720) 481-8173  
1111 Washington Ave, Suite 200  
Golden, CO 80401

Civil Engineer

Raptor Civil Engineering  
Eric Burtzlaff  
eric@raptor-civil.com  
(720) 774-7736  
8620 Wolff Ct, Suite 105B  
Westminster, CO, 80031

Landscape Architect

Galloway  
Troy Noser  
troynoser@gallowayus.com  
(303) 770-8884  
5500 Greenwood Plaza Blvd, Suite 200  
Greenwood Village, CO 80111

Transportation Engineer

SM Rocha  
Fred Lantz  
fred@smrocha.com  
(303) 458-9798  
8700 Turnpike Dr, Suite 240  
Westminster, Colorado 80031

Surveyor

Power Surveying Company Inc.  
Richard B. Gabriel  
rgabriel@powersurveying.com  
303-702-1617  
6911 Broadway  
Denver, CO 80221

Thank you for your time and attention. Please let me know if you have any questions.



Nanci Kerr  
President

# A.L.T.A./N.S.P.S. Land Title Survey

LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO

## LAND DESCRIPTION - 3107 W. 63RD AVE.

(THE FOLLOWING LEGAL DESCRIPTION WAS TAKEN FROM FIRST INTEGRITY TITLE COMPANY COMMITMENT NUMBER 103-2227738-S WITH AN EFFECTIVE DATE OF NOVEMBER 4, 2022.)

LOT 15, CLEAR CREEK GARDENS SUBDIVISION, IN THE NORTHWEST QUARTER, SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PM, COUNTY OF ADAMS, STATE OF COLORADO.

FOR INFORMATION PURPOSES ONLY: 3107 WEST 63RD AVENUE, DENVER, CO 80221

## SCHEDULE B II ITEMS - 3107 W. 63RD AVE.

(THE FOLLOWING LEGAL DESCRIPTION WAS TAKEN FROM FIRST INTEGRITY TITLE COMPANY COMMITMENT NUMBER 103-2227738-S WITH AN EFFECTIVE DATE OF NOVEMBER 4, 2022. ITEMS 1 THROUGH 7, 9 AND 10 ARE GENERAL, NON SURVEY REPLATED ITEMS AND ARE NOT ADDRESSED HEREON.)

- (X) = PLOTTED SCHEDULE B II ITEM
- (8) ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE RECORDED PLAT OF CLEAR CREEK GARDENS SUBDIVISION, RECORDED SEPTEMBER 1, 1948 AT RECEPTION NO. 334607 IN BOOK F9 AT PAGE 9. [PERTAINS TO SUBJECT PROPERTY, PLOTTED AND SHOWN HEREON]
11. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072. [NO DOCUMENTATION PROVIDED]
12. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO THE FENCE AND DRIVE ENCROACHES THE EAST BOUNDARY LINE OF LOT 15 AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072. [NO DOCUMENTATION PROVIDED]
13. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO THE 6' WOOD FENCE LINE ALONG THE NORTH AND EAST BOUNDARY LINES AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072. [NO DOCUMENTATION PROVIDED]

## LAND DESCRIPTION - 3240 W. 64TH AVE

(THE FOLLOWING LEGAL DESCRIPTION WAS TAKEN FROM FIRST INTEGRITY TITLE COMPANY COMMITMENT NUMBER 103-2222071-S WITH AN EFFECTIVE DATE OF AUGUST 12, 2022.)

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING,

EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 AT RECEPTION NO. 20051017001136790,

COUNTY OF ADAMS, STATE OF COLORADO.

FOR INFORMATION PURPOSES ONLY: 3240 WEST 64TH AVENUE, DENVER, CO 80221

## SCHEDULE B II ITEMS - 3240 W. 64RD AVE.

(THE FOLLOWING LEGAL DESCRIPTION WAS TAKEN FROM FIRST INTEGRITY TITLE COMPANY COMMITMENT NUMBER 103-2222071-S WITH AN EFFECTIVE DATE OF AUGUST 12, 2022. ITEMS 1 THROUGH 9 ARE GENERAL, NON-SURVEY REPLATED ITEMS AND ARE NOT ADDRESSED HEREON.)

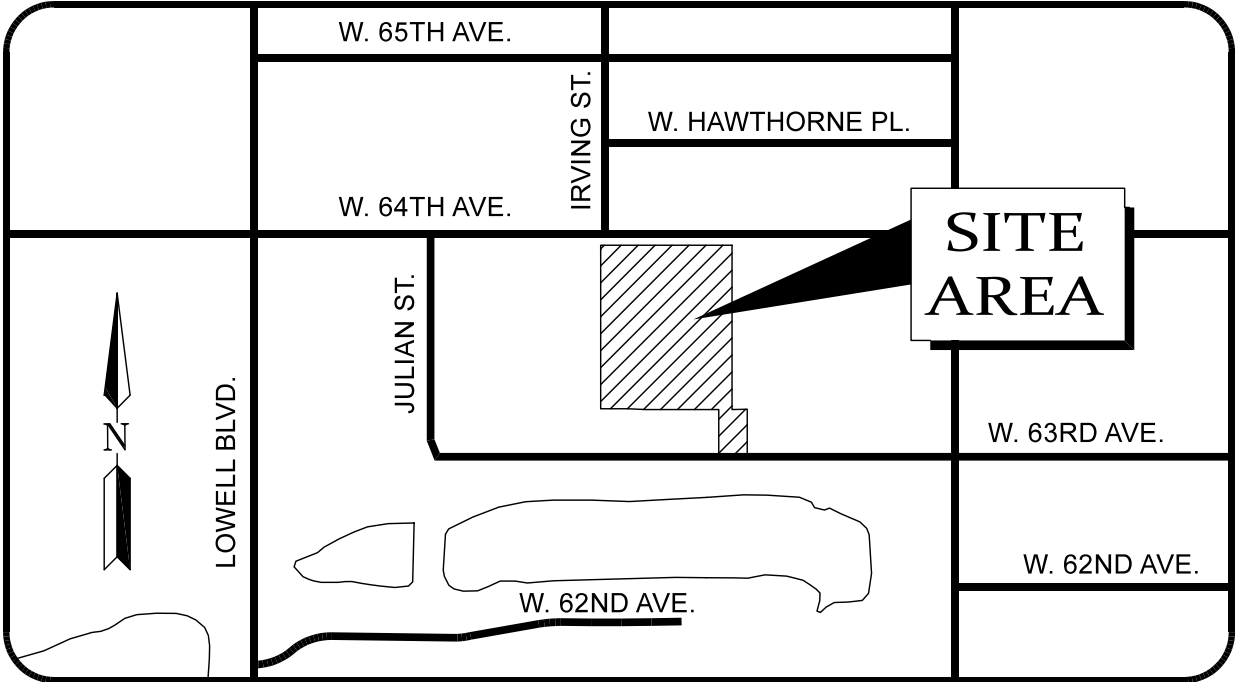
10. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL, P.L.S. 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221. [NO DOCUMENTATION PROVIDED]
11. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO FENCE LINES ALONG THE NORTH, EAST AND WEST BOUNDARY LINES AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL, P.L.S. 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221. [NO DOCUMENTATION PROVIDED]

## BASIS OF BEARINGS

BEARINGS ARE BASED UPON THE EAST LINE OF THE NORTHWEST CORNER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH P.M., SAID LINE IS ASSUMED TO BEAR SOUTH 00°18'27" EAST, A DISTANCE OF 2635.90 FEET AND IS MONUMENTED BY A FOUND 3.25" ALUMINUM CAP IN RANGE BOX FOUND (ILLEGIBLE MONUMENT) AT THE NORTHEAST CORNER OF NORTHWEST CORNER OF SAID SECTION 8 AND A FOUND 2" ALUMINUM CAP IN RANGE BOX (ILLEGIBLE MONUMENT) FOUND AT THE WEST 1/4 CORNER OF SAID SECTION 8.

## ZONING DATA

AS OF THE DATE OF THIS SURVEY A ZONING REPORT HAS NOT BEEN PROVIDED



## LAND DESCRIPTION - 3214 W. 64TH AVE

(THE FOLLOWING LEGAL DESCRIPTION WAS TAKEN FROM FIRST INTEGRITY TITLE COMPANY COMMITMENT NUMBER 103-2222072-S WITH AN EFFECTIVE DATE OF AUGUST 12, 2022.)

THAT PART OF THE NORTHWEST ¼ OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 50 RODS WEST OF THE NORTHEAST CORNER OF SAID NORTHWEST ¼; THENCE DUE WEST ALONG SAID SECTION LINE, 10 RODS; THENCE AT RIGHT ANGLES DUE SOUTH 40 RODS; THENCE AT RIGHT ANGLES DUE EAST 10 RODS; THENCE AT RIGHT ANGLES DUE NORTH 40 RODS TO THE PLACE OF BEGINNING, EXCEPT THE NORTH 30 FEET THEREOF FOR ROAD PURPOSES AND EXCEPT THAT PORTION OF LAND CONVEYED TO THE COUNTY OF ADAMS, STATE OF COLORADO IN THE DEED RECORDED JUNE 24, 2005 AT RECEPTION NO. 20050624000665580, COUNTY OF ADAMS, STATE OF COLORADO.

FOR INFORMATION PURPOSES ONLY: 3214 WEST 64TH AVENUE, DENVER, CO 80221

## SCHEDULE B II ITEMS - 3214 W. 64RD AVE.

(THE FOLLOWING LEGAL DESCRIPTION WAS TAKEN FROM FIRST INTEGRITY TITLE COMPANY COMMITMENT NUMBER 103-2222072-S WITH AN EFFECTIVE DATE OF AUGUST 12, 2022. ITEMS 1 THROUGH 8, 10 AND 11 ARE GENERAL, NON-SURVEY REPLATED ITEMS AND ARE NOT ADDRESSED HEREON.)

- (X) = PLOTTED SCHEDULE B II ITEM
- (9) TEMPORARY CONSTRUCTION EASEMENT RECITED IN DEED RECORDED JUNE 24, 2005 AT RECEPTION NO. 20050624000665580. [PERTAINS TO SUBJECT PROPERTY, PLOTTED AND SHOWN HEREON]
12. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE A.L.T.A./N.S.P.S. LAND TITLE SURVEY JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL PLS 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221. [NO DOCUMENTATION PROVIDED]
13. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO FENCE LINES ALONG THE EAST, WEST AND NORTH BOUNDARY LINES AS DISCLOSED ON THE A.L.T.A./N.S.P.S. LAND TITLE SURVEY JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL PLS 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221. [NO DOCUMENTATION PROVIDED]

## PROJECT BENCHMARK

ADAMS COUNTY CONTROL POINT #226 AKA RTD  
RECOVERED A 3.25" ALUMINUM CAP STAMPED "COLO.DEPT OF HIGHWAYS CONTROL MONUMENT GPS 34 ZBS PLS 11434 4.070000" LOCATED IN THE RTD PARK-N-RIDE LOT AT THE NORTHEASTERLY CORNER OF BROADWAY ST AND W 70TH AVE. 150' MORE OR LESS WEST OF BROADWAY ST AND 300' MORE OR LESS NORTH OF WEST 70TH AVE.

NAVD 88 ELEVATION = 5169.24 FEET

## SURVEYOR'S NOTES

1. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
2. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POWER SURVEYING COMPANY INC. TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD, RIGHTS-OF-WAY, AND TITLE OF RECORD. POWER SURVEYING COMPANY INC. RELIED UPON FIRST AMERICAN TITLE INSURANCE COMPANY (TITLE COMMITMENT NO.) NCS-1078009-CO, EFFECTIVE DATE JULY 20, 2021, 5:00 P.M., FIRST AMERICAN TITLE INSURANCE COMPANY (TITLE COMMITMENT NO.) NCS-1085182-CO, EFFECTIVE DATE AUGUST 26, 2021, 5:00 P.M. AND WESTCOR LAND TITLE INSURANCE COMPANY (TITLE COMMITMENT NO.) 107-2133474-S FOR THIS INFORMATION.

## SURVEYOR'S NOTES: CON'T

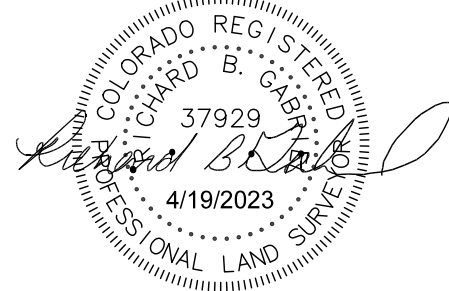
3. FLOOD ZONE DESIGNATION: AS SHOWN ON F.I.R.M. MAP PANEL #08001C0584H, WITH AN EFFECTIVE REVISION DATE OF MARCH 5, 2007 AND AS SHOWN ON F.I.R.M. MAP PANEL #08001C0592H, WITH AN EFFECTIVE REVISION DATE OF MARCH 5, 2007, THE SUBJECT PROPERTY LIES ENTIRELY WITHIN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).
4. FIELD SURVEY COMPLETION COMPLETION DATE: MARCH 21, 2023.
5. THIS A.L.T.A./N.S.P.S. LAND TITLE SURVEY CONSISTS OF SIX (6) SHEETS, AND SHOULD NOT BE CONSIDERED COMPLETE UNLESS ALL SHEETS ARE INCLUDED AS A SET.
6. UNIT OF MEASUREMENT: THE LINEAR UNIT OF MEASUREMENT FOR THIS SURVEY IS THE INTERNATIONAL FOOT, DEFINED AS EXACTLY 0.3048 METER.
7. OBSERVED PARKING SPACES: AS OF THE DATE OF THIS SURVEY, THERE IS NO DELINEATED PARKING ON THE SUBJECT PROPERTY.
8. THERE WAS NO OBSERVED EVIDENCE OF CURRENT EARTHMOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS AT THE TIME OF THE FIELD SURVEY.
9. THERE WAS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL AT THE TIME OF THE FIELD SURVEY.
10. THE SUBJECT PROPERTY HAS DIRECT ACCESS TO AND FROM WEST 64TH AVENUE AND WEST 63RD AVENUE, BOTH PAVED, PUBLIC RIGHTS-OF-WAY.
11. THIS SURVEY PLAT WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTIES AS NAMED IN THE CERTIFICATE AS SHOWN HEREON. SAID CERTIFICATE DOES NOT EXTEND TO ANY UNNAMED ENTITY OR PERSON WITHOUT AN EXPRESS RE-CERTIFICATION BY THE SURVEYOR NAMING SUCH PERSON OR ENTITY.
12. THERE ARE NO VISIBLE APPARENT PROPOSED CHANGES IN STREET RIGHT-OF-WAY LINES AFFECTING THE SUBJECT PROPERTY.
13. THERE ARE NO ENCROACHMENTS ONTO ADJOINING PREMISES, STREETS OR ALLEYS BY ANY BUILDINGS, STRUCTURES OR OTHER IMPROVEMENTS LOCATED ON THE SUBJECT PROPERTY, AND NO ENCROACHMENTS ONTO THE SUBJECT PROPERTY BY BUILDINGS, STRUCTURES OR OTHER IMPROVEMENTS SITUATED ON ADJOINING PREMISES, EXCEPT AS SHOWN HEREON.
14. COMBINED PARCELS LOCATED AT 3107 W. 63RD AVE., 3240 W. 64TH AVE. AND 3214 W. 64TH AVE TOTALS +/-218,396 SQ. FEET OR ±5.014 ACRES, MORE OR LESS.

## SURVEYOR'S CERTIFICATE

TO: ICC 64TH 1 LLC, A COLORADO LIMITED LIABILITY COMPANY; FIRST INTEGRITY TITLE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 7(A), 7(B)(1), 7(C) 8, 9, 11(A), 11(B), 12, 13, 16, 17, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MARCH 21, 2023.

RICHARD B. GABRIEL, P.L.S.  
Colorado License No. 37929  
For and on behalf of Power Surveying Company, Inc.  
6911 BROADWAY  
DENVER, CO 80221  
(303) 702-1617  
www.powersurveying.com



## CLERK AND RECORDER'S CERTIFICATE

ACCEPTED FOR FILING IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ADAMS COUNTY, COLORADO ON THIS \_\_\_\_ DAY OF \_\_\_\_\_, 2021 A.D. AT \_\_\_\_\_ O'CLOCK \_\_\_\_ M.

COUNTY CLERK AND RECORDER \_\_\_\_\_ DEPUTY \_\_\_\_\_

INSTRUMENT No. \_\_\_\_\_

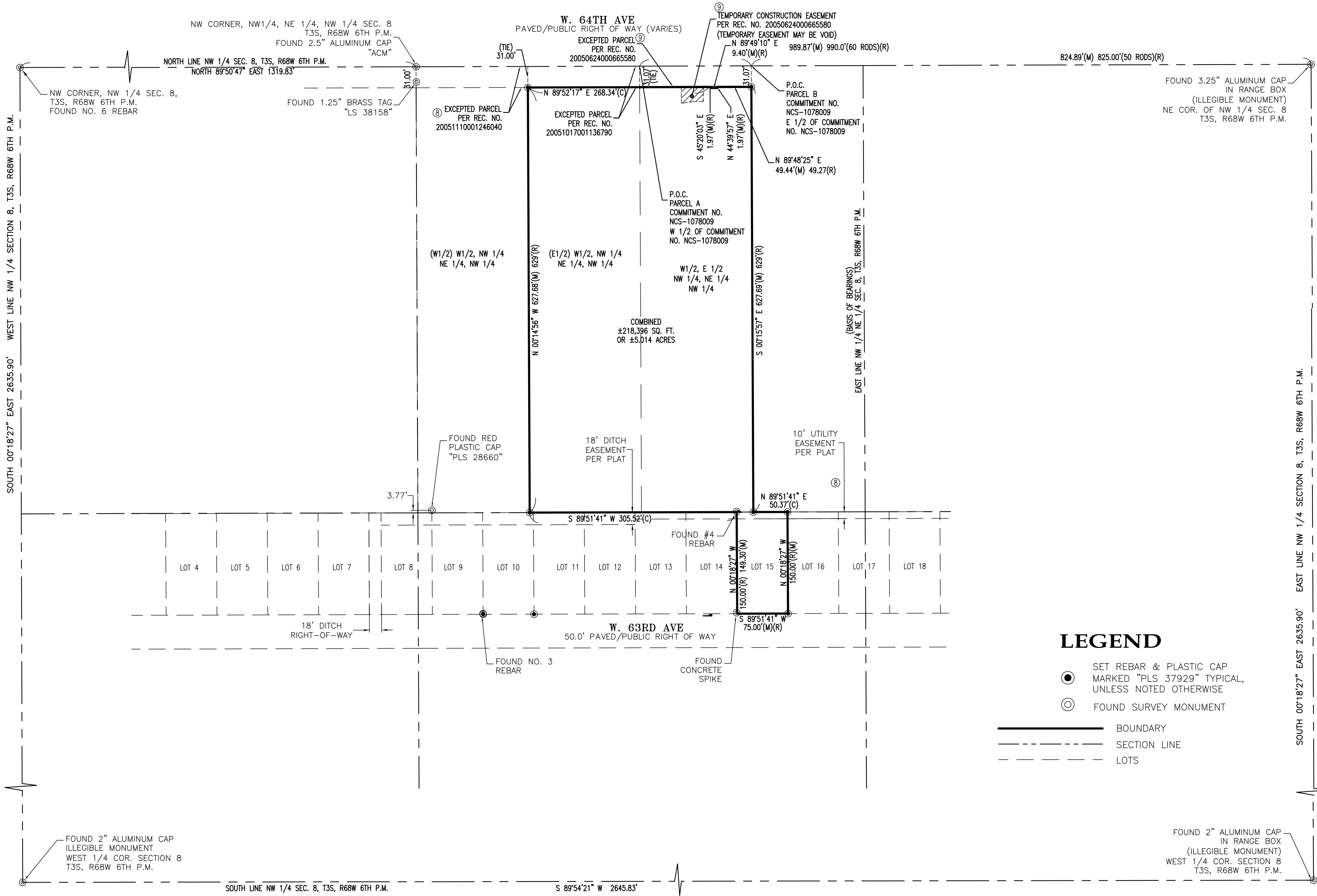


TYPE OF SUBMITTAL:	ALTA/NSPS TITLE LAND SURVEY
PREPARATION DATE:	SEPTEMBER 14, 2021
REVISION DATE:	MARCH 27, 2023
REVISION DATE:	APRIL 19, 2023
DRAWN BY: BJJ	REVIEWED BY: RBG
JOB NO. 501-23-041	DWG: 23-041 ALTA.dwg

SHEET 1 OF 6

# A.L.T.A./N.S.P.S. Land Title Survey

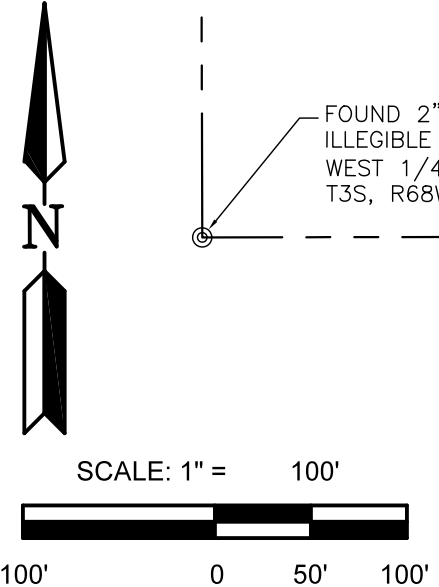
LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3  
SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF DENVER,  
COUNTY OF ADAMS, STATE OF COLORADO

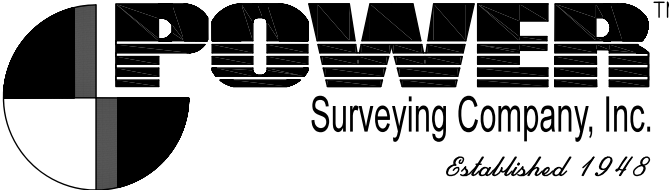


## LEGEND

- SET REBAR & PLASTIC CAP MARKED "PLS 37929" TYPICAL, UNLESS NOTED OTHERWISE
- FOUND SURVEY MONUMENT

- BOUNDARY
- SECTION LINE
- LOTS





**POWER**<sup>TM</sup>  
Surveying Company, Inc.  
*Established 1948*

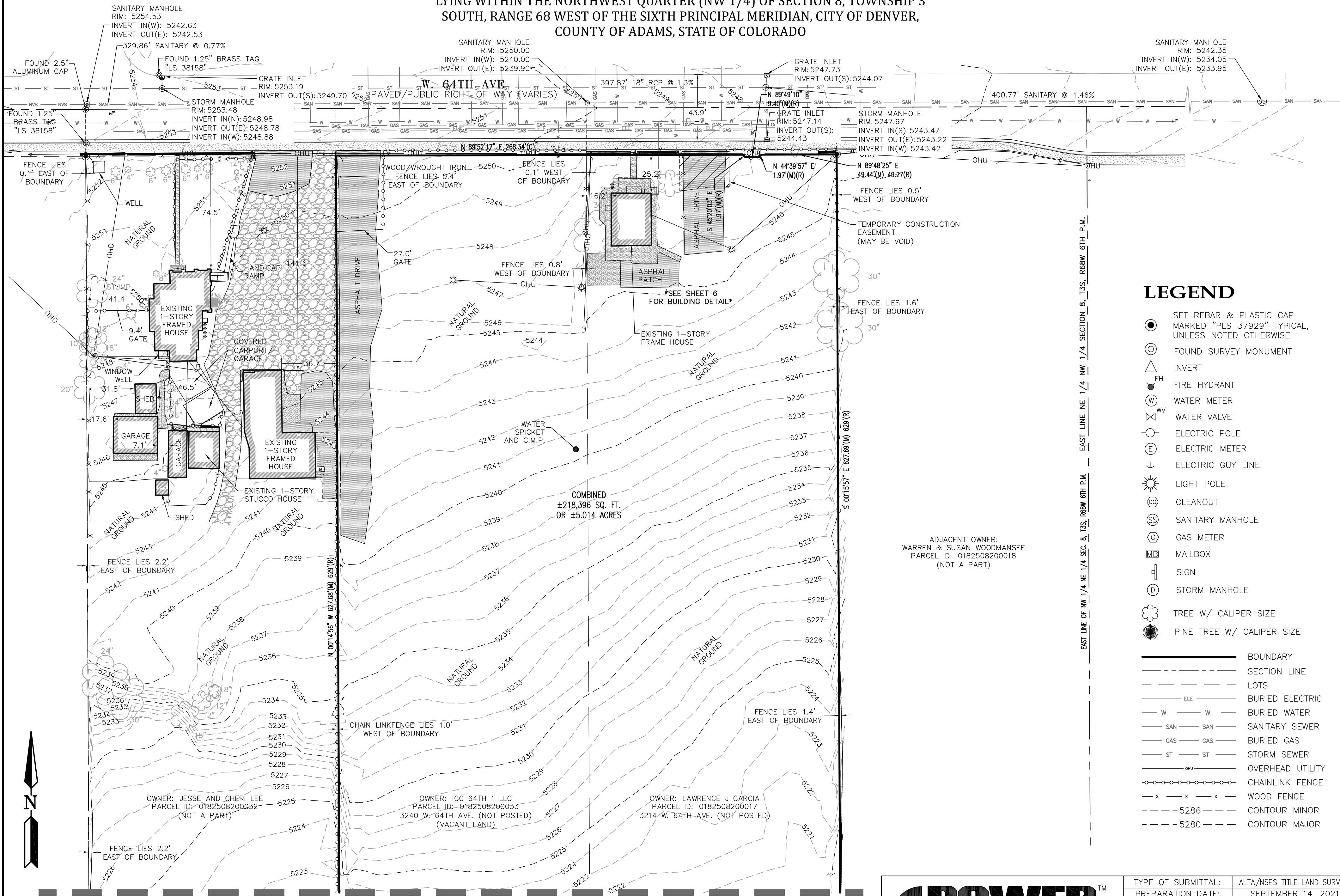
6911 BROADWAY  
DENVER, COLORADO 80221

PH: 303-702-1617  
FAX: 303-702-1488  
WWW.POWERSURVEYING.COM

TYPE OF SUBMITTAL:	ALTA/NSPS TITLE LAND SURVEY
PREPARATION DATE:	SEPTEMBER 14, 2021
REVISION DATE:	MARCH 27, 2023
REVISION DATE:	APRIL 19, 2023
DRAWN BY: BJJ	REVIEWED BY: RBG
JOB NO. 501-23-041	DWG: 23-041 ALTA.dwg

# A.L.T.A./N.S.P.S. Land Title Survey

LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3  
SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF DENVER,  
COUNTY OF ADAMS, STATE OF COLORADO



## LEGEND

- SET REBAR & PLASTIC CAP MARKED "PLS 37929" TYPICAL, UNLESS NOTED OTHERWISE
- FOUND SURVEY MONUMENT
- INVERT
- FH FIRE HYDRANT
- W WATER METER
- WV WATER VALVE
- ELECTRIC POLE
- E ELECTRIC METER
- ELECTRIC GUY LINE
- LIGHT POLE
- CLEANOUT
- SS SANITARY MANHOLE
- G GAS METER
- MB MAILBOX
- SIGN
- D STORM MANHOLE
- TREE W/ CALIPER SIZE
- PINE TREE W/ CALIPER SIZE

- BOUNDARY
- SECTION LINE
- LOTS
- BURIED ELECTRIC
- BURIED WATER
- SANITARY SEWER
- BURIED GAS
- STORM SEWER
- OVERHEAD UTILITY
- CHAINLINK FENCE
- WOOD FENCE
- CONTOUR MINOR
- CONTOUR MAJOR

ADJACENT OWNER:  
WARREN & SUSAN WOODMANSEE  
PARCEL ID: 0182508200018  
(NOT A PART)



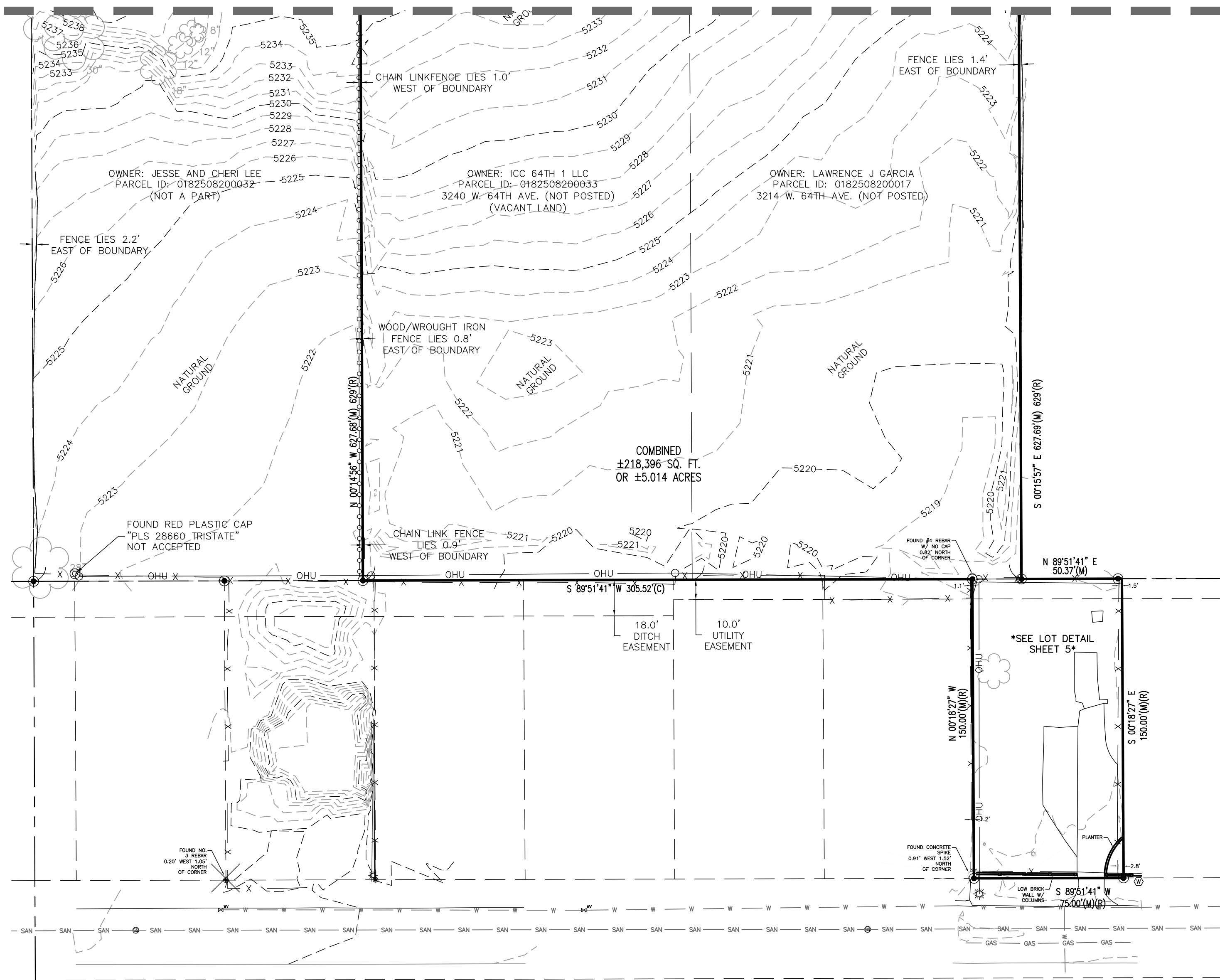
TYPE OF SUBMITTAL:	ALTA/NSPS TITLE LAND SURVEY
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A.L.T.A./N.S.P.S. Land Title Survey

LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3  
SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF DENVER,  
COUNTY OF ADAMS, STATE OF COLORADO

MATCHLINE - SEE SHEET 3



LEGEND

- SET REBAR & PLASTIC CAP MARKED "PLS 37929" TYPICAL, UNLESS NOTED OTHERWISE
- FOUND SURVEY MONUMENT
- INVERT
- FH FIRE HYDRANT
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- GAS BURIED GAS
- ST STORM SEWER
- OHU OVERHEAD UTILITY
- CHAINLINK FENCE
- WOOD FENCE
- CONTOUR MINOR
- CONTOUR MAJOR



SCALE: 1" = 40'

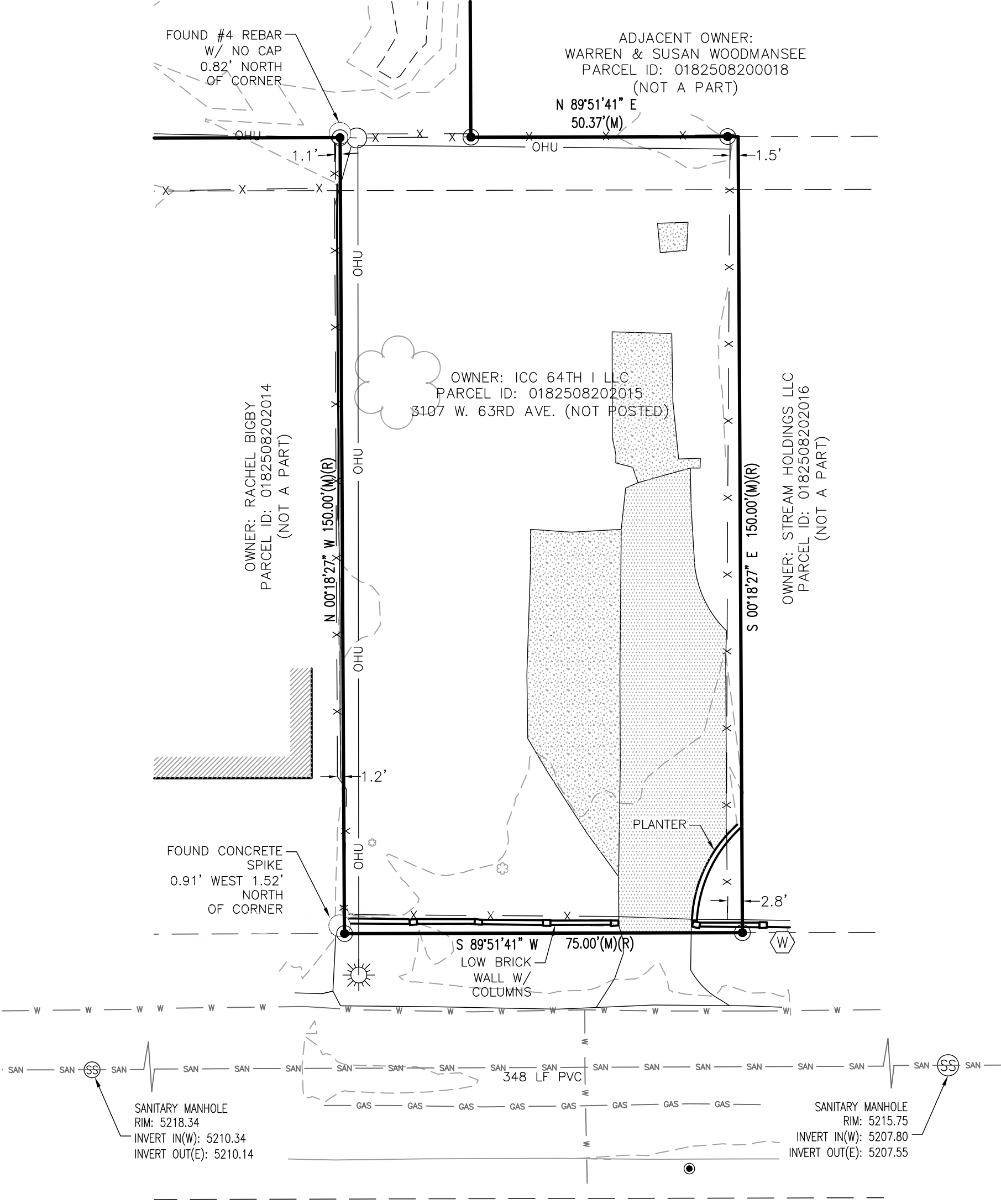


**POWER**™  
Surveying Company, Inc.  
*Established 1948*  
6911 BROADWAY  
DENVER, COLORADO 80221  
PH: 303-702-1617  
FAX: 303-702-1488  
WWW.POWERSURVEYING.COM

TYPE OF SUBMITTAL:	ALTA/NSPS TITLE LAND SURVEY
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# A.L.T.A./N.S.P.S. Land Title Survey

LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3  
SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF DENVER,  
COUNTY OF ADAMS, STATE OF COLORADO



## LEGEND

- SET REBAR & PLASTIC CAP MARKED "PLS 37929" TYPICAL, UNLESS NOTED OTHERWISE
- FOUND SURVEY MONUMENT
- INVERT
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- ELECTRIC POLE
- ELECTRIC METER
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- STORM SEWER
- OVERHEAD UTILITY
- CHAINLINK FENCE
- WOOD FENCE
- CONTOUR MINOR
- CONTOUR MAJOR



SCALE: 1" = 20'



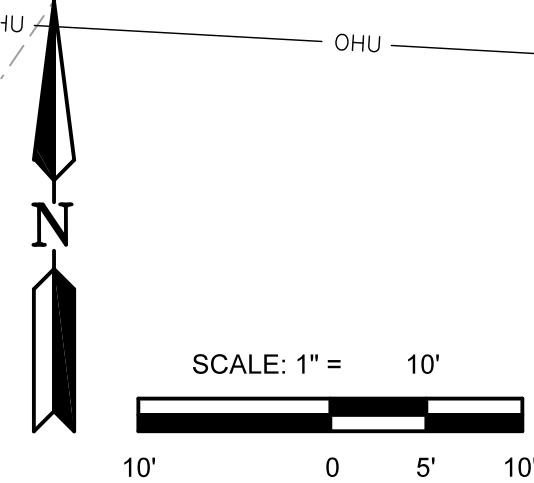
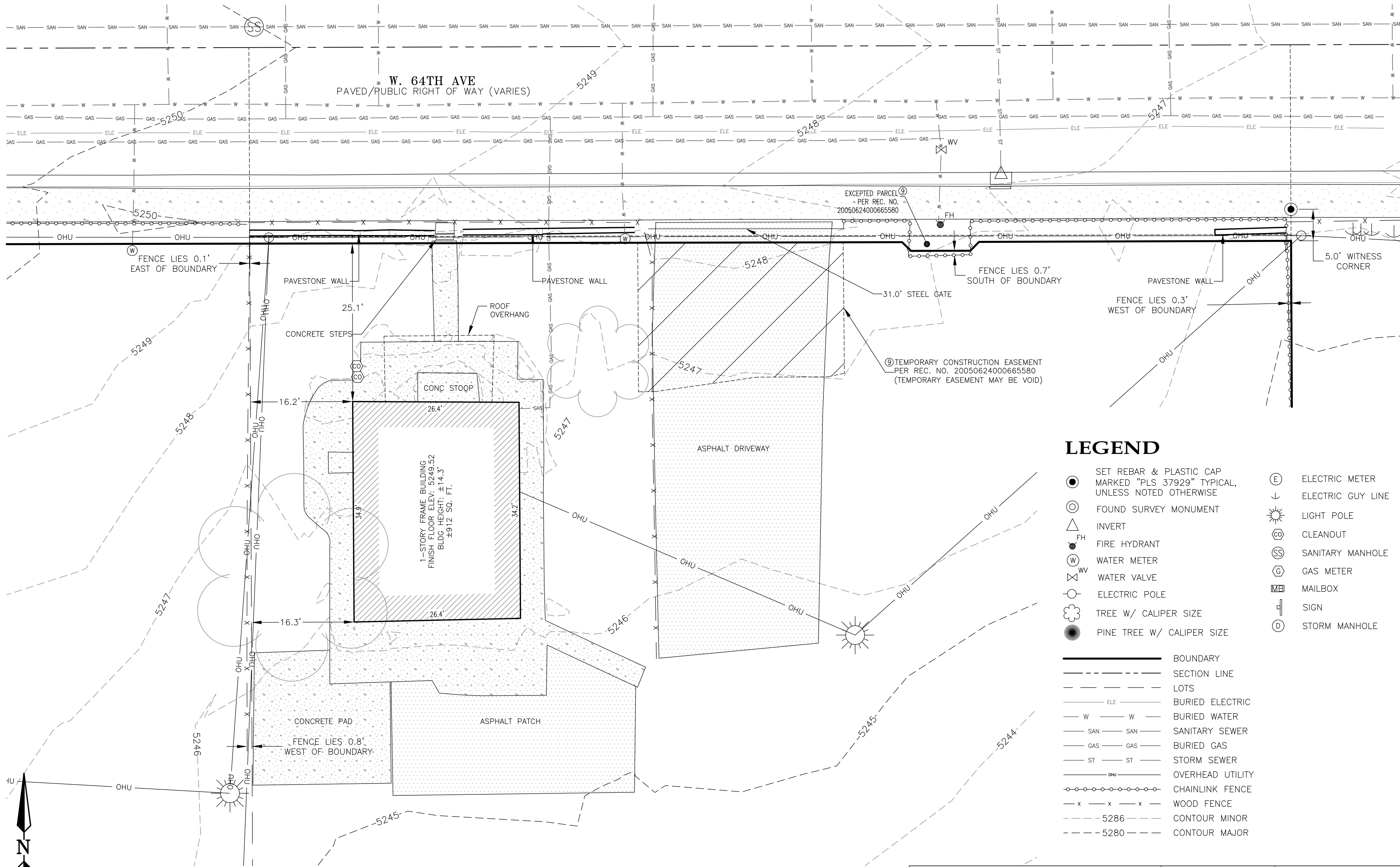
20' 0 10' 20'

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LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3  
SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF DENVER,  
COUNTY OF ADAMS, STATE OF COLORADO



**BUILDING DETAIL**



TYPE OF SUBMITTAL:	ALTA/NSPS TITLE LAND SURVEY
PREPARATION DATE:	SEPTEMBER 14, 2021
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LOCATED IN THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH P.M.  
CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO  
ADDRESS: 3214-3240 W 64TH AVE, DENVER, CO

## SITE DATA TABLE

**PROJECT SUMMARY:**

PROJECT CONSISTS OF (4) RESIDENTIAL BUILDINGS WITH (42) UNITS EACH. EACH RESIDENTIAL BUILDING IS 3 STORIES TALL. A LEASING BUILDING IS LOCATED IN THE MIDDLE OF THE SITE ADJACENT TO AN OUTDOOR AMENITY.

THE BUILDINGS WILL BE TYPE V-B CONSTRUCTION. THE EXTERIOR MATERIALS WILL INCLUDE FIBER CEMENT SIDING WITH BRICK ACCENTS, VINYL WINDOWS, AND TPO ROOFING. THE EXTERIOR DESIGN WILL BE CONTEMPORARY WITH MODERN ACCENTS THROUGHOUT THE FACADE, SUCH AS METAL PANEL AND METAL SUNSHADES. THE EAST BUILDING ENTRIES WILL FEATURE A WALL MURAL BY A LOCAL ARTIST.

TOTAL LOT SIZE:	218,396 SF (5.014 AC)
DENSITY:	33.5 DU / AC
RESIDENTIAL BLDG. SF:	53,352 SF (24.4% LOT COVERAGE)
LEASING OFFICE SF:	2,500 SF (1.1% LOT COVERAGE)
ACTIVE OPEN/GREEN SPACE:	65,303 SF REQUIRED (30%) 60,528 SF PROVIDED - GREEN SPACE (28%) 11,853 SF PROVIDED - SIDEWALKS / WALKWAYS (5%)
AMENITY SPACE:	11,939 SF (5%)

## SITE LEGEND

	PROPERTY LINE
	ADJACENT PROPERTY LINE
	LOT DIVISION LINE
	SITE SETBACKS
	BUILDING OUTLINE
	SURVEY POINT
	WATER VALVE
	FIRE HYDRANT
	WATER METER
	SANITARY SEWER MANHOLE
	OVERHEAD UTILITY SERVICE
	SANITARY SEWER LINE
	WATER SERVICE LINE
	STORM SEWER
	GAS SERVICE LINE
	FENCE (WOOD)
	FENCE (CHAINLINK)
	VEHICULAR CIRCULATION
	UTILITY POLE



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3214-3240 W 64TH AVE  
CHANGE IN USE  
CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO

22-127

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NOT FOR CONSTRUCTION

[illegible]

## SITE PLAN

SHEET 2 OF 17



# INNER CIRCLE CAPITAL SUBDIVISION

A PORTION OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

Case # PLT -

SHEET 1 OF 2

## OWNERSHIP AND DEDICATION CERTIFICATE

KNOW ALL MEN BY THESE PRESENTS THAT THE UNDERSIGNED, ICC 64TH 1 LLC, A COLORADO LIMITED LIABILITY COMPANY, BEING THE OWNERS OF THE FOLLOWING DESCRIBED PROPERTY:

ALL OF LOT 15 OF CLEAR CREEK GARDENS SUBDIVISION, COUNTY OF ADAMS, STATE OF COLORADO.

TOGETHER WITH THE FOLLOWING:

THAT PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 50 RODS (825 FEET) WEST OF THE NORTHEAST CORNER OF SAID NORTHWEST 1/4; THENCE DUE WEST ALONG SAID SECTION LINE, 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE SOUTH 40 RODS (660 FEET); THENCE AT RIGHT ANGLES DUE EAST 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE NORTH 40 RODS (660 FEET) TO THE PLACE OF BEGINNING.

EXCEPT THE NORTH 30 FEET THEREOF FOR ROAD PURPOSES, AND EXCEPT THAT PORTION OF LAND CONVEYED TO THE COUNTY OF ADAMS, STATE OF COLORADO IN THE DEED RECORDED JUNE 24, 2005 UNDER RECEPTION NO. 20050624000665580, COUNTY OF ADAMS, STATE OF COLORADO.

ALSO TOGETHER WITH THE FOLLOWING:

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:  
COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 UNDER RECEPTION NO. 20051017001136790, COUNTY OF ADAMS, STATE OF COLORADO.

CONTAINING 218,396 TOTAL SQUARE FEET OR 5.014 TOTAL ACRES OF LAND, MORE OR LESS.

HAVE BY THESE PRESENTS LAID OUT, AND PLATTED THE SAME INTO A LOT AS SHOWN ON THIS PLAT UNDER THE NAME AND STYLE OF INNER CIRCLE CAPITAL SUBDIVISION.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

FOR: ICC 64TH 1 LLC, A COLORADO LIMITED LIABILITY COMPANY

BY: INNER CIRCLE CAPITAL LLC, A COLORADO LIMITED LIABILITY COMPANY, ITS AGENT

BY: \_\_\_\_\_  
JAIDEEP CHADHA, MANAGER

## NOTARY ACKNOWLEDGMENT

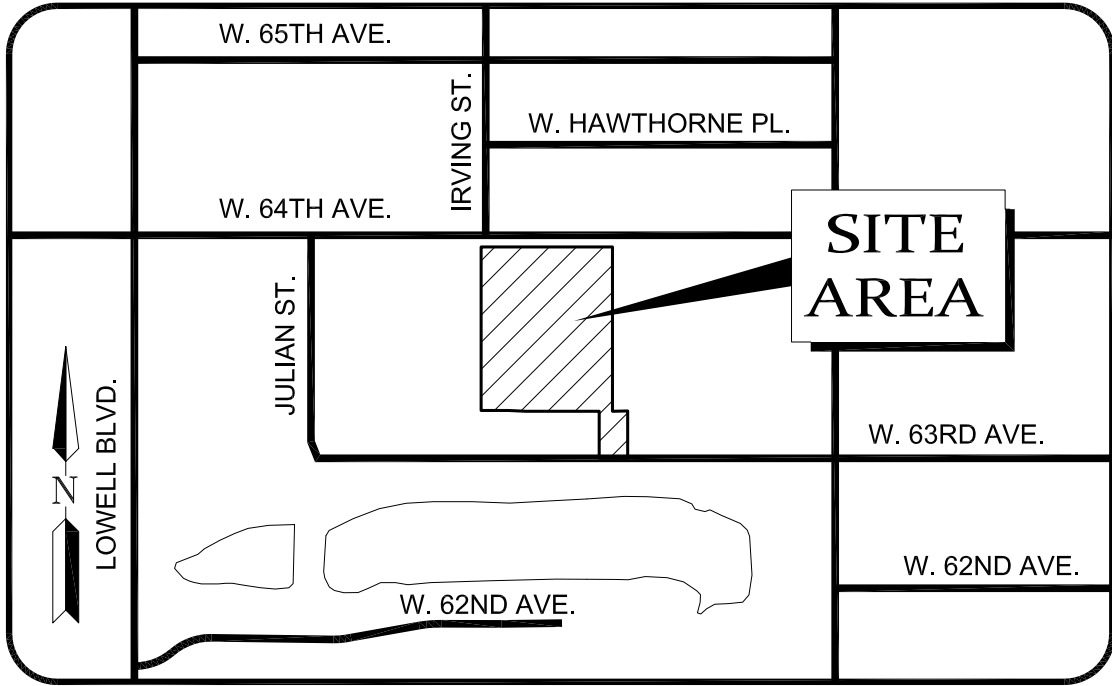
STATE OF \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_) SS.

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_, BY \_\_\_\_\_.

NOTARY PUBLIC

MY COMMISSION EXPIRES: \_\_\_\_\_

ADDRESS OF NOTARY: \_\_\_\_\_



VICINITY MAP  
Not to Scale

## MORTGAGEE'S CONSENT

THE UNDERSIGNED, HIGH COUNTRY BANK, N.A., AS BENEFICIARY OF DEEDS OF TRUST WHICH CONSTITUTES A LIEN UPON THE DECLARANT'S PROPERTY, RECORDED FEBRUARY 14, 2023 AT RECEPTION No. 2023000008026 IN THE OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF ADAMS, STATE OF COLORADO, CONSENTS TO THE DEDICATION OF LAND TO STREETS, ALLEYS, ROADS AND OTHER PUBLIC AREAS, AS DESIGNATED ON THIS PLAT, AND FOREVER RELEASES SAID LANDS FROM THE LIEN CREATED BY SAID INSTRUMENT.

\_\_\_\_\_  
DATE

HIGH COUNTRY BANK  
7360 WEST US HIGHWAY 50  
P.O. BOX309  
SALIDA, CO 81201  
(719) 539-2516

## NOTARY ACKNOWLEDGMENT

STATE OF \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_) SS.

THE FOREGOING MORTGAGEE'S CONSENT WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_, BY \_\_\_\_\_, AS \_\_\_\_\_ OF HIGH COUNTRY BANK.

MY COMMISSION EXPIRES: \_\_\_\_\_

NOTARY PUBLIC

ADDRESS OF NOTARY: \_\_\_\_\_

## COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT

APPROVED BY THE ADAMS COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

DEVELOPMENT SERVICES MANAGER

## STATEMENT OF PURPOSE

THIS MINOR SUBDIVISION PLAT IS CREATED AND RECORDED TO COMBINE THE THREE (3) PARCELS CURRENTLY BEING ASSESSED SEPARATELY AND CREATE ONE (1) NEW PLATTED LOT.

## SURVEYOR'S NOTES

1. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

2. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POWER SURVEYING, INC. FOR INFORMATION REGARDING BOUNDARY, EASEMENTS AND TITLE, POWER SURVEYING, INC. RELIED UPON THE FOLLOWING COMMITMENT FOR TITLE INSURANCE ISSUED BY WESTCOR LAND TITLE INSURANCE COMPANY:

COMMITMENT No. 103-2303894-R, WITH AN EFFECTIVE DATE OF MARCH 31, 2023.

3. FLOOD ZONE DESIGNATION: THE SUBJECT PROPERTY LIES WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% PERCENT ANNUAL CHANCE FLOODPLAIN), AS SHOWN ON FEMA F.I.R.M. MAP #08001C 0584 H, WITH AN EFFECTIVE DATE OF MARCH 5, 2007.

4. FIELD SURVEY COMPLETION COMPLETION DATE: MARCH 22, 2023.

5. BASIS OF BEARINGS: NORTH 89°50'47" EAST, A DISTANCE OF 2639.65 FEET, BEING THE BEARING OF THE NORTH LINE OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, AS DEFINED AND MEASURED BETWEEN A FOUND #6 REBAR (NO CAP) IN RANGE BOX AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER (NW 1/4) AND A FOUND 3-1/4" DIAMETER ALUMINUM CAP IN RANGE BOX, PLS 26288 AT THE NORTHEAST CORNER OF SAID NORTHWEST QUARTER (NW 1/4).

6. THE POLICY OF THE COUNTY REQUIRES THAT MAINTENANCE ACCESS SHALL BE PROVIDED TO ALL STORM DRAINAGE FACILITIES TO ASSURE CONTINUOUS OPERATIONAL CAPABILITY OF THE SYSTEM. THE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE FACILITIES INCLUDING INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES, AND DETENTION BASINS LOCATED ON THEIR LAND UNLESS MODIFIED BY THE SUBDIVISION DEVELOPMENT AGREEMENT. SHOULD THE OWNER FAIL TO MAINTAIN SAID FACILITIES, THE COUNTY SHALL HAVE THE RIGHT TO ENTER SAID LAND FOR THE SOLE PURPOSE OF OPERATIONS AND MAINTENANCE. ALL SUCH MAINTENANCE COST WILL BE ASSESSED TO THE PROPERTY OWNERS.

## SURVEYOR'S CERTIFICATE

I, RICHARD BRUCE GABRIEL, A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY REPRESENTED HEREIN WAS MADE UNDER MY SUPERVISION AND THE MONUMENTS SHOWN THEREON ACTUALLY EXIST, AND THE PLAT ACCURATELY REPRESENTS SAID SURVEY.

RICHARD B. GABRIEL, P.L.S.  
Colorado License No. 37929  
For and on behalf of  
Power Surveying Company, Inc.

## CLERK AND RECORDER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN MY OFFICE AT \_\_\_\_\_ O'CLOCK \_\_\_\_M., THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D., 20 \_\_\_\_.

FILED AT RECEPTION NO. \_\_\_\_\_.

BY: \_\_\_\_\_  
ADAMS COUNTY RECORDER

DEPUTY



TYPE OF SUBMITTAL:	MINOR SUBD. PLAT
PREPARATION DATE:	APRIL 4, 2023
REVISION DATE:	
REVISION DATE:	
JOB NO. 501-23-041	DWG: 501-23-041.dwg

SHEET 1 OF 2

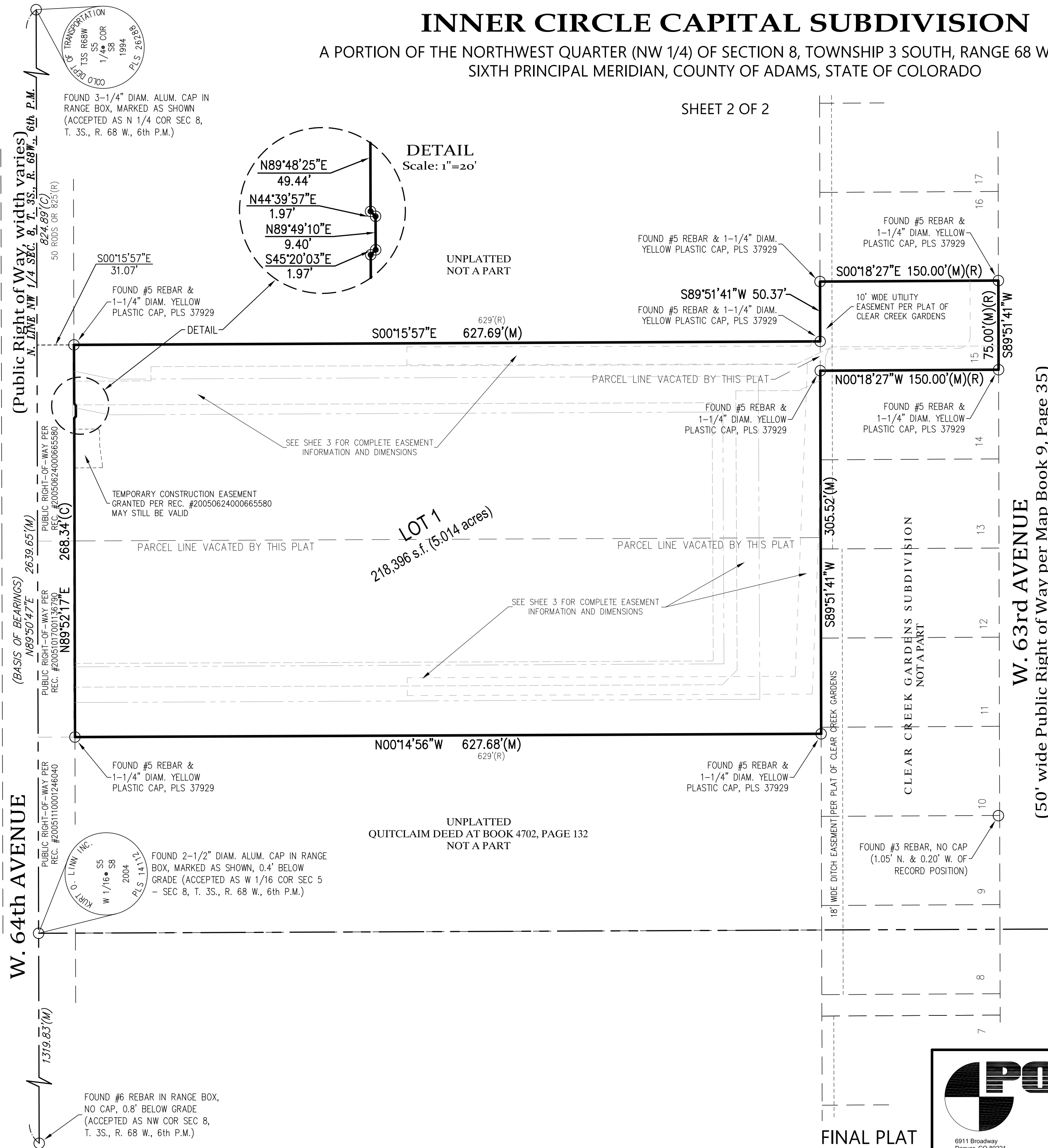
COVER SHEET

# INNER CIRCLE CAPITAL SUBDIVISION

A PORTION OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

Case # PLT -

SHEET 2 OF 2



## LEGEND OF SYMBOLS & ABBREVIATIONS

○	MONUMENT FOUND, AS NOTED
●	SET REBAR & 1-1/2" DIAMETER YELLOW PLASTIC CAP, PLS 37929, TYPICAL UNLESS NOTED OTHERWISE
(C)	CALCULATED
(M)	MEASURED
16	LOT NUMBER
(R)	RECORD
---	EXISTING RECORD EASEMENT LINE
AE	NEW ACCESS EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
DE	NEW DRAINAGE EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
UE	NEW UTILITY EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
---	ADJOINING PARCEL OR LOT LINE
---	CENTER LINE
---	PUBLIC LANDS SURVEY SECTION LINE
---	PLAT BOUNDARY LIMITS



SCALE: 1" = 60'



TYPE OF SUBMITTAL:	MINOR SUBD. PLAT
PREPARATION DATE:	APRIL 4, 2023
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REVISION DATE:	
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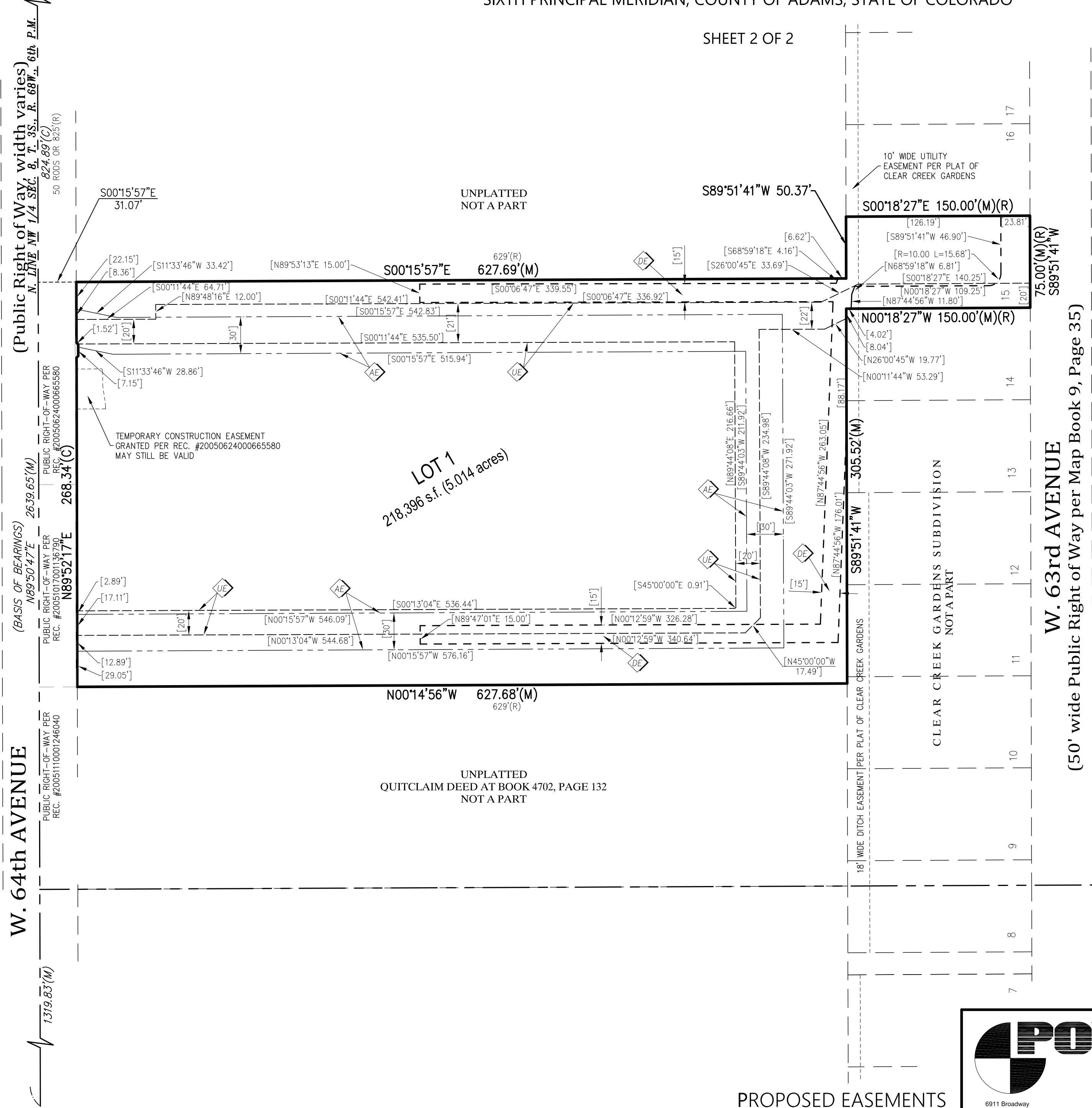
SHEET 2 OF 2

INNER CIRCLE CAPITAL SUBDIVISION

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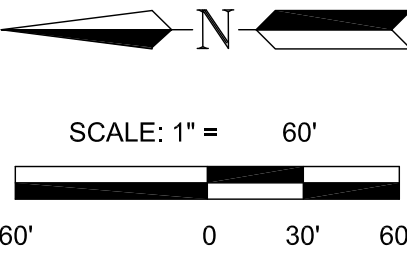
Case # PLT -

SHEET 2 OF 2



LEGEND OF SYMBOLS & ABBREVIATIONS

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- (C) CALCULATED
- (M) MEASURED
- 16 LOT NUMBER
- (R) RECORD
- EXISTING RECORD EASEMENT LINE
- AE --- NEW ACCESS EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
- DE --- NEW DRAINAGE EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
- UE --- NEW UTILITY EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
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- CENTER LINE
- PUBLIC LANDS SURVEY SECTION LINE
- PLAT BOUNDARY LIMITS



POWER  
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Established 1948  
PH. 303-702-1617  
FAX. 303-702-1488  
www.powersurveying.com

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SHEET 2 OF 2

PROPOSED EASEMENTS



### Application Type:

<input type="checkbox"/> Conceptual Review	<input type="checkbox"/> Preliminary PUD	<input type="checkbox"/> Temporary Use
<input type="checkbox"/> Subdivision, Preliminary	<input type="checkbox"/> Final PUD	<input type="checkbox"/> Variance
<input type="checkbox"/> Subdivision, Final	<input type="checkbox"/> Rezone	<input type="checkbox"/> Conditional Use
<input type="checkbox"/> Plat Correction/ Vacation	<input type="checkbox"/> Special Use	<input type="checkbox"/> Other: _____

**PROJECT NAME:**

### APPLICANT

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### OWNER

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### TECHNICAL REPRESENTATIVE (Consultant, Engineer, Surveyor, Architect, etc.)

Name:  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

## DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor  
Parcel Number

Existing  
Zoning:

Existing Land  
Use:

Proposed Land  
Use:

Have you attended a Conceptual Review? YES ☐ NO ☐

If Yes, please list PRE#:

I hereby certify that I am making this application as owner of the above described property or acting under the authority of the owner (attached authorization, if not owner). I am familiar with all pertinent requirements, procedures, and fees of the County. I understand that the Application Review Fee is non-refundable. All statements made on this form and additional application materials are true to the best of my knowledge and belief.

Name:

Date:

Owner's Printed Name

Name:

Owner's Signature



# Colorado Secretary of State

Colorado Secretary of State  
ID#: 20221784936  
Document #: 20221784936  
Filed on: 08/15/2022 08:58:26 AM  
Paid: \$1.00

## Articles of Organization for a Limited Liability Company

filed pursuant to § 7-90-301 and § 7-80-204 of the Colorado Revised Statutes (C.R.S.)

**The domestic entity name of the limited liability company is** ICC 64th 1 LLC

**The principal office street address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

**The principal office mailing address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

**The name of the registered agent is** Inner Circle Capital LLC

**The registered agent's street address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

**The registered agent's mailing address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

The person above has agreed to be appointed as the registered agent for this entity.

**The management of the limited liability company is vested in** Managers

There is at least one member of the limited liability company.

### Person(s) forming the limited liability company

Inner Circle Capital LLC  
8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., and, if

applicable, the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

**Name(s) and address(es) of the individual(s) causing the document to be delivered for filing**

Jaideep Chadha  
8200 S Kellerman Cir  
Aurora CO 80016-7399  
US



**STRENGTH | SERVICE | STABILITY**

**TITLE DEPARTMENT – DELIVERY TRANSMITTAL**

**Closing Location:**  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

Order No.: 103-2227738-S  
Property Address: 3107 W 63rd Ave, Denver, CO 80221  
Buyer(s)/Borrower(s): ICC 64th 1 LLC, a Colorado limited liability company  
Seller(s): Delgado Properties, LLC, a Colorado limited liability company

**BUYER/BORROWER**

ICC 64th 1 LLC, a Colorado limited liability company  
**Delivered Via Agent**

**SELLER**

Delgado Properties, LLC, a Colorado limited liability company  
**Delivered Via Agent**

**SELLING AGENT/BROKER**

HomeSmart  
License No.: EC100054186  
Carlos R. Gonzalez  
License No.: EA40024778  
carlos@gonzalezrealtyllc.net  
8300 E. Maplewood Ave, Ste 100  
Greenwood Village, CO 80111  
Phone: (303)858-8100  
Fax:  
Cell: (720)935-7655

Above is a list of clients to whom the attached materials have been delivered. First Integrity Title Company has several office locations in which to serve you. The location noted on the commitment may not be your closing location. Please contact the closer below to confirm the closing destination as well as any inquiries or questions you may have. We sincerely thank you for your business and look forward to serving you.

**FOR QUESTIONS OR COMMENTS:**

**Escrow Officer:** Tina Bonham  
E-Mail Address: TinaB@FirstIntegrityTitle.com  
Phone: 720-897-1137  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**Escrow Assistant:** Team Tina  
E-Mail Address: TeamTina@firstintegritytitle.com  
Phone:  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**WIRE INSTRUCTIONS:**

**BANK:** First Western Trust Bank  
**ABA NO.:** 102007011  
**ACCOUNT:** 2067300  
**CREDIT:** First Integrity Title Company  
**REFERENCE:** 103-2227738-S  
**All Cashier's Checks must be payable to First Integrity Title Company**



**ALTA Commitment Form (6-17-06)**

**COMMITMENT FOR TITLE INSURANCE**

***Issued by***  
**WestCor Land Title Insurance Company**

WestCor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

First Integrity Title Company



Aksana Mistiukevich

WESTCOR LAND TITLE INSURANCE COMPANY



By: Mary O'Kane  
President  
Attest: Patricia H. Power  
Secretary

## CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.*

**First Integrity Title Company  
as agent for  
Westcor Land Title Insurance Company**

Commitment No.: 103-2227738-S

**SCHEDULE A  
COMMITMENT FOR TITLE INSURANCE**

1. Effective Date: **November 4, 2022**

2. Policy or Policies to be issued:

	Amount	Premium
A. ALTA Owners Policy (06/17/06)	<b>\$230,000.00</b>	<b>\$850.00</b>

Proposed Insured: **ICC 64th 1 LLC, a Colorado limited liability company**

Tax Certificate	<b>\$25.00</b>
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Endorsement CO-110.1	<b>\$75.00</b>
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3. The estate or interest in the land described or referred to in this Commitment and covered herein is Fee Simple and title thereto is at the effective date hereof vested in:

[Delgado Properties, LLC, a Colorado limited liability company](#)

4. The land referred to in this Commitment is situate in Adams County, State of Colorado and is described as follows:

See Exhibit A attached hereto and made a part hereof.

Also known by street and number as: 3107 W 63rd Ave, Denver, CO 80221

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **EXHIBIT A**

LOT 15, CLEAR CREEK GARDENS SUBDIVISION IN THE NORTHWEST QUARTER, SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PM, COUNTY OF ADAMS, STATE OF COLORADO.

For information purposes only: 3107 W 63rd Ave, Denver, CO 80221  
APN/Parcel ID: 0182508202015

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **SCHEDULE B - SECTION I**

### **REQUIREMENTS**

The following are the requirements that must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
4. You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
5. Payment of all taxes, charges and assessments, levied and assessed against the subject premises which are due and payable.
6. Receipt by the Company of the appropriate affidavit and indemnity executed by the owners of the subject property.
7. Warranty Deed must be sufficient to convey the fee simple estate or interest in the land described or referred to herein, to the proposed insured, Schedule A, item 2A.

Note: C.R.S. §38-35-109(2) required that a notation of the purchaser's legal address, (not necessarily the same as the property address) be included on the face of the Deed to be recorded.

8. ITEM INTENTIONALLY DELETED.
9. If Juan Delgado is not signing on behalf of the Delgado Properties, LLC, a Colorado limited liability company, the following requirements will need to be furnished to the Company:
  - a. A copy of the Operating Agreement of Delgado Properties, LLC, a Colorado limited liability company,
  - b. Statement of Authority stating who is authorized to sign on behalf of Delgado Properties, LLC, a Colorado limited liability company.
10. ITEM INTENTIONALLY DELETED.
11. ITEM INTENTIONALLY DELETED.
12. NOTE: A Statement of Authority recorded SEPTEMBER 9, 2022 at Reception No. [2022000076232](#) sets forth Shawna Chadha, Member and Jaideep Chadha, Member for Inner Circle Capital LLC, a Colorado limited liability company, Manager for ICC 64th 1 LLC, a Colorado limited liability company and Jaideep Chadha, Member and Mandeep Singh, Member for Onyx Capital Solutions, LLC, a Colorado limited liability company, Member, authorized to sign on behalf of ICC 64th 1 LLC Colorado limited liability company.

If Shawna Chadha, Member, Jaideep Chadha, Member, Jaideep Chadha, Member and Mandeep Singh, Member are not signing on behalf of ICC 64th 1 LLC, LLC, a Colorado Limited Liability Company the following will need to be furnished to the Company:

- a. Copy of the Operating Agreement of ICC 64th 1 LLC, LLC, a Colorado Limited Liability Company,

**SCHEDULE B - SECTION I**

(Continued)

b. Statement of Authority stating who is authorized to sign on behalf of ICC 64th 1 LLC, LLC, a Colorado Limited Liability Company.

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**NOTE:** According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

**WARRANTY DEED RECORDED APRIL 20, 2020 AT RECEPTION NO. [2020000036018](#).**

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## **SCHEDULE B - SECTION II**

### **EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not show by the Public Record.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquired of record for value the estate or interest or mortgage thereon covered by this Commitment.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
7. Taxes for the current year, including all taxes now or heretofore assessed, due, or payable.
8. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE RECORDED PLAT OF CLEAR CREEK GARDENS SUBDIVISION, RECORDED SEPTEMBER 1, 1948 AT RECEPTION NO. 334607 IN [BOOK F9 AT PAGE 9](#).
9. ANY EXISTING UNRECORDED LEASES OR TENANCIES.
10. JUDGMENTS, STATE AND/OR FEDERAL TAX LIENS, IF ANY, AGAINST THE PROPOSED INSURED.  
  
NOTE: THIS EXCEPTION WILL NOT APPEAR ON ANY LOAN/LENDER'S POLICY.
11. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072.
12. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO THE FENCE AND DRIVE ENCROACHES THE EAST BOUNDARY LINE OF LOT 15 AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072.
13. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO THE 6' WOOD FENCE LINE ALONG THE NORTH AND EAST BOUNDARY LINES AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072.

**End of Schedule B Section II**

## DISCLOSURE STATEMENT

- Pursuant to Section 38-35-125 of Colorado Revised Statutes and Colorado Division of Insurance Regulation 8-1-2 (Section 5), if the parties to the subject transaction request us to provide escrow-settlement and disbursement services to facilitate the closing of the transaction, then all funds submitted for disbursement must be available for immediate withdrawal.
- Colorado Division of Insurance Regulation 8-1-2, Section 5, Paragraph H, requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title insurance commitment, other than the effective date of the title insurance commitment, for all matters which appear of record prior to the time of recording. Whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an Owner's Policy of Title Insurance and is responsible for the recording and First Integrity Title Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception No. 5 in Schedule B-2 will not appear in the Owner's Title Policy and Lender's Title Policy when issued.
- Colorado Division of Insurance Regulation 8-1-2, Paragraph M of Section 5, requires that prospective insured(s) of a single family residence be notified in writing that the standard exception from coverage for unfilled Mechanics or Materialmans Liens may or may not be deleted upon the satisfaction of the requirement(s) pertinent to the transaction. These requirements will be addressed upon receipt of a written request to provide said coverage, or if the Purchase and Sale Agreement/Contract is provided to the Company then the necessary requirements will be reflected on the commitment.
- Colorado Division of Insurance Regulation 8-1-3, Paragraph C. 11.f. of Section 5 - requires a title insurance company to make the following notice to the consumer: "A closing protection letter is available to be issued to lenders, buyers and sellers".
- If the sales price of the subject property exceeds \$100,000.00 the seller shall be required to comply with the Disclosure of Withholding Provisions of C.R.S. 39-22-604.5 (Nonresident Withholding).
- Section 39-14-102 of Colorado Revised Statutes requires that a Real Property Transfer Declaration accompany any conveyance document presented for recordation in the State of Colorado. Said Declaration shall be completed and signed by either the grantor or grantee.
- Recording statutes contained in Section 30-10-406(3)(a) of the Colorado Revised Statutes require that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right, and bottom margin of at least one-half of an inch. The clerk and recorder may refuse to record or file a document that does not conform to requirements of this paragraph.
- Section 38-35-109 (2) of the Colorado Revised Statutes, 1973, requires that a notation of the purchasers legal address, (not necessarily the same as the property address) be included on the face of the deed to be recorded.
- Regulations of County Clerk and Recorder's offices require that all documents submitted for recording must contain a return address on the front page of every document being recorded.
- Pursuant to Section 10-11-122 of the Colorado Revised Statutes, 1987 the Company is required to disclose the following information:
  - The subject property may be located in a special taxing district.
  - A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
  - Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder or the County Assessor.
- Pursuant to Section 10-11-123 of the Colorado Revised Statutes, when it is determined that a mineral estate has been severed from the surface estate, the Company is required to disclose the following information: that there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and that such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Notwithstanding anything to the contrary in this Commitment, if the policy to be issued is other than an ALTA Owner's Policy (6/17/06), the policy may not contain an arbitration clause, or the terms of the arbitration clause may be different from those set forth in this Commitment. If the policy does contain an arbitration clause, and the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.



**NOTICE OF PRIVACY POLICY**  
**of**  
**Westcor Land Title Insurance Company and First Integrity Title Company**

Westcor Land Title Insurance Company ("WLTIC") and First Integrity Title Company values its customers and is committed to protecting the privacy of personal information. In keeping with that philosophy, we have developed a Privacy Policy, set out below, that will ensure the continued protection of your nonpublic personal information and inform you about the measures WLTIC and First Integrity Title Company take to safeguard that information.

**Who is Covered**

We provide our Privacy Policy to each customer when they purchase a WLTIC title insurance policy. Generally, this means that the Privacy Policy is provided to the customer at the closing of the real estate transaction.

**Information Collected**

In the normal course of business and to provide the necessary services to our customers, we may obtain nonpublic personal information directly from the customer, from customer-related transactions, or from third parties such as our title insurance agents, lenders, appraisers, surveyors or other similar entities.

**Access to Information**

Access to all nonpublic personal information is limited to those employees who have a need to know in order to perform their jobs. These employees include, but are not limited to, those in departments such as legal, underwriting, claims administration and accounting.

**Information Sharing**

Generally, WLTIC and do not share nonpublic personal information that it collects with anyone other than its policy issuing agents as needed to complete the real estate settlement services and issue its title insurance policy as requested by the consumer. WLTIC or may share nonpublic personal information as permitted by law with entities with whom WLTIC or has a joint marketing agreement. Entities with whom WLTIC or have a joint marketing agreement have agreed to protect the privacy of our customer's nonpublic personal information by utilizing similar precautions and security measures as WLTIC and uses to protect this information and to use the information for lawful purposes. WLTIC and , however, may share information as required by law in response to a subpoena, to a government regulatory agency or to prevent fraud.

**Information Security**

WLTIC and First Integrity Title Company, at all times, strive to maintain the confidentiality and integrity of the personal information in its possession and has instituted measures to guard against its unauthorized access. We maintain physical, electronic and procedural safeguards in compliance with federal standards to protect that information.



4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

## **PRIVACY POLICY**

### **Committed to Protecting Customer Information**

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information particularly any personal or financial information. You have a right to know how we will utilize the personal information you provide to us. Therefore, First Integrity Title Company has adopted this Privacy Policy to govern the use and handling of your personal information.

### **Applicability**

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity.

### **Types of Information**

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our agents, or others; and
- Information we receive from a consumer-reporting agency.

### **Use of Information**

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis.

### **Former Customers**

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

### **Confidentiality and Security**

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities that need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Thank you for giving us the opportunity to provide your closing and settlement services.



**STRENGTH | SERVICE | STABILITY**

**TITLE DEPARTMENT – DELIVERY TRANSMITTAL**

**Closing Location:**

4610 S. Ulster Street, Suite 100  
Denver, CO 80237

Phone: (303)209-0312 Fax: (303)648-4238

Order No.: 103-2222072-S  
Property Address: 3214 West 64th Avenue, Denver, CO 80221  
Buyer(s)/Borrower(s): ICC 64th 1 LLC, a Colorado limited liability company  
Seller(s): Gerald Nunez

**BUYER/BORROWER**

ICC 64th 1 LLC, a Colorado limited liability company  
**Delivered Via Agent**

**SELLING AGENT/BROKER**

Amerivest Realty  
License No.: EC100054647  
Shawna Chadha  
License No.: 100088061  
buyandsell@shawnachadha.com  
4770 Baseline Road, Suite 200  
Boulder, CO 80303  
Phone: (858)382-0099

**LENDER**

ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

servicing@roserock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

Ali Awe  
aawe@rosewock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

**SELLER**

Gerald Nunez  
**Delivered Via Agent**

**LISTING AGENT/BROKER**

HomeSmart  
License No.: EC100054186  
Carlos Gonzalez  
License No.: 40024778  
Carlos@gonzalezrealtyllc.net  
8300 E. Maplewood Ave, Ste 100  
Greenwood Village, CO 80111  
Phone: (303)858-8100  
Cell: (720)935-7655

Above is a list of clients to whom the attached materials have been delivered. First Integrity Title Company has several office locations in which to serve you. The location noted on the commitment may not be your closing location. Please contact the closer below to confirm the closing destination as well as any inquiries or questions you may have. We sincerely thank you for your business and look forward to serving you.

**FOR QUESTIONS OR COMMENTS:**

**Escrow Officer:** Tina Bonham  
E-Mail Address: TinaB@FirstIntegrityTitle.com  
Phone: 720-897-1137  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**Escrow Assistant:** Team Tina  
E-Mail Address: TeamTina@firstintegritytitle.com  
Phone:  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**WIRE INSTRUCTIONS:**

**BANK:** First Western Trust Bank  
**ABA NO.:** 102007011  
**ACCOUNT:** 2067300  
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**ALTA Commitment Form (6-17-06)**

**COMMITMENT FOR TITLE INSURANCE**

***Issued by***  
**WestCor Land Title Insurance Company**

WestCor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

First Integrity Title Company

*Curtis N. Gray*

Curtis N. Gray

WESTCOR LAND TITLE INSURANCE COMPANY



By: *Mary O'Kane*  
President

Attest: *Patricia H. Power*  
Secretary

## CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.*

**First Integrity Title Company  
as agent for  
Westcor Land Title Insurance Company**

Commitment No.: 103-2222072-S

**SCHEDULE A  
COMMITMENT FOR TITLE INSURANCE**

1. Effective Date: **August 12, 2022**

2. Policy or Policies to be issued:

	Amount	Premium
A. ALTA Owners Policy (06/17/06)	<b>\$1,600,000.00</b>	<b>\$1,847.00</b>

Proposed Insured: **ICC 64th 1 LLC, a Colorado limited liability company**

B. ALTA Loan Policy (06/17/06)	<b>\$1,205,000.00</b>	<b>\$150.00</b>
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Proposed Insured: ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

TAX CERTIFICATE	<b>\$25.00</b>
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Endorsement ALTA 8.1	<b>\$50.00</b>
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Endorsement 111.9-06	<b>\$50.00</b>
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Endorsement ALTA 17.1	<b>\$50.00</b>
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Endorsement CO Form 100.1	<b>\$50.00</b>
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Endorsement CO-110.1 (del ex. 1,2 & 3)	<b>\$75.00</b>
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3. The estate or interest in the land described or referred to in this Commitment and covered herein is Fee Simple and title thereto is at the effective date hereof vested in:

[Gerald Nunez](#)

4. The land referred to in this Commitment is situate in Adams County, State of Colorado and is described as follows:

See Exhibit A attached hereto and made a part hereof.

Also known by street and number as: 3214 West 64th Avenue, Denver, CO 80221

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## EXHIBIT A

That Part of the Northwest 1/4 of Section 8, Township 3 South, Range 68 West described as follows:

Commencing at a point on the North Section Line, 50 Rods West of the Northeast corner of said Northwest 1/4; Thence Due West along said Section Line, 10 Rods; Thence at Right Angles Due South 40 Rods; Thence at Right Angles Due East 10 Rods; Thence at Right Angles Due North 40 Rods to the Place of Beginning, Except the North 30 feet thereof for road purposes, and except that Portion of Land Conveyed to the County of Adams, State of Colorado in the Deed Recorded June 24, 2005 under Reception No. [20050624000665580](#), County of Adams, State of Colorado.

For information purposes only: 3214 West 64th Avenue, Denver, CO 80221  
APN/Parcel ID: 0182508200017

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **SCHEDULE B - SECTION I**

### **REQUIREMENTS**

The following are the requirements that must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
4. You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
5. Payment of all taxes, charges and assessments, levied and assessed against the subject premises which are due and payable.
6. Receipt by the Company of the appropriate affidavit and indemnity executed by the owners of the subject property.
7. NOTE: APPROVED BY UNDERWRITER
8. ITEM INTENTIONALLY DELETED.
9. ITEM INTENTIONALLY DELETED.
10. Correction Deed from LAWRENCE J. GARCIA to GERALD NUNEZ .

Note: This requirement is necessary because

A. The legal description in the Deed RECORDED should appear as set forth in item 4 of Schedule A of this Commitment.

NOTE: ASSESSOR'S SHORTHAND DESCRIPTION WAS USED

B. The grantor in the Deed RECORDED ON OCTOBER 14, 2021, AT RECEPTION NO. [2021000121453](#) appeared as LAWRENCE GARCIA , whereas title was conveyed to the said grantor as LAWRENCE J. GARCIA.

11. Warranty Deed must be sufficient to convey the fee simple estate or interest in the land described or referred to herein, to the proposed insured, Schedule A, item 2A.  
  
Note: C.R.S. §38-35-109(2) required that a notation of the purchaser's legal address, (not necessarily the same as the property address) be included on the face of the Deed to be recorded.
12. Deed of Trust sufficient to encumber the fee simple estate or interest in the land described or referred to herein for the benefit of the proposed insured, Schedule A, item 2(b) or 2(c).
13. Release of the Deed of Trust from Lawrence J. Garcia, a married man, as his sole and separate property to the Public Trustee of Adams County for the benefit of American Pacific Mortgage Corporation to secure an indebtedness in the principal sum of \$392,000.00, and any other amounts and/or obligations secured



**SCHEDULE B - SECTION I**  
(Continued)

thereby, dated April 21, 2021 and recorded on April 28, 2021 at Reception No. [2021000051806](#) and Re-recorded on July 13, 2021 at Reception No. [2021000083257](#).

14. Item intentionally deleted.
15. The following requirements for ICC 64th 1 LLC, a Colorado limited liability company will need to be furnished to the Company:
  - a. A copy of the Operating Agreement of ICC 64th 1 LLC, a Colorado limited liability company,
  - b. Statement of Authority stating who is authorized to sign on behalf of ICC 64th 1 LLC, a Colorado limited liability company.

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**NOTE:** According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

**A Beneficiary Deed Recorded on February 12, 2015 at Reception No. [2015000009979](#).**

**A General Warranty Deed Recorded on April 28, 2021 at Reception No. [2021000051805](#).**

**A Colorado Quit Claim Deed Recorded on October 14, 2021 at Reception No. [2021000121453](#).**

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## **SCHEDULE B - SECTION II**

### **EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not show by the Public Record.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquired of record for value the estate or interest or mortgage thereon covered by this Commitment.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
7. Taxes for the current year, including all taxes now or heretofore assessed, due, or payable.

NOTE: UPON PAYMENT OF THE PREMIUMS AND SATISFACTION OF THE REQUIREMENTS IN SCHEDULE B – SECTION I THAT THE ABOVE EXCEPTION WILL BE AMENDED TO READ "TAXES AND ASSESSMENTS FOR THE YEARS 2022, AND SUBSEQUENT YEARS, A LIEN, NOT YET DUE OR PAYABLE."

8. ANY EXISTING LEASES OR TENANCIES.
9. TEMPORARY CONSTRUCTION EASEMENT RECITED IN DEED RECORDED JUNE 24, 2005 AT RECEPTION NO. [20050624000665580](#).
10. THE FINAL TITLE INSURANCE POLICY(S) SHALL NOT AND DOES NOT INSURE THE TITLE TO THOSE FIXTURES, STRUCTURES AND LIKE APPURTENANCES WHICH ARE NOT ASSESSED AND TAXED AS REAL PROPERTY BY THE COUNTY. NO EXAMINATION OF THE TITLE TO THE REFERENCED FIXTURES, STRUCTURES AND LIKE APPURTENANCES HAS BEEN MADE.
11. JUDGMENTS, STATE AND/OR FEDERAL TAX LIENS, IF ANY, AGAINST THE PROPOSED INSURED.

NOTE: THIS EXCEPTION WILL NOT APPEAR ON ANY LOAN/LENDER'S POLICY.

12. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE A.L.T.A/N.S.P.S. LAND TITLE SURVEY JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL PLS 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221.
13. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO FENCE LINES ALONG THE EAST, WEST AND NORTH BOUNDARY LINES AS DISCLOSED ON THE A.L.T.A/N.S.P.S. LAND

**SCHEDULE B - SECTION II**

(Continued)

TITLE SURVEY JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL  
PLS 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO  
80221.

**End of Schedule B Section II**

## DISCLOSURE STATEMENT

- Pursuant to Section 38-35-125 of Colorado Revised Statutes and Colorado Division of Insurance Regulation 8-1-2 (Section 5), if the parties to the subject transaction request us to provide escrow-settlement and disbursement services to facilitate the closing of the transaction, then all funds submitted for disbursement must be available for immediate withdrawal.
- Colorado Division of Insurance Regulation 8-1-2, Section 5, Paragraph H, requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title insurance commitment, other than the effective date of the title insurance commitment, for all matters which appear of record prior to the time of recording. Whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an Owner's Policy of Title Insurance and is responsible for the recording and First Integrity Title Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception No. 5 in Schedule B-2 will not appear in the Owner's Title Policy and Lender's Title Policy when issued.
- Colorado Division of Insurance Regulation 8-1-2, Paragraph M of Section 5, requires that prospective insured(s) of a single family residence be notified in writing that the standard exception from coverage for unfilled Mechanics or Materialmans Liens may or may not be deleted upon the satisfaction of the requirement(s) pertinent to the transaction. These requirements will be addressed upon receipt of a written request to provide said coverage, or if the Purchase and Sale Agreement/Contract is provided to the Company then the necessary requirements will be reflected on the commitment.
- Colorado Division of Insurance Regulation 8-1-3, Paragraph C. 11.f. of Section 5 - requires a title insurance company to make the following notice to the consumer: "A closing protection letter is available to be issued to lenders, buyers and sellers".
- If the sales price of the subject property exceeds \$100,000.00 the seller shall be required to comply with the Disclosure of Withholding Provisions of C.R.S. 39-22-604.5 (Nonresident Withholding).
- Section 39-14-102 of Colorado Revised Statutes requires that a Real Property Transfer Declaration accompany any conveyance document presented for recordation in the State of Colorado. Said Declaration shall be completed and signed by either the grantor or grantee.
- Recording statutes contained in Section 30-10-406(3)(a) of the Colorado Revised Statutes require that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right, and bottom margin of at least one-half of an inch. The clerk and recorder may refuse to record or file a document that does not conform to requirements of this paragraph.
- Section 38-35-109 (2) of the Colorado Revised Statutes, 1973, requires that a notation of the purchasers legal address, (not necessarily the same as the property address) be included on the face of the deed to be recorded.
- Regulations of County Clerk and Recorder's offices require that all documents submitted for recording must contain a return address on the front page of every document being recorded.
- Pursuant to Section 10-11-122 of the Colorado Revised Statutes, 1987 the Company is required to disclose the following information:
  - The subject property may be located in a special taxing district.
  - A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
  - Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder or the County Assessor.
- Pursuant to Section 10-11-123 of the Colorado Revised Statutes, when it is determined that a mineral estate has been severed from the surface estate, the Company is required to disclose the following information: that there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and that such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Notwithstanding anything to the contrary in this Commitment, if the policy to be issued is other than an ALTA Owner's Policy (6/17/06), the policy may not contain an arbitration clause, or the terms of the arbitration clause may be different from those set forth in this Commitment. If the policy does contain an arbitration clause, and the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.

**NOTICE OF PRIVACY POLICY**  
**of**  
**Westcor Land Title Insurance Company and First Integrity Title Company**

Westcor Land Title Insurance Company ("WLTIC") and First Integrity Title Company values its customers and is committed to protecting the privacy of personal information. In keeping with that philosophy, we have developed a Privacy Policy, set out below, that will ensure the continued protection of your nonpublic personal information and inform you about the measures WLTIC and First Integrity Title Company take to safeguard that information.

**Who is Covered**

We provide our Privacy Policy to each customer when they purchase a WLTIC title insurance policy. Generally, this means that the Privacy Policy is provided to the customer at the closing of the real estate transaction.

**Information Collected**

In the normal course of business and to provide the necessary services to our customers, we may obtain nonpublic personal information directly from the customer, from customer-related transactions, or from third parties such as our title insurance agents, lenders, appraisers, surveyors or other similar entities.

**Access to Information**

Access to all nonpublic personal information is limited to those employees who have a need to know in order to perform their jobs. These employees include, but are not limited to, those in departments such as legal, underwriting, claims administration and accounting.

**Information Sharing**

Generally, WLTIC and do not share nonpublic personal information that it collects with anyone other than its policy issuing agents as needed to complete the real estate settlement services and issue its title insurance policy as requested by the consumer. WLTIC or may share nonpublic personal information as permitted by law with entities with whom WLTIC or has a joint marketing agreement. Entities with whom WLTIC or have a joint marketing agreement have agreed to protect the privacy of our customer's nonpublic personal information by utilizing similar precautions and security measures as WLTIC and uses to protect this information and to use the information for lawful purposes. WLTIC and , however, may share information as required by law in response to a subpoena, to a government regulatory agency or to prevent fraud.

**Information Security**

WLTIC and First Integrity Title Company, at all times, strive to maintain the confidentiality and integrity of the personal information in its possession and has instituted measures to guard against its unauthorized access. We maintain physical, electronic and procedural safeguards in compliance with federal standards to protect that information.



4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

## **PRIVACY POLICY**

### **Committed to Protecting Customer Information**

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information particularly any personal or financial information. You have a right to know how we will utilize the personal information you provide to us. Therefore, First Integrity Title Company has adopted this Privacy Policy to govern the use and handling of your personal information.

### **Applicability**

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity.

### **Types of Information**

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our agents, or others; and
- Information we receive from a consumer-reporting agency.

### **Use of Information**

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis.

### **Former Customers**

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

### **Confidentiality and Security**

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities that need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Thank you for giving us the opportunity to provide your closing and settlement services.



**STRENGTH | SERVICE | STABILITY**

**TITLE DEPARTMENT – DELIVERY TRANSMITTAL**

**Closing Location:**

4610 S. Ulster Street, Suite 100

Denver, CO 80237

Phone: (303)209-0312 Fax: (303)648-4238

Order No.: 103-2222071-S  
Property Address: 3240 W 64th Avenue, Denver, CO 80221  
Buyer(s)/Borrower(s): ICC 64th 1 LLC, a Colorado limited liability company  
Seller(s): Invictus Family Trust 2018

**BUYER/BORROWER**

ICC 64th 1 LLC, a Colorado limited liability company

**Delivered Via Agent**

**SELLING AGENT/BROKER**

Amerivest Realty  
License No.: EC100054647  
Shawna Chadha  
License No.: 100088061  
buyandsell@shawnachadha.com  
4770 Baseline Road, Suite 200  
Boulder, CO 80303  
Phone: (858)382-0099

**LENDER**

ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

Ali Awe  
aawe@roserock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

servicing@roserock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

**SELLER**

Invictus Family Trust 2018

**Delivered Via Agent**

**LISTING AGENT/BROKER**

HomeSmart  
License No.: EC100054186  
Carlos R. Gonzalez  
License No.: 40024778  
carlos@gonzalezrealtyllc.net  
8300 E. Maplewood Ave, Ste 100  
Greenwood Village, CO 80111  
Phone: (303)858-8100  
Cell: (720)935-7655

Above is a list of clients to whom the attached materials have been delivered. First Integrity Title Company has several office locations in which to serve you. The location noted on the commitment may not be your closing location. Please contact the closer below to confirm the closing destination as well as any inquiries or questions you may have. We sincerely thank you for your business and look forward to serving you.

**FOR QUESTIONS OR COMMENTS:**

**Escrow Officer:** Tina Bonham  
E-Mail Address: TinaB@FirstIntegrityTitle.com  
Phone: 720-897-1137  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**Escrow Assistant:** Team Tina  
E-Mail Address: TeamTina@firstintegritytitle.com  
Phone:  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**WIRE INSTRUCTIONS:**

**BANK:** First Western Trust Bank  
**ABA NO.:** 102007011  
**ACCOUNT:** 2067300  
**CREDIT:** First Integrity Title Company  
**REFERENCE:** 103-2222071-S  
**All Cashier's Checks must be payable to First Integrity Title Company**

**ALTA Commitment Form (6-17-06)**

**COMMITMENT FOR TITLE INSURANCE**

***Issued by***  
**WestCor Land Title Insurance Company**

WestCor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

WESTCOR LAND TITLE INSURANCE COMPANY



By: Mary O'Vann  
President  
Attest: Patricia H. Power  
Secretary



## CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.*

**First Integrity Title Company  
as agent for  
Westcor Land Title Insurance Company**

Commitment No.: 103-2222071-S

**SCHEDULE A  
COMMITMENT FOR TITLE INSURANCE**

1. Effective Date: **August 12, 2022**

2. Policy or Policies to be issued:

	Amount	Premium
A. ALTA Owners Policy (06/17/06)	<b>\$1,600,000.00</b>	<b>\$1,847.00</b>

Proposed Insured: **ICC 64th 1 LLC, a Colorado limited liability company**

B. ALTA Loan Policy (06/17/06)	<b>\$1,205,000.00</b>	<b>\$150.00</b>
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Proposed Insured: ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

Tax Certificate	<b>\$25.00</b>
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Endorsement 110.1-06 AS TO EXCS. 1,2,3	<b>\$75.00</b>
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Endorsement ALTA 8.1 (Environmental Protection Lien)	<b>\$50.00</b>
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Endorsement 111.9-06	<b>\$50.00</b>
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Endorsement ALTA 17.1	<b>\$50.00</b>
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Endorsement CO Form 100.1	<b>\$50.00</b>
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3. The estate or interest in the land described or referred to in this Commitment and covered herein is Fee Simple and title thereto is at the effective date hereof vested in:

[Invictus Family Trust 2018](#)

4. The land referred to in this Commitment is situate in Adams County, State of Colorado and is described as follows:

See Exhibit A attached hereto and made a part hereof.

Also known by street and number as: 3240 W 64th Avenue, Denver, CO 80221

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **EXHIBIT A**

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING,  
EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 UNDER RECEPTION NO. 20051017001136790,

COUNTY OF ADAMS, STATE OF COLORADO

For information purposes only: 3240 W 64th Avenue, Denver, CO 80221  
APN/Parcel ID: 0182508200033

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## SCHEDULE B - SECTION I

### REQUIREMENTS

The following are the requirements that must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
4. You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
5. Payment of all taxes, charges and assessments, levied and assessed against the subject premises which are due and payable.
6. Receipt by the Company of the appropriate affidavit and indemnity executed by the owners of the subject property.
7. **NOTE: APPROVED AS TO UNDERWRITER**
8. We find no open Deeds of Trust/Mortgage of record.  
Please verify by inquiry of escrow personnel and/or agents whether or not we have overlooked something and advise the title department accordingly prior to close of escrow.  
We will require an "Affidavit of No Deed of Trust/Mortgage" to be signed by the sellers/borrowers prior to close of escrow and forwarded to the title unit.
9. ITEM INTENTIONALLY DELETED.
10. ITEM INTENTIONALLY DELETED.
11. ITEM INTENTIONALLY DELETED.
12. Warranty Deed must be sufficient to convey the fee simple estate or interest in the land described or referred to herein, to the proposed insured, Schedule A, item 2A.  
  
Note: C.R.S. §38-35-109(2) required that a notation of the purchaser's legal address, (not necessarily the same as the property address) be included on the face of the Deed to be recorded.  
  
NOTE: TRUST AFFIDAVIT FOR INVICTUS FAMILY TRUST 2018 RECORDED NOVEMBER 19, 2018 AT RECEPTION NO. [2018000092941](#) EVIDENCES SHARON NUNEZ DEGROEN, TRUSTEE.
13. Deed of Trust sufficient to encumber the fee simple estate or interest in the land described or referred to herein for the benefit of the proposed insured, Schedule A, item 2(b) or 2(c).
14. The following requirements for ICC 64th 1 LLC, a Colorado limited liability company will need to be furnished to the Company:
  - a. ITEM INTENTIONALLY DELETED.
  - b. Statement of Authority stating who is authorized to sign on behalf of ICC 64th 1 LLC, a Colorado limited liability company.

**SCHEDULE B - SECTION I**  
(Continued)

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**NOTE:** According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

**GWD 03/30/2021 AT RECEPTION NO. 2021000038645.**

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## **SCHEDULE B - SECTION II**

### **EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Record.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquired of record for value the estate or interest or mortgage thereon covered by this Commitment.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
7. Taxes for the current year, including all taxes now or heretofore assessed, due, or payable.

NOTE: UPON PAYMENT OF THE PREMIUMS AND SATISFACTION OF THE REQUIREMENTS IN SCHEDULE B – SECTION I THAT THE ABOVE EXCEPTION WILL BE AMENDED TO READ "TAXES AND ASSESSMENTS FOR THE YEARS 2022, AND SUBSEQUENT YEARS, A LIEN, NOT YET DUE OR PAYABLE."

8. ANY EXISTING LEASES OR TENANCIES.
9. JUDGMENTS, STATE AND/OR FEDERAL TAX LIENS, IF ANY, AGAINST THE PROPOSED INSURED.

NOTE: THIS EXCEPTION WILL NOT APPEAR ON ANY LOAN/LENDER'S POLICY.

10. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL, P.L.S. 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221.
11. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO FENCE LINES ALONG THE NORTH, EAST AND WEST BOUNDARY LINES AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL, P.L.S. 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221.

**End of Schedule B Section II**

## DISCLOSURE STATEMENT

- Pursuant to Section 38-35-125 of Colorado Revised Statutes and Colorado Division of Insurance Regulation 8-1-2 (Section 5), if the parties to the subject transaction request us to provide escrow-settlement and disbursement services to facilitate the closing of the transaction, then all funds submitted for disbursement must be available for immediate withdrawal.
- Colorado Division of Insurance Regulation 8-1-2, Section 5, Paragraph H, requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title insurance commitment, other than the effective date of the title insurance commitment, for all matters which appear of record prior to the time of recording Whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an Owner's Policy of Title Insurance and is responsible for the recording and First Integrity Title Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception No. 5 in Schedule B-2 will not appear in the Owner's Title Policy and Lender's Title Policy when issued.
- Colorado Division of Insurance Regulation 8-1-2, Paragraph M of Section 5, requires that prospective insured(s) of a single family residence be notified in writing that the standard exception from coverage for unfilled Mechanics or Materialmans Liens may or may not be deleted upon the satisfaction of the requirement(s) pertinent to the transaction. These requirements will be addressed upon receipt of a written request to provide said coverage, or if the Purchase and Sale Agreement/Contract is provided to the Company then the necessary requirements will be reflected on the commitment.
- Colorado Division of Insurance Regulation 8-1-3, Paragraph C. 11.f. of Section 5 - requires a title insurance company to make the following notice to the consumer: "A closing protection letter is available to be issued to lenders, buyers and sellers".
- If the sales price of the subject property exceeds \$100,000.00 the seller shall be required to comply with the Disclosure of Withholding Provisions of C.R.S. 39-22-604.5 (Nonresident Withholding).
- Section 39-14-102 of Colorado Revised Statutes requires that a Real Property Transfer Declaration accompany any conveyance document presented for recordation in the State of Colorado. Said Declaration shall be completed and signed by either the grantor or grantee.
- Recording statutes contained in Section 30-10-406(3)(a) of the Colorado Revised Statutes require that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right, and bottom margin of at least one-half of an inch. The clerk and recorder may refuse to record or file a document that does not conform to requirements of this paragraph.
- Section 38-35-109 (2) of the Colorado Revised Statutes, 1973, requires that a notation of the purchasers legal address, (not necessarily the same as the property address) be included on the face of the deed to be recorded.
- Regulations of County Clerk and Recorder's offices require that all documents submitted for recording must contain a return address on the front page of every document being recorded.
- Pursuant to Section 10-11-122 of the Colorado Revised Statutes, 1987 the Company is required to disclose the following information:
  - The subject property may be located in a special taxing district.
  - A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
  - Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder or the County Assessor.
- Pursuant to Section 10-11-123 of the Colorado Revised Statutes, when it is determined that a mineral estate has been severed from the surface estate, the Company is required to disclose the following information: that there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and that such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Notwithstanding anything to the contrary in this Commitment, if the policy to be issued is other than an ALTA Owner's Policy (6/17/06), the policy may not contain an arbitration clause, or the terms of the arbitration clause may be different from those set forth in this Commitment. If the policy does contain an arbitration clause, and the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.

**NOTICE OF PRIVACY POLICY**  
**of**  
**Westcor Land Title Insurance Company and First Integrity Title Company**

Westcor Land Title Insurance Company ("WLTIC") and First Integrity Title Company values its customers and is committed to protecting the privacy of personal information. In keeping with that philosophy, we have developed a Privacy Policy, set out below, that will ensure the continued protection of your nonpublic personal information and inform you about the measures WLTIC and First Integrity Title Company take to safeguard that information.

**Who is Covered**

We provide our Privacy Policy to each customer when they purchase a WLTIC title insurance policy. Generally, this means that the Privacy Policy is provided to the customer at the closing of the real estate transaction.

**Information Collected**

In the normal course of business and to provide the necessary services to our customers, we may obtain nonpublic personal information directly from the customer, from customer-related transactions, or from third parties such as our title insurance agents, lenders, appraisers, surveyors or other similar entities.

**Access to Information**

Access to all nonpublic personal information is limited to those employees who have a need to know in order to perform their jobs. These employees include, but are not limited to, those in departments such as legal, underwriting, claims administration and accounting.

**Information Sharing**

Generally, WLTIC and do not share nonpublic personal information that it collects with anyone other than its policy issuing agents as needed to complete the real estate settlement services and issue its title insurance policy as requested by the consumer. WLTIC or may share nonpublic personal information as permitted by law with entities with whom WLTIC or has a joint marketing agreement. Entities with whom WLTIC or have a joint marketing agreement have agreed to protect the privacy of our customer's nonpublic personal information by utilizing similar precautions and security measures as WLTIC and uses to protect this information and to use the information for lawful purposes. WLTIC and , however, may share information as required by law in response to a subpoena, to a government regulatory agency or to prevent fraud.

**Information Security**

WLTIC and First Integrity Title Company, at all times, strive to maintain the confidentiality and integrity of the personal information in its possession and has instituted measures to guard against its unauthorized access. We maintain physical, electronic and procedural safeguards in compliance with federal standards to protect that information.





4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

## **PRIVACY POLICY**

### **Committed to Protecting Customer Information**

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information particularly any personal or financial information. You have a right to know how we will utilize the personal information you provide to us. Therefore, First Integrity Title Company has adopted this Privacy Policy to govern the use and handling of your personal information.

### **Applicability**

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity.

### **Types of Information**

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our agents, or others; and
- Information we receive from a consumer-reporting agency.

### **Use of Information**

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis.

### **Former Customers**

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

### **Confidentiality and Security**

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities that need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Thank you for giving us the opportunity to provide your closing and settlement services.



## CRESTVIEW WATER & SANITATION DISTRICT

Nanci Kerr, President  
Sky to Ground  
3214 & 3240 W. 64<sup>th</sup> avenue, 3107 W. 63<sup>rd</sup> avenue  
Denver, CO 80221

December 2, 2022

RE: Water and Sanitary Sewer Service, 3214 & 3240 W. 64<sup>th</sup> avenue, Denver, CO 80221 Parcel #0182508200017 & #0182508200033 and 3107 W. 63<sup>rd</sup> avenue, Denver, CO 80221 Parcel #0182508202015

Will Serve Letter

Ms. Kerr,

Please be advised that Crestview Water and Sanitation District (Crestview) currently provides both water and sanitary sewer service to the address of 3214 W. 64<sup>th</sup> avenue and is willing to provide treated water and sanitary sewer service to 3240 W. 64<sup>th</sup> avenue and 3107 W. 63<sup>rd</sup> avenue and a possible future development on Adams County parcel nos. 0182508200017, 0182508200033 and 0182508202015 in Adams County, Colorado that is wholly within the Crestview Water and Sanitation District boundaries.

Prior to creating a layout and filing a plat for any future development of these parcels, the petitioning owner/developer (developer) should have a pre-design meeting with Crestview, as the developer MUST allow for the installation of adequate water mains in strict accordance with Denver Water Engineering Standards and Crestview Rules and Regulations and engineering requirements. Crestview provides drinking water to its customers by means of a wholesale water purchasing contract with Denver Water. As part of the Contract, Denver Water requires Crestview to adhere to Denver Water's Engineering Standards.

Sanitary sewer mains must also be designed in accordance with Crestview Rules and Regulations and engineering requirements. For any future development of these parcels, the developer will be responsible for all costs related to the installation of required water and sewer mains and is responsible for all utility modeling, engineering studies and plan development/review costs. All water and sewer mains and appurtenances for the new development shall be installed at the developer's expense and deeded free and clear to Crestview prior to the issuance of any water or sewer taps.

Any required off-site improvements to Crestview's water distribution system and/or sanitary sewer collection system created by additional system demands from your proposed development will be the responsibility of the owner/developer both financially and physically.

Crestview requires a signature of acceptance of this Will Serve letter by the developer prior to scheduling a pre-design meeting with Crestview. Please provide a copy of this signed Will Serve letter when scheduling a pre-design meeting to Crestview's engineer, Clarice O'Hanlon, at [cohanlon@crestviewwater.net](mailto:cohanlon@crestviewwater.net).

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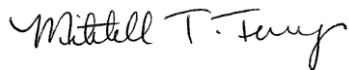
Signature of developer representative

---

Date

If you have any questions or require additional information, please contact our office.

Sincerely,

A handwritten signature in black ink that reads "Mitchell T. Terry". The signature is written in a cursive, flowing style.

Mitchell T. Terry  
District Manager  
Crestview Water & Sanitation District

**From:** [Jaideep Chadha](#)  
**To:** [Nanci Kerr](#)  
**Subject:** FW: Service Request Confirmation  
**Date:** Wednesday, December 07, 2022 10:00:12 AM

---

Services are active but online account will take 1 day to be set-up. Maybe the email below will be sufficient?

Thanks,  
Jaideep Chadha

**Jaideep S. Chadha**  
Co-Founder and CEO  
e: [jaideep@innercirclecap.com](mailto:jaideep@innercirclecap.com)  
c: 484-868-8383  
w: [www.innercirclecap.com](http://www.innercirclecap.com)



---

**From:** email@XcelEnergy-EmailNews.com <email@XcelEnergy-EmailNews.com>  
**Sent:** Wednesday, December 7, 2022 9:47 AM  
**To:** JAIDEEP@INNERCIRCLECAP.COM  
**Subject:** Service Request Confirmation

**EXTERNAL - STOP & THINK** before opening links and attachments.



[Billing & Payment](#)   [Start, Stop, Transfer](#)   [Programs & Rebates](#)   [Outage & Emergencies](#)

---

Account Number: **53-0014305682-7**  
Address: **3214 W 64TH AVE, DENVER CO**  
**80221-2160**

Success! Your order has been processed.

If you're currently enrolled in My Account, you will see your new premise appear within one business day under the Usage tab.

If you have not yet registered for My Account,

enroll today.

**My Account**

My Account offers you:

- Many options to view and pay your energy bill, including paperless billing
- Energy saving tips and tools to track your monthly usage
- Access to your account anytime, anywhere, from any device

If applicable, a start service fee to establish service will appear on your first bill.

Sincerely,  
Xcel Energy Customer Care

## Download the App Today

[Download on the app store logo png](#)



[Get it on Google Play](#)



[My Account](#)

[Customer Support](#)

[Privacy Policy](#)

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414 NICOLLET MALL, MINNEAPOLIS, MN 55401



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This email has been scanned for spam and viruses by Proofpoint Essentials. Click [here](#) to report this email as spam.

501-23-041 Legal Desc for Minor Subdivision Plat

**Inner Circle Capital Subdivision**

ALL OF LOT 15 OF CLEAR CREEK GARDENS SUBDIVISION, COUNTY OF ADAMS, STATE OF COLORADO.

TOGETHER WITH THE FOLLOWING:

THAT PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 50 RODS (825 FEET) WEST OF THE NORTHEAST CORNER OF SAID NORTHWEST 1/4; THENCE DUE WEST ALONG SAID SECTION LINE, 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE SOUTH 40 RODS (660 FEET); THENCE AT RIGHT ANGLES DUE EAST 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE NORTH 40 RODS (660 FEET) TO THE PLACE OF BEGINNING.

EXCEPT THE NORTH 30 FEET THEREOF FOR ROAD PURPOSES, AND EXCEPT THAT PORTION OF LAND CONVEYED TO THE COUNTY OF ADAMS, STATE OF COLORADO IN THE DEED RECORDED JUNE 24, 2005 UNDER RECEPTION NO. 20050624000665580, COUNTY OF ADAMS, STATE OF COLORADO.

ALSO TOGETHER WITH THE FOLLOWING:

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 UNDER RECEPTION NO. 20051017001136790, COUNTY OF ADAMS, STATE OF COLORADO

CONTAINING 218,396 TOTAL SQUARE FEET OR 5.014 TOTAL ACRES OF LAND, MORE OR LESS.

**Print Forms**  
[Redemption Certificate](#)  
[Account Balance](#)  
[Statement Of Taxes Due](#)  
[Summary of Taxes Due](#)

**Account Links**  
[Account Summary](#)  
[Account Value](#)  
[Transaction Detail](#)  
[Verify My Email](#)

**External Links**  
[Change of Address Form](#)

**Payment Receipts**  
[Receipt from Jan 23, 2023](#)  
[Receipt from Jun 7, 2022](#)  
[Receipt from Mar 10, 2022](#)  
[Receipt from May 3, 2021](#)  
[Receipt from Mar 4, 2021](#)  
[Receipt from Feb 19, 2020](#)  
[Receipt from Jun 10, 2019](#)  
[Receipt from Feb 4, 2019](#)  
[Receipt from May 23, 2018](#)  
[Receipt from Feb 20, 2018](#)  
[Receipt from Mar 31, 2017](#)  
[Receipt from Feb 25, 2017](#)  
[Receipt from Feb 19, 2016](#)  
[Receipt from Feb 23, 2015](#)  
[Receipt from Feb 7, 2014](#)

The amount of taxes due on this page are based on last year's property value assessments.  
For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103054
Parcel Number	0182508200017
Owners	ICC 64TH 1 LLC
Address	8200 S KELLERMAN CIR AURORA, CO 80016-7399
Situs Address	3214 W 64TH AVE
Legal	SECT,TWN,RNG:8-3-68 DESC: BEG 50 RODS W OF NE COR NW4 TH W 10 RODS TH S 40 RODS TH E 10 RODS TH N 40 RODS TO BEG EXC RD 2/386A

 **DUE DATES:**  
*First Half Payment Due March 1*  
*Second Half Payment Due June 15*  
**OR**  
*Full Payment Due April 30*

If paying or corresponding by mail, please use the following addresses:

PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869

CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601

**Inquiry**

As Of

Payment Type ☐ First ☒ Full

Total Due \$0.00

Value		
Area Id	Mill Levy	
495 - 495		122.4710000
	Actual	Assessed
RES IMPRV LAND - 1112	192,500	13,380
SINGLE FAMILY RES - 1212	320,892	22,300
Total Value	513,392	35,680
Taxes		\$4,369.76



**Print Forms**

- [Redemption Certificate](#)
- [Account Balance](#)
- [Statement Of Taxes Due](#)
- [Summary of Taxes Due](#)

**Account Links**

- [Account Summary](#)
- [Account Value](#)
- [Transaction Detail](#)
- [Verify My Email](#)

**External Links**

- [Change of Address Form](#)

**Payment Receipts**

- [Receipt from Jan 23, 2023](#)
- [Receipt from Sep 6, 2022](#)
- [Receipt from Apr 14, 2022](#)
- [Receipt from Feb 19, 2022](#)
- [Receipt from Mar 31, 2021](#)
- [Receipt from May 9, 2017](#)
- [Receipt from Jun 30, 2016](#)
- [Receipt from Jan 20, 2016](#)
- [Receipt from Mar 30, 2015](#)
- [Receipt from May 28, 2014](#)
- [Receipt from Nov 26, 2013](#)

The amount of taxes due on this page are based on last year's property value assessments.  
For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103062
Parcel Number	0182508200033
Owners	ICC 64TH 1 LLC
Address	3240 W 64TH AVE DENVER, CO 80221-2160
Situs Address	3240 W 64TH AVE
Legal	SECT,TWN,RNG:8-3-68 DESC: E2 OF THE FOL BEG AT A PT ON N LN OF SEC 8 60 RODS W OF NE COR NW4 TH W 20 RODS TH S 40 RODS TH E 20 RODS TH N 40 RODS TO BEG M/L EXC RDS 2/3224A

 **DUE DATES:**  
*First Half Payment Due March 1*  
*Second Half Payment Due June 15*  
**OR**  
*Full Payment Due April 30*

*If paying or corresponding by mail, please use the following addresses:*

**PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869**

**CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601**

**Inquiry**

As Of

Payment Type ☐ First ☒ Full

Total Due \$0.00

Value		
Area Id		Mill Levy
495 - 495		122.4710000
	Actual	Assessed
UNIM LND 1-4.99 AC - 0520	192,500	55,830
<b>Taxes</b>		<b>\$6,837.56</b>

Print Forms

[Redemption Certificate](#)  
[Account Balance](#)  
[Statement Of Taxes Due](#)  
[Summary of Taxes Due](#)

Account Links

[Account Summary](#)  
[Account Value](#)  
[Transaction Detail](#)  
[Verify My Email](#)

External Links

[Change of Address Form](#)

Payment Receipts

[Receipt from Jan 23, 2023](#)  
[Receipt from Nov 14, 2022](#)  
[Receipt from Dec 11, 2021](#)  
[Receipt from Apr 22, 2020](#)  
[Receipt from Oct 26, 2018](#)  
[Receipt from Sep 5, 2017](#)  
[Receipt from Aug 26, 2016](#)  
[Receipt from Sep 29, 2015](#)  
[Receipt from Aug 29, 2014](#)  
[Receipt from Aug 12, 2013](#)

The amount of taxes due on this page are based on last year's property value assessments.  
For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103092
Parcel Number	0182508202015
Owners	ICC 64TH I LLC
Address	8200 S KELLERMAN CIR AURORA, CO 80016-7399
Situs Address	3107 W 63RD AVE
Legal	SUB: CLEAR CREEK GARDENS SUBD DESC: PLOT 15



**DUE DATES:**  
**First Half Payment Due March 1**  
**Second Half Payment Due June 15**  
**OR**  
**Full Payment Due April 30**


*If paying or corresponding by mail, please use the following addresses:*

**PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869**

**CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601**

Inquiry

As Of



Payment Type

☐ First  
☒ Full

Total Due

\$0.00

Value		
Area Id	Mill Levy	
495 - 495	122.4710000	
	Actual	Assessed
VACANT RESIDENTIAL - 0100	70,000	20,300
Taxes		\$2,486.16



## **REZONING (Zoning Map Amendment)**

Application submittals must include all documents on this checklist as well as this page. Please use the reference guide (pg. 2) included in this packet for more information on each submittal item.

All applications shall be submitted electronically to [epermitcenter@adcogov.org](mailto:epermitcenter@adcogov.org). If the submittal is too large to email as an attachment, the application may be sent as an unlocked OneDrive link. Alternatively, the application may be delivered on a flash drive to the One-Stop Customer Service Center. All documents should be combined in a single PDF. Once a complete application has been received, fees will be invoiced and payable online at <https://permits.adcogov.org/CitizenAccess/>.

- ☒ 1. Development Application Form (pg. 4)
- ☐ 2. Application Fees (see table)
- ☒ 3. Written Explanation of the Project
- ☐ 4. Site Plan Showing Proposed Development, including:
  - a. Proposed Building Envelope
  - b. Parking Areas
  - c. Site Access
  - d. Landscape Areas
- ☐ 5. Trip Generation Letter
- ☒ 6. Preliminary Drainage Analysis
- ☐ 7. Neighborhood Meeting Summary
- ☒ 8. Proof of Ownership (warranty deed or title policy)
- ☒ 9. Proof of Water and Sewer Services
- ☒ 10. Legal Description
- ☒ 11. Certificate of Taxes Paid
- ☐ 12. Certificate of Notice to Mineral Estate Owners/and Lessees (pg. 6)
- ☐ 13. Certificate of Surface Development (pg. 7)

Applications Fees	Amount	Due
Application	\$1,600	After complete application received



### Application Type:

<input type="checkbox"/> Conceptual Review	<input type="checkbox"/> Preliminary PUD	<input type="checkbox"/> Temporary Use
<input type="checkbox"/> Subdivision, Preliminary	<input type="checkbox"/> Final PUD	<input type="checkbox"/> Variance
<input type="checkbox"/> Subdivision, Final	<input type="checkbox"/> Rezone	<input type="checkbox"/> Conditional Use
<input type="checkbox"/> Plat Correction/ Vacation	<input type="checkbox"/> Special Use	<input type="checkbox"/> Other: _____

**PROJECT NAME:**

### APPLICANT

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### OWNER

Name(s):  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---

### TECHNICAL REPRESENTATIVE (Consultant, Engineer, Surveyor, Architect, etc.)

Name:  Phone #:

Address:

City, State, Zip:

2nd Phone #:  Email:

---



## DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor  
Parcel Number

Existing  
Zoning:

Existing Land  
Use:

Proposed Land  
Use:

Have you attended a Conceptual Review? YES ☐ NO ☐

If Yes, please list PRE#:

I hereby certify that I am making this application as owner of the above described property or acting under the authority of the owner (attached authorization, if not owner). I am familiar with all pertinent requirements, procedures, and fees of the County. I understand that the Application Review Fee is non-refundable. All statements made on this form and additional application materials are true to the best of my knowledge and belief.

Name:

Date:

Owner's Printed Name

Name:

Owner's Signature

### Purpose

The purpose of this Rezone (Text Amendment) application is for the zoning to align with the proposed Comprehensive Plan Amendment. The intent is to transition away from R-2 and R-1-C zoning that only allows single family and two family homes per lot to R-4 that allows multifamily residential, trails, resident garden, and outdoor recreation areas. The plan includes 168 market-rate, for-rent, multifamily units in an area of the County that is experiencing growth.

The purpose of the Subdivision – Minor/Final application is to create one contiguous lot out of three lots to promote the harmonious redevelopment of the site while also conforming to the subdivision standards.

### Meets R-4 Standards

The application meets the R-4 zoning standards as shown in the table below.

R-4 Zoning Standards	Minimum	Proposed
Minimum lot size	2 acres	5.014 acres
Minimum density	14 du/ac	
Maximum density	35 du/ac	33.6 du/ac
Minimum lot width at the primary ROW	200'	330'
Minimum front setback	25'	84'
Minimum side setback	25'	66'
Minimum read setback	20'	109'
Minimum ROW setback from an arterial	50'	84'
Minimum ROW setback from a local street	25'	N/A
Minimum setback from a section line	100'	115'
Maximum height of a principal structure	70'	35'
Minimum Floor Area of Dwellings		
Efficiency unit	450' SF	480' SF
One bedroom	600' SF	635' SF
Two bedrooms	750' SF	964' SF
Three bedrooms	900' SF	1,022 SF

There are no accessory structures.

Uses	Area in SF	Lot Coverage
Total lot size	218,396	100.00%
Total leasable area	136,400	62.46%
Leasing center/clubhouse area	2,500	1.14%
Open space	61,332	28.08%
Active open space	18,924	8.66%
Active open space as a percent of open space	18,924	30.86%

### **Designed to be Compatible with Adjacent Uses**

The zoning and associated site plan are designed with compatibility in mind. Specific steps were taken to avoid adverse impacts, including the use of fencing, landscaping, buffers, transition areas and building heights.

For example, the edge treatment on the southern boundary includes a new 6' solid privacy fence in the correct location, about 20 pine and spruce trees to provide a visual and privacy barrier. At full maturity the trees will be 40' to 60'. The closest multifamily building is over 100' from the southern property line. In addition to landscaping, there is a trail, enclosed dog play area, and parking to buffer between uses.

Plans for the vacant lot facing 63<sup>rd</sup> Ave will offer a significant visual improvement over current conditions with landscaping and resident's garden.

Even with 30' of grade fall from north to south across the site, the southernmost buildings' ground floor is at a similar elevation as the single family homes to the south. The intentional building placement reduces visual impacts.

### **Creating a community, Not Just High Density Housing**

This application seeks to create a community, not just high density housing. Plans include:

- Clubhouse with on-site staff
- Co-working space
- Secure package and delivery room
- Fitness center
- Community kitchen
- Hospitality rooms
- Outdoor seating and fire pit
- Outdoor grills
- Grass play area
- Bike racks
- Decomposed granite 1/3 mile walking trail
- Incorporation of on-site rocks into gabion benches and walls
- Reuse of on-site boulders into trail features and moments
- Birdhouses through out the open spaces
- Enclosed dog play area
- Residents' garden with raised planter bed.





April 21, 2023

Layla Bajelan  
Adams County  
Community and Economic Development  
4430 S. Adams County Parkway  
1st Floor, Suite W2000A  
Brighton, CO 80601

VIA EMAIL: [epermitcenter@adcogov.org](mailto:epermitcenter@adcogov.org)

### **Concurrent Applications**

The applicant for 64th Avenue Apartments submits the following applications for your consideration:

- Comprehensive Plan Amendment
- Rezoning (Zone Map Amendment) from R-2 and R-1-C to R-4
- Subdivision-Minor/Final
- Subdivision Improvement Agreement
- Change In Use Permit

### **Location**

The applications encompass three lots on a combined 5.014 acres located in southwest Adams County on 64th Ave between Federal and Lowell Blvds. The addresses are 3214 & 3240 West 64th Avenue & 3107 W 63rd Avenue, Denver, CO 80221.

### **Community Overview**

The intent of the applications is to allow for the creation of 168 new market rate, for rent, multifamily units in four three-story buildings.

### **Submittal Items**

The applications include the following documents and plans:

- Development Application Forms for the five types of applications
- Written Explanation for Comprehensive Plan Amendment
- Written Explanation for Rezoning (Zone Map Amendment)

- Written Explanation for Subdivision-Minor/Final and Subdivision Improvement Agreement
- Written Explanation for Change In Use Permit
- Will Serve Letter from Crestview Water and Sanitation District
- Proof of Service from Xcel
- Certificate of Taxes Paid
- Title Commitments
- Proof of Ownership
- ALTA Survey
- Legal Description
- Traffic Impact Study
- Site Plan
- Parking Plan
- Landscape Plan
- Lighting Plan
- Architectural Plans
- Final Plat
- Construction/Engineering Design Plans
- Erosion and Sediment Control Plans
- Level 3 Storm Drainage Study

The following items will be forwarded to the county in the near-term:

- A neighborhood meeting is slated for Wednesday, May 17, 2023, at 6 PM at Tennyson Knolls Prep, 6330 Tennyson St, Arvada, CO 80003. Invitations will be mailed to ~ 375 residents who resided within 750 feet of the site no later than 10 days prior to the meeting. A summary of the meeting will be provided shortly thereafter.
- Research on identifying any severed mineral estate owners is underway by TCO Land Services and Compliance. This work is expected to be completed before the end of April. A Certificate of Notice to Mineral Estate Owners/and Lessees and Certificate of Surface Development will be completed at that time, if required.

### **Applicant**

The applicant team include the following professionals:

#### Owner and Applicant

ICC 64th 1 LLC  
 Jaideep Chadha  
 jaideep@innercirclecap.com  
 (484) 868-8383  
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 Littleton, Colorado 80120

#### Entitlements & Owner's Rep

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Golden, CO 80401

Civil Engineer

Raptor Civil Engineering  
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Transportation Engineer

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Fred Lantz  
fred@smrocha.com  
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Westminster, Colorado 80031

Surveyor

Power Surveying Company Inc.  
Richard B. Gabriel  
rgabriel@powersurveying.com  
303-702-1617  
6911 Broadway  
Denver, CO 80221

Thank you for your time and attention. Please let me know if you have any questions.



Nanci Kerr  
President



LOCATED IN THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH P.M.  
CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO  
ADDRESS: 3214-3240 W 64TH AVE, DENVER, CO

## SITE DATA TABLE

**PROJECT SUMMARY:**

THE BUILDINGS WILL BE TYPE V-B CONSTRUCTION. THE EXTERIOR MATERIALS WILL INCLUDE FIBER CEMENT SIDING WITH BRICK ACCENTS, VINYL WINDOWS, AND TPO ROOFING. THE EXTERIOR DESIGN WILL BE CONTEMPORARY WITH MODERN ACCENTS THROUGHOUT THE FACADE, SUCH AS METAL PANEL AND METAL SUNSHADES. THE EAST BUILDING ENTRIES WILL FEATURE A WALL MURAL BY A LOCAL ARTIST.

TOTAL LOT SIZE:	218,396 SF (5.014 AC)
DENSITY:	33.5 DU / AC
RESIDENTIAL BLDG. SF:	53,352 SF (24.4% LOT COVERAGE)
LEASING OFFICE SF:	2,500 SF (1.1% LOT COVERAGE)
ACTIVE OPEN/GREEN SPACE:	65,303 SF REQUIRED (30%) 60,528 SF PROVIDED - GREEN SPACE (28%) 11,853 SF PROVIDED - SIDEWALKS / WALKWAYS (5%)
AMENITY SPACE:	11,939 SF (5%)

## SITE LEGEND

	PROPERTY LINE
	ADJACENT PROPERTY LINE
	LOT DIVISION LINE
	SITE SETBACKS
	BUILDING OUTLINE
	SURVEY POINT
	WATER VALVE
	FIRE HYDRANT
	WATER METER
	SANITARY SEWER MANHOLE
	OVERHEAD UTILITY SERVICE
	SANITARY SEWER LINE
	WATER SERVICE LINE
	STORM SEWER
	GAS SERVICE LINE
	FENCE (WOOD)
	FENCE (CHAINLINK)
	VEHICULAR CIRCULATION
	UTILITY POLE



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3214-3240 W 64TH AVE  
CHANGE IN USE  
CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO

22-127

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[illegible]

## SITE PLAN

SHEET 2 OF 17



# TRAFFIC IMPACT STUDY

For

**64<sup>th</sup> Avenue Apartments  
Adams County, Colorado**

February 2023

Prepared for:

ICC 64<sup>th</sup> 1 LLC  
8200 S Kellerman Circle  
Aurora, Colorado 80016

Prepared by:



**SM ROCHA, LLC**  
TRAFFIC AND TRANSPORTATION CONSULTANTS

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Colorado Springs, Colorado 80903  
(719) 203-6639

Project Engineer:  
Brandon Wilson, EIT  
Megan Bock, EIT

Engineer in Responsible Charge:  
Fred Lantz, PE



23-011814

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APPENDIX A	TRAFFIC COUNT DATA
APPENDIX B	SIGNAL TIMING INFORMATION
APPENDIX C	LEVEL OF SERVICE DEFINITIONS
APPENDIX D	CAPACITY WORKSHEETS

## I. Introduction

### Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled 64<sup>th</sup> Avenue Apartments.

This proposed development consists of a multifamily residential community. The development is located near the southeast corner of W 64<sup>th</sup> Avenue and Irving Street in Adams County, Colorado.

### Study Area Boundaries

The study area to be examined in this analysis encompasses the W 64<sup>th</sup> Avenue intersections with Federal Boulevard and Lowell Boulevard as well as the proposed site accesses.

Figure 1 illustrates location of the site and study intersections.

### Site Description

Land for the development within the eastern lot is occupied by a single-family residential use, while the western lot is vacant. However, aerial imagery indicates the western lot may be currently used as outdoor storage from adjacent lots. The proposed development area is surrounded by a mix of residential and commercial land uses.

The proposed development is understood to entail the new construction of a four-building multifamily residential community supporting a total of 168 dwelling units with associated amenities.

Proposed access to the development is provided via two full-movement accesses onto W 64<sup>th</sup> Avenue (referred to as Access A and Access B).

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2025.

General site and access locations are shown on Figure 1.

A conceptual site plan, as prepared by Brown Collective Architecture, is shown on Figure 2. This plan is provided for illustrative purposes only.



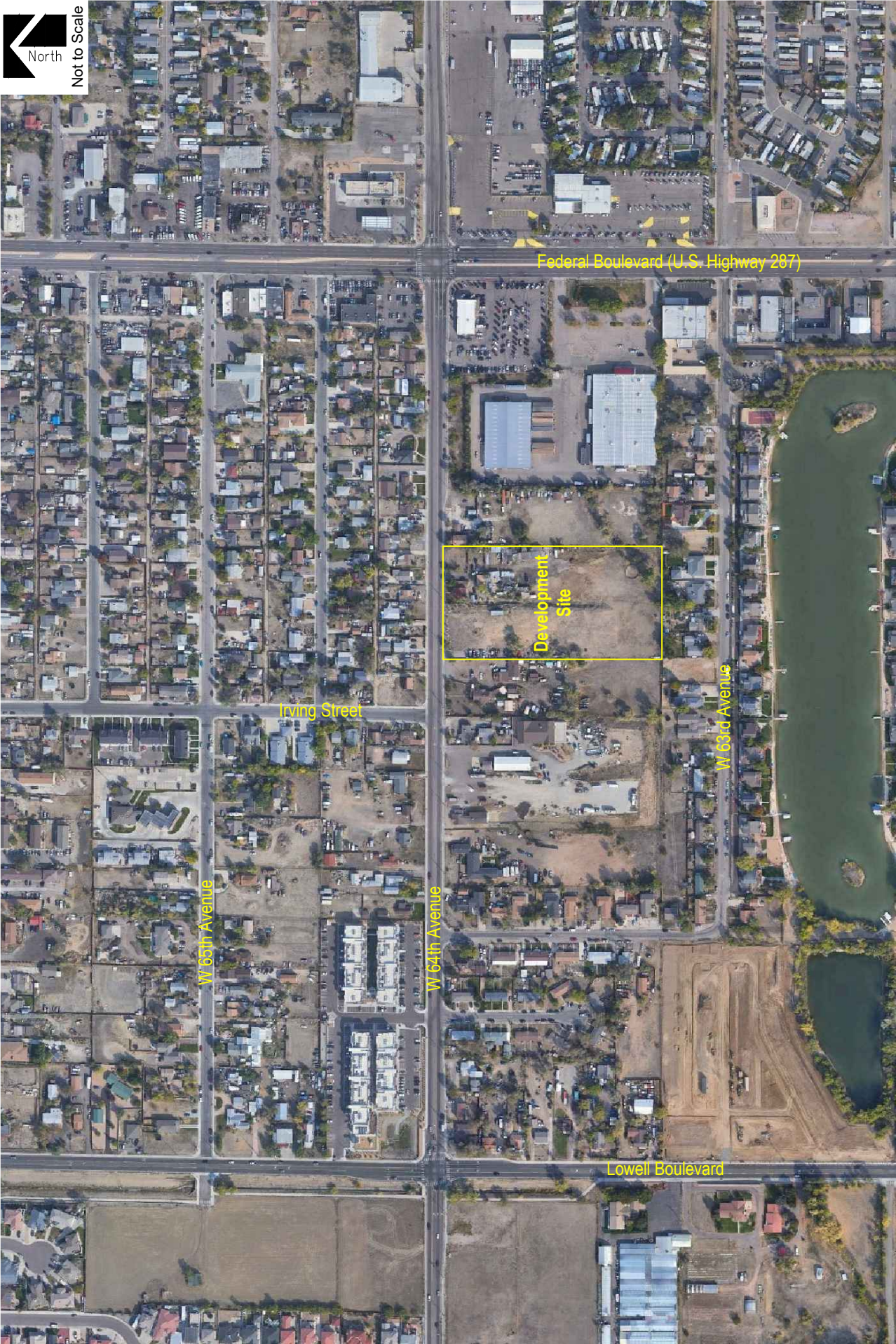
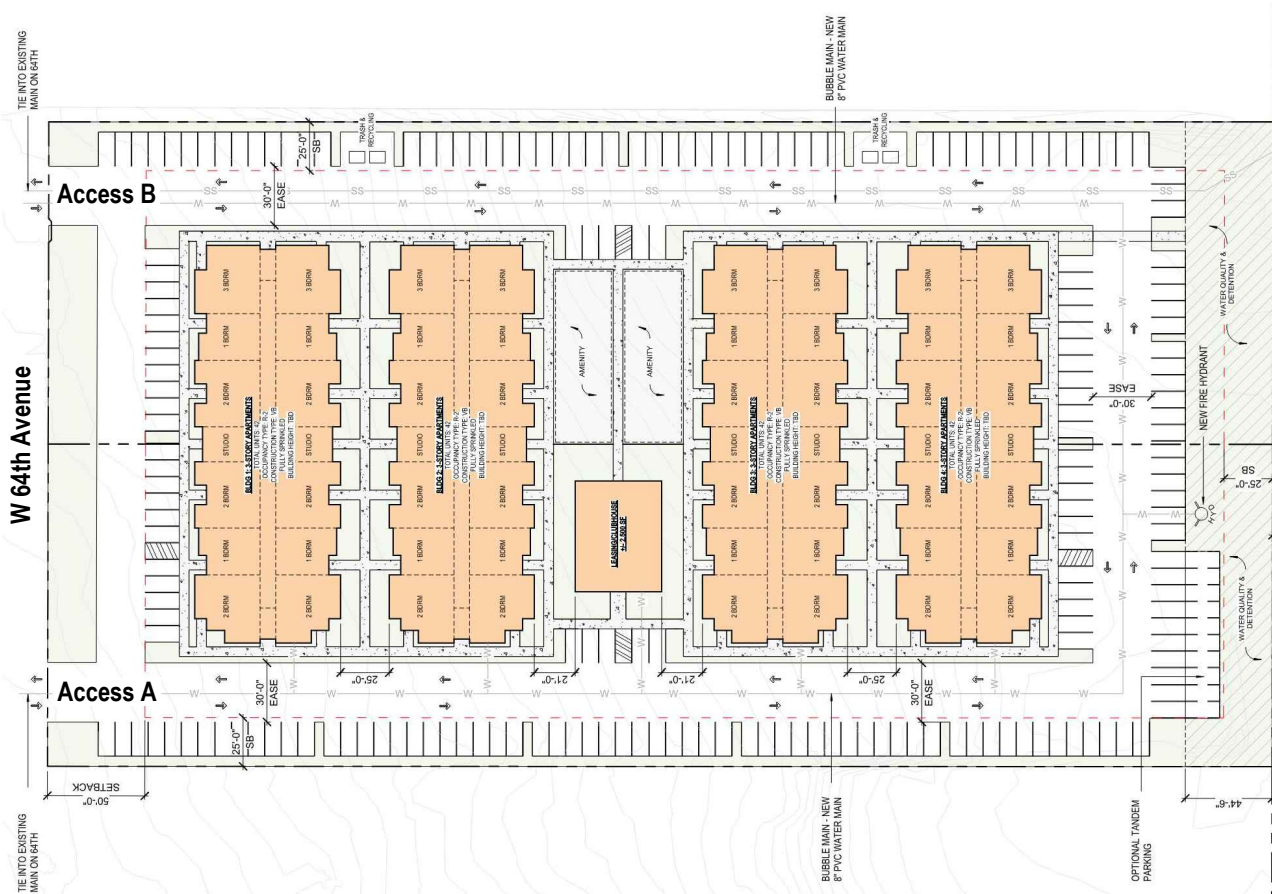


Figure 1  
SITE LOCATION







## Existing and Committed Surface Transportation Network

Within the study area, W 64<sup>th</sup> Avenue is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include Lowell Boulevard and Federal Boulevard. A brief description of each roadway, based on the County's Transportation Master Plan<sup>1</sup>, is provided below:

W 64<sup>th</sup> Avenue is an east-west collector roadway having two through lanes (one lane in each direction) with exclusive turn lanes at the intersections within the study area. W 64<sup>th</sup> Avenue provides a posted speed limit of 30 MPH.

Lowell Boulevard is a north-south collector roadway having two through lanes (one lane in each direction) with exclusive turn lanes at the intersection within the study area. Lowell Boulevard provides a posted speed limit of 30 MPH.

Federal Boulevard is a north-south principal arterial roadway having six through lanes (three lanes in each direction) with a combination of shared and exclusive turn lanes at the intersection within the study area. The Colorado Department of Transportation (CDOT) categorizes the adjacent segment of Federal Boulevard (U.S. Highway 287) as a Non-Rural Principal Highway (NR-A) and provides a posted speed limit of 45 MPH.

The study intersections of W 64<sup>th</sup> Avenue with Lowell Boulevard and Federal Boulevard are signalized. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

No regional or specific improvements for the above-described roadways are known to be planned or committed at this time. The study area roadways appear to be built to their ultimate cross-sections.

---

<sup>1</sup> Advancing Adams Transportation Master Plan, Fehr & Peers, April 2022.

## II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of W 64<sup>th</sup> Avenue with Federal Boulevard and Lowell Boulevard. Average daily traffic (ADT) volumes were collected over a 24-hour period on W 64<sup>th</sup> Avenue. Counts were collected on Wednesday, January 25, 2023, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

Existing volumes and intersection geometry are shown on Figure 3. Traffic count data is included for reference in Appendix A.

Existing signal timing parameters for W 64<sup>th</sup> Avenue and Federal Boulevard were obtained from CDOT and used throughout this study to the best extent possible in order to remain consistent with existing signal coordination plans. Signal timing information received is included for reference in Appendix B.

Existing signal timing parameters for W 64<sup>th</sup> Avenue and Lowell Boulevard were assumed based on the existing signal head configuration and allowable movements, and pursuant to typical signal timing data described within the County's Development Standards & Regulations<sup>2</sup>. Timings were used throughout this study to the best extent possible in order to remain consistent with typical County signal coordination plans.

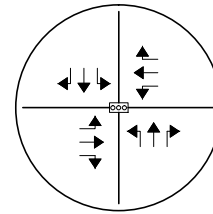
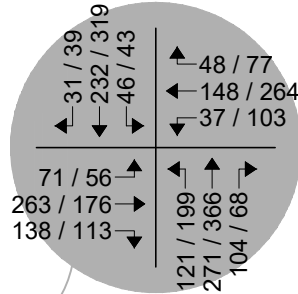
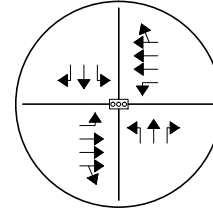
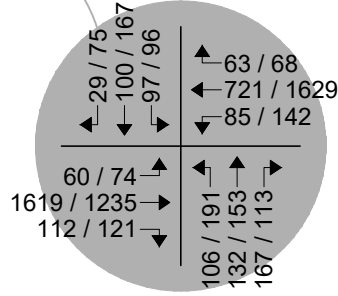
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<sup>2</sup> Adams County Development Standards and Regulations, Adams County, July 2021.

Federal Boulevard



(10,150)



Lowell Boulevard

W 64th Avenue

**LEGEND**

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 3**  
**EXISTING TRAFFIC**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



**SM ROCHA, LLC**  
Traffic and Transportation Consultants

### Peak Hour Intersection Levels of Service – Existing Traffic

The Signalized and Unsignalized Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM), 6<sup>th</sup> Edition, by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing and future traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix C and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix D.

**Table 1 – Intersection Capacity Analysis Summary – Existing Traffic**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.2)	C (20.9)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (20.9)	C (26.4)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)

### Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS C during both peak traffic hours.

### **III. Future Traffic Conditions Without Proposed Development**

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Years 2025 and 2043, a compounded annual growth rate was determined using historical traffic data for the surrounding area provided by CDOT's Online Transportation Information System (OTIS) along the adjacent segment of Federal Boulevard (U.S. Highway 287), which anticipates a 20-year growth rate of less than one percent. Therefore, in order to provide for a conservative analysis, a growth rate of one percent was applied to existing traffic volumes. This annual growth rate provides for a conservative analysis and is assumed to account for regional growth projections and the level of in-fill development expected within the area.

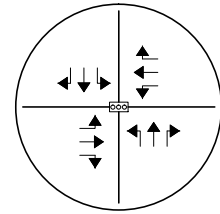
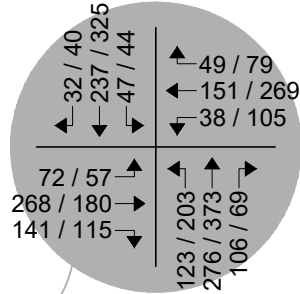
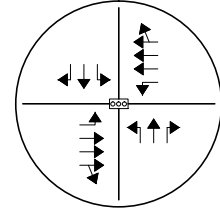
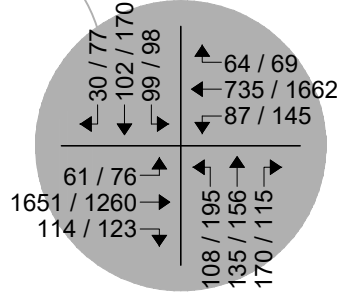
Pursuant to the non-committed area roadway improvements discussed in Section I, Year 2025 and Year 2043 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. This assumption provides for a conservative analysis. Year 2043 assumes existing signal timing parameters for the W 64<sup>th</sup> Avenue intersections with Lowell Boulevard and Federal Boulevard with optimized intersection splits in effort to better long-term intersection performance.

Projected background traffic volumes and intersection geometry for Years 2025 and 2043 are shown on Figure 4 and Figure 5, respectively.

Federal Boulevard



(10,355)



Lowell Boulevard

W 64th Avenue

**LEGEND**

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 4**  
**BACKGROUND TRAFFIC - YEAR 2025**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



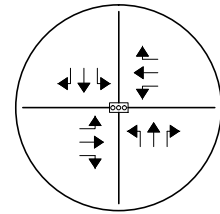
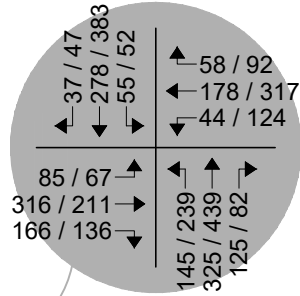
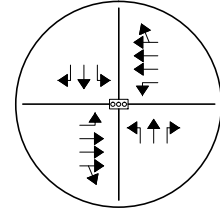
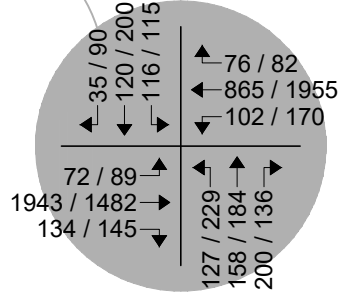
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Traffic and Transportation Consultants



Federal Boulevard



(12,180)



Lowell Boulevard

W 64th Avenue

**LEGEND**

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 5**  
**BACKGROUND TRAFFIC - YEAR 2043**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



**SM ROCHA, LLC**  
Traffic and Transportation Consultants

### Peak Hour Intersection Levels of Service – Background Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2025 are listed in Table 2. Year 2043 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix C. Intersection capacity worksheets are provided in Appendix D.

**Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2025**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.2)	C (21.4)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (21.4)	C (27.1)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)

### Background Traffic Analysis Results – Year 2025

Year 2025 background traffic analysis indicates that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the AM peak traffic hour and LOS C during the PM peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

**Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2043**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.5)	C (24.0)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (25.2)	C (33.4)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)

### Background Traffic Analysis Results – Year 2043

By Year 2043 and without the proposed development, the study intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue experiences LOS B operations during the AM peak traffic hour and LOS C operations during the PM peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

## IV. Proposed Project Traffic

### Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11<sup>th</sup> Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use code 220 (Multifamily Housing (Low-Rise)) was used for estimating trip generation because of its conservative rates and best fit to the proposed land use description.

Trip generation rates used in this study are presented in Table 4.

**Table 4 – Trip Generation Rates**

ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

**Table 5 – Trip Generation Summary**

ITE CODE	LAND USE	SIZE		TOTAL TRIPS GENERATED						
				24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
					ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	168 DU		1,132	16	51	67	54	32	86
<i>Total:</i>				1,132	16	51	67	54	32	86

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 1,132 daily vehicle trips with 67 of those occurring during the morning peak hour and 86 during the afternoon peak hour.

### **Adjustments to Trip Generation Rates**

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

### **Trip Distribution**

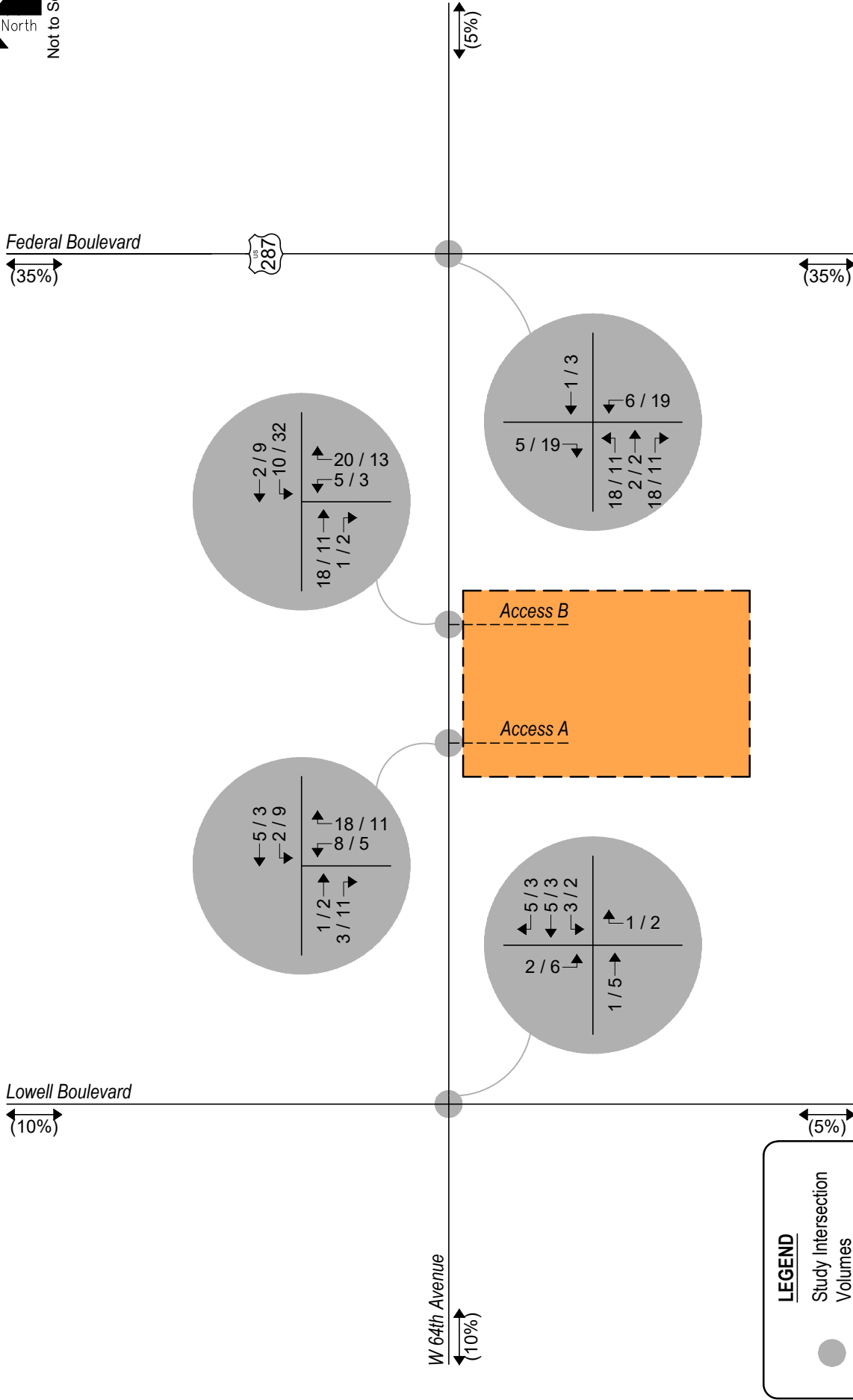
The overall directional distribution of site-generated traffic was determined based on the location of the development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and in reference to historical traffic count data provided by the Denver Regional Council of Governments (DRCOG).

Overall trip distribution patterns for the development are shown on Figure 6.

### **Trip Assignment**

Trip assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.



## **V. Future Traffic Conditions With Proposed Developments**

Total traffic is the traffic projected to be on area roadways with consideration of the proposed development. Total traffic includes background traffic projections for Years 2025 and 2043 with consideration of site-generated traffic. For analysis purposes, it was assumed that development construction would be completed by end of Year 2025.

Pursuant to area roadway improvement discussions provided in Section III, Year 2025 and Year 2043 total traffic conditions assume no roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

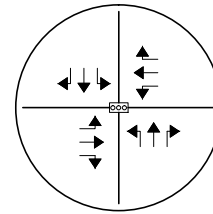
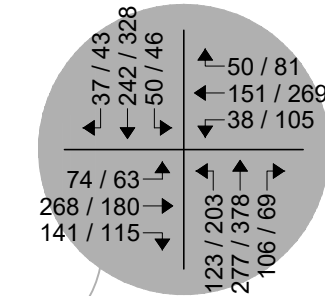
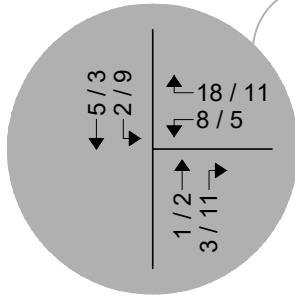
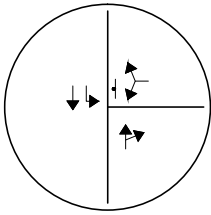
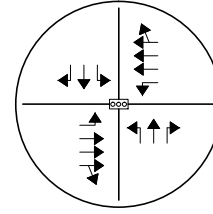
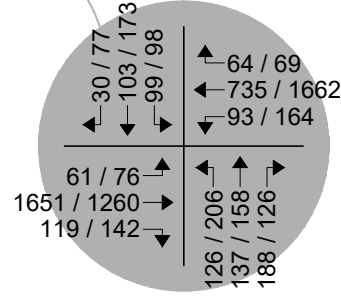
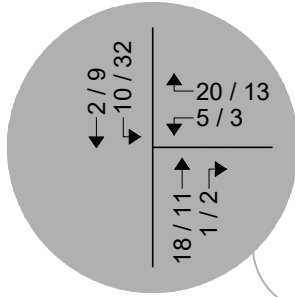
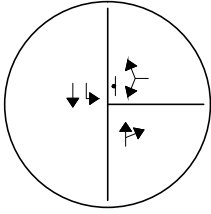
Projected Year 2025 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2043.

Federal Boulevard



(11,205)



Lowell Boulevard

W 64th Avenue

**LEGEND**

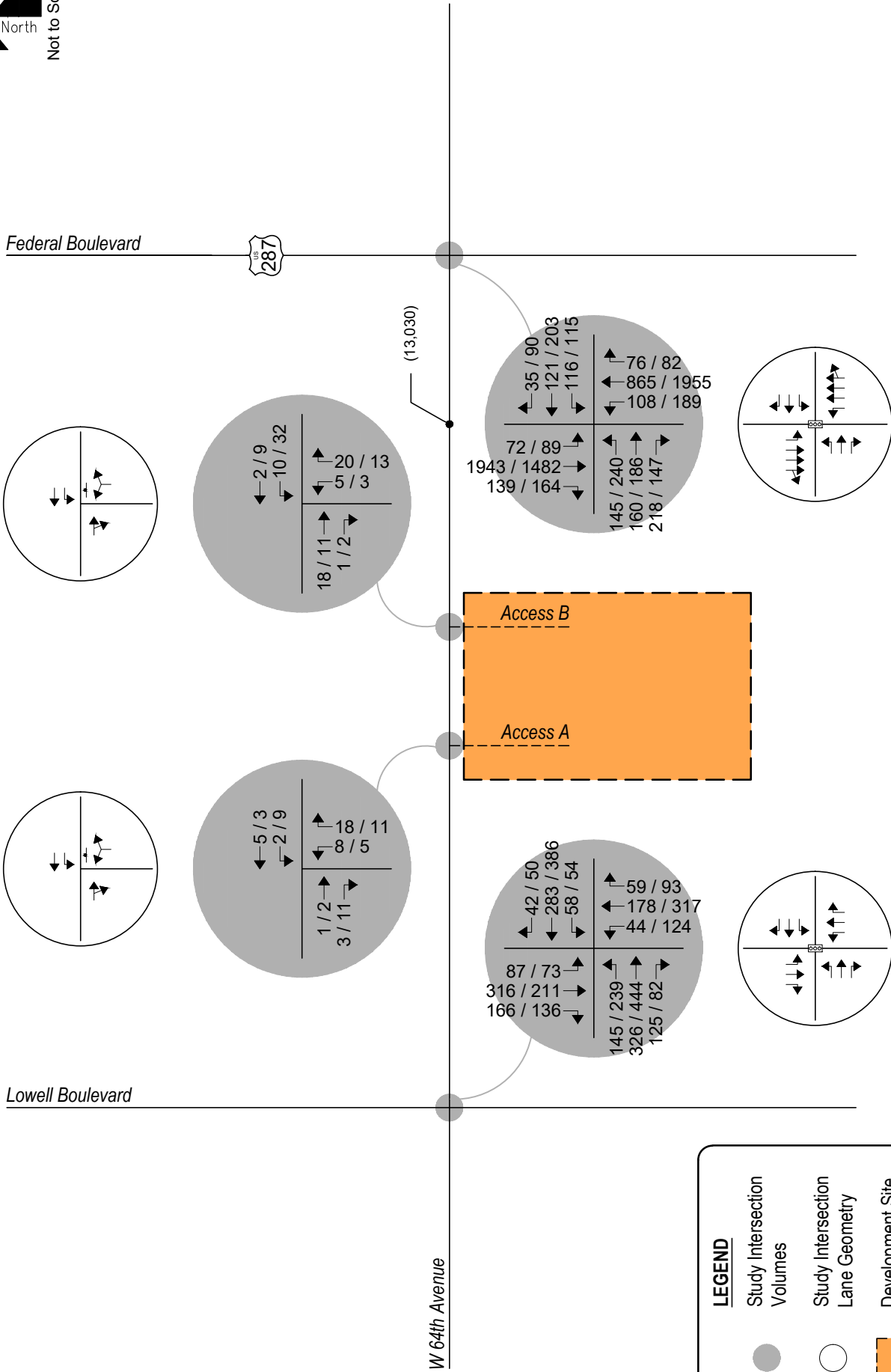
- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

**Figure 7**  
**TOTAL TRAFFIC - YEAR 2025**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic

**64TH AVENUE APARTMENTS**  
Traffic Impact Study



**SM ROCHA, LLC**  
Traffic and Transportation Consultants



**Figure 8**  
**TOTAL TRAFFIC - YEAR 2043**  
Volumes & Intersection Geometry  
AM / PM Peak Hour  
(ADT) : Average Daily Traffic



## VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the latest HCM and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

### Peak Hour Intersection Levels of Service – Total Traffic

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2025 and 2043 are summarized in Table 6 and Table 7, respectively.

Definitions of levels of service are given in Appendix C. Intersection capacity worksheets are provided in Appendix D.

**Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2025**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64th Avenue (Signalized)	B (18.2)	C (21.4)
Federal Boulevard / W 64th Avenue (Signalized)	C (22.3)	C (28.0)
Access A / W 64th Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A
Access B / W 64th Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)  
Stop-Controlled Intersection: Level of Service

**Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2043**

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Lowell Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	B (18.5)	C (24.1)
Federal Boulevard / W 64 <sup>th</sup> Avenue (Signalized)	C (26.2)	C (34.6)
Access A / W 64 <sup>th</sup> Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A
Access B / W 64 <sup>th</sup> Avenue (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)  
 Stop-Controlled Intersection: Level of Service

### Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2043 and upon development build-out, the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue shows an overall LOS B operation during the morning peak traffic hour and LOS C operation during the afternoon peak traffic hour.

The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

The stop-controlled intersections of W 64<sup>th</sup> Avenue with Access A and Access B are projected to have turning movement operations at LOS A for both peak traffic hours.

Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersections. These intersection operations are similar to background conditions.

## VII. Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled W 64<sup>th</sup> Avenue Apartments. This proposed residential development consists of an apartment community. The development is located near the southeast corner of W 64<sup>th</sup> Avenue and Irving Street in Adams County, Colorado.

The study area examined in this analysis encompassed the W 64<sup>th</sup> Avenue intersections with Federal Boulevard and Lowell Boulevard as well as the proposed site accesses.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2025 and Year 2043 background traffic conditions, and Year 2025 and Year 2043 total traffic conditions.

Analysis of existing traffic conditions indicates that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour. The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS C during both peak traffic hours.

Without the proposed development, Year 2025 background operational analysis shows that the signalized intersection of Lowell Boulevard with W 64<sup>th</sup> Avenue has overall operations at LOS B during the AM peak traffic hour and LOS C during the PM peak traffic hour. The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

By Year 2043 and without the proposed development, the Lowell Boulevard and W 64<sup>th</sup> Avenue intersection has overall projected operations at LOS B for the morning peak traffic hour and LOS C during the afternoon peak traffic hour. The signalized intersection of Federal Boulevard with W 64<sup>th</sup> Avenue projects overall operations at LOS C during both peak traffic hours.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2043 background traffic conditions. Proposed site accesses have long-term operations at LOS A during peak traffic periods and upon build-out.

## **APPENDIX A**

### **Traffic Count Data**



(303) 216-2439  
www.alltrafficdata.net

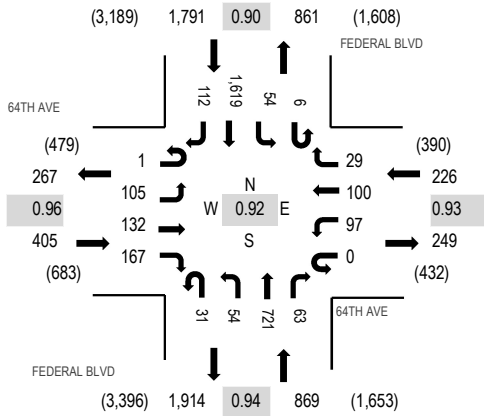
**Location:** 1 FEDERAL BLVD & 64TH AVE AM

**Date:** Wednesday, January 25, 2023

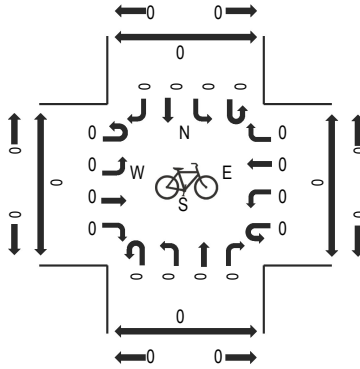
**Peak Hour:** 07:15 AM - 08:15 AM

**Peak 15-Minutes:** 07:30 AM - 07:45 AM

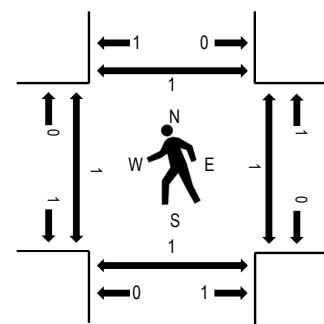
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				FEDERAL BLVD Northbound				FEDERAL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	15	29	29	0	17	21	3	2	14	117	9	1	5	346	12	620	3,151	0	0	0	0
7:15 AM	0	23	27	47	0	26	25	3	2	9	169	14	1	10	407	10	773	3,291	0	0	0	0
7:30 AM	1	26	38	38	0	22	30	9	12	14	196	17	3	12	442	39	899	3,258	0	0	0	0
7:45 AM	0	25	43	38	0	26	22	10	9	21	199	13	0	19	396	38	859	2,997	0	1	0	0
8:00 AM	0	31	24	44	0	23	23	7	8	10	157	19	2	13	374	25	760	2,764	1	0	1	1
8:15 AM	0	13	14	29	0	15	17	7	7	16	208	14	3	12	357	28	740		0	0	0	0
8:30 AM	0	17	19	34	0	14	17	4	4	15	160	19	2	12	300	21	638		0	0	0	1
8:45 AM	0	19	32	28	0	23	18	8	6	19	166	8	4	10	271	14	626		0	0	0	0
Count Total	1	169	226	287	0	166	173	51	50	118	1,372	113	16	93	2,893	187	5,915		1	1	1	2
Peak Hour	1	105	132	167	0	97	100	29	31	54	721	63	6	54	1,619	112	3,291		1	1	1	1





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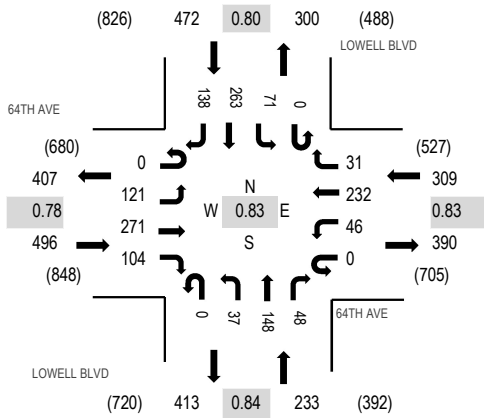
**Location:** 2 LOWELL BLVD & 64TH AVE AM

**Date:** Wednesday, January 25, 2023

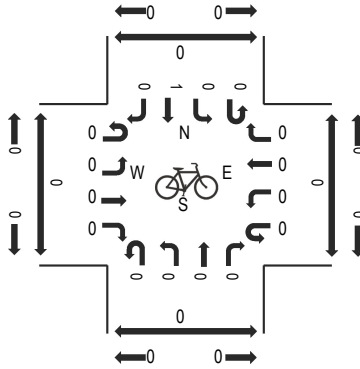
**Peak Hour:** 07:30 AM - 08:30 AM

**Peak 15-Minutes:** 07:45 AM - 08:00 AM

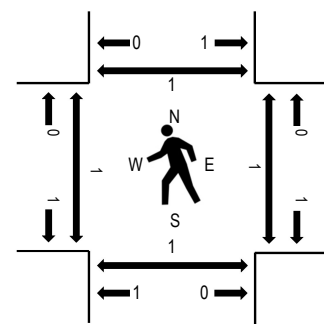
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				LOWELL BLVD Northbound				LOWELL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	15	55	20	0	13	45	2	0	2	16	11	0	15	47	26	267	1,405	0	1	0	0
7:15 AM	0	20	57	17	0	14	35	7	0	7	25	9	0	12	68	27	298	1,477	0	0	0	0
7:30 AM	0	27	77	21	0	11	58	7	0	14	40	15	0	13	69	32	384	1,510	0	0	0	0
7:45 AM	0	36	86	36	0	17	66	10	0	8	38	10	0	21	74	54	456	1,405	0	0	0	0
8:00 AM	0	33	56	29	0	11	49	7	0	6	30	13	0	17	58	30	339	1,188	0	1	0	1
8:15 AM	0	25	52	18	0	7	59	7	0	9	40	10	0	20	62	22	331		1	0	1	0
8:30 AM	0	20	50	18	0	13	26	10	0	6	27	10	0	13	46	40	279		0	0	0	0
8:45 AM	0	12	54	14	0	9	36	8	0	5	26	15	0	14	28	18	239		0	0	0	0
Count Total	0	188	487	173	0	95	374	58	0	57	242	93	0	125	452	249	2,593		1	2	1	1
Peak Hour	0	121	271	104	0	46	232	31	0	37	148	48	0	71	263	138	1,510		1	1	1	1



(303) 216-2439  
www.alltrafficdata.net

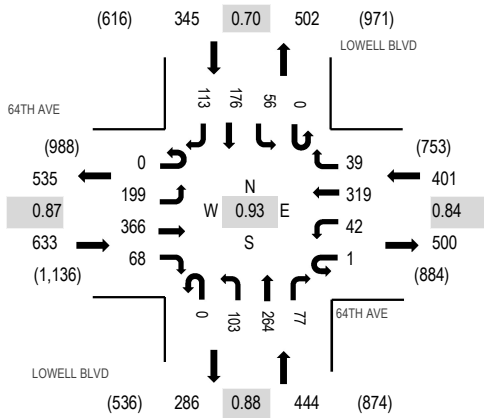
**Location:** 2 LOWELL BLVD & 64TH AVE PM

**Date:** Wednesday, January 25, 2023

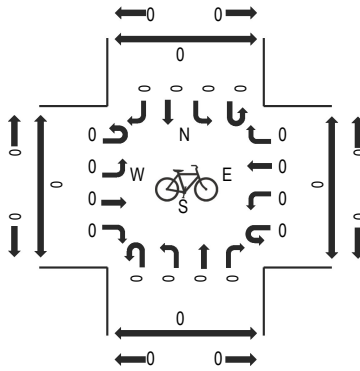
**Peak Hour:** 04:00 PM - 05:00 PM

**Peak 15-Minutes:** 04:00 PM - 04:15 PM

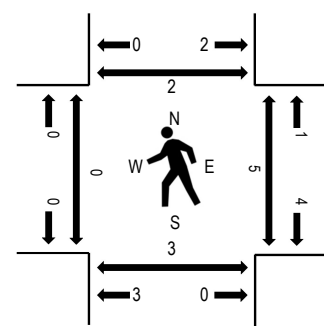
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	64TH AVE Eastbound				64TH AVE Westbound				LOWELL BLVD Northbound				LOWELL BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	46	104	19	0	14	73	6	0	23	69	15	0	21	57	45	492	1,823	0	0	0	2
4:15 PM	0	48	69	17	1	10	98	12	0	24	54	19	0	10	35	29	426	1,732	0	4	3	0
4:30 PM	0	58	107	17	0	10	71	12	0	25	69	17	0	13	37	22	458	1,746	0	1	0	0
4:45 PM	0	47	86	15	0	8	77	9	0	31	72	26	0	12	47	17	447	1,658	0	0	0	0
5:00 PM	0	33	87	16	0	11	72	16	0	22	55	16	0	8	38	27	401	1,556	0	0	0	0
5:15 PM	0	50	80	15	0	9	65	17	0	33	83	16	0	6	43	23	440		0	0	0	0
5:30 PM	0	33	62	15	0	8	68	8	0	19	76	15	0	7	32	27	370		0	0	0	0
5:45 PM	0	26	69	17	0	8	64	6	0	13	66	16	0	2	38	20	345		0	0	0	0
Count Total	0	341	664	131	1	78	588	86	0	190	544	140	0	79	327	210	3,379		0	5	3	2
Peak Hour	0	199	366	68	1	42	319	39	0	103	264	77	0	56	176	113	1,823		0	5	3	2



Start Time	25-Jan-23 Wed	EB	WB	Total
12:00 AM		47	59	106
01:00		43	45	88
02:00		37	39	76
03:00		18	32	50
04:00		68	44	112
05:00		110	132	242
06:00		252	156	408
07:00		379	256	635
08:00		304	223	527
09:00		301	205	506
10:00		236	241	477
11:00		221	241	462
12:00 PM		241	272	513
01:00		248	317	565
02:00		292	338	630
03:00		330	386	716
04:00		457	421	878
05:00		383	402	785
06:00		334	288	622
07:00		281	273	554
08:00		231	238	469
09:00		150	197	347
10:00		111	122	233
11:00		72	77	149
Total		5146	5004	10150
Percent		50.7%	49.3%	
AM Peak	-	07:00	07:00	-
Vol.	-	379	256	-
PM Peak	-	16:00	16:00	-
Vol.	-	457	421	-
Grand Total		5146	5004	10150
Percent		50.7%	49.3%	
ADT		ADT 10,150	ADT 10,150	

## **APPENDIX B**

### **Signal Timing Information**

CDOT

Administration

MaxTime Timing Shee

Federal and 64th Ave



Unit Information	
Controller ID	0
Main St.	SH 287
Side St.	64th Ave

Adapter	IP Address	Subnet Mask	Default Gateway	ARP	DHCP
1	10.11.79.214	255.255.255.0	10.11.79.1	Disable	
2	10.20.70.51	255.255.255.0	0.0.0.0	Disable	

Serial Ports:

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux_P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Flash	0	Auto Ped Clr	Enable	Red Revert	4.0	Backup Time	600	Ext Mode	Enable
All Red Exit	6	Grn Flash Freq.	60	Yel Flash Freq.	60	MCE Enable	Enable	Free Seq.	1
MCE Seq.	1	Start Yellow	0.0	Start Red	0.0	Start Clear Hold	6		

Phase Parameters

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Walk Time	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	28	0	32	0	27	0	30	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	3	5	3	4	3	5	3	4	0	0	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	4.5	5.0	1.5	1.5	1.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	12	30	30	22	22	30	10	22	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	8	20	8	15	10	20	8	15	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	1.5	5.0	1.5	1.5	1.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr																				
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Walk Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr																				
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Options**

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Enable	X	X	X	X	X	X	X	X												
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II					X	X	X													
Non Lock Mem	X	X	X		X	X	X													
Min Veh Recall																				
Max Veh Recall		X				X														
Ped Recall																				
Soft Veh Recall																				
Dual Entry				X				X												
Sim Gap Dis																				
Guaranteed Pass																				
Act Rest Walk																				
Cond Service																				
Add Initial																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Enable																				
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II																				
Non Lock Mem																				
Min Veh Recall																				
Max Veh Recall																				
Ped Recall																				
Soft Veh Recall																				
Dual Entry																				
Sim Gap Dis																				
Guaranteed Pass																				

Act Rest Walk																			
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Cond Service																			
Add Initial																			

**Additional Phase Options**

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

**Phase Configuration**

Ph.	Startup	Ring	Concurrent	No Served Phases	Startup Mir	Description
1	Phase Not On	1	5,6		0	SBLT
2	Green No Walk	1	5,6		0	NBT
3	Phase Not On	1	7,8		0	
4	Phase Not On	1	7,8		0	EBT
5	Phase Not On	2	1,2		0	NBLT
6	Green No Walk	2	1,2		0	SBT
7	Phase Not On	2	3,4		0	
8	Phase Not On	2	3,4		0	WBT
9	None	0			0	
10	None	0			0	
11	None	0			0	
12	None	0			0	
13	None	0			0	
14	None	0			0	
15	None	0			0	
16	None	0			0	
17	None	0			0	

18	None	0			0	
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19	None	0			0	
20	None	0			0	
21	None	0			0	
22	None	0			0	
23	None	0			0	
24	None	0			0	
25	None	0			0	
26	None	0			0	
27	None	0			0	
28	None	0			0	
29	None	0			0	
30	None	0			0	
31	None	0			0	
32	None	0			0	
33	None	0			0	
34	None	0			0	
35	None	0			0	
36	None	0			0	
37	None	0			0	
38	None	0			0	
39	None	0			0	
40	None	0			0	

Sequence Configuration

Sequence 1

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 2

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 3

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 4

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 5

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 6

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 7

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 8

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 9

Sequence 10

Sequence 11

Sequence 12

Ring	Phases
------	--------

Ring	Phases
------	--------

Ring	Phases
------	--------

Ring	Phases
------	--------

1	1,2,a,3,4,b	1	2,1,a,3,4,b	1	1,2,a,3,4,b	1	1,2,a,3,4,b
2	5,6,a,8,7,b	2	5,6,a,8,7,b	2	5,6,a,7,8,b	2	5,6,a,7,8,b
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	
7		7		7		7	
8		8		8		8	
9		9		9		9	
10		10		10		10	
11		11		11		11	
12		12		12		12	
13		13		13		13	
14		14		14		14	
15		15		15		15	
16		16		16		16	

Sequence 13

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 14

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 15

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 16

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 13

11	
12	
13	
14	
15	
16	

Sequence 14

11	
12	
13	
14	
15	
16	

Sequence 15

11	
12	
13	
14	
15	
16	

Sequence 16

11	
12	
13	
14	
15	
16	

Sequence 17

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 18

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 19

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 20

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Vehicle Detection Parameters

Det.	Call Phs	Call Ovl	Additional Call Phase	Switch Phase	Delay	Extend	Queue Limit	No Activity	Max Presence	Erratic Counts	Failed Time	Description
1	1	0		0	0.0	0.0	0	0	0	0	0	
2	2	0		0	0.0	0.0	0	0	0	0	0	
3	2	0		0	0.0	0.0	0	0	0	0	0	

4	2	0		0	0,0	0,0	0	0	0	0	0	
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5	2	0		0	0,0	0,0	0	0	0	0	0	
6	2	0		0	0,0	0,0	0	0	0	0	0	
7	3	0		0	0,0	0,0	0	0	0	0	0	
8	4	0		0	0,0	0,0	0	0	0	0	0	
9	4	0		0	0,0	0,0	0	0	0	0	0	
10	4	0		0	0,0	0,0	0	0	0	0	0	
11	4	0		0	0,0	0,0	0	0	0	0	0	
12	4	0		0	0,0	0,0	0	0	0	0	0	
13	1	0		0	0,0	0,0	0	0	0	0	0	
14	3	0		0	0,0	0,0	0	0	0	0	0	
15	5	0		0	0,0	0,0	0	0	0	0	0	
16	6	0		0	0,0	0,0	0	0	0	0	0	
17	6	0		0	0,0	0,0	0	0	0	0	0	
18	6	0		0	0,0	0,0	0	0	0	0	0	
19	6	0		0	0,0	0,0	0	0	0	0	0	
20	6	0		0	0,0	0,0	0	0	0	0	0	
21	7	0		0	0,0	0,0	0	0	0	0	0	
22	8	0		0	0,0	0,0	0	0	0	0	0	
23	8	0		0	0,0	0,0	0	0	0	0	0	
24	8	0		0	0,0	0,0	0	0	0	0	0	
25	8	0		0	0,0	0,0	0	0	0	0	0	
26	8	0		0	0,0	0,0	0	0	0	0	0	
27	5	0		0	0,0	0,0	0	0	0	0	0	
28	7	0		0	0,0	0,0	0	0	0	0	0	
29	0	0		0	0,0	0,0	0	0	0	0	0	
30	0	0		0	0,0	0,0	0	0	0	0	0	
31	0	0		0	0,0	0,0	0	0	0	0	0	
32	0	0		0	0,0	0,0	0	0	0	0	0	
33	0	0		0	0,0	0,0	0	0	0	0	0	
34	0	0		0	0,0	0,0	0	0	0	0	0	
35	0	0		0	0,0	0,0	0	0	0	0	0	
36	0	0		0	0,0	0,0	0	0	0	0	0	
37	0	0		0	0,0	0,0	0	0	0	0	0	
38	0	0		0	0,0	0,0	0	0	0	0	0	
39	0	0		0	0,0	0,0	0	0	0	0	0	
40	0	0		0	0,0	0,0	0	0	0	0	0	
41	0	0		0	0,0	0,0	0	0	0	0	0	
42	0	0		0	0,0	0,0	0	0	0	0	0	
43	0	0		0	0,0	0,0	0	0	0	0	0	
44	0	0		0	0,0	0,0	0	0	0	0	0	
45	0	0		0	0,0	0,0	0	0	0	0	0	
46	0	0		0	0,0	0,0	0	0	0	0	0	
47	0	0		0	0,0	0,0	0	0	0	0	0	
48	0	0		0	0,0	0,0	0	0	0	0	0	
49	0	0		0	0,0	0,0	0	0	0	0	0	
50	0	0		0	0,0	0,0	0	0	0	0	0	
51	0	0		0	0,0	0,0	0	0	0	0	0	
52	0	0		0	0,0	0,0	0	0	0	0	0	
53	0	0		0	0,0	0,0	0	0	0	0	0	
54	0	0		0	0,0	0,0	0	0	0	0	0	
55	0	0		0	0,0	0,0	0	0	0	0	0	
56	0	0		0	0,0	0,0	0	0	0	0	0	
57	0	0		0	0,0	0,0	0	0	0	0	0	
58	0	0		0	0,0	0,0	0	0	0	0	0	
59	0	0		0	0,0	0,0	0	0	0	0	0	
60	0	0		0	0,0	0,0	0	0	0	0	0	
61	0	0		0	0,0	0,0	0	0	0	0	0	
62	0	0		0	0,0	0,0	0	0	0	0	0	
63	0	0		0	0,0	0,0	0	0	0	0	0	
64	0	0		0	0,0	0,0	0	0	0	0	0	
65	0	0		0	0,0	0,0	0	0	0	0	0	
66	0	0		0	0,0	0,0	0	0	0	0	0	
67	0	0		0	0,0	0,0	0	0	0	0	0	

68	0	0		0	0.0	0.0	0	0	0	0	0	
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69	0	0		0	0.0	0.0	0	0	0	0	0	
70	0	0		0	0.0	0.0	0	0	0	0	0	
71	0	0		0	0.0	0.0	0	0	0	0	0	
72	0	0		0	0.0	0.0	0	0	0	0	0	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Occupancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow Lock Call				X																
Red Lock call				X																
Passage	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	
Queue																				
Call	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		X
Terminate																				

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector	X	X	X	X	X	X	X	X												
Occupancy	X	X	X	X	X	X	X	X												
Yellow Lock Call				X																
Red Lock call			X																	
Passage	X	X	X	X	X	X	X	X												
Queue																				
Call	X	X	X	X	X	X	X	X												
Terminate																				

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Passage																				
Queue																				
Call																				
Terminate																				

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector												
Occupancy												
Yellow Lock Call												
Red Lock call												
Passage												
Queue												
Call												
Terminate												

Data Collection Period	60
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Pedestrian Detectors

	Call	Call	No	Max	
Det	Phase	Ovlp	Act	Presence	Erratic Count
1	0	0	0	0	0
2	2	0	0	0	0
3	0	0	0	0	0
4	4	0	0	0	0
5	0	0	0	0	0
6	6	0	0	0	0
7	0	0	0	0	0
8	8	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0

	Call	Call	No	Max	
Det	Phase	Ovlp	Act	Presence	Erratic Count
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	0	0	0	0
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	0	0	0	0	0
31	0	0	0	0	0
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0

15	0	0	0	0	0
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35	0	0	0	0	0
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16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	0	0	0	0

36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0

Overlaps

OLP	Type	Included Phases	Modifier Phases	Trail	Trail	Trail	Walk	Ped	Walk	Ped	Delay	Flash	Descriptions
				GRN	YEL	RED	1	Clr 1	2	Clr 2			
1	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
2	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
3	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
4	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
5	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
6	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
7	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
8	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
9	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
10	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
11	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
12	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
13	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
14	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
15	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
16	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
17	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
18	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
19	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
20	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
21	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
22	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
23	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
24	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
25	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
26	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
27	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
28	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
29	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
30	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
31	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
32	Off			0	0.0	0.0	0	0	0	0	0.0	Off	

Coordination Parameters

Operational Mode	Correction Mode	Maximum Mode	Force Mode
Automatic	Shortway (Auto)	Per Pattern	Per Pattern

Patterns

Patt.	Cycle	Offset 1	Offset 2	Offset 2	Split	Sequence	Ref. Color	Max Mode	Phs	Det	Ped
									Pln	Pln	Pln
1	100	13	0	0	1	1	Yel	Inh	1	1	1
2	120	22	0	0	2	2	Yel	Inh	1	1	1
3	120	64	0	0	3	3	Yel	Inh	1	1	1
4	100	26	0	0	4	4	Yel	Inh	1	1	1
5	0	0	0	0	0	0	Yel	Inh	1	1	1
6	0	0	0	0	0	0	Yel	Inh	1	1	1
7	0	0	0	0	0	0	Yel	Inh	1	1	1
8	0	0	0	0	0	0	Yel	Inh	1	1	1
9	0	0	0	0	0	0	Yel	Inh	1	1	1
10	0	0	0	0	0	0	Yel	Inh	1	1	1
11	100	13	0	0	11	11	Yel	Inh	2	1	1
12	120	22	0	0	12	12	Yel	Inh	2	1	1
13	120	64	0	0	13	13	Yel	Inh	2	1	1
14	100	26	0	0	14	14	Yel	Inh	2	1	1
15	0	0	0	0	0	0	Yel	Inh	1	1	1
16	0	0	0	0	0	0	Yel	Inh	1	1	1

17	0	0	0	0	0	0	Yel	Inh	1	1	1
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18	0	0	0	0	0	0	Yel	Inh	1	1	1
19	0	0	0	0	19	19	Yel	Max2	2	1	1
20	0	0	0	0	20	20	Yel	Max2	1	1	1
21	0	0	0	0	0	0	Yel	Inh	1	1	1
22	0	0	0	0	0	0	Yel	Inh	1	1	1
23	0	0	0	0	0	0	Yel	Inh	1	1	1
24	0	0	0	0	0	0	Yel	Inh	1	1	1
25	0	0	0	0	0	0	Yel	Inh	1	1	1
26	0	0	0	0	0	0	Yel	Inh	1	1	1
27	0	0	0	0	0	0	Yel	Inh	1	1	1
28	0	0	0	0	0	0	Yel	Inh	1	1	1
29	0	0	0	0	0	0	Yel	Inh	1	1	1
30	0	0	0	0	0	0	Yel	Inh	1	1	1
31	0	0	0	0	0	0	Yel	Inh	1	1	1
32	0	0	0	0	0	0	Yel	Inh	1	1	1
33	0	0	0	0	0	0	Yel	Inh	1	1	1
34	0	0	0	0	0	0	Yel	Inh	1	1	1
35	0	0	0	0	0	0	Yel	Inh	1	1	1
36	0	0	0	0	0	0	Yel	Inh	1	1	1
37	0	0	0	0	0	0	Yel	Inh	1	1	1
38	0	0	0	0	0	0	Yel	Inh	1	1	1
39	0	0	0	0	0	0	Yel	Inh	1	1	1
40	0	0	0	0	0	0	Yel	Inh	1	1	1
41	0	0	0	0	0	0	Yel	Inh	1	1	1
42	0	0	0	0	0	0	Yel	Inh	1	1	1
43	0	0	0	0	0	0	Yel	Inh	1	1	1
44	0	0	0	0	0	0	Yel	Inh	1	1	1
45	0	0	0	0	0	0	Yel	Inh	1	1	1
46	0	0	0	0	0	0	Yel	Inh	1	1	1
47	0	0	0	0	0	0	Yel	Inh	1	1	1
48	0	0	0	0	0	0	Yel	Inh	1	1	1
49	0	0	0	0	0	0	Yel	Inh	1	1	1
50	0	0	0	0	0	0	Yel	Inh	1	1	1
51	0	0	0	0	0	0	Yel	Inh	1	1	1
52	0	0	0	0	0	0	Yel	Inh	1	1	1
53	0	0	0	0	0	0	Yel	Inh	1	1	1
54	0	0	0	0	0	0	Yel	Inh	1	1	1
55	0	0	0	0	0	0	Yel	Inh	1	1	1
56	0	0	0	0	0	0	Yel	Inh	1	1	1
57	0	0	0	0	0	0	Yel	Inh	1	1	1
58	0	0	0	0	0	0	Yel	Inh	1	1	1
59	0	0	0	0	0	0	Yel	Inh	1	1	1
60	0	0	0	0	0	0	Yel	Inh	1	1	1
61	0	0	0	0	0	0	Yel	Inh	1	1	1
62	0	0	0	0	0	0	Yel	Inh	1	1	1
63	0	0	0	0	0	0	Yel	Inh	1	1	1
64	0	0	0	0	0	0	Yel	Inh	1	1	1
65	0	0	0	0	0	0	Yel	Inh	1	1	1
66	0	0	0	0	0	0	Yel	Inh	1	1	1
67	0	0	0	0	0	0	Yel	Inh	1	1	1
68	0	0	0	0	0	0	Yel	Inh	1	1	1
69	0	0	0	0	0	0	Yel	Inh	1	1	1
70	0	0	0	0	0	0	Yel	Inh	1	1	1
71	0	0	0	0	0	0	Yel	Inh	1	1	1
72	0	0	0	0	0	0	Yel	Inh	1	1	1
73	0	0	0	0	0	0	Yel	Inh	1	1	1
74	0	0	0	0	0	0	Yel	Inh	1	1	1
75	0	0	0	0	0	0	Yel	Inh	1	1	1
76	0	0	0	0	0	0	Yel	Inh	1	1	1
77	0	0	0	0	0	0	Yel	Inh	1	1	1
78	0	0	0	0	0	0	Yel	Inh	1	1	1
79	0	0	0	0	0	0	Yel	Inh	1	1	1
80	0	0	0	0	0	0	Yel	Inh	1	1	1

81	0	0	0	0	0	0	Yel	Inh	1	1	1
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82	0	0	0	0	0	0	Yel	Inh	1	1	1
83	0	0	0	0	0	0	Yel	Inh	1	1	1
84	0	0	0	0	0	0	Yel	Inh	1	1	1
85	0	0	0	0	0	0	Yel	Inh	1	1	1
86	0	0	0	0	0	0	Yel	Inh	1	1	1
87	0	0	0	0	0	0	Yel	Inh	1	1	1
88	0	0	0	0	0	0	Yel	Inh	1	1	1
89	0	0	0	0	0	0	Yel	Inh	1	1	1
90	0	0	0	0	0	0	Yel	Inh	1	1	1
91	0	0	0	0	0	0	Yel	Inh	1	1	1
92	0	0	0	0	0	0	Yel	Inh	1	1	1
93	0	0	0	0	0	0	Yel	Inh	1	1	1
94	0	0	0	0	0	0	Yel	Inh	1	1	1
95	0	0	0	0	0	0	Yel	Inh	1	1	1
96	0	0	0	0	0	0	Yel	Inh	1	1	1
97	0	0	0	0	0	0	Yel	Inh	1	1	1
98	0	0	0	0	0	0	Yel	Inh	1	1	1
99	0	0	0	0	0	0	Yel	Inh	1	1	1
100	0	0	0	0	0	0	Yel	Inh	1	1	1
101	0	0	0	0	0	0	Yel	Inh	1	1	1
102	0	0	0	0	0	0	Yel	Inh	1	1	1
103	0	0	0	0	0	0	Yel	Inh	1	1	1
104	0	0	0	0	0	0	Yel	Inh	1	1	1
105	0	0	0	0	0	0	Yel	Inh	1	1	1
106	0	0	0	0	0	0	Yel	Inh	1	1	1
107	0	0	0	0	0	0	Yel	Inh	1	1	1
108	0	0	0	0	0	0	Yel	Inh	1	1	1
109	0	0	0	0	0	0	Yel	Inh	1	1	1
110	0	0	0	0	0	0	Yel	Inh	1	1	1
111	0	0	0	0	0	0	Yel	Inh	1	1	1
112	0	0	0	0	0	0	Yel	Inh	1	1	1
113	0	0	0	0	0	0	Yel	Inh	1	1	1
114	0	0	0	0	0	0	Yel	Inh	1	1	1
115	0	0	0	0	0	0	Yel	Inh	1	1	1
116	0	0	0	0	0	0	Yel	Inh	1	1	1
117	0	0	0	0	0	0	Yel	Inh	1	1	1
118	0	0	0	0	0	0	Yel	Inh	1	1	1
119	0	0	0	0	0	0	Yel	Inh	1	1	1
120	0	0	0	0	0	0	Yel	Inh	1	1	1
121	0	0	0	0	0	0	Yel	Inh	1	1	1
122	0	0	0	0	0	0	Yel	Inh	1	1	1
123	0	0	0	0	0	0	Yel	Inh	1	1	1
124	0	0	0	0	0	0	Yel	Inh	1	1	1
125	0	0	0	0	0	0	Yel	Inh	1	1	1
126	0	0	0	0	0	0	Yel	Inh	1	1	1
127	0	0	0	0	0	0	Yel	Inh	1	1	1
128	0	0	0	0	0	0	Yel	Inh	1	1	1

**Split Parameters**

Split 1		Coord	Ref	Mode
PH.	Time	PH	PH	
1	15			None
2	49	X	X	None
3	14			None
4	22			Min Rcl
5	17			None
6	47	X	X	None
7	14			None
8	22			Min Rcl
9	0			None
10	0			None
11	0			None
12	0			None

Split 2		Coord	Ref	Mode
PH.	Time	PH	PH	
1	13			None
2	74	X	X	None
3	12			None
4	21			None
5	13			None
6	74	X	X	None
7	12			None
8	21			Min Rcl
9	0			None
10	0			None
11	0			None
12	0			None

13	0			None
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13	0			None
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14	0			None
15	0			None
16	0			None

14	0			None
15	0			None
16	0			None

Split 3		Coord	Ref	Mode
PH.	Time	PH	PH	
1	15			None
2	66	X	X	None
3	29			None
4	10			None
5	24			None
6	57	X	X	None
7	14			None
8	25			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 4		Coord	Ref	Mode
PH.	Time	PH	PH	
1	13			None
2	53	X	X	None
3	12			None
4	22			None
5	20			None
6	46	X	X	None
7	15			None
8	19			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 5		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0	X	X	None
3	0			None
4	0			None
5	0			None
6	0	X	X	None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 6		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 7		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 8		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 9		Coord	Ref	Mode
PH.	Time	PH	PH	

Split 10		Coord	Ref	Mode
PH.	Time	PH	PH	

1	0			None
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1	0			None
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2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

Split 9		Coord	Ref	
PH.	Time	PH	PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 10		Coord	Ref	
PH.	Time	PH	PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 11		Coord	Ref	
PH.	Time	PH	PH	Mode
1	15			None
2	49	X	X	None
3	14			None
4	22			None
5	17			None
6	47	X	X	None
7	14			None
8	22			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 12		Coord	Ref	
PH.	Time	PH	PH	Mode
1	13			None
2	74	X	X	None
3	12			None
4	21			None
5	13			None
6	74	X	X	None
7	12			None
8	21			Min Rcl
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 13		Coord	Ref	
PH.	Time	PH	PH	Mode
1	15			None
2	66	X	X	None
3	29			None
4	10			None
5	24			None
6	57	X	X	None
7	14			None
8	25			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 14		Coord	Ref	
PH.	Time	PH	PH	Mode
1	13			None
2	53	X	X	None
3	12			None
4	22			None
5	20			None
6	46	X	X	None
7	15			None
8	19			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 15		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None

Split 16		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None

5	0			None
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5	0			None
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6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 17		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 18		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 19		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 20		Coord	Ref	Mode
PH.	Time	PH	PH	
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 19		Coord	Ref	Mode
PH.	Time	PH	PH	
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 20		Coord	Ref	Mode
PH.	Time	PH	PH	
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Ring	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Offset																

Day Plan		1																														
Month of Year					Days of Week							Days of Month																				
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				



Day Plan

2

Month of Year		Days of Week							Days of Month																			
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

3

Month of Year		Days of Week							Days of Month																			
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

4

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X					X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

5

Month of Year					Days of Week							Days of Month																		
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			

Day Plan

6

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan		7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Day Plan

8

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

9

Month of Year					Days of Week							Days of Month																
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan

10

Month of Year					Days of Week							Days of Month																		
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			



Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan

12

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan

13

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan

14

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan

15

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan

1

Event	Hour	Min.	Act
1	5	0	1
2	6	0	2
3	8	30	1
4	15	0	3
5	18	30	1

Day Plan

2

Event	Hour	Min.	Act
1	6	0	4
2	23	0	20
3	0	0	
4	0	0	
5	0	0	

Day Plan

3

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan

4

Event	Hour	Min.	Act
1	7	5	2
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan

1

Event	Hour	Min.	Act
6	22	0	20
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

2

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

3

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

4

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

5

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

6

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

7

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan

8

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan	9	
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Day Plan	10	
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Day Plan	11	
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Day Plan	12	
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Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan		13		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		14		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		15		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		16		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		17		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		18		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		19		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan		20		
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											
11	None											
12	None											
13	None											
14	None											
15	None											
16	None											
17	None											
18	None											
19	None											
20	Pattern 20											
21	None											
22	None											
23	None											

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
33	None											
34	None											
35	None											
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											
51	None											
52	None											
53	None											
54	None											
55	None											

24	None																		
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56	None																		
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25	None								
26	None								
27	None								
28	None								
29	None								
30	None								
31	None								
32	None								

57	None								
58	None								
59	None								
60	None								
61	None								
62	None								
63	None								
64	None								

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Link	0	0	0	0	0	0	0	0
Delay	0	1	0	0	0	0	0	0
Min Duration	0	0	0	0	0	0	0	0
Min Green	0	0	0	0	0	0	0	0
Min Walk	0	0	0	0	0	0	0	0
Ent. Ped Clear	0	255	255	255	255	255	255	255
Track Green	15	0	0	0	0	0	0	0
Dwell Green	0	0	0	0	0	0	0	0
Max Presence	0	0	0	0	0	0	0	0
Enter Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Ent. Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Track Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Ped Clear	255	255	255	255	255	255	255	255
Exit Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Preempt	1	2	3	4	5	6	7	8
Non Lock Mem								
Not Override Flash								
NotOverrideNextPre								
Flash Dwell								

Preemption Configuration

Preempt	1	2	3	4	5	6	7	8
Track phase								
Dwell Phase			2,5	4,7	1,6	3,8		
Dwell Ped								
Exit Phase								
Track Overlap								
Dwell overlap								
Cycling phase								
Cycling Ped								
Cycling Overlap								

IO Modules

IO Mod	TYPE
1	Caltrans 332
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None

Channel Configuration

Chan	Ctrl Type	Source
1	Phs Veh	1
2	Phs Veh	2
3	Phs Veh	3
4	Phs Veh	4
5	Phs Veh	5
6	Phs Veh	6
7	Phs Veh	7
8	Phs Veh	8
9	None	1
10	None	2

Chan	Ctrl Type	Source
11	None	3
12	None	4
13	Phs Ped	2
14	Phs Ped	4
15	Phs Ped	6
16	Phs Ped	8
17	None	5
18	None	6
19	None	0
20	None	0

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow																
Flash Red	X	X	X	X	X	X	X	X								
Alt Flash	X			X	X			X								
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flash Yellow																
Flash Red																
Alt Flash																

Startup Clearance Hold Type

1=off, 2=On, 3=Flash and 4= Alt Flash

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Red																
Yellow																
Green																

Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
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Red															
Yellow															
Green															

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	notActive	On	Off	Off	Red
2	dltGrn	On	Off	Off	Red
3	PreGrn	Off	Off	On	Green
4	minGrn	Off	Off	On	Green
5	grnExt	Off	Off	On	Green
6	grnDwell	Off	Off	On	Green
7	preClear	Off	Off	On	Green
8	yelChange	Off	On	Off	Yellow
9	redClear	On	Off	Off	Red
10	redDwell	On	Off	Off	Red
11	Barrier	On	Off	Off	Red
12					

Pedestrian Intervals

Interval	Description	DWK	CLR	Wlk	Type
1	notActive	On	Off	Off	Dont Walk
2	dltPed	On	Off	Off	Dont Walk
3	walk	Off	Off	On	Walk
4	walkDwell	Off	Off	On	Walk
5	flashDtWlk	Flash	Off	Off	Ped Clear
6	dWalk	On	Off	Off	Dont Walk
7					
8					

Countdown Display

Display	Addr	Phase	Time
1			
2			
3			
4			
5			
6			
7			
8			

Display	Addr	Phase	Time
9			
10			
11			
12			
13			
14			
15			
16			

Display	Addr	Phase	Time
17			
18			
19			
20			
21			
22			
23			
24			

Display	Addr	Phase	Time
25			
26			
27			
28			
29			
30			
31			
32			

Manual Control Phase Groups

Grp 1		Grp 2		Grp 3		Grp 4		Grp 5		Grp 6		Grp 7		Grp 8	
Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph
1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0
11	0	11	0	11	0	11	0	11	0	11	0	11	0	11	0
12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0
13	0	13	0	13	0	13	0	13	0	13	0	13	0	13	0
14	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0
15	0	15	0	15	0	15	0	15	0	15	0	15	0	15	0
16	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0

Prioritor Settings

Prioritor	Priority Ph	Output Dly
1		0
2		0
3		0
4		0
5		0
6		0
7		0
8		0

Enabled	Lock Out Time
No	0

Loopback Functions

Func	Result	Function Type	Index	Source	Function Type	Index

1				
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51				
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2				
3				
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99				
100				

Peer Configuration

Ctrl	Peer ID	IP address	SNMP Port	Hot Port	Serial Port	Serial Addr.	Master Sect.	P2P TO	Description
1	0		161	80	0	0	0	15	
2	0		161	80	0	0	0	15	
3	0		161	80	0	0	0	15	
4	0		161	80	0	0	0	15	
5	0		161	80	0	0	0	15	
6	0		161	80	0	0	0	15	
7	0		161	80	0	0	0	15	
8	0		161	80	0	0	0	15	
9	0		161	80	0	0	0	15	
10	0		161	80	0	0	0	15	

11	0		161	80	0	0	0	15	
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12	0		161	80	0	0	0	15	
13	0		161	80	0	0	0	15	
14	0		161	80	0	0	0	15	
15	0		161	80	0	0	0	15	
16	0		161	80	0	0	0	15	
17	0		161	80	0	0	0	15	
18	0		161	80	0	0	0	15	
19	0		161	80	0	0	0	15	
20	0		161	80	0	0	0	15	
21	0		161	80	0	0	0	15	
22	0		161	80	0	0	0	15	
23	0		161	80	0	0	0	15	
24	0		161	80	0	0	0	15	
25	0		161	80	0	0	0	15	
26	0		161	80	0	0	0	15	
27	0		161	80	0	0	0	15	
28	0		161	80	0	0	0	15	
29	0		161	80	0	0	0	15	
30	0		161	80	0	0	0	15	
31	0		161	80	0	0	0	15	
32	0		161	80	0	0	0	15	
33	0		161	80	0	0	0	15	
34	0		161	80	0	0	0	15	
35	0		161	80	0	0	0	15	
36	0		161	80	0	0	0	15	
37	0		161	80	0	0	0	15	
38	0		161	80	0	0	0	15	
39	0		161	80	0	0	0	15	
40	0		161	80	0	0	0	15	
41	0		161	80	0	0	0	15	
42	0		161	80	0	0	0	15	
43	0		161	80	0	0	0	15	
44	0		161	80	0	0	0	15	
45	0		161	80	0	0	0	15	
46	0		161	80	0	0	0	15	
47	0		161	80	0	0	0	15	
48	0		161	80	0	0	0	15	
49	0		161	80	0	0	0	15	
50	0		161	80	0	0	0	15	
51	0		161	80	0	0	0	15	
52	0		161	80	0	0	0	15	
53	0		161	80	0	0	0	15	
54	0		161	80	0	0	0	15	
55	0		161	80	0	0	0	15	
56	0		161	80	0	0	0	15	
57	0		161	80	0	0	0	15	
58	0		161	80	0	0	0	15	
59	0		161	80	0	0	0	15	
60	0		161	80	0	0	0	15	
61	0		161	80	0	0	0	15	
62	0		161	80	0	0	0	15	
63	0		161	80	0	0	0	15	
64	0		161	80	0	0	0	15	
65	0		161	80	0	0	0	15	
66	0		161	80	0	0	0	15	
67	0		161	80	0	0	0	15	
68	0		161	80	0	0	0	15	
69	0		161	80	0	0	0	15	
70	0		161	80	0	0	0	15	
71	0		161	80	0	0	0	15	
72	0		161	80	0	0	0	15	
73	0		161	80	0	0	0	15	
74	0		161	80	0	0	0	15	

75	0		161	80	0	0	0	15	
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76	0		161	80	0	0	0	15	
77	0		161	80	0	0	0	15	
78	0		161	80	0	0	0	15	
79	0		161	80	0	0	0	15	
80	0		161	80	0	0	0	15	
81	0		161	80	0	0	0	15	
82	0		161	80	0	0	0	15	
83	0		161	80	0	0	0	15	
84	0		161	80	0	0	0	15	
85	0		161	80	0	0	0	15	
86	0		161	80	0	0	0	15	
87	0		161	80	0	0	0	15	
88	0		161	80	0	0	0	15	
89	0		161	80	0	0	0	15	
90	0		161	80	0	0	0	15	
91	0		161	80	0	0	0	15	
92	0		161	80	0	0	0	15	
93	0		161	80	0	0	0	15	
94	0		161	80	0	0	0	15	
95	0		161	80	0	0	0	15	
96	0		161	80	0	0	0	15	
97	0		161	80	0	0	0	15	
98	0		161	80	0	0	0	15	
99	0		161	80	0	0	0	15	
100	0		161	80	0	0	0	15	
101	0		161	80	0	0	0	15	
102	0		161	80	0	0	0	15	
103	0		161	80	0	0	0	15	
104	0		161	80	0	0	0	15	
105	0		161	80	0	0	0	15	
106	0		161	80	0	0	0	15	
107	0		161	80	0	0	0	15	
108	0		161	80	0	0	0	15	
109	0		161	80	0	0	0	15	
110	0		161	80	0	0	0	15	
111	0		161	80	0	0	0	15	
112	0		161	80	0	0	0	15	
113	0		161	80	0	0	0	15	
114	0		161	80	0	0	0	15	
115	0		161	80	0	0	0	15	
116	0		161	80	0	0	0	15	
117	0		161	80	0	0	0	15	
118	0		161	80	0	0	0	15	
119	0		161	80	0	0	0	15	
120	0		161	80	0	0	0	15	
121	0		161	80	0	0	0	15	
122	0		161	80	0	0	0	15	
123	0		161	80	0	0	0	15	
124	0		161	80	0	0	0	15	
125	0		161	80	0	0	0	15	
126	0		161	80	0	0	0	15	
127	0		161	80	0	0	0	15	
128	0		161	80	0	0	0	15	
129	0		161	80	0	0	0	15	
130	0		161	80	0	0	0	15	
131	0		161	80	0	0	0	15	
132	0		161	80	0	0	0	15	
133	0		161	80	0	0	0	15	
134	0		161	80	0	0	0	15	
135	0		161	80	0	0	0	15	
136	0		161	80	0	0	0	15	
137	0		161	80	0	0	0	15	
138	0		161	80	0	0	0	15	

139	0		161	80	0	0	0	15	
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140	0		161	80	0	0	0	15	
141	0		161	80	0	0	0	15	
142	0		161	80	0	0	0	15	
143	0		161	80	0	0	0	15	
144	0		161	80	0	0	0	15	
145	0		161	80	0	0	0	15	
146	0		161	80	0	0	0	15	
147	0		161	80	0	0	0	15	
148	0		161	80	0	0	0	15	
149	0		161	80	0	0	0	15	
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151	0		161	80	0	0	0	15	
152	0		161	80	0	0	0	15	
153	0		161	80	0	0	0	15	
154	0		161	80	0	0	0	15	
155	0		161	80	0	0	0	15	
156	0		161	80	0	0	0	15	
157	0		161	80	0	0	0	15	
158	0		161	80	0	0	0	15	
159	0		161	80	0	0	0	15	
160	0		161	80	0	0	0	15	
161	0		161	80	0	0	0	15	
162	0		161	80	0	0	0	15	
163	0		161	80	0	0	0	15	
164	0		161	80	0	0	0	15	
165	0		161	80	0	0	0	15	
166	0		161	80	0	0	0	15	
167	0		161	80	0	0	0	15	
168	0		161	80	0	0	0	15	
169	0		161	80	0	0	0	15	
170	0		161	80	0	0	0	15	
171	0		161	80	0	0	0	15	
172	0		161	80	0	0	0	15	
173	0		161	80	0	0	0	15	
174	0		161	80	0	0	0	15	
175	0		161	80	0	0	0	15	
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184	0		161	80	0	0	0	15	
185	0		161	80	0	0	0	15	
186	0		161	80	0	0	0	15	
187	0		161	80	0	0	0	15	
188	0		161	80	0	0	0	15	
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193	0		161	80	0	0	0	15	
194	0		161	80	0	0	0	15	
195	0		161	80	0	0	0	15	
196	0		161	80	0	0	0	15	
197	0		161	80	0	0	0	15	
198	0		161	80	0	0	0	15	
199	0		161	80	0	0	0	15	
200	0		161	80	0	0	0	15	
201	0		161	80	0	0	0	15	
202	0		161	80	0	0	0	15	

203	0		161	80	0	0	0	15	
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204	0		161	80	0	0	0	15	
205	0		161	80	0	0	0	15	
206	0		161	80	0	0	0	15	
207	0		161	80	0	0	0	15	
208	0		161	80	0	0	0	15	
209	0		161	80	0	0	0	15	
210	0		161	80	0	0	0	15	
211	0		161	80	0	0	0	15	
212	0		161	80	0	0	0	15	
213	0		161	80	0	0	0	15	
214	0		161	80	0	0	0	15	
215	0		161	80	0	0	0	15	
216	0		161	80	0	0	0	15	
217	0		161	80	0	0	0	15	
218	0		161	80	0	0	0	15	
219	0		161	80	0	0	0	15	
220	0		161	80	0	0	0	15	
221	0		161	80	0	0	0	15	
222	0		161	80	0	0	0	15	
223	0		161	80	0	0	0	15	
224	0		161	80	0	0	0	15	
225	0		161	80	0	0	0	15	
226	0		161	80	0	0	0	15	
227	0		161	80	0	0	0	15	
228	0		161	80	0	0	0	15	
229	0		161	80	0	0	0	15	
230	0		161	80	0	0	0	15	
231	0		161	80	0	0	0	15	
232	0		161	80	0	0	0	15	
233	0		161	80	0	0	0	15	
234	0		161	80	0	0	0	15	
235	0		161	80	0	0	0	15	
236	0		161	80	0	0	0	15	
237	0		161	80	0	0	0	15	
238	0		161	80	0	0	0	15	
239	0		161	80	0	0	0	15	
240	0		161	80	0	0	0	15	
241	0		161	80	0	0	0	15	
242	0		161	80	0	0	0	15	
243	0		161	80	0	0	0	15	
244	0		161	80	0	0	0	15	
245	0		161	80	0	0	0	15	
246	0		161	80	0	0	0	15	
247	0		161	80	0	0	0	15	
248	0		161	80	0	0	0	15	
249	0		161	80	0	0	0	15	
250	0		161	80	0	0	0	15	
251	0		161	80	0	0	0	15	
252	0		161	80	0	0	0	15	
253	0		161	80	0	0	0	15	
254	0		161	80	0	0	0	15	
255	0		161	80	0	0	0	15	

### Section Configuration

Section	Control	Poll	Req #	Fail Time	Algorithm Period	Description
1	None	60	1	300	240	
2	None	60	1	300	240	
3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	

9	None	60	1	300	240	
---	------	----	---	-----	-----	--



10	None	60	1	300	240	
11	None	60	1	300	240	
12	None	60	1	300	240	
13	None	60	1	300	240	
14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
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32	

## **APPENDIX C**

### **Level of Service Definitions**

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016:  
Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

### **Automobile Level of Service (LOS) for Signalized Intersections**

Levels of service are defined to represent reasonable ranges in control delay.

#### **LOS A**

Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

#### **LOS B**

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

#### **LOS C**

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

#### **LOS D**

Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

#### **LOS E**

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

#### **LOS F**

Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

### **Level of Service (LOS) for Unsignalized TWSC Intersections**

























Level of Service ( $v/c \leq 1.0$ )	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

## **APPENDIX D**

### **Capacity Worksheets**

Timings  
1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	271	104	46	232	31	37	148	48	71	263	138
Future Volume (vph)	121	271	104	46	232	31	37	148	48	71	263	138
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.309			0.580			0.584			0.564		
Satd. Flow (perm)	576	1863	1583	1080	1863	1583	1088	1863	1583	1051	1863	1583
Satd. Flow (RTOR)			113			164			164			150
Lane Group Flow (vph)	132	295	113	50	252	34	40	161	52	77	286	150
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	13.0	42.0	42.0	29.0	29.0	29.0	26.0	26.0	26.0	12.0	38.0	38.0
Total Split (%)	16.3%	52.5%	52.5%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	15.0%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.7	26.7	26.7	16.3	16.3	16.3	33.1	33.1	33.1	43.3	43.3	43.3
Actuated g/C Ratio	0.33	0.33	0.33	0.20	0.20	0.20	0.41	0.41	0.41	0.54	0.54	0.54
v/c Ratio	0.43	0.47	0.19	0.23	0.66	0.08	0.09	0.21	0.07	0.12	0.28	0.16
Control Delay	21.3	22.3	3.9	27.6	37.6	0.3	21.0	20.5	0.2	12.0	12.9	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	22.3	3.9	27.6	37.6	0.3	21.0	20.5	0.2	12.0	12.9	2.9
LOS	C	C	A	C	D	A	C	C	A	B	B	A
Approach Delay		18.2			32.3			16.4			9.8	
Approach LOS		B			C			B			A	
Queue Length 50th (ft)	45	109	0	21	117	0	13	55	0	18	78	0
Queue Length 95th (ft)	73	156	27	47	176	0	40	117	0	46	148	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	311	861	792	324	558	589	449	770	750	637	1007	925
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.34	0.14	0.15	0.45	0.06	0.09	0.21	0.07	0.12	0.28	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
AM Peak Hour

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 18.2







Intersection LOS: B

Intersection Capacity Utilization 53.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

























 Ø1	 Ø2 (R)	 Ø4
12 s	26 s	42 s
 Ø6 (R)	 Ø7	 Ø8
38 s	13 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

### Existing Traffic Conditions

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	132	167	97	100	29	85	721	63	30	1619	112
Future Volume (vph)	106	132	167	97	100	29	85	721	63	30	1619	112
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.593			0.461			0.068			0.318		
Satd. Flow (perm)	1105	1863	1583	859	1863	1583	127	5024	0	592	5034	0
Satd. Flow (RTOR)			148			118		19			15	
Lane Group Flow (vph)	115	143	182	105	109	32	92	852	0	33	1882	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	20.6	13.6	13.6	20.6	13.6	13.6	82.1	76.5		78.4	71.2	
Actuated g/C Ratio	0.17	0.11	0.11	0.17	0.11	0.11	0.68	0.64		0.65	0.59	
v/c Ratio	0.50	0.68	0.59	0.53	0.52	0.11	0.50	0.27		0.07	0.63	
Control Delay	48.2	67.2	20.5	49.5	58.6	0.8	20.1	10.5		6.5	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.2	67.2	20.5	49.5	58.6	0.8	20.1	10.5		6.5	17.3	
LOS	D	E	C	D	E	A	C	B		A	B	
Approach Delay		42.9			47.2			11.4			17.1	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	75	107	24	68	80	0	20	108		7	331	
Queue Length 95th (ft)	128	175	96	117	138	0	62	141		18	400	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	228	248	339	200	248	313	196	3207		474	2994	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.50	0.58	0.54	0.53	0.44	0.10	0.47	0.27		0.07	0.63	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Existing Traffic Conditions  
AM Peak Hour

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 20.9











Intersection LOS: C

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
13 s	74 s		12 s	21 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
13 s	74 s		12 s	21 s



Timings  
1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	366	68	43	319	39	103	264	77	56	176	113
Future Volume (vph)	199	366	68	43	319	39	103	264	77	56	176	113
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.227			0.527			0.637			0.400		
Satd. Flow (perm)	423	1863	1583	982	1863	1583	1187	1863	1583	745	1863	1583
Satd. Flow (RTOR)			95			164			164			123
Lane Group Flow (vph)	216	398	74	47	347	42	112	287	84	61	191	123
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.3	34.3	34.3	19.5	19.5	19.5	29.1	29.1	29.1	35.7	35.7	35.7
Actuated g/C Ratio	0.43	0.43	0.43	0.24	0.24	0.24	0.36	0.36	0.36	0.45	0.45	0.45
v/c Ratio	0.62	0.50	0.10	0.20	0.77	0.08	0.26	0.42	0.12	0.15	0.23	0.16
Control Delay	22.4	18.4	2.1	24.4	39.5	0.3	24.0	24.7	0.4	15.5	15.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	18.4	2.1	24.4	39.5	0.3	24.0	24.7	0.4	15.5	15.9	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		17.9			34.1			20.3			11.9	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	67	137	0	19	160	0	44	120	0	17	58	0
Queue Length 95th (ft)	102	193	14	44	236	0	92	204	1	43	111	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	349	908	820	294	558	589	431	676	679	410	832	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.44	0.09	0.16	0.62	0.07	0.26	0.42	0.12	0.15	0.23	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Existing Traffic Conditions  
PM Peak Hour

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 20.9







Intersection LOS: C

Intersection Capacity Utilization 62.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

























 Ø1	 Ø2 (R)	 Ø4
10 s	26 s	44 s
 Ø6 (R)	 Ø7	 Ø8
36 s	15 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

# Existing Traffic Conditions

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	153	113	96	167	75	142	1629	68	74	1235	121
Future Volume (vph)	191	153	113	96	167	75	142	1629	68	74	1235	121
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5019	0
Flt Permitted	0.488			0.416			0.102			0.068		
Satd. Flow (perm)	909	1863	1583	775	1863	1583	190	5055	0	127	5019	0
Satd. Flow (RTOR)			209			164		7			17	
Lane Group Flow (vph)	208	166	123	104	182	82	154	1845	0	80	1474	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	14.0	10.0	10.0	29.0	25.0	25.0	24.0	66.0		15.0	57.0	
Total Split (%)	11.7%	8.3%	8.3%	24.2%	20.8%	20.8%	20.0%	55.0%		12.5%	47.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	27.1	18.1	18.1	30.7	20.0	20.0	74.8	64.5		67.7	59.0	
Actuated g/C Ratio	0.23	0.15	0.15	0.26	0.17	0.17	0.62	0.54		0.56	0.49	
v/c Ratio	0.77	0.59	0.30	0.36	0.59	0.20	0.59	0.68		0.45	0.60	
Control Delay	58.2	58.0	1.8	36.7	54.8	1.2	21.1	22.5		22.5	23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.2	58.0	1.8	36.7	54.8	1.2	21.1	22.5		22.5	23.3	
LOS	E	E	A	D	D	A	C	C		C	C	
Approach Delay		44.2			37.7			22.4			23.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	131	121	0	61	132	0	44	379		22	283	
Queue Length 95th (ft)	#209	#233	0	109	210	0	96	456		62	368	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	269	281	416	418	310	400	370	2719		211	2477	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.77	0.59	0.30	0.25	0.59	0.20	0.42	0.68		0.38	0.60	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Existing Traffic Conditions  
PM Peak Hour

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 26.4

Intersection LOS: C

Intersection Capacity Utilization 74.0%











ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

























Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
15 s	66 s		29 s	10 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
24 s	57 s		14 s	25 s

# Timings

## 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	276	106	47	237	32	38	151	49	72	268	141
Future Volume (vph)	123	276	106	47	237	32	38	151	49	72	268	141
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.300			0.577			0.582			0.558		
Satd. Flow (perm)	559	1863	1583	1075	1863	1583	1084	1863	1583	1039	1863	1583
Satd. Flow (RTOR)			115			164			164			153
Lane Group Flow (vph)	134	300	115	51	258	35	41	164	53	78	291	153
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	13.0	42.0	42.0	29.0	29.0	29.0	26.0	26.0	26.0	12.0	38.0	38.0
Total Split (%)	16.3%	52.5%	52.5%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	15.0%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	29.0	29.0	29.0	16.3	16.3	16.3	30.8	30.8	30.8	41.0	41.0	41.0
Actuated g/C Ratio	0.36	0.36	0.36	0.20	0.20	0.20	0.38	0.38	0.38	0.51	0.51	0.51
v/c Ratio	0.42	0.44	0.18	0.23	0.68	0.08	0.10	0.23	0.07	0.13	0.31	0.17
Control Delay	20.4	20.8	3.7	27.5	38.3	0.3	21.2	21.0	0.2	12.2	13.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	20.8	3.7	27.5	38.3	0.3	21.2	21.0	0.2	12.2	13.6	3.0
LOS	C	C	A	C	D	A	C	C	A	B	B	A
Approach Delay		17.1			32.8			16.8			10.3	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	45	111	0	22	120	0	14	57	0	19	80	0
Queue Length 95th (ft)	74	157	27	47	179	0	41	119	0	47	152	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	323	861	793	322	558	589	416	716	709	602	953	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.35	0.15	0.16	0.46	0.06	0.10	0.23	0.07	0.13	0.31	0.17

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

# Background Traffic Conditions

AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 18.2







Intersection LOS: B

Intersection Capacity Utilization 54.2%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø4
12 s	26 s	42 s
 Ø6 (R)	 Ø7	 Ø8
38 s	13 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	135	170	99	102	30	87	735	64	61	1651	114
Future Volume (vph)	108	135	170	99	102	30	87	735	64	61	1651	114
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.586			0.448			0.065			0.302		
Satd. Flow (perm)	1092	1863	1583	835	1863	1583	121	5024	0	563	5034	0
Satd. Flow (RTOR)			146			118		20			15	
Lane Group Flow (vph)	117	147	185	108	111	33	95	869	0	66	1919	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	20.7	13.7	13.7	20.7	13.7	13.7	80.6	73.5		78.9	71.0	
Actuated g/C Ratio	0.17	0.11	0.11	0.17	0.11	0.11	0.67	0.61		0.66	0.59	
v/c Ratio	0.51	0.69	0.60	0.55	0.52	0.12	0.53	0.28		0.15	0.64	
Control Delay	48.5	67.8	21.5	50.4	58.6	0.8	23.6	11.7		6.9	17.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.5	67.8	21.5	50.4	58.6	0.8	23.6	11.7		6.9	17.6	
LOS	D	E	C	D	E	A	C	B		A	B	
Approach Delay		43.7			47.5			12.8			17.3	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	76	110	28	70	81	0	21	113		15	345	
Queue Length 95th (ft)	129	179	101	121	140	0	70	146		30	412	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	228	248	337	198	248	313	191	3086		455	2986	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.51	0.59	0.55	0.55	0.45	0.11	0.50	0.28		0.15	0.64	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 21.4











Intersection LOS: C

Intersection Capacity Utilization 69.3%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
13 s	74 s		12 s	21 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
13 s	74 s		12 s	21 s



Timings  
1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	373	69	44	325	40	105	269	79	57	180	115
Future Volume (vph)	203	373	69	44	325	40	105	269	79	57	180	115
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.222			0.524			0.634			0.381		
Satd. Flow (perm)	414	1863	1583	976	1863	1583	1181	1863	1583	710	1863	1583
Satd. Flow (RTOR)			95			164			164			125
Lane Group Flow (vph)	221	405	75	48	353	43	114	292	86	62	196	125
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.5	34.5	34.5	19.6	19.6	19.6	26.6	26.6	26.6	35.5	35.5	35.5
Actuated g/C Ratio	0.43	0.43	0.43	0.24	0.24	0.24	0.33	0.33	0.33	0.44	0.44	0.44
v/c Ratio	0.64	0.50	0.10	0.20	0.77	0.08	0.29	0.47	0.14	0.16	0.24	0.16
Control Delay	23.0	18.4	2.1	24.4	39.6	0.3	25.5	26.7	0.5	15.6	16.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	18.4	2.1	24.4	39.6	0.3	25.5	26.7	0.5	15.6	16.0	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		18.1			34.2			21.8			12.0	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	68	139	0	19	162	0	45	124	0	18	60	0
Queue Length 95th (ft)	105	197	15	44	240	0	93	208	2	43	113	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	347	908	820	292	558	589	393	620	636	395	827	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.45	0.09	0.16	0.63	0.07	0.29	0.47	0.14	0.16	0.24	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.4

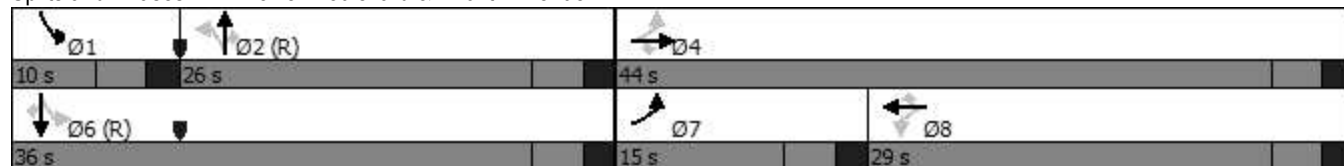
Intersection LOS: C

Intersection Capacity Utilization 63.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



























# Timings

## 2: Federal Boulevard & W 64th Avenue

# Background Traffic Conditions

PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	156	115	98	170	77	145	1662	69	76	1260	123
Future Volume (vph)	195	156	115	98	170	77	145	1662	69	76	1260	123
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5019	0
Flt Permitted	0.485			0.398			0.096			0.068		
Satd. Flow (perm)	903	1863	1583	741	1863	1583	179	5055	0	127	5019	0
Satd. Flow (RTOR)			209			164		7			17	
Lane Group Flow (vph)	212	170	125	107	185	84	158	1882	0	83	1504	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	14.0	10.0	10.0	29.0	25.0	25.0	24.0	66.0		15.0	57.0	
Total Split (%)	11.7%	8.3%	8.3%	24.2%	20.8%	20.8%	20.0%	55.0%		12.5%	47.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	26.9	17.9	17.9	30.8	20.0	20.0	75.0	64.4		67.4	58.6	
Actuated g/C Ratio	0.22	0.15	0.15	0.26	0.17	0.17	0.62	0.54		0.56	0.49	
v/c Ratio	0.79	0.61	0.30	0.38	0.60	0.21	0.60	0.69		0.47	0.61	
Control Delay	60.6	59.1	1.9	37.1	55.2	1.2	23.2	22.9		23.7	23.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.6	59.1	1.9	37.1	55.2	1.2	23.2	22.9		23.7	23.9	
LOS	E	E	A	D	E	A	C	C		C	C	
Approach Delay		45.6			38.0			22.9			23.9	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	134	125	0	63	134	0	46	392		23	295	
Queue Length 95th (ft)	#222	#243	0	111	212	0	106	470		65	382	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	267	278	414	415	310	400	365	2717		210	2460	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.61	0.30	0.26	0.60	0.21	0.43	0.69		0.40	0.61	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 27.1

Intersection LOS: C

Intersection Capacity Utilization 75.1%









ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

























Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	56 s	29 s	10 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	57 s	14 s	25 s

Timings  
1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	325	125	55	278	37	44	178	58	85	316	166
Future Volume (vph)	145	325	125	55	278	37	44	178	58	85	316	166
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.268			0.550			0.555			0.512		
Satd. Flow (perm)	499	1863	1583	1025	1863	1583	1034	1863	1583	954	1863	1583
Satd. Flow (RTOR)			136			164			164			180
Lane Group Flow (vph)	158	353	136	60	302	40	48	193	63	92	343	180
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	14.0	44.0	44.0	30.0	30.0	30.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	17.5%	55.0%	55.0%	37.5%	37.5%	37.5%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	31.9	31.9	31.9	18.3	18.3	18.3	28.3	28.3	28.3	38.1	38.1	38.1
Actuated g/C Ratio	0.40	0.40	0.40	0.23	0.23	0.23	0.35	0.35	0.35	0.48	0.48	0.48
v/c Ratio	0.47	0.48	0.19	0.26	0.71	0.08	0.13	0.29	0.09	0.18	0.39	0.21
Control Delay	19.4	19.3	3.1	26.2	37.4	0.3	23.1	23.2	0.3	14.5	16.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	19.3	3.1	26.2	37.4	0.3	23.1	23.2	0.3	14.5	16.5	3.3
LOS	B	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		15.9			32.0			18.4			12.4	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	50	126	0	25	140	0	17	73	0	24	106	0
Queue Length 95th (ft)	77	169	27	51	200	0	46	137	0	59	199	37
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	342	908	841	320	582	607	366	660	666	523	886	847
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.39	0.16	0.19	0.52	0.07	0.13	0.29	0.09	0.18	0.39	0.21

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 18.5

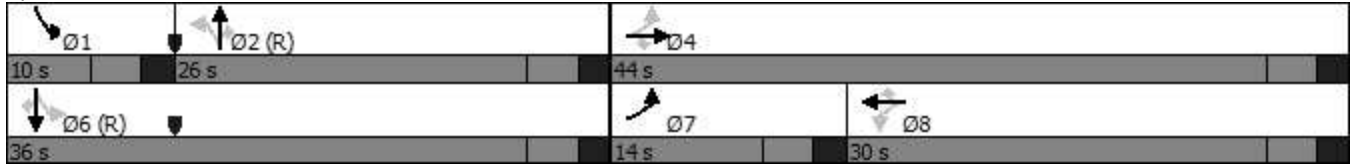
Intersection LOS: B

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



























# Timings

## 2: Federal Boulevard & W 64th Avenue

# Background Traffic Conditions

AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	158	200	116	120	35	102	865	76	72	1943	134
Future Volume (vph)	127	158	200	116	120	35	102	865	76	72	1943	134
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.526			0.376			0.056			0.248		
Satd. Flow (perm)	980	1863	1583	700	1863	1583	104	5024	0	462	5034	0
Satd. Flow (RTOR)			131			118		20			15	
Lane Group Flow (vph)	138	172	217	126	130	38	111	1023	0	78	2258	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	21.6	14.6	14.6	21.6	14.6	14.6	79.8	72.5		78.0	69.9	
Actuated g/C Ratio	0.18	0.12	0.12	0.18	0.12	0.12	0.66	0.60		0.65	0.58	
v/c Ratio	0.62	0.76	0.71	0.67	0.58	0.13	0.64	0.34		0.21	0.77	
Control Delay	53.7	72.4	33.5	58.4	60.1	0.9	37.0	12.6		7.6	21.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	53.7	72.4	33.5	58.4	60.1	0.9	37.0	12.6		7.6	21.4	
LOS	D	E	C	E	E	A	D	B		A	C	
Approach Delay		51.5			51.7			15.0			20.9	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	89	129	62	81	95	0	33	144		18	476	
Queue Length 95th (ft)	150	#220	149	#144	161	0	#105	176		34	540	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	221	248	324	188	248	313	180	3043		390	2940	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.62	0.69	0.67	0.67	0.52	0.12	0.62	0.34		0.20	0.77	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 25.2

Intersection LOS: C

Intersection Capacity Utilization 78.4%









ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

























 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	74 s	12 s	21 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	74 s	12 s	21 s



# Timings

## 1: Lowell Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	439	82	52	383	47	124	317	92	69	211	136
Future Volume (vph)	239	439	82	52	383	47	124	317	92	69	211	136
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.175			0.490			0.616			0.300		
Satd. Flow (perm)	326	1863	1583	913	1863	1583	1147	1863	1583	559	1863	1583
Satd. Flow (RTOR)			95			164			164			148
Lane Group Flow (vph)	260	477	89	57	416	51	135	345	100	75	229	148
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.5	36.5	36.5	21.5	21.5	21.5	25.0	25.0	25.0	33.5	33.5	33.5
Actuated g/C Ratio	0.46	0.46	0.46	0.27	0.27	0.27	0.31	0.31	0.31	0.42	0.42	0.42
v/c Ratio	0.79	0.56	0.12	0.23	0.83	0.09	0.38	0.59	0.16	0.24	0.29	0.20
Control Delay	33.3	18.5	2.8	24.4	42.9	0.3	27.8	30.3	1.6	17.3	17.5	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	18.5	2.8	24.4	42.9	0.3	27.8	30.3	1.6	17.3	17.5	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		21.5			36.7			24.8			13.0	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	76	160	0	21	189	0	56	156	0	23	76	0
Queue Length 95th (ft)	#173	241	20	51	#314	0	110	#252	9	50	131	34
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	328	908	820	273	558	589	359	583	608	319	780	749
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.53	0.11	0.21	0.75	0.09	0.38	0.59	0.16	0.24	0.29	0.20

### Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

## Background Traffic Conditions

PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 24.0

Intersection LOS: C

Intersection Capacity Utilization 70.9%

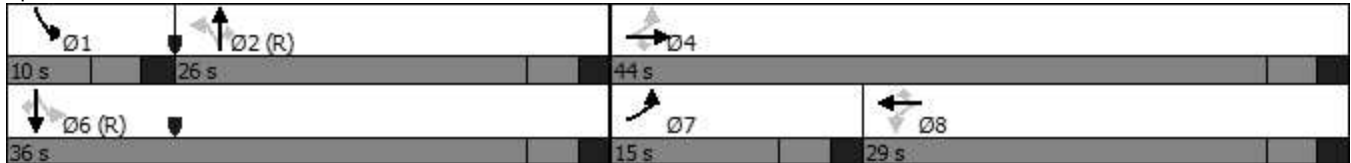
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



























# Timings

## 2: Federal Boulevard & W 64th Avenue

# Background Traffic Conditions

PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	184	136	115	200	90	170	1955	82	89	1482	145
Future Volume (vph)	229	184	136	115	200	90	170	1955	82	89	1482	145
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5019	0
Flt Permitted	0.221			0.590			0.065			0.071		
Satd. Flow (perm)	412	1863	1583	1099	1863	1583	121	5055	0	132	5019	0
Satd. Flow (RTOR)			164			209		8			18	
Lane Group Flow (vph)	249	200	148	125	217	98	185	2214	0	97	1769	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	19.0	29.0	29.0	13.0	23.0	23.0	18.0	67.0		11.0	60.0	
Total Split (%)	15.8%	24.2%	24.2%	10.8%	19.2%	19.2%	15.0%	55.8%		9.2%	50.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	35.9	22.9	22.9	24.8	16.9	16.9	73.3	61.9		63.7	56.5	
Actuated g/C Ratio	0.30	0.19	0.19	0.21	0.14	0.14	0.61	0.52		0.53	0.47	
v/c Ratio	0.89	0.56	0.34	0.46	0.83	0.24	0.79	0.85		0.63	0.75	
Control Delay	67.0	50.5	6.9	38.7	75.5	1.4	50.2	29.2		36.6	28.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	67.0	50.5	6.9	38.7	75.5	1.4	50.2	29.2		36.6	28.6	
LOS	E	D	A	D	E	A	D	C		D	C	
Approach Delay		46.6			48.6			30.8			29.0	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	155	140	0	72	164	0	89	529		29	412	
Queue Length 95th (ft)	#272	218	44	123	#283	0	#193	601		#99	475	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	281	372	447	272	279	415	253	2609		155	2371	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.89	0.54	0.33	0.46	0.78	0.24	0.73	0.85		0.63	0.75	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Background Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 33.4

Intersection LOS: C

Intersection Capacity Utilization 85.2%









ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

























Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11 s	67 s	13 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	60 s	19 s	23 s

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	277	106	50	242	37	38	151	50	74	268	141
Future Volume (vph)	123	277	106	50	242	37	38	151	50	74	268	141
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.295			0.577			0.582			0.557		
Satd. Flow (perm)	550	1863	1583	1075	1863	1583	1084	1863	1583	1038	1863	1583
Satd. Flow (RTOR)			115			164			164			153
Lane Group Flow (vph)	134	301	115	54	263	40	41	164	54	80	291	153
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	13.0	42.0	42.0	29.0	29.0	29.0	26.0	26.0	26.0	12.0	38.0	38.0
Total Split (%)	16.3%	52.5%	52.5%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	15.0%	47.5%	47.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	29.2	29.2	29.2	16.5	16.5	16.5	30.6	30.6	30.6	40.8	40.8	40.8
Actuated g/C Ratio	0.36	0.36	0.36	0.21	0.21	0.21	0.38	0.38	0.38	0.51	0.51	0.51
v/c Ratio	0.42	0.44	0.18	0.24	0.69	0.09	0.10	0.23	0.08	0.13	0.31	0.17
Control Delay	20.3	20.6	3.7	27.6	38.3	0.4	21.3	21.1	0.2	12.4	13.7	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	20.6	3.7	27.6	38.3	0.4	21.3	21.1	0.2	12.4	13.7	3.0
LOS	C	C	A	C	D	A	C	C	A	B	B	A
Approach Delay		17.0			32.5			16.8			10.4	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	45	111	0	23	122	0	14	57	0	19	80	0
Queue Length 95th (ft)	73	157	27	49	182	0	41	119	0	48	153	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	323	861	793	322	558	589	414	712	706	599	949	881
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.35	0.15	0.17	0.47	0.07	0.10	0.23	0.08	0.13	0.31	0.17

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

# Timings 1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.2







Intersection LOS: B

Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø4
12 s	26 s	42 s
 Ø6 (R)	 Ø7	 Ø8
38 s	13 s	29 s

# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	137	188	99	103	30	93	735	64	61	1651	119
Future Volume (vph)	126	137	188	99	103	30	93	735	64	61	1651	119
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.583			0.442			0.064			0.303		
Satd. Flow (perm)	1086	1863	1583	823	1863	1583	119	5024	0	564	5034	0
Satd. Flow (RTOR)			145			118		20			16	
Lane Group Flow (vph)	137	149	204	108	112	33	101	869	0	66	1924	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	20.8	13.8	13.8	20.8	13.8	13.8	80.6	73.5		78.8	70.9	
Actuated g/C Ratio	0.17	0.12	0.12	0.17	0.12	0.12	0.67	0.61		0.66	0.59	
v/c Ratio	0.60	0.70	0.66	0.55	0.53	0.12	0.56	0.28		0.15	0.65	
Control Delay	52.7	68.3	26.8	50.6	58.7	0.8	26.6	11.7		6.9	17.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	52.7	68.3	26.8	50.6	58.7	0.8	26.6	11.7		6.9	17.8	
LOS	D	E	C	D	E	A	C	B		A	B	
Approach Delay		46.7			47.7			13.2			17.4	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	90	112	42	70	82	0	23	113		15	349	
Queue Length 95th (ft)	149	181	123	121	141	0	78	146		30	413	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	228	248	336	197	248	313	190	3084		456	2981	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.60	0.60	0.61	0.55	0.45	0.11	0.53	0.28		0.14	0.65	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 22.3









Intersection LOS: C

Intersection Capacity Utilization 69.9%

ICU Level of Service C

Analysis Period (min) 15




Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	74 s	12 s	21 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	74 s	12 s	21 s







HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	5	8	18
Future Vol, veh/h	1	3	2	5	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	2	5	9	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	4	0	12	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1618	-	1008	1081
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1618	-	1007	1081
Mov Cap-2 Maneuver	-	-	-	-	923	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1013	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1027	-	-	1618	-	
HCM Lane V/C Ratio	0.028	-	-	0.001	-	
HCM Control Delay (s)	8.6	-	-	7.2	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

























HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	1	10	2	5	20
Future Vol, veh/h	18	1	10	2	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	11	2	5	22
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	21	0	45	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	965	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	958	1056
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	992	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	6.1		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1019	-	-	1595	-	
HCM Lane V/C Ratio	0.027	-	-	0.007	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	378	69	46	328	43	105	269	81	63	180	115
Future Volume (vph)	203	378	69	46	328	43	105	269	81	63	180	115
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.219			0.521			0.634			0.380		
Satd. Flow (perm)	408	1863	1583	970	1863	1583	1181	1863	1583	708	1863	1583
Satd. Flow (RTOR)			95			164			164			125
Lane Group Flow (vph)	221	411	75	50	357	47	114	292	88	68	196	125
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.6	34.6	34.6	19.8	19.8	19.8	26.5	26.5	26.5	35.4	35.4	35.4
Actuated g/C Ratio	0.43	0.43	0.43	0.25	0.25	0.25	0.33	0.33	0.33	0.44	0.44	0.44
v/c Ratio	0.64	0.51	0.10	0.21	0.78	0.09	0.29	0.47	0.14	0.17	0.24	0.16
Control Delay	23.0	18.4	2.1	24.5	39.7	0.3	25.6	26.8	0.7	15.8	16.1	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	18.4	2.1	24.5	39.7	0.3	25.6	26.8	0.7	15.8	16.1	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		18.1			34.0			21.9			12.1	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	68	141	0	20	165	0	45	124	0	19	60	0
Queue Length 95th (ft)	105	201	15	45	243	0	93	208	3	47	113	31
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	346	908	820	291	558	589	391	616	633	393	824	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.45	0.09	0.17	0.64	0.08	0.29	0.47	0.14	0.17	0.24	0.16

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 21.4

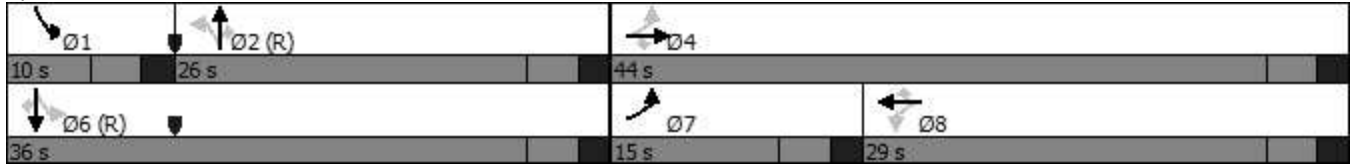
Intersection LOS: C

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	158	126	98	173	77	164	1662	69	76	1260	142
Future Volume (vph)	206	158	126	98	173	77	164	1662	69	76	1260	142
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5009	0
Flt Permitted	0.476			0.393			0.090			0.070		
Satd. Flow (perm)	887	1863	1583	732	1863	1583	168	5055	0	130	5009	0
Satd. Flow (RTOR)			209			164		7			20	
Lane Group Flow (vph)	224	172	137	107	188	84	178	1882	0	83	1524	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	14.0	10.0	10.0	29.0	25.0	25.0	24.0	66.0		15.0	57.0	
Total Split (%)	11.7%	8.3%	8.3%	24.2%	20.8%	20.8%	20.0%	55.0%		12.5%	47.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	26.9	17.9	17.9	30.8	20.0	20.0	75.4	64.4		66.2	57.5	
Actuated g/C Ratio	0.22	0.15	0.15	0.26	0.17	0.17	0.63	0.54		0.55	0.48	
v/c Ratio	0.85	0.62	0.33	0.38	0.61	0.21	0.65	0.69		0.47	0.63	
Control Delay	67.1	59.5	2.8	37.1	55.6	1.2	28.2	22.9		24.1	25.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	67.1	59.5	2.8	37.1	55.6	1.2	28.2	22.9		24.1	25.1	
LOS	E	E	A	D	E	A	C	C		C	C	
Approach Delay		48.1			38.3			23.3			25.0	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	143	126	0	63	136	0	58	392		23	308	
Queue Length 95th (ft)	#247	#248	6	111	216	0	130	470		66	400	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	265	278	414	415	310	400	360	2717		211	2409	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.85	0.62	0.33	0.26	0.61	0.21	0.49	0.69		0.39	0.63	

### Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

# Timings 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 75.9%











ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.





Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
15 s	56 s		29 s	10 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
24 s	57 s		14 s	25 s





HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	11	9	3	5	11
Future Vol, veh/h	2	11	9	3	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	10	3	5	12
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	14	0	31	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	983	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	977	1074
Mov Cap-2 Maneuver	-	-	-	-	903	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	994	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		5.4		8.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.006	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Access B & W 64th Avenue

























Total Traffic Conditions  
PM Peak Hour - Year 2025

Intersection						
Int Delay, s/veh	5.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	2	32	9	3	13
Future Vol, veh/h	11	2	32	9	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	35	10	3	14
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	14	0	93	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	80	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	907	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	887	1067
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	922	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		5.7		8.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.022	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	



Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	326	125	58	283	42	44	178	59	87	316	166
Future Volume (vph)	145	326	125	58	283	42	44	178	59	87	316	166
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.263			0.549			0.555			0.510		
Satd. Flow (perm)	490	1863	1583	1023	1863	1583	1034	1863	1583	950	1863	1583
Satd. Flow (RTOR)			136			164			164			180
Lane Group Flow (vph)	158	354	136	63	308	46	48	193	64	95	343	180
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	14.0	44.0	44.0	30.0	30.0	30.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	17.5%	55.0%	55.0%	37.5%	37.5%	37.5%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	32.2	32.2	32.2	18.5	18.5	18.5	28.1	28.1	28.1	37.8	37.8	37.8
Actuated g/C Ratio	0.40	0.40	0.40	0.23	0.23	0.23	0.35	0.35	0.35	0.47	0.47	0.47
v/c Ratio	0.47	0.47	0.19	0.27	0.72	0.09	0.13	0.30	0.10	0.18	0.39	0.21
Control Delay	19.3	19.1	3.0	26.3	37.4	0.4	23.3	23.4	0.3	14.6	16.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	19.1	3.0	26.3	37.4	0.4	23.3	23.4	0.3	14.6	16.7	3.3
LOS	B	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		15.8			31.7			18.6			12.5	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	50	126	0	26	142	0	17	74	0	26	107	0
Queue Length 95th (ft)	77	169	27	53	203	0	46	137	0	61	200	37
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	341	908	841	319	582	607	362	654	662	520	881	843
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.39	0.16	0.20	0.53	0.08	0.13	0.30	0.10	0.18	0.39	0.21

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

# Total Traffic Conditions

AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 18.5

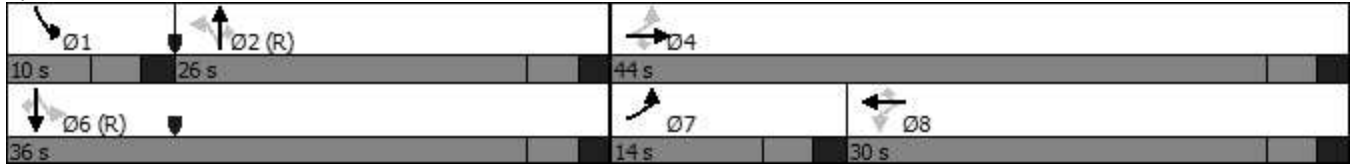
Intersection LOS: B

Intersection Capacity Utilization 60.4%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 1: Lowell Boulevard & W 64th Avenue



# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	160	218	116	121	35	108	865	76	72	1943	139
Future Volume (vph)	145	160	218	116	121	35	108	865	76	72	1943	139
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5024	0	1770	5034	0
Flt Permitted	0.519			0.369			0.056			0.248		
Satd. Flow (perm)	967	1863	1583	687	1863	1583	104	5024	0	462	5034	0
Satd. Flow (RTOR)			131			118		20			15	
Lane Group Flow (vph)	158	174	237	126	132	38	117	1023	0	78	2263	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	12.0	21.0	21.0	12.0	21.0	21.0	13.0	74.0		13.0	74.0	
Total Split (%)	10.0%	17.5%	17.5%	10.0%	17.5%	17.5%	10.8%	61.7%		10.8%	61.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	None	C-Max		None	C-Max	
Act Effct Green (s)	21.6	14.6	14.6	21.6	14.6	14.6	79.7	72.4		77.9	69.8	
Actuated g/C Ratio	0.18	0.12	0.12	0.18	0.12	0.12	0.66	0.60		0.65	0.58	
v/c Ratio	0.71	0.77	0.77	0.68	0.58	0.13	0.67	0.34		0.21	0.77	
Control Delay	60.2	72.7	39.7	58.8	60.2	0.9	40.1	12.7		7.6	21.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	60.2	72.7	39.7	58.8	60.2	0.9	40.1	12.7		7.6	21.6	
LOS	E	E	D	E	E	A	D	B		A	C	
Approach Delay		55.5			52.0			15.5			21.1	
Approach LOS		E			D			B			C	
Queue Length 50th (ft)	104	131	78	81	97	0	38	144		18	477	
Queue Length 95th (ft)	#180	#225	#189	#146	163	0	#118	176		34	543	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	221	248	324	186	248	313	180	3040		390	2933	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.71	0.70	0.73	0.68	0.53	0.12	0.65	0.34		0.20	0.77	

### Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated

## Timings

### 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 79.0%









ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.




Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	74 s	12 s	21 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
13 s	74 s	12 s	21 s





HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	5	8	18
Future Vol, veh/h	1	3	2	5	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	2	5	9	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	4	0	12	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1618	-	1008	1081
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1618	-	1007	1081
Mov Cap-2 Maneuver	-	-	-	-	923	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1013	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1027	-	-	1618	-	
HCM Lane V/C Ratio	0.028	-	-	0.001	-	
HCM Control Delay (s)	8.6	-	-	7.2	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

























HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
AM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	1	10	2	5	20
Future Vol, veh/h	18	1	10	2	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	11	2	5	22
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	21	0	45	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	965	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	958	1056
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	992	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		6.1		8.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1019	-	-	1595	-	
HCM Lane V/C Ratio	0.027	-	-	0.007	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Timings  
1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	444	82	54	386	50	124	317	93	73	211	136
Future Volume (vph)	239	444	82	54	386	50	124	317	93	73	211	136
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.172			0.488			0.616			0.299		
Satd. Flow (perm)	320	1863	1583	909	1863	1583	1147	1863	1583	557	1863	1583
Satd. Flow (RTOR)			95			164			164			148
Lane Group Flow (vph)	260	483	89	59	420	54	135	345	101	79	229	148
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	44.0	44.0	29.0	29.0	29.0	26.0	26.0	26.0	10.0	36.0	36.0
Total Split (%)	18.8%	55.0%	55.0%	36.3%	36.3%	36.3%	32.5%	32.5%	32.5%	12.5%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.6	36.6	36.6	21.6	21.6	21.6	25.0	25.0	25.0	33.4	33.4	33.4
Actuated g/C Ratio	0.46	0.46	0.46	0.27	0.27	0.27	0.31	0.31	0.31	0.42	0.42	0.42
v/c Ratio	0.80	0.57	0.11	0.24	0.84	0.10	0.38	0.59	0.17	0.25	0.29	0.20
Control Delay	33.8	18.5	2.8	24.5	43.2	0.4	27.8	30.4	1.6	17.5	17.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	18.5	2.8	24.5	43.2	0.4	27.8	30.4	1.6	17.5	17.6	3.8
LOS	C	B	A	C	D	A	C	C	A	B	B	A
Approach Delay		21.6			36.8			24.8			13.1	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	76	162	0	22	191	0	56	156	0	24	77	0
Queue Length 95th (ft)	#175	245	20	53	#319	0	110	#252	10	52	131	34
Internal Link Dist (ft)		290			1453			271			232	
Turn Bay Length (ft)	100		100	105		55	90		90	105		105
Base Capacity (vph)	327	908	820	272	558	589	358	581	606	317	778	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.53	0.11	0.22	0.75	0.09	0.38	0.59	0.17	0.25	0.29	0.20

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

# Timings

## 1: Lowell Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 24.1

Intersection LOS: C

Intersection Capacity Utilization 71.1%

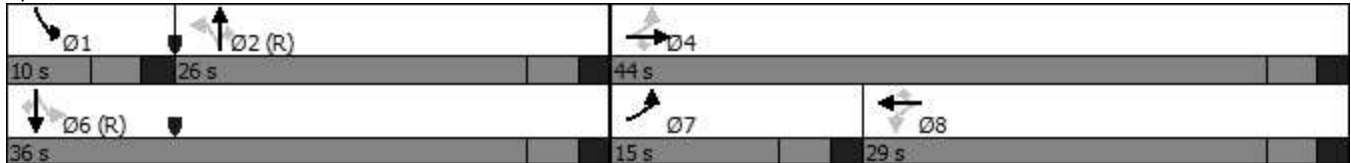
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Lowell Boulevard & W 64th Avenue





























# Timings

## 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	186	147	115	203	90	189	1955	82	89	1482	164
Future Volume (vph)	240	186	147	115	203	90	189	1955	82	89	1482	164
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5055	0	1770	5009	0
Flt Permitted	0.214			0.584			0.066			0.072		
Satd. Flow (perm)	399	1863	1583	1088	1863	1583	123	5055	0	134	5009	0
Satd. Flow (RTOR)			164			209		8			20	
Lane Group Flow (vph)	261	202	160	125	221	98	205	2214	0	97	1789	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	11.0		8.0	11.0	
Total Split (s)	19.0	29.0	29.0	13.0	23.0	23.0	18.0	67.0		11.0	60.0	
Total Split (%)	15.8%	24.2%	24.2%	10.8%	19.2%	19.2%	15.0%	55.8%		9.2%	50.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	36.0	23.0	23.0	25.0	17.0	17.0	73.5	61.8		63.0	55.8	
Actuated g/C Ratio	0.30	0.19	0.19	0.21	0.14	0.14	0.61	0.52		0.52	0.46	
v/c Ratio	0.94	0.57	0.37	0.46	0.84	0.24	0.85	0.85		0.63	0.76	
Control Delay	76.3	50.5	8.3	38.7	76.5	1.4	57.5	29.2		36.8	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	76.3	50.5	8.3	38.7	76.5	1.4	57.5	29.2		36.8	29.4	
LOS	E	D	A	D	E	A	E	C		D	C	
Approach Delay		50.5			49.3			31.6			29.8	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	164	142	0	72	167	0	105	529		29	419	
Queue Length 95th (ft)	#298	221	55	123	#291	0	#231	601		#98	483	
Internal Link Dist (ft)		778			343			800			342	
Turn Bay Length (ft)	110		110	105		105	590			215		
Base Capacity (vph)	279	372	447	272	279	415	254	2607		154	2341	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.94	0.54	0.36	0.46	0.79	0.24	0.81	0.85		0.63	0.76	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

## Timings

### 2: Federal Boulevard & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 34.6

Intersection LOS: C

Intersection Capacity Utilization 86.0%











ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.





Queue shown is maximum after two cycles.

Splits and Phases: 2: Federal Boulevard & W 64th Avenue

 Ø1	 Ø2 (R)		 Ø3	 Ø4
11 s	67 s		13 s	29 s
 Ø5	 Ø6 (R)		 Ø7	 Ø8
18 s	60 s		19 s	23 s





HCM 6th TWSC  
3: Access A & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	11	9	3	5	11
Future Vol, veh/h	2	11	9	3	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	251	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	10	3	5	12
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	14	0	31	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	983	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	977	1074
Mov Cap-2 Maneuver	-	-	-	-	903	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	994	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	5.4		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.006	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Access B & W 64th Avenue

Total Traffic Conditions  
PM Peak Hour - Year 2043

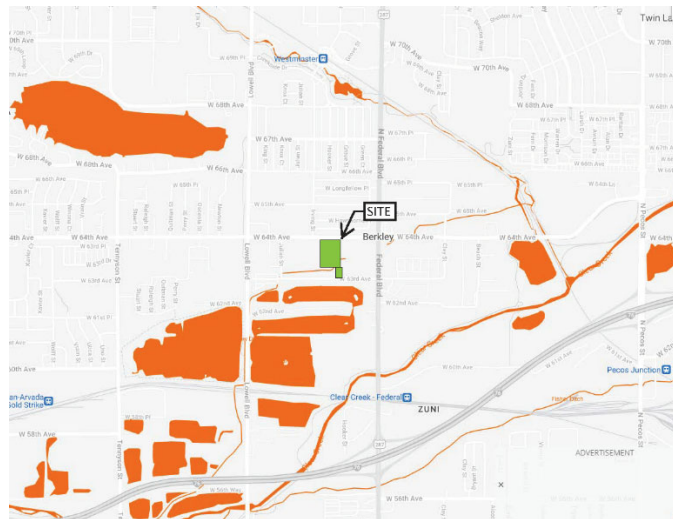
Intersection						
Int Delay, s/veh	5.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	2	32	9	3	13
Future Vol, veh/h	11	2	32	9	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	136	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	35	10	3	14
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	14	0	93	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	80	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	907	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	887	1067
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	922	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	5.7		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1014	-	-	1604	-	
HCM Lane V/C Ratio	0.017	-	-	0.022	-	
HCM Control Delay (s)	8.6	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	



# FINAL DRAINAGE REPORT

## 64<sup>th</sup> Avenue Apartments

3214-3240 West 64<sup>th</sup> Avenue, Denver, CO



**PREPARED BY**  
NOLAN STUART, EI  
DESIGN ENGINEER  
RAPTOR CIVIL ENGINEERING

**REVIEWED BY**  
ERIC BURTZLAFF, PE  
PRINCIPAL  
RAPTOR CIVIL ENGINEERING

**DATE: APRIL 20<sup>TH</sup>, 2023**  
**JOB: 22-127**

8620 Wolff Ct, Suite 105B  
Westminster, CO 80031  
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[www.raptor-civil.com](http://www.raptor-civil.com)



THIS REPORT FOR DRAINAGE DESIGN OF THE 64<sup>TH</sup> AVE APARTMENTS WAS PREPARED BY ME (OR UNDER MY SUPERVISION) IN ACCORDANCE WITH THE PROVISIONS OF UNINCORPORATED ADAMS COUNTY AND MILE HIGH FLOOD DISTRICT DRAINAGE CRITERIA AND WAS DESIGNED TO COMPLY WITH THE PROVISIONS THEREOF. I UNDERSTAND THAT UNINCORPORATED ADAMS COUNTY AND MILE HIGH FLOOD DISTRICT DRAINAGE CRITERIA DOES NOT, AND WILL NOT, ASSUME LIABILITY FOR DRAINAGE FACILITIES DESIGNED BY OTHERS.

BY:     ERIC BURTZLAFF, PE  
          LICENSED PROFESSIONAL ENGINEER  
          STATE OF COLORADO  
          NO. 50061

SEAL:



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## 1. INTRODUCTION

RCE has prepared the following Final Drainage Report for a proposed multi-building apartment complex at 3214-3240 West 64<sup>th</sup> Ave, Denver, Colorado.

This report will demonstrate that the West 64<sup>th</sup> Ave Apartments will not negatively impact downstream drainage nor the adjacent properties.

### A. LOCATION

The subject property is currently three parcels of land of land addressed:

- 3107 W 63<sup>rd</sup> Ave, Denver, Colorado
  - Consists of Lot 15 of the Clear Creek Gardens Subdivision
  - 0.258 acres in size
  - Partially developed with a concrete drive and fencing all around
- 3214 W 64<sup>th</sup> Ave, Denver, Colorado
  - Consists of parts of the northwest quarter of section 8, township 3 south, range 68 west
  - 2.378 acres in size
  - Partially developed with an asphalt drive and one story frame house
- 3240 W 64<sup>th</sup> Ave, Denver, Colorado
  - Consists of the east one-half of the following described parcel: commencing at a point on the north section line, 60 rods west of the northeaster corner of the northwest quarter of section 8, township 3 south, range 68 west in Adams County, Colorado; thence west on said section line 20 rods, thence at right angles south 540 rods, thence at right angles east 20 rods, thence at right angles north 40 rods to the point of beginning, except that portion conveyed to the county of Adams in warranty deed recorded October 17, 2005 at reception no., 20051017001136790.
  - 2.361 acres in size
  - The lot is considered vacant land, but is partially developed with an asphalt drive and wrought iron fence

All together, this subject site is 5.03 acres and is partially developed.

The subject site is bordered to the North by West 64<sup>th</sup> Ave, the East and West by developed lots and the South by West 63<sup>rd</sup> Ave.

The subject site is lying within the Northwest Quarter (NW ¼) of Section 8, Township 3 South, range 68 West of the Sixth Principal Meridian, City of Denver, County of Adams, State of Colorado.





## **B. DESCRIPTION OF PROPERTY**

### Existing Topography and Ground Cover

The subject site is 5.03 acres. The existing ground cover is low growing vegetation and grasses. According to USDA NRCS Custom Soil Resource website, the site is:

- 61.0% map unit symbol Gr (3.1 acres)
  - Gravelly land-Shale outcrop complex (hydrologic soil group A)
- 20.2% map unit symbol HID (1.0 acres)
  - Heldt clay on 3% to 9% slopes (hydrologic soil group C)
- 10.9% map unit symbol Lw (0.5 acres)
  - Loamy alluvial land, moderately wet on 0% to 1% slopes (hydrologic soil group C)
- 7.9% map unit symbol Wt (0.4)
  - Wet alluvial land on 0% to 1% slopes (hydrologic soil group D)

The site slopes at an average slope of 4% from northwest to southeast towards the 3107 West 63<sup>rd</sup> Ave, the properties west of that and eventually towards West 63<sup>rd</sup> Ave.

### Existing Drainage Studies

There are currently no existing or historic drainage studies for this specific area.

## **C. PROPOSED PROJECT DESCRIPTION**

This development proposes a multi-building apartment complex on the site. This will include drive aisles, parking spaces, a dirt walking path along the entire west and south property lines, a water quality pond and an underground detention basin.

## **D. FLOOD HAZARD**

The subject site is located within two FEMA Firm Maps. The very north of the property where it connects to West 64<sup>th</sup> Ave falls under Map Number 08001C0584H, dated March 5, 2007. The majority of the property falls under Map Number 08001C0592H, dated March 5, 2007. The site is located within Zone X defined as outside the 0.2% annual chance floodplain.

## **2. HISTORIC DRAINAGE SYSTEM**

### **A. MAJOR BASIN DESCRIPTIONS**

After reaching West 63<sup>rd</sup> Ave, flows make their way towards Lake Sangraco/Clear Creek. Both are large regional facilities in the area located just south of the site. There are also reservoirs such as the Jim Baker Reservoir and Clear Creek Valley park nearby.



## B. SUB-BASIN DESCRIPTIONS

Historically, the subject site is divided into two sub-basins described as H1 and H2 in this drainage report/plan and two design points described as Design Point A and Design Point B. There are no off-site flows onto the subject property. Flows conveyed in West 64<sup>th</sup> Ave do not come onto the site and will be picked up by inlets beforehand.

**Basin H1** is 4.76 acres and consists of low grass and vegetation as well as a small asphalt drive and one story house. Basin H1 slopes southeast towards the south property line and is historically 4.32% impervious. Basin H1 detailed information can be found below in Table 1.

**Basin H2** is 0.26 acres and consists of a dirt and asphalt drive covering most of the lot. Basin H2 slopes southeast towards West 63<sup>rd</sup> Ave and is historically 2.00% impervious. Basin H2 detailed information can be found below in Table 1.

**Table 1 – Historic Summar**

Basin	Area (ac)	C5	C100	I5 (in/hr)	I100 (in/hr)	Q5 (cfs)	Q100 (cfs)
H1 (N LOT)	4.76	0.07	0.50	2.12	4.57	0.71	10.91
H2 (S LOT)	0.26	0.05	0.49	1.56	3.36	0.02	0.43

Refer to **Appendix G** for the Historic Drainage Plan.

**Design Point A** is the historic discharge location for Basin H1 and **Design Point B** is the historic discharge location for Basin H2. Design point info can be found below in Table 3.

## 3. DEVELOPED DRAINAGE SYSTEM

### A. SUB-BASIN DESCRIPTIONS

In developed conditions, the site is broken into 5 sub-basins described as D1, D2, D3, D4 & D5 in this drainage report/plan and 6 design points described as **Design Points C, D, E, F, G and H**.

**Basins D1, D2, D3 and D4** are 0.78 acres, 1.34 acres, 1.02 acres and 1.59 acres, respectively. They consist of proposed apartment buildings, drive aisles, parking spaces, landscape area, and a walking path. They break up the northern two lots into 4 quadrants.

Basins D1 and D2 slope south towards two separate inlets that flow into the proposed on-site storm system which lets out into the proposed water quality and underground detention. They are determined to be 68.63% and 61.48% impervious., respectively.

Basin D3 slopes west and then south towards an inlet that flows into the proposed on-site storm system which lets out into the proposed water quality and underground detention. Basin D4



slopes south towards an inlet that also flows into the proposed on-site storm system. Basin D3 is determined to be 65.70% impervious and Basin D4 is determined to be 60.42% impervious.

Basin D5 slopes in all directions towards the proposed water quality which is above the proposed underground detention system. It is determined to be 2.78% impervious.

Detailed information about all developed basins can be found below in Table 2.

**Table 2 – Developed Summary Table**

Basin	Area (ac)	C <sub>5</sub>	C <sub>100</sub>	I <sub>5</sub> (in/hr)	I <sub>100</sub> (in/hr)	Q <sub>5</sub> (cfs)	Q <sub>100</sub> (cfs)
D1 (NW)	0.78	0.60	0.77	3.26	7.03	1.52	4.18
D2 (SW)	1.34	0.54	0.74	3.37	7.27	2.44	7.19
D3 (NE)	1.02	0.57	0.75	3.48	7.50	2.03	5.75
D4 (SE)	1.59	0.53	0.73	3.18	6.85	2.69	7.99
D5 (S Lot)	0.30	0.06	0.50	3.06	6.60	0.05	0.97

Refer to **Appendix G** for the Developed Drainage Plan.

**Design Points C, D, E and F** represent all flows routed to individual inlets on site, which all then flow towards the water quality facility and ultimately the underground detention facility. This includes the entirety of Basins D1, D2, D3 and D4 respectively.

**Design Point G** represent all flows routed to the water quality pond. This includes the entirety of D5.

**Design Point H** represents flows released from the underground detention facility via redundant pump to proposed grade, which then flows into the existing gutter flowline in West 63<sup>rd</sup> Ave. These flows meet the allowable release rate requirements set forth in the Denver SDDTC Manual.

Design point info for the developed basins can be found below in Table 3.



Table 3 – Design Point Summary Table

Design Point	Area (ac)	Q <sub>10</sub> (cfs)	Q <sub>100</sub> (cfs)
A	4.76	2.02	10.91
B	0.26	0.07	0.43
C	0.78	1.98	4.18
D	1.34	3.25	7.19
E	1.02	2.67	5.75
F	1.59	3.58	7.99
G	0.30	0.17	0.97
H	5.03	1.88	10.20

**B. DEVELOPMENT CRITERIA REFERENCES AND CONSTRAINTS**

The proposed drainage design complies with both the Unincorporated Adams County Drainage Criteria and the Mile-High Flood District Drainage Criteria Manual.

To the best knowledge of this engineer, the proposed development does not impact adjacent drainage studies.

**C. HYDROLOGIC CRITERIA**Design Storm Frequencies

Per MHFD Storm Drainage Criteria Manual, the 10 and 100-year storm events are analyzed as the minor and major storm events, respectively.

Hydrologic Method

Since the site is under 160 acres, the Rational Method was used to calculate runoff in this report. Flowrates were calculated using the following MHFD formulas.

- Impervious values are from Volume 1 Chapter 6 of MHFD drainage criteria manual table 6-3 "Recommended Percent Impervious Values".
- The one-hour precipitation is based on MHFD's spreadsheet "MHFD-Detention" version v4.03 where P1 is based on Denver.
- The runoff coefficients are "Weighted C" values from Volume 1 Chapter 6 of MHFD drainage criteria manual table 6-4 "Runoff coefficient equations" based on NRCS Hydrologic Soil Group C/D.
- Time of Concentration is calculated using equations from Volume 1 Chapter 6 of MHFD drainage criteria manual for overland and channelized flows.
- The rainfall intensity was calculated using equation 5-1 from Volume 1 Chapter 5 of MHFD drainage criteria manual along with aforementioned P values.



f) The peak flowrate is calculated  $Q = CIA$ .

#### **D. HYDRAULIC CRITERIA**

For this development, there is storm infrastructure proposed throughout the site to help facilitate runoff to the on-site detention facility. There are inlets located around the site to capture all runoff from each of the buildings and drive aisles. All flows that don't reach an inlet instead reach the on-site water quality and detention directly.

All inlets and storm pipes have been sized to ensure they can handle all flow from the developed site. Inlets were sized with the UD Inlet spreadsheet and pipes were sized using Storm Systems in Civil3D. Refer to **Appendix F** for these calculations.

#### **E. DETENTION**

##### Conveyance

There are four inlets on-site to convey flows into the proposed water quality and detention systems. Flows from each developed basin on the North property all reach one of these inlets. D1 uses a Type D (Depressed) Inlet, while basins D2, D3 & D4 all utilize 10' Type R Curb Inlets. Please see **Appendix F** for all inlet calculations.

Runoff will reach the proposed detention via storm system or overland flows. Once runoff enters the facility through the storm system, it will meet the required drain time of 40-hours and will be released at the allowable rates outlined below, via the proposed storm outfall system. The system has been sized and all calculations are provided in **Appendix E**. Besides the proposed outfall pump system to public storm infrastructure, no other offsite facilities are proposed at this time.

##### Detention Facility

Stormwater for the site will be routed to the underground detention facility proposed in the northwest corner of the lot. The facility is a Stormtech MC-7200 with 77 chambers. It has been designed using ADS software along with the MHFD-Detention v4-05 spreadsheet. Refer to **Appendix E** for a full breakdown of the design and sizing.

##### Detention Volumes

Using MHFD's spreadsheet "MHFD-Detention" v4.03, the required detention volume was calculated as detailed below. Please refer to **Appendix E** for a copy of this spreadsheet.

**Table 4 – Underground Detention Facility Volume & WSEL Table**

	Volume		WSEL
	Ac-ft	Cu-ft	Ft
Bottom of Facility	0	0	5203.25
WQCV	0.099	4,312	5204.69
10-year	0.222	9,670	5205.58
100-year	0.16	6,970	5206.7
Top of Facility	0.16	6,970	5209

#### Water Surface Elevations

The water surface elevations for the 10-year and 100-year are shown in Table 4 above.

#### Allowable Release Rates

Per MHFD Storm Drainage Criteria Manual, the 10 and 100-year storm historic events dictate the allowable release rates. Release rates must be at least 90% of what they were historically. See Table 4 below for historic and proposed release rates.

**Table 5 – Allowable Release Rate Summary**

Storm Event	Area (ac)	Historic Release Rates (cfs)	Allowable Release (90% of Historic Flows) (cfs)
Minor (10-year)	5.02	1.88	1.69
Major (100-year)	5.02	10.20	9.18

#### Emergency Overflow

Emergency overflow for the facility will be conveyed through an open grate on the outlet structure. This will be at the proposed surface level and will discharge directly to West 63<sup>rd</sup> Avenue via overland flow, where it will ultimately be collected in public storm infrastructure.



## F. WATER QUALITY

Water quality for this site is via the proposed rain garden located on the south lot. The rain garden has been sized to handle flows from the entire site. See **Appendix D** for these calculations.

### Four Step Process

#### Step One:

Employ Runoff Reduction Practices – Considering the amount of disturbance for this project, measures were taken to ensure that green space was provided wherever feasible. The entire southern portion of the property has been kept as green space and water quality.

#### Step Two:

Implement Control Measures That Provide a Water Quality Capture Volume with Slow Release – A rain garden is proposed on site, which then flows into the proposed underground detention. Release rates are controlled out of this detention with a pump system that ensures allowable release rates that improve upon the historic conditions.

#### Step Three:

Stabilize Drainageways – To the best of our knowledge, no channel improvements are required for the area, therefore no channel improvements are being proposed with this development.

#### Step Four:

Implement Site Specific and Other Source Control Measures – On-site permanent control measures include the use of pervious landscaped areas wherever feasible and the on-site underground detention facility.

## 4. CONCLUSIONS

This project meets the requirements of the Unincorporated Adams County Drainage Requirements and the MHFD Urban Storm Drainage Criteria Manual. This project will provide both water quality and detention and shall not have negative impacts to downstream properties or infrastructure. No variances are being requested at this time. Proposed on-site improvements will decrease the overall runoff to 90% of historic rates. This project shall not have a negative impact on surrounding developments or existing drainage facilities.

## 5. REFERENCES

Mile High Flood District Storm Drainage Criteria Manual (Volumes 1, 2, and 3), Revision dates vary



**6. APPENDICES**

- G. NRCS WEB SOIL SURVEY**
- H. FEMA FLOOD MAP**
- I. COMPOSITE RUNOFF SPREADHSEET**
- J. WATER QUALITY COMPUTATIONS**
- K. DETENTION BASIN COMPUTATIONS**
- L. HYDRAULIC CALCULATIONS**
- M. DRAINAGE PLANS**





## **APPENDIX A: NRCS WEB SOIL SURVEY**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Adams County Area, Parts of Adams and Denver Counties, Colorado



March 30, 2023

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.



# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


# Custom Soil Resource Report Soil Map



# Custom Soil Resource Report


## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals

### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Adams County Area, Parts of Adams and Denver Counties, Colorado  
Survey Area Data: Version 19, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 1, 2020—Jul 2, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Gr	Gravelly land-Shale outcrop complex	3.1	61.0%
HID	Heldt clay, 3 to 9 percent slopes	1.0	20.2%
Lw	Loamy alluvial land, moderately wet	0.5	10.9%
Wt	Wet alluvial land	0.4	7.9%
<b>Totals for Area of Interest</b>		<b>5.0</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Adams County Area, Parts of Adams and Denver Counties, Colorado

### Gr—Gravelly land-Shale outcrop complex

#### Map Unit Setting

*National map unit symbol:* 34vy  
*Elevation:* 4,400 to 5,500 feet  
*Mean annual precipitation:* 12 to 14 inches  
*Mean annual air temperature:* 46 to 54 degrees F  
*Frost-free period:* 120 to 160 days

#### Map Unit Composition

*Gravelly land:* 65 percent  
*Shale outcrop:* 35 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Gravelly Land

##### Setting

*Landform:* Hillslopes  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Colluvium derived from mixed and/or slope alluvium derived from mixed

##### Typical profile

*H1 - 0 to 3 inches:* gravelly sand  
*H2 - 3 to 60 inches:* gravelly sand

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* A  
*Ecological site:* R067BY063CO - Gravel Breaks  
*Hydric soil rating:* No

#### Description of Shale Outcrop

##### Typical profile

*H1 - 0 to 60 inches:* unweathered bedrock

##### Properties and qualities

*Slope:* 15 to 45 percent  
*Depth to restrictive feature:* 0 inches to paralithic bedrock  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Available water supply, 0 to 60 inches:* Very low (about 0.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8s  
*Hydrologic Soil Group:* D  
*Ecological site:* R067BY045CO - Shaly Plains  
*Hydric soil rating:* No

## **HID—Heldt clay, 3 to 9 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 34w1  
*Elevation:* 4,000 to 5,600 feet  
*Mean annual precipitation:* 12 to 14 inches  
*Mean annual air temperature:* 46 to 52 degrees F  
*Frost-free period:* 130 to 155 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Heldt and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Heldt**

#### **Setting**

*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from mixed

#### **Typical profile**

*H1 - 0 to 5 inches:* clay  
*H2 - 5 to 32 inches:* clay  
*H3 - 32 to 40 inches:* silty clay loam  
*H4 - 40 to 60 inches:* sandy clay loam

#### **Properties and qualities**

*Slope:* 3 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Gypsum, maximum content:* 2 percent  
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 10.0  
*Available water supply, 0 to 60 inches:* High (about 9.5 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 4e  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* C



## Custom Soil Resource Report

*Ecological site:* R067BY042CO - Clayey Plains

*Hydric soil rating:* No

### Minor Components

#### Nunn

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

#### Dacono

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## Lw—Loamy alluvial land, moderately wet

### Map Unit Setting

*National map unit symbol:* 34w5

*Elevation:* 4,000 to 5,500 feet

*Mean annual precipitation:* 12 to 14 inches

*Mean annual air temperature:* 48 to 52 degrees F

*Frost-free period:* 135 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Loamy alluvial land:* 70 percent

*Minor components:* 30 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Loamy Alluvial Land

#### Setting

*Landform:* Drainageways

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium derived from mixed

#### Typical profile

*H1 - 0 to 6 inches:* variable

*H2 - 6 to 36 inches:* stratified loam to clay loam

*H3 - 36 to 60 inches:* sand

#### Properties and qualities

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 6.00 in/hr)

*Depth to water table:* About 18 to 36 inches

*Calcium carbonate, maximum content:* 5 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water supply, 0 to 60 inches:* Low (about 6.0 inches)

**Interpretive groups**

*Land capability classification (irrigated): 3w*  
*Land capability classification (nonirrigated): 4w*  
*Hydrologic Soil Group: C*  
*Hydric soil rating: No*

**Minor Components**

**Nunn**

*Percent of map unit: 12 percent*  
*Hydric soil rating: No*

**Satanta**

*Percent of map unit: 12 percent*  
*Landform: Paleoterraces*  
*Hydric soil rating: No*

**Fluvaquentic haplustolls**

*Percent of map unit: 6 percent*  
*Landform: Sloughs*  
*Hydric soil rating: Yes*

**Wt—Wet alluvial land**

**Map Unit Setting**

*National map unit symbol: 34xj*  
*Elevation: 4,000 to 5,600 feet*  
*Mean annual precipitation: 12 to 14 inches*  
*Mean annual air temperature: 48 to 52 degrees F*  
*Frost-free period: 125 to 155 days*  
*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Wet alluvial land: 100 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Wet Alluvial Land**

**Setting**

*Landform: Flood plains*  
*Landform position (three-dimensional): Talf*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Alluvium derived from mixed*

**Typical profile**

*H1 - 0 to 8 inches: variable*  
*H2 - 8 to 36 inches: stratified sandy loam to clay*  
*H3 - 36 to 60 inches: sand*

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.06 to 6.00 in/hr)

*Depth to water table:* About 6 to 24 inches

*Calcium carbonate, maximum content:* 15 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water supply, 0 to 60 inches:* Low (about 4.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* 5w

*Land capability classification (nonirrigated):* 5w

*Hydrologic Soil Group:* D

*Ecological site:* R067BY038CO - Wet Meadow

*Hydric soil rating:* Yes

# References

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- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)



## **APPENDIX B: FEMA FLOOD MAP**



**NOTES TO USERS**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations** shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services  
NOAA, NIMS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>.

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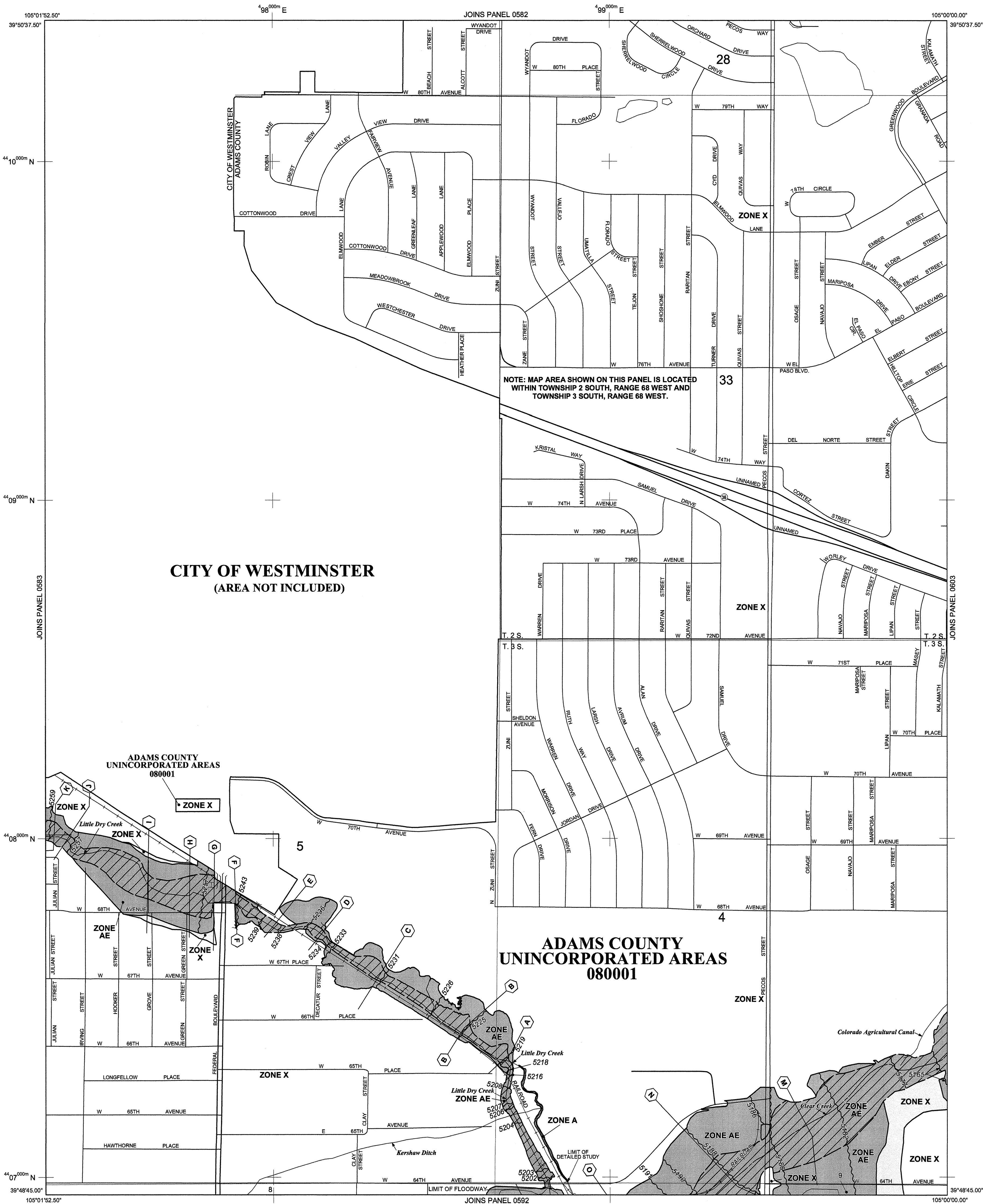
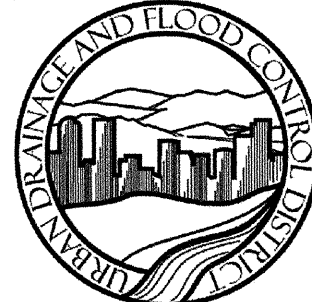
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

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This digital Flood Insurance Rate Map (FIRM) was produced through a cooperative partnership between the State of Colorado Water Conservation Board, the Urban Drainage and Flood Control District, and the Federal Emergency Management Agency (FEMA). The State of Colorado Water Conservation Board and the Urban Drainage and Flood Control District have implemented a long-term approach of floodplain management to reduce the costs associated with flooding. As part of this effort, both the State of Colorado and the Urban Drainage and Flood Control District have joined in Cooperating Technical Partner agreements with FEMA to produce this digital FIRM.

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**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.

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.  
Base Flood Elevation line and value; elevation in feet\*  
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  
29 29 Transsect line  
87°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)  
42°75'00"N 1000-meter Universal Transverse Mercator grid ticks, zone 13  
6000000 M 5000-foot grid ticks: Alabama State Plane coordinate system, east zone (FIPSZONE 0101), 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**  
August 16, 1998

**EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**  
March 5, 2007 - to update map format.

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 1-800-636-6620.

**MAP SCALE 1" = 500'**  
250 0 500 1000 FEET  
150 0 150 300 METERS

**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0584H**

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**ADAMS COUNTY, COLORADO**  
**AND INCORPORATED AREAS**

**PANEL 584 OF 1150**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**  
**COMMUNITY** **NUMBER** **PANEL** **SUFFIX**  
ADAMS COUNTY 080001 0584 H

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 08001C0584H**  
**MAP REVISED MARCH 5, 2007**

**Federal Emergency Management Agency**



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NOAA, NINGS12  
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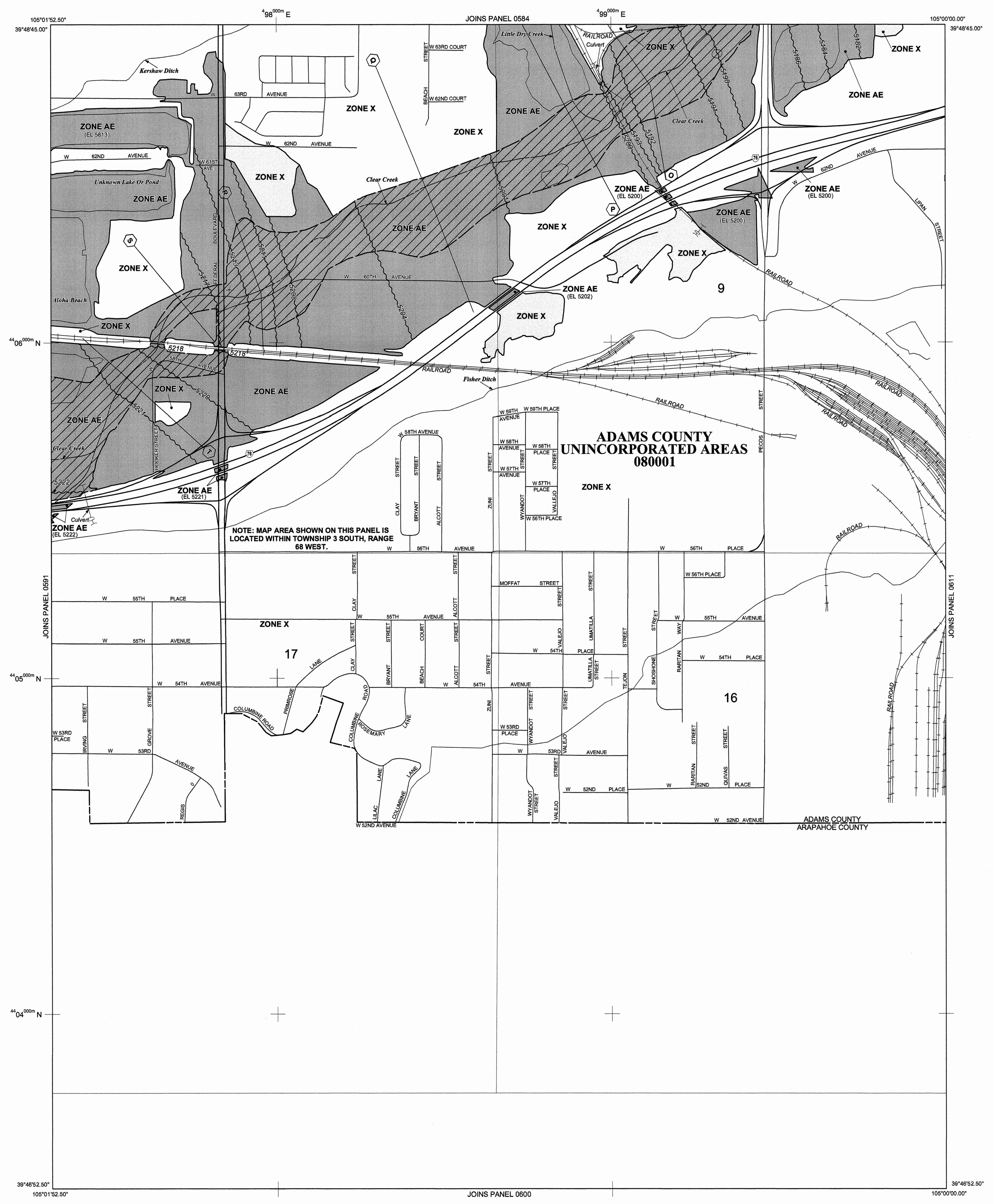
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ADAMS COUNTY  
UNINCORPORATED AREAS  
080001

ADAMS COUNTY  
ARAPAHOE COUNTY



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**

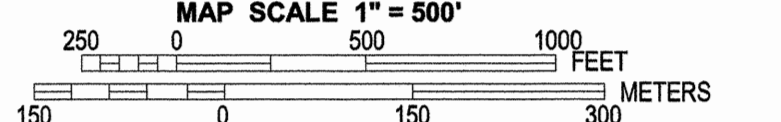

**OTHERWISE PROTECTED AREAS (OPAs)**

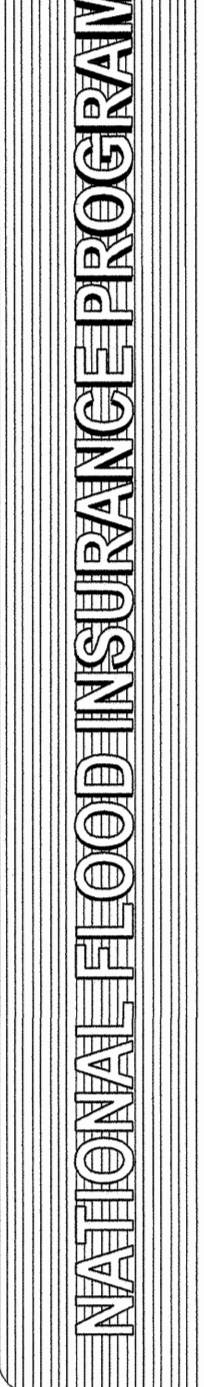

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

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.  
Base Flood Elevation line and value; elevation in feet\*  
Base Flood Elevation value where uniform within zone; elevation in feet\*  
Cross section line  
Transect line  
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)  
1000-meter Universal Transverse Mercator grid ticks, zone 13  
5000-foot grid ticks: Alabama State Plane coordinate system, east zone (FIPSZONE 0101), Transverse Mercator  
Bench mark (see explanation in Notes to Users section of this FIRM panel)  
River Mile  
MAP REPOSITORIES  
Refer to Map Repositories list on Map Index  
EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP  
August 16, 1995  
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL  
March 5, 2007 - to update map format.

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.





PANEL 0592H

FIRM

FLOOD INSURANCE RATE MAP

ADAMS COUNTY,

COLORADO


AND INCORPORATED AREAS

PANEL 592 OF 1150  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ADAMS COUNTY	080001	0592	H

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  
08001C0592H

MAP REVISED  
MARCH 5, 2007

Federal Emergency Management Agency





## **APPENDIX C: COMPOSITE RUNOFF SPREADSHEET**

COMPOSITE RUNOFF CALCULATIONS

PROJECT NAME: 3214-3240 W 64TH AVE  
CALCULATED BY: NMS

DATE: 4/21/2023



"C" Factors for Composite Analysis

	Roof	Walk/Drive	Gravel	Landscape
C2	0.74	0.74	0.30	0.01
C5	0.77	0.77	0.36	0.05
C10	0.80	0.80	0.43	0.15
C25	0.82	0.82	0.54	0.33
C50	0.83	0.83	0.59	0.40
C100	0.85	0.85	0.65	0.49
I (%)	90%	90%	40%	2%

Runoff Coefficients derived from MHFD Volume 1, Chapter 6 (Runoff), Table 6-3 & 6-4 for NRCS Group C&D Soils.

Basin ID	Basin Area (ac)	Basin Area (sf)	Roof Area (sf)	Walk/Drive Area (sf)	Gravel Area (sf)	Landscape Area (sf)	Composite Imperviousness	C <sub>2yr</sub>	C <sub>5yr</sub>	C <sub>10yr</sub>	C <sub>25yr</sub>	C <sub>50yr</sub>	C <sub>100yr</sub>
H1 (N LOT)	4.76	207171	972	787	8581	196831	4.32%	0.03	0.07	0.16	0.34	0.41	0.50
H2 (S LOT)	0.26	11250	0	0	0	11250	2.00%	0.01	0.05	0.15	0.33	0.40	0.49
D1 (NW)	0.78	33844	13474	12152	0	8218	68.63%	0.56	0.60	0.64	0.70	0.73	0.77
D2 (SW)	1.34	58555	13994	25587	0	18974	61.48%	0.50	0.54	0.59	0.66	0.69	0.74
D3 (NE)	1.02	44293	6601	25459	0	12233	65.70%	0.54	0.57	0.62	0.69	0.71	0.75
D4 (SE)	1.59	69408	21835	24242	0	23331	60.42%	0.49	0.53	0.58	0.66	0.69	0.73
D5 (S Lot)	0.30	12870	0	114	0	12756	2.78%	0.02	0.06	0.15	0.33	0.41	0.50
Total Site	5.03	218970	55904	87554	0	75512	59.65%						

Overland Flow Time

Channelized Flow Time

Basin ID	Overland Flow Length (ft)	Overland Flow Slope (ft/ft)	Overland Flow Time (min)	Channelized Flow Length (ft)	Channelized Flow Slope (ft/ft)	Channelized Flow Time (min)	Time of Concentration* (min)
H1	300	0.05	19.06	363	0.05	1.37	20.42
H2	154	0.00	34.96	0	0.03	0.00	34.96
D1	194	0.05	7.24	96	0.05	0.35	7.59
D2	117	0.06	5.94	250	0.05	0.93	6.87
D3	49	0.05	3.86	532	0.04	2.34	6.20
D4	137	0.06	6.63	397	0.05	1.56	8.19
D5	75	0.06	9.07	0	0.06	0.00	9.07

Time of Concentration is derived from MHFD Volume 1, Chapter 6 (Runoff), Section 2.4

\*Minimum Time of Concentration is 5 mins

	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1-hour rainfall depth (in)=	0.81	1.09	1.33	1.71	2.02	2.35

Rainfall depth is derived from MHFD-Detention spreadsheet v4.03, P values

Rainfall Intensity (in/hr)

Peak Flow (cfs)

Basin ID	I <sub>2yr</sub>	I <sub>5yr</sub>	I <sub>10yr</sub>	I <sub>25yr</sub>	I <sub>50yr</sub>	I <sub>100yr</sub>	Basin ID	Q <sub>2yr</sub>	Q <sub>5yr</sub>	Q <sub>10yr</sub>	Q <sub>25yr</sub>	Q <sub>50yr</sub>	Q <sub>100yr</sub>
H1	1.58	2.12	2.59	3.33	3.93	4.57	H1	0.21	0.71	2.02	5.43	7.74	10.91
H2	1.16	1.56	1.90	2.45	2.89	3.36	H2	0.00	0.02	0.07	0.21	0.30	0.43
D1	2.42	3.26	3.98	5.12	6.05	7.03	D1	1.06	1.52	1.98	2.80	3.43	4.18
D2	2.51	3.37	4.11	5.29	6.25	7.27	D2	1.69	2.44	3.25	4.72	5.83	7.19
D3	2.59	3.48	4.25	5.46	6.45	7.50	D3	1.41	2.03	2.67	3.81	4.69	5.75
D4	2.36	3.18	3.88	4.99	5.89	6.85	D5	1.86	2.69	3.58	5.22	6.47	7.99
D5	2.27	3.06	3.74	4.80	5.67	6.60	D2	0.01	0.05	0.17	0.47	0.68	0.97

Peak Flow is derived from the Rational Method Equation



## **APPENDIX D: WATER QUALITY COMPUTATIONS**

# Design Procedure Form: Rain Garden (RG)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 2

Designer: **NMS**  
 Company: **RAPTOR CIVIL**  
 Date: **April 21, 2023**  
 Project: \_\_\_\_\_  
 Location: **3214 W 64TH AVE**

## 1. Basin Storage Volume

- A) Effective Imperviousness of Tributary Area,  $I_a$   
 (100% if all paved and roofed areas upstream of rain garden)
- B) Tributary Area's Imperviousness Ratio ( $i = I_a/100$ )
- C) Water Quality Capture Volume (WQCV) for a 12-hour Drain Time  
 (WQCV =  $0.8 * (0.91 * i^3 - 1.19 * i^2 + 0.78 * i)$ )
- D) Contributing Watershed Area (including rain garden area)
- E) Water Quality Capture Volume (WQCV) Design Volume  
 Vol = (WQCV / 12) \* Area
- F) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm
- G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume
- H) User Input of Water Quality Capture Volume (WQCV) Design Volume  
 (Only if a different WQCV Design Volume is desired)

$I_a = 65.7$  %

$i = 0.657$

WQCV = 0.21 watershed inches

Area = 281,437 sq ft

$V_{WQCV} = 4,819$  cu ft

$d_e =$  in

$V_{WQCV \text{ OTHER}} =$  cu ft

$V_{WQCV \text{ USER}} =$  cu ft

## 2. Basin Geometry

- A) WQCV Depth (12-inch maximum)
- B) Rain Garden Side Slopes ( $Z = 4$  min., horiz. dist per unit vertical)  
 (Use "0" if rain garden has vertical walls)
- C) Minimum Flat Surface Area
- D) Actual Flat Surface Area
- E) Area at Design Depth (Top Surface Area)
- F) Rain Garden Total Volume  
 ( $V_T = ((A_{Top} + A_{Actual}) / 2) * \text{Depth}$ )

$D_{WQCV} = 12$  in

$Z = 4.00$  ft / ft

$A_{Min} = 3698$  sq ft

$A_{Actual} = 4479$  sq ft

$A_{Top} = 5739$  sq ft

$V_T = 5,109$  cu ft

## 3. Growing Media

Choose One \_\_\_\_\_  
☒ 18" Rain Garden Growing Media  
☐ Other (Explain): \_\_\_\_\_

## 4. Underdrain System

- A) Are underdrains provided?
- B) Underdrain system orifice diameter for 12 hour drain time
- i) Distance From Lowest Elevation of the Storage Volume to the Center of the Orifice
- ii) Volume to Drain in 12 Hours
- iii) Orifice Diameter, 3/8" Minimum

Choose One \_\_\_\_\_  
☒ YES  
☐ NO

$y = 1.5$  ft

$Vol_{12} = 4,819$  cu ft

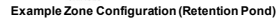
$D_o = 1 \frac{11}{16}$  in



## **APPENDIX E: DETENTION BASIN COMPUTATIONS**

*MHFD-Detention, Version 4.05 (January 2022)*

Basin ID:



	acre-feet
	acre-feet
0.81	inches
1.09	inches
1.33	inches
1.71	inches
2.02	inches
2.35	inches
3.22	inches

4/21/2023, 11:09 AM

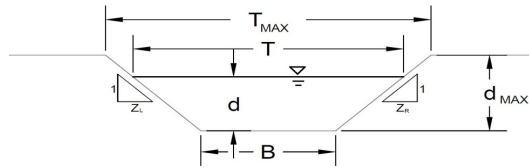


## APPENDIX F: HYDRAULIC CALCULATIONS

# AREA INLET IN A SWALE

Enter Your Project Name Here

D1



This worksheet uses the NRCS  
vegetal retardance method to  
determine Manning's n.

For more information see  
Section 7.2.3 of the USDCM.

## Analysis of Trapezoidal Grass-Lined Channel Using SCS Method

NRCS Vegetal Retardance (A, B, C, D, or E)

Manning's n (Leave cell D16 blank to manually enter an n value)

Channel Invert Slope

Bottom Width

Left Side Slope

Right Side Slope

Check one of the following soil types:

Soil Type:	Max. Velocity ( $V_{MAX}$ )	Max Froude No. ( $F_{MAX}$ )
Non-Cohesive	5.0 fps	0.60
Cohesive	7.0 fps	0.80
Paved	N/A	N/A

A, B, C, D or E

n =	0.013
$S_0$ =	16.5000 ft/ft
B =	0.00 ft
Z1 =	86.15 ft/ft
Z2 =	86.15 ft/ft

Choose One:

- ☐ Non-Cohesive  
☐ Cohesive  
☐ Paved

Max. Allowable Top Width of Channel for Minor &amp; Major Storm

Max. Allowable Water Depth in Channel for Minor &amp; Major Storm

	Minor Storm	Major Storm	
$T_{MAX}$ =	50.00	50.00	feet
$d_{MAX}$ =	0.50	0.50	feet

## Allowable Channel Capacity Based On Channel Geometry

MINOR STORM Allowable Capacity is based on Top Width Criterion

MAJOR STORM Allowable Capacity is based on Top Width Criterion

	Minor Storm	Major Storm	
$Q_{allow}$ =	932.6	932.6	cfs
$d_{allow}$ =	0.29	0.29	ft

## Water Depth in Channel Based On Design Peak Flow

Design Peak Flow

Water Depth

$Q_o$ =	2.0	4.2	cfs
d =	0.03	0.04	feet

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'



# AREA INLET IN A SWALE

Enter Your Project Name Here

D1

**Inlet Design Information (Input)**

Type of Inlet

CDOT TYPE D (Parallel &amp; Depressed)

Inlet Type =

CDOT TYPE D (Parallel &amp; Depressed)

Angle of Inclined Grate (must be  $\leq 30$  degrees)

Width of Grate

Length of Grate

Open Area Ratio

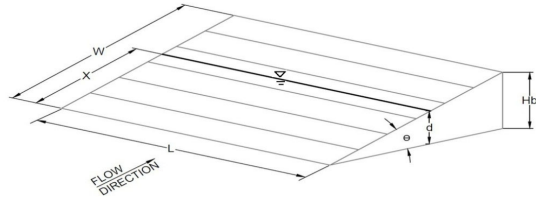
Height of Inclined Grate

Clogging Factor

Grate Discharge Coefficient

Orifice Coefficient

Weir Coefficient

 $\theta =$  0.00 degrees

W = 6.00 feet

L = 3.00 feet

 $A_{\text{RATIO}} =$  0.70 $H_B =$  0.00 feet $C_f =$  0.38 $C_d =$  0.68 $C_o =$  0.45 $C_w =$  1.46

Water Depth at Inlet (for depressed inlets, 1 foot is added for depression)

	MINOR	MAJOR
d =	1.03	1.04
$Q_a =$	24.2	24.5
Bypassed Flow, $Q_b =$	0.0	0.0
Capture Percentage = $Q_a/Q_o = C\%$	100	100

**Total Inlet Interception Capacity (assumes clogged condition)**

**ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)**

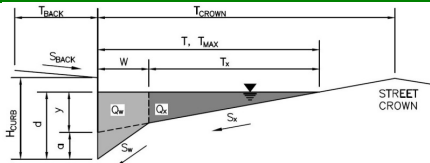
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

D2

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

 $T_{BACK} =$  0.0 ft

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

 $S_{BACK} =$  ft/ft

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

 $n_{BACK} =$  0.012

Height of Curb at Gutter Flow Line

 $H_{CURB} =$  6.00 inches

Distance from Curb Face to Street Crown

 $T_{CROWN} =$  90.0 ft

Gutter Width

 $W =$  2.00 ft

Street Transverse Slope

 $S_X =$  0.015 ft/ft

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

 $S_W =$  0.083 ft/ft

Street Longitudinal Slope - Enter 0 for sump condition

 $S_O =$  0.000 ft/ft

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

 $n_{STREET} =$  0.012

Max. Allowable Spread for Minor &amp; Major Storm

	Minor Storm	Major Storm	
$T_{MAX} =$	90.0	90.0	ft

Max. Allowable Depth at Gutter Flowline for Minor &amp; Major Storm

	Minor Storm	Major Storm	
$d_{MAX} =$	6.0	6.0	inches

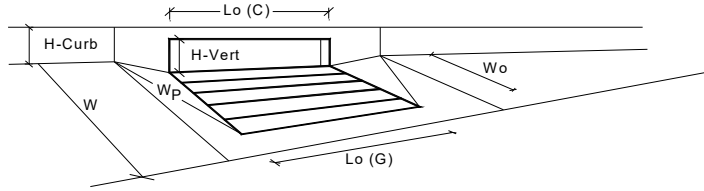
Check boxes are not applicable in SUMP conditions

☐☐**MINOR STORM Allowable Capacity is based on Depth Criterion****MAJOR STORM Allowable Capacity is based on Depth Criterion**

	Minor Storm	Major Storm	
$Q_{allow} =$	SUMP	SUMP	cfs

# INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		$a_{local}$ =	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	1	1	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	6.0	inches
<b>Grate Information</b>		MINOR		MAJOR	
Length of a Unit Grate		$L_o (G)$ =	N/A	N/A	feet
Width of a Unit Grate		$W_o$ =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		$A_{ratio}$ =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		$C_r (G)$ =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		$C_w (G)$ =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		$C_o (G)$ =	N/A	N/A	
<b>Curb Opening Information</b>		MINOR		MAJOR	
Length of a Unit Curb Opening		$L_o (C)$ =	10.00	10.00	feet
Height of Vertical Curb Opening in Inches		$H_{vert}$ =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		$H_{throat}$ =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		$W_p$ =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		$C_r (C)$ =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		$C_w (C)$ =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		$C_o (C)$ =	0.67	0.67	
<b>Low Head Performance Reduction (Calculated)</b>		MINOR		MAJOR	
Depth for Grate Midwidth		$d_{Grate}$ =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		$d_{Curb}$ =	0.33	0.33	ft
Combination Inlet Performance Reduction Factor for Long Inlets		$RF_{Combination}$ =	0.57	0.57	
Curb Opening Performance Reduction Factor for Long Inlets		$RF_{Curb}$ =	0.93	0.93	
Grated Inlet Performance Reduction Factor for Long Inlets		$RF_{Grate}$ =	N/A	N/A	
<b>Total Inlet Interception Capacity (assumes clogged condition)</b>		MINOR		MAJOR	
		$Q_a$ =	8.3	8.3	cfs
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		$Q_{PEAK REQUIRED}$ =	3.3	7.2	cfs

Warning 5: The width of unit is greater than the gutter width.

**ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)**

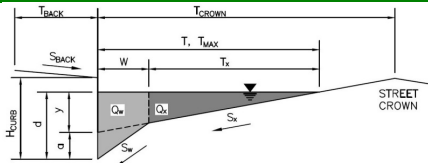
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

D3

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor &amp; Major Storm

Max. Allowable Depth at Gutter Flowline for Minor &amp; Major Storm

Check boxes are not applicable in SUMP conditions

**MINOR STORM Allowable Capacity is based on Depth Criterion****MAJOR STORM Allowable Capacity is based on Depth Criterion** $T_{BACK} =$  0.0 ft $S_{BACK} =$  ft/ft $n_{BACK} =$  $H_{CURB} =$  6.00 inches $T_{CROWN} =$  33.0 ft $W =$  2.00 ft $S_X =$  0.019 ft/ft $S_W =$  0.083 ft/ft $S_O =$  0.000 ft/ft $n_{STREET} =$  0.012

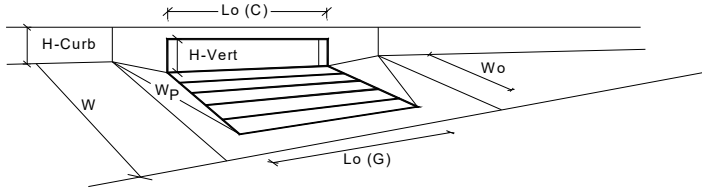
	Minor Storm	Major Storm	
$T_{MAX} =$	33.0	33.0	ft
$d_{MAX} =$	6.0	6.0	inches



	Minor Storm	Major Storm	
$Q_{allow} =$	SUMP	SUMP	cfs

# INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



## Design Information (Input)

Type of Inlet  
Local Depression (additional to continuous gutter depression 'a' from above)  
Number of Unit Inlets (Grate or Curb Opening)  
Water Depth at Flowline (outside of local depression)  
**Grate Information**  
Length of a Unit Grate  
Width of a Unit Grate  
Area Opening Ratio for a Grate (typical values 0.15-0.90)  
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)  
Grate Weir Coefficient (typical value 2.15 - 3.60)  
Grate Orifice Coefficient (typical value 0.60 - 0.80)

## Curb Opening Information

Length of a Unit Curb Opening  
Height of Vertical Curb Opening in Inches  
Height of Curb Orifice Throat in Inches  
Angle of Throat (see USDCM Figure ST-5)  
Side Width for Depression Pan (typically the gutter width of 2 feet)  
Clogging Factor for a Single Curb Opening (typical value 0.10)  
Curb Opening Weir Coefficient (typical value 2.3-3.7)  
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)

## Low Head Performance Reduction (Calculated)

Depth for Grate Midwidth  
Depth for Curb Opening Weir Equation  
Combination Inlet Performance Reduction Factor for Long Inlets  
Curb Opening Performance Reduction Factor for Long Inlets  
Grated Inlet Performance Reduction Factor for Long Inlets

## Total Inlet Interception Capacity (assumes clogged condition)

Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)

	MINOR	MAJOR	
Type =	CDOT Type R Curb Opening		
$a_{local}$ =	3.00	3.00	inches
No =	1	1	
Ponding Depth =	6.0	6.0	inches
	MINOR	MAJOR	Override Depths
$L_o (G)$ =	N/A	N/A	feet
$W_o$ =	N/A	N/A	feet
$A_{ratio}$ =	N/A	N/A	
$C_r (G)$ =	N/A	N/A	
$C_w (G)$ =	N/A	N/A	
$C_o (G)$ =	N/A	N/A	
	MINOR	MAJOR	
$L_o (C)$ =	10.00	10.00	feet
$H_{vert}$ =	6.00	6.00	inches
$H_{throat}$ =	6.00	6.00	inches
Theta =	63.40	63.40	degrees
$W_p$ =	2.00	2.00	feet
$C_r (C)$ =	0.10	0.10	
$C_w (C)$ =	3.60	3.60	
$C_o (C)$ =	0.67	0.67	
	MINOR	MAJOR	
$d_{Grate}$ =	N/A	N/A	ft
$d_{Curb}$ =	0.33	0.33	ft
$RF_{Combination}$ =	0.57	0.57	
$RF_{Curb}$ =	0.93	0.93	
$RF_{Grate}$ =	N/A	N/A	
	MINOR	MAJOR	
$Q_a$ =	8.3	8.3	cfs
$Q_{PEAK REQUIRED}$ =	2.7	5.8	cfs

**ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)**

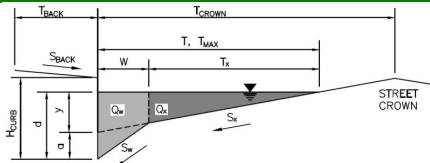
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

D4

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor &amp; Major Storm

Max. Allowable Depth at Gutter Flowline for Minor &amp; Major Storm

Check boxes are not applicable in SUMP conditions

**MINOR STORM** Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion $T_{BACK} =$  0.0 ft $S_{BACK} =$  ft/ft $n_{BACK} =$  $H_{CURB} =$  6.00 inches $T_{CROWN} =$  33.0 ft $W =$  2.00 ft $S_X =$  0.019 ft/ft $S_W =$  0.083 ft/ft $S_O =$  0.000 ft/ft $n_{STREET} =$  0.012

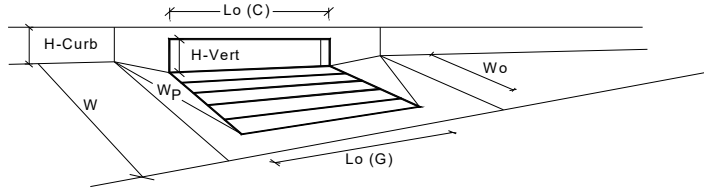
	Minor Storm	Major Storm	
$T_{MAX} =$	33.0	33.0	ft
$d_{MAX} =$	6.0	6.0	inches

☐☐

	Minor Storm	Major Storm	
$Q_{allow} =$	SUMP	SUMP	cfs

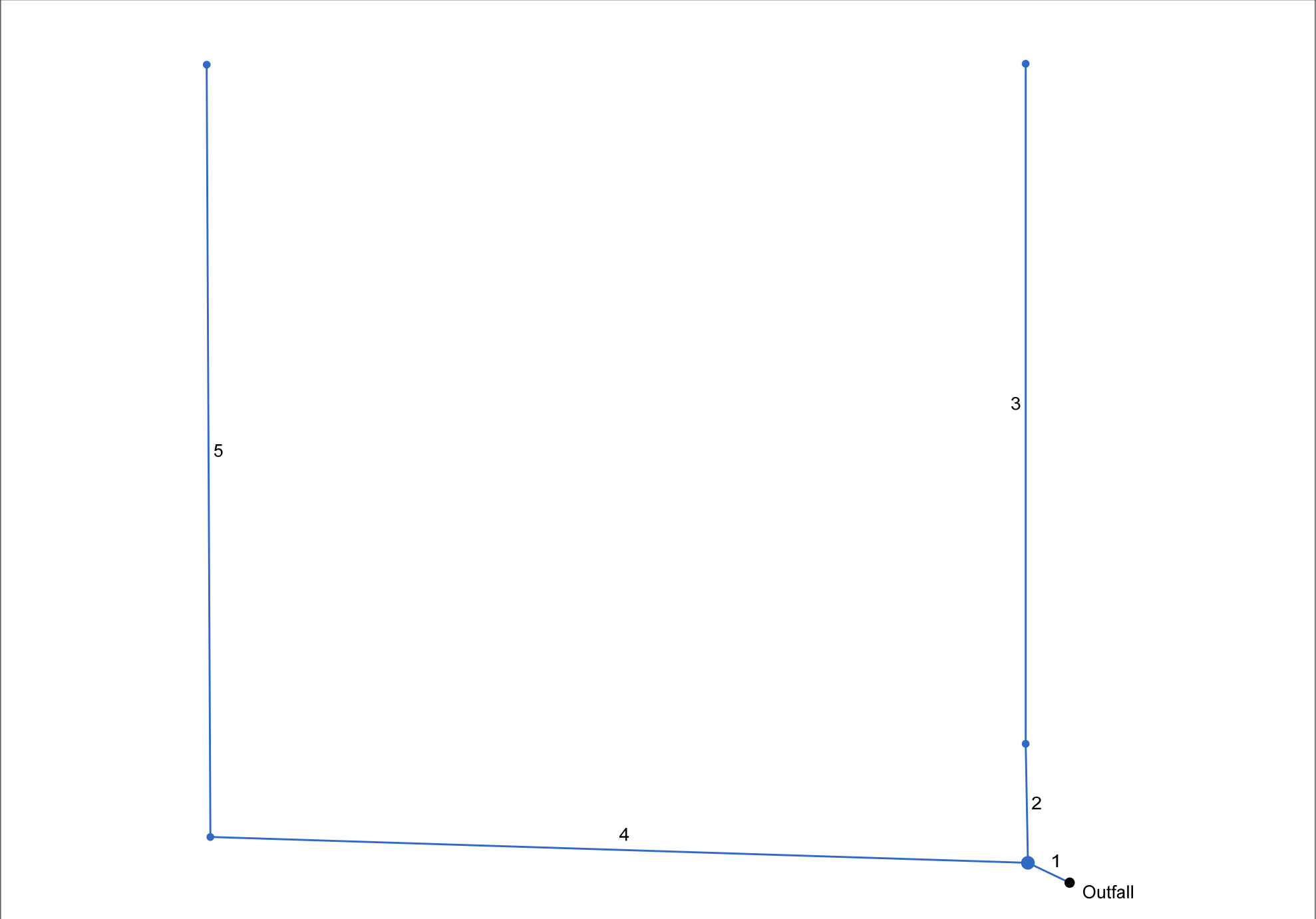
# INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	CDOT Type R Curb Opening			
Local Depression (additional to continuous gutter depression 'a' from above)		$a_{local}$ =	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	1	1	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	6.0	inches
<b>Grate Information</b>		MINOR		MAJOR	
Length of a Unit Grate		$L_o (G)$ =	N/A	N/A	feet
Width of a Unit Grate		$W_o$ =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		$A_{ratio}$ =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		$C_r (G)$ =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		$C_w (G)$ =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		$C_o (G)$ =	N/A	N/A	
<b>Curb Opening Information</b>		MINOR		MAJOR	
Length of a Unit Curb Opening		$L_o (C)$ =	10.00	10.00	feet
Height of Vertical Curb Opening in Inches		$H_{vert}$ =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		$H_{throat}$ =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		$W_p$ =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		$C_r (C)$ =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		$C_w (C)$ =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		$C_o (C)$ =	0.67	0.67	
<b>Low Head Performance Reduction (Calculated)</b>		MINOR		MAJOR	
Depth for Grate Midwidth		$d_{Grate}$ =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		$d_{Curb}$ =	0.33	0.33	ft
Combination Inlet Performance Reduction Factor for Long Inlets		$RF_{Combination}$ =	0.57	0.57	
Curb Opening Performance Reduction Factor for Long Inlets		$RF_{Curb}$ =	0.93	0.93	
Grated Inlet Performance Reduction Factor for Long Inlets		$RF_{Grate}$ =	N/A	N/A	
<b>Total Inlet Interception Capacity (assumes clogged condition)</b>		MINOR		MAJOR	
		$Q_a$ =	8.3	8.3	cfs
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		$Q_{PEAK REQUIRED}$ =	3.6	8.0	cfs

# Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



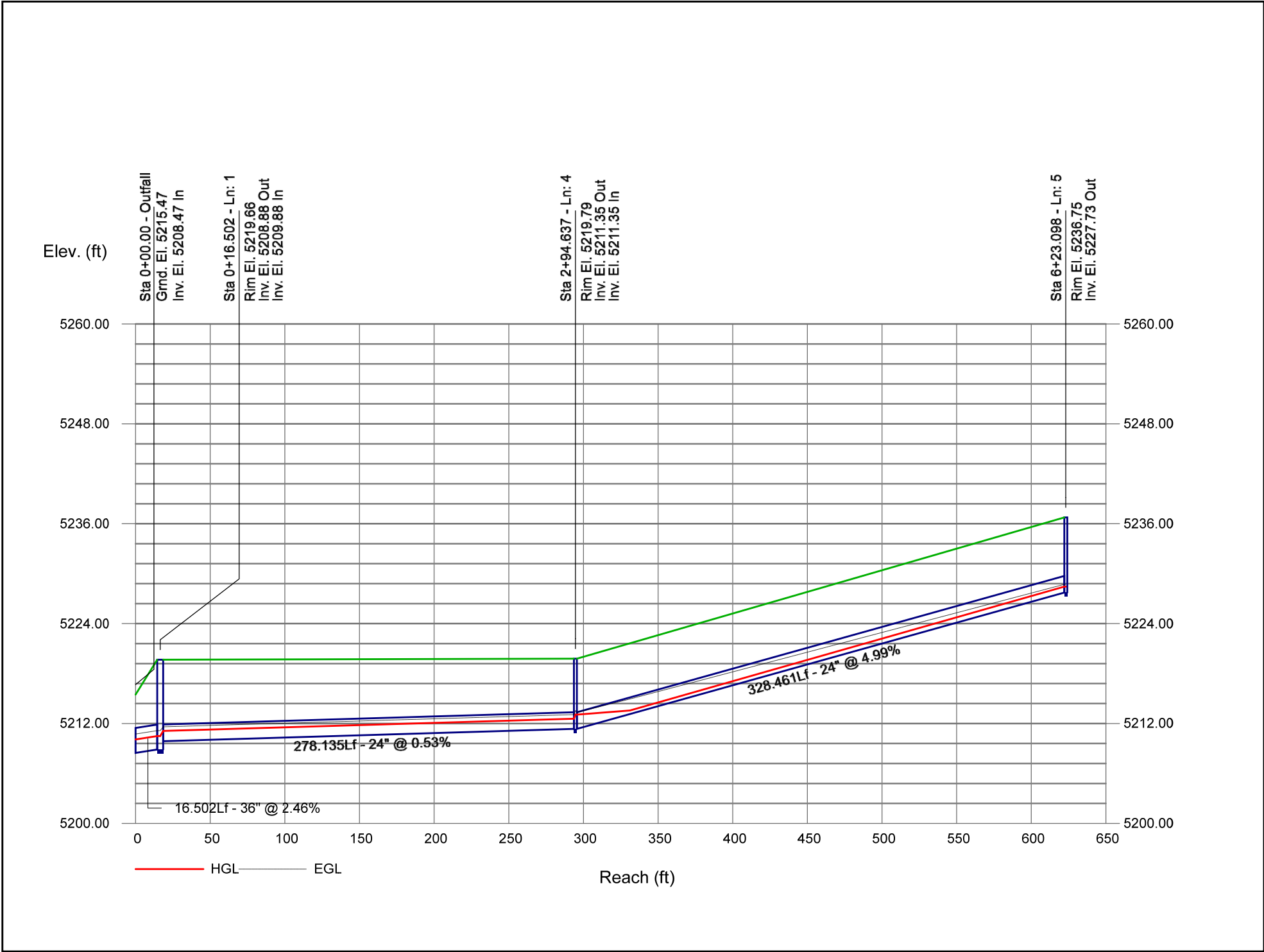
Project File: Storm System 24 36.stm	Number of lines: 5	Date: 4/21/2023
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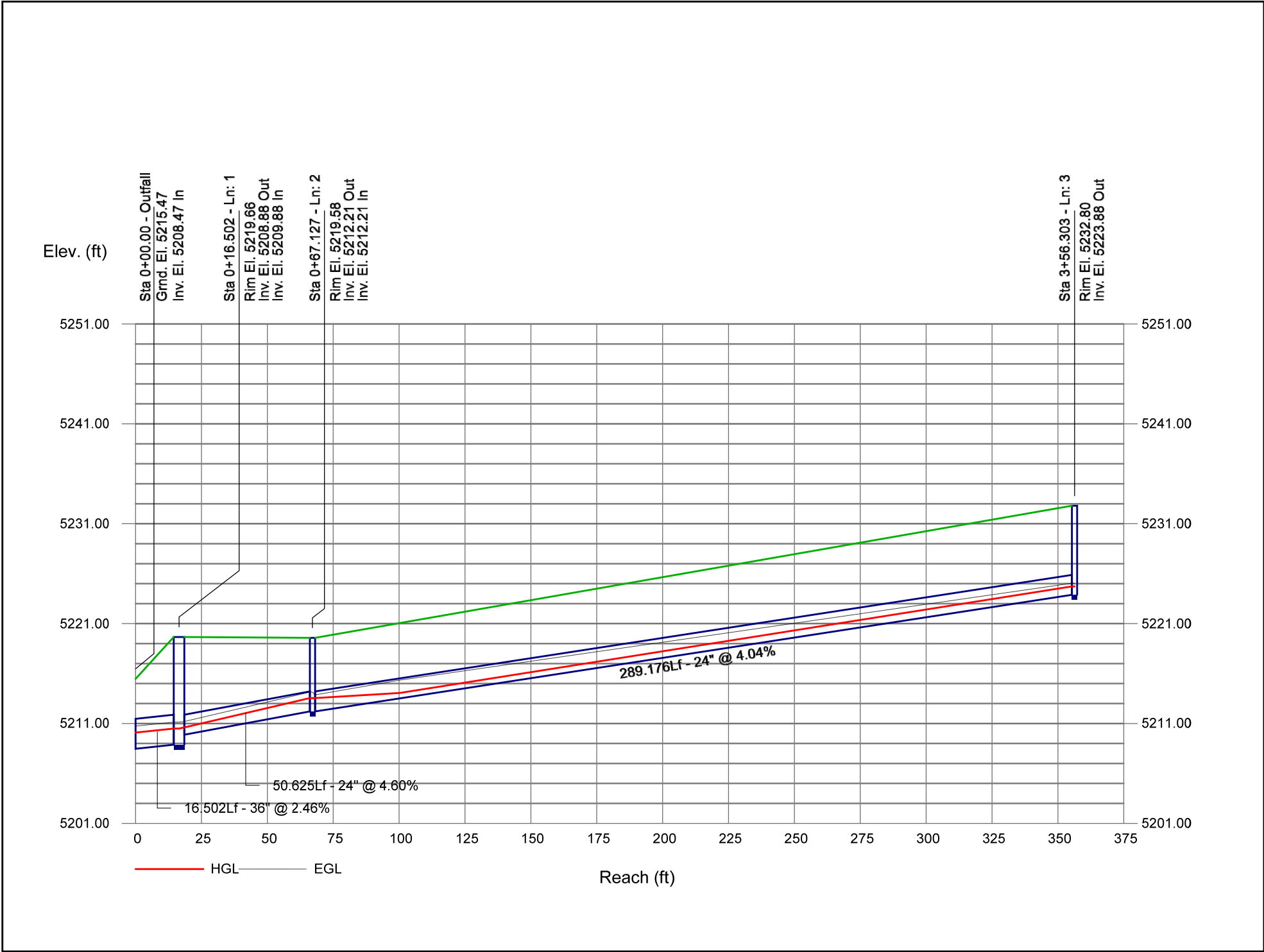
# Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	16.502	0.00	0.00	0.00	0.00	0.00	0.0	7.8	0.0	25.11	104.7	6.46	36	2.46	5208.47	5208.88	5210.09	5210.49	0.00	5219.66	Pipe - (17)
2	1	50.625	0.00	0.00	0.00	0.00	0.00	5.0	6.4	0.0	13.74	48.52	9.73	24	4.60	5209.88	5212.21	5210.61	5213.54	5219.66	5219.58	Pipe - (23)
3	2	289.176	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	5.75	45.44	3.57	24	4.04	5212.21	5223.88	5213.54	5224.73	5219.58	5232.80	Pipe - (19)
4	1	278.135	0.00	0.00	0.00	0.00	0.00	5.0	7.0	0.0	11.37	16.44	5.65	24	0.53	5209.88	5211.35	5211.10	5212.57	5219.66	5219.79	Pipe - (27)
5	4	328.461	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	4.18	50.51	2.79	24	4.99	5211.35	5227.73	5213.07	5228.45	5219.79	5236.75	Pipe - (18)
Project File: Storm System 24 36.stm																Number of lines: 5				Run Date: 4/21/2023		
NOTES:Known Qs only ; c = cir e = ellip b = box																						

Storm Sewer Profile



Storm Sewer Profile





## **APPENDIX G: DRAINAGE PLANS**

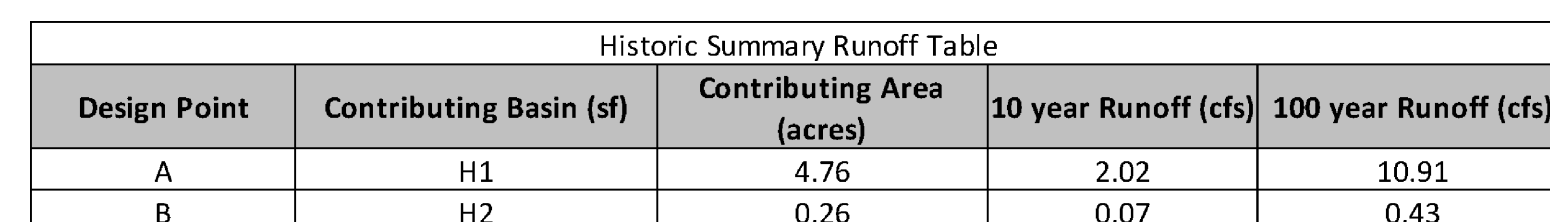
LOCATED IN THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH P.M.  
CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO  
ADDRESS: 3214-3240 W 64TH AVE, DENVER, CO, 80221



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ENGINEERING.

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HEET 1 OF 02

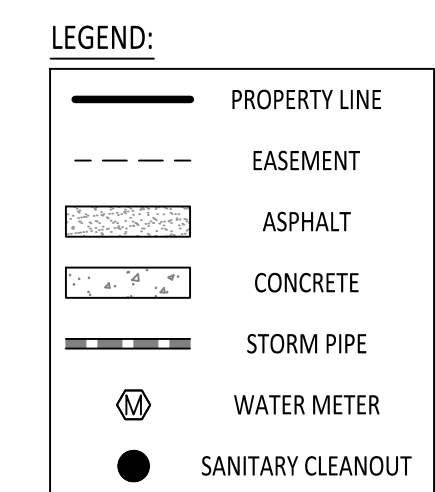


**SURVEY STATEMENT:**  
RAPTOR CIVIL ENGINEERING RELIED ON THE LAND SURVEY PREPARED BY POWER SURVEYING COMPANY, INC. RCE  
TAKES NO RESPONSIBILITY FOR ERRORS/OMISSIONS BY LAND SURVEYOR.

**BASIS OF BEARINGS:**  
BEARINGS ARE BASED UPON THE EAST LINE OF THE NORTHWEST CORNER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH P.M., SAID LINE IS ASSUMED TO BEAR SOUTH 00°18'27" EAST, A DISTANCE OF 2635.90 FEET AND IS MONUMENTED BY A FOUND 3.25" ALUMINUM CAP IN RANGE BOX (ILLEGIBLE MONUMENT) AT THE NORTHEAST CORNER OF NORTHWEST CORNER OF SAID SECTION 8 AND A FOUND 2" ALUMINUM CAP IN RANGE BOX (ILLEGIBLE MONUMENT) FOUND AT THE WEST 1/4 CORNER OF SAID SECTION 8.

**BENCHMARK:**  
ADAMS COUNTY CONTROL POINT #226 AKA RTD  
RECOVERED A 3.25" ALUMINUM CAP STAMPED "COLO. DEPT OF HIGHWAYS CONTROL MONUMENT GPS 34 ZBS PLS  
11434 4.070000" LOCATED IN THE RTD PARK-N-RIDE LOT AT THE NORTHEASTERLY CORNER OF BROADWAY ST AND  
W 70TH AVE. 150' MORE OR LESS WEST OF BROADWAY ST AND 300' MORE OR LESS NORTH OF WEST 70TH AVE.

NAVD 88 ELEVATION = 5169.24 FEET



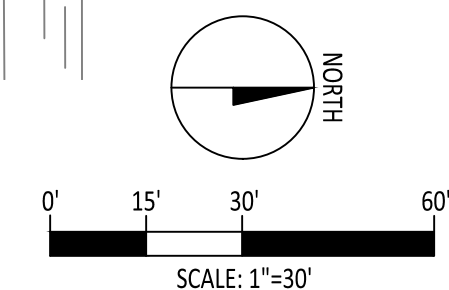
LOCATED IN THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH P.M.  
CITY OF DENVER, COUNTY OF ADAMS, STATE OF COLORADO  
ADDRESS: 3214-3240 W 64TH AVE, DENVER, CO, 80221



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ENGINEERING.








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SHEET 2 OF 02



	Volume		WSEL
	Ac-ft	Cu-ft	Ft
Bottom of Facility	0	0	5203.25
WQCV	0.099	4,312	5204.69
10-year	0.222	9,670	5205.58
100-year	0.16	6,970	5206.7
Top of Facility	0.16	6,970	5209

NAVD 88 ELEVATION = 5169.24 FEET

	PROPERTY LINE
	EASEMENT
	ASPHALT
	CONCRETE
	STORM PIPE
	WATER METER
	SANITARY CLEANOUT

**DRAINAGE NOTES:**  
REFER TO DRAINAGE REPORT PREPARED BY RAPTOR CIVIL ENGINEERING FOR THIS PROJECT FOR ALL STORM SYSTEM CALCULATIONS.



PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



3214 W 64TH AVE  
DENVER, CO, USA

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

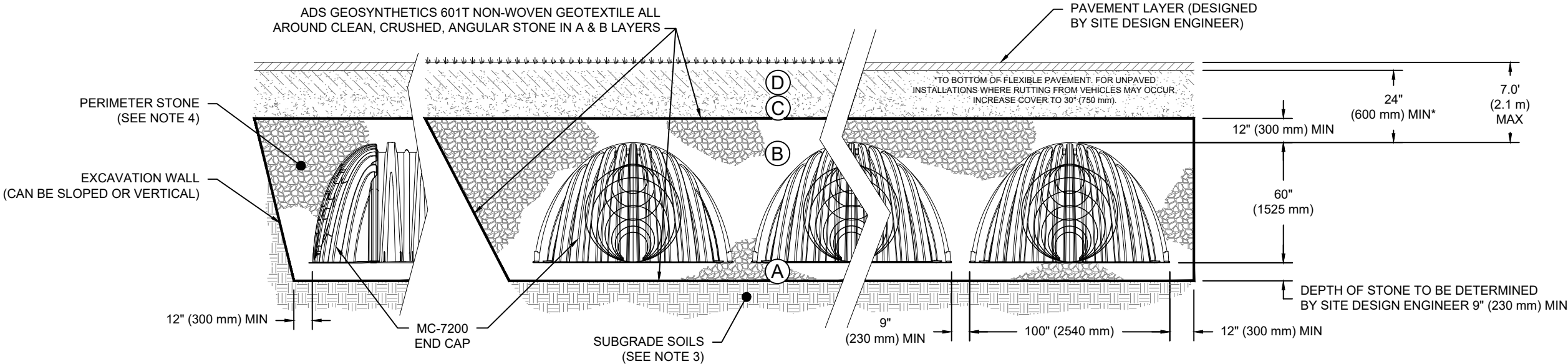




ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
  - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
- MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

3214 W 64TH AVE

DENVER, CO, USA

DATE:

DRAWN: EE

PROJECT #:

CHECKED: N/A

StormTech®

Chamber System

888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD

HILLIARD, OH 43026

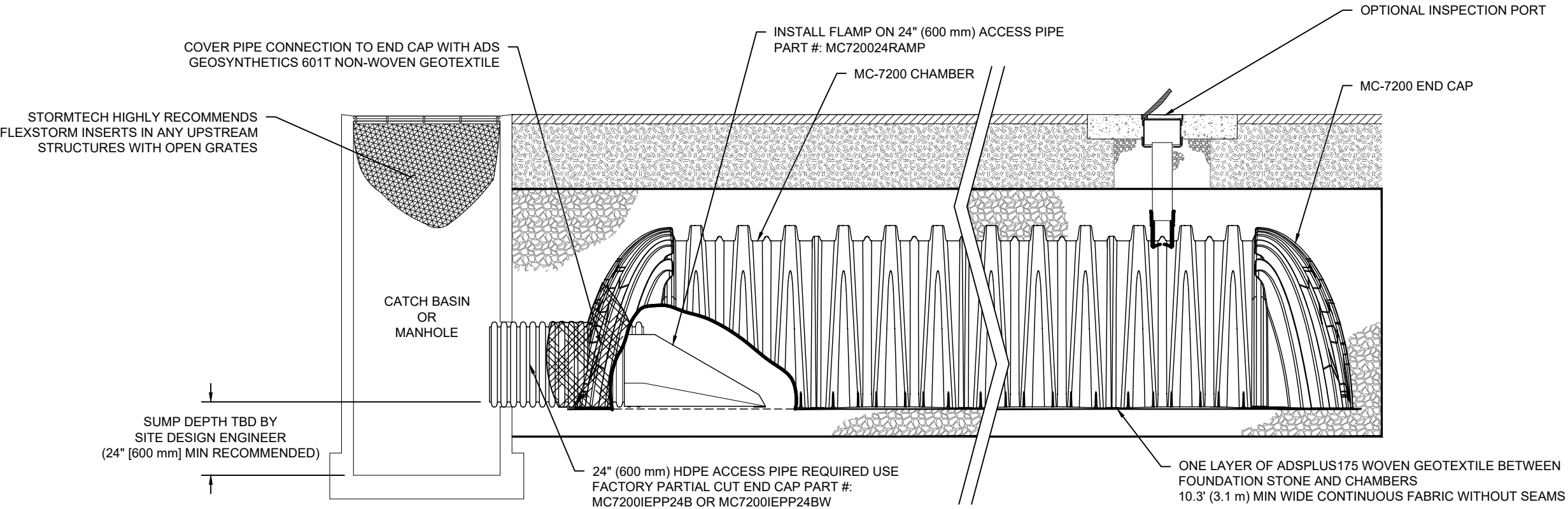
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ADS

SHEET

3 OF 5

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.



**MC-7200 ISOLATOR ROW PLUS DETAIL**  
NTS

**INSPECTION & MAINTENANCE**

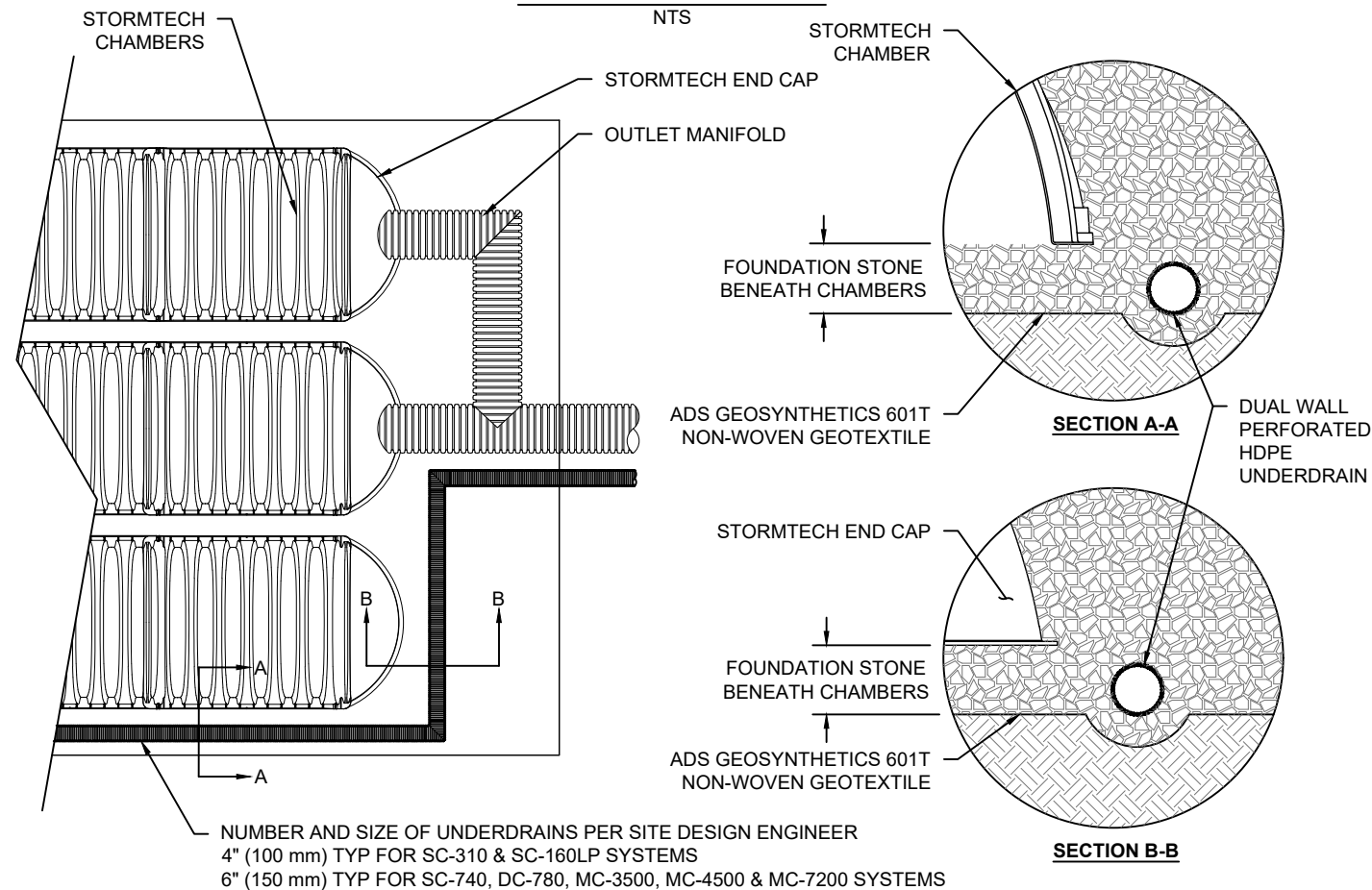
- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
    - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
    - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
    - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
    - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
    - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
  - B. ALL ISOLATOR PLUS ROWS
    - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
    - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
      - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
      - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
    - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
  - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

**NOTES**

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

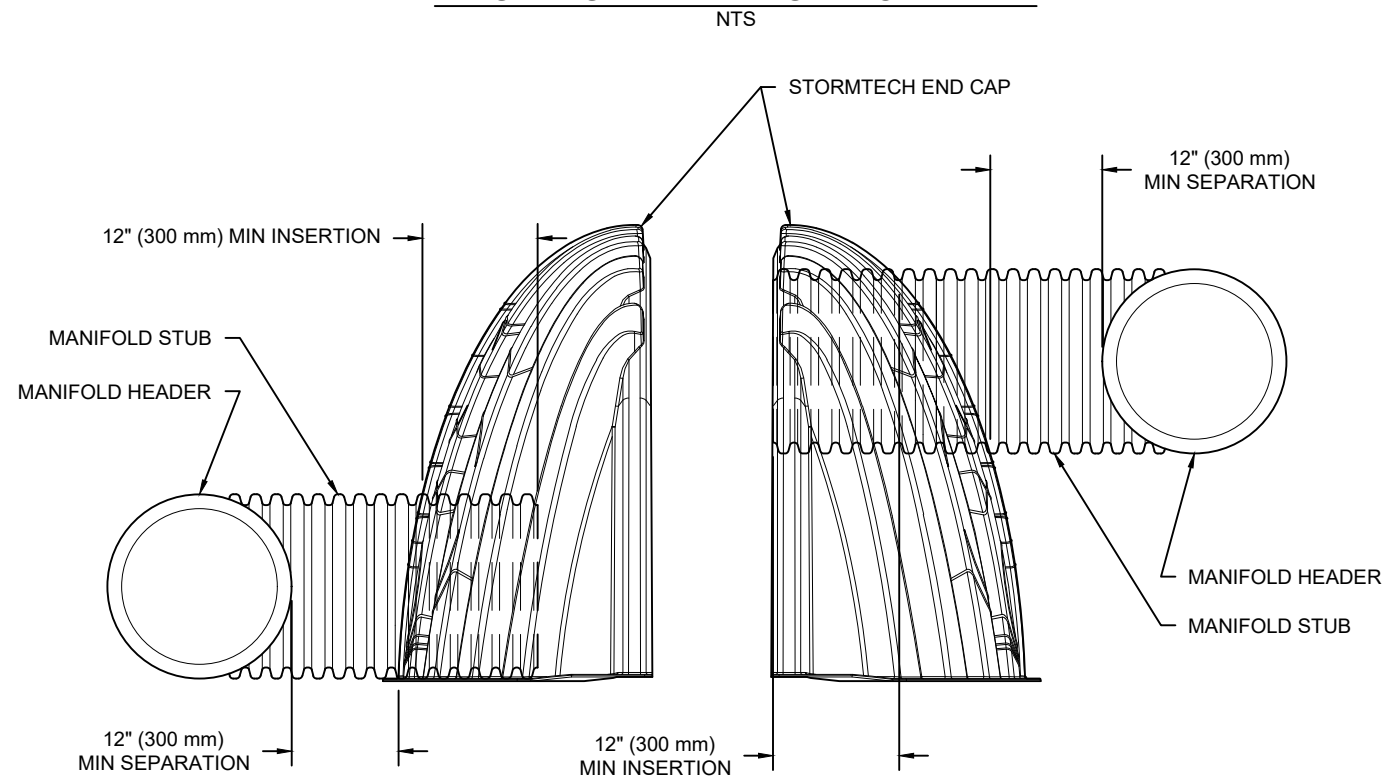
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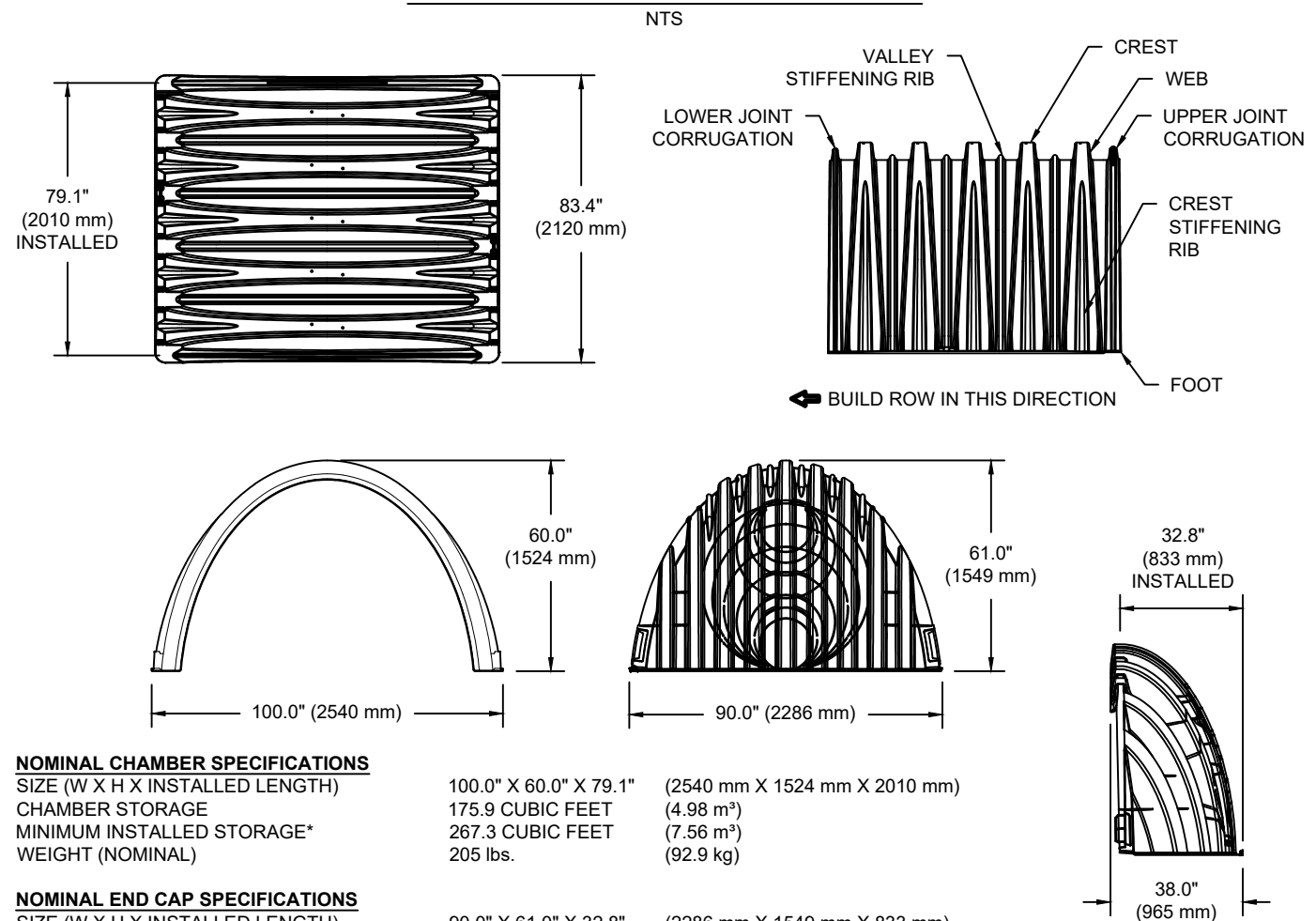
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

---

NTS



SIZE (W X H X INSTALLED LENGTH)

CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

SIZE (W X H X INSTALLED LENGTH)

END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

\*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"  
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW			---
MC7200IEPP18B		1.97" (50 mm)	
MC7200IEPP18BW			
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW			
MC7200IEPP24B		2.26" (57 mm)	
MC7200IEPP24BW			
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

3214 W 64TH AVE

DENVER, CO, USA

DATE:	DRAWN: EE
PROJECT #:	CHECKED: N/A

**StormTech®**  
Chamber System

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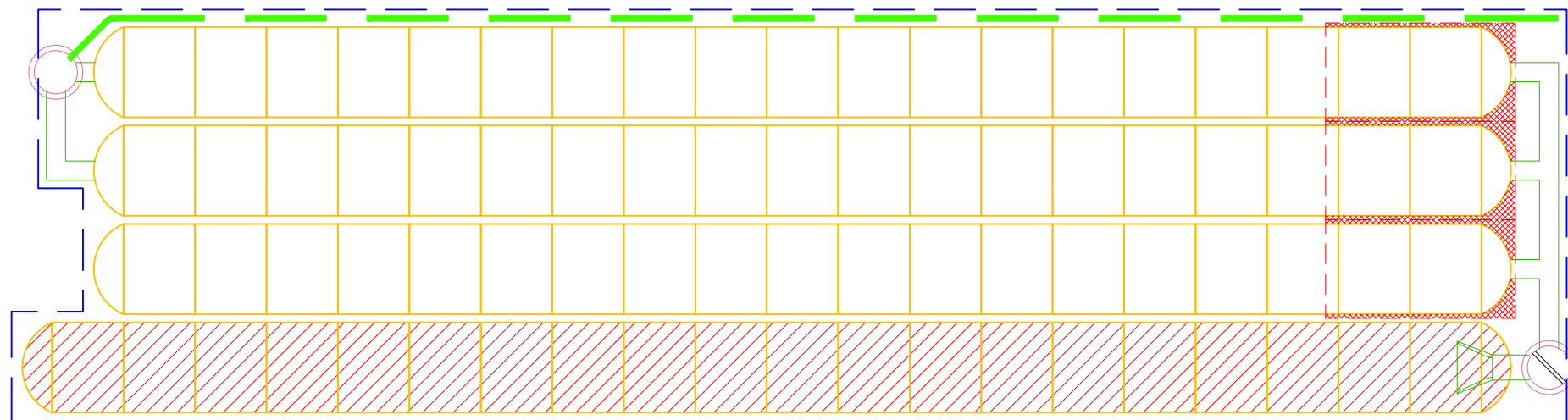
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SHEET  
OF 5

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**Articles of Organization for a Limited Liability Company**

filed pursuant to § 7-90-301 and § 7-80-204 of the Colorado Revised Statutes (C.R.S.)

**The domestic entity name of the limited liability company is** ICC 64th 1 LLC

**The principal office street address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

**The principal office mailing address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

**The name of the registered agent is** Inner Circle Capital LLC

**The registered agent's street address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

**The registered agent's mailing address is** 8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

The person above has agreed to be appointed as the registered agent for this entity.

**The management of the limited liability company is vested in** Managers

There is at least one member of the limited liability company.

**Person(s) forming the limited liability company**

Inner Circle Capital LLC  
8200 S Kellerman Cir  
Aurora CO 80016-7399  
US

Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., and, if

applicable, the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

**Name(s) and address(es) of the individual(s) causing the document to be delivered for filing**

Jaideep Chadha  
8200 S Kellerman Cir  
Aurora CO 80016-7399  
US



**STRENGTH | SERVICE | STABILITY**

**TITLE DEPARTMENT – DELIVERY TRANSMITTAL**

**Closing Location:**  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

Order No.: 103-2227738-S  
Property Address: 3107 W 63rd Ave, Denver, CO 80221  
Buyer(s)/Borrower(s): ICC 64th 1 LLC, a Colorado limited liability company  
Seller(s): Delgado Properties, LLC, a Colorado limited liability company

**BUYER/BORROWER**

ICC 64th 1 LLC, a Colorado limited liability company  
**Delivered Via Agent**

**SELLER**

Delgado Properties, LLC, a Colorado limited liability company  
**Delivered Via Agent**

**SELLING AGENT/BROKER**

HomeSmart  
License No.: EC100054186  
Carlos R. Gonzalez  
License No.: EA40024778  
carlos@gonzalezrealtyllc.net  
8300 E. Maplewood Ave, Ste 100  
Greenwood Village, CO 80111  
Phone: (303)858-8100  
Fax:  
Cell: (720)935-7655

Above is a list of clients to whom the attached materials have been delivered. First Integrity Title Company has several office locations in which to serve you. The location noted on the commitment may not be your closing location. Please contact the closer below to confirm the closing destination as well as any inquiries or questions you may have. We sincerely thank you for your business and look forward to serving you.

**FOR QUESTIONS OR COMMENTS:**

**Escrow Officer:** Tina Bonham  
E-Mail Address: TinaB@FirstIntegrityTitle.com  
Phone: 720-897-1137  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**Escrow Assistant:** Team Tina  
E-Mail Address: TeamTina@firstintegritytitle.com  
Phone:  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**WIRE INSTRUCTIONS:**

**BANK:** First Western Trust Bank  
**ABA NO.:** 102007011  
**ACCOUNT:** 2067300  
**CREDIT:** First Integrity Title Company  
**REFERENCE:** 103-2227738-S  
**All Cashier's Checks must be payable to First Integrity Title Company**

**ALTA Commitment Form (6-17-06)**

**COMMITMENT FOR TITLE INSURANCE**

***Issued by***  
**WestCor Land Title Insurance Company**

WestCor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

First Integrity Title Company



Aksana Mistiukevich

WESTCOR LAND TITLE INSURANCE COMPANY



By: Mary O'Kane  
President  
Attest: Patricia H. Power  
Secretary



## CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.*

**First Integrity Title Company  
as agent for  
Westcor Land Title Insurance Company**

Commitment No.: 103-2227738-S

**SCHEDULE A  
COMMITMENT FOR TITLE INSURANCE**

1. Effective Date: **November 4, 2022**

2. Policy or Policies to be issued:

	Amount	Premium
A. ALTA Owners Policy (06/17/06)	<b>\$230,000.00</b>	<b>\$850.00</b>

Proposed Insured: **ICC 64th 1 LLC, a Colorado limited liability company**

Tax Certificate	<b>\$25.00</b>
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Endorsement CO-110.1	<b>\$75.00</b>
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3. The estate or interest in the land described or referred to in this Commitment and covered herein is Fee Simple and title thereto is at the effective date hereof vested in:

[Delgado Properties, LLC, a Colorado limited liability company](#)

4. The land referred to in this Commitment is situate in Adams County, State of Colorado and is described as follows:

See Exhibit A attached hereto and made a part hereof.

Also known by street and number as: 3107 W 63rd Ave, Denver, CO 80221

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **EXHIBIT A**

LOT 15, CLEAR CREEK GARDENS SUBDIVISION IN THE NORTHWEST QUARTER, SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PM, COUNTY OF ADAMS, STATE OF COLORADO.

For information purposes only: 3107 W 63rd Ave, Denver, CO 80221  
APN/Parcel ID: 0182508202015

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **SCHEDULE B - SECTION I**

### **REQUIREMENTS**

The following are the requirements that must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
4. You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
5. Payment of all taxes, charges and assessments, levied and assessed against the subject premises which are due and payable.
6. Receipt by the Company of the appropriate affidavit and indemnity executed by the owners of the subject property.
7. Warranty Deed must be sufficient to convey the fee simple estate or interest in the land described or referred to herein, to the proposed insured, Schedule A, item 2A.

Note: C.R.S. §38-35-109(2) required that a notation of the purchaser's legal address, (not necessarily the same as the property address) be included on the face of the Deed to be recorded.

8. ITEM INTENTIONALLY DELETED.
9. If Juan Delgado is not signing on behalf of the Delgado Properties, LLC, a Colorado limited liability company, the following requirements will need to be furnished to the Company:
  - a. A copy of the Operating Agreement of Delgado Properties, LLC, a Colorado limited liability company,
  - b. Statement of Authority stating who is authorized to sign on behalf of Delgado Properties, LLC, a Colorado limited liability company.
10. ITEM INTENTIONALLY DELETED.
11. ITEM INTENTIONALLY DELETED.
12. NOTE: A Statement of Authority recorded SEPTEMBER 9, 2022 at Reception No. [2022000076232](#) sets forth Shawna Chadha, Member and Jaideep Chadha, Member for Inner Circle Capital LLC, a Colorado limited liability company, Manager for ICC 64th 1 LLC, a Colorado limited liability company and Jaideep Chadha, Member and Mandeep Singh, Member for Onyx Capital Solutions, LLC, a Colorado limited liability company, Member, authorized to sign on behalf of ICC 64th 1 LLC Colorado limited liability company.

If Shawna Chadha, Member, Jaideep Chadha, Member, Jaideep Chadha, Member and Mandeep Singh, Member are not signing on behalf of ICC 64th 1 LLC, LLC, a Colorado Limited Liability Company the following will need to be furnished to the Company:

- a. Copy of the Operating Agreement of ICC 64th 1 LLC, LLC, a Colorado Limited Liability Company,

**SCHEDULE B - SECTION I**

(Continued)

b. Statement of Authority stating who is authorized to sign on behalf of ICC 64th 1 LLC, LLC, a Colorado Limited Liability Company.

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**NOTE:** According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

**WARRANTY DEED RECORDED APRIL 20, 2020 AT RECEPTION NO. [2020000036018](#).**

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## **SCHEDULE B - SECTION II**

### **EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not show by the Public Record.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquired of record for value the estate or interest or mortgage thereon covered by this Commitment.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
7. Taxes for the current year, including all taxes now or heretofore assessed, due, or payable.
8. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE RECORDED PLAT OF CLEAR CREEK GARDENS SUBDIVISION, RECORDED SEPTEMBER 1, 1948 AT RECEPTION NO. 334607 IN [BOOK F9 AT PAGE 9](#).
9. ANY EXISTING UNRECORDED LEASES OR TENANCIES.
10. JUDGMENTS, STATE AND/OR FEDERAL TAX LIENS, IF ANY, AGAINST THE PROPOSED INSURED.  
  
NOTE: THIS EXCEPTION WILL NOT APPEAR ON ANY LOAN/LENDER'S POLICY.
11. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072.
12. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO THE FENCE AND DRIVE ENCROACHES THE EAST BOUNDARY LINE OF LOT 15 AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072.
13. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO THE 6' WOOD FENCE LINE ALONG THE NORTH AND EAST BOUNDARY LINES AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 2215, DATED 10/17/2022 ISSUED BY JOSEPH W. STICE, III PLS 36072.

**End of Schedule B Section II**

## DISCLOSURE STATEMENT

- Pursuant to Section 38-35-125 of Colorado Revised Statutes and Colorado Division of Insurance Regulation 8-1-2 (Section 5), if the parties to the subject transaction request us to provide escrow-settlement and disbursement services to facilitate the closing of the transaction, then all funds submitted for disbursement must be available for immediate withdrawal.
- Colorado Division of Insurance Regulation 8-1-2, Section 5, Paragraph H, requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title insurance commitment, other than the effective date of the title insurance commitment, for all matters which appear of record prior to the time of recording. Whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an Owner's Policy of Title Insurance and is responsible for the recording and First Integrity Title Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception No. 5 in Schedule B-2 will not appear in the Owner's Title Policy and Lender's Title Policy when issued.
- Colorado Division of Insurance Regulation 8-1-2, Paragraph M of Section 5, requires that prospective insured(s) of a single family residence be notified in writing that the standard exception from coverage for unfilled Mechanics or Materialmans Liens may or may not be deleted upon the satisfaction of the requirement(s) pertinent to the transaction. These requirements will be addressed upon receipt of a written request to provide said coverage, or if the Purchase and Sale Agreement/Contract is provided to the Company then the necessary requirements will be reflected on the commitment.
- Colorado Division of Insurance Regulation 8-1-3, Paragraph C. 11.f. of Section 5 - requires a title insurance company to make the following notice to the consumer: "A closing protection letter is available to be issued to lenders, buyers and sellers".
- If the sales price of the subject property exceeds \$100,000.00 the seller shall be required to comply with the Disclosure of Withholding Provisions of C.R.S. 39-22-604.5 (Nonresident Withholding).
- Section 39-14-102 of Colorado Revised Statutes requires that a Real Property Transfer Declaration accompany any conveyance document presented for recordation in the State of Colorado. Said Declaration shall be completed and signed by either the grantor or grantee.
- Recording statutes contained in Section 30-10-406(3)(a) of the Colorado Revised Statutes require that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right, and bottom margin of at least one-half of an inch. The clerk and recorder may refuse to record or file a document that does not conform to requirements of this paragraph.
- Section 38-35-109 (2) of the Colorado Revised Statutes, 1973, requires that a notation of the purchasers legal address, (not necessarily the same as the property address) be included on the face of the deed to be recorded.
- Regulations of County Clerk and Recorder's offices require that all documents submitted for recording must contain a return address on the front page of every document being recorded.
- Pursuant to Section 10-11-122 of the Colorado Revised Statutes, 1987 the Company is required to disclose the following information:
  - The subject property may be located in a special taxing district.
  - A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
  - Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder or the County Assessor.
- Pursuant to Section 10-11-123 of the Colorado Revised Statutes, when it is determined that a mineral estate has been severed from the surface estate, the Company is required to disclose the following information: that there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and that such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Notwithstanding anything to the contrary in this Commitment, if the policy to be issued is other than an ALTA Owner's Policy (6/17/06), the policy may not contain an arbitration clause, or the terms of the arbitration clause may be different from those set forth in this Commitment. If the policy does contain an arbitration clause, and the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.

# **NOTICE OF PRIVACY POLICY**

## **of**

### **Westcor Land Title Insurance Company and First Integrity Title Company**

Westcor Land Title Insurance Company ("WLTIC") and First Integrity Title Company values its customers and is committed to protecting the privacy of personal information. In keeping with that philosophy, we have developed a Privacy Policy, set out below, that will ensure the continued protection of your nonpublic personal information and inform you about the measures WLTIC and First Integrity Title Company take to safeguard that information.

#### **Who is Covered**

We provide our Privacy Policy to each customer when they purchase a WLTIC title insurance policy. Generally, this means that the Privacy Policy is provided to the customer at the closing of the real estate transaction.

#### **Information Collected**

In the normal course of business and to provide the necessary services to our customers, we may obtain nonpublic personal information directly from the customer, from customer-related transactions, or from third parties such as our title insurance agents, lenders, appraisers, surveyors or other similar entities.

#### **Access to Information**

Access to all nonpublic personal information is limited to those employees who have a need to know in order to perform their jobs. These employees include, but are not limited to, those in departments such as legal, underwriting, claims administration and accounting.

#### **Information Sharing**

Generally, WLTIC and do not share nonpublic personal information that it collects with anyone other than its policy issuing agents as needed to complete the real estate settlement services and issue its title insurance policy as requested by the consumer. WLTIC or may share nonpublic personal information as permitted by law with entities with whom WLTIC or has a joint marketing agreement. Entities with whom WLTIC or have a joint marketing agreement have agreed to protect the privacy of our customer's nonpublic personal information by utilizing similar precautions and security measures as WLTIC and uses to protect this information and to use the information for lawful purposes. WLTIC and , however, may share information as required by law in response to a subpoena, to a government regulatory agency or to prevent fraud.

#### **Information Security**

WLTIC and First Integrity Title Company, at all times, strive to maintain the confidentiality and integrity of the personal information in its possession and has instituted measures to guard against its unauthorized access. We maintain physical, electronic and procedural safeguards in compliance with federal standards to protect that information.





4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

## **PRIVACY POLICY**

### **Committed to Protecting Customer Information**

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information particularly any personal or financial information. You have a right to know how we will utilize the personal information you provide to us. Therefore, First Integrity Title Company has adopted this Privacy Policy to govern the use and handling of your personal information.

### **Applicability**

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity.

### **Types of Information**

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our agents, or others; and
- Information we receive from a consumer-reporting agency.

### **Use of Information**

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis.

### **Former Customers**

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

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We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities that need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Thank you for giving us the opportunity to provide your closing and settlement services.



**STRENGTH | SERVICE | STABILITY**

**TITLE DEPARTMENT – DELIVERY TRANSMITTAL**

**Closing Location:**

4610 S. Ulster Street, Suite 100  
Denver, CO 80237

Phone: (303)209-0312 Fax: (303)648-4238

Order No.: 103-2222072-S  
Property Address: 3214 West 64th Avenue, Denver, CO 80221  
Buyer(s)/Borrower(s): ICC 64th 1 LLC, a Colorado limited liability company  
Seller(s): Gerald Nunez

**BUYER/BORROWER**

ICC 64th 1 LLC, a Colorado limited liability company  
**Delivered Via Agent**

**SELLING AGENT/BROKER**

Amerivest Realty  
License No.: EC100054647  
Shawna Chadha  
License No.: 100088061  
buyandsell@shawnachadha.com  
4770 Baseline Road, Suite 200  
Boulder, CO 80303  
Phone: (858)382-0099

**LENDER**

ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership  
of the indebtedness secured by the insured mortgage, except a  
successor who is an obligor under the provisions of Section 12© of the  
conditions and stipulations

servicing@roserock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

Ali Awe  
aawe@rosewock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

**SELLER**

Gerald Nunez  
**Delivered Via Agent**

**LISTING AGENT/BROKER**

HomeSmart  
License No.: EC100054186  
Carlos Gonzalez  
License No.: 40024778  
Carlos@gonzalezrealtyllc.net  
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Above is a list of clients to whom the attached materials have been delivered. First Integrity Title Company has several office locations in which to serve you. The location noted on the commitment may not be your closing location. Please contact the closer below to confirm the closing destination as well as any inquiries or questions you may have. We sincerely thank you for your business and look forward to serving you.

**FOR QUESTIONS OR COMMENTS:**

**Escrow Officer:** Tina Bonham  
E-Mail Address: TinaB@FirstIntegrityTitle.com  
Phone: 720-897-1137  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**Escrow Assistant:** Team Tina  
E-Mail Address: TeamTina@firstintegritytitle.com  
Phone:  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**WIRE INSTRUCTIONS:**

**BANK:** First Western Trust Bank  
**ABA NO.:** 102007011  
**ACCOUNT:** 2067300  
**CREDIT:** First Integrity Title Company  
**REFERENCE:** 103-2222072-S  
**All Cashier's Checks must be payable to First Integrity Title Company**

**ALTA Commitment Form (6-17-06)**

**COMMITMENT FOR TITLE INSURANCE**

***Issued by***  
**WestCor Land Title Insurance Company**

WestCor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

First Integrity Title Company

*Curtis N. Gray*

Curtis N. Gray

WESTCOR LAND TITLE INSURANCE COMPANY



By: Mary O'Kane  
President

Attest: Patricia H. Power  
Secretary

## CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.*

**First Integrity Title Company  
as agent for  
Westcor Land Title Insurance Company**

Commitment No.: 103-2222072-S

**SCHEDULE A  
COMMITMENT FOR TITLE INSURANCE**

1. Effective Date: **August 12, 2022**

2. Policy or Policies to be issued:

	Amount	Premium
A. ALTA Owners Policy (06/17/06)	<b>\$1,600,000.00</b>	<b>\$1,847.00</b>

Proposed Insured: **ICC 64th 1 LLC, a Colorado limited liability company**

B. ALTA Loan Policy (06/17/06)	<b>\$1,205,000.00</b>	<b>\$150.00</b>
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Proposed Insured: ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

TAX CERTIFICATE	<b>\$25.00</b>
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Endorsement ALTA 8.1	<b>\$50.00</b>
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Endorsement 111.9-06	<b>\$50.00</b>
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Endorsement ALTA 17.1	<b>\$50.00</b>
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Endorsement CO Form 100.1	<b>\$50.00</b>
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Endorsement CO-110.1 (del ex. 1,2 & 3)	<b>\$75.00</b>
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3. The estate or interest in the land described or referred to in this Commitment and covered herein is Fee Simple and title thereto is at the effective date hereof vested in:

[Gerald Nunez](#)

4. The land referred to in this Commitment is situate in Adams County, State of Colorado and is described as follows:

See Exhibit A attached hereto and made a part hereof.

Also known by street and number as: 3214 West 64th Avenue, Denver, CO 80221

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## EXHIBIT A

That Part of the Northwest 1/4 of Section 8, Township 3 South, Range 68 West described as follows:

Commencing at a point on the North Section Line, 50 Rods West of the Northeast corner of said Northwest 1/4; Thence Due West along said Section Line, 10 Rods; Thence at Right Angles Due South 40 Rods; Thence at Right Angles Due East 10 Rods; Thence at Right Angles Due North 40 Rods to the Place of Beginning, Except the North 30 feet thereof for road purposes, and except that Portion of Land Conveyed to the County of Adams, State of Colorado in the Deed Recorded June 24, 2005 under Reception No. [20050624000665580](#), County of Adams, State of Colorado.

For information purposes only: 3214 West 64th Avenue, Denver, CO 80221  
APN/Parcel ID: 0182508200017

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **SCHEDULE B - SECTION I**

### **REQUIREMENTS**

The following are the requirements that must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
4. You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
5. Payment of all taxes, charges and assessments, levied and assessed against the subject premises which are due and payable.
6. Receipt by the Company of the appropriate affidavit and indemnity executed by the owners of the subject property.
7. NOTE: APPROVED BY UNDERWRITER
8. ITEM INTENTIONALLY DELETED.
9. ITEM INTENTIONALLY DELETED.
10. Correction Deed from LAWRENCE J. GARCIA to GERALD NUNEZ .

Note: This requirement is necessary because

A. The legal description in the Deed RECORDED should appear as set forth in item 4 of Schedule A of this Commitment.

NOTE: ASSESSOR'S SHORTHAND DESCRIPTION WAS USED

B. The grantor in the Deed RECORDED ON OCTOBER 14, 2021, AT RECEPTION NO. [2021000121453](#) appeared as LAWRENCE GARCIA , whereas title was conveyed to the said grantor as LAWRENCE J. GARCIA.

11. Warranty Deed must be sufficient to convey the fee simple estate or interest in the land described or referred to herein, to the proposed insured, Schedule A, item 2A.  
  
Note: C.R.S. §38-35-109(2) required that a notation of the purchaser's legal address, (not necessarily the same as the property address) be included on the face of the Deed to be recorded.
12. Deed of Trust sufficient to encumber the fee simple estate or interest in the land described or referred to herein for the benefit of the proposed insured, Schedule A, item 2(b) or 2(c).
13. Release of the Deed of Trust from Lawrence J. Garcia, a married man, as his sole and separate property to the Public Trustee of Adams County for the benefit of American Pacific Mortgage Corporation to secure an indebtedness in the principal sum of \$392,000.00, and any other amounts and/or obligations secured

**SCHEDULE B - SECTION I**  
(Continued)

thereby, dated April 21, 2021 and recorded on April 28, 2021 at Reception No. [2021000051806](#) and Re-recorded on July 13, 2021 at Reception No. [2021000083257](#).

14. Item intentionally deleted.
15. The following requirements for ICC 64th 1 LLC, a Colorado limited liability company will need to be furnished to the Company:
  - a. A copy of the Operating Agreement of ICC 64th 1 LLC, a Colorado limited liability company,
  - b. Statement of Authority stating who is authorized to sign on behalf of ICC 64th 1 LLC, a Colorado limited liability company.

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**NOTE:** According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

**A Beneficiary Deed Recorded on February 12, 2015 at Reception No. [2015000009979](#).**

**A General Warranty Deed Recorded on April 28, 2021 at Reception No. [2021000051805](#).**

**A Colorado Quit Claim Deed Recorded on October 14, 2021 at Reception No. [2021000121453](#).**

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## **SCHEDULE B - SECTION II**

### **EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not show by the Public Record.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquired of record for value the estate or interest or mortgage thereon covered by this Commitment.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
7. Taxes for the current year, including all taxes now or heretofore assessed, due, or payable.

NOTE: UPON PAYMENT OF THE PREMIUMS AND SATISFACTION OF THE REQUIREMENTS IN SCHEDULE B – SECTION I THAT THE ABOVE EXCEPTION WILL BE AMENDED TO READ "TAXES AND ASSESSMENTS FOR THE YEARS 2022, AND SUBSEQUENT YEARS, A LIEN, NOT YET DUE OR PAYABLE."

8. ANY EXISTING LEASES OR TENANCIES.
9. TEMPORARY CONSTRUCTION EASEMENT RECITED IN DEED RECORDED JUNE 24, 2005 AT RECEPTION NO. [20050624000665580](#).
10. THE FINAL TITLE INSURANCE POLICY(S) SHALL NOT AND DOES NOT INSURE THE TITLE TO THOSE FIXTURES, STRUCTURES AND LIKE APPURTENANCES WHICH ARE NOT ASSESSED AND TAXED AS REAL PROPERTY BY THE COUNTY. NO EXAMINATION OF THE TITLE TO THE REFERENCED FIXTURES, STRUCTURES AND LIKE APPURTENANCES HAS BEEN MADE.
11. JUDGMENTS, STATE AND/OR FEDERAL TAX LIENS, IF ANY, AGAINST THE PROPOSED INSURED.

NOTE: THIS EXCEPTION WILL NOT APPEAR ON ANY LOAN/LENDER'S POLICY.

12. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE A.L.T.A/N.S.P.S. LAND TITLE SURVEY JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL PLS 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221.
13. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO FENCE LINES ALONG THE EAST, WEST AND NORTH BOUNDARY LINES AS DISCLOSED ON THE A.L.T.A/N.S.P.S. LAND

**SCHEDULE B - SECTION II**

(Continued)

TITLE SURVEY JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL  
PLS 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO  
80221.

**End of Schedule B Section II**

## DISCLOSURE STATEMENT

- Pursuant to Section 38-35-125 of Colorado Revised Statutes and Colorado Division of Insurance Regulation 8-1-2 (Section 5), if the parties to the subject transaction request us to provide escrow-settlement and disbursement services to facilitate the closing of the transaction, then all funds submitted for disbursement must be available for immediate withdrawal.
- Colorado Division of Insurance Regulation 8-1-2, Section 5, Paragraph H, requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title insurance commitment, other than the effective date of the title insurance commitment, for all matters which appear of record prior to the time of recording. Whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an Owner's Policy of Title Insurance and is responsible for the recording and First Integrity Title Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception No. 5 in Schedule B-2 will not appear in the Owner's Title Policy and Lender's Title Policy when issued.
- Colorado Division of Insurance Regulation 8-1-2, Paragraph M of Section 5, requires that prospective insured(s) of a single family residence be notified in writing that the standard exception from coverage for unfilled Mechanics or Materialmans Liens may or may not be deleted upon the satisfaction of the requirement(s) pertinent to the transaction. These requirements will be addressed upon receipt of a written request to provide said coverage, or if the Purchase and Sale Agreement/Contract is provided to the Company then the necessary requirements will be reflected on the commitment.
- Colorado Division of Insurance Regulation 8-1-3, Paragraph C. 11.f. of Section 5 - requires a title insurance company to make the following notice to the consumer: "A closing protection letter is available to be issued to lenders, buyers and sellers".
- If the sales price of the subject property exceeds \$100,000.00 the seller shall be required to comply with the Disclosure of Withholding Provisions of C.R.S. 39-22-604.5 (Nonresident Withholding).
- Section 39-14-102 of Colorado Revised Statutes requires that a Real Property Transfer Declaration accompany any conveyance document presented for recordation in the State of Colorado. Said Declaration shall be completed and signed by either the grantor or grantee.
- Recording statutes contained in Section 30-10-406(3)(a) of the Colorado Revised Statutes require that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right, and bottom margin of at least one-half of an inch. The clerk and recorder may refuse to record or file a document that does not conform to requirements of this paragraph.
- Section 38-35-109 (2) of the Colorado Revised Statutes, 1973, requires that a notation of the purchasers legal address, (not necessarily the same as the property address) be included on the face of the deed to be recorded.
- Regulations of County Clerk and Recorder's offices require that all documents submitted for recording must contain a return address on the front page of every document being recorded.
- Pursuant to Section 10-11-122 of the Colorado Revised Statutes, 1987 the Company is required to disclose the following information:
  - The subject property may be located in a special taxing district.
  - A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
  - Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder or the County Assessor.
- Pursuant to Section 10-11-123 of the Colorado Revised Statutes, when it is determined that a mineral estate has been severed from the surface estate, the Company is required to disclose the following information: that there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and that such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Notwithstanding anything to the contrary in this Commitment, if the policy to be issued is other than an ALTA Owner's Policy (6/17/06), the policy may not contain an arbitration clause, or the terms of the arbitration clause may be different from those set forth in this Commitment. If the policy does contain an arbitration clause, and the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.

**NOTICE OF PRIVACY POLICY**  
**of**  
**Westcor Land Title Insurance Company and First Integrity Title Company**

Westcor Land Title Insurance Company ("WLTIC") and First Integrity Title Company values its customers and is committed to protecting the privacy of personal information. In keeping with that philosophy, we have developed a Privacy Policy, set out below, that will ensure the continued protection of your nonpublic personal information and inform you about the measures WLTIC and First Integrity Title Company take to safeguard that information.

**Who is Covered**

We provide our Privacy Policy to each customer when they purchase a WLTIC title insurance policy. Generally, this means that the Privacy Policy is provided to the customer at the closing of the real estate transaction.

**Information Collected**

In the normal course of business and to provide the necessary services to our customers, we may obtain nonpublic personal information directly from the customer, from customer-related transactions, or from third parties such as our title insurance agents, lenders, appraisers, surveyors or other similar entities.

**Access to Information**

Access to all nonpublic personal information is limited to those employees who have a need to know in order to perform their jobs. These employees include, but are not limited to, those in departments such as legal, underwriting, claims administration and accounting.

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- Information about your transactions with us, our agents, or others; and
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**STRENGTH | SERVICE | STABILITY**

**TITLE DEPARTMENT – DELIVERY TRANSMITTAL**

**Closing Location:**

4610 S. Ulster Street, Suite 100

Denver, CO 80237

Phone: (303)209-0312 Fax: (303)648-4238

Order No.: 103-2222071-S  
Property Address: 3240 W 64th Avenue, Denver, CO 80221  
Buyer(s)/Borrower(s): ICC 64th 1 LLC, a Colorado limited liability company  
Seller(s): Invictus Family Trust 2018

**BUYER/BORROWER**

ICC 64th 1 LLC, a Colorado limited liability company

**Delivered Via Agent**

**SELLING AGENT/BROKER**

Amerivest Realty  
License No.: EC100054647  
Shawna Chadha  
License No.: 100088061  
buyandsell@shawnachadha.com  
4770 Baseline Road, Suite 200  
Boulder, CO 80303  
Phone: (858)382-0099

**LENDER**

ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

Ali Awe  
aawe@roserock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

servicing@roserock.com  
8872 HSC Parkway, Suite 401  
Bryan, TX 77807

**SELLER**

Invictus Family Trust 2018

**Delivered Via Agent**

**LISTING AGENT/BROKER**

HomeSmart  
License No.: EC100054186  
Carlos R. Gonzalez  
License No.: 40024778  
carlos@gonzalezrealtyllc.net  
8300 E. Maplewood Ave, Ste 100  
Greenwood Village, CO 80111  
Phone: (303)858-8100  
Cell: (720)935-7655

Above is a list of clients to whom the attached materials have been delivered. First Integrity Title Company has several office locations in which to serve you. The location noted on the commitment may not be your closing location. Please contact the closer below to confirm the closing destination as well as any inquiries or questions you may have. We sincerely thank you for your business and look forward to serving you.

**FOR QUESTIONS OR COMMENTS:**

**Escrow Officer:** Tina Bonham  
E-Mail Address: TinaB@FirstIntegrityTitle.com  
Phone: 720-897-1137  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**Escrow Assistant:** Team Tina  
E-Mail Address: TeamTina@firstintegritytitle.com  
Phone:  
4610 S. Ulster Street, Suite 100  
Denver, CO 80237

**WIRE INSTRUCTIONS:**

**BANK:** First Western Trust Bank  
**ABA NO.:** 102007011  
**ACCOUNT:** 2067300  
**CREDIT:** First Integrity Title Company  
**REFERENCE:** 103-2222071-S  
**All Cashier's Checks must be payable to First Integrity Title Company**

**ALTA Commitment Form (6-17-06)**

**COMMITMENT FOR TITLE INSURANCE**

***Issued by***  
**WestCor Land Title Insurance Company**

WestCor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

WESTCOR LAND TITLE INSURANCE COMPANY



By: Mary O'Vann  
President  
Attest: Patricia H. Power  
Secretary

## CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.*



**First Integrity Title Company  
as agent for  
Westcor Land Title Insurance Company**

Commitment No.: 103-2222071-S

**SCHEDULE A  
COMMITMENT FOR TITLE INSURANCE**

1. Effective Date: **August 12, 2022**

2. Policy or Policies to be issued:

	Amount	Premium
A. ALTA Owners Policy (06/17/06)	<b>\$1,600,000.00</b>	<b>\$1,847.00</b>

Proposed Insured: **ICC 64th 1 LLC, a Colorado limited liability company**

B. ALTA Loan Policy (06/17/06)	<b>\$1,205,000.00</b>	<b>\$150.00</b>
--------------------------------	-----------------------	-----------------

Proposed Insured: ROSE ROCK CAPITAL FUND I, LP, and each successor in ownership of the indebtedness secured by the insured mortgage, except a successor who is an obligor under the provisions of Section 12© of the conditions and stipulations

Tax Certificate	<b>\$25.00</b>
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Endorsement 110.1-06 AS TO EXCS. 1,2,3	<b>\$75.00</b>
--	----------------

Endorsement ALTA 8.1 (Environmental Protection Lien)	<b>\$50.00</b>
--	----------------

Endorsement 111.9-06	<b>\$50.00</b>
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Endorsement ALTA 17.1	<b>\$50.00</b>
-----------------------	----------------

Endorsement CO Form 100.1	<b>\$50.00</b>
---------------------------	----------------

3. The estate or interest in the land described or referred to in this Commitment and covered herein is Fee Simple and title thereto is at the effective date hereof vested in:

[Invictus Family Trust 2018](#)

4. The land referred to in this Commitment is situate in Adams County, State of Colorado and is described as follows:

See Exhibit A attached hereto and made a part hereof.

Also known by street and number as: 3240 W 64th Avenue, Denver, CO 80221

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## **EXHIBIT A**

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING,  
EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 UNDER RECEPTION NO. 20051017001136790,

COUNTY OF ADAMS, STATE OF COLORADO

For information purposes only: 3240 W 64th Avenue, Denver, CO 80221  
APN/Parcel ID: 0182508200033

This commitment is invalid unless the Insuring Provisions and Schedules A and B are attached.

## SCHEDULE B - SECTION I

### REQUIREMENTS

The following are the requirements that must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
4. You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
5. Payment of all taxes, charges and assessments, levied and assessed against the subject premises which are due and payable.
6. Receipt by the Company of the appropriate affidavit and indemnity executed by the owners of the subject property.
7. **NOTE: APPROVED AS TO UNDERWRITER**
8. We find no open Deeds of Trust/Mortgage of record.  
Please verify by inquiry of escrow personnel and/or agents whether or not we have overlooked something and advise the title department accordingly prior to close of escrow.  
We will require an "Affidavit of No Deed of Trust/Mortgage" to be signed by the sellers/borrowers prior to close of escrow and forwarded to the title unit.
9. ITEM INTENTIONALLY DELETED.
10. ITEM INTENTIONALLY DELETED.
11. ITEM INTENTIONALLY DELETED.
12. Warranty Deed must be sufficient to convey the fee simple estate or interest in the land described or referred to herein, to the proposed insured, Schedule A, item 2A.  
  
Note: C.R.S. §38-35-109(2) required that a notation of the purchaser's legal address, (not necessarily the same as the property address) be included on the face of the Deed to be recorded.  
  
NOTE: TRUST AFFIDAVIT FOR INVICTUS FAMILY TRUST 2018 RECORDED NOVEMBER 19, 2018 AT RECEPTION NO. [2018000092941](#) EVIDENCES SHARON NUNEZ DEGROEN, TRUSTEE.
13. Deed of Trust sufficient to encumber the fee simple estate or interest in the land described or referred to herein for the benefit of the proposed insured, Schedule A, item 2(b) or 2(c).
14. The following requirements for ICC 64th 1 LLC, a Colorado limited liability company will need to be furnished to the Company:
  - a. ITEM INTENTIONALLY DELETED.
  - b. Statement of Authority stating who is authorized to sign on behalf of ICC 64th 1 LLC, a Colorado limited liability company.

**SCHEDULE B - SECTION I**  
(Continued)

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**NOTE:** According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

**GWD 03/30/2021 AT RECEPTION NO. 2021000038645.**

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## **SCHEDULE B - SECTION II**

### **EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not show by the Public Record.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquired of record for value the estate or interest or mortgage thereon covered by this Commitment.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
7. Taxes for the current year, including all taxes now or heretofore assessed, due, or payable.

NOTE: UPON PAYMENT OF THE PREMIUMS AND SATISFACTION OF THE REQUIREMENTS IN SCHEDULE B – SECTION I THAT THE ABOVE EXCEPTION WILL BE AMENDED TO READ "TAXES AND ASSESSMENTS FOR THE YEARS 2022, AND SUBSEQUENT YEARS, A LIEN, NOT YET DUE OR PAYABLE."

8. ANY EXISTING LEASES OR TENANCIES.
9. JUDGMENTS, STATE AND/OR FEDERAL TAX LIENS, IF ANY, AGAINST THE PROPOSED INSURED.

NOTE: THIS EXCEPTION WILL NOT APPEAR ON ANY LOAN/LENDER'S POLICY.

10. ANY AND ALL NOTES, EASEMENTS AND RECITALS AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL, P.L.S. 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221.
11. ANY AND ALL MATTERS, ISSUES OR CLAIMS THAT MAY ARISE DUE TO FENCE LINES ALONG THE NORTH, EAST AND WEST BOUNDARY LINES AS DISCLOSED ON THE IMPROVEMENT LOCATION CERTIFICATE JOB NUMBER 501-21-238, DATED 09/14/2021 ISSUED BY RICHARD B. GABRIEL, P.L.S. 37929 ON BEHALF OF POWER SURVEYING COMPANY, INC., 6911 BROADWAY DENVER, CO 80221.

**End of Schedule B Section II**

## DISCLOSURE STATEMENT

- Pursuant to Section 38-35-125 of Colorado Revised Statutes and Colorado Division of Insurance Regulation 8-1-2 (Section 5), if the parties to the subject transaction request us to provide escrow-settlement and disbursement services to facilitate the closing of the transaction, then all funds submitted for disbursement must be available for immediate withdrawal.
- Colorado Division of Insurance Regulation 8-1-2, Section 5, Paragraph H, requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title insurance commitment, other than the effective date of the title insurance commitment, for all matters which appear of record prior to the time of recording Whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an Owner's Policy of Title Insurance and is responsible for the recording and First Integrity Title Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception No. 5 in Schedule B-2 will not appear in the Owner's Title Policy and Lender's Title Policy when issued.
- Colorado Division of Insurance Regulation 8-1-2, Paragraph M of Section 5, requires that prospective insured(s) of a single family residence be notified in writing that the standard exception from coverage for unfilled Mechanics or Materialmans Liens may or may not be deleted upon the satisfaction of the requirement(s) pertinent to the transaction. These requirements will be addressed upon receipt of a written request to provide said coverage, or if the Purchase and Sale Agreement/Contract is provided to the Company then the necessary requirements will be reflected on the commitment.
- Colorado Division of Insurance Regulation 8-1-3, Paragraph C. 11.f. of Section 5 - requires a title insurance company to make the following notice to the consumer: "A closing protection letter is available to be issued to lenders, buyers and sellers".
- If the sales price of the subject property exceeds \$100,000.00 the seller shall be required to comply with the Disclosure of Withholding Provisions of C.R.S. 39-22-604.5 (Nonresident Withholding).
- Section 39-14-102 of Colorado Revised Statutes requires that a Real Property Transfer Declaration accompany any conveyance document presented for recordation in the State of Colorado. Said Declaration shall be completed and signed by either the grantor or grantee.
- Recording statutes contained in Section 30-10-406(3)(a) of the Colorado Revised Statutes require that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right, and bottom margin of at least one-half of an inch. The clerk and recorder may refuse to record or file a document that does not conform to requirements of this paragraph.
- Section 38-35-109 (2) of the Colorado Revised Statutes, 1973, requires that a notation of the purchasers legal address, (not necessarily the same as the property address) be included on the face of the deed to be recorded.
- Regulations of County Clerk and Recorder's offices require that all documents submitted for recording must contain a return address on the front page of every document being recorded.
- Pursuant to Section 10-11-122 of the Colorado Revised Statutes, 1987 the Company is required to disclose the following information:
  - The subject property may be located in a special taxing district.
  - A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
  - Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder or the County Assessor.
- Pursuant to Section 10-11-123 of the Colorado Revised Statutes, when it is determined that a mineral estate has been severed from the surface estate, the Company is required to disclose the following information: that there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and that such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Notwithstanding anything to the contrary in this Commitment, if the policy to be issued is other than an ALTA Owner's Policy (6/17/06), the policy may not contain an arbitration clause, or the terms of the arbitration clause may be different from those set forth in this Commitment. If the policy does contain an arbitration clause, and the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.

**NOTICE OF PRIVACY POLICY**  
**of**  
**Westcor Land Title Insurance Company and First Integrity Title Company**

Westcor Land Title Insurance Company ("WLTIC") and First Integrity Title Company values its customers and is committed to protecting the privacy of personal information. In keeping with that philosophy, we have developed a Privacy Policy, set out below, that will ensure the continued protection of your nonpublic personal information and inform you about the measures WLTIC and First Integrity Title Company take to safeguard that information.

**Who is Covered**

We provide our Privacy Policy to each customer when they purchase a WLTIC title insurance policy. Generally, this means that the Privacy Policy is provided to the customer at the closing of the real estate transaction.

**Information Collected**

In the normal course of business and to provide the necessary services to our customers, we may obtain nonpublic personal information directly from the customer, from customer-related transactions, or from third parties such as our title insurance agents, lenders, appraisers, surveyors or other similar entities.

**Access to Information**

Access to all nonpublic personal information is limited to those employees who have a need to know in order to perform their jobs. These employees include, but are not limited to, those in departments such as legal, underwriting, claims administration and accounting.

**Information Sharing**

Generally, WLTIC and do not share nonpublic personal information that it collects with anyone other than its policy issuing agents as needed to complete the real estate settlement services and issue its title insurance policy as requested by the consumer. WLTIC or may share nonpublic personal information as permitted by law with entities with whom WLTIC or has a joint marketing agreement. Entities with whom WLTIC or have a joint marketing agreement have agreed to protect the privacy of our customer's nonpublic personal information by utilizing similar precautions and security measures as WLTIC and uses to protect this information and to use the information for lawful purposes. WLTIC and , however, may share information as required by law in response to a subpoena, to a government regulatory agency or to prevent fraud.

**Information Security**

WLTIC and First Integrity Title Company, at all times, strive to maintain the confidentiality and integrity of the personal information in its possession and has instituted measures to guard against its unauthorized access. We maintain physical, electronic and procedural safeguards in compliance with federal standards to protect that information.



4610 S. Ulster Street, Suite 100  
Denver, CO 80237  
Phone: (303)209-0312 Fax: (303)648-4238

## **PRIVACY POLICY**

### **Committed to Protecting Customer Information**

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information particularly any personal or financial information. You have a right to know how we will utilize the personal information you provide to us. Therefore, First Integrity Title Company has adopted this Privacy Policy to govern the use and handling of your personal information.

### **Applicability**

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity.

### **Types of Information**

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our agents, or others; and
- Information we receive from a consumer-reporting agency.

### **Use of Information**

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis.

### **Former Customers**

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

### **Confidentiality and Security**

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities that need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Thank you for giving us the opportunity to provide your closing and settlement services.





## CRESTVIEW WATER & SANITATION DISTRICT

Nanci Kerr, President  
Sky to Ground  
3214 & 3240 W. 64<sup>th</sup> avenue, 3107 W. 63<sup>rd</sup> avenue  
Denver, CO 80221

December 2, 2022

RE: Water and Sanitary Sewer Service, 3214 & 3240 W. 64<sup>th</sup> avenue, Denver, CO 80221 Parcel #0182508200017 & #0182508200033 and 3107 W. 63<sup>rd</sup> avenue, Denver, CO 80221 Parcel #0182508202015

Will Serve Letter

Ms. Kerr,

Please be advised that Crestview Water and Sanitation District (Crestview) currently provides both water and sanitary sewer service to the address of 3214 W. 64<sup>th</sup> avenue and is willing to provide treated water and sanitary sewer service to 3240 W. 64<sup>th</sup> avenue and 3107 W. 63<sup>rd</sup> avenue and a possible future development on Adams County parcel nos. 0182508200017, 0182508200033 and 0182508202015 in Adams County, Colorado that is wholly within the Crestview Water and Sanitation District boundaries.

Prior to creating a layout and filing a plat for any future development of these parcels, the petitioning owner/developer (developer) should have a pre-design meeting with Crestview, as the developer MUST allow for the installation of adequate water mains in strict accordance with Denver Water Engineering Standards and Crestview Rules and Regulations and engineering requirements. Crestview provides drinking water to its customers by means of a wholesale water purchasing contract with Denver Water. As part of the Contract, Denver Water requires Crestview to adhere to Denver Water's Engineering Standards.

Sanitary sewer mains must also be designed in accordance with Crestview Rules and Regulations and engineering requirements. For any future development of these parcels, the developer will be responsible for all costs related to the installation of required water and sewer mains and is responsible for all utility modeling, engineering studies and plan development/review costs. All water and sewer mains and appurtenances for the new development shall be installed at the developer's expense and deeded free and clear to Crestview prior to the issuance of any water or sewer taps.

Any required off-site improvements to Crestview's water distribution system and/or sanitary sewer collection system created by additional system demands from your proposed development will be the responsibility of the owner/developer both financially and physically.

Crestview requires a signature of acceptance of this Will Serve letter by the developer prior to scheduling a pre-design meeting with Crestview. Please provide a copy of this signed Will Serve letter when scheduling a pre-design meeting to Crestview's engineer, Clarice O'Hanlon, at [cohanlon@crestviewwater.net](mailto:cohanlon@crestviewwater.net).

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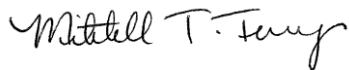
Signature of developer representative

---

Date

If you have any questions or require additional information, please contact our office.

Sincerely,

A handwritten signature in black ink that reads "Mitchell T. Terry". The signature is written in a cursive style with a large, stylized 'M' and 'T'.

Mitchell T. Terry  
District Manager  
Crestview Water & Sanitation District

**From:** [Jaideep Chadha](#)  
**To:** [Nanci Kerr](#)  
**Subject:** FW: Service Request Confirmation  
**Date:** Wednesday, December 07, 2022 10:00:12 AM

---

Services are active but online account will take 1 day to be set-up. Maybe the email below will be sufficient?

Thanks,  
Jaideep Chadha

**Jaideep S. Chadha**  
Co-Founder and CEO  
e: [jaideep@innercirclecap.com](mailto:jaideep@innercirclecap.com)  
c: 484-868-8383  
w: [www.innercirclecap.com](http://www.innercirclecap.com)



---

**From:** email@XcelEnergy-EmailNews.com <email@XcelEnergy-EmailNews.com>  
**Sent:** Wednesday, December 7, 2022 9:47 AM  
**To:** JAIDEEP@INNERCIRCLECAP.COM  
**Subject:** Service Request Confirmation

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[Billing & Payment](#)   [Start, Stop, Transfer](#)   [Programs & Rebates](#)   [Outage & Emergencies](#)

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Account Number: **53-0014305682-7**  
Address: **3214 W 64TH AVE, DENVER CO**  
**80221-2160**

Success! Your order has been processed.

If you're currently enrolled in My Account, you will see your new premise appear within one business day under the Usage tab.

If you have not yet registered for My Account,

enroll today.

**My Account**

My Account offers you:

- Many options to view and pay your energy bill, including paperless billing
- Energy saving tips and tools to track your monthly usage
- Access to your account anytime, anywhere, from any device

If applicable, a start service fee to establish service will appear on your first bill.

Sincerely,  
Xcel Energy Customer Care

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414 NICOLLET MALL, MINNEAPOLIS, MN 55401



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501-23-041 Legal Desc for Minor Subdivision Plat

**Inner Circle Capital Subdivision**

ALL OF LOT 15 OF CLEAR CREEK GARDENS SUBDIVISION, COUNTY OF ADAMS, STATE OF COLORADO.

TOGETHER WITH THE FOLLOWING:

THAT PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 50 RODS (825 FEET) WEST OF THE NORTHEAST CORNER OF SAID NORTHWEST 1/4; THENCE DUE WEST ALONG SAID SECTION LINE, 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE SOUTH 40 RODS (660 FEET); THENCE AT RIGHT ANGLES DUE EAST 10 RODS (165 FEET); THENCE AT RIGHT ANGLES DUE NORTH 40 RODS (660 FEET) TO THE PLACE OF BEGINNING.

EXCEPT THE NORTH 30 FEET THEREOF FOR ROAD PURPOSES, AND EXCEPT THAT PORTION OF LAND CONVEYED TO THE COUNTY OF ADAMS, STATE OF COLORADO IN THE DEED RECORDED JUNE 24, 2005 UNDER RECEPTION NO. 20050624000665580, COUNTY OF ADAMS, STATE OF COLORADO.

ALSO TOGETHER WITH THE FOLLOWING:

THE EAST ONE-HALF OF THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT A POINT ON THE NORTH SECTION LINE, 60 RODS WEST OF THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST IN ADAMS COUNTY, COLORADO; THENCE WEST ON SAID SECTION LINE 20 RODS, THENCE AT RIGHT ANGLES SOUTH 40 RODS, THENCE AT RIGHT ANGLES EAST 20 RODS, THENCE AT RIGHT ANGLES NORTH 40 RODS TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS IN WARRANTY DEED RECORDED OCTOBER 17, 2005 UNDER RECEPTION NO. 20051017001136790, COUNTY OF ADAMS, STATE OF COLORADO

CONTAINING 218,396 TOTAL SQUARE FEET OR 5.014 TOTAL ACRES OF LAND, MORE OR LESS.

**Print Forms**

[Redemption Certificate](#)  
[Account Balance](#)  
[Statement Of Taxes Due](#)  
[Summary of Taxes Due](#)

**Account Links**

[Account Summary](#)  
[Account Value](#)  
[Transaction Detail](#)  
[Verify My Email](#)

**External Links**

[Change of Address Form](#)

**Payment Receipts**

[Receipt from Jan 23, 2023](#)  
[Receipt from Jun 7, 2022](#)  
[Receipt from Mar 10, 2022](#)  
[Receipt from May 3, 2021](#)  
[Receipt from Mar 4, 2021](#)  
[Receipt from Feb 19, 2020](#)  
[Receipt from Jun 10, 2019](#)  
[Receipt from Feb 4, 2019](#)  
[Receipt from May 23, 2018](#)  
[Receipt from Feb 20, 2018](#)  
[Receipt from Mar 31, 2017](#)  
[Receipt from Feb 25, 2017](#)  
[Receipt from Feb 19, 2016](#)  
[Receipt from Feb 23, 2015](#)  
[Receipt from Feb 7, 2014](#)

The amount of taxes due on this page are based on last year's property value assessments.  
 For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103054
Parcel Number	0182508200017
Owners	ICC 64TH 1 LLC
Address	8200 S KELLERMAN CIR AURORA, CO 80016-7399
Situs Address	3214 W 64TH AVE
Legal	SECT,TWN,RNG:8-3-68 DESC: BEG 50 RODS W OF NE COR NW4 TH W 10 RODS TH S 40 RODS TH E 10 RODS TH N 40 RODS TO BEG EXC RD 2/386A


**DUE DATES:**  
 First Half Payment Due March 1  
 Second Half Payment Due June 15  
 OR  
 Full Payment Due April 30

If paying or corresponding by mail, please use the following addresses:

PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869

CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601

**Inquiry**

As Of

Payment Type ☐ First ☒ Full

Total Due \$0.00

Value		
Area Id	Mill Levy	
495 - 495		122.4710000
	Actual	Assessed
RES IMPRV LAND - 1112	192,500	13,380
SINGLE FAMILY RES - 1212	320,892	22,300
<b>Total Value</b>	<b>513,392</b>	<b>35,680</b>
<b>Taxes</b>		<b>\$4,369.76</b>



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[Summary of Taxes Due](#)

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**Payment Receipts**

[Receipt from Jan 23, 2023](#)  
[Receipt from Sep 6, 2022](#)  
[Receipt from Apr 14, 2022](#)  
[Receipt from Feb 19, 2022](#)  
[Receipt from Mar 31, 2021](#)  
[Receipt from May 9, 2017](#)  
[Receipt from Jun 30, 2016](#)  
[Receipt from Jan 20, 2016](#)  
[Receipt from Mar 30, 2015](#)  
[Receipt from May 28, 2014](#)  
[Receipt from Nov 26, 2013](#)

The amount of taxes due on this page are based on last year's property value assessments.  
For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103062
Parcel Number	0182508200033
Owners	ICC 64TH 1 LLC
Address	3240 W 64TH AVE DENVER, CO 80221-2160
Situs Address	3240 W 64TH AVE
Legal	SECT,TWN,RNG:8-3-68 DESC: E2 OF THE FOL BEG AT A PT ON N LN OF SEC 8 60 RODS W OF NE COR NW4 TH W 20 RODS TH S 40 RODS TH E 20 RODS TH N 40 RODS TO BEG M/L EXC RDS 2/3224A

 **DUE DATES:**  
*First Half Payment Due March 1*  
*Second Half Payment Due June 15*  
**OR**  
*Full Payment Due April 30*

*If paying or corresponding by mail, please use the following addresses:*

**PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869**

**CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601**

**Inquiry**

As Of

Payment Type ☐ First  
☒ Full

Total Due \$0.00

Value		
Area Id		Mill Levy
495 - 495		122.4710000
	Actual	Assessed
UNIM LND 1-4.99 AC - 0520	192,500	55,830
Taxes		\$6,837.56



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Account Links

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Payment Receipts

[Receipt from Jan 23, 2023](#)  
[Receipt from Nov 14, 2022](#)  
[Receipt from Dec 11, 2021](#)  
[Receipt from Apr 22, 2020](#)  
[Receipt from Oct 26, 2018](#)  
[Receipt from Sep 5, 2017](#)  
[Receipt from Aug 26, 2016](#)  
[Receipt from Sep 29, 2015](#)  
[Receipt from Aug 29, 2014](#)  
[Receipt from Aug 12, 2013](#)

The amount of taxes due on this page are based on last year's property value assessments.  
For current year values visit the [Adams County Assessor's site](#).

Summary	
Account Id	R0103092
Parcel Number	0182508202015
Owners	ICC 64TH I LLC
Address	8200 S KELLERMAN CIR AURORA, CO 80016-7399
Situs Address	3107 W 63RD AVE
Legal	SUB: CLEAR CREEK GARDENS SUBD DESC: PLOT 15



**DUE DATES:**  
**First Half Payment Due March 1**  
**Second Half Payment Due June 15**  
**OR**  
**Full Payment Due April 30**


*If paying or corresponding by mail, please use the following addresses:*

**PAYMENTS ARE TO BE MAILED TO: P.O. BOX 869 BRIGHTON, CO 80601-0869**

**CORRESPONDENCE IS TO BE MAILED TO: 4430 South Adams County Parkway, Suite C2436 Brighton, CO 80601**

Inquiry

As Of



Payment Type

☐ First  
☒ Full

Total Due

\$0.00

Value		
Area Id	Mill Levy	
495 - 495	122.4710000	
	Actual	Assessed
VACANT RESIDENTIAL - 0100	70,000	20,300
Taxes		\$2,486.16