



July 19, 2019

Greg Barnes, Planner  
Adams County Community & Economic Development Department  
4430 South Adams County Parkway  
Brighton, CO 80601-8204

**RE: Chavez Equestrian Arena, Personal – Conditional Use Permit Submittal**

Dear Mr. Barnes:

On behalf of Pedro and Ana Chavez, please find enclosed the following application submittal documents for a Conditional Use Permit to allow some minor modifications for the Person use of their Equestrian Arena. The site is the Chavez primary residence located at 14747 Harvest Mile Road in Brighton.

We believe the submittal documents provide Adams County with a thorough outline of how the proposed use of the Chavez Arena is intended to remain a private and personal facility for the enjoyment of the Chavez family, extended family, and invited guest. Their proposed Escaramuza Descendencia Charra equestrian training and special events are not only compatible with the surrounding neighborhood but will become a great cultural addition for the Adams County community. We look forward to working with you and the County to help ensure the Chavez Equestrian Arena and site meets your requirements for a safe, family environment for the limited special equestrian events proposed with the Conditional Use Permit.

One outstanding detail is the sale and distribution of alcoholic beverages at the special events. We propose to address that item during the review and refinement process for the Conditional Use Permit.

Please let me know if you have any questions and if you need anything else for your review. We look forward to working with you, and I look forward to talking with you soon.

Sincerely,  
**PLAN WEST INC.**

A handwritten signature in blue ink, appearing to read "D. R. Brehm", written in a cursive style.

David R. Brehm  
President

Attachments: List of submittal Documents

CC: Pedro and Ana Chavez

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**List of Submittal Documents**

- Cover letter dated July 19, 2019
- Submittal Checklist -- Conditional Use Permit
  1. Development Application -- with Authorization for Plan West to represent the Chavez owners
  2. Application Fees: \$1,000  
Tri County Health Fees: Not applicable with the existing approved septic system
  3. Written Explanation of the Project
    - History Summary
    - Intent
    - Introduction to Charreria
    - Conditional Use Permit -- Description
    - Commitments and Conditions of the Permit
  4. Site Plan showing Proposed Development (two plans)
    - Daily and Weekend operations
    - Special Equestrian Events
  5. Proof of Ownership: Heritage Title Company, Inc
  6. Proof of Water and Sewer
  7. Proof of Utilities
    - Electric Bill
  8. Legal Description
  9. Certificate of Taxes Paid
  10. Certificate of Notice to Mineral Estate Ownership and Lessees
    - Mineral rights owners will be notified of public hearings in compliance with the State Statute
  11. Certificate of Surface Development
    - Not applicable; there is not surface development related to mineral, oil, or gas extraction

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**Supplemental Items -- Section 12**

1. Traffic Analysis
2. Drainage Report
3. Neighborhood Meeting Summary
  - Notification
  - Project summary for neighborhood meeting
  - Notification map and addresses
  - Sign-in sheet of attendants
  - Meeting notes summary

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**Supporting Documents -- Section 13**

1. Criteria for Approval (2-02-08-06)
    - Includes detailed descriptions of how the request for the Conditional Use Permit meets the criteria
  2. Development Review Team Comments -- April 2, 2019
    - With applicant response
    - Permits for 2<sup>nd</sup> access drive
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**CHAVEZ EQUESTRIAN ARENA, PERSONAL**  
**July 19, 2019**

**CONDITIONAL USE PERMIT**

Application submittals must include all documents on this checklist as well as this page. Please use the reference guide (pgs. 3-4) included in this packet for more information on each submittal item.

All submittals shall include one (1) hard copy of all documents and one (1) electronic copy with all documents combined in a single PDF. For hard copies, each document shall be labeled or tabbed with the corresponding checklist number.

- ☒ 1. Development Application Form (pg. 5)
- ☒ 2. Application Fees (see pg. 2)
- ☒ 3. Written Explanation of the Project
- ☒ 4. Site Plan Showing Proposed Development
- ☒ 5. Proof of Ownership (warranty deed or title policy)
- ☒ 6. Proof of Water and Sewer Services
- ☒ 7. Proof of Utilities (e.g. electric, gas)
- ☒ 8. Legal Description
- ☒ 9. Certificate of Taxes Paid
- ☐ 10. Certificate of Notice to Mineral Estate Owners/and Lessees (pg. 7)
- ☒ 11. Certificate of Surface Development (pg. 8-10)

Supplemental Items (if applicable) \*Contact County staff for supplemental forms

- ☒ 1. Traffic Impact Study
- ☒ 2. Neighborhood Meeting Summary
- ☐ 3. Solid waste transfer station\*
- ☐ 4. Solid waste composting facility\*
- ☐ 5. Scrap tire recycling facility\*
- ☐ 6. Inert fill\*
- ☐



Application Fees	Amount	Due
Conditional Use Permit	\$1,000 (\$300 per additional residential request/ \$500 per additional non-residential)	With application submittal \$1,000
Tri-County Health *made payable to Tri-County Health	\$245	With application submittal Not Applicable if installing Approved septic system



## DEVELOPMENT APPLICATION FORM

### Application Type:

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

**PROJECT NAME:**

### APPLICANT

Name  Phone

Address

City, State, Zip

Second Phone  Email

### OWNER

Name  Phone

Address

City, State, Zip

Second Phone  Email

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

Name  Phone

Address

City, State, Zip

Second Phone  Email

## DESCRIPTION OF SITE

Address

14747 Harvest Road

City, State, Zip

Brighton, CO 80603

Area Acres  
Square Feet

46.579

Tax Assessor  
Parcel Number

0156718400001

County  
Section

A-3

County Land  
Use

Residential w/ Equestrian Arena - Personal

Proposed Land  
Use

Limited modifications and additions to the personal use of the arena

Have you attended a Conceptual Review? ☒ Yes

No ☐

If yes, please list Project

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.

Applicant's Name: Plan West Inc., David R. Brehm, President

Applicant's Signature:



Date:

CERTIFICATION OF NOTICE TO MINERAL ESTATE OWNERS

I/We, Plan West Inc., David R. Brehm, President  
(the "Applicant") by signing below, hereby declare and certify as follows:

With respect to the property located at:

Physical Address: Harvest Road, Brighton, CO

Legal Description: SBLW

Parcel #(s):

(PLEASE CHECK ONE): ☐ The applicant will provide notification to the Mineral Estate Owners, as identified on the Title Plat, not less than thirty days prior to an initial public hearing in Adams County. ☐ The applicant will provide certification of notification as required.

On the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, which is not less than thirty days before the initial public hearing, notice of application for surface development was provided to mineral estate owners pursuant to section 24-65.5-103 of the Colorado Revised Statutes;

or

I/We have searched the records of the Adams County Tax Assessor and the Adams County Clerk and Recorder for the above identified parcel and have found that no mineral estate owner is identified therein.

Date: \_\_\_\_\_ Applicant: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Address: \_\_\_\_\_

STATE OF COLORADO )

)

COUNTY OF ADAMS )

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by

\_\_\_\_\_.

Witness my hand and official seal.

My Commission expires: \_\_\_\_\_

Notary Public

After Recording Return To:

Name and Address of Person Preparing Legal Description:

**A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department with all applicable land use applications.**

**LEGAL DESCRIPTION**

SCT, TWN, RND SC PARC AA B AT TH COR SD SEC TH N SD M S W OT TO TH TR PB TH S SD M S OT TH N SD M S W OT TO A PT ON THE APPROX CIL TH DNVOR HDSN CANAL TH WL AL SD APPROX CIL TH DNVOR HDSN CANAL TH L CCRS S SD M S W OT S SD M S W OT N SD M S W OT N SD M S W OT N SD M S W OT N SD M S W OT T TH WL LN SD S TH N SD M S W OT TH S SD M S OT TO TH TR PB



## **Pedro & Ana Chavez**

14747 Harvest Road  
Brighton, Colorado 80603  
ana.chavez5@aol.com  
303.356.1282

March 19, 2019

Adams County  
Community & Economic Development Department  
4430 South Adams County Parkway  
1<sup>st</sup> Floor, Suite W2000  
Brighton, Colorado 80601-8204

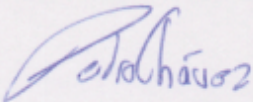
Re: Owner Authorization For 2<sup>nd</sup> Conceptual Review / Conditional Use Application

To Whom It May Concern:

We, Pedro and Ana Chavez, are the owners of 14747 Harvest Road in Brighton, Colorado 80603 and hereby authorize Miller & Law, P.C., our attorneys, to apply for a Conceptual Review as part of our Conditional Use Permit Application with Adams County, Colorado, whereby we are seeking an expanded personal use approval so that we can host events with family and friends in the equestrian arena that is on our residential property and is incidental to our primary residence. The proposed land use is Equestrian Arena, Personal (Expanded Personal Use Corresponding to the Design Requirements and Performance Standard Section 4-06-02-01-05 and as permitted under the Zone District Regulations Use Chart and Dimensional Requirements in Section 3-07-01).

Acknowledged and Approved:

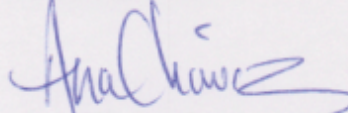
PEDRO CHAVEZ



Pedro Chavez, Owner

Acknowledged and Approved:

ANA CHAVEZ



Ana Chavez, Owner



## **CHAVEZ ARENA**

14747 Harvest Road  
Brighton, Colorado, 80603

### **EQUESTRIAN ARENA – PERSONAL CONDITIONAL USE PERMIT**

July 19, 2019

#### **TO ALLOW**

- A limited number of special events per year
- A limited number of invited guests, greater than the 20 allowed, to attend the special events
- Limited number of livestock to be brought onto the site
- Limited Sale of food
- Sale and distribution of alcoholic beverage to be discussed with the County

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#### **SUMMARY HISTORY OF THE CHAVEZ SITE DEVELOPMENT**

In 2008 the Chavez family purchased a 46.57-acre site in Adams County which included their family home. In 2014 they constructed a barn/outbuilding to store vehicles, horse trailers, and equipment. In 2018 the Chavezes constructed an equestrian arena for their personal use. The Chavez family, extended family, and friends started to use the area to practice horsemanship and to train cowboys and horses for rodeos and events.

In July 2018 the Chavezes were cited for improper use of the arena and were directed to apply for and acquire a Conditional Use Permit. Over the past year, the Chavezes and their team have discussed the details of the Conditional Use Permit. The following sections cover the intent, details, and conditions of the requested Conditional Use Permit.

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#### **INTENT**

The Chavez Arena and surrounding grounds are intended to be used for Charrería equestrian training, practice, and special rodeo events as a private facility for the Chavez family and friends. Special equestrian and rodeo events are proposed on a limited schedule during the year. Attendance will be limited to invited guests of the Chavez family. There will not be ticket sales to the events. The rodeo events and competitions will not offer monetary compensation or rewards. The Arena is not for hire or for rent. The uses and activities are defined by the following Commitments and Conditions. The intent is to provide cultural heritage programs and events that enrich the community and will not have offensive impacts on any surrounding properties or roadways.

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#### **INTRODUCTION TO CHARRERIA**

The practice of a Charro (cowboy) is a balance of artistic expression and athletic prowess. Charrería competitions hold great cultural significance in both Mexico and the United States and have become a feature at the National Western Stock Show in Denver. Charrerías are events adapted from traditions brought by Spanish settlers during the colonial period, in which Charros competed in a variety of horsemanship skills. The men's events of the Charrería include everything from roping skills to bull riding. An integral feature of the Charrería is the Escaramuza, in which women's riding teams, dressed in exquisite traditional costume, perform precise choreography on horseback. In the 1970s the United States saw a resurgence of these sports, and in 2002 the American Charro Association was formed. Families in the United States and Mexico emphasize the importance of these equestrian skills and events not only as a celebration of heritage and athletic ability but also as a platform to impart discipline, passion, personal character, and etiquette to their families, friends, and community.

**DEFINITIONS:**

*Charrería* – Mexican Rodeo (National Sport of Mexico)  
*Charra* – Female Equestrian

*Escaramuza* – Women’s Team Riding  
*Charro* – Male Equestrian

In the tradition of the *Charrería*, the Chavez family is committed to helping ensure that the use of their arena at weekly training sessions and special rodeo events will celebrate and share their cultural heritage with the community, and that the arena becomes a positive addition to the neighborhood, community, and Adams County.

The Chavez *Escaramuza Descendencia Charra* have been competing since 2016 and participated at the US National level in Houston, Texas their inaugural year. In October of 2018, the Descendencia went to Zacatecas, Mexico to compete at an international level. At that competition, the Chavez team ranked third of the US competing teams. This July they placed first in the Colorado state finals to qualify for the international competition in Mexico to be held in the fall of 2019. The team is looking forward to sharing their award winning *Escaramuza* skill and performances to bring notoriety and recognition to their Adams County, Colorado home.

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**CONDITIONAL USE PERMIT – TO THE EQUESTRIAN ARENA – PERSONAL, PERMITTED USE**

The Conditional Use Permit requests the following uses and activities be permitted:

- Agricultural Support Business and Services – riding stable and training (Escaramuza Descendencia Charra riding group training)  
Sections 3-05-01, 3-07-01, 3-10-04-01, and 4-06-02-01-05 of the Adams County Development Standards and regulations
- Equestrian arena use by more than 20 people (who do not live on the property) who attend a prescribed, limited number of activities/events during a calendar year  
Section 4-06-02-01-05
- To allow livestock to be brought onto the site for a limited number of occasions during a calendar year  
Section 4-06-02-01-05
- To allow food to be sold on the premises during special rodeo and equestrian events
- To allow the sale of alcoholic beverage during special rodeo and equestrian events  
The sale of alcohol will be discussed with the County regulatory and licensing departments during the review process of the Conditional Use Permit application

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**COMMITMENTS AND CONDITIONS OF THE CONDITIONAL USE PERMIT**

**WEEKLY EQUESTRIAN TRAINING AND PRACTICE SESSIONS**

- The weekly Equestrian and Charra training events, primarily held on Fridays and Saturdays, are planned to be small and have no negative impact on the premises and surrounding neighborhood. The weekly training sessions will be limited to family and friends and should not exceed twenty people in addition to the Chavez family. Under Section 4-06-02-01-05 (4)(e), the limited equestrian training and participation by visitors qualifies as Personal use.
- The Conditional Use Permit for the weekly training sessions:
  - Allows a limited number of personal horses be brought to the site for training and practice and not to host a rodeo. The use of a personal horse will maximize the educational benefits of the training and practice sessions.
  - The training and practice sessions will be limited by invitation only and do not include a fee.
  - Rodeos are not included as part of these weekly training sessions.
  - The weekly training sessions may include parents, siblings, and friends that may exceed the 20-person limit allowed under Personal use. See limitations for guests below.



### **SPECIAL EVENTS**

- Rodeo and Equestrian Events
  - No more than 8 events per year
  - No more than one special event per month in April, May, June, July, August, September, October, and one in December. The December event will be scheduled one Saturday in December, subject to an annual celebration of the Virgin of Guadalupe.
  - A safe environment is a primary commitment of the Chavez family for all functions and events at the arena and surrounding grounds.
  - Traffic management and parking will be managed by attendants provided by the Chavez family.
  - Parking areas and traffic lanes will be designated with traffic cones, ropes, flags, and other visually defining markers as shown on the special event Site Plan and as part of the Conditional Use Permit.
  - Separate areas will be defined for passenger vehicles, horses, animal trailers, fire lanes, the dedicated entrance and exit, food trucks and other vendor vehicles, picnic area, portable toilets, emergency vehicle parking, and circulation. Circulation will be maintained during the event to help assure safe conditions for the guests and animals.
  - Special events will be limited to hours from 8:00 AM to 10:00 PM, not including the unloading of horses and staging of the event activities. Events will be scheduled to end no later than 9:00 PM to provide all guests ample time, approximately an hour, to exit the property without disturbing the neighbors along Harvest Road. The daylight hours of the events will not require additional site lighting.

### **GUESTS**

- Weekly Training and Riding Sessions
  - Typically no more than 20 to 25 people, that are not related to the Chavez family, per training session, with a maximum of 50 people, including parents, siblings, and friends.
- Special Rodeo and Equestrian Events
  - No more than 290 invited guests, that are not related to the Chavez family, per event.
  - Event volunteers, security, livestock handlers, vendors, emergency personnel, and other event managers may be allowed, up to an additional 70 people.
  - A special event shall not exceed 360 people.
  - The Conditional Use Permit – Special Event Site Plan shows parking for 150 guest, passenger vehicles plus additional space for family, vendors, emergency vehicles, and separate parking for horse trailer/equestrian handling. Based on an invited guest list, traffic is estimated to include 2 to 5 guests per vehicle. The proposed parking and circulation site plan will accommodate the requested 360 people per event. To assure no parking will be allowed on Harvest Road, the south field on the property can be used for overflow parking.
  - Horse trailers are intended to be parked for loading behind and to the west of the garage building.
- Invitations to Special Events
  - Invitations will be in electronic or written format that can be confirmed at the gate.
  - Signage will be clear that no admittance will be allowed without a confirmed invitation.
  - Security will be strictly enforced. People without an invitation will not be admitted.

### **ADDITIONAL HORSES**

- Weekly Training Sessions
  - Horses for weekday and weekend training sessions are planned to use animals living on-site. In the event additional or special horses are desired for a training session, no more than 6 additional horses from an off-site location is anticipated to be required for any weekly training.

- Special Rodeo and Equestrian Events
  - Rodeo and equestrian participants will be permitted to bring additional livestock, including horses, to the site from off-site locations. The additional livestock will be limited in number to those animals that can be safely accommodated and supported by the size of the site and arena.

#### **SECURITY**

- All training and riding sessions and all special events will be by invitation only.
- The limited training and riding sessions will be monitored and enforced by the Chavez family.
- Security for rodeos and special events will be enforced by independent vendors under separate contract and in collaboration with the Adams County Sheriff's Office. Confirmation of invitation, as well as parking and traffic control, may include volunteers or hired assistance. All assistance will be coordinated with the Adams County Sheriff's office and patrol person(s) working the special event. Access to the premises will be controlled at one access point. The secondary access point will be dedicated as exit-only during special events, to keep the flow of traffic running smoothly and to avoid traffic congestion.

#### **FOOD AND CONCESSIONS**

- The arena does not include kitchen facilities.
- Training and riding sessions do not include food services.
- Special events may include the following food services:
  - Personal food and alcohol, brought to the arena and grounds by the invited guests
  - Food truck(s) by invitation, limited to no more than four (4) independent vendors per event
  - Catering food service that may include on-site food preparation and serving by volunteers or catering service
  - Alcoholic beverage and bar service are requested to be allowed as a private gathering. Alcohol distribution will be monitored and controlled by qualified volunteers or paid servers. The sale and service of alcohol will be discussed with Adams County to comply with all licensing regulations.

#### **RESTROOM FACILITIES**

- Training and riding sessions have a limited participation. Portable toilets will be available
- Special events will contract for portable toilets with a private vendor.
- A minimum of one (1) portable toilet will be provided per 100 people. ADA-accessible portable toilets will be provided as required.

#### **WASTE DISPOSAL SERVICES**

- Waste disposal services for rodeos and special events will be provided by a contracted and licensed vendor.
  - Waste disposal bins will be dispersed throughout the property so that potential offensive impacts related to waste are properly addressed and proactively resolved.
  - All waste, including but not limited to paper products, cups, bottles, cans, and other materials, from a special event will be removed from the site and adjacent to Harvest Road within 18 hours of the close of the special event.

#### **NOTIFICATION TO THE COUNTY**

- Training and riding sessions are limited in number and mostly scheduled for weekends.
  - No special accommodations are proposed for coordinating scheduling with Adams County.

- Special Events:
  - For all monthly special events (April through October), the annual schedule will be submitted to Adams County and the Adams County Sheriff's Office annually during the first week of February of the event year.
  - The date of the December event will be submitted by the first week of October in that year.
  - Confirmation of coordination with security personnel for each event will be included in the submittal.

#### **SITE PLANS**

- Two site plans are submitted as integral parts of the Conditional Use Permit.
  - The Daily Use Site Plan for training and practice sessions includes no special provisions for visitors. The site will function as a typical daily operation for similar lots in the area.
  - The Rodeo and Special Events Site Plan includes circulation and parking for passenger vehicles, horse trailers, emergency vehicles, food trucks and other vendor vehicles, catering and picnic areas, staging of portable toilets, and other information to help define and control the activities of weekly sessions and special events.
- The Site Plans may be modified from time to time to adjust to specific conditions. Changes to a Site Plan will be submitted and coordinated with Adams County prior to a special event.

#### **TRAFFIC CONTROL FROM HARVEST ROAD**

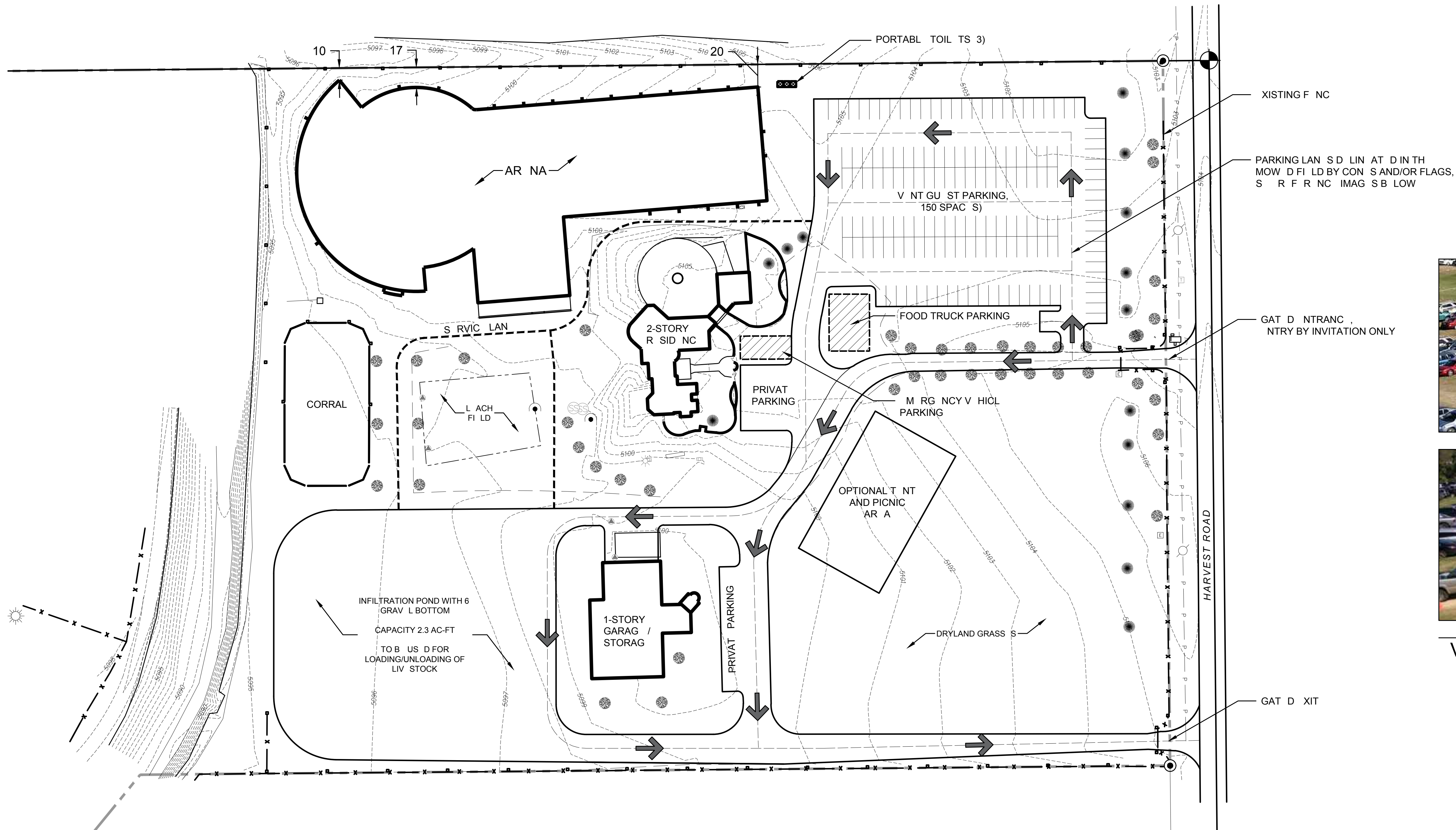
- Per discussion with County Staff, a traffic study for weekday training sessions is not required. The study conducted was for Saturday Special Events. A traffic analysis and report concluded the special events will not have a negative impact on the operations of Harvest Road or any of the surrounding roads. No mitigation measures are needed to accommodate the traffic anticipated for the rodeo special events. For more detailed information on traffic, please reference the Chavez Arena – Traffic Impact Study submitted with this application.

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**End of Report**







V NT PARKING R F R NC IMAG S

# CHAVEZ ARENA

QU STRIAN AR NA - P RSONAL  
CONDITIONAL US P RMIT

Rodeo and questrian vents  
Site Plan

14747 Harvest Road Adams County, Colorado

OWNER  
Chavez Family  
14747 Harvest Rd  
Adams County, CO 80603

SURVEYOR  
Acklam, Inc.  
1 S Telluride St, Suite 7  
Brighton, CO 80601  
303) 65 -6267

LANDSCAPE ARCHITECT  
Plan West, Inc.  
767 Santa Fe Drive  
Denver, CO 80204  
303) 741-1411  
planwest.com

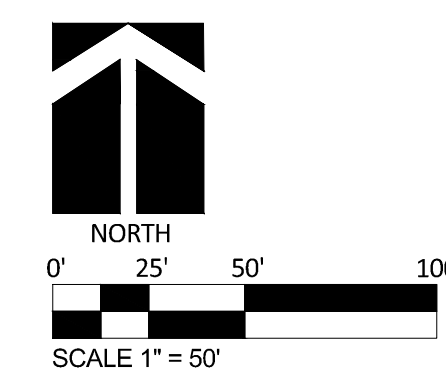


767 Santa Fe Drive  
Denver, CO 80204  
303) 741-1411  
planwest.com

PLANNING  
SITE DESIGN  
ENTITLEMENTS  
LANDSCAPE ARCHITECTURE

Job No  
Date  
Revisions

2018-37  
07-1 -201





**OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES**

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

LIC

WELL PERMIT NUMBER 278699  
DIV. 1 WD 2 DES. BASIN MD

APPLICANT

Lot: AA Block: Filing: Subdiv: LETTERLY FARMS NORTH

PEDRO & ANA CHAVEZ  
14500 IMBODEN ROAD  
HUDSDON, CO 80642-

APPROVED WELL LOCATION

ADAMS COUNTY  
NE 1/4 SE 1/4 Section 18  
Township 1 S Range 65 W Sixth P.M.

DISTANCES FROM SECTION LINES

2345 Ft. from South Section Line  
500 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

(303) 655-0323

PERMIT TO CONSTRUCT A WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(II)(A) as the only well on a tract of land of 46.57 acres described as Parcel AA, Letterly Farms North, Division of Land, Adams County.
- 4) The use of ground water from this well is limited to fire protection, ordinary household purposes inside not more than three (3) single family dwellings, the watering of poultry, domestic animals and livestock on a farm or ranch and the irrigation of not more than one (1) acre of home gardens and lawns.
- 5) Production from this well is restricted to the Upper Arapahoe aquifer, which corresponds to the interval between 165 feet and 345 feet below the ground surface. Plain casing shall be installed and grouted to prevent production from other zones.
- 6) The pumping rate of this well shall not exceed 15 GPM.
- 7) The return flow from the use of this well must be through an individual waste water disposal system of the non-evaporative type where the water is returned to the same stream system in which the well is located.
- 8) This well shall be constructed not more than 200 feet from the location specified on this permit.

NOTE: To ensure a maximum productive life of this well, perforated casing should be set through the entire producing interval of the approved zone or aquifer indicated above. B.D.H. 09/17/08

APPROVED  
BDH

State Engineer

Receipt No. 3633000

DATE ISSUED 09-17-2008

By

EXPIRATION DATE 09-17-2010





# ADAMS COUNTY TREASURER

## Certificate Of Taxes Due

Account Number R0162151  
Parcel 0156718400001  
Assessed To  
CHAVEZ MONJE PEDRO AND  
C/O:CHAVEZ ANA  
14747 HARVEST RD  
BRIGHTON, CO 80603-5805

Certificate Number 2019-119009  
Order Number  
Vendor ID Counter

### Legal Description

SECT,TWN,RNG:18-1-65 DESC: PARC AA BEG AT THE E4 COR OF SD SEC 18 TH N 89D 59M 15S W 40 FT TO THE TRUE POB TH S 00D 04M 16S E 610 FT TH N 89D 59M 15S W 891/29 FT TO A PT ON THE APPROX C/L OF THE DENVER HUDSON CANAL TH WLY ALG SD APPROX C/L OF THE DENVER HUDSON CANAL THE FOL 5 COURSES S 39D 39M 39S W 69/39 FT S 65D 24M 03S W 791/14 FT N 88D 52M 27S W 199/59 FT N 78D 12M 19S W 347/42 FT N 68D 37M 23S W 434/47 FT TO THE WLY LN OF SD SE4 TH N 00D 01M 37S W 759/82 FT TH S 89D 59M 15S E 2598/73 FT TO THE TRUE POB 46/5790A

### Situs Address

14747 HARVEST RD 000000000

Year	Tax	Interest	Fees	Payments	Balance
<b>Tax Charge</b>					
2018	\$6,600.96	\$0.00	\$0.00	(\$3,300.48)	\$3,300.48
Total Tax Charge					\$3,300.48
<b>Special Assessment: STORMWATER UTILITY FEE</b>					
2018	\$93.02	\$0.00	\$0.00	(\$46.51)	\$46.51
Total Special Assessment: STORMWATER UTILITY FEE					\$46.51
<b>Special Assessment: TREASURERS FEE SWU</b>					
2018	\$9.30	\$0.00	\$0.00	(\$4.65)	\$4.65
Total Special Assessment: TREASURERS FEE SWU					\$4.65
<b>GRAND TOTAL</b>					<b>\$3,351.64</b>
First Half Due as of 03/20/2019					\$0.00
Second Half Due as of 03/20/2019					\$3,351.64

Tax Billed at 2018 Rates for Tax Area 292 - 292

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6660000	\$258.05	RES IMPRV LAND	\$398,250	\$28,670
CENTRAL COLO WATER CONSERVA	1.5400000	\$108.40	SINGLE FAMILY RES	\$426,416	\$30,700
FIRE DISTRICT 6	11.7950000	\$830.25	1217	\$153,109	\$11,020
ADAMS COUNTY	26.8640000	\$1,890.95	Total	\$977,775	\$70,390
SD 27	49.0920000	\$3,455.59			
URBAN DRAINAGE SOUTH PLATTE	0.0940000*	\$6.62			
URBAN DRAINAGE & FLOOD CONT	0.7260000*	\$51.10			
Taxes Billed 2018	93.7770000	\$6,600.96			

\* Credit Levy

STORMWATER UTILITY FEE	\$93.02
TREASURERS FEE SWU	\$9.30

ALL TAX SALE AMOUNTS ARE SUBJECT TO CHANGE DUE TO ENDORSEMENT OF CURRENT TAXES BY THE LIENHOLDER OR TO ADVERTISING AND DISTRAINT WARRANT FEES. CHANGES MAY OCCUR AND THE TREASURER'S OFFICE WILL NEED TO BE CONTACTED PRIOR TO REMITTANCE AFTER AUGUST 1. TAX LIEN SALE REDEMPTION AMOUNTS MUST BE PAID BY CASH OR CASHIERS CHECK.

SPECIAL TAXING DISTRICTS AND THE BOUNDARIES OF SUCH DISTRICTS MAY BE ON FILE WITH THE BOARD OF COUNTY COMMISSIONERS, THE COUNTY CLERK, OR THE COUNTY ASSESSOR.

This certificate does not include land or improvements assessed under a separate account number, personal property taxes, transfer tax or misc. tax collected on behalf of other entities, special or local improvement district assessments or mobile homes, unless specifically mentioned.

I, the undersigned, do hereby certify that the entire amount of taxes due upon the above described parcels of real property and all outstanding sales for unpaid taxes as shown by the records in my office from which the same may still be redeemed with the amount required for redemption are as noted herein. In witness whereof, I have hereunto set my hand and seal.





# ADAMS COUNTY TREASURER

## Certificate Of Taxes Due

---

TREASURER, ADAMS COUNTY, Lisa L. Culpepper J.D..

Treasurer, Adams County, Lisa L. Culpepper J.D.



4430 S. Adams County Parkway

Brighton, CO 80601

A handwritten signature in black ink, appearing to be 'L. Culpepper'.



# HERITAGE TITLE COMPANY, INC.

4582 South Ulster St Pkwy, Suite 1300, Denver, CO 80237

Phone: (303) 476-5800 Fax: (866) 300-8568

## Borrower(s) Closing Statement FINAL

Escrow No: H0521352 - 322 JBO

Close Date: 01/10/2018

Proration Date: 01/16/2018

Disbursement Date: 01/16/2018

Buyer(s)/Borrower(s): Pedro Chavez Monje  
Ana Chavez

Lender: Marketplace Home Mortgage, LLC Loan #: 700171193314

Property: 14747 Harvest Road  
Brighton, CO 80603-5805

Brief Legal: SECT,TWN,RNG:18-1-65 DESC: PARC AA BEG AT THE E4 COR OF SD SEC 18 TH W 40 FT TO THE TRUE POB TH S 610 FT 1

Description	Debit	Credit
<b>NEW AND EXISTING ENCUMBRANCES:</b>		
New Loan from Marketplace Home Mortgage, LLC		424,000.00
<b>NEW LOAN CHARGES: - Marketplace Home Mortgage, LLC</b>		
Processing Fees to Marketplace Home Mortgage, LLC	495.00	
Underwriting Fees to Marketplace Home Mortgage, LLC	895.00	
Appraisal Fee to Pendo Management Group	950.00	
Credit Report to Credit Plus	89.46	
TITLE - LOAN CLOSING FEE to Heritage Title Company, Inc.	400.00	
Homeowner's Insurance Premium to State Farm Insurance	1,582.96	
Prepaid Interest to Marketplace Home Mortgage, LLC @ \$53.00 per day from 1/16/2018 to 2/1/2018	848.00	
Homeowner's Insurance to Marketplace Home Mortgage, LLC 11 mos. @ \$325.9200/month	3,585.12	
Property Taxes to Marketplace Home Mortgage, LLC 4 mos. @ \$622.3500/month	2,489.40	
Aggregate Adjustment to Marketplace Home Mortgage, LLC	(325.92)	
<b>REAL ESTATE CLOSING CHARGES</b>		
Title - Closing Protection Letter Fee to Heritage Title Company, Inc.	25.00	
ALTA Loan Policy 6-17-06 for \$424,000.00 to Heritage Title Company, Inc. Premium: \$850.00	850.00	
<b>RECORDING FEES:</b>		
Recording Fee For Mortgage to Heritage Title Company, Inc.	68.00	
Recording Fee For Deed to Heritage Title Company, Inc.	13.00	
<b>ADDITIONAL CHARGES:</b>		
1ST 1/2 2017 TAX ESCROW to ADAMS COUNTY TREASURER	4,500.00	
2016 TAX LIEN to ADAMS COUNTY TREASURER	8,500.00	
COURTESY CHECK to IRS 2015 - 2016	29,781.38	
COURTESY CHECK to CNH IND CAP	48,603.39	
Lender Credits	(425.00)	
<b>PAYOFFS:</b>		
Payoff to 2008000063101	0.00	
<b>Sub Totals</b>	102,924.79	424,000.00
<b>Refund Due Borrower</b>	321,075.21	
<b>Totals</b>	424,000.00	424,000.00

Buyer(s)/Borrower(s):

Pedro Chavez Monje  
Settlement Agent:

Date Ana Chavez

Date

HERITAGE TITLE COMPANY, INC.





# ADAMS COUNTY TREASURER

## Certificate Of Taxes Due

Account Number R0162151  
Parcel 0156718400001  
Assessed To  
CHAVEZ TRUST  
14747 HARVEST RD  
BRIGHTON, CO 80603-5805

Certificate Number 2018-105403  
Order Number  
Vendor ID Counter

### Legal Description

SECT, TWN, RNG: 18-1-65 DESC: PARC AA BEG AT THE E4 COR OF SD SEC 18 TH W 40 FT TO THE TRUE POB TH S 610 FT TH W 891/29 FT TH FOL THE 5 COURSES S 39D 39M W 69/39 FT TH S 65D 24M W 791/14 FT TH N 88D 52M W 199/59 FT TH N 78D 12M W 347/42 FT TH N 68D 37M W 434/47 FT TH N 759/82 FT TH E 2598/73 FT TO THE TRUE POB 46/5790A

### Situs Address

14747 HARVEST RD 000000000

Year	Tax	Interest	Fees	Payments	Balance
<b>Tax Charge</b>					
2017	\$6,610.60	\$0.00	\$0.00	(\$6,610.60)	\$0.00
<b>Total Tax Charge</b>					\$0.00
<b>Grand Total Due as of 07/03/2018</b>					\$0.00

Tax Billed at 2017 Rates for Tax Area 292 - 292

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6690000	\$258.26	RES IMPRV LAND	\$398,250	\$28,670
CENTRAL COLO WATER CONSERVA	1.8000000	\$126.70	SINGLE FAMILY RES	\$426,416	\$30,700
FIRE DISTRICT 6	11.7950000	\$830.25	1217	\$153,109	\$11,020
ADAMS COUNTY	26.9290000	\$1,895.53	Total	\$977,775	\$70,390
SD 27	49.1640000	\$3,460.66			
URBAN DRAINAGE SOUTH PLATTE	0.0570000*	\$4.01			
URBAN DRAINAGE & FLOOD CONT	0.5000000*	\$35.19			

Taxes Billed 2017 93.9140000 \$6,610.60

\* Credit Levy

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TREASURER, ADAMS COUNTY, Brigitte C. Grimm.

Treasurer, Adams County, Brigitte Grimm

*Brigitte C. Grimm*



4430 S. Adams County Parkway  
Brighton, CO 80601





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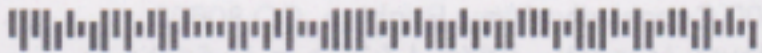
500 Cooperative Way  
Brighton CO 80603-8728

www.unitedpower.com

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Payments 866-999-4485  
Report an Outage 303-637-1350

10244 1 AV 0.383  
PEDRO CHAVEZ  
ANA CHAVEZ  
14747 HARVEST RD  
BRIGHTON CO 80603-5805

5 10244  
C-23



Payment Due By  
**07/17/2019**

Total Due  
**\$321.94**

From Date

To Date

Days

Billing Date

05/22/2019

06/24/2019

33

06/27/2019

Rate	Meter	Prev Rdg	Pres Rdg	Mult	kWh	Dmd
R1	1554831	68229	71049	1	2820	16.712

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Account # 16633600 District EAST Cycle 12

Service 14747 HARVEST MILE RD  
Address RESIDENCE (METER PEDESTAL)

**ACTIVITY SINCE LAST BILL**

Previous Balance 500.43  
Late Payment Charge 5.00  
Payment Received - Thank You -505.43  
Balance Forward 0.00

**CURRENT BILLING DETAIL**

Energy Charge 2,820 KWH @ 0.1015 286.23  
Demand Charge 16.712 KW @ 1.00 16.71  
Fixed Charge 19.00  
Current Month 321.94  
**TOTAL DUE 321.94**

PEDRO CHAVEZ  
ANA CHAVEZ  
14747 HARVEST RD  
BRIGHTON CO 80603-0000

Payment Due By  
**07/17/2019**

Total Due  
**\$321.94**

Amount Enclosed \$



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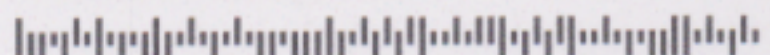


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Return Stub with check payment

Please Make Checks Payable and Return to:

UNITED POWER  
PO BOX 173703  
DENVER CO 80217-3703

12



00166336005 0000000000 0000321943 0000321943



Chavez Equestrian Arena, Private  
Conditional Use Permit

Address:

11111 Harvest Road  
Brighton, CO 80601

Parcel Number:

00000000000000

Legal Description

S1/4 CT1/4 N, T1/4 WNSHIP, RAN 1/4 1/4 1/4 1/4 D1/4 SC1/4 PARC AA B1/4 AT TH1/4 1/4 1/4 C1/4 RN1/4 R  
1/4 1/4 SD S1/4 C 1/4 1/4 TH N 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 T T1/4 TH1/4 TR1/4 1/4 P1/4 B TH S 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S  
1/4 1/4 1/4 1/4 T TH N 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4 T T1/4 A PT 1/4 N TH1/4 APPR1/4 1/4 1/4 IMAT1/4  
C1/4 NT1/4 R LIN1/4 1/4 1/4 TH1/4 D1/4 NV1/4 R H1/4 1/4 DS1/4 N CANAL TH WL1/4 AL1/4 SD APPR1/4 1/4 1/4 IMAT1/4  
C1/4 NT1/4 R LIN1/4 1/4 1/4 TH1/4 D1/4 NV1/4 R H1/4 1/4 DS1/4 N CANAL TH1/4 1/4 1/4 LL1/4 OWIN1/4 1/4 1/4 C1/4 1/4 1/4 RS1/4 S  
S 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4 T S 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4 T N 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4  
1/4 T N 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4 T N 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4 T T1/4 TH1/4 WL1/4 LN 1/4 1/4  
SD S1/4 1/4 TH N 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S W 1/4 1/4 1/4 1/4 1/4 T TH S 1/4 1/4 D 1/4 1/4 M 1/4 1/4 S 1/4 1/4 1/4 1/4 1/4 T T1/4 TH1/4  
TR1/4 1/4 P1/4 B 1/4 1/4 1/4 1/4 1/4 A

Area:

11.111 Acres

# Chavez Arena

## Traffic Impact Analysis



**Date:** May 17, 2019

**Submitted To:**

Plan West Inc.  
767 Santa Fe Drive  
Denver, CO 80204

**Submitted By:**

Fox Tuttle Hernandez Transportation Group, LLC  
P.O. Box 19768  
Boulder, CO 80308-2768

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**APPENDIX**

Level of Service Definitions

Existing Traffic Data

Intersection Capacity Worksheets

**CHAVEZ ARENA****TRAFFIC IMPACT STUDY****1.0 INTRODUCTION**

Fox Tuttle Hernandez Transportation Group completed the traffic impact study for private rodeos to be hosted on the existing Chavez family property in Adams County, Colorado. The property is located at 1474 Harvest Road, which is along the west side of Harvest Road approximately one-half mile south of E. 152<sup>nd</sup> Avenue. The project proposes to utilize the existing arena, corrals, and land located on a residential lot to host up to 290 invited guests at monthly events over the summer months, up to seven (7) events per year. To accommodate the guests, a proposed site plan has been developed to provide parking for guests and horse trailers. In addition, the site plan has developed an internal circulation plan for vehicles to enter and exit the site.

The purpose of this study is to assist in identifying potential traffic impacts within the study area as a result of this project. The traffic study addresses existing and short-term (Year 2024) peak hour intersection conditions in the study area with and without the generated traffic for the Chavez Arena rodeo events. The information contained in this study is anticipated to be used by Adams County in identifying any intersection or roadway deficiencies and potential improvements. This study focused on the Saturday event arrival and departure peak hours which represents the periods anticipated to have the highest trip generation for the proposed private rodeo use.

**2.0 PROJECT DESCRIPTION**

The Chavez Arena is located on the existing Chavez family residence located at 14747 Harvest Road in Adams County. The latest site plan proposes to utilize the two existing accesses onto the property along Harvest Road, which are approximately 0.56 miles and 0.62 miles south of E. 152<sup>nd</sup> Avenue. Both accesses will be gated, with the northernmost access designated as entrance only and the southernmost access as exit only.



---

In addition to the Saturday special rodeo and equestrian events, the Chavez Arena proposes to be utilized for weekly equestrian training and practice. The training and practice sessions will be limited to family/friends and will not exceed 50 people in addition to the inhabitants. For special events, the Chavez Arena proposes to host up to 290 invited guests with up to 70 staff, which include event volunteers, security, livestock handlers, vendors, and/or emergency personal. The events will utilize the existing arena, corals, and land for up to seven (7) monthly events per year. For special events, the current site plan shows space for up to 150 guest parking spaces and up to 14 horse trailer parking spaces, with additional space available that could be utilized for overflow parking if needed. The attendance will be limited to invited guests of the Chavez family and there will be no ticket sales to the events. Further, the Chavez Arena will not be available for rent or hire.

Based on information provided by the applicant, three separate events would typically occur during the Saturday rodeo and equestrian events (approximately 2.5 hours in length each), with an anticipated start time at 10:00 a.m. and an end time at 6:30 p.m. A summary of the estimated individual event times as well as estimated guest attendance information is provided below. While not all guests are expected to attend all three events, to provide a conservative review, the last event of the day was assumed to have the full guest attendance.

- Event 1: 10:00 a.m. to 12:30 p.m. – 150 guests estimated to attend
- Event 2: 1:00 p.m. to 3:30 p.m. – 250 guests estimated to attend
- Event 3: 4:00 p.m. to 6:30 p.m. – 290 guests estimated to attend

Based on conversations with the County staff, due to the relatively low attendance for the weekday training/practice sessions, a weekday traffic analysis was not required for the proposed project. Thus, this study focuses on identifying potential traffic impacts during the Saturday special events.

A vicinity map is shown on **Figure 1**. The proposed site plan and accesses are shown on **Figure 2**.

### 3.0 STUDY CONSIDERATIONS

The traffic operations analysis addressed the unsignalized intersection operations using the procedures and methodologies set forth by the Highway Capacity Manual (HCM)<sup>1</sup>. Study intersections were evaluated using Synchro (version 10) software.

#### 3.1 Data Collection

Saturday midday and evening peak period turning movement volumes were collected in April 2019, along Harvest Road at the E. 152<sup>nd</sup> Avenue and E. 128<sup>th</sup> Avenue intersections. The peak times coincide with the end of the first and start of the second event (12:00 p.m. to 1:00 p.m.) and end of the last event (6:00 to 7:00 p.m.). Average daily traffic (ADT) counts were collected for one weekday (24-hours) and one Saturday (24-hours) along Harvest Road south of E. 152<sup>nd</sup> Avenue in April 2019. The existing Saturday traffic volumes are illustrated on **Figure 3**. The existing intersection geometry and traffic control are also shown on these figures. Count data sheets are provided in the **Appendix**.

#### 3.2 Level of Service Criteria

To measure and describe the operational status of the study intersections, transportation engineers and planners commonly use a grading system referred to as “Level of Service” (LOS) that is defined by the HCM. LOS characterizes the operation conditions of an intersection’s traffic flow, ranging from LOS A (indicating very good, free flow operations) to LOS F (indicating congested and sometimes oversaturated conditions). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with traveling through an intersection. The intersection LOS is represented as a delay in seconds per vehicle for the intersection as a whole and for each turning movement.

Typically, LOS A through C are considered to be good for the overall intersection operations with LOS D as acceptable in peak hours. Adams County’s Development Standards and Regulations (Chapter 8 – Access Design and Traffic Requirements Guidelines for Traffic Impact Studies) indicate that all intersections should operate at LOS D or better during peak hours. Criteria contained in the HCM was applied for this analysis in order to determine existing peak

---

<sup>1</sup> Highway Capacity Manual, A Guide for Multimodal Mobility Analysis, 6<sup>th</sup> Edition, Transportation Research Board, 2016.

---

hour performance. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

## 4.0 EXISTING CONDITIONS

### 4.1 Roadways

The study area boundaries took into consideration the amount of traffic to be generated by the project and potential impact to the existing roadway network. The primary public roadways that will serve the Chavez Arena are discussed in the following text.

**E. 152<sup>nd</sup> Avenue** is a two-lane east-west rural arterial with access to the I-76 interchange approximately three miles west of Harvest Road. West of I-76, E. 152<sup>nd</sup> Avenue transitions to E. Bromley Lane, which provides a connection to the City of Brighton. To the east E. 152<sup>nd</sup> Avenue provides access to low-density single-family homes and dead ends at Qual Run Road/26<sup>th</sup> North Road approximately seven (7) miles east of Harvest Road. Near Harvest Road, E. 152<sup>nd</sup> Avenue has two through lanes (one per direction) that are approximately 12 feet in width with eight (8) to 10-foot wide gravel shoulders. The posted speed limit is 55 miles per hour (mph). E. 152<sup>nd</sup> Avenue currently services approximately 3,500 vehicles per day (vpd) on a typical weekday (year 2018) just east of Hayessmount Road.

**Harvest Road** is a two-lane north-south gravel section line arterial that provides access to low-density residential agricultural homes. Harvest Road intersects with E. 152<sup>nd</sup> Avenue and E. 168<sup>th</sup> Avenue, both of which have interchange access to I-76 to the west. To the south, Harvest Road dead ends at E. 128<sup>th</sup> Avenue. The speed limit is 40 mph within the study area. Harvest Road is approximately 30 feet in width. Based on the daily traffic volumes collected in April 2019, Harvest Road, south of E. 152<sup>nd</sup> Avenue, currently services approximately 350 vpd on a weekday and 250 vpd on a Saturday.

**E. 128<sup>th</sup> Avenue** is an east-west, two-lane gravel section line arterial that provides access to low-density residential agricultural homes. E. 128<sup>th</sup> Avenue has a posted speed limit of 40 mph and is approximately 36 feet in width. No daily traffic volume information is available for E. 128<sup>th</sup> Avenue but based on the peak period traffic count data collected on a Saturday, the estimated daily weekday traffic volumes along E. 128<sup>th</sup> Avenue are approximately 100 vpd near Harvest Road.

## 4.2 Intersections

The study area was developed from discussions with Adams County and includes two existing intersections. They are listed below with the current traffic control:

- (1) E. 152<sup>nd</sup> Avenue at Harvest Road (side-street stop-controlled)
- (2) E. 128<sup>th</sup> Avenue at Harvest Road (side-street stop-controlled)

The lane configurations at each of the study locations are illustrated on **Figure 3**.

## 4.3 Existing Intersection Capacity Analysis

The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

The existing capacity analysis indicated that the side-street stop-controlled intersections on either end of Harvest Road are currently operating overall at LOS A during the Saturday peak hours, with all movements operating at LOS C or better.

## 5.0 FUTURE BACKGROUND TRAFFIC CONDITIONS

### 5.1 Annual Growth Factor and Future Volume Methodology

In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based on recent and historical Colorado Department of Transportation (CDOT) traffic data and the Denver Regional Council of Governments (DRCOG) regional model. Based on this data, it is assumed there will be an annual growth rate of two (2) percent. This traffic growth rate was applied to the existing traffic volumes to generate Year 2024 (5-year horizon) background traffic volumes. Year 2024 background traffic is summarized in **Figure 4**.

### 5.2 Year 2024 Background Intersection Capacity Analysis

The study intersections were evaluated to determine baseline operations for the Year 2024 background scenario and to identify any capacity constraints associated with background traffic. The level of service criteria discussed previously was applied to the study intersections to determine the impacts with the short-term background volumes.

---

The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

The evaluation indicated that the study intersections at either end of Harvest Road are anticipated to continue to operate acceptably overall, LOS A, during the Saturday peak hours, with all movements operating at LOS C or better.

## 6.0 PROPOSED DEVELOPMENT TRAFFIC

### 6.1 Trip Generation

A trip generation estimate was performed to determine the traffic characteristics of the proposed special events for the Chavez Arena. The proposed special rodeo and equestrian events are unique and the Institute of Transportation Engineers (ITE) Trip Generation Manual does not provide trip generation rates for this special use. Therefore, extensive data was gathered from the applicant in regards to how the special events are expected to operate.

The Chavez family has hosted previous events at their property and used experience from those past events to provide the following assumptions:

- The site is limited to seven (7) events per year with no more than one special event occurring per the months of May, June, July, August, September, October, and December.
- The special events will be limited to the hours from 8:00 a.m. to 10:00 p.m. and events will be scheduled no later than 9:00 p.m.
- No more than 290 invited guests that are not related to the Chavez family, will be invited per event.
- Based on the invited guest list, attendance is estimated to include two (2) to five (5) guests per family.
- Up to an additional 70 people, such as event volunteers, security, livestock handlers, vendors, emergency personnel, and other event managers will be on-site during a special event.
- No more than 14 horse trailer stalls per event.

- 
- A typical Saturday special event will have three separate events during the day with the estimated attendance at each event listed below.
    - Event 1: 10:00 a.m. to 12:30 p.m. – 150 guests estimated to attend
    - Event 2: 1:00 p.m. to 3:30 p.m. – 250 guests estimated to attend
    - Event 3: 4:00 p.m. to 6:30 p.m. – 290 guests estimated to attend
    - *Based on previous events held at the Chavez Arena, after the last event ends at 6:30 p.m., some guests stay at the site while most people leave by 8:00 p.m.*

The following assumptions were applied to estimate the trips into and out of the Chavez property during the special events:

- The estimated average vehicle occupancy for invited guests is 2.5 people per vehicle and for volunteer/staff is 1.5 people per vehicle.
  - The Federal Highways Administration's 2003 Managing Travel for Planned Special Events<sup>2</sup> report stated that a vehicle occupancy factor of 2.5 people per vehicle represents a common assumption for general event attendees.
  - Volunteers/staff are expected to have a lower vehicle occupancy than invited guests. Therefore, for volunteers/staff, 1.5 people per vehicle was assumed.
  - The applicant estimated that the vehicle occupancy for invited guests would be two (2) to five (5) people per vehicle. Therefore, the estimated vehicle occupancy of 2.5 people per vehicle for invited guests and 1.5 people per vehicle for volunteers/staff provides a conservative estimate.
- A portion of guests were assumed to arrive via a Transportation Network Company (TNC) option, such as Uber or Lyft, or to be dropped-off/picked-up by family/friends. It was assumed that approximately five (5) drop-offs would occur prior to the first and second event and approximately 10 pick-ups would occur after the last event.
- A peak hour factor (PHF) of 0.5 was applied to entering and exiting vehicles during the Saturday midday (12:00 p.m.) and evening (6:00 p.m.) peak hours to account for peaking characteristics for the special event.

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<sup>2</sup> Managing Travel for Planned Special Events, U.S. Department of Transportation Federal Highway Administration, September 2003

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To estimate the trip generation during a special event, trips were estimated for the proposed site on an hourly basis per the information provided by the applicant and special event research, as summarized previously. The entering and exiting trips for a Saturday special event are shown in **Table 2**.

## 6.2 Trip Distribution and Assignment

The estimated trip volumes presented in **Table 2** were distributed onto the study area roadway network based on existing traffic characteristics and traffic patterns in the area. The overall assumed distribution is as follows, as well as presented on **Figure 5**:

### Saturday Rodeo and Equestrian Special Events

- 65% to/from the west on E. 152<sup>nd</sup> Avenue
- 15% to/from the north on Harvest Road
- 15% to/from the east on E. 152<sup>nd</sup> Avenue
- 4% to/from the west on E. 128<sup>th</sup> Avenue
- 1% to/from the east on E. 128<sup>th</sup> Avenue

Using the distribution assumptions, the projected site traffic was assigned to the study area roadway network for the Saturday midday (12:00 p.m.) and evening (6:00 p.m.) peak hour periods. The Saturday special event site-generated trips for the Chavez Arena are shown on **Figure 6**.

## 7.0 TRAFFIC CONDITIONS WITH SITE DEVELOPMENT

This section discusses impacts associated with special events at the Chavez Arena under existing and Year 2024 conditions.

### 7.1 Existing + Project Intersection Capacity Analysis

The site-generated traffic volumes were added to the existing traffic volumes to analyze potential site impacts. The existing + site-generated traffic volumes for a special event on a Saturday are illustrated on **Figure 7**. The level of service criteria discussed in prior sections was applied to the study intersections to determine impacts with the addition of site-build out

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traffic volumes in the short-term. The results of the LOS calculations for the study intersections and proposed access locations are summarized in **Table 1**.

**The project trips have minimal impact on the study intersections and the intersections are expected to continue to operate overall at LOS A.** The average delay on the northbound approach on Harvest Road at E. 152<sup>nd</sup> Avenue is estimated to experience an additional two (2) seconds in the midday peak hour and six (6) seconds in the evening peak hour. The approach level of service changes from LOS B to LOS C, when compared to existing conditions, which meets the County's acceptable operations criteria.

The property accesses are expected to operate acceptably with the proposed intersection geometrics and traffic control. These accesses can remain as one lane approaches with side-street stop-controlled, designating entrance only for the northernmost access and exit only for the southernmost access. Both accesses are predicted to operate overall at LOS A and all movements will operate at LOS A even with the event traffic. Due to the relatively low volumes on Harvest Road, the queues for vehicles entering and existing the site during the peak hours is expected to be minimal (less than one vehicle) and the northbound 95<sup>th</sup> percentile queue<sup>3</sup> on Harvest Road at E. 152<sup>nd</sup> Avenue are expected to be increase to approximately 55 feet during the evening peak hour (currently northbound queues are less than one vehicle).

## 7.2 Year 2024 Background + Project Intersection Capacity Analysis

The site-generated traffic volumes were added to the Year 2024 background volumes to analyze potential site impacts in a five-year horizon scenario. The Year 2024 background + site-generated traffic volumes for a special event on a Saturday are illustrated on **Figure 8**. The level of service criteria discussed in prior sections was applied to the study intersections to determine impacts with the addition of site-build out traffic volumes in the long-term. The results of the LOS calculations for the intersections are summarized in **Table 1**.

**The project trips have minimal impact on the study intersections and the intersections are expected to continue to operate overall at LOS A.** The average delay on the northbound approach on Harvest Road at E. 152<sup>nd</sup> Avenue is estimated to experience an additional three (3)

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<sup>3</sup> It should be noted that the 95<sup>th</sup> percentile queue length is a theoretical queue that is 1.65 standard deviations above the average queue length. In theory, the 95<sup>th</sup> percentile queue would be exceeded 5% of the time based on the average queue length, but it is also possible that a queue this long may not occur.



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seconds in the midday peak hour and eight (8) seconds in the evening peak hour compared to existing conditions. The approach level of service changes from LOS B to LOS C, when compared to existing conditions, which meets the County's acceptable operations criteria.

The property accesses are expected to operate acceptably with the proposed intersection geometrics and traffic control. These accesses can remain as one lane approaches with side-street stop-controlled, designating entrance only for the northernmost access and exit only for the southernmost access. Both accesses are predicted to operate overall at LOS A and all movements will operate at LOS A even with the event traffic. Due to the relatively low volumes on Harvest Road, the queues for vehicles entering and existing the site during the peak hours is expected to be minimal (less than one vehicle) and the northbound 95<sup>th</sup> percentile queue on Harvest Road at E. 152<sup>nd</sup> Avenue are expected to be increase to approximately 70 feet during the evening peak hour (currently northbound queues are less than one vehicle).

Based on the expected operations during the Saturday special events (i.e. no delay and queueing issues anticipated), a southbound right-turn lane along Harvest Road at the site entrance is not needed.

## **8.0 HARVEST ROAD**

Adams County Transportation Plan states that gravel roads on which daily traffic volumes reach approximately 500 vehicles per day should be considered for paving to improve the serviceability of the roads and to manage dust from traffic on unpaved roads. Based on the daily traffic volumes collected in April 2019, Harvest Road currently services approximately 350 vpd on a weekday and 250 vpd on a Saturday. With the project on special event days, the estimated year 2024 daily traffic volumes on a Saturday is 645 vpd. The weekday daily traffic volumes are expected to remain under 500 vpd. Although, the roadway volumes may exceed 500 vpd on a special event day, Harvest Road does not need to be paved as this volume will only be exceeded seven (7) days per year (less than two percent of days per year).

## **9.0 TRAVEL DEMAND MANAGEMENT STRATEGIES**

While the capacity analysis did not find operational deficiencies, there may be a need for management tools if traffic inbound or outbound begins to queue longer than estimated. Potential Travel Demand Management (TDM) strategies for consideration are listed below:

- 
- Provide traffic flaggers in the parking lot area to direct drivers to available spaces quickly and efficiently.
  - Monitor operations at the Harvest Road accesses. If necessarily, provide traffic flaggers at accesses to direct drivers onto the property. The traffic flaggers would not be allowed to stop traffic on Harvest Road without permission from County, but can help facilitate getting people on site quickly.
  - Monitor operations at the Harvest Road accesses. If necessarily, traffic flaggers should control the release of drivers at the end of the last event, allowing through traffic on Harvest Road to have priority.
  - Encourage guests and event staff to carpool to/from the event (three or more people per vehicle). Consider offering incentives or reserving parking spaces near the entrance for carpool vehicles.
  - If the 150-space guest parking lot area is full, encourage staff/volunteers to park in the overflow parking area.

## 10.0 CONCLUSION

The Chavez family proposes to utilize the existing arena, corrals, and land located on their residential lot to host up to 290 invited guests at up to seven (7) monthly events per year. This study focused on the special rodeo and equestrian events which are planned to occur on Saturdays. The current plan proposes to utilize the existing two (2) accesses to the property on Harvest Road, with the northernmost access operating as an entrance only and the southernmost access operating as exit only during events. Both of these accesses would be gated during events to manage travel.

During a special event, the project is estimated to generate approximately 391 Saturday daily trips with 61 trips occurring during the Saturday midday peak hour (12:00 - 1:00 p.m.) and 110 trips occurring during the Saturday evening (6:00 – 7:00 p.m.) peak hour. It was determined that the existing roadway and intersection network can serve the added traffic volumes under existing and five-year horizon (Year 2024) conditions. No mitigation measures are needed to accommodate the traffic anticipated for the rodeo special events.

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# ***Tables and Figures:***

*Table 1 –Peak Hour Intersection Level-of-Service Summary*

*Table 2 - Trip Generation Summary*

*Figure 1 – Vicinity Map*

*Figure 2 – Conceptual Site Plan*

*Figure 3 – Year 2019 Existing Traffic Volumes*

*Figure 4 – Year 2024 Background Traffic Volumes*

*Figure 5 – Site Trip Distribution*

*Figure 6 –Site-Generated Traffic Volumes*

*Figure 7 – Existing + Site-Generated Traffic Volumes*

*Figure 8 – Year 2024 Background + Site-Generated Traffic Volumes*

# ***Appendix:***

*Level of Service Definitions*

*Existing Traffic Data*

*Intersection Capacity Worksheets*

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Table 1 - Peak Hour Intersection Level of Service Summary

Intersection and Lanes Groups	Existing (Year 2019)				Year 2024 Background				Existing + Project Trips (Special Event)				Year 2024 Background + Project Trips (Special Event)			
	Sat. Midday Peak		Sat. PM Peak		Sat. Midday Peak		Sat. PM Peak		Sat. Midday Peak		Sat. PM Peak		Sat. Midday Peak		Sat. PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
<b>Stop-Controlled</b>																
<b>Harvest Road at E. 152nd Avenue</b>	<b>1</b>	<b>A</b>	<b>2</b>	<b>A</b>	<b>2</b>	<b>A</b>	<b>2</b>	<b>A</b>	<b>2</b>	<b>A</b>	<b>6</b>	<b>A</b>	<b>3</b>	<b>A</b>	<b>7</b>	<b>A</b>
Eastbound <b>Left</b> +Through+Right	8	A	8	A	8	A	8	A	8	A	8	A	8	A	8	A
Westbound <b>Left</b> +Through+Right	0	A	8	A	0	A	8	A	8	A	8	A	8	A	8	A
Northbound <b>Left</b> +Through+Right	14	B	13	B	14	B	13	B	16	C	19	C	17	C	21	C
Southbound <b>Left</b> +Through+Right	12	B	12	B	13	B	13	B	13	B	13	B	14	B	14	B
<b>Harvest Road at Site Entrance</b>									<b>0</b>	<b>A</b>	<b>0</b>	<b>A</b>	<b>0</b>	<b>A</b>	<b>0</b>	<b>A</b>
Northbound <b>Left</b> +Through									7	A	0	A	7	A	0	A
Southbound Through+Right									0	A	0	A	0	A	0	A
<b>Harvest Road at Site Exit</b>									<b>4</b>	<b>A</b>	<b>8</b>	<b>A</b>	<b>3</b>	<b>A</b>	<b>7</b>	<b>A</b>
Eastbound <b>Left</b> +Right									9	A	10	A	9	A	10	A
Northbound Through									0	A	0	A	0	A	0	A
Southbound Through									0	A	0	A	0	A	0	A
<b>Harvest Road at E. 128th Avenue</b>	<b>4</b>	<b>A</b>	<b>6</b>	<b>A</b>	<b>4</b>	<b>A</b>	<b>4</b>	<b>A</b>	<b>5</b>	<b>A</b>	<b>7</b>	<b>A</b>	<b>4</b>	<b>A</b>	<b>5</b>	<b>A</b>
Eastbound <b>Left</b> +Through	7	A	7	A	7	A	7	A	7	A	7	A	7	A	7	A
Westbound Through+Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A
Southbound <b>Left</b> +Right	8	A	8	A	8	A	9	A	8	A	9	A	8	A	9	A

Note: Delay represented in average seconds per vehicle.

Note: For single-lane approaches at two-way side-street stop controlled intersections, the critical movement delay for the free flow controlled approach is shown versus the approach delay (critical movement is bolded)

Table 2 - Trip Generation Summary (Saturday Special Event)

Time	Enter				Exit				Total [Vehicles]			Staff on Site	Guests on Site
	Staff	Staff Veh. Trips	Guests	Guests Veh. Trips	Staff	Staff Veh. Trips	Guests	Guests Veh. Trips	Enter	Exit	Total		
7:00 AM	25	17	0	0	0	0	0	0	17	0	17	25	0
8:00 AM	35	24	0	0	0	0	0	0	24	0	24	60	0
9:00 AM	10	7	115	46	0	0	0	5	53	5	58	70	115
10:00 AM	0	0	30	12	0	0	0	0	12	0	12	70	145
11:00 AM	0	0	5	2	0	0	0	0	2	0	2	70	150
12:00 PM	0	0	115	46	0	0	25	15	46	15	61	70	240
1:00 PM	0	0	15	6	0	0	5	2	6	2	8	70	250
2:00 PM	0	0	5	2	0	0	5	2	2	2	4	70	250
3:00 PM	0	0	50	20	0	0	15	6	20	6	26	70	285
4:00 PM	0	0	5	2	0	0	0	0	2	0	2	70	290
5:00 PM	0	0	5	2	0	0	5	2	2	2	4	70	290
6:00 PM	0	0	0	10	30	20	200	80	10	100	110	40	90
7:00 PM	0	0	0	0	30	20	85	34	0	54	54	10	5
8:00 PM	0	0	0	0	10	7	5	2	0	9	9	0	0
<b>Total Saturday New Trips (Special Event)</b>	<b>70</b>	<b>48</b>	<b>345</b>	<b>148</b>	<b>70</b>	<b>47</b>	<b>345</b>	<b>148</b>	<b>196</b>	<b>195</b>	<b>391</b>		





**FOX TUTTLE HERNANDEZ**  
Transportation Group

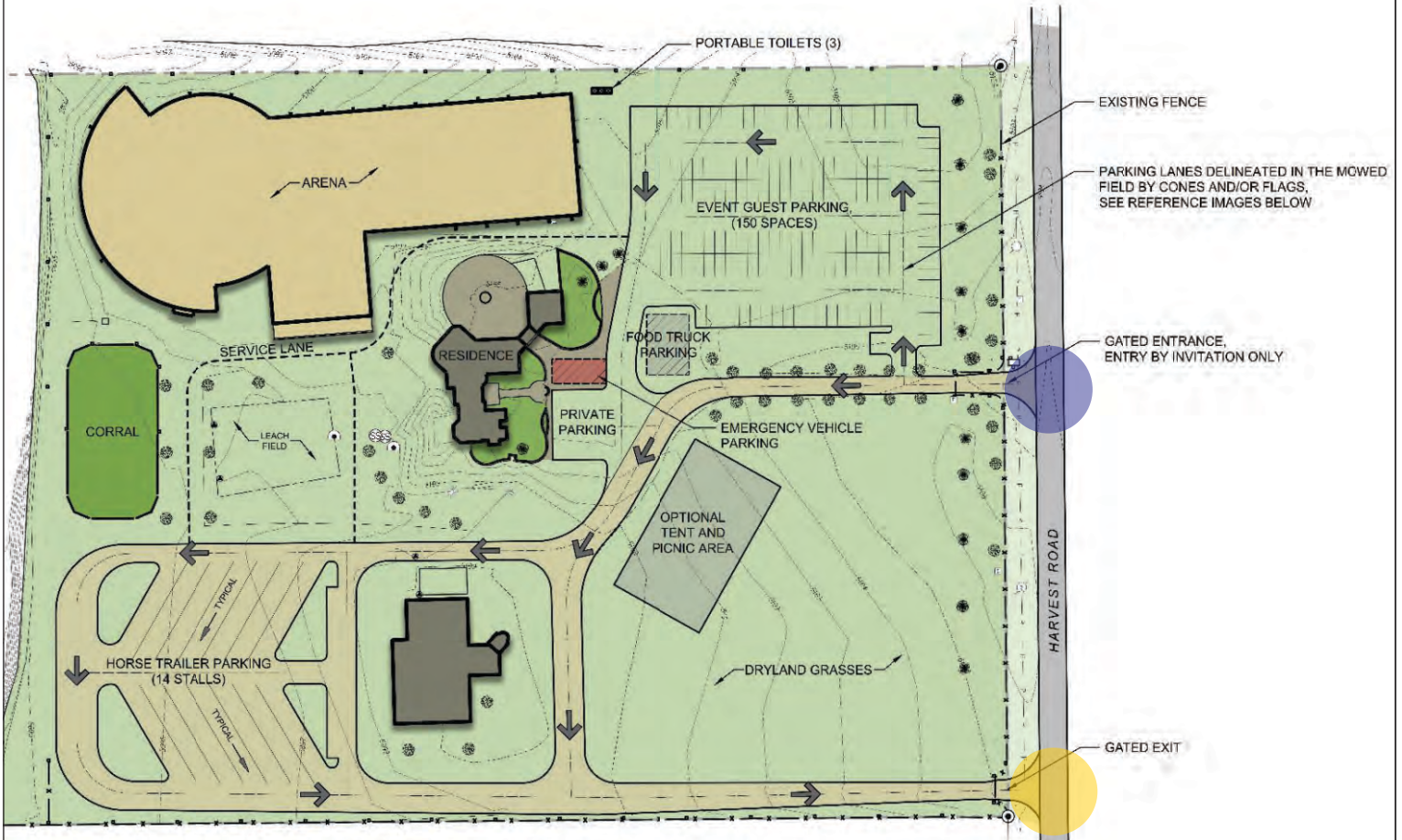
CHAVEZ ARENA TRAFFIC IMPACT STUDY  
VICINITY MAP

Project #	19031	Original Scale	NTS	Date	5/13/19	Drawn by	EJG	Figure #	1
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Enter Only (Gated Access)  
Along Harvest Road

Exit Only (Gated Access)  
Along Harvest Road



EVENT PARKING REFERENCE IMAGES

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CHAVEZ ARENA TRAFFIC IMPACT STUDY  
Site Plan (Special Rodeo and Equestrian Events)

Project #	19031	Original Scale	NTS	Date	5/13/19	Drawn by	EJG	Figure #	2
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# KEY

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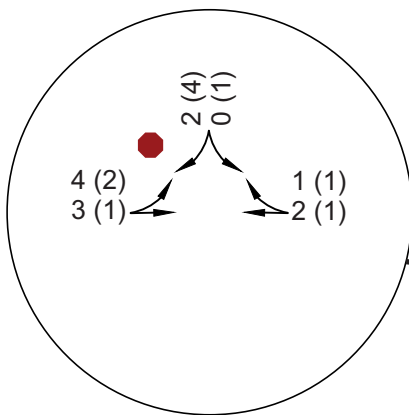
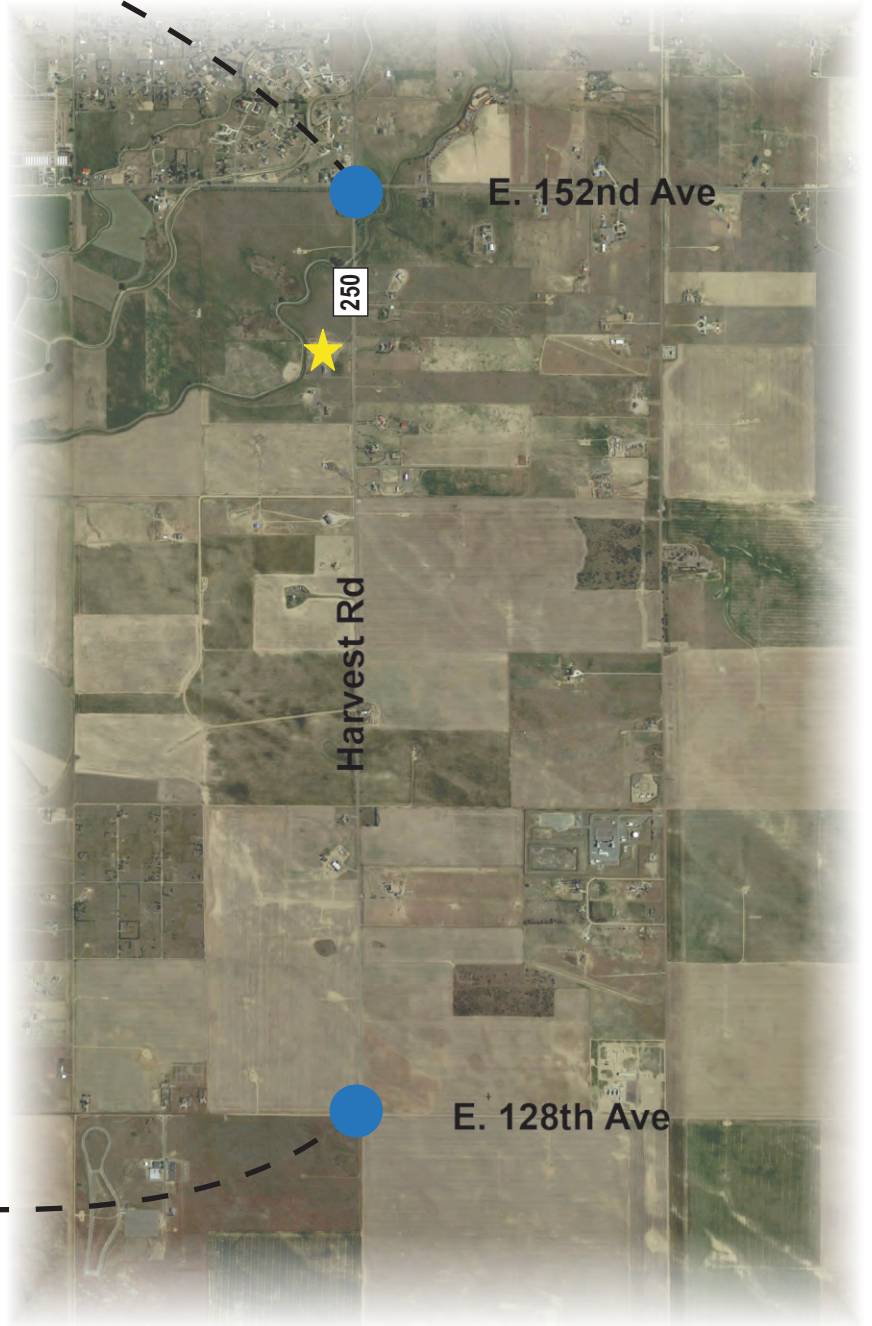
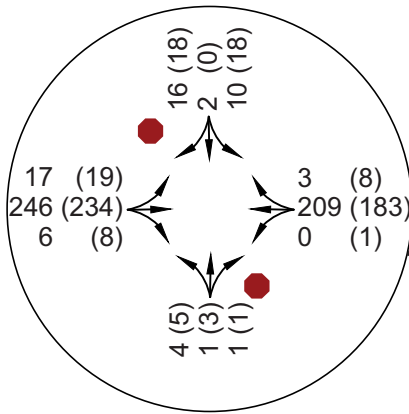
SATURDAY 12PM (6PM) PEAK HOUR TRAFFIC VOLUME

X,XXX

SATURDAY DAILY TRAFFIC VOLUME



LANE CONFIGURATION



**FOX TUTTLE HERNANDEZ**  
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CHAVEZ ARENA TRAFFIC IMPACT STUDY  
2019 EXISTING TRAFFIC VOLUMES

Project #	19031	Original Scale	NTS	Date	5/15/19	Drawn by	EJG	Figure #	3
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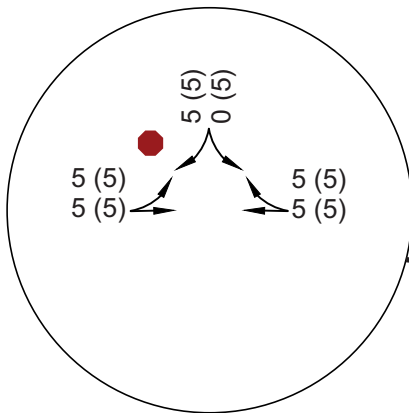
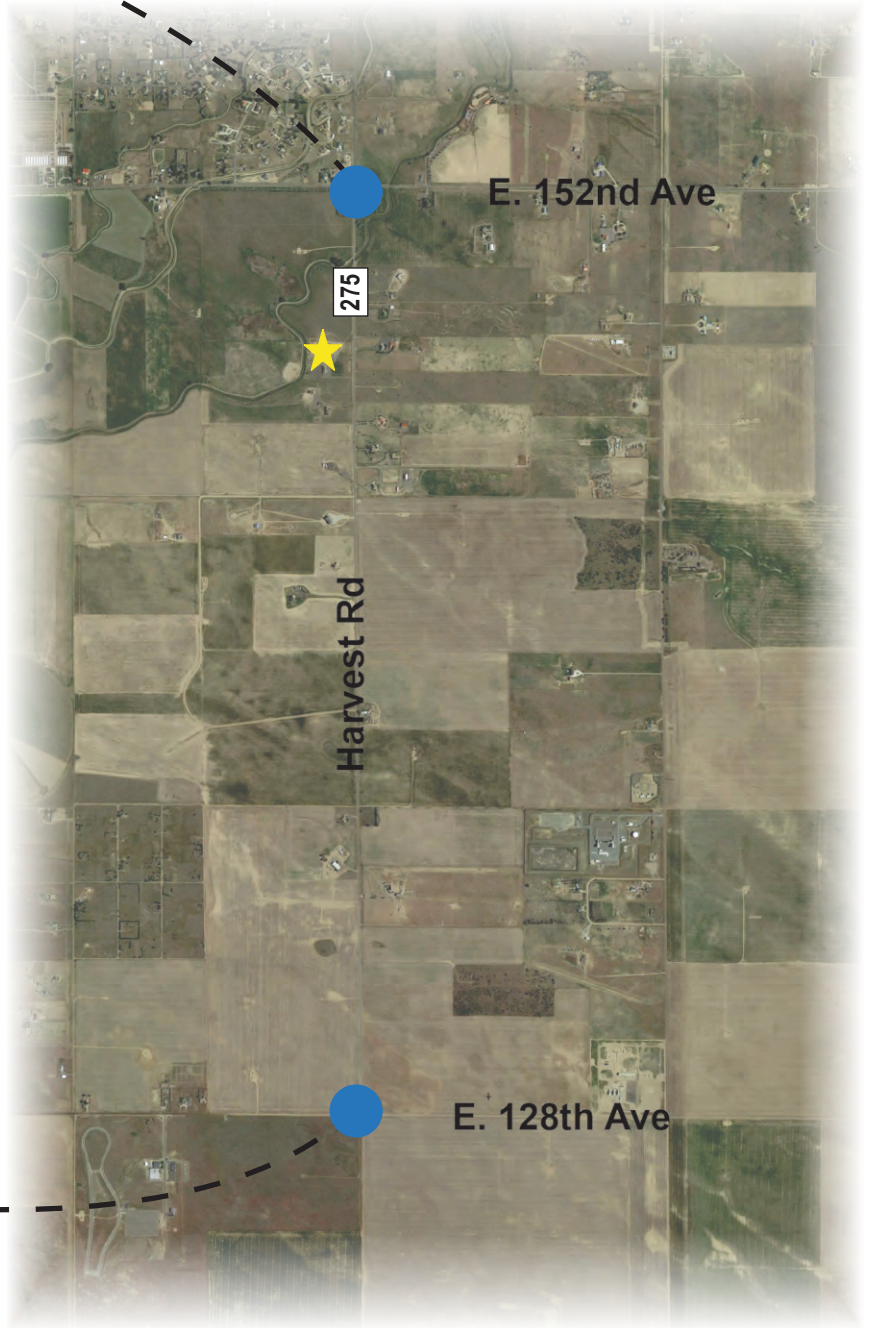
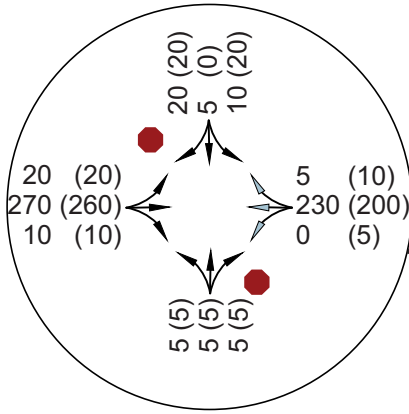
SATURDAY 12PM (6PM) PEAK HOUR TRAFFIC VOLUME

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SATURDAY DAILY TRAFFIC VOLUME



LANE CONFIGURATION



**FOX TUTTLE HERNANDEZ**  
Transportation Group

CHAVEZ ARENA TRAFFIC IMPACT STUDY  
2024 BACKGROUND TRAFFIC VOLUMES

Project #	19031	Original Scale	NTS	Date	5/15/19	Drawn by	EJG	Figure #	4
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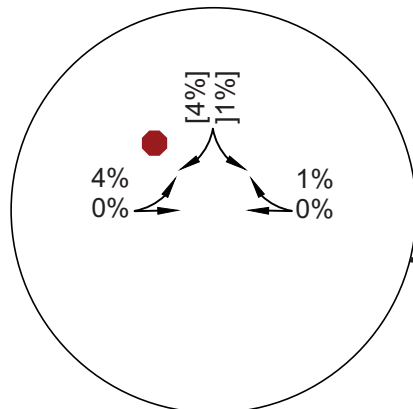
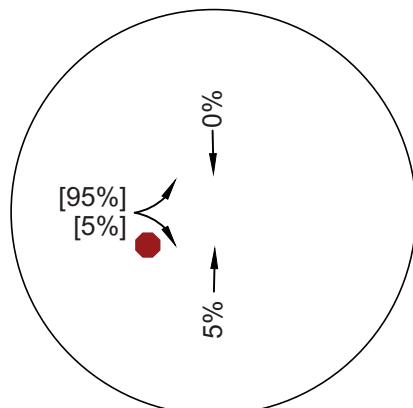
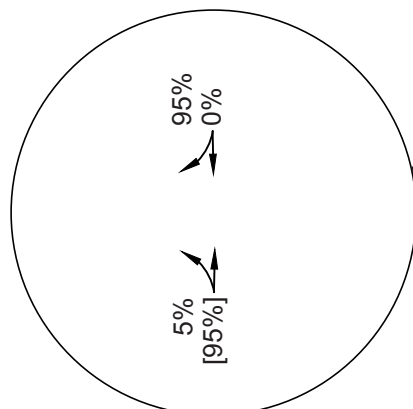
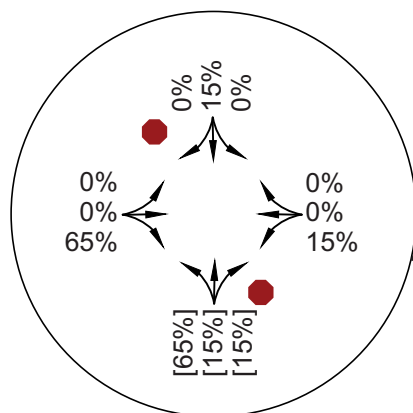
# KEY

XX% [XX%]

ENTER [EXIT] TRIP PERCENT



LANE CONFIGURATION



**FOX TUTTLE HERNANDEZ**

Transportation Group

## CHAVEZ ARENA TRAFFIC IMPACT STUDY SITE TRIP DISTRIBUTION

Project #	19031	Original Scale	NTS	Date	5/15/19	Drawn by	EJG	Figure #	5
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# KEY

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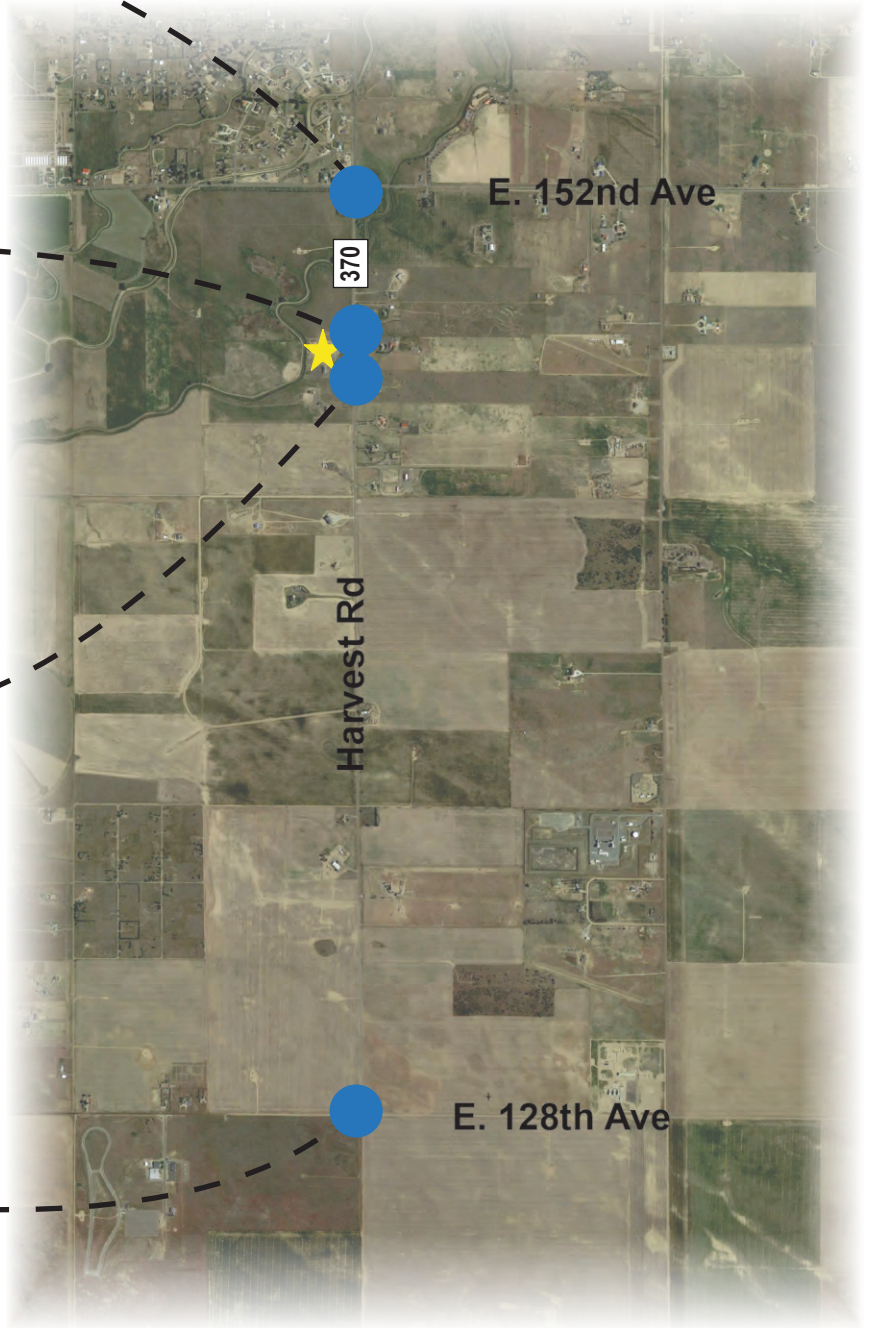
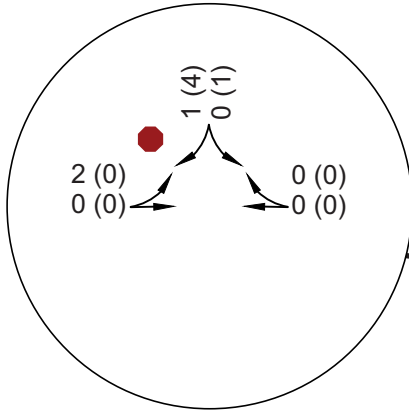
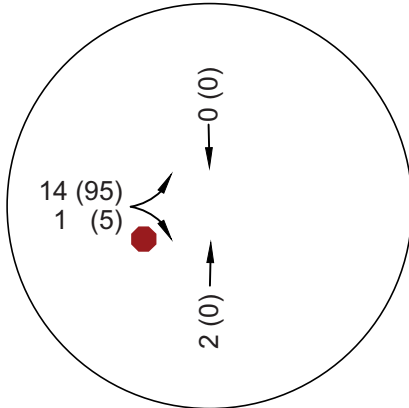
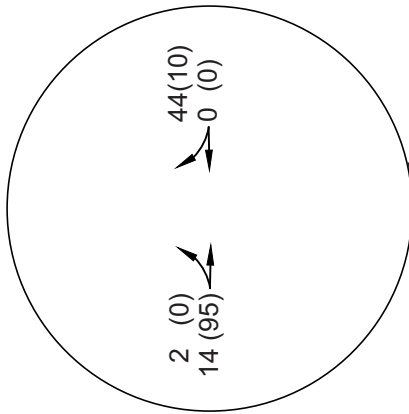
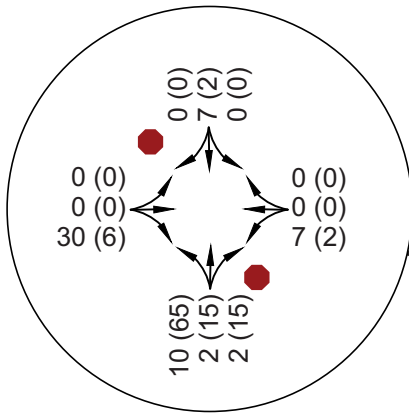
SATURDAY 12PM (6PM) PEAK HOUR TRAFFIC VOLUME

X,XXX

SATURDAY DAILY TRAFFIC VOLUME



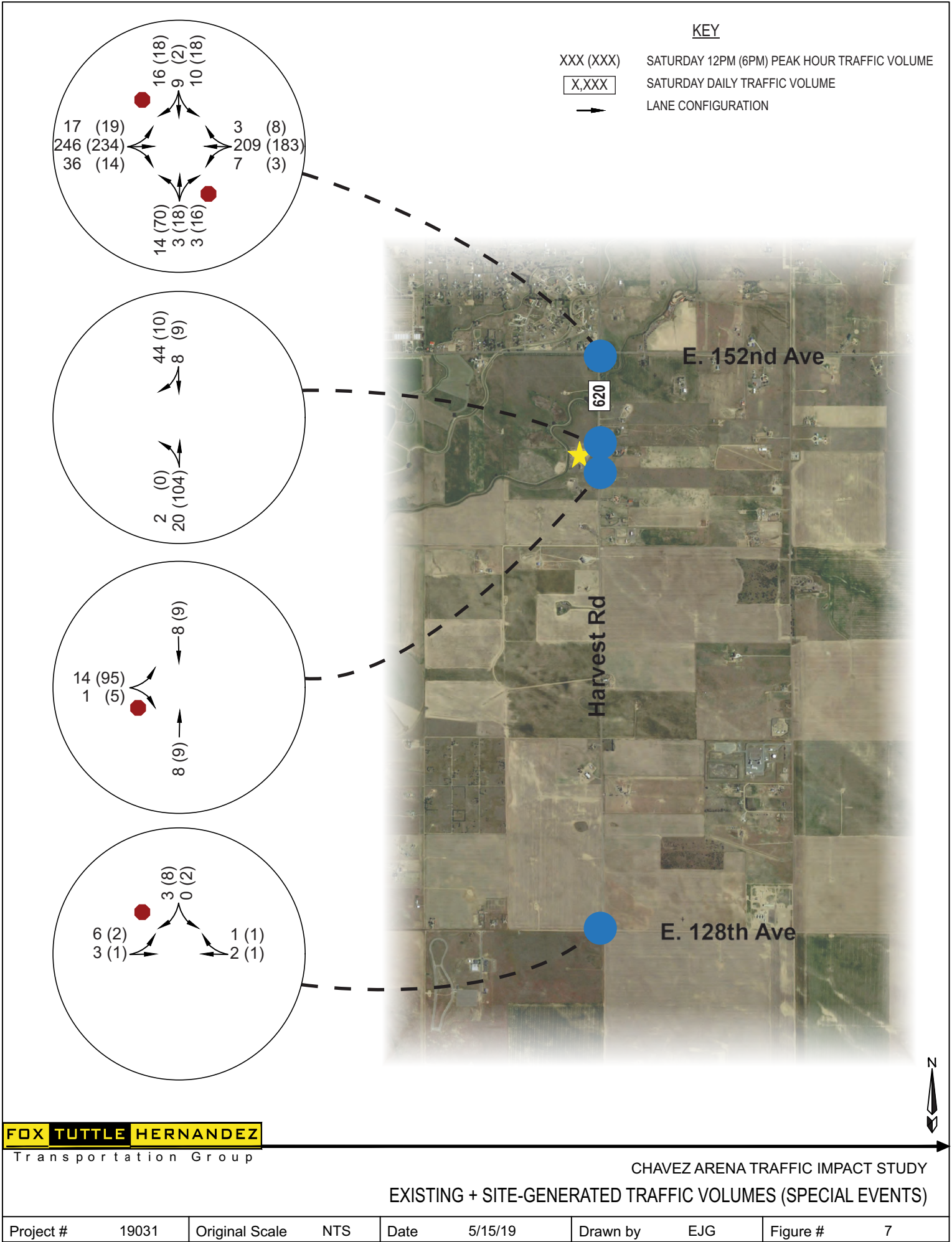
LANE CONFIGURATION



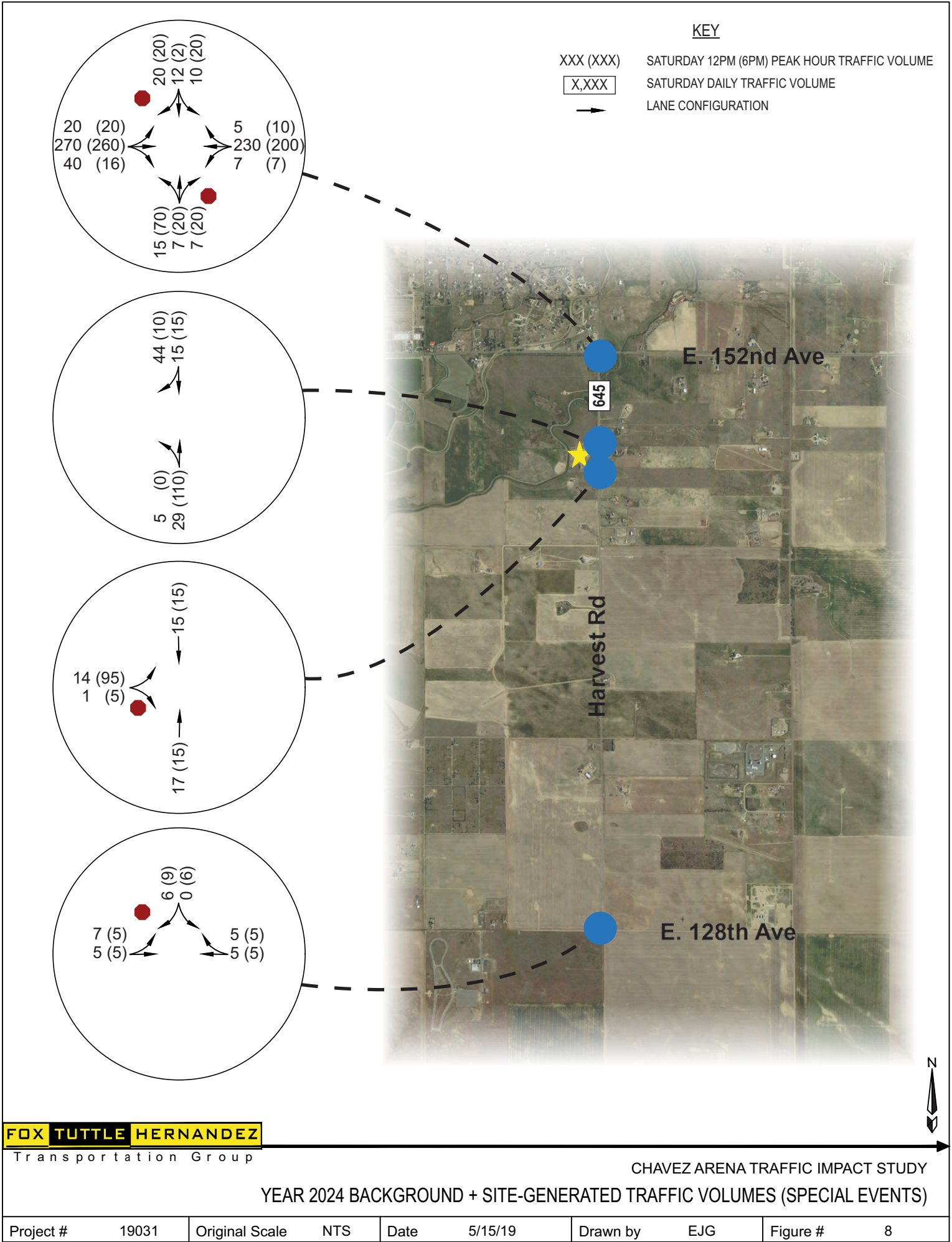
**FOX TUTTLE HERNANDEZ**  
Transportation Group

## CHAVEZ ARENA TRAFFIC IMPACT STUDY SITE-GENERATED TRAFFIC VOLUMES (SPECIAL EVENTS)

Project #	19031	Original Scale	NTS	Date	5/15/19	Drawn by	EJG	Figure #	6
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***Level of Service Definitions***



### LEVEL OF SERVICE DEFINITIONS

In rating roadway and intersection operating conditions with existing or future traffic volumes, “Levels of Service” (LOS) A through F are used, with LOS A indicating very good operation and LOS F indicating poor operation. Levels of service at signalized and unsignalized intersections are closely associated with vehicle delays experienced in seconds per vehicle. More complete level of service definitions and delay data for signal and stop sign controlled intersections are contained in the following table for reference.

Level of Service Rating	Delay in seconds per vehicle (a)		Definition
	Signalized	Unsignalized	
A	0.0 to 10.0	0.0 to 10.0	Low vehicular traffic volumes; primarily free flow operations. Density is low and vehicles can freely maneuver within the traffic stream. Drivers are able to maintain their desired speeds with little or no delay.
B	10.1 to 20.0	10.1 to 15.0	Stable vehicular traffic volume flow with potential for some restriction of operating speeds due to traffic conditions. Vehicle maneuvering is only slightly restricted. The stopped delays are not bothersome and drivers are not subject to appreciable tension.
C	20.1 to 35.0	15.1 to 25.0	Stable traffic operations, however the ability for vehicles to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer vehicle queues cause delays along the corridor.
D	35.1 to 55.0	25.1 to 35.0	Approaching unstable vehicular traffic flow where small increases in volume could cause substantial delays. Most drivers are restricted in ability to maneuver and selection of travel speeds due to congestion. Driver comfort and convenience are low, but tolerable.
E	55.1 to 80.0	35.1 to 50.0	Traffic operations characterized by significant approach delays and average travel speeds of one-half to one-third the free flow speed. Vehicular flow is unstable and there is potential for stoppages of brief duration. High signal density, extensive vehicle queuing, or corridor signal progression/timing are the typical causes of vehicle delays at signalized corridors.
F	> 80.0	> 50.0	Forced vehicular traffic flow and operations with high approach delays at critical intersections. Vehicle speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion.

(a) Delay ranges based on 2010 Highway Capacity Manual criteria.



***Existing Traffic Data***





## Daily Vehicle Volume Report

Study Date: Saturday, 04/27/2019

Unit ID: RDC 2

Location: Harvest Rd, Adams County, CO

Comments: South of 152nd Ave

	Southbound Volume	Northbound Volume	Total Volume
00:00 - 00:59	1	1	2
01:00 - 01:59	0	0	0
02:00 - 02:59	1	1	2
03:00 - 03:59	1	1	2
04:00 - 04:59	0	2	2
05:00 - 05:59	1	0	1
06:00 - 06:59	6	3	9
07:00 - 07:59	10	5	15
08:00 - 08:59	7	4	11
09:00 - 09:59	3	8	11
10:00 - 10:59	8	7	15
11:00 - 11:59	10	10	20
12:00 - 12:59	8	5	13
13:00 - 13:59	15	8	23
14:00 - 14:59	14	6	20
15:00 - 15:59	6	11	17
16:00 - 16:59	11	9	20
17:00 - 17:59	4	7	11
18:00 - 18:59	9	11	20
19:00 - 19:59	9	10	19
20:00 - 20:59	4	4	8
21:00 - 21:59	3	4	7
22:00 - 22:59	0	0	0
23:00 - 23:59	2	0	2
<b>Totals</b>	<b>133</b>	<b>117</b>	<b>250</b>
<b>AM Peak Time</b>	<b>10:10 - 11:09</b>	<b>10:23 - 11:22</b>	<b>10:20 - 11:19</b>
<b>AM Peak Volume</b>	<b>13</b>	<b>11</b>	<b>23</b>
<b>PM Peak Time</b>	<b>13:05 - 14:04</b>	<b>15:09 - 16:08</b>	<b>13:04 - 14:03</b>
<b>PM Peak Volume</b>	<b>18</b>	<b>13</b>	<b>25</b>

## Daily Vehicle Volume Report

Study Date: Thursday, 04/25/2019

Unit ID: RDC 2

Location: Harvest Rd, Adams County, CO

Comments: South of 152nd Ave

	Southbound Volume	Northbound Volume	Total Volume
00:00 - 00:59	4	2	6
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	1	0	1
04:00 - 04:59	0	1	1
05:00 - 05:59	6	1	7
06:00 - 06:59	7	9	16
07:00 - 07:59	7	11	18
08:00 - 08:59	12	5	17
09:00 - 09:59	9	14	23
10:00 - 10:59	8	15	23
11:00 - 11:59	7	10	17
12:00 - 12:59	14	6	20
13:00 - 13:59	3	10	13
14:00 - 14:59	15	14	29
15:00 - 15:59	12	7	19
16:00 - 16:59	15	11	26
17:00 - 17:59	16	15	31
18:00 - 18:59	22	16	38
19:00 - 19:59	9	18	27
20:00 - 20:59	5	7	12
21:00 - 21:59	3	0	3
22:00 - 22:59	0	4	4
23:00 - 23:59	0	1	1
Totals	175	177	352
AM Peak Time	07:11 - 08:10	08:38 - 09:37	07:11 - 08:10
AM Peak Volume	15	16	26
PM Peak Time	18:00 - 18:59	19:07 - 20:06	18:00 - 18:59
PM Peak Volume	22	20	38



Adams County, CO  
Chavez Arena Traffic Study  
AM Peak  
E 152nd Ave and Harvest Rd

File Name : E 152nd and Harvest AM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 1

Groups Printed- Automobiles

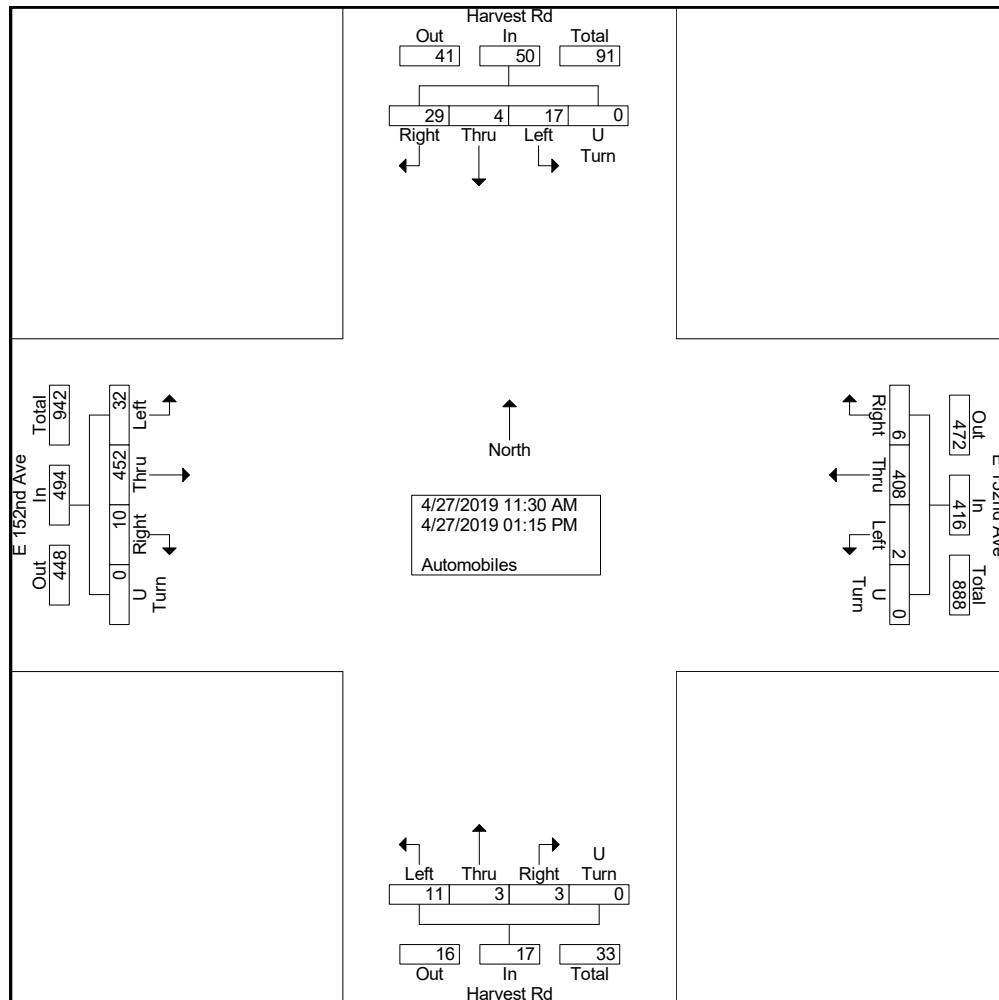
Start Time	E 152nd Ave Eastbound					E 152nd Ave Westbound					Harvest Rd Northbound					Harvest Rd Southbound					Int. Total
	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	
11:30 AM	6	50	0	0	56	2	50	0	0	52	0	2	0	0	2	2	0	6	0	8	118
11:45 AM	6	41	1	0	48	0	50	1	0	51	3	0	0	0	3	1	0	1	0	2	104
Total	12	91	1	0	104	2	100	1	0	103	3	2	0	0	5	3	0	7	0	10	222
12:00 PM	4	49	1	0	54	0	64	0	0	64	2	1	1	0	4	4	1	3	0	8	130
12:15 PM	7	54	1	0	62	0	47	0	0	47	1	0	0	0	1	1	1	5	0	7	117
12:30 PM	2	67	2	0	71	0	47	3	0	50	0	0	0	0	0	1	0	4	0	5	126
12:45 PM	4	76	2	0	82	0	51	0	0	51	1	0	0	0	1	4	0	4	0	8	142
Total	17	246	6	0	269	0	209	3	0	212	4	1	1	0	6	10	2	16	0	28	515
01:00 PM	2	64	3	0	69	0	46	0	0	46	3	0	0	0	3	3	1	2	0	6	124
01:15 PM	1	51	0	0	52	0	53	2	0	55	1	0	2	0	3	1	1	4	0	6	116
Grand Total	32	452	10	0	494	2	408	6	0	416	11	3	3	0	17	17	4	29	0	50	977
Apprch %	6.5	91.5	2	0		0.5	98.1	1.4	0		64.7	17.6	17.6	0		34	8	58	0		
Total %	3.3	46.3	1	0	50.6	0.2	41.8	0.6	0	42.6	1.1	0.3	0.3	0	1.7	1.7	0.4	3	0	5.1	



Ridgeview Data  
Collection

Adams County, CO  
Chavez Arena Traffic Study  
AM Peak  
E 152nd Ave and Harvest Rd

File Name : E 152nd and Harvest AM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 2

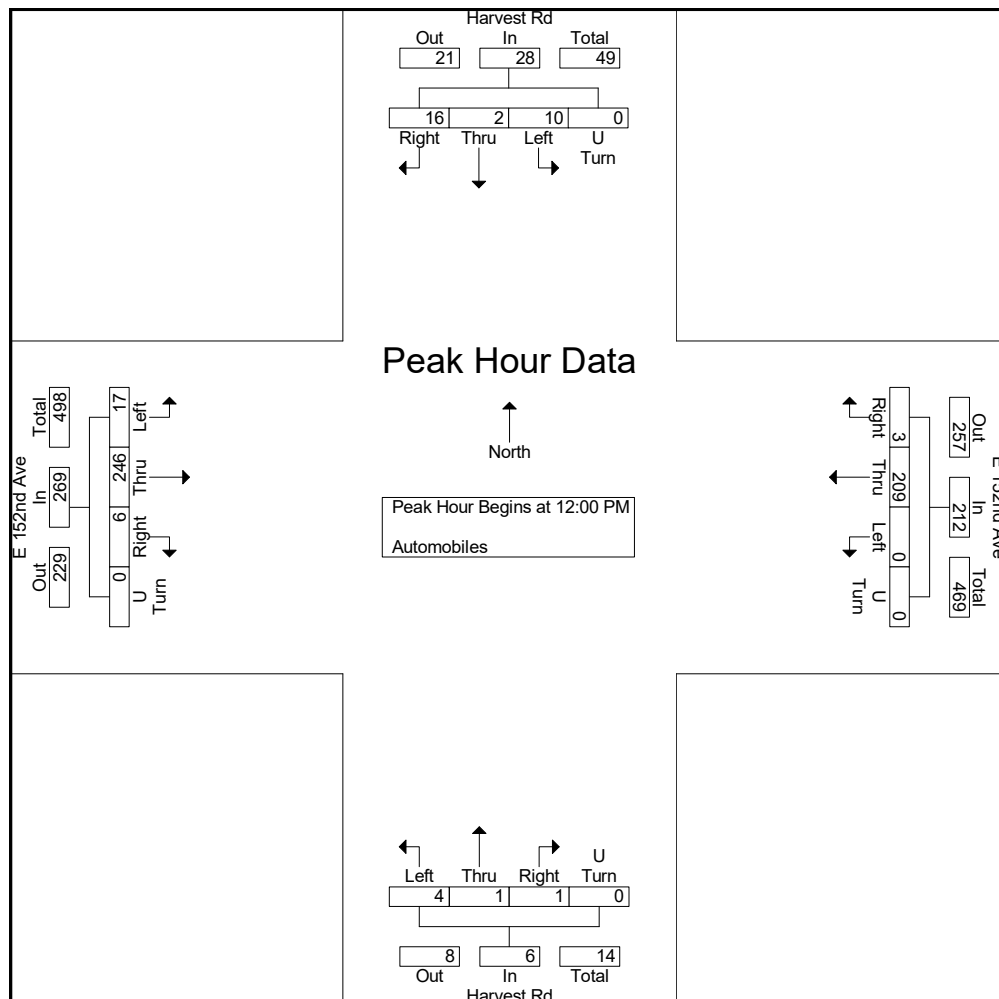




Adams County, CO  
Chavez Arena Traffic Study  
AM Peak  
E 152nd Ave and Harvest Rd

File Name : E 152nd and Harvest AM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 3

	E 152nd Ave Eastbound					E 152nd Ave Westbound					Harvest Rd Northbound					Harvest Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 11:30 AM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	4	49	1	0	54	0	64	0	0	64	2	1	1	0	4	4	1	3	0	8	130
12:15 PM	7	54	1	0	62	0	47	0	0	47	1	0	0	0	1	1	1	5	0	7	117
12:30 PM	2	67	2	0	71	0	47	3	0	50	0	0	0	0	0	1	0	4	0	5	126
12:45 PM	4	76	2	0	82	0	51	0	0	51	1	0	0	0	1	4	0	4	0	8	142
Total Volume	17	246	6	0	269	0	209	3	0	212	4	1	1	0	6	10	2	16	0	28	515
% App. Total	6.3	91.4	2.2	0		0	98.6	1.4	0		66.7	16.7	16.7	0		35.7	7.1	57.1	0		
PHF	.607	.809	.750	.000	.820	.000	.816	.250	.000	.828	.500	.250	.250	.000	.375	.625	.500	.800	.000	.875	.907





Adams County, CO  
Chavez Arena Traffic Study  
PM Peak  
E 152nd Ave and Harvest Rd

File Name : E 152nd and Harvest PM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 1

Groups Printed- Automobiles

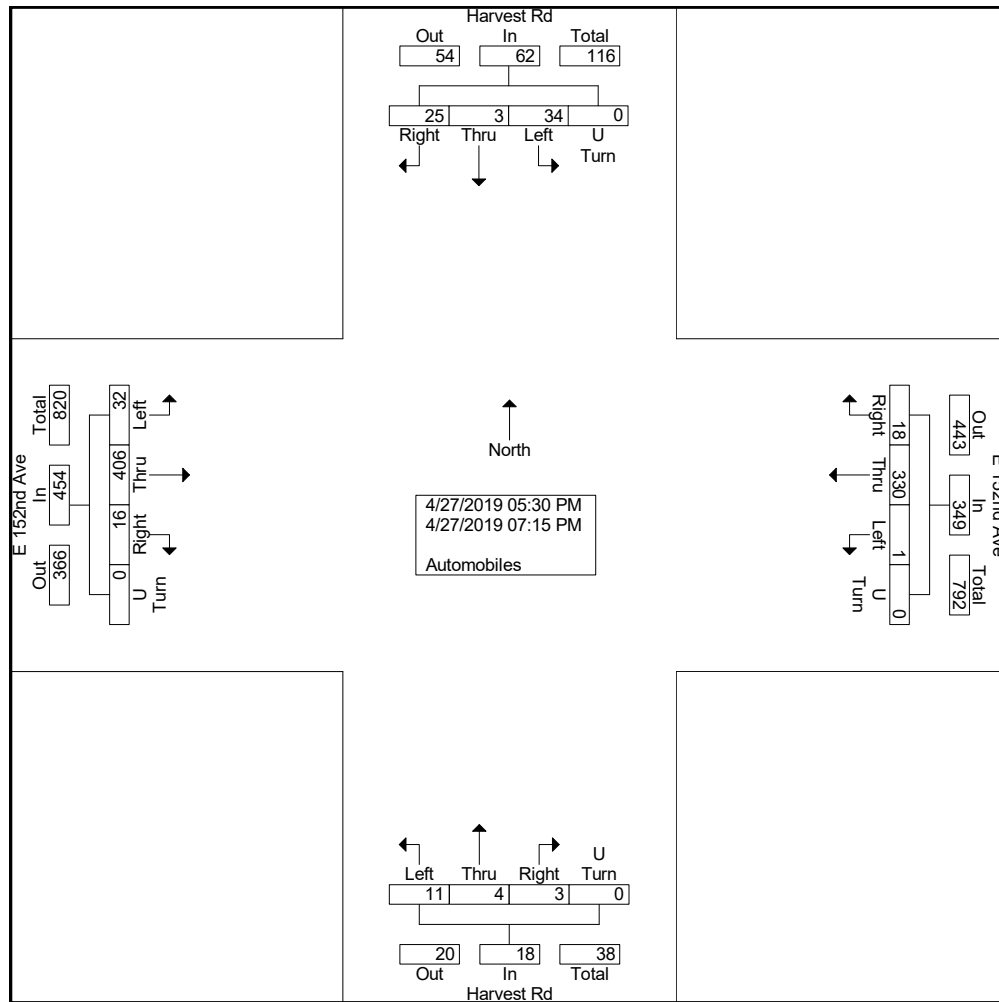
Start Time	E 152nd Ave Eastbound					E 152nd Ave Westbound					Harvest Rd Northbound					Harvest Rd Southbound					Int. Total
	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	
05:30 PM	4	60	0	0	64	0	55	1	0	56	0	0	0	0	0	3	0	6	0	9	129
05:45 PM	4	59	1	0	64	0	40	1	0	41	1	0	0	0	1	9	0	4	0	13	119
Total	8	119	1	0	128	0	95	2	0	97	1	0	0	0	1	12	0	10	0	22	248
06:00 PM	6	55	5	0	66	0	41	3	0	44	0	1	0	0	1	2	0	3	0	5	116
06:15 PM	5	60	2	0	67	1	47	3	0	51	4	2	1	0	7	4	0	5	0	9	134
06:30 PM	2	44	0	0	46	0	37	5	0	42	3	0	0	0	3	4	2	2	0	8	99
06:45 PM	5	45	2	0	52	0	32	2	0	34	2	0	0	0	2	4	0	2	0	6	94
Total	18	204	9	0	231	1	157	13	0	171	9	3	1	0	13	14	2	12	0	28	443
07:00 PM	5	42	6	0	53	0	36	1	0	37	0	0	1	0	1	2	0	2	0	4	95
07:15 PM	1	41	0	0	42	0	42	2	0	44	1	1	1	0	3	6	1	1	0	8	97
Grand Total	32	406	16	0	454	1	330	18	0	349	11	4	3	0	18	34	3	25	0	62	883
Apprch %	7	89.4	3.5	0		0.3	94.6	5.2	0		61.1	22.2	16.7	0		54.8	4.8	40.3	0		
Total %	3.6	46	1.8	0	51.4	0.1	37.4	2	0	39.5	1.2	0.5	0.3	0	2	3.9	0.3	2.8	0	7	



Ridgeview Data  
Collection

Adams County, CO  
Chavez Arena Traffic Study  
PM Peak  
E 152nd Ave and Harvest Rd

File Name : E 152nd and Harvest PM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 2

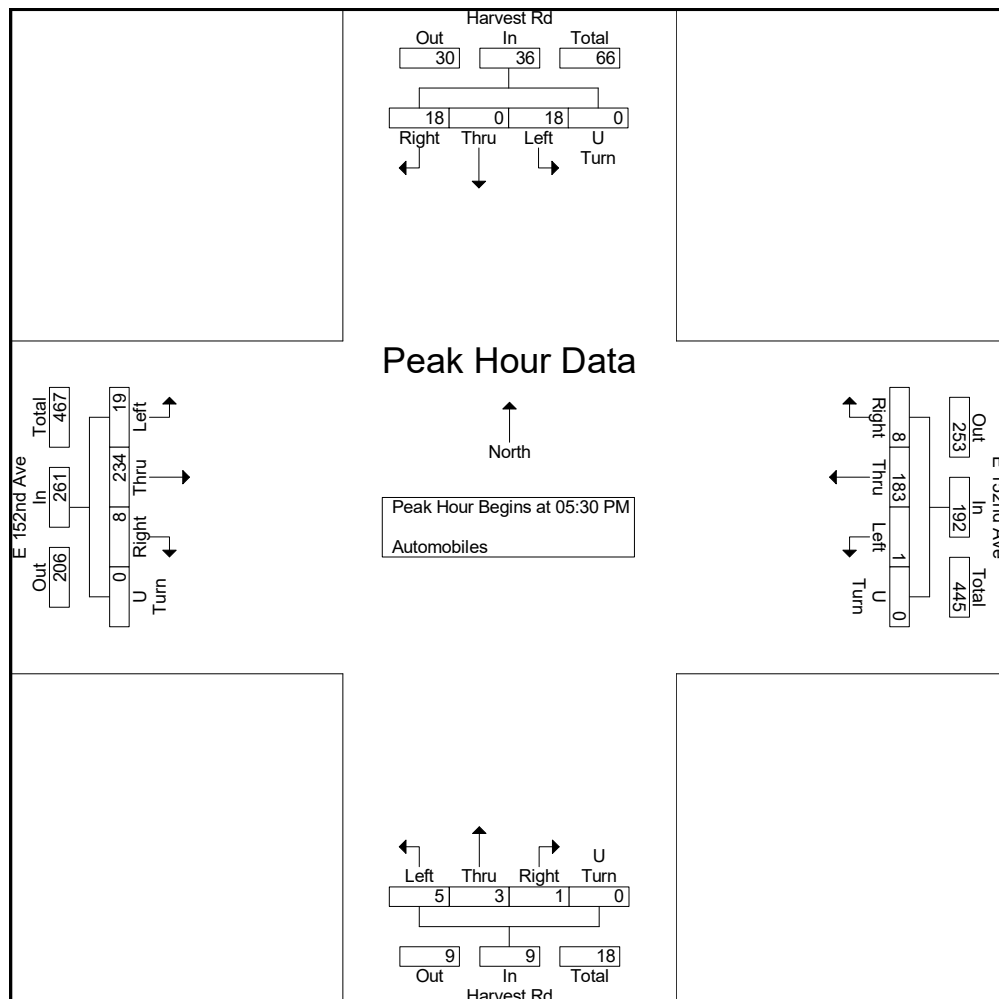




Adams County, CO  
Chavez Arena Traffic Study  
PM Peak  
E 152nd Ave and Harvest Rd

File Name : E 152nd and Harvest PM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 3

	E 152nd Ave Eastbound					E 152nd Ave Westbound					Harvest Rd Northbound					Harvest Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 05:30 PM to 07:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
05:30 PM	4	60	0	0	64	0	55	1	0	56	0	0	0	0	0	3	0	6	0	9	129
05:45 PM	4	59	1	0	64	0	40	1	0	41	1	0	0	0	1	9	0	4	0	13	119
06:00 PM	6	55	5	0	66	0	41	3	0	44	0	1	0	0	1	2	0	3	0	5	116
06:15 PM	5	60	2	0	67	1	47	3	0	51	4	2	1	0	7	4	0	5	0	9	134
Total Volume	19	234	8	0	261	1	183	8	0	192	5	3	1	0	9	18	0	18	0	36	498
% App. Total	7.3	89.7	3.1	0		0.5	95.3	4.2	0		55.6	33.3	11.1	0		50	0	50	0		
PHF	.792	.975	.400	.000	.974	.250	.832	.667	.000	.857	.313	.375	.250	.000	.321	.500	.000	.750	.000	.692	.929







Adams County, CO  
 Chavez Arena Traffic Study  
 AM Peak  
 E 128th Ave and Harvest Rd

File Name : E 128th and Harvest AM  
 Site Code : IPO 48  
 Start Date : 4/27/2019  
 Page No : 1

Groups Printed- Automobiles

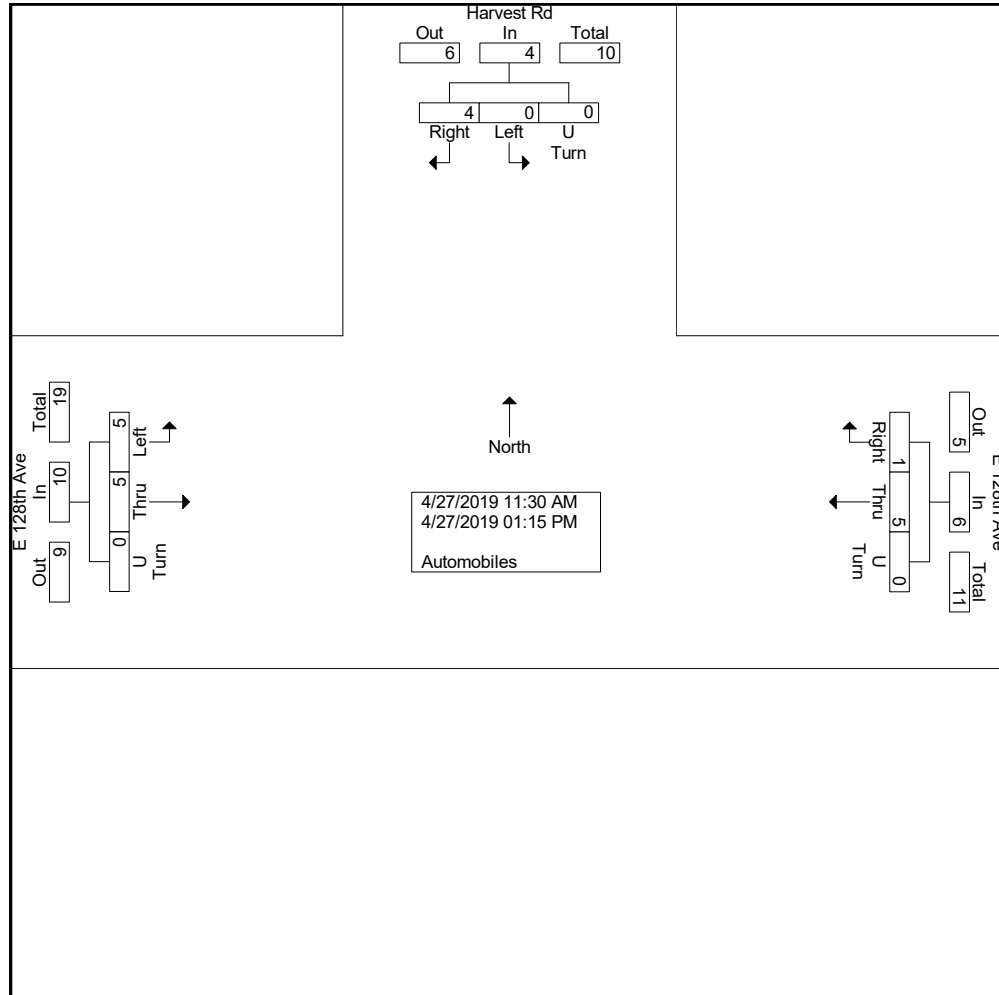
Start Time	E 128th Ave Eastbound				E 128th Ave Westbound				Harvest Rd Southbound				Int. Total
	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	
11:30 AM	0	1	0	1	1	0	0	1	0	0	0	0	2
11:45 AM	0	1	0	1	2	0	0	2	0	1	0	1	4
Total	0	2	0	2	3	0	0	3	0	1	0	1	6
12:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
12:30 PM	1	1	0	2	1	0	0	1	0	0	0	0	3
12:45 PM	0	1	0	1	0	1	0	1	0	1	0	1	3
Total	2	2	0	4	1	1	0	2	0	2	0	2	8
01:00 PM	2	1	0	3	0	0	0	0	0	0	0	0	3
01:15 PM	1	0	0	1	1	0	0	1	0	1	0	1	3
Grand Total	5	5	0	10	5	1	0	6	0	4	0	4	20
Apprch %	50	50	0		83.3	16.7	0		0	100	0		
Total %	25	25	0	50	25	5	0	30	0	20	0	20	



Ridgeview Data  
Collection

Adams County, CO  
Chavez Arena Traffic Study  
AM Peak  
E 128th Ave and Harvest Rd

File Name : E 128th and Harvest AM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 2

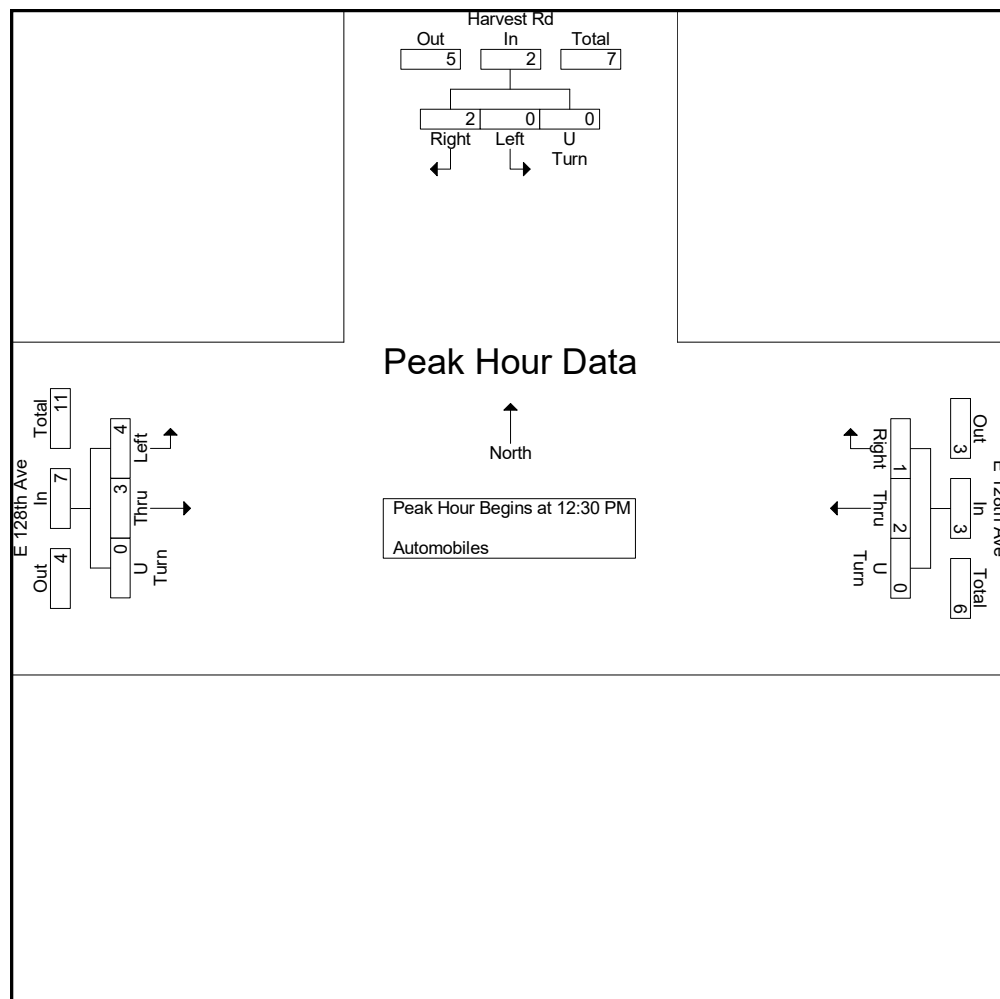




Adams County, CO  
Chavez Arena Traffic Study  
AM Peak  
E 128th Ave and Harvest Rd

File Name : E 128th and Harvest AM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 3

	E 128th Ave Eastbound				E 128th Ave Westbound				Harvest Rd Southbound				
Start Time	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 11:30 AM to 01:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:30 PM													
12:30 PM	1	1	0	2	1	0	0	1	0	0	0	0	3
12:45 PM	0	1	0	1	0	1	0	1	0	1	0	1	3
01:00 PM	2	1	0	3	0	0	0	0	0	0	0	0	3
01:15 PM	1	0	0	1	1	0	0	1	0	1	0	1	3
Total Volume	4	3	0	7	2	1	0	3	0	2	0	2	12
% App. Total	57.1	42.9	0		66.7	33.3	0		0	100	0		
PHF	.500	.750	.000	.583	.500	.250	.000	.750	.000	.500	.000	.500	1.00





Adams County, CO  
Chavez Arena Traffic Study  
PM Peak  
E 128th Ave and Harvest Rd

File Name : E 128th and Harvest PM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 1

Groups Printed- Automobiles

Start Time	E 128th Ave Eastbound				E 128th Ave Westbound				Harvest Rd Southbound				Int. Total
	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	
05:30 PM	1	1	0	2	0	0	0	0	0	3	0	3	5
05:45 PM	1	0	0	1	0	1	0	1	1	0	0	1	3
Total	2	1	0	3	0	1	0	1	1	3	0	4	8
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	1	0	0	1	0	1	0	1	2
06:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
06:45 PM	0	1	0	1	0	0	0	0	1	2	0	3	4
Total	1	1	0	2	1	0	0	1	1	4	0	5	8
07:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
07:15 PM	0	0	0	0	1	0	0	1	0	2	0	2	3
Grand Total	3	3	0	6	2	1	0	3	2	9	0	11	20
Apprch %	50	50	0		66.7	33.3	0		18.2	81.8	0		
Total %	15	15	0	30	10	5	0	15	10	45	0	55	

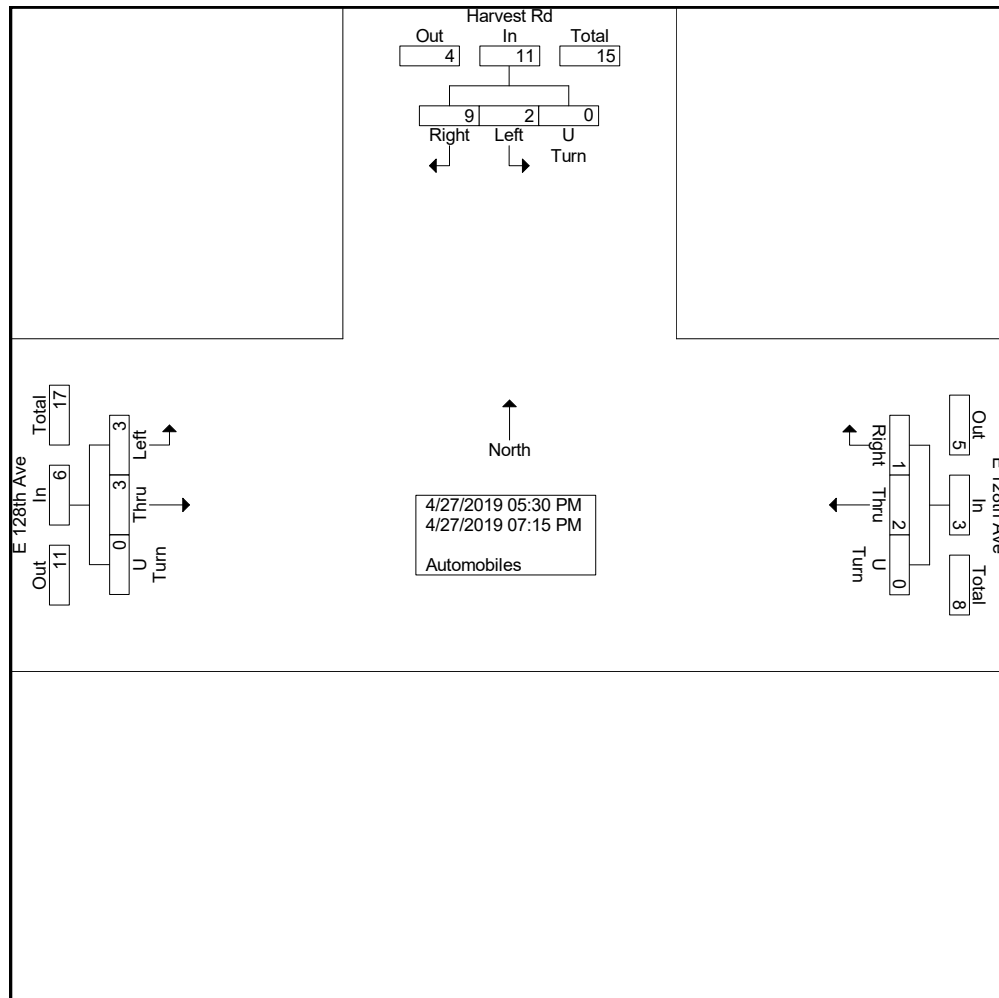




Ridgeview Data  
Collection

Adams County, CO  
Chavez Arena Traffic Study  
PM Peak  
E 128th Ave and Harvest Rd

File Name : E 128th and Harvest PM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 2

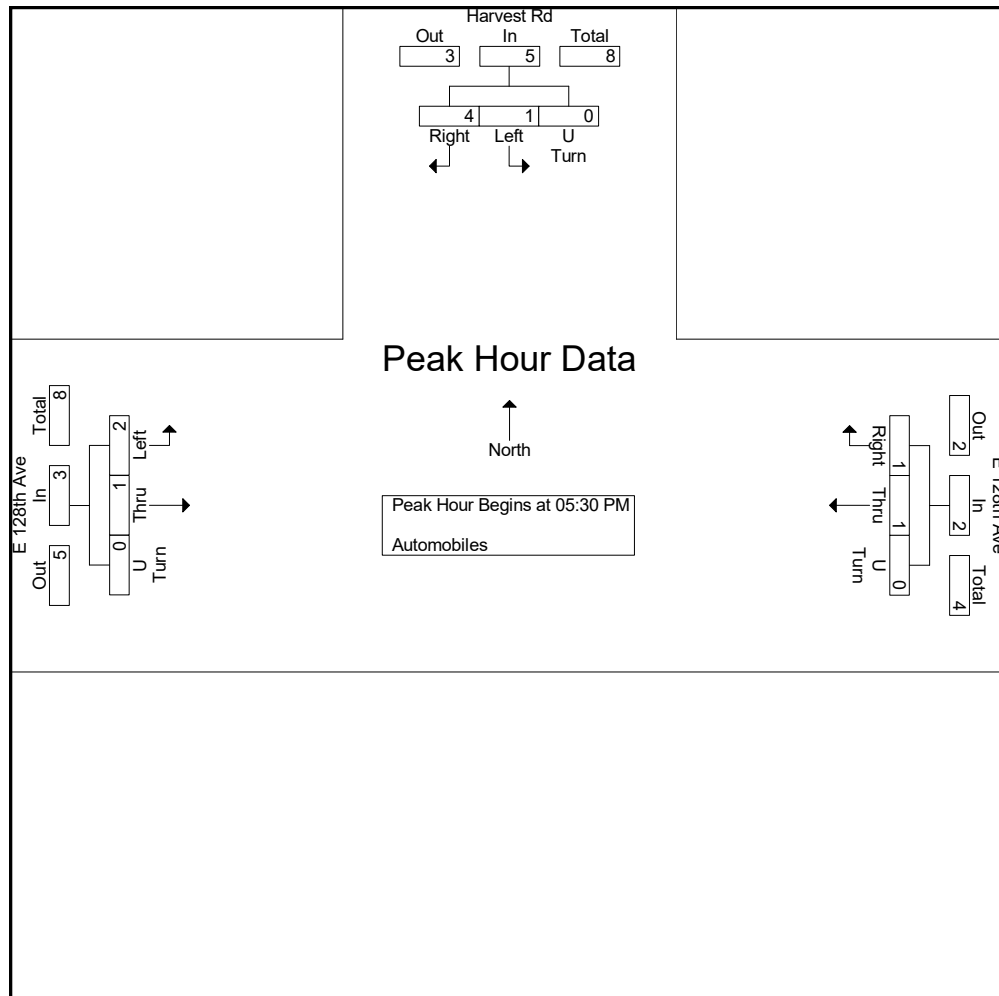


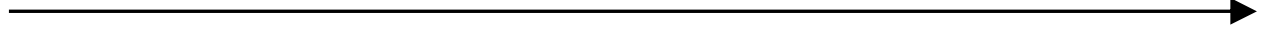


Adams County, CO  
Chavez Arena Traffic Study  
PM Peak  
E 128th Ave and Harvest Rd

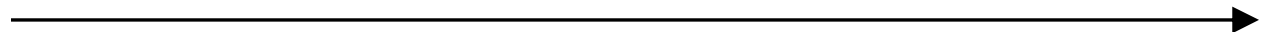
File Name : E 128th and Harvest PM  
Site Code : IPO 48  
Start Date : 4/27/2019  
Page No : 3

	E 128th Ave Eastbound				E 128th Ave Westbound				Harvest Rd Southbound				
Start Time	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 05:30 PM to 07:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:30 PM													
05:30 PM	1	1	0	2	0	0	0	0	0	3	0	3	5
05:45 PM	1	0	0	1	0	1	0	1	1	0	0	1	3
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	1	0	0	1	0	1	0	1	2
Total Volume	2	1	0	3	1	1	0	2	1	4	0	5	10
% App. Total	66.7	33.3	0		50	50	0		20	80	0		
PHF	.500	.250	.000	.375	.250	.250	.000	.500	.250	.333	.000	.417	.500





***Intersection Capacity Worksheets:  
2019 Existing***



Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	246	6	0	209	3	4	1	1	10	2	16
Future Vol, veh/h	17	246	6	0	209	3	4	1	1	10	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	83	83	83	38	38	38	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	300	7	0	252	4	11	3	3	11	2	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	307	0	0	610	602	304	603	603	254
Stage 1	-	-	-	-	-	-	346	346	-	254	254	-
Stage 2	-	-	-	-	-	-	264	256	-	349	349	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1309	-	-	1254	-	-	407	414	736	411	413	785
Stage 1	-	-	-	-	-	-	670	635	-	750	697	-
Stage 2	-	-	-	-	-	-	741	696	-	667	633	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1309	-	-	1254	-	-	390	406	736	402	405	785
Mov Cap-2 Maneuver	-	-	-	-	-	-	390	406	-	402	405	-
Stage 1	-	-	-	-	-	-	657	623	-	736	697	-
Stage 2	-	-	-	-	-	-	721	696	-	649	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.8	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	426	1309	-	-	1254	-	-	558
HCM Lane V/C Ratio	0.037	0.016	-	-	-	-	-	0.057
HCM Control Delay (s)	13.8	7.8	0	-	0	-	-	11.8
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	4	3	2	1	0	2
Future Vol, veh/h	4	3	2	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	5	3	1	0	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	4	0	0 23 4
Stage 1	-	-	- 4 -
Stage 2	-	-	- 19 -
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	-	- 993 1080
Stage 1	-	-	- 1019 -
Stage 2	-	-	- 1004 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1618	-	- 989 1080
Mov Cap-2 Maneuver	-	-	- 989 -
Stage 1	-	-	- 1015 -
Stage 2	-	-	- 1004 -

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1618	-	-	-	1080
HCM Lane V/C Ratio	0.004	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	19	234	8	1	183	8	5	3	1	18	0	18
Future Vol, veh/h	19	234	8	1	183	8	5	3	1	18	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	86	86	86	32	32	32	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	241	8	1	213	9	16	9	3	26	0	26




Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	222	0	0	249	0	0	518	509	245	511	509	218
Stage 1	-	-	-	-	-	-	285	285	-	220	220	-
Stage 2	-	-	-	-	-	-	233	224	-	291	289	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1347	-	-	1317	-	-	468	467	794	473	467	822
Stage 1	-	-	-	-	-	-	722	676	-	782	721	-
Stage 2	-	-	-	-	-	-	770	718	-	717	673	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1347	-	-	1317	-	-	447	459	794	457	459	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	447	459	-	457	459	-
Stage 1	-	-	-	-	-	-	710	665	-	769	720	-
Stage 2	-	-	-	-	-	-	745	717	-	692	662	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	13.1	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	474	1347	-	-	1317	-	-	587
HCM Lane V/C Ratio	0.059	0.015	-	-	0.001	-	-	0.089
HCM Control Delay (s)	13.1	7.7	0	-	7.7	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection

Int Delay, s/veh 5.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	1	1	4
Future Vol, veh/h	2	1	1	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	38	38	50	50	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	3	2	2	2	10

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	4	0	-	0	16	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	13	-
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	-	-	-	1002	1081
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1618	-	-	-	999	1081
Mov Cap-2 Maneuver	-	-	-	-	999	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1618	-	-	-	1064
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.2	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0




***Intersection Capacity Worksheets:  
2024 Background***

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	20	270	10	0	230	5	5	5	5	10	5	20
Future Vol, veh/h	20	270	10	0	230	5	5	5	5	10	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	83	83	83	38	38	38	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	329	12	0	277	6	13	13	13	11	6	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	283	0	0	341	0	0	678	666	335	676	669	280
Stage 1	-	-	-	-	-	-	383	383	-	280	280	-
Stage 2	-	-	-	-	-	-	295	283	-	396	389	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1279	-	-	1218	-	-	366	380	707	367	379	759
Stage 1	-	-	-	-	-	-	640	612	-	727	679	-
Stage 2	-	-	-	-	-	-	713	677	-	629	608	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1279	-	-	1218	-	-	345	371	707	344	370	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	345	371	-	344	370	-
Stage 1	-	-	-	-	-	-	625	598	-	710	679	-
Stage 2	-	-	-	-	-	-	686	677	-	590	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	14.3	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	428	1279	-	-	1218	-	-	508
HCM Lane V/C Ratio	0.092	0.019	-	-	-	-	-	0.078
HCM Control Delay (s)	14.3	7.9	0	-	0	-	-	12.7
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	5	5	0	5
Future Vol, veh/h	5	5	5	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	9	7	7	0	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	14	0	-	0	38	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	27	-
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	-	-	-	974	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1604	-	-	-	968	1070
Mov Cap-2 Maneuver	-	-	-	-	968	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	996	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.6	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1604	-	-	-	1070	
HCM Lane V/C Ratio	0.005	-	-	-	0.009	
HCM Control Delay (s)	7.3	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	



Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	260	10	5	200	10	5	5	5	20	0	20
Future Vol, veh/h	20	260	10	5	200	10	5	5	5	20	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	86	86	86	32	32	32	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	268	10	6	233	12	16	16	16	29	0	29




Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	278	0	0	581	572	273	582	571	239
Stage 1	-	-	-	-	-	-	315	315	-	251	251	-
Stage 2	-	-	-	-	-	-	266	257	-	331	320	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1321	-	-	1285	-	-	425	430	766	424	431	800
Stage 1	-	-	-	-	-	-	696	656	-	753	699	-
Stage 2	-	-	-	-	-	-	739	695	-	682	652	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1321	-	-	1285	-	-	402	420	766	396	421	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	402	420	-	396	421	-
Stage 1	-	-	-	-	-	-	683	644	-	739	696	-
Stage 2	-	-	-	-	-	-	709	692	-	639	640	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	13.2	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	486	1321	-	-	1285	-	-	530
HCM Lane V/C Ratio	0.096	0.016	-	-	0.005	-	-	0.109
HCM Control Delay (s)	13.2	7.8	0	-	7.8	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4

Intersection

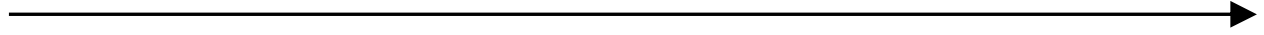
Int Delay, s/veh 4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	5	5	5	5
Future Vol, veh/h	5	5	5	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	38	38	50	50	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	10	10	12	12

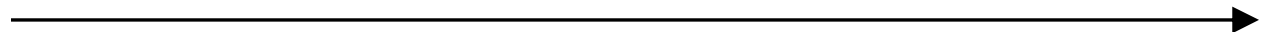
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	20	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1596	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1596	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1596	-	-	-	1002
HCM Lane V/C Ratio	0.008	-	-	-	0.024
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



***Intersection Capacity Worksheets:  
Existing + Project***



Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	246	36	7	209	3	14	3	3	10	9	16
Future Vol, veh/h	17	246	36	7	209	3	14	3	3	10	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	83	83	83	38	38	38	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	300	44	8	252	4	37	8	8	11	10	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	344	0	0	648	636	322	642	656	254
Stage 1	-	-	-	-	-	-	364	364	-	270	270	-
Stage 2	-	-	-	-	-	-	284	272	-	372	386	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1309	-	-	1215	-	-	383	395	719	387	385	785
Stage 1	-	-	-	-	-	-	655	624	-	736	686	-
Stage 2	-	-	-	-	-	-	723	685	-	648	610	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1309	-	-	1215	-	-	358	384	719	369	374	785
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	384	-	369	374	-
Stage 1	-	-	-	-	-	-	642	612	-	721	681	-
Stage 2	-	-	-	-	-	-	690	680	-	620	598	-




Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	15.6	13
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	1309	-	-	1215	-	-	489
HCM Lane V/C Ratio	0.135	0.016	-	-	0.007	-	-	0.081
HCM Control Delay (s)	15.6	7.8	0	-	8	0	-	13
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3



Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	20	8	44
Future Vol, veh/h	0	0	2	20	8	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	50	40	85	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	4	50	9	88

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	111	53	97
Stage 1	53	-	-
Stage 2	58	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	886	1014	1496
Stage 1	970	-	-
Stage 2	965	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	883	1014	1496
Mov Cap-2 Maneuver	883	-	-
Stage 1	967	-	-
Stage 2	965	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1496	-	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	7.4	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection

Int Delay, s/veh 4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	14	1	0	8	8	0
Future Vol, veh/h	14	1	0	8	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	92	40	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	2	0	20	16	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	36	16	0
Stage 1	16	-	-
Stage 2	20	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	977	1063	0
Stage 1	1007	-	0
Stage 2	1003	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	977	1063	-
Mov Cap-2 Maneuver	977	-	-
Stage 1	1007	-	-
Stage 2	1003	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 982	-
HCM Lane V/C Ratio	- 0.031	-
HCM Control Delay (s)	- 8.8	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0.1	-

Intersection

Int Delay, s/veh 4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	6	3	2	1	0	3
Future Vol, veh/h	6	3	2	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	5	3	1	0	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	4	0	0 29 4
Stage 1	-	-	- - 4 -
Stage 2	-	-	- - 25 -
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	-	- - 986 1080
Stage 1	-	-	- - 1019 -
Stage 2	-	-	- - 998 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1618	-	- - 980 1080
Mov Cap-2 Maneuver	-	-	- - 980 -
Stage 1	-	-	- - 1013 -
Stage 2	-	-	- - 998 -

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1618	-	-	-	1080
HCM Lane V/C Ratio	0.006	-	-	-	0.006
HCM Control Delay (s)	7.2	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0




Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	234	14	3	183	8	70	18	16	18	2	18
Future Vol, veh/h	19	234	14	3	183	8	70	18	16	18	2	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	86	86	86	50	50	50	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	241	14	3	213	9	140	36	32	26	3	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	222	0	0	255	0	0	526	516	248	546	519	218
Stage 1	-	-	-	-	-	-	288	288	-	224	224	-
Stage 2	-	-	-	-	-	-	238	228	-	322	295	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1347	-	-	1310	-	-	462	463	791	448	461	822
Stage 1	-	-	-	-	-	-	720	674	-	779	718	-
Stage 2	-	-	-	-	-	-	765	715	-	690	669	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1347	-	-	1310	-	-	438	454	791	398	452	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	438	454	-	398	452	-
Stage 1	-	-	-	-	-	-	708	663	-	766	716	-
Stage 2	-	-	-	-	-	-	736	713	-	615	658	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	18.5	12.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	473	1347	-	-	1310	-	-	531
HCM Lane V/C Ratio	0.44	0.015	-	-	0.003	-	-	0.104
HCM Control Delay (s)	18.5	7.7	0	-	7.8	0	-	12.6
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.2	0	-	-	0	-	-	0.3



Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	104	9	10
Future Vol, veh/h	0	0	0	104	9	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	50	50	90	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	208	10	20

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	228	20	30	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	760	1058	1583	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	760	1058	1583	-	-	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1583	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	8.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	95	5	0	9	9	0
Future Vol, veh/h	95	5	0	9	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	92	32	90	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	190	10	0	28	10	0




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	38	10	0
Stage 1	10	-	-
Stage 2	28	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	974	1071	0
Stage 1	1013	-	0
Stage 2	995	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	974	1071	-
Mov Cap-2 Maneuver	974	-	-
Stage 1	1013	-	-
Stage 2	995	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 978	-
HCM Lane V/C Ratio	- 0.204	-
HCM Control Delay (s)	- 9.6	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0.8	-

Intersection

Int Delay, s/veh 6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	1	2	8
Future Vol, veh/h	2	1	1	1	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	38	38	50	50	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	3	2	2	5	19

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	4	0	0 16 3
Stage 1	-	-	- 3 -
Stage 2	-	-	- 13 -
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	-	- 1002 1081
Stage 1	-	-	- 1020 -
Stage 2	-	-	- 1010 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1618	-	- 999 1081
Mov Cap-2 Maneuver	-	-	- 999 -
Stage 1	-	-	- 1017 -
Stage 2	-	-	- 1010 -

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1618	-	-	-	1064
HCM Lane V/C Ratio	0.003	-	-	-	0.022
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

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***Intersection Capacity Worksheets:  
2024 Background + Project***

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Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	20	270	40	7	230	5	15	7	7	10	12	20
Future Vol, veh/h	20	270	40	7	230	5	15	7	7	10	12	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	83	83	83	38	38	38	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	329	49	8	277	6	39	18	18	11	14	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	283	0	0	378	0	0	717	701	354	716	722	280
Stage 1	-	-	-	-	-	-	402	402	-	296	296	-
Stage 2	-	-	-	-	-	-	315	299	-	420	426	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1279	-	-	1180	-	-	345	363	690	345	353	759
Stage 1	-	-	-	-	-	-	625	600	-	712	668	-
Stage 2	-	-	-	-	-	-	696	666	-	611	586	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1279	-	-	1180	-	-	317	351	690	315	342	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	351	-	315	342	-
Stage 1	-	-	-	-	-	-	610	586	-	695	663	-
Stage 2	-	-	-	-	-	-	656	661	-	562	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	17	13.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	1279	-	-	1180	-	-	451
HCM Lane V/C Ratio	0.204	0.019	-	-	0.007	-	-	0.106
HCM Control Delay (s)	17	7.9	0	-	8.1	0	-	13.9
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.4






Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	29	15	44
Future Vol, veh/h	0	0	2	29	15	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	50	40	85	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	4	73	18	88

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	143	62	106	0	-	0
Stage 1	62	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	850	1003	1485	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	847	1003	1485	-	-	-
Mov Cap-2 Maneuver	847	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	942	-	-	-	-	-




Approach	EB	NB	SB
HCM Control Delay, s	0	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1485	-	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	7.4	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	1	0	17	15	0
Future Vol, veh/h	14	1	0	17	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	92	40	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	2	0	43	30	0
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	73	30	-	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	931	1044	0	-	-	0
Stage 1	993	-	0	-	-	0
Stage 2	979	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	931	1044	-	-	-	-
Mov Cap-2 Maneuver	931	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT EBLn1		SBT			
Capacity (veh/h)	-		938		-	
HCM Lane V/C Ratio	-		0.032		-	
HCM Control Delay (s)	-		9		-	
HCM Lane LOS	-		A		-	
HCM 95th %tile Q(veh)	-		0.1		-	

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	5	5	5	0	6
Future Vol, veh/h	7	5	5	5	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	9	7	7	0	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	14	0	0 44 11
Stage 1	-	-	- 11 -
Stage 2	-	-	- 33 -
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	-	- 967 1070
Stage 1	-	-	- 1012 -
Stage 2	-	-	- 989 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1604	-	- 959 1070
Mov Cap-2 Maneuver	-	-	- 959 -
Stage 1	-	-	- 1004 -
Stage 2	-	-	- 989 -

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1604	-	-	-	1070
HCM Lane V/C Ratio	0.008	-	-	-	0.011
HCM Control Delay (s)	7.3	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	20	260	16	7	200	10	70	20	20	20	2	20
Future Vol, veh/h	20	260	16	7	200	10	70	20	20	20	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	86	86	86	50	50	50	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	268	16	8	233	12	140	40	40	29	3	29




Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	284	0	0	589	579	276	613	581	239
Stage 1	-	-	-	-	-	-	318	318	-	255	255	-
Stage 2	-	-	-	-	-	-	271	261	-	358	326	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1321	-	-	1278	-	-	420	426	763	405	425	800
Stage 1	-	-	-	-	-	-	693	654	-	749	696	-
Stage 2	-	-	-	-	-	-	735	692	-	660	648	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1321	-	-	1278	-	-	395	415	763	349	414	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	415	-	349	414	-
Stage 1	-	-	-	-	-	-	680	642	-	735	691	-
Stage 2	-	-	-	-	-	-	700	687	-	575	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	21.3	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	437	1321	-	-	1278	-	-	482
HCM Lane V/C Ratio	0.503	0.016	-	-	0.006	-	-	0.126
HCM Control Delay (s)	21.3	7.8	0	-	7.8	0	-	13.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.8	0	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	110	15	10
Future Vol, veh/h	0	0	0	110	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	50	50	90	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	220	17	20

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	247	27	37
Stage 1	27	-	-
Stage 2	220	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	741	1048	1574
Stage 1	996	-	-
Stage 2	817	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	741	1048	1574
Mov Cap-2 Maneuver	741	-	-
Stage 1	996	-	-
Stage 2	817	-	-




Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1574	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Intersection

Int Delay, s/veh 7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	5	0	15	15	0
Future Vol, veh/h	95	5	0	15	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	92	32	90	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	190	10	0	47	17	0




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	64	17	0
Stage 1	17	-	-
Stage 2	47	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	942	1062	0
Stage 1	1006	-	0
Stage 2	975	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	942	1062	-
Mov Cap-2 Maneuver	942	-	-
Stage 1	1006	-	-
Stage 2	975	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 947	-
HCM Lane V/C Ratio	- 0.211	-
HCM Control Delay (s)	- 9.8	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0.8	-

Intersection

Int Delay, s/veh 4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	5	5	6	9
Future Vol, veh/h	5	5	5	5	6	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	38	38	50	50	42	42
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	10	10	14	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	20	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1596	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1596	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1596	-	-	-	1014
HCM Lane V/C Ratio	0.008	-	-	-	0.035
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



# Final Drainage Report

## Chavez Arena

(JN: 19034)

Adams County, CO

14747 Harvest Road  
Brighton, CO 80603

July 19, 2019

Prepared for:

### Chavez Family

14747 Harvest Road  
Brighton, CO 80603

Prepared by:

### Proof Civil

Jason DeYoung, PE  
800 W. 8<sup>th</sup> Ave, Ste. 104  
Denver, CO 80204  
303.325.5709

## **Certification**

### **ENGINEER CERTIFICATION OF DRAINAGE REPORT**

I hereby certify that this report (plan) for the Final Drainage design of Chavez Arena was prepared by me or under my direct supervision in accordance with the provisions of Adams County Storm Drainage Design and Technical Criteria for the owners thereof. I understand that Adams County does not and will not assume liability for drainage facilities designed by others.

---

Date

---

Jason DeYoung, PE  
Registered Professional Engineer  
State of Colorado PE No. 45332  
For and on behalf of Proof Civil Co.

### **DEVELOPER CERTIFICATION OF DRAINAGE FACILITIES**

Ana Chavez hereby certifies that the drainage facilities for Chavez Arena shall be constructed according to the design presented in this report. I understand that Adams County does not and will not assume liability for the drainage facilities designed and/ or certified by my engineer. I understand that Adams County reviews drainage plans pursuant to Colorado Revised Statutes Title 30, Article 28; but cannot, on behalf of Ana Chavez, guarantee that final drainage design review will absolve Ana Chavez and/ or their successors and/ or assigns the future liability for improper design. I further understand that approval of the Final Plat and/ or Final Development Plan does not imply approval of my engineer's drainage design."

---

Date

---

Name of Developer (please print)

---

Authorized Signature

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## **I. Introduction**

This final drainage report for Chavez Arena will address the on-site stormwater conveyance and treatment for the development in accordance with criteria set forth by Adams County as well as previously approved relevant drainage studies.

## **II. General Location and Description**

### **A. Project Location**

The proposed project is located between East 144<sup>th</sup> Avenue and East 152<sup>nd</sup> Avenue on the west side of Harvest Road, with an address of 14747 Harvest Road in unincorporated Adams County. The property is located within Section 18, Township 1 south, Range 65 west of the 6<sup>th</sup> P.M., County of Adams, State of Colorado. Residential and agricultural uses surround the project site.

### **B. Project Description**

The subject property contains approximately 46.5 acres of land on both the east and west side of the Denver Hudson Canal, which bisects the property. The portion of the property west of the Denver Hudson Canal is undeveloped, will remain undeveloped during this project, and will not be considered in this report. The portion of the property east of the Canal is comprised of approximately 11 acres, and has been previously developed with a 3,885 square foot footprint residential home, an ancillary 6,600 shop building, a 52,300 sf arena, associated landscaping, gravel driveways, and parking areas.

### **C. Floodplain Information**

According to FEMA Flood Insurance Rate Map Panel #08001C0355H, revised March 5, 2007, the subject site is located within flood hazard area Zone X. Zone X is defined as area outside the 0.2-percent-chance (or 500-year) flood. Refer to Appendix A for the applicable FEMA flood map.

### **D. Soils Description**

According to the United States Department of Agriculture Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey, onsite soils are identified as Ascalon Sandy Loam and Vona loamy sand and are classified as Hydrologic Soil Groups B and A. Group A is sand, loamy sand or sandy loam types of soils. It has low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission. Group B is silt loam or loam. It has a moderate infiltration rate when thoroughly wetted and consists chiefly or moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures.

## **III. Historic Drainage**

### **A. Existing Drainage Pattern**

The site generally drains from east to west at a general slope of 1.4%. Flows are historically conveyed toward the Denver Hudson Canal, and are partially discharged into the ditch. Remaining flows are transferred offsite into the neighboring property. The site is covered by the previously mentioned improvements and dryland grasses.

### **B. Existing Basins**

The existing site was analyzed as a single basin described as follows:

**a. Basin EX-1**

The existing site generally drains from east to west, ultimately discharging partially to the Denver Hudson Canal and partially to the neighboring property to the south.

**IV. Drainage Criteria**

**A. Regulation**

Methods described in the UDFCD Urban Storm Drainage Criteria Manual and in the Adams County Storm Drainage Design and Stormwater Quality Regulations were used for the drainage design of the Site.

**B. Drainage Studies, Outfall Systems Plans and Site Constraints**

There are no known master drainage studies or outfall systems plans which address this site.

The site grading was constrained by existing grades of surrounding improvements adjacent to the site.

**C. Hydrology**

The Rational Method analysis, utilizing the Intensity-Duration-Frequency curves established for Adams County were used to determine the on-site runoff generated for the 5-year (minor), and 100-year (major) storm events. Runoff coefficients were based on the type of proposed development outlined in the UDFCD manual. Runoff coefficients used in the analysis were weighted according to the existing and proposed land uses in each basin or sub-basin and the time of concentration values have been calculated for each of the basins or sub-basins per Adams County criteria. Detention storage has been calculated using point rainfall estimates for the 100-year and 500-year storm events, and field collected infiltration rate data. Hydrologic calculations can be found in Appendix B.

**D. Hydraulics**

Conveyance of on-site generated and tributary off-site flows has been calculated using Manning's equation in accordance with the UDFCD Urban Storm Drainage Criteria Manual and the Adams County Criteria.

**V. Drainage Design**

**A. General Concept**

Proposed on-site drainage design will generally follow historical drainage patterns. Runoff will generally sheet flow the western boundary of the site. However, rather than being discharged into the Denver Hudson Canal, flows will be captured in an infiltration pond located in the southwest corner of the subject site where runoff will percolate into the proposed pond bottom.

**B. Proposed Drainage Basins**

The improved site is divided into drainage sub-basins described as follows:

**a. Basin A1**

Basin A-1 consists of the northern portion of the arena building and proximate undeveloped dryland grass area. Runoff generated from this basin will be conveyed via a property line swale along the northern edge of the property where flows will enter the proposed western property swale at design point 1. The basin will have an imperviousness of 56% and will generate runoff rates of 1.33 cfs and 4.41 cfs for the 5-year and 100-year events, respectively.

**b. Basin A<sub>2</sub>**

Basin A-2 consists of the southern portion of the arena building, a majority of the existing house, associated hardscape and dryland grass area. Runoff generated from this basin will sheet flow to the west and be conveyed via swale into the proposed infiltration pond at design point 2. The basin will have an imperviousness of 34% and will generate runoff rates of 1.84 cfs and 9.00 cfs for the 5-year and 100-year events, respectively.

**c. Basin A<sub>3</sub>**

Basin A-3 consists of the southern portion of the site, including the existing shop building, undeveloped area, and the proposed infiltration pond. Runoff generated from this basin will be conveyed via sheet flow directly to the proposed infiltration pond. The basin will have an imperviousness of 14% and will generate runoff rates of 1.09 cfs and 11.87 cfs for the 5-year and 100-year events, respectively.

**d. Basin B<sub>1</sub>**

Basin B-1 consists of the northeastern portion of the site, consisting largely of undeveloped area covered with dryland grasses. Runoff generated from this basin will not be disturbed as a part of this project and will maintain historic drainage patterns to the northeast corner of the site and ultimately to the neighboring property to the north. The basin will have an imperviousness of 6% and will generate runoff rates of 0.16 cfs and 3.99 cfs for the 5-year and 100-year events, respectively.

**C. Storage and Water Quality Treatment**

As the Denver Hudson Canal barricades the natural drainage pattern of the relatively flat existing site, conventional methods of detention and release are not feasible for the site. In order to prevent discharge of stormwater into the Canal, site drainage will be directed to a proposed infiltration pond. To prevent any overflow from the infiltration pond to the Denver Hudson Canal, the pond has been sized to contain the entire 500-year runoff event (see Appendix C for site basin characteristics) with a pond capacity of 2.3 acre-ft.

The surface infiltration rate of 0.29 in/hr. determined via borehole infiltration testing in the pond area has been used to determine the overall infiltration rate of the pond. Given the proposed pond bottom area, the pond will infiltrate 97% the 100-year event runoff within 54.11 hours, complying the state regulation of 72 hours or less. Similarly, the pond will infiltrate 99% of the 100-year event runoff volume within 55.23 hours, in compliance with the state regulation of 120 hours or less. See Appendix D for pond volume and infiltration calculations.

Water quality will be provided by the infiltration pond as well. A 6" layer of gravel will be installed across the pond bottom to capture silt and sediment of runoff from the site. Upon siltation or sedimentation, the gravel will be removed and either washed and reapplied or replaced. This process will be repeated as necessary.

**D. Floodplain Impact and Management**

The site is not located with a mapped floodplain.

**E. Groundwater Management**

The proposed infiltration pond will be installed above the groundwater table and no groundwater issues are anticipated as part of this project.

## **VI. Conclusion**

### **A. Compliance with Standards**

This report presents the description and calculations for the drainage analysis and design of Chavez Arena. The drainage system was designed in accordance with the Adams County Storm Drainage Design and Stormwater Quality Regulations and the UDFCD Urban Storm Drain Criteria Manual. The pond has been designed to comply with state regulations regarding infiltration/release rates.

### **B. Variances from Criteria**

No variances from applicable criteria are being requested as a part of this drainage design.

## **VII. References**

(2016, June). *Urban Storm Drainage Criteria Manual Volumes 1, 2, and 3*. Urban Drainage and Flood Control District.



- 
- APPENDIX A – MAPS AND SITE DESCRIPTIONS

## 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 to landward of 0.2 North American Vertical Datum of 1988 (NAVD 88). Users of the 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 the 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 the 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 1955 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  
SSM-C-3, #6022  
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) 713-3342, or visit a website at <http://www.ngs.noaa.gov/>.

**Base map** information shown on this FIRM was provided by the Adams County and Commerce City GIS departments. The coordinate system used for the production of the digital FIRM is Universal Transverse Mercator, Zone 13N, referenced to North American Datum of 1983 and the GRS 80 spheroid, Western Hemisphere.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the **Flood Profiles and Floodway Data** tables in the **Flood Insurance Study** report which contain authoritative hydraulic data may reflect stream channel distances that differ from what is shown on this map.

**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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 tables containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a **Flood Insurance Study** report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

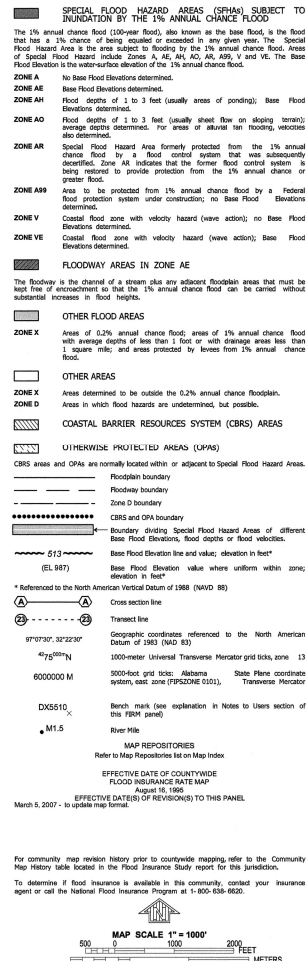
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2677) or visit the FEMA website at <http://www.fema.gov/>.

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 agreement of mutual management to reduce the costs associated with flooding. As part of the effort, both the State of Colorado and the Urban Drainage and Flood Control District have joined in Cooperative Technical Partner agreements with FEMA to produce this digital FIRM.

Additional flood hazard information and resources are available from local communities, the Colorado Water Conservation Board, and the Urban Drainage and Flood Control District.



## LEGEND



## PANEL 0355H

## FIRM FLOOD INSURANCE RATE MAP ADAMS COUNTY, COLORADO AND INCORPORATED AREAS

**PANEL 355 OF 1150**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

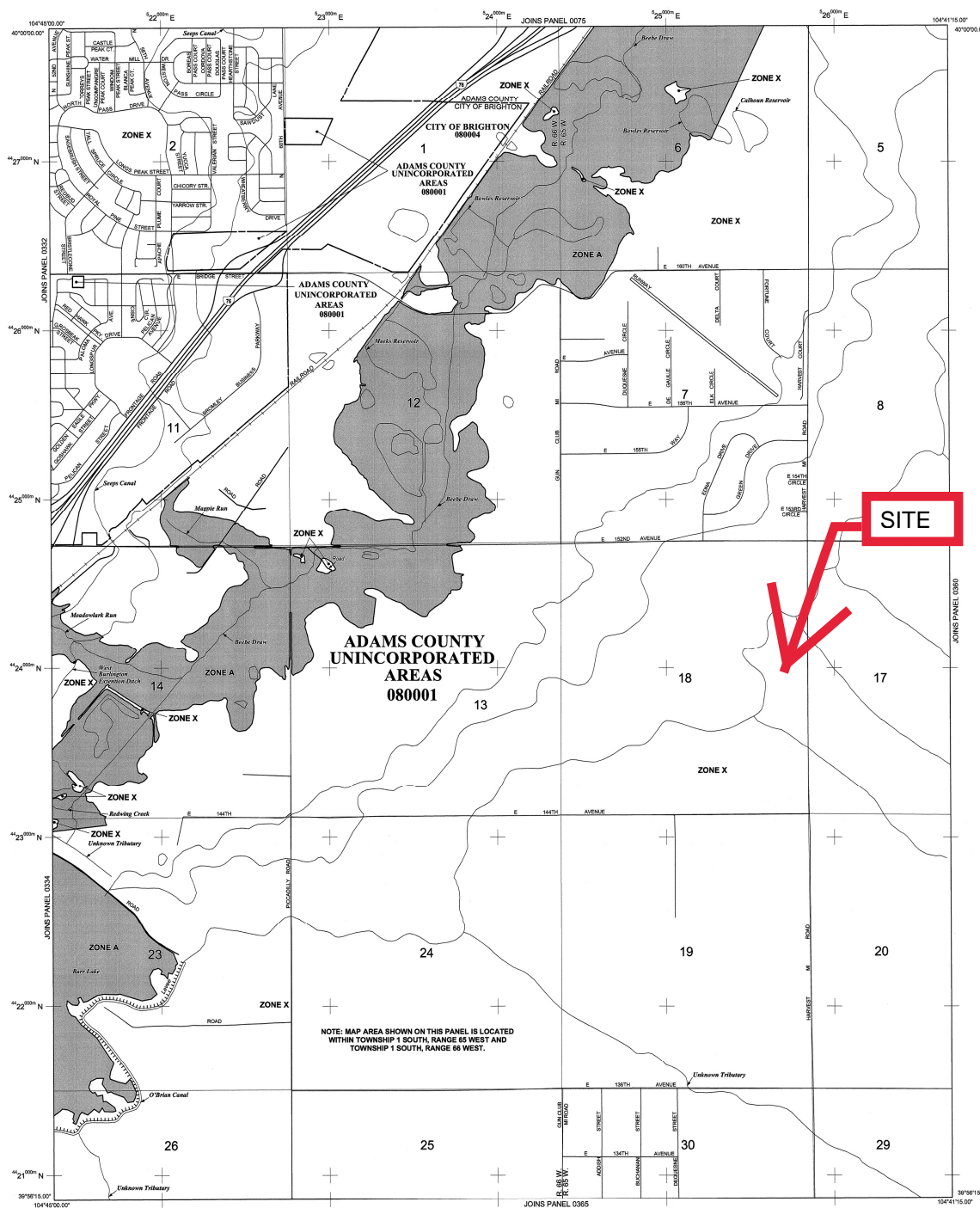
**CONTAINS:**

COMMUNITY	NUMBER	PANEL	SUFFIX
ADAMS COUNTY	080001	0355	H
BRIGHTON, CITY OF	080004	0355	H

Notice to User: The Map Number shown below should be used when checking map orders. The Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER 08001C0355H**  
**MAP REVISED MARCH 5, 2007**

Federal Emergency Management Agency




# Hydrologic Soil Group—Adams County Area, Parts of Adams and Denver Counties, Colorado (Chavez Arena)



# Hydrologic Soil Group—Adams County Area, Parts of Adams and Denver Counties, Colorado (Chavez Arena)

## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points



 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available


### 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 15, Sep 13, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 17, 2015—Oct 2, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AsB	Ascalon sandy loam, 0 to 3 percent slopes	B	11.8	91.2%
VnB	Vona loamy sand, 0 to 3 percent slopes	A	0.3	2.5%
VnD	Vona loamy sand, 3 to 9 percent slopes	A	0.8	6.2%
<b>Totals for Area of Interest</b>			<b>12.9</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

- 
- APPENDIX B – HYDROLOGIC CALCUATIONS

Project : Chavez Arena  
 Project No. : 19034

Date : 7/18/2019  
 By : JGD

## Drainage Basin Imperviousness (Proposed Condition)

Soil Type : **B**

	Roof	Concrete	Asphalt	Landscape	Playground	Gravel	Undeveloped						
Imperviousness :	90%	90%	100%	2%	10%	40%	2%						
Basin Name	Areas (sq.ft.)							Total Area (sq.ft.)	Composite % Imp.	Runoff Coefficients			
										C <sub>2</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>100</sub>
Existing Site	62,335	5,510				68,841	345,523	482,209	20%	0.13	0.15	0.22	0.52
A1	23,631						14,724	38,355	56%	0.43	0.46	0.51	0.69
A2	33,311	4,287					66,202	103,800	34%	0.24	0.26	0.33	0.59
A3	6,685	844				60,747	182,012	250,288	14%	0.08	0.10	0.17	0.49
B1		379				9,125	81,554	91,058	6%	0.03	0.04	0.11	0.46
Proposed Site	62,335	5,510				69,872	344,492	482,209	20%	0.13	0.15	0.22	0.52

### SF2 - Time of Concentration (Proposed Condition)

Basin ID	Area (AC.)	C <sub>s</sub>	Initial/Overland Time			Travel Time					Time of Concentration		Final
			L <sub>i</sub> (ft.)	S (%)	T <sub>i</sub> (min.)	L <sub>t</sub> (ft.)	S (%)	Conveyance Factor	Vel (fps)	T <sub>t</sub> (min.)	Comp. T <sub>c</sub> (min.)	Regional T <sub>c</sub> (Min.)	T <sub>c</sub> (Min.)
A1	0.88	0.46	55	5.00	5.0	407	2.5	15	2.4	2.9	7.9	19.0	7.9
A2	2.38	0.26	55	5.00	6.6	480	1.6	15	1.9	4.2	10.8	24.8	10.8
A3	5.75	0.10	412	1.40	32.8	206	2.0	15	2.1	1.6	34.4	25.9	25.9
B1	2.09	0.04	500	0.40	57.8	60	1.0	10	1.0	1.0	58.8	26.0	26.0

- 
- APPENDIX C – HYDRAULIC CALCULATIONS

Project : Chavez Arena  
Project No. : 19034

Date : 7/18/2019  
By : JGD

### SF3 - Minor Storm (Proposed Condition)

1-hr Point Rainfall **1.11** in. (5-year Event)

Description	Design Point	Direct Runoff						Total Runoff				Street		Travel Time			Comments
		Area (ac.)	C <sub>s</sub>	Tc (min.)	CA (ac.)	I (in/hr)	Q (cfs)	Tc (min.)	CA (ac.)	I (in/hr)	Q (cfs)	Slope (%)	Flow (cfs)	Length (ft)	Vel. (fps)	tt (min.)	
A1	1	0.88	0.46	7.9	0.4	3.28	1.33					0.6	1.33	348.0	1.5	3.7	
A2	2	2.38	0.26	10.8	0.6	2.91	1.84	14.5	1.0	2.6	2.7						
A3		5.75	0.10	25.9	0.6	1.90	1.09										
B1		2.09	0.04	26.0	0.1	1.89	0.16										



Project : Chavez Arena  
Project No. : 19034

Date : 7/18/2019  
By : JGD

### SF3 - Major Storm (Proposed Condition)

1-hr Point Rainfall **2.46** in. (100-year Event)

Description	Design Point	Direct Runoff						Total Runoff				Street		Travel Time			Comments
		Area (ac.)	C <sub>100</sub>	Tc (min.)	CA (ac.)	I (in/hr)	Q (cfs)	Tc (min.)	CA (ac.)	I (in/hr)	Q (cfs)	Slope (%)	Flow (cfs)	Length (ft)	Vel. (fps)	tt (min.)	
A1	1	0.88	0.69	7.9	0.6	7.26	4.41					0.6	4.41	348.0	1.5	3.7	
A2	2	2.38	0.59	10.8	1.4	6.46	9.00	14.5	2.0	5.7	11.3						
A3		5.75	0.49	25.9	2.8	4.21	11.87										
B1		2.09	0.46	26.0	1.0	4.20	3.99										

- APPENDIX D – STORAGE AND WATER QUALITY CALCULATIONS



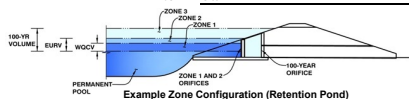
## DETENTION BASIN STAGE-STORAGE TABLE BUILDER

UD-Detention, Version 3.07 (February 2017)

---

Project: Chavez Arena

Basin ID: Site



Required Volume Calculation	
Selected BMP Type =	RP
Watershed Area =	11.07 acres
Watershed Length =	792 ft
Watershed Slope =	0.014 ft/ft
Watershed Imperviousness =	20.00% percent
Percentage Hydrologic Soil Group A =	8.8% percent
Percentage Hydrologic Soil Group B =	91.2% percent
Percentage Hydrologic Soil Groups C/D =	0.0% percent
Desired WQCV Drain Time =	12.0 hours
Location for 1-hr Rainfall Depth =	D.I.A.
Water Quality Capture Volume (WQCV) =	0.085 acre-feet
Excess Urban Runoff Volume (EURV) =	0.218 acre-feet
2-yr Runoff Volume (P1 = 0.85 in.) =	0.113 acre-feet
5-yr Runoff Volume (P1 = 1.13 in.) =	0.175 acre-feet
10-yr Runoff Volume (P1 = 1.39 in.) =	0.313 acre-feet
25-yr Runoff Volume (P1 = 1.8 in.) =	0.690 acre-feet
50-yr Runoff Volume (P1 = 2.15 in.) =	0.968 acre-feet
100-yr Runoff Volume (P1 = 2.53 in.) =	1.345 acre-feet
500-yr Runoff Volume (P1 = 3.55 in.) =	2.249 acre-feet
Approximate 2-yr Detention Volume =	0.106 acre-feet
Approximate 5-yr Detention Volume =	0.164 acre-feet
Approximate 10-yr Detention Volume =	0.276 acre-feet
Approximate 25-yr Detention Volume =	0.388 acre-feet
Approximate 50-yr Detention Volume =	0.439 acre-feet
Approximate 100-yr Detention Volume =	0.570 acre-feet

[illegible]

Select Zone 1 Storage Volume (Required) =		acre-feet
Select Zone 2 Storage Volume (Optional) =		acre-feet
Select Zone 3 Storage Volume (Optional) =		acre-feet
Total Detention Basin Volume =		
Initial Surcharge Volume (ISV) =	N/A	ft <sup>3</sup>
Initial Surcharge Depth (ISD) =	N/A	ft
Total Available Detention Depth (H <sub>av</sub> ) =	N/A	ft
Depth of Trickle Channel (H <sub>TC</sub> ) =	N/A	ft
Slope of Trickle Channel (S <sub>TC</sub> ) =	N/A	ft/ft
Slopes of Main Basin Sides (S <sub>mb</sub> ) =		H:V
Basin Length-to-Width Ratio (R <sub>mb</sub> ) =		
Initial Surcharge Area (A <sub>sv</sub> ) =		ft <sup>2</sup>
Surcharge Volume Length (L <sub>sv</sub> ) =		ft
Surcharge Volume Width (W <sub>sv</sub> ) =		ft
Depth of Basin Floor (H <sub>mbf</sub> ) =		ft
Length of Basin Floor (L <sub>mbf</sub> ) =		ft
Width of Basin Floor (W <sub>mbf</sub> ) =		ft
Area of Basin Floor (A <sub>mbf</sub> ) =		ft <sup>2</sup>
Volume of Basin Floor (V <sub>mbf</sub> ) =		ft <sup>3</sup>
Depth of Main Basin (H <sub>mb</sub> ) =		ft
Length of Main Basin (L <sub>mb</sub> ) =		ft
Width of Main Basin (W <sub>mb</sub> ) =		ft
Area of Main Basin (A <sub>mb</sub> ) =		ft <sup>2</sup>
Volume of Main Basin (V <sub>mb</sub> ) =		ft <sup>3</sup>
Calculated Total Basin Volume (V <sub>tb</sub> ) =		acre-feet

[illegible]

Project : Chavez Arena  
Project No. : 19034

Calculated By : JGD  
Date : 7/19/2019

#### Basin Information

Tributary Area =	11.07	acres
Basin Imperviousness =	20.0%	
Soil Type =	B	
100-yr, 1-hour Point Rainfall =	2.46	inches

### Pond Volume by Contour Area

Contour Elevation	Areas (sq.ft.)	Area (Acre)	Volume (ft <sup>3</sup> )	Cumulative Volume (ac-ft)
5093	43,456	1.00	0	0.00
5094	49,835	1.14	46,609	1.07
5095	58,617	1.35	100,776	2.31

### Pond Infiltration

Infiltration Rate from Water Infiltration Investigation:	0.29 in/hr
100 year Runoff Volume (from UDFCD Basin Sheet):	58,588 cu. ft.
Pond Bottom Area:	43,456 sf
Full Pond Infiltration Rate:	1,050.2 cu. ft./hr
Time to Infiltrate 97% of 100-Year Runoff Volume:	54.11 hr
Time to Infiltrate 99% of 100-Year Runoff Volume:	55.23 hr

- APPENDIX D – PAGES FROM WATER INFILTRATION INVESTIGATION (BY OTHERS)



**WATER INFILTRATION**  
**INVESTIGATION®**

**14747 Harvest Road  
Adams County, Colorado  
80603**

**Prepared Exclusively For:**

**Mr. Pedro Chavez  
Chavez & Sons  
14747 Harvest Road  
Brighton, Colorado  
80603**



**ATEST, Inc. Project Number 39,030-P**

**June 28, 2019**

**ATEST, Inc.**

**P.O. Box 632121 • Highlands Ranch, Colorado 80163 • (303) 887-2782**



## 4.0 ENGINEERING ANALYSIS AND DESIGN

### 4.1 Discussion of Results

The depth to groundwater and the depth of a suitable infiltrative zone permits the use of a detention pond area. The slope of the ground (almost one (0.95%) percent sloping to the west by west-southwest) is suitable for a detention pond to intercept and reduce overland flow off-site.

#### 4.1.1 Soil / Groundwater Interaction (composite information):

The following information combines the soil and groundwater data into a composite cross section matching soil data and types, groundwater infiltration and hydraulic conductivity rates into a profile for use across the southwest portion of the site.

##### Southwestern area:

- **Top four (4) feet (unsaturated zone)(4.081) feet deep at the time of initial drilling:**

Percent passing #200 = 34.1%

Soil type: silty clayey sand (SC-SM)

Infiltration rates:

P-1 @ 5' deep =	0.25 inches per hour,
P-2 @ 4' deep =	0.25 inches per hour, and
P-3 @ 3' deep =	<u>0.38 inches per hour</u>
Average =	0.29 inches per hour.

- **From four (4) to eleven (11) feet deep (saturated zone):**

Percent passing #200 = 32.5 %

Soil type: = silty clayey sand (SC-SM)

Nat moist / density = 112.4 lb./cu.ft. @ 13.0 % moisture

Atterbergs: LL = 23.8% PL = 16.9% PI = 6.9%

Specific Gravity (G) = 2.570

Void ratio (e) = 42.66%

Porosity (n) = 29.90%

Saturation (S) = 78.58%

Hydraulic conductivity (K) =  $9.247 \times 10^{-6}$  feet per minute.

- **From eleven (11) to fifteen-and-a-half (15.5) feet deep (saturated zone):**

Percent passing #200 = 35.3 %

Soil type: = clayey sand (SC-CL)

Nat moist / density = 106.2 lb./cu.ft. @ 18.4 % moisture

Atterbergs: LL = 31.9% PL = 15.2% PI = 16.8%

Specific Gravity (G) = 2.620

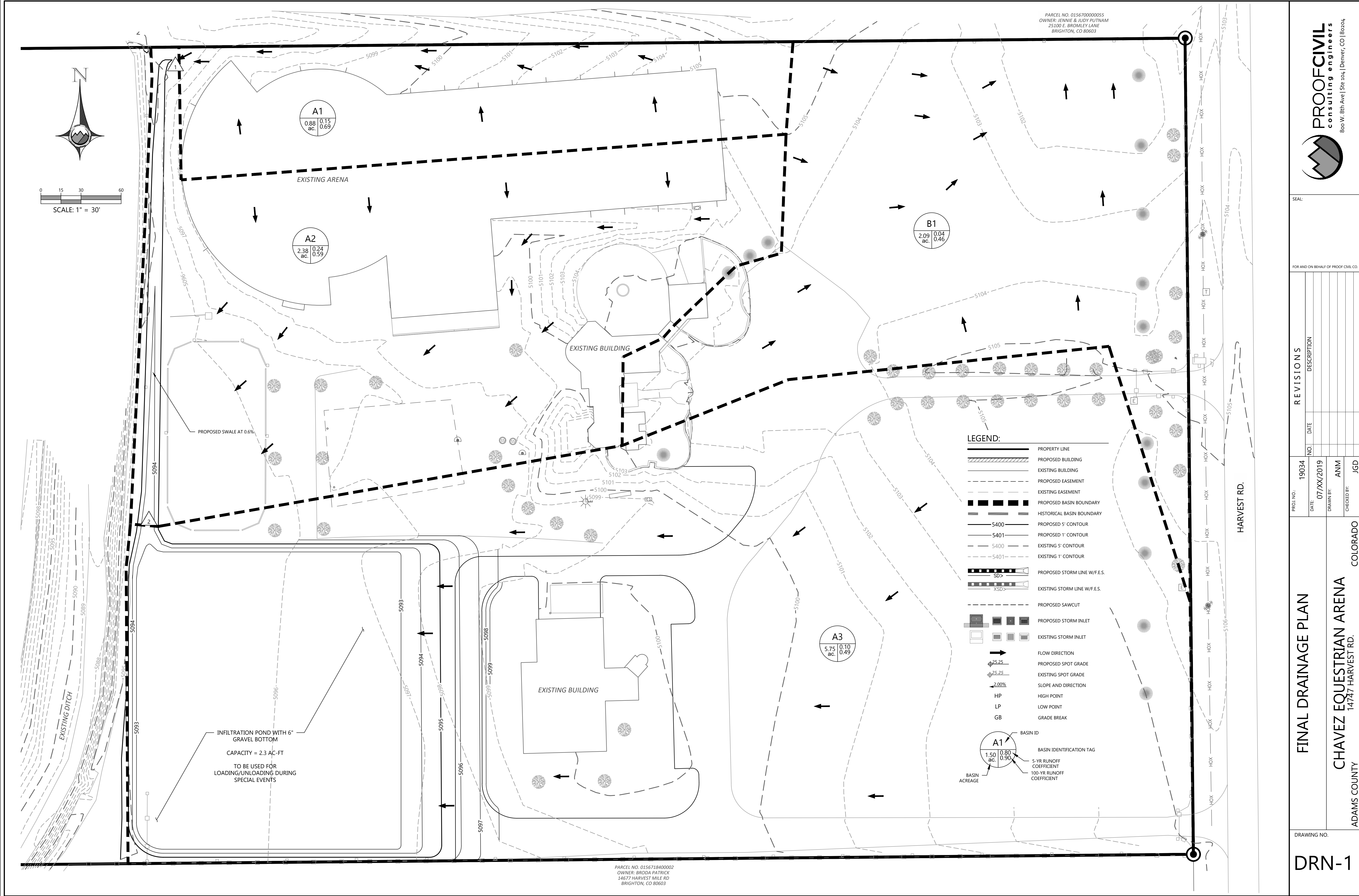
Void ratio (e) = 53.91 %

Porosity (n) = 35.03 %

Saturation (S) = 89.45 %

Hydraulic conductivity (K) =  $6.943 \times 10^{-5}$  feet per minute

- APPENDIX E – DRAINAGE PLAN



PROOFcivil  
consulting engineers  
800 W. 8th Ave | Ste 404 | Denver, CO 80204

SEAL:

FOR AND ON BEHALF OF PROOF CIVIL CO.

REVISIONS

NO.	DATE	DESCRIPTION
1	07/XX/2019	ANM
2		JGD

FINAL DRAINAGE PLAN

CHAVEZ EQUESTRIAN ARENA  
14747 HARVEST RD.

ADAMS COUNTY  
COLORADO

DRAWING NO.

DRN-1

# NOTICE OF NEIGHBORHOOD MEETING

This notice is to inform you of an upcoming opportunity to participate in a neighborhood meeting for a CUP (Conditional Use Permit) within Adams County.

---

**PROPERTY LOCATION:** Chavez Arena  
14747 Harvest Road, Brighton, Colorado

**APPLICATION SUMMARY:** The Chavezes have built an Equestrian Arena and are in process of applying for a Conditional Use Permit (CUP) with Adams County which, if approved, would allow them to use their Arena for weekly equestrian training, primarily on Fridays and Saturdays, for small groups between twenty and forty people. Although the number of riders and kids participating in the training each week is anticipated to be up to around twenty at a time, weekly training sessions may include parents, siblings, and friends that could exceed the twenty-person limit allowed under the personal use designation by Adams County. In addition, the CUP, if approved, would allow the Chavezes to hold a limited number of special rodeo/equestrian events. There would be no more than seven such special events per year, with no more than one special event per month, beginning in May through October, and one in December. A safe environment is a primary commitment of the Chavez family for all future functions and events at the arena and surrounding grounds. Traffic management and parking will be managed by attendants provided by the Chavez family. Special events to include security and fire safety, according to Adams County guidelines and CUP approval requirements.

**MEETING INFORMATION:**  
DATE: Tuesday, March 5, 2019  
LOCATION: Chavez Arena  
14747 Harvest Road, Brighton, Colorado  
TIME: 6:00 pm – 6:30 pm Arena Tour  
6:30 pm – 8:00 pm Open house with a short presentation, discussion, then questions and answers.

**PROJECT REPRESENTATIVES:**  
NAME: Jonathan Slie  
Miller & Law, PC  
PHONE NUMBER: (303) 722 – 6500  
EMAIL ADDRESS: jrs@millerandlaw.com  
  
NAME: David Brehm  
PlanWest, Inc  
PHONE NUMBER: (303) 741 – 1411  
EMAIL ADDRESS: dbrehm@planwest.com

---

During the meeting the Owners, Pedro and Ana Chavez, and project representatives, Jonathan Slie and David Brehm, will present the proposed Chavez Arena CUP to the audience. A graphic representation of the proposal, project fact sheet, and/or detailed handouts regarding specific details of the CUP may be provided for audience review and discussion.

Audience members will be given an opportunity to ask questions and provide comment regarding the proposed project.

Please feel free to contact Jonathan Slie with any questions regarding the Chavez Arena CUP meeting.

---



## **CHAVEZ ARENA**

11111 Harvest Road  
Brighton, Colorado, 80001

## **EQUESTRIAN ARENA -- PRIVATE CONDITIONAL USE PERMIT**

### **AGENDA**

Neighborhood Meeting  
March 5, 2019

---

To share the intent and details of the proposed extended  
private use of the Chavez arena

and

To solicit input from the neighbors on the program and  
Conditional Use Permit

---

### **6:00 PM INTRODUCTIONS AND TOUR OF THE CHAVEZ ARENA**

Pedro and Ana Chavez - Hosts

Nathan Slie - Land Use Attorney, project representative  
Miller & La LLC

David Brehm - Land Planner, Landscape Architect  
Plan West Inc, project representative

### **6:30 PM OPEN HOUSE AND PRESENTATION**

Ana and Pedro Chavez

Nathan Slie - Content Process

David Brehm - Site Plans, Conditions and Commitments

### **6:45 PM QUESTIONS AND DISCUSSION**

Neighbors

### **8:00 TO 8:30 PM CONCLUSION AND SUMMARY**

---





## CHAVEZ ARENA

14747 Harvest Road  
Brighton, Colorado, 80603

### EQUESTRIAN ARENA -- PRIVATE CONDITIONAL USE PERMIT

Neighborhood Meeting  
March 5, 2019

#### INTENT

Request a Conditional Use Permit to allow the Chavez family to expand the private use of their equestrian arena to extended family and friends. The primary objective is to offer the use of the arena for instruction and practice of a variety of equestrian techniques and to host a limited number of special equestrian events. The Chavez family is committed to provide a safe environment for all participants and guests.

***The arena is not proposed to be for hire or for rent for commercial use.***

The following outline and conditions are submitted as an advance copy of the official application to Adams County. The intent will remain the same. The details for safe operation of the events may be refined subject to input and discussion with the neighbors, the County staff, referral agencies, Planning Commission, and County Commissioners.

---

The Conditional Use Permit is for the following:

- **WEEKLY EQUESTRIAN TRAINING AND PRACTICE SESSIONS**
  - Primarily on Fridays and Saturdays, by invitation only
  - Typically, training sessions are limited to 20 to 25 guests. Some sessions may include parents, siblings, and friends that may include up to 50 people
- **SPECIAL EQUESTRIAN OR RODEO EVENTS – 7 PER YEAR**
  - One Saturday per month from May through October and one Saturday in December
  - guests by invitation only
  - No more than 300 guests with a maximum of 400 people including support staff

---

#### COMMITMENTS AND CONDITIONS OF THE CONDITIONAL USE PERMIT

The Chavez family has taken great effort to prepare conditionals and commitments as part of the Conditional Use Permit Application to help assure the proposed extended private use of the arena does not have offensive impacts to their neighbors and surrounding properties.

##### **ACCESS, CIRCULATION, AND PARKING**

- Traffic management and parking will be managed by attendants staffed by the Chavez family.
- Parking areas and traffic lanes will be designated with traffic cones, ropes, flags, and other visually defining markers
- Separate areas will be defined for passenger vehicles, horses, and animal trailers, fire lanes, the dedicated entrance and exit, food trucks, picnic area, portable toilets, and emergency vehicle parking and circulation. Circulation will be maintained during the event to help assure safe conditions for the guests and animals.
- Special events – From 8:00 AM to 10:00 PM, not including the loading and unloading of horses and staging of the event activities. Events will be scheduled to end no later than 9:00 PM to provide all guests ample time to exit the property by 10:00 PM so as not to disturb the neighbors along Harvest Road.

##### **SECURITY**

- Special equestrian and rodeos and events will be managed in collaboration with the Adams County Sheriff's Office. Confirmation of invitations, parking, and traffic control may include volunteers or hired assistance.
- Access to the premises will be controlled at one entry location on Harvest Road. The secondary access point will be dedicated as exit-only during special events to help avoid traffic congestion.



---

### **FOOD AND CONCESSIONS**

- The arena does not include kitchen facilities
- Training and riding sessions do not include food services
- Special events may include the following food and alcohol services:
  - Personal food and alcohol brought to the arena and grounds by the invited guests
  - Food truck(s) by invitation, limited to no more than three (3) independent vendors
  - Catering food service that may include on-site food preparation and serving by volunteers or catering
  - Alcoholic beverage and bar service may be provided and will be monitored and controlled by qualified volunteers or paid servers.

### **RESTROOM FACILITIES**

- Special Events will contract for portable toilets with a private vendor
- One (1) portable toilet will be provided per 100 people. Handicap portable toilets will be provided as required.

### **WASTE DISPOSAL SERVICES**

- Waste disposal services for Rodeos and Special events will be provided by a contracted and licensed vendor. Waste disposal bins will be dispersed throughout the property to help assure no offensive impacts related to waste
- All waste, including but not limited to paper products, cups, bottles, cans, and other material will be collected from the site and adjacent to Harvest Road by 4:00 PM the day following a special event.

### **TWO SITE PLANS**

- The Daily Use Site Plan for training and practice session includes no special provisions for visitors. The site will function as a typical daily operation for similar properties in the area. Access will be controlled at the existing electronic gate on Harvest Road
- The Rodeo and Special Events Site Plan includes circulation and parking for passenger vehicles, horse trailers, emergency vehicles, food trucks, catering and picnic areas, staging of portable toilets, and other information to help define and control the activities of special events.
  - Changes to the site plan will be submitted and coordinated with Adams County

### **TRAFFIC CONTROL FROM HARVEST ROAD:**

- The limited use of the arena does not anticipate negative impacts to traffic along Harvest Road. A traffic analysis and report will be prepared to identify potential impacts and make recommendation to help assure access and traffic flow on Harvest Road is maintained.

---

### **NEXT STEPS**

- A formal application will be submitted to Adams County Planning Department
- The formal submittal will be routed to various departments in the County including but not limited to the County Sheriff's Office, Fire, Engineering, Traffic departments for comment and clarification
- Once the referral comments are received, the Chavez team will work with the various departments to resolve potential conflicts to help assure the plans and commitments will provide a safe environment and not have a negative impact on the surrounding area.
- Public Hearings:
  - Adams County Planning Commission
  - Adams County Board of County Commissioners
- Request for approval of the Conditional Use Permit and schedule the first Special Equestrian Rodeo Event

---

### **FOR MORE INFORMATION**

Jonathan Slie  
Miller & Law, PC  
303-722-6500  
[jrs@millerandlaw.com](mailto:jrs@millerandlaw.com)

David Brehm  
Plan West Inc.  
303-741-1411  
[dbrehm@planwest.com](mailto:dbrehm@planwest.com)

---



## CHAVEZ ARENA

8888 Harvest Road  
Brighton, Colorado, 80020

### EQUESTRIAN ARENA – PRIVATE PROPOSED CONDITIONAL USE PERMIT

Neighborhood Meeting

#### Meeting Summary and Meeting Notes

March 5, 2019

---

#### Meeting Summary and Notes:

- Notice of the meeting was sent to the eleven adjacent property owners within 1,000 feet of the Chavez property. See the notification map and list.
- The meeting was held in the garage/ancillary building south of the Chavez main residence.
- The presentation started with a tour of the arena including the stalls where the resident and visiting horses are kept and groomed. The tour included the arena. Ana and Pedro Chavez provided the background for the arena and their intent to hold private equestrian training and limited events over the course of the year.
- An informational handout was distributed to the visitors.
- Nathan Slie, and David Brehm presented the intent of the proposed use of the arena and conditions and limitations of the proposed training sessions and monthly special events.

#### Questions and Discussion:

- Most of the questions revolved around the process in the County, will there be public hearings, will the public have an opportunity to testify and give feedback to the County officials?

##### Answers – Public Process:

- Yes, there will be two public hearings. One with the Planning Commission and a public hearing with the County Commissioners. The adjacent neighbors will be mailed hearing notification. The general public will be notified by signs and publish notice in a local newspaper. The public will be given the opportunity to ask questions and provide testimony regarding the proposed Conditional Use Permit.
- What is the best way to share our support for the proposed uses of the arena?

##### Answers

- We suggested they share their support with their neighbors and encourage their neighbors to support the CUP.
- Once the formal submittal of the CUP has been accepted by the County staff, residents are encouraged to write a letter or email to staff with all questions, concerns, and support if they are in favor of the proposed uses and operations.
- Will people be allowed to park their vehicle for an event on Harvest Drive?

##### Answers

- No Parking on Harvest. There will be signs and enforcement. Attendance will be limited to invited guests and parking will be in a controlled area on the Chavez property.

## 9) Trash:

- The conditions of the permit include picking up trash along Harvest Road no later than the day after the event
- **Discussion:** The neighbors felt the Chaves should not be required to pick up trash dumped on the side of the road by other people. They found a dead calf that appeared to be dumped. Disposing the dead calf and when dumped by outsiders should not be the responsibility of the Chave event.

## Closing Discussion:

- The discussion included a comment level the special events should not be commercial and open to the and limited to invitation only. The attendance felt the events should be interesting and educational. They expressed significant support for the CIP and that the Chave family should have a right to use their property and their arena.
- The people at the meeting were assured they would be notified of any future meetings and hearings. They were encouraged to contact Nathan Slie or David Brehm if they had any questions.

---

End of Meeting Notes

Chaven Arena

March 5, 2019

Neighborhood Meeting

TENDEES:

Pedro Chaven  
Jonathan Slie  
David Brehm

Sign in

Name	Address	Phone - email Contact
David Brehm	767 Santa Fe Drive Denver CO	3.741.1411 d.brehm@ planwest.com
David Martinez	14333 Harvest Gl. Brighton CO	(720) 212-5718 ddavidm@yahoo.com
Scott Martin Jill Woskisch	14920 Harvest Brighton, CO. 80603	602.885-9997 h202liv@msn.com
Jonathan Slie	1900 W Littleton Blvd Littleton CO 80120	303.722.6500



## CHAVEZ ARENA

Harvest Road  
Brighton, Colorado

## EQUESTRIAN ARENA -- PRIVATE CONDITIONAL USE PERMIT

### SIGN-IN SHEET

Neighborhood Meeting  
March 3, 2019

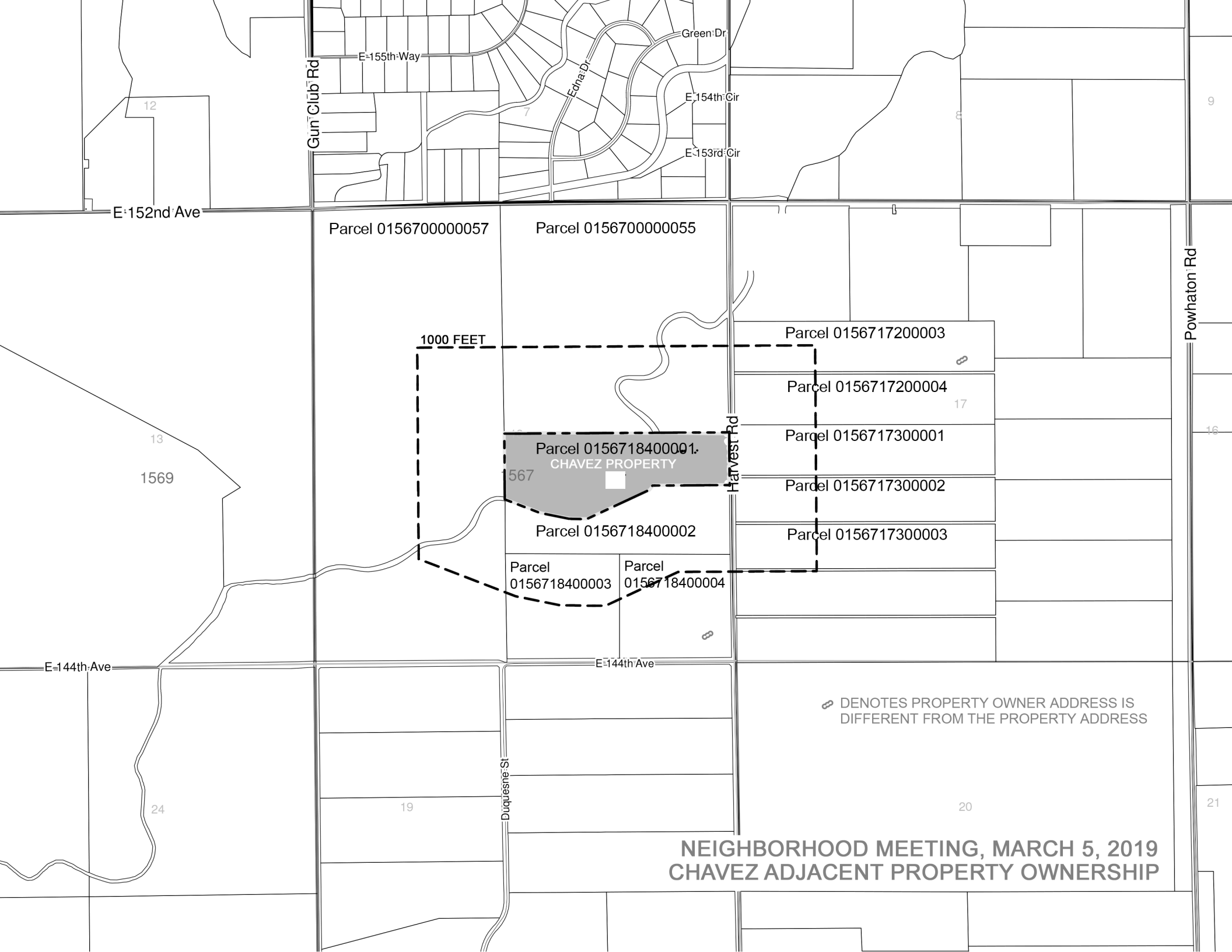
To share the intent and details of the proposed extended  
private use of the Chavez arena

and

To solicit input from the neighbors on the program and  
Conditional Use Permit

NAME	ADDRESS	PHONE	EMAIL
<input type="checkbox"/> Ana Chavez	Harvest Rd Brighton CO		<a href="mailto:ana.chavez@a.com">ana.chavez@a.com</a>
<input type="checkbox"/> Pedro Chavez	Harvest Rd Brighton CO		<a href="mailto:ana.chavez@a.com">ana.chavez@a.com</a>
<input type="checkbox"/> David Martine	Harvest Rd Brighton CO		<a href="mailto:ddaviddm@yahoo.com">ddaviddm@yahoo.com</a>
<input type="checkbox"/> Scott Martin	Harvest Rd Brighton CO		<a href="mailto:holliv@msn.com">holliv@msn.com</a>
<input type="checkbox"/> Bill Nishisch	Harvest Rd Brighton CO		<a href="mailto:holliv@msn.com">holliv@msn.com</a>
<input type="checkbox"/> Jonathan Slie	Miller La, PC W Littleton Blvd Littleton CO		<a href="mailto:rs@millerandla.com">rs@millerandla.com</a>
<input type="checkbox"/> David Brehm	Plan West Inc Santa Fe Dr Denver CO		<a href="mailto:dbrehm@planwest.com">dbrehm@planwest.com</a>

J:\2018-37 Chavez Arena\Reports\Neighborhood Meeting\Sign-In Sheet Neighborhood Meeting 03-05-19



NEIGHBORHOOD MEETING, MARCH 5, 2019  
CHAVEZ ADJACENT PROPERTY OWNERSHIP



## CHAVEZ ARENA ADJACENT PROPERTY – NEIGHBORHOOD NOTIFICATION

---

Parcel #0156700000055

Parcel Address: 25100 E BROMLEY LN

Owner:

Owner Name: **PUTNAM JENNIE LEE AND PUTNAM JUDY A**

Owner Address: 25100 E BROMLEY LN, BRIGHTON CO 80603

Parcel #0156700000057

Parcel Address: 23880 E 152ND AVE

Owner:

Owner Name: **SMITH GAIL L TRUST**

Owner Address: 23880 E 152ND AVE, BRIGHTON CO 80603

Parcel #0156717200003

Parcel Address: 14920 HARVEST RD

Owner:

Owner Name: **MARTIN F SCOTT**

Owner Address: 10301 E 107TH PL, BRIGHTON CO 80601-7142

Parcel #0156717200004

Parcel Address: 14880 HARVEST RD

Owner:

Owner Name: **ROSS TRACY A AND ROSS VICKY A**

Owner Address: 14880 HARVEST MILE RD, BRIGHTON CO 80603-5806

Parcel #0156717300001

Parcel Address: 14820 HARVEST RD

Owner:

Owner Name: **MEDINA NICOLAS**

Owner Address: 14820 HARVEST RD, BRIGHTON CO 80603-5806

Parcel #0156717300002

Parcel Address: 14770 HARVEST RD

Owner:

Owner Name: **MCDONALD TAYLOR JERRY AND MCDONALD CHRISTINE SCOTT**

Owner Address: 14770 HARVEST RD, BRIGHTON CO 80603-5806

Parcel #0156717300003

Parcel Address: 14660 HARVEST RD

Owner:

Owner Name: **TORRES VIANEY L HERNANDEZ AND GONZALEZ FRANCISCO I**

Parcel #0156718400002

Parcel Address: 14677 HARVEST RD

Owner:

Owner Name: **BRODA PATRICK**

Owner Address: 14677 HARVEST MILE RD, BRIGHTON CO 80603

Parcel #0156718400003

Parcel Address:

Owner:

Owner Name: **DS LLC**

Owner Address: 2 OSPREY CIR, THORNTON CO 80241-4104

Parcel #0156718400004

Parcel Address: 14505 HARVEST RD

Owner:

Owner Name: **BASULTO RAMON GALLEGOS AND GALLEGOS EDUVIGES RIVERA  
DE**

Owner Address: 13656 MADISON STREET, THORNTON CO 80602

7017 3040 0000 5727 2922

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage

\$

Total Tracy A Ross

\$

Sent Vicky A Ross

\$

Street

City, State, ZIP

5806

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2939

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage

\$

Total Post Nicolas Medina

\$

Sent To

14820 HARVEST RD, BRIGHTON CO 80603

5806

Street and Apt.

City, State, ZIP

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2946

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage

\$

Total Post Jerry Taylor McDonald

\$

Sent To

14770 HARVEST RD, BRIGHTON CO 80603

5806

Street and Apt.

City, State, ZIP

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2892

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage

\$

Total Postage

\$

Sent To

Jennie Lee Putnam

Judy A. Putnam

25100 E Bromley Ln

Brighton, CO 80603

City, State, ZIP

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2908

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage

\$

Total Postage

\$

Sent To

Gail L Smith Trust

23880 E 152ND AVE, BRIGHTON CO

80603

Street and Apt.

City, State, ZIP

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2915

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage

\$

Total Postage

\$

Sent To

Martin F Scott

10301 E 107TH PL, BRIGHTON CO 80601-

7142

Street and Apt.

City, State, ZIP

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7018 0360 0000 6623 2596

U.S. Postal Service<sup>TM</sup>  
**CERTIFIED MAIL<sup>®</sup> RECEIPT**  
 Domestic Mail Only

20

For delivery information, visit our website at [www.usps.com](http://www.usps.com).

**OFFICIAL USE**

Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- ☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

\$

Total Post

Ramon Gallegos Basulto

Sent To

Eduviges Rivera Gallegos

Street and

13656 Madison Street

City, State,

Thornton, CO 80602

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2953

U.S. Postal Service<sup>TM</sup>  
**CERTIFIED MAIL<sup>®</sup> RECEIPT**  
 Domestic Mail Only

10

For delivery information, visit our website at [www.usps.com](http://www.usps.com).

**OFFICIAL USE**

Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- ☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

\$

Total Post

Vianey L Hernandez Torres

Sent To

Francisco I Gonzales

Street and

14660 HARVEST RD, BRIGHTON CO 80602

City, State,

5806

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7017 3040 0000 5727 2960

U.S. Postal Service<sup>TM</sup>  
**CERTIFIED MAIL<sup>®</sup> RECEIPT**  
 Domestic Mail Only

18

For delivery information, visit our website at [www.usps.com](http://www.usps.com).

**OFFICIAL USE**

Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- ☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

\$

Total Postage

Patrick Broda

14677 Harvest Mile Rd

Sent To

Brighton, CO 80603

Street and Ap

City, State, Zi

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7018 0360 0000 6623 2589

U.S. Postal Service<sup>TM</sup>  
**CERTIFIED MAIL<sup>®</sup> RECEIPT**  
 Domestic Mail Only

19

For delivery information, visit our website at [www.usps.com](http://www.usps.com).

**OFFICIAL USE**

Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- ☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

\$

Total F

DS LLC

Sent To

2 Osprey Circle

Street

Thornton, CO 80241-4104

City, S.

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Jennie Lee Putnam  
Judy A. Putnam  
25100 E Bromley Ln  
Brighton, CO 80603



9590 9402 4700 8323 5799 74

## 2. Article Number (Transfer from service label)

7017 3040 0000 5727 2892

PS Form 3811, July 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent☐ Addressee

## B. Received by (Printed Name)

JENNIE BALDWIN

## C. Date of Delivery

2-26-19

## D. Is delivery address different from item 1?

☐ Yes

If YES, enter delivery address below:

☒ No

FEB 26 2019

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)

☐ Priority Mail Express®☐ Registered Mail™☐ Registered Mail Restricted Delivery☒ Return Receipt for Merchandise☐ Signature Confirmation™☐ Signature Confirmation Restricted Delivery☒ Restricted Delivery

Domestic Return Receipt

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Gail L Smith Trust  
23880 E 152ND AVE, BRIGHTON CO  
80603



9590 9402 3786 8032 3494 58

## 2. Article Number (Transfer from service label)

7017 3040 0000 5727 2908

PS Form 3811, July 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent☐ Addressee

## B. Received by (Printed Name)

JANE SMITH

## C. Date of Delivery

2-26-19

## D. Is delivery address different from item 1?

☐ Yes

If YES, enter delivery address below:

☒ No

USPS

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)

☐ Priority Mail Express®☐ Registered Mail™☐ Registered Mail Restricted Delivery☒ Return Receipt for Merchandise☐ Signature Confirmation™☐ Signature Confirmation Restricted Delivery☒ Restricted Delivery

Domestic Return Receipt

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Martin F Scott  
10301 E 107TH PL, BRIGHTON CO 80601-7142



9590 9402 3786 8032 3494 41

## 2. Article Number (Transfer from service label)

7017 3040 0000 5727 2915

PS Form 3811, July 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent☐ Addressee

## B. Received by (Printed Name)

Martin F Scott

## C. Date of Delivery

2/25/19

## D. Is delivery address different from item 1?

☐ Yes

If YES, enter delivery address below:

☒ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)

☐ Priority Mail Express®☐ Registered Mail™☐ Registered Mail Restricted Delivery☒ Return Receipt for Merchandise☐ Signature Confirmation™☐ Signature Confirmation Restricted Delivery☒ Restricted Delivery

Domestic Return Receipt

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Tracy A Ross  
Vicky A Ross  
14880 HARVEST MILE RD, BRIGHTON CO  
5806



9590 9402 3786 8032 3494 34

## 2. Article Number (Transfer from service label)

7017 3040 0000 5727 2922

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent☐ Addressee

## B. Received by (Printed Name)

Tracy Ross

## C. Date of Delivery

8-26-19

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☒ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)

- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☒ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt



Miller & Law, P.C.  
1900 W. Littleton Blvd.  
Littleton, CO 80120

MAR 27 2019

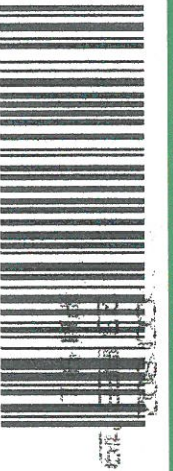
LN  
25-25

Miller & Law, P.C.  
1900 W. Littleton Blvd.  
Littleton, CO 80120

MAR 05 2019

NSP

CERTIFIED MAIL<sup>®</sup> POWER



7017 3040 0000 5727 2939

Nicolas Medina  
14820 HARVEST RD, BRIGHTON CO 80603  
5806

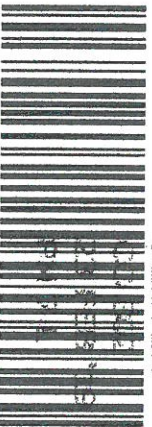
NEOPOST  
02/22/2019  
US POSTAGE \$006.80<sup>9</sup>  
ZIP 80120  
041L10404116

80603-5806  
80120-2023

NIXIE 000 DE 1 0003/20/19  
RETURN TO SENDER  
UNCLAIMED  
UNABLE TO FORWARD  
BC: 80120202300 \*1220-07508-23-41

CERTIFIED MAIL<sup>®</sup>

DENVER



7017 3040 0000 5727 2946

Jerry Taylor McDonald  
14770 HARVEST RD, BRIGHTON CO 80603  
5806

NEOPOST  
02/22/2019  
US POSTAGE \$006.80<sup>9</sup>  
FIRST-CLASS MAIL  
ZIP 80120  
041L10404116

80603-5806  
80120-2023

NIXIE 000 DE 1 0002/28/19  
RETURN TO SENDER  
NO SUCH NUMBER  
UNABLE TO FORWARD  
BC: 80120202300 \*1020-08890-23-41



**SENDER: COMPLETE THIS SECTION**

■ Complete items 1, 2, and 3.

■ Print your name and address on the reverse so that we can return the card to you.

■ Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Nicolas Medina  
14820 HARVEST RD, BRIGHTON CO 80601  
5806



9590 9402 3786 8032 3494 27

2. Article Number (Transfer from service label)

7017 3040 0000 5727 2939

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

☒ X

☐ Agent  
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☒ No

**3. Service Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input checked="" type="checkbox"/> Return Receipt for Merchandise  |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

Domestic Return Receipt

**SENDER: COMPLETE THIS SECTION**

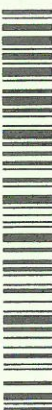
■ Complete items 1, 2, and 3.

■ Print your name and address on the reverse so that we can return the card to you.

■ Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Jerry Taylor McDonald  
14770 HARVEST RD, BRIGHTON CO 80601  
5806



9590 9402 3786 8032 3494 10

2. Article Number (Transfer from service label)

7017 3040 0000 5727 2946

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

☒ X

☐ Agent  
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☒ No

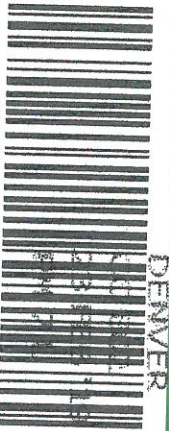
**3. Service Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input checked="" type="checkbox"/> Return Receipt for Merchandise  |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

Domestic Return Receipt

Miller & Law, P.C.  
1900 W. Littleton Blvd.  
Littleton, CO 80120

MAR 27 2019



7017 3040 0000 5727 2953

Vianey L Hernandez Torres  
Francisco I Gonzales  
14660 HARVEST RD, BRIGHTON CO 80603  
5806

NEOPOST  
02/22/2019  
US POSTAGE \$006.80



ZIP 80120  
041L10404116

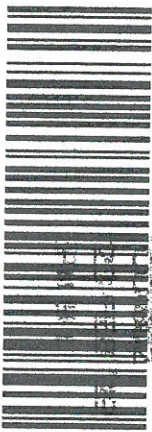
80603-5806  
80120>2023

BC: 80120202300

\*1820-08694-23-41

10

CERTIFIED MAIL®



7017 3040 0000 5727 2960

NEOPOST  
02/22/2019  
US POSTAGE \$006.80



ZIP 80120  
041L10404116

Miller & Law, P.C.  
1900 W. Littleton Blvd.  
Littleton, CO 80120

MAR 27 2019

Patrick Broda  
14677 Harvest Mile Rd  
Brighton, CO 80603

NEOPOST

02/22/2019

US POSTAGE \$006.80

RETURN TO SENDER  
UNCLAIMED  
UNABLE TO FORWARD

BC: 80120202300

\*1220-07490-23-41

18



UNIT DETACHED TO THE RIGHT OF THE RETURNED ADDRESS. FOLD AT DOTTED LINE. PLACE STICKER TO THE RIGHT OF THE RETURNED ADDRESS.

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**1. Article Addressed to:**

Vianey L Hernandez Torres  
Francisco I Gonzales  
14660 HARVEST RD, BRIGHTON CO 80603  
5806

9590 9402 3786 8032 3494 03



**2. Article Number (Transfer from service label)**

7017 3040 0000 5727 2953

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

**A. Signature**  
☒ Agent  
☐ Addressee

**B. Received by (Printed Name)**  
**C. Date of Delivery**

**D. Is delivery address different from item 1? If YES, enter delivery address below:** ☐ Yes ☒ No

**3. Service Type**

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☒ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**1. Article Addressed to:**

Patrick Broda  
14677 Harvest Mile Rd  
Brighton, CO 80603

9590 9402 3786 8032 3493 97



**2. Article Number (Transfer from service label)**

7017 3040 0000 5727 2960

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

**A. Signature**  
☒ Agent  
☐ Addressee

**B. Received by (Printed Name)**  
**C. Date of Delivery**

**D. Is delivery address different from item 1? If YES, enter delivery address below:** ☐ Yes ☒ No

**3. Service Type**

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☒ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

DS LLC

2 Osprey Circle

Thornton, CO 80241-4104



9590 9402 3786 8032 3493 80

2. Article Number (Transfer from service label)

1B 0360 0000 6623 2589

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

☒ Agent ☐ Addressee

B. Received by (Printed Name)

*Ramón Gallegos*

C. Date of Delivery

*2/25/19*

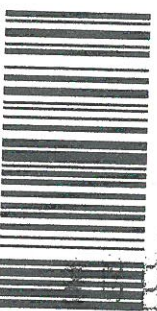
D. Is delivery address different from item 1? ☐ Yes ☒ No  
If YES, enter delivery address below:

3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restrict                   |
| <input checked="" type="checkbox"/> Certified Mail Restricted Delivery | <input checked="" type="checkbox"/> Return Receipt for Merchandise  |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

Domestic Return Receipt

CERTIFIED MAIL



701B 0360 0000 66

Miller & Law, P.C.  
1900 W. Littleton Blvd.  
Littleton, CO 80120

Ramon Gallegos Basuto  
Eduviges Rivera Gallegos  
13656 Madison Street  
Thornton, CO 80602

MAR 27 2019

80602-871235

8C: 11



First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10



**United States  
Postal Service**

• **Sender:** Please print your name, address, and ZIP+4® in this box •

Miller & Law, P.C.  
1900 W. Littleton Blvd.  
Littleton, CO 80120

FEB 27 2019

525

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ramen Gallegos Basulto  
Eduviges Rivera Gallegos  
13656 Madison Street  
Thornton, CO 80602



9590 9402 3786 8032 3493 73

**2. Article Number (Transfer from service label)**

7018 0360 0000 6623 2596

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE 1

**A. Signature**

X

B. Received t

**D. Is delivery :**  
**If YES, enter**

### 3. Service Type

- ☐ Adult Signature
  - ☐ Adult Signature I
  - ☐ Certified Mail®
  - ☐ Certified Mail Re
  - ☐ Collect on Deliv
  - ☐ Collect on Deliv
  - ☐ Insured Mail
  - ☐ Insured Mail Res
- (over \$500)



## CHAVEZ EQUESTRIAN ARENA – PERSONAL CONDITIONAL USE PERMIT

### 2-02-08-06 CRITERIA FOR APPROVAL

July 19, 2019

#### OVERVIEW

*The Chavez Equestrian Arena – Personal Conditional Use Permit allows for an opportunity to provide culturally unique equestrian events for Escaramuza Descendencia Charra riding, rodeos, and training in Adams County. A limited number of events, for a restricted number of invited family and friends, with controlled and regulated operations, will help assure a safe, on-site environment that will provide a positive addition to the community and have no negative impact on the neighborhood or surrounding area.*

#### CRITERIA FOR APPROVAL

**1. The conditional use is permitted in the applicable zone district.**

*The lot is zoned R-3. An Equestrian Arena, Personal (4-06-02-01-05) is a permitted use.*

**1. ACCESSORY STATUS:**

- *The arena is an accessory structure to the primary residence on the site.*

**2. CONSTRUCTION OF EQUESTRIAN ARENA, PERSONAL:**

- *The primary residence was constructed prior the construction of the arena.*

**3. NUMBER OF GUESTS:**

- *See REQUEST FOR A CONDITIONAL USE PERMIT to increase the number of guests for a limited number of special events per year.*

**4. CONDITIONAL USE PERMIT REQUIRED:**

**a. MORE THAN 20 PEOPLE:**

- *At times, more than 20 people will be present, including the Chavez family, invited guests, cowboys, riders, vendors, and support staff. See project narrative and CUP conditions.*

**b. MONETARY OR OTHER COMPENSATION IS COLLECTED OR EXCHANGED FOR ADMITTANCE OR PARTICIPATION:**

- *Guests are by invitation. No fees will be charged or collected. No monetary compensation will be offered to the participants*

**c. FOOD IS BOUGHT OR SOLD ON THE PREMISE:**

- *The CUP includes the ability to have limited food sales per special event. See project narrative and conditions.*

**d. ALCOHOL BOUGHT OR SOLD ON THE PREMISES:**

- *The applicant will continue to discuss with Adams County the regulations and permitting process to include the opportunity to offer alcoholic beverages at the special events.*

**e. LIVESTOCK IS BROUGHT TO THE SITE FROM A PROVIDER FOR THE PURPOSE OF HOSTING A RODEO:**

- *See project narrative and conditions. The CUP includes allowing a limited number of animals to be brought to the site from a provider for the special events.*



5. NO COMMERCIAL ACTIVITIES:

- No commercial competition or commercial entertainment, user fees, dues, or other compensation are permitted. The special events will have no fees, commercial competitions, or other compensation.

6. NO OFFENSIVE IMPACTS:

- The arena shall be operated in such a manner so that there is no adverse impact on surrounding properties relating to dust, erosion, odor, noise, glare, off-site illumination (more than one foot candle of illumination measure at the property line), waste disposal, traffic, or parking congestion. Neither a nuisance nor noxious activity shall be conducted on the property, which will be used as a personal equestrian arena.
- The CUP Commitments, Conditions, and Site Plans prescribe how the special events will have no adverse impacts on the surrounding area.
- The special events are limited to daylight hours. Additional illumination will not be required.
- All rodeo activities are programed to be inside the arena that will contain noise from rodeo events.
- Odor is not expected to be a factor to surrounding area.
- Dust and erosion will be controlled by the operations of the special events.
- A Traffic Report submitted with the CUP application concluded the limited number of special events will not have an adverse impact on the surrounding roadways.
- Parking will be on-site as delineated on the CUP site plan. The site provides ample space for safe vehicular circulation for guests, vendors, and emergency vehicles.
- Waste disposal and portable toilets will be provided by private vendors and maintained for each event for the safety and comfort of the invited guests.
- Nuisance and noxious activities will not be tolerated. Enforcement of the rules will be by volunteers and/or paid security.

2. The conditional use is consistent with the purposes of these standards and regulations.

*The CUP meets and exceeds the intent, standards, and regulations to provide a safe environment in Adams County and the surrounding community. The narrative outlines the intended use of the arena for family and invited guests to a limited number of special equestrian events per year. The Commitments and Conditions stipulate how the special events will operate to share the culturally unique Charrería and Escaramuza equestrian events in a safe, family- and community-friendly environment.*

3. The conditional use will comply with the requirements of these standards and regulations including, but not limited to, all applicable performance standards.

*The Commitments and Conditions address the requirements and applicable performance standards.*

4. The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. In making this determination, the Planning Commission and the Board of County Commissioners shall find, at a minimum, that the conditional use will not result in excessive traffic generation, noise, vibration, dust, glare, heat, smoke, fumes, gas, odors, or inappropriate hours of operation.

*The Commitments and Conditions prescribe how the operations for a given special event will provide a positive environment at a limited number of events per year.*

**5. The conditional use permit has addressed all off-site impacts.**

*The Traffic Study prepared for the proposed special events concluded there would be no adverse impact to the surrounding roadways. The conditions include collecting trash that may have been generated at the special event within a prescribed timeframe following each event to help assure no negative impacts to the surrounding community.*

**6. The site is suitable for the conditional use including adequate usable space, adequate access, and absence of environmental constraints.**

*The site has adequate usable space for the anticipated guests with ample overflow capacity. The drainage report prescribes how storm water will be managed in a safe condition and within acceptable requirements for detention and water quality.*

**7. The site plan for the proposed conditional use will provide the most convenient and functional use of the lot including the parking scheme, traffic circulation, open space, fencing, screening, landscaping, signage, and lighting.**

*The CUP site plan prescribes safe circulation patterns and parking for all vehicles, including passenger vehicles, livestock trailers, vendor trucks and equipment, and emergency vehicles. Existing fences and gates will be used to control ingress and egress to invited guests and traffic.*

**8. Sewer, water, storm water drainage, fire protection, police protection, and roads are to be available and adequate to serve the needs of the conditional use as designed and proposed.**

- *Sewer will be provided by portable toilets in accordance with industry standards for the number of guests.*
- *Water will be available from the on-site well and bottled water.*
- *Storm runoff will be managed in accordance with the drainage study submitted with the CUP application.*
- *Fire and emergency services will have clear and direct access to the arena. A parking area has been identified on the site plan for emergency vehicles.*
- *Police and security will be coordinated with the Adams County Sheriff's office.*
- *The Traffic Analysis submitted with the CUP concluded the limited number of special events and limited guests using the surrounding road will provide adequate safe access to and from the special events and not have an adverse impact to the existing roads.*



## CHAVEZ EQUESTRIAN ARENA – PERSONAL CONDITIONAL USE PERMIT

### Development Review Team Comments (PRE 2019-00039)

March and April 2019

#### ***Applicant response***

July 19, 2019

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#### Development Engineering, Greg Labrie

April 1, 2019

1. The site is not in a floodplain, a NRCO District.
2. An Environmental Assessment is not required.
3. County MS4 Stormwater permit area. The use of erosion and sediment control BMPs are expected.  
*Response: Design plans will show BMP for erosion and sediment control.*
4. Harvest Road is limited to one access.  
*Response: Two access drives were permitted and installed with the construction of the home in 2008. The second drive provides alternative access to the multiple structures on the site for emergency vehicles. The projected traffic on Harvest Road is not projected to create an unsafe condition on Harvest Road.*
5. Traffic – A Traffic Analysis is included in the submittal.
6. Drainage – A drainage report is included in the submittal.

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#### ROW Review, Marissa Hillje

April 1, 2019

1. Harvest Road should have a half right-of-way width of 60 feet. Current is 40 feet.  
*Response: The traffic study concluded the proposed use of the arena will have no negative impact on Harvest Road. Additional ROW is not required at this time*
2. Title Commitment is required.  
*Response: A Title Commitment is included in the submittal. There have been no changes to the property ownership since the date of the Title Policy. An updated Title will be provided prior to scheduling a public hearing.*
3. Plat was created by land survey plat deposit. Rec #2005-106.  
*Response: Acknowledged.*

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#### Building Safety Review, Justin Blair

March 27, 2019

1. Dependent upon the development standards and regulations and land use approval, there may be a trigger for a change of occupancy for this indoor arena from a U to Assembly Occupancy under the International Building Code.  
*Response: No changes to the arena have been made or are planned. The arena does not include permanent seating or living areas. The applicant believes the current occupancy and use are appropriate and no changes are necessary.*

**Planner Review, Greg Barnes**

**April 2, 2019**

1. A Conditional Use Permit (CUP) for a commercial Equestrian Arena (is required). The property is located in the A-3 District and is included in the Airport Height and Noise Overlay Districts.  
*Response: The proposed use meets the requirements of a CUP for Equestrian – Personal. The Airport Height or Noise Overlay do not apply to the private use of the Arena.*
2. Comprehensive Plan – Future Land Use designation of the property is Agriculture. The intent is for very low-density development and agricultural support.  
*Response: The 46.579-acre parcel was created for residential use allowed in the A-3 District. The Arena – Personal use is allowed in the A-3 zone district. The CUP requests minor modifications for Private use to allow a limited number of special events per year with a limited number of guests. The CUP application meets the criteria for approval.*
3. Development Standards and Regulations
  - a. A CUP requires discretionary review and approval by the Board of County Commissioners.  
*Response: Acknowledged. The owners and applicant understand public hearings will be held with the Planning Commission to obtain approvals from the Board of County Commissioners.*
  - b., c., and d. Outlines the schedule and process for hearings  
*Response: Acknowledged.*
  - e. The criteria for approval and possible conditions are listed in DSR 2-02-08, which generally include consistency with the regulations, compatibility with the surround area, and reduction of off-site impacts.  
*Response: The Site Plans and conditions of operations submitted with the application show there are no off-site impacts from the limited number of special events. The proposed use meets the County regulations for compatibility. The character and quality of the special equestrian events proposed will have no adverse impacts on the surrounding area.*
4. Performance Standards for Commercial equestrian arenas  
*Response: The arena is not proposed to be for commercial events. The CUP is for minor modifications to the permitted Equestrian – Personal operation of the arena. The standards for Personal Equestrian Arena are met with the submitted site plans and Conditions submitted with the CUP application.*
5. Criteria for Approval  
*Response: The applicant believes the Criteria for Approval have been met and exceeded. The number of invited guests is limited. People without an invitation will not be allowed to enter the site. No more than 290 guests and 70 participants and support staff (including organizers and vendors) will be admitted for any special event. The detailed Traffic Analysis concluded the special events scheduled for one Saturday per month from April to October, and one event in December, will have no negative impact on Harvest Road and the surrounding network of streets. The special equestrian events do not include activities or large numbers of people that would have an adverse negative impact on the surrounding neighbors and area.*

*The Commitments and Conditions of the Conditional Use Permit prescribes safe operations to help ensure the special events provide a healthy, safe environment for the Chavez family, guests and surrounding neighborhood.*

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Chavez Equestrian Arena, Personal -- Conditional Use Permit  
Development Review Team Comments

*Applicant Response*

July 19, 2019

Page 3 of 3

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**Environmental Analyst, Eden Steele**

**April 2, 2019**

1. The site is in the Airport Height Overlay (AHO) with restrictions in section 3-33 of the Adams County Development Standards and regulations.

*Response: Section 3-33 has been reviewed. The applicant believes the site, arena, and uses proposed by the CUP are within the prescribed regulations.*

2. Noise Reduction

*Response: The Arena does not include residential occupancy. The noise reduction requirements do not apply.*

3. Request for a signed Aircraft Activity Covenant with Disclosure must be signed prior to building permits.

*Response: The arena does not include habitable space or a request for new building construction. The applicant believes the Aircraft Activity Covenant with Disclosure does not apply to the request for a Conditional Use Permit.*

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COUNTY OF ADAMS  
4430 SOUTH ADAMS COUNTY PARKWAY  
1<sup>ST</sup> FLOOR, SUITE W2000B  
BRIGHTON, CO 80601

720-523-6825

BDL12-00205

JOB ADDRESS  
SECTION

PLEASE PRINT

1 JOB ADDRESS 14747 Harvest Rd		CITY Brighton		ZIP 80603
2 LEGAL DESCRIPTION: INCLUDE SUBDIVISION, FILING NO., BLOCK, LOT IF APPLICABLE				
3 OWNER Chavez Trust		LAST NAME FIRST NAME		PHONE # Home 3-655-0323 Cel 3-356-1282
4 SETBACKS FROM PROPERTY LINES N S 150' E 450' W				
5 ARCHITECT OR DESIGNER OR ENGINEER		MAIL ADDRESS		PHONE LICENSE NO.
6 CONTRACTOR HOME-OWNER		MAIL ADDRESS		PHONE REGISTRATION NO.
7 PLUMBING CONTRACTOR		MAIL ADDRESS		PHONE REGISTRATION NO.
8 USE OF BLDG OR IMPROVEMENT (IF CHANGE IN USE ATTACH DETAILED DESCRIPTION) CHECK ONE <input checked="" type="checkbox"/> RESIDENTIAL <input type="checkbox"/> COMMERCIAL				
9 CLASS OF WORK: <input checked="" type="checkbox"/> NEW <input type="checkbox"/> ADDITION <input type="checkbox"/> ALTERATION <input type="checkbox"/> REPAIR <input type="checkbox"/> MOVE <input type="checkbox"/> DEMOLISH <input type="checkbox"/> CHANGE IN USE				
10 DESCRIBE WORK: Barn 100' x 600'				
11 SPECIAL CONDITIONS: (FOR OFFICE USE ONLY) Barn not for commercial or industrial use or living quarters 18" CMP w/ FES Required - Permit & Inspection Must be Obtained from Construction Management Prior to C.O. Im 5/31/12 If disturbing > 1 acre, a COPS Stormwater Construction permit must be obtained AB 5-31-12				
12 VALUATION OF WORK: \$ (COST OF LABOR AND MATERIALS) \$35,000 54,081.10				

S. R.  
W. USE ZONE

TYPE OF HEATING FUEL:		TYPE OF CONST V-B		OCCUPANCY GROUP U	SIZE OF BLDG. (TOTAL) SQ. FT. 6009
TYPE OF SEWAGE DISPOSAL: <input type="checkbox"/> PUBLIC <input checked="" type="checkbox"/> PRIVATE		FIRE ZONE 6		NO. OF STORIES 1	MAX OCC. LOAD
TYPE OF WATER SUPPLY: <input type="checkbox"/> PUBLIC <input checked="" type="checkbox"/> PRIVATE		NO. OF DWELLING UNITS		NO. OF BEDROOMS	NO. OF BATHROOMS
		FIRE SPRINKLERS REQ YES NO		OFFSTREET PARKING SPACES COVERED UNCOVERED	
NOTICE: THIS PERMIT BECOMES NULL AND VOID IF WORK OR CONSTRUCTION AUTHORIZED IS NOT COMMENCED WITHIN 180 DAYS, OR IF CONSTRUCTION OR WORK IS SUSPENDED OR ABANDONED FOR A PERIOD OF 180 DAYS AT ANY TIME AFTER WORK IS COMMENCED.		SPECIAL APPROVALS		APPROVED	DENIED MEMO
WARNING: THE ISSUANCE OF THIS BUILDING PERMIT DOES NOT ABRIDGE, CANCEL OR AUTHORIZE VIOLATION OF PRIVATE RIGHTS, COVENANTS OR RESERVATIONS WHICH MAY BE ASSOCIATED WITH THE BUILDING SITE, NOR DOES THIS PERMIT CERTIFY COMPLIANCE WITH ANY APPLICABLE STATE OR FEDERAL LAWS.		ZONING REVIEW			5/14/12
I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE SAME TO BE TRUE AND CORRECT. ALL PROVISIONS OF LAWS AND REGULATION GOVERNING THIS TYPE OF WORK WILL BE COMPLIED WITH WHETHER SPECIFIED HEREIN OR NOT. THE GRANTING OF A PERMIT DOES NOT PRESUME OR GIVE AUTHORITY TO VIOLATE OR CANCEL THE PROVISIONS OF ANY OTHER STATE OR LOCAL LAW REGULATING CONSTRUCTION OR THE PERFORMANCE OF CONSTRUCTION		ENGINEERING			5.14.12
SIGNATURE OF CONTRACTOR OR AUTHORIZED AGENT Ana Charez		HEALTH DEPT.			
DATE: 5/04/12		FIRE DEPT.		Have letter	
SIGNATURE OF OWNER		STORM WATER		AB	5.31.12
		TRAFFIC IMPACT FEE			
		DOUBLE FEE			
		BUILDING PERMIT			
		PLAN CHECK FEE			
		CHECK #	CASH	TOTAL	622.00
		2109			

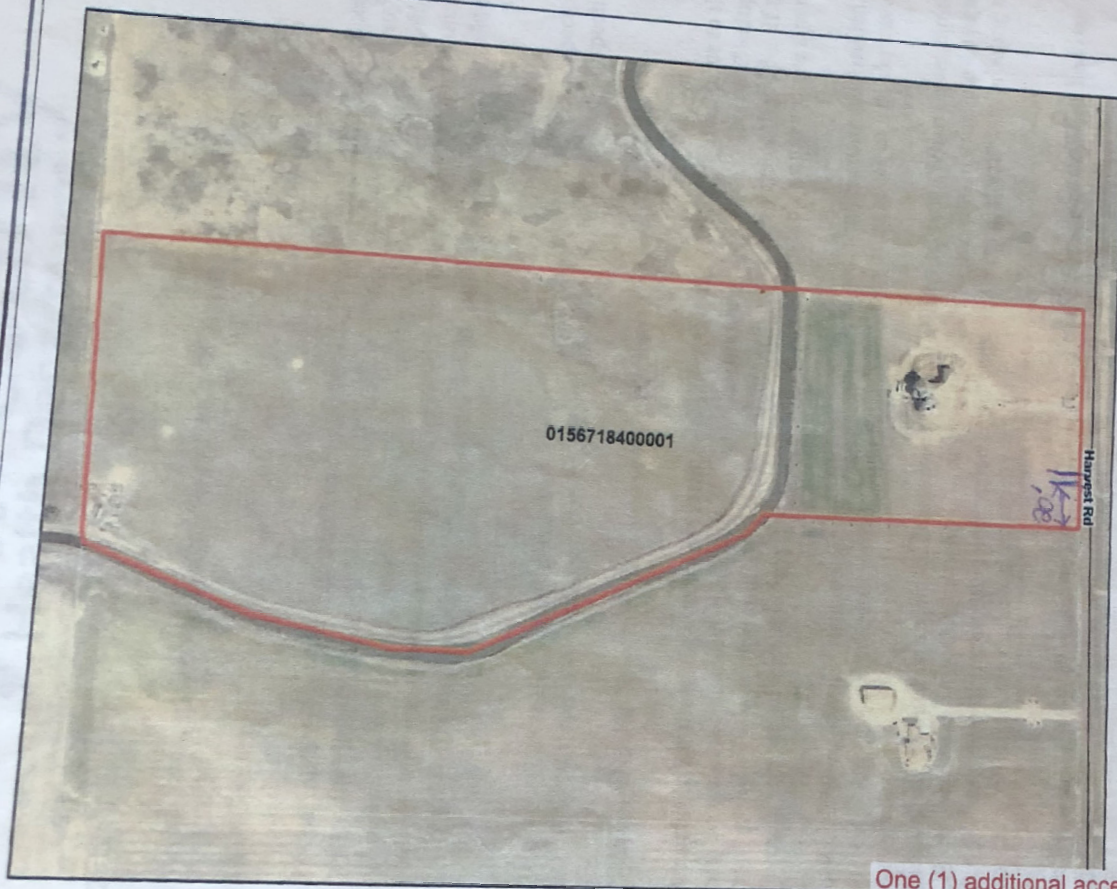
PERMIT VALIDATION  
APPROVED BY  
WHITE BUILDING DEPT

DATE: 9/14/12  
PERMIT NUMBER: BDL12-1548  
GOLDENROD ASSESSOR





14747 Harvest Rd



### Legend

- County Boundary
- Adjacent Counties
- Township
- Streets
- Hwy outline
- Road outline
- Interstates
- US, State Hwys
- Tollways
- Streets/Roads
- Residential Buildings
- Parcels
- 2010 West Aerials
- 2010 East Aerials

0 450 900 1350 ft.

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

One (1) additional access approved as shown

5/24/12