COLORADO
Department of Transportation
Region 5

Region 5 Traffic Section
3803 N. Main Ave. Suite 100
Durango, Colorado 81301

Permit No. **522008**

February 18, 2022

Alice K Platt
Mountain Crossing, LLC
19440 Charleswood Lane
Bend, Oregon 97702

Dear Permittee:

1. Please review the attached State Highway Access Permit (Form #101) and all enclosed attachments.
2. If you choose NOT to act on the permit, please return the permit unsigned.
3. If you wish to APPEAL the Terms and Conditions of the permit, please refer to the attached Form 101, Pages 2 and 3 for an explanation of the appeal procedures.
4. If you ACCEPT the Permit and its Terms and Conditions and are authorized to sign as legal owner of the property or as an authorized representative, please sign and date the Access Permit form on the line marked "PERMITTEE". Your signature confirms your agreement to all the listed Terms and Conditions.
5. Provide a check or money order made payable to CDOT for the total amount due of $300.00.
6. **You must return the signed Access Permit signature pages, including the permit face page (Form #101) and the final page of the terms and conditions, with your payment to the Colorado Department of Transportation (CDOT) at the address noted below. The Department will return an executed copy of this permit.**
7. If you fail to sign and return the attached Access Permit within 60 days of the date of this transmittal letter, Colorado Department of Transportation will consider this permit withdrawn.
8. **As described in the attached Terms and Conditions, you must make a written request to obtain a Notice to Proceed. DO NOT begin any work within the State Highway Right-of-Way without a validated Access Permit and Notice to Proceed. Use of this permit without the Colorado Department of Transportation's validation shall be considered a violation of State Law.**

If you have any questions, please call Randee Reider at (970) 385-3626.

Region 5 Traffic Section
3803 N. Main Ave. Suite 100
Durango, Colorado 81301

COLORADO DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ACCESS PERMIT

CDOT Permit No. **522008**

State Highway No / Mp / Side: 084A / 27.657 / Right

Permit Fee	Date of Transmittal	Region / Section / Patrol / Name	Local Jurisdiction
$300.00	02/18/2022	5 / 03 / 07	Archuleta County

The Permittee(s):

Alice K Platt
Mountain Crossing, LLC
19440 Charleswood Lane
Bend, Oregon 97702
(303) 818-6892

The Applicant(s):

Christopher S. McGranahan
LSC Transportation Consultants, Inc
1889 York Street
Denver, Colorado 80206
(303) 333-1105

is hereby granted permission to have an access to the state highway at the location noted below. The access shall be constructed, maintained and used in accordance with this permit, including the State Highway Access Code and any attachments, terms, conditions and exhibits. This permit may be revoked by the Issuing Authority if at any time the permitted access and its use violate any parts of this permit. The issuing authority, the Department and their duly appointed agents and employees shall be held harmless against any action for personal injury or property damage sustained by reason of the exercise of the permit.

Location: Access to be located on the east side of State Highway 084, a distance of approximately 3,468 feet north of milepost 27. Also known as CR 302/Mill Creek Road.

Access to Provide Service to:

(Land Use Code)	(Size)	(Units)
1098 - County Road		
770 - Business Park	**90,000**	**SqFt**
Total Traffic	**584**	**DHV**

Additional Information:

* See attached pages 2-3 of Form 101, and all other attachments, enclosures, and exhibits for additional terms and conditions. *

MUNICIPALITY OR COUNTY APPROVAL

Required only when the appropriate local authority retains issuing authority.

Signature	Print Name	Date	Title
N/A			

Upon the signing of this permit the permittee agrees to the terms and conditions and referenced attachments contained herein. All construction shall be completed in an expeditious and safe manner and shall be finished within 45 days from Initiation. The permitted access shall be completed in accordance with the terms and conditions of the permit prior to being used.

The permittee shall contact the Region 5 Access Manager with the Colorado Department of Transportation, at (970) 385-3626 at least thirty (30) days prior to beginning any work within the CDOT right-of-way or beginning the permitted use(s).

The person signing as the permittee must be the owner or legal representative of the property served by the permitted access and have full authority to accept the permit and its terms and conditions.

	Print Name	Date
Permittee Signature DocuSigned by: Alice K Platt	Alice K Platt	2/21/2022 | 11:11 AM MST
Applicant Signature DocuSigned by: Chris McGranahan 8A275E8E99B948E...	Chris McGranahan	4/8/2022 | 12:30 PM MDT

This permit is not valid until signed by a duly authorized representative of the Department.

COLORADO DEPARTMENT OF TRANSPORTATION

Signature	Print Name	Title	Date (of issue)
DocuSigned by: Randee Reider 6327DE9009904C1...	Randee Reider	Region 5 Access Manager	4/15/2022 | 3:35 PM MDT

Copy Distribution: Required: 1.Region 2.Applicant 3.Staff Access Section 4.Central Files. Make copies as necessary for: Local Authority, Inspector, MTCE Patrol, Traffic Engineer

The following paragraphs are excerpts of the State Highway Access Code. These are provided for your convenience but do not alleviate compliance with all sections of the Access Code. A copy of the State Highway Access Code is available from your local issuing authority (local government) or the Colorado Department of Transportation (Department). When this permit was issued, the issuing authority made its decision based in part on information submitted by the applicant, on the access category which is assigned to the highway, what alternative access to other public roads and streets is available, and safety and design standards. Changes in use or design not approved by the permit or the issuing authority may cause the revocation or suspension of the permit.

APPEALS

1. Should the permittee or applicant object to the denial of a permit application by the Department or object to any of the terms or conditions of a permit placed there by the Department, the applicant and permittee (appellant) have a right to appeal the decision to the [Transportation] Commission [of Colorado]. To appeal a decision, submit a request for administrative hearing to the Transportation Commission of Colorado within 60 days of transmittal of notice of denial or transmittal of the permit for signature. Submit the request to the Transportation Commission of Colorado, 4201 East Arkansas Avenue, Denver, Colorado 80222-3400. The request shall include reasons for the appeal and may include changes, revisions, or conditions that would be acceptable to the permittee or applicant.

2. Any appeal by the applicant or permittee of action by a local issuing authority shall be filed with the local authority and be consistent with the appeal procedures of the local authority.

3. In submitting the request for administrative hearing, the appellant has the option of including within the appeal a request for a review by the Department's internal administrative review committee pursuant to [Code] subsection 2.10. When such committee review is requested, processing of the appeal for formal administrative hearing, 2.9(5) and (6), shall be suspended until the appellant notifies the Commission to proceed with the administrative hearing, or the appellant submits a request to the Commission or the administrative law judge to withdraw the appeal. The two administrative processes, the internal administrative review committee, and the administrative hearing, may not run concurrently.

4. Regardless of any communications, meetings, administrative reviews or negotiations with the Department or the internal administrative review Committee regarding revisions or objections to the permit or a denial, if the permittee or applicant wishes to appeal the Department's decision to the Commission for a hearing, the appeal must be brought to the Commission within 60 days of transmittal of notice of denial or transmittal of the permit.

PERMIT EXPIRATION

1. A permit shall be considered expired if the access is not under construction within one year of the permit issue date or before the expiration of any authorized extension. When the permittee is unable to commence construction within one year after the permit issue date, the permittee may request a one year extension from the issuing authority. No more than two one-year extensions may be granted under any circumstances. If the access is not under construction within three years from date of issue the permit will be considered expired. Any request for an extension must be in writing and submitted to the issuing authority before the permit expires. The request should state the reasons why the extension is necessary, when construction is anticipated, and include a copy of page 1 (face of permit) of the access permit. Extension approvals shall be in writing. The local issuing authority shall obtain the concurrence of the Department prior to the approval of an extension, and shall notify the Department of all denied extensions within ten days. Any person wishing to reestablish an access permit that has expired may begin again with the application procedures. An approved Notice to Proceed, automatically renews the access permit for the period of the Notice to Proceed.

CONSTRUCTION

1. Construction may not begin until a Notice to Proceed is approved. (Code subsection 2.4]

2. The construction of the access and its appurtenances as required by the terms and conditions of the permit shall be completed at the expense of the permittee except as provided in subsection 2.14. All materials used in the construction of the access within the highway right-of-way or on permanent easements, become public property. Any materials removed from the highway right-of-way will be disposed of only as directed by the Department. All fencing, guard rail, traffic control devices and other equipment and materials removed in the course of access construction shall be given to the Department unless otherwise instructed by the permit or the Department inspector.

3. The permittee shall notify the individual or the office specified on the permit or Notice to Proceed at least two working days prior to any construction within state highway right-of-way. Construction of the access shall not proceed until both the access permit and the Notice to Proceed are issued. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within the highway right-of-way. A construction time extension not to exceed 30 working days may be requested from the individual or office specified on the permit.

4. The issuing authority and the Department may inspect the access during construction and upon completion of the access to ensure that all terms and conditions of the permit are met. Inspectors are authorized to enforce the conditions of the permit during construction and to halt any activities within state right-of-way that do not comply with the provisions of the permit, that conflict with concurrent highway construction or maintenance work, that endanger highway property, natural or cultural resources protected by law, or the health and safety of workers or the public.

5. Prior to using the access, the permittee is required to complete the construction according to the terms and conditions of the permit. Failure by the permittee to abide

by all permit terms and conditions shall be sufficient cause for the Department or issuing authority to initiate action to suspend or revoke the permit and close the access. If in the determination of the Department or issuing authority the failure to comply with or complete the construction requirements of the permit create a highway safety hazard, such shall be sufficient cause for the summary suspension of the permit. If the permittee wishes to use the access prior to completion, arrangements must be approved by the issuing authority and Department and included in the permit. The Department or issuing authority may order a halt to any unauthorized use of the access pursuant to statutory and regulatory powers. Reconstruction or improvement of the access may be required when the permittee has failed to meet required specifications of design or materials. If any construction element fails within two years due to improper construction or material specifications, the permittee shall be responsible for all repairs. Failure to make such repairs may result in suspension of the permit and closure of the access.

6. The permittee shall provide construction traffic control devices at all times during access construction, in conformance with the M.U.T.C.D. as required by section 42-4-104, C.R.S., as amended.

7. A utility permit shall be obtained for any utility work within highway right-of-way. Where necessary to remove, relocate, or repair a traffic control device or public or private utilities for the construction of a permitted access, the relocation, removal or repair shall be accomplished by the permittee without cost to the Department or issuing authority, and at the direction of the Department or utility company. Any damage to the state highway or other public right-of-way beyond that which is allowed in the permit shall be repaired immediately. The permittee is responsible for the repair of any utility damaged in the course of access construction, reconstruction or repair.

8. In the event it becomes necessary to remove any right-of-way fence, the posts on either side of the access shall be securely braced with an approved end post before the fence is cut to prevent any slacking of the remaining fence. All posts and wire removed are Department property and shall be turned over to a representative of the Department.

9. The permittee shall ensure that a copy of the permit is available for review at the construction site at all times. The permit may require the contractor to notify the individual or office specified on the permit at any specified phases in construction to allow the field inspector to inspect various aspects of construction such as concrete forms, subbase, base course compaction, and materials specifications. Minor changes and additions may be ordered by the Department or local authority field inspector to meet unanticipated site conditions.

10. Each access shall be constructed in a manner that shall not cause water to enter onto the roadway or shoulder, and shall not interfere with the existing drainage system on the right-of-way or any adopted municipal system and drainage plan..

11. By accepting the permit, permittee agrees to save, indemnify, and hold harmless to the extent allowed by law, the issuing authority, the Department, its officers, and employees from suits, actions, claims of any type or character brought because of injuries or damage sustained by any person resulting from the permittee's use of the access permit during the construction of the access.

CHANGES IN ACCESS USE AND PERMIT VIOLATIONS

1. It is the responsibility of the property owner and permittee to ensure that the use of the access to the property is not in violation of the Code, permit terms and conditions or the Act. The terms and conditions of any permit are binding upon all assigns, successors-in-interest, heirs and occupants. If any significant changes are made or will be made in the use of the property which will affect access operation, traffic volume and or vehicle type, the permittee or property owner shall contact the local issuing authority or the Department to determine if a new access permit and modifications to the access are required.

2. When an access is constructed or used in violation of the Code, section 43-2-147(5)(c), C.R.S., of the Act applies. The Department or issuing authority may summarily suspend an access permit and immediately order closure of the access when its continued use presents an immediate threat to public health, welfare or safety. Summary suspension shall comply with article 4 of title 24, C.R.S.

MAINTENANCE

1. The permittee, his or her heirs, successors-in-interest, assigns, and occupants of the property serviced by the access shall be responsible for meeting the terms and conditions of the permit, the repair and maintenance of the access beyond the edge of the roadway including any cattle guard and gate, and the removal or clearance of snow or ice upon the access even though deposited on the access in the course of Department snow removal operations. Within unincorporated areas the Department will keep access culverts clean as part of maintenance of the highway drainage system. However, the permittee is responsible for the repair and replacement of any access-related culverts within the right-of-way. Within incorporated areas, drainage responsibilities for municipalities are determined by statute and local ordinance. The Department will maintain the roadway including auxiliary lanes and shoulders, except in those cases where the access installation has failed due to improper access construction and/or failure to follow permit requirements and specifications in which case the permittee shall be responsible for such repair. Any significant repairs such as culvert replacement, resurfacing, or changes in design or specifications, requires authorization from the Department.

Worker Safety and Health

All workers within the State Highway right of way shall comply with their employer's safety and health policies/procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations – including, but not limited to the applicable sections of 29 CFR Part 1910 – Occupational Safety and Health Standards and 29 CFR Part 1926 – Safety and Health Regulations for Construction.

Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment:

- Head protection that complies with the ANSI Z89.1-1997 standard;
- At all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96;
- High visibility apparel as specified in the Traffic Control provisions of this permit (at a minimum, ANSI/ISEA 107-1999, Class 2).

Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

Environmental Clearance

It is the applicant's responsibility to contact the appropriate agencies and obtain all environmental clearances that apply to their activities. Such clearances may include but are not limited to Corps of Engineers 404 Permits or Colorado Discharge Permit System permits, or ecological, archeological, historical, or cultural resource clearances. The CDOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances and information about prohibited discharges; copy attached.

LEVEL 3 - ACCESS PERMIT TERMS & CONDITIONS
FULL-MOVEMENT ACCESS WITH AUXILIARY LANES

A. PERMIT REQUIREMENTS SPECIFIC TO THIS ACCESS:

1. **Permit Number 522008 is issued by the Colorado Department of Transportation (CDOT) in accordance with the 1998 Access Code and is based upon the information submitted by the Permittee.**
   a. **Any changes in the herein permitted type and use and/or volume of traffic using the access, drainage, or other operational aspects shall render this permit void, requiring that a new application be submitted for review based upon currently existing and anticipated future conditions.**
   b. **Upon completion of the improvements identified in this permit, Permit 522008 shall replace and void all previous access permits for this location.**
   c. **If the requirements of this Permit are not satisfied or this Permit expires, the access rights will revert to the access permit issued prior to this permit. If there is no valid prior permit then the access rights and uses shall revert to the historic use.**
   d. **This permit is not valid unless the land use(s) enumerated herein have been approved by the local (City/County) Land Use Planning Authority.**

2. Permit Number **522008** is issued for the **construction and use** of:
   a. A **Paved Full-Movement access** on **State Highway 084** for **County Road 302/Mill Creek Road/Mountain Crossing, LLC** at approximate mile marker **27.657 Right.**
   b. A **left ingress deceleration lane** from **southbound State Highway 084** onto **eastbound County Road 302. Details for this turn lane construction shall be submitted by Permittee/Applicant in Exhibit "B," Reserved (Designs Plans) and approved by CDOT prior to construction.**
   c. A **right ingress deceleration lane** from **northbound State Highway 084** onto **eastbound County Road 302. Details for this turn lane construction shall be submitted by Permittee/Applicant in Exhibit "B," Reserved (Designs Plans) and approved by CDOT prior to construction.**

3. The access shall be **Paved a distance of 50 feet** from the edge of the traveled way and may be paved or gravel surfaced any remining distance within State Highway ROW.

4. **A two-inch overlay of the entire width of the roadway will be required when determined by the Department to be necessary at the pre-design meeting, in accordance with 4.7 (6) of the State Highway Access Code (Code).**

5. The access shall be **perpendicular** to the travel lanes of the State Highway for a minimum distance of **40 feet from the edge of pavement or to the ROW, whichever is less. It shall slope down and away** from the adjacent pavement edge at a rate of **two percent (2%)** for a minimum of **20 feet**, then not to exceed **eight percent (8%)** grade up or down to the ROW line.

6. **Temporary Traffic Control shall be discussed at the preconstruction meeting. The Traffic Control Company and Engineer of record** shall attend the meeting. Temporary Traffic Control is required at all times during construction of the access in accordance with the **Traffic Control Plan (TCP) and corresponding Methods of Handling Traffic (MHT)**. The **MHT's shall be developed and implemented** by a **Traffic Control Supervisor (TCS) certified** by the **American Traffic Safety Services Association (ATSSA)** or the **Colorado Contractors Association (CCA).**

7. The category for this section of Highway **084** is **R-A.** The access shall be in conformance with the State of Colorado State Highway Access Code, Volume Two, Code of Colorado Regulations 601-1, August 31, 1998 as amended.

8. Incorporated as part of this permit are the following:
   a. State Highway Access Permit pages 1-3 and Page 101a
   b. Access Permit Terms and Conditions Pages **1 through 12**
   c. **EXHIBIT "A,"** (Traffic Impact Study dated **January 26, 2022**)
   d. **EXHIBIT "B," Reserved** (Plans)
   e. CDOT Late Fall, Winter and Spring Special Provisions for Access Construction and Utility Installations
   f. CDOT Environmental Clearances Information Summary
   g. Water Quality Program Summary
   h. State Highway Access Permit Application (CDOT Form No. 137) received **May 27, 2021.**

9. This Permit describes the access and improvements that will serve the following land uses:
   a. Existing/historic uses of County Road 302/Mill Creek Road (ITE Code 1098).
   b. Phase I of Mountain Crossing LLC Business Park (ITE Code 770), 90,000 sq. ft. All other phases of Mountain Crossing LLC Business Park will require a separate CDOT Access Permit for County Road 302.

10. This permit is only for the purpose stated herein. Any changes in the type, use and/or volume of traffic using the access will require a new permit.

11. The maximum traffic generation to **SH 084** for the development listed in **9 a-b** above is as follows:
    a. Phase I of Mountain Crossing – shall generate no more than **584** PM Peak Hour movements as identified in **Exhibit "A"**.

12. At the access location, **SH 084** has a posted speed limit of **35/45 mph** with approximate **6:1 foreslopes** and **4,500 AADT**, which correlates to a minimum Clear Zone of **14/18** feet from the edge of traveled way. The Permittee/Contractor shall take the minimum Clear Zone into consideration during the design and construction of the access.

13. Any damaged curb and gutter, sidewalk and abandoned curb cuts along the property adjacent

to the State Highway shall be replaced as part of this project.

14. **All required access improvements will be installed prior to any use of the Phase I Mountain Crossing Business Park.**

15. All other accesses to SH 084 shall be closed, unless an additional CDOT Access Permit has been approved by the Department.

16. "Right-of-Way" means the entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel or the entire width of every way declared to be a public highway by any law of this state.

17. Internal site circulation and parking must be adequate to serve the land uses described here.

18. No backing into the Right-of-Way will be allowed under any circumstances.

19. No parking within the Right-of-Way will be allowed under any circumstances.

20. Both backing into the Right-of-Way and parking within the Right-of-Way are considered to be traffic offenses and can be ticketed by any law enforcement officer of the jurisdiction in which the access is located.

21. Any violation of the above provisions may be grounds for revocation by the Department of this access permit and may result in physical closure of the access.

B. REQUIREMENTS PRIOR TO SUBMISSION OF DESIGN PLANS:

1. Prior to any construction Plan or Specification development, contact David Peyton at 970-385-8948 or at david.peyton@state.co.us to set up a pre-design meeting. The engineer of record shall attend the pre-design meeting.

C. REQUIREMENTS PRIOR TO NOTICE-TO-PROCEED (NTP) FOR CONSTRUCTION:

1. It is the responsibility of the Permittee/Applicant to determine which **environmental clearances** and/or regulations apply to the project, and to obtain any clearances that are required directly from the appropriate agency. Please refer to "CDOT Environmental Clearance Information Summary" for details. **FAILURE TO COMPLY WITH REGULATORY REQUIREMENTS MAY RESULT IN SUSPENSION OR REVOCATION OF THE CDOT ACCESS PERMIT, OR ENFORCEMENT ACTIONS BY OTHER AGENCIES. Prior to the request for Notice-to-Proceed (NTP), you must first contact CDOT's Environmental Specialist at 970-385-1425, and provide the necessary environmental clearances as identified in the Permit Terms & Conditions and Permit Attachments. This office will not issue a Notice-to-Proceed (NTP) without written Environmental Clearance Certification.**

2. A **written request for a Notice to Proceed** must be submitted to this issuing office along with the following items. Only after the Permittee complies with items a through l of this section will a **Notice-to-Proceed (NTP)** be issued to allow the commencement of construction.

   a. The Permittee shall provide **written approval** from the Local Authority for the proposed land use that will be served by the access. Granting of an access permit in no way implies CDOT concurrence or non-concurrence with the Permittee's proposed land use.

   b. Once the Land Use has been approved by the Local Authority, the Permittee will furnish the Colorado Department of Transportation (CDOT) **one (1) electronic set of design plans** for review. These plans must be scaled to 11x17" paper.

   c. The **design plans shall show the existing highway ROW, property lines and easements, as determined by a Professional Land Surveyor, for the entire length of the access improvements along the highway**. If the **proposed improvements along the highway encroach on the existing ROW or easements, ROW plans are required** for the dedication and/or acquisition of the necessary ROW/easements. **The permitee shall request a ROW plan coordination meeting with the Region 5 Access Manager prior to developing any ROW plans**. **No grading, construction, structures or toes of slopes necessary for site development shall be placed within CDOT ROW.**

   d. Once accepted, CDOT will sign the plans as approved. **Once approved, the design plans will become final and labeled EXHIBIT "B," (Plans)** and incorporated as part of this permit. The access approach and all related highway improvements will be constructed in accordance with the approved final design plans. The remainder of the terms and conditions of this permit shall refer to the final design plans as **EXHIBIT "B,"** reserved. If the Permittee wishes a **waiver** from the design standards the request shall be in conformance with section 4.12 of the State Highway Access Code utilizing CDOT Form No. 112. CDOT may or may not approve the waiver. CDOT will only issue a NTP for approved designs.

   e. The Permittee shall provide documentation showing that current (less than 1 year old) CDOT approved **mix designs** will be used for Hot Mix Asphalt (HMA) and Concrete as well as documentation listing the sources of materials for use on the project. The documentation shall be submitted to the CDOT Region 5 Access Manager for verification a minimum of five (5) working days prior to the requested NTP date. A NTP shall **NOT** be issued **PRIOR** to obtaining approval for all materials from the Region Materials Engineer (RME).

   f. The Permittee shall provide a **Traffic Control Plan (TCP)** which will be **submitted as part of the aforementioned design plans.** The TCP shall include the typical applications (which may be a reference to one or more of the cases illustrated in the MUTCD or in the CDOT S Standard Plans) showing the different phases of construction, the locations of signs, signals, and pavement marking. A tabulation of necessary

pavement markings, signing quantities, schedule of construction traffic control devices and project specifications are also required. In addition to the TCP, the actual **Methods of Handling Traffic (MHT)** shall be submitted by the **Traffic Control Supervisor (TCS)** at the pre-construction conference. Any additional MHT's required during the course of construction **shall be submitted** to the Region 5 Access Manager for review and acceptance **a minimum of three (3) working days prior to the desired implementation date.** Traffic Control of any nature will not be allowed unless authorized in writing by CDOT.

g. A **Performance Bond** to CDOT shall be required to be in place to insure completion of the required highway improvements in conformance with all CDOT standards and specifications. The bond must be in the amount of at least 110% of the cost of the construction. A Cost Estimate certified by the Engineer and a draft of the bond must be provided to CDOT for review and approval by CDOT before acceptance of the final bond and before construction is allowed to commence. Upon completion and acceptance of the highway improvements, CDOT will release the performance bond after an approved **Warranty Bond** in the amount of 20% of the cost of the construction is received. The warranty bond shall be held for two (2) years after the construction acceptance date.

h. The Department will require the **Permittee to retain a Professional Engineer (PE)** to be in Responsible Charge of Construction oversight. A written confirmation from the Permittee is required to show that the requirement in this term is met.

i. The Permittee/Contractor is required to obtain **Insurance** in conformance with Standard Specification Section 107 Responsibility for Damage Claims, Insurance Types and Coverage Limits. **Professional Liability insurance, as described in Section 107, is required for the design plans, design and construction surveying, as well as for the Professional Engineer in responsible Charge of Construction oversight.** Copies of insurance coverage will be submitted to the Region 5 Access Manager prior to the issuing of the NTP or approving the Design Plans **EXHIBIT "B"** reserved. A copy of the insurance policy is required to be available at the construction site at all times for inspection.

j. A **Construction Schedule** detailing the execution of the project shall be submitted to the Region 5 Access Manager.

k. A **pre-construction conference** is required prior to the issuance of the NTP. It is the responsibility of the Permittee to schedule and coordinate this meeting. At least five (5) working days prior to the pre-construction conference the Permittee will submit the following packet of information to CDOT for review:
    a. Baseline Construction Schedule
    b. Material Submittals
    c. Asphalt and Concrete Mix Designs
    d. Methods of Handling Traffic
    e. Performance Bond

f. Liability Insurance
g. Witten confirmation of PE for Construction

l. The Permittee/Contractor must contact the Region 5 Traffic Construction Coordinator at 3803 North Main Avenue, Durango, CO or telephone (970) 385-3633 to schedule a **pre-construction conference**.

D. GENERAL DESIGN REQUIREMENTS:

1. **Design of improvements** within the highway ROW shall be in compliance with the most current editions of the following manuals and documents except as indicated:
   a. CDOT Design Guide
   b. CDOT Drainage Design Manual
   c. CDOT Standard Plans M&S Standards
   d. AASHTO Roadside Design Guide
   e. AASHTO Policy on Geometric Design of Highways and Streets
   f. CDOT Standard Specifications for Road and Bridge Construction
   g. CDOT Standard Special Provisions
   h. Manual on Uniform Traffic Control Devices (MUTCD)
   i. 1998 State Highway Access Code, Volume 2, Code of Regulations 601-1, as amended
   j. ITE Traffic Engineering Handbook
   k. ITE Trip Generation Manual, **6th Edition**
   l. 2011 CDOT CAD Manual

2. **No grading, construction, structures or toes of slopes necessary for site development shall be placed within CDOT ROW.**

3. The design standards listed under item 1 of this section will override the final design plans, **EXHIBIT "B,"** reserved should an oversight, omission or conflict occur.

4. CDOT assumes no liability or responsibility whatsoever for the accuracy, completeness or correctness of the Permittee's final design plans, **EXHIBIT "B,"** reserved. Any design errors are the sole responsibility of the Permittee and their Engineer.

5. Permittee is required to comply with the **Americans with Disabilities Act Accessibility Guidelines (ADAAG)** that have been adopted by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board), and incorporated by the U.S. Attorney General as a federal standard. These guidelines are defining traversable slope requirements and prescribing the use of a defined pattern of truncated domes as detectable warnings at street crossings. The current Standard Plans reflect these requirements.

6. It is the responsibility of the Permittee/Applicant to determine which **environmental clearances** and/or regulations apply to the project, and to obtain any clearances that are required directly from the appropriate agency. Please refer to "CDOT Environmental Clearance

Information Summary" for details. **FAILURE TO COMPLY WITH REGULATORY REQUIREMENTS MAY RESULT IN SUSPENSION OR REVOCATION OF THE CDOT ACCESS PERMIT, OR ENFORCEMENT ACTIONS BY OTHER AGENCIES.**

7. ALL discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include substances such as: wash water, paint, automotive fluids, solvents, oils or soaps.

8. Unless otherwise identified by CDOT or the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) as not being a source of pollutants to the waters of the State, the following discharges to storm water systems are allowed without a Colorado Discharge Permit System permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, footing drains, water line flushing, flows from riparian habitats and wetlands, and flow from firefighting activities, and water incidental to street sweeping (including associated sidewalks and medians) and that is not associated with construction. Discharges from these sources may still require separate CDPS permit coverage to be obtained by the discharger.

9. ANY OTHER DISCHARGES may require Colorado Discharge Permit(s) or separate permits from CDPHE or the appropriate agency before work begins. For additional information and forms, go to the CDPHE website at: http://www.cdphe.state.co.us/wq/PermitsUnits/wqcdpmt.html or contact the CDOT Water Quality Program Manager at 303-757-9343.

10. Discharges may also be subject to additional State and Local restrictions, such as MS4 (Municipal Separate Storm Water Sewerage Systems) requirements for permanent sediment control, TMDL (Total Maximum Daily Limit), TMAL (Total Maximum Annual Limit) or discharge.

11. **Any removal of existing fence, in excess of opening required for the access, or installation of a fence that is erected adjacent to the highway ROW requires a separate CDOT Fencing Agreement.** All fencing described by the CDOT Fencing Agreement shall be shown in the design plans.

12. **Any landscaping** within CDOT ROW requires a separate **CDOT Landscaping Permi**t. All landscaping described by the CDOT Landscaping Permit shall be shown in the design plans.

13. **Any Utility work** within CDOT ROW requires a separate **CDOT Utility Permit**. All utilities and utility work described by the CDOT Utility Permit shall be shown in the design plans.

E. DRAINAGE DESIGN REQUIREMENTS:

1. No site drainage from the constructed access shall enter onto the traveled way of the highway.

2. Drainage to the State Highway Right-of-Way shall not exceed the historical undeveloped rate of flow. Detention ponds may be required to control drainage flow from developed properties at or below historical flow rates.

3. Any drainage study shall consider and the design reflect the 25 year flood for rural two lane highways, 50 year flood for four lane highways, and 100 year flood in all urban areas.

4. Required Cross Culverts under the State Highway, Side Drain Culverts under the Access, Curb, Gutter, Inlets, Manholes, Sidewalk and Driveways shall conform to CDOT Standards and facilitate proper drainage along the State Highway. Culvert ends not contained within manholes or inlets shall be fitted with standard end sections. The Drainage design shall be included in **EXHIBIT "B,"** reserved.

F. PAVEMENT DESIGN REQUIREMENTS:

a. Pavement design materials shall conform with:
   a. Section 304 - Aggregate Base Course (ABC) - Class 1 or 2 and Class 6, with resistance values of at least 70 and 78 respectively when tested by the Hveem Stabilometer method.
   b. Section 403 - Hot Mix Asphalt Grading S or SX.
   c. Section 412 & 601 - Concrete Pavement Class P = 4,200 psi

b. The permittee/applicant is responsible for submitting a pavement design for improvements within current or proposed CDOT ROW. At its discretion, CDOT may provide the pavement design required for the improvements.

G. FINAL STABILIZATION REQUIREMENTS:

1. Topsoil, seeding, fertilizer and mulching shall be required within the ROW limits on all disturbed areas not surfaced immediately upon completion of the access.

2. A minimum of 4 inches of topsoil shall be placed on all slopes which are to be seeded and mulched.

3. The following types of seed and application rates shall be used unless a separate Landscaping Permit states otherwise:

Seed Requirements:

COMMON NAME	BOTANICAL NAME	LBS. PLS\ACRE
Western Wheatgrass (V. Arriba)	Pascopyrum Smithii	16
Slender Wheatgrass (V. San Luis)	Elymus Trachycaulus	6

Indian Ricegrass (V. Paloma)	Oryzopsis Hymenoides	6
Hard Fescue (V. Durar)	Festuca Ovina Duriuscula	6
Alsike Clover	Trifolium Hybridium	4
Sand Dropseed	Sporobolus Cryptandrus	0.50
Total lbs/acre		38.50

Seed shall be mechanically drilled to a depth of 0.25 or 0.5 inches into the soil on slopes flatter than 3:1. Seed shall be broadcast on slopes 3:1 or steeper and raked into soil.

4. **Fertilizer Requirements:**

Nutrient Type	% AVAILABLE	LBS\ACRE
Nitrogen:	18	45
Phosphorus:	46	115

Fertilizer shall be incorporated to a depth of 2" to 4" into the topsoil.

5. **Mulching Requirements and Application:** 2 tons/acre straw mechanically crimped into soil on slopes flatter than 3:1. Place a soil retention blanket consisting of woven wood or straw coconut material on slopes 3:1 or steeper.

H. GENERAL CONSTRUCTION REQUIREMENTS:

1. **A COPY OF THIS PERMIT AND THE VALIDATED NOTICE TO PROCEED MUST BE ON THE JOB WITH THE CONTRACTOR AT ALL TIMES OR ANY WORK ONSITE AND OFFSITE WILL BE ORDERED TO BE IMMEDIATELY SUSPENDED UNTIL THIS TERM IS COMPLIED WITH.**

2. The PE in responsible charge of construction observation shall evaluate insure compliance with plans and specifications with regard to the roadway improvements and Traffic Control within the State Highway ROW. **The PE's responsibilities shall be as defined in Section 5 of the Bylaws and Rules of The State Board of Licensure for Architects, Professional Engineers and Professional Land Surveyors** and the relevant sections of the latest CDOT Standard Specifications for Road and Bridge Construction. The PE shall be experienced and competent in road and bridge construction management, inspection and materials testing.

3. **Construction Activities** within the highway ROW shall be in compliance with the most current editions of the following manuals:
   a. CDOT Standard Specifications for Road and Bridge Construction
   b. CDOT Standard Special Provisions
   c. CDOT Standard Plans M&S Standards
   d. CDOT Construction Manual
   e. CDOT Field Materials Manual
   f. CDOT Laboratory Manual of Test Procedures
   g. Manual on Uniform Traffic Control Devices (MUTCD) Part IV and the Colorado Supplement

h. **EXHIBIT "B,"** reserved

4. The Permittee/Contractor is responsible for obtaining any necessary additional **Federal, State and/or City/County permits or clearances** required for construction of the access. Approval of this access permit does not constitute verification of this action by the Permittee.

5. The Permittee will be responsible for **verification of existing utility locations**. The Permittee must notify owners or operators of **underground utility facilities** at least two (2) business days prior to beginning excavation in the vicinity of such facilities, as required under Section 9-1.5-103, Colorado Revised Statutes. **Call Utility Notification Center of Colorado** (UNCC), **811** or 1-800-922-1987 for marking of member utilities. Call non-member utilities directly.

6. The Permittee/Contractor shall coordinate access construction with any utility installations.

7. Any damage to utilities during construction shall be the Permittee's responsibility to repair or replace the utility at no cost to the Department.

8. The Permittee/Contractor shall not make any changes to the access design without prior approval from the Region 5 Access Manager or other authorized Region 5 CDOT representative. If necessary, minor changes, corrections, and/or additions to this permit will be ordered by CDOT to meet unanticipated site conditions.

9. Any damage to any existing highway facilities shall be repaired by the Permittee prior to continuing other work.

I. SAFETY, WORKING TIMES AND TRAFFIC CONTROL:

1. CDOT reserves the right to suspend any construction activities, to include Traffic Control, that interfere with the safe operation of the State Highway. Any such suspensions shall require a written plan of action detailing how the Permittee/Contractor will prevent further safety infractions prior to recommencing construction activities.

2. All equipment, materials or any other non-crashworthy item shall be stored outside the clear zone during non-working times.

3. Existing highway signs requiring removal within the limits of the construction activities shall be removed and delivered to the CDOT Maintenance Shop for storage and future replacement by the Permittee unless otherwise agreed to by CDOT and Permittee. Installation shall be as directed by CDOT.

4. The Permittee/Contractor will be responsible for keeping the State Highway travel lanes and shoulders clear of any mud or debris tracked onto it throughout construction of the access on a daily basis or as otherwise directed by CDOT.

5. The existing paved shoulder edge shall not be saw cut back until the future pavement is ready to be installed. The shoulder shall be saw cut a minimum of one (1) foot from the existing pavement edge to assure a straight edge for placement of adjacent asphalt material.

6. Any pavement drop-offs that will be left overnight shall be delineated with appropriate channelizing devices and any reasonably obtained lateral buffer space. Drop-offs of more than 1.5 inches shall be shouldered with material to eliminate them.

7. Any required pavement marking(s) and signing shall be installed by the Permittee/Contractor prior to opening any roadway to traffic.

8. The Permittee/Contractor shall comply with Revision of Section 107.06 of the CDOT Specifications regarding Safety, Health, and Sanitation Provisions.

9. No work within the highway ROW will be allowed on Saturdays, Sundays, legal holidays, or during periods of adverse weather conditions.

10. All construction activities within the state highway ROW will not be allowed to begin before sunrise and shall be required to cease prior to sunset. Traffic Control operations may begin one half hour before sunrise and continue until one half hour after sunset.

11. No disruption of traffic flow will be allowed during the morning (7:00 AM to 8:30 AM) and evening (4:30 PM to 6:00 PM) peak hour traffic flows, unless otherwise authorized in writing by CDOT.

J. FINAL PROJECT ACCEPTANCE:

1. **Engineering Certification Submittal:** Prior to final acceptance by CDOT, the PE shall certify to CDOT in writing that all inspections, materials, materials testing, and construction methods conform to the plans, specifications and purpose of the design. The certification shall be supported by the submittal of project documentation complying with the requirements of this permit. The submittal shall be sent to the Region 5 Access Manager, Colorado Department of Transportation, 3803 Main Avenue, Suite 100, Durango, Colorado 81301. The submittal shall:
   a. Have the stamp and signature of the PE in responsible charge of construction oversight signifying that the engineering services addressed therein have been performed by the PE, or directly under the PE's supervision.
   b. Be based upon the PE's knowledge and information regarding the project.
   c. Be in accordance with applicable standards of practice.

2. Upon completion of the work, the Engineer **shall submit 3-sets of "As Constructed" plans** showing in detail all ROW easements, construction improvements and any modifications or revisions made to the design plans during construction. All changes, modifications or revisions shall be signed and sealed by the engineer.

3. **Final Project Acceptance** will be by the Regional Transportation Director (RTD) or their authorized designee.

4. **Reconstruction or improvements** to the access will be required when the Permittee fails to meet the required design and/or materials specifications. If any construction element fails within two years of CDOT's final acceptance due to improper construction or materials, the Permittee is responsible for all such repairs.

PERMITTEE: DocuSigned by: Alice K Platt 8A275F8E89B948F... DATE 2/21/2022 | 11:11 AM MST
Alice K. Platt for Mountain Crossing, LLC

APPLICANT: DocuSigned by: Chris McGranahan F824151E0DED4AD... DATE 4/8/2022 | 12:30 PM MDT
Christopher S. McGranahan for LSC Transportation Consultants, Inc.

LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
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FAX (303) 333-1107
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January 26, 2022

Mountain Crossing, LLC
2323 N.W. Lakeside Place
Bend, OR 97703
c/o Summit AE
2764 Compass Drive, #230
Grand Junction, CO 81506
Attn: Keith Mendenhall, PE

Re: Mountain Crossing
Pagosa Springs
LSC #200840

Dear Mr. Mendenhall:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Mountain Crossing development in Pagosa Springs, Colorado, to address CDOT comments. As shown on Figure 1, the site is located southeast of the intersection of US Highway (US) 160 and State Highway (SH) 84 in Pagosa Springs, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; an adjustment of existing volumes to account for the pandemic and seasonal conditions; the typical weekday site-generated traffic volume projections for the site for three land use scenarios; the assignment of the projected traffic volumes to the area roadways for three land use scenarios; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; a queuing and weaving analysis, and any recommended roadway improvements to mitigate the site's traffic impacts.

LAND USE AND ACCESS

Phase 1 of the Mountain Crossing development is proposed to include up to 90,000 square feet of shopping center land use. Access for Phase 1 will be via one full-movement access to Mill Creek Road.

Phase 1 plus Phase 2 will include up to 200,000 square feet of shopping center land use and buildout (Phases 1 - 3) will have up to 350,000 square feet of shopping center land use. As

shown on Figure 2, the conceptual site plans shows right-in/right-out access to SH 84 for Phases 2 and 3 and potential future connections through the parcel to the north and east. When these connections are made they will provide additional access to the Mountain Crossing development. The Mountain Crossing site does not control these off-site connections so the analysis is intended to show the amount of development that can be supported with access only to SH 84.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **US Highway 160 (US 160)** is a two-lane paved US highway adjacent to and north of the site. The section of US 160 west of SH 84 is categorized as N-RB, a Non-Rural Arterial, by the Colorado Department of Transportation (CDOT). The section of US 160 east of State Highway 84 is categorized as R-A, Regional Highway. The posted speed limit on US 160 in the vicinity of SH 84 is 45 miles per hour (mph). The CDOT Straight Line Diagram is attached.

- **State Highway 84 (SH 84)** is a two-lane paved state highway adjacent to and west of the site. The section of SH 84 in the vicinity of the site is categorized as R-A, Regional Highway, by CDOT. The posted speed limit on SH 84 in the vicinity of the site is 35 mph for northbound traffic and 45 mph for southbound traffic. The posted speed limit increases to 65 mph well south of the site. The northbound transition to 35 mph occurs about 700 feet south of Mill Creek Road. The intersection of SH 84 and US 160 is stop-sign controlled. The CDOT Straight Line Diagram is attached.

- **Mill Creek Road (County Road 302)** is a gravel county road which extends east from SH 84. Mill Creek Road is classified as a Recreational Access Road. The intersection of Mill Creek Road and SH 84 is stop-sign controlled.

Existing Traffic Conditions

Figure 3a shows the November, 2020 existing lane geometries, traffic controls, and traffic volumes in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes and daily traffic counts are from the attached traffic counts conducted by Counter Measures in November, 2020.

Adjustments For Pandemic And Seasonal Variations

Figure 3b shows the estimated July, 2020 traffic volumes based on a pandemic and seasonal adjustment. The average daily traffic volumes in Figure 3b are from the attached CDOT Straight Line Diagrams and the July average daily traffic volumes are based on the seasonal variation data included in the appendix from CDOT continuous counter location #217. The July daily volume of 5,000 vpd on SH 84 in Figure 3b was compared to the November, 2020 daily volume counted as 3,985 vpd in Figure 3a for an overall adjustment of about 1.28. An adjustment

factor of 1.30 was applied to the peak-hour volumes in Figure 3a to estimate the peak-hour volumes in Figure 3b.

2025 and 2041 Background Traffic

Figure 4 shows the estimated July, 2025 background traffic, lane geometry, and traffic control and Figure 5 shows the estimated July, 2041 background traffic, lane geometry, and traffic control. The estimates are based on an annual growth rate of about 0.5 percent on US 160 and about 0.1 percent on SH 84 based on the CDOT 20-year growth factors of 1.11 and 1.02, respectively, from the attached CDOT Straight Line Diagrams.

Existing, 2025, and 2041 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in Figures 3b, 4, and 5 were analyzed as appropriate to determine the existing, 2025, and 2041 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **US 160/SH 84:** All movements at this unsignalized intersection currently operate at LOS "C" or better during both morning and afternoon peak-hours and are expected to do so through 2041.

- **SH 84/Mill Creek Road:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both peak-hours and are expected to do so through 2041.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE) for the proposed land use.

In Phase 1, the site is projected to generate about 3,693 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 52 vehicles would enter and about 32 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 241 vehicles would enter and about 261 vehicles would exit. These trips are expected to include about 34 percent passby trips.

In Phase 1 plus Phase 2, the site is projected to generate about 6,357 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 117 vehicles would enter and about 71 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 436 vehic-

les would enter and about 472 vehicles would exit. These trips are expected to include about 34 percent passby trips.

At buildout (Phases 1 - 3), the site is projected to generate about 9,300 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 204 vehicles would enter and about 125 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 659 vehicles would enter and about 714 vehicles would exit. These trips are expected to include about 34 percent passby trips.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site's proposed land use.

TRIP ASSIGNMENT

Figure 7a shows the estimated Phase 1 primary site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the Phase 1 trip generation estimate (from Table 2).

Figure 7b shows the estimated Phase 1 assignment of passby site-generated traffic.

Figure 8a shows the estimated Phase 1 plus Phase 2 primary site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the Phase 1 plus Phase 2 trip generation estimate (from Table 2).

Figure 8b shows the estimated Phase 1 plus Phase 2 assignment of passby site-generated traffic.

Figure 9a shows the estimated buildout (Phases 1 - 3) primary site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the buildout (Phases 1 - 3) trip generation estimate (from Table 2).

Figure 9b shows the estimated buildout (Phases 1 - 3) assignment of passby site-generated traffic.

2025 AND 2041 TOTAL TRAFFIC

Figure 10 shows the 2025 total traffic which is the sum of the 2025 background traffic volumes (from Figure 4) and the 2025 site-generated traffic volumes (from Figures 7a and 7b). Figure 10 also shows the recommended 2025 lane geometry and traffic control.

Figure 11 shows the 2041 total traffic with Phase 1 plus Phase 2 which is the sum of 2041 background traffic volumes (from Figure 5) and the Phase 1 plus Phase 2 site-generated traffic

volumes (from Figures 8a and 8b). Figure 11 also shows the recommended 2041 lane geometry and traffic control with development of Phase 1 plus Phase 2.

Figure 12 shows the 2041 total traffic with Phases 1 - 3 which is the sum of 2041 background traffic volumes (from Figure 5) and the Phases 1 - 3 site-generated traffic volumes (from Figures 9a and 9b). Figure 12 also shows the recommended 2041 lane geometry and traffic control with development of Phases 1 - 3.

Figure 13 shows the 2041 conceptual lane geometry and traffic control along SH 84 adjacent to the site with development of either Phase 2 or Phase 3.

PROJECTED LEVELS OF SERVICE

The intersections in Figures 10 through 12 were analyzed to determine the 2025 and 2041 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **US 160/SH 84:** All movements at this unsignalized intersection are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2041 with the following exception: The northbound left-turn movement is expected to operate at LOS "F" in the 2041 afternoon peak-hour with development of either Phase 2 or Phase 3. As a signalized intersection, both peak-hours are expected to operate at LOS "B".

- **SH 84/Mill Creek Road:** All movements at this unsignalized intersection are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2041 with the following exception: The westbound left-turn movement is expected to operate at LOS "F" in the 2041 afternoon peak-hour with development of either Phase 2 or Phase 3. As a signalized intersection, both peak-hours are expected to operate at LOS "B" or better through 2041.

- **SH 84/RIRO Site Access:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2041.

- **Mill Creek Road/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better during both morning and afternoon peak-hours through 2041.

WEAVING ANALYSIS

A weaving analysis was completed for the SH 84 section between the proposed right-in/right-out access and US 160 and between Mill Creek Road and the right-in/right-out access. The weaving section level of service from Phases 1 and 2 in 2041 is expected to be LOS "A" and for Phases 1 - 3 is expected to be LOS "B" or better.

TRAFFIC SIGNAL WARRANT ANALYSIS

Figures 14a through 15b show the analysis for Traffic Signal Warrant 2 (Four-Hour) and Warrant 3 (Peak-Hour) at the intersections of US 160/US 84 and US 84/Mill Creek Road.

As shown, the US 160/US 84 intersection will meet Warrant 2 with Phase 2. Warrant 3 will likely be met with Phase 1 but traffic signal control will not be needed until development of Phase 2.

The US 84/Mill Creek intersection will meet Warrant 2 with development of Phases 2 or 3, but is not expected to meet Warrant 3 until development of Phase 3.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. In Phase 1, the site is projected to generate about 3,693 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 52 vehicles would enter and about 32 vehicles would exit the site. During the afternoon peak-hour, about 241 vehicles would enter and about 261 vehicles would exit. These trips are expected to include about 34 percent passby trips.

2. In Phase 1 plus Phase 2, the site is projected to generate about 6,357 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 117 vehicles would enter and about 71 vehicles would exit the site. During the afternoon peak-hour, about 436 vehicles would enter and about 472 vehicles would exit. These trips are expected to include about 34 percent passby trips.

3. At buildout (Phases 1 - 3), the site is projected to generate about 9,300 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 204 vehicles would enter and about 125 vehicles would exit the site. During the afternoon peak-hour, about 659 vehicles would enter and about 714 vehicles would exit. These trips are expected to include about 34 percent passby trips.

Projected Levels of Service

4. All movements at all of the unsignalized intersections analyzed are expected to operate at acceptable levels of service during both morning and afternoon peak-hours through 2041 with the following exceptions: The northbound left-turn lane at the US 160/SH 84 intersection and the westbound left-turn lane at the SH 84/Mill Creek Road intersection are expected to operate at LOS “F” in the 2041 afternoon peak-hour with development of either Phase 2 or Phase 3. The proposed mitigation is traffic signal control at both intersections once traffic signal warrants are met. All intersection are expected to operate at acceptable levels of service with development of Phase 1.

Conclusions

5. The impact of the Mountain Crossing development can be accommodated by the existing and planned roadway network with the following recommendations.

2025 Phase 1 Recommended Improvements

6. The applicant should construct a southbound left-turn deceleration lane on SH 84 approaching Mill Creek Road as shown in Figure 10. An appropriate length for the southbound 45 mph posted speed limit is 500 feet (273 feet for deceleration plus 227 feet for vehicle storage) plus a 162-foot (13.5:1) transition taper and 45:1 redirect taper.

7. The applicant should construct a northbound right-turn deceleration lane on SH 84 approaching Mill Creek Road as shown in Figure 10. An appropriate length for the northbound 35 mph speed limit is 190 feet plus a 120-foot (10:1) transition taper.

8. An access permit application has been submitted for the Phase 1 impacts shown in Figure 10.

2041 Conceptual Recommended Improvements

9. The conceptual future improvements for Phase 2 and Phase 3 are shown in Figures 11 through 13 and will likely be supported by future traffic studies and access permit applications. The intersections of US 160/SH 84 and SH 84/Mill Creek Road will likely meet traffic signal warrants by 2041 with development of Phase 2 or Phase 3.

* * * * *

We trust our findings will assist you in gaining approval of the proposed Mountain Crossing development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By_____
Christopher S. McGranahan, PE, PTOE
Principal

1-26-22

CSM/wc

Enclosures: Tables 1 - 3
Figures 1 - 15b
CDOT Straight Line Diagrams
Traffic Count Reports
CDOT Historic Traffic Data
Level of Service Definitions
Level of Service Reports
Weaving Analysis

W:\LSC\Projects\2020\200840-MountainCrossing\Report\Jan-2022\MtnCrossing-012622.wpd

Table 1
Intersection Level of Service
Mountain Crossing
Pagosa Springs, CO
LSC #200840; January, 2022

Intersection Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Level of Service AM	2025 Background Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Level of Service AM	2041 Background Level of Service PM	2041 Total Traffic with Phases 1 & 2 Level of Service AM	2041 Total Traffic with Phases 1 & 2 Level of Service PM	2041 Total Traffic with Phases 1 & 2 Mitigated Level of Service AM	2041 Total Traffic with Phases 1 & 2 Mitigated Level of Service PM	2041 Total Traffic with Phases 1 - 3 Level of Service AM	2041 Total Traffic with Phases 1 - 3 Level of Service PM	2041 Total Traffic with Phases 1 -3 Mitigated Level of Service AM	2041 Total Traffic with Phases 1 -3 Mitigated Level of Service PM
US Highway 160/SH 84	TWSC																
NB Left		B	C	B	C	B	D	B	C	B	F			C	F		
NB Right		A	A	A	A	A	A	A	A	A	A			A	A		
WB Left		A	A	A	A	A	A	A	A	A	A			A	A		
Critical Movement Delay (sec/veh)		12.2	15.4	12.4	15.8	12.8	34.2	13.2	18.5	14.2	159.1			15.4	>240		
	Signalized																
EB Through												A	B			A	B
EB Right												A	A			A	A
WB Left												A	B			A	B
WB Through												A	B			A	B
NB Left												D	D			D	C
NB Right												A	A			A	A
Entire Intersection Delay (sec /veh)												14.6	17.1			14.9	17.4
Entire Intersection LOS												B	B			B	B
SH 84/Mill Creek Road	TWSC																
WB Approach		A	B	A	B	--	--	B	B	--	--			--	--		
WB Left		--	--	--	--	B	D	--	--	B	F			C	F		
WB Right		--	--	--	--	A	B	--	--	A	A			A	A		
SB Approach or SB Left		A	A	A	A	A	A	A	A	A	A			A	B		
Critical Movement Delay (sec/veh)		9.8	10.1	9.9	10.3	12.3	26.6	10.1	10.6	14.3	169.0			17.8	>240		
	Signalized																
WB Left												D	D			D	D
WB Right												B	B			B	A
NB Through												A	A			A	A
NB Right												A	A			A	A
SB Left												A	A			A	B
SB Through												A	A			A	A
Entire Intersection Delay (sec /veh)												4.7	9.2			5.2	11.8
Entire Intersection LOS												A	A			A	B
SH 84/RIRO Site Access	TWSC																
WB Right		--	--	--	--	--	--	--	--	A	B			A	C		
Critical Movement Delay (sec/veh)		--	--	--	--	--	--	--	--	9.7	14.6			9.9	21.9		
Mill Creek Road/Site Access	TWSC																
EB Approach		--	--	--	--	A	A	--	--	A	A			A	A		
SB Approach		--	--	--	--	A	B	--	--	A	A			A	B		
Critical Movement Delay (sec/veh)		--	--	--	--	8.6	10.0	--	--	8.6	9.6			8.7	10.2		

(1) Proposed mitigation is traffic signal control at both intersections.

Table 2
ESTIMATED TRAFFIC GENERATION
Mountain Crossing
Pagosa Springs, CO
LSC #200840; January, 2022

		Trip Generation Rates [1]					Total Trips Generated				
		Average	AM Peak-Hour		PM Peak-Hour		Average	AM Peak-Hour		PM Peak-Hour	
Trip Generating Category	Quantity	Weekday	In	Out	In	Out	Weekday	In	Out	In	Out
CURRENTLY PROPOSED LAND USE											
Phase 1											
Shopping Center [2]	90 KSF [3]	62.18	0.583	0.357	2.681	2.904	5,596	52	32	241	261
					Passby Trips [4] =		1,903	14	14	85	85
					Subtotal =		*3,693*	*38*	*18*	*156*	*176*
Phase 2											
Shopping Center [2]	200 KSF [3]	48.16	0.583	0.357	2.178	2.360	9,632	117	71	436	472
					Passby Trips [4] =		3,275	32	32	154	154
					Subtotal =		*6,357*	*85*	*39*	*282*	*318*
Phase 3											
Shopping Center [2]	350 KSF [3]	40.26	0.583	0.357	1.883	2.040	14,091	204	125	659	714
					Passby Trips [4] =		4,791	56	56	233	233
					External Primary Trips Total =		**9,300**	**148**	**69**	**426**	**481**

Notes:
(1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.
(2) ITE Land Use No. 820 - Shopping Center - formula rates for daily and PM peak - average rates for AM peak.
(3) KSF = 1,000 square feet
(4) Passby trips are assumed to be 34 percent

Table 3
Weaving Levels of Service Analysis
Mountain Crossing
Pagosa Springs, CO
LSC #200840; January, 2022

Segment	2041 Total w/ Phases 1 + 2 Level of Service AM	2041 Total w/ Phases 1 + 2 Level of Service PM	2041 Total w/ Phases 1 + 2 + 3 Level of Service AM	2041 Total w/ Phases 1 + 2 + 3 Level of Service PM
SH 84 between the site access and SH 160				
Density (passenger cars/mile/lane)	3.5	9.4	4.0	12.4
Level of Service	A	A	A	B
SH 84 between Mill Creek Road (CR 302) the site access				
Density (passenger cars/mile/lane)	2.9	5.3	3.1	5.9
Level of Service	A	A	A	A

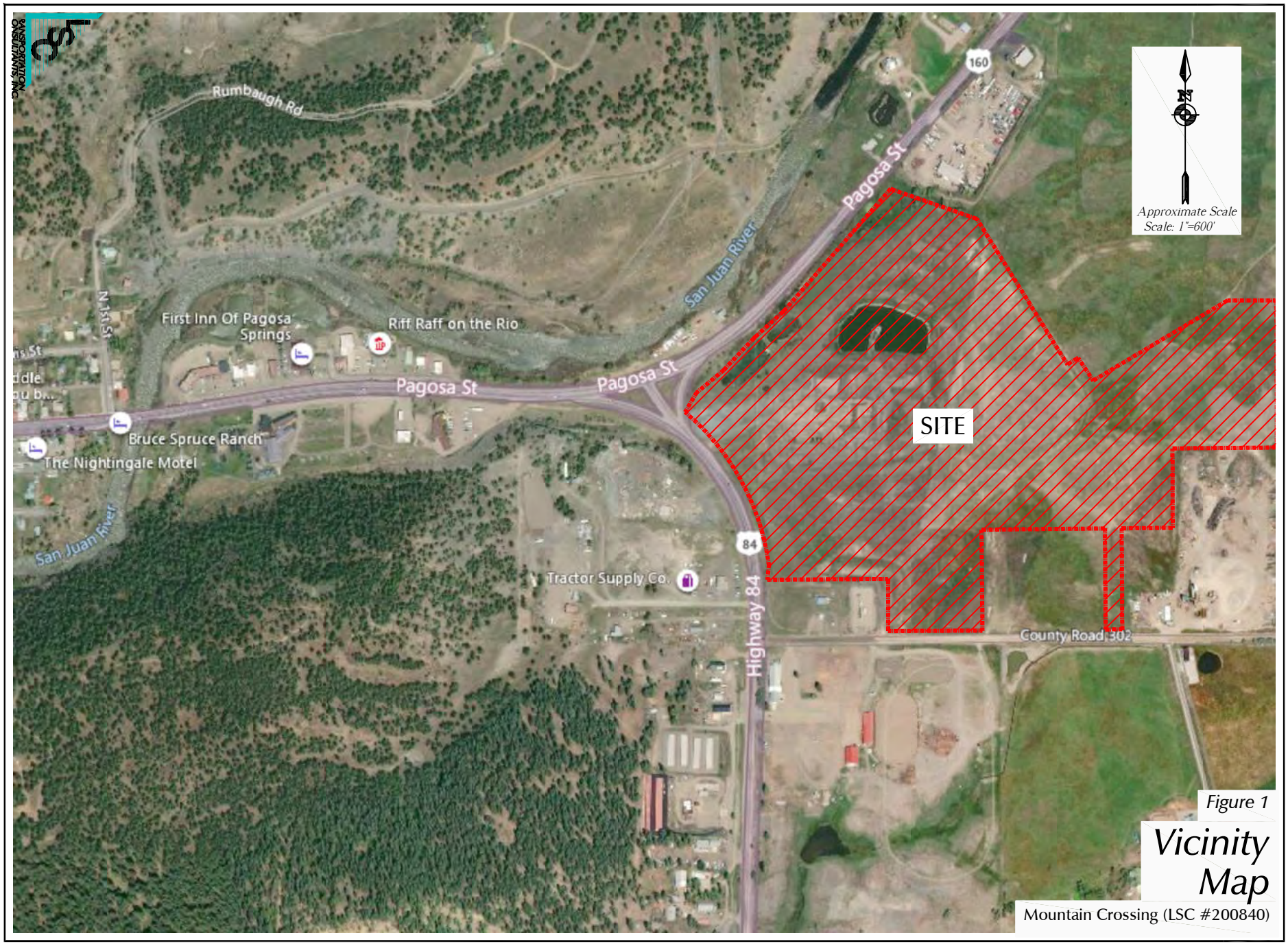


Figure 1

Vicinity Map

Mountain Crossing (LSC #200840)

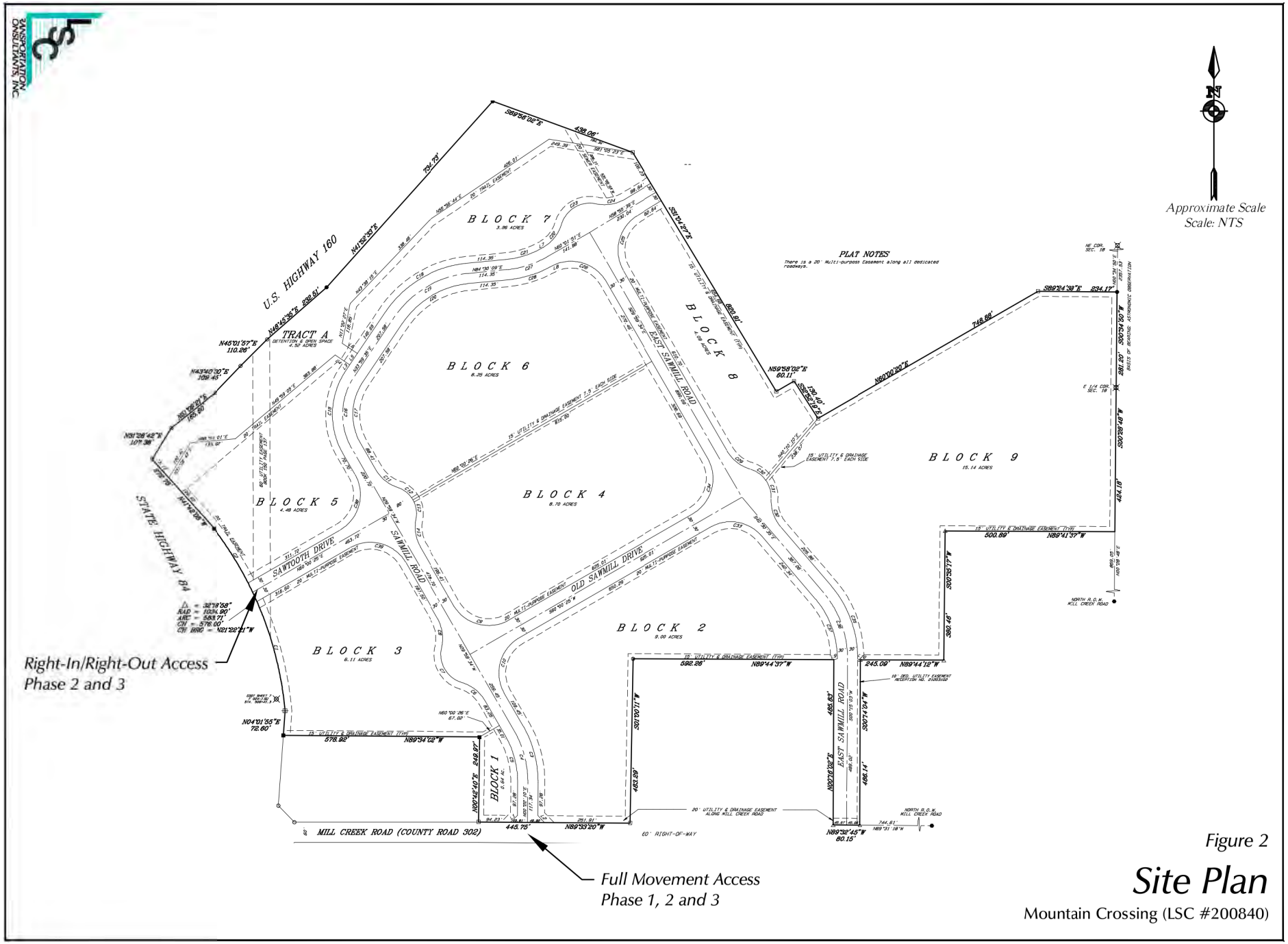
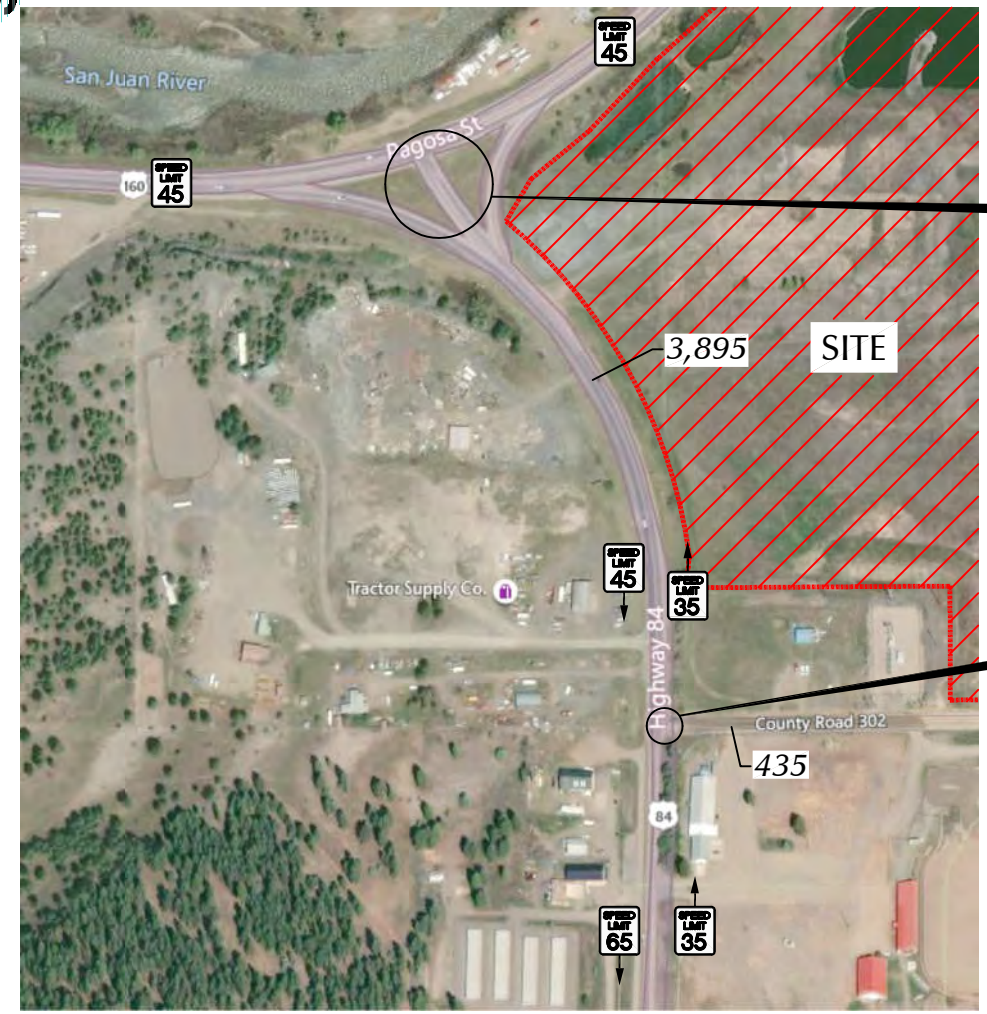
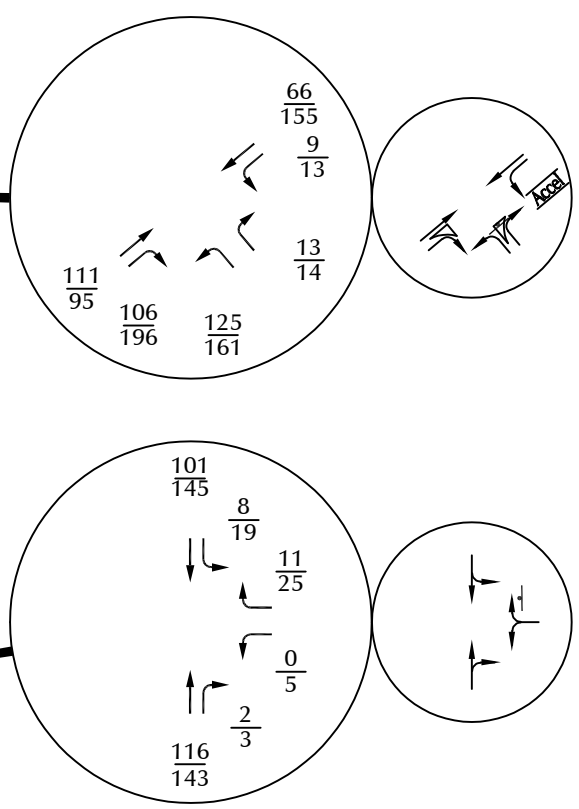


Figure 2

Site Plan

Mountain Crossing (LSC #200840)





LEGEND:

⊦ = Stop Sign

SPEED LIMIT 45 = Speed Limit

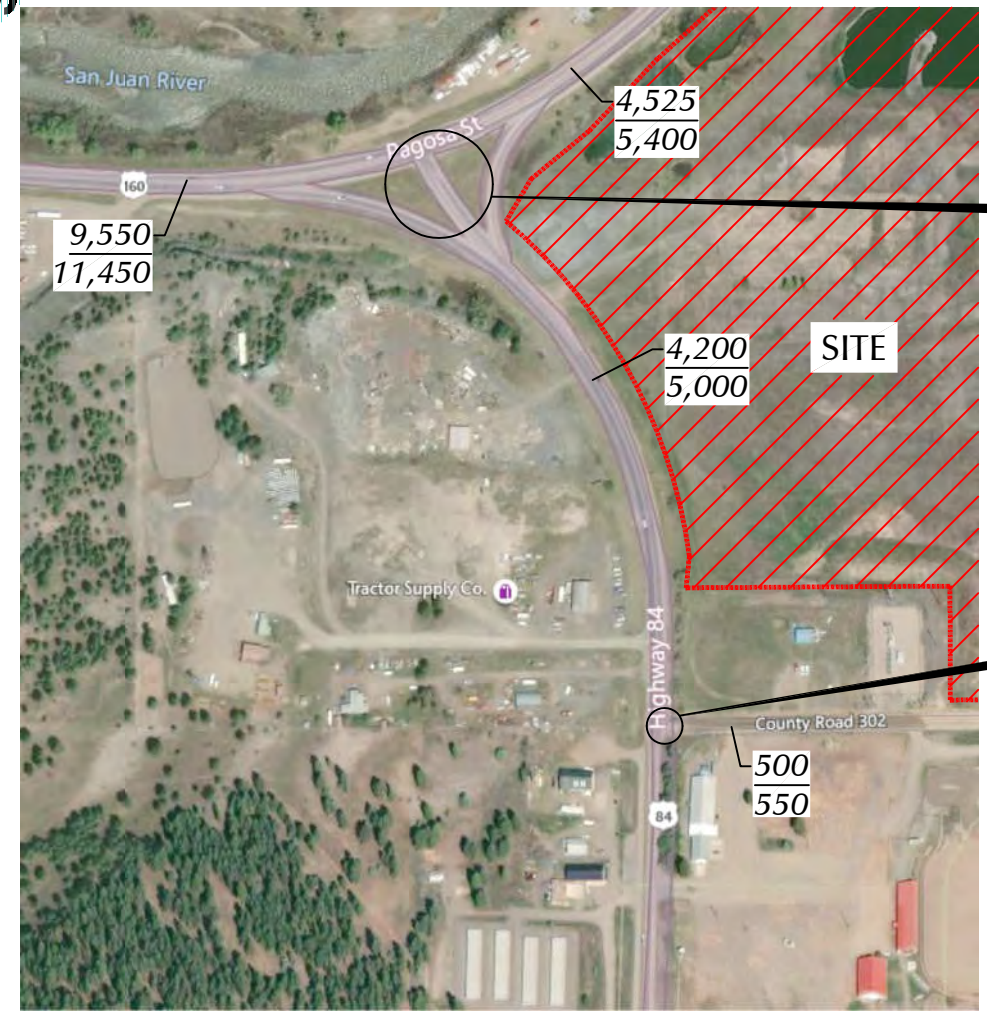
26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

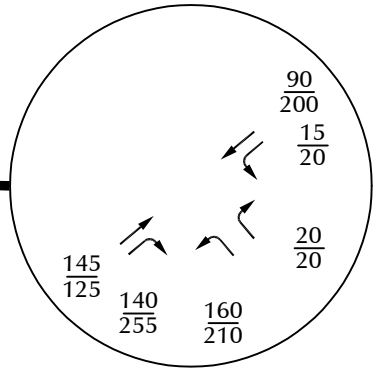
1,000 = Average Daily Traffic

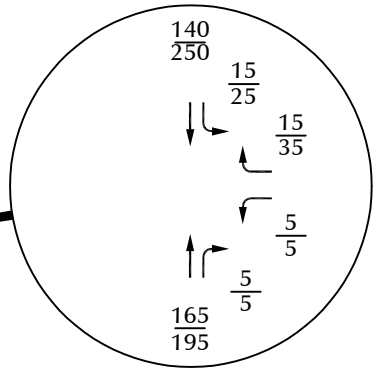
Figure 3a

November, 2020 Existing Traffic, Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)







Approximate Scale
Scale: 1"=1,200'

Notes:
1. ADT (average) per CDOT SLD plus one year of growth per the CDOT 20-year factors.
2. ADT (July) based on factor of 1.20 based on historic data at continuous counter ID# 217 on US 160 in Bayfield.
3. Peak hour volumes were adjusted based on comparing the SH 84 July ADT of 5,000vpd to November, 2020 ADT of 3,895vpd from Figure 3a. This led to an adjustment factor of 1.30.

LEGEND:

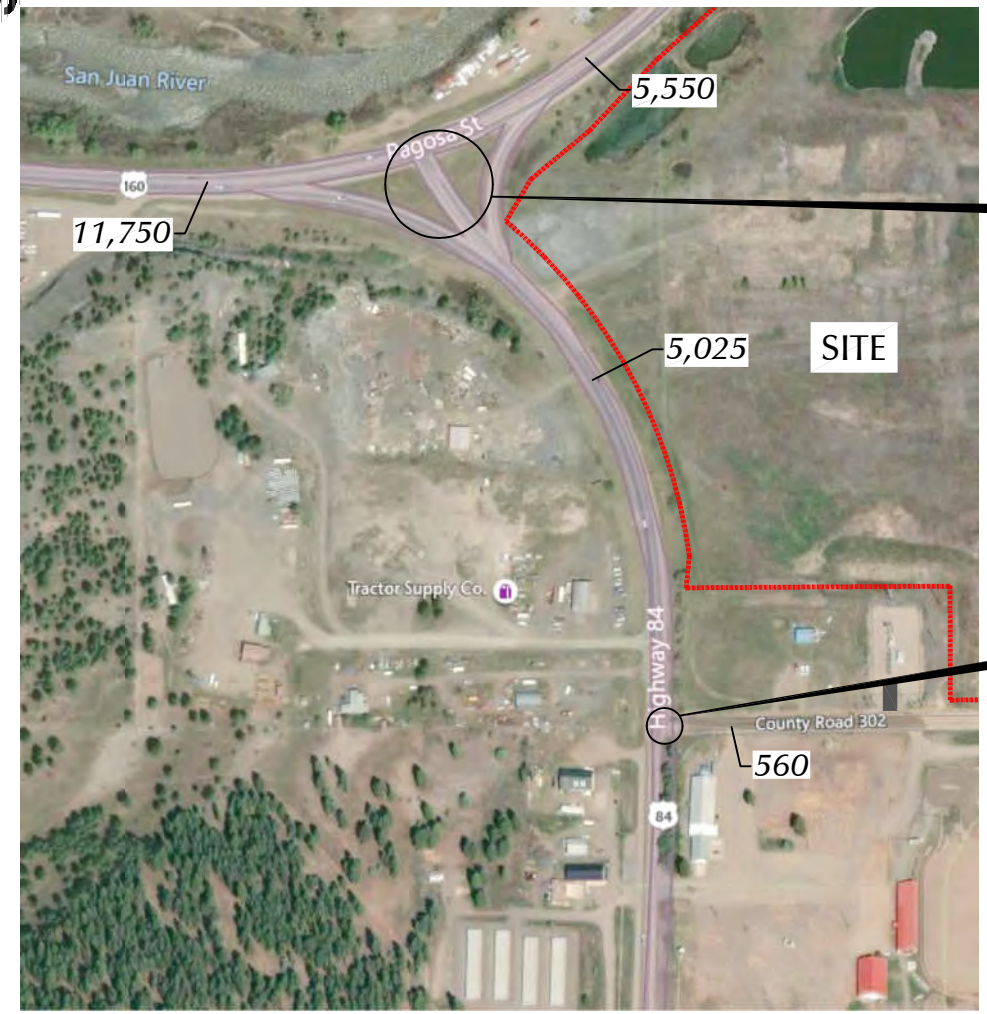
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

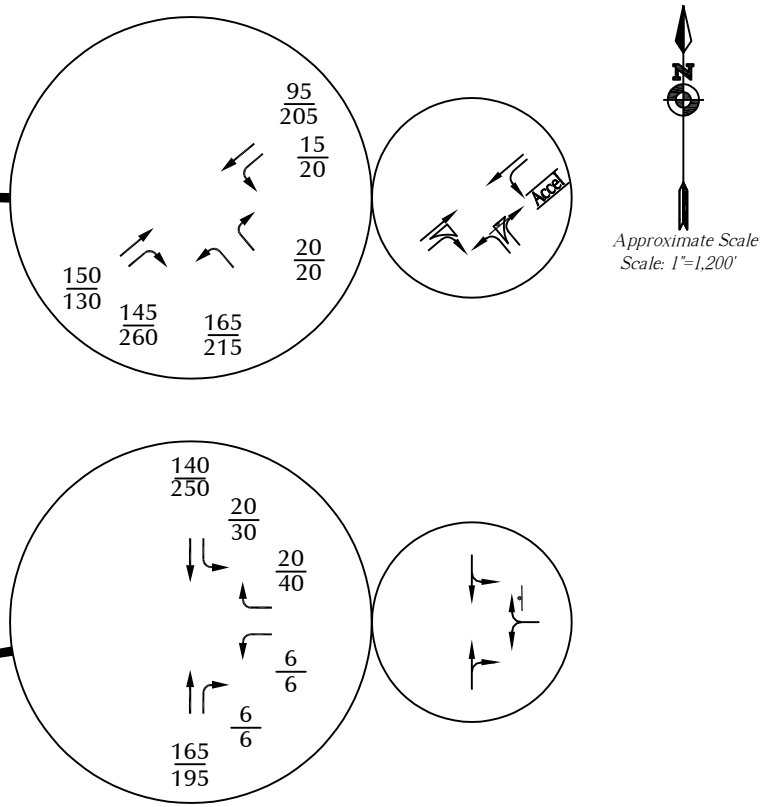
$\frac{500}{750}$ = $\frac{\text{Average Daily Traffic (Average)}}{\text{Average Daily Traffic (July)}}$

Figure 3b

July, 2020 Existing Traffic, Adjusted for Pandemic

Mountain Crossing (LSC #200840)





LEGEND:

⊦ = Stop Sign

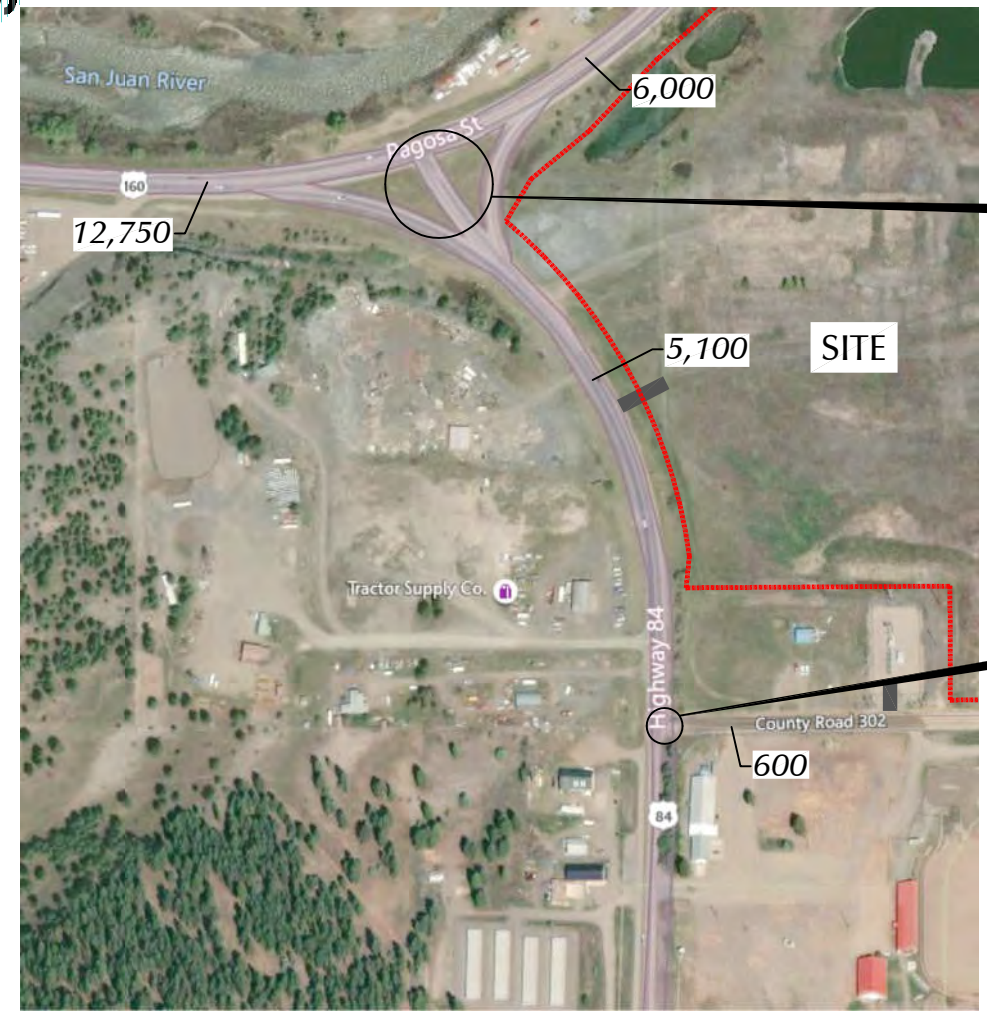
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

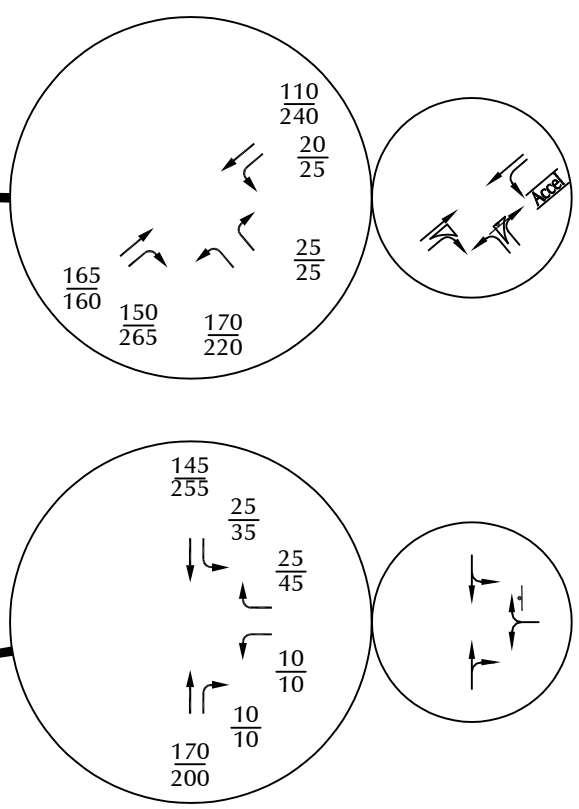
1,000 = Average Daily Traffic

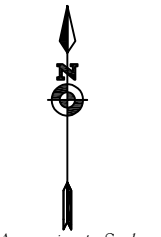
Figure 4

July, 2025 Background Traffic, Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)







LEGEND:

⊦ = Stop Sign

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

Figure 5

July, 2041 Background Traffic, Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)

N

Approximate Scale
Scale: 1"=1,200'

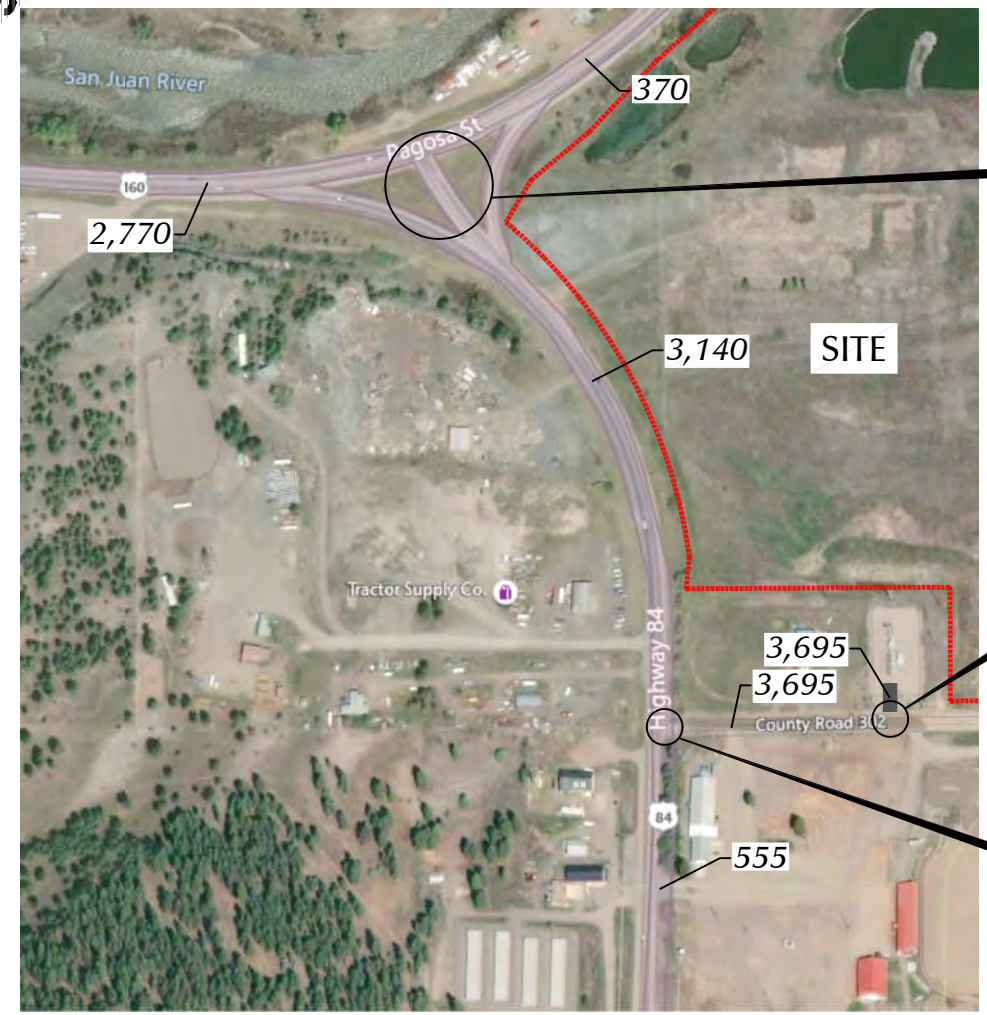
LEGEND:

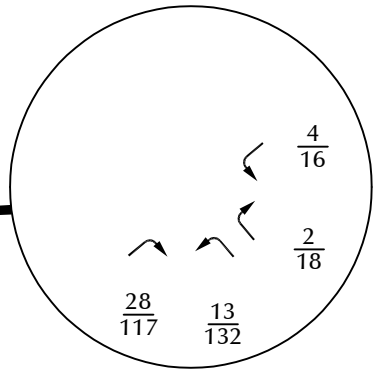
65% = Percent Directional Distribution

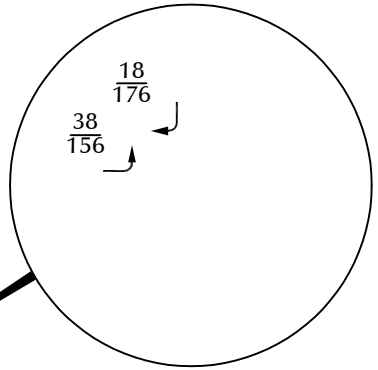
Figure 6

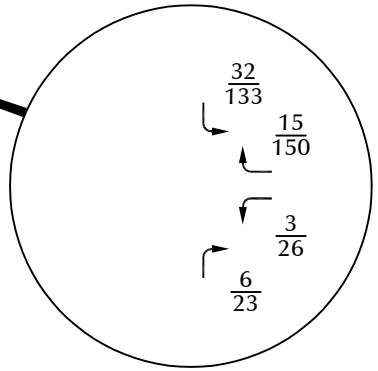
Directional Distribution of Primary Site-Generated Traffic

Mountain Crossing (LSC #200840)









Approximate Scale
Scale: 1"=1,200'

LEGEND:

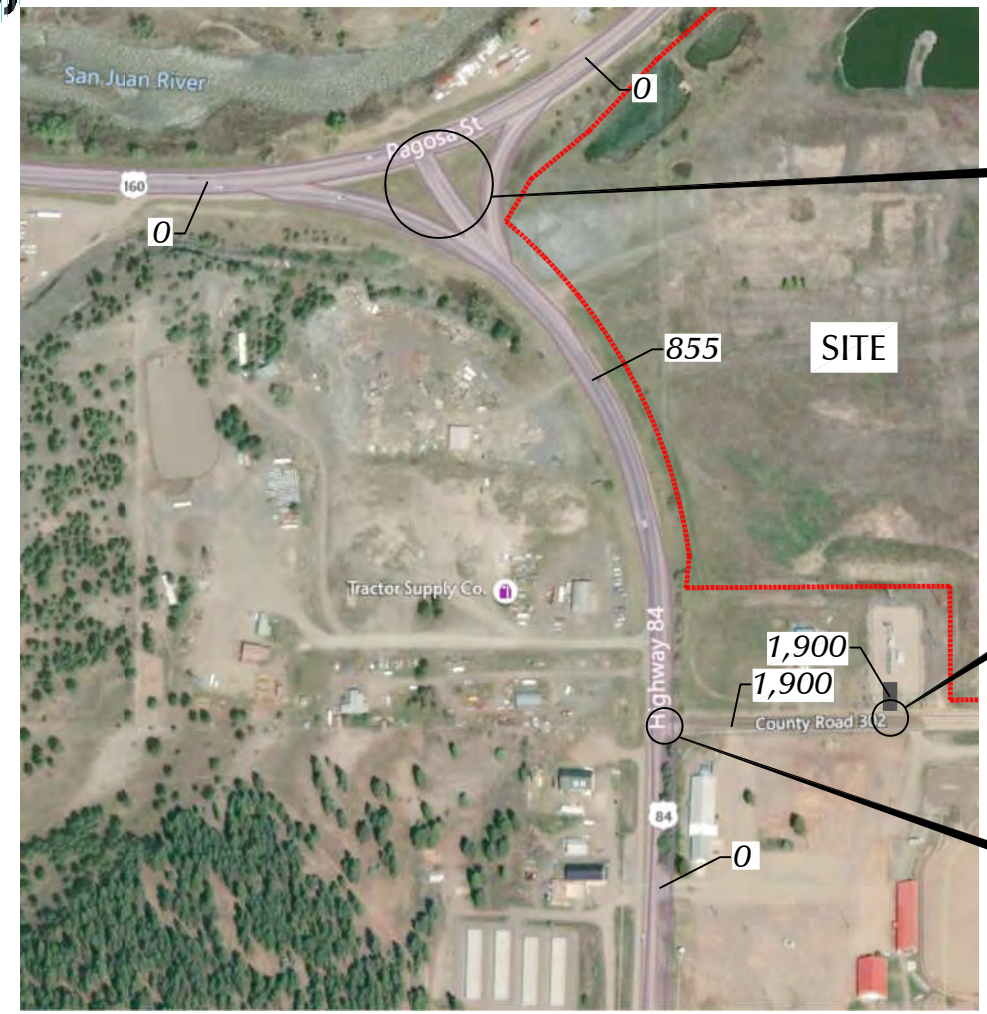
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

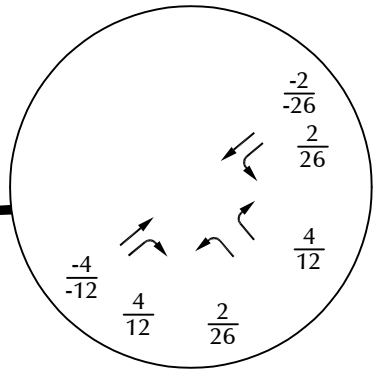
Figure 7a

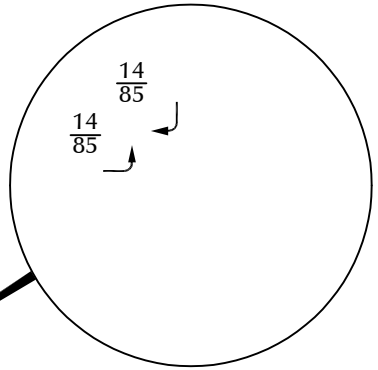
Phase 1 Assignment of Primary Site-Generated Traffic

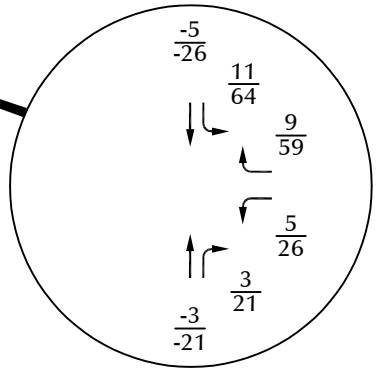
Mountain Crossing (LSC #200840)



Note: Assumes 45% passby trips from US 160 and 55% of passby trips from SH 84.







Approximate Scale
Scale: 1"=1,200'

LEGEND:

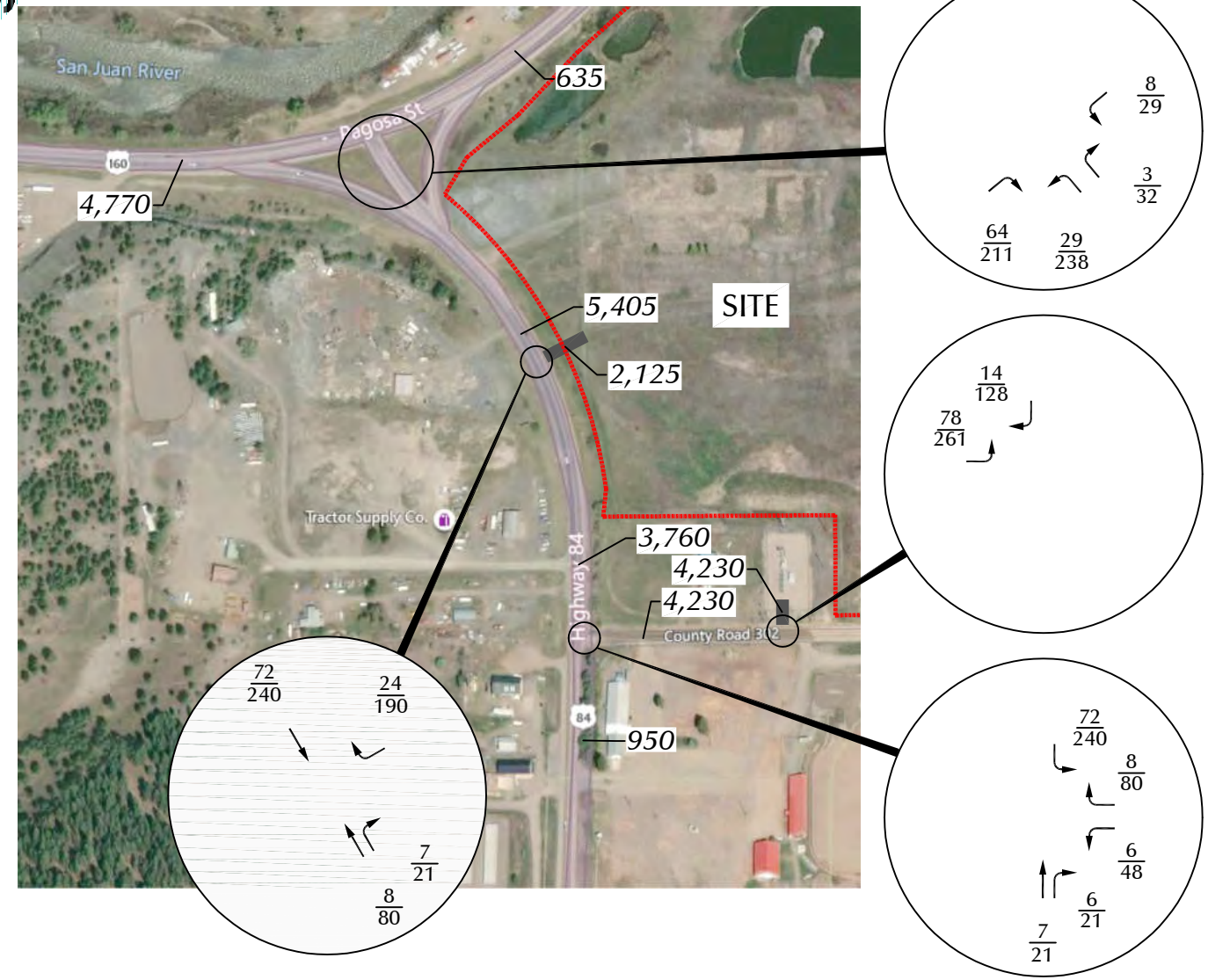
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

Figure 7b

Phase 1 Assignment of Passby Site-Generated Traffic

Mountain Crossing (LSC #200840)



Approximate Scale
Scale: 1"=1,200'

LEGEND:

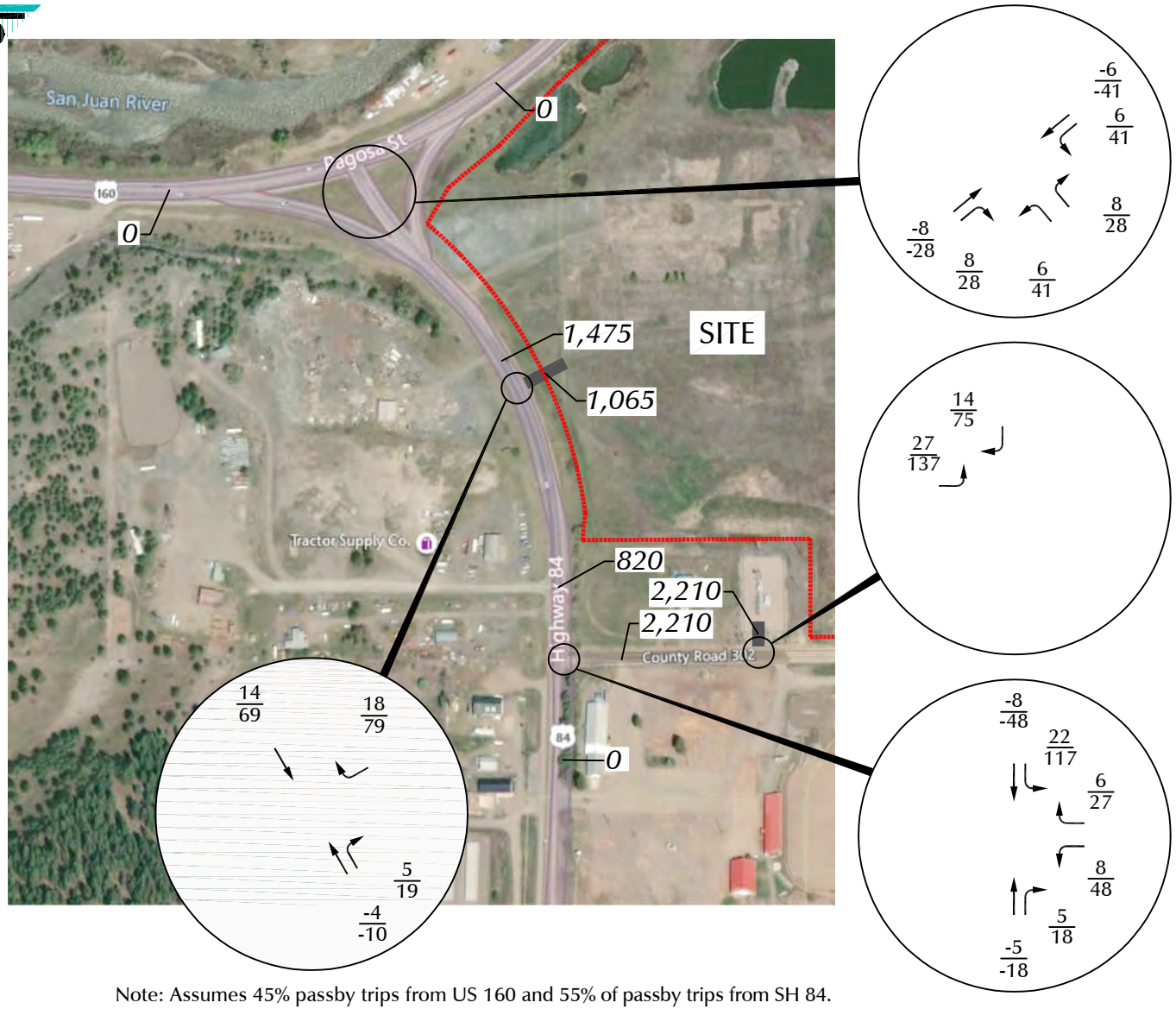
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

Figure 8a

Phase 1+2 Assignment of Primary Site-Generated Traffic

Mountain Crossing (LSC #200840)



Note: Assumes 45% passby trips from US 160 and 55% of passby trips from SH 84.

LEGEND:

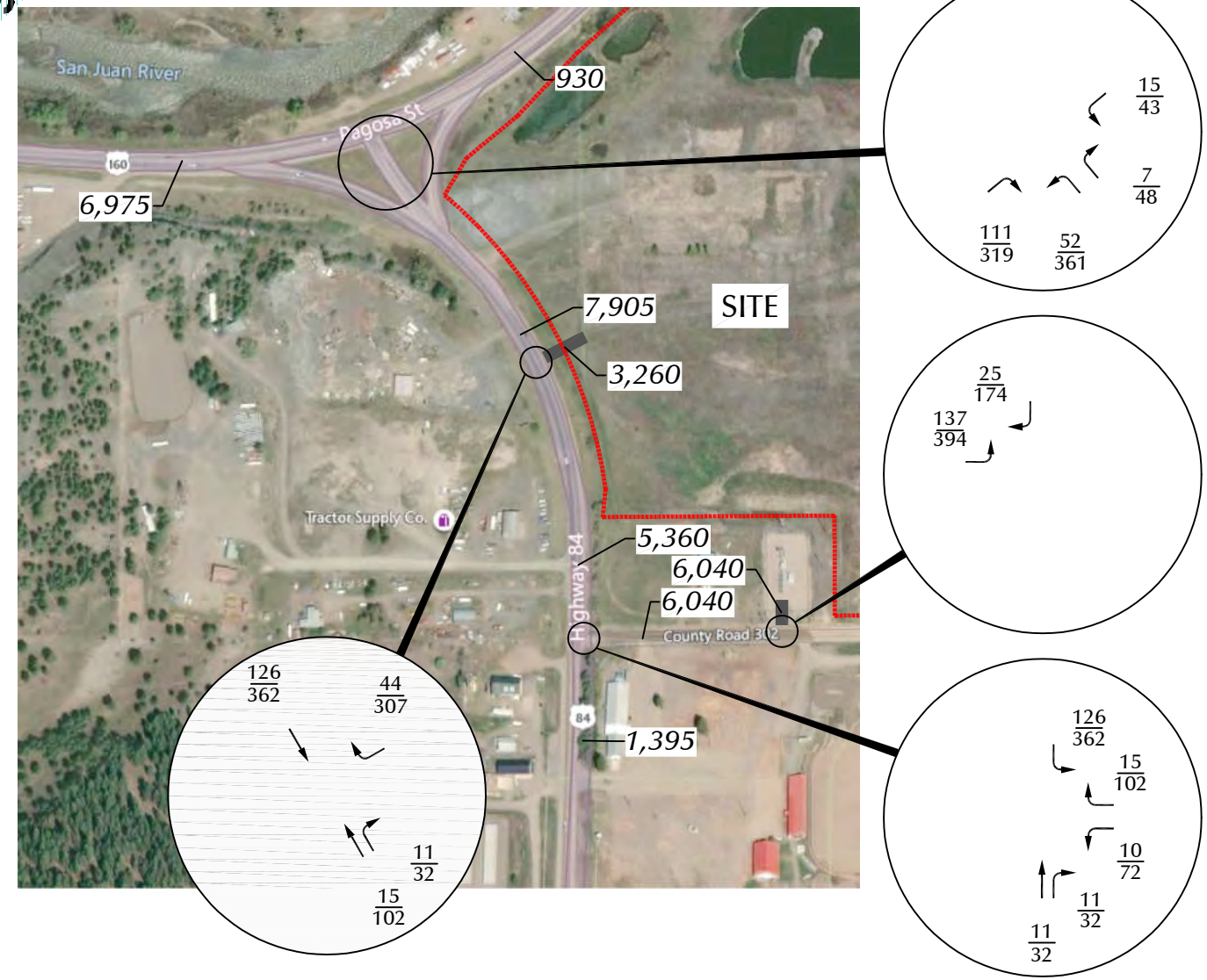
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

Figure 8b

Phase 1+2 Assignment of Passby Site-Generated Traffic

Mountain Crossing (LSC #200840)



Approximate Scale
Scale: 1"=1,200'

LEGEND:

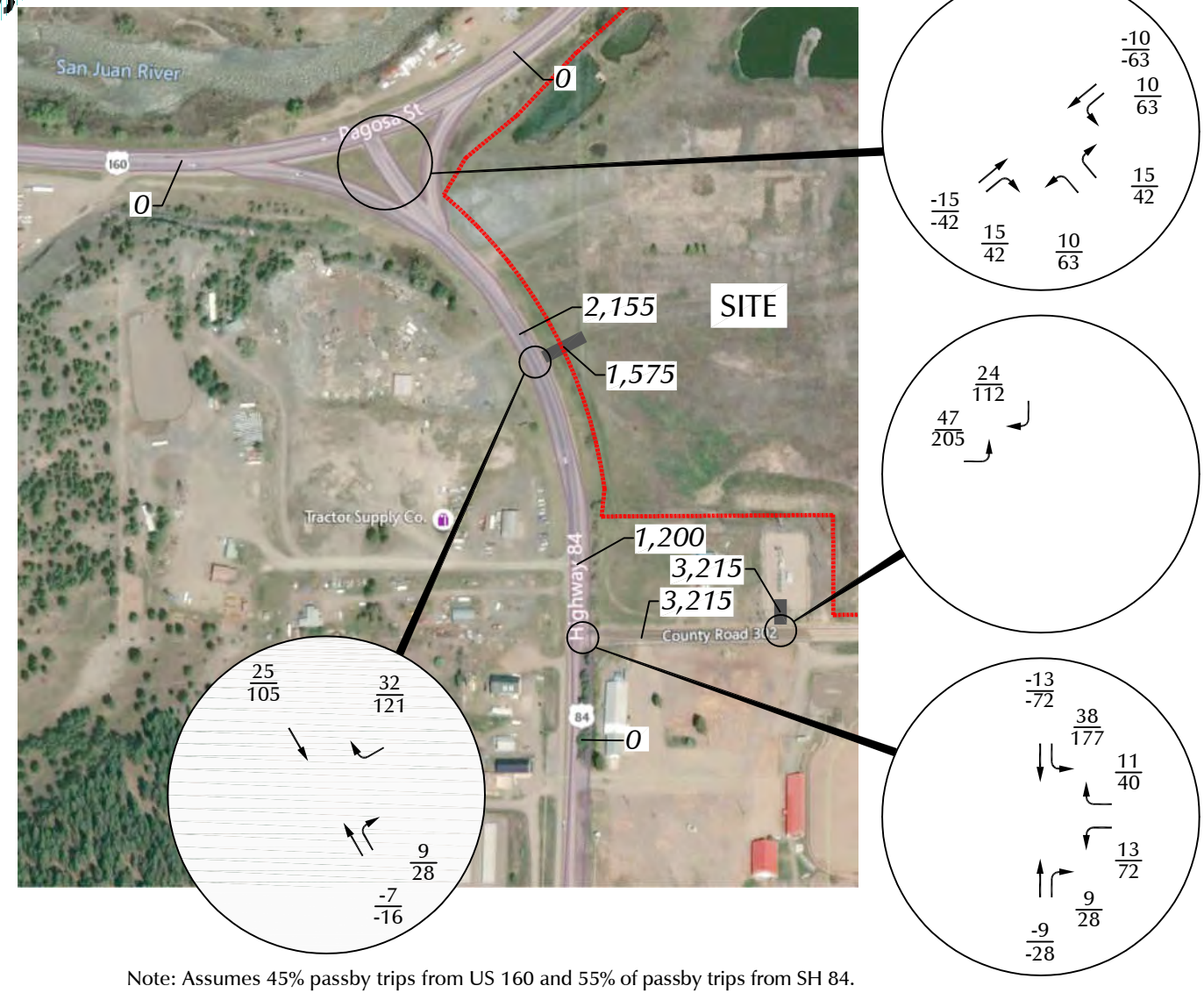
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

Figure 9a

Phase 1+2+3 Assignment of Primary Site-Generated Traffic

Mountain Crossing (LSC #200840)



Approximate Scale
Scale: 1"=1,200'

Note: Assumes 45% passby trips from US 160 and 55% of passby trips from SH 84.

LEGEND:

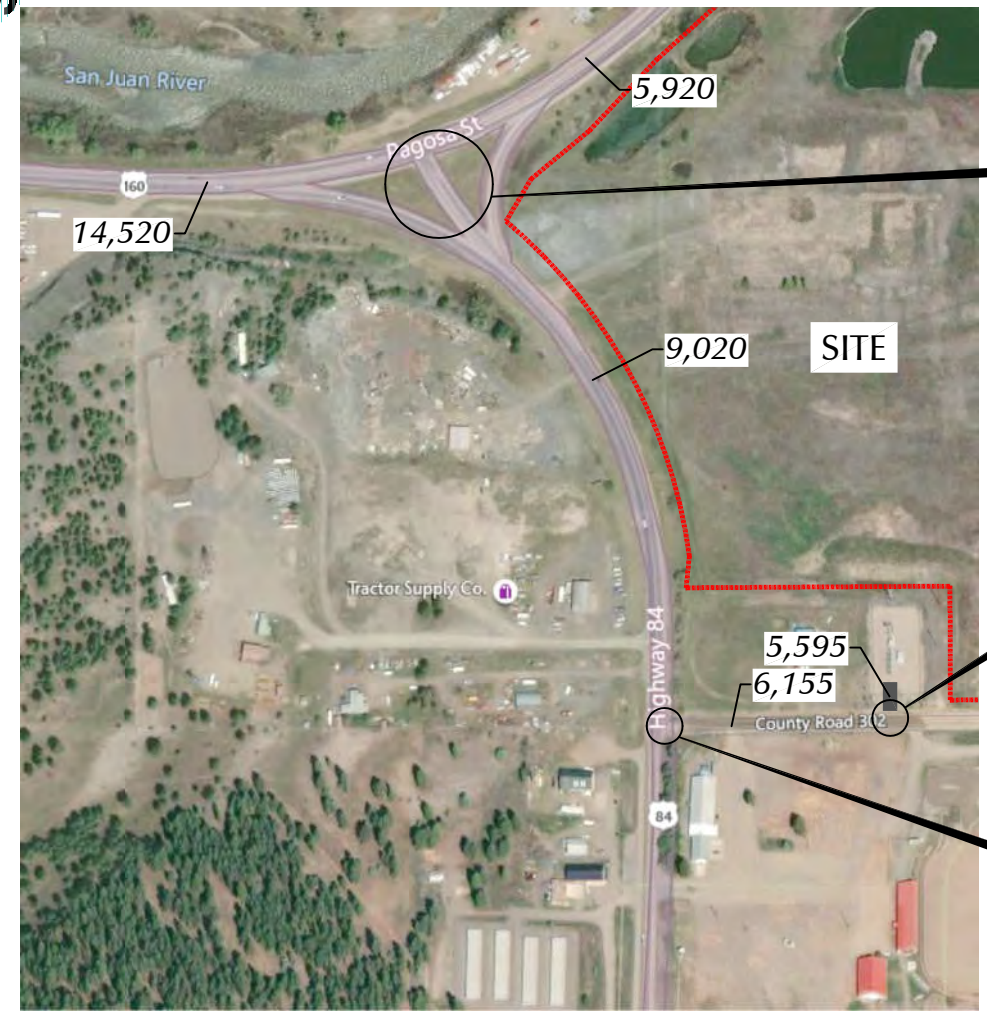
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

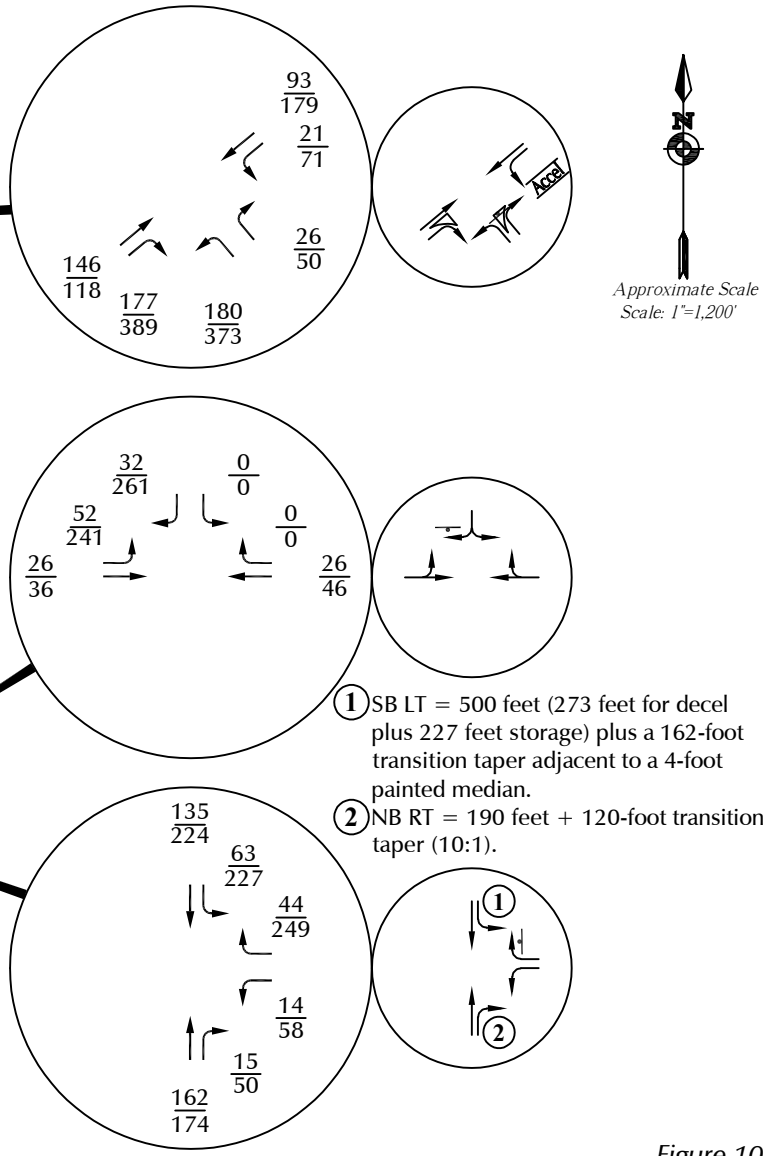
1,000 = Average Daily Traffic

Figure 9b

Phase 1+2+3 Assignment of Passby Site-Generated Traffic

Mountain Crossing (LSC #200840)





Notes:
1. This scenario is the basis for the access permit application.
2. The volumes in this figure are the sum of the volumes in Figure 4, Figure 7a and Figure 7b.

LEGEND:

⊦ = Stop Sign

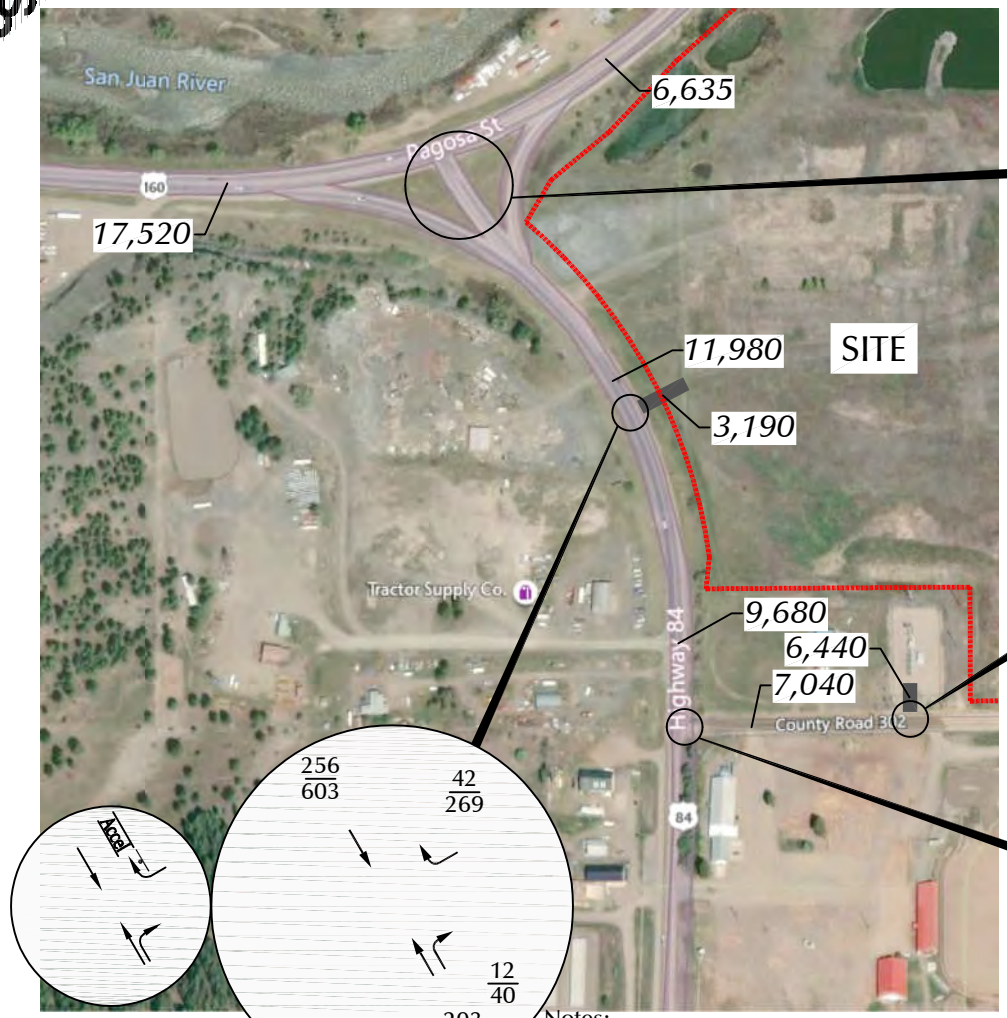
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

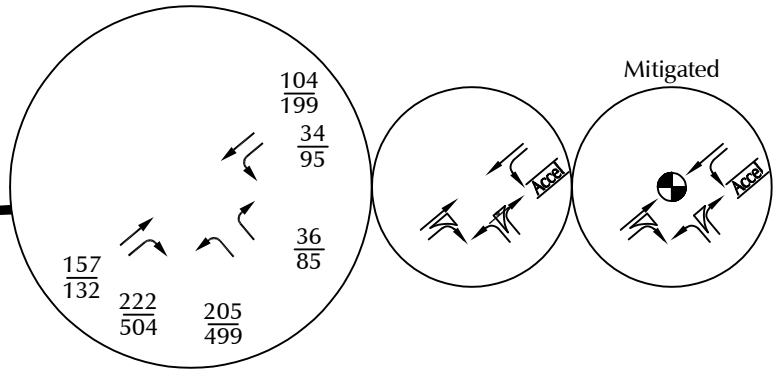
1,000 = Average Daily Traffic

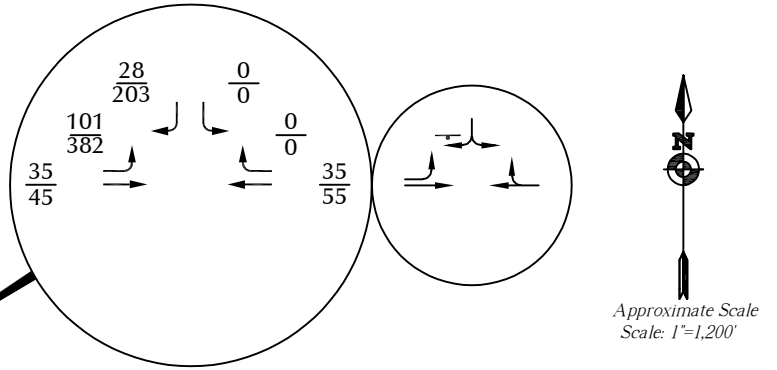
Figure 10

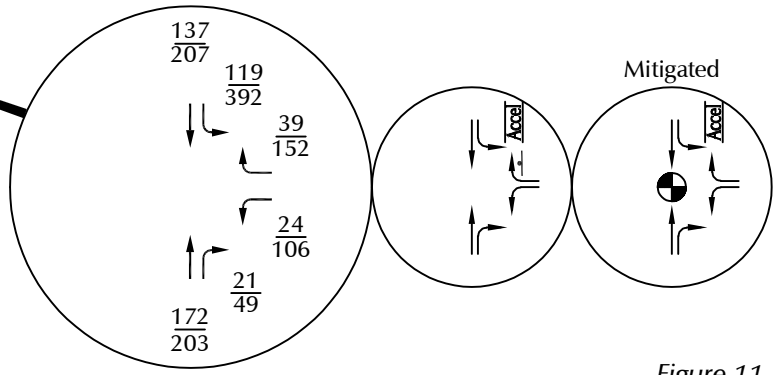
Year 2025 Total Traffic w/ Phase 1, Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)









Approximate Scale
Scale: 1"=1,200'

LEGEND:

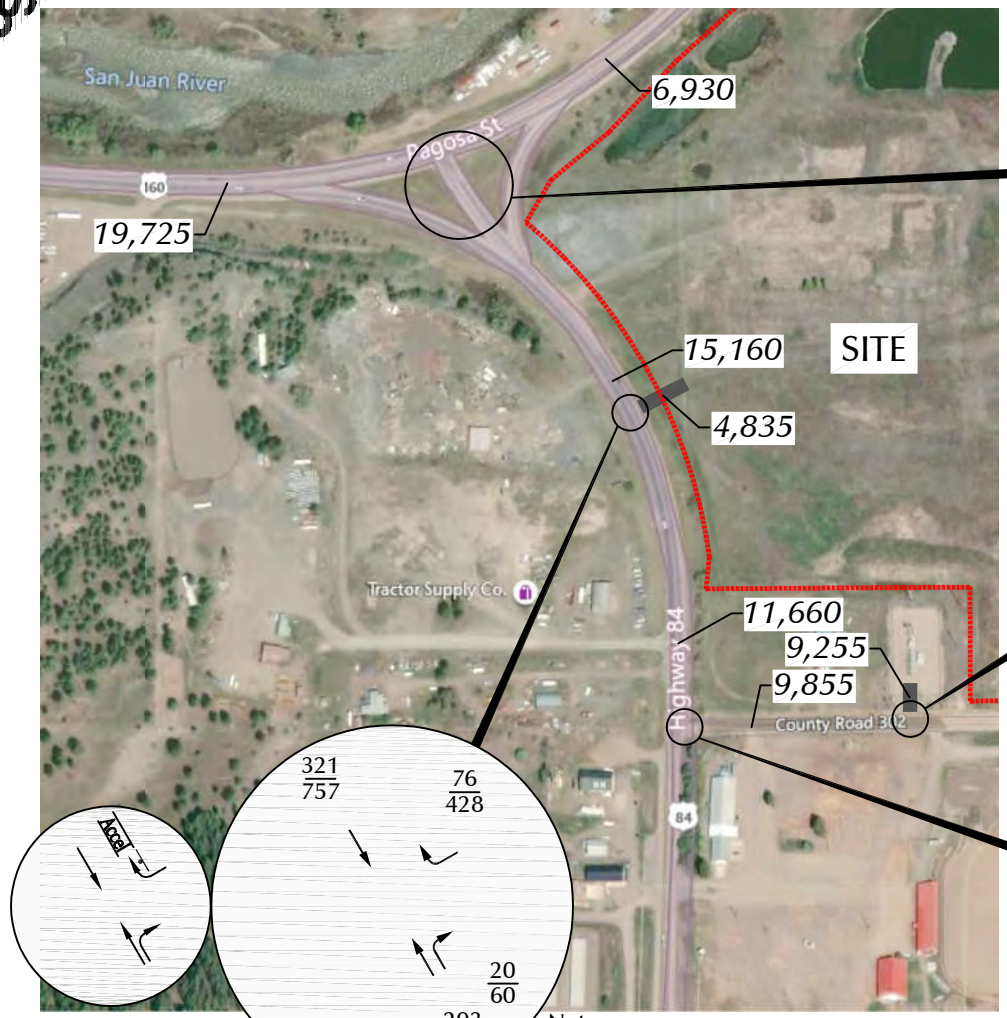
- ⊦ = Stop Sign
- ◒ = Traffic Signal
- 26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic

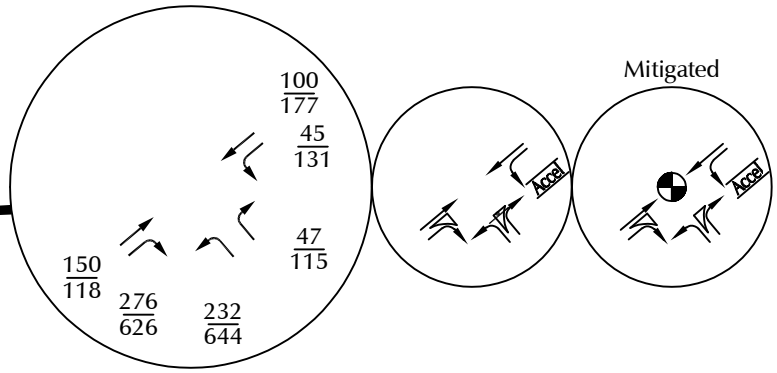
Notes:
1. The 2041 conceptual lane geometry for SH 84 is shown in Figure 13.
2. The volumes in this figure are the sum of the volumes in Figure 5, Figure 8a and Figure 8b.

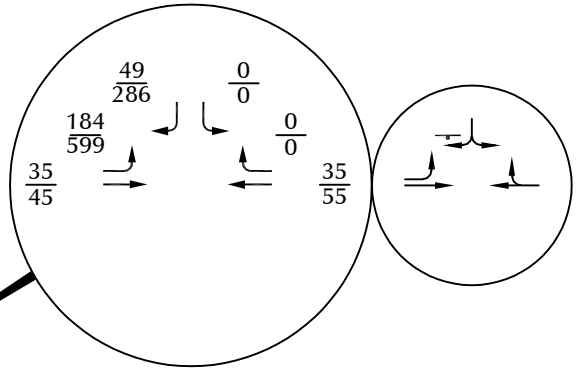
Figure 11

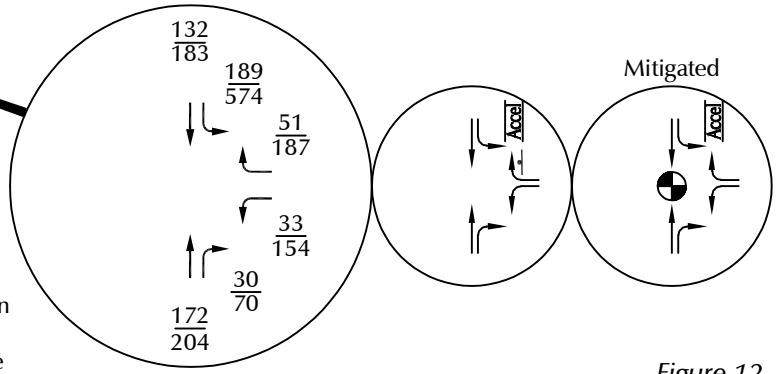
Year 2041 Total Traffic w/ Phase 1+2, Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)









Approximate Scale
Scale: 1"=1,200'

LEGEND:

- ⊦ = Stop Sign
- ◒ = Traffic Signal
- 26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic

Notes:
1. The 2041 conceptual lane geometry is shown in Figure 13.
2. The volumes in this figure are the sum of the volumes in Figure 5, Figure 9a and Figure 9b.

Figure 12

Year 2041 Total Traffic w/ Phase 1+2+3, Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)

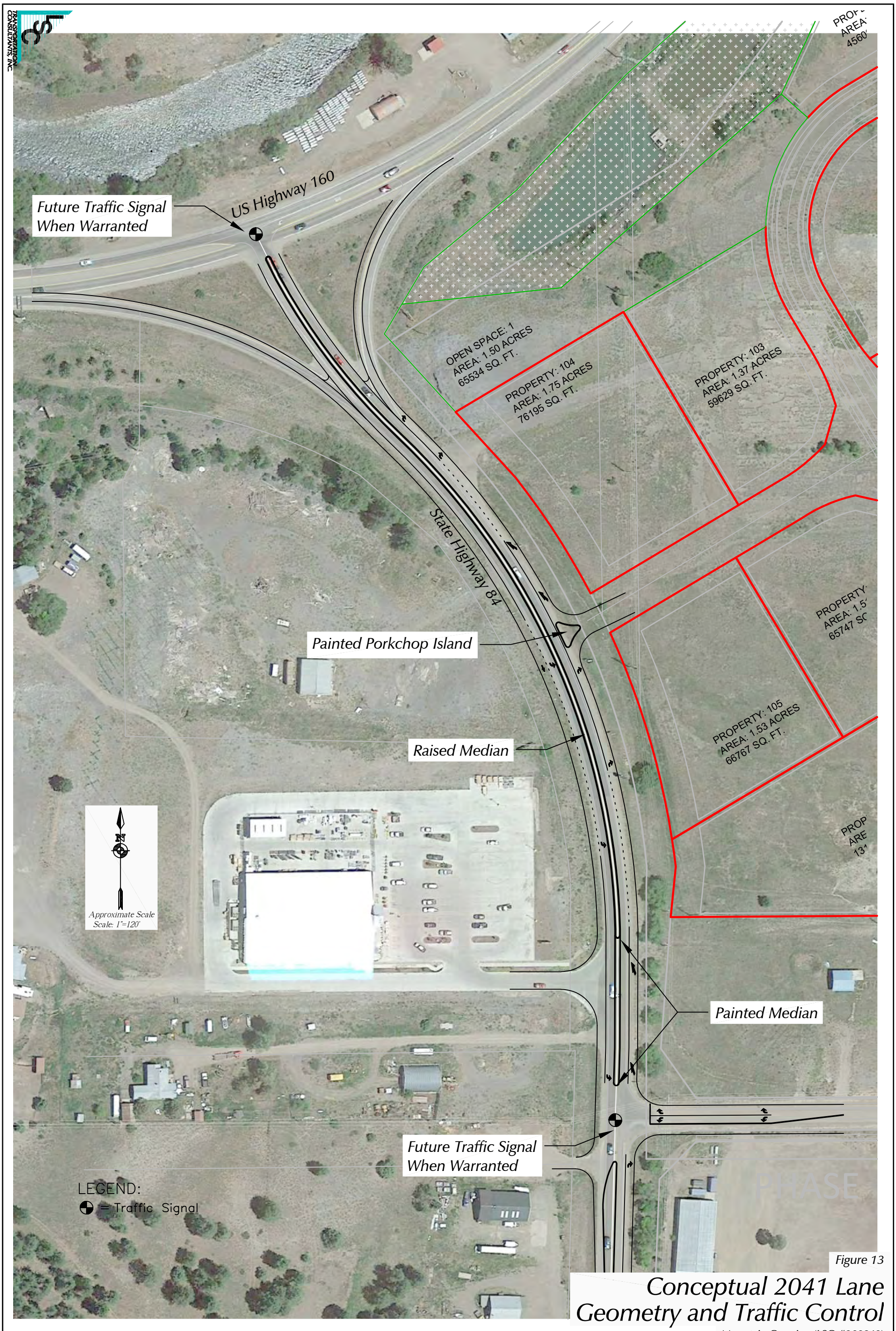
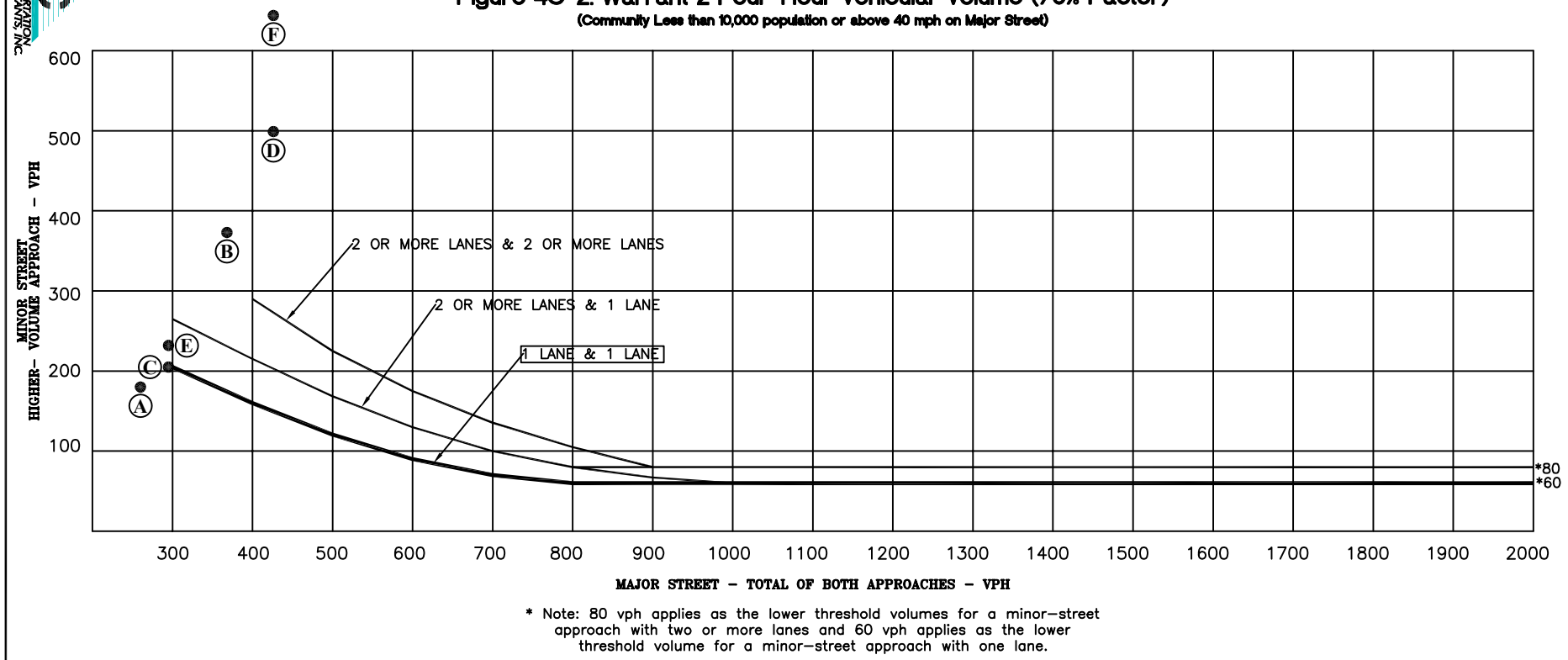


Figure 13

Conceptual 2041 Lane Geometry and Traffic Control

Mountain Crossing (LSC #200840)



Data Points = (Major Street, Minor Street)

Ⓐ 2025 Total AM Peak (Phase 1)(Figure 10) = (260,180)
Ⓑ 2025 Total PM Peak (Phase 1) (Figure 10) = (368,373)

Ⓒ 2041 Total AM Peak (Phase 1+2)(Figure 11) = (295,205)
Ⓓ 2041 Total PM Peak (Phase 1+2) (Figure 11) = (426,499)

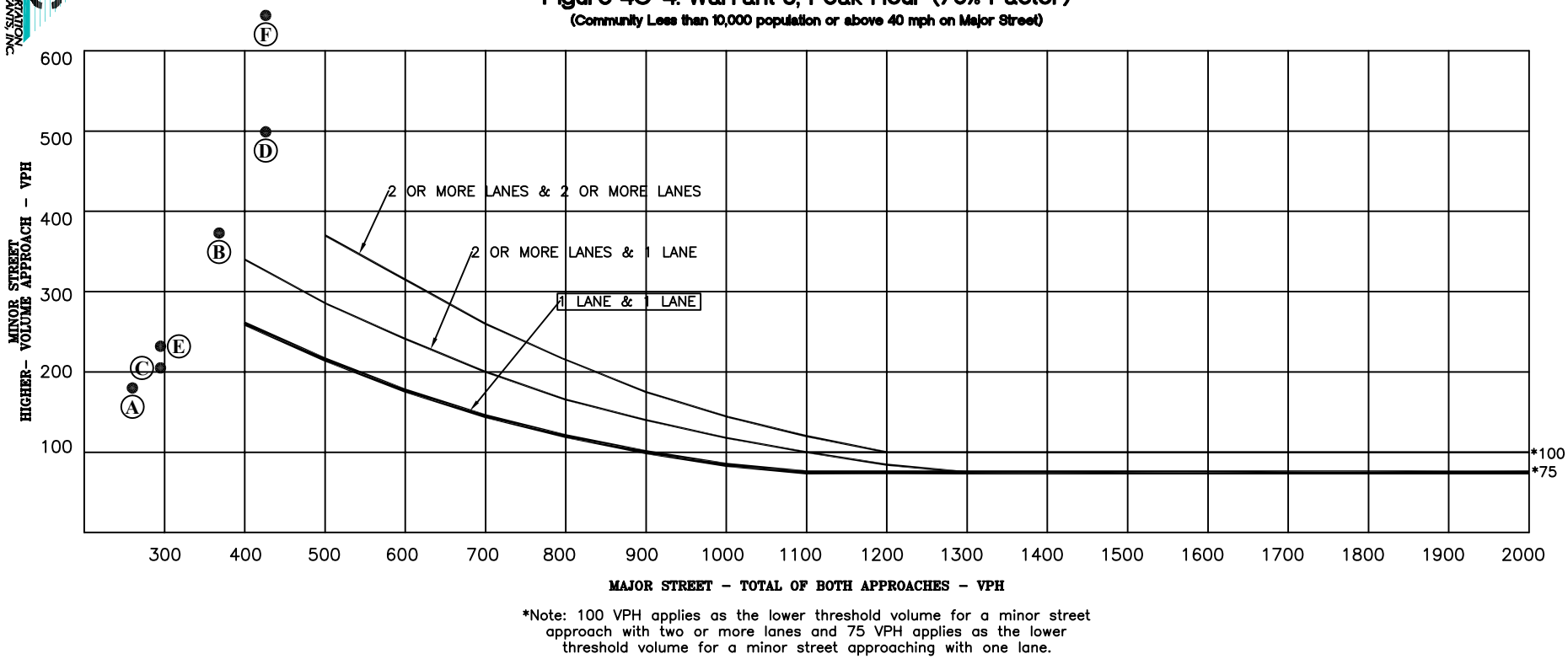
Ⓔ 2041 Total AM Peak (Phase 1+2+3)(Figure 12) = (295,232)
Ⓕ 2041 Total PM Peak (Phase 1+2+3) (Figure 12) = (426,644)

Notes:
1. Major street volumes include EB through, WB through and WB left. Minor street volumes include only NB left.
2. This warrant will likely be met with development of Phase 2 or 3 .

Figure 14a

Warrant 2 - Four-Hour Vehicular Volume US 160/SH 84

Mountain Crossing (LSC #200840)



Data Points = (Major Street, Minor Street)

Ⓐ 2025 Total AM Peak (Phase 1)(Figure 10) = (260,180)
Ⓑ 2025 Total PM Peak (Phase 1) (Figure 10) = (368,373)

Ⓒ 2041 Total AM Peak (Phase 1+2)(Figure 11) = (295,205)
Ⓓ 2041 Total PM Peak (Phase 1+2) (Figure 11) = (426,499)

Ⓔ 2041 Total AM Peak (Phase 1+2+3)(Figure 12) = (295,232)
Ⓕ 2041 Total PM Peak (Phase 1+2+3) (Figure 12) = (426,644)

Notes:
1. Major street volumes include EB through, WB through and WB left. Minor street volumes include only NB left.
2. This warrant will likely be met with development of Phase 1 but traffic signal control will not be needed until development of Phase 2 as Phase 1 is shown to operate acceptably with stop sign control. in addition the peak hour warrant is not typically used for retail.

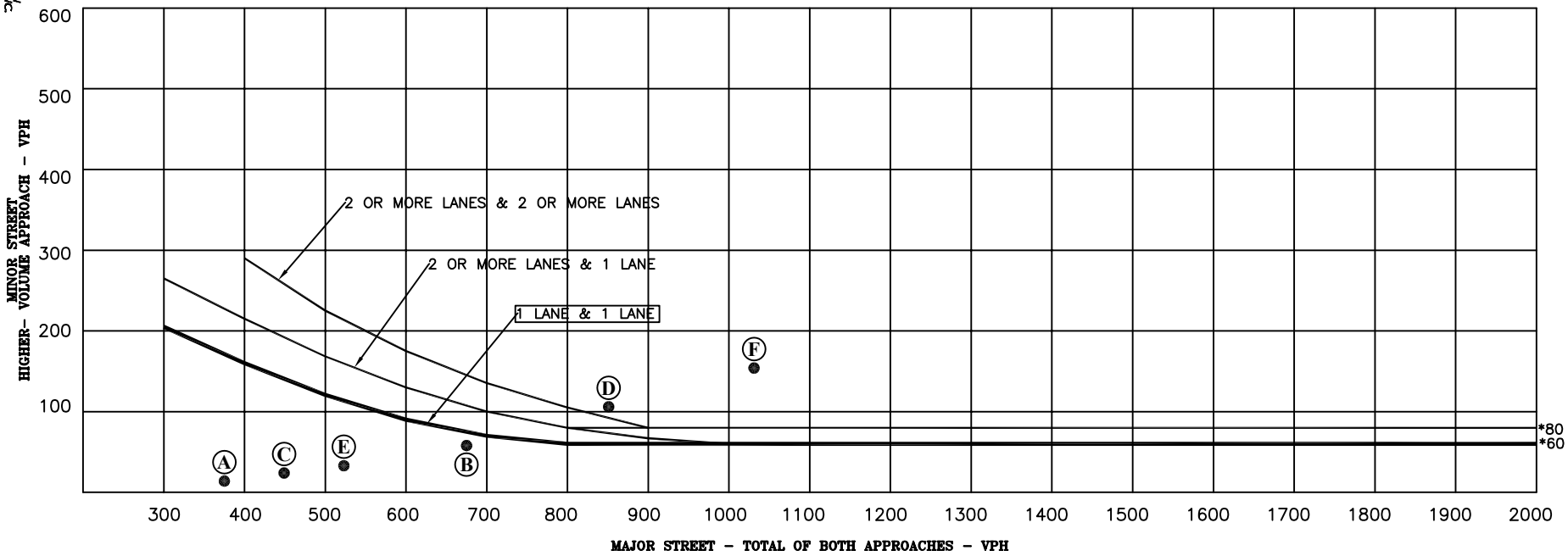
Figure 14b

Warrant 3 - Peak-Hour Vehicular Volume US 160/SH 84

Mountain Crossing (LSC #200840)

Figure 4C-2. Warrant 2 Four-Hour Vehicular Volume (70% Factor)

(Community Less than 10,000 population or above 40 mph on Major Street)



* Note: 80 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Data Points = (Major Street, Minor Street)

Ⓐ 2025 Total AM Peak (Phase 1)(Figure 10) = (375,14)
Ⓑ 2025 Total PM Peak (Phase 1) (Figure 10) = (675,58)

Ⓒ 2041 Total AM Peak (Phase 1+2)(Figure 11) = (449,24)
Ⓓ 2041 Total PM Peak (Phase 1+2) (Figure 11) = (851,106)

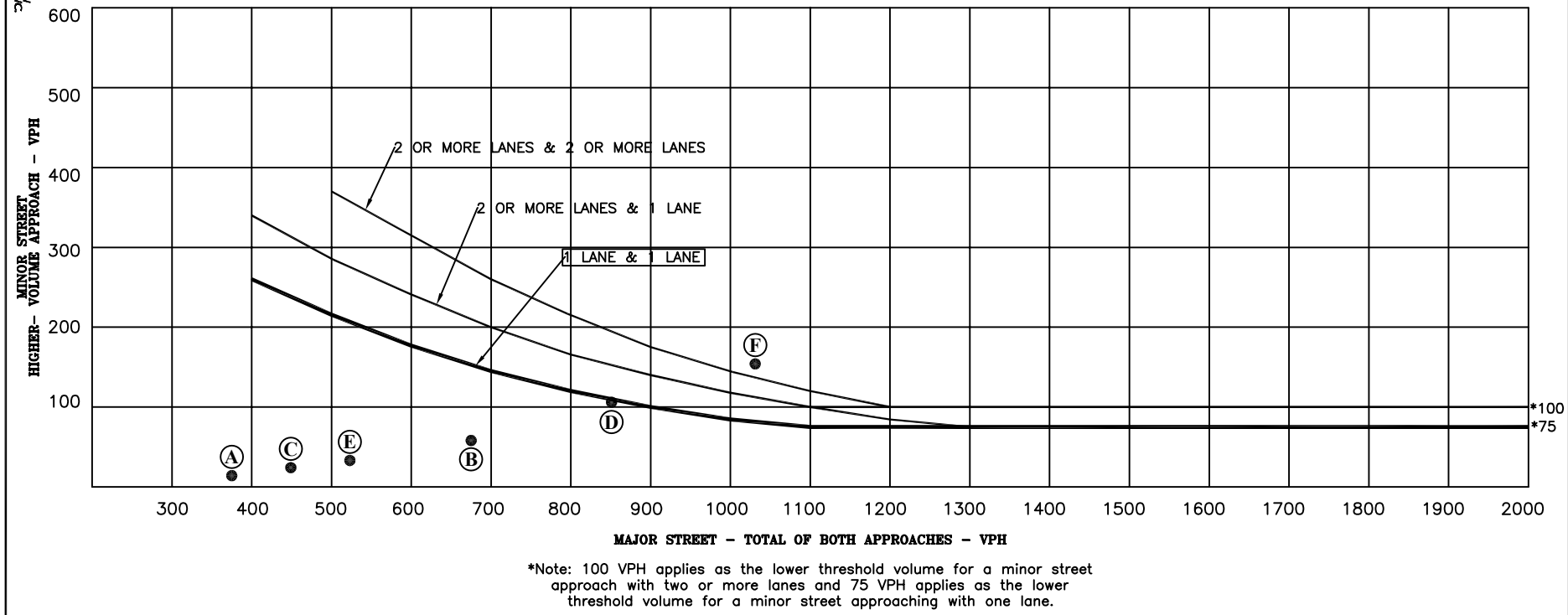
Ⓔ 2041 Total AM Peak (Phase 1+2+3)(Figure 12) = (523,33)
Ⓕ 2041 Total PM Peak (Phase 1+2+3) (Figure 12) = (1031,154)

Notes:
Major street volumes include NB through, NB right, SB through and SB left. Minor street volumes include WB left.
This warrant will likely be met with development of Phase 2 or 3 based on four afternoon hours likely exceeding the threshold.

Figure 15a

Warrant 2 - Four-Hour Vehicular Volume SH 84/Mill Creek Road

Mountain Crossing (LSC #200840)



Data Points = (Major Street, Minor Street)

Ⓐ 2025 Total AM Peak (Phase 1)(Figure 10) = (375,14)
Ⓑ 2025 Total PM Peak (Phase 1) (Figure 10) = (675,58)

Ⓒ 2041 Total AM Peak (Phase 1+2)(Figure 11) = (449,24)
Ⓓ 2041 Total PM Peak (Phase 1+2) (Figure 11) = (851,106)

Ⓔ 2041 Total AM Peak (Phase 1+2+3)(Figure 12) = (523,33)
Ⓕ 2041 Total PM Peak (Phase 1+2+3) (Figure 12) = (1031,154)

Notes:
1. Major street volumes include NB through, NB right, SB through and SB left. Minor street volumes include WB left.
2. This warrant will not likely be met until Phase 3.

Figure 15b

Warrant 3 - Peak-Hour Vehicular Volume SH 84/Mill Creek Road

Mountain Crossing (LSC #200840)

Route 084A From 26 to 28

Legend

- Route
- Milepoint

Structures

- Major Structure
- Minor Structure

Created:

Date: 12/6/2020

Time: 8:35:28 AM

0 0.15 0.3 0.45 0.6

Miles

N W E S

CDOT

The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".

Route 084A
From 26 To 28

Ramps
Overpass
Underpass
Structures

CLASSIFICATION

Access Control	R-A: Regional Highway

SAFETY

Primary Speed Limit	60	50	35

TRAFFIC

AADT	3300	4200
DHV	15.5	
Peak Truck Percentage	0.70	0.42
V/C Ratio	0.33	0.35
V/C Ratio 20	0.34	0.37
Year 20 Factor	1.02	1.05

It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.

Route 160A From 143 to 146

Legend

- Route
- Milepoint

Structures

- Major Structure
- Minor Structure

Created:

Date: 12/6/2020

Time: 8:40:04 AM

0 0.15 0.3 0.45 0.6

Miles

N W E S

CDOT

The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".

CLASSIFICATION

Access Control	NR-C: Non-Rural Arterial	NR-B: Non-Rural Arterial		R-A: Regional Highway

SAFETY

Primary Speed Limit	25	30	35	45	55	60

TRAFFIC

AADT	15000	9500	4500
DHV	9.5	11.0	12.5
Peak Truck Percentage	0.54	0.50	1.27
V/C Ratio	0.45	0.51	0.35
V/C Ratio 20	0.50	0.57	0.40
Year 20 Factor	1.12	1.11	1.15

It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HIGHWAY 84
E/W STREET: HIGHWAY 160
CITY: PAGOSA SPRINGS
COUNTY: ARCHULETA

File Name : HWY84HWY160
Site Code : 00000011
Start Date : 12/1/2020

Groups Printed- VEHICLES

	Southbound				HIGHWAY 160 Westbound				HIGHWAY 84 Northbound				HIGHWAY 160 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	0	6	0	0	12	0	0	0	0	12	12	0	42
06:45 AM	0	0	0	0	0	8	0	0	16	0	0	0	0	16	25	0	65
Total	0	0	0	0	0	14	0	0	28	0	0	0	0	28	37	0	107
07:00 AM	0	0	0	0	0	10	0	0	11	0	2	0	0	16	14	0	53
07:15 AM	0	0	0	0	2	10	0	0	32	0	0	0	0	22	19	0	85
07:30 AM	0	0	0	0	2	17	0	0	28	0	2	0	0	34	18	0	101
07:45 AM	0	0	0	0	3	17	0	0	31	0	4	0	0	26	31	0	112
Total	0	0	0	0	7	54	0	0	102	0	8	0	0	98	82	0	351
08:00 AM	0	0	0	0	3	16	0	0	31	0	5	0	0	21	31	0	107
08:15 AM	0	0	0	0	1	16	0	0	35	0	2	0	0	30	26	0	110
Total	0	0	0	0	4	32	0	0	66	0	7	0	0	51	57	0	217
04:00 PM	0	0	0	0	0	47	0	0	32	0	4	0	0	28	35	0	146
04:15 PM	0	0	0	0	2	36	0	0	40	0	7	0	0	30	48	0	163
04:30 PM	0	0	0	0	3	36	0	0	36	0	2	0	0	22	51	0	150
04:45 PM	0	0	0	0	5	40	0	0	46	0	2	0	0	22	45	0	160
Total	0	0	0	0	10	159	0	0	154	0	15	0	0	102	179	0	619
05:00 PM	0	0	0	0	3	43	0	0	39	0	3	0	0	21	52	0	161
05:15 PM	0	0	0	0	4	33	0	0	35	0	2	0	0	19	50	0	143
05:30 PM	0	0	0	0	3	28	0	0	26	0	0	0	0	22	41	0	120
05:45 PM	0	0	0	0	2	22	0	0	20	0	0	0	0	13	37	1	95
Total	0	0	0	0	12	126	0	0	120	0	5	0	0	75	180	1	519
Grand Total	0	0	0	0	33	385	0	0	470	0	35	0	0	354	535	1	1813
Apprch %	0.0	0.0	0.0	0.0	7.9	92.1	0.0	0.0	93.1	0.0	6.9	0.0	0.0	39.8	60.1	0.1	
Total %	0.0	0.0	0.0	0.0	1.8	21.2	0.0	0.0	25.9	0.0	1.9	0.0	0.0	19.5	29.5	0.1	

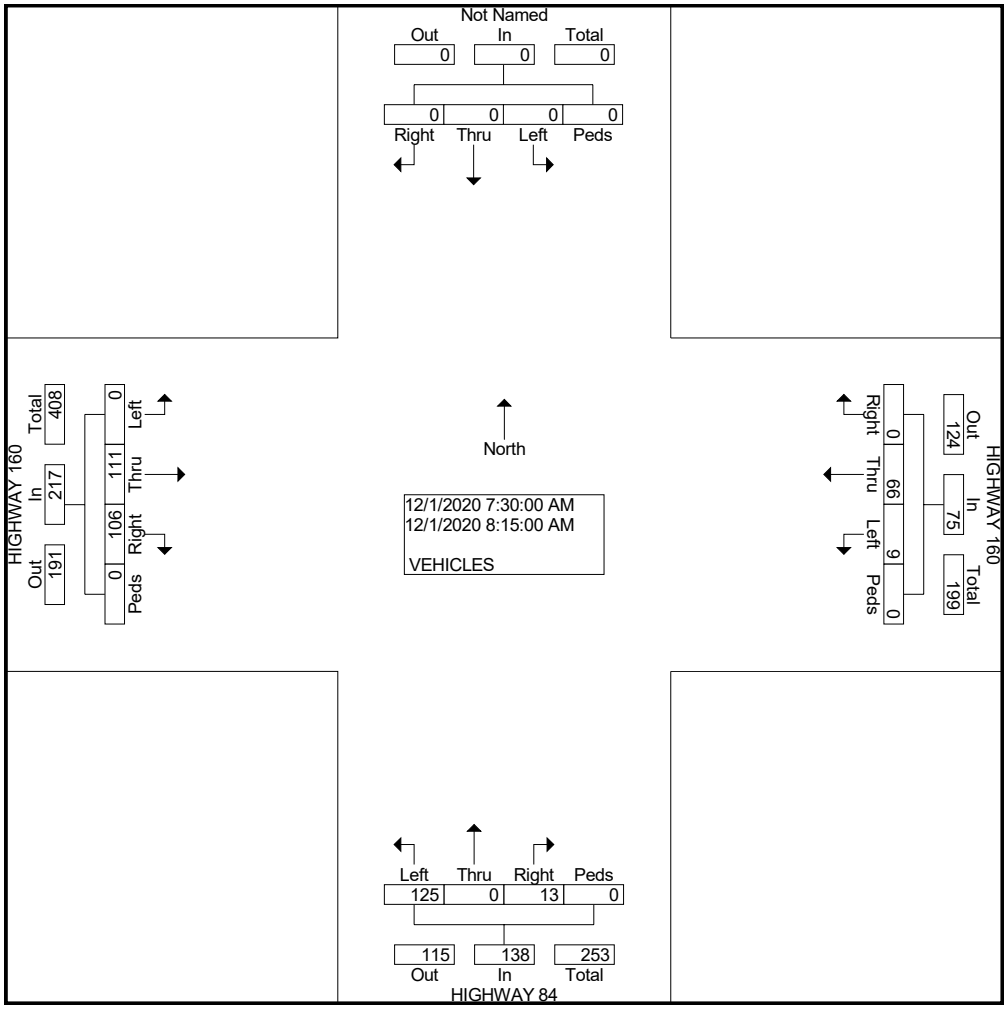
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HIGHWAY 84
E/W STREET: HIGHWAY 160
CITY: PAGOSA SPRINGS
COUNTY: ARCHULETA

File Name : HWY84HWY160
Site Code : 00000011
Start Date : 12/1/2020

	Southbound					HIGHWAY 160 Westbound					HIGHWAY 84 Northbound					HIGHWAY 160 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	0	0	0	0	9	66	0	0	75	125	0	13	0	138	0	111	106	0	217	430
Percent	0.0	0.0	0.0	0.0		12.0	88.0	0.0	0.0		90.6	0.0	9.4	0.0		0.0	51.2	48.8	0.0		
07:45 Volume	0	0	0	0	0	3	17	0	0	20	31	0	4	0	35	0	26	31	0	57	112
Peak Factor																					0.960
High Int.	6:15:00 AM					07:45 AM					08:15 AM					07:45 AM					
Volume	0	0	0	0	0	3	17	0	0	20	35	0	2	0	37	0	26	31	0	57	
Peak Factor										0.938					0.932					0.952	



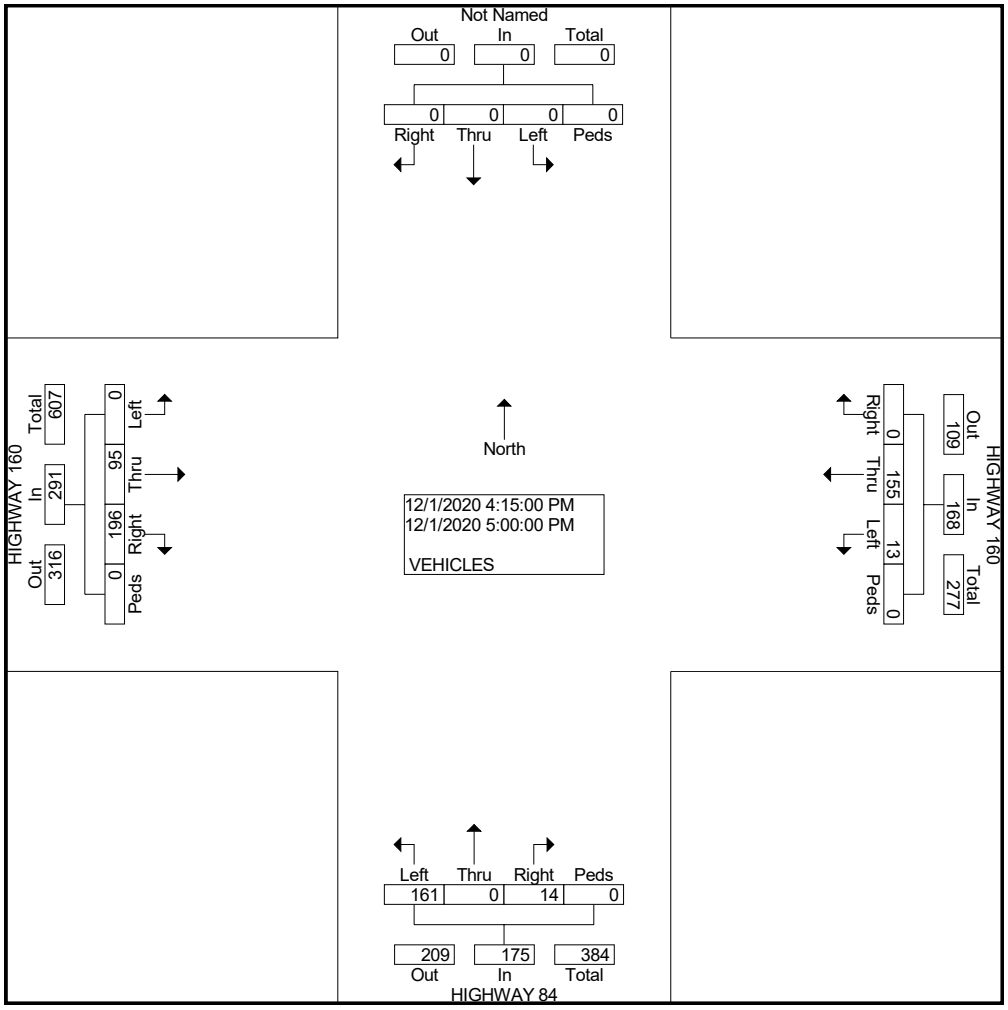
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HIGHWAY 84
E/W STREET: HIGHWAY 160
CITY: PAGOSA SPRINGS
COUNTY: ARCHULETA

File Name : HWY84HWY160
Site Code : 00000011
Start Date : 12/1/2020

	Southbound					HIGHWAY 160 Westbound					HIGHWAY 84 Northbound					HIGHWAY 160 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	0	0	0	0	0	13	155	0	0	168	161	0	14	0	175	0	95	196	0	291	634
Percent	0.0	0.0	0.0	0.0		7.7	92.3	0.0	0.0		92.0	0.0	8.0	0.0		0.0	32.6	67.4	0.0		
04:15 Volume	0	0	0	0	0	2	36	0	0	38	40	0	7	0	47	0	30	48	0	78	163
Peak Factor																					0.972
High Int.						05:00 PM					04:45 PM					04:15 PM					
Volume	0	0	0	0	0	3	43	0	0	46	46	0	2	0	48	0	30	48	0	78	
Peak Factor										0.913					0.911					0.933	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HIGHWAY 84
E/W STREET: MILL CREEK ROAD
CITY: PAGOSA SPRINGS
COUNTY: ARCHULETA

File Name : HWY84MILLCRK
Site Code : 00000008
Start Date : 12/2/2020

Groups Printed- VEHICLES

	HIGHWAY 84 Southbound				MILL CREEK ROAD Westbound				HIGHWAY 84 Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	6	0	0	0	0	0	0	0	7	0	0	0	0	0	0	13
06:45 AM	1	17	0	0	0	0	4	0	0	8	1	0	0	0	0	0	31
Total	1	23	0	0	0	0	4	0	0	15	1	0	0	0	0	0	44
07:00 AM	0	10	0	0	0	0	1	0	0	14	1	0	0	0	0	0	26
07:15 AM	2	12	0	0	2	0	1	0	0	34	0	0	0	0	0	0	51
07:30 AM	0	14	0	0	0	0	0	0	0	32	1	0	0	0	0	0	47
07:45 AM	3	32	0	0	0	0	4	0	0	30	0	0	0	0	0	0	69
Total	5	68	0	0	2	0	6	0	0	110	2	0	0	0	0	0	193
08:00 AM	3	25	0	0	0	0	4	0	0	24	1	0	0	0	0	0	57
08:15 AM	2	30	0	0	0	0	3	0	0	30	0	0	0	0	0	0	65
Total	5	55	0	0	0	0	7	0	0	54	1	0	0	0	0	0	122
04:00 PM	3	50	0	0	2	0	10	0	0	22	1	0	0	0	0	0	88
04:15 PM	7	36	0	0	1	0	3	0	0	34	0	0	0	0	0	0	81
04:30 PM	2	33	0	0	1	0	9	0	0	32	2	0	0	0	0	0	79
04:45 PM	6	37	0	0	1	0	6	0	0	33	0	0	0	0	0	0	83
Total	18	156	0	0	5	0	28	0	0	121	3	0	0	0	0	0	331
05:00 PM	4	39	0	0	2	0	7	0	0	44	1	0	0	0	0	0	97
05:15 PM	3	42	0	0	1	0	0	0	0	27	0	0	0	0	0	0	73
05:30 PM	3	38	0	0	0	0	2	0	0	28	0	0	0	0	0	0	71
05:45 PM	1	19	0	0	0	0	0	0	0	23	0	0	0	0	0	0	43
Total	11	138	0	0	3	0	9	0	0	122	1	0	0	0	0	0	284
Grand Total	40	440	0	0	10	0	54	0	0	422	8	0	0	0	0	0	974
Apprch %	8.3	91.7	0.0	0.0	15.6	0.0	84.4	0.0	0.0	98.1	1.9	0.0	0.0	0.0	0.0	0.0	
Total %	4.1	45.2	0.0	0.0	1.0	0.0	5.5	0.0	0.0	43.3	0.8	0.0	0.0	0.0	0.0	0.0	

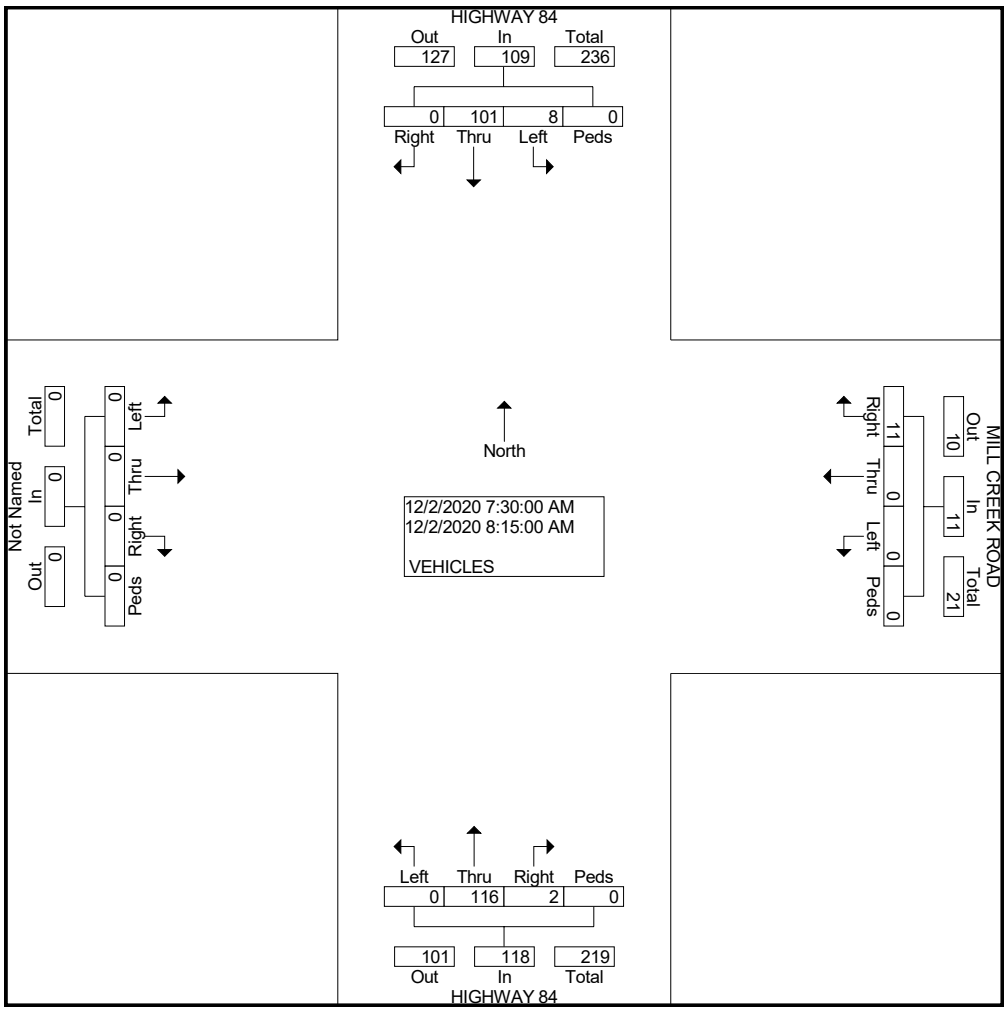
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HIGHWAY 84
E/W STREET: MILL CREEK ROAD
CITY: PAGOSA SPRINGS
COUNTY: ARCHULETA

File Name : HWY84MILLCRK
Site Code : 00000008
Start Date : 12/2/2020

	HIGHWAY 84 Southbound					MILL CREEK ROAD Westbound					HIGHWAY 84 Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	8	101	0	0	109	0	0	11	0	11	0	116	2	0	118	0	0	0	0	0	238
Percent	7.3	92.7	0.0	0.0		0.0	0.0	100.0	0.0		0.0	98.3	1.7	0.0		0.0	0.0	0.0	0.0		
07:45 Volume	3	32	0	0	35	0	0	4	0	4	0	30	0	0	30	0	0	0	0	0	69
Peak Factor																					0.862
High Int.	07:45 AM					07:45 AM					07:30 AM										
Volume	3	32	0	0	35	0	0	4	0	4	0	32	1	0	33						
Peak Factor					0.779					0.688					0.894						



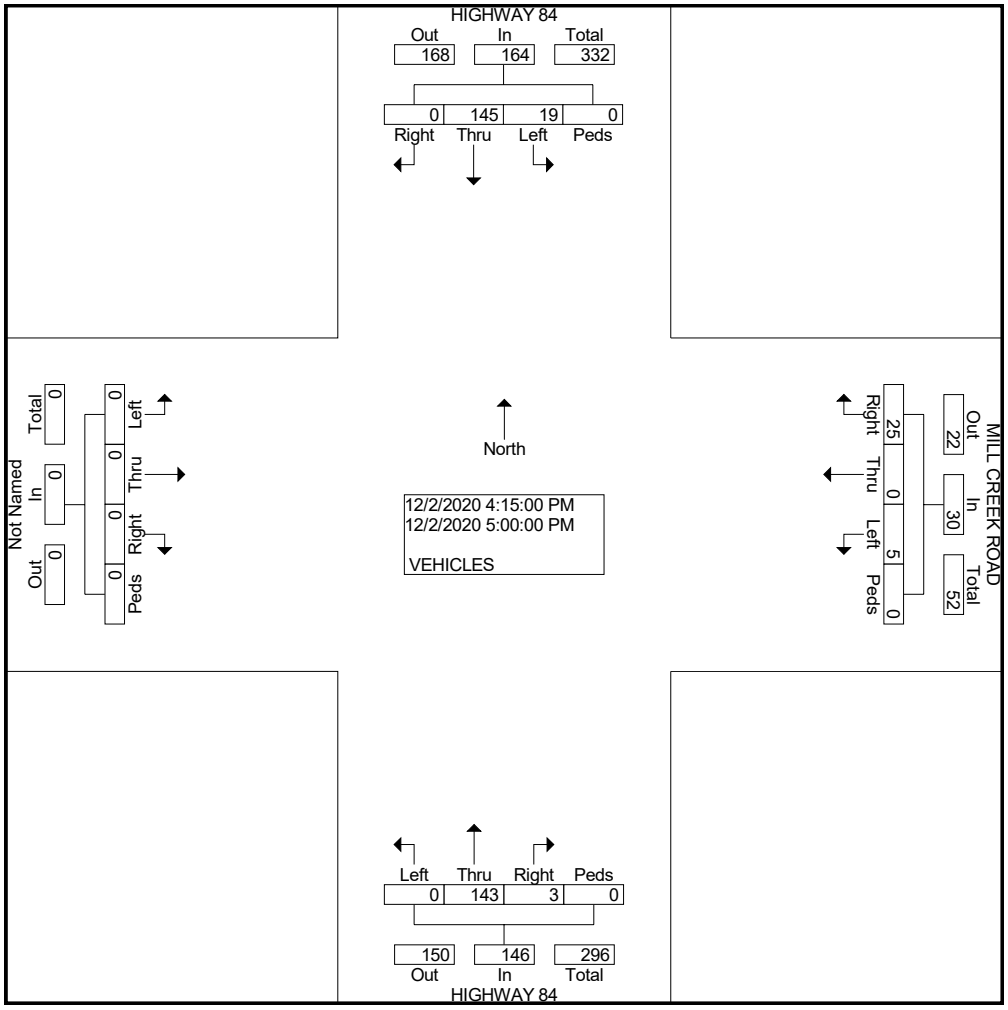
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HIGHWAY 84
E/W STREET: MILL CREEK ROAD
CITY: PAGOSA SPRINGS
COUNTY: ARCHULETA

File Name : HWY84MILLCRK
Site Code : 00000008
Start Date : 12/2/2020

	HIGHWAY 84 Southbound					MILL CREEK ROAD Westbound					HIGHWAY 84 Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	19	145	0	0	164	5	0	25	0	30	0	143	3	0	146	0	0	0	0	0	340
Percent	11.6	88.4	0.0	0.0		16.7	0.0	83.3	0.0		0.0	97.9	2.1	0.0		0.0	0.0	0.0	0.0		
05:00 Volume	4	39	0	0	43	2	0	7	0	9	0	44	1	0	45	0	0	0	0	0	97
Peak Factor																					0.876
High Int.	04:15 PM					04:30 PM					05:00 PM										
Volume	7	36	0	0	43	1	0	9	0	10	0	44	1	0	45						
Peak Factor					0.953					0.750					0.811						



Location: HIGHWAY 84 N/O MILL CREEK ROAD
City: PAGOSA SPRINGS
County: ARCHULETA
Direction: NORTH/SOUTH

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 200113
Station ID: 200113

Start Time	02-Dec-20 Wed	NORTHBOU	SOUTHBOU							Total
12:00 AM		4	3							7
01:00		0	0							0
02:00		1	2							3
03:00		1	1							2
04:00		5	4							9
05:00		12	7							19
06:00		36	51							87
07:00		104	90							194
08:00		145	135							280
09:00		171	**161**							**332**
10:00		168	129							297
11:00		**183**	132							315
12:00 PM		**172**	165							337
01:00		164	166							330
02:00		167	150							317
03:00		171	191							**362**
04:00		157	**193**							350
05:00		141	154							295
06:00		69	93							162
07:00		27	47							74
08:00		21	47							68
09:00		14	24							38
10:00		4	12							16
11:00		2	1							3
Total		1939	1958							3897
Percent		49.8%	50.2%							
AM Peak	-	11:00	09:00	-	-	-	-	-	-	09:00
Vol.	-	183	161	-	-	-	-	-	-	332
PM Peak	-	12:00	16:00	-	-	-	-	-	-	15:00
Vol.	-	172	193	-	-	-	-	-	-	362
Grand Total		1939	1958							3897
Percent		49.8%	50.2%							
ADT		ADT 3,897		AADT 3,897						

COUNTER MEASURES INC.

1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Location: MILL CREEK ROAD E-O HIGHWAY 84
City: PAGOSA SPRINGS
County: ARCHULETA
Direction: EAST/WEST

Site Code: 200114
Station ID: 200114

Start Time	02-Dec-20 Wed	EASTBOUN	WESTBOUN							Total
12:00 AM		0	3							3
01:00		0	0							0
02:00		0	0							0
03:00		1	1							2
04:00		0	0							0
05:00		0	0							0
06:00		3	3							6
07:00		12	8							20
08:00		**20**	**23**							**43**
09:00		17	19							36
10:00		14	22							36
11:00		20	23							43
12:00 PM		**23**	18							41
01:00		13	19							32
02:00		15	13							28
03:00		21	10							31
04:00		23	**34**							**57**
05:00		12	11							23
06:00		7	3							10
07:00		7	6							13
08:00		3	2							5
09:00		3	1							4
10:00		0	0							0
11:00		0	0							0
Total		214	219							433
Percent		49.4%	50.6%							
AM Peak	-	08:00	08:00	-	-	-	-	-	-	08:00
Vol.	-	20	23	-	-	-	-	-	-	43
PM Peak	-	12:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	23	34	-	-	-	-	-	-	57
Grand Total		214	219							433
Percent		49.4%	50.6%							
ADT		ADT 433		AADT 433						

Historic ADT Data for US 160 Near Bayfield, CO - Used for Pandemic and Seasonal Adjustments

COUNT STATION ID	CALENDAR YEAR	JAN AVG ADT (Trips/Day)	FEB AVG ADT (Trips/Day)	MAR AVG ADT (Trips/Day)	APR AVG ADT (Trips/Day)	MAY AVG ADT (Trips/Day)	JUN AVG ADT (Trips/Day)	JUL AVG ADT (Trips/Day)	AUG AVG ADT (Trips/Day)	SEP AVG ADT (Trips/Day)	OCT AVG ADT (Trips/Day)	NOV AVG ADT (Trips/Day)	DEC AVG ADT (Trips/Day)	YEAR TOTAL (Trips/Year)	AVERAGE ADT (Trips/Day)
217	2020	8,523	8,629	7,427	5,940	8,425	10,355	11,284	11,377	10,930	9,828	8,467	8,166	109,351	9,113
217	2019	8,077	7,879	8,973	9,881	10,637	12,142	12,416	11,883	10,946	10,376	9,127	8,946	121,283	10,107
217	2018	8,349	8,590	9,101	9,557	10,711	10,560	10,919	11,721	11,346	10,471	9,430	8,749	119,504	9,959
217	2017	7,832	8,561	9,431	9,858	10,640	12,132	12,138	11,504	10,454	10,041	9,133	8,783	120,507	10,042
217	2016	7,834	8,406	9,133	9,475	10,560	11,798	12,167	11,584	11,353	10,427	9,081	8,718	120,536	10,045

5-year July total = 58,924
July Monthly average = 11,785

5-year November total = 45,238
November Monthly average = 9,048

5-year Average Monthly total = 49,265
Overall Montly average = 9,853

Seasonal Factor for converting November to July = 1.30

ADT Factor from Average ADT to July ADT = 1.20

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

LOS	Average Vehicle Delay sec/vehicle	Operational Characteristics
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. The delay could be up to 15 seconds. Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.
D	25 to 35 seconds	This is the point at which a traffic signal may be warranted for this intersection. The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. There is a high probability that this intersection will meet traffic signal warrants. The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. The only remedy for these long delays is installing a traffic signal or restricting the accesses. The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	145	140	15	90	160	20
Future Vol, veh/h	145	140	15	90	160	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	230	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	159	17	102	182	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	165	0	301	-
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1413	-	691	0
Stage 1	-	0	-	-	864	0
Stage 2	-	0	-	-	890	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1413	-	683	-
Mov Cap-2 Maneuver	-	-	-	-	683	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NW
HCM Control Delay, s	0	1.1	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	683	-	-	1413	-
HCM Lane V/C Ratio	0.266	-	-	0.012	-
HCM Control Delay (s)	12.2	0	-	7.6	-
HCM Lane LOS	B	A	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	15	165	5	15	140
Future Vol, veh/h	5	15	165	5	15	140
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	17	188	6	17	159

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	384	191	0	0	194	0
Stage 1	191	-	-	-	-	-
Stage 2	193	-	-	-	-	-
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	619	851	-	-	1379	-
Stage 1	841	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	610	851	-	-	1379	-
Mov Cap-2 Maneuver	610	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	775	1379	-
HCM Lane V/C Ratio	-	-	0.029	0.012	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	125	255	20	200	210	20
Future Vol, veh/h	125	255	20	200	210	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	230	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	142	290	23	227	239	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	142	0	415	-
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1441	-	594	0
Stage 1	-	0	-	-	885	0
Stage 2	-	0	-	-	773	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1441	-	584	-
Mov Cap-2 Maneuver	-	-	-	-	584	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	761	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.7	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	584	-	-	1441	-
HCM Lane V/C Ratio	0.409	-	-	0.016	-
HCM Control Delay (s)	15.4	0	-	7.5	-
HCM Lane LOS	C	A	-	A	-
HCM 95th %tile Q(veh)	2	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	35	195	5	25	250
Future Vol, veh/h	5	35	195	5	25	250
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	40	222	6	28	284

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	565	225	0	0	228	0
Stage 1	225	-	-	-	-	-
Stage 2	340	-	-	-	-	-
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	486	814	-	-	1340	-
Stage 1	812	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	474	814	-	-	1340	-
Mov Cap-2 Maneuver	474	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	747	1340	-
HCM Lane V/C Ratio	-	-	0.061	0.021	-
HCM Control Delay (s)	-	-	10.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	150	145	15	95	165	20
Future Vol, veh/h	150	145	15	95	165	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	170	165	17	108	188	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	170	0	312	-
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1407	-	681	0
Stage 1	-	0	-	-	860	0
Stage 2	-	0	-	-	885	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1407	-	673	-
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	NW
HCM Control Delay, s	0	1	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	673	-	-	1407	-
HCM Lane V/C Ratio	0.279	-	-	0.012	-
HCM Control Delay (s)	12.4	0	-	7.6	-
HCM Lane LOS	B	A	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	20	165	7	20	140
Future Vol, veh/h	7	20	165	7	20	140
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	23	188	8	23	159

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	397	192	0	0	196	0
Stage 1	192	-	-	-	-	-
Stage 2	205	-	-	-	-	-
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	608	850	-	-	1377	-
Stage 1	841	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	597	850	-	-	1377	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	766	1377	-
HCM Lane V/C Ratio	-	-	0.04	0.017	-
HCM Control Delay (s)	-	-	9.9	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	130	260	20	205	215	20
Future Vol, veh/h	130	260	20	205	215	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	295	23	233	244	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	148	0	427	-
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	279	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1434	-	584	0
Stage 1	-	0	-	-	880	0
Stage 2	-	0	-	-	768	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1434	-	575	-
Mov Cap-2 Maneuver	-	-	-	-	575	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	756	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.7	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	575	-	-	1434	-
HCM Lane V/C Ratio	0.425	-	-	0.016	-
HCM Control Delay (s)	15.8	0	-	7.6	-
HCM Lane LOS	C	A	-	A	-
HCM 95th %tile Q(veh)	2.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	40	195	7	30	250
Future Vol, veh/h	7	40	195	7	30	250
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	45	222	8	34	284

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	578	226	0	0	230	0
Stage 1	226	-	-	-	-	-
Stage 2	352	-	-	-	-	-
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	478	813	-	-	1338	-
Stage 1	812	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	464	813	-	-	1338	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	691	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	731	1338	-
HCM Lane V/C Ratio	-	-	0.073	0.025	-
HCM Control Delay (s)	-	-	10.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	143	180	21	93	180	29
Future Vol, veh/h	143	180	21	93	180	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	205	24	106	205	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	163	0	317	-
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	154	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1416	-	676	0
Stage 1	-	0	-	-	866	0
Stage 2	-	0	-	-	874	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1416	-	665	-
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	859	-

Approach	EB	WB	NW
HCM Control Delay, s	0	1.4	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	665	-	-	1416	-
HCM Lane V/C Ratio	0.308	-	-	0.017	-
HCM Control Delay (s)	12.8	0	-	7.6	-
HCM Lane LOS	B	A	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	46	163	15	64	137
Future Vol, veh/h	13	46	163	15	64	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	190	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	52	185	17	73	156

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	487	185	0	0	202	0
Stage 1	185	-	-	-	-	-
Stage 2	302	-	-	-	-	-
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	540	857	-	-	1370	-
Stage 1	847	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	511	857	-	-	1370	-
Mov Cap-2 Maneuver	511	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	2.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	511	857	1370	-
HCM Lane V/C Ratio	-	-	0.029	0.061	0.053	-
HCM Control Delay (s)	-	-	12.3	9.5	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.2	0.2	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	27	27	0	0	32
Future Vol, veh/h	52	27	27	0	0	32
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	31	31	0	0	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	31	0	-	0	180	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	149	-
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	1582	-	-	-	810	1043
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1582	-	-	-	779	1043
Mov Cap-2 Maneuver	-	-	-	-	779	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1582	-	-	-	1043
HCM Lane V/C Ratio	0.037	-	-	-	0.035
HCM Control Delay (s)	7.4	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	18.3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	114	393	71	170	382	54
Future Vol, veh/h	114	393	71	170	382	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	92	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	437	79	189	415	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	127	0	474	-
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1459	-	549	0
Stage 1	-	0	-	-	899	0
Stage 2	-	0	-	-	716	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1459	-	519	-
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	NW
HCM Control Delay, s	0	2.2	34.2
HCM LOS			D

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	519	-	-	1459	-
HCM Lane V/C Ratio	0.8	-	-	0.054	-
HCM Control Delay (s)	34.2	0	-	7.6	-
HCM Lane LOS	D	A	-	A	-
HCM 95th %tile Q(veh)	7.6	-	-	0.2	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	256	180	45	233	231
Future Vol, veh/h	52	256	180	45	233	231
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	190	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	284	200	50	259	257

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	975	200	0	0	250	0
Stage 1	200	-	-	-	-	-
Stage 2	775	-	-	-	-	-
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	279	841	-	-	1316	-
Stage 1	834	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	224	841	-	-	1316	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	365	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14	0	4.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	224	841	1316	-
HCM Lane V/C Ratio	-	-	0.258	0.338	0.197	-
HCM Control Delay (s)	-	-	26.6	11.5	8.4	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	1	1.5	0.7	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	241	37	47	0	0	261
Future Vol, veh/h	241	37	47	0	0	261
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	274	42	53	0	0	297

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	53	0	-	0	643	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	590	-
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	1553	-	-	-	438	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1553	-	-	-	359	1014
Mov Cap-2 Maneuver	-	-	-	-	359	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	SB
HCM Control Delay, s	6.8	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1553	-	-	-	1014
HCM Lane V/C Ratio	0.176	-	-	-	0.292
HCM Control Delay (s)	7.8	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	1.2

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	165	150	20	110	170	25
Future Vol, veh/h	165	150	20	110	170	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	188	170	23	125	193	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	188	0	359	-
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	171	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1386	-	640	0
Stage 1	-	0	-	-	844	0
Stage 2	-	0	-	-	859	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1386	-	629	-
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	NW
HCM Control Delay, s	0	1.2	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	629	-	-	1386	-
HCM Lane V/C Ratio	0.307	-	-	0.016	-
HCM Control Delay (s)	13.2	0	-	7.6	-
HCM Lane LOS	B	A	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	25	170	10	25	145
Future Vol, veh/h	10	25	170	10	25	145
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	28	193	11	28	165

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	420	199	0	0	204	0
Stage 1	199	-	-	-	-	-
Stage 2	221	-	-	-	-	-
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	590	842	-	-	1368	-
Stage 1	835	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	576	842	-	-	1368	-
Mov Cap-2 Maneuver	576	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	797	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	744	1368	-
HCM Lane V/C Ratio	-	-	0.053	0.021	-
HCM Control Delay (s)	-	-	10.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	160	265	25	240	220	25
Future Vol, veh/h	160	265	25	240	220	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	301	28	273	250	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	182	0	511	-
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1393	-	523	0
Stage 1	-	0	-	-	849	0
Stage 2	-	0	-	-	729	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1393	-	513	-
Mov Cap-2 Maneuver	-	-	-	-	513	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.7	18.5
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	513	-	-	1393	-
HCM Lane V/C Ratio	0.487	-	-	0.02	-
HCM Control Delay (s)	18.5	0	-	7.6	-
HCM Lane LOS	C	A	-	A	-
HCM 95th %tile Q(veh)	2.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	45	200	10	35	255
Future Vol, veh/h	10	45	200	10	35	255
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	51	227	11	40	290

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	603	233	0	0	238	0
Stage 1	233	-	-	-	-	-
Stage 2	370	-	-	-	-	-
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	462	806	-	-	1329	-
Stage 1	806	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	445	806	-	-	1329	-
Mov Cap-2 Maneuver	445	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	702	1329	-
HCM Lane V/C Ratio	-	-	0.089	0.03	-
HCM Control Delay (s)	-	-	10.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	157	222	34	104	205	36
Future Vol, veh/h	157	222	34	104	205	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	247	38	116	228	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	174	0	366	-
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	192	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1403	-	634	0
Stage 1	-	0	-	-	856	0
Stage 2	-	0	-	-	841	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1403	-	617	-
Mov Cap-2 Maneuver	-	-	-	-	617	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	NW
HCM Control Delay, s	0	1.9	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	617	-	-	1403	-
HCM Lane V/C Ratio	0.369	-	-	0.027	-
HCM Control Delay (s)	14.2	0	-	7.6	-
HCM Lane LOS	B	A	-	A	-
HCM 95th %tile Q(veh)	1.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	39	172	21	119	137
Future Vol, veh/h	24	39	172	21	119	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	150	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	43	191	23	132	152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	607	-	0	0	214	0
Stage 1	191	-	-	-	-	-
Stage 2	416	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	2.218	-
Pot Cap-1 Maneuver	460	0	-	-	1356	-
Stage 1	841	0	-	-	-	-
Stage 2	666	0	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	415	-	-	-	1356	-
Mov Cap-2 Maneuver	415	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	415	-	1356	-
HCM Lane V/C Ratio	-	-	0.064	-	0.098	-
HCM Control Delay (s)	-	-	14.3	0	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	-	0.3	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	42	203	12	0	256
Future Vol, veh/h	0	42	203	12	0	256
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	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	226	13	0	284

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	226	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	813	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	813	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	813	-
HCM Lane V/C Ratio	-	-	0.057	-
HCM Control Delay (s)	-	-	9.7	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	101	35	35	0	0	28
Future Vol, veh/h	101	35	35	0	0	28
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	39	39	0	0	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	39	0	-	0	302	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	263	-
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	1571	-	-	-	690	1033
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	781	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	640	1033
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	781	-

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1571	-	-	-	1033
HCM Lane V/C Ratio	0.071	-	-	-	0.03
HCM Control Delay (s)	7.5	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

Intersection	
Int Delay, s/veh	86.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	132	504	95	199	499	85
Future Vol, veh/h	132	504	95	199	499	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	560	106	221	554	94

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	147	0	580	-
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1435	-	~ 477	0
Stage 1	-	0	-	-	880	0
Stage 2	-	0	-	-	654	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1435	-	~ 442	-
Mov Cap-2 Maneuver	-	-	-	-	~ 442	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	NW
HCM Control Delay, s	0	2.5	159.1
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	442	-	-	1435	-
HCM Lane V/C Ratio	1.254	-	-	0.074	-
HCM Control Delay (s)	159.1	0	-	7.7	-
HCM Lane LOS	F	A	-	A	-
HCM 95th %tile Q(veh)	23.1	-	-	0.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	22.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	106	152	203	49	392	207
Future Vol, veh/h	106	152	203	49	392	207
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	150	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	169	226	54	436	230

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1328	-	0	0	280	0
Stage 1	226	-	-	-	-	-
Stage 2	1102	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	2.218	-
Pot Cap-1 Maneuver	171	0	-	-	1283	-
Stage 1	812	0	-	-	-	-
Stage 2	318	0	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 113	-	-	-	1283	-
Mov Cap-2 Maneuver	~ 113	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	210	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	169	0	6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	113	-	1283	-
HCM Lane V/C Ratio	-	-	1.042	-	0.339	-
HCM Control Delay (s)	-	-	169	0	9.2	-
HCM Lane LOS	-	-	F	A	A	-
HCM 95th %tile Q(veh)	-	-	7	-	1.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	269	336	40	0	603
Future Vol, veh/h	0	269	336	40	0	603
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	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	299	373	44	0	670

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	373	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	673	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	673	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	673	-
HCM Lane V/C Ratio	-	-	0.444	-
HCM Control Delay (s)	-	-	14.6	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	2.3	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	382	45	55	0	0	203
Future Vol, veh/h	382	45	55	0	0	203
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	424	50	61	0	0	226

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	61	0	-	0	959	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	898	-
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	1542	-	-	-	285	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	398	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1542	-	-	-	204	1004
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	398	-

Approach	EB	WB	SB
HCM Control Delay, s	7.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1542	-	-	-	1004
HCM Lane V/C Ratio	0.275	-	-	-	0.225
HCM Control Delay (s)	8.2	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	1.1	-	-	-	0.9

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	157	222	34	104	205	36
Future Volume (vph)	157	222	34	104	205	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		600	220		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.647		0.950	
Satd. Flow (perm)	1863	1583	1205	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		247				40
Link Speed (mph)	45			45	30	
Link Distance (ft)	1029			1114	725	
Travel Time (s)	15.6			16.9	16.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	174	247	38	116	228	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	247	38	116	228	40
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	60.0	60.0	60.0	60.0	30.0	30.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%
Maximum Green (s)	55.0	55.0	55.0	55.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	63.2	63.2	63.2	63.2	16.8	16.8
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.19	0.19
v/c Ratio	0.13	0.21	0.04	0.09	0.69	0.12
Control Delay	5.4	1.3	5.4	5.3	43.4	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	1.3	5.4	5.3	43.4	8.8
LOS	A	A	A	A	D	A
Approach Delay	3.0			5.3	38.2	
Approach LOS	A			A	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 46 (51%), Referenced to phase 4:EBT and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 14.6		Intersection LOS: B	
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

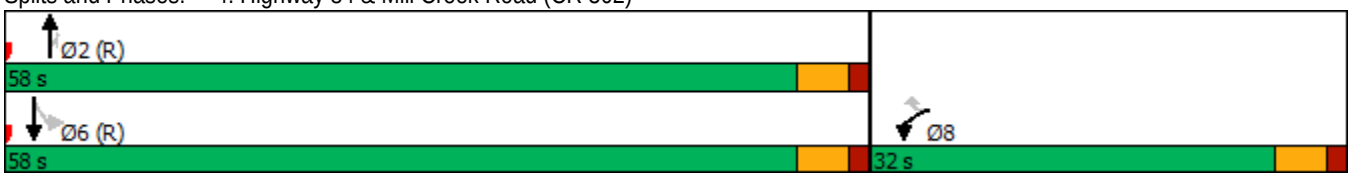
Splits and Phases: 3: Highway 84 & Highway 160

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	39	172	21	119	137
Future Volume (vph)	24	39	172	21	119	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		100	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.637	
Satd. Flow (perm)	1770	1583	1863	1583	1187	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		43		23		
Link Speed (mph)	30		30			30
Link Distance (ft)	423		619			585
Travel Time (s)	9.6		14.1			13.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	43	191	23	132	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	43	191	23	132	152
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	32.0	32.0	58.0	58.0	58.0	58.0
Total Split (%)	35.6%	35.6%	64.4%	64.4%	64.4%	64.4%
Maximum Green (s)	27.0	27.0	53.0	53.0	53.0	53.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	6.9	6.9	76.2	76.2	76.2	76.2
Actuated g/C Ratio	0.08	0.08	0.85	0.85	0.85	0.85
v/c Ratio	0.20	0.27	0.12	0.02	0.13	0.10
Control Delay	41.7	16.6	2.0	0.9	1.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	16.6	2.0	0.9	1.7	1.4
LOS	D	B	A	A	A	A
Approach Delay	26.3		1.9			1.6
Approach LOS	C		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 4.7		Intersection LOS: A	
Intersection Capacity Utilization 32.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Highway 84 & Mill Creek Road (CR 302)

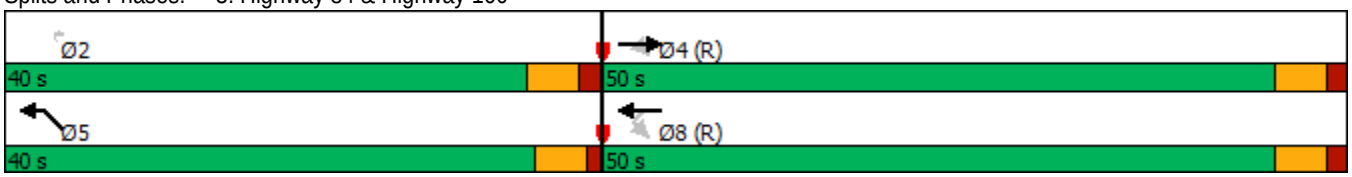


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	132	504	95	199	499	85
Future Volume (vph)	132	504	95	199	499	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		600	220		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.663		0.950	
Satd. Flow (perm)	1863	1583	1235	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		560				94
Link Speed (mph)	45			45	30	
Link Distance (ft)	1009			1032	714	
Travel Time (s)	15.3			15.6	16.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	147	560	106	221	554	94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	560	106	221	554	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	5	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Detector Phase	4	4	8	8	5	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	9.5	23.0
Total Split (s)	50.0	50.0	50.0	50.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%
Maximum Green (s)	45.0	45.0	45.0	45.0	35.5	35.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	-2.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	2.5	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	48.8	48.8	48.8	48.8	33.7	31.2
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.37	0.35
v/c Ratio	0.15	0.50	0.16	0.22	0.84	0.15
Control Delay	11.8	2.9	12.3	12.4	37.7	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	2.9	12.3	12.4	37.7	5.4
LOS	B	A	B	B	D	A
Approach Delay	4.8			12.3	33.0	
Approach LOS	A			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 51 (57%), Referenced to phase 4:EBT and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Highway 84 & Highway 160

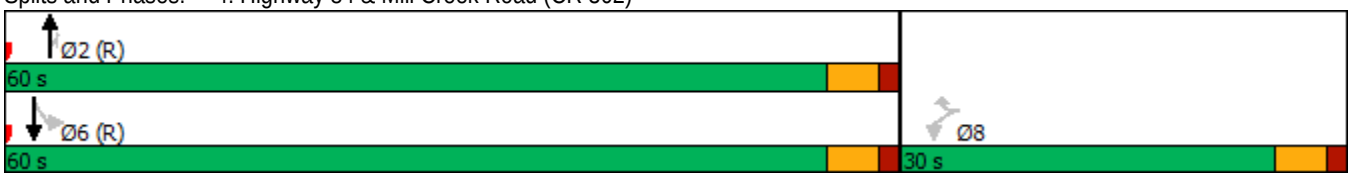


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	106	152	203	49	392	207
Future Volume (vph)	106	152	203	49	392	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		100	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.617	
Satd. Flow (perm)	1770	1583	1863	1583	1149	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		169		54		
Link Speed (mph)	30		30			30
Link Distance (ft)	423		619			599
Travel Time (s)	9.6		14.1			13.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	118	169	226	54	436	230
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	169	226	54	436	230
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	30.0	30.0	60.0	60.0	60.0	60.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Maximum Green (s)	25.0	25.0	55.0	55.0	55.0	55.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	11.3	11.3	68.7	68.7	68.7	68.7
Actuated g/C Ratio	0.13	0.13	0.76	0.76	0.76	0.76
v/c Ratio	0.53	0.49	0.16	0.04	0.50	0.16
Control Delay	44.9	10.7	3.6	1.2	6.0	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	10.7	3.6	1.2	6.0	3.2
LOS	D	B	A	A	A	A
Approach Delay	24.7		3.1			5.1
Approach LOS	C		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 59 (66%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Highway 84 & Mill Creek Road (CR 302)



Intersection	
Int Delay, s/veh	7.4

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	150	276	45	100	232	47
Future Vol, veh/h	150	276	45	100	232	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	307	50	111	258	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	167	0	378	-
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1411	-	624	0
Stage 1	-	0	-	-	863	0
Stage 2	-	0	-	-	824	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1411	-	602	-
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	795	-

Approach	EB	WB	NW
HCM Control Delay, s	0	2.4	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	602	-	-	1411	-
HCM Lane V/C Ratio	0.428	-	-	0.035	-
HCM Control Delay (s)	15.4	0	-	7.6	-
HCM Lane LOS	C	A	-	A	-
HCM 95th %tile Q(veh)	2.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	51	172	30	189	132
Future Vol, veh/h	33	51	172	30	189	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	150	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	57	191	33	210	147

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	758	-	0	0	224	0
Stage 1	191	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	2.218	-
Pot Cap-1 Maneuver	375	0	-	-	1345	-
Stage 1	841	0	-	-	-	-
Stage 2	568	0	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	317	-	-	-	1345	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.8	0	4.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	317	-	1345	-
HCM Lane V/C Ratio	-	-	0.116	-	0.156	-
HCM Control Delay (s)	-	-	17.8	0	8.2	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	-	0.6	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	76	203	20	0	321
Future Vol, veh/h	0	76	203	20	0	321
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	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	84	226	22	0	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	226	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	813	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	813	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	813	-
HCM Lane V/C Ratio	-	-	0.104	-
HCM Control Delay (s)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.3	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	184	35	35	0	0	49
Future Vol, veh/h	184	35	35	0	0	49
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	204	39	39	0	0	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	39	0	-	0	486	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	447	-
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	1571	-	-	-	540	1033
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	468	1033
Mov Cap-2 Maneuver	-	-	-	-	468	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	644	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1571	-	-	-	1033
HCM Lane V/C Ratio	0.13	-	-	-	0.053
HCM Control Delay (s)	7.6	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.2

Intersection	
Int Delay, s/veh	226.3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	118	626	131	177	644	115
Future Vol, veh/h	118	626	131	177	644	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	600	220	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	131	696	146	197	716	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	131	0	620	-
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1454	-	~ 452	0
Stage 1	-	0	-	-	895	0
Stage 2	-	0	-	-	~ 616	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1454	-	~ 407	-
Mov Cap-2 Maneuver	-	-	-	-	~ 407	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	~ 554	-

Approach	EB	WB	NW
HCM Control Delay, s	0	3.3	$ 374.4
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	WBL	WBT
Capacity (veh/h)	407	-	-	1454	-
HCM Lane V/C Ratio	1.758	-	-	0.1	-
HCM Control Delay (s)	$ 374.4	0	-	7.8	-
HCM Lane LOS	F	A	-	A	-
HCM 95th %tile Q(veh)	44.6	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	173.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	154	187	204	70	574	183
Future Vol, veh/h	154	187	204	70	574	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	150	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	208	227	78	638	203

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1706	-	0	0	305	0
Stage 1	227	-	-	-	-	-
Stage 2	1479	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	2.218	-
Pot Cap-1 Maneuver	~ 100	0	-	-	1256	-
Stage 1	811	0	-	-	-	-
Stage 2	209	0	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 49	-	-	-	1256	-
Mov Cap-2 Maneuver	~ 49	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	~ 103	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 1294.8	0	8.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	49	-	1256	-
HCM Lane V/C Ratio	-	-	3.492	-	0.508	-
HCM Control Delay (s)	-	-	$ 1294.8	0	10.8	-
HCM Lane LOS	-	-	F	A	B	-
HCM 95th %tile Q(veh)	-	-	18.7	-	3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	428	331	60	0	757
Future Vol, veh/h	0	428	331	60	0	757
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	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	476	368	67	0	841

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	368	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	677	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	677	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	677	-
HCM Lane V/C Ratio	-	-	0.702	-
HCM Control Delay (s)	-	-	21.9	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	5.8	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	599	45	55	0	0	286
Future Vol, veh/h	599	45	55	0	0	286
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	666	50	61	0	0	318

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	61	0	-	0	1443	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	1382	-
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	1542	-	-	-	146	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	233	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1542	-	-	-	81	1004
Mov Cap-2 Maneuver	-	-	-	-	81	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	233	-

Approach	EB	WB	SB
HCM Control Delay, s	8.5	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1542	-	-	-	1004
HCM Lane V/C Ratio	0.432	-	-	-	0.317
HCM Control Delay (s)	9.1	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	2.2	-	-	-	1.4

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	150	276	45	100	232	47
Future Volume (vph)	150	276	45	100	232	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		600	220		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.651		0.950	
Satd. Flow (perm)	1863	1583	1213	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		307				52
Link Speed (mph)	45			45	30	
Link Distance (ft)	940			1077	704	
Travel Time (s)	14.2			16.3	16.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	307	50	111	258	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	307	50	111	258	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	60.0	60.0	60.0	60.0	30.0	30.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%
Maximum Green (s)	55.0	55.0	55.0	55.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	61.7	61.7	61.7	61.7	18.3	18.3
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.20	0.20
v/c Ratio	0.13	0.26	0.06	0.09	0.72	0.14
Control Delay	6.0	1.4	6.1	5.9	43.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	1.4	6.1	5.9	43.5	8.1
LOS	A	A	A	A	D	A
Approach Delay	3.0			5.9	37.6	
Approach LOS	A			A	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 55 (61%), Referenced to phase 4:EBT and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 37.4%		ICU Level of Service A	
Analysis Period (min) 15			

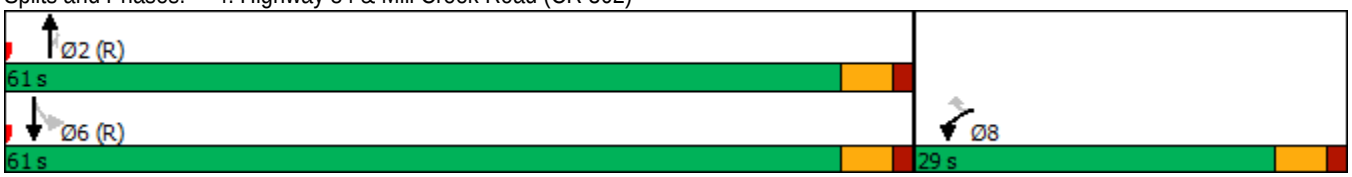
Splits and Phases: 3: Highway 84 & Highway 160

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	33	51	172	30	189	132
Future Volume (vph)	33	51	172	30	189	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		100	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.637	
Satd. Flow (perm)	1770	1583	1863	1583	1187	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		57		33		
Link Speed (mph)	30		30			30
Link Distance (ft)	423		619			602
Travel Time (s)	9.6		14.1			13.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	57	191	33	210	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	57	191	33	210	147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Maximum Green (s)	24.0	24.0	56.0	56.0	56.0	56.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	7.4	7.4	75.7	75.7	75.7	75.7
Actuated g/C Ratio	0.08	0.08	0.84	0.84	0.84	0.84
v/c Ratio	0.26	0.31	0.12	0.02	0.21	0.09
Control Delay	42.4	15.6	2.1	0.8	1.9	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	15.6	2.1	0.8	1.9	1.4
LOS	D	B	A	A	A	A
Approach Delay	26.1		1.9			1.7
Approach LOS	C		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Highway 84 & Mill Creek Road (CR 302)

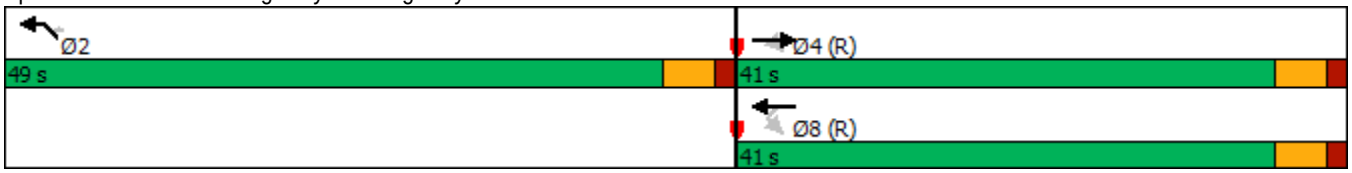


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	118	626	131	177	644	115
Future Volume (vph)	118	626	131	177	644	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		600	220		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.673		0.950	
Satd. Flow (perm)	1863	1583	1254	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		696				128
Link Speed (mph)	45			45	30	
Link Distance (ft)	916			1055	742	
Travel Time (s)	13.9			16.0	16.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	131	696	146	197	716	128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	696	146	197	716	128
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	41.0	41.0	41.0	41.0	49.0	49.0
Total Split (%)	45.6%	45.6%	45.6%	45.6%	54.4%	54.4%
Maximum Green (s)	36.0	36.0	36.0	36.0	44.0	44.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	-2.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	39.5	39.5	39.5	39.5	42.5	40.5
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.47	0.45
v/c Ratio	0.16	0.64	0.27	0.24	0.86	0.16
Control Delay	17.2	4.7	19.1	18.0	32.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	4.7	19.1	18.0	32.0	2.9
LOS	B	A	B	B	C	A
Approach Delay	6.7			18.5	27.6	
Approach LOS	A			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 4:EBT and 8:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Highway 84 & Highway 160

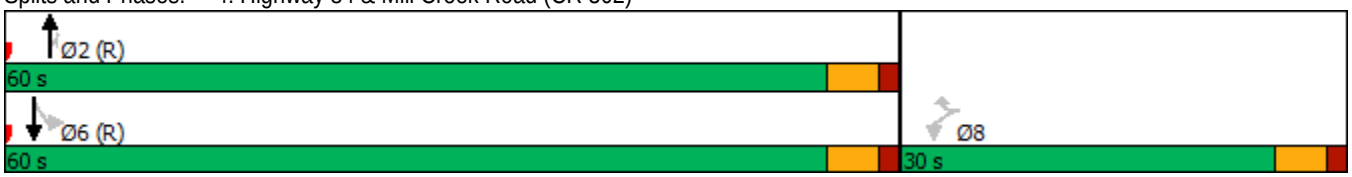


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	154	187	204	70	574	183
Future Volume (vph)	154	187	204	70	574	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		100	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.617	
Satd. Flow (perm)	1770	1583	1863	1583	1149	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		208		78		
Link Speed (mph)	30		30			30
Link Distance (ft)	423		619			581
Travel Time (s)	9.6		14.1			13.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	171	208	227	78	638	203
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	208	227	78	638	203
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	30.0	30.0	60.0	60.0	60.0	60.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Maximum Green (s)	25.0	25.0	55.0	55.0	55.0	55.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	-2.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	14.0	14.0	66.0	66.0	68.0	66.0
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.76	0.73
v/c Ratio	0.62	0.49	0.17	0.07	0.74	0.15
Control Delay	44.9	9.0	4.5	1.3	10.6	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	9.0	4.5	1.3	10.6	3.1
LOS	D	A	A	A	B	A
Approach Delay	25.2		3.7			8.8
Approach LOS	C		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 65 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Highway 84 & Mill Creek Road (CR 302)



HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+2
Jurisdiction	CDOT	Time Period Analyzed	AM Peak Hour
Project Description	SH 84 between the site access (Right-in/ Right-out) and SH 160	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	145	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	173	30	12	30
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	202	34	14	35

Weaving Flow Rate (v_w), pc/h	69	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	216	Density-Based Capacity (c_{IWL}), pc/h/ln	1831
Total Flow Rate (v), pc/h	285	Demand Flow-Based Capacity (c_{IW}), pc/h	9917
Volume Ratio (VR)	0.242	Weaving Segment Capacity (c_W), veh/h	3503
Minimum Lane Change Rate (LC_{MIN}), lc/h	69	Adjusted Weaving Area Capacity, pc/h	3438
Maximum Weaving Length (L_{MAX}), ft	4970	Volume-to-Capacity Ratio (v/c)	0.08

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	3	Average Weaving Speed (S_W), mi/h	39.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.6
Weaving Lane Change Rate (LC_W), lc/h	69	Average Speed (S), mi/h	41.1
Weaving Lane Change Rate (LC_{All}), lc/h	69	Density (D), pc/mi/ln	3.5
Weaving Intensity Factor (W)	0.126	Level of Service (LOS)	A

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+2
Jurisdiction	CDOT	Time Period Analyzed	PM Peak Hour
Project Description	SH 84 between the site access (Right-in/ Right-out) and SH 160	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	145	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	287	214	55	49
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	335	243	62	57

Weaving Flow Rate (v_w), pc/h	300	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	397	Density-Based Capacity (c_{IWL}), pc/h/ln	1674
Total Flow Rate (v), pc/h	697	Demand Flow-Based Capacity (c_{IW}), pc/h	5581
Volume Ratio (VR)	0.430	Weaving Segment Capacity (c_W), veh/h	3228
Minimum Lane Change Rate (LC_{MIN}), lc/h	300	Adjusted Weaving Area Capacity, pc/h	3143
Maximum Weaving Length (L_{MAX}), ft	7020	Volume-to-Capacity Ratio (v/c)	0.22

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	6	Average Weaving Speed (S_W), mi/h	34.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	39.0
Weaving Lane Change Rate (LC_W), lc/h	300	Average Speed (S), mi/h	37.1
Weaving Lane Change Rate (LC_{All}), lc/h	300	Density (D), pc/mi/ln	9.4
Weaving Intensity Factor (W)	0.401	Level of Service (LOS)	A

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+2+3
Jurisdiction	CDOT	Time Period Analyzed	AM Peak Hour
Project Description	SH 84 between the site access (Right-in/ Right-out) and SH 160	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	145	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	169	52	24	34
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	197	59	27	40

Weaving Flow Rate (v_w), pc/h	99	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	224	Density-Based Capacity (c_{IWL}), pc/h/ln	1778
Total Flow Rate (v), pc/h	323	Demand Flow-Based Capacity (c_{IW}), pc/h	7818
Volume Ratio (VR)	0.307	Weaving Segment Capacity (c_W), veh/h	3412
Minimum Lane Change Rate (LC_{MIN}), lc/h	99	Adjusted Weaving Area Capacity, pc/h	3339
Maximum Weaving Length (L_{MAX}), ft	5659	Volume-to-Capacity Ratio (v/c)	0.10

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	3	Average Weaving Speed (S_W), mi/h	38.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.3
Weaving Lane Change Rate (LC_W), lc/h	99	Average Speed (S), mi/h	40.5
Weaving Lane Change Rate (LC_{All}), lc/h	99	Density (D), pc/mi/ln	4.0
Weaving Intensity Factor (W)	0.167	Level of Service (LOS)	A

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+2+3
Jurisdiction	CDOT	Time Period Analyzed	PM Peak Hour
Project Description	SH 84 between the site access (Right-in/ Right-out) and SH 160	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	145	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	281	344	84	50
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	328	390	95	58

Weaving Flow Rate (v_w), pc/h	448	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	423	Density-Based Capacity (c_{IWL}), pc/h/ln	1600
Total Flow Rate (v), pc/h	871	Demand Flow-Based Capacity (c_{IW}), pc/h	4669
Volume Ratio (VR)	0.514	Weaving Segment Capacity (c_W), veh/h	3096
Minimum Lane Change Rate (LC_{MIN}), lc/h	448	Adjusted Weaving Area Capacity, pc/h	3004
Maximum Weaving Length (L_{MAX}), ft	7991	Volume-to-Capacity Ratio (v/c)	0.29

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	6	Average Weaving Speed (S_W), mi/h	32.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	37.5
Weaving Lane Change Rate (LC_W), lc/h	448	Average Speed (S), mi/h	35.0
Weaving Lane Change Rate (LC_{All}), lc/h	448	Density (D), pc/mi/ln	12.4
Weaving Intensity Factor (W)	0.550	Level of Service (LOS)	B

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+2
Jurisdiction	CDOT	Time Period Analyzed	AM Peak Hour
Project Description	SH 84 between Mill Creek Rd (CR 302) the site access (Right-in/ Right-out)	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	230	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	160	39	0	12
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	187	44	0	14

Weaving Flow Rate (v_W), pc/h	58	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	187	Density-Based Capacity (c_{IWL}), pc/h/ln	1841
Total Flow Rate (v), pc/h	245	Demand Flow-Based Capacity (c_{IW}), pc/h	10127
Volume Ratio (VR)	0.237	Weaving Segment Capacity (c_W), veh/h	3524
Minimum Lane Change Rate (LC_{MIN}), lc/h	58	Adjusted Weaving Area Capacity, pc/h	3457
Maximum Weaving Length (L_{MAX}), ft	4918	Volume-to-Capacity Ratio (v/c)	0.07

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	4	Average Weaving Speed (S_W), mi/h	40.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.8
Weaving Lane Change Rate (LC_W), lc/h	58	Average Speed (S), mi/h	41.6
Weaving Lane Change Rate (LC_{All}), lc/h	58	Density (D), pc/mi/ln	2.9
Weaving Intensity Factor (W)	0.076	Level of Service (LOS)	A

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+2
Jurisdiction	CDOT	Time Period Analyzed	PM Peak Hour
Project Description	SH 84 between Mill Creek Rd (CR 302) the site access (Right-in/ Right-out)	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	230	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	163	152	0	40
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	190	172	0	47

Weaving Flow Rate (v_W), pc/h	219	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	190	Density-Based Capacity (c_{IWL}), pc/h/ln	1587
Total Flow Rate (v), pc/h	409	Demand Flow-Based Capacity (c_{IW}), pc/h	4486
Volume Ratio (VR)	0.535	Weaving Segment Capacity (c_W), veh/h	3059
Minimum Lane Change Rate (LC_{MIN}), lc/h	219	Adjusted Weaving Area Capacity, pc/h	2980
Maximum Weaving Length (L_{MAX}), ft	8238	Volume-to-Capacity Ratio (v/c)	0.14

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	4	Average Weaving Speed (S_W), mi/h	37.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	40.2
Weaving Lane Change Rate (LC_W), lc/h	219	Average Speed (S), mi/h	38.9
Weaving Lane Change Rate (LC_{All}), lc/h	219	Density (D), pc/mi/ln	5.3
Weaving Intensity Factor (W)	0.217	Level of Service (LOS)	A

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+ 2 + 3
Jurisdiction	CDOT	Time Period Analyzed	AM Peak Hour
Project Description	SH 84 between Mill Creek Rd (CR 302) the site access (Right-in/ Right-out)	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	230	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	152	51	0	20
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	177	58	0	23

Weaving Flow Rate (v_w), pc/h	81	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	177	Density-Based Capacity (c_{IWL}), pc/h/ln	1779
Total Flow Rate (v), pc/h	258	Demand Flow-Based Capacity (c_{IW}), pc/h	7643
Volume Ratio (VR)	0.314	Weaving Segment Capacity (c_W), veh/h	3409
Minimum Lane Change Rate (LC_{MIN}), lc/h	81	Adjusted Weaving Area Capacity, pc/h	3340
Maximum Weaving Length (L_{MAX}), ft	5735	Volume-to-Capacity Ratio (v/c)	0.08

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	4	Average Weaving Speed (S_W), mi/h	40.3
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.6
Weaving Lane Change Rate (LC_W), lc/h	81	Average Speed (S), mi/h	41.2
Weaving Lane Change Rate (LC_{All}), lc/h	81	Density (D), pc/mi/ln	3.1
Weaving Intensity Factor (W)	0.099	Level of Service (LOS)	A

HCS7 Freeway Weaving Report

Project Information

Analyst	KDF	Date	10/21/2021
Agency	LSC Transportation Consultants, Inc	Analysis Year	2041 w/ Phase 1+ 2 + 3
Jurisdiction	CDOT	Time Period Analyzed	PM Peak Hour
Project Description	SH 84 between Mill Creek Rd (CR 302) the site access (Right-in/ Right-out)	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	230	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.939
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	144	187	0	60
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.00	2.00	2.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.980	0.980	0.952
Flow Rate (v_i), pc/h	168	212	0	70

Weaving Flow Rate (v_w), pc/h	282	Freeway Max Capacity (c_{IFL}), pc/h/ln	2200
Non-Weaving Flow Rate (v_{NW}), pc/h	168	Density-Based Capacity (c_{IWL}), pc/h/ln	1502
Total Flow Rate (v), pc/h	450	Demand Flow-Based Capacity (c_{IW}), pc/h	3828
Volume Ratio (VR)	0.627	Weaving Segment Capacity (c_W), veh/h	2899
Minimum Lane Change Rate (LC_{MIN}), lc/h	282	Adjusted Weaving Area Capacity, pc/h	2820
Maximum Weaving Length (L_{MAX}), ft	9348	Volume-to-Capacity Ratio (v/c)	0.16

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	4	Average Weaving Speed (S_W), mi/h	37.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	39.7
Weaving Lane Change Rate (LC_W), lc/h	282	Average Speed (S), mi/h	38.0
Weaving Lane Change Rate (LC_{All}), lc/h	282	Density (D), pc/mi/ln	5.9
Weaving Intensity Factor (W)	0.265	Level of Service (LOS)	A

COLORADO
Department of Transportation
Region 5

R5 Traffic & Safety
3803 N. Main Avenue, Suite 100
Durango, CO 81301-4034

LATE FALL, WINTER AND SPRING SPECIAL PROVISIONS FOR ACCESS CONSTRUCTION AND UTILITY INSTALLATIONS

It's that time of year again when work within the Right of Way (ROW) becomes a special concern. Due to Southwest Colorado's unpredictable weather, utility work in the ROW can create several types of hazards for the traveling public, contractors and their personnel. The condition of the highway can change quickly. Mud tracked onto the highway by equipment, or ice and snowpack are just a few of the conditions that make the roadway more hazardous for all concerned. The terrain within the ROW must be kept clear of hazards as well. Holes, trenches, equipment and materials can make the terrain "unrecoverable" for a driver should his/her vehicle leave the highway.

Activities must be shut down when the roadway is other than dry.

The use of frozen materials for backfilling will only lead to settlement. The contractor must make extra effort to compact the excavation. In the spring, any settlement of backfill shall be repaired. The re-vegetation shall take place yet this fall or early next spring.

COLORADO DEPARTMENT OF TRANSPORTATION
Environmental Clearances Information Summary

PURPOSE - This summary is intended to inform entities external to CDOT that may be entering the state highway right-of-way to perform work related to their own facilities (such as Utility, Special Use or Access Permittees), about some of the more commonly encountered environmental permits/clearances that may apply to their activities. This listing is not all-inclusive—additional environmental or cultural resource permits/clearances may be required in certain instances. Appropriate local, state and federal agencies should be contacted for additional information if there is any uncertainty about what permits/clearances are required for a specific activity. **IMPORTANT: Please Review The Following Information Carefully – Failure to Comply With Regulatory Requirements May Result In Suspension or Revocation of Your CDOT Permit, Or Enforcement Actions By Other Agencies.**

CLEARANCE CONTACTS - As indicated in the permit/clearance descriptions listed below, the following agencies may be contacted for additional information:

- Colorado Department of Public Health and Environment (CDPHE): General Information – (303) 692-2000
  Water Quality Control Division (WQCD): (303) 692-3500
  Environmental Permitting Website https://www.colorado.gov/pacific/cdphe/all-permits
- CDOT Water Quality Program Manager: (303) 512-4053 https://www.codot.gov/programs/environmental/water-quality
- CDOT Asbestos Project Manager: (303) 512-5519
- Colorado Office of Archaeology and Historic Preservation: (303) 866-5216
- U.S. Army Corps of Engineers, District Regulatory Offices:
  Omaha District (Northeastern CO), Denver Office (303) 979-4120
  http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado.aspx
  Sacramento District (Western CO), Grand Junction Office (970) 243-1199
  http://www.spk.usace.army.mil/Missions/Regulatory.aspx
  Albuquerque District (Southeastern CO), Pueblo Office (719) 543-9459
  http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits.aspx
- CDOT Utilities, Special Use and Access Permitting: (303) 757-9654 https://www.codot.gov/business/permits

Wildlife Resources - Disturbance of wildlife shall be avoided to the maximum extent practicable. Entry into areas of known or suspected threatened or endangered species habitat requires special authorization from the CDOT permitting office. If any threatened or endangered species are encountered during the progress of the permitted work, work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Information about threatened or endangered species may be obtained from the CDOT website, http://www.codot.gov/programs/environmental/wildlife/guidelines, or the Colorado Parks and Wildlife (CPW) website, http://www.cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx. Additional guidance may be provided by the appropriate Region Planning and Environmental Manager (RPEM).

Cultural Resources - The applicant must request a file search of the permit area through the Colorado Office of Archaeology and Historic Preservation (OAHP), Denver, to ascertain if historic or archaeological resources have previously been identified (https://www.historycolorado.org/file-access; 303-866-5216). Inventory of the permit area by a qualified cultural resources specialist may be necessary, per the recommendation of CDOT. If archaeological sites/artifacts or historic resources are encountered as the project progresses, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office and RPEM.

Paleontological Resources - The level of effort required for paleontological resources is dependent on the amount of ground disturbance, including rock scaling, digging, trenching, boring, ground leveling, and similar activities.

- If the permit will involve extensive ground disturbance (generally involving more than one mile of CDOT ROW), a full review will be required by a qualified paleontologist, including map, file, and locality searches, with final recommendations provided by the CDOT paleontologist upon receipt of the report. Based on results of the review, a survey or inventory of the permit area may be necessary.
- If the permit will involve a small amount of ground disturbance (less than one mile of ROW), the applicant must request a fossil locality search through the University of Colorado Museum of Natural History (https://www.colorado.edu/cumuseum/research-collections/paleontology/policies-procedure) and the Denver Museum of Nature and Science (https://www.dmns.org/science/earth-sciences/earth-sciences-collections/). The museum collections manager will provide information about localities in the project area. If there are no known localities, the permit requirement for paleontology is complete upon submitting that information to CDOT. If there are known localities, the CDOT paleontologist will be contacted by the museum with details, and additional recommendations will be made if necessary. Note that museum staff are not required to disclose the details of fossil localities to the permit applicant, nor is detailed locality information required for the permit application to proceed.
- If the permit involve no ground disturbance, no action is required for paleontological resources. If fossils are encountered during the permitted action, all work in the immediate area of the find should stop and the CDOT Staff Paleontologist and the Region Environmental Manager should be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office in the Permit Special Provisions. Contact Information: See the museum websites listed above. The CDOT Paleontologist is not able to conduct locality searches independently. For further information contact CDOT Paleontologist Nicole Peavey at nicole.peavey@state.co.us or (303)757-9632.

Hazardous Materials, Solid Waste - The Solid Wastes Disposal Sites and Facilities Act C.R.S. 30-20-100, et al, and Regulations Pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2), prohibit solid waste disposal without an approved Certificate of Designation (a landfill permit). The Colorado Hazardous Waste Act C.R.S. 25-15-301 et al, and the Colorado Hazardous Waste Regulations (6 CCR 1007-3) prohibit the transfer, storage or disposal (TSD) of hazardous waste except at permitted TSD sites. There are no permitted landfills or TSD sites within the State Highway Right of Way. Therefore, all solid or hazardous wastes that might be generated by the activities of entities entering the State Highway Right of Way must be removed from the ROW and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). If pre-existing solid waste or hazardous materials contamination (including oil or petroleum contaminated soil, asbestos, chemicals, mine tailings, etc.) is encountered during the performance of work, the permittee shall halt work in the affected area and immediately contact the CDOT Regional Permitting Office for direction as to how to proceed. ***Contact Information:*** Theresa Santangelo-Dreiling, CDOT Hazardous Materials Management Supervisor: (303) 512-5524.

Asbestos Containing Materials, Asbestos Contaminated Soil - All work on asbestos containing materials (ACM) must comply with the applicable requirements of the CDPHE Air Pollution Control Division's (APCD) Regulation 8. Disposal of ACM, and work done in asbestos-contaminated soil, must comply with the CDPHE Hazardous Materials and Waste Management Division's (HMWMD) Solid Waste Regulations. The application for any CDOT permit must specifically identify any ACM involved in the work for which authorization is being requested. Additional guidance or requirements may be specified in the permit special provisions. ***Contact Info:*** CDPHE APCD and HMWMD Regulations can be accessed via the CDPHE Environmental Permitting Website listed above. Additional information **concerning clearance on CDOT projects** is available from the CDOT Asbestos Project Manager (303) 512-5519, or Theresa Santangelo-Dreiling, Hazardous Materials Management Supervisor: (303) 512-5524.

Transportation of Hazardous Materials - No person may offer or accept a hazardous material for transportation in commerce unless that person is registered in conformance with the United States Department of Transportation regulations at 49 CFR, Part 171. The hazardous material must be properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements, or an exemption, approval or registration has been issued. Vehicles requiring a placard, must obtain authorization and a State HAZMAT Permit from the Colorado Public Utilities Commission. ***Contact Information:*** For authorization and more info call the Federal Motor Safety Carrier Administration, US DOT for inter- and intra-state HAZMAT Registration (303) 969-6748. Colorado Public Utilities Commission: (303) 894-2868.

Discharge of Dredged or Fill Material – 404 Permits Administered By the U.S. Army Corps of Engineers, and Section 401 Water Quality Certifications Issued by the CDPHE WQCD - Clean Water Act section 404 permits are often required for the discharge of dredged or fill material into waters of the U.S., including wetlands. Several types of section 404 permits exist, including nationwide, regional general, and individual permits. Nationwide permits are the most commonly authorized type for activities with relatively minor impacts. If an individual 404 permit is required, section 401 water quality certification from the CDPHE WQCD is also required. Contact the appropriate Corps District Regulatory Office for information about what type of 404 permit may be required (contact information above). Contact the CDPHE Water Quality Control Division at (303) 692-3500.

Working on or in any stream or its bank - In order to protect and preserve the state's fish and wildlife resources from actions that may obstruct, diminish, destroy, change, modify, or vary a natural existing stream or its banks or tributaries, it may be necessary to obtain a Senate Bill 40 certification from the Colorado Department of Natural Resources. A stream is defined as 1) represented by a solid blue line on USGS 7.5' quadrangle maps; and/or 2) intermittent streams providing live water beneficial to fish and wildlife; and/or 3) segments of streams supporting 25% or more cover within 100 yards upstream or downstream of the project; and/or 4) segments of streams having wetlands present within 200 yards upstream or downstream of the project measured by valley length. The CPW application, as per guidelines agreed upon by CDOT and CPW, can be accessed at https://www.codot.gov/programs/environmental/wildlife/guidelines.

Erosion and Sediment Control Practices - Any activities that disturb one or more acres of land require a Stormwater Construction Permit (SCP) from the CDPHE-WQCD. Erosion & sediment control requirements will be specified in that permit. In situations where a stormwater permit is *not* required, all reasonable erosion and sediment control measures should be taken to minimize erosion and sedimentation. Control practices should be in accordance with CDOT Standard Specifications 107.25, 208, 213 and 216 (https://www.codot.gov/business/designsupport/cdot-construction-specifications). The CDOT Erosion Control and Stormwater Quality Guide (website: https://www.codot.gov/programs/environmental/landscape-architecture/erosion-storm-quality) can also be used to design erosion/sediment controls. ***Contact Information:*** Contact the CDPHE-WQCD at (303) 692-3500. Website: https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits

Site Stabilization - All disturbances require a stabilization plan, native seeding or landscape design plan according to applicable CDOT Standard Specifications 212-217 and 623. The CDOT Erosion Control and Stormwater Quality Guide should also be used to plan restoration of disturbed vegetation. Website: https://www.codot.gov/programs/environmental/landscape-architecture/erosion-storm-quality

Stormwater Discharge From Industrial Facilities - Discharges of stormwater runoff from certain types of industrial facilities, such as concrete batch plants - require a CDPS Stormwater Permit. ***Contact Information:*** Contact the CDPHE-WQCD at (303) 692-3500. Website: https://colorado.gov/pacific/cdphe/wq-commerce-and-industry-permits

Concrete Washout - Waste generated from concrete activities shall NOT be allowed to flow into the drainage ways, inlets, receiving waters, or in the CDOT ROW. Concrete waste shall be placed in a temporary concrete washout facility and must be located a minimum of 50 feet from state waters, drainageways, and inlets. Concrete washout shall be in accordance to CDOT specifications and guidelines at https://www.codot.gov/business/designsupport/cdot-construction-specifications and refer to the specifications and their revisions for sections 101, 107 and 208.

Construction Dewatering (Discharge or Infiltration) and Remediation Activities - Discharges of water encountered during excavation or work in wet areas may require a Construction Dewatering or Remediation Activities Discharge Permit. ***Contact***

Information: Contact the CDPHE-WQCD at (303) 692-3500. For Applications and Instructions: https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits.

Municipal Separate Storm Sewer System (MS4) Requirements - When working in a MS4 area, discharges to the storm sewer system are subject to CDOT's or other municipalities' MS4 Permit. For activities within the boundaries of a municipality that has a MS4 permit, the owner of such activity should contact the municipality regarding stormwater related requirements. All discharges to the CDOT highway drainage system or within the Right of Way (ROW) must comply with the applicable provisions of the Colorado Water Quality Control Act, the Water Quality Control Commission (WQCC) Regulations (https://www.colorado.gov/pacific/cdphe/wqcc-regulations-and-policies-and-water-quality-statutes) and the CDOT MS4 Permit #COS-000005 (https://www.codot.gov/programs/environmental/water-quality/documents). Discharges are subject to inspection by CDOT and CDPHE. For CDOT-related MS4 programs and requirements, go to: https://www.codot.gov/programs/environmental/water-quality/stormwater-programs.

Post-Construction Permanent Water Quality - When working in a CDOT MS4 area and the activity disturbs one or more acres, permanent water quality control measures may be required. Information on the requirements can be found under the CDOT Permanent Water Quality MS4 Program at: https://www.codot.gov/programs/environmental/water-quality/stormwater-programs/pwq-permanent-water-quality

Discharges to Storm Sewer Systems

Prohibited Discharges - All discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include, but are not limited to, substances such as wash water, paint, automotive fluids, solvents, oils or soaps and sediment.

Allowable Discharges - The following discharges to stormwater systems are allowed without a permit from the CDPHE-WQCD: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, uncontaminated springs, footing drains, water line flushing, flows from riparian habitats and wetlands, and flow from firefighting activities. ***Contact Information:*** Contact the CDPHE-WQCD at (303) 692-3500. Information can also be found in the CDOT Illicit Discharge MS4 Program PDD at: https://www.codot.gov/programs/environmental/water-quality/stormwater-programs/idde.html.

Spill Reporting - Spills shall be contained and cleaned up as soon as possible. Spills shall NOT be washed down into the storm drain or buried. All spills shall be reported to the CDOT Illicit Discharge Hotline at (303) 512-4426 (4H20), as well as the Regional Permitting Office and Regional Maintenance Supervisor. Spills on highways, into waterways, any spill in the highway right-of-way exceeding 25 gallons, or that may otherwise present an immediate danger to the public shall be reported by calling 911, and shall also be reported to the CDPHE at 1-877-518-5608. More information can be found at https://www.colorado.gov/pacific/cdphe/emergency-reporting-line.

Disposal of Drilling Fluids - Drilling fluids used in operations such as Horizontal Directional Drilling may be classified as "discharges" or "solid wastes," and in general, should be pumped or vacuumed from the construction area, removed from the State Highway Right of Way, and disposed of at permitted facilities that specifically accept such wastes. Disposal of drilling fluids into storm drains, storm sewers, roadside ditches or any other type of man-made or natural waterway is prohibited by Water Quality Control and/or Solid Waste regulations. Small quantities of drilling fluid solids (less than 1 cubic yard of solids) may be left on-site after either being separated from fluids or after infiltration of the water, provided: 1) the drilling fluid consists of only water and bentonite clay, or, if required for proper drilling properties, small quantities of polymer additives that are approved for use in drinking water well drilling; 2) the solids are fully contained in a pit, and are not likely to pose a nuisance to future work in the area, 3) the solids are covered and the area restored as required by CDOT permit requirements (Utility, Special Use, or Access Permits, etc.). ***Contact Information:*** Contact CDPHE (telephone #'s listed above).

Noxious Weeds and Invasive Species Management Plan - Noxious Weeds and Invasive Species guidance can be found by contacting the Colorado Department of Agriculture (https://www.colorado.gov/pacific/agconservation/noxiousweeds) and the Colorado Division of Parks and Wildlife (http://cpw.state.co.us/aboutus/Pages/RS-NoxiousWeeds.aspx). In either case, management plans involving the control of noxious weeds associated with the permitted activity and cleaning of equipment will be required.

Industrial Stormwater Resources

- Guidance on discharges without a Permit
  https://www.colorado.gov/pacific/cdphe/clean-water-construction-compliance-assistance-and-guidance
- Utility Accommodation Code
  https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=3222
- Industrial Facilities Control Measures
  https://udfcd.org/wp-content/uploads/2014/07/Chapter-5-Source-Control-BMPs.pdf

CDOT Resources

- CDOT Environmental Clearance Information
  https://www.codot.gov/programs/environmental/resources/guidance-standards/environmental-clearances-info-summary-august-2017/view
- CDOT Stormwater Programs
  https://www.codot.gov/programs/environmental/water-quality/stormwater-programs
- CDOT Erosion Control and Stormwater Quality Field Guide
  https://www.codot.gov/programs/environmental/landscape-architecture/erosion-storm-quality
- CDOT Water Quality program and MS4 permit
  https://www.codot.gov/programs/environmental/water-quality
- CDOT Water Quality Field Guide
  https://www.silverthorne.org/home/showdocument?id=8530

COLORADO
Department of Transportation

For more information on CDOT Utility and Special Use Permits:
https://www.codot.gov/business/permits/utilitiesspecialuse

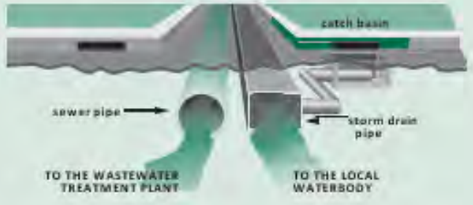
For more information on CDOT Access Permits:
https://www.codot.gov/business/permits/accesspermits

For more information on CDOT's Water Quality Program Contact:
2829 W Howard Place
Denver, CO 80204
302-512-4053

CDOT's stormwater program website:
www.codot.gov/programs/environmental/water-quality

CDOT Illicit Discharge Hotline: 303-512-4H2O (4426)

Water Quality Program
Industrial Facilities Program



Stormwater runoff enters the storm drain system, which is different from the wastewater system. Stormwater runoff drains to waterways untreated.

What is stormwater runoff?

Stormwater runoff is water from rain or melting snow that does not soak into the ground. It flows from rooftops, over paved areas, bare soil, and sloped lawns. Municipal Separate Storm Sewer Systems (MS4s) – storm drain inlets, pipes and ditches - collect stormwater runoff and convey it directly to local bodies of water.

Why is stormwater runoff a problem?

Ideally, the stormwater runoff is contaminant free. In reality, it picks up pollutants such as: soil, animal waste, salt, pesticides, fertilizers, oil and grease, and debris and transports them to waterways where they are discharged with no treatment. This is stormwater pollution.

CDOT has a MS4 permit (COS-000005) from the Colorado Department of Public Health and the Environment (CDPHE) to discharge stormwater from their storm drain system. The permit states that only stormwater (and a few other allowable discharges like landscape irrigation overflow) can be discharged from CDOT's storm drain system. Pollutants, such as dirt, fertilizers, pesticides, oil and grease, antifreeze, and other automotive fluids are strictly prohibited from being disposed of in CDOT's storm drain system. As part of the permit, CDOT has several different programs to prevent pollutants from entering the storm drain system. The programs are:

- Construction sites
- Permanent Water Quality
- Illicit discharges
- **Industrial facilities**
- Public education and outreach
- Pollution prevention and good housekeeping
- Wet Weather Monitoring

Allowable discharges into CDOT's storm drain system include the following:

- Landscape irrigation
- Lawn Watering
- Diverted stream flows
- Irrigation return flow
- Rising ground waters
- *Uncontaminated* ground water infiltration to separate storm sewers
- *Uncontaminated* pumped ground water
- Springs
- Flow from riparian habitats and wetlands
- Water line flushing in accordance with the division's *Low Risk Policy Discharge guidance: Potable Water*
- Discharges from potable water sources
- Foundation Drains
- Air conditioning condensation
- Water from crawl space pumps
- Footing drains
- Individual residential car washing
- Dechlorinated swimming pools discharges
- Water incidental to street sweeping
- Dye testing in accordance with manufacturing recommendations
- Stormwater runoff
- Emergency firefighting activities
- Authorized discharges by CDPS or NPDES permit
- Agricultural runoff that does not require a CDPS or NPDES permit.

Industrial facilities program

CDOT issues Utility Permits to those utility companies, special use permittees, industry, or others wishing to install, adjust, relocate, remove, or maintain utilities in CDOT's right-of-way. CDOT issues Access Permits for building access from private property (driveways) to state highways (driveways). These two permits are issued, and inspections are conducted through CDOT's five regional offices located throughout Colorado. CDOT's Water Quality Program tracks and maintains a record of any permittee that ties into CDOT's storm drain system.

CDOT's Industrial Facilities Program is focused on educating those industrial facilities that discharge stormwater into CDOT's storm drain system. Under this program, CDOT also educates industrial facilities on the proper management of *potential* pollutants that could enter the CDOT storm drain system.

Industrial facilities include a site that includes any of the following activities for any of the following categories of industries:

- **Activities**
  - Manufacturing, processing, raw materials storage
  - Industrial plant yards (e.g., concrete batch plants)
  - Access roads/rail lines used to carry raw materials, manufactured products, waste materials, or byproducts
  - Material handling
  - Refuse site
  - Application or disposal of process waste waters
  - Storage and maintenance of materials handling equipment
    - Residual treatment, storage, or disposal
    - Shipping and receiving areas
    - Manufacturing buildings
    - Storage areas used (including tank farms) for raw materials and immediate and final products
    - Areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.

If any of the listed activities applies to a site, CDOT is required to report the industrial facility to CDPHE on the potential discharges and water quality concerns.

Stormwater Control Measures for Industrial Facility Permittees

Industrial facilities are required to use stormwater control measures (SCMs) during construction of the facility and when operating the facility. Stormwater control measures are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution entering CDOT's storm drain system. SCMs also include treatment, operating procedures, and practices to control site runoff, spillage or leaks, waste disposal, or drainage from material storage. SCMs include structural and nonstructural controls.

- **Examples of Stormwater Control Measures**

Waste shall be segregated properly into various categories such as hazardous materials, toxic liquids, non-hazardous materials, and recyclable materials. Proper disposal is required for each by-product category.

Containers of liquids should have secondary containment and be stored away from drainageways, inlets, receiving waters, areas of high traffic, and areas susceptible to flooding. Containers also should be properly labeled.

Poor placement of containers of liquid. The secondary containment BMP should hold 110% of the volume of the largest container.

CDOT defines a utility or utility facility as any privately, publicly, or cooperatively owned line, facility, or system producing, transmitting, or distributing the following

- Communications
- Cable television
- Power
- Electricity
- Light
- Heat gas
- Oil
- Crude products
- Water steam
- Waste
- Stormwater not connected with highway drainage
- Other similar commodities as defined in page 10 of the utility code

COLORADO DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

Instructions: ***Please print or type***

- Contact the Colorado Department of Transportation (CDOT) or your local government to determine your issuing authority.
- Contact the issuing authority to determine what plans and other documents are required to be submitted with your application.
- Complete this form (some questions may not apply to you) and attach all necessary documents and Submit it to the issuing authority.
- Submit an application for each access affected.
- If you have any questions contact the issuing authority.
- For additional information see CDOT's Access Management website at **https://www.codot.gov/business/permits/accesspermits**

1) Property owner (Permittee)		2) Applicant or Agent for permittee (if different from property owner)	
Mountain Crossing, LLC		LSC Transportation Consultants, Inc. Chris McGranahan	
Street address: 19440 Charleswood Lane		Mailing address: 1889 York Street	
City, state & zip: Bend, OR 97702	Phone #: 970-261-9952	City, state & zip: Denver, CO 80206	Phone # (required): 303-333-1105
E-mail address: keith@summitae.com		E-mail address if available: chris@lsctrans.com	

3) Address of property to be served by permit (required)
No property address. The undeveloped parcels are located on CR 302 (Mill Creek Road).

4) Legal description of property: If within jurisdictional limits of Municipality, city and/or County, which one?

county	subdivision	block	lot	section	township	range
Archuleta	Mtn. Crossing		1-B1, 1-C, IIB	18	35	1W

5) What State Highway are you requesting access from?
SH 84A

6) What side of the highway? ☐ N ☐ S ☒ E ☐ W

7) How many feet is the proposed access from the nearest mile post?
1,750 +/- feet (☐ N ☒ S ☐ E ☐ W) from: MP 28

How many feet is the proposed access from the nearest cross street?
0 feet (☐ N ☐ S ☐ E ☐ W) from: CR 302 (Mill Creek Road)

8) What is the approximate date you intend to begin construction?
9/1/2021

9) Check here if you are requesting a:
☐ new access ☐ temporary access (duration anticipated:) ☐ improvement to existing access
☒ change in access use ☐ removal of access ☐ relocation of an existing access (provide detail)

10) Provide existing property use
Public Road

11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?
☒ no ☐ yes, if yes - what are the permit number(s) and provide copies: and/or, permit date:

12) Does the property owner own or have any interests in any adjacent property?
☒ no ☐ yes, if yes - please describe:

13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?
☐ no ☒ yes, if yes - list them on your plans and indicate the proposed and existing access points.
The property borders CR 302 (Mill Creek Road) and US 160

14) If you are requesting agricultural field access - how many acres will the access serve?
N/A

15) If you are requesting commercial or industrial access please indicate the types and number of businesses and provide the floor area square footage of each.

business/land use	square footage	business	square footage
Shopping Center Retail	90,000		

16) If you are requesting residential developement access, what is the type (single family, apartment, townhouse) and number of units?

type	number of units	type	number of units
N/A			

17) Provide the following vehicle count estimates for vehicles that will use the access. Leaving the property then returning is two counts.

Indicate if your counts are ☒ peak hour volumes or ☐ average daily volumes.	# of passenger cars and light trucks at peak hour volumes	# of multi unit trucks at peak hour volumes
	550	12
# of single unit vehicles in excess of 30 ft.	# of farm vehicles (field equipment)	**Total count of all vehicles**
18	6	586

18) Check with the issuing authority to determine which of the following documents are required to complete the review of your application.

a) Property map indicating other access, bordering roads and streets.
b) Highway and driveway plan profile.
c) Drainage plan showing impact to the highway right-of-way.
d) Map and letters detailing utility locations before and after development in and along the right-of-way.
e) Subdivision, zoning, or development plan.
f) Proposed access design.
g) Parcel and ownership maps including easements.
h) Traffic studies.
i) Proof of ownership.

1- It is the applicant's responsibility to contact appropriate agencies and obtain all environmental clearances that apply to their activities. Such clearances may include Corps of Engineers 404 Permits or Colorado Discharge Permit System permits, or ecological, archeological, historical or cultural resource clearances. The CDOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances, information about prohibited discharges, and may be obtained from Regional CDOT Utility/Special Use Permit offices or accessed via the CDOT Planning/Construction-Environmental-Guidance webpage: **https://www.codot.gov/programs/environmental/resources/guidance-standards/environmental-clearances-info-summary-august-2017/view**

2- All workers within the State Highway right of way shall comply with their employer's safety and health policies/ procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations - including, but not limited to the applicable sections of 29 CFR Part 1910 - Occupational Safety and Health Standards and 29 CFR Part 1926 - Safety and Health Regulations for Construction.

Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment: High visibility apparel as specified in the Traffic Control provisions of the documentation accompanying the Notice to Proceed related to this permit (at a minimum, ANSI/ISEA 107-1999, class 2); head protection that complies with the ANSI Z89.1-1997 standard; and at all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999.

Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

3- The Permittee is responsible for complying with the Revised Guidelines that have been adopted by the Access Board under the American Disabilities Act (ADA). These guidelines define traversable slope requirements and prescribe the use of a defined pattern of truncated domes as detectable warnings at street crossings. The new Standards Plans and can be found on the Design and Construction Project Support web page at:
https://www.codot.gov/business/civilrights/ada/resources-engineers

If an access permit is issued to you, it will state the terms and conditions for its use. Any changes in the use of the permitted access not consistent with the terms and conditions listed on the permit may be considered a violation of the permit.

The applicant declares under penalty of perjury in the second degree, and any other applicable state or federal laws, that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

I understand receipt of an access permit does not constitute permission to start access construction work.

Applicant [redacted]	Print name	Date
	Christopher S. McGranahan, PE, PTOE	May 21, 2021

If the [redacted] of the property, we require this application also to be signed by the property owner or their [redacted]ative (or other acceptable written evidence). This signature shall constitute agreement with this application by all owners-of-interest unless stated in writing. If a permit is issued, the property owner, in most cases, will be listed as the permittee.

Property owner signature	Print name	Date
Alice K. Platt Manager for Mountain Crossing LLC	ALICE K. PLATT	5-22-21

INSTRUCTIONS FOR COMPLETING APPLICATION FOR ACCESS PERMIT (CDOT FORM NO. 137)
December 2018

To construct, relocate, close, or modify access(es) to a State Highway or when there are changes in use of such access point(s), an application for access permit must be submitted to the Colorado Department of Transportation (CDOT) or the local jurisdiction serving as the issuing authority for State Highway Access Permits. Contact the CDOT Regional Access Unit in which the subject property is located to determine where the application must be submitted. The following link will help you determine which CDOT Region office to contact:

https://www.codot.gov/business/permits/accesspermits/regional-offices.html

All applications are processed and access permits are issued in accordance to the requirements and procedures found in the most current version of the State Highway Access Code (Access Code). Code and the application form are also available from CDOT's web site at:

https://www.codot.gov/business/permits/accesspermits

Please complete all information requested accurately. Access permits granted based on applications found to contain false information may be revoked. An incomplete application will not be accepted. If additional information, plans and documents are required, attach them to the application. Keep a copy of your submittal for your records. Please note that only the original signed copy of the application will be accepted. Do not send or enclose any permit fee at this time. A permit fee will be collected if an access permit is issued. The following is a brief description of the information to be provided on each enumerated space on the application form (CDOT Form 137, 2010).

1. **Property Owner (Permittee):** Please provide the full name, mailing address and telephone number and the E-mail address (if available) of the legal property owner (owner of the surface rights). Please provide a telephone number where the Permittee can be reached during business hours (8:00 a.m. to 5:00 p.m.). Having a contract on the property is not a sufficient legal right to that property for purposes of this application. If the access is to be on or across an access easement, then a copy of the easement MUST accompany this application. If federal land is involved, provide the name of the relevant federal agency AND attach copy of federal authorization for property use.

2. **Agent for permittee:** If the applicant (person completing this application) is different than the property owner (Permittee), provide entity name (if applicable), the full name of the person serving as the Agent, mailing address, telephone number, and the E-mail address (if available). Please provide a telephone number where the Agent can be reached during business hours (8:00 a.m. to 5:00 p.m.). Joint applications such as owner/lessee may be submitted. Corporations must be licensed to do business in Colorado: All corporations serving as, or providing, an Agent as the applicant must be licensed to do business in Colorado.

3. **Address of Property to be Served:** Provide if property to be served has an official street address. If the access is a public road, note the name (or future name) of the road.

4. **Legal Description of Property:** Fill in this item to the extent it applies. This information is available at your local County Courthouse, or on your ownership deed(s). A copy of the deed may be required as part of this application in some situations. To determine applicability, check with the CDOT's Regional Access Manager or issuing authority staff.

5. **State Highway:** Provide the State Highway number from which the access is requested.

6. **Highway Side:** Mark the appropriate box to indicate what side of the highway the requested access is located.

7. **Access Mile Point:** Without complete information, we may not be able to locate the proposed access. To obtain the distance in feet, drive the length between the mile point and the proposed access, rounding the distance on the odometer to the nearest tenth of a mile; multiply the distance by 5,280 feet to obtain the number of feet from the mile point. Then enter the direction (i.e. north, south, east, west) from the mile point to the proposed access. Finally, enter the mile point number. It is helpful in rural or undeveloped areas if some flagging is tied to the right-of-way fence at the desired location of the access. Also, if there is a cross street or road close to the proposed access, note the distance in feet (using the same procedures noted above) from that cross street or road.

8. **Access Construction Date**: Fill in the date on which construction of the access is planned to begin.

9. **Access Request:** Mark items that apply. More than one item may be checked.

10. **Existing property use:** Describe how the property is currently being used. For example, common uses are Single Family Residential, Commercial or Agricultural.

11. **Existing Access:** Does the property have ***any other legal alternatives to reach a public road*** other than the access requested in this application? Note the access permit number(s) for any existing state highway access point(s) along with their issue date(s). If there are no existing access point(s), mark the "no" box.

12. **Adjacent Property:** Please mark the appropriate box. If the "yes" box is marked, provide a brief description of the property (location of the property in relation to the property for which this access application is being made).

13. **Abutting Streets:** If there are any other existing or proposed public roads or easements abutting the property, they should be shown on a map or plan attached to this application.

14. **Agricultural Acres:** Provide number of acres **to be served.**

15. Access Use: List the land uses and square footage of the site as it will be when it is fully developed. The planned land uses as they will be when the site is fully developed are used to project the amount of traffic that the site will generate, peak hour traffic levels and the type of vehicles that can be expected as a result of the planned land uses. There may be exceptional circumstances that would allow phased installation of access requirements. This is at the discretion of the CDOT Regional Access Unit or issuing authority staff.

16. Estimated Traffic Count: Provide a reasonable estimate of the traffic volume expected to use the access. Note the type of vehicles that will use the access along with the volume (number of vehicles in and out at either the peak hour or average daily rates) for each type of vehicle. A vehicle leaving the property and then returning counts as two trips. If 40 customers are expected to visit the business daily, there would be 80 trips in addition to the trips made by all employees and other visitors (such as delivery and trash removal vehicles). If the PDF on-line version of this application is being used, the fields for each type of vehicle will automatically be added together to populate the last field on the page.

17. Documents and Plans: The CDOT Regional Access Manager or issuing authority staff will determine which of these items must be provided to make the application complete. Incomplete applications will not be accepted. If an incomplete application is received via U.S. mail or through means other than in the hand of the Access Manager or issuing authority staff, it will not be processed. ***It is the responsibility of the applicant to verify with the CDOT Regional Access Manager or issuing authority staff whether the application is complete at the time of submission.***

Signature: Generally, if the applicant is not the property owner, then the property owner or a legally authorized representative must sign the application. With narrow exceptions, proof of the property owner's consent is required to be submitted with the application (proof may be a power of attorney or a similar consent instrument). The CDOT Regional Access Manager or issuing authority staff will determine if the exception provided in the Access Code (2.3 (3) (b)) is applicable.

If CDOT is the issuing authority for this application, direct your questions to the CDOT Regional Access Manager or the issuing authority staff serving the subject property.

https://www.codot.gov/business/permits/accesspermits/regional-offices.html

If the application is accepted, it will be reviewed by the CDOT Regional Access Manager or the issuing authority staff. If an Access Permit is issued, be sure to read all of the attached Terms and Conditions before signing and returning the Access Permit. The Terms and Conditions may require that additional information be provided prior to issuance of the Notice to Proceed.

The CDOT Regional Access Manager (or issuing authority staff) MUST be contacted prior to commencing work on any Access Permit project. ***A Notice to Proceed that authorizes the Permittee to begin access related construction MUST be issued prior to working on the access in the State Highway right-of-way.*** The Notice to Proceed may also have Terms and Conditions that must be fulfilled before work may begin on the permitted access.