

# Strategic Land Solutions, Inc.

Civil Engineering • Land Planning • Entitlements

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Wednesday, March 05, 2025

**Attn: Ms. Emma Heth**  
**Town of Frisco Colorado:**  
**Community Development**  
1 East Main Street  
Frisco, CO 80443

**RE: 1<sup>st</sup> Bank/McDonald's Renovation Letter of Introduction (960 N. 10 Mile Drive)**

As we discussed in our pre-application meeting, McDonald's plans remodel the existing First Bank building into a McDonald's Restaurant. McDonald's plans to reuse the existing building in its current location, and they plan to reuse most of the building exterior.

As part of the building modifications, McDonald's plans to remove the existing drive-through tellers and canopy and patch the building wall in the teller location with material matching the existing building finishes. McDonald's also plans to modify the south building façade to add three windows to serve the new drive-through lane. The south wall of the building will be modified to better support the drive-through facilities. The existing east and west building elevations will largely remain in their current conditions. The west entrance will be modified to include a vestibule and dual storefront doors. The building interior renovations include removing the teller counters, lobby, offices, and wall safes, leaving the existing restrooms in their current location. McDonald's will then install a new kitchen, dining room, and cashier areas.

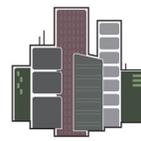
As discussed in our pre-application meeting, McDonald's is pursuing a sign code change to allow a second menu board for their dual drive-through layout. Please reference the letter included with this submittal package for the proposed sign code language change.

As part of the site renovation, McDonald's plan to add a grease interceptor upstream of the existing sanitary sewer line, upgrade the existing 1-inch water service to a 1-1/2-inch water service, and to upgrade the electrical service to three phase 1,200-amp service. Communications facilities serving the site will also need to be upgraded to serve McDonald's.

McDonald's plans to raze and rebuild portions of the existing parking lot as shown on the site plan included with this submittal. The new parking lot layout fits within the current pavement footprint, but it is being revised to one-way traffic, which works better with McDonald's site functionality. Areas of the existing curb and gutter along the south side of the site will remain in their current location. The existing sidewalk along the south side of the site will remain, and any broken areas of concrete will be repaired. McDonald's also plans to add a patio seating area between the drive-through and the building to enhance the appearance from Summit Boulevard. The revised landscaping will be designed to work with the existing mature landscaping, and to keep the existing exterior mature trees where possible.

The existing drainage patterns will be kept throughout the site. Furthermore, the existing

Ms. Emma Heth  
Letter of Introduction  
Wednesday – March 05, 2025  
Page 2



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imperviousness of the site will not be increased with the McDonald's project. Therefore, the proposed renovations will not adversely affect the existing storm drain facilities serving the site.

As you can see from the information in this letter, and from the attached submittal documents, it is McDonald's intent to use the existing site and building where possible to keep the exiting character of the site. The impacts to the mature landscaping and the existing building architecture will be limited, and additional landscaping and a patio are being added to help offset impacts from the proposed drive-through location.

Please feel free to contact me during your review if you have any questions about what is being proposed.

Sincerely,

**STRATEGIC LAND SOLUTIONS, INC.**

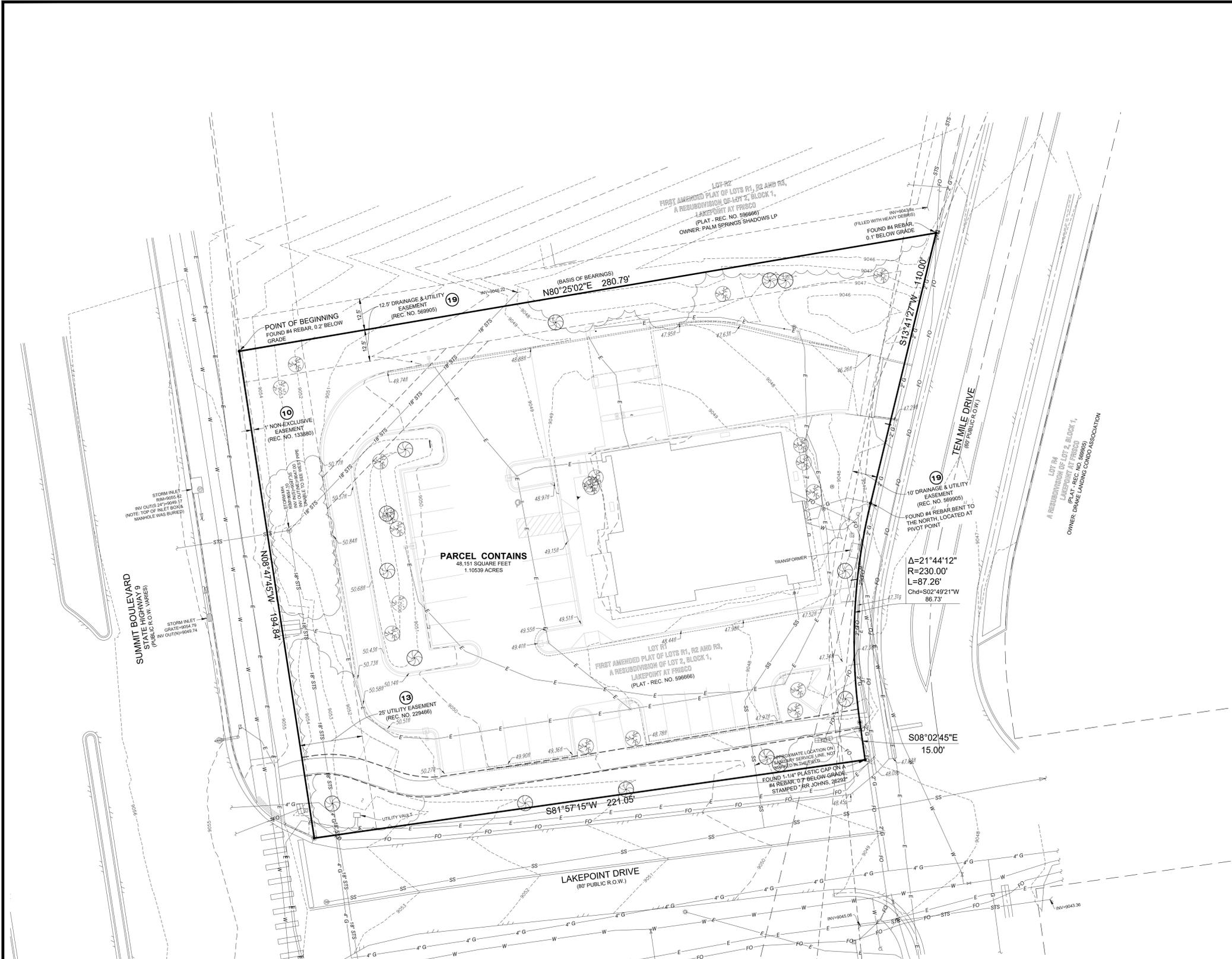
A handwritten signature in black ink that reads "Robert J. Palmer". The signature is fluid and cursive, with a long horizontal stroke at the end.

**Robert J. Palmer, PE** (CO, NM, AZ, WY, MT)  
President for SLS, Inc. A Colorado Corporation

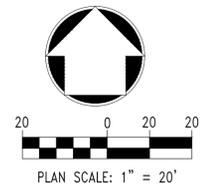
Attachments: Conceptual Site Plan, Conceptual Building Footprint, Existing Site Conditions, Conceptual Trash Enclosure Elevations, traffic study.

cc: Mr. Robert Yagusesky, OVUR via: [robert.yagusesky@us.mcd.com](mailto:robert.yagusesky@us.mcd.com)





LEGEND	
SS	UNLOCATABLE IMPROVEMENTS
SS	UNDERGROUND SANITARY SEWER LINE
STS	UNDERGROUND STORM SEWER LINE
W	UNDERGROUND WATER LINE
●	BOLLARD
⊗	CLEANOUT
⊕	COMMUNICATIONS PEDESTAL
⊖	ELECTRIC METER
⊙	FIRE HYDRANT
⊘	GAS METER
⊚	HOSE BIB (WATER SPIGOT)
⊛	LIGHT POLE (DIRECTIONAL)
⊜	MANHOLE (SANITARY)
⊝	MANHOLE (STORM)
⊞	NUMBER OF PARKING STALLS
⊟	SIGN
⊠	STREET LIGHT
⊡	WATER VALVE
⊢	SPOT ELEVATION
⊣	DECIDUOUS TREE
⊤	EVERGREEN TREE
BLDHT	BUILDING HEIGHT (FF - HIGHEST POINT)
FF	FINISHED FLOOR
L/S	LANDSCAPING
R.O.W.	RIGHT-OF-WAY
REC. NO.	RECEPTION NUMBER
●	SET 5/8"x24" REBAR & 1-1/4" YELLOW PLASTIC CAP STAMPED "ESC LS 38421"
●	FOUND MONUMENT AS DESCRIBED



Know what's below.  
Call before you dig.

NO.	DATE	REVISION	DESCRIPTION

CIVIL ENGINEERING CONSULTANT

**Strategic Land Solutions, Inc.**  
 2595 PONDEROSA ROAD  
 FRANKTOWN, CO 80116  
 720.384.7661 Phone  
 rpalmer@strategicls.net  
 Robert J. Palmer, PE  
 President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: ROBERT J. PALMER  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 36320  
 STATE OF COLORADO

BY Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

**McDonald's**  
 THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF MCDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

ROCKY MOUNTAIN REGION  
 OFFICE ADDRESS

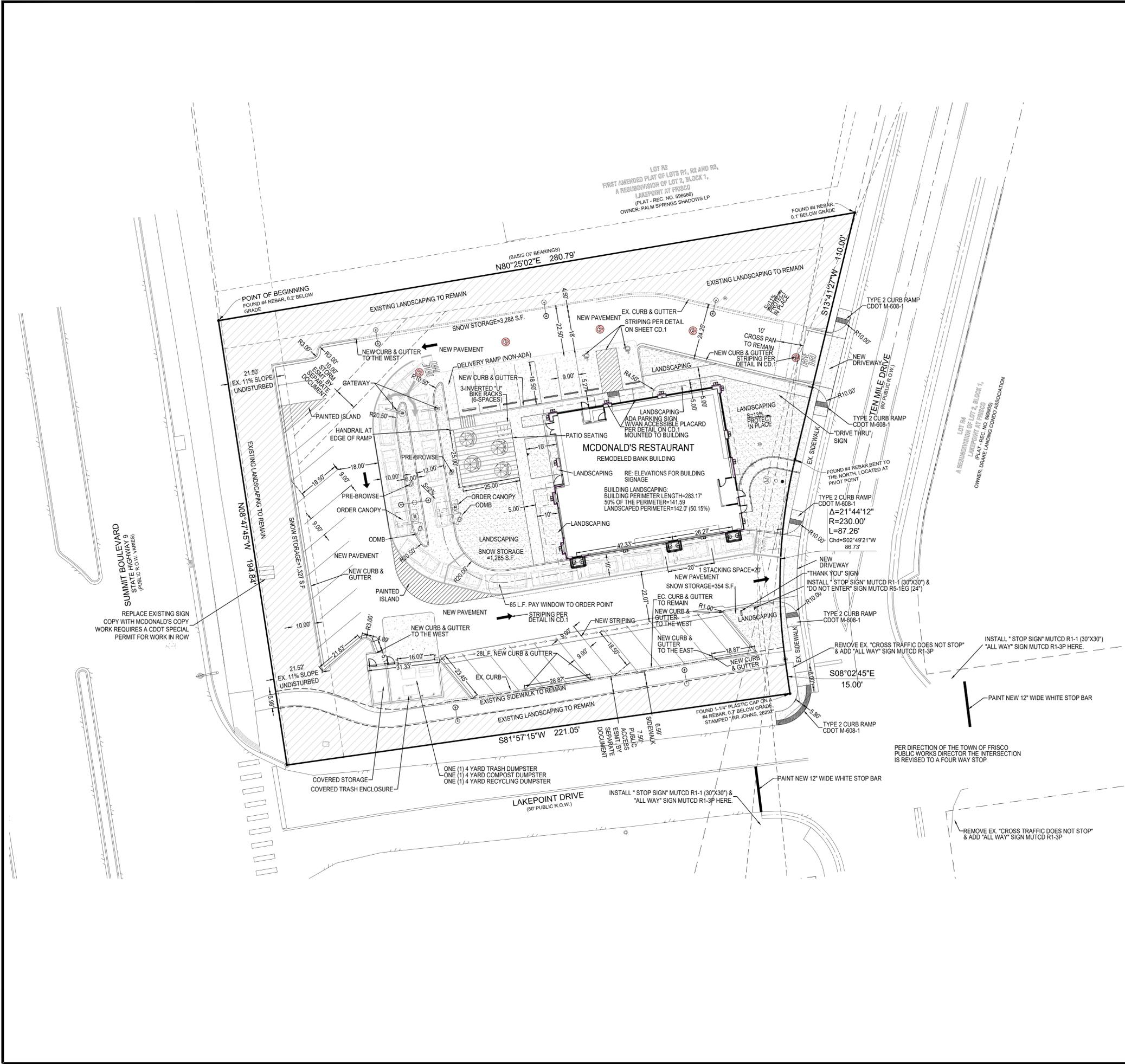
STREET ADDRESS	960 N. TEN MILE DRIVE
CITY	FRISCO
STATE	COLORADO
COUNTY	SUMMIT
STATE STAKE I.D.#	51062
NATIONAL I.D.#	44322

SCALE:	AS NOTED	M&D RE:	BAKER
DATE:	09/05/2025	M&D P/JCM	YAGUESKY
DESIGNED BY:	RJP	FILE NAME:	CURRENT.DWG
DRAWN BY:	RJP	SLS BY:	24-0001-216
CHECKED BY:	RJP		

DRAWING TITLE: **EXISTING CONDITIONS**

SHEET NO: **EX-1**





- SITE PLAN NOTES**
- ALL DIMENSIONS AND RADII ARE TO THE FACE (FOR 6" REVEAL CURB) OR FLOWLINE (FOR CURB & GUTTER) UNLESS OTHERWISE NOTED.
  - PARKING SPACE STRIPING TO BE WHITE, 4" WIDE, UNLESS OTHERWISE NOTED.
  - LOT LINE AND EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM THE SURVEY PREPARED BY CLC, INC.
  - CONCRETE PAVEMENT, SIDEWALK, CURB & GUTTER TO BE REMOVED (IF APPLICABLE) SHALL BE SAWCUT. CONTRACTOR SHALL REMOVE TO NEXT JOINT IF SAWCUT IS WITHIN 5 FOOT OF A JOINT.
  - THE PARKING AREAS AND ACCESS DRIVES SHALL CONSIST OF A FLEXIBLE COMPOSITE PAVEMENT SECTION OF SIX-INCHES OF ASPHALT OVER FOUR-INCHES OF AGGREGATE BASE COURSE (REFERENCE: SOILS REPORT). AT A MINIMUM, THE PAVEMENT SHALL BE DESIGNED TO SUPPORT THE WEIGHT IMPOSED BY FIRE APPARATUS (40.5 TON, 3 AXLES).
  - THE DRIVE THRU, LOADING AREA, AND TRASH DUMPSTER AREA SHALL CONSIST OF A PORTLAND CEMENT CONCRETE PAVEMENT WITH A MINIMUM THICKNESS OF EIGHT (8) INCHES (UNLESS OTHERWISE NOTED) WITH A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, REINFORCED WITH #3 BARS, 16" O.C.B.W. IN CENTER OF SLAB. USE 3/2" CHAIRS AT 48" O.C.B.W.
  - ALL ACCESSIBLE RAMPS TO INCLUDE DETECTABLE WARNING PANELS.
  - ALL CONSTRUCTION WITHIN PUBLIC-RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF FRISCO STANDARD CONSTRUCTION SPECIFICATIONS.
  - ALL ACCESS AND ACCESSIBLE PARKING IS DESIGNED TO MEET ADA ACCESSIBILITY REQUIREMENTS.

- SITE PLAN LEGEND (PROPOSED)**
- SITE PROPERTY LINE (WITH METES & BOUNDS NOTED)
  - ADA ACCESSIBLE ROUTE
  - ADJACENT PARCEL PROPERTY LINE
  - EXISTING CURBLINE
  - PROPOSED 6" CURBLINE W/ MONOLITHIC GUTTER RE: DETAIL 2.4 ON SHEET 6
  - PROPOSED 6" CURBLINE W/ 1" CATCH PAN GUTTER, RE: DETAIL 2.4 ON SHEET 6
  - 6" TEMPORARY ASPHALT CURB
  - PROPOSED 6" CURBLINE W/ 1" SPILL PAN GUTTER, RE: DETAIL 2.4 ON SHEET 6
  - PROPOSED CONCRETE PAVEMENT (WITH THICKNESS NOTED)
  - PROPOSED OVERHEAD ROOF/CANOPY LINE
  - PROPOSED BUILDING LINE
  - CONCRETE SCREEN WALL
  - PARKING SPACES
  - INVERTED "U" BICYCLE RACK
  - EXISTING LANDSCAPING TO REMAIN

NO.	DATE	REVISION DESCRIPTION

Prepared under the direct supervision of:

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 2595 PONDEROSA ROAD  
 FRANKTOWN, CO 80116  
 720.384.7661 Phone  
 rpalmer@strategicls.net  
 Robert J. Palmer, PE  
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SEAL: COLORADO REGISTERED PROFESSIONAL ENGINEER  
 ROBERT J. PALMER  
 36320

By Robert J. Palmer, PE  
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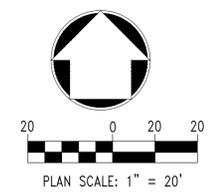
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ROCKY MOUNTAIN REGION

OFFICE ADDRESS: 960 N. TEN MILE DRIVE, FRISCO, COLORADO, SUMMIT, 51062, 44322

SCALE: AS NOTED  
 DATE: 09/05/2025  
 DESIGNED BY: RJP  
 DRAWN BY: RJP  
 CHECKED BY: RJP

M&D RE: BAKER  
 M&D P/C/M: YAGUESKY  
 FILE NAME: CURRENT.DWG  
 SLS. NO.: 24-0001-216



**811**  
 Know what's below.  
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**SITE PLAN**

SHEET NO: **C1.1**

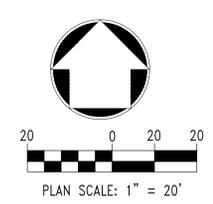
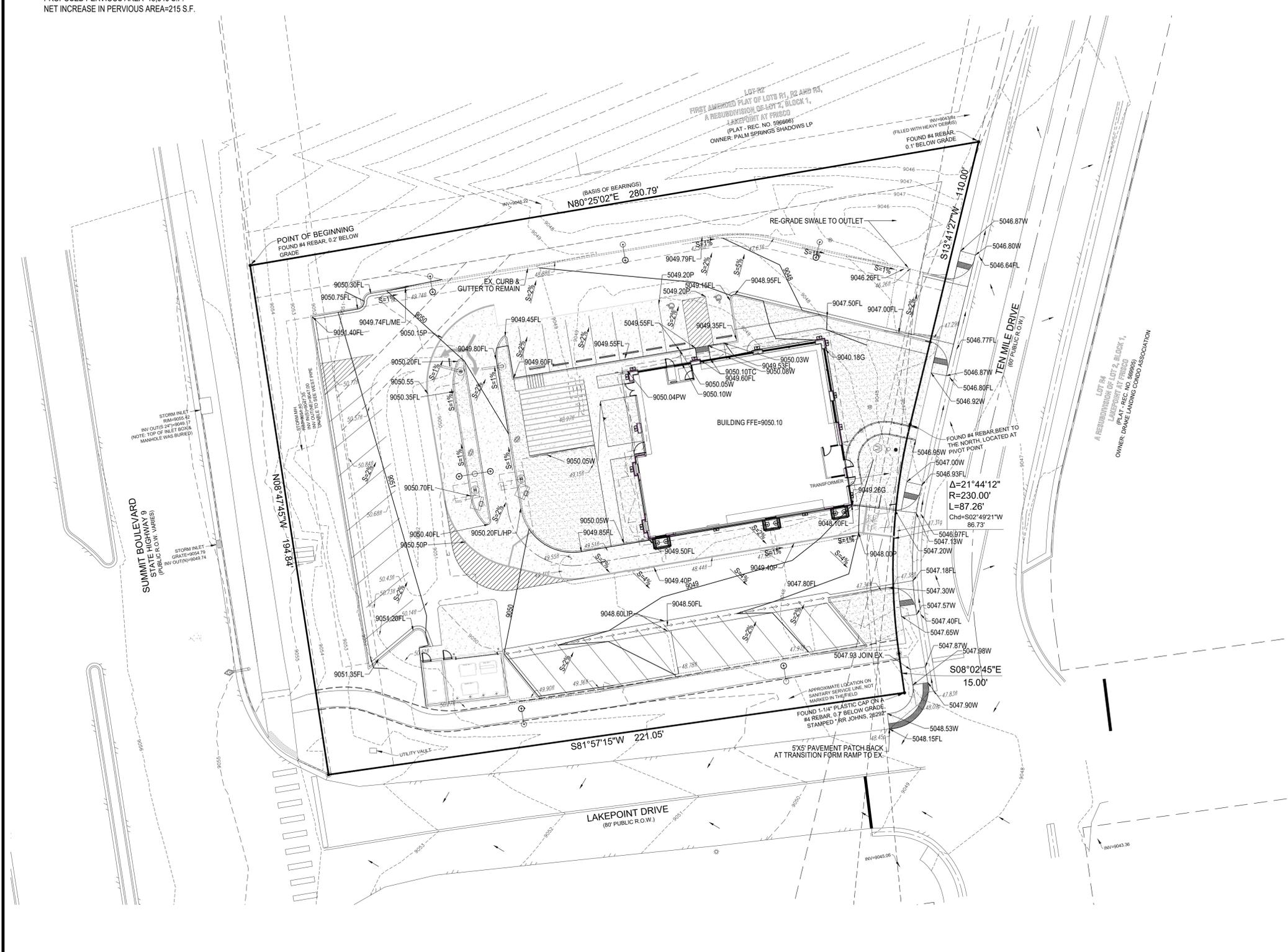
GRADING/PAVING NOTE:  
 THE EXISTING PARKING LOT WILL BE RE-PAVED MAINTAINING  
 THE CURRENT DRAINAGE BASINS AND DRAINAGE PATTERNS.  
 THE SITE IMPERVIOUSNESS IS REDUCED WITH THIS PROJECT.  
 EXISTING PERVIOUS AREA=19,725 S.F.  
 PROPOSED PERVIOUS AREA=19,940 S.F.  
 NET INCREASE IN PERVIOUS AREA=215 S.F.

**GRADING and DRAINAGE NOTES**

1. ALL ONSITE STORM DRAIN AND DETENTION FACILITIES ARE PRIVATE, AND WILL BE MAINTAINED BY THE PROPERTY OWNER. THE PROPOSED DRAINAGE EASEMENT IS BEING DEDICATED FROM THE PROPOSED DRAINAGE FACILITIES TO THE EXISTING PUBLIC ACCESS, UTILITY, AND FIRE LANE EASEMENT AT THE PROPERTY LINE. THE EXISTING PUBLIC ACCESS, UTILITY AND FIRE LANE LEADS TO A PUBLIC RIGHT-OF-WAY. NO ONSITE DRIVE LANES LEAD TO A PUBLIC RIGHT-OF-WAY.
2. REFER TO LAYOUT & CONTROL PLAN FOR DIMENSIONS AND IDENTIFICATION OF PROPOSED IMPROVEMENTS.
3. LOT LINE AND EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY PREPARED BY ENGINEERING SERVICES COMPANY, INC.
4. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. USE WHATEVER MEANS NECESSARY INCLUDING BUT NOT LIMITED TO STAKED STRAW BALES AND/OR SILT FENCES. CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE BY THE OWNER AND/OR THE TOWN OF FRISCO. THE CONTRACTOR'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE OWNER AND/OR TOWN OF FRISCO MAY AT THEIR OWN OPTION DIRECT THE CONTRACTOR IN THESE METHODS. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT, STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE OWNER AND/OR THE TOWN OF FRISCO AT THE EXPENSE OF THE CONTRACTOR.
5. ALL CURB AND GUTTER ELEVATIONS ARE FLOWLINE UNLESS NOTED OTHERWISE. ALL CURB AND GUTTER IS CATCH UNLESS NOTED OTHERWISE. FINISHED WALK AND CURB ELEVATIONS SHALL BE 6" ABOVE FINISH PAVEMENT UNLESS NOTED OTHERWISE. PROPOSED ELEVATIONS ARE SHOWN TO FINISHED PAVEMENT OR GRADE. LANDSCAPE AREAS SHALL BE ROUGH GRADED TO 6" BELOW TOP OF WALKS AND CURBS. FINISH GRADING IS BY THE GENERAL CONTRACTOR.
6. ALL FILL AREAS SHALL BE SCARIFIED AND RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT  $\pm 2\%$  FROM OPTIMUM, UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER. THE LOOSE THICKNESS OF EACH LAYER OF FILL SHALL NOT EXCEED EIGHT-INCHES. AREAS TO BE PAVED SHALL BE SCARIFIED AND RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT  $\pm 2\%$  FROM OPTIMUM UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER. CONTRACTOR SHALL EMPLOY THE ORIGINAL SOILS ENGINEER TO TEST ALL EARTHWORK TO INSURE COMPLIANCE WITH SOILS REPORT.
7. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE TOWN OF FRISCO ENGINEERING DIVISION. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER / OWNER'S REPRESENTATIVE OF ANY PROBLEM(S) IN CONFORMING TO THE APPROVED PLANS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO ITS CONSTRUCTION.
9. CURB (ACCESSIBLE) ACCESSIBLE RAMPS ARE TO BE PROVIDED AT INTERSECTIONS AND DRIVE ACCESSES AS SHOWN.
10. ALL ACCESSIBLE RAMPS AND DETECTABLE WARNINGS SHALL CONFORM TO THE TOWN OF FRISCO STANDARD DETAILS. 5 FOOT BY 5 FOOT LANDINGS WITH A MAXIMUM GRADE OF 2 PERCENT SHALL BE LOCATED AT THE TOP OF ALL ACCESSIBLE RAMPS.
11. ALL CONSTRUCTION WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH CURRENT TOWN OF FRISCO STANDARD CONSTRUCTION SPECIFICATIONS.

**GRADING & DRAINAGE LEGEND**

	EXISTING CONTOUR (1' INTERVAL)
	25.60FL PROPOSED SPOT GRADE - FLOW LINE
	25.60P PROPOSED SPOT GRADE - PAVEMENT
	25.60TW PROPOSED SPOT GRADE - TOP OF WALK
	25.60G PROPOSED SPOT GRADE - GROUND
	25.60ME PROPOSED SPOT GRADE - MATCH EXISTING
	6" CURB WITH 1" CATCH GUTTER
	6" CURB WITH 1" SPILL GUTTER
	6" MONOLITHIC CURB WITH 1" SPILL GUTTER
	EXISTING FLOW
	EXISTING STORM DRAIN WITH PIPE SIZE & TYPE NOTED
	EXISTING STORM INLET
	EXISTING STORM MANHOLE
	PROPOSED ELECTRICAL LINE
	PROPOSED STORM DRAIN
	PROPOSED SANITARY SEWER WATER LINE
	EXISTING INTERM CONTOUR
	EXISTING INDEX CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERM CONTOUR
	PROPOSED SILT FENCE
	PROPERTY LINE
	100-YEAR FLOOD BOUNDARY
	FLOW LINE
	GRADE BREAK
	HIGH POINT
	MATCH EXISTING
	PAVEMENT
	TOP OF CURB
	SIDEWALK



NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

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PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL:

By Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

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ROCKY MOUNTAIN REGION

OFFICE ADDRESS

960 N. TEN MILE DRIVE	CITY	FRISCO	STATE	COLORADO	COUNTY	SUMMIT	51062	44322
							STATE STAKE I.D.#	MATCHLINE I.D.#
							REGIONAL DWG. NO.	

SCALE:	AS NOTED	M&D RE: BAKER
DATE:	09/05/2025	M&D P/C/M YAGUESKY
DESIGNED BY:	RJP	
DRAWN BY:	RJP	FILE NAME:
CHECKED BY:	RJP	CURRENT.DWG
		SLS. BY: 24-0001-216
DRAWING TITLE		
GRADING PLAN		
SHEET NO.		
C1.2		



**SEDIMENT & EROSION CONTROL LEGEND**

-  VEHICLE TRACKING PAD
-  STABILIZED STAGING AREA
-  INLET PROTECTION, AREA
-  CONCRETE WASHOUT
-  INLET PROTECTION, INTERIM
-  CURB SOCK
-  INLET PROTECTION, ON-GRADE
-  SILT FENCE
-  DIVERSION DITCH
-  CONSTRUCTION FENCE
-  LIMIT OF CONSTRUCTION
-  CHECK DAM
-  DIRECTION OF RUNOFF

**GENERAL NOTES:**

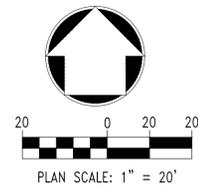
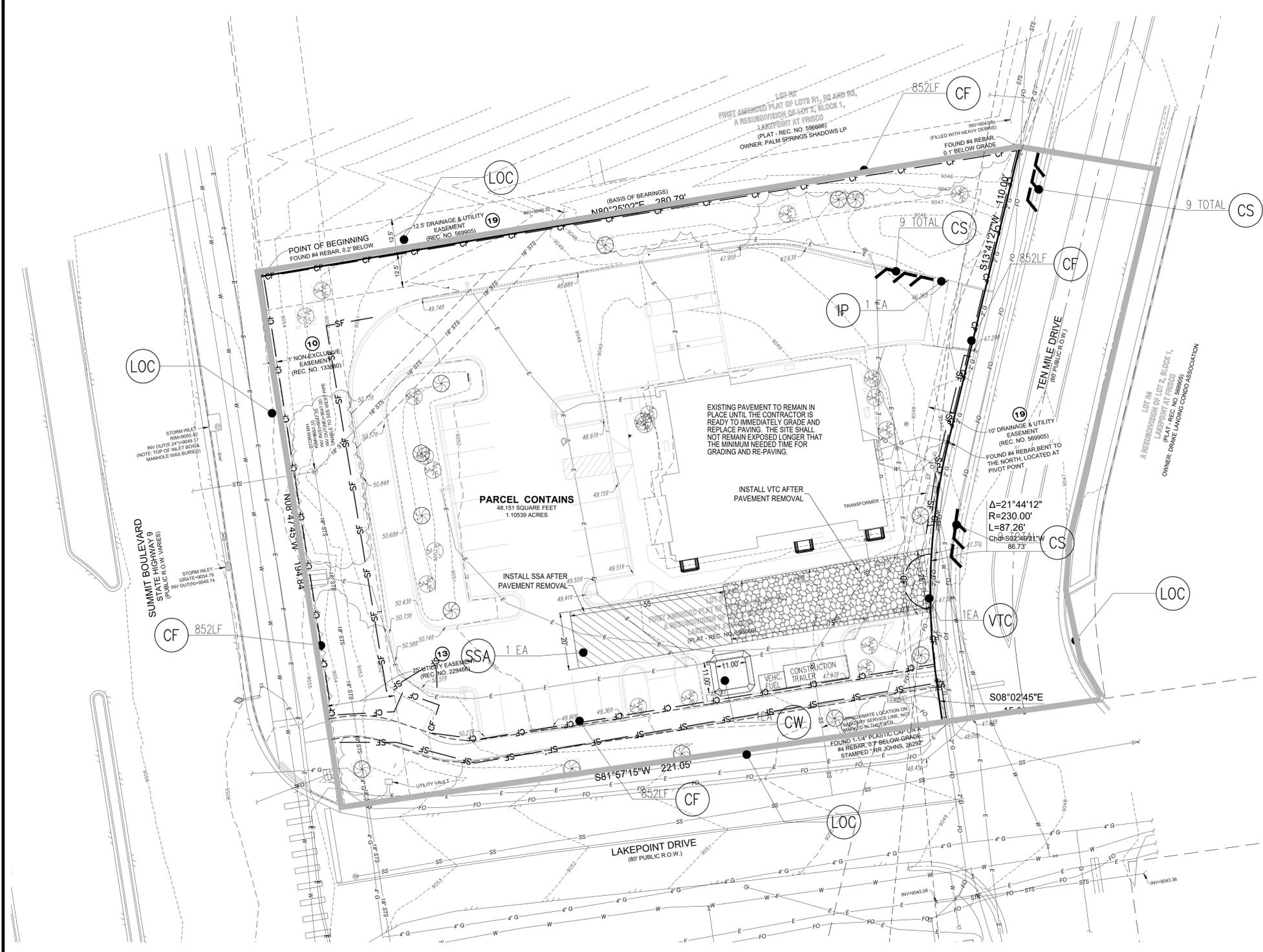
1. ANY DAMAGE TO EXISTING PUBLIC IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO: (1) CURB, GUTTER AND SIDEWALK, (2) LANDSCAPING, AND/OR (3) UTILITIES SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S COST.
2. ALL PROPOSED STORM SEWER IS PRIVATE, UNLESS OTHERWISE LABELED.
3. POST PAVING WILL REQUIRE BACK OF CURB PROTECTION OR SOD.
4. NO ONSITE STOCKPILE WILL BE UTILIZED, BECAUSE OF THE LIMITED SIZE OF THE SITE.
5. THE TOTAL DISTURBED AREA=0.85 ACRES

**EROSION & SEDIMENT CONTROL PLAN NOTE:**

1. THIS EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PLACED IN THE CITY'S FILE FOR THE PROJECT AND APPEARS TO FULFILL THE TOWN OF FRISCO EROSION CONTROL CRITERIA AND REQUIREMENTS. I UNDERSTAND THAT ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE OWNER DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE CITY EROSION CONTROL INSPECTOR MAY REQUIRE MODIFICATIONS, ADDITIONS, OR REPAIRS AT THE TIME OF INSPECTION.
2. ALL AREAS DISTURBED BY GRADING OR CONSTRUCTION, NOT BEING FORMALLY LANDSCAPED, SHALL BE MULCHED AND REVEGETATED WITH SEEDING AND/OR OTHER PLANT MATERIALS. ALL SEEDING AREAS SHALL RECEIVE SEEDING MULCH (E.G., STRAW-CRIMPED IN PLACE OR HYDROMULCH, ETC.). IN ORDER TO PROMOTE GROWTH AND INCREASE SOIL CONTACT ALL ROCKS LARGER THAN THREE INCHES IN DIAMETER SHALL BE REMOVED, AND A MINIMUM OF THREE INCHES OF TOPSOIL SHALL BE INSTALLED UTILIZING EXISTING STOCKPILED TOPSOIL FROM THE SITE, WHEN POSSIBLE. SEEDED AREAS IN EXCESS OF 3:1 (HORIZONTAL:VERTICAL) SLOPE (33 PERCENT) SHALL RECEIVE BIODEGRADABLE EROSION CONTROL BLANKETS, TO REDUCE POTENTIAL FOR DAMAGE FROM HEAVY, CONCENTRATED STORM-WATER RUNOFF. SEED MIXES AND OTHER PLANT MATERIAL SHALL BE SELECTED FROM THE "PLANT MATERIALS LIST - FRISCO COLORADO". ALTERNATIVE PLANT MATERIALS MAY BE CONSIDERED IF IT IS DETERMINED BY THE COMMUNITY DEVELOPMENT DEPARTMENT OR PLANNING COMMISSION BASED ON COMPETENT EVIDENCE THAT THE PROPOSED PLANT MATERIAL IS SUITABLE TO THE CLIMATE AND PLACEMENT ON THE SITE.

**C.D.P.S. NOTE**

OWNER/CONTRACTOR MUST OBTAIN A CDPS STORMWATER DISCHARGE PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH IF REQUIRED.



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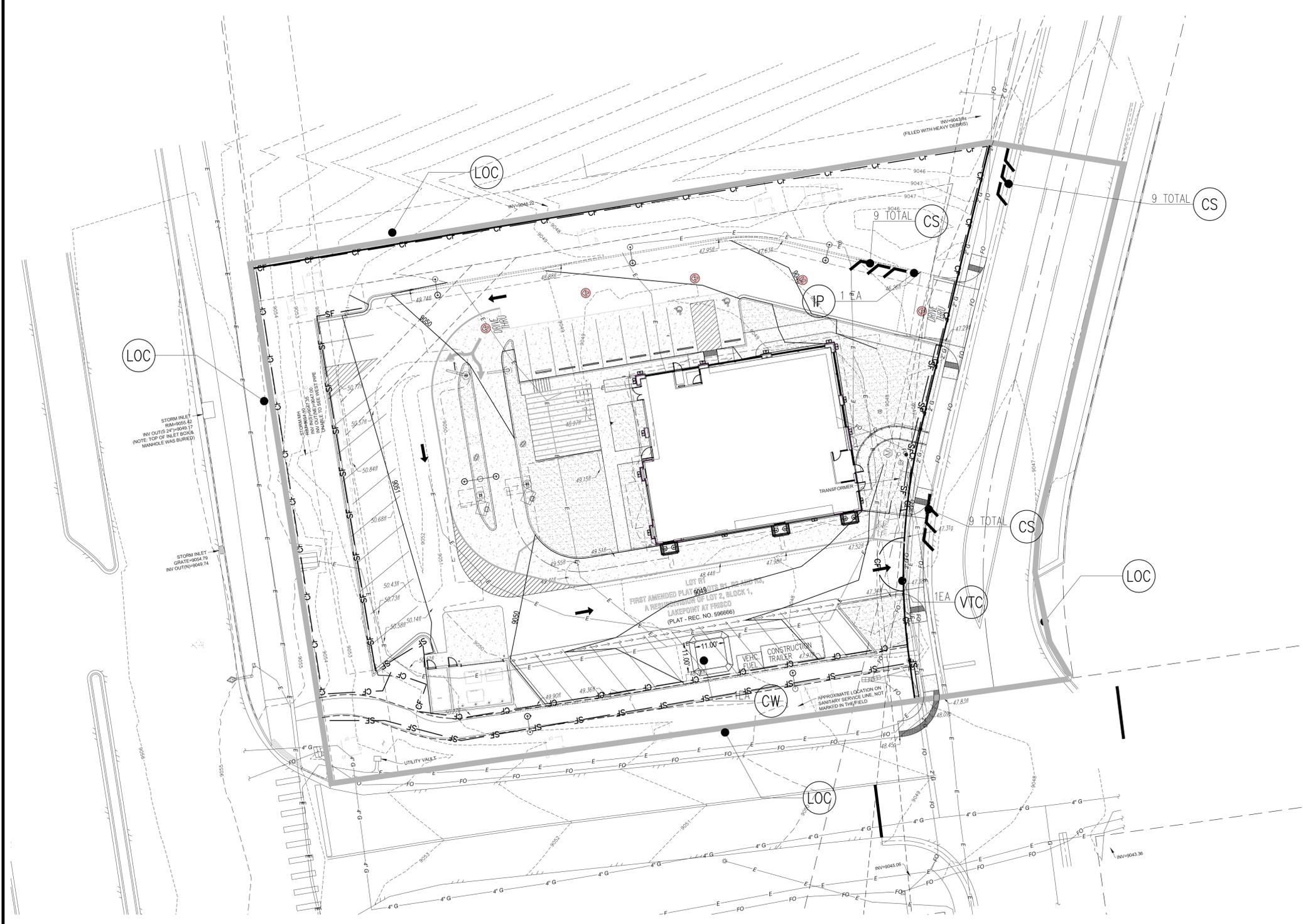
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960 N. TEN MILE DRIVE	STATE	COLORADO	
FRISCO	CITY	SUMMIT	COUNTY
		51062	ZIP CODE
		44322	PARCEL ID#

SCALE: AS NOTED	MD RE: BAKER
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DRAWING TITLE:	
EROSION CONTROL INITIAL	
SHEET NO:	
EC1.0	



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- VEHICLE TRACKING PAD
- INLET PROTECTION, AREA
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- SILT FENCE
- CONSTRUCTION FENCE
- DIRECTION OF RUNOFF
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**C.D.P.S. NOTE**

OWNER/CONTRACTOR MUST OBTAIN A CDPS STORMWATER DISCHARGE PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH IF REQUIRED.

NO.	DATE	REVISION DESCRIPTION

**Strategic Land Solutions, Inc.**  
Civil Engineering & Land Planning Solutions  
 2595 PONDEROSA ROAD  
 FRANKTOWN, CO 80116  
 720.384.7661 Phone  
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 Robert J. Palmer, PE  
 President

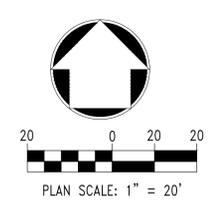
PREPARED UNDER THE DIRECT SUPERVISION OF:  
  
 SEAL: **ROBERT J. PALMER**  
 36320  
 PROFESSIONAL ENGINEER  
 By Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

**McDonald's**  
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF MCDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.  
 OFFICE: ROCKY MOUNTAIN REGION  
 ADDRESS:

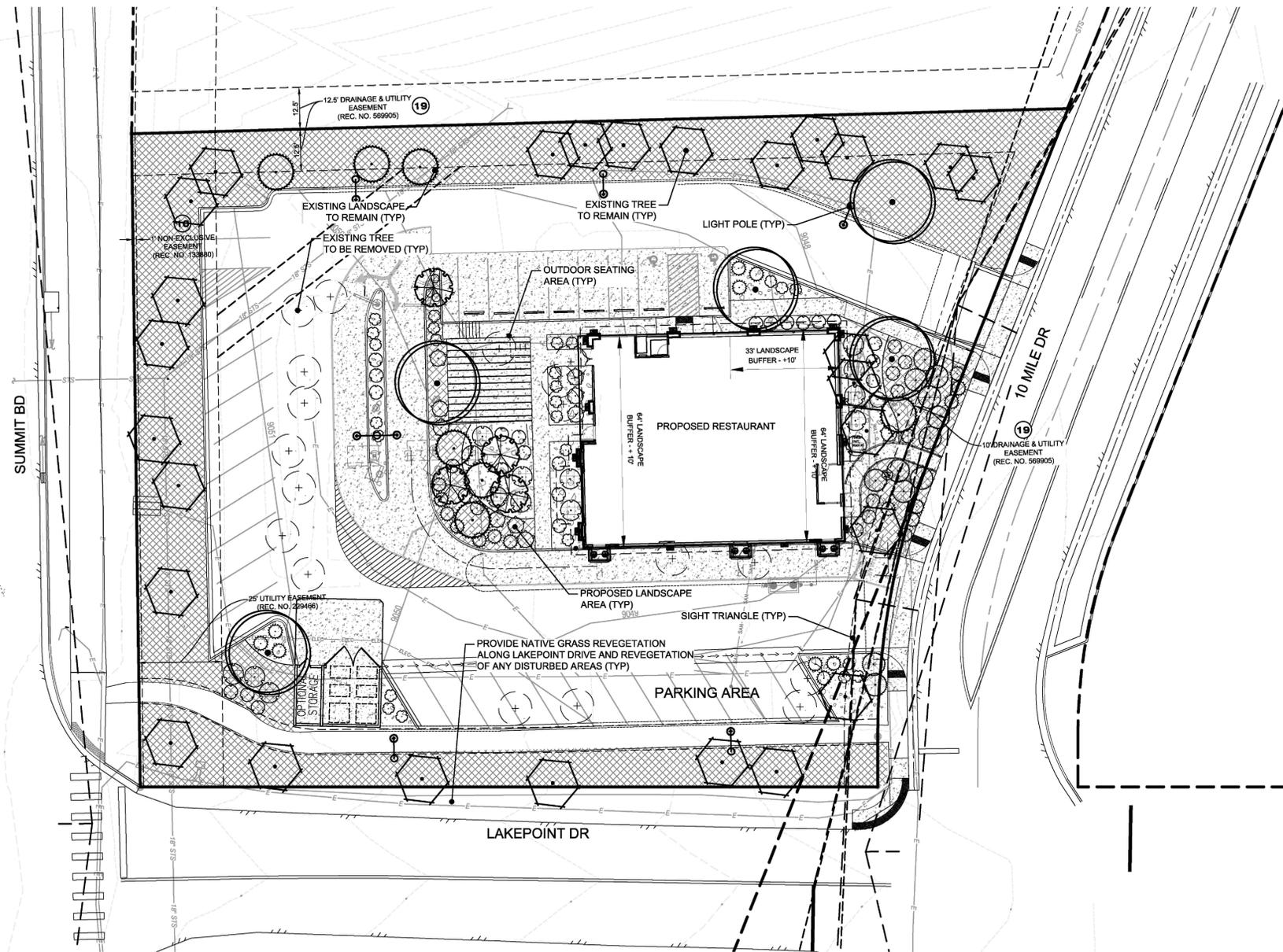
STREET ADDRESS	960 N. TEN MILE DRIVE
CITY	FRISCO
COUNTY	SUMMIT
STATE	COLORADO
REGIONAL DWG. NO.	
STATE DWG. NO.	51062
MATERIAL DWG.	44322

SCALE:	AS NOTED	M&D RE:	BAKER
DATE:	09/05/2025	M&D P/JCM	YAGUESKY
DESIGNED BY:	RJP		
DRAWN BY:	RJP	FILE NAME:	CURRENT.DWG
CHECKED BY:	RJP	SLS BY:	24-0001-216

DRAWING TITLE:  
**EROSION CONTROL UTILITY/PAVING**  
 SHEET NO:  
**EC1.1**



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



SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
<b>TREES</b>			
	PB	7	PICEA PUNGENS GLAUCA 'HOOPSII' / DWARF BLUE SPRUCE
	PANG	5	POPULUS ANGUSTIFOLIA / NARROWLEAF COTTONWOOD
	PT	4	POPULUS TREMULOIDES / QUAKING ASPEN
	EX-REM	18	REMOVE AS INDICATED / EXISTING TREE TO BE REMOVED
	EX-RET	27	TO REMAIN- PROTECT DURING CONSTRUCTION / EXISTING TREE TO REMAIN
<b>SHRUBS</b>			
	AMI	11	ARONIA MELANOCARPA 'IROQUIS BEAUTY' / DWARF CHOKEBERRY
	CSR	33	CORNUS SERICEA 'ARCTIC FIRE' / DOGWOOD
	JHH	23	JUNIPERUS HORIZONTALIS 'HUGHES' / CREEPING JUNIPER
	JHBM	12	JUNIPERUS SABINA 'BROADMOOR' / BROADMOOR JUNIPER
	MR	3	MAHONIA REPENS / CREEPING MAHONIA
	PFF	25	POTENTILLA FRUTICOSA 'ABBOTSWOOD' / POTENTILLA
	RAC	15	RIBES AUREUM / GOLDEN CURRANT
<b>GROUND COVERS</b>			
	EX-RS	12,653 SF	EX LANDSCAPE - SHRUB BED / TO REMAIN
<b>MULCHES</b>			
	RM	2,837 SF	ROCK MULCH / RIVER ROCK 1"-2"
	WM	1,910 SF	SHREDDED CEDAR MULCH / WOOD MULCH

**IRRIGATION NOTES:**

IRRIGATION IS TO BE EXTENDED TO NEW PLANTINGS FROM EXISTING SYSTEM, PE SCHEDULE BELOW.

- Perennials to receive one of 0.5 GPH emitters
- Grasses to receive one of 1.0 GPH emitters
- Shrubs to receive two of 1.0 GPH emitters
- Trees to receive to receive minimum four of 2.0 GPH emitters

1. All areas disturbed by grading or construction, not being formally landscaped, shall be mulched and revegetated with seeding and/or other plant materials. All seeded areas shall receive seeding mulch (e.g., straw-crimped in place or hydromulch, etc.). In order to promote growth and increase soil contact all rocks larger than three inches in diameter shall be removed, and a minimum of three inches of topsoil shall be installed utilizing existing stockpiled topsoil from the site, when possible. Seeded areas in excess of 3:1 (horizontal:vertical) slope (33 percent) shall receive biodegradable erosion control blankets, to reduce potential for damage from heavy, concentrated storm-water runoff. Seed mixes and other plant material shall be selected from the "Plant Materials List - Frisco Colorado". Alternative plant materials may be considered if it is determined by the Community Development Department or

**GENERAL NOTES:**

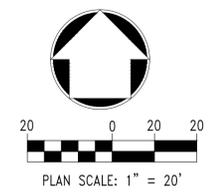
- ANY DAMAGE TO EXISTING PUBLIC IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO: (1) CURB, GUTTER AND SIDEWALK, (2) LANDSCAPING, AND/OR (3) UTILITIES SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S COST.
- ALL PROPOSED STORM SEWER IS PRIVATE, UNLESS OTHERWISE LABELED
- POST PAVING WILL REQUIRE BACK OF CURB PROTECTION OR SOD.
- NO ONSITE STOCKPILE WILL BE UTILIZED, BECAUSE OF THE LIMITED SIZE OF THE SITE.
- THE TOTAL DISTURBED AREA=0.85 ACRES

**C.D.P.S. NOTE**

OWNER/CONTRACTOR MUST OBTAIN A CDPS STORMWATER DISCHARGE PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH IF REQUIRED.

**EROSION & SEDIMENT CONTROL PLAN NOTE:**

- THIS EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PLACED IN THE CITY'S FILE FOR THE PROJECT AND APPEARS TO FULFILL THE TOWN OF FRISCO EROSION CONTROL CRITERIA AND REQUIREMENTS. I UNDERSTAND THAT ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE OWNER DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE CITY EROSION CONTROL INSPECTOR MAY REQUIRE MODIFICATIONS, ADDITIONS, OR REPAIRS AT THE TIME OF INSPECTION.
- ALL AREAS DISTURBED BY GRADING OR CONSTRUCTION, NOT BEING FORMALLY LANDSCAPED, SHALL BE MULCHED AND REVEGETATED WITH SEEDING AND/OR OTHER PLANT MATERIALS. ALL SEEDED AREAS SHALL RECEIVE SEEDING MULCH (E.G., STRAW-CRIMPED IN PLACE OR HYDROMULCH, ETC.). IN ORDER TO PROMOTE GROWTH AND INCREASE SOIL CONTACT ALL ROCKS LARGER THAN THREE INCHES IN DIAMETER SHALL BE REMOVED, AND A MINIMUM OF THREE INCHES OF TOPSOIL SHALL BE INSTALLED UTILIZING EXISTING STOCKPILED TOPSOIL FROM THE SITE, WHEN POSSIBLE. SEEDED AREAS IN EXCESS OF 3:1 (HORIZONTAL:VERTICAL) SLOPE (33 PERCENT) SHALL RECEIVE BIODEGRADABLE EROSION CONTROL BLANKETS, TO REDUCE POTENTIAL FOR DAMAGE FROM HEAVY, CONCENTRATED STORM-WATER RUNOFF. SEED MIXES AND OTHER PLANT MATERIAL SHALL BE SELECTED FROM THE "PLANT MATERIALS LIST - FRISCO COLORADO". ALTERNATIVE PLANT MATERIALS MAY BE CONSIDERED IF IT IS DETERMINED BY THE COMMUNITY DEVELOPMENT DEPARTMENT OR PLANNING COMMISSION BASED ON COMPETENT EVIDENCE THAT THE PROPOSED PLANT MATERIAL IS SUITABLE TO THE CLIMATE AND PLACEMENT ON THE SITE.



NO.		DATE	REVISION DESCRIPTION
CIVIL ENGINEERING CONSULTANT			
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PREPARED UNDER THE DIRECT SUPERVISION OF:			
SEAL:			
BY Robert J. Palmer, PE Licensed Professional Engineer (CO PE #36320), AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.			
		ROCKY MOUNTAIN REGION OFFICE ADDRESS 44322	
STREET ADDRESS	CITY	COUNTY	STATE
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DRAWN BY:	RJP	SLS. D/A:	24-0001-216
CHECKED BY:	RJP		
DRAWING TITLE:			
EROSION CONTROL FINAL STABILIZATION			
SHEET NO.:			
EC1.2			

**Wind Erosion/Dust Control (DC) EC-14**

**Description**

Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. These BMPs include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered.



Photograph DC-1. Water truck used for dust suppression. Photo courtesy of Douglas County.

**Appropriate Uses**

Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.

**Design and Installation**

The following construction BMPs can be used for dust control:

- An irrigation/sprinkler system can be used to wet the top layer of disturbed soil to help keep dry soil particles from becoming airborne.
- Seeding and mulching can be used to stabilize disturbed surfaces and reduce dust emissions.
- Protecting existing vegetation can help to slow wind velocities across the ground surface, thereby limiting the likelihood of soil particles to become airborne.
- Spray-on soil binders form a bond between soil particles keeping them grounded. Chemical treatments may require additional permitting requirements. Potential impacts to surrounding waterways and habitat must be considered prior to use.
- Placing rock on construction roadways and entrances will help keep dust to a minimum across the construction site.
- Wind fences can be installed on site to reduce wind speeds. Install fences perpendicular to the prevailing wind direction for maximum effectiveness.

**Maintenance and Removal**

When using an irrigation/sprinkler control system to aid in dust control, be careful not to overwater. Overwatering will cause construction vehicles to track mud off-site.

Wind Erosion Control/ Dust Control	
Functions	
Erosion Control	Yes
Sediment Control	No
Site/Material Management	Moderate

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 DC-1

**MM-1 Concrete Washout Area (CWA)**

setbacks infeasible or if highly permeable soils exist in the area, then the pit must be installed with an impermeable liner (16 mil minimum thickness) or surface storage alternatives using prefabricated concrete washout devices or a lined aboveground storage area should be used.

Design details with notes are provided in Detail CWA-1 for pits and CWA-2 for aboveground storage areas. Pre-fabricated concrete washout container information can be obtained from vendors.

**Maintenance and Removal**

A key consideration for concrete washout areas is to ensure that adequate signage is in place identifying the location of the washout area. Part of inspecting and maintaining washout areas is ensuring that adequate signage is provided and in good repair and that the washout area is being used, as opposed to washout in non-designated areas of the site.

Remove concrete waste in the washout area, as needed to maintain BMP function (typically when filled to about two-thirds of its capacity). Collect concrete waste and deliver offsite to a designated disposal location.

Upon termination of use of the washout site, accumulated solid waste, including concrete waste and any contaminated soils, must be removed from the site to prevent on-site disposal of solid waste. If the wash water is allowed to evaporate and the concrete hardens, it may be recycled.



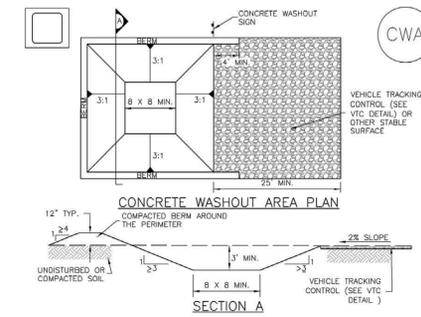
Photograph CWA-2. Prefabricated concrete washout. Photo courtesy of CDOT.



Photograph CWA-3. Earthen concrete washout. Photo courtesy of CDOT.

CWA-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**Concrete Washout Area (CWA) MM-1**

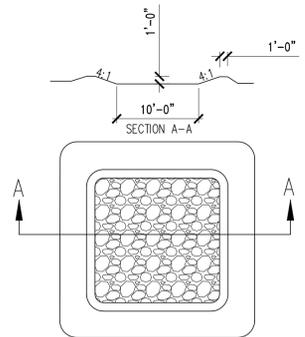


**CWA-1. CONCRETE WASHOUT AREA**

**CWA INSTALLATION NOTES**

- SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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- NOTE:**
- BOTTOM OF CONTAINMENT AREA SHALL BE LINED WITH 1 1/2" GRAVEL SUFFICIENT TO HOLD THE EQUIPMENT LOADS.
  - IN CASE OF A MAJOR SPILL NOTIFY THE EMERGENCY CONTACT PERSONS LISTED ON THE COVER SHEET OF THESE PLANS.
  - ALL SIDE SLOPES ARE TO BE 4:1 MAX. FUELING VEHICLES CONTAINING 500 GALLONS OR MORE WILL BE REQUIRED TO OBTAIN A SEPARATE PERMIT FROM LONGMONT FIRE DEPARTMENT.
  -

**FUEL CONTAINMENT BERM 1**

**WIND AND DUST CONTROL 2**

**CONCRETE WASHOUT AREA 3**

**CONCRETE WASHOUT AREA 4**

**MM-1 Concrete Washout Area (CWA)**

**CWA MAINTENANCE NOTES**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(TEXT ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PUEBLO, COLORADO. NOT AVAILABLE IN ARTISTS) NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM IUCED STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

CWA-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**Good Housekeeping Practices (GH) MM-3**

**Description**

Implement construction site good housekeeping practices to prevent pollution associated with solid, liquid and hazardous construction-related materials and wastes. Stormwater Management Plans (SWMPs) should clearly specify BMPs including these good housekeeping practices:

- Provide for waste management.
- Establish proper building material staging areas.
- Designate paint and concrete washout areas.
- Establish proper equipment/vehicle fueling and maintenance practices.
- Control equipment/vehicle washing and allowable non-stormwater discharges.
- Develop a spill prevention and response plan.

**Acknowledgement:** This Fact Sheet is based directly on EPA guidance provided in *Developing Your Stormwater Pollution Prevention Plan (EPA 2007)*.

**Appropriate Uses**

Good housekeeping practices are necessary at all construction sites.

**Design and Installation**

The following principles and actions should be addressed in SWMPs:

- Provide for Waste Management.** Implement management procedures and practices to prevent or reduce the exposure and transport of pollutants in stormwater from solid, liquid and sanitary wastes that will be generated at the site. Practices such as trash disposal, recycling, proper material handling, and cleanup measures can reduce the potential for stormwater runoff to pick up construction site wastes and discharge them to surface waters. Implement a comprehensive set of waste-management practices for hazardous or toxic materials, such as paints, solvents, petroleum products, pesticides, wood preservatives, acids, roofing tar, and other materials. Practices should include storage, handling, inventory, and cleanup procedures, in case of spills. Specific practices that should be considered include:
  - Designate trash and bulk waste-collection areas on-site.

Good Housekeeping	
Functions	
Erosion Control	No
Sediment Control	No
Site/Material Management	Yes

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 GH-1

**MM-3 Good Housekeeping Practices (GH)**

- Recycle materials whenever possible (e.g., paper, wood, concrete, oil).
- Segregate and provide proper disposal options for hazardous material wastes.
- Clean up litter and debris from the construction site daily.
- Locate waste-collection areas away from streets, gutters, watercourses, and storm drains. Waste-collection areas (dumpsters, and such) are often best located near construction site entrances to minimize traffic on disturbed soils. Consider secondary containment around waste collection areas to minimize the likelihood of contaminated discharges.
- Empty waste containers before they are full and overflowing.

**Sanitary and Septic Waste**

- Provide convenient, well-maintained, and properly located toilet facilities on-site.
- Locate toilet facilities away from storm drain inlets and waterways to prevent accidental spills and contamination of stormwater.
- Maintain clean restroom facilities and empty portable toilets regularly.
- Where possible, provide secondary containment pans under portable toilets.
- Provide tie-downs or stake-downs for portable toilets.
- Educate employees, subcontractors, and suppliers on locations of facilities.
- Treat or dispose of sanitary and septic waste in accordance with state or local regulations. Do not discharge or bury wastewater at the construction site.
- Inspect facilities for leaks. If found, repair or replace immediately.
- Special care is necessary during maintenance (pump out) to ensure that waste and/or biocide are not spilled on the ground.

**Hazardous Materials and Wastes**

- Develop and implement employee and subcontractor education, as needed, on hazardous and toxic waste handling, storage, disposal, and cleanup.
- Designate hazardous waste-collection areas on-site.
- Place all hazardous and toxic material wastes in secondary containment.



Photograph GH-3. Locate portable toilet facilities on level surfaces away from waterways and storm drains. Photo courtesy of WVE.

GH-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**Good Housekeeping Practices (GH) MM-3**

- Hazardous waste containers should be inspected to ensure that all containers are labeled properly and that no leaks are present.

**Establish Proper Building Material Handling and Staging Areas.** The SWMP should include comprehensive handling and management procedures for building materials, especially those that are hazardous or toxic. Paints, solvents, pesticides, fuels and oils, other hazardous materials or building materials that have the potential to contaminate stormwater should be stored indoors or under cover whenever possible or in areas with secondary containment. Secondary containment measures prevent a spill from spreading across the site and may include dikes, berms, curbing, or other containment methods. Secondary containment techniques should also ensure the protection of groundwater. Designate staging areas for activities such as fueling vehicles, mixing paints, plaster, mortar, and other potential pollutants. Designated staging areas enable easier monitoring of the use of materials and clean up of spills. Training employees and subcontractors is essential to the success of this pollution prevention principle. Consider the following specific materials handling and staging practices:

- Train employees and subcontractors in proper handling and storage practices.
- Clearly designate site areas for staging and storage with signs and on construction drawings. Staging areas should be located in areas central to the construction site. Segment the staging area into sub-areas designated for vehicles, equipment, or stockpiles. Construction entrances and exits should be clearly marked so that delivery vehicles enter/exit through stabilized areas with vehicle tracking controls (See Vehicle Tracking Control Fact Sheet).
- Provide storage in accordance with Spill Protection, Control and Countermeasures (SPCC) requirements and plans and provide cover and impermeable perimeter control, as necessary, for hazardous materials and contaminated soils that must be stored on site.
- Ensure that storage containers are regularly inspected for leaks, corrosion, support or foundation failure, or other signs of deterioration and tested for soundness.
- Reuse and recycle construction materials when possible.

**Designate Concrete Washout Areas.** Concrete contractors should be encouraged to use the washout facilities at their own plants or dispatch facilities when feasible; however, concrete washout commonly occurs on construction sites. If it is necessary to provide for concrete washout areas on-site, designate specific washout areas and design facilities to handle anticipated washout water. Washout areas should also be provided for paint and stucco operations. Because washout areas can be a source of pollutants from leaks or spills, care must be taken with regard to their placement and proper use. See the Concrete Washout Area Fact Sheet for detailed guidance.

Both self-constructed and prefabricated washout containers can fill up quickly when concrete, paint, and stucco work are occurring on large portions of the site. Be sure to check for evidence that contractors are using the washout areas and not dumping materials onto the ground or into drainage facilities. If the washout areas are not being used regularly, consider posting additional signage, relocating the facilities to more convenient locations, or providing training to workers and contractors.

When concrete, paint, or stucco is part of the construction process, consider these practices which will help prevent contamination of stormwater. Include the locations of these areas and the maintenance and inspection procedures in the SWMP.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 GH-3

**CONCRETE WASHOUT AREA 5**

**GOOD HOUSEKEEPING 6**

**GOOD HOUSEKEEPING 7**

**GOOD HOUSEKEEPING 8**

NO. DATE REVISION DESCRIPTION

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 Robert J. Palmer, PE  
 President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: **ROBERT J. PALMER**  
 REGISTERED PROFESSIONAL ENGINEER  
 NO. 36320  
 STATE OF COLORADO

BY Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

**McDonald's**  
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ROCKY MOUNTAIN REGION

OFFICE ADDRESS

960 N. TEN MILE DRIVE  
 STATE COLORADO  
 FRISCO  
 COUNTY SUMMIT  
 CITY

51062  
 STATE SOURCE I.D.#  
 NATIONAL I.D.#

44322  
 ADDRESS

SCALE: AS NOTED M&D REF: BAKER  
 DATE: 09/05/2015 M&D P/C# YAGUESKY  
 DESIGNED BY: RJP  
 DRAWN BY: RJP FILE NAME: CURRENT.DWG  
 CHECKED BY: RJP SLS ID: 24-0001-218

**EROSION CONTROL DETAILS**

**EC2.0**

**Good Housekeeping Practices (GH) MM-3**

- Use high-pressure water spray at vehicle washing facilities without detergents. Water alone can remove most dirt adequately.
- Do not conduct other activities, such as vehicle repairs, in the wash area.
- Include the location of the washing facilities and the inspection and maintenance procedures in the SWMP.
- Develop a Spill Prevention and Response Plan.** Spill prevention and response procedures must be identified in the SWMP. Representative procedures include identifying ways to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and response. The plan should also specify material handling procedures and storage requirements and ensure that clear and concise spill cleanup procedures are provided and posted for areas in which spills may potentially occur. When developing a spill prevention plan, include the following:
  - Note the locations of chemical storage areas, storm drains, tributary drainage areas, surface waterbodies on or near the site, and measures to stop spills from leaving the site.
  - Provide proper handling and safety procedures for each type of waste. Keep Material Safety Data Sheets (MSDSs) for chemical used on site with the SWMP.
  - Establish an education program for employees and subcontractors on the potential hazards to humans and the environment from spills and leaks.
  - Specify how to notify appropriate authorities, such as police and fire departments, hospitals, or municipal sewage treatment facilities to request assistance. Emergency procedures and contact numbers should be provided in the SWMP and posted at storage locations.
  - Describe the procedures, equipment and materials for immediate cleanup of spills and proper disposal.
  - Identify personnel responsible for implementing the plan in the event of a spill. Update the spill prevention plan and clean up materials as changes occur to the types of chemicals stored and used at the facility.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 GH-5

GOOD HOUSEKEEPING 9

**MM-3 Good Housekeeping Practices (GH)**

**Spill Prevention, Control, and Countermeasure (SPCC) Plan**  
 Construction sites may be subject to 40 CFR Part 112 regulations that require the preparation and implementation of a SPCC Plan to prevent oil spills from aboveground and underground storage tanks. The facility is subject to this rule if it is a non-transportation-related facility that:

- Has a total storage capacity greater than 1,320 gallons or a completely buried storage capacity greater than 42,000 gallons.
- Could reasonably be expected to discharge oil in quantities that may be harmful to navigable waters of the United States and adjoining shorelines.

Furthermore, if the facility is subject to 40 CFR Part 112, the SWMP should reference the SPCC Plan. To find out more about SPCC Plans, see EPA's website on SPCC at [www.epa.gov/oilspill/spcc.htm](http://www.epa.gov/oilspill/spcc.htm).

**Reporting Oil Spills**  
 In the event of an oil spill, contact the National Response Center toll free at 1-800-424-8802 for assistance, or for more details, visit their website: [www.nrc.uscg.mil](http://www.nrc.uscg.mil).

**Maintenance and Removal**  
 Effective implementation of good housekeeping practices is dependent on clear designation of personnel responsible for supervising and implementing good housekeeping programs, such as site cleanup and disposal of trash and debris, hazardous material management and disposal, vehicle and equipment maintenance, and other practices. Emergency response "drills" may aid in emergency preparedness. Checklists may be helpful in good housekeeping efforts. Staging and storage areas require permanent stabilization when the areas are no longer being used for construction-related activities. Construction-related materials, debris and waste must be removed from the construction site once construction is complete.

**Design Details**  
 See the following Fact Sheets for related Design Details:  
 MM-1 Concrete Washout Area  
 MM-2 Stockpile Management  
 SM-4 Vehicle Tracking Control

Design details are not necessary for other good housekeeping practices; however, be sure to designate where specific practices will occur on the appropriate construction drawings.

GH-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

GOOD HOUSEKEEPING 10

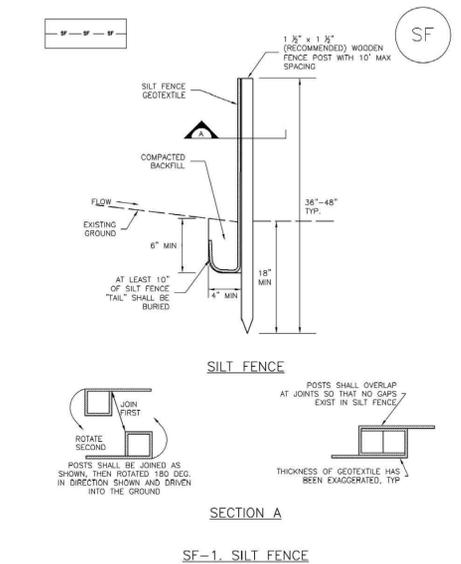
**SC-1 Silt Fence (SF)**

**Maintenance and Removal**  
 Inspection of silt fence includes observing the material for tears or holes and checking for slumping, fence and undercut areas bypassing flows. Repair of silt fence typically involves replacing the damaged section with a new section. Sediment accumulated behind silt fence should be removed, as needed to maintain BMP effectiveness, typically before it reaches a depth of 6 inches. Silt fence may be removed when the upstream area has reached final stabilization.



Photograph SF-2. When silt fence is not installed along the contour, a "7-hook" installation may be appropriate to ensure that the BMP does not create concentrated flow parallel to the silt fence. Photo courtesy of Tom Gore.

**Silt Fence (SF) SC-1**



November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SF-3

SILT FENCE 12

**SF-1 Silt Fence (SF)**

**SILT FENCE INSTALLATION NOTES**

- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
- A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
- COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTOR SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
- SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
- SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
- AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

**SILT FENCE MAINTENANCE NOTES**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
- REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
- SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
- WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PALMER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)  
 NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED. WHEN DIFFERENCES ARE NOTED.

SF-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

SILT FENCE 13

**SC-2 Sediment Control Log (SCL)**

Although sediment control logs initially allow runoff to flow through the BMP, they can quickly become a barrier and should be installed as if they are impermeable.

Design details and notes for sediment control logs are provided in the following details. Sediment logs must be properly installed per the detail to prevent undercutting, bypassing and displacement. When installed on slopes, sediment control logs should be installed along the contours (i.e., perpendicular to flow).

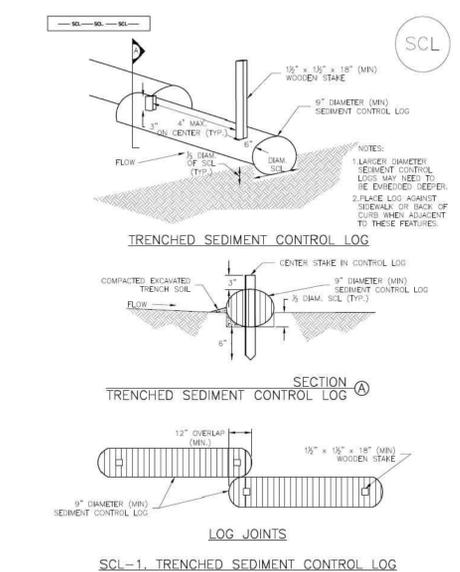
Improper installation can lead to poor performance. Be sure that sediment control logs are properly trenched (if lighter than 8 lb/foot), anchored and tightly jointed.

**Maintenance and Removal**  
 Be aware that sediment control logs will eventually degrade. Remove accumulated sediment before the depth is one-half the height of the sediment log and repair damage to the sediment log, typically by replacing the damaged section. Once the upstream area is stabilized, remove and properly dispose of the logs. Areas disturbed beneath the logs may need to be seeded and mulched. Sediment control logs that are biodegradable may occasionally be left in place (e.g., when logs are used in conjunction with erosion control blankets as permanent slope breaks). However, removal of sediment control logs after final stabilization is typically appropriate when used in perimeter control, inlet protection and check dam applications. Compost from compost sediment control logs may be spread over the area and seeded as long as this does not cover newly established vegetation.

SC-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2015

SEDIMENT CONTROL LOG 14

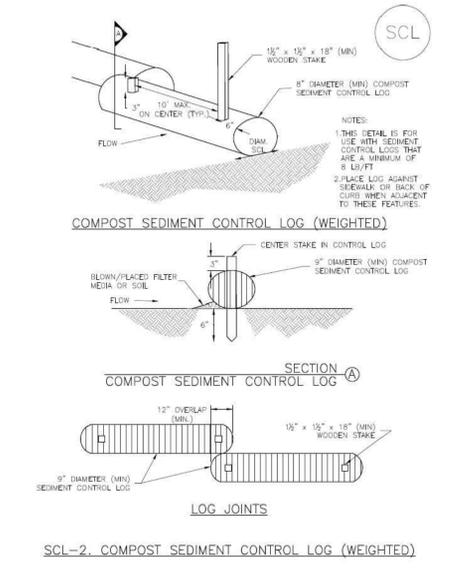
**Sediment Control Log (SCL) SC-2**



November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-3

SEDIMENT CONTROL LOG 15

**SC-2 Sediment Control Log (SCL)**



SC-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2015

SEDIMENT CONTROL LOG 16

NO. DATE REVISION DESCRIPTION

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**McDonald's**  
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SCALE: AS NOTED  
 DATE: 09/05/2015  
 DESIGNED BY: RJP  
 DRAWN BY: RJP  
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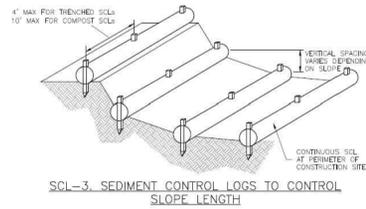
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**EROSION CONTROL DETAILS**

SHEET NO. EC2.1

**Sediment Control Log (SCL)**

**SC-2**



November 2015 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SCL-5

**SC-2 Sediment Control Log (SCL)**

**SEDIMENT CONTROL LOG INSTALLATION NOTES**

- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
- SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND-DEVELOPING ACTIVITIES.
- SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELISOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
- SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES; HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
- IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
- THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.
- FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 4" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

**SEDIMENT CONTROL LOG MAINTENANCE NOTES**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION/COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SCL-6 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 November 2015

**Rock Sock (RS)**

**SC-5**

**Description**

A rock sock is constructed of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter. Rock socks are typically used either as a perimeter control or as part of inlet protection. When placed at angles in the curb line, rock socks are typically referred to as curb socks. Rock socks are intended to trap sediment from stormwater runoff that flows onto roadways as a result of construction activities.



**Photograph RS-1.** Rock socks placed at regular intervals in a curb line can help reduce sediment loading to storm sewer inlets. Rock socks can also be used as perimeter controls.

**Appropriate Uses**

Rock socks can be used at the perimeter of a disturbed area to control localized sediment loading. A benefit of rock socks as opposed to other perimeter controls is that they do not have to be trenched or staked into the ground; therefore, they are often used on roadway construction projects where paved surfaces are present.

Use rock socks in inlet protection applications when the construction of a roadway is substantially complete and the roadway has been directly connected to a receiving storm system.

**Design and Installation**

When rock socks are used as perimeter controls, the maximum recommended tributary drainage area per 100 linear feet of rock socks is approximately 0.25 acres with disturbed slope length of up to 150 feet and a tributary slope gradient no steeper than 3:1. A rock sock design detail and notes are provided in Detail RS-1. Also see the Inlet Protection Fact Sheet for design and installation guidance when rock socks are used for inlet protection and in the curb line.

When placed in the gutter adjacent to a curb, rock socks should protrude no more than two feet from the curb in order for traffic to pass safely. If located in a high traffic area, place construction markers to alert drivers and street maintenance workers of their presence.

**Maintenance and Removal**

Rock socks are susceptible to displacement and breaking due to vehicle traffic. Inspect rock socks for damage and repair or replace as necessary. Remove sediment by sweeping or vacuuming as needed to maintain the functionality of the BMP, typically when sediment has accumulated behind the rock sock to one-half of the sock's height.

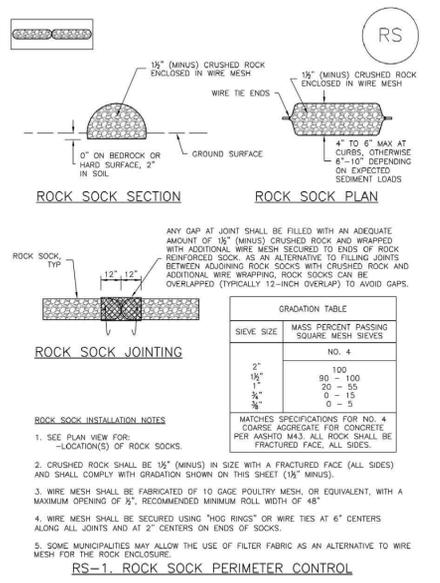
Rock Sock	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No

Once upstream stabilization is complete, rock socks and accumulated sediment should be removed and properly disposed.

November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 RS-1

**SC-5**

**Rock Sock (RS)**



RS-2 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 November 2010

**SEDIMENT CONTROL LOG**

**17**

**SEDIMENT CONTROL LOG**

**18**

**ROCK SOCK**

**19**

**ROCK SOCK**

**20**

**Rock Sock (RS)**

**SC-5**

**ROCK SOCK MAINTENANCE NOTES**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
- ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER RECOMMENDS NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 RS-3

**ROCK SOCK**

**21**

**SC-6**

**Inlet Protection (IP)**

IP-3. Rock Sock Inlet Protection for Sump/Area Inlet  
IP-4. Silt Fence Inlet Protection for Sump/Area Inlet  
IP-5. Over-excavation Inlet Protection  
IP-6. Straw Bale Inlet Protection for Sump/Area Inlet  
CIP-1. Culvert Inlet Protection

Proprietary inlet protection devices should be installed in accordance with manufacturer specifications.

More information is provided below on selecting inlet protection for sump and on-grade locations.

**Inlets Located in a Sump**

When applying inlet protection in sump conditions, it is important that the inlet continue to function during larger runoff events. For curb inlets, the maximum height of the protective barrier should be lower than the top of the curb opening to allow overflow into the inlet during larger storms without excessive localized flooding. If the inlet protection height is greater than the curb elevation, particularly if the filter becomes clogged with sediment, runoff will not enter the inlet and may bypass it, possibly causing localized flooding, public safety issues, and downstream erosion and damage from bypassed flows.

Area inlets located in a sump setting can be protected through the use of silt fence, concrete block and rock socks (on paved surfaces), sediment control logs/straw wattles embedded in the adjacent soil and stacked around the area inlet (on pervious surfaces), over-excavation around the inlet, and proprietary products providing equivalent functions.

**Inlets Located on a Slope**

For curb and gutter inlets on paved sloping streets, block and rock sock inlet protection is recommended in conjunction with curb socks in the gutter leading to the inlet. For inlets located along unpaved roads, also see the Check Dam Fact Sheet.

**Maintenance and Removal**

Inspect inlet protection frequently. Inspection and maintenance guidance includes:

- Inspect for tears that can result in sediment directly entering the inlet, as well as result in the contents of the BMP (e.g., gravel) washing into the inlet.
- Check for improper installation resulting in untreated flows bypassing the BMP and directly entering the inlet or bypassing to an unprotected downstream inlet. For example, silt fence that has not been properly trenched around the inlet can result in flows under the silt fence and directly into the inlet.
- Look for displaced BMPs that are no longer protecting the inlet. Displacement may occur following larger storm events that wash away or reposition the inlet protection. Traffic or equipment may also crush or displace the BMP.
- Monitor sediment accumulation upgradient of the inlet protection.

IP-2 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 August 2013

**INLET PROTECTION**

**22**

**Inlet Protection (IP)**

**SC-6**

- Remove sediment accumulation from the area upstream of the inlet protection, as needed to maintain BMP effectiveness, typically when it reaches no more than half the storage capacity of the inlet protection. For silt fence, remove sediment when it accumulates to a depth of no more than 6 inches. Remove sediment accumulation from the area upstream of the inlet protection as needed to maintain the functionality of the BMP.
- Proprietary inlet protection devices should be inspected and maintained in accordance with manufacturer specifications. If proprietary inlet insert devices are used, sediment should be removed in a timely manner to prevent devices from breaking and spilling sediment into the storm drain.

Inlet protection must be removed and properly disposed of when the drainage area for the inlet has reached final stabilization.

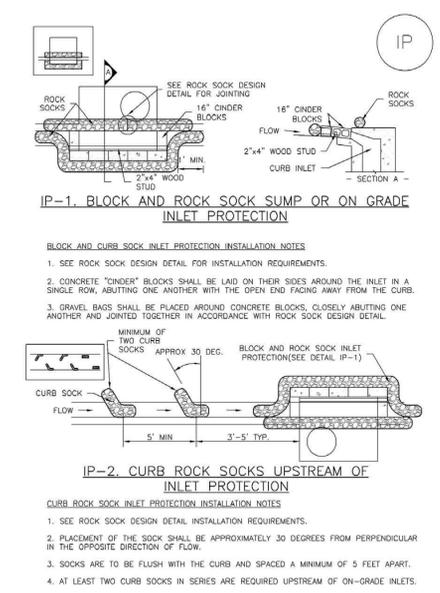
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Urban Storm Drainage Criteria Manual Volume 3 IP-3

**INLET PROTECTION**

**23**

**SC-6**

**Inlet Protection (IP)**



IP-4 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 August 2013

**INLET PROTECTION**

**24**

NO. DATE REVISION DESCRIPTION

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SCALE: AS NOTED  
DATE: 09/05/2025  
DESIGNED BY: RJP  
DRAWN BY: RJP  
CHECKED BY: RJP

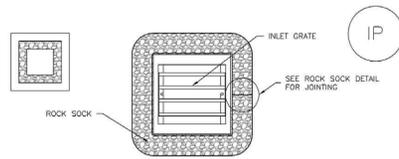
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MD P/CM: YAGUESKY

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EROSION CONTROL DETAILS

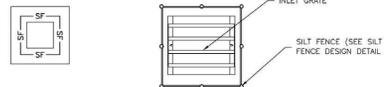
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**Inlet Protection (IP) SC-6**



**IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION**

- ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

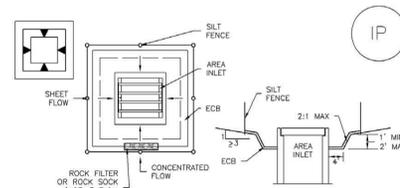


**IP-4. SILT FENCE FOR SUMP INLET PROTECTION**

- SILT FENCE INLET PROTECTION INSTALLATION NOTES**
- SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
  - STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

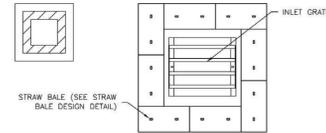
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**SC-6 Inlet Protection (IP)**



**IP-5. OVEREXCAVATION INLET PROTECTION**

- OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES**
- THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
  - WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
  - SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.

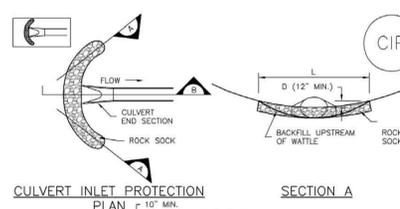


**IP-6. STRAW BALE FOR SUMP INLET PROTECTION**

- STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES**
- SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ADJUTING ONE ANOTHER.

IP-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 August 2013

**Inlet Protection (IP) SC-6**



**CIP-1. CULVERT INLET PROTECTION**

- CULVERT INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR -LOCATION OF CULVERT INLET PROTECTION.
  - SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

- CULVERT INLET PROTECTION MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS 1/2 THE HEIGHT OF THE ROCK SOCK.
  - CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-7

**SC-6 Inlet Protection (IP)**

- GENERAL INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
    - LOCATION OF INLET PROTECTION.
    - TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
  - INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
  - MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

- INLET PROTECTION MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
  - INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
  - WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)**
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.**
- NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION. HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.**
- NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.**

IP-8 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 August 2013

NO. DATE REVISION DESCRIPTION

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BY Robert J. Palmer, PE  
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 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

INLET PROTECTION

25

INLET PROTECTION

26

INLET PROTECTION

27

INLET PROTECTION

28

**Construction Fence (CF) SM-3**

**Description**  
 A construction fence restricts site access to designated entrances and exits, delineates construction site boundaries, and keeps construction out of sensitive areas such as natural areas to be preserved as open space, wetlands and riparian areas.

**Appropriate Uses**  
 A construction fence can be used to delineate the site perimeter and locations within the site where access is restricted to protect natural resources such as wetlands, waterbodies, trees, and other natural areas of the site that should not be disturbed.

If natural resource protection is an objective, then the construction fencing should be used in combination with other perimeter control BMPs such as silt fence, sediment control logs or similar measures.

**Design and Installation**  
 Construction fencing may be chain link or plastic mesh and should be installed following manufacturer's recommendations. See Detail CF-1 for typical installations.

Do not place construction fencing in areas within work limits of machinery.

**Maintenance and Removal**

- Inspect fences for damage; repair or replace as necessary.
- Fencing should be tight and any areas with stumping or fallen posts should be reinstalled.
- Fencing should be removed once construction is complete.

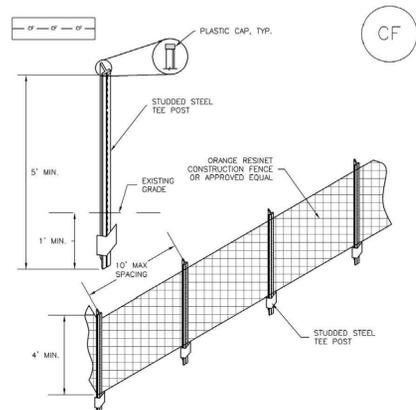


Photograph CF-1. A construction fence field delineates areas where existing vegetation is being protected. Photo courtesy of Douglas County.

Construction Fence	
Functions	
Erosion Control	No
Sediment Control	No
Site/Material Management	Yes

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CF-1

**SM-3 Construction Fence (CF)**



**CF-1. PLASTIC MESH CONSTRUCTION FENCE**

- CONSTRUCTION FENCE INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
    - LOCATION OF CONSTRUCTION FENCE.
  - CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
  - CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4" HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
  - STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
  - CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CF-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**Construction Fence (CF) SM-3**

- CONSTRUCTION FENCE MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
  - WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.**
- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)**

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CF-3

CONSTRUCTION FENCE

31

**SM-4 Vehicle Tracking Control (VTC)**

**VTC-3. Stabilized Construction Entrance/Exit with Wheel Wash.** This is an aggregate pad, similar to VTC-1, but includes equipment for tire washing. The wheel wash equipment may be as simple as hand-held power washing equipment to more advance proprietary systems. When a wheel wash is provided, it is important to direct wash water to a sediment trap prior to discharge from the site.

Vehicle tracking controls are sometimes installed in combination with a sediment trap to treat runoff.

**Maintenance and Removal**

Inspect the area for degradation and replace aggregate or material used for a stabilized entrance/exit as needed. If the area becomes clogged and ponds water, remove and dispose of excess sediment or replace material with a fresh layer of aggregate as necessary.

With aggregate vehicle tracking controls, ensure rock and debris from this area do not enter the public right-of-way.

Remove sediment that is tracked onto the public right of way daily or more frequently as needed. Excess sediment in the roadway indicates that the stabilized construction entrance needs maintenance.

Ensure that drainage ditches at the entrance/exit area remain clear.

A stabilized entrance should be removed only when there is no longer the potential for vehicle tracking to occur. This is typically after the site has been stabilized.

When wheel wash equipment is used, be sure that the wash water is discharged to a sediment trap prior to discharge. Also inspect channels conveying the water from the wash area to the sediment trap and stabilize areas that may be eroding.

When a construction entrance/exit is removed, excess sediment from the aggregate should be removed and disposed of appropriately. The entrance should be promptly stabilized with a permanent surface following removal, typically by paving.



Photograph VTC-2. A vehicle tracking control pad with wheel wash facility. Photo courtesy of Tom Gore.

VTC-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

VEHICLE TRACKING CONTROL

32

960 N. TEN MILE DRIVE  
 FRISCO, COLORADO  
 CITY STATE COUNTY

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ROCKY MOUNTAIN REGION  
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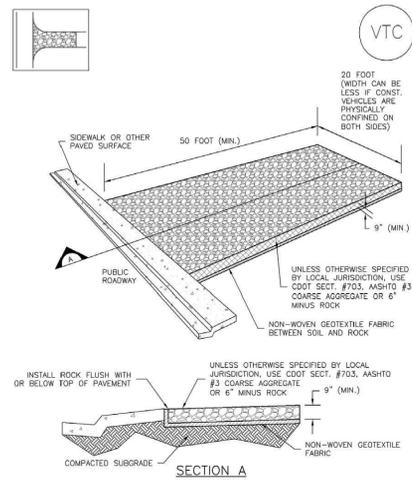
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CHECKED BY: RJP	

EROSION CONTROL DETAILS

SHEET NO.

EC2.3

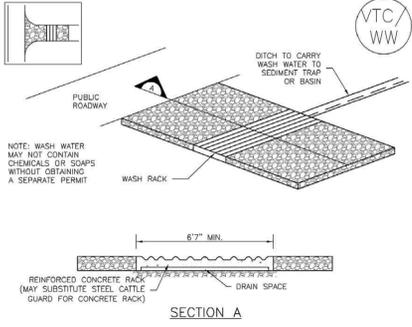
**Vehicle Tracking Control (VTC) SM-4**



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-3

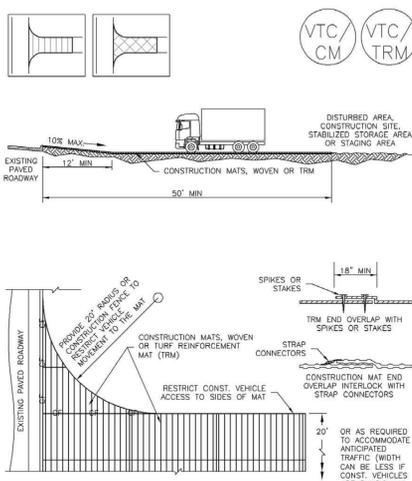
**SM-4 Vehicle Tracking Control (VTC)**



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-4

**Vehicle Tracking Control (VTC) SM-4**



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-5

**SM-4 Vehicle Tracking Control (VTC)**

- STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
    - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S)
    - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM)
  - CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
  - A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
  - STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
  - A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
  - UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
  - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOULDER OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UFGCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

VEHICLE TRACKING CONTROL

33

VEHICLE TRACKING CONTROL

34

VEHICLE TRACKING CONTROL

35

VEHICLE TRACKING CONTROL

36

**SM-6 Stabilized Staging Area (SSA)**

- Minimizing Long-Term Stabilization Requirements**
- Utilize off-site parking and restrict vehicle access to the site.
  - Use construction mats in lieu of rock when staging is provided in an area that will not be disturbed otherwise.
  - Consider use of a bermed contained area for materials and equipment that do not require a stabilized surface.
  - Consider phasing of staging areas to avoid disturbance in an area that will not be otherwise disturbed.

See Detail SSA-1 for a typical stabilized staging area and SSA-2 for a stabilized staging area when materials staging in roadways is required.

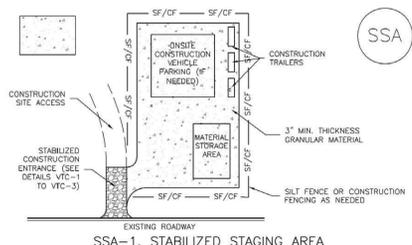
**Maintenance and Removal**

Maintenance of stabilized staging areas includes maintaining a stable surface cover of gravel, repairing perimeter controls, and following good housekeeping practices.

When construction is complete, debris, unused stockpiles and materials should be recycled or properly disposed. In some cases, this will require disposal of contaminated soil from equipment leaks in an appropriate landfill. Staging areas should then be permanently stabilized with vegetation or other surface cover planned for the development.

SSA-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**SM-6 Stabilized Staging Area (SSA)**



SSA-1. STABILIZED STAGING AREA

- STABILIZED STAGING AREA INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
    - LOCATION OF STAGING AREA(S)
    - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
  - STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
  - STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
  - THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
  - UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
  - ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.
- STABILIZED STAGING AREA MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SSA-3

**SM-6 Stabilized Staging Area (SSA)**

- STABILIZED STAGING AREA MAINTENANCE NOTES**
- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
  - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEED, AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UFGCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

SSA-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**Street Sweeping and Vacuuming (SS) SM-7**

**Description**

Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway.

**Appropriate Uses**

Use this practice at construction sites where vehicles may track sediment of site onto paved roadways.

**Design and Installation**

Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming.

On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

**Maintenance and Removal**

- Inspect paved roads around the perimeter of the construction site on a daily basis and more frequently, as needed. Remove accumulated sediment, as needed.
- Following street sweeping, check inlet protection that may have been displaced during street sweeping.
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.



Photograph SS-1. A street sweeper removes sediment and potential pollutants along the curb line at a construction site. Photo courtesy of Tom Gore.

Street Sweeping/ Vacuuming	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	Yes

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SS-1

STABILIZED STAGING AREA

37

STABILIZED STAGING AREA

38

STABILIZED STAGING AREA

39

STREET SWEEPING & VACUUMING

40

NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

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960 N. TEN MILE DRIVE  
 FRISCO, COLORADO  
 SUMMIT COUNTY  
 STATE: COLORADO  
 CITY: FRISCO  
 REGIONAL DRG. NO.  
 STATE STAKE I.D.#  
 51062  
 NATIONAL I.D.#  
 44322

OFFICE ADDRESS  
 ROCKY MOUNTAIN REGION

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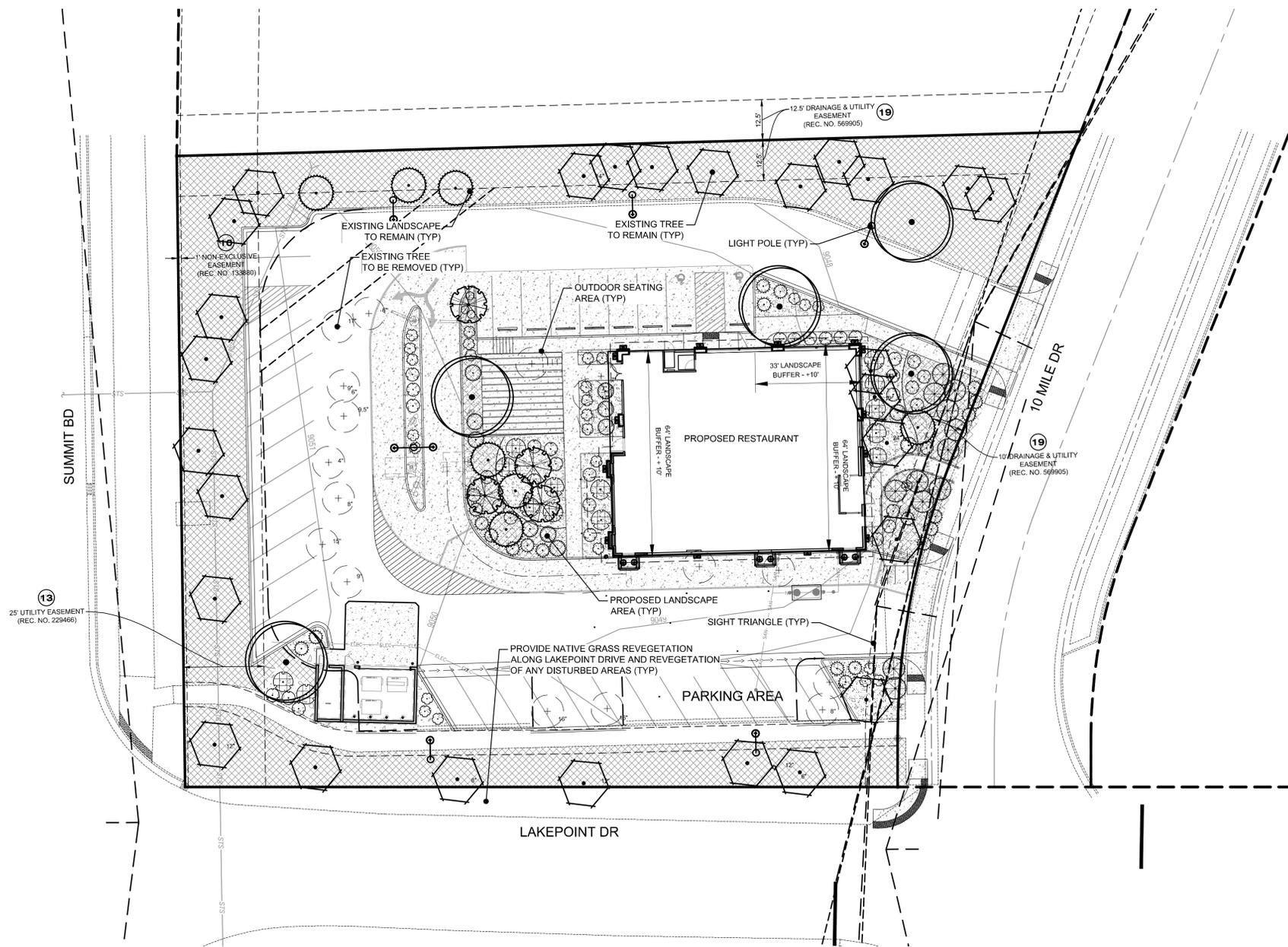
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 CHECKED BY: RJP

MED RES: BAKER  
 MOD P/CM: YAGUESKY

FILE NAME: CURRENT.DWG  
 SLS. BY: 24-0001-218

**EROSION CONTROL DETAILS**

SHEET NO.  
**EC2.4**



**LANDSCAPE PLAN**  
SCALE: 1" = 20'

**CODE REQUIREMENTS**

LOT SIZE = 48,151 SF

OVERALL LANDSCAPE: 1 TREE PER 1125 SF LOT AREA + 1 SHRUB PER 1750 SF LOT AREA = 32 TREES / 28 SHRUBS REQUIRED / 32 TREES + 28 SHRUBS PROVIDED\* (16 EXISTING TREES USED TOWARD REQUIREMENTS)

PARKING: 32 PROVIDED SPACES = 20920 SF PAVED AREA = 1256 SF PARKING LANDSCAPE REQUIRED / 1300 SF PROVIDED  
1 TREE + 2 SHRUBS PER 150 SF = 8 TREES + 17 SHRUBS REQUIRED / 8 TREES + 17 SHRUBS PROVIDED

LANDSCAPE BUFFERS:  
BUILDING FRONTAGE = 64 + 64 + 79 + 79 = 286 LF  
PROVIDED BUFFER = 64 + 64 + 33 = 161 (56%)

**PLANT SCHEDULE**

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
<b>TREES</b>				
	PB	7	PICEA PUNGENS GLAUCA 'HOOPSI' / DWARF BLUE SPRUCE	50% 6' HEIGHT 25% 8' HEIGHT 25% 10' HEIGHT
	PANG	5	POPULUS ANGUSTIFOLIA / NARROWLEAF COTTONWOOD	50% 3" CALIPER 50% 2" CALIPER
	PT	4	POPULUS TREMULOIDES / QUAKING ASPEN	50% 3" CALIPER 50% 2" CALIPER
	EX-REM	18	REMOVE AS INDICATED / EXISTING TREE TO BE REMOVED	EXISTING
	EX-RET	27	TO REMAIN- PROTECT DURING CONSTRUCTION / EXISTING TREE TO REMAIN	EXISTING
<b>SHRUBS</b>				
	CSR	33	CORNUS SERICEA 'ARCTIC FIRE' / DOGWOOD	5 GAL
	JHH	22	JUNIPERUS HORIZONTALIS 'HUGHES' / CREEPING JUNIPER	5 GAL
	JHBM	12	JUNIPERUS SABINA 'BROADMOOR' / BROADMOOR JUNIPER	5 GAL
	MR	3	MAHONIA REPENS / CREEPING MAHONIA	5 GAL
	PMN	11	PHYSOCARPUS MONOGYNUS / MOUNTAIN NINEBARK	5 GAL
	PFF	25	POTENTILLA FRUTICOSA 'ABBOTSWOOD' / POTENTILLA	5 GAL
	RAC	14	RIBES AUREUM / GOLDEN CURRANT	5 GAL
<b>GROUND COVERS</b>				
	EX-RS	12,679 SF	EX LANDSCAPE - SHRUB BED / TO REMAIN	EXISTING
<b>MULCHES</b>				
	RM	3,013 SF	ROCK MULCH / RIVER ROCK 1"-2"	MULCH
	WM	1,904 SF	SHREDDED CEDAR MULCH / WOOD MULCH	MULCH

**IRRIGATION NOTES:**

IRRIGATION IS TO BE EXTENDED TO NEW PLANTINGS FROM EXISTING SYSTEM, PER SCHEDULE BELOW.

- Perennials to receive one of 0.5 GPH emitters
- Grasses to receive one of 1.0 GPH emitters
- Shrubs to receive two of 1.0 GPH emitters
- Trees to receive to receive minimum four of 2.0 GPH emitters

1. All areas disturbed by grading or construction, not being formally landscaped, shall be mulched and revegetated with seeding and/or other plant materials. All seeded areas shall receive seeding mulch (e.g., straw-crimped in place or hydromulch, etc.). In order to promote growth and increase soil contact all rocks larger than three inches in diameter shall be removed, and a minimum of three inches of topsoil shall be installed utilizing existing stockpiled topsoil from the site, when possible. Seeded areas in excess of 3:1 (horizontal:vertical) slope (33 percent) shall receive biodegradable erosion control blankets, to reduce potential for damage from heavy, concentrated storm-water runoff. Seed mixes and other plant material shall be selected from the "Plant Materials List - Frisco Colorado". Alternative plant materials may be considered if it is determined by the Community Development Department or Planning Commission based on competent evidence that the proposed plant material is suitable to the climate and placement on the site.

NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTING

**Strategic Land Solutions, Inc.**  
Civil Engineering & Land Planning Solutions  
2595 PONDEROSA ROAD  
FRANKTOWN, CO 80116  
720.304.7661 Phone  
rpalmer@stratigids.net  
Robert J. Palmer, PE  
President

**McDonald's**  
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF MCDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

ROCKY MOUNTAIN REGION

OFFICE ADDRESS

960 N. TEN MILE DRIVE  
FRISCO, COLORADO

CITY STATE COUNTY

SUMMIT, COLORADO 80152

REG. NO. 51062

DATE: AS NOTED

DESIGNED BY: JRO

DRAWN BY: JRO

CHECKED BY: NAM

NO. RE: BAKER

NO. P/C: YAGUESKY

FILE NAME: CURRENT.DWG

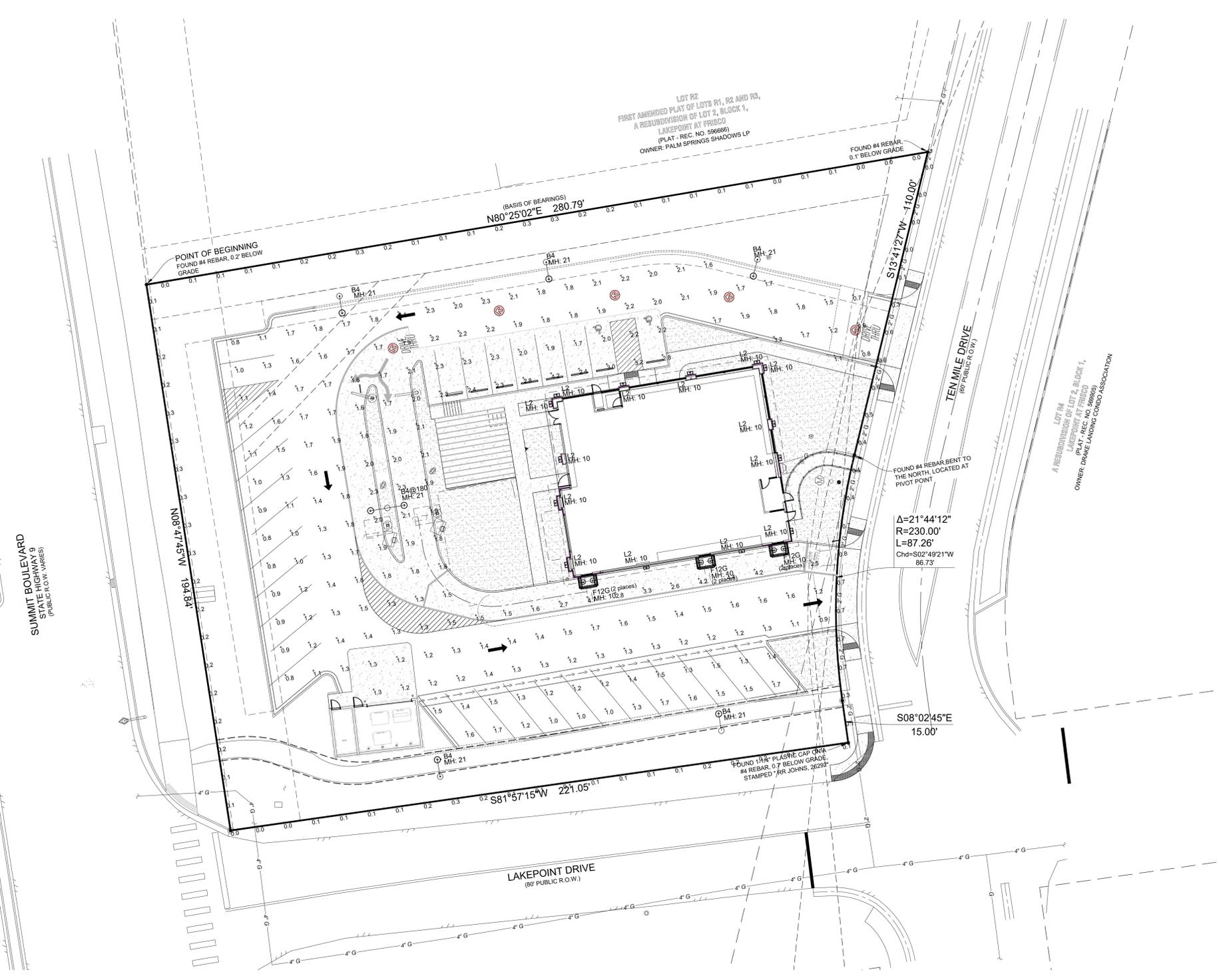
SLS # 24-0001-216

**NDS**  
NATURAL DESIGN SOLUTIONS  
Landscape Architecture  
Land Planning · Irrigation Design  
5539 Colt Drive, Longmont, CO 80503  
(303) 443-0388 · neil@ndscolorado.com

LANDSCAPE PLAN

SHEET NO. **L1.0**

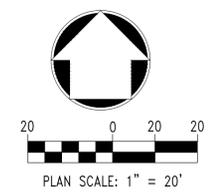




Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING SURFACE READINGS	Illuminance	Fc	1.71	4.7	0.7	2.44	6.71
PROPERTY LINE READINGS	Illuminance	Fc	0.21	0.8	0.0	N.A.	N.A.

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
⊕	5	B4	Single	0.850	UCM2-ANG-36L-615-5K7-4W	71.6	1.43	21	to be determined
⊕ ⊕	1	B4@180	Back-Back	0.850	UCM2-ANG-36L-615-5K7-4W	71.6	2.86	21	to be determined
⊕	6	F12G	SINGLE	0.850	SL8542-GD-905CCT	12.45	n/a	10	n/a
⊕	14	L2	SINGLE	0.850	RWSC-36L-5K-DO-U-PS	14.4	n/a	10	n/a

Ordinance:  
Full Cutoff  
30 & 40ft max pole lighting  
0.9fc max spill on adjacent property or row  
2FC Avg max



Know what's below.  
Call before you dig.

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

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Civil Engineering & Land Planning Solutions  
2595 PONDEROSA ROAD  
FRANKTOWN, CO 80116  
720.384.7661 Phone  
rpalmer@strategics.net  
Robert J. Palmer, PE  
President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: ROBERT J. PALMER  
36320  
PROFESSIONAL ENGINEER

BY Robert J. Palmer, PE  
Licensed Professional Engineer (CO PE #36320),  
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

**McDonald's**  
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OFFICE ADDRESS: ROCKY MOUNTAIN REGION

960 N. TEN MILE DRIVE	CITY	FRISCO	COUNTY	SUMMIT	STATE	COLORADO	ZIP	51062	ZIP	44322

SCALE:	AS NOTED	M&D RE:	BAKER
DATE:	09/05/2025	M&D P/C:	YAGUESKY
DESIGNED BY:	RJP	FILE NAME:	CURRENT.DWG
DRAWN BY:	RJP	SLS BY:	24-0001-216
CHECKED BY:	RJP		
DRAWING TITLE:	LIGHTING PLAN		
SHEET NO.:	LI1.0		

**Lighting**  
**SLED**  
HIGH EFFICIENCY LINEAR LED FACADE FIXTURE

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
TYPE: SLED4HE PROJECT: \_\_\_\_\_  
CATALOG #: \_\_\_\_\_

**FEATURES**

- The SLED Linear LED Lighting System offers a discrete and minimalist design to maximize the lighting effect for marketing your building as your brand with long-term energy usage and maintenance to a minimum.
- Thanks to its intuitive "plug and play" mounting design with integral driver system, installation is quick and simple and it requires that power be brought to the fixture in each installation case.
- The unique fixture design and the long life Mid-Power LED source minimizes maintenance to only an occasional cleaning of outer lens surface.
- This successful system is truly a "set it and forget it" solution that is only offset from factory lighting.

**CONSTRUCTION**

- Power cord mounting brackets that conceal power cables.
- Fixture to fabric connections are made external to the fixture.

**OPTICS**

- 5000K color temp standard.
- Translucent glass lens.
- Down only full cut off.

**ORDERING GUIDE**

Example: SLED-XX-DO-UXX-XX

S	LED	HE	DR	DO	U	Color
5	Ultra Facade Fixture	Mid Power	High Efficiency	Down Only	Universal DO	5000K color temp

**KEY DATA**

Lumens	834 / 128
Voltage	30
Efficiency (lm/w)	83.8 / 82.9
Required Line Power	1.70 / 1000.000
Input Current Range (amps)	0.06 - 0.12

**Lighting**  
**UCM2**  
ARCHITECTURAL AREA STATE

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
TYPE: PROJECT: \_\_\_\_\_  
CATALOG #: \_\_\_\_\_

**UNIVERSE®**

**FEATURES**

- Available in 1, 2, 3, 4W, 5W, and 6W distributions.
- 3000K, 4000K, 5000K CCT.
- 0-9V dimming ready.
- Integrated sensor production: 90% in stock, 20% in series.
- Signage kits.
- UltraViolet Series Optics for precise distributions, maximum fixture spacing and minimal lightglare.

**CONSTRUCTION**

- Die-cast aluminum housing.
- Standard configurations do not require a fat wire, optional lenses and long-term glass.
- All internal and external hardware is stainless steel.

**INSTALLATION**

- Each unit ships with a formed drilling template for accurate and quick installation.
- All optional features quickly plug together to series.
- Fixtures are not opened during the installation process.
- Complete instructions for fixture installation posted on web site at [www.currentlighting.com](http://www.currentlighting.com).

**ELECTRICAL**

- Full integrated driver for completely self-contained lighting system.
- Power load required only at beginning of wire, continuous over or stand alone fixture.

**WARRANTY**

- 5 year warranty.
- 5 year limited warranty for additional information.

**CONTROL TECHNOLOGY LIGHTGRID®**

**CONSTRUCTION**

- All housing components die cast aluminum 360 alloy, sealed with corrosion resistant powder coating.
- Standard configurations do not require a fat wire, optional lenses and long-term glass.
- All internal and external hardware is stainless steel.

**INSTALLATION**

- Each unit ships with a formed drilling template for accurate and quick installation.
- All optional features quickly plug together to series.
- Fixtures are not opened during the installation process.
- Complete instructions for fixture installation posted on web site at [www.currentlighting.com](http://www.currentlighting.com).

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- 5 year limited warranty for additional information.

**Lighting**  
**UCM2**  
ARCHITECTURAL AREA STATE

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
TYPE: PROJECT: \_\_\_\_\_  
CATALOG #: \_\_\_\_\_

**ORDERING GUIDE**

Example: UCM2-MND-LUM-BLUP-36L-405-4172-CL-6L5-RW-SC-LS-5V

UCM2	LED Source	HE	DR	DO	U	Color
UCM2	Ultra Facade Fixture	Mid Power	High Efficiency	Down Only	Universal DO	5000K color temp

**Security Lighting**  
**RWSC**  
RADIUS LED WALL SCONCE

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
TYPE: PROJECT: \_\_\_\_\_  
CATALOG #: \_\_\_\_\_

**FEATURES**

- Available in 1, 2, 3, 4W, 5W, and 6W distributions.
- 3000K, 4000K, 5000K CCT.
- 0-9V dimming ready.
- Integrated sensor production: 90% in stock, 20% in series.
- Signage kits.
- UltraViolet Series Optics for precise distributions, maximum fixture spacing and minimal lightglare.

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**ELECTRICAL**

- Full integrated driver for completely self-contained lighting system.
- Power load required only at beginning of wire, continuous over or stand alone fixture.

**WARRANTY**

- 5 year warranty.
- 5 year limited warranty for additional information.

**Security Lighting**  
**SL-8542-5CCT**  
6" LED Ultra-Thin Downlight

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
TYPE: PROJECT: \_\_\_\_\_  
CATALOG #: \_\_\_\_\_

**Construction**

- Ultra-thin profile.
- Durable aluminum construction.
- Frosted acrylic lens diffuses glare and maximizes output.

**Electrical**

- 120V-60Hz, AC.
- Dimmable TRIAC or ELV, 10-100%.
- 50,000 hour projected life.
- 120° Beam Angle.
- Nominal 12.5W | 1055 lumens (delivered).
- 90 CRI | SCCT Selectable: 27K, 3K, 35K, 4K, 5K.

**Installation**

- Spring-loaded retention tabs hold downlight snug to ceiling surface, off-board driver/junction box, poke-in connectors, and linkable connector cable.
- IC Rated for direct contact with batt type fiberglass insulation.

**Ordering Information** Example: SL8542-WH-90SCCT

SL	8542	WH	90	SCCT
Family	Series	Finish	Cut-off	CCT

**ALUMINUM POLES**

**PS3**  
3" SQUARE (3/4" POLE)

**PR4**  
4" ROUND (3/4" POLE)

**MAXIMUM ALLOWABLE EPA (WPI)**

BASE	PS3	PS4	PS5	PS6	PS7	PS8	PS9	PS10	PS11	PS12	PS13	PS14	PS15
PS3-120-120	120	120	120	120	120	120	120	120	120	120	120	120	120

**SPECIFICATIONS**

- Base shall be cast aluminum 6061 alloy, free of any porosity, foreign materials, or cosmetic blemishes. Base casting shall be heat treated to a T-6 condition, and of uniform wall thickness, with no warping or mold shifting.

**WARNINGS**

- Caution must be exercised in the selection of a design wind speed when the pole is to be installed in a special wind region (as indicated by the wind map) or in an area where wind speed is unpredictable.

**NOTES**

- PS3 is used for Parkway Square Accent (Small) Scale - PS3WS, and Spectra Small Scale - SP3.

**CONTEMPORARY LUMINAIRE ARM MATRIX**

**POLE MOUNT**

**SLAND** WT: 5.16LBS EPA: 7.7

**SLAND-2** WT: 9.14LBS EPA: 2.44

**SLAND-3** WT: 11.8LBS EPA: 1.98

**SLAND-4** WT: 14.5LBS EPA: 1.47

**SLAND-5** WT: 17.2LBS EPA: 1.00

**SLAND-6** WT: 19.9LBS EPA: 0.54

**SLAND-7** WT: 22.6LBS EPA: 0.18

**SLAND-8** WT: 25.3LBS EPA: 0.18

**SLAND-9** WT: 28.0LBS EPA: 0.18

**SLAND-10** WT: 30.7LBS EPA: 0.18

**SLAND-11** WT: 33.4LBS EPA: 0.18

**SLAND-12** WT: 36.1LBS EPA: 0.18

**SLAND-13** WT: 38.8LBS EPA: 0.18

**SLAND-14** WT: 41.5LBS EPA: 0.18

**SLAND-15** WT: 44.2LBS EPA: 0.18

**SLAND-16** WT: 46.9LBS EPA: 0.18

**SLAND-17** WT: 49.6LBS EPA: 0.18

**SLAND-18** WT: 52.3LBS EPA: 0.18

**SLAND-19** WT: 55.0LBS EPA: 0.18

**SLAND-20** WT: 57.7LBS EPA: 0.18

**SLAND-21** WT: 60.4LBS EPA: 0.18

**SLAND-22** WT: 63.1LBS EPA: 0.18

**SLAND-23** WT: 65.8LBS EPA: 0.18

**SLAND-24** WT: 68.5LBS EPA: 0.18

**SLAND-25** WT: 71.2LBS EPA: 0.18

**SLAND-26** WT: 73.9LBS EPA: 0.18

**SLAND-27** WT: 76.6LBS EPA: 0.18

**SLAND-28** WT: 79.3LBS EPA: 0.18

**SLAND-29** WT: 82.0LBS EPA: 0.18

**SLAND-30** WT: 84.7LBS EPA: 0.18

**SLAND-31** WT: 87.4LBS EPA: 0.18

**SLAND-32** WT: 90.1LBS EPA: 0.18

**SLAND-33** WT: 92.8LBS EPA: 0.18

**SLAND-34** WT: 95.5LBS EPA: 0.18

**SLAND-35** WT: 98.2LBS EPA: 0.18

**SLAND-36** WT: 100.9LBS EPA: 0.18

**SLAND-37** WT: 103.6LBS EPA: 0.18

**SLAND-38** WT: 106.3LBS EPA: 0.18

**SLAND-39** WT: 109.0LBS EPA: 0.18

**SLAND-40** WT: 111.7LBS EPA: 0.18

**SLAND-41** WT: 114.4LBS EPA: 0.18

**SLAND-42** WT: 117.1LBS EPA: 0.18

**SLAND-43** WT: 119.8LBS EPA: 0.18

**SLAND-44** WT: 122.5LBS EPA: 0.18

**SLAND-45** WT: 125.2LBS EPA: 0.18

**SLAND-46** WT: 127.9LBS EPA: 0.18

**SLAND-47** WT: 130.6LBS EPA: 0.18

**SLAND-48** WT: 133.3LBS EPA: 0.18

**SLAND-49** WT: 136.0LBS EPA: 0.18

**SLAND-50** WT: 138.7LBS EPA: 0.18

**SLAND-51** WT: 141.4LBS EPA: 0.18

**SLAND-52** WT: 144.1LBS EPA: 0.18

**SLAND-53** WT: 146.8LBS EPA: 0.18

**SLAND-54** WT: 149.5LBS EPA: 0.18

**SLAND-55** WT: 152.2LBS EPA: 0.18

**SLAND-56** WT: 154.9LBS EPA: 0.18

**SLAND-57** WT: 157.6LBS EPA: 0.18

**SLAND-58** WT: 160.3LBS EPA: 0.18

**SLAND-59** WT: 163.0LBS EPA: 0.18

**SLAND-60** WT: 165.7LBS EPA: 0.18

**SLAND-61** WT: 168.4LBS EPA: 0.18

**SLAND-62** WT: 171.1LBS EPA: 0.18

**SLAND-63** WT: 173.8LBS EPA: 0.18

**SLAND-64** WT: 176.5LBS EPA: 0.18

**SLAND-65** WT: 179.2LBS EPA: 0.18

**SLAND-66** WT: 181.9LBS EPA: 0.18

**SLAND-67** WT: 184.6LBS EPA: 0.18

**SLAND-68** WT: 187.3LBS EPA: 0.18

**SLAND-69** WT: 190.0LBS EPA: 0.18

**SLAND-70** WT: 192.7LBS EPA: 0.18

**SLAND-71** WT: 195.4LBS EPA: 0.18

**SLAND-72** WT: 198.1LBS EPA: 0.18

**SLAND-73** WT: 200.8LBS EPA: 0.18

**SLAND-74** WT: 203.5LBS EPA: 0.18

**SLAND-75** WT: 206.2LBS EPA: 0.18

**SLAND-76** WT: 208.9LBS EPA: 0.18

**SLAND-77** WT: 211.6LBS EPA: 0.18

**SLAND-78** WT: 214.3LBS EPA: 0.18

**SLAND-79** WT: 217.0LBS EPA: 0.18

**SLAND-80** WT: 219.7LBS EPA: 0.18

**SLAND-81** WT: 222.4LBS EPA: 0.18

**SLAND-82** WT: 225.1LBS EPA: 0.18

**SLAND-83** WT: 227.8LBS EPA: 0.18

**SLAND-84** WT: 230.5LBS EPA: 0.18

**SLAND-85** WT: 233.2LBS EPA: 0.18

**SLAND-86** WT: 235.9LBS EPA: 0.18

**SLAND-87** WT: 238.6LBS EPA: 0.18

**SLAND-88** WT: 241.3LBS EPA: 0.18

**SLAND-89** WT: 244.0LBS EPA: 0.18

**SLAND-90** WT: 246.7LBS EPA: 0.18

**SLAND-91** WT: 249.4LBS EPA: 0.18

**SLAND-92** WT: 252.1LBS EPA: 0.18

**SLAND-93** WT: 254.8LBS EPA: 0.18

**SLAND-94** WT: 257.5LBS EPA: 0.18

**SLAND-95** WT: 260.2LBS EPA: 0.18

**SLAND-96** WT: 262.9LBS EPA: 0.18

**SLAND-97** WT: 265.6LBS EPA: 0.18

**SLAND-98** WT: 268.3LBS EPA: 0.18

**SLAND-99** WT: 271.0LBS EPA: 0.18

**SLAND-100** WT: 273.7LBS EPA: 0.18

**ARCHITECTURAL AREA LIGHTING**

**POLES/ARMS/ACCESSORIES**

**ARCHITECTURAL AREA LIGHTING**

**McDonald's**  
ROCKY MOUNTAIN REGION

960 N. TEN MILE DRIVE  
FRISCO, COLORADO 80443

SCALE: AS NOTED  
DATE: 09/05/2025  
DESIGNED BY: RJP  
DRAWN BY: RJP  
CHECKED BY: RJP

MED RES: BAKER  
MCD P/CM: YAGUESKY  
FILE NAME: CURRENT.DWG  
SLS. NO: 24-0001-218

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

**Calculation Summary**

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING SURFACE READINGS	Illuminance	Fc	1.71	4.7	0.7	2.44	6.71
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**Luminaire Schedule**

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⊕ ⊕	1	B4@180	Back-Back	0.850	UCM2-ANG-36L-615-5K7-4W	71.6	2.86	21	to be determined
⊕	6	F12G	SINGLE	0.850	SL8542-GD-905CCT	12.45	n/a	10	n/a
⊕	14	L2	SINGLE	0.850	RWSC-36L-5K-DO-U-PS	14.4	n/a	10	n/a

Ordinance:  
Full Cutoff  
30 & 40ft max pole lighting  
0.9fc max spill on adjacent property or row  
2FC Avg max

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Know what's below. Call before you dig.

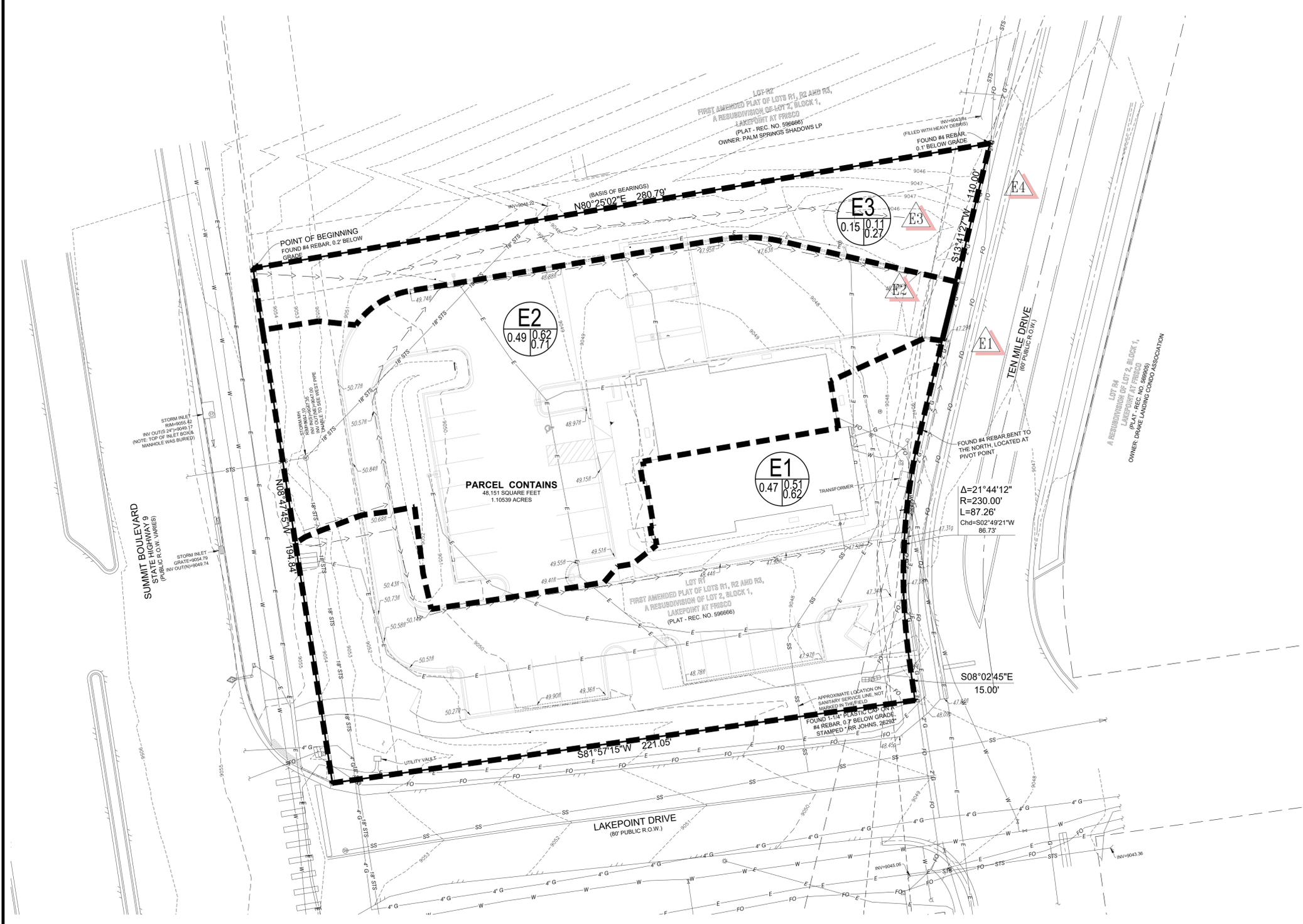
**LI1.1**

EXISTING SUMMARY RUNOFF TABLE

DESIGN PT	CONTRIBUTING BASINS / AREA (acres)	5-YEAR RUNOFF (cfs)	100-YEAR PEAK RUNOFF (cfs)
E1	E1/0.467	0.48	1.26
E2	E2/0.485	0.65	1.61
E3	E3C/0.153	0.03	0.15
E4	E1-E3/1.105	0.95	2.53

LEGEND

- TC CALCULATIONS
- BASIN LIMITS
- DESIGN POINT
- BASIN DESIGNATION
- 5 YR COMPOSITE 'C'
- 100YR COMPOSITE 'C'
- BASIN AREA



NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

**Strategic Land Solutions, Inc.**  
 Civil Engineering & Land Planning Solutions  
 2595 PONDEROSA ROAD  
 FRANKTOWN, CO 80116  
 720.384.7661 Phone  
 rpalm@strategicls.net  
 Robert J. Palmer, PE  
 President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: PROFESSIONAL ENGINEER

BY Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
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ROCKY MOUNTAIN REGION

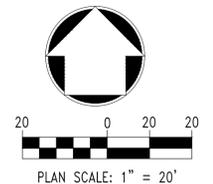
OFFICE ADDRESS

960 N. TEN MILE DRIVE  
 FRISCO, COLORADO  
 SUMMIT, COLORADO  
 51062  
 44322

SCALE: AS NOTED M&D RE: BAKER  
 DATE: 09/05/2025 M&D P/JCM YAGUESKY  
 DESIGNED BY: RJP  
 DRAWN BY: RJP FILE NAME: CURRENT.DWG  
 CHECKED BY: RJP SLS BY: 24-0001-216

DRAWING TITLE: EXISTING DRAIANGE

SHEET NO: DR-1

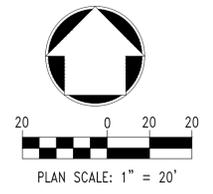


PROPOSED SUMMARY RUNOFF TABLE

DESIGN PT	CONTRIBUTING BASINS / AREA (acres)	5-YEAR RUNOFF (cfs)	100-YEAR PEAK RUNOFF (cfs)
1	A/0.487	0.45	1.24
2	B/0.465	0.61	1.53
3	C/0.153	0.03	0.15
4	A-C/1.105	0.90	2.45

LEGEND

- TC CALCULATIONS
- BASIN LIMITS
- DESIGN POINT
- BASIN DESIGNATION
- 5 YR COMPOSITE 'C'
- 100YR COMPOSITE 'C'
- BASIN AREA



NO.	DATE	REVISION	DESCRIPTION

CIVIL ENGINEERING CONSULTANT:  
**Strategic Land Solutions, Inc.**  
 Civil Engineering & Land Planning Solutions  
 2595 PONDEROSA ROAD  
 FRANKTOWN, CO 80116  
 720.384.7661 Phone  
 rpalmer@strategics.net  
 Robert J. Palmer, PE  
 President

PREPARED UNDER THE DIRECT SUPERVISION OF:  
 SEAL:   
 BY Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

**McDonald's**  
 OFFICE ADDRESS: 960 N. TEN MILE DRIVE, FRISCO, COLORADO, SUMMIT, COLORADO 80502  
 OFFICE ADDRESS: 51062, 44322

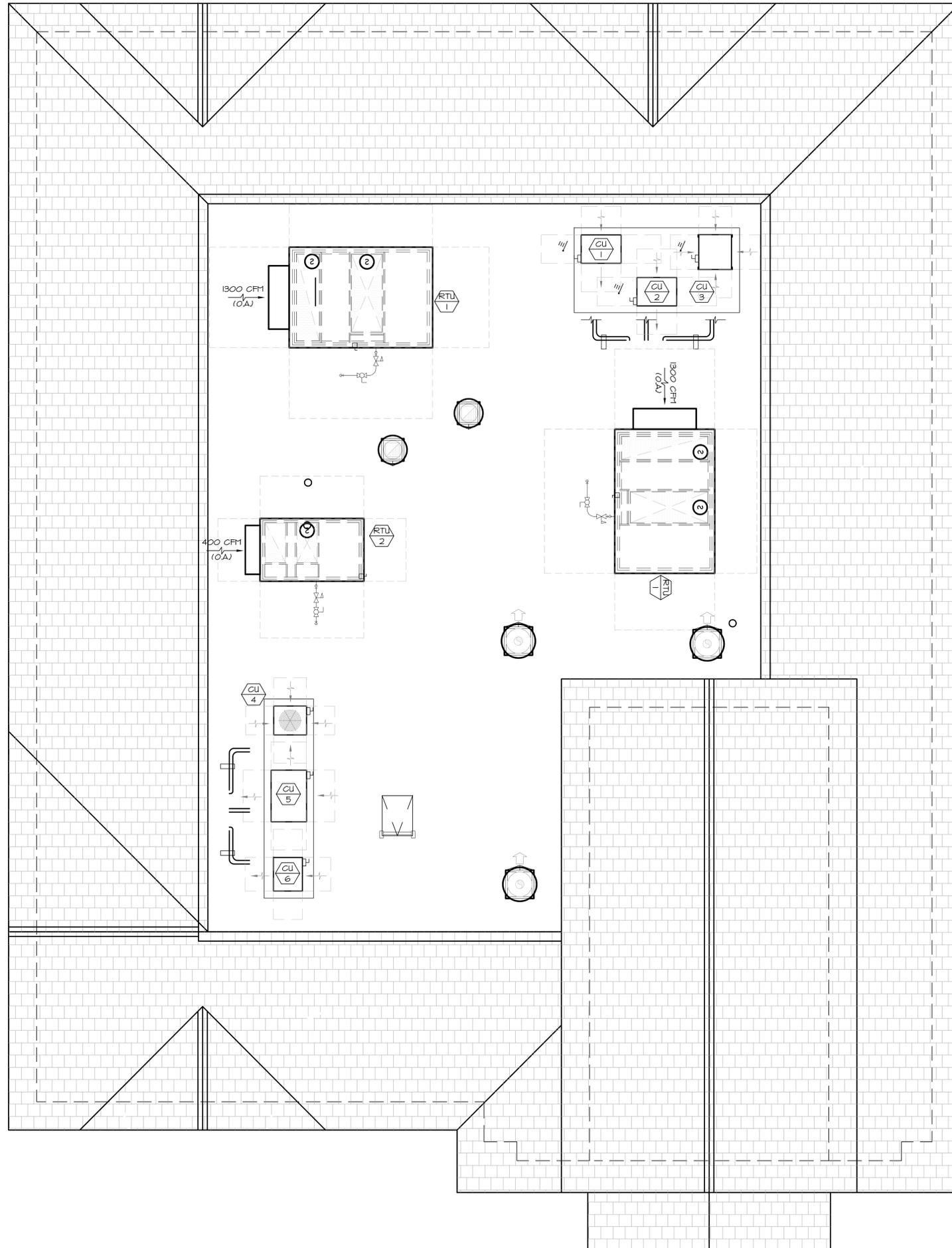
960 N. TEN MILE DRIVE  
 FRISCO, COLORADO  
 COUNTY: SUMMIT  
 CITY: FRISCO  
 STATE: COLORADO  
 ZIP: 80502  
 REGIONAL DWG. NO.:  
 REGIONAL DWG. NO.:  
 REGIONAL DWG. NO.:

SCALE: AS NOTED  
 DATE: 09/05/2025  
 DESIGNED BY: RJP  
 DRAWN BY: RJP  
 CHECKED BY: RJP  
 M&D RE: BAKER  
 M&D P/JCM: YAGUSESKY  
 FILE NAME: CURRENT.DWG  
 SLS BY: 24-0001-216

DRAWING TITLE:  
**PROPOSED DRAINAGE PLAN**

SHEET NO.:  
**DR-2**





**1 ROOF PLAN**  
SCALE: 1/4" = 1'-0"



NO.	DATE	REVISION DESCRIPTION
1		

**ARCHITECTURAL CONSULTING**  
**ARRIS**  
 ARCHITECTURE  
 Aris Architecture, LLC  
 285 Commander Drive  
 Erie, CO 80516  
 970.988.6302  
 coreys@arrisinc.net

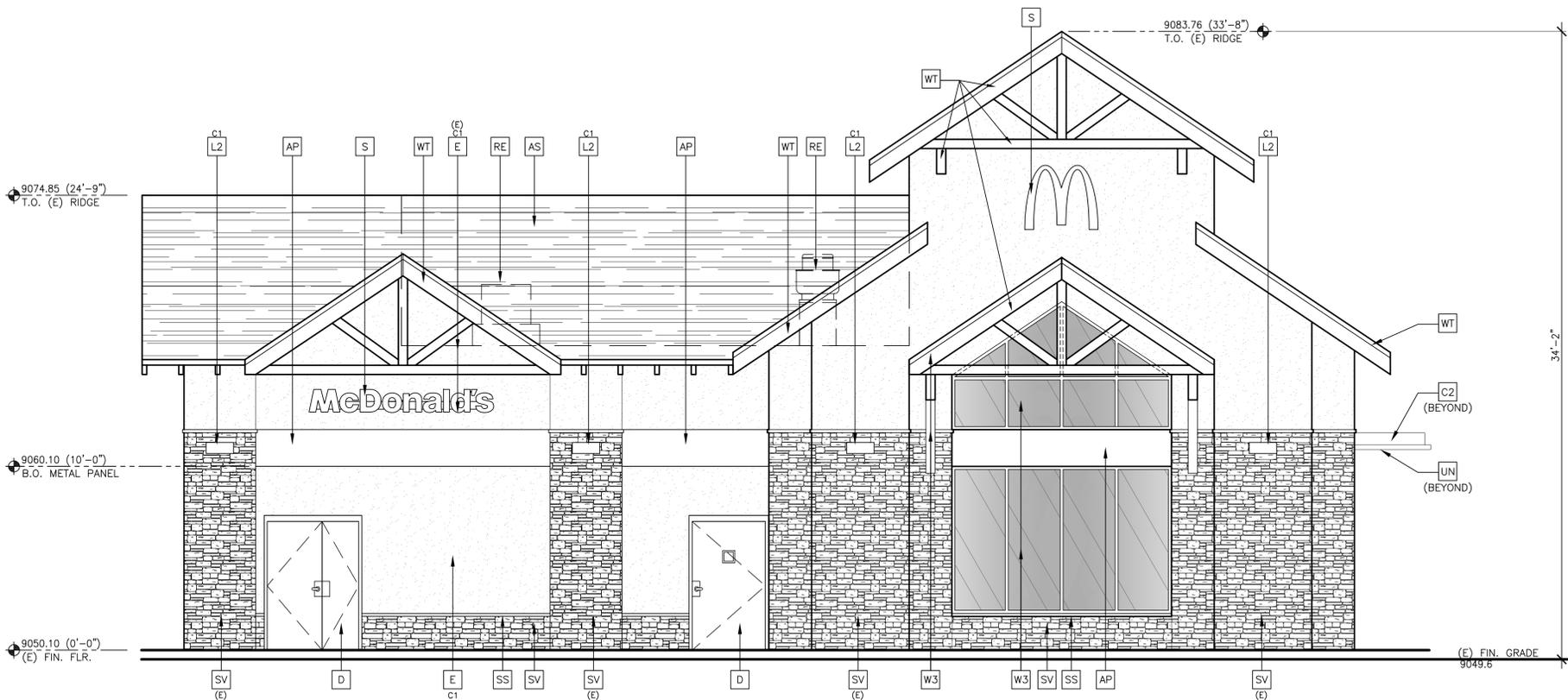
McDonald's  
 OFFICE: ROCKY MOUNTAIN REGION  
 ADDRESS:

STREET ADDRESS		STATE	
960 N. TEN MILE DRIVE		COLORADO	
CITY	COUNTY	CITY	STATE
FRISCO	SUMMIT	FRISCO	COLORADO
FEDERAL INC. NO.	STATE STORE ID#	INTERNAL ID#	
		51062	44322

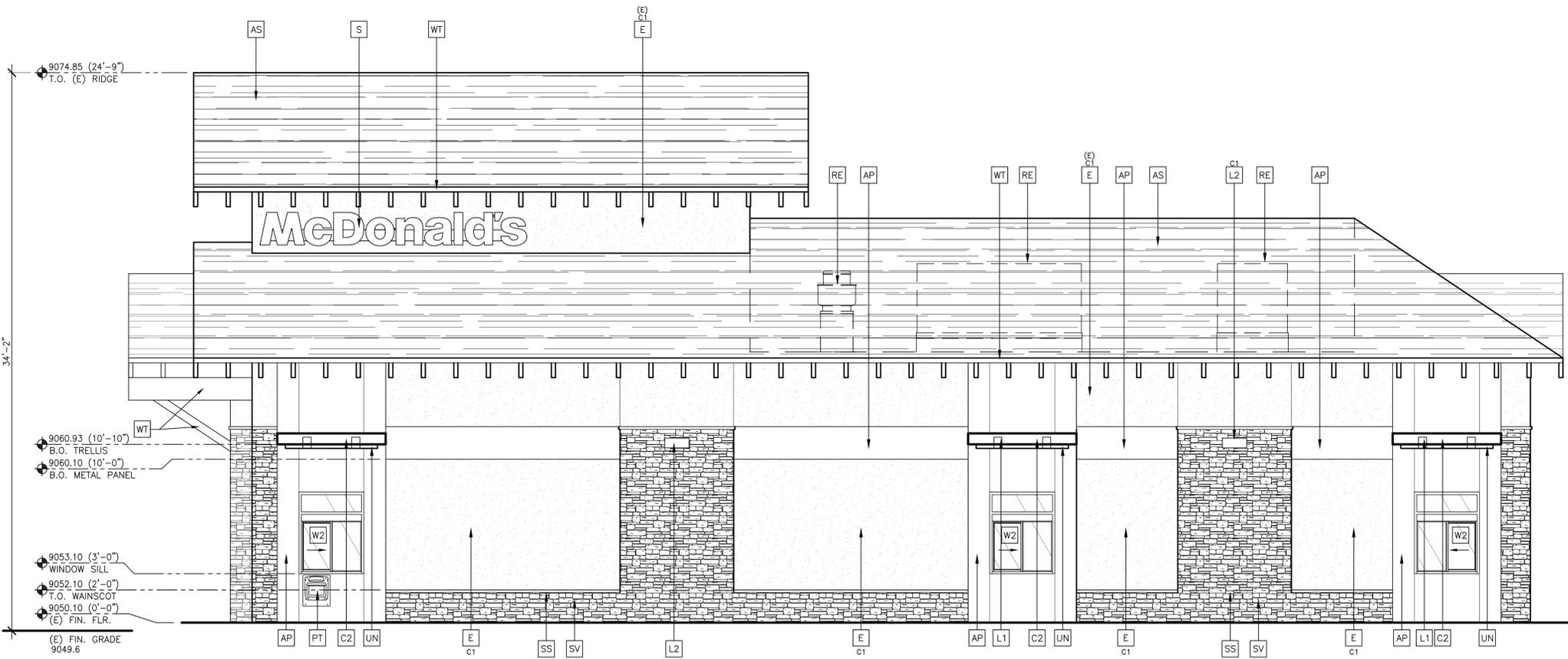
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DATE:	02/07/2025	MSD P/CHK:	YAGUSESKY
DESIGNED BY:	CS	FILE NAME:	
DRAWN BY:	CS		
CHECKED BY:	CS		

DRAWING TITLE  
**ROOF PLAN**

SHEET NO.  
**A1.3**



1 WEST ELEVATION  
 1/4" = 1'-0"



2 SOUTH ELEVATION  
 1/4" = 1'-0"

- KEY NOTES:**
- AP ALPOLIC METAL PANEL (COLOR: RAL 7022)
  - AS EXISTING ASPHALT SHINGLES TO REMAIN
  - C2 ALUMINUM CANOPY SYSTEM  
 COLOR: RAL 7022
  - D HOLLOW METAL DOOR  
 PAINT: "GAUNTLET GRAY" SW-7017 BY SHERWIN WILLIAMS
  - E EXTERIOR INSULATION FINISH SYSTEM (E.I.F.S.), PAINTED  
 C1 - COLOR:  
 C1 = "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS  
 -EXISTING EIFS, PAINTED
  - DE DECAL BY GRAPHICS SUPPLIER  
 SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED.  
 SUPPLIERS:  
 VOMELA (865) 330-7337, ann.bowen@vomela.com  
 GFX INTERNATIONAL (847) 543-4600, mcdonaldsdecor@gfxi.com
  - L1 RECESSED DOWN LIGHT FIXTURE - SEE ELECTRICAL  
 C1 - COLOR:  
 C1 = GOLD
  - L2 LIGHT FIXTURE  
 C1 COLOR:  
 C1 = COLOR: PLATINUM SILVER
  - PT (RMHC) COIN COLLECTOR  
 MODEL: #WPT STD CALL 1-888-743-7435 TO ORDER
  - RE OUTLINE OF ROOF MOUNTED EQUIPMENT
  - S McDONALD'S SIGNAGE BY OTHERS - NOT APPROVED BY THIS SITE PLAN  
 APPROVED UNDER SEPARATE PERMIT.  
 C1 - COLOR:  
 C1 = WEATHERED ZINC RACEWAY  
 C2 = RAL 7022 RACEWAY
  - SS STONE SILL, MATCH EXISTING  
 (E) - EXISTING TO REMAIN
  - SV STONE VENEER: MATCH EXISTING  
 (E) - EXISTING TO REMAIN
  - UN METAL UNDERSCORE  
 COLOR: CUSTOM COLOR TO  
 MATCH MUNSELL 7.5Y 8/8  
 (NOTE: 8/8 DESIGNATES A  
 COLOR SATURATION VALUE OF  
 8 AND CHROMA OF 8)
  - W1 EXTERIOR WINDOW ASSEMBLY - TEMPERED GLASS  
 COLOR: EXTRA DARK BRONZE
  - W2 DRIVE-THRU WINDOW BY READY ACCESS  
 MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN;  
 ELECTRONIC RELEASE  
 COLOR: DEEP BRONZE  
 SLIDE DIRECTION: RL = RIGHT TO LEFT  
 LR = LEFT TO RIGHT
  - W3 EXTERIOR WINDOW ASSEMBLY - TEMPERED SPANDREL GLASS  
 SPANDREL GLAZING - #1-0016 CHARCOAL - 6MM PPG  
 CLEAR OPACI-COAT-300 (ICD HIGH PERFORMANCE COATINGS)  
 OR EQUAL  
 FRAME COLOR: DARK BRONZE
  - WT WOOD TRIM:  
 PAINT: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS

NO.	DATE	REVISION DESCRIPTION
1		

ARCHITECTURAL CONSULTANT:  
**ARRIS**  
 ARCHITECTURE  
 Arris Architecture, LLC  
 285 Commander Drive  
 Erie, CO 80516  
 970.988.6302  
 coreys@arrisinc.net

McDonald's

OFFICE ADDRESS  
 ROCKY MOUNTAIN REGION  
 44322

STREET ADDRESS  
 960 N. TEN MILE DRIVE

CITY  
 FRISCO

STATE  
 COLORADO

COUNTY  
 SUMMIT

RECORDING DIST. NO.  
 51062

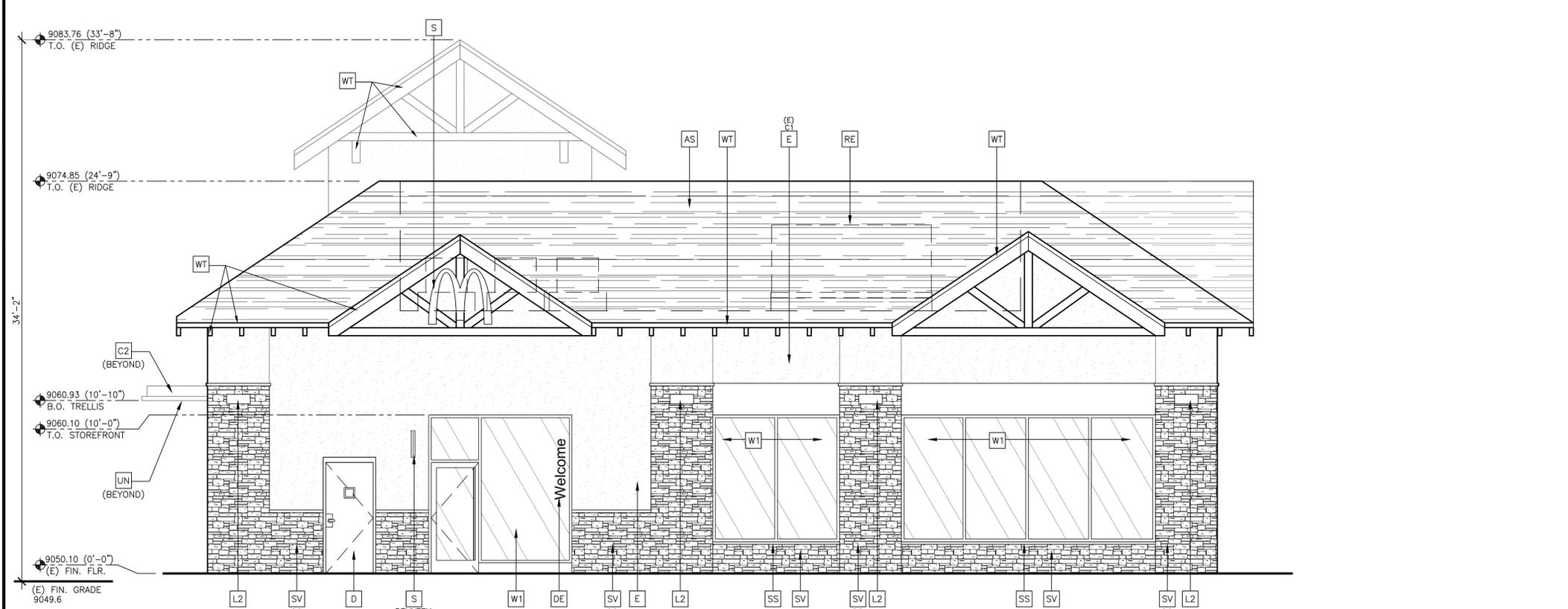
MAPBOOK REF.  
 44322

SCALE: AS NOTED  
 DATE: 02/07/2025  
 DESIGNED BY: CS  
 DRAWN BY: CS  
 CHECKED BY: CS

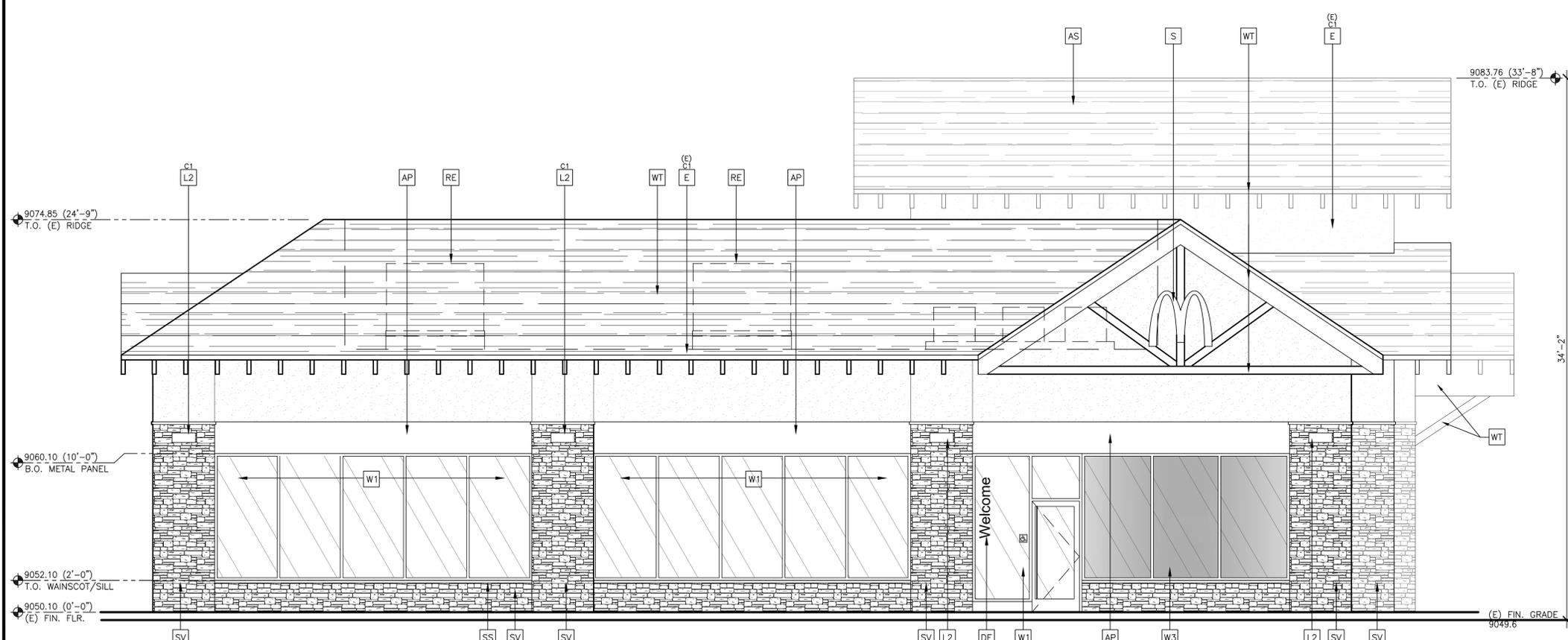
NO. RE: BAKER  
 AND P/C: YAGUESKY  
 FILE NAME:

DRAWING TITLE  
**EXTERIOR ELEVATIONS**

SHEET NO.  
**A2.0**



1 EAST ELEVATION  
1/4" = 1'-0"



2 NORTH ELEVATION  
1/4" = 1'-0"

- KEY NOTES:**
- AP ALPOLIC METAL PANEL (COLOR: RAL 7022)
  - AS EXISTING ASPHALT SHINGLES TO REMAIN
  - C2 ALUMINUM CANOPY SYSTEM  
COLOR: RAL 7022
  - D HOLLOW METAL DOOR  
PAINT: "GAUNTLET GRAY" SW-7017 BY SHERWIN WILLIAMS
  - E EXTERIOR INSULATION FINISH SYSTEM (E.I.F.S.), PAINTED  
C1 - COLOR:  
C1 = "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS  
EXISTING EIFS, PAINTED
  - DE DECAL BY GRAPHICS SUPPLIER  
SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED.  
SUPPLIERS:  
VOMELA (865) 330-7337, ann.bowen@vomela.com  
GFX INTERNATIONAL (847) 543-4600, mcdonaldsdecor@gfxi.com
  - L1 RECESSED DOWN LIGHT FIXTURE - SEE ELECTRICAL  
C1 - COLOR:  
C1 = GOLD
  - L2 LIGHT FIXTURE  
C1 COLOR:  
C1 = COLOR: PLATINUM SILVER
  - PT (RMHC) COIN COLLECTOR  
MODEL: #WPT STD CALL 1-888-743-7435 TO ORDER
  - RE OUTLINE OF ROOF MOUNTED EQUIPMENT
  - S McDONALD'S SIGNAGE BY OTHERS - NOT APPROVED BY THIS SITE PLAN  
APPROVED UNDER SEPARATE PERMIT.  
C1 - COLOR:  
C1 = WEATHERED ZINC RACEWAY  
C2 = RAL 7022 RACEWAY
  - SS STONE SILL, MATCH EXISTING  
(E) - EXISTING TO REMAIN
  - SV STONE VENEER: MATCH EXISTING  
(E) - EXISTING TO REMAIN
  - UN METAL UNDERSCORE  
COLOR: CUSTOM COLOR TO  
MATCH MUNSELL 7.5Y 8/8  
(NOTE: 8/8 DESIGNATES A  
COLOR SATURATION VALUE OF  
8 AND CHROMA OF 8)
  - W1 EXTERIOR WINDOW ASSEMBLY - TEMPERED GLASS  
COLOR: EXTRA DARK BRONZE
  - W2 DRIVE-THRU WINDOW BY READY ACCESS  
MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN;  
ELECTRONIC RELEASE  
COLOR: DEEP BRONZE  
XX - SLIDE DIRECTION: RL = RIGHT TO LEFT  
LR = LEFT TO RIGHT

NO.	DATE	REVISION DESCRIPTION
1		

ARCHITECTURAL CONSULTANT:

**ARRIS**  
ARCHITECTURE

Arri Architecture, LLC  
285 Commander Drive  
Erie, CO 80516  
970.988.6302  
coreys@arrisinc.net

**McDonald's**

OFFICE ADDRESS: ROCKY MOUNTAIN REGION

STREET ADDRESS	960 N. TEN MILE DRIVE
CITY	FRISCO
STATE	COLORADO
COUNTY	BLANDALL
CITY	SUMMIT
REGIONAL DING. NO.	
STATE STORE D/F	51062
W/FORM. D/F	44322

SCALE	AS NOTED	MD RE: BAKER
DATE	02/07/2025	MD P/CM: YAGUESKY
DESIGNED BY:	CS	
DRAWN BY:	CS	FILE NAME:
CHECKED BY:	CS	

DRAWING TITLE:  
**EXTERIOR ELEVATIONS**

SHEET NO:  
**A2.1**

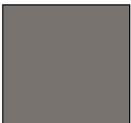
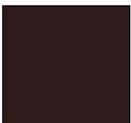


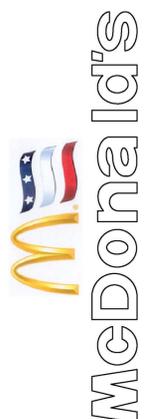
1 WEST ELEVATION  
A2.0 1/4" = 1'-0"



2 SOUTH ELEVATION  
A2.0 1/4" = 1'-0"

MATERIAL LEGEND

- 
 STONE VENEER:  
MATCH EXISTING
- 
 STUCCO /  
HOLLOW METAL DOORS:  
PAINT: "GAUNTLET GRAY"  
SW-7017 BY SHERWIN  
WILLIAMS
- 
 WOOD TRIM:  
PAINT: "IRON ORE" SW  
7069 BY SHERWIN  
WILLIAMS
- 
 GOLD UNDERSCORE  
COLOR: CUSTOM COLOR TO  
MATCH MUNSELL 7.5Y 6/6
- 
 EXTERIOR WINDOW ASSEMBLY  
COLOR: EXTRA DARK BRONZE
- 
 ALPOLIC METAL PANEL /  
DRIVE THRU CANOPIES:  
COLOR: RAL 7022
- 
 SPANDELE GLASS:  
#1-0016 CHARCOAL -  
SMW PPG CLEAR  
OPAC-COAT-300 (CD  
HIGH PERFORMANCE  
COATINGS) OR EQUAL

 <b>McDonald's</b>		OFFICE ADDRESS ROCKY MOUNTAIN REGION
STREET ADDRESS 960 N. TEN MILE DRIVE	CITY FRISCO	STATE COLORADO
COUNTY SUMMIT	STATE STORE #/R 51062	ZIP CODE 80622
SCALE: AS NOTED	DESIGNED BY: CS	DRAWN BY: CS
DATE: 02/07/2025	CHECKED BY: CS	FILE NAME:
ARCHITECTURAL CONSULTING <b>ARRIS</b> ARCHITECTURE Arris Architecture, LLC 285 Commander Drive Erie, CO 80516 970.988.6302 coreys@arrisinc.net	ARCHITECTURAL CONSULTING ARCHITECT BAKER	
<b>EXTERIOR ELEVATIONS</b>		
<b>A2.0</b>		



1 EAST ELEVATION  
A2.1 1/4" = 1'-0"



2 NORTH ELEVATION  
A2.1 1/4" = 1'-0"

MATERIAL LEGEND

-  STONE VENER:  
MATCH EXISTING
-  STUCCO /  
HOLLOW METAL DOORS:  
PAINT: "GAUNTLET GRAY"  
SW-7017 BY SHERWIN  
WILLIAMS
-  WOOD TRIM:  
PAINT: "IRON ORE" SW  
7069 BY SHERWIN  
WILLIAMS
-  GOLD UNDERSCORE  
COLOR: CUSTOM COLOR TO  
MATCH MUNSELL 7.5Y 8/8
-  EXTERIOR WINDOW ASSEMBLY  
COLOR: EXTRA DARK BRONZE
-  HOLLOW METAL DOORS:  
PAINT: "GAUNTLET GRAY"  
SW-7017 BY SHERWIN  
WILLIAMS
-  ALPOLIC METAL PANEL /  
DRIVE THRU CANOPIES:  
COLOR: RAL 7022
-  SPANDEL GLASS:  
#1-0016 CHARCOAL -  
SWM PFG CLEAR  
OPACI-COAT-300 (ICD  
HIGH PERFORMANCE  
COATINGS) OR EQUAL

NO.	DATE	REVISION DESCRIPTION
1		

ARCHITECTURAL CONSULTING

**ARRIS**  
ARCHITECTURE

Arris Architecture, LLC  
285 Commander Drive  
Erie, CO 80516  
970.988.6302  
coreys@arrisinc.net



**McDonald's**

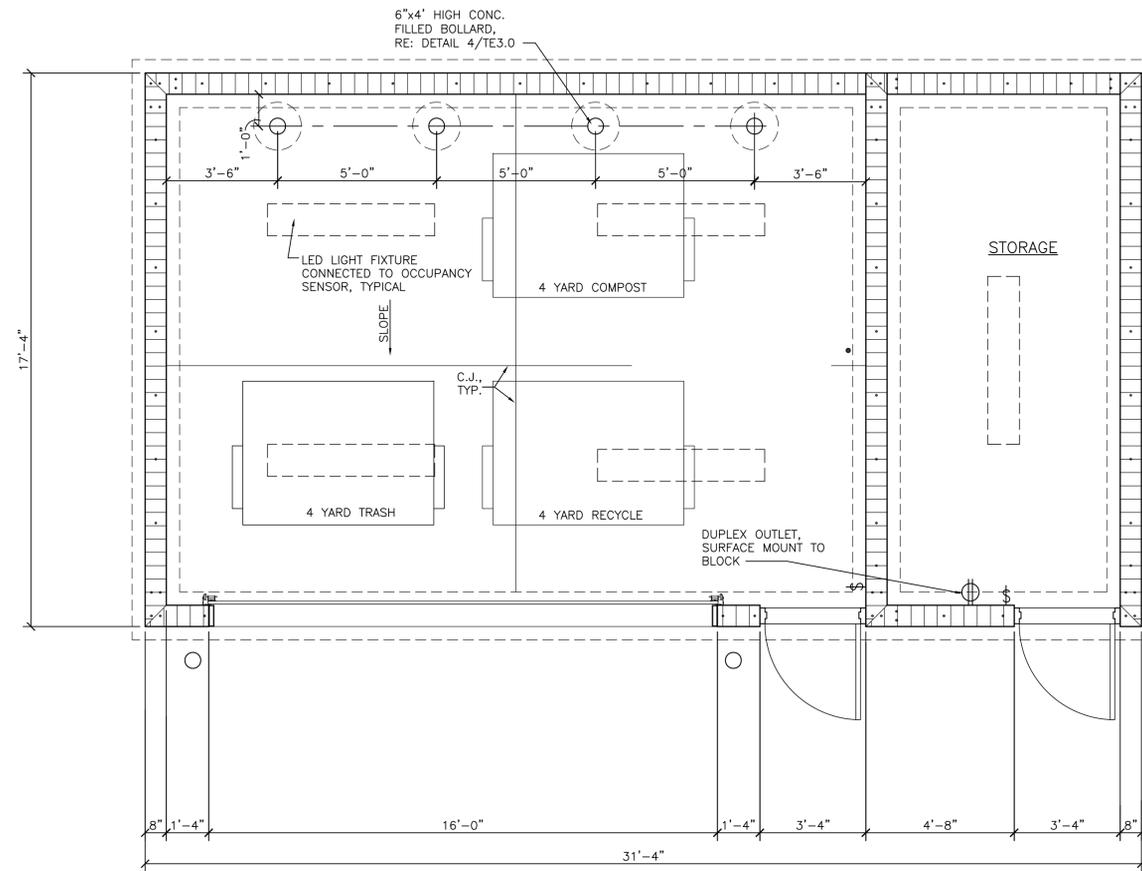
OFFICE: ROCKY MOUNTAIN REGION  
ADDRESS:

STREET ADDRESS		960 N. TEN MILE DRIVE	
CITY	COUNTY	STATE	COLORADO
FRISCO	SUMMIT		
PERMANENT INV. NO.	SITE NO.	ZIP	51062
		PHONE	44-322

SCALE:	AS NOTED	DESIGNED BY:	CS
DATE:	02/07/2025	DRAWN BY:	CS
DESIGNED BY:	CS	CHECKED BY:	CS
DESIGNED BY:	BAKER	FILE NAME:	

PROJECT TITLE:  
EXTERIOR ELEVATIONS

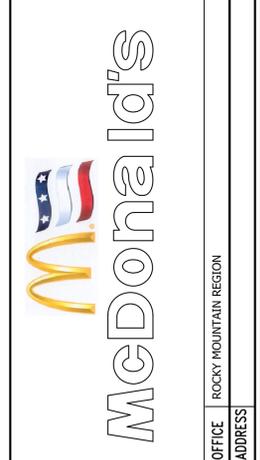
SHEET NO:  
**A2.1**



**1 TRASH ENCLOSURE PLAN**  
SCALE: 3/8"=1'-0"

NO.	DATE	REVISION DESCRIPTION
1		

ARCHITECTURAL CONSULTANT:  
**ARRIS ARCHITECTURE**  
 Arris Architecture, LLC  
 285 Commander Drive  
 Erie, CO 80516  
 970.988.6302  
 coreys@arrisinc.net

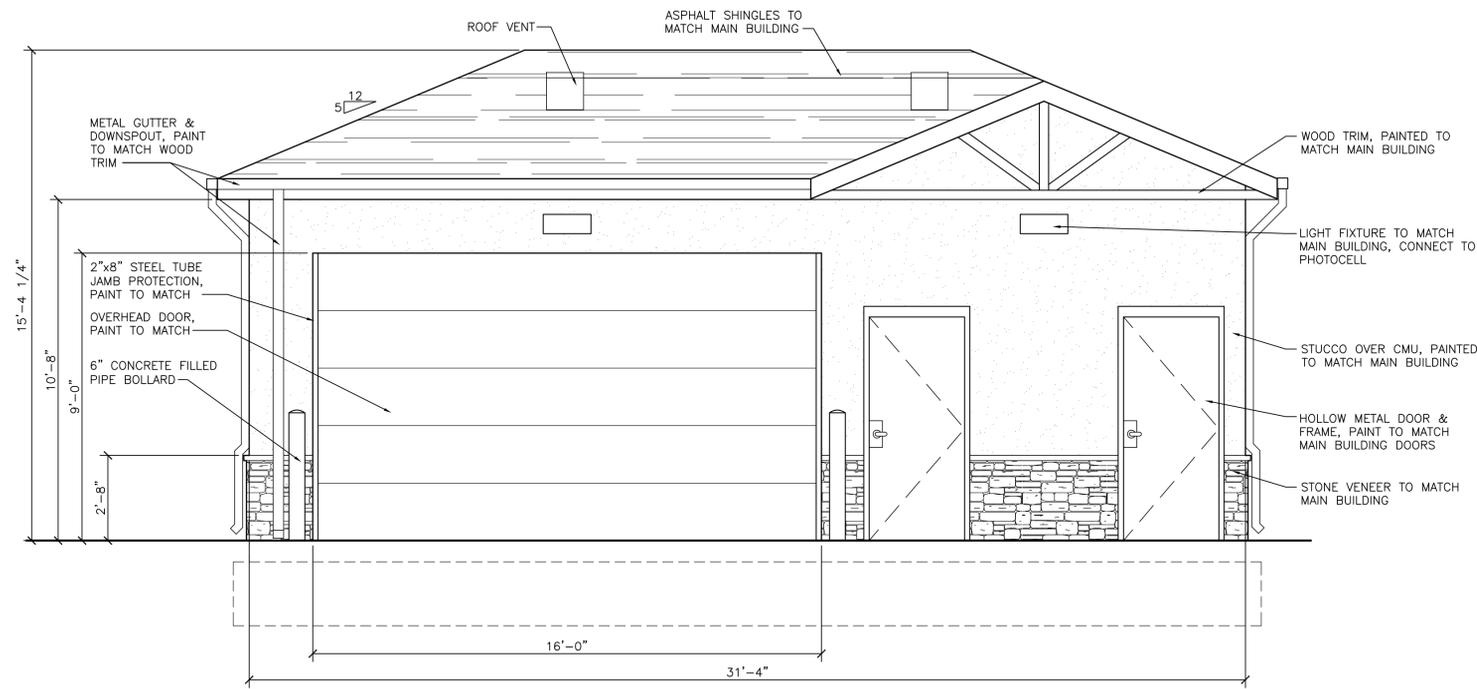


STREET ADDRESS: 960 N. TEN MILE DRIVE  
 CITY: FRISCO  
 STATE: COLORADO  
 COUNTY: SUMMIT  
 REGIONAL ZONE NO.:  
 STATE STORE ID#: 51062  
 NATIONAL ID#: 44322  
 OFFICE ADDRESS: ROCKY MOUNTAIN REGION

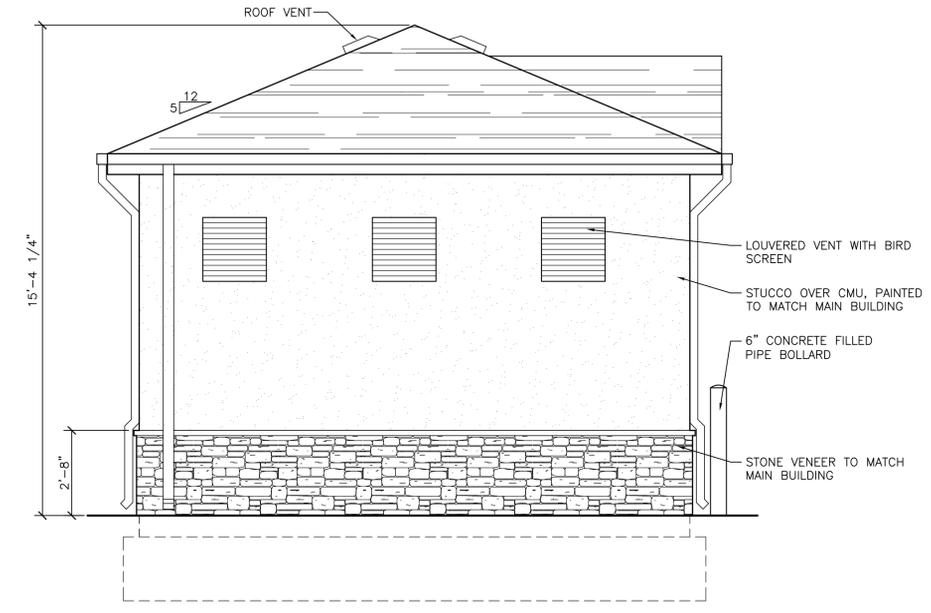
SCALE: AS NOTED  
 DATE: 02/07/2025  
 DESIGNED BY: CS  
 DRAWN BY: CS  
 CHECKED BY: CS  
 MD RE: BAKER  
 MD P/CM: YAGUSESKY  
 FILE NAME:

DRAWING TITLE:  
**TRASH ENCLOSURE PLAN**

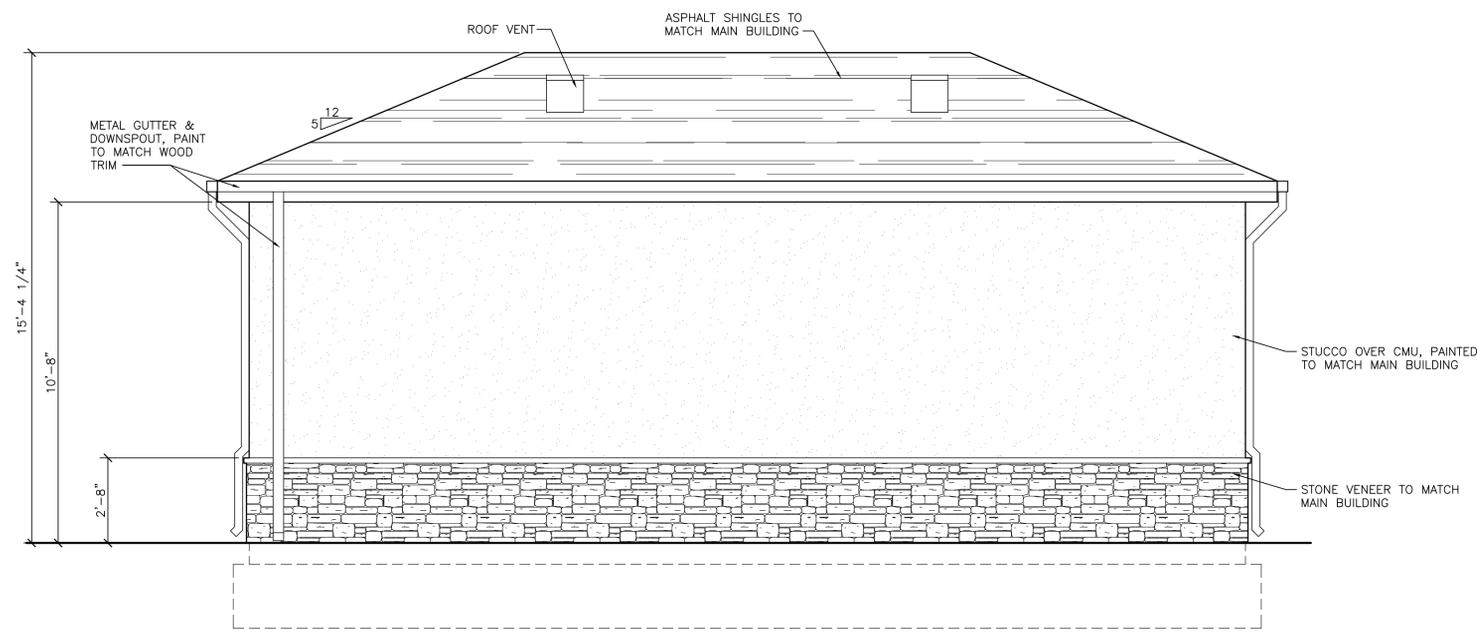
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**A2.2**



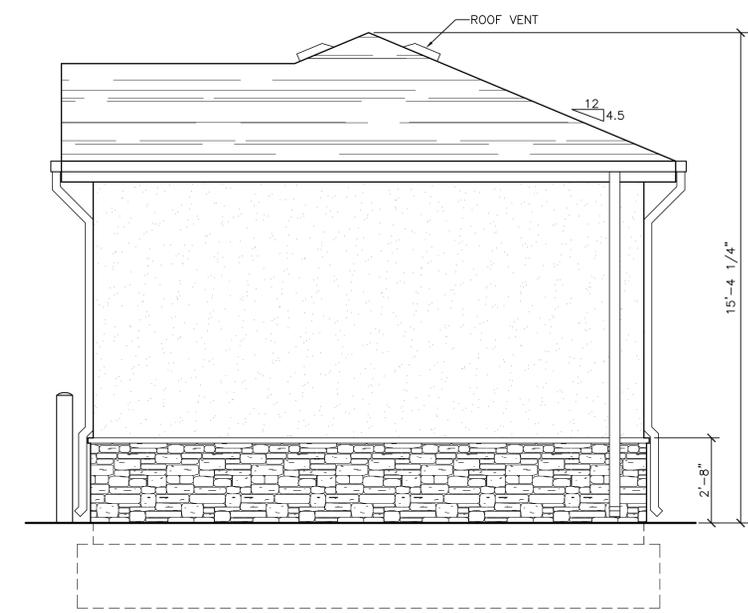
**1 TRASH ENCLOSURE ELEVATION**  
SCALE: 3/8"=1'-0"



**2 TRASH ENCLOSURE ELEVATION**  
SCALE: 3/8"=1'-0"



**3 TRASH ENCLOSURE ELEVATION**  
SCALE: 3/8"=1'-0"



**4 TRASH ENCLOSURE ELEVATION**  
SCALE: 3/8"=1'-0"

NO.	DATE	REVISION DESCRIPTION
1		

ARCHITECTURAL CONSULTANT:  
**ARRIS ARCHITECTURE**  
 Arris Architecture, LLC  
 285 Commander Drive  
 Erie, CO 80516  
 970.988.6302  
 coreys@arrisinc.net

ROCKY MOUNTAIN REGION  
 ADDRESS

STREET ADDRESS	960 N. TEN MILE DRIVE
CITY	FRISCO
STATE	COLORADO
COUNTY	SUMMIT
REGIONAL DMC NO.	
STATE STORE ID#	51062
MARKING ID#	44322

SCALE:	AS NOTED	MD RE: BAKER
DATE:	02/07/2025	MD P/CM: YAGUSESKY
DESIGNED BY:	CS	
DRAWN BY:	CS	FILE NAME:
CHECKED BY:	CS	

DRAWING TITLE:  
**TRASH ENCLOSURE ELEVATIONS**

SHEET NO:  
**A2.3**



1 TRASH ENCLOSURE ELEVATION  
SCALE: 3/8"=1'-0"



2 TRASH ENCLOSURE ELEVATION  
SCALE: 3/8"=1'-0"



3 TRASH ENCLOSURE ELEVATION  
SCALE: 3/8"=1'-0"



4 TRASH ENCLOSURE ELEVATION  
SCALE: 3/8"=1'-0"

MATERIAL LEGEND

- 
 STONE VENEER:  
MATCH EXISTING
- 
 STUCCO /  
HOLLOW METAL DOORS:  
PAINT: "GAUNTLET GRAY"  
SW-7017 BY SHERWIN  
WILLIAMS
- 
 WOOD TRIM:  
PAINT: "IRON ORE" SW  
7069 BY SHERWIN  
WILLIAMS
- 
 HOLLOW METAL DOORS:  
PAINT: "GAUNTLET GRAY"  
SW-7017 BY SHERWIN  
WILLIAMS

NO.	DATE	REVISION DESCRIPTION
1	-	-

ARCHITECTURAL CONSULTANT:

**ARRIS**  
ARCHITECTURE  
Arri's Architecture, LLC  
285 Commander Drive  
Erie, CO 80516  
970.988.6302  
coreys@arrisinc.net



McDonald's

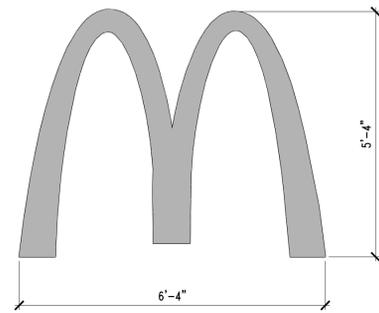
OFFICE: ROCKY MOUNTAIN REGION  
ADDRESS:

STREET ADDRESS	960 N. TEN MILE DRIVE
CITY	FRISCO
STATE	COLORADO
COUNTY	SUMMIT
STATE STORE ID#	51062
REGIONAL DMC ID#	44322
MARKING ID#	

SCALE:	AS NOTED	MD RE:	BAKER
DATE:	02/07/2025	MD P/CM:	YAGUSESKY
DESIGNED BY:	CS		
DRAWN BY:	CS	FILE NAME:	
CHECKED BY:	CS		

DRAWING TITLE:  
TRASH  
ENCLOSURE  
ELEVATIONS

SHEET NO:  
**A2.3**



NOTE: THE McDONALD'S ARCH IS PAINTED YELLOW (PMS 123)

PAINTED ARCH

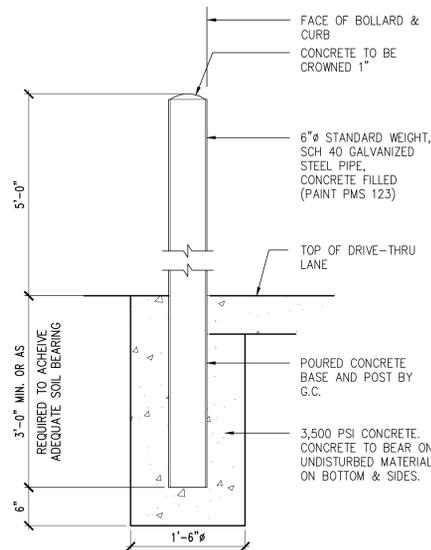
8



NOTE: ALL TEXT SHALL BE PAINTED YELLOW (PMS 123)

PAINTED 'THANK YOU'

9



DRIVE THRU BOLLARD FOUNDATION

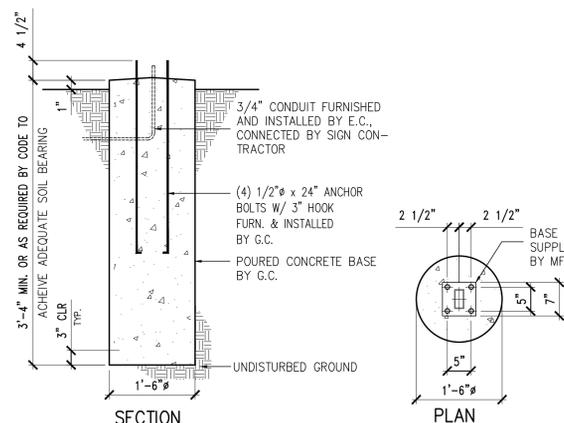
12



NOTE: ALL TEXT AND ARROW SHALL BE PAINTED YELLOW (PMS 123)

PAINTED 'DRIVE THRU' WITH ARROW

13



NOTES:

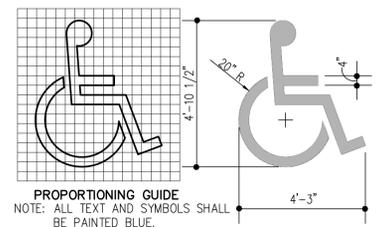
- THIS DETAIL TO BE USED WITH SITE SIGNS FROM: TENCON, EVERBRITE, OR YESCO. CONTRACTOR TO COORDINATE DETAILS WITH SIGN COMPANY.
- THIS FOOTING DETAIL TO BE USED FOR ALL ENTER/EXIT, WELCOME SIGNS AND DRIVE THRU DIRECTIONAL SIGNAGE. COORDINATE WITH THE SITE PLANS AND McDONALD'S PROJECT MANAGER FOR THE EXACT LOCATION, ORIENTATION AND NUMBER OF SIGNS TO BE INSTALLED AT THIS SITE. ALL WORK TO BE COORDINATED WITH OTHER TRADES.

DIRECTIONAL SIGN FOUNDATION

14

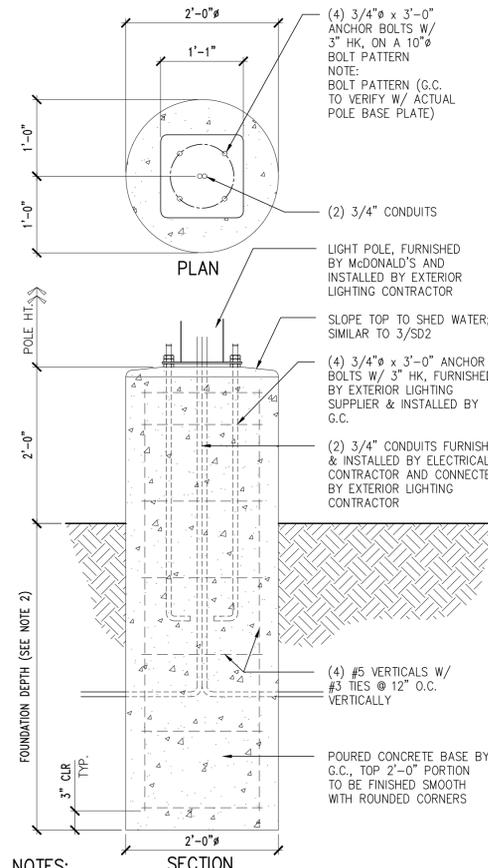
NOT USED

15



PAINTED ACCESSIBLE PARKING

10

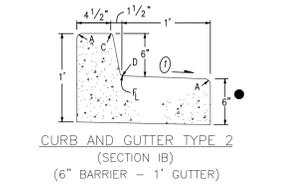
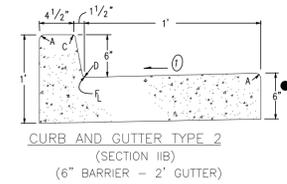


NOTES:

- IF THE EXISTING EARTH IS NON-VIRGIN FILL MATERIAL OR OTHERWISE UNSUITABLE TO SUPPORT THE BASE AND LIGHT, CONSULT THE McDONALD'S SOILS ENGINEER PRIOR TO PLACING CONCRETE.
- FOUNDATION DEPTH AS REQUIRED BY CODE OR TO ACHIEVE ADEQUATE SOIL BEARING CAPACITY, (6" DEPTH MINIMUM).
- IF OPTIONAL TAPERED STEEL BASE IS USED, FILL 2'-0" Ø BASE WITH CONCRETE TO FORM TOP 2'-0" PORTION OF LIGHT POLE BASE.

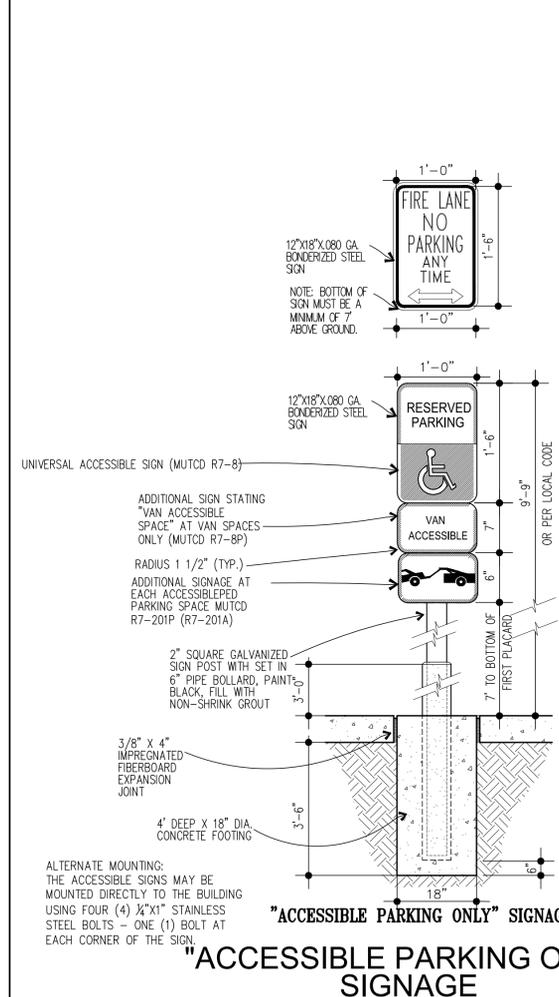
LIGHT POLE BASE

16



ONSITE CURB & GUTTER

11



ACCESSIBLE PARKING SIGNAGE

17

NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

**Strategic Land Solutions, Inc.**  
Civil Engineering, Land Planning, Site Services  
2595 PONDEROSA ROAD  
FRANKTOWN, CO 80116  
720.364.7661 Phone  
rpalmer@strategicsolutions.net  
Robert J. Palmer, PE  
President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: COLORADO REGISTERED PROFESSIONAL ENGINEER  
ROBERT J. PALMER  
36320

By Robert J. Palmer, PE  
Licensed Professional Engineer (CO PE #36320),  
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

McDonald's  
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF McDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

ROCKY MOUNTAIN REGION

OFFICE ADDRESS

960 N. TEN MILE DRIVE  
FRISCO, COLORADO  
SUMMIT COUNTY

STATE: COLORADO  
COUNTY: SUMMIT  
CITY: FRISCO

REGIONAL DWG. NO. 51062  
MATERIAL D/W 44322

SCALE: AS NOTED  
DATE: 09/05/2025  
DESIGNED BY: RJP  
DRAWN BY: RJP  
CHECKED BY: RJP

MD REF: BAKER  
MD P/CM: YAGUESKY  
FILE NAME: CURRENT.DWG  
SLS. BY: 24-0001-218

DRAWING TITLE: CONSTRUCTION DETAILS

SHEET NO. CD.1





Scale: 1" = 20'

LEGEND	
—E—	UNDERGROUND ELECTRICAL LINE
—FO—	UNDERGROUND FIBER-OPTIC LINE
—G—	UNDERGROUND GAS LINE
—SS—	UNDERGROUND SANITARY SEWER LINE
—STS—	UNDERGROUND STORM SEWER LINE
—T—	UNDERGROUND TELEPHONE LINE
—W—	UNDERGROUND WATER LINE
—C—	CONTOUR LINE
—	EDGE OF ASPHALT PAVEMENT
○	BOLLARD
□	CLEANOUT
□	COMMUNICATIONS PEDESTAL
□	COMMUNICATIONS VAULT
□	ELECTRIC BOX
□	ELECTRIC METER
□	ELECTRIC PEDESTAL
□	R.O.W.
□	ELECTRIC VAULT
□	FIRE HYDRANT
□	GAS METER
□	HOSE BIB (WATER SPOUT)
□	IRRIGATION VALVE
□	LIGHT POLE (AREA)
○	LIGHT POLE (DIRECTIONAL)
○	MANHOLE (SANITARY)
○	MANHOLE (STORM)
○	NUMBER OF PARKING STALLS
○	SIGN
○	STREET LIGHT
○	WATER VALVE
○	DECIDUOUS TREE
○	EVERGREEN TREE
○	BLDGH
FF	BUILDING HEIGHT (FF - HIGHEST POINT)
FF	FINISHED FLOOR
L/S	LANDSCAPING
R.O.W.	RIGHT-OF-WAY
REC. NO.	RECEPTION NUMBER
SET 5/8"x24" REBAR & 1-1/4" YELLOW PLASTIC CAP STAMPED "ESC LS 38421"	
●	FOUND MONUMENT AS DESCRIBED



VICINITY MAP

ZONING INFORMATION	
ZONING CLASSIFICATION	LAKEPOINT PUD
BUILDING SETBACKS	FRONT: 25' EASEMENT REAR: 0' LEFT: 5' SIDEWALK RIGHT: 12.5' EASEMENT
PARKING SETBACKS	FRONT: 25' EASEMENT REAR: 0' LEFT: 5' SIDEWALK RIGHT: 12.5' EASEMENT
PARKING REQUIREMENT	25 MINIMUM STALLS
MAXIMUM BUILDING HEIGHT	35' AVERAGE GRADE AT BUILDING CORNERS
ZONING INFORMATION PER A MCDONALD'S SITE INVESTIGATION REPORT DATED DECEMBER 23, 2024. PROJECT NUMBER 100876.	

GENERAL NOTES

- THIS SURVEY WAS BASED ON TITLE COMMITMENT NUMBER ABD20214589-5 PREPARED BY LAND TITLE GUARANTEE COMPANY AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, WITH A COMMITMENT DATE OF DECEMBER 5, 2024 AT 5:00 P.M., AND DOES NOT CONSTITUTE A TITLE SEARCH BY THIS SURVEYOR FOR OTHER EASEMENTS AND/OR EXCEPTIONS OF RECORD.
- THE USE OF THE WORD "CERTIFY" OR "CERTIFICATION" AS SHOWN AND USED HEREON CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OF FINDING WHICH ARE THE SUBJECT OF THE CERTIFICATION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.
- THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE ENTITIES NAMED IN THE SURVEYOR'S CERTIFICATION HEREON. SAID CERTIFICATION DOES NOT EXTEND TO ANY UNNAMED PERSON OR ENTITY WITHOUT AN EXPRESS WRITTEN RE-CERTIFICATION BY THE SURVEYOR OF RECORD NAMING SAID PERSON OR ENTITY.
- BEARINGS ARE BASED ON THE NORTHERLY LINE OF LOT R1, FIRST AMENDED PLAT OF LOTS R1, R2 AND R3, A RESUBDIVISION OF LOT 2, BLOCK 1, LAKEPOINT AT FRISCO WITH AN ASSUMED BEARING OF N80°25'02"E BOUNDED BY A #4 REBAR, 0.2' BELOW GRADE FOUND AT THE NORTHWESTERLY CORNER OF SAID LOT R1 AND A #4 REBAR, 0.1' BELOW GRADE FOUND AT THE NORTHEASTERLY CORNER OF SAID LOT R1, WITH ALL BEARINGS CONTAINED HEREIN BEING RELATIVE THERETO.
- THE ADDRESS OF THE SURVEYED PROPERTY IS: 960 NORTH TEN MILE DRIVE AS POSTED ON THE BUILDING.
- BY GRAPHIC PLOTTING ONLY THE SUBJECT PROPERTY IS SITUATED IN FLOOD ZONE "X" ACCORDING TO FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 081110335F WITH AN EFFECTIVE DATE OF NOVEMBER 16, 2018. NO OFFICE CALCULATIONS OR FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS INFORMATION.
- BENCHMARK: NGS BM W449, PID DF5530 - DISK SET INTO A DRILL HOLE IN THE TOP OF THE SOUTH ONE OF THREE CONCRETE FOUNDATIONS FOR THE LARGE "SHELL" SIGN. IT IS 28.8 M EAST FROM THE EDGE OF OIL FOR DILLON DAM ROAD, 17.7 M NORTH FROM THE NORTHWEST CORNER OF A BUILDING AT 1121 SUMMIT BOULEVARD, 3.2 M NORTH FROM A WITNESS POST, 0.2 M WEST FROM THE WESTERN CORNER OF THE IRON BASE OF THE SOUTHERN SIGN POST AND ABOUT 8 M BELOW INTERSTATE 70. ELEVATION: 9058.09 FEET (NAVD 1988 DATUM).
- THE SUBJECT PROPERTY HAS DIRECT ACCESS TO TEN MILE DRIVE, A PUBLIC RIGHT-OF-WAY.
- THERE ARE 24 REGULAR PARKING SPACES AND 1 HANDICAP PARKING SPACES ON THE SURVEYED PROPERTY.
- AT THE TIME OF THE SURVEY THE SUBJECT PROPERTY WAS UNDER 12 INCHES TO 36 INCHES OF SNOW AND WEATHER CONDITIONS LIMITED THE NUMBER OF IMPROVEMENTS SHOWN ON THIS SURVEY. ONLY MAJOR STRUCTURES, LIMITED MINOR STRUCTURES, AND PROPERTY CORNER MONUMENTATION WERE LOCATED DURING THIS SURVEY. UNLOCATABLE IMPROVEMENTS ARE BASED ON AERIAL PHOTOGRAPHY. SEE LEGEND FOR THESE IMPROVEMENTS. DUE TO HEAVY SNOW ON THE GROUND, UNDERGROUND UTILITY MARKINGS WERE NOT PROVIDED. THE UTILITIES SHOWN HEREON ARE BASED ON UTILITY MAPPING AND DESIGN FILES PROVIDED BY THE CLIENT.
- ALL UNDERGROUND UTILITIES SHOULD BE FIELD VERIFIED PRIOR TO ANY DESIGN AND CONSTRUCTION.
- BURIED UTILITIES AND PIPELINES SHOWN HEREON ARE PER VISIBLE AND APPARENT SURFACE EVIDENCE, RECORD DRAWINGS OF THE CONSTRUCTION UTILITY LINES AND/OR LOCATION DERIVED FROM THE FIELD SURVEY OF UTILITY MARKINGS PROVIDED BY AN INDEPENDENT UTILITY LOCATING FIRM. NO GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY OR THOROUGHNESS OF SUCH INFORMATION. ENGINEERING SERVICE COMPANY DOES NOT ALLOW FIELD PERSONAL TO ACCESS UTILITY MANHOLES OR ENCLOSED STRUCTURES. THEREFORE SUB-SURFACE PIPE SIZES IF NOTED HEREON ARE OBSERVED FROM SURFACE LOCATIONS AND/OR TAKEN FROM RECORD DRAWINGS. IF MORE ACCURATE LOCATIONS AND/OR SIZES OF UNDERGROUND UTILITIES OF PIPELINES ARE REQUIRED, THE UTILITY OR PIPELINE LOCATION AND/OR SIZE WILL HAVE TO BE VERIFIED BY FIELD PHOTOLOGGING. ENGINEERING SERVICE COMPANY AND THE SURVEYOR OF RECORD SHALL NOT BE HELD LIABLE FOR THE LOCATION OF OR THE FAILURE TO NOTE THE LOCATION OF NON-VISIBLE UNDERGROUND UTILITIES AND PIPELINES.
- THERE WAS NO VISIBLE EVIDENCE OF CEMETERIES, GRAVESITES OR BURIAL GROUNDS LOCATED ON THE SUBJECT PROPERTY.
- ALL PARCELS SHOWN HEREON ARE CONTIGUOUS AND CONTAIN NO GORES, GAPS OR OVERLAPS ALONG THEIR COMMON BOUNDARIES.
- ALL LINEAL DISTANCES ON THIS SURVEY ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DEFINED AS EXACTLY 1200/3937 METERS.
- ALL BOUNDARY MEASURED DIMENSIONS SHOWN MATCH THE RECORD DIMENSIONS.
- NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS WERE OBSERVED AT THE TIME OF SURVEY (TABLE A, ITEM 16).
- STORM SEWER LINES ARE SHOWN BASED ON FIELD EVIDENCE AND PER THE OFFICIAL AS-BUILT SET OF 1ST BANK LAKEPOINT AT FRISCO. NO STORM SEWER MAPPING WAS PROVIDED AT THE TIME OF SURVEY.

LEGAL DESCRIPTION:

LOT R1, FIRST AMENDED PLAT OF LOTS R1, R2 AND R3, A RESUBDIVISION OF LOT 2, BLOCK 1, LAKEPOINT AT FRISCO, ACCORDING TO THE PLAT RECORDED MAY 26, 1999 UNDER RECEPTION NO. 596666, COUNTY OF SUMMIT, STATE OF COLORADO.

THE ABOVE LEGAL DESCRIPTION DESCRIBES ALL THAT LAND CONTAINED IN A GENERAL WARRANTY DEED RECORDED ON SEPTEMBER 15, 1998 AT RECEPTION NUMBER 575355 IN SUMMIT COUNTY, COLORADO.

AS SURVEYED LEGAL DESCRIPTION:

LOT R1, FIRST AMENDED PLAT OF LOTS R1, R2 AND R3, A RESUBDIVISION OF LOT 2, BLOCK 1, LAKEPOINT AT FRISCO, ACCORDING TO THE PLAT RECORDED MAY 26, 1999 UNDER RECEPTION NUMBER 596666 IN THE OFFICE OF THE SUMMIT COUNTY CLERK AND RECORDER, SITUATED IN THE NW 1/4 OF SECTION 26, TOWNSHIP 5 SOUTH, RANGE 75 WEST OF THE 6TH PRINCIPAL MERIDIAN, TOWN OF FRISCO, COUNTY OF SUMMIT, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

- BEGINS AT THE NORTHWEST CORNER OF LOT R1, FIRST AMENDED PLAT OF LOTS R1, R2 AND R3, A RESUBDIVISION OF LOT 2, BLOCK 1, LAKEPOINT AT FRISCO;
- THENCE S13°41'27"W A DISTANCE OF 110.00 FEET TO A POINT OF CURVE;
  - THENCE ALONG A TANGENT CURVE TO THE LEFT HAVING A CENTRAL ANGLE OF 21°44'12", A RADIUS OF 230.00 FEET, AN ARC LENGTH OF 87.26 FEET, A CHORD BEARING S02°49'21"W WITH A CHORD DISTANCE OF 86.73 FEET;
  - THENCE S08°02'45"E TANGENT TO THE LAST DESCRIBED CURVE, A DISTANCE OF 15.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT R1;
- THENCE S18°57'15"W ALONG THE SOUTH LINE OF SAID LOT R1 AND THE NORTH R.O.W. LINE OF LAKEPOINT DRIVE, A DISTANCE OF 221.05 FEET TO THE SOUTHWEST CORNER OF SAID LOT R1;
- THENCE N08°47'45"W ALONG THE WEST LINE OF SAID LOT R1 AND THE EAST R.O.W. LINE OF SUMMIT BOULEVARD, A DISTANCE OF 194.84 FEET TO THE POINT OF BEGINNING.

PARCEL CONTAINS (48,151 SQUARE FEET) 1.10539 ACRES, MORE OR LESS.

THE ABOVE AS SURVEYED LEGAL DESCRIPTION WAS PROVIDED AT THE CLIENT'S REQUEST.

ASSURANCE NOTE: THE ABOVE LEGAL DESCRIPTION AND AS SURVEYED LEGAL DESCRIPTION DESCRIBES ALL THAT LAND INSURED IN SCHEDULE A(3) OF TITLE COMMITMENT NUMBER ABD20214589-5 PREPARED BY LAND TITLE GUARANTEE COMPANY AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY WITH A COMMITMENT DATE OF DECEMBER 5, 2024 AT 5:00 P.M.

SURVEYOR'S CERTIFICATION:

TO: MCDONALD'S USA, LLC, A DELAWARE LIMITED LIABILITY COMPANY; MCDONALD'S CORPORATION; MCDONALD'S REAL ESTATE COMPANY, AND LAND TITLE GUARANTEE COMPANY AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY;

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY AEA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 8(a), 7(b), 7(c), 7(d), 8, 9, 11(b), 13, AND 16 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MAY 6, 2025.

I FURTHER CERTIFY THAT I, JUSTIN A. CONNER, A LICENSED LAND SURVEYOR IN THE STATE OF COLORADO, CERTIFY FOR AND ON BEHALF OF ENGINEERING SERVICE COMPANY THAT THE SURVEY SHOWN HEREON WAS PERFORMED BY ME OR UNDER MY RESPONSIBLE CHARGE, THAT IT IS BASED UPON MY KNOWLEDGE, INFORMATION AND BELIEF; THAT IT HAS BEEN PREPARED IN ACCORDANCE WITH THE APPLICABLE STANDARDS OF PRACTICE, THAT IT IS NOT A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED AND IS, TO THE BEST OF MY KNOWLEDGE, ACCURATE AND COMPLETE.

DATE OF PLAT OR MAP: MAY 27, 2025.

JUSTIN A. CONNER  
PROFESSIONAL L.S. NO. 38421  
FOR AND ON BEHALF OF  
ENGINEERING SERVICE COMPANY  
Email: justin@engineering-service.com



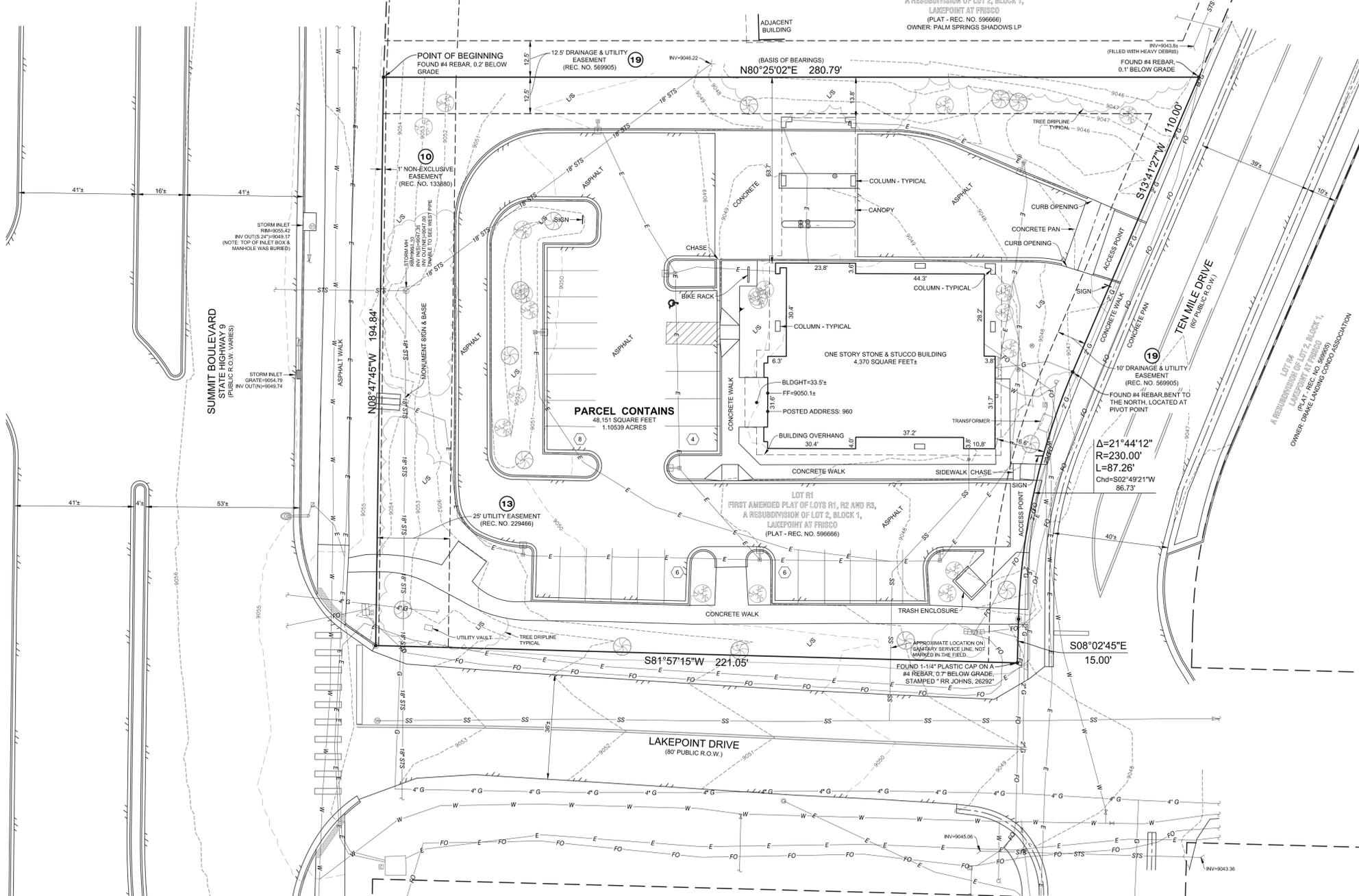
NOTICE:

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

ANY PERSON WHO KNOWINGLY REMOVES, ALTERS, OR DEFACTS ANY PUBLIC LAND SURVEY MONUMENT, AND BOUNDARY MONUMENT, OR ACCESSORY COMPLETS A CLASS TWO (2) MISDEMEANOR, PURSUANT TO STATE STATUTE 18-4-508 OF THE COLORADO REVISED STATUTES.

NOTES CORRESPONDING TO SCHEDULE B - SECTION 2 OF TITLE COMMITMENT:

- ITEMS 1 THROUGH 7 ARE NON-SURVEY RELATED ITEMS.
- 8 (THIS ITEM WAS INTENTIONALLY DELETED)
  - 9 (THIS ITEM WAS INTENTIONALLY DELETED)
  - 10 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS OF QUIT CLAIM DEED RECORDED MAY 15, 1973 UNDER RECEPTION NO. 133880. (APPLIES TO THE SUBJECT PROPERTY, PLOTTABLE ITEMS ARE SHOWN HEREON.)
  - 11 EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE PLAT RECORDED MAY 15, 1973 UNDER RECEPTION NO. 133881. (AFFECTS THE SUBJECT PROPERTY, HOWEVER CONTAINS NO PLOTTABLE ITEMS.)
  - 12 NOTES, DEDICATIONS AND EASEMENTS SET FORTH ON THE PLAT FOR LAKEPOINT AT FRISCO RECORDED AUGUST 5, 1981 UNDER RECEPTION NO. 228882. (AFFECTS THE SUBJECT PROPERTY, HOWEVER CONTAINS NO PLOTTABLE ITEMS.)
  - 13 TERMS, CONDITIONS AND PROVISIONS OF PUBLIC SERVICE EASEMENT RECORDED SEPTEMBER 29, 1981 UNDER RECEPTION NO. 229466. (APPLIES TO THE SUBJECT PROPERTY, PLOTTABLE ITEMS ARE SHOWN HEREON.)
  - 14 ANY TAX, LIEN, FEE, OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE FRISCO SANITATION DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED JULY 02, 1984, UNDER RECEPTION NO. 28012. (AFFECTS THE SUBJECT PROPERTY, HOWEVER CONTAINS NO PLOTTABLE ITEMS.)
  - 15 (THIS ITEM WAS INTENTIONALLY DELETED)
  - 16 (THIS ITEM WAS INTENTIONALLY DELETED)
  - 17 (THIS ITEM WAS INTENTIONALLY DELETED)
  - 18 (THIS ITEM WAS INTENTIONALLY DELETED)
  - 19 NOTES, DEDICATIONS AND EASEMENTS SET FORTH ON THE PLAT FOR LAKEPOINT AT FRISCO RECORDED JULY 13, 1988 UNDER RECEPTION NO. 369595. (APPLIES TO THE SUBJECT PROPERTY, PLOTTABLE ITEMS ARE SHOWN HEREON.)
  - 20 NOTES, DEDICATIONS AND EASEMENTS SET FORTH ON THE PLAT RECORDED MAY 26, 1999 UNDER RECEPTION NO. 596666. (APPLIES TO THE SUBJECT PROPERTY, PLOTTABLE ITEMS ARE SHOWN HEREON.)
  - 21 EXISTING LEASES AND TENANCIES. (NOT ADDRESSED.)
  - 22 ALL WATER OR MINERAL RIGHTS, AS EXCLUDED, AND TERMS, CONDITIONS AND PROVISIONS, AS SET FORTH IN SPECIAL WARRANTY DEED FROM FIRSTBANK OF SILVERTHORNE NKA FIRSTBANK OF SUMMIT COUNTY TO MCDONALD'S REAL ESTATE COMPANY, A DELAWARE CORPORATION RECORDED UNDER RECEPTION NO. (NOT ADDRESSED.)
  - 23 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DECLARATION OF RESTRICTIVE USE COVENANT RECORDED UNDER RECEPTION NO. (NOT ADDRESSED.)
  - 24



Prepared For: ALTA / NSPS LAND TITLE SURVEY  
 LOT R1, FIRST AMENDED PLAT OF LOTS R1, R2 AND R3, A RESUBDIVISION OF LOT 2, BLOCK 1, LAKEPOINT AT FRISCO SITUATED IN THE NW 1/4 OF SECTION 26, T5S, R.78W, OF THE 6TH P.M. TOWN OF FRISCO, COUNTY OF SUMMIT, STATE OF COLORADO 960 NORTH TEN MILE ROAD

Designed By: JDP Date: 1/31/2025  
 Drawn By: JDP Survey No.: 25-004-S  
 Checked By: JDP, JAC Project No.: 337, 133  
 Field Book No.: 687, 982 Scale: 1" = 20'  
 Sheet No.: 1 OF 1

Revisions:  
 Description  
 1  
 2  
 3

Engineering Service Company  
 14190 East Evans Avenue  
 Aurora, Colorado 80014  
 Phone: 303.337.1393  
 Fax: 303.337.7481  
 justin@engineering-service.com

McDonald's USA, LLC  
 1500 S. Bascom Avenue, Suite 1900  
 Denver, Colorado 80202

**From:** [Corey Stinar](#)  
**To:** [Heth, Emma](#)  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062  
**Date:** Tuesday, September 9, 2025 2:14:39 PM  
**Attachments:** [image001.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.png](#)  
[image007.png](#)  
[image008.png](#)

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This message came from outside your organization.  
Please review the email and report as suspicious if you have any doubts of the integrity of the message.

[Report Suspicious](#)

Hi Emma, correct the #1 choice is the Munsell 8/8 color and is what I have on the plans.

Thanks!  
Corey

---

**From:** Heth, Emma <emmah@townoffrisco.com>  
**Sent:** Tuesday, September 9, 2025 10:10 AM  
**To:** Corey Stinar <coreys@arrisinc.net>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Hi Corey,

Can you confirm that the “#1 choice” sample you sent is the Munsell 8/8 color you send a screenshot of below and that’s included on the updated plans? If so, we are good with that color.

Thanks!  
Emma

**Emma Heth (she/her) | Planner II | Community Development**



**Email:** [EmmaH@TownofFrisco.com](mailto:EmmaH@TownofFrisco.com)  
**Office:** 970-668-4581

---

**From:** Heth, Emma  
**Sent:** Tuesday, August 19, 2025 9:26 AM  
**To:** Corey Stinar <coreys@arrisinc.net>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Sounds good, thanks Corey!

**Emma Heth (she/her) | Planner II | Community Development**



**Email:** [EmmaH@TownofFrisco.com](mailto:EmmaH@TownofFrisco.com)  
**Office:** 970-668-4581

---

**From:** Corey Stinar <coreys@arrisinc.net>  
**Sent:** Tuesday, August 19, 2025 6:19 AM  
**To:** Heth, Emma <emmah@townoffrisco.com>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

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Good morning Emma, I am going to overnight FedEx some samples of the gold color. I will mark the one that would be our first choice, which in my opinion meets the chroma of 8. I did add the notes we discussed previously to the elevations, but wanted to get you these samples.

I am included the other samples just in case you don’t agree with chroma level on our first choice, we will be covered with the other samples.

Thanks!  
Corey

---

**From:** Heth, Emma <emmah@townoffrisco.com>  
**Sent:** Monday, August 11, 2025 2:29 PM  
**To:** Corey Stinar <coreys@arrisinc.net>

**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Hi Corey,

That works. You can include this screenshot in the application materials and make it clear that the title means this is a chroma of 8 on the Munsell color chart.

We do require physical samples of materials for the Planning Commission meeting so that they can see what is being proposed. Would you be able to provide a physical sample for Robert to bring to that meeting? It has not been scheduled as we are still waiting on comments from referral agencies.

Thanks,  
Emma

**Emma Heth** ([she/her](#)) | Planner II | Community Development



Email: [EmmaH@TownofFrisco.com](mailto:EmmaH@TownofFrisco.com)

Office: 970-668-4581

---

**From:** Corey Stinar <[coreys@arrisinc.net](mailto:coreys@arrisinc.net)>  
**Sent:** Monday, August 11, 2025 1:53 PM  
**To:** Heth, Emma <[emmah@townoffrisco.com](mailto:emmah@townoffrisco.com)>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

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The original image below is a 10 on chroma. Here is another image that is 8/8 so chroma of 8. I wont have physical sample but we can note that the color to match Munsell 7.5y 8/8

## Match of Munsell™ 7.5y 8/8 \*



Ready to purchase? Select your options in the 4 steps below.

### Step 1: Select Paint Type / Application ?

Spray, OEM, ?  
Bottles and Pens

House and Wall ?  
Paint

Specialty Paint ?

---

**From:** Heth, Emma <[emmah@townoffrisco.com](mailto:emmah@townoffrisco.com)>  
**Sent:** Monday, August 11, 2025 1:49 PM  
**To:** Corey Stinar <[coreys@arrisinc.net](mailto:coreys@arrisinc.net)>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Hi Corey,

Is that sample an 8 or a 10? Accent colors have a maximum chroma of 8.

Here is the code language for reference:

- *Maximum Color Chroma.* No color may be used as the primary color of the building that exceeds a chroma of four on the Munsell Color chart.
- *Exception for Building Accents.* Colors that exceed a chroma of four, but do not exceed a chroma of eight on the Munsell Color chart may be used only sparingly as accents, such as on trim or railings. Luminescent, fluorescent, or reflective colors shall not be utilized on any exterior portion of the building.

Best,  
Emma

**Emma Heth** ([she/her](#)) | Planner II | Community Development



Email: [EmmaH@TownofFrisco.com](mailto:EmmaH@TownofFrisco.com)  
Office: 970-668-4581

**From:** Corey Stinar <[coreys@arrisinc.net](mailto:coreys@arrisinc.net)>  
**Sent:** Monday, August 11, 2025 1:24 PM  
**To:** Heth, Emma <[emmah@townoffrisco.com](mailto:emmah@townoffrisco.com)>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

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This message came from outside your organization.  
Please review the email and report as suspicious if you have any doubts of the integrity of the message.

The image below is a Munsell yellow we had to match on another project that mandated colors with Munsell, would this work for the underscore?

## Match of Munsell™ 7.5y 8/10 \*



Ready to purchase? Select your options in the 4 steps below.

### Step 1: Select Paint Type / Application

- Spray, OEM, Bottles and Pens
- House and Wall Paint
- Specialty Paint

**From:** Corey Stinar  
**Sent:** Monday, August 11, 2025 1:06 PM  
**To:** 'EmmaH@TownofFrisco.com' <[EmmaH@TownofFrisco.com](mailto:EmmaH@TownofFrisco.com)>  
**Subject:** FW: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Hello Emma, what is the max allowed value and Chroma for the yellow?

Thanks!  
Corey

**From:** Robert Palmer <[rpalmer@strategics.net](mailto:rpalmer@strategics.net)>  
**Sent:** Monday, July 28, 2025 1:08 PM  
**To:** Corey Stinar <[coreys@arrisinc.net](mailto:coreys@arrisinc.net)>  
**Subject:** FW: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Thanks.

Robert Palmer, P.E.  
720-384-7661

**From:** Heth, Emma <[emmah@townoffrisco.com](mailto:emmah@townoffrisco.com)>  
**Sent:** Monday, July 28, 2025 12:31 PM  
**To:** Robert Palmer <[rpalmer@strategics.net](mailto:rpalmer@strategics.net)>  
**Subject:** RE: McDonalds at 960 N. Ten Mile Drive, Frisco -51062

Hi Robert,

See below for comments from Planning to address. I just sent another reminder message to the other referral agencies, so I will let you know when we hear back. Our Public Works Director/Town Engineer Chris McGinnis left the town last week, so we may have a slight delay on that review. We anticipate having contracted services in place soon.



Attn: McDonald's  
960 N. 10 Mile Drive  
Frisco, CO 80443  
Sept 12,2025

To Whom It May Concern, I have reviewed the site plans for this location and can confirm we will be able to provide waste service and do have the clearce to preform the required services. Please feel free to contact me at 602-980-8808 if you have any further questions.

*Estrella Diaz*  
\_\_\_\_\_  
WM Representative  
Signature

9/12/2025  
\_\_\_\_\_  
Date

# Proposed McDonald's

960 North Ten Mile Dr

## **Frisco, CO**

### Traffic Impact Study

Prepared for:



McDonald's Corporation  
c/o Strategic Land Solutions, Inc.  
Attn: Robert Palmer, PE  
2595 Ponderosa Rd  
Franktown, CO 80116

(SLS Ref # 24-0001-216)

Prepared by:



Platinum Traffic Engineering  
2876 Amyvale Court  
Castle Rock, CO 80109

(PTE Ref # 25001)



09/09/2025

September 9, 2025

## Contents

Revision History .....	iv
1 Introduction .....	1-1
2 Existing and Planned Conditions .....	2-6
3 Proposed Conditions .....	3-11
4 Future Conditions .....	4-15
5 Analysis of Proposed Conditions .....	5-20
6 Proposed Mitigation Measures .....	6-29
7 Conclusions & Recommendations .....	7-30
8 References .....	8-33
Appendix .....	35

## Appendix

- Trip Generation Re-Evaluation
- Frisco Trails Master Plan
- Traffic Volume Data
- Intersection Analysis Methodology
- Right Turns On Red
- ITE Trip Generation and Trip Assignments
- Pass By Trip Reductions
- Background Traffic Volumes
- Background Roadway Improvements
- Proposed Drive-Through Queue Capacity
- Driveway Spacing
- Driveway Lines of Sight
- CDOT Access Permit (Draft)
- Exit Lane - Alternative Configuration
- Operational Review of Ten Mile Dr & N Ten Mile Dr Intersection
- Traffic Analysis Reports

## List of Figures

Figure 1-a: Vicinity Map .....	1-1
Figure 1-b: Proposed Project Site Plan (September 5, 2025) (No Scale) .....	1-2
Figure 2-a: 2025 Existing Conditions and LOS .....	2-8
Figure 2-b: Planned CDOT Project – I-70 Exit 203 Interchange Improvements [6] .....	2-10
Figure 3-a: Estimated Net New Site-Generated Trip Distribution and Assignment (2026) .....	3-13
Figure 3-b: Estimated Net New Site-Generated Trip Distribution and Assignment (2046) .....	3-14
Figure 4-a: Short-Term Background Traffic Conditions (2026) .....	4-16
Figure 4-b: Long-Term Background Traffic Conditions (2046) .....	4-17
Figure 4-c: Short-Term Total Traffic Conditions (2026) .....	4-18
Figure 4-d: Long-Term Total Traffic Conditions (2046) .....	4-19
Figure 5-a: Background Traffic LOS.....	5-22
Figure 5-b: Total Traffic LOS .....	5-22

## Appendix

Figure A 1 Trail Master Plan – Frisco Gateway Recommendations [1] .....	3
Figure A 2 Estimated Traffic Volumes “CDOT Figure 4-1 No-Build Opening Year” [3].....	4
Figure A 3 Forecasted 2045 Traffic Volumes “CDOT Figure 5-11 Horizon Year Alternative 1” [3].....	4
Figure A 4 Aug 2023 Traffic Volumes CDOT Route 009C, Sta 100513 (Near I-70) [4].....	5
Figure A 5 Snapshot of Video used for Westbound RTOR Observations (from SE Corner) .....	9
Figure A 6 ITE 934 AM Pass-By Rates [5].....	11
Figure A 7 ITE 934 PM Pass-By Rates [5].....	11
Figure A 8 Annual Traffic Volume Totals 2015-2024 - CDOT Route 009C, Sta 240 (S/O Tiger Rd) [4] .	12
Figure A 9 Proposed 2028 Background Roadway Improvements [3] .....	14
Figure A 10 Study Location # 1 - Proposed Southbound Left Turn Movement Re-Routing (2028) [3]	15
Figure A 11 Proposed Project Drive-Through Layout .....	16
Figure A 12 Existing Driveway Spacing .....	17
Figure A 13 Proposed Sight Triangles .....	19
Figure A 14 Departure Sight Lines– Motorist’s Perspective Looking Left/North.....	20
Figure A 15 Departure Sight Lines – Motorist’s Perspective Looking Right/South to Lake Point Dr ...	20
Figure A 16 Alternate Site Exit Signing and Marking Configuration (Optional) .....	23
Figure A 17 Estimated 2046 Total Traffic Volumes at 10 Mile Dr & N 10 Mile Dr.....	24

## List of Tables

Table 1-A: Study Locations .....	1-4
Table 1-B: Study Periods .....	1-5
Table 2-A: 2025 Existing Intersection Delay and Level of Service (LOS) Summary .....	2-8
Table 2-B: Existing Storage (Turn Bay) Lengths .....	2-9
Table 2-C: Existing Queue Lengths and Queue Ratios .....	2-9
Table 3-A: Trip Generation Summary .....	3-11
Table 5-A: Future Horizon Years Delay and LOS Summary .....	5-21
Table 5-B: Estimated Maximum 95 <sup>th</sup> Percentile Queue Lengths and Queue Ratios – 2026 .....	5-23
Table 5-C: Estimated Maximum 95 <sup>th</sup> Percentile Queue Lengths and Queue Ratios – 2046.....	5-24
Table 5-D: Fast-Food Restaurant Drive-Through Queue Generation Data .....	5-25
Table 7-A: Summary of Recommended Improvement Measures.....	7-30
Table 7-B: Key Issues Identified by the Agency and Addressed in this TIS .....	7-31

## Appendix

Table A 1 Summary of Frisco Gateway Recommendation (Trail Master Plan – 2023 Update) [1] .....	2
Table A 2 Aug 2023 Traffic Volumes CDOT Route 009C, Sta100513 (S/O I-70, Frisco) [4].....	5
Table A 3 Historic Monthly Traffic Volumes CDOT Route 009C, Sta240 (S/O Tiger Rd), 2006-2024 [4]	6
Table A-4: LOS Meaning for Signalized and Unsignalized Intersections [11].....	8
Table A 5 Summary of RTOR Observations.....	9
Table A 6 Summary of ITE Land Use Descriptions [5].....	10
Table A 7 Summary of Primary Site-Generated Trips.....	10
Table A 8 Estimated Traffic Volume Seasonal Adjustment Factor (Jan 2024 to Oct 2024)* .....	12
Table A-9: Estimated Traffic Volume Growth Factors [4] .....	13
Table A-10 Trip Generation Summary – Former Drive-Through Bank Use.....	21
Table A 11 Project Notes - Vistro Traffic Volume Input .....	26
Table A 12 Vistro Traffic Volume Input Parameters .....	27
Table A 13 Vistro Traffic Analysis Reports – Heading #s Numbers by Analysis Scenario.....	28



## Revision History

Submittal Date	Notes
February 24, 2025	Draft – for Town Review
September 9, 2025	Final – for Submittal to Town

## 1 Introduction

The purpose of this Traffic Impact Study (TIS) is to satisfy requirements by the Town of Frisco, CO (Agency) to estimate the traffic impacts associated with a proposed development on adjacent roadways and intersections in terms of existing and future traffic conditions both with and without the development. If necessary, mitigations shall also be recommended to mitigate impacts.

### 1.1 PROPOSED DEVELOPMENT

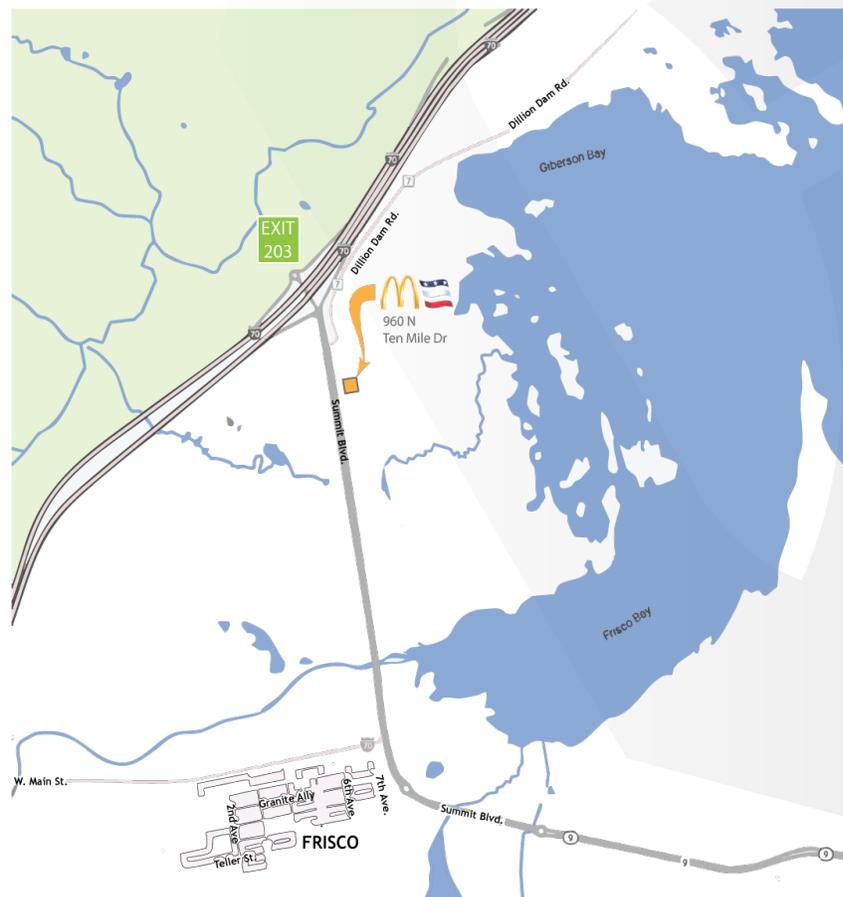
This section describes the Project. The subject of this TIS is a proposed new McDonald’s restaurant that will re-model and occupy an existing building formerly used as a drive-through bank in Frisco, Colorado.

**Project Location.** The location of the proposed restaurant and drive-through is 960 North Ten Mile Dr in Frisco, CO, as illustrated in [Figure 1-a](#). The location is approximately 0.3 miles from Interstate 70 (I-70).

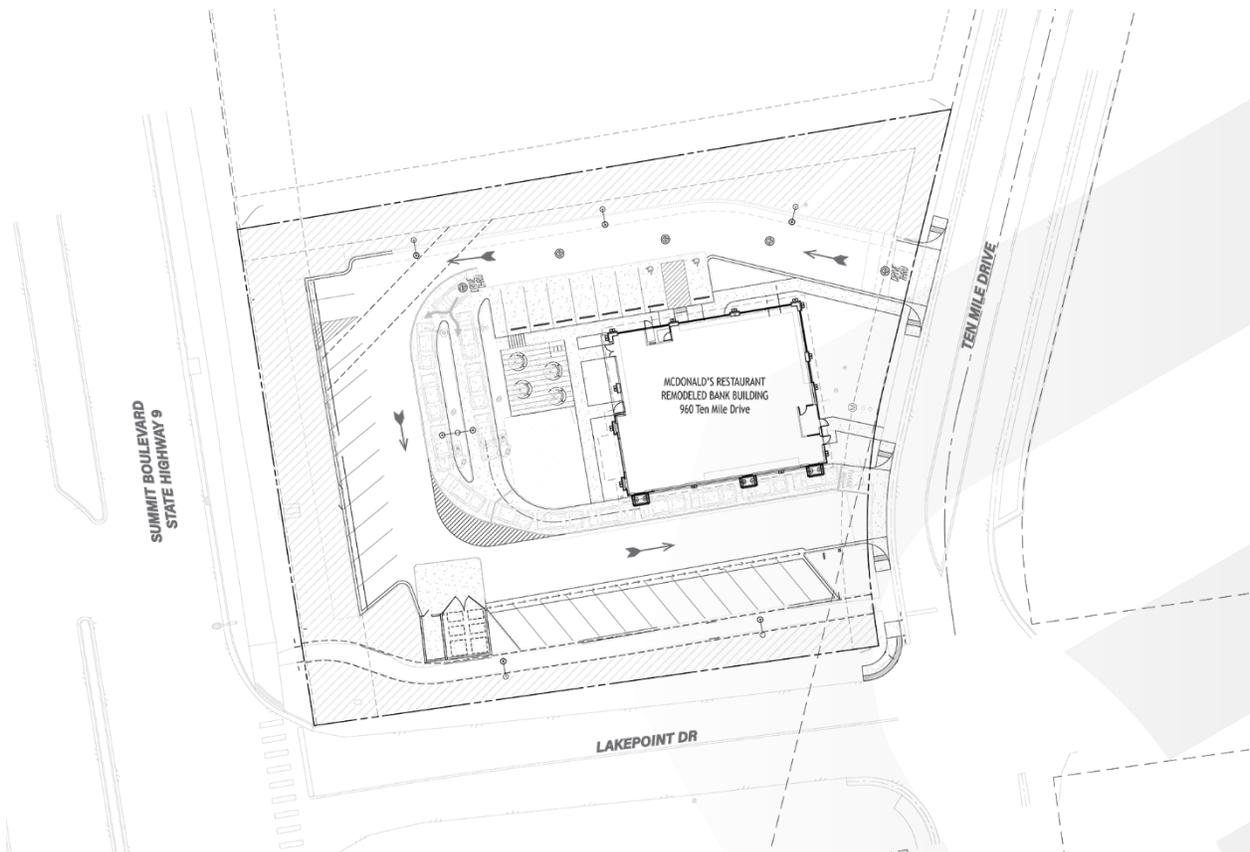
**Project Scale.** This TIS was prepared using a proposed building area of 4,364 square feet (SF). The final site plan was revised to a total footprint of 4,575 SF to accommodate a standard kitchen layout the existing floor plan could not accommodate. This minor change in gross floor area does not materially affect traffic operations or study conclusions; therefore, the TIS analyses were not updated. See the Appendix for an assessment of this change. The proposed site plan is illustrated in [Figure 1-b](#).

**Project Timing.** The proposed Project opening year is 2026.

*Figure 1-a: Vicinity Map*



*Figure 1-b: Proposed Project Site Plan (September 5, 2025) (No Scale)*



**Proposed Parking.** The proposed site plan indicates on-site parking will consist of 32 proposed parking spaces, including two accessible parking spaces, as shown in [Figure 1-b](#).

**Proposed Vehicular Access.** The access to the Project will re-use two existing accesses established by the former drive-through bank. The accesses will be converted to one-way flow in support of the one-way (counter-clockwise) site circulation indicated in [Figure 1-b](#). Both accesses currently exist along the site’s North Ten Mile Drive, and are included as Study Locations listed in [Table 1-A](#). Refer to *5 Analysis of Proposed Conditions* for a discussion of the analysis performed for the Project.

**Proposed Drive-Through Lanes.** As illustrated in the site plan presented in [Figure 1-b](#) above, Project provides a drive-through lane that splits into two lanes when customers place orders. The drive-through is serviced by two pre-sale displays, two order kiosks, and three drive-up windows (a pay window, a present window, and a 3rd window to facilitate efficient operation). Internal channelization of the outside drive-through lane consists of traversable pavement markings to allow drive-through customers to exit the drive-through lanes early (customer opts out of order,

etc.). See *5 Analysis of Proposed Conditions*, for details and analysis regarding the proposed drive-through storage capacity.

**Proposed Non-Vehicular Access.** The existing sidewalk paths providing non-vehicular access to the Project site from Summit Blvd and Lakepoint Dr will be reused. The site plan limits pedestrian access from adjacent sidewalks to specific locations, focusing pedestrian / vehicle activity at designated areas where the vehicular-pedestrian conflict can be optimized to maximize visibility and attention. A review of the Town’s Trail Master Plan reveals recommendations to improve trail connectivity in the Town [1]. Refer to the Appendix for more information about the recommendations in the Trails Master Plan in the vicinity of the Project. Summit Transit also serves the area with bus stops along North Ten Mile Dr within a short walk from the Project site. The proposed site plan also supports bicycle travel through a covered bicycle parking area, which provides a visible location for customers to park their bicycles securely.

## 1.2 TIS SCOPE

The scope of this TIS was established through a review of the agency’s TIS criteria [2] and discussions with the Agency the week of January 24, 2025. In addition to the typical impact analysis performed in a TIS, comments from a January 8, 2025 Agency Development Review Committee meeting (DRC) and follow-up TIS scoping discussions with the Agency identified the following key issues that should be addressed in this TIS. A summary of items that warranted specific discussions is included in *7 Conclusions & Recommendations*.

1. **DRC Comment:** *“Traffic study to determine increase in traffic volume at intersection of Summit Blvd. If it increases by 20%, a CDOT Access permit is required and potential intersection improvements.”* (Refer to the discussion in *5 Analysis of Proposed Conditions*.)
2. **DRC Comment:** *“South driveway does not meet standards for separation from intersection (10 Mile/Lake Point). Increased traffic at this driveway increases the nonconformity. Traffic study to analyze this issue and analyze sight distance, access control, and need for intersection improvements at 10 Mile Drive/Lake Point.”* (Refer to the discussion in *5 Analysis of Proposed Conditions*.)
3. **CDOT Project.** This TIS’s Study Locations are impacted by the Colorado Department of Transportation (CDOT) I-70 Exit 203 Interchange Improvement Project (Refer to the discussion in *4 Future Conditions*)

The following items summarize several additional routine scoping items that impact this TIS, including base assumptions for this TIS. These items are incorporated into the TIS without specific discussions provided in response.

- **DRC Comment:** “Development meets threshold of Section 180-6-12 requiring a traffic study.”
- **Study Locations.** As discussed with the Agency, several existing signalized and stop-controlled intersections near the site are included for analysis. These locations are summarized in [Table 1-A](#) and are referred to as “Study Locations” throughout this TIS.
- **Study Periods.** The peak periods to be evaluated in this TIS during which traffic volume data was gathered and analysis performed in this TIS (Study Periods) are summarized in [Table 1-B](#).
- **Study Horizons.** In addition to analysis of the existing year, 2025, the following future Horizon Year(s) will be evaluated in this TIS.
  - *Short Term Horizon - 2026.* Based on the estimated opening of the Project, 2026 will represent the Short-Term Horizon Year in this TIS.
  - *Long Term Horizon - 2046.* The year 2046 was selected with the Agency as the Long-Term Horizon Year for evaluating future traffic conditions.
- **Trip Distribution.** The proposed trip distribution used in the TIS was agreed to with the Agency in concept at the time of Scoping. The agreed trip distribution was modified slightly during the preparation of the TIS to account for traffic using Dillon Dam Rd to/from the East to reach the Project site. (Refer to additional discussion in *3 Proposed Conditions*)
- **Target LOS.** The agreed target LOS for this TIS is LOS E. Intersections that experience average delays higher than those associated with LOS E will be considered unacceptable and mitigations should be recommended to improve the LOS.
- **CDOT TIS Outline.** CDOT Region 3 may review the TIS due to the proposed use adjacent to Summit Blvd (State Highway 9), but the TIS need not follow the CDOT TIS Outline format.

**Table 1-A: Study Locations**

Location	Status	Access Type	Existing Traffic Control
#1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct	Existing	Full-Movement	Traffic Signal
#2 - Summit Blvd (SH 9) & Lakepoint Dr	Existing	Right-In / Right-Out	Two-Way STOP Control (2WSC)
#3 - Summit Blvd (SH 9) & Ten Mile Dr (South)	Existing	Full-Movement	Traffic Signal
#4 - Lakepoint Dr & North Ten Mile Dr	Existing	Full-Movement	2WSC
#5 - Dillon Dam Rd & North Ten Mile Dr	Existing	Full-Movement	2WSC (T-Int)



*Table 1-B: Study Periods*

Study Period	Description	Approx. Times with Peak One-Hour Volume Period	Month / Season
<b>AM</b>	Weekday Morning Peak Period	7:00 AM – 9:00 AM	October
<b>PM</b>	Weekday Afternoon Peak Period	4:00 PM – 6:00 PM	October
<b>Sat</b>	Weekend Peak Period	3:00 PM – 6:00 PM	January

## 2 Existing and Planned Conditions

This section evaluates the existing conditions and improvements planned in the immediate future that affect traffic in the Project’s study area.

### 2.1 EXISTING CONDITIONS

This section discusses the current traffic conditions in the study area.

**Traffic Data.** Where available, traffic data from a recent CDOT study, described in this section below, was used for this TIS [3]. The study used 2023 traffic volumes to estimate 2025 volumes. This data was used for the existing conditions analysis for this TIS. Data was available for three of the five Study Locations (#1 - *Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct*, #2 - *Summit Blvd (SH 9) & Lakepoint Dr*, and #3 - *Summit Blvd (SH 9) & Ten Mile Dr (South)*), and this TIS collected data for #4 - *Lakepoint Dr & North Ten Mile Dr*. The volumes for #5 - *Dillon Dam Rd & North Ten Mile Dr* was calculated in this TIS by balancing volume data. All locations were adjusted to be consistent with appropriate timeframes. A seasonal adjustment factor was applied to the AM and PM traffic volume data collected in January. For more information about the estimation of the seasonal adjustment factor, refer to the Appendix. The existing traffic volumes are illustrated in [Figure 2-a](#). Additional information regarding the existing traffic volume data used in this TIS is included in the Appendix.

**Roadway Network.** Several roadways are included in the Study Area, Summit Blvd (SH9), Lake Point Dr, Ten Mile Dr, and Dillon Dam Rd. The following summarizes the characteristics of each roadway.

- **Summit Blvd (SH 9).** Summit Boulevard is a Major Arterial roadway through Frisco and is also State Highway 9 (SH 9). It provides two through lanes and auxiliary right and left turn lanes along a divided highway with signalized access. The posted speed limit is 35 MPH. CDOT classifies SH 9 as an *NR-B: Non-Rural Arterial* in the Study Area, generally located near Milepost (MP) 97 [4]. State Highway 9 provides a regional connection between Interstate-70 near the Study Area and to areas as far south as Canon City, passing through Breckenridge, over the continental divide at Hoosier Pass, and to Fairplay, where it meets its first regional highway intersection.
- **Lake Point Dr.** Lakepoint Dr is a two-lane roadway with no marked turn lanes and functions like a collector roadway adjacent to the site and local street east of the Study Area. Lake Point Dr provides traffic from North Ten Mile Dr and others with direct access to and from NB Summit Blvd (SH 9) through right-turn movements only. Lake Point Dr does not currently have a posted speed limit.



- **North Ten Mile Dr** North Ten Mile Dr is a two-lane commercial collector with a two-way left-turn lane (TWLTL) supporting left turns to and from commercial properties to which it provides direct access. North Ten Mile Dr is posted at 20 MPH and its movements approaching Lake Point Dr are STOP-controlled.
- **Ten Mile Dr (South).** Ten Mile Dr, similar to North Ten Mile Dr is a commercial collector providing direct access to commercial properties. Ten Mile Dr meets Summit Blvd (SH 9) at a signalized intersection, opposite a signalized driveway to commercial big-box and other strip commercial properties.
- **Dillon Dam Rd.** Dillon Dam Rd is a two-lane roadway that functions as a collector, providing a key alternative to I-70 between Frisco and the Town of Dillon and other residential communities and key recreational areas along Dillon Reservoir. The speed limit along Dillon Dam Road approaching Summit Blvd (SH 9) is posted at 30 MPH, but it is not posted in the opposite direction. Dillon Dam Rd and Lusher Court align at their signalized intersection with Summit Blvd (SH 9) as the first intersection south of the I-70 ramp terminals located immediately to the north.
- **Lusher Ct.** Lusher Ct is a two-lane roadway, posted at 20 MPH, that currently serves as a commercial collector west of Summit Blvd (SH 9). It provides links to many commercial areas. Dillon Dam Rd and Lusher Court align at their signalized intersection with Summit Blvd (SH 9).

The roadway network within the immediate study area is illustrated in [Figure 2-a](#).

**Nearby Land Use.** The Project is situated along an area of mixed commercial sites. The current site currently houses a vacant building where a former drive-through bank once operated. Adjacent to the north are various retail including grocery and a coffee shop. Across North Ten Mile Dr to the east are professional buildings with off-street parking. Behind the commercial uses along Summit Blvd to the east are residential condominium communities. Recreational opportunities exist all around Project area, with trail heads.

**Existing Level of Service.** The Levels of Service (LOS) estimated by the operational analysis of existing conditions are summarized in [Table 2-A](#) and [Figure 2-a](#). For a description of non-default values used in the *PTV Vistro* model for this project, refer to the Appendix.

Figure 2-a: 2025 Existing Conditions and LOS

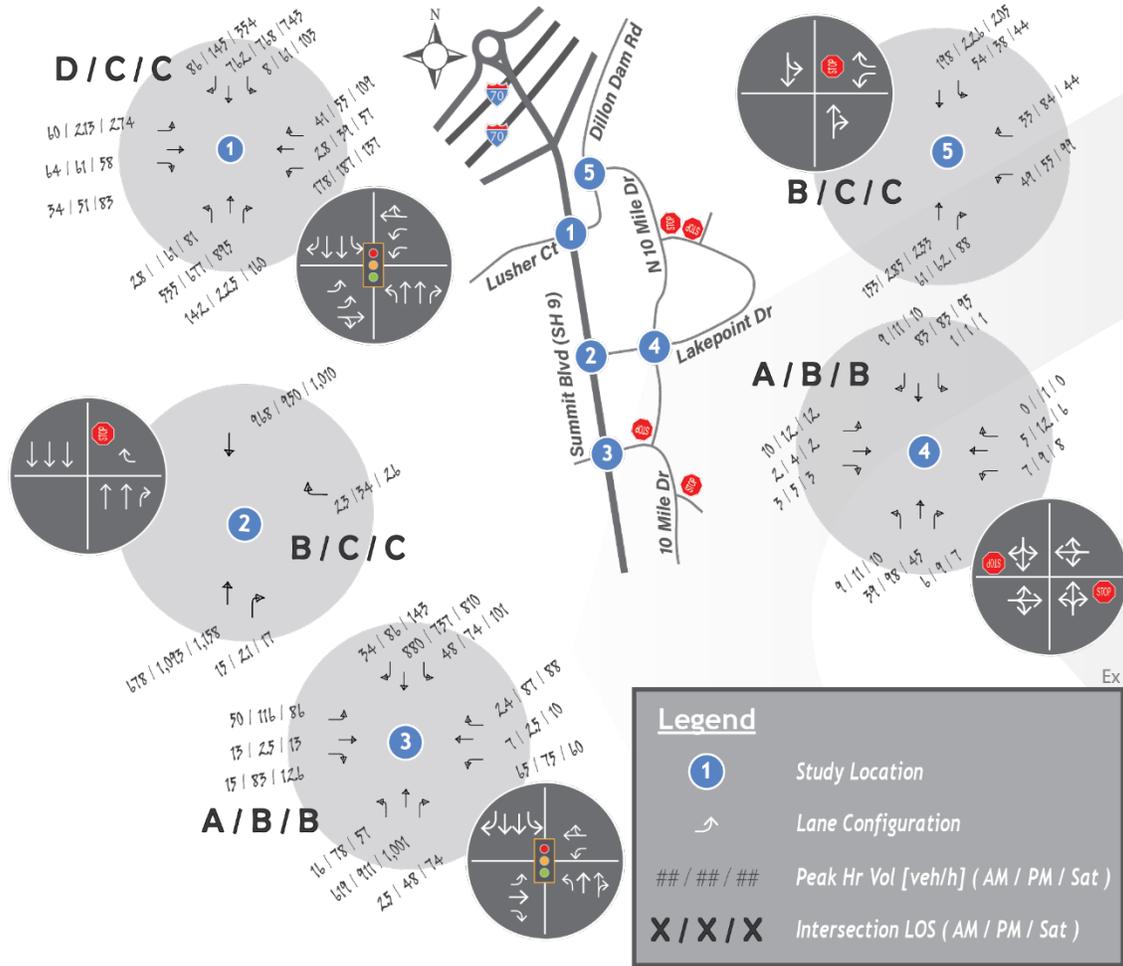


Table 2-A: 2025 Existing Intersection Delay and Level of Service (LOS) Summary

Study Location	AM	PM	SAT
1 - Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct	45.89 D	25.78 C	26.28 C
2 - Summit Blvd (SH-9) & Lakepoint Dr	0.16 B	0.23 C	0.18 C
3 - Summit Blvd (SH-9) & Ten Mile Dr	9.22 A	13.22 B	13.35 B
4 - Lakepoint Dr & North Ten Mile Dr	8.76 A	8.80 B	9.05 B
5 - Dillon Dam Rd & North Ten Mile Dr	2.61 B	3.03 C	3.61 C

Note: Numeric values represent average delay in seconds/vehicle. Two-way stop control locations report the worst movement’s delay.

Results of traffic operations analyses are reported in terms of Levels of Service (LOS). Please refer to the Appendix for information about the standard methodology used to analyze the intersections.

**Existing Queues.** Existing storage lengths for vehicular turn bays are summarized in [Table 2-B](#). Estimated 95<sup>th</sup> Percentile queues and queue ratios estimated in the existing conditions are summarized in [Table 2-C](#). For more description of these metrics, refer to *5 Analysis of Proposed Conditions*.

**Table 2-B: Existing Storage (Turn Bay) Lengths**

Location	Movement	Storage [feet]
1 - Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct	NBL	165
	NBR*	160
	SBL	180
	SBR*	325
	EBL	175
	EBR	175
2 - Summit Blvd (SH-9) & Lakepoint Dr	NBR	235
3 - Summit Blvd (SH-9) & 10 Mile Dr	NBL	145
	SBR	500
	SBL	300
	EBL*	160
	EBR*	160
4 - Lakepoint Dr & North Ten Mile Dr	WBL*	240
	NB*	205
	SB*	35
5 - Dillon Dam Rd & North Ten Mile Dr	WBL*	150
	WBR	100

Queue ratios (QR) are a calculated metric presented as a quick means to assess the portion of turn bay storage capacity used by the 95<sup>th</sup> percentile queue lengths, expressed as a percentage.

**Note:** \*Storage lane extends to the upstream intersection, so its reported length represents the distance to the first driveway or intersection.

**Table 2-C: Existing Queue Lengths and Queue Ratios**

Location	Control	Lane Group or Movement	AM	PM	SAT
1 - Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct (Signalized)	Signalized	NBL	< 1 veh	30 (18%)	<b>42 (25%)</b>
		NBR	72 (45%)	<b>142 (89%)</b>	99 (62%)
		SBL	39 (22%)	54 (30%)	<b>56 (31%)</b>
		SBR	196 (60%)	233 (72%)	<b>240 (74%)</b>
		WBL	138 (58%)	<b>144 (60%)</b>	106 (44%)
		EBL	<b>410 (234%)</b>	208 (119%)	210 (120%)
2 - Summit Blvd (SH-9) & Lakepoint Dr (2WSC)	2WSC	WBR	< 1 veh	< 1 veh	< 1 veh
3 - Summit Blvd (SH-9) & Ten Mile Dr (Signalized)	Signalized	NBL	< 1 veh	<b>33 (23%)</b>	< 1 veh
		SBL	< 1 veh	<b>59 (20%)</b>	30 (10%)
		SBR	< 1 veh	<b>113 (21%)</b>	56 (10%)
		WBL	<b>91 (38%)</b>	80 (33%)	82 (34%)
		EBL	75 (47%)	<b>174 (109%)</b>	130 (81%)
4 - Lakepoint Dr & North Ten Mile Dr (2WSC)	2WSC	NB	< 1 veh	< 1 veh	< 1 veh
		SB	< 1 veh	< 1 veh	< 1 veh
		EBL	< 1 veh	< 1 veh	< 1 veh
		WBL	< 1 veh	< 1 veh	< 1 veh
5 - Dillon Dam Rd & North Ten Mile Dr (2WSC)	2WSC	SBL	< 1 veh	< 1 veh	< 1 veh
		WBL	< 1 veh	29 (29%)	<b>34 (34%)</b>
		WBR	< 1 veh	29 (29%)	<b>34 (34%)</b>

**Notes:**

- XXX (YY%) = 95<sup>th</sup> Percentile Queue [ft/ln] (Queue Ratio)
- Bold indicates Maximum Queue for the Study Periods

## 2.2 PLANNED CONDITIONS

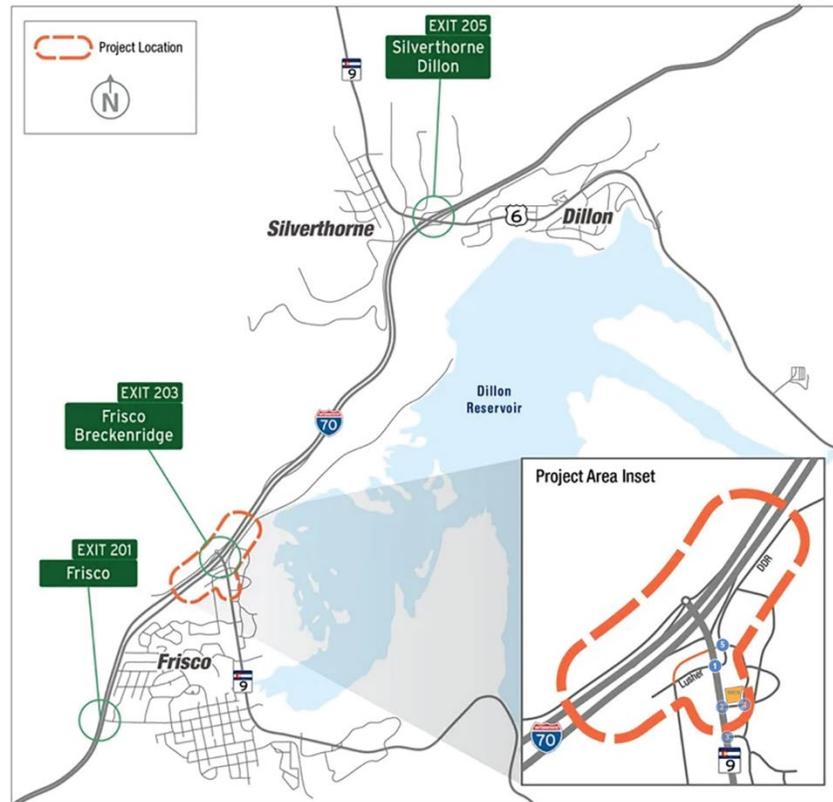
This section describes background roadway improvements that are planned in the Study Area.

**I-70 Exit 203 Interchange Improvements.** CDOT will improve two of the Study Locations by 2028 as part of the *I-70 Exit 203 Interchange Improvements* project (the “*CDOT Interchange Project*”). The key functional changes at the two affected Study Locations are summarized below. Refer to the Appendix for more information about the schedule and a graphical representation of the proposed improvements. **Figure 2-b**

offers an overview of the CDOT Interchange Project location.

- Construct a new frontage road, which connects Lusher Ct and Dillon Dam Road via an underpass of Summit Blvd (SH 9), shown in **Figure 2-b**.
- Construct a roundabout where the proposed frontage road meets Dillon Dam Rd at #5 - Dillon Dam Rd & North Ten Mile Dr
- Re-configure #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct to remove all turn movements that conflict with Summit Blvd (except westbound right turns).
- Re-direct all affected movements to the Frontage Road.
- Channelize right turns movements to/from Lusher Ct and Dillon Dam Rd. Westbound rights from Dillon Dam Rd to Northbound Summit Blvd (SH 9) will use two lanes, and be signalized.

**Figure 2-b: Planned CDOT Project – I-70 Exit 203 Interchange Improvements [6]**



*Upon completion of the CDOT Interchange Project in 2028, the intersection of #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct- all intersection conflicts will have been removed except between northbound through and westbound right turn movements. These two turn movements alone will be signalized. All other movements will flow freely.*

### 3 Proposed Conditions

This section discusses the vehicular trips that will travel to/from the Project after opening (Project trips) and estimates specifically where each trip will pass through the Study Locations using Trip Distribution and Trip Assignment processes.

#### 3.1 SITE TRIP GENERATION

This section documents the estimated Project Trips based on the trip generation analysis performed for the Project. The analysis is based on rates available from the Institute of Transportation Engineer’s (ITE) Trip Generation Manual (11<sup>th</sup> edition) [5] (TGM).

**Total Project Trips.** The total project trips are based on the land uses applied to this project. The Appendix contains descriptions of the land use description from the TGM.

**Internal Trip Capture.** This Project did not apply internal trip capture reductions.

**Pass-By Trip Reductions.** Pass-by trip reductions have been applied for the Project due to the draw the Project’s drive-through restaurant has on traffic already on the roadway network. The pass-by rates applied are based on data provided in the TGM and are presented in the Appendix. [Table 3-A](#) summarizes the results of the trip generation analysis and the net new Project trips analyzed in this TIS.

*Table 3-A: Trip Generation Summary*

ITE Code	Qty	AM Trips [veh/h]				PM Trips [veh/h]				Sat Trips [veh/h]			
		Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
934 <sup>1</sup>	4.364 <sup>2</sup>	44.61	99	96	195	33.03	75	69	144	55.25	123	118	241
Pass-By Rate <sup>2</sup>			49	48	97		41	37	79		61	59	120
Net New Trips			50	48	98		34	32	65		62	59	121

**Notes:**

1. ITE Code 934: *Fast-Food Restaurant with Drive-Through Window*
  - o Independent Variable: 1000 Sq. Ft. GFA
  - o AM: 51% In, 49% Out
  - o PM: 52% In, 48% Out
  - o Sat: 51% In, 49% Out
  - o Total Weekday Trips: 2,040 (@ 467.48 trips per 1000 Sq. Ft. GFA)
2. 50% Pass By rate applied. Refer to the discussion above and the data presented in [Figure A 6](#), in the Appendix.
3. Analysis performed at the original planned GFA of 4,364 SF. In development, the GFA was increased to 4,575 SF and is determined to not significantly impact analysis. In agreement with the Agency, analysis of this increase is included in the Appendix for reference.

### 3.2 TRIP DISTRIBUTION

The proposed distribution of site-generated trips to and from the site was estimated based on the heavy draw the Project is expected to have on interstate travelers.

As discussed in *1 Introduction*, the Trip Distribution percentages for this TIS were agreed upon during the scoping process. The Trip Distribution included 70% to and from I-70 and 30% to and from the south of the Project site along Summit Blvd (SH 9). A minor adjustment to the agreed trip distribution was incorporated into this analysis since then, specifically redistributing 10% of Project trips to/from the east of the Project along Dillon Dam Rd due to the regional importance of this non-interstate alternative route between the towns of Frisco and Dillon. The 10% difference was balanced by evenly reducing the originally agreed trip distributions. The trip distribution used for this TIS is illustrated in [Figure 3-a](#) and [Figure 3-b](#).

### 3.3 SITE-GENERATED TRIPS

The trips generated by the Project, shown by turn movement at each Study Location in the years 2026 and 2046, are illustrated in [Figure 3-a](#) and [Figure 3-b](#) in accordance with the Trip Distribution. The Trip Assignments in each figure are slightly different due to the re-routing of traffic that the CDOT Interchange Project scheduled to be completed in 2028 will require. The figures display the net new site trips, after accounting for reductions due to Pass-By trips described above. The Appendix also presents a tabular summary of the Primary Project trips. Pass by reductions were only applied to turn movements toward the Project from Summit Blvd (SH 9).

**Figure 3-a: Estimated Net New Site-Generated Trip Distribution and Assignment (2026)**

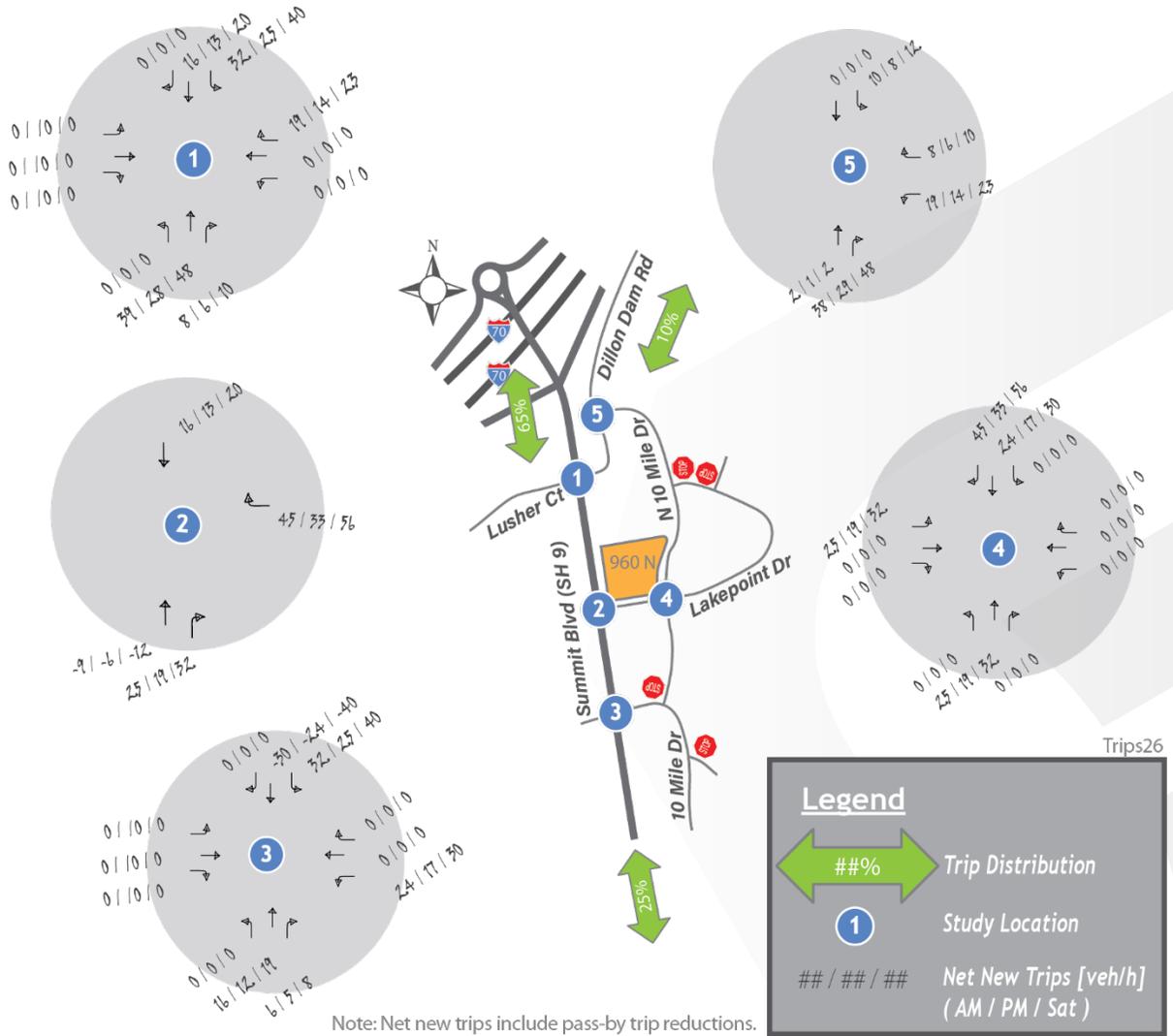
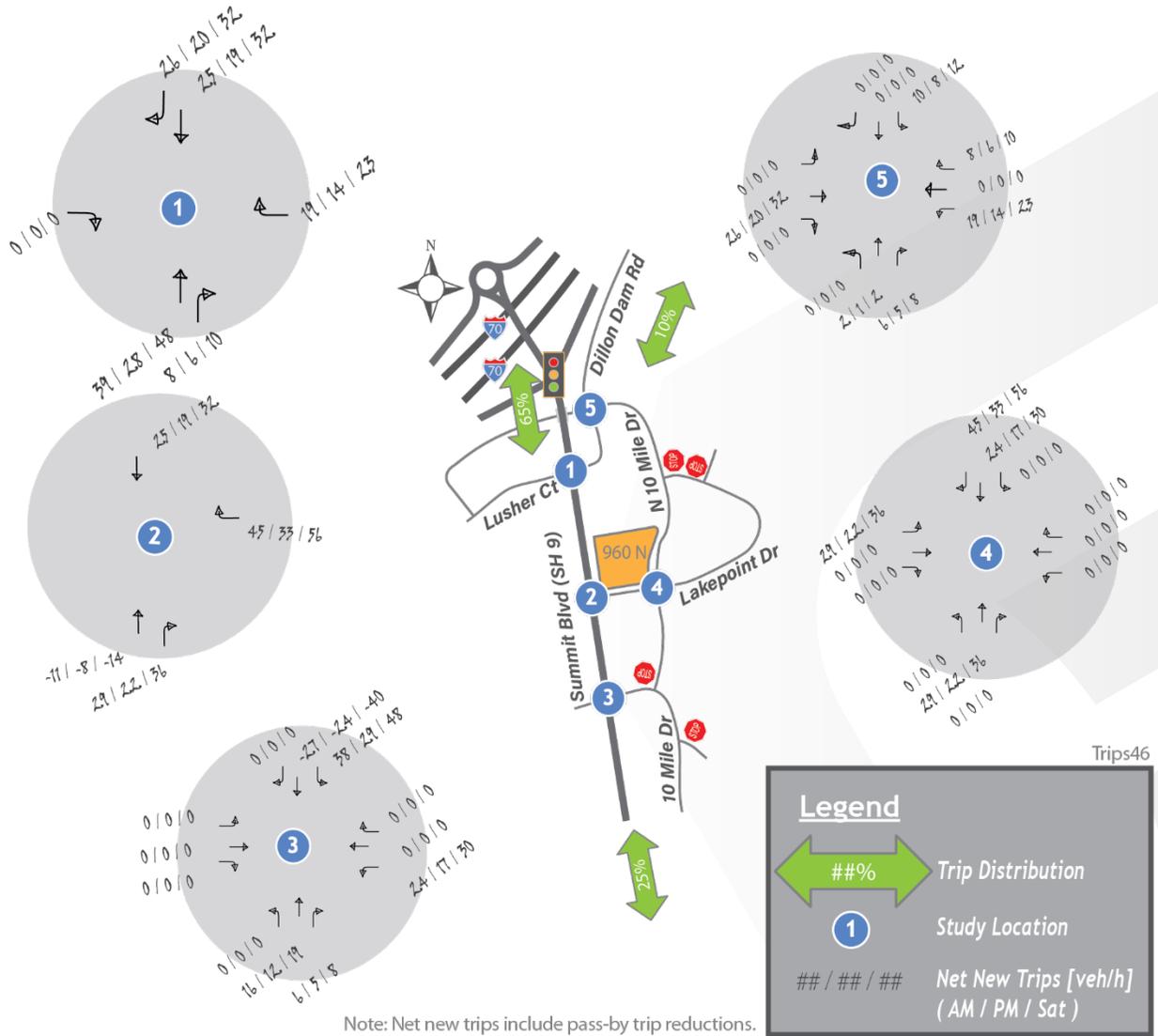


Figure 3-b: Estimated Net New Site-Generated Trip Distribution and Assignment (2046)



## 4 Future Conditions

The following sections describe traffic conditions expected to be present in future Background Traffic and Total Traffic conditions.

### 4.1 BACKGROUND TRAFFIC CONDITIONS

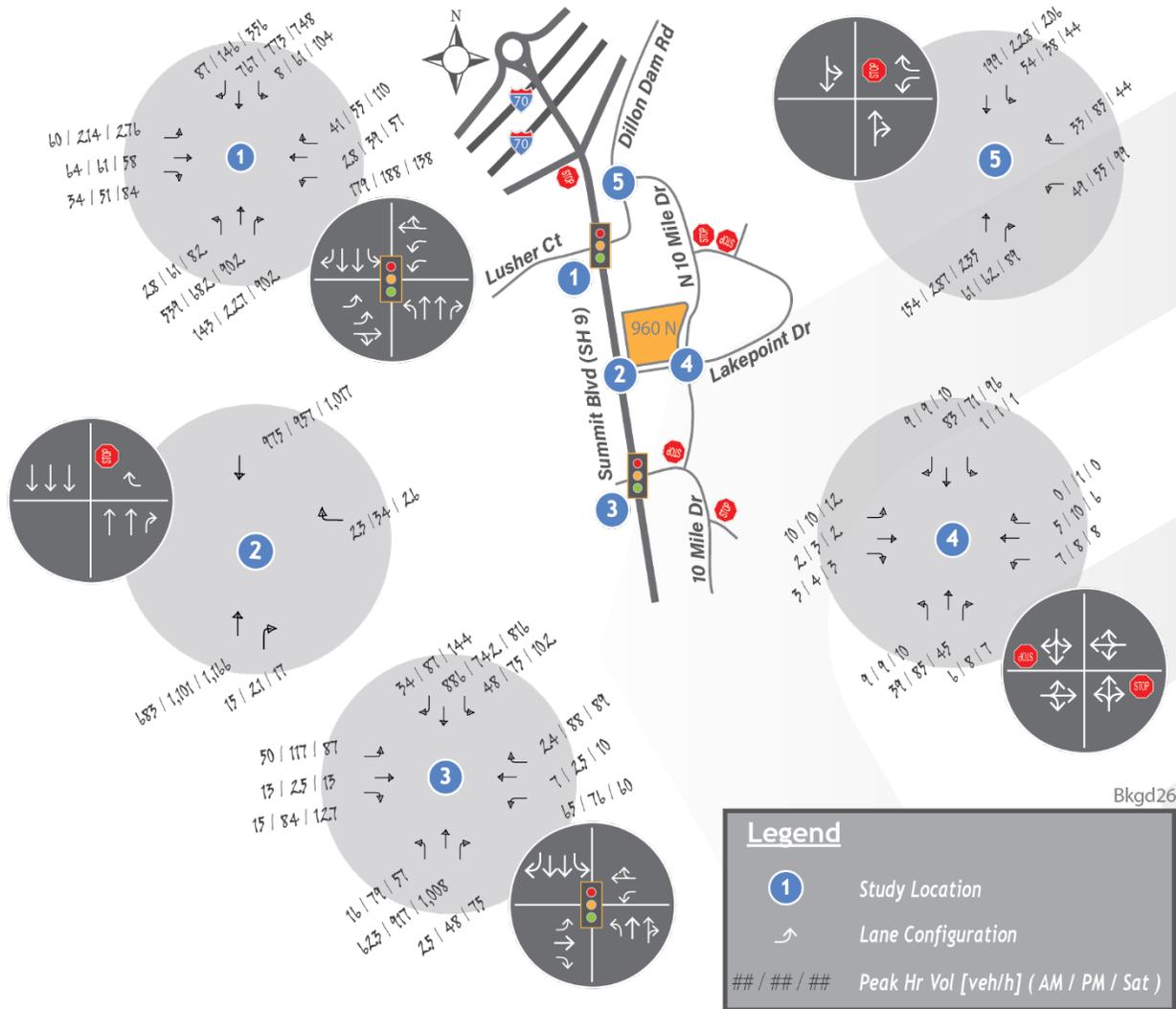
This section addresses the development of estimated Background Traffic volumes, referring to the traffic volumes that would be present without the Project (Project’s no-build scenario). Background Traffic conditions, including traffic volumes and intersection lane configurations expected in the Short-Term and Long-Term horizon years are shown in [Figure 4-a](#) and [Figure 4-b](#).

**Short-Term Background Conditions – Roadway Network.** The CDOT Interchange Project (described in *2 Existing and Planned Conditions*) will begin construction in the same year as the Project’s opening year and Short-Term Study Horizon. The final improvements are not expected to be completed until 2028, so the Short-Term Background conditions analyzed in this TIS account for the CDOT Interchange No Build Scenario for this horizon. Further, this TIS analysis does not account for temporary work zone traffic control that will be necessary to maintain traffic flow. The CDOT project aims to improve traffic operations, so the analysis of the existing conditions analysis will present a more conservative Short-Term Background conditions analysis. The intersection lane configuration in the future roadway network expected in the Short-Term Background conditions is shown in [Figure 4-a](#).

**Short-Term Background Conditions – Estimated Traffic Volumes.** The CDOT Study completed in November 2023 presents estimated 2025 traffic volume data for three Study Locations, #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct, #3 - Summit Blvd (SH 9) & Ten Mile Dr (South), and #5 - Dillon Dam Rd & North Ten Mile Dr. The project are expected to be completed in 2028 [6]. The 2024 traffic volumes from the CDOT Study used as base inputs at the relevant Study Locations and adjusted by growth factors to reach the Study Horizon, 2026. For more information on the estimation of growth factors, refer to the Appendix. The estimated Short-Term Background Traffic volumes are shown in [Figure 4-b](#).

**Long-Term Background Conditions – Roadway Network.** As described in *2 Existing and Planned Conditions*, major improvements to #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct and #5 - Dillon Dam Rd & North Ten Mile Dr are planned in the CDOT Interchange Project. No other known background roadway improvements are expected in the Study Area, so the 2046 background conditions reflect those improvements. The specific intersection lane configuration in the roadway network expected in the Long-Term horizon years is shown in [Figure 4-b](#). Additional information about the background roadway improvements is available in the Appendix.

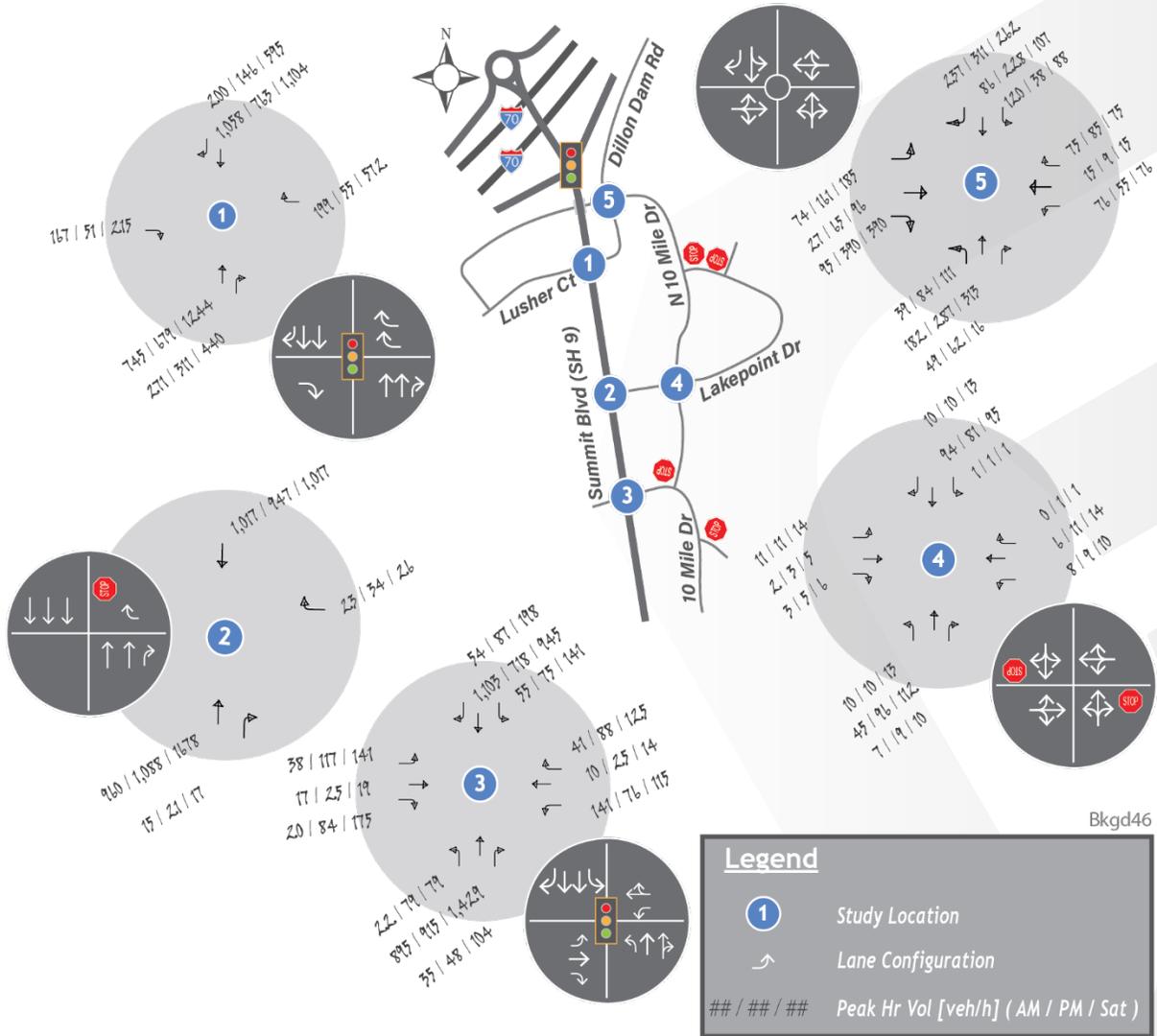
**Figure 4-a: Short-Term Background Traffic Conditions (2026)**



Based on the proposed enhancements at #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct, a basic optimization of traffic signal timing yield similar conclusions to those of the CDOT study. Specifically, this TIS found that the reduced conflicts and overall simplicity allows the shortening of the cycle length resulting in reduced delays at #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct. While not included as Study Locations, it was also noted that a shorter cycle length is compatible with new traffic signals proposed at the I-70 ramp terminals. Ultimately, the Long-Term analysis employs cycle lengths of 45 seconds at #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct and 90 seconds at #3 - Summit Blvd (SH 9) & Ten Mile Dr (South), which reduces delays at that intersection as well without fully compromising coordination reliability due to pedestrian crossing times. A more thorough optimization of traffic signal timings based on actual conditions will be necessary upon

completion of construction, but analysis indicates that significant improvements to the corridor are possible at #3 - Summit Blvd (SH 9) & Ten Mile Dr (South) through signal timing adjustments due to the significant investment in capacity improvements elsewhere.

**Figure 4-b: Long-Term Background Traffic Conditions (2046)**



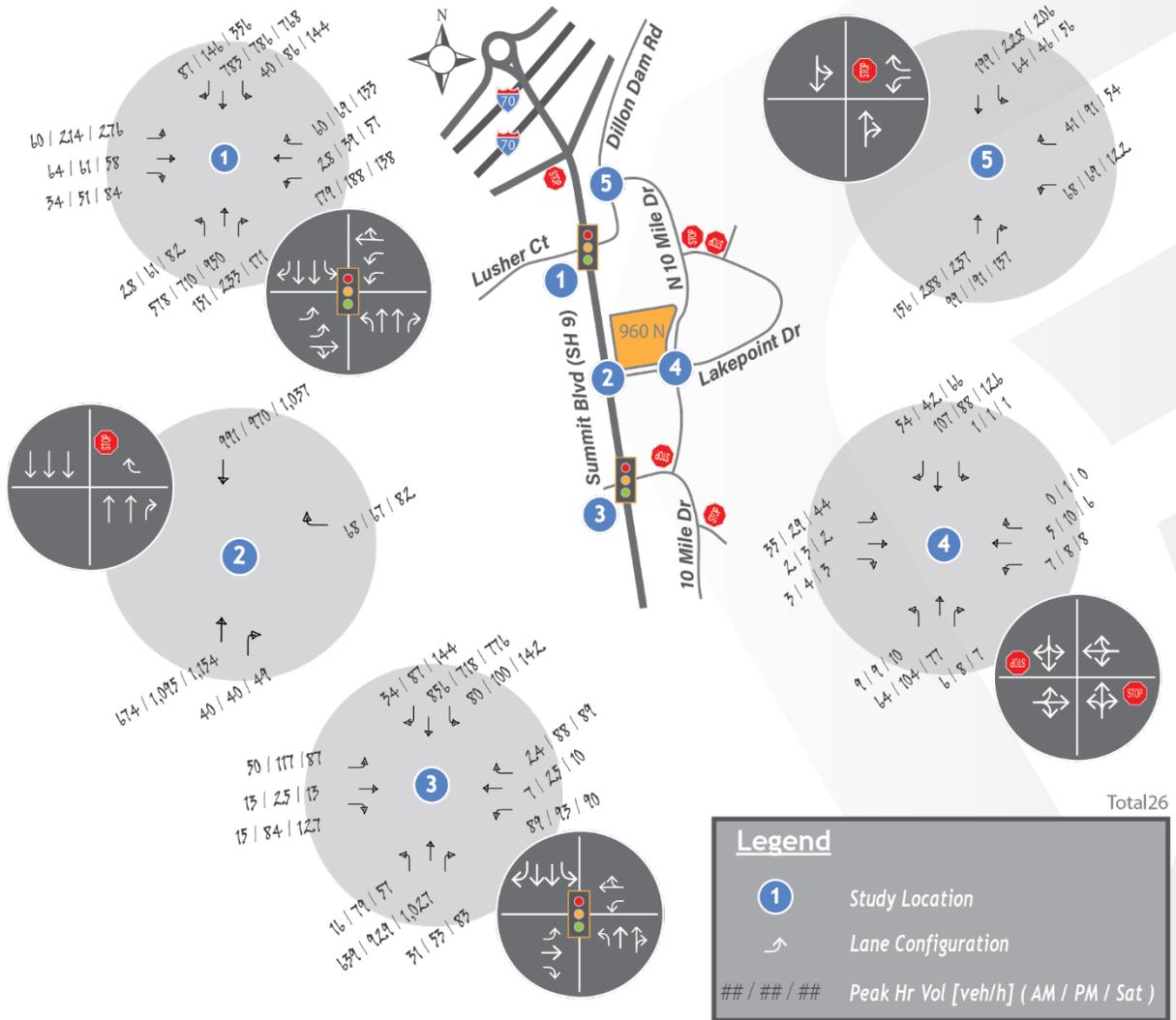
**Long-Term Background Conditions – Estimated Traffic Volumes.** The study performed by CDOT in November 2023 presents forecasted 2045 traffic volume data for three Study Locations, #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct, #3 - Summit Blvd (SH 9) & Ten Mile Dr (South), and #5 - Dillon Dam Rd & North Ten Mile Dr. The 2045 traffic volumes from the CDOT Study were used as base volume inputs at the relevant Study Locations and adjusted by growth factors to reach

the Study Horizon, 2046. For more information on the estimation of growth factors, refer to the Appendix. The estimated Long-Term Background Traffic volumes are shown in **Figure 4-b** above.

### 4.2 TOTAL TRAFFIC CONDITIONS

This section describes the Total Traffic conditions, representing the traffic volume in a scenario where the Project is built.

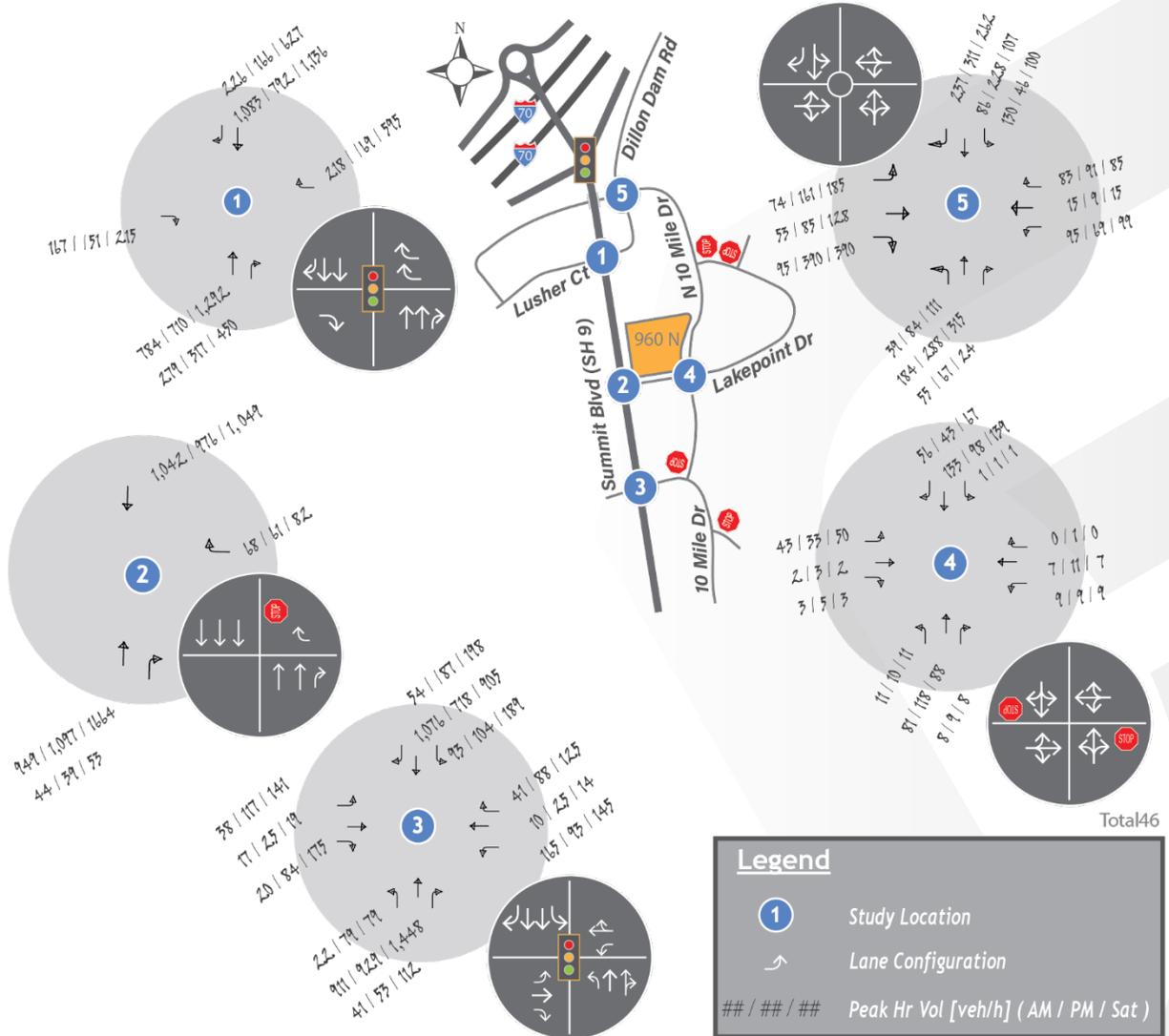
**Figure 4-c: Short-Term Total Traffic Conditions (2026)**



**Total Traffic Volumes.** To enable the analysis of the impacts of the site-generated traffic in each of the horizon study periods, the site-generated traffic volumes developed in 3 Proposed Conditions are added to the respective peak periods in both the Short-Term and Long-Term Background Traffic volume scenarios above. Doing so at a granular turn-movement level creates the Total Traffic

volume data used in each horizon year. The Short-Term Total Traffic volumes are illustrated in **Figure 4-c** above and the Long-Term Total Traffic volumes are illustrated in **Figure 4-d** below.

**Figure 4-d: Long-Term Total Traffic Conditions (2046)**



## 5 Analysis of Proposed Conditions

This section reports on the evaluation of the Study Locations' performance with respect to various measures. Each analysis considers measures of effectiveness (MoE) including level of service and queueing analysis.

### 5.1 LEVEL OF SERVICE (LOS)

The roadway network and operational characteristics were modeled using *PTV Vistro 2025* (PTV Vistro) software using the *Highway Capacity Manual 7th Edition* (HCM) methodology.

The intersection and movement delays and LOS are summarized in [Table 5-A](#) and [Figure 5-a](#). Roundabout analysis produces levels of service by approach lane, which is reported for #5 - *Dillon Dam Rd & North Ten Mile Dr* in 2046.

**Overview of Results.** The operations analysis found that operations at all Study Locations operate at acceptable average levels of service, but individual movements at two Study Locations fall below acceptable levels of delay in 2026 Background Traffic conditions. However, Background Traffic conditions in 2046 Background Traffic, 20 years later, operate with less delay than in 2026. The introduction of Project trips adds delay to all movements where Project trips pass through, but all intersections and movements operate at acceptable LOS.

The analysis of Background Traffic conditions in the Short-Term and Long-Term Horizon Years revealed the intersections of #1 - *Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct* and #3 - *Summit Blvd (SH 9) & Ten Mile Dr (South)* operate at acceptable average levels of service, but several minor approach movements experience higher and even unacceptable levels of service in 2026 that are later resolved in 2046. Other study locations during other study periods show that each operates at an acceptable level of service during the horizon years. The 2026 Background Traffic Conditions do not account for capacity reductions caused by work zone activity and traffic control expected during the construction seasons between 2026 and 2028.

**Table 5-A: Future Horizon Years Delay and LOS Summary**

Study Location	2026						2046					
	BACKGROUND			TOTAL			BACKGROUND			TOTAL		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
<b>1 - Summit Blvd (SH-9) &amp; Dillon Dam Rd / Lusher Ct</b>	45.89 D	25.79 C	26.30 C	45.35 D	26.23 C	27.20 C	4.65 A	4.65 A	4.65 A	4.96 A	4.89 A	5.05 A
<b>2 - Summit Blvd (SH-9) &amp; Lakepoint Dr</b>	0.16 B	0.25 C	0.18 C	0.49 B	0.51 C	0.63 C	0.16 B	0.25 C	0.21 C	0.49 C	0.46 C	0.82 D
<b>3 - Summit Blvd (SH-9) &amp; Ten Mile Dr</b>	9.22 A	14.87 B	13.46 B	10.84 B	15.17 B	14.01 B	9.04 A	14.12 B	16.03 B	10.79 B	14.88 B	17.26 B
<b>4 - Lakepoint Dr &amp; North Ten Mile Dr</b>	8.94 A	8.87 B	9.06 B	9.58 B	9.39 B	9.95 B	8.87 A	9.01 B	9.16 B	10.01 B	9.60 B	10.22 B
<b>5 - Dillon Dam Rd &amp; North Ten Mile Dr</b>	2.60 B	3.04 C	3.63 C	3.17 B	3.56 C	4.60 C	A	A	B	A	A	B

Study Location	Mvmt	2026						2046					
		BACKGROUND			TOTAL			BACKGROUND			TOTAL		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1 - Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct	NBL	6.46 A	9.63 A	10.41 B	7.10 A	10.31 B	11.68 B	-	-	-	-	-	-
	NBT	13.52 B	17.53 B	18.17 B	14.75 B	18.70 B	20.13 C	3.96 A	3.96 A	3.96 A	4.19 A	4.13 A	4.28 A
	NBR	10.41 B	14.55 B	14.19 B	11.18 B	15.34 B	15.37 B	-	-	-	-	-	-
	SBL	7.94 A	11.97 B	12.12 B	10.01 B	12.93 B	15.70 B	-	-	-	-	-	-
	SBT	11.29 B	15.87 B	16.69 B	12.21 B	16.78 B	18.22 B	-	-	-	-	-	-
	SBR	11.64 B	16.32 B	17.17 B	12.38 B	17.05 B	18.38 B	-	-	-	-	-	-
	EBL	299.1 F	57.49 E	58.59 E	299.1 F	57.66 E	58.59 E	-	-	-	-	-	-
	EBT	57.98 E	49.18 D	47.87 D	54.79 D	48.38 D	45.97 D	-	-	-	-	-	-
	EBR	57.98 E	49.18 D	47.87 D	54.79 D	48.38 D	45.97 D	-	-	-	-	-	-
	WBL	59.55 E	59.10 E	59.14 E	59.55 E	57.58 E	58.61 E	-	-	-	-	-	-
	WBT	62.70 E	62.82 E	62.22 E	61.75 E	61.40 E	60.44 E	-	-	-	-	-	-
WBR	-	-	-	-	-	-	21.03 C	21.03 C	21.03 C	21.16 C	21.12 C	21.06 C	
2 - Summit Blvd (SH-9) & Lakepoint Dr	WBR	12.06 B	15.45 C	15.78 C	12.75 B	16.59 C	17.99 C	13.94 B	15.33 C	22.19 C	15.07 C	16.35 C	28.57 D
3 - Summit Blvd (SH-9) & Ten Mile Dr	NBL	2.49 A	5.28 A	4.45 A	3.04 A	5.28 A	4.45 A	2.55 A	5.23 A	6.70 A	3.30 A	5.25 A	6.72 A
	NBT	6.52 A	11.62 B	10.81 B	8.33 A	11.89 B	11.10 B	7.43 A	12.76 B	15.60 B	9.78 A	13.90 B	17.34 B
	NBR	6.54 A	11.64 B	10.84 B	8.35 A	11.91 B	11.13 B	7.44 A	12.79 B	15.63 B	9.81 A	13.94 B	17.40 B
	SBU	2.95 A	6.91 A	6.25 A	4.26 A	7.66 A	7.49 A	3.09 A	6.65 A	10.52 B	4.92 A	7.50 A	12.63 B
	SBL	2.95 A	6.91 A	6.25 A	4.26 A	7.66 A	7.49 A	3.09 A	6.65 A	10.52 B	4.92 A	7.50 A	12.63 B
	SBT	5.50 A	9.59 A	8.76 A	6.64 A	9.59 A	8.76 A	6.12 A	10.20 B	12.01 B	7.43 A	10.64 B	12.85 B
	SBR	3.97 A	7.34 A	7.07 A	4.82 A	7.34 A	7.07 A	4.49 A	7.75 A	10.16 B	5.46 A	8.08 A	10.85 B
	EBL	58.19 E	55.27 E	57.26 E	54.98 D	55.27 E	57.26 E	44.67 D	41.13 D	39.97 D	40.93 D	41.31 D	40.42 D
	EBT	51.83 D	43.10 D	44.21 D	48.79 D	43.10 D	44.21 D	39.02 D	31.67 C	28.98 C	36.08 D	30.87 C	27.79 C
	WBL	58.24 E	46.90 D	49.22 D	57.17 E	47.80 D	51.03 D	45.07 D	35.05 D	31.36 C	42.54 D	35.74 D	32.47 C
	WBT	52.49 D	45.11 D	46.89 D	49.25 D	45.11 D	46.89 D	40.33 D	33.2 C	31.33 C	36.88 D	32.33 C	29.97 C
4 - Lakepoint Dr & North Ten Mile Dr	NBL	9.96 A	10.26 B	10.25 B	11.56 B	11.49 B	12.54	9.90 A	10.54 B	11.07 B	12.60	11.97	13.19
	NBT	9.63 A	10.03 B	9.75 A	10.30 B	10.62 B	10.69 B	9.60 A	10.18 B	10.49 B	10.75 B	10.91 B	10.99 B
	NBR	8.65 A	9.00 A	8.72 A	8.94 A	9.29 A	9.15 A	8.64 A	9.11 A	9.35 A	9.21 A	9.49 A	9.34 A
	SBL	9.76 A	10.23 B	10.00 B	11.03 B	11.26 B	11.81 B	9.71 A	10.50 B	11.00 B	11.91 B	11.72 B	12.37 B
	SBT	9.88 A	9.88 A	10.05 B	10.81 B	10.55 B	11.36 B	9.84 A	10.00 B	10.25 B	11.40 B	10.77 B	11.72 B
	SBR	8.91 A	8.86 A	9.03 A	9.45 A	9.23 A	9.83 A	8.89 A	8.96 A	9.12 A	9.86 A	9.37 A	10.07 B
	EBL	7.24 A	7.26 A	7.25 A	7.28 A	7.29 A	7.30 A	7.24 A	7.26 A	7.27 A	7.30 A	7.29 A	7.31 A
	WBL	7.24 A	7.24 A	7.24 A	7.24 A	7.24 A	7.24 A	7.24 A	7.24 A	7.25 A	7.24 A	7.24 A	7.24 A
5 - Dillon Dam Rd & North Ten Mile Dr	NB	-	-	-	-	-	-	A	A	B	A	A	B
	SB1	-	-	-	-	-	-	A	A	A	A	A	A
	SB2	-	-	-	-	-	-	A	A	A	A	A	A
	SBL	7.77 A	8.10 A	8.04 A	7.88 A	8.20 A	8.20 A	-	-	-	-	-	-
	EB	-	-	-	-	-	-	A	B	B	A	C	C
	WB	-	-	-	-	-	-	A	A	A	A	A	A
	WBL	13.59 B	16.53 C	16.75 C	14.93 B	18.14 C	19.85 C	-	-	-	-	-	-
	WBR	10.39 B	12.74 B	13.25 B	11.30 B	13.93 B	15.74 C	-	-	-	-	-	-

**Note:** Numeric values represent average delay in seconds/vehicle.

Figure 5-a: Background Traffic LOS

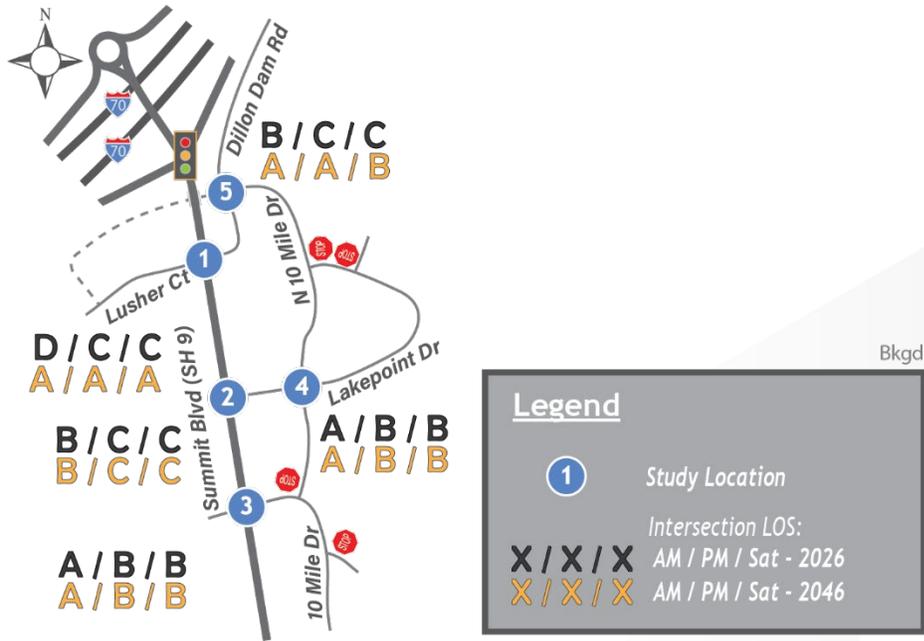
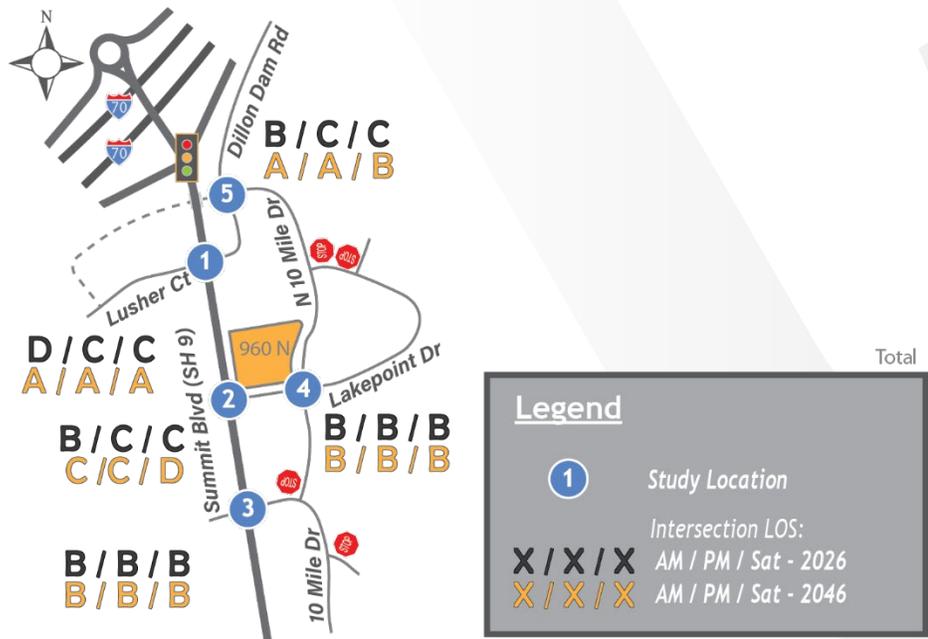


Figure 5-b: Total Traffic LOS



## 5.2 QUEUING ANALYSIS – ROADWAYS

This section summarizes the queue analysis at the Study Locations in the Short Term and Long Term horizon years. Queue analysis was performed using *HCM* methodology within PTV Vistro. **Table 5-B** summarizes the queue lengths for the Study Periods. This TIS presents a separately calculated metric known as the Queue Ratio (QR). The QR represents the portion of the storage capacity used by the queue, expressed as a percentage. (Storage lengths are available in **Table 2-B** above.)

**Table 5-B: Estimated Maximum 95<sup>th</sup> Percentile Queue Lengths and Queue Ratios – 2026**

		BACKGROUND			TOTAL		
		AM	PM	SAT	AM	PM	SAT
<b>1 - Summit Blvd (SH-9) &amp; Dillon Dam Rd / Lusher Ct (Signalized)</b>	NBL	< 1 veh	30 (18%)	<b>42 (25%)</b>	< 1 veh	31 (19%)	<b>45 (27%)</b>
	NBR	72 (45%)	<b>144 (90%)</b>	100 (63%)	80 (50%)	<b>153 (96%)</b>	111 (69%)
	SBL	39 (22%)	54 (30%)	<b>56 (31%)</b>	58 (32%)	66 (37%)	<b>86 (48%)</b>
	SBR	196 (60%)	233 (72%)	<b>240 (74%)</b>	203 (62%)	239 (74%)	<b>248 (76%)</b>
	WBL	139 (58%)	<b>145 (60%)</b>	106 (44%)	139 (58%)	<b>143 (60%)</b>	106 (44%)
	EBL	<b>410 (234%)</b>	208 (119%)	210 (120%)	<b>410 (234%)</b>	208 (119%)	210 (120%)
<b>2 - Summit Blvd (SH-9) &amp; Lakepoint Dr (2WSC)</b>	WBR	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
<b>3 - Summit Blvd (SH-9) &amp; Ten Mile Dr (Signalized)</b>	NBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
	SBL	< 1 veh	24 (8%)	<b>31 (10%)</b>	< 1 veh	33 (11%)	<b>45 (15%)</b>
	SBR	< 1 veh	35 (6%)	<b>57 (11%)</b>	< 1 veh	35 (6%)	<b>57 (11%)</b>
	WBL	<b>91 (38%)</b>	80 (33%)	82 (34%)	126 (53%)	105 (44%)	<b>128 (53%)</b>
	EBL	75 (47%)	<b>175 (109%)</b>	133 (83%)	73 (46%)	<b>175 (109%)</b>	133 (83%)
<b>4 - Lakepoint Dr &amp; North Ten Mile Dr (2WSC)</b>	NBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
	SBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	<b>25 (25%)</b>
	EBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
	WBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
<b>5 - Dillon Dam Rd &amp; North Ten Mile Dr (2WSC)</b>	SBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
	WBL	< 1 veh	29 (29%)	<b>34 (34%)</b>	21 (21%)	38 (38%)	<b>52 (52%)</b>
	WBR	< 1 veh	29 (29%)	<b>34 (34%)</b>	21 (21%)	38 (38%)	<b>52 (52%)</b>

**Notes:**

- XXX (YY%) = 95<sup>th</sup> Percentile Queue [ft/ln] (Queue Ratio)
- Bold indicates Maximum Queue for the Study Periods

**Table 5-C: Estimated Maximum 95<sup>th</sup> Percentile Queue Lengths and Queue Ratios – 2046**

		BACKGROUND			TOTAL		
		AM	PM	SAT	AM	PM	SAT
<b>1 - Summit Blvd (SH-9) &amp; Dillon Dam Rd / Lusher Ct (Signalized: WBR x NBT)</b>	WBR	24 (10%)	24 (10%)	24 (10%)	28 (12%)	28 (12%)	29 (12%)
<b>2 - Summit Blvd (SH-9) &amp; Lakepoint Dr (2WSC)</b>	WBR	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	<b>41 (41%)</b>
<b>3 - Summit Blvd (SH-9) &amp; Ten Mile Dr (Signalized)</b>	NBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	<b>18 (12%)</b>
	SBL	< 1 veh	< 1 veh	<b>46 (15%)</b>	< 1 veh	29 (10%)	<b>71 (24%)</b>
	SBR	< 1 veh	30 (6%)	<b>82 (15%)</b>	< 1 veh	31 (6%)	<b>86 (16%)</b>
	WBL	<b>68 (28%)</b>	58 (24%)	54 (23%)	<b>91 (38%)</b>	76 (32%)	84 (35%)
	EBL	42 (26%)	126 (79%)	<b>151 (94%)</b>	40 (25%)	127 (79%)	<b>152 (95%)</b>
<b>4 - Lakepoint Dr &amp; North Ten Mile Dr (2WSC)</b>	NB	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
	SB	< 1 veh	< 1 veh	< 1 veh	25 (61%)	< 1 veh	<b>29 (71%)</b>
	EBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
	WBL	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh	< 1 veh
<b>5 - Dillon Dam Rd &amp; North Ten Mile Dr (Roundabout)</b>	NB	28	60	<b>75</b>	31	65	<b>86</b>
	SB1	< 1 veh	<b>25</b>	< 1 veh	< 1 veh	<b>27</b>	20
	SB2	< 1 veh	<b>26</b>	22	< 1 veh	26	22
	EB	< 1 veh	127	<b>137</b>	23	146	<b>171</b>
	WB	< 1 veh	20	<b>26</b>	21	24	<b>33</b>

**Note:**

- XXX (YY%) = Maximum 95<sup>th</sup> Percentile Queue [ft/ln] (Queue Ratio)
- QR is not reported at proposed roundabout. Storage length is unknown.

### 5.3 QUEUEING CAPACITY – PROJECT DRIVE-THROUGH

The Project proposes to offer drive-through service. The Town requires a fast-food restaurant to accommodate 5.0 queued vehicles for every service window available [2]. Based on this requirement and the three proposed service windows described in *1 Introduction*, the site must accommodate a minimum of 15 vehicles (or a minimum of 300 feet of total storage, at 20 feet per vehicle).

The Project proposes an on-site queue storage capacity that accommodates at least 20 queued vehicles, as follows. Refer also to the Project site plan excerpt in *Figure 1-b* above and the Appendix.

1. 250 feet (total length of 2 lanes) from the edge of accessible parking to the merge point
  2. 85 feet from the merge point to the payment window
  3. 65 feet from the payment window to the 3<sup>rd</sup> window
- 400 feet total storage capacity, or 20 vehicles**

Based on lessons learned at its restaurants across the United States, McDonald’s maintains its drive-through queues at its new restaurants by designing its sites and kitchens to optimize operations. Site selection process screens out sites that do not conform to their design criteria. Specifically, sites’ drive-through lanes must provide a minimum of 60 feet of vehicle storage between the drive-through order position and the first window. The Project’s site design exceeds its own minimum requirement by providing almost 50% more distance in this key dimension, providing approximately 85 feet. Based on these conditions, the Project expects drive-through queues to be well-managed. As discussed below, ample storage is provided during busy scenarios.

Additionally, two independent studies of drive-through queue lengths, including one conducted in 2012 [7] and an updated report in 2019 [8], monitored and identified key measures about fast food drive-through restaurant queue behaviors. The findings of each study are summarized in [Table 5-D](#). The report from the 2012 study specifically stated that McDonald’s restaurants were included in its sample, but the 2019 findings did not name specific restaurants included in its sample.

**Table 5-D: Fast-Food Restaurant Drive-Through Queue Generation Data**

Measure	2012 Study [3]	2019 Study [4]
<b>Number of Data Points</b>	14	6
<b>Average Maximum Queue (Vehicles)</b>	8.50	8.00
<b>Standard Deviation (Vehicles)</b>	2.68	3.41
<b>Coefficient of Variation</b>	32%	43%
<b>Range (Vehicles)</b>	5 to 13	5 to 14
<b>85<sup>th</sup> Percentile Queue Length (Vehicles)</b>	12.00	13.80
<b>33<sup>rd</sup> Percentile Queue Length (Vehicles)</b>	7.90	6.00
<b>85<sup>th</sup> Percentile Queue Length (Feet)</b>	240	260

The Project’s proposed drive-through provides queue storage of 400 feet or 20 vehicles, which is longer than the 85<sup>th</sup> percentile queues from either study (12.00 and 13.80 vehicles), exceeds the highest maximum queue length (13 and 14 vehicles) observed in either study, and even exceeds the Agency’s requirement to support 15 queued vehicles.

Based on the information presented in this section, and in the absence of extraordinary conditions, queues from the Project’s drive-through operations are expected to be contained on site, and are not expected to spill back onto N Ten Mile Dr.

#### 5.4 DRIVEWAY SPACING

The DRC comments received in January 2025 indicated that the spacing of the existing Project driveway does not meet the Agency’s standards:

*South driveway does not meet standards for separation from intersection (10 Mile/Lake Point).*

Topographic and right-of-way (ROW) survey received after the DRC meeting indicates the existing intersection in fact does meet the Agency’s minimum driveway spacing and intersection spacing standards. The Project site plan in [Figure 1-b](#) above incorporates the survey and indicates that the driveway’s nearest edge is 41 feet from the ROW for Lake Point Dr, in compliance with the current standards [9]. Refer to the Appendix for more information about the spacing of the existing driveways from the nearby intersections and between each driveway.

#### 5.5 DRIVEWAY SIGHT DISTANCE

Intersection sight distance applies to motorists departing the Project site, to enter the stream of major street traffic along North Ten Mile Dr. In the case of this Project, the subject location is the southern one-way outbound driveway located near Lake Point Dr. Preliminary departure sight triangle from the existing driveway is included in the Appendix and they are free of permanent obstructions. The sight lines should be drawn more precisely in the construction drawings to avoid proposed obstructions being overlooked. For more information about the lines of sight, please refer to the Appendix.

#### 5.6 TRAFFIC CONTROL

The on-site vehicle circulation will consist of one-way circulation in a counter-clockwise direction around the Project building. Traffic exiting the site onto North Ten Mile Dr should approach STOP controls. One way signage should be clearly posted visible along North Ten Mile Dr so the entry and exits are clear to approaching motorists. The two-way STOP controls do not experience significant delays with or without the Project trips at any of the locations, except for eastbound movements at both signalized Study Locations, #1 - *Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct* and #2 - *Summit Blvd (SH 9) & Lakepoint Dr*.

## 5.7 PARKING CAPACITY

The Project’s parking lot layout and pedestrian flow design provide adequate circulation without unnecessary or unreasonable conflict points between vehicles and pedestrians, bicyclists, and other road users.

## 5.8 CDOT ACCESS PERMIT CONSIDERATIONS

The Project located at 960 North Ten Mile Dr introduces 1,602 (365%) more weekday trips compared to the previous use as a drive-in bank. Refer to [Table 3-A](#) above and [Table A-10](#) in the Appendix, 2,040 veh/day (Project) and 438 veh/day (Bank).

A proposed access permit approved by CDOT Region 3 will be required because the proposed change in use results in a more than 20% increase in daily trips. Refer to the Appendix regarding the estimated trip generation and a draft access permit application as well as current daily traffic volumes along Summit Blvd (SH 9) in the Study Area.

The Agency clarified during its review of this TIS that the Project will act as the permit Applicant and submit the application to CDOT on behalf of the Permittee, the Town of Frisco. The Town requires the application prior to issuance of building permits for the Project.

## 5.9 OTHER CONSIDERATIONS – AGENCY REVIEW

The Agency reviewed a draft of the TIS and requested that it include several other considerations, discussed in this section.

**Exit Configuration.** The Agency requested a review of the site access exit configuration due to its width. The site plan’s proposed exit configuration, shown in [Figure 1-b](#), is optimizes traffic flow and safety while reusing the existing building layout. Having three service windows, especially the third window used as needed to fulfill quick orders, helps reduce drive-through congestion during the restaurant’s busy periods. Since most customers use the drive-through, conflicts between drive-through and circulating vehicles at the exit are infrequent. Should operational issues arise, an alternative exit configuration is presented in the Appendix for further consideration.

**Ten Mile Dr & N Ten Mile Dr.** The Study Locations in this TIS do not include the nearby stop-controlled intersection of N Ten Mile Dr & Ten Mile Dr, but the location is within the limits of the figures in this TIS. The Study Locations were initially agreed with the Agency (refer to scoping discussions in [1 Introduction](#)). However, following their review of a draft version of this TIS, the Agency requested a high-level investigation of the intersection operations to estimate whether the impacts of site trips being distributed through this intersection will be significant.

To conduct this investigation, the intersection was assessed using Sat Total Traffic volumes estimated for the year 2046. The intersection hourly traffic volumes used for the investigation were estimated using the future Background traffic volumes and estimated new Project-related trips at #3 - *Summit Blvd (SH 9) & Ten Mile Dr (South)* and #4 - *Lakepoint Dr & North Ten Mile Dr*.

Operational analysis of this intersection revealed it is expected to operate with acceptable delays in these conditions. This analysis is expanded on in the Appendix for reference.

**STOP-Sign Configuration.** The Town of Frisco has tentatively decided to recommend creating an all-way STOP condition at the intersection of #4 - *Lakepoint Dr & North Ten Mile Dr* for reasons unrelated to the Project. This new right-of-way configuration will decrease delays experienced by motorists approaching the intersection along N Ten Mile Dr (northbound and southbound approaches in this TIS) and will introduce delays for east and westbound traffic along Lakepoint Dr. The analysis of #4 - *Lakepoint Dr & North Ten Mile Dr* performed in this TIS remains valid, because it considers a more conservative condition at the location and traffic volumes are light.

## 6 Proposed Mitigation Measures

This section describes the various mitigation measures recommended to maintain acceptable operations during the Background and Total Traffic conditions in future horizon years.

### 6.1 ROADWAY MODIFICATIONS

Due to the acceptable operations presented in *5 Analysis of Proposed Conditions*, no additional roadway modifications are recommended for the Project for two reasons:

- Background roadway improvements will be under construction as the Project is also under construction. The Project will be open before the background improvements are complete.
- The results of analysis of the Long Term Horizon Year indicates the Background conditions that include the proposed CDOT improvements provide sufficient capacity to address unacceptable operations in the future. As such, it is reasonable to assert that operations will also be acceptable between their completion in 2028 and 2046.

### 6.2 MITIGATED LEVELS OF SERVICE

This section would typically summarize the LOS estimated after incorporating recommended mitigation measures. In the case for this Project, no *new* mitigations are recommended, for the reasons previously stated, in either the Background or Total Traffic conditions in either the Short-Term or Long-Term Study Horizons. As such, no re-evaluation of the operations analysis was necessary or performed.

### 6.3 STORAGE (TURN BAY) LENGTHS

This section would typically discuss the updated queue analysis based on the recommended mitigation measures and respect to available storage capacity and reports issues. In the case for this Project, no *new* mitigations are recommended, for the reasons previously stated, in either the Background or Total Traffic conditions in either the Short-Term or Long-Term Study Horizons. As such, no re-evaluation of the queue analysis was necessary or performed

## 7 Conclusions & Recommendations

This section summarizes the findings and recommendations of this Traffic Impact Study (TIS).

### 7.1 RECOMMENDED IMPROVEMENTS

**Background Improvements.** The improvements summarized in *2 Existing and Planned Conditions* and referred to as the CDOT Interchange Project are supported by the analysis in this TIS as an effective mitigation to unacceptable operations identified in the 2026 Background Traffic conditions.

### 7.2 PROPOSED SITE IMPROVEMENTS

The Project-related improvements summarized in *Table 7-A* are recommended prior to its opening.

*Table 7-A: Summary of Recommended Improvement Measures*

ID	Location	Improvement Name	Recommended Timeframe
A	Project Driveway (Entrance)	Re-Configure Full Movement Entrance	Prior to opening
B	Project Driveway (Exit)	Re-Configure Full Movement Exit	Prior to opening
C	Project Driveway (Exit)	Sight Triangles	Prior to opening

- A. **Re-Configure Full-Movement Entrance.** Reconfigure the existing northern access of 960 North Ten Mile Drive to an entrance-only supporting the proposed one-way Project site circulation. Install one-way signage per Manual on Uniform Traffic Control Devices [10] standards.
- B. **Re-Configure Full Movement Exit.** Reconfigure the existing southern access of 960 North Ten Mile Drive to a full-movement exit-only supporting the proposed one-way Project site circulation. Install STOP control for traffic exiting the site and one-way signage per Manual on Uniform Traffic Control Devices [10] standards.
- C. **Sight Triangles.** Update construction documents to include sight triangles at the southern access (exit) and (utilities, signage, etc.) for the southern access. The Project shall follow the AGENCY’s requirements to minimize new obstructions in driveway sight triangles.

### 7.3 SUMMARY

This Traffic Impact Study (TIS) was prepared to identify and address impacts to intersection operations in the roadway network due to the proposed McDonald’s restaurant and drive-through in a remodeled vacant drive-through bank building at 960 North Ten Mile Dr in Frisco, CO (Project). The Project proposes a 4,575 square-foot restaurant and drive-through with vehicular access along North Ten Mile Rd at two existing driveways. The proposed site will use one-way internal circulation due to the re-use of the existing building and other site conditions. (Refer to *1 Introduction* starting on Page 1-1 for more information.)

The scope of this TIS was discussed with the Agency in advance. Several key issues were raised at TIS scoping, as indicated in **Table 7-B**. The TIS scope otherwise includes the following base assumptions:

- Five (5) Study Locations
- Three (3) Peak Periods
- Existing Conditions Analysis (2025)
- Two (2) Future Horizons: Short Term (2026), and Long-Term (2046)
- Two Traffic Volume scenarios: Background (Project *no-build*) and Total Traffic (Project *build*)

Refer to *1 Introduction* starting on Page 1-1 for more information.

**Table 7-B: Key Issues Identified by the Agency and Addressed in this TIS**

Item	Description	Summary of Response	TIS Section with Additional Discussion
<b>Pre-App Comment: CDOT Access</b>	Traffic study to determine increase in traffic volume at intersection of Summit Blvd. If it increases by 20%, a CDOT Access permit is required and potential intersection improvements	Access Permit is Required. No Access Improvements Recommended.	<i>5 Analysis of Proposed Conditions</i>
<b>Pre-App Comment: Existing Driveway</b>	South driveway does not meet standards for separation from intersection (10 Mile/Lake Point). Increased traffic at this driveway increases the nonconformity. Traffic study to analyze this issue and analyze sight distance, access control, and need for intersection improvements at 10 Mile Dr/Lake Point.	Survey indicates the existing driveway location is in conformance with Agency standard minimum spacing. Sight distance evaluation included.	<i>5 Analysis of Proposed Conditions</i>

This TIS estimated a total of 2,040 new daily trips will travel to and from the Project (not including 438 daily trips no longer generated by the prior use as a drive-through bank), based on data available in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11<sup>th</sup> Edition) [5]. These “*Project trips*” were combined with estimated Background Traffic volumes to develop traffic volume scenarios referred to as Total Traffic volumes. Traffic volumes estimated in both Short-Term and Long-Term Horizon Year scenarios were used to analyze the operational performance of the Study Locations in each future year. (Refer to *3 Proposed Conditions* starting on Page 3-11 and *4 Future Conditions* starting on Page 4-15 for more information.)

Background traffic volume scenarios for this TIS rely heavily on traffic volume forecasts developed by others in a 2023 transportation improvement study performed for CDOT Region 3 [3]. The design of the CDOT Interchange Project is being designed, as of February 2025, and will result in modifications to the roadway network near the I-70 Exit 203 interchange in Frisco, the “*CDOT Interchange Project*,” by approximately 2028. (Refer to *4 Future Conditions* starting on Page 4-15 for more information.)

The schedule for the construction of the CDOT Interchange Project improvements overlaps with the opening year of the Project addressed in this TIS and affects two of its Study Locations, #1 - *Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct* and #5 - *Dillon Dam Rd & North Ten Mile Dr*. The CDOT Interchange Project brings several planned changes to the background roadway network that were considered when evaluating the performance of the Study Locations in this TIS. In fact, the major changes provide adequate relief to the Study locations such that no additional mitigations are needed to address operational issues. (Refer to *4 Future Conditions* starting on Page 4-15.)

As a result of the analysis in this TIS, standard design practices, and as summarized in this section above, several baseline improvements are recommended for the proposed Project accesses, which are the responsibility of the Project. These include re-configuring the two existing accesses to accept the one-way circulation and incorporating sight triangles into the construction documents. (Refer to *5 Analysis of Proposed Conditions* starting on Page 5-20 and *6 Proposed Mitigation Measures* starting on Page 6-29 for more information.)

***In summary, assuming the implementation of the recommended background improvements known as the CDOT Interchange Improvements and described in this TIS, the Study Locations are expected to operate at adequate levels of service in the future. No further mitigations are necessary to address unacceptable operations in the Background or Total Traffic conditions in the Short-Term or Long-Term Horizon Years (2026 and 2046). Furthermore, in the absence of extraordinary conditions, queues from the Project’s drive-through operations are expected to be fully contained on site, and are not expected to spill back onto N Ten Mile Dr.***

## 8 References

- [1] Town of Frisco, "Trails Master Plan," 2017 (updated 2023). [Online]. Available: <https://www.frisco.gov/departments/recreation-and-culture/trails/>. [Accessed Feb 2025].
- [2] C. Town of Frisco, "Code of Ordinances - Town of Frisco, Colorado," Jan 2025. [Online]. Available: [https://library.municode.com/co/frisco/codes/code\\_of\\_ordinances?nodeId=CH180UNDECO\\_ARTVIDEST\\_S180-6.12TRST](https://library.municode.com/co/frisco/codes/code_of_ordinances?nodeId=CH180UNDECO_ARTVIDEST_S180-6.12TRST).
- [3] A. S. L. (. f. C. R. 3), "I-70 Exit 203 and EB Auxiliary Lane Design, Alternatives Traffic Analysis Technical Report," 2023.
- [4] Colorado Department of Transportation, "Online Transportation Information System (OTIS)," [Online]. Available: <https://dtdapps.coloradodot.info/otis/TrafficData>. [Accessed Jan 2025].
- [5] Institute of Transportation Engineers (ITE), "ITE Trip Generation Manual, 11th Edition," Transoft Solutions, Inc., 2021. [Online]. Available: <https://itetripgen.org/>.
- [6] Colorado Department of Transportation, "I-70 Exit 203 Interchange in Frisco - Design Phase," [Online]. Available: <https://www.codot.gov/projects/i70-exit203-interchange-frisco>. [Accessed 28 January 2025].
- [7] M. M. L. d. L. a. N. H. M. Spack, Drive-Through Queue Generation, 2012.
- [8] S. Solutions, Drive-Thru Queue Generation, 2019.
- [9] Town of Frisco, "Minimum Street Design and Access Criteria," 12 March 2019. [Online]. Available: <https://www.frisco.gov/wp-content/uploads/2024/03/155-1.-Street-Design-and-Access-2019.pdf>. [Accessed Jan 2025].
- [10] Federal Highway Administration (FHWA), "Manual on Uniform Traffic Control Devices, 11th Edition," Dec 2023. [Online]. Available: [https://mutcd.fhwa.dot.gov/kno\\_11th\\_Edition.htm](https://mutcd.fhwa.dot.gov/kno_11th_Edition.htm). [Accessed Nov 2024].



[11 National Academies of Sciences, Engineering, and Medicine, "Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis," The National Academies Press, 2022. [Online]. Available: <https://doi.org/10.17226/26432>.

[12 American Association of State Highway Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, 2011 6th edition.

[13 Fox Tuttle Transportation Group, LLC, "Lake Hill Development TIA," Fox Tuttle Transportation Group, LLC (#22010), Sep 26, 2022.



## Appendix

## TRIP GENERATION RE-EVALUATION

As described in *1 Introduction* and *3 Proposed Conditions*, the proposed restaurant's square footage has increased by 5% beyond what the TIS analysis evaluated. This Appendix describes the impact of that change on the analyses and findings of this TIS.

The trip generation rates used are based on average (linear) rates, so the number of new trips is expected to also increase by 5%. With this increase, there are approximately 102 additional trips on a typical weekday<sup>1</sup>. During peak hours, this results in approximately 13 extra Project trips during the Sat Study Period<sup>2</sup>. When looking at the individual 2046 turn movements in *Figure 3-b*, the increased gross floor area increases the assigned trips by up to three extra trips per hour<sup>3</sup>. At that movement, three hourly trips are equivalent to a single extra Project trip every 20 minutes.

Given the minimal changes in project trips, along with delays that represent LOS B, it is evident that re-evaluating all analyses in this TIS would not alter the findings in a meaningful way. As such, the author of this TIS and the Agency agree that the TIS need not be updated to reflect the minor increase in proposed area. In summary, the specific analysis of this TIS reflects the 4,375 square foot gross floor area of the existing building, and the findings apply to the proposed Project, which includes a 4,575 square foot restaurant and drive-through.

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<sup>1</sup> The notes in *Table 3-A* indicate a total of 2,040 project trips per weekday. At 5%, the extra daily trips for the updated restaurant area are approximately 102 trips per day.

<sup>2</sup> Data from *Table 3-A* indicate a total of 241 project trips per Sat Peak Period. At 5%, the extra hourly trips for the updated restaurant area are approximately 13 trips per hour.

<sup>3</sup> The most hourly Project trips assigned to a single movement in 2046 based on *Figure 3-b* is 48 trips per hour, at the southbound left turn at #3 - *Summit Blvd (SH-9) & Ten Mile*. Three trips per hour are based on 5% of 48 hourly trips.

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## FRISCO TRAILS MASTER PLAN

The 2023 update to the Town of Frisco’s Trails Master Plan [1] provides specific enhancement recommendations near the Project site, but none of the recommendations affect the Project site. The Frisco Gateway Recommendations near the Project are summarized in [Table A 1](#) and copy of the figure from the plan, indicating the location of projects, is provided in [Figure A 1](#).

*Table A 1 Summary of Frisco Gateway Recommendation (Trail Master Plan – 2023 Update) [1]*

Frisco Gateway Recommendation Name (Refer to Locations in Figure A 1)	Description
<b>New Trails (T5)</b>	<i>Formalize the soft surface pedestrian footpath from Willow Preserve Overlook (and Trailhead Parking) to the County Recpath system. Portions of this area are classified as “shrub scrub” wetland; further investigation of impact should be pursued.</i>
<b>Frisco Pathway Connection (C1)</b>	<i>Work with CDOT to establish designated bicycle and pedestrian infrastructure to improve the connection between the Frisco Transit Center &amp; Basecamp commercial complex to the residential areas and County Recpath system across SH-9 and via Dillon Dam Road. CDOT’s latest design concepts for this intersection are illustrated in Figure 9.</i>
<b>Frisco Pathway Connection (C2)</b>	<i>Establish designated bicycle and pedestrian infrastructure connecting the off-street paved path at North Ten Mile Road to the County Recpath system via Lakepoint Drive to 9000 Divide.</i>
<b>Frisco Pathway Connection (C3)</b>	<i>Work with CDOT to establish a continuous, year-round, multi-use paved pathway on the west side of SH-9 from Lusher Court to County Rd 1040.</i>

Figure A 1 Trail Master Plan – Frisco Gateway Recommendations [1]



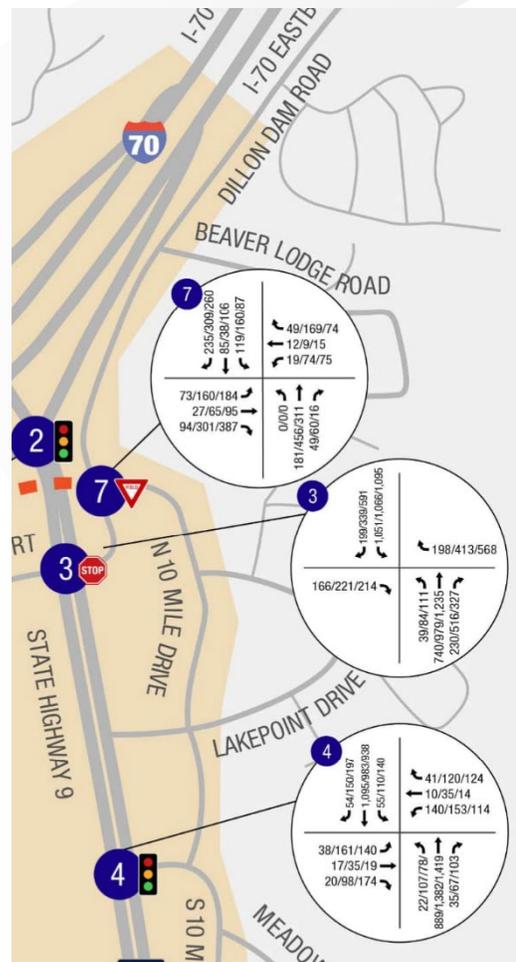
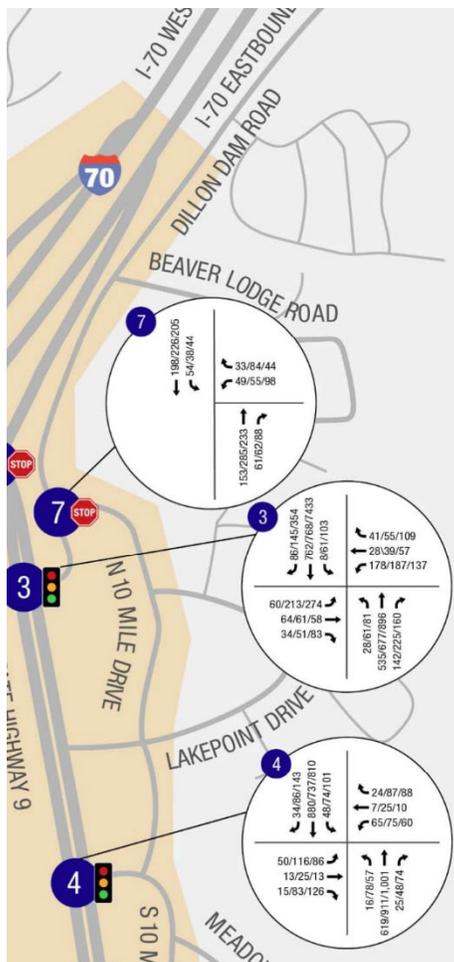
**TRAFFIC VOLUME DATA**

**Turning Movement Count Data.** As discussed in 2 Existing and Planned Conditions turning movement count data was collected at #4 - Lakepoint Dr & North Ten Mile Dr on Thursday, January 30, 2025 and Saturday, February 1, 2025. Those reports are attached in the following pages.

The remaining data was gathered from a recent CDOT Traffic Study. **Figure A 2** and **Figure A 3** illustrate the original traffic volume data adjusted for use in this TIS.

**Figure A 2 Estimated Traffic Volumes “CDOT Figure 4-1 No-Build Opening Year” [3]**

**Figure A 3 Forecasted 2045 Traffic Volumes “CDOT Figure 5-11 Horizon Year Alternative 1” [3]**

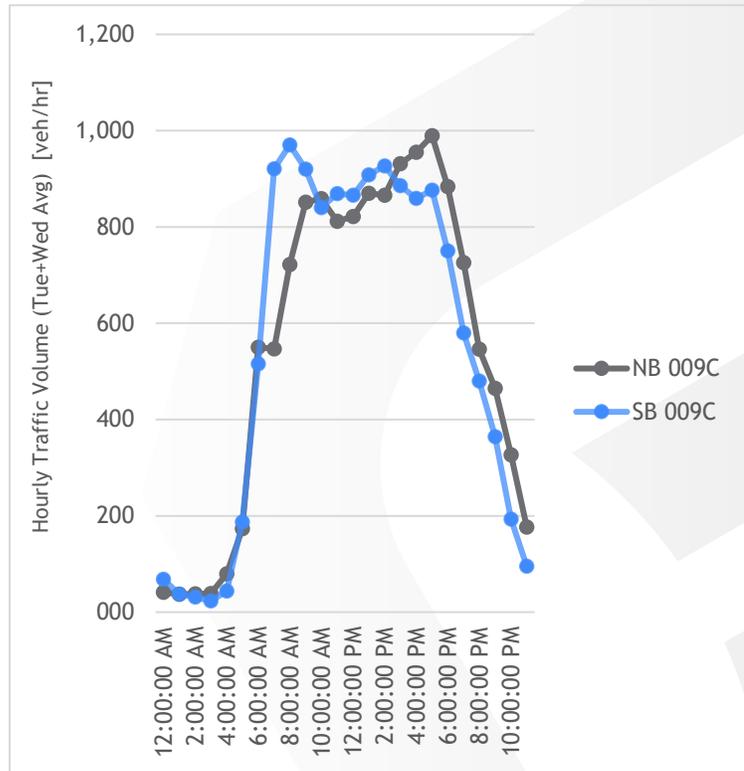


**Bi-Directional Volume Data.** *Table A 2* and *Figure A 4* summarize the average hourly volumes from 48 hours of directional traffic volume data collected by CDOT along Summit Blvd August 23-24, 2023.

*Table A 2 Aug 2023 Traffic Volumes  
CDOT Route 009C, Sta 100513 (S/O I-70,  
Frisco) [4]*

	NB	SB
12:00:00 AM	41	68
1:00:00 AM	37	37
2:00:00 AM	38	32
3:00:00 AM	39	23
4:00:00 AM	80	44
5:00:00 AM	174	187
6:00:00 AM	550	516
7:00:00 AM	547	921
8:00:00 AM	722	971
9:00:00 AM	852	921
10:00:00 AM	859	841
11:00:00 AM	812	870
12:00:00 PM	822	866
1:00:00 PM	870	908
2:00:00 PM	866	927
3:00:00 PM	932	886
4:00:00 PM	955	860
5:00:00 PM	990	877
6:00:00 PM	884	750
7:00:00 PM	726	580
8:00:00 PM	546	480
9:00:00 PM	465	365
10:00:00 PM	327	193
11:00:00 PM	177	96
<b>Grand Total</b>	<b>13,306</b>	<b>13,213</b>
		<b>26,519</b>

*Figure A 4 Aug 2023 Traffic Volumes  
CDOT Route 009C, Sta 100513 (Near I-70) [4]*



The closest CDOT Automatic Traffic Recording (ATR) station along SH 9 is located along SH 9 several miles south of the Project. The CDOT ATR collects traffic volume data continuously and CDOT publishes average daily traffic volumes by month over many years, as summarized in [Table A 3](#).

*Table A 3 Historic Monthly Traffic Volumes  
CDOT Route 009C, Sta240 (S/O Tiger Rd), 2006-2024 [4]*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006		20,998	21,722	16,262	14,383	18,215	21,499	19,876	17,816	14,343	16,474	17,318
2007	17,702	17,620	18,759	14,050	12,673				18,771	16,492	17,633	19,734
2008	20,905	20,794	21,778	16,242	14,218	17,918	21,285	20,247	18,055	15,894	15,800	19,566
2009	21,034	20,678	20,526	15,689	13,641	17,657	21,077	19,819	17,562	14,586	15,975	19,679
2010	21,080	20,612	21,125	15,130	13,030	17,052	21,181	19,662	18,019	14,514	15,010	19,458
2011	19,904	19,013	19,970	14,963	12,362	17,049	20,609	20,745	18,187	15,322	15,089	20,645
2012	21,020	20,867	21,856	14,988	13,970	18,252	21,689	21,020	18,465	15,317	14,911	16,463
2013	19,202	21,802	21,597	15,304	14,226	18,639	23,409	22,113	18,964	16,174	17,346	20,515
2014	22,074	21,741	22,695	17,203								21,545
2015	22,254	24,105	22,746	16,768	14,626	19,975	24,189	22,612	20,612	17,216	16,072	18,628
2016	20,067	20,166	19,771	15,583	15,315	20,234	24,369	22,538	21,058	17,606	17,498	20,596
2017	22,314	22,238	22,640	16,863	15,739	20,133	23,872	22,365	20,694	17,736	17,914	22,213
2018	24,454	23,112	23,746	17,638	16,681	21,491	25,586	23,805	21,848	17,993	19,613	24,572
2019	26,864	25,558	25,043	19,475	17,420	19,707	22,715	25,287	23,769	18,932	19,522	23,106
2020	26,091	24,334	16,206	8,459	12,873	20,096	25,398	24,184	23,870	21,272	18,851	22,557
2021	23,613	23,681	24,455	19,981	18,729	23,885	26,569	24,052	22,303	19,357	19,779	23,740
2022	25,343	26,314	25,528	19,385	17,755	22,419	25,576	25,157	23,340	20,126	19,542	23,392
2023	25,561	26,129	25,423	20,266	17,932	22,107	26,085	24,365	23,106	19,796	18,253	23,473
2024	24,223	24,914	25,075	19,321	17,805	23,097	26,984	25,061	23,741	20,929	19,491	26,127

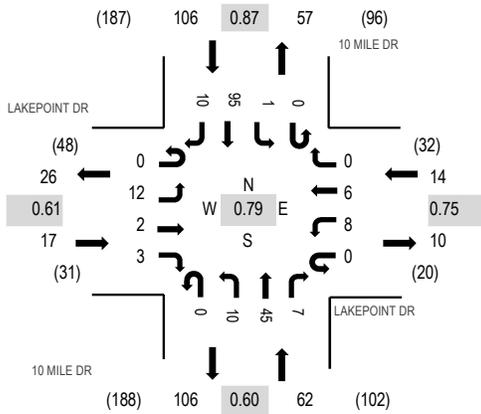
Location: 1 10 MILE DR & LAKEPOINT DR AM

Date: Thursday, January 30, 2025

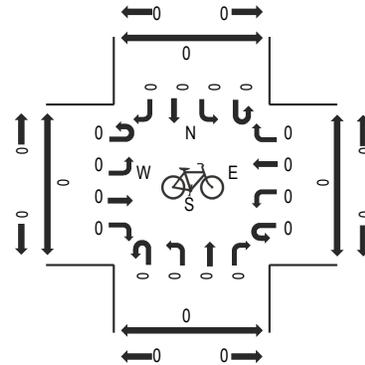
Peak Hour: 07:45 AM - 08:45 AM

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

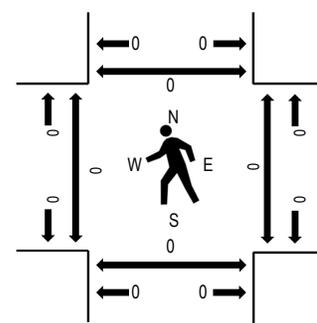
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians

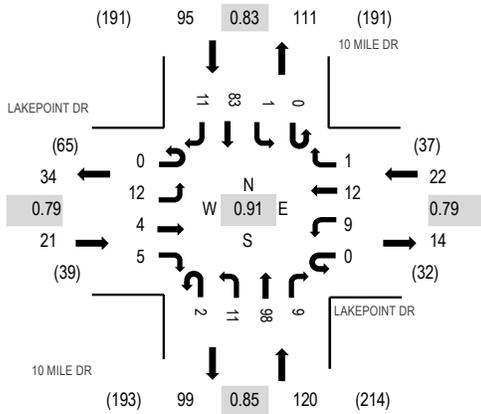


Note: Total study counts contained in parentheses.

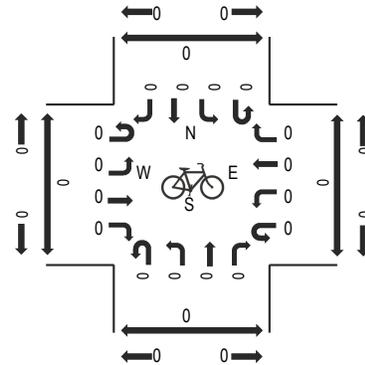
### Traffic Counts - Motorized Vehicles

Interval Start Time	LAKEPOINT DR Eastbound				LAKEPOINT DR Westbound				10 MILE DR Northbound				10 MILE DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	2	0	0	0	1	0	1	0	0	5	0	0	1	8	1	19	161	0	1	0	0
7:15 AM	0	1	2	0	0	5	1	0	0	0	6	3	0	0	16	2	36	181	0	0	0	0
7:30 AM	0	2	1	1	0	2	2	2	1	2	6	2	0	0	20	2	43	190	0	1	0	0
7:45 AM	0	4	1	0	0	2	1	0	0	3	20	3	0	1	26	2	63	199	0	0	0	0
8:00 AM	0	2	0	0	0	1	2	0	0	3	7	0	0	0	22	2	39	191	0	0	0	0
8:15 AM	0	3	0	0	0	2	1	0	0	2	4	2	0	0	29	2	45		0	0	0	0
8:30 AM	0	3	1	3	0	3	2	0	0	2	14	2	0	0	18	4	52		0	0	0	0
8:45 AM	0	3	0	2	0	2	2	0	0	3	11	1	0	0	24	7	55		0	1	0	0
Count Total	0	20	5	6	0	18	11	3	1	15	73	13	0	2	163	22	352		0	3	0	0
Peak Hour	0	12	2	3	0	8	6	0	0	10	45	7	0	1	95	10	199		0	0	0	0

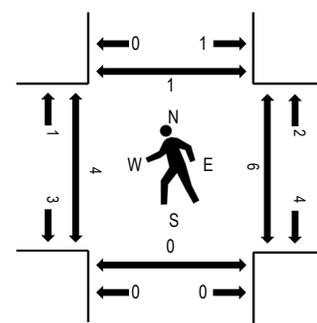
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	LAKEPOINT DR Eastbound				LAKEPOINT DR Westbound				10 MILE DR Northbound				10 MILE DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	1	1	0	0	2	1	1	0	4	23	4	0	1	25	5	68	246	0	0	0	0
4:15 PM	0	5	1	3	0	1	3	0	0	1	15	5	0	0	21	2	57	249	0	10	3	1
4:30 PM	0	0	0	2	0	2	0	0	0	4	19	3	0	0	19	6	55	255	4	1	0	0
4:45 PM	0	2	1	1	0	1	4	0	0	3	27	3	0	0	20	4	66	258	1	1	0	0
5:00 PM	0	2	1	2	0	3	3	1	2	6	28	0	0	1	19	3	71	235	0	1	0	0
5:15 PM	0	4	1	2	0	3	2	0	0	2	23	2	0	0	21	3	63		3	3	0	1
5:30 PM	0	4	1	0	0	2	3	0	0	0	20	4	0	0	23	1	58		0	1	0	0
5:45 PM	0	2	1	2	0	3	2	0	0	1	14	1	0	1	14	2	43		0	1	0	0
Count Total	0	20	7	12	0	17	18	2	2	21	169	22	0	3	162	26	481		8	18	3	2
Peak Hour	0	12	4	5	0	9	12	1	2	11	98	9	0	1	83	11	258		4	6	0	1

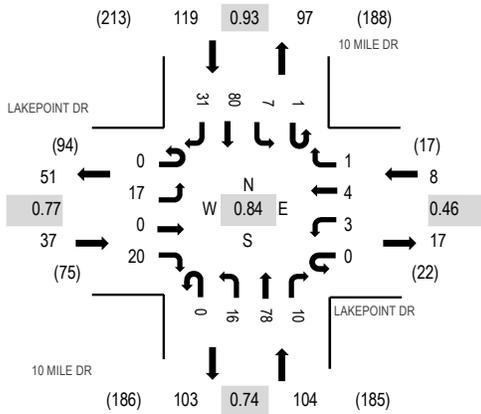
Location: 1 10 MILE DR & LAKEPOINT DR **PM** — Sat Peak

Date: Saturday, February 1, 2025

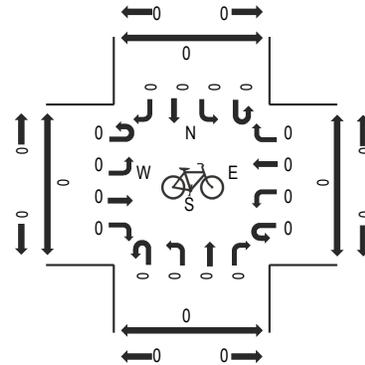
Peak Hour: 03:30 PM - 04:30 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

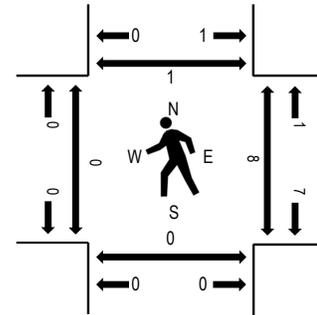
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



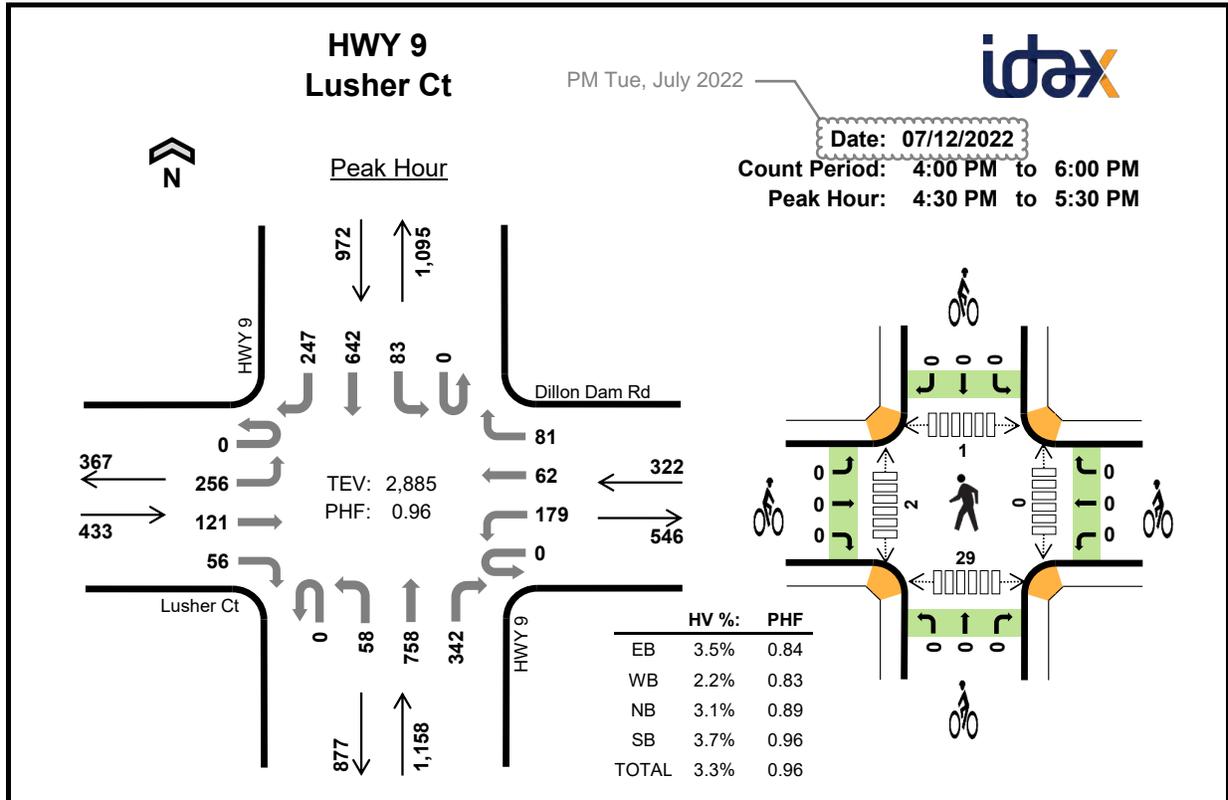
### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	LAKEPOINT DR Eastbound				LAKEPOINT DR Westbound				10 MILE DR Northbound				10 MILE DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
3:00 PM	0	4	0	3	0	2	1	0	0	2	20	0	0	0	14	8	54	230	0	1	1	0
3:15 PM	0	10	0	3	0	0	0	0	1	1	10	0	0	0	16	8	49	237	0	1	0	0
3:30 PM	0	5	0	3	0	1	1	0	0	3	16	3	0	0	21	11	64	268	0	2	0	0
3:45 PM	0	8	0	4	0	0	1	0	0	5	16	1	0	2	15	11	63	262	0	0	0	0
4:00 PM	0	3	0	4	0	0	2	1	0	4	19	1	1	1	19	6	61	260	0	5	0	1
4:15 PM	0	1	0	9	0	2	0	0	0	4	27	5	0	4	25	3	80		0	1	0	0
4:30 PM	0	4	0	4	0	0	0	0	0	4	19	1	0	0	23	3	58		0	0	0	1
4:45 PM	0	7	2	1	0	4	2	0	0	5	17	1	0	1	12	9	61		0	0	0	0
Count Total	0	42	2	31	0	9	7	1	1	28	144	12	1	8	145	59	490		0	10	1	2
Peak Hour	0	17	0	20	0	3	4	1	0	16	78	10	1	7	80	31	268		0	8	0	1



**Two-Hour Count Summaries**

Interval Start	Lusher Ct				Dillon Dam Rd				HWY 9				HWY 9				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	70	23	15	0	48	14	19	0	21	167	76	0	30	138	58	679	0	
4:15 PM	0	45	18	19	0	53	16	18	1	20	176	83	0	18	134	61	662	0	
4:30 PM	0	76	38	15	0	33	17	17	0	14	169	83	0	19	150	77	708	0	
4:45 PM	0	56	22	17	0	43	15	14	0	14	187	88	0	18	153	66	693	2,742	
5:00 PM	0	73	31	16	0	42	16	28	0	16	181	80	0	22	180	51	736	2,799	
5:15 PM	0	51	30	8	0	61	14	22	0	14	221	91	0	24	159	53	748	2,885	
5:30 PM	0	72	23	13	0	50	17	14	0	17	187	76	0	16	127	44	656	2,833	
5:45 PM	0	76	23	10	0	46	15	10	1	14	159	82	0	24	131	40	631	2,771	
Count Total	0	519	208	113	0	376	124	142	2	130	1,447	659	0	171	1,172	450	5,513	0	
Peak Hour	All	0	256	121	56	0	179	62	81	0	58	758	342	0	83	642	247	2,885	0
	HV	0	12	2	1	0	0	1	6	0	0	31	5	0	2	26	8	94	0
	HV%	-	5%	2%	2%	-	0%	2%	7%	-	0%	4%	1%	-	2%	4%	3%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	1	11	6	26	0	0	0	0	0	0	0	0	4	4
4:15 PM	3	2	9	10	24	0	0	0	0	0	0	0	0	7	7
4:30 PM	8	2	14	13	37	0	0	0	0	0	0	0	0	8	8
4:45 PM	1	0	5	9	15	0	0	0	0	0	0	0	0	8	8
5:00 PM	4	2	8	7	21	0	0	0	0	0	0	2	0	3	5
5:15 PM	2	3	9	7	21	0	0	0	0	0	0	0	1	10	11
5:30 PM	3	0	10	3	16	0	0	0	0	0	0	0	0	7	7
5:45 PM	3	0	8	4	15	0	1	0	0	1	0	0	0	1	1
Count Total	32	10	74	59	175	0	1	0	0	1	0	2	1	48	51
Peak Hour	15	7	36	36	94	0	0	0	0	0	0	2	1	29	32

<b>Two-Hour Count Summaries - Heavy Vehicles</b>																		
Interval Start	Lusher Ct				Dillon Dam Rd				HWY 9				HWY 9				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	5	0	3	0	0	0	1	0	1	10	0	0	2	3	1	26	0
4:15 PM	0	2	0	1	0	0	1	1	0	1	8	0	0	2	6	2	24	0
4:30 PM	0	6	2	0	0	0	0	2	0	0	11	3	0	0	10	3	37	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	4	1	0	0	8	1	15	102
5:00 PM	0	4	0	0	0	0	0	2	0	0	7	1	0	0	4	3	21	97
5:15 PM	0	1	0	1	0	0	1	2	0	0	9	0	0	2	4	1	21	94
5:30 PM	0	1	2	0	0	0	0	0	0	1	9	0	0	0	2	1	16	73
5:45 PM	0	3	0	0	0	0	0	0	0	1	7	0	0	0	4	0	15	73
Count Total	0	23	4	5	0	0	2	8	0	4	65	5	0	6	41	12	175	0
Peak Hour	0	12	2	1	0	0	1	6	0	0	31	5	0	2	26	8	94	0
<b>Two-Hour Count Summaries - Bikes</b>																		
Interval Start	Lusher Ct			Dillon Dam Rd			HWY 9			HWY 9			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i>																		

## INTERSECTION ANALYSIS METHODOLOGY

The performance of the roadway network depends most of all on the performance at intersections, due to the exchange of right-of-way assignment that must take place to provide access where conflicting streams of traffic must cross paths. The Study Locations represent the key intersections near the Project that are analyzed in this study. The Agency, like most local agencies nearby and nationally, requires the use of the latest edition of the *Highway Capacity Manual 7<sup>th</sup> Edition (HCM)* to estimate the performance of intersections within its jurisdiction.

The intersection levels of service (LOS) reported in this TIS are based on an analysis of the existing roadway features and typical one-hour traffic volumes. Peak periods are typically identified using available traffic data, engineering judgment, or a combination of both, as described more specifically in the body of the TIS.

Intersection operations were analyzed with PTV Vistro 2025 (sp 0-2) software (PTV Vistro) using the methodologies outlined in the HCM. PTV Vistro estimates delays and reports the delays and LOS. Detailed analysis reports are included in this, Appendix and results are also summarized in figures and tables throughout this TIS.

The LOS provides an overview of how well an intersection is expected to operate. The Agency has a design objective of LOS E or better for intersection operations, per its Traffic Impact Study Criteria. The criteria for the HCM LOS designations are provided in the Table below. LOS are presented as letter grades, similar to an academic summarization of a student’s performance.

**Table A-4: LOS Meaning for Signalized and Unsignalized Intersections [11]**

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections	Unsignalized Intersections	
A	≤10	≤10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
C	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and ≤80	>35 and ≤50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

## RIGHT TURNS ON RED

As discussed in 1.22 *Existing and Planned Conditions*, RTOR volume reductions were applied at #3 - *Summit Blvd (SH 9) & Ten Mile Dr (South)*. Observations of video recordings taken the week of Feb 1, 2025, at the intersection of #3 - *Summit Blvd (SH 9) & Ten Mile Dr (South)* informed the application of the right-turn-on-red (RTOR) reductions to traffic volumes used in the Traffic Analysis Reports. Refer to [Figure A 5](#) for an example image from the video used. [Table A 5](#) catalogs the observations and calculated % RTOR using video imagery. The use of these and other traffic volume reductions described in the HCS is also identified in [Table A 11](#).

Video recordings taken at the intersection of #1 - *Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct* did not permit effective estimation of the proportion of westbound RTOR; however, infrequent opportunities for RTOR were noticed during field observations made on Sat Feb 1, 2025. This was due primarily to the westbound through volume and the shared westbound through/right lane.

**Table A 5 Summary of RTOR Observations**

Date of Observation	Start Time	End Time	Intersection ID	Intersection Name	Approach Direction	Observed # Right-Turn Vehs (Green/Yellow)	# Observed Right-Turn Vehs (Red, aka RTOR)	Observation Duration (H:M:S)	% RTOR
2025-01-30 Thu	7:00 AM	7:15 AM	3	SH9 @ 10 Mile	WB	2	5	0:15:00	71%
2025-01-30 Thu	4:00 PM	4:15 PM	3	SH9 @ 10 Mile	WB	15	13	0:15:00	46%
2025-02-01 Sat	3:00 PM	3:15 PM	3	SH9 @ 10 Mile	WB	14	6	0:15:00	30%
<b>Total</b>								0:45:00	

**Figure A 5 Snapshot of Video used for Westbound RTOR Observations (from SE Corner)**



## ITE TRIP GENERATION AND TRIP ASSIGNMENTS

**Table A 6** summarizes the ITE Land Use description discussed in *3 Proposed Conditions*.

**Table A 6 Summary of ITE Land Use Descriptions [5]**

ITE Code	ITE Land Use Name	ITE Land Use Description
<b>934</b>	Fast-Food Restaurant with Drive-Through Window	This land use includes any fast-food restaurant with a drive-through window. This type of restaurant is characterized by a large drive-through and large carry-out clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. The restaurant does not provide table service. A patron generally orders from a menu board and pays before receiving the meal. A typical duration of stay for an eat-in patron is less than 30 minutes.

**Table A 7** provides a tabular version of the Project’s trip assignments. The table differs from the one illustrated in **Figure 3-a** and **Figure 3-b** above because Pass-By trips are not addressed in **Table A 7**.

**Table A 7 Summary of Primary Site-Generated Trips**

Study Location	Movement	2026 TOTAL			2046 TOTAL		
		AM	PM	SAT	AM	PM	SAT
<b>1 - Summit Blvd (SH-9) &amp; Dillon Dam Rd / Lusher Ct</b>	NBT	43	31	53	43	31	53
	NBR	8	6	10	8	6	10
	SBL	32	25	40			
	SBT	32	25	40	38	29	48
	SBR				26	20	32
<b>2 - Summit Blvd (SH-9) &amp; Lakepoint Dr</b>	NBT	6	5	8	6	5	8
	NBR	25	19	32	29	22	36
	SBT	32	25	40	38	29	48
	WBR	45	33	56	45	33	56
<b>3 - Summit Blvd (SH-9) &amp; Ten Mile Dr</b>	NBT	19	14	23	19	14	23
	NBR	6	5	8	6	5	8
	SBU	13	10	16	16	12	20
	SBL	19	15	24	22	17	28
	WBL	24	17	30	24	17	30
<b>4 - Lakepoint Dr &amp; North Ten Mile Dr</b>	NBT	25	19	32	29	22	36
	SBT	24	17	30	24	17	30
	SBR	45	33	56	45	33	56
	EBL	25	19	32	29	22	36
<b>5 - Dillon Dam Rd &amp; North Ten Mile Dr</b>	NBT	2	1	2	2	1	2
	NBR	38	29	48	6	5	8
	SBL	10	8	12	10	8	12
	EBT				26	20	32
	WBL	19	14	23	19	14	23
	WBR*	8	6	10			

**PASS BY TRIP REDUCTIONS**

Figure A 6 and Figure A 7 show the available ITE pass-by trip reduction rates for Land Use Code 934 (Fast-Food Restaurant with Drive-Through Window) [5]. The 50% pass-by rate used in this TIS was based on the lesser of the Average Pass-By Rates available in the figures below.

Figure A 6 ITE 934 AM Pass-By Rates [5]

Vehicle Pass-By Rates by Land Use										
Source: ITE Trip Generation Manual, 11th Edition										
Land Use Code	934									
Land Use	Fast-Food Restaurant with Drive-Through Window									
Setting	General Urban/Suburban									
Time Period	Weekday AM Peak Period									
# Data Sites	5									
Average Pass-By Rate	50%									
Pass-By Characteristics for Individual Sites										
GFA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour	Source	
					Primary (%)	Diverted (%)	Total (%)			
1.4	Kentucky	1993	—	62	22	16	38	1407	2	
3	Kentucky	1993	—	43	14	43	57	2903	2	
3.3	--	1996	—	68	—	—	32	—	21	
3.6	Kentucky	1993	—	32	47	21	68	437	2	
4.2	Indiana	1993	—	46	23	31	54	1049	2	

Figure A 7 ITE 934 PM Pass-By Rates [5]

Vehicle Pass-By Rates by Land Use										
Source: ITE Trip Generation Manual, 11th Edition										
Land Use Code	934									
Land Use	Fast-Food Restaurant with Drive-Through Window									
Setting	General Urban/Suburban									
Time Period	Weekday PM Peak Period									
# Data Sites	11									
Average Pass-By Rate	55%									
Pass-By Characteristics for Individual Sites										
GFA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour	Source	
					Primary (%)	Diverted (%)	Total (%)			
1.3	Kentucky	1993	—	68	22	10	32	2055	2	
1.9	Kentucky	1993	33	67	24	9	33	2447	2	
2.8	Florida	1995	47	66	—	—	34	—	30	
2.9	Florida	1996	271	41	41	18	59	—	30	
3	Kentucky	1993	—	31	31	38	69	4250	2	
3.1	Florida	1995	28	71	—	—	29	—	30	
3.1	Florida	1996	29	38	—	—	62	—	30	
3.2	Florida	1996	202	40	39	21	60	—	30	
3.3	—	1996	—	62	—	—	38	—	21	
4.2	Indiana	1993	—	56	25	19	44	1632	2	
4.3	Florida	1994	304	62	—	—	38	—	30	

## BACKGROUND TRAFFIC VOLUMES

This Appendix section describes the details behind the adjustment factors used to normalize traffic volumes in each horizon year, based on the base data available. Existing Conditions data, as discussed in *2 Existing and Planned Conditions*.

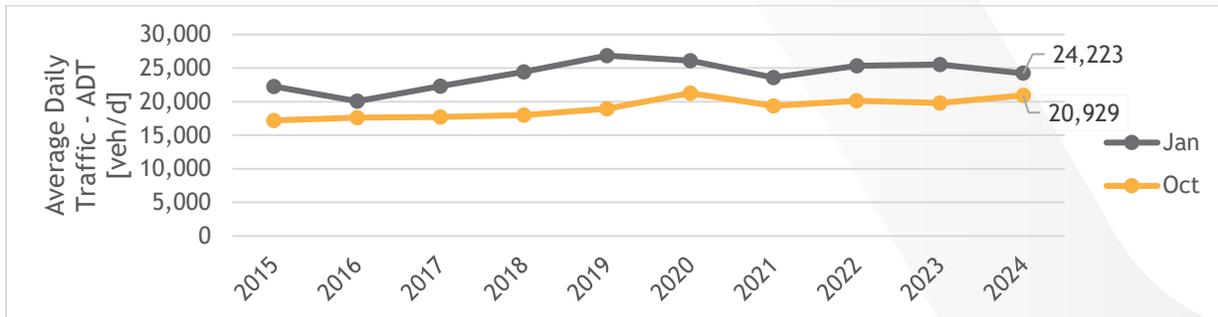
**Seasonal Adjustments.** As described in *2 Existing and Planned Conditions* seasonal adjustment factors were applied to AM & PM data collected for this TIS in January 2025. The majority of TMC data used for the AM and PM study periods used in this TIS was collected by others in October [3]. The seasonal adjustment factors used in this TIS address differences in travel patterns across different months/seasons of the year and align the new TMC data with the October data used in the CDOT study. The estimation of the seasonal adjustment factor is summarized in **Table A 8**, which takes data from **Table A 3** above and **Figure A 8**.

**Table A 8 Estimated Traffic Volume Seasonal Adjustment Factor (Jan 2024 to Oct 2024)\***

Location	Season 1: Jan 2024 [veh/day]	Season 2: Oct 2024 [veh/day]	Seasonal Adjustment Factor (Season 1 to Season 2)
CDOT Route 009C, Station 240 (on SH 9 S/O Tiger Rd, Breckenridge)	24,223*	20,929*	<b>0.86</b>

\*Note: Refer to traffic volumes in **Table A 3**.

**Figure A 8 Annual Traffic Volume Totals 2015-2024 - CDOT Route 009C, Sta 240 (S/O Tiger Rd) [4]**



Note: Refer to source data in **Table A 3**.

**Short-Term Future Growth Factors.** The future traffic volumes for #4 - *Lakepoint Dr & North Ten Mile Dr* were not available, so the TMC data collected for this TIS between January 30 and February 1, 2025 was factored to estimate future conditions using a growth factor. The factor was estimated using future traffic projections for Summit Blvd (Hwy 009C) published online by CDOT [4] were used as a growth factor between 2025 and 2026. (The seasonal factor described above was also applied to AM and PM TMC when estimating 2046 traffic at #4 - *Lakepoint Dr & North Ten Mile Dr*).

**Long-Term Future Growth Factors.** Forecasted traffic volumes for #4 - *Lakepoint Dr & North Ten Mile Dr* were not available in the CODT study, so the TMC data collected for this TIS on January 30 and February 1, 2025, was factored to estimate future conditions using a growth factor.

The 2025 volumes at #4 - *Lakepoint Dr & North Ten Mile Dr* were increased uniformly by approximately 15% to estimate 2046 background traffic volumes. The growth factor applied to traffic volumes at #4 - *Lakepoint Dr & North Ten Mile Dr* was estimated using future traffic projections for Summit Blvd (Hwy 009C) published online by CDOT [4]. These volumes were assumed to be consistent with growth patterns in the adjacent area, which is already mature and is likely to experience relatively low sustained growth over the long-term. The calculated annual average growth rate based on the 2023 and forecasted 2046 Summit Blvd traffic volume data was 0.651% per year. This growth rate was used to calculate a growth factor for each location between 2025 and 2046. (The seasonal factor described above was also applied to AM and PM TMC when estimating 2046 traffic at #4 - *Lakepoint Dr & North Ten Mile Dr*).

**Table A-9: Estimated Traffic Volume Growth Factors [4]**

Year 1	Year 2	Growth Factor (Year 1 to Year 2)
2025	2026	1.007
2045	2046	1.007
2025	2046	1.146

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*An Average Annual Growth Rate is used to estimate compound growth in traffic over any timespan.*

*A Growth Factor is used to adjust a traffic volume between two specific years.*

*A Seasonal Adjustment Factor is used to adjust a traffic volume between two different specific months of a year.*

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**BACKGROUND ROADWAY IMPROVEMENTS (CDOT)**

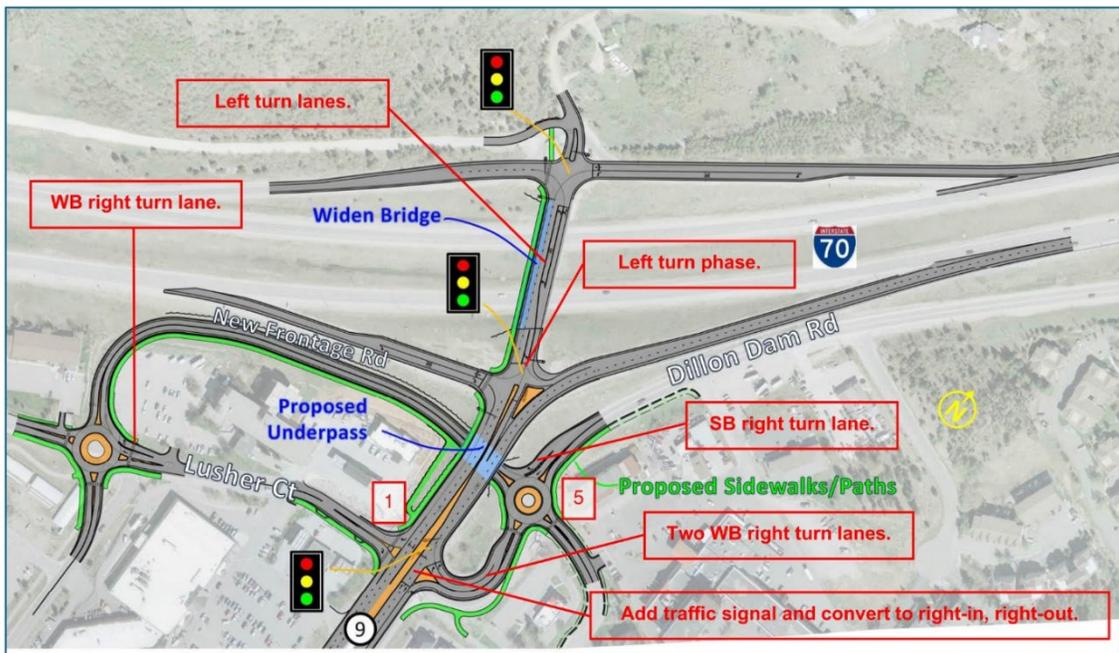
As discussed in *2 Existing and Planned Conditions*, CDOT Region 3 has scheduled construction of improvements illustrated in **Figure A 9**, beginning in 2026, with completion expected in 2028. The project, referred to in this TIS as the *CDOT Interchange Project*, affects two Study Locations, #1 - *Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct* and #5 - *Dillon Dam Rd & North Ten Mile Dr* after the Short-Term Study Horizon but before the Long-Term Study Horizon. A project website offers the following additional insights about the current project schedule:

*Construction [of the CDOT Interchange Improvements] will begin the spring of 2026 and is anticipated to continue through the fall of 2028 with a winter shutdown between November and March in 2026 and 2027 [6].*

This TIS assumes that the proposed configuration in **Figure A 9** was accepted as the final alternative and will be designed and constructed as shown. The design of construction documents for the CDOT Interchange Improvement was in progress and copies of the progress plans were requested, but not received before this TIS was prepared.

**Figure A 9 Proposed 2028 Background Roadway Improvements [3]**

**Figure 6-1 – Proposed Alternative**

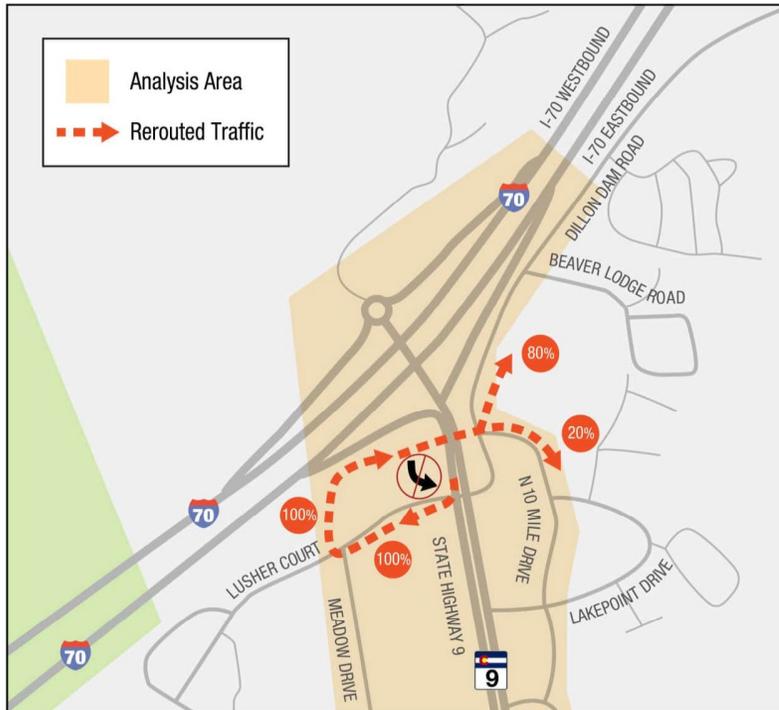


Note: Proposed refinements are shown in red and blue text indicates a improvement that was already included in Alternative 1.

Certain turning movements to the Project site through the intersection of #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct will require taking a new route due to background improvements proposed by the CDOT Interchange Project. The necessary re-routing is shown in **Figure A 10**. Assignments of site-generated trips in the 2046 Horizon Year presented in *3 Proposed Conditions* reflect the new route. The routes for other inbound and outbound Project trips traveling through #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct will remain the same.

**Figure A 10 Study Location # 1 - Proposed Southbound Left Turn Movement Re-Routing (2028) [3]**

**Figure 5-4 – SB Left Turns at Dillon Dam Road Rerouting**



**SB left turns at the DDR.**

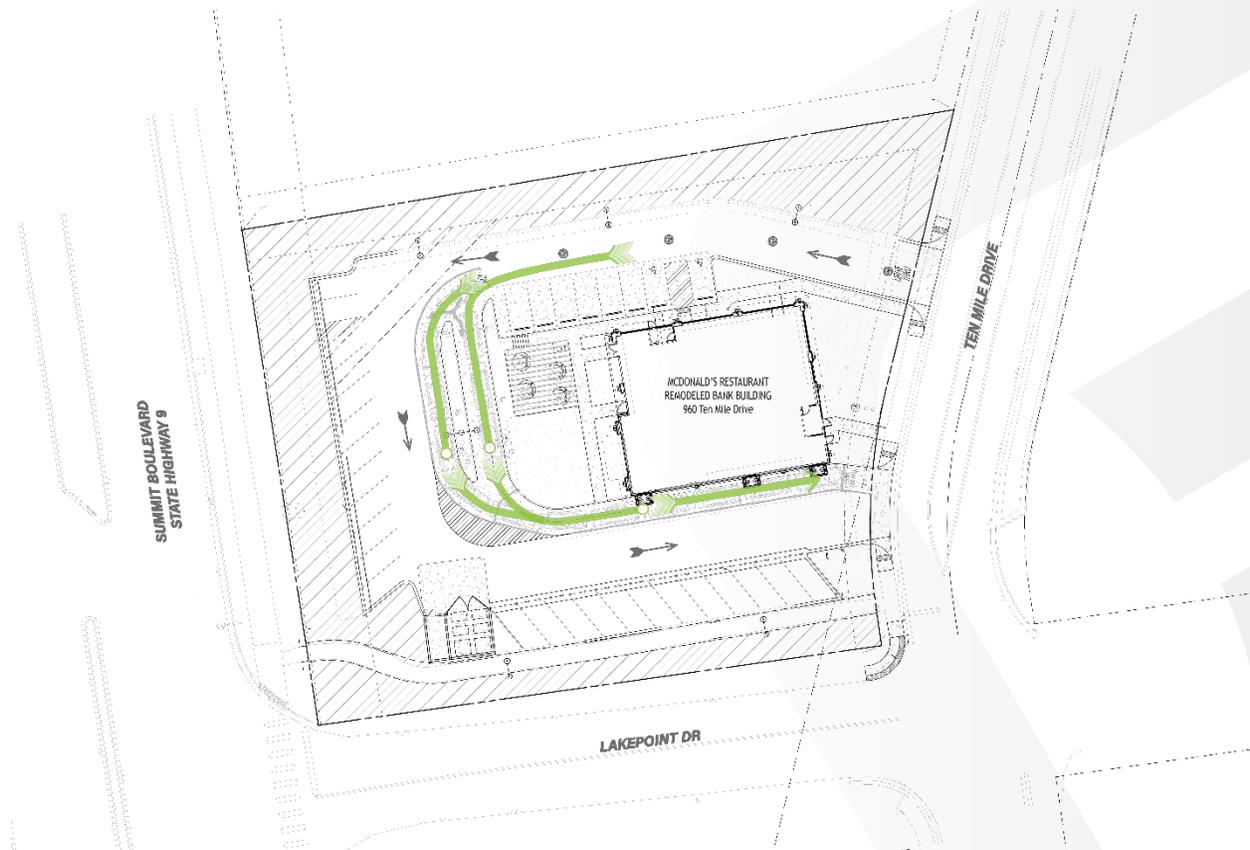
The rerouting assumptions for this movement are shown in Figure 5-4. All SB left turns are assumed to make a right turn at Lusher Court, a right turn onto the Frontage Road using the roundabout at the Meadow Drive/Lusher Court intersection, 80 percent of drivers would turn right onto DDR at the new roundabout intersection, and the remaining 20 percent of drivers would continue through the roundabout onto N. 10 Mile Road.

These rerouting assumptions apply to both design alternatives.

## PROPOSED DRIVE-THROUGH QUEUE CAPACITY

As introduced in *1 Introduction* and discussed in *5 Analysis of Proposed Conditions*, the proposed drive-through provides sufficient storage to address the Agency requirements and expected demand. **Figure A 11** illustrates the queue storage areas referenced in *5 Analysis of Proposed Conditions*.

**Figure A 11 Proposed Project Drive-Through Layout**



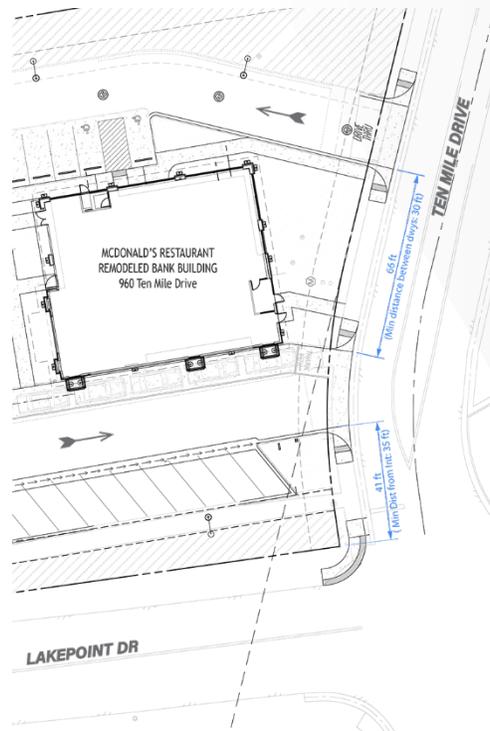
## DRIVEWAY SPACING

As first noted in *1 Introduction* and discussed in *5 Analysis of Proposed Conditions*, the existing driveway spacing was an area of focus for this TIS. Below are two relevant excerpts from section IV.D of the Agency’s *Minimum Street Design and Access Criteria* March 12, 2019 [9]. Additionally, **Figure A 12** illustrates the distance from the existing southern Project driveway to the ROW of Lake Point Dr and to the northern Project driveway. The northern driveway does not support exiting vehicles, so departure sight triangles are not relevant and were not illustrated.

*Proximity to Intersection – Driveways accessing Town ROW near an intersection of a Major Arterial (Summit Blvd.) shall be a minimum of fifty (50) feet and for all other street classifications shall be a minimum of thirty-five (35) feet from the intersecting street ROW as measured from the nearest edge of the driveway. When this spacing cannot be achieved (for example, due to topography or lot size) effort shall be made to place the entrance as far from the intersecting ROW as possible.*

*Driveway Spacing – No two driveways connecting to a public or private street, alley or highway shall be within thirty (30) feet of one another measured from edge of driveway to edge of driveway within the Town ROW or private street ROW. When this spacing cannot be achieved (for example, due to topography or lot size) effort shall be made to place the driveways as far apart as possible and must be approved by the Public Works Director in accordance with Section VI, Waivers to These Criteria.*

**Figure A 12 Existing Driveway Spacing**



## DRIVEWAY LINES OF SIGHT

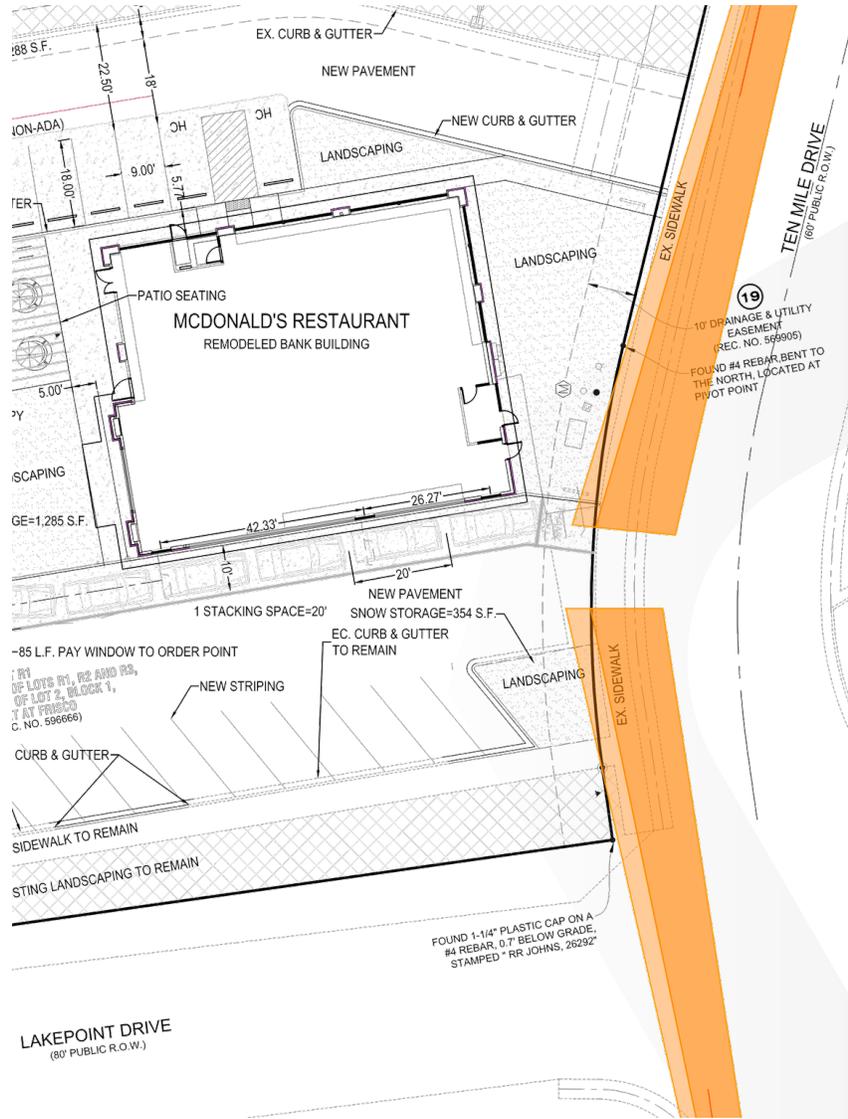
As first noted in *1 Introduction* and discussed in *5 Analysis of Proposed Conditions*, the sight lines were reviewed in this TIS. Project’s proposed one-way site circulation reduces the number of movements and conflicts at the property’s two accesses. For STOP-controlled approaches, AASHTO intersection sight distance Case B applies [12]. It should be noted that the calculated minimum lines of sight needed for each maneuver are greatly exaggerated for this situation due to the variable speeds of major street traffic caused by the nearby STOP controls at the intersection of Lake Point Dr (southbound motorists decelerating to a stop condition and northbound motorists accelerating from a stop). Nonetheless, the full sight triangles were constructed based on a passenger car and 30 MPH design speed along southbound North Ten Mile Dr on grades less than 3.0%. The triangles are illustrated on the Project site plan in [Figure A 13](#). A sight distance of 290 feet was used in each case, based on Case B2 (the more conservative approach). Each sight triangle includes two overlapping sight triangles that show setbacks at approximately 10 and 15 feet behind the traveled way.

The existing line of sight appears to exceed the minimum sight distance based on field observations. While the line of sight was not measured directly in the field, a video recording was taken from a motorist’s perspective, waiting at a typical location in a typical sedan, and watching for an opportunity to turn left. Review of the video indicates more than nine (9) seconds of time since the oncoming southbound vehicle first appears until the vehicle crosses the path of the waiting motorist. This time is referred to as an observed gap, and typically, 6.5 seconds of observed gap time is typically the minimum acceptable observed gap for a motorist to make a decision to turn.

Additionally, [Figure A 14](#) and [Figure A 15](#) present images captured during field observations on Saturday, February 1, 2025 before 5:00 PM. The images show the sight lines from a motorist’s perspective.



Figure A 13 Proposed Sight Triangles



*Figure A 14 Departure Sight Lines– Motorist’s Perspective Looking Left/North*



*Figure A 15 Departure Sight Lines – Motorist’s Perspective Looking Right/South to Lake Point Dr*



### CDOT ACCESS PERMIT (DRAFT)

As first noted in *1 Introduction* and discussed in *5 Analysis of Proposed Conditions*, the Project is adjacent to a state highway and requires a state highway access permit.

The following pages include a **draft** CDOT access permit for the Project. The trip generation estimates included in the access permit are conservatively higher due to the following:

1. ITE Trip Generation Web App output limitation (permit attachment), and
2. To provide a conservative trip estimate

Refer to **Table 3-A** above for more precise estimates used in this TIS and **Table A-10** for a more precise estimate of the trips generated by the former bank.

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*The attached **DRAFT** CDOT Access Permit application has  
⚠ **Not Been Submitted** to any agency by the TIS author, ⚠  
as of the date of this TIS Revision.*

---

**Table A-10 Trip Generation Summary – Former Drive-Through Bank Use.**

ITE Code	Qty	Period	Rate	In [veh/h]	Out [veh/h]	Total [veh/h]
912 <sup>1</sup>	4.364 KSF <sup>2</sup>	AM Trips [veh/h]	9.95	25	18	<b>43</b>
		PM Trips [veh/h]	21.01	46	46	<b>92</b>
		Sat Trips [veh/h]	26.35	59	56	<b>115</b>
		Daily [veh/d]	100.35			<b>438</b>

**Notes:**

1. ITE Code 912: Drive-In Bank
  - o AM (Oct): 58% In, 42% Out
  - o PM (Oct): 50% In, 50% Out
  - o Sat (Jan): 51% In, 49% Out
2. KSF = 1,000 Sq. Ft. GFA

# COLORADO DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

- Instructions:
- 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 <http://www.codot.gov/business/permits/accesspermits>.
- Please print or type**
- \*Indicates required field*

1) Property Owner (Permittee)*		2) Applicant or Agent for Permittee (if different from property owner)	
Street Address*		Mailing Address	
City, State & Zip*	Phone #	City, State & Zip	Phone #
E-mail Address*		E-mail Address (if available)	
3) Address of property to be served by permit*			
4) Legal description of property: (If within jurisdictional limits of Municipality, City and/or County, which one?)			
county	subdivision	block	lot
			section
			township
			range
5) What State Highway are you requesting access from?*		6) What side of the highway?*	
		<input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W	
7) How many feet is the proposed access from the nearest milepost (or cross street if mile post unknown)?*			
feet ( <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W ) from:			
8) What is the approximate date you intend to begin construction?			
9) Check here if you are requesting a:*			
<input type="checkbox"/> New Access		<input type="checkbox"/> Temporary Access (duration anticipated: _____)	<input type="checkbox"/> Improvement to Existing Access
<input type="checkbox"/> Change in Access Use		<input type="checkbox"/> Removal of Access	<input type="checkbox"/> Relocation of an Existing Access (provide detail)
10) Provide existing property use			
11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?*			
<input type="checkbox"/> No		<input type="checkbox"/> 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?*			
<input type="checkbox"/> No		<input type="checkbox"/> Yes, if yes – please describe:	
13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?*			
<input type="checkbox"/> No		<input type="checkbox"/> Yes, if yes – list them on your plans and indicate the proposed and existing access points.	
14) If you are requesting agriculture field access – how many acres will the access serve?			
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/Land Use
			Square Footage
16) If you are requesting residential development access, what is the type (single family, apartment, townhouse) and number of units?			
Type		Number of Units	Type
			Number of Units
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		# of passenger cars and light trucks at peak hour volumes	# of multi-unit trucks at peak hour volumes
<input type="checkbox"/> peak hour volumes or <input type="checkbox"/> average daily volumes.			
# of single unit vehicles in excess of 30 ft.		# of farm vehicles (field equipment)	Total count of all vehicles

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 COOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances, information about prohibited discharges, and may be obtained from Regional COOT Utility/Special Use Permit offices or accessed via the COOT 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 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 289.1-1997 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 241-1999.

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 or Agent for Permittee Signature	Print Name	Date
If the applicant is not the owner of the property, we require this application also to be signed by the property owner or their legally authorized representative (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

**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. If the mile post is unknown, note the distance in feet (using the same procedures noted above) from that cross street or road closest to the proposed access.
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.

# Fast-Food Restaurant with Drive-Through Window (934)

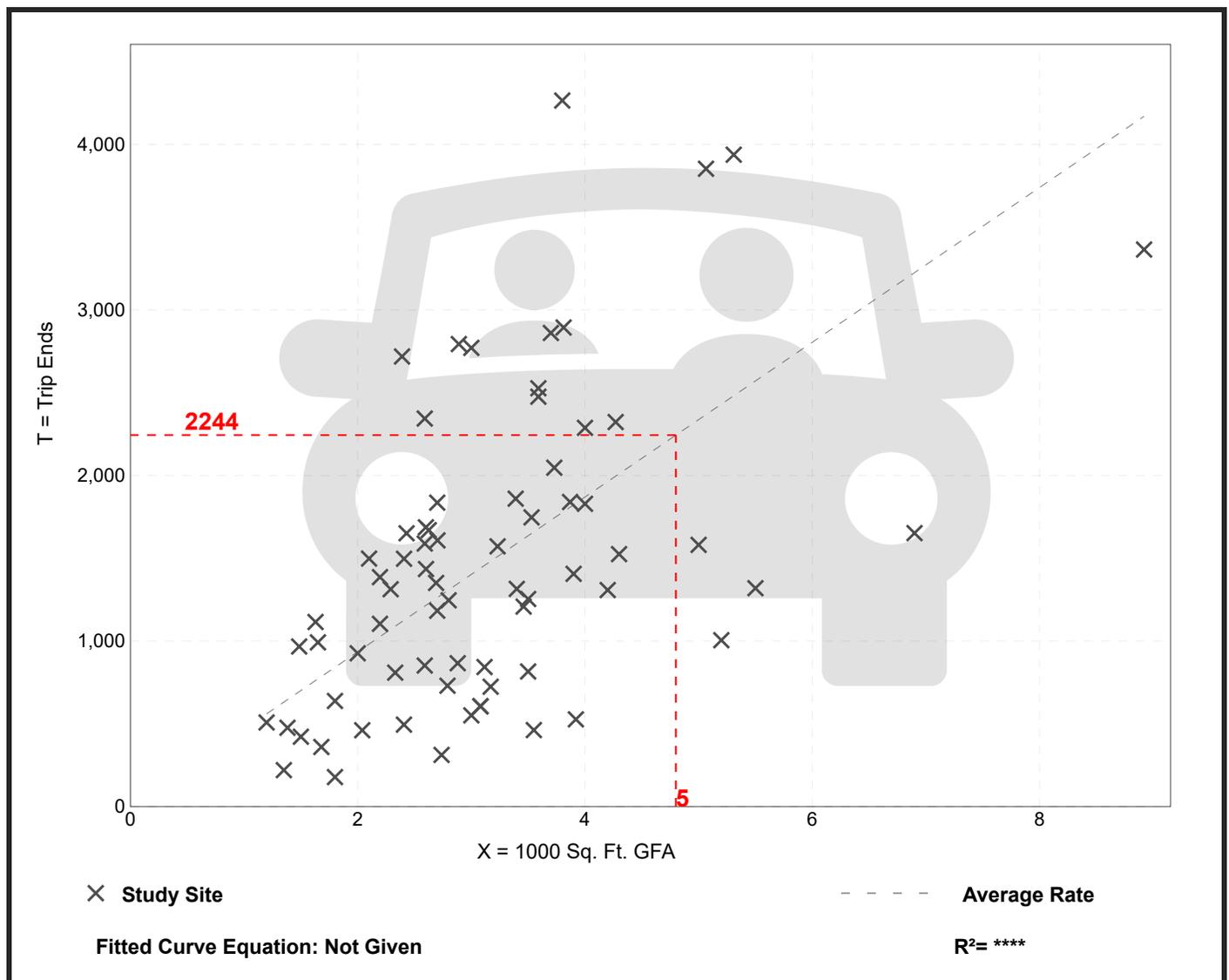
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 71  
Avg. 1000 Sq. Ft. GFA: 3  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

## Data Plot and Equation



# Fast-Food Restaurant with Drive-Through Window (934)

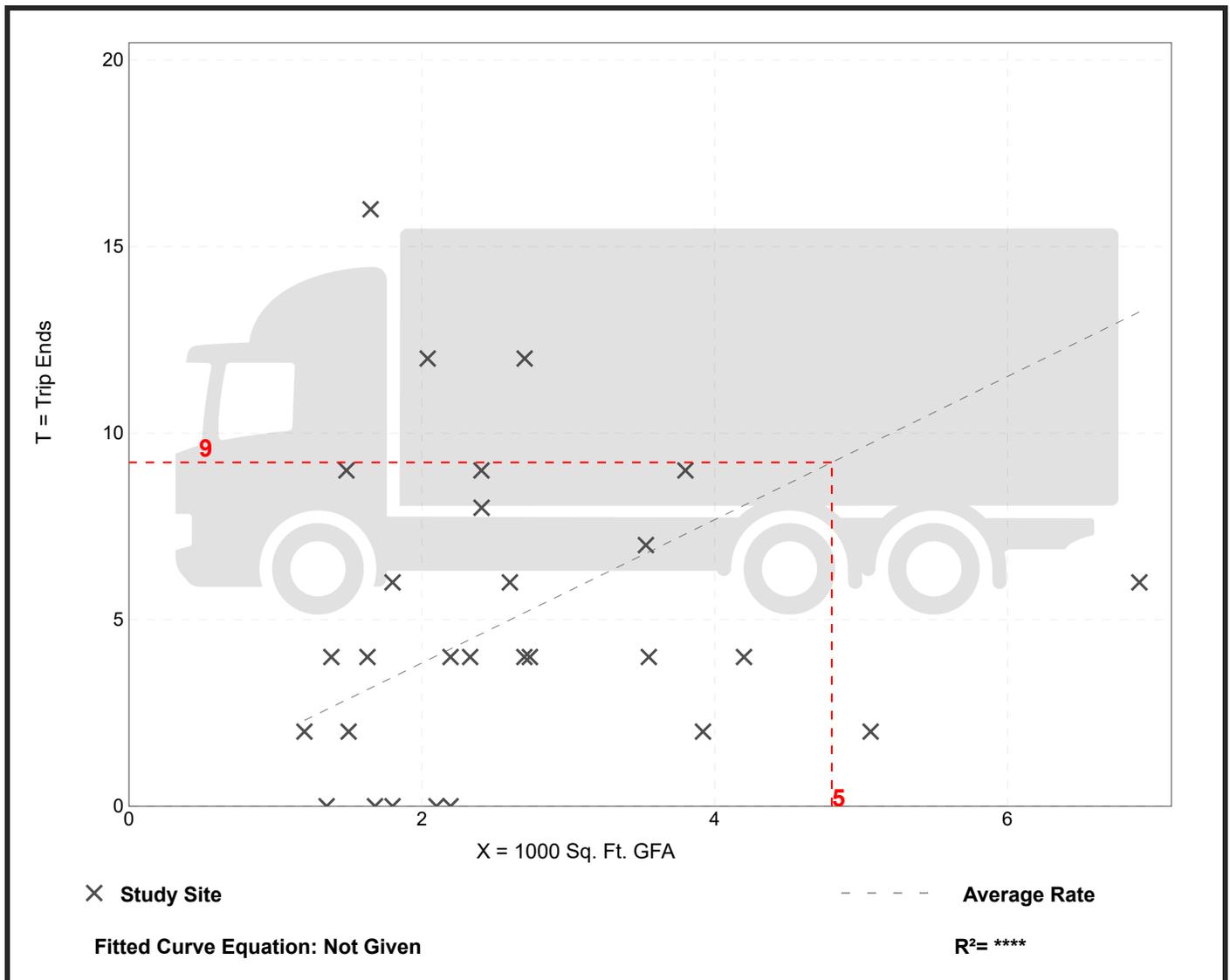
Truck Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 28  
Avg. 1000 Sq. Ft. GFA: 3  
Directional Distribution: 50% entering, 50% exiting

## Truck Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.92	0.00 - 9.70	1.93

## Data Plot and Equation



# Drive-in Bank (912)

**FORMER USE:**  
960 NORTH TEN MILE RD,  
FRISCO, CO

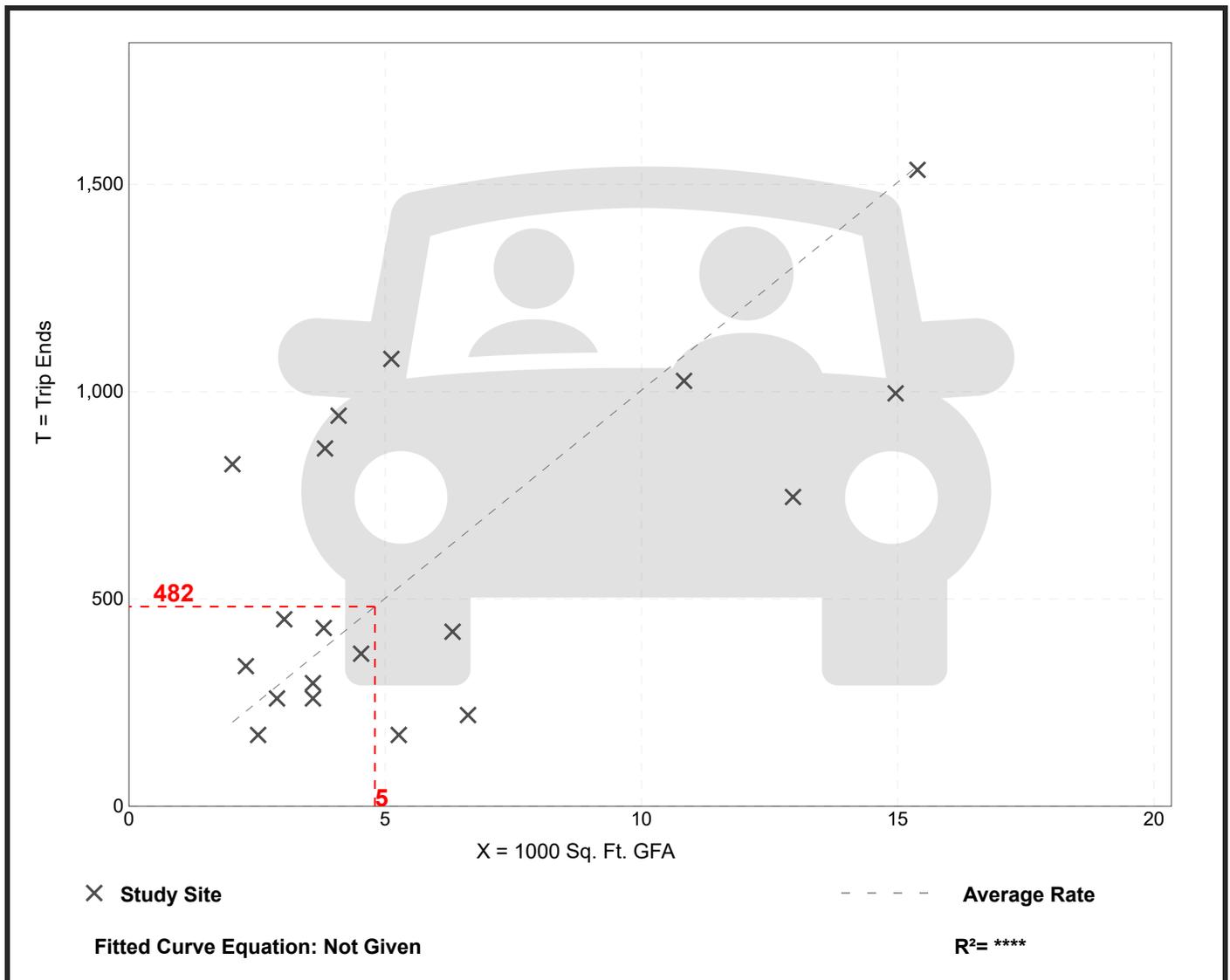
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 19  
Avg. 1000 Sq. Ft. GFA: 6  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
100.35	32.67 - 408.42	68.62

## Data Plot and Equation

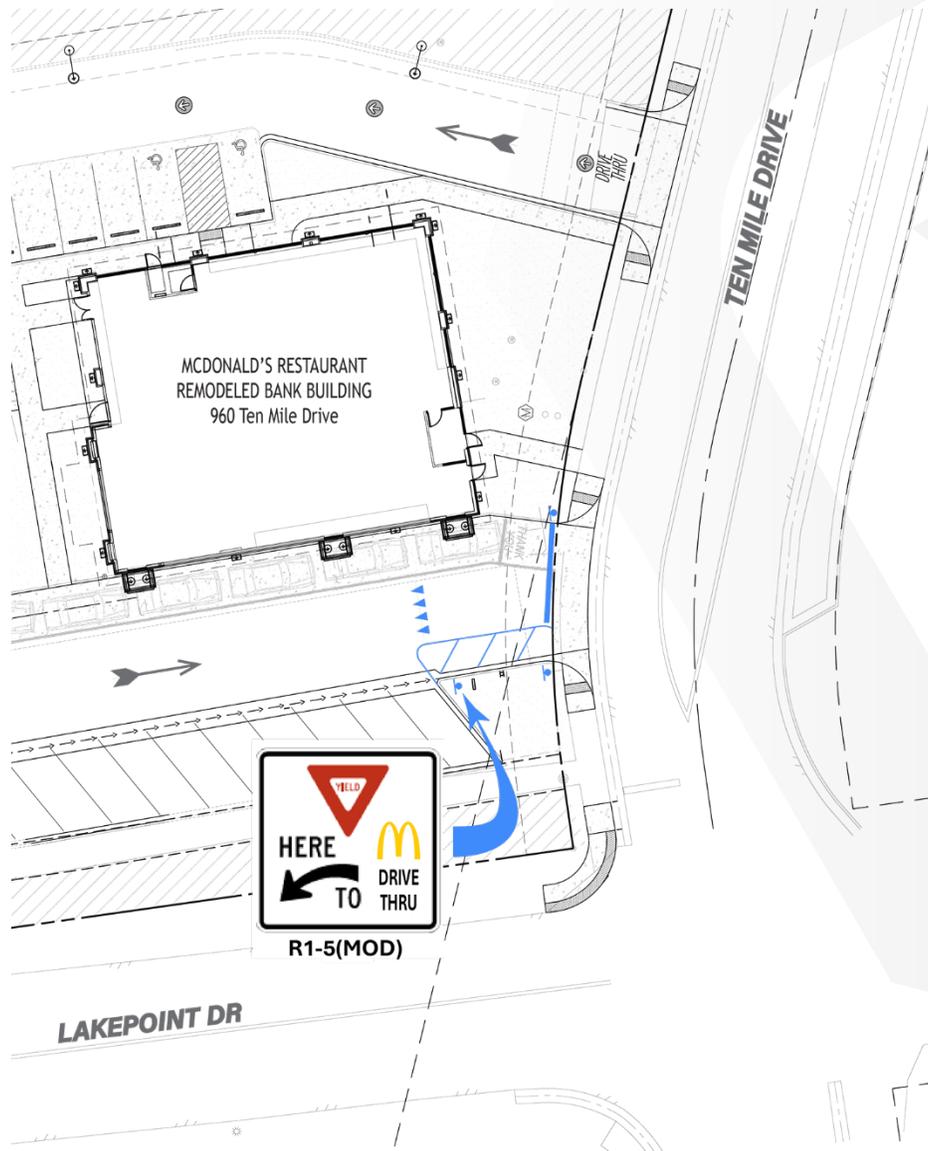


### EXIT LANE - ALTERNATIVE CONFIGURATION

If the operations at the Project’s exit, outlined in *5 Analysis of Proposed Conditions*, require attention, or if the Project chooses to implement this from the outset, an alternative sign and marking layout is shown in [Figure A 16](#).

This alternate layout directs exiting traffic (other than drive-through vehicles) into a single lane and introduces a YIELD condition using a modified MUTCD-compliant sign that identifies right-of-way. This configuration is designed to minimize effects on drive-through operations while supporting safe and efficient traffic flow for customers navigating the exit.

*Figure A 16 Alternate Site Exit Signing and Marking Configuration (Optional)*



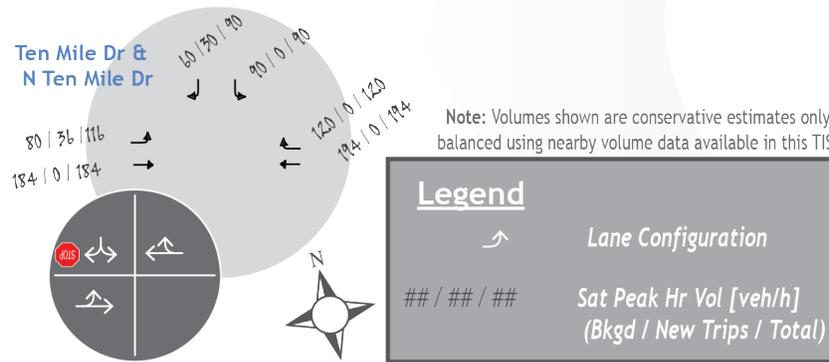
**OPERATIONAL REVIEW OF TEN MILE DR & N TEN MILE DR INTERSECTION**

As described in *5 Analysis of Proposed Conditions*, a supplemental review was conducted for the T-intersection of Ten Mile Dr & N Ten Mile Dr, which is not a Study Location. This review was prompted by the expected distribution of new Project-generated trips through the intersection.

Operations were assessed using Synchro 12 and the HCM 7th Edition methodology for the 2046 Total traffic volume scenario, representing an expected worst-case condition. Traffic volumes were estimated based on adjacent study intersections and adjusted to reflect site access.

The intersection is expected to operate with acceptable delays, and site trips—based on the assumed distribution—are not expected to materially impact operations. Supporting estimated volume data and lane configuration is included in *Figure A 17* and operational analysis is included below. Operational analysis was performed for this intersection using Cubic Transportation Systems Synchro (version 12.2 build 5, revision 31).

*Figure A 17 Estimated 2046 Total Traffic Volumes at 10 Mile Dr & N 10 Mile Dr*



## TRAFFIC ANALYSIS REPORTS

PTV *Vistro* model analysis reports are collated for each of the evaluated scenarios.

**Table A 11** indicates which volume adjustments were applied in this TIS in one or more scenarios. For more specifics, please refer to the Traffic Analysis Reports.

**Table A 11 Project Notes - Vistro Traffic Volume Input**

Vistro Volume Param	Project Input Notes	#1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct	#2 - Summit Blvd (SH 9) & Lakepoint Dr	#3 - Summit Blvd (SH 9) & Ten Mile Dr (South)	#4 - Lakepoint Dr & North Ten Mile Dr	#5 - Dillon Dam Rd & North Ten Mile Dr
<b>Base Volume Input</b>	Used for available TMC data.	•	•	•	•	•
<b>Base Volume Adj factor</b>	Used as a seasonal factor at Study Location 4 in AM & PM Study Periods.				•	
<b>Heavy Vehicles %</b>	2022 PM HV% available from other TIS TMC data at #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct and #3 - Summit Blvd (SH 9) & Ten Mile Dr (South) [13]*. HV%= 2.0% used elsewhere.	•		•		
<b>Growth Factor</b>	Used to factor available volume data to study years.	•	•	•	•	•
<b>In-Process Volume</b>	Not used.					
<b>Diverted Trips</b>	Not used.					
<b>Pass-by Trips</b>	Used to apply pass-by trips as noted in the body of the report.	•	•	•		
<b>Existing Site Adj Volume</b>	Not used.					
<b>Other Volume</b>	Used to re-distribute background volumes due to Future Background Conditions.					•
<b>Right-Turn on Red Volume</b>	Used % RTOR method, at #1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct and #3 - Summit Blvd (SH 9) & Ten Mile Dr (South), based on observations of existing behavior at #3 - Summit Blvd (SH 9) & Ten Mile Dr (South).	•		•		
<b>Peak Hour Factor</b>	Data not available, so defaults used (0.92).	•	•	•	•	•
<b>Other Adj Factor</b>	Used to reduce analysis volumes at channelized right-turn movements with an add lane (as per HCM).	• (2046)		•		

\* **Note:** CDOT OTIS website was out of service when SH-9 (Hwy 009C) HV% was needed for this TIS.

**Table A 12** provides definitions of the user input as well as calculated fields found in the Vistro Traffic Analysis Reports.

**Table A 12 Vistro Traffic Volume Input Parameters**

Vistro Volume Param	Description (Vistro User Manual)	Unit	Default Value	User-Input or Calc Only?
<b>Base Volume Input</b>	Summary of Base Volume Input, description below.	veh/h	0	User (PTE)
<b>Base Volume Adj factor</b>	User definable adjustment factor to apply if desired to base volume input. An example application would be a seasonal adjustment factor. Default = 1.0000. Range = 0 - 99.9000	-	1.00	User (PTE)
<b>Final Base Volume</b>	Base volume representing the base condition. <i>= Base Volume Input * Base Volume Adjustment Factor</i>	veh/h	-	Calc
<b>Heavy Vehicles %</b>	Percent of heavy vehicles for each turn movement. Default = 2. Range = 0 – 100	%	2.00	User (PTE)
<b>Growth Rate</b>	Growth rate to be applied as multiplicative factor to adjust volume to future year analysis. Default = 1.000	-	1.00	User (PTE)
<b>In-Process Volume</b>	User definable volume input typically used to account for trips already approved by a nearby development that is not yet in place.	veh/h	0	User (PTE)
<b>Future Background Volume</b>	Future volumes before any trips are added for the new development. <i>= Final Base Volume * Growth Rate + In-Process Volume</i>	veh/h	-	Calc
<b>Site-Generated Trips</b>	Trips calculated from the new development(s) based on the trip generation, distribution, and assignment paths. Making changes to any component of the trip generation process will result in a change to this value.	veh/h	-	Calc
<b>Diverted Trips</b>	Trips attracted from the traffic on roadways within the vicinity of the development site but require a diversion from that roadway to another roadway to gain access to the site. Diverted trips add traffic to the roadways adjacent to a site. Value may be negative or positive.	veh/h	0	User (PTE)
<b>Pass-by Trips</b>	Trips made as intermediate stops to the development on the way from an origin to a primary trip destination. This field is used in tandem with the Trip Generation for a zone. Primary trips (non-pass-by) can be generated and assigned to the study network, while pass-by adjustments at project driveways can be entered in these fields. Value may be negative or positive.	veh/h	0	User (PTE)
<b>Existing Site Adj Volume</b>	User defined volume adjustment to account for trips either added or removed due to changes in the land use to accommodate the new development. For example, an existing apartment complex is removed to allow construction of a new retail shop. In this case, trips from the apartment complex have been accounted for in the base volume and now need to be removed. This parameter may be positive or negative.	veh/h	0	User (PTE)
<b>Net New Trips</b>	Total new trips added to the system after accounting for all adjustments. <i>= Site Generated + Diverted + Pass-by + Existing Site Adjustment Volume</i>	veh/h	-	Calc
<b>Other Volume</b>	User definable volume not accounted for by other volume parameters	veh/h	0.00	User (PTE)
<b>Future Total Volume</b>	Total future volume after all site generated trips and volume adjustments have been made. <i>= Future Background Volume + Net New Trips + other volume</i>	veh/h	-	Calc
<b>Right-Turn on Red Volume</b>	Volume adjustment to account for vehicles per hour that turn right on a red signal. Value is positive. If the Right Turn on Red Method is set to Absolute, a right-turn on red volume value can be entered. If the Right Turn on Red Method is set to Percentage, a right-turn on red percentage value can be entered. This value will calculate right turn on red volume based on a percentage of the movement's Future Total Volume. Global Settings or Multi Change can be used to set a default Right Turn on Red Percentage.	veh/h or %	0.00	User (PTE)
<b>Total Hourly Volume</b>	Total hourly future volume after accounting for right-turn on red.	veh/h	-	Calc
<b>Peak Hour Factor</b>	PHF based on the Highway Capacity Manual used to adjust the hourly volume to reflect the 15-minute peak flow rate. Default = 1.0000. Range = 0.25 – 1.0000	-	0.92	User (PTE)
<b>Other Adj Factor</b>	User-defined adjustment factor to account for factors not accounted for by any other parameter. Default = 1.0000. Range = 0.0 – 99.9000	-	1.00	User (PTE)
<b>Total 15-Minute Volume</b>	Estimated total vehicles during the highest 15-minute period of the peak hour. <i>= (Total Hourly Volume * 0.25 / PHF) * Other Adjustment Factor</i>	veh	-	Calc
<b>Total Analysis Volume</b>	Calculated total analysis volume, including all volume adjustments and factors defined. <i>= Total 15-Minute Volume * 4</i>	veh/h	-	Calc

**Table A 13** provides headings of the following PTV Vistro reports which can be helpful while navigating the Traffic Analysis Reports.

**Table A 13 Vistro Traffic Analysis Reports – Heading #s Numbers by Analysis Scenario**

Scenario	2025	2026	2046
<b>Existing</b>			
<b>AM</b>	1		
<b>PM</b>	4		
<b>Sat</b>	7		
<b>Background</b>			
<b>AM</b>		10	2
<b>PM</b>		11	5
<b>Sat</b>		12	8
<b>Total Traffic</b>			
<b>AM</b>		13	3
<b>PM</b>		14	6
<b>Sat</b>		15	9

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	45.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.476

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	28	896	142	103	743	354	274	64	34	178	28	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0070	1.0000	1.0070	1.0070	1.0070	1.0070	1.0000	1.0000	1.0000	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	14	0	0	36	0	0	3	0	0	11
Total Hourly Volume [veh/h]	28	902	128	104	748	320	276	64	31	178	28	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	245	35	28	203	87	75	17	8	48	8	27
Total Analysis Volume [veh/h]	30	980	139	113	813	348	300	70	34	193	30	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	53.0	0.0	12.0	53.0	0.0	12.0	40.0	0.0	15.0	43.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	84.9	73.0	73.0	84.9	75.4	75.4	7.0	10.6	8.5	12.1
g / C, Green / Cycle	0.71	0.61	0.61	0.71	0.63	0.63	0.06	0.09	0.07	0.10
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.09	0.17	0.23	0.22	0.09	0.06	0.05	0.08
s, saturation flow rate [veh/h]	607	3503	1602	652	3503	1577	3375	1768	3514	1643
c, Capacity [veh/h]	460	2130	974	469	2200	990	197	157	250	167
d1, Uniform Delay [s]	6.19	12.80	10.09	7.52	10.81	10.66	56.50	52.94	54.76	52.86
k, delay calibration	0.50	0.50	0.50	0.17	0.50	0.50	0.13	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.72	0.31	0.42	0.48	0.98	242.59	4.73	4.99	9.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.07	0.46	0.14	0.24	0.37	0.35	1.52	0.66	0.77	0.83
d, Delay for Lane Group [s/veh]	6.46	13.52	10.40	7.94	11.29	11.64	299.09	57.67	59.75	62.70
Lane Group LOS	A	B	B	A	B	B	F	E	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.24	6.97	1.60	0.86	5.05	4.41	9.66	3.30	3.06	4.57
50th-Percentile Queue Length [ft/ln]	5.94	174.35	39.90	21.43	126.35	110.26	241.53	82.38	76.58	114.24
95th-Percentile Queue Length [veh/ln]	0.43	11.31	2.87	1.54	8.74	7.85	16.42	5.93	5.51	8.08
95th-Percentile Queue Length [ft/ln]	10.70	282.63	71.82	38.58	218.52	196.36	410.43	148.29	137.84	201.89

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	6.46	13.52	10.40	7.94	11.29	11.64	299.09	57.67	57.67	59.75	62.70	62.70
Movement LOS	A	B	B	A	B	B	F	E	E	E	E	E
d_A, Approach Delay [s/veh]	12.96			11.09			236.94			60.98		
Approach LOS	B			B			F			E		
d_I, Intersection Delay [s/veh]	45.89											
Intersection LOS	D											
Intersection V/C	0.476											

**Emissions**

Vehicle Miles Traveled [mph]	3.46	113.03	16.03	9.83	70.71	30.27	37.14	12.88	15.09	10.79
Stops [stops/h]	7.13	418.44	47.88	25.72	303.24	132.31	579.66	98.86	183.79	137.09
Fuel consumption [US gal/h]	0.22	10.15	1.27	0.75	6.84	2.97	21.52	2.10	3.73	2.77
CO [g/h]	15.73	709.56	88.45	52.47	478.41	207.81	1504.07	146.84	260.71	193.73
NOx [g/h]	3.06	138.05	17.21	10.21	93.08	40.43	292.64	28.57	50.73	37.69
VOC [g/h]	3.64	164.45	20.50	12.16	110.88	48.16	348.58	34.03	60.42	44.90

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	783		783		583		633	
d_b, Bicycle Delay [s]	22.20		22.20		30.10		28.02	
I_b,int, Bicycle LOS Score for Intersection	2.519		2.640		2.231		2.124	
Bicycle LOS	B		B		B		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.047

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	678	15	0	968	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	678	15	0	968	0	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	184	4	0	263	0	6
Total Analysis Volume [veh/h]	737	16	0	1052	0	25
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.03
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	3.66
d_A, Approach Delay [s/veh]	0.00		0.00		12.03	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.16					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	48	810	34	50	13	126	60	7	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.000	1.000	1.007	1.000	1.0000	1.0000	1.0070	1.0070	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	3	0	0	13	0	0	11
Total Hourly Volume [veh/h]	57	1008	67	0	48	816	31	50	13	114	60	7	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	13	222	8	14	4	0	16	2	4
Total Analysis Volume [veh/h]	62	1096	73	0	52	887	34	54	14	0	65	8	14
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	90.0	0.0	0.0	12.0	90.0	0.0	0.0	18.0	0.0	0.0	18.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	100.8	90.0	90.0	100.8	89.6	89.6	9.2	9.2	9.2	9.2	9.2
g / C, Green / Cycle	0.84	0.75	0.75	0.84	0.75	0.75	0.08	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.09	0.32	0.32	0.09	0.25	0.02	0.04	0.01	0.00	0.05	0.01
s, saturation flow rate [veh/h]	725	1840	1800	594	3503	1577	1356	1870	1589	1399	1654
c, Capacity [veh/h]	641	1379	1349	527	2617	1178	131	143	122	141	127
d1, Uniform Delay [s]	2.19	5.54	5.54	2.71	5.15	3.93	56.12	51.54	0.00	55.88	51.84
k, delay calibration	0.50	0.50	0.50	0.32	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.97	1.00	0.24	0.35	0.05	2.07	0.29	0.00	2.36	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.10	0.43	0.43	0.10	0.34	0.03	0.41	0.10	0.00	0.46	0.17
d, Delay for Lane Group [s/veh]	2.49	6.51	6.54	2.95	5.50	3.97	58.19	51.83	0.00	58.24	52.49
Lane Group LOS	A	A	A	A	A	A	E	D	A	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.20	4.93	4.84	0.16	3.29	0.20	1.68	0.40	0.00	2.02	0.64
50th-Percentile Queue Length [ft/ln]	4.93	123.14	120.94	3.88	82.34	5.00	41.90	10.04	0.00	50.51	15.98
95th-Percentile Queue Length [veh/ln]	0.35	8.57	8.44	0.28	5.93	0.36	3.02	0.72	0.00	3.64	1.15
95th-Percentile Queue Length [ft/ln]	8.87	214.14	211.12	6.98	148.21	9.00	75.42	18.08	0.00	90.92	28.77

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	2.49	6.52	6.54	2.95	2.95	5.50	3.97	58.19	51.83	0.00	58.24	52.49	52.49
Movement LOS	A	A	A	A	A	A	A	E	D	A	E	D	D
d_A, Approach Delay [s/veh]	6.32			5.31			56.88			56.79			
Approach LOS	A			A			E			E			
d_I, Intersection Delay [s/veh]	9.22												
Intersection LOS	A												
Intersection V/C	0.375												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	4.68	79.82	3.06	2.12	0.55	0.00	2.94	0.99
Stops [stops/h]	5.91	147.77	145.13	4.65	197.61	6.00	50.28	12.05	0.00	60.61	19.18
Fuel consumption [US gal/h]	0.44	5.34	5.24	0.24	5.52	0.19	1.10	0.26	0.00	1.34	0.42
CO [g/h]	30.61	373.42	366.27	17.09	385.92	13.23	76.77	18.12	0.00	93.54	29.15
NOx [g/h]	5.96	72.65	71.26	3.33	75.09	2.57	14.94	3.53	0.00	18.20	5.67
VOC [g/h]	7.09	86.54	84.89	3.96	89.44	3.07	17.79	4.20	0.00	21.68	6.76

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1417		1417		217		217	
d_b, Bicycle Delay [s]	5.10		5.10		47.70		47.70	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.322		1.693		1.721	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.093

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	39	6	1	83	9	10	2	3	7	5	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Total 15-Minute Volume [veh/h]	2	9	1	0	19	2	2	0	1	2	1	0
Total Analysis Volume [veh/h]	8	36	6	1	78	8	9	2	3	7	5	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.04	0.01	0.00	0.09	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.72	9.53	8.59	9.56	9.75	8.81	7.24	0.00	0.00	7.24	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.34	0.34	0.34	0.02	0.02	0.02	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	4.62	4.62	4.62	8.42	8.42	8.42	0.42	0.42	0.42	0.29	0.29	0.29
d_A, Approach Delay [s/veh]	9.45			9.66			4.65			4.22		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.76											
Intersection LOS	A											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.110

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	153	61	54	198	49	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	153	61	54	198	49	33
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	17	15	54	13	9
Total Analysis Volume [veh/h]	166	66	59	215	53	36
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.11	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.76	0.00	13.57	10.38
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.10	0.54	0.54
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.54	2.54	13.39	13.39
d_A, Approach Delay [s/veh]	0.00		1.67		12.28	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.61					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	← R			↑			← R					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.02	8.32	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67			9.02			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.42											
Intersection LOS												

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	61	896	225	103	743	354	274	61	51	187	39	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0070	1.0000	1.0070	1.0070	1.0070	1.0070	1.0000	1.0000	1.0000	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	23	0	0	36	0	0	5	0	0	11
Total Hourly Volume [veh/h]	61	902	202	104	748	320	276	61	46	187	39	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	245	55	28	203	87	75	17	13	51	11	27
Total Analysis Volume [veh/h]	66	980	220	113	813	348	300	66	50	203	42	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	64.0	0.0	12.0	64.0	0.0	21.0	27.0	0.0	17.0	23.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	78.4	66.5	66.5	78.4	67.1	67.1	12.8	16.6	9.0	12.8
g / C, Green / Cycle	0.65	0.55	0.55	0.65	0.56	0.56	0.11	0.14	0.07	0.11
(v / s)_i Volume / Saturation Flow Rate	0.10	0.28	0.14	0.18	0.23	0.22	0.09	0.07	0.06	0.09
s, saturation flow rate [veh/h]	647	3503	1602	631	3503	1577	3375	1738	3514	1659
c, Capacity [veh/h]	443	1940	887	417	1957	881	361	241	264	178
d1, Uniform Delay [s]	8.92	16.59	13.85	10.36	15.21	14.99	52.52	47.67	54.46	52.57
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.94	0.67	1.60	0.65	1.33	4.97	1.48	4.65	10.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.15	0.51	0.25	0.27	0.42	0.40	0.83	0.48	0.77	0.84
d, Delay for Lane Group [s/veh]	9.63	17.53	14.52	11.96	15.87	16.32	57.49	49.14	59.11	62.82
Lane Group LOS	A	B	B	B	B	B	E	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.67	8.24	3.16	1.20	6.30	5.49	4.75	3.37	3.21	4.98
50th-Percentile Queue Length [ft/ln]	16.66	206.01	78.96	30.12	157.56	137.31	118.78	84.15	80.15	124.45
95th-Percentile Queue Length [veh/ln]	1.20	12.95	5.68	2.17	10.42	9.34	8.33	6.06	5.77	8.64
95th-Percentile Queue Length [ft/ln]	29.98	323.71	142.12	54.21	260.49	233.40	208.14	151.47	144.28	215.92

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	9.63	17.53	14.52	11.96	15.87	16.32	57.49	49.14	49.14	59.11	62.82	62.82
Movement LOS	A	B	B	B	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	16.60			15.64			55.16			60.68		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	25.78											
Intersection LOS	C											
Intersection V/C	0.486											

**Emissions**

Vehicle Miles Traveled [mph]	7.61	113.03	25.37	9.83	70.71	30.27	37.14	14.36	15.87	11.72
Stops [stops/h]	19.99	494.43	94.75	36.14	378.15	164.77	285.06	100.98	192.37	149.34
Fuel consumption [US gal/h]	0.57	11.52	2.33	0.92	8.16	3.55	6.05	2.12	3.89	3.02
CO [g/h]	39.83	805.46	162.84	64.41	570.69	248.06	422.79	148.13	272.11	210.92
NOx [g/h]	7.75	156.71	31.68	12.53	111.04	48.26	82.26	28.82	52.94	41.04
VOC [g/h]	9.23	186.67	37.74	14.93	132.26	57.49	97.99	34.33	63.06	48.88

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	967			967			367			300		
d_b, Bicycle Delay [s]	16.02			16.02			40.02			43.35		
I_b,int, Bicycle LOS Score for Intersection	2.623			2.640			2.254			2.160		
Bicycle LOS	B			B			B			B		

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1093	21	0	950	0	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1093	21	0	950	0	34
Peak Hour Factor	0.9200	1.0000	1.0000	0.9200	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	297	5	0	258	0	9
Total Analysis Volume [veh/h]	1188	21	0	1033	0	34
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.17
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	7.16
d_A, Approach Delay [s/veh]	0.00		0.00		15.17	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.23					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.419

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	155.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	74	810	86	116	25	126	60	25	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0000	1.0070	1.0000	1.0000	1.0000	1.0070	1.0070	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	9	0	0	13	0	0	39
Total Hourly Volume [veh/h]	57	1008	67	74	816	77	116	25	114	60	25	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	20	222	21	32	7	0	16	7	13
Total Analysis Volume [veh/h]	62	1096	73	80	887	84	126	27	0	65	27	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss											
Flashing Yellow Arrow	No			No			No			No		
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	63	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	78.0	0.0	12.0	78.0	0.0	0.0	30.0	0.0	0.0	30.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		Yes			Yes			No			No	
Pedestrian Recall		No			No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	84.2	84.2	84.2	84.2	84.2	20.8	20.8	20.8	20.8	20.8
g / C, Green / Cycle	0.70	0.70	0.70	0.70	0.70	0.17	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.10	0.32	0.32	0.17	0.18	0.10	0.01	0.00	0.05	0.05
s, saturation flow rate [veh/h]	636	1840	1800	480	5012	1288	1870	1589	1383	1648
c, Capacity [veh/h]	457	1292	1264	323	3520	204	322	274	255	284
d1, Uniform Delay [s]	9.42	7.83	7.83	14.75	6.46	52.49	41.70	0.00	46.43	43.16
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.62	1.17	1.20	1.83	0.17	3.04	0.11	0.00	0.52	0.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.14	0.46	0.46	0.25	0.25	0.62	0.08	0.00	0.25	0.28
d, Delay for Lane Group [s/veh]	10.03	8.99	9.03	16.58	6.63	55.53	41.81	0.00	46.94	43.69
Lane Group LOS	B	A	A	B	A	E	D	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.73	6.36	6.24	1.32	2.51	3.87	0.68	0.00	1.78	2.07
50th-Percentile Queue Length [ft/ln]	18.19	158.91	156.04	32.88	62.73	96.76	16.99	0.00	44.39	51.77
95th-Percentile Queue Length [veh/ln]	1.31	10.49	10.34	2.37	4.52	6.97	1.22	0.00	3.20	3.73
95th-Percentile Queue Length [ft/ln]	32.75	262.28	258.47	59.19	112.92	174.17	30.59	0.00	79.90	93.18

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	10.03	9.01	9.03	16.58	6.63	0.00	55.53	41.81	0.00	46.94	43.69	43.69
Movement LOS	B	A	A	B	A		E	D	A	D	D	D
d_A, Approach Delay [s/veh]	9.06			7.45			53.11			45.16		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	13.22											
Intersection LOS	B											
Intersection V/C	0.419											

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	7.20	79.82	4.95	1.06	0.00	2.94	3.57
Stops [stops/h]	21.83	190.70	187.24	39.46	225.83	116.11	20.39	0.00	53.26	62.12
Fuel consumption [US gal/h]	0.65	5.96	5.85	0.84	5.94	2.49	0.42	0.00	1.13	1.31
CO [g/h]	45.64	416.85	408.90	58.79	415.05	173.73	29.60	0.00	79.23	91.26
NOx [g/h]	8.88	81.10	79.56	11.44	80.75	33.80	5.76	0.00	15.42	17.76
VOC [g/h]	10.58	96.61	94.77	13.62	96.19	40.26	6.86	0.00	18.36	21.15

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1217		1217		417		417	
d_b, Bicycle Delay [s]	9.20		9.20		37.60		37.60	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.091		1.834		1.862	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Total 15-Minute Volume [veh/h]	3	23	2	0	19	3	3	1	1	2	3	0
Total Analysis Volume [veh/h]	10	92	8	1	78	10	11	4	5	8	11	1
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.11	0.01	0.00	0.09	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.26	10.02	9.00	10.23	9.88	8.87	7.26	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.45	0.45	0.35	0.35	0.35	0.02	0.02	0.02	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	11.33	11.33	11.33	8.81	8.81	8.81	0.51	0.51	0.51	0.34	0.34	0.34
d_A, Approach Delay [s/veh]	9.97			9.77			3.99			2.90		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.80											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.148

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	285	62	38	226	55	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	285	62	38	226	55	84
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	17	10	61	15	23
Total Analysis Volume [veh/h]	310	67	41	246	60	91
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.15	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	8.09	0.00	16.44	12.69
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.07	1.13	1.13
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.75	1.75	28.30	28.30
d_A, Approach Delay [s/veh]	0.00		1.16		14.18	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.03					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↗			↵			↗↵					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.02	8.32	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67			9.02			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.42											
Intersection LOS												

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	26.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	81	896	160	103	743	354	274	58	83	137	57	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0070	1.0000	1.0070	1.0070	1.0070	1.0070	1.0000	1.0000	1.0000	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	16	0	0	36	0	0	8	0	0	11
Total Hourly Volume [veh/h]	81	902	144	104	748	320	276	58	75	137	57	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	245	39	28	203	87	75	16	20	37	15	27
Total Analysis Volume [veh/h]	88	980	157	113	813	348	300	63	82	149	62	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	63.0	0.0	12.0	63.0	0.0	18.0	17.0	0.0	28.0	27.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	77.3	65.5	65.5	77.3	65.7	65.7	12.5	19.3	7.3	14.1
g / C, Green / Cycle	0.64	0.55	0.55	0.64	0.55	0.55	0.10	0.16	0.06	0.12
(v / s)_i Volume / Saturation Flow Rate	0.13	0.28	0.10	0.17	0.23	0.22	0.09	0.09	0.04	0.10
s, saturation flow rate [veh/h]	656	3503	1602	658	3503	1577	3375	1700	3514	1681
c, Capacity [veh/h]	444	1912	874	425	1918	863	353	274	215	198
d1, Uniform Delay [s]	9.39	17.19	13.73	10.60	16.00	15.76	52.81	46.18	55.21	51.95
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.00	0.99	0.45	1.52	0.69	1.40	5.78	1.59	3.94	10.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.20	0.51	0.18	0.27	0.42	0.40	0.85	0.53	0.69	0.86
d, Delay for Lane Group [s/veh]	10.39	18.17	14.18	12.12	16.69	17.17	58.59	47.77	59.15	62.22
Lane Group LOS	B	B	B	B	B	B	E	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	8.44	2.20	1.23	6.52	5.68	4.80	4.17	2.35	5.62
50th-Percentile Queue Length [ft/ln]	23.28	211.08	55.06	30.86	162.96	142.01	119.93	104.18	58.66	140.61
95th-Percentile Queue Length [veh/ln]	1.68	13.21	3.96	2.22	10.71	9.59	8.39	7.50	4.22	9.51
95th-Percentile Queue Length [ft/ln]	41.91	330.21	99.11	55.54	267.64	239.72	209.73	187.52	105.59	237.85

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	10.39	18.17	14.18	12.12	16.69	17.17	58.59	47.77	47.77	59.15	62.22	62.22
Movement LOS	B	B	B	B	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	17.10			16.41			55.06			60.79		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	26.28											
Intersection LOS	C											
Intersection V/C	0.497											

**Emissions**

Vehicle Miles Traveled [mph]	10.15	113.03	18.11	9.83	70.71	30.27	37.14	17.95	11.65	13.29
Stops [stops/h]	27.94	506.59	66.07	37.03	391.11	170.41	287.82	125.02	140.79	168.73
Fuel consumption [US gal/h]	0.78	11.74	1.64	0.93	8.40	3.65	6.12	2.61	2.86	3.40
CO [g/h]	54.74	820.81	114.64	65.13	586.99	255.20	427.97	182.11	199.72	237.45
NOx [g/h]	10.65	159.70	22.30	12.67	114.21	49.65	83.27	35.43	38.86	46.20
VOC [g/h]	12.69	190.23	26.57	15.10	136.04	59.15	99.19	42.21	46.29	55.03

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	950		950		200		367	
d_b, Bicycle Delay [s]	16.54		16.54		48.60		40.02	
I_b,int, Bicycle LOS Score for Intersection	2.583		2.640		2.307		2.104	
Bicycle LOS	B		B		B		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1158	17	0	1010	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1158	17	0	1010	0	26
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	315	5	0	274	0	7
Total Analysis Volume [veh/h]	1259	18	0	1098	0	28
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.71
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.25
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	6.21
d_A, Approach Delay [s/veh]	0.00		0.00		15.71	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻↵			↻↵↵				↵↻↵			↵↻↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	101	810	143	86	13	126	60	10	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.000	1.000	1.007	1.000	1.0000	1.0000	1.0070	1.0070	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	14	0	0	13	0	0	26
Total Hourly Volume [veh/h]	57	1008	67	0	101	816	129	86	13	114	60	10	62
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	27	222	35	23	4	0	16	3	17
Total Analysis Volume [veh/h]	62	1096	73	0	110	887	140	93	14	0	65	11	67
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	85.0	0.0	0.0	12.0	85.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	92.7	80.8	80.8	92.7	81.5	81.5	17.3	17.3	17.3	17.3	17.3
g / C, Green / Cycle	0.77	0.67	0.67	0.77	0.68	0.68	0.14	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.09	0.32	0.32	0.18	0.25	0.09	0.07	0.01	0.00	0.05	0.05
s, saturation flow rate [veh/h]	681	1840	1800	618	3503	1577	1289	1870	1589	1399	1598
c, Capacity [veh/h]	557	1241	1214	494	2383	1073	166	269	228	228	230
d1, Uniform Delay [s]	3.98	9.37	9.37	5.11	8.22	6.73	54.47	44.33	0.00	48.76	46.25
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	1.31	1.34	1.04	0.45	0.25	2.94	0.08	0.00	0.68	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.48	0.48	0.22	0.37	0.13	0.56	0.05	0.00	0.29	0.34
d, Delay for Lane Group [s/veh]	4.39	10.67	10.71	6.15	8.66	6.98	57.41	44.41	0.00	49.44	47.12
Lane Group LOS	A	B	B	A	A	A	E	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.35	7.21	7.07	0.67	4.65	1.24	2.89	0.36	0.00	1.83	2.14
50th-Percentile Queue Length [ft/ln]	8.76	180.14	176.87	16.71	116.13	30.96	72.19	9.11	0.00	45.74	53.47
95th-Percentile Queue Length [veh/ln]	0.63	11.61	11.44	1.20	8.18	2.23	5.20	0.66	0.00	3.29	3.85
95th-Percentile Queue Length [ft/ln]	15.77	290.20	285.92	30.08	204.49	55.73	129.94	16.39	0.00	82.33	96.25

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	4.39	10.69	10.71	6.15	6.15	8.66	6.98	57.41	44.41	0.00	49.44	47.12	47.12
Movement LOS	A	B	B	A	A	A	A	E	D	A	D	D	D
d_A, Approach Delay [s/veh]	10.38			8.21			55.71			48.18			
Approach LOS	B			A			E			D			
d_I, Intersection Delay [s/veh]	13.35												
Intersection LOS	B												
Intersection V/C	0.413												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	9.90	79.82	12.60	3.65	0.55	0.00	2.94	3.53
Stops [stops/h]	10.51	216.17	212.24	20.05	278.70	37.15	86.62	10.93	0.00	54.88	64.16
Fuel consumption [US gal/h]	0.50	6.36	6.24	0.67	6.70	0.96	1.88	0.23	0.00	1.18	1.36
CO [g/h]	34.71	444.36	435.92	46.54	468.48	67.01	131.20	16.05	0.00	82.39	95.40
NOx [g/h]	6.75	86.46	84.81	9.05	91.15	13.04	25.53	3.12	0.00	16.03	18.56
VOC [g/h]	8.04	102.99	101.03	10.79	108.57	15.53	30.41	3.72	0.00	19.09	22.11

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1333		1333		300		300	
d_b, Bicycle Delay [s]	6.67		6.67		43.35		43.35	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.418		1.758		1.838	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	12	2	0	26	3	3	1	1	2	2	0
Total Analysis Volume [veh/h]	11	49	8	1	103	11	13	2	3	9	7	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.06	0.01	0.00	0.13	0.01	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.24	9.75	8.72	9.99	10.04	9.02	7.25	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	A	A	A	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.27	0.47	0.47	0.47	0.02	0.02	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	6.65	6.65	6.65	11.79	11.79	11.79	0.61	0.61	0.61	0.38	0.38	0.38
d_A, Approach Delay [s/veh]	9.70			9.95			5.24			4.07		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	9.05											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.248

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	233	88	44	205	98	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	233	88	44	205	98	44
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	24	12	56	27	12
Total Analysis Volume [veh/h]	253	96	48	223	107	48
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.25	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	8.03	0.00	16.63	13.16
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.08	1.33	1.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.05	2.05	33.16	33.16
d_A, Approach Delay [s/veh]	0.00		1.42		15.55	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.61					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↕↗			↕			↖↗					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.02	8.32	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67			9.02			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.42											
Intersection LOS												

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	45.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.476

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	28	896	142	103	743	354	274	64	34	178	28	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	14	0	0	36	0	0	3	0	0	11
Total Hourly Volume [veh/h]	28	902	129	104	748	320	276	64	31	179	28	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	245	35	28	203	87	75	17	8	49	8	27
Total Analysis Volume [veh/h]	30	980	140	113	813	348	300	70	34	195	30	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	53.0	0.0	12.0	53.0	0.0	12.0	39.0	0.0	16.0	43.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	84.9	73.0	73.0	84.9	75.4	75.4	7.0	10.5	8.7	12.1
g / C, Green / Cycle	0.71	0.61	0.61	0.71	0.63	0.63	0.06	0.09	0.07	0.10
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.09	0.17	0.23	0.22	0.09	0.06	0.06	0.08
s, saturation flow rate [veh/h]	607	3503	1602	651	3503	1577	3375	1768	3514	1643
c, Capacity [veh/h]	460	2130	974	469	2200	990	197	155	254	167
d1, Uniform Delay [s]	6.19	12.80	10.10	7.52	10.81	10.66	56.50	53.05	54.68	52.86
k, delay calibration	0.50	0.50	0.50	0.17	0.50	0.50	0.13	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.72	0.31	0.42	0.48	0.98	242.59	4.93	4.86	9.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.07	0.46	0.14	0.24	0.37	0.35	1.52	0.67	0.77	0.83
d, Delay for Lane Group [s/veh]	6.46	13.52	10.41	7.94	11.29	11.64	299.09	57.98	59.55	62.70
Lane Group LOS	A	B	B	A	B	B	F	E	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.24	6.97	1.61	0.86	5.05	4.41	9.66	3.31	3.09	4.57
50th-Percentile Queue Length [ft/ln]	5.94	174.35	40.21	21.44	126.35	110.26	241.53	82.63	77.24	114.24
95th-Percentile Queue Length [veh/ln]	0.43	11.31	2.90	1.54	8.74	7.85	16.42	5.95	5.56	8.08
95th-Percentile Queue Length [ft/ln]	10.70	282.63	72.38	38.59	218.52	196.36	410.43	148.73	139.04	201.89

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	6.46	13.52	10.41	7.94	11.29	11.64	299.09	57.98	57.98	59.55	62.70	62.70
Movement LOS	A	B	B	A	B	B	F	E	E	E	E	E
d_A, Approach Delay [s/veh]	12.95			11.09			237.02			60.85		
Approach LOS	B			B			F			E		
d_I, Intersection Delay [s/veh]	45.89											
Intersection LOS	D											
Intersection V/C	0.476											

**Emissions**

Vehicle Miles Traveled [mph]	3.46	113.03	16.15	9.83	70.71	30.27	37.14	12.88	15.24	10.79
Stops [stops/h]	7.13	418.44	48.26	25.72	303.24	132.31	579.66	99.15	185.38	137.09
Fuel consumption [US gal/h]	0.22	10.15	1.28	0.75	6.84	2.97	21.52	2.11	3.76	2.77
CO [g/h]	15.73	709.56	89.12	52.47	478.41	207.81	1504.07	147.34	262.77	193.73
NOx [g/h]	3.06	138.05	17.34	10.21	93.08	40.43	292.64	28.67	51.13	37.69
VOC [g/h]	3.64	164.45	20.66	12.16	110.88	48.16	348.58	34.15	60.90	44.90

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	783		783		567		633	
d_b, Bicycle Delay [s]	22.20		22.20		30.82		28.02	
I_b,int, Bicycle LOS Score for Intersection	2.520		2.640		2.231		2.127	
Bicycle LOS	B		B		B		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.047

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	678	15	0	968	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	683	15	0	975	0	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	186	4	0	265	0	6
Total Analysis Volume [veh/h]	742	16	0	1060	0	25
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.06
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	3.67
d_A, Approach Delay [s/veh]	0.00		0.00		12.06	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.16					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	48	810	34	50	13	126	60	7	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	3	0	0	13	0	0	11
Total Hourly Volume [veh/h]	57	1008	67	0	48	816	31	50	13	114	60	7	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	13	222	8	14	4	0	16	2	4
Total Analysis Volume [veh/h]	62	1096	73	0	52	887	34	54	14	0	65	8	14
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	90.0	0.0	0.0	12.0	90.0	0.0	0.0	18.0	0.0	0.0	18.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	100.8	90.0	90.0	100.8	89.6	89.6	9.2	9.2	9.2	9.2	9.2
g / C, Green / Cycle	0.84	0.75	0.75	0.84	0.75	0.75	0.08	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.09	0.32	0.32	0.09	0.25	0.02	0.04	0.01	0.00	0.05	0.01
s, saturation flow rate [veh/h]	725	1840	1800	594	3503	1577	1356	1870	1589	1399	1654
c, Capacity [veh/h]	641	1379	1349	527	2617	1178	131	143	122	141	127
d1, Uniform Delay [s]	2.19	5.54	5.54	2.71	5.15	3.93	56.12	51.54	0.00	55.88	51.84
k, delay calibration	0.50	0.50	0.50	0.32	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.97	1.00	0.24	0.35	0.05	2.07	0.29	0.00	2.36	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.10	0.43	0.43	0.10	0.34	0.03	0.41	0.10	0.00	0.46	0.17
d, Delay for Lane Group [s/veh]	2.49	6.51	6.54	2.95	5.50	3.97	58.19	51.83	0.00	58.24	52.49
Lane Group LOS	A	A	A	A	A	A	E	D	A	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.20	4.93	4.84	0.16	3.29	0.20	1.68	0.40	0.00	2.02	0.64
50th-Percentile Queue Length [ft/ln]	4.93	123.14	120.94	3.88	82.34	5.00	41.90	10.04	0.00	50.51	15.98
95th-Percentile Queue Length [veh/ln]	0.35	8.57	8.44	0.28	5.93	0.36	3.02	0.72	0.00	3.64	1.15
95th-Percentile Queue Length [ft/ln]	8.87	214.14	211.12	6.98	148.21	9.00	75.42	18.08	0.00	90.92	28.77

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	2.49	6.52	6.54	2.95	2.95	5.50	3.97	58.19	51.83	0.00	58.24	52.49	52.49
Movement LOS	A	A	A	A	A	A	A	E	D	A	E	D	D
d_A, Approach Delay [s/veh]	6.32			5.31			56.88			56.79			
Approach LOS	A			A			E			E			
d_I, Intersection Delay [s/veh]	9.22												
Intersection LOS	A												
Intersection V/C	0.375												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	4.68	79.82	3.06	2.12	0.55	0.00	2.94	0.99
Stops [stops/h]	5.91	147.77	145.13	4.65	197.61	6.00	50.28	12.05	0.00	60.61	19.18
Fuel consumption [US gal/h]	0.44	5.34	5.24	0.24	5.52	0.19	1.10	0.26	0.00	1.34	0.42
CO [g/h]	30.61	373.42	366.27	17.09	385.92	13.23	76.77	18.12	0.00	93.54	29.15
NOx [g/h]	5.96	72.65	71.26	3.33	75.09	2.57	14.94	3.53	0.00	18.20	5.67
VOC [g/h]	7.09	86.54	84.89	3.96	89.44	3.07	17.79	4.20	0.00	21.68	6.76

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1417			1417			217			217		
d_b, Bicycle Delay [s]	5.10			5.10			47.70			47.70		
I_b,int, Bicycle LOS Score for Intersection	2.582			2.322			1.693			1.721		
Bicycle LOS	B			B			A			A		

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	39	6	1	83	9	10	2	3	7	5	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	11	2	0	23	2	3	1	1	2	1	0
Total Analysis Volume [veh/h]	10	42	7	1	90	10	11	2	3	8	5	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.05	0.01	0.00	0.11	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.96	9.63	8.65	9.76	9.88	8.91	7.24	0.00	0.00	7.24	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.22	0.40	0.40	0.40	0.02	0.02	0.02	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	5.60	5.60	5.60	10.03	10.03	10.03	0.52	0.52	0.52	0.33	0.33	0.33
d_A, Approach Delay [s/veh]	9.57			9.79			4.98			4.45		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.94											
Intersection LOS	A											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.110

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	153	61	54	198	49	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	61	54	199	49	33
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	17	15	54	13	9
Total Analysis Volume [veh/h]	167	66	59	216	53	36
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.11	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.77	0.00	13.59	10.39
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.10	0.54	0.54
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.54	2.54	13.42	13.42
d_A, Approach Delay [s/veh]	0.00		1.67		12.30	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.60					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	lr			l			lr					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.02	8.32	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67			9.02			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.42											
Intersection LOS												

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	61	896	225	103	743	354	274	61	51	187	39	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	23	0	0	36	0	0	5	0	0	11
Total Hourly Volume [veh/h]	61	902	204	104	748	320	276	61	46	188	39	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	245	55	28	203	87	75	17	13	51	11	27
Total Analysis Volume [veh/h]	66	980	222	113	813	348	300	66	50	204	42	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	64.0	0.0	12.0	64.0	0.0	21.0	27.0	0.0	17.0	23.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	78.4	66.5	66.5	78.4	67.1	67.1	12.8	16.6	9.0	12.8
g / C, Green / Cycle	0.65	0.55	0.55	0.65	0.56	0.56	0.11	0.14	0.08	0.11
(v / s)_i Volume / Saturation Flow Rate	0.10	0.28	0.14	0.18	0.23	0.22	0.09	0.07	0.06	0.09
s, saturation flow rate [veh/h]	647	3503	1602	631	3503	1577	3375	1738	3514	1659
c, Capacity [veh/h]	443	1940	887	416	1957	881	361	241	265	178
d1, Uniform Delay [s]	8.92	16.59	13.87	10.36	15.21	14.99	52.52	47.70	54.44	52.57
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.94	0.68	1.60	0.65	1.33	4.97	1.49	4.66	10.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.15	0.51	0.25	0.27	0.42	0.40	0.83	0.48	0.77	0.84
d, Delay for Lane Group [s/veh]	9.63	17.53	14.55	11.97	15.87	16.32	57.49	49.18	59.10	62.82
Lane Group LOS	A	B	B	B	B	B	E	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.67	8.24	3.19	1.20	6.30	5.49	4.75	3.37	3.22	4.98
50th-Percentile Queue Length [ft/ln]	16.66	206.01	79.80	30.12	157.56	137.31	118.78	84.19	80.55	124.45
95th-Percentile Queue Length [veh/ln]	1.20	12.95	5.75	2.17	10.42	9.34	8.33	6.06	5.80	8.64
95th-Percentile Queue Length [ft/ln]	29.98	323.71	143.63	54.22	260.49	233.40	208.14	151.54	144.99	215.92

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	9.63	17.53	14.55	11.97	15.87	16.32	57.49	49.18	49.18	59.10	62.82	62.82
Movement LOS	A	B	B	B	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	16.60			15.64			55.17			60.68		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	25.79											
Intersection LOS	C											
Intersection V/C	0.486											

**Emissions**

Vehicle Miles Traveled [mph]	7.61	113.03	25.60	9.83	70.71	30.27	37.14	14.36	15.95	11.72
Stops [stops/h]	19.99	494.43	95.76	36.15	378.15	164.77	285.06	101.03	193.32	149.34
Fuel consumption [US gal/h]	0.57	11.52	2.35	0.92	8.16	3.55	6.05	2.12	3.91	3.02
CO [g/h]	39.83	805.46	164.49	64.42	570.69	248.06	422.79	148.20	273.43	210.92
NOx [g/h]	7.75	156.71	32.00	12.53	111.04	48.26	82.26	28.83	53.20	41.04
VOC [g/h]	9.23	186.67	38.12	14.93	132.26	57.49	97.99	34.35	63.37	48.88

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	967			967			367			300		
d_b, Bicycle Delay [s]	16.02			16.02			40.02			43.35		
I_b,int, Bicycle LOS Score for Intersection	2.625			2.640			2.254			2.162		
Bicycle LOS	B			B			B			B		

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.097

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1093	21	0	950	0	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1101	21	0	957	0	34
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	299	6	0	260	0	9
Total Analysis Volume [veh/h]	1197	23	0	1040	0	37
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.45
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.32
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	8.00
d_A, Approach Delay [s/veh]	0.00		0.00		15.45	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.25					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	74	810	86	116	25	126	60	25	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	9	0	0	13	0	0	40
Total Hourly Volume [veh/h]	57	1008	67	0	75	816	78	117	25	114	60	25	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	20	222	21	32	7	0	16	7	13
Total Analysis Volume [veh/h]	62	1096	73	0	82	887	85	127	27	0	65	27	52
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	78.0	0.0	0.0	12.0	78.0	0.0	0.0	30.0	0.0	0.0	30.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	90.8	79.2	79.2	90.8	79.6	79.6	19.2	19.2	19.2	19.2	19.2
g / C, Green / Cycle	0.76	0.66	0.66	0.76	0.66	0.66	0.16	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.09	0.32	0.32	0.13	0.25	0.05	0.10	0.01	0.00	0.05	0.05
s, saturation flow rate [veh/h]	712	1840	1800	618	3503	1577	1288	1870	1589	1383	1648
c, Capacity [veh/h]	550	1215	1188	470	2324	1046	206	299	254	256	263
d1, Uniform Delay [s]	4.87	10.21	10.21	6.11	9.11	7.19	52.30	42.97	0.00	46.38	44.48
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	1.39	1.43	0.81	0.48	0.15	2.97	0.13	0.00	0.52	0.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.49	0.49	0.17	0.38	0.08	0.62	0.09	0.00	0.25	0.30
d, Delay for Lane Group [s/veh]	5.28	11.60	11.64	6.91	9.59	7.34	55.27	43.10	0.00	46.90	45.11
Lane Group LOS	A	B	B	A	A	A	E	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.38	7.62	7.48	0.54	4.97	0.77	3.89	0.69	0.00	1.78	2.11
50th-Percentile Queue Length [ft/ln]	9.61	190.39	186.93	13.39	124.18	19.31	97.35	17.31	0.00	44.38	52.78
95th-Percentile Queue Length [veh/ln]	0.69	12.14	11.96	0.96	8.62	1.39	7.01	1.25	0.00	3.20	3.80
95th-Percentile Queue Length [ft/ln]	17.31	303.53	299.04	24.10	215.56	34.76	175.23	31.16	0.00	79.89	95.00

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	5.28	11.62	11.64	6.91	6.91	9.59	7.34	55.27	43.10	0.00	46.90	45.11	45.11
Movement LOS	A	B	B	A	A	A	A	E	D	A	D	D	D
d_A, Approach Delay [s/veh]	11.30			9.20			53.14			45.92			
Approach LOS	B			A			D			D			
d_I, Intersection Delay [s/veh]	14.87												
Intersection LOS	B												
Intersection V/C	0.435												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	7.38	79.82	7.65	4.99	1.06	0.00	2.94	3.57
Stops [stops/h]	11.54	228.47	224.31	16.06	298.04	23.17	116.82	20.78	0.00	53.26	63.34
Fuel consumption [US gal/h]	0.52	6.56	6.44	0.52	7.01	0.59	2.50	0.43	0.00	1.13	1.34
CO [g/h]	36.03	458.59	449.89	36.17	490.30	41.44	174.54	30.30	0.00	79.18	93.50
NOx [g/h]	7.01	89.22	87.53	7.04	95.39	8.06	33.96	5.89	0.00	15.41	18.19
VOC [g/h]	8.35	106.28	104.27	8.38	113.63	9.60	40.45	7.02	0.00	18.35	21.67

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1217		1217		417		417	
d_b, Bicycle Delay [s]	9.20		9.20		37.60		37.60	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.369		1.835		1.863	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	85	8	1	71	9	10	3	4	8	10	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	23	2	0	19	2	3	1	1	2	3	0
Total Analysis Volume [veh/h]	10	92	9	1	77	10	11	3	4	9	11	1
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.11	0.01	0.00	0.09	0.01	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.26	10.03	9.00	10.23	9.88	8.86	7.26	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.46	0.46	0.46	0.35	0.35	0.35	0.02	0.02	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	11.43	11.43	11.43	8.70	8.70	8.70	0.51	0.51	0.51	0.38	0.38	0.38
d_A, Approach Delay [s/veh]	9.97			9.76			4.43			3.10		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.87											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.149

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	285	62	38	226	55	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	62	38	228	55	85
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	17	10	62	15	23
Total Analysis Volume [veh/h]	312	67	41	248	60	92
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.15	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	8.10	0.00	16.53	12.74
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.07	1.15	1.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.75	1.75	28.65	28.65
d_A, Approach Delay [s/veh]	0.00		1.15		14.24	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.04					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↗			↵			↗↵					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.02	8.32	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67			9.02			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.42											
Intersection LOS												

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	26.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	81	896	160	103	743	354	274	58	83	137	57	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	16	0	0	36	0	0	8	0	0	11
Total Hourly Volume [veh/h]	82	902	145	104	748	320	276	58	76	138	57	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	245	39	28	203	87	75	16	21	38	15	27
Total Analysis Volume [veh/h]	89	980	158	113	813	348	300	63	83	150	62	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	63.0	0.0	12.0	63.0	0.0	18.0	17.0	0.0	28.0	27.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	77.3	65.5	65.5	77.3	65.7	65.7	12.5	19.3	7.3	14.1
g / C, Green / Cycle	0.64	0.55	0.55	0.64	0.55	0.55	0.10	0.16	0.06	0.12
(v / s)_i Volume / Saturation Flow Rate	0.14	0.28	0.10	0.17	0.23	0.22	0.09	0.09	0.04	0.10
s, saturation flow rate [veh/h]	656	3503	1602	658	3503	1577	3375	1699	3514	1681
c, Capacity [veh/h]	444	1912	874	425	1918	863	353	273	216	198
d1, Uniform Delay [s]	9.40	17.19	13.73	10.60	16.01	15.77	52.81	46.24	55.19	51.95
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	0.99	0.45	1.53	0.69	1.40	5.78	1.62	3.94	10.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.20	0.51	0.18	0.27	0.42	0.40	0.85	0.53	0.69	0.86
d, Delay for Lane Group [s/veh]	10.41	18.17	14.19	12.12	16.69	17.17	58.59	47.87	59.14	62.22
Lane Group LOS	B	B	B	B	B	B	E	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.94	8.44	2.22	1.23	6.52	5.68	4.80	4.20	2.36	5.62
50th-Percentile Queue Length [ft/ln]	23.57	211.08	55.45	30.86	163.01	142.05	119.93	105.05	59.05	140.61
95th-Percentile Queue Length [veh/ln]	1.70	13.21	3.99	2.22	10.71	9.59	8.39	7.56	4.25	9.51
95th-Percentile Queue Length [ft/ln]	42.42	330.21	99.82	55.55	267.70	239.78	209.73	189.09	106.29	237.85

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	10.41	18.17	14.19	12.12	16.69	17.17	58.59	47.87	47.87	59.14	62.22	62.22
Movement LOS	B	B	B	B	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	17.10			16.42			55.08			60.77		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	26.30											
Intersection LOS	C											
Intersection V/C	0.497											

**Emissions**

Vehicle Miles Traveled [mph]	10.26	113.03	18.22	9.83	70.71	30.27	37.14	18.08	11.72	13.29
Stops [stops/h]	28.28	506.59	66.54	37.03	391.22	170.46	287.82	126.06	141.72	168.73
Fuel consumption [US gal/h]	0.79	11.74	1.65	0.93	8.40	3.65	6.12	2.63	2.88	3.40
CO [g/h]	55.40	820.81	115.42	65.14	587.13	255.27	427.97	183.60	201.02	237.45
NOx [g/h]	10.78	159.70	22.46	12.67	114.23	49.67	83.27	35.72	39.11	46.20
VOC [g/h]	12.84	190.23	26.75	15.10	136.07	59.16	99.19	42.55	46.59	55.03

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	950		950		200		367	
d_b, Bicycle Delay [s]	16.54		16.54		48.60		40.02	
I_b,int, Bicycle LOS Score for Intersection	2.585		2.640		2.309		2.106	
Bicycle LOS	B		B		B		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1158	17	0	1010	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1166	17	0	1017	0	26
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	317	5	0	276	0	7
Total Analysis Volume [veh/h]	1267	18	0	1105	0	28
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.78
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.25
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	6.25
d_A, Approach Delay [s/veh]	0.00		0.00		15.78	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻			↻↵				↵↻			↵↻		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	101	810	143	86	13	126	60	10	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	14	0	0	13	0	0	27
Total Hourly Volume [veh/h]	57	1008	67	0	102	816	130	87	13	114	60	10	62
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	28	222	35	24	4	0	16	3	17
Total Analysis Volume [veh/h]	62	1096	73	0	111	887	141	95	14	0	65	11	67
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	85.0	0.0	0.0	12.0	85.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	92.5	80.6	80.6	92.5	81.3	81.3	17.5	17.5	17.5	17.5	17.5
g / C, Green / Cycle	0.77	0.67	0.67	0.77	0.68	0.68	0.15	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.09	0.32	0.32	0.18	0.25	0.09	0.07	0.01	0.00	0.05	0.05
s, saturation flow rate [veh/h]	681	1840	1800	618	3503	1577	1289	1870	1589	1399	1598
c, Capacity [veh/h]	555	1237	1210	493	2377	1070	169	272	231	230	233
d1, Uniform Delay [s]	4.04	9.47	9.48	5.19	8.31	6.82	54.33	44.13	0.00	48.55	46.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	1.32	1.35	1.06	0.45	0.26	2.94	0.08	0.00	0.66	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.48	0.48	0.23	0.37	0.13	0.56	0.05	0.00	0.28	0.34
d, Delay for Lane Group [s/veh]	4.45	10.80	10.84	6.25	8.76	7.07	57.26	44.21	0.00	49.22	46.89
Lane Group LOS	A	B	B	A	A	A	E	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.35	7.26	7.13	0.68	4.68	1.26	2.95	0.36	0.00	1.82	2.13
50th-Percentile Queue Length [ft/ln]	8.86	181.50	178.20	17.06	117.00	31.44	73.68	9.09	0.00	45.62	53.32
95th-Percentile Queue Length [veh/ln]	0.64	11.68	11.51	1.23	8.23	2.26	5.30	0.65	0.00	3.28	3.84
95th-Percentile Queue Length [ft/ln]	15.95	291.97	287.66	30.72	205.70	56.59	132.62	16.35	0.00	82.12	95.98

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	4.45	10.81	10.84	6.25	6.25	8.76	7.07	57.26	44.21	0.00	49.22	46.89	46.89
Movement LOS	A	B	B	A	A	A	A	E	D	A	D	D	D
d_A, Approach Delay [s/veh]	10.49			8.31			55.59			47.95			
Approach LOS	B			A			E			D			
d_I, Intersection Delay [s/veh]	13.46												
Intersection LOS	B												
Intersection V/C	0.415												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	9.99	79.82	12.69	3.73	0.55	0.00	2.94	3.53
Stops [stops/h]	10.63	217.80	213.84	20.48	280.81	37.72	88.41	10.90	0.00	54.74	63.99
Fuel consumption [US gal/h]	0.50	6.38	6.26	0.68	6.74	0.97	1.91	0.23	0.00	1.17	1.36
CO [g/h]	34.83	446.23	437.75	47.24	470.83	67.82	133.79	16.00	0.00	82.11	95.06
NOx [g/h]	6.78	86.82	85.17	9.19	91.61	13.20	26.03	3.11	0.00	15.98	18.49
VOC [g/h]	8.07	103.42	101.45	10.95	109.12	15.72	31.01	3.71	0.00	19.03	22.03

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
l_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1333		1333		300		300	
d_b, Bicycle Delay [s]	6.67		6.67		43.35		43.35	
l_b,int, Bicycle LOS Score for Intersection	2.582		2.419		1.761		1.840	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	45	7	1	96	10	12	2	3	8	6	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	12	2	0	26	3	3	1	1	2	2	0
Total Analysis Volume [veh/h]	11	49	8	1	104	11	13	2	3	9	7	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.06	0.01	0.00	0.13	0.01	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.25	9.75	8.72	10.00	10.05	9.03	7.25	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	A	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.27	0.48	0.48	0.48	0.02	0.02	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	6.65	6.65	6.65	11.91	11.91	11.91	0.61	0.61	0.61	0.38	0.38	0.38
d_A, Approach Delay [s/veh]	9.71			9.95			5.24			4.07		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	9.06											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	16.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.252

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↬		↵		↶	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	233	88	44	205	98	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	235	89	44	206	99	44
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	24	12	56	27	12
Total Analysis Volume [veh/h]	255	97	48	224	108	48
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.25	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	8.04	0.00	16.75	13.25
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.08	1.35	1.35
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.05	2.05	33.71	33.71
d_A, Approach Delay [s/veh]	0.00		1.42		15.67	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.63					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	← →			↑			← →					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)								
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.02	8.32	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67			9.02			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.42											
Intersection LOS												

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	45.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	28	896	142	103	743	354	274	64	34	178	28	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	43	8	32	32	0	0	0	0	0	0	19
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	15	0	0	36	0	0	3	0	0	13
Total Hourly Volume [veh/h]	28	945	136	136	780	320	276	64	31	179	28	116
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	257	37	37	212	87	75	17	8	49	8	32
Total Analysis Volume [veh/h]	30	1027	148	148	848	348	300	70	34	195	30	126
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	49.0	0.0	12.0	49.0	0.0	12.0	43.0	0.0	16.0	47.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	83.4	71.5	71.5	83.4	74.0	74.0	7.0	11.9	8.7	13.6
g / C, Green / Cycle	0.70	0.60	0.60	0.70	0.62	0.62	0.06	0.10	0.07	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.29	0.09	0.23	0.24	0.22	0.09	0.06	0.06	0.10
s, saturation flow rate [veh/h]	595	3503	1602	633	3503	1577	3375	1768	3514	1637
c, Capacity [veh/h]	440	2085	954	445	2158	971	197	176	254	186
d1, Uniform Delay [s]	6.80	13.91	10.83	8.84	11.67	11.35	56.50	51.67	54.68	52.11
k, delay calibration	0.50	0.50	0.50	0.29	0.50	0.50	0.13	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.83	0.35	1.17	0.54	1.03	242.59	3.12	4.86	9.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.07	0.49	0.16	0.33	0.39	0.36	1.52	0.59	0.77	0.84
d, Delay for Lane Group [s/veh]	7.10	14.75	11.18	10.01	12.21	12.38	299.09	54.79	59.55	61.75
Lane Group LOS	A	B	B	B	B	B	F	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.25	7.77	1.78	1.28	5.57	4.60	9.66	3.20	3.09	5.14
50th-Percentile Queue Length [ft/ln]	6.29	194.34	44.56	32.06	139.26	114.90	241.53	80.04	77.24	128.43
95th-Percentile Queue Length [veh/ln]	0.45	12.35	3.21	2.31	9.44	8.11	16.42	5.76	5.56	8.85
95th-Percentile Queue Length [ft/ln]	11.32	308.65	80.20	57.71	236.03	202.79	410.43	144.07	139.04	221.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	7.10	14.75	11.18	10.01	12.21	12.38	299.09	54.79	54.79	59.55	61.75	61.75
Movement LOS	A	B	B	B	B	B	F	D	D	E	E	E
d_A, Approach Delay [s/veh]	14.12			12.01			236.20			60.53		
Approach LOS	B			B			F			E		
d_I, Intersection Delay [s/veh]	45.35											
Intersection LOS	D											
Intersection V/C	0.510											

**Emissions**

Vehicle Miles Traveled [mph]	3.46	118.45	17.07	12.87	73.76	30.27	37.14	12.88	15.24	12.19
Stops [stops/h]	7.55	466.40	53.47	38.47	334.22	137.88	579.66	96.05	185.38	154.11
Fuel consumption [US gal/h]	0.23	11.10	1.39	1.08	7.43	3.07	21.52	2.03	3.76	3.10
CO [g/h]	16.22	776.20	97.13	75.59	519.48	214.42	1504.07	142.10	262.77	216.67
NOx [g/h]	3.16	151.02	18.90	14.71	101.07	41.72	292.64	27.65	51.13	42.16
VOC [g/h]	3.76	179.89	22.51	17.52	120.39	49.69	348.58	32.93	60.90	50.21

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	717			717			633			700		
d_b, Bicycle Delay [s]	24.70			24.70			28.02			25.35		
I_b,int, Bicycle LOS Score for Intersection	2.566			2.698			2.231			2.160		
Bicycle LOS	B			B			B			B		

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	678	15	0	968	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	25	0	32	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-15	0	0	-16	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	674	40	0	991	0	68
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	183	11	0	269	0	18
Total Analysis Volume [veh/h]	733	43	0	1077	0	74
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.14
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.75
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.47
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	11.85
d_A, Approach Delay [s/veh]	0.00		0.00		12.75	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	10.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	48	810	34	50	13	126	60	7	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	6	13	19	0	0	0	0	0	24	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	3	0	0	13	0	0	11
Total Hourly Volume [veh/h]	57	1027	73	13	67	816	31	50	13	114	84	7	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	279	20	4	18	222	8	14	4	0	23	2	4
Total Analysis Volume [veh/h]	62	1116	79	14	73	887	34	54	14	0	91	8	14
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	85.0	0.0	0.0	12.0	85.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	97.6	86.0	86.0	97.6	86.5	86.5	12.4	12.4	12.4	12.4	12.4
g / C, Green / Cycle	0.81	0.72	0.72	0.81	0.72	0.72	0.10	0.10	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.09	0.33	0.33	0.15	0.25	0.02	0.04	0.01	0.00	0.07	0.01
s, saturation flow rate [veh/h]	728	1840	1798	599	3503	1577	1356	1870	1589	1399	1654
c, Capacity [veh/h]	625	1319	1288	513	2526	1137	159	193	164	169	171
d1, Uniform Delay [s]	2.73	7.17	7.17	3.55	6.26	4.78	53.72	48.63	0.00	54.54	48.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	1.15	1.18	0.71	0.39	0.05	1.26	0.16	0.00	2.64	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.10	0.46	0.46	0.17	0.35	0.03	0.34	0.07	0.00	0.54	0.13
d, Delay for Lane Group [s/veh]	3.04	8.31	8.35	4.26	6.64	4.82	54.98	48.79	0.00	57.17	49.25
Lane Group LOS	A	A	A	A	A	A	D	D	A	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.26	6.12	6.01	0.39	3.82	0.23	1.62	0.39	0.00	2.81	0.61
50th-Percentile Queue Length [ft/ln]	6.38	153.11	150.27	9.68	95.52	5.78	40.45	9.65	0.00	70.26	15.32
95th-Percentile Queue Length [veh/ln]	0.46	10.18	10.03	0.70	6.88	0.42	2.91	0.69	0.00	5.06	1.10
95th-Percentile Queue Length [ft/ln]	11.48	254.57	250.79	17.42	171.94	10.40	72.81	17.37	0.00	126.48	27.58

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	3.04	8.33	8.35	4.26	4.26	6.64	4.82	54.98	48.79	0.00	57.17	49.25	49.25
Movement LOS	A	A	A	A	A	A	A	D	D	A	E	D	D
d_A, Approach Delay [s/veh]	8.07			6.38			53.71			55.63			
Approach LOS	A			A			D			E			
d_I, Intersection Delay [s/veh]	10.84												
Intersection LOS	B												
Intersection V/C	0.407												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	92.52	90.57	7.83	79.82	3.06	2.12	0.55	0.00	4.11	0.99
Stops [stops/h]	7.66	183.73	180.32	11.61	229.26	6.93	48.54	11.58	0.00	84.32	18.39
Fuel consumption [US gal/h]	0.46	5.93	5.81	0.46	5.97	0.20	1.05	0.25	0.00	1.85	0.40
CO [g/h]	32.02	414.52	406.33	32.24	417.00	14.13	73.39	17.27	0.00	129.28	27.73
NOx [g/h]	6.23	80.65	79.06	6.27	81.13	2.75	14.28	3.36	0.00	25.15	5.39
VOC [g/h]	7.42	96.07	94.17	7.47	96.64	3.27	17.01	4.00	0.00	29.96	6.43

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1333		1333		300		300	
d_b, Bicycle Delay [s]	6.67		6.67		43.35		43.35	
I_b,int, Bicycle LOS Score for Intersection	2.603		2.333		1.693		1.764	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	0	24	45	25	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	64	6	1	107	54	35	2	3	7	5	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	17	2	0	29	15	10	1	1	2	1	0
Total Analysis Volume [veh/h]	10	70	7	1	116	59	38	2	3	8	5	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.09	0.01	0.00	0.15	0.05	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.56	10.30	8.94	11.03	10.81	9.45	7.28	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.39	0.39	0.39	0.78	0.78	0.78	0.07	0.07	0.07	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	9.63	9.63	9.63	19.47	19.47	19.47	1.82	1.82	1.82	0.33	0.33	0.33
d_A, Approach Delay [s/veh]	10.34			10.36			6.43			4.45		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.58											
Intersection LOS	B											

**Intersection Level Of Service Report  
Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.166

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	153	61	54	198	49	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	38	10	0	19	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	156	99	64	199	68	41
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	27	17	54	18	11
Total Analysis Volume [veh/h]	170	108	70	216	74	45
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.05	0.00	0.17	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	7.88	0.00	14.93	11.30
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.12	0.12	0.84	0.84
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.03	3.03	20.91	20.91
d_A, Approach Delay [s/veh]	0.00		1.93		13.56	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.17					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.078

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑ ↓			↑			↑ ↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	62	0	0	64	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	62	0	0	64	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	17	0	0	17	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	67	0	0	70	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.07	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.34	8.32	0.00	9.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.24	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	6.05	0.00	0.00	6.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.34			9.36			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	9.35											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	61	896	225	103	743	354	274	61	51	187	39	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	6	25	25	0	0	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	23	0	0	36	0	0	5	0	0	12
Total Hourly Volume [veh/h]	61	933	210	129	773	320	276	61	46	188	39	112
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	254	57	35	210	87	75	17	13	51	11	30
Total Analysis Volume [veh/h]	66	1014	228	140	840	348	300	66	50	204	42	122
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	42.0	0.0	12.0	42.0	0.0	21.0	17.0	0.0	49.0	45.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	77.2	65.2	65.2	77.2	65.9	65.9	12.8	17.4	9.5	14.1
g / C, Green / Cycle	0.64	0.54	0.54	0.64	0.55	0.55	0.11	0.14	0.08	0.12
(v / s)_i Volume / Saturation Flow Rate	0.10	0.29	0.14	0.23	0.24	0.22	0.09	0.07	0.06	0.10
s, saturation flow rate [veh/h]	638	3503	1602	620	3503	1577	3375	1738	3514	1653
c, Capacity [veh/h]	428	1903	870	400	1923	866	360	251	280	194
d1, Uniform Delay [s]	9.55	17.63	14.60	11.67	16.05	15.66	52.57	47.06	53.96	51.87
k, delay calibration	0.50	0.50	0.50	0.26	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.77	1.07	0.73	1.26	0.72	1.39	5.09	1.32	3.63	9.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.15	0.53	0.26	0.35	0.44	0.40	0.83	0.46	0.73	0.84
d, Delay for Lane Group [s/veh]	10.31	18.70	15.34	12.93	16.78	17.05	57.66	48.38	57.58	61.40
Lane Group LOS	B	B	B	B	B	B	E	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.69	8.92	3.39	1.48	6.77	5.65	4.76	3.33	3.18	5.39
50th-Percentile Queue Length [ft/ln]	17.32	222.99	84.86	36.88	169.28	141.29	118.93	83.34	79.45	134.72
95th-Percentile Queue Length [veh/ln]	1.25	13.82	6.11	2.66	11.04	9.55	8.33	6.00	5.72	9.20
95th-Percentile Queue Length [ft/ln]	31.18	345.44	152.75	66.39	275.97	238.75	208.36	150.00	143.01	229.89

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	10.31	18.70	15.34	12.93	16.78	17.05	57.66	48.38	48.38	57.58	61.40	61.40
Movement LOS	B	B	B	B	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	17.69			16.44			55.07			59.29		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	26.23											
Intersection LOS	C											
Intersection V/C	0.512											

**Emissions**

Vehicle Miles Traveled [mph]	7.61	116.95	26.30	12.18	73.06	30.27	37.14	14.36	15.95	12.82
Stops [stops/h]	20.79	535.18	101.83	44.26	406.28	169.54	285.43	100.00	190.68	161.66
Fuel consumption [US gal/h]	0.59	12.34	2.48	1.17	8.71	3.64	6.06	2.10	3.84	3.25
CO [g/h]	40.89	862.68	173.34	81.45	608.72	254.19	423.58	146.70	268.33	226.87
NOx [g/h]	7.96	167.85	33.72	15.85	118.44	49.46	82.41	28.54	52.21	44.14
VOC [g/h]	9.48	199.93	40.17	18.88	141.08	58.91	98.17	34.00	62.19	52.58

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	600		600		200		667	
d_b, Bicycle Delay [s]	29.40		29.40		48.60		26.67	
I_b,int, Bicycle LOS Score for Intersection	2.658		2.685		2.254		2.187	
Bicycle LOS	B		B		B		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.190

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1093	21	0	950	0	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	19	0	25	0	33
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-11	0	0	-12	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1095	40	0	970	0	67
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	298	11	0	264	0	18
Total Analysis Volume [veh/h]	1190	43	0	1054	0	73
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.19
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.59
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.69
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	17.33
d_A, Approach Delay [s/veh]	0.00		0.00		16.59	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.446

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻↵			↵↻↵				↵↻↵			↵↻↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	74	810	86	116	25	126	60	25	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	5	10	15	0	0	0	0	0	17	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	9	0	0	13	0	0	40
Total Hourly Volume [veh/h]	57	1022	72	10	90	816	78	117	25	114	77	25	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	278	20	3	24	222	21	32	7	0	21	7	13
Total Analysis Volume [veh/h]	62	1111	78	11	98	887	85	127	27	0	84	27	52
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	78.0	0.0	0.0	12.0	78.0	0.0	0.0	30.0	0.0	0.0	30.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	90.8	79.0	79.0	90.8	79.6	79.6	19.2	19.2	19.2	19.2	19.2
g / C, Green / Cycle	0.76	0.66	0.66	0.76	0.66	0.66	0.16	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.09	0.33	0.33	0.18	0.25	0.05	0.10	0.01	0.00	0.06	0.05
s, saturation flow rate [veh/h]	712	1840	1798	614	3503	1577	1288	1870	1589	1383	1648
c, Capacity [veh/h]	550	1211	1183	467	2324	1046	206	299	254	256	263
d1, Uniform Delay [s]	4.87	10.41	10.42	6.48	9.11	7.19	52.30	42.97	0.00	47.06	44.48
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	1.45	1.49	1.17	0.48	0.15	2.97	0.13	0.00	0.74	0.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.50	0.50	0.23	0.38	0.08	0.62	0.09	0.00	0.33	0.30
d, Delay for Lane Group [s/veh]	5.28	11.86	11.91	7.66	9.59	7.34	55.27	43.10	0.00	47.80	45.11
Lane Group LOS	A	B	B	A	A	A	E	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.38	7.88	7.74	0.73	4.97	0.77	3.89	0.69	0.00	2.33	2.11
50th-Percentile Queue Length [ft/ln]	9.61	197.07	193.39	18.32	124.18	19.31	97.35	17.31	0.00	58.31	52.78
95th-Percentile Queue Length [veh/ln]	0.69	12.49	12.30	1.32	8.62	1.39	7.01	1.25	0.00	4.20	3.80
95th-Percentile Queue Length [ft/ln]	17.31	312.19	307.43	32.97	215.56	34.76	175.23	31.16	0.00	104.96	95.00

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	5.28	11.89	11.91	7.66	7.66	9.59	7.34	55.27	43.10	0.00	47.80	45.11	45.11
Movement LOS	A	B	B	A	A	A	A	E	D	A	D	D	D
d_A, Approach Delay [s/veh]	11.56			9.21			53.14			46.50			
Approach LOS	B			A			D			D			
d_I, Intersection Delay [s/veh]	15.17												
Intersection LOS	B												
Intersection V/C	0.446												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	92.06	90.12	9.81	79.82	7.65	4.99	1.06	0.00	3.80	3.57
Stops [stops/h]	11.54	236.49	232.07	21.98	298.04	23.17	116.82	20.78	0.00	69.97	63.34
Fuel consumption [US gal/h]	0.52	6.74	6.61	0.71	7.01	0.59	2.50	0.43	0.00	1.49	1.34
CO [g/h]	36.03	470.99	461.79	49.56	490.30	41.44	174.54	30.30	0.00	104.01	93.50
NOx [g/h]	7.01	91.64	89.85	9.64	95.39	8.06	33.96	5.89	0.00	20.24	18.19
VOC [g/h]	8.35	109.16	107.02	11.49	113.63	9.60	40.45	7.02	0.00	24.10	21.67

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1217		1217		417		417	
d_b, Bicycle Delay [s]	9.20		9.20		37.60		37.60	
I_b,int, Bicycle LOS Score for Intersection	2.598		2.378		1.835		1.895	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	0	0	17	33	19	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	104	8	1	88	42	29	3	4	8	10	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	28	2	0	24	11	8	1	1	2	3	0
Total Analysis Volume [veh/h]	10	113	9	1	96	46	32	3	4	9	11	1
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.15	0.01	0.00	0.12	0.04	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	11.49	10.62	9.29	11.26	10.55	9.23	7.29	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.61	0.61	0.61	0.61	0.61	0.61	0.06	0.06	0.06	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	15.28	15.28	15.28	15.18	15.18	15.18	1.52	1.52	1.52	0.38	0.38	0.38
d_A, Approach Delay [s/veh]	10.60			10.13			5.98			3.10		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.39											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.198

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	285	62	38	226	55	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	29	8	0	14	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	288	91	46	228	69	91
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	25	13	62	19	25
Total Analysis Volume [veh/h]	313	99	50	248	75	99
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.20	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	8.20	0.00	18.14	13.93
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.09	1.51	1.51
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.14	2.14	37.74	37.74
d_A, Approach Delay [s/veh]	0.00		1.38		15.74	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.56					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.059

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑ ↓			↑			↑ ↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	49	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	0	0	49	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	0	0	13	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	49	0	0	53	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.05	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.25	8.32	0.00	9.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.17	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	4.33	0.00	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.25			9.27			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	9.26											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	2	0	0
Entry Pocket Length [ft]	165.00	100.00	100.00	180.00	100.00	100.00	175.00	100.00	175.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	81	896	160	103	743	354	274	58	83	137	57	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	53	10	40	40	0	0	0	0	0	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	17	0	0	36	0	0	8	0	0	13
Total Hourly Volume [veh/h]	82	955	154	144	788	320	276	58	76	138	57	120
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	260	42	39	214	87	75	16	21	38	15	33
Total Analysis Volume [veh/h]	89	1038	167	157	857	348	300	63	83	150	62	130
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Flashing Yellow Arrow	No			No								
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Maximum Green [s]	7	19	0	7	19	0	8	16	0	7	15	0
Amber [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	49.0	0.0	12.0	49.0	0.0	18.0	15.0	0.0	44.0	41.0	0.0
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	5	0	7	5	0	7	5	0	7	5	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No										

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	75.5	63.5	63.5	75.5	63.9	63.9	12.5	21.0	7.5	16.0
g / C, Green / Cycle	0.63	0.53	0.53	0.63	0.53	0.53	0.10	0.18	0.06	0.13
(v / s)_i Volume / Saturation Flow Rate	0.14	0.30	0.10	0.25	0.24	0.22	0.09	0.09	0.04	0.11
s, saturation flow rate [veh/h]	642	3503	1602	638	3503	1577	3375	1699	3514	1670
c, Capacity [veh/h]	420	1854	848	396	1863	839	353	297	222	223
d1, Uniform Delay [s]	10.53	18.90	14.85	12.87	17.40	16.87	52.81	44.71	55.02	50.93
k, delay calibration	0.50	0.50	0.50	0.48	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.15	1.23	0.52	2.83	0.82	1.51	5.78	1.26	3.59	9.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.21	0.56	0.20	0.40	0.46	0.41	0.85	0.49	0.68	0.86
d, Delay for Lane Group [s/veh]	11.68	20.13	15.37	15.70	18.22	18.38	58.59	45.97	58.61	60.44
Lane Group LOS	B	C	B	B	B	B	E	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.00	9.59	2.47	1.90	7.29	5.93	4.80	4.11	2.35	6.28
50th-Percentile Queue Length [ft/ln]	24.99	239.71	61.66	47.59	182.32	148.16	119.93	102.67	58.78	157.03
95th-Percentile Queue Length [veh/ln]	1.80	14.67	4.44	3.43	11.72	9.92	8.39	7.39	4.23	10.39
95th-Percentile Queue Length [ft/ln]	44.99	366.67	110.98	85.65	293.04	247.98	209.73	184.80	105.80	259.79

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	11.68	20.13	15.37	15.70	18.22	18.38	58.59	45.97	45.97	58.61	60.44	60.44
Movement LOS	B	C	B	B	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	18.93			17.97			54.46			59.64		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	27.20											
Intersection LOS	C											
Intersection V/C	0.540											

**Emissions**

Vehicle Miles Traveled [mph]	10.26	119.72	19.26	13.66	74.54	30.27	37.14	18.08	11.72	15.01
Stops [stops/h]	29.99	575.31	73.99	57.10	437.57	177.80	287.82	123.20	141.07	188.44
Fuel consumption [US gal/h]	0.83	13.14	1.81	1.45	9.31	3.79	6.12	2.56	2.86	3.76
CO [g/h]	57.90	918.59	126.72	101.47	650.78	265.11	427.97	179.18	199.72	262.76
NOx [g/h]	11.26	178.72	24.65	19.74	126.62	51.58	83.27	34.86	38.86	51.12
VOC [g/h]	13.42	212.89	29.37	23.52	150.82	61.44	99.19	41.53	46.29	60.90

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	717		717		167		600	
d_b, Bicycle Delay [s]	24.70		24.70		50.42		29.40	
I_b,int, Bicycle LOS Score for Intersection	2.641		2.713		2.309		2.145	
Bicycle LOS	B		B		B		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.244

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1158	17	0	1010	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	32	0	40	0	56
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-20	0	0	-20	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1154	49	0	1037	0	82
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	314	13	0	282	0	22
Total Analysis Volume [veh/h]	1254	53	0	1127	0	89
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.24
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	17.99
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.94
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	23.51
d_A, Approach Delay [s/veh]	0.00		0.00		17.99	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.63					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.432

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	101	810	143	86	13	126	60	10	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	8	16	24	0	0	0	0	0	30	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	14	0	0	13	0	0	27
Total Hourly Volume [veh/h]	57	1031	75	16	126	816	130	87	13	114	90	10	62
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	280	20	4	34	222	35	24	4	0	24	3	17
Total Analysis Volume [veh/h]	62	1121	82	17	137	887	141	95	14	0	98	11	67
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	85.0	0.0	0.0	12.0	85.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	92.5	80.5	80.5	92.5	81.3	81.3	17.5	17.5	17.5	17.5	17.5
g / C, Green / Cycle	0.77	0.67	0.67	0.77	0.68	0.68	0.15	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.09	0.33	0.33	0.25	0.25	0.09	0.07	0.01	0.00	0.07	0.05
s, saturation flow rate [veh/h]	681	1840	1796	607	3503	1577	1289	1870	1589	1399	1598
c, Capacity [veh/h]	555	1235	1206	483	2377	1070	169	272	231	230	233
d1, Uniform Delay [s]	4.04	9.67	9.68	5.76	8.31	6.82	54.33	44.13	0.00	49.78	46.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	1.40	1.44	1.73	0.45	0.26	2.94	0.08	0.00	1.25	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.49	0.49	0.32	0.37	0.13	0.56	0.05	0.00	0.43	0.34
d, Delay for Lane Group [s/veh]	4.45	11.08	11.13	7.49	8.76	7.07	57.26	44.21	0.00	51.03	46.89
Lane Group LOS	A	B	B	A	A	A	E	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.35	7.62	7.48	1.00	4.68	1.26	2.95	0.36	0.00	2.84	2.13
50th-Percentile Queue Length [ft/ln]	8.86	190.59	186.96	24.95	117.00	31.44	73.68	9.09	0.00	70.88	53.32
95th-Percentile Queue Length [veh/ln]	0.64	12.15	11.96	1.80	8.23	2.26	5.30	0.65	0.00	5.10	3.84
95th-Percentile Queue Length [ft/ln]	15.95	303.80	299.08	44.91	205.70	56.59	132.62	16.35	0.00	127.58	95.98

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	4.45	11.10	11.13	7.49	7.49	8.76	7.07	57.26	44.21	0.00	51.03	46.89	46.89
Movement LOS	A	B	B	A	A	A	A	E	D	A	D	D	D
d_A, Approach Delay [s/veh]	10.78			8.39			55.59			49.20			
Approach LOS	B			A			E			D			
d_I, Intersection Delay [s/veh]	14.01												
Intersection LOS	B												
Intersection V/C	0.432												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	93.17	91.15	13.86	79.82	12.69	3.73	0.55	0.00	4.43	3.53
Stops [stops/h]	10.63	228.71	224.35	29.94	280.81	37.72	88.41	10.90	0.00	85.05	63.99
Fuel consumption [US gal/h]	0.50	6.64	6.51	0.99	6.74	0.97	1.91	0.23	0.00	1.83	1.36
CO [g/h]	34.83	464.29	454.98	69.07	470.83	67.82	133.79	16.00	0.00	127.65	95.06
NOx [g/h]	6.78	90.33	88.52	13.44	91.61	13.20	26.03	3.11	0.00	24.84	18.49
VOC [g/h]	8.07	107.60	105.45	16.01	109.12	15.72	31.01	3.71	0.00	29.58	22.03

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1333		1333		300		300	
d_b, Bicycle Delay [s]	6.67		6.67		43.35		43.35	
I_b,int, Bicycle LOS Score for Intersection	2.610		2.433		1.761		1.895	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	32	0	0	30	56	32	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	77	7	1	126	66	44	2	3	8	6	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	21	2	0	34	18	12	1	1	2	2	0
Total Analysis Volume [veh/h]	11	84	8	1	137	72	48	2	3	9	7	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.11	0.01	0.00	0.19	0.07	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	12.54	10.69	9.15	11.81	11.36	9.83	7.30	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.49	0.49	0.49	1.01	1.01	1.01	0.09	0.09	0.09	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	12.30	12.30	12.30	25.23	25.23	25.23	2.31	2.31	2.31	0.38	0.38	0.38
d_A, Approach Delay [s/veh]	10.76			10.84			6.61			4.07		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.95											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	19.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.339

**Intersection Setup**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↪		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Dillon Dam Rd		Dillon Dam Rd		North Ten Mile Dr	
Base Volume Input [veh/h]	233	88	44	205	98	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	48	12	0	23	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	237	137	56	206	122	54
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	37	15	56	33	15
Total Analysis Volume [veh/h]	258	149	61	224	133	59
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.00	0.05	0.00	0.34	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	8.20	0.00	19.85	15.74
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.11	0.11	2.06	2.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.63	2.63	51.59	51.59
d_A, Approach Delay [s/veh]	0.00		1.75		18.58	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.60					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 56: Summit Blvd (SH-9) & I-70 EB Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.097

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑ ↓			↑			↑ ↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Eastbound			Westbound		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	76	0	0	80	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	76	0	0	80	0	0	0	0	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	21	0	0	22	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	83	0	0	87	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.09	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.43	8.32	0.00	9.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A		A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.31	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	7.63	0.00	0.00	8.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.43			9.45			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	9.44											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	4.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.320

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	r			r			r			rr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	180.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	0	896	230	103	743	354	274	0	166	0	0	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	39	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	27	0	0	36	0	0	17	0	0	11
Total Hourly Volume [veh/h]	0	902	244	104	748	320	276	0	150	0	0	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	245	0	28	203	87	75	0	0	0	0	27
Total Analysis Volume [veh/h]	0	980	0	113	813	348	300	0	0	0	0	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	45
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow												
Signal Group	0	2	0	1	6	0	7	4	6	0	8	4
Auxiliary Signal Groups												
Maximum Green [s]	0	19	0	7	19	0	8	16	19	0	15	16
Amber [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	5.0	5.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No			No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	0.0	35.0	0.0	50.0	35.0	0.0	50.0	10.0	35.0	0.0	50.0	10.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	7	5	0	7	5	5	0	5	5
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	3.0
Minimum Recall		No			No				No			No
Maximum Recall		Yes			Yes				Yes			No
Pedestrian Recall		No			No				No			No

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	C	R	R	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	3.00
g_i, Effective Green Time [s]	30.2	30.2	30.2	30.2	30.2	3.8
g / C, Green / Cycle	0.67	0.67	0.67	0.67	0.67	0.08
(v / s)_i Volume / Saturation Flow Rate	0.28	0.00	0.23	0.22	0.00	0.04
s, saturation flow rate [veh/h]	3503	1602	3503	1577	1589	2700
c, Capacity [veh/h]	2346	1073	2346	1056	1064	232
d1, Uniform Delay [s]	3.41	0.00	3.20	3.15	0.00	19.58
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.00	0.41	0.84	0.00	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.42	0.00	0.35	0.33	0.00	0.47
d, Delay for Lane Group [s/veh]	3.96	0.00	3.60	3.99	0.00	21.03
Lane Group LOS	A	A	A	A	A	C
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.86	0.00	0.66	0.69	0.00	0.54
50th-Percentile Queue Length [ft/ln]	21.42	0.00	16.49	17.25	0.00	13.53
95th-Percentile Queue Length [veh/ln]	1.54	0.00	1.19	1.24	0.00	0.97
95th-Percentile Queue Length [ft/ln]	38.55	0.00	29.69	31.05	0.00	24.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	3.96	0.00	0.00	3.60	3.99	0.00	0.00	0.00	0.00	0.00	21.03
Movement LOS		A	A		A	A			A			C
d_A, Approach Delay [s/veh]	3.96			3.72			0.00			21.03		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	4.65											
Intersection LOS	A											
Intersection V/C	0.320											

**Emissions**

Vehicle Miles Traveled [mph]	113.03	0.00	70.71	30.27	0.00	8.44
Stops [stops/h]	137.07	0.00	105.55	55.20	0.00	86.60
Fuel consumption [US gal/h]	6.13	0.00	4.09	1.85	0.00	1.17
CO [g/h]	428.39	0.00	285.57	129.40	0.00	82.07
NOx [g/h]	83.35	0.00	55.56	25.18	0.00	15.97
VOC [g/h]	99.28	0.00	66.18	29.99	0.00	19.02

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
I_b,int, Bicycle LOS Score for Intersection	2.390	2.547	1.560	1.560
Bicycle LOS	B	B	A	A

**Sequence**

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.058

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	953	15	0	1010	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	960	15	0	1017	0	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	261	4	0	276	0	6
Total Analysis Volume [veh/h]	1043	16	0	1105	0	25
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.94
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.19
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	4.64
d_A, Approach Delay [s/veh]	0.00		0.00		13.94	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.16					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.378

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻↵			↵↻↵				↵↻↵			↵↻↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	55	810	54	38	17	126	60	10	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	5	0	0	13	0	0	18
Total Hourly Volume [veh/h]	57	1008	67	0	55	816	49	38	17	114	60	10	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	15	222	13	10	5	0	16	3	6
Total Analysis Volume [veh/h]	62	1096	73	0	60	887	53	41	18	0	65	11	25
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	13.0	66.0	0.0	0.0	12.0	65.0	0.0	0.0	12.0	0.0	0.0	12.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	73.0	62.5	62.5	73.0	62.4	62.4	7.0	7.0	7.0	7.0	7.0
g / C, Green / Cycle	0.81	0.69	0.69	0.81	0.69	0.69	0.08	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.08	0.32	0.32	0.09	0.25	0.03	0.03	0.01	0.00	0.05	0.02
s, saturation flow rate [veh/h]	749	1840	1800	632	3503	1577	1339	1870	1589	1394	1639
c, Capacity [veh/h]	661	1277	1249	561	2426	1092	127	145	124	145	127
d1, Uniform Delay [s]	2.27	6.20	6.21	2.80	5.70	4.40	43.22	38.64	0.00	42.90	39.13
k, delay calibration	0.50	0.50	0.50	0.39	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	1.21	1.24	0.30	0.43	0.08	1.45	0.38	0.00	2.16	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.09	0.46	0.46	0.11	0.37	0.05	0.32	0.12	0.00	0.45	0.28
d, Delay for Lane Group [s/veh]	2.55	7.41	7.44	3.09	6.12	4.49	44.67	39.02	0.00	45.07	40.33
Lane Group LOS	A	A	A	A	A	A	D	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.16	4.36	4.29	0.15	2.85	0.28	0.94	0.38	0.00	1.50	0.78
50th-Percentile Queue Length [ft/ln]	3.88	109.06	107.16	3.66	71.20	6.88	23.50	9.44	0.00	37.50	19.41
95th-Percentile Queue Length [veh/ln]	0.28	7.79	7.68	0.26	5.13	0.50	1.69	0.68	0.00	2.70	1.40
95th-Percentile Queue Length [ft/ln]	6.98	194.69	192.04	6.58	128.16	12.39	42.30	17.00	0.00	67.50	34.94

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	2.55	7.43	7.44	3.09	3.09	6.12	4.49	44.67	39.02	0.00	45.07	40.33	40.33
Movement LOS	A	A	A	A	A	A	A	D	D	A	D	D	D
d_A, Approach Delay [s/veh]	7.18			5.85			42.95			43.38			
Approach LOS	A			A			D			D			
d_I, Intersection Delay [s/veh]	9.04												
Intersection LOS	A												
Intersection V/C	0.378												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	5.40	79.82	4.77	1.61	0.71	0.00	2.94	1.63
Stops [stops/h]	6.21	174.49	171.45	5.85	227.85	11.01	37.60	15.11	0.00	60.00	31.06
Fuel consumption [US gal/h]	0.44	5.65	5.54	0.29	5.86	0.31	0.72	0.28	0.00	1.16	0.59
CO [g/h]	30.82	395.03	387.56	20.10	409.70	21.88	50.11	19.82	0.00	81.04	41.31
NOx [g/h]	6.00	76.86	75.41	3.91	79.71	4.26	9.75	3.86	0.00	15.77	8.04
VOC [g/h]	7.14	91.55	89.82	4.66	94.95	5.07	11.61	4.59	0.00	18.78	9.57

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1356		1333		156		156	
d_b, Bicycle Delay [s]	4.67		5.00		38.27		38.27	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.339		1.678		1.756	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	45	7	1	94	10	11	2	3	8	6	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Total 15-Minute Volume [veh/h]	2	11	2	0	22	2	3	0	1	2	1	0
Total Analysis Volume [veh/h]	9	42	7	1	88	9	10	2	3	7	6	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.05	0.01	0.00	0.11	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.90	9.60	8.64	9.71	9.84	8.89	7.24	0.00	0.00	7.24	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.22	0.39	0.39	0.39	0.02	0.02	0.02	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	5.46	5.46	5.46	9.66	9.66	9.66	0.47	0.47	0.47	0.29	0.29	0.29
d_A, Approach Delay [s/veh]	9.53			9.75			4.83			3.90		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.87											
Intersection LOS	A											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type: Roundabout  
Analysis Method: HCM 7th Edition  
Analysis Period: 15 minutes

Delay (sec / veh): 5.2  
Level Of Service: A

**Intersection Setup**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Base Volume Input [veh/h]	0	181	49	119	85	235	73	27	94	75	15	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	39	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	182	49	120	86	237	74	27	95	76	15	75
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	49	13	33	23	59	19	7	24	21	4	20
Total Analysis Volume [veh/h]	39	198	53	130	93	237	74	27	95	83	15	82
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	236			140			312			317		
Exiting Flow Rate [veh/h]	276			361			55			214		
Demand Flow Rate [veh/h]	39	182	49	120	86	237	74	27	95	76	15	75
Adjusted Demand Flow Rate [veh/h]	39	198	53	130	93	237	74	27	95	83	15	82

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	296	228	0	200	184
Capacity of Entry and Bypass Lanes [veh/h]	1086	1197	1305	1004	999
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1064	1174	1280	985	979
X, volume / capacity	0.27	0.19	0.19	0.20	0.18

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	1.11	0.70	0.68	0.74	0.67
95th-Percentile Queue Length [ft]	27.78	17.50	16.97	18.51	16.78
Approach Delay [s/veh]	6.01	4.55		5.56	5.42
Approach LOS	A	A		A	A
Intersection Delay [s/veh]	5.24				
Intersection LOS	A				

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	4.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.320

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	r			r			r			rr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	180.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	0	896	225	103	743	354	274	0	51	0	0	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	84	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	31	0	0	36	0	0	5	0	0	11
Total Hourly Volume [veh/h]	0	902	280	104	748	320	276	0	46	0	0	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	245	0	28	203	87	75	0	0	0	0	27
Total Analysis Volume [veh/h]	0	980	0	113	813	348	300	0	0	0	0	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	45
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow												
Signal Group	0	2	0	1	6	0	7	4	6	0	8	4
Auxiliary Signal Groups												
Maximum Green [s]	0	19	0	7	19	0	8	16	19	0	15	16
Amber [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	5.0	5.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No			No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	0.0	35.0	0.0	50.0	35.0	0.0	50.0	10.0	35.0	0.0	50.0	10.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	7	5	0	7	5	5	0	5	5
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	3.0
Minimum Recall		No			No				No			No
Maximum Recall		Yes			Yes				Yes			No
Pedestrian Recall		No			No				No			No

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	C	R	R	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	3.00
g_i, Effective Green Time [s]	30.2	30.2	30.2	30.2	30.2	3.8
g / C, Green / Cycle	0.67	0.67	0.67	0.67	0.67	0.08
(v / s)_i Volume / Saturation Flow Rate	0.28	0.00	0.23	0.22	0.00	0.04
s, saturation flow rate [veh/h]	3503	1602	3503	1577	1589	2700
c, Capacity [veh/h]	2346	1073	2346	1056	1064	232
d1, Uniform Delay [s]	3.41	0.00	3.20	3.15	0.00	19.58
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.00	0.41	0.84	0.00	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.42	0.00	0.35	0.33	0.00	0.47
d, Delay for Lane Group [s/veh]	3.96	0.00	3.60	3.99	0.00	21.03
Lane Group LOS	A	A	A	A	A	C
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.86	0.00	0.66	0.69	0.00	0.54
50th-Percentile Queue Length [ft/ln]	21.42	0.00	16.49	17.25	0.00	13.53
95th-Percentile Queue Length [veh/ln]	1.54	0.00	1.19	1.24	0.00	0.97
95th-Percentile Queue Length [ft/ln]	38.55	0.00	29.69	31.05	0.00	24.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	3.96	0.00	0.00	3.60	3.99	0.00	0.00	0.00	0.00	0.00	21.03
Movement LOS		A	A		A	A			A			C
d_A, Approach Delay [s/veh]	3.96			3.72			0.00			21.03		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	4.65											
Intersection LOS	A											
Intersection V/C	0.320											

**Emissions**

Vehicle Miles Traveled [mph]	113.03	0.00	70.71	30.27	0.00	8.44
Stops [stops/h]	137.07	0.00	105.55	55.20	0.00	86.60
Fuel consumption [US gal/h]	6.13	0.00	4.09	1.85	0.00	1.17
CO [g/h]	428.39	0.00	285.57	129.40	0.00	82.07
NOx [g/h]	83.35	0.00	55.56	25.18	0.00	15.97
VOC [g/h]	99.28	0.00	66.18	29.99	0.00	19.02

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
I_b,int, Bicycle LOS Score for Intersection	2.394	2.547	1.560	1.560
Bicycle LOS	B	B	A	A

**Sequence**

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1093	21	0	950	0	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-13	0	0	-10	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1088	21	0	947	0	34
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	296	6	0	257	0	9
Total Analysis Volume [veh/h]	1183	23	0	1029	0	37
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.33
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.32
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	7.91
d_A, Approach Delay [s/veh]	0.00		0.00		15.33	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.25					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻↵			↵↻↵				↵↻↵			↵↻↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	74	810	86	116	25	126	60	25	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	9	0	0	13	0	0	40
Total Hourly Volume [veh/h]	57	1008	67	0	75	816	78	117	25	114	60	25	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	20	222	21	32	7	0	16	7	13
Total Analysis Volume [veh/h]	62	1096	73	0	82	887	85	127	27	0	65	27	52
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	54.0	0.0	0.0	12.0	54.0	0.0	0.0	24.0	0.0	0.0	24.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	64.8	53.6	53.6	64.8	54.2	54.2	15.2	15.2	15.2	15.2	15.2
g / C, Green / Cycle	0.72	0.60	0.60	0.72	0.60	0.60	0.17	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.08	0.32	0.32	0.12	0.25	0.05	0.10	0.01	0.00	0.05	0.05
s, saturation flow rate [veh/h]	752	1840	1800	665	3503	1577	1288	1870	1589	1383	1648
c, Capacity [veh/h]	571	1096	1072	497	2107	948	229	315	268	279	278
d1, Uniform Delay [s]	4.85	10.83	10.84	6.12	9.58	7.56	39.04	31.56	0.00	34.63	32.67
k, delay calibration	0.50	0.50	0.50	0.37	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	1.90	1.95	0.53	0.62	0.19	2.09	0.12	0.00	0.42	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.54	0.54	0.17	0.42	0.09	0.55	0.09	0.00	0.23	0.28
d, Delay for Lane Group [s/veh]	5.23	12.73	12.79	6.65	10.20	7.75	41.13	31.67	0.00	35.05	33.22
Lane Group LOS	A	B	B	A	B	A	D	C	A	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.31	6.66	6.54	0.41	4.24	0.66	2.81	0.49	0.00	1.28	1.51
50th-Percentile Queue Length [ft/ln]	7.77	166.45	163.52	10.18	106.07	16.59	70.21	12.35	0.00	32.01	37.71
95th-Percentile Queue Length [veh/ln]	0.56	10.89	10.73	0.73	7.62	1.19	5.05	0.89	0.00	2.30	2.72
95th-Percentile Queue Length [ft/ln]	13.99	272.24	268.37	18.33	190.52	29.86	126.37	22.23	0.00	57.61	67.88

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	5.23	12.76	12.79	6.65	6.65	10.20	7.75	41.13	31.67	0.00	35.05	33.22	33.22
Movement LOS	A	B	B	A	A	B	A	D	C	A	D	C	C
d_A, Approach Delay [s/veh]	12.38			9.72			39.47			34.05			
Approach LOS	B			A			D			C			
d_I, Intersection Delay [s/veh]	14.12												
Intersection LOS	B												
Intersection V/C	0.438												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	7.38	79.82	7.65	4.99	1.06	0.00	2.94	3.57
Stops [stops/h]	12.43	266.32	261.63	16.30	339.42	26.55	112.33	19.76	0.00	51.21	60.34
Fuel consumption [US gal/h]	0.52	6.98	6.85	0.51	7.44	0.63	2.10	0.36	0.00	0.96	1.12
CO [g/h]	36.46	488.02	478.96	35.98	519.75	43.70	146.64	25.38	0.00	67.16	78.57
NOx [g/h]	7.09	94.95	93.19	7.00	101.12	8.50	28.53	4.94	0.00	13.07	15.29
VOC [g/h]	8.45	113.10	111.00	8.34	120.46	10.13	33.98	5.88	0.00	15.56	18.21

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1089		1089		422		422	
d_b, Bicycle Delay [s]	9.34		9.34		28.01		28.01	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.369		1.835		1.863	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	96	9	1	81	10	11	3	5	9	11	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	26	2	0	22	3	3	1	1	2	3	0
Total Analysis Volume [veh/h]	11	104	10	1	88	11	12	3	5	10	12	1
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.13	0.01	0.00	0.11	0.01	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.54	10.18	9.11	10.50	10.00	8.96	7.26	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.53	0.53	0.53	0.41	0.41	0.41	0.02	0.02	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	13.27	13.27	13.27	10.15	10.15	10.15	0.57	0.57	0.57	0.43	0.43	0.43
d_A, Approach Delay [s/veh]	10.13			9.89			4.36			3.15		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.01											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type: Roundabout  
Analysis Method: HCM 7th Edition  
Analysis Period: 15 minutes

Delay (sec / veh): 9.2  
Level Of Service: A

**Intersection Setup**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Base Volume Input [veh/h]	0	285	62	38	226	309	160	65	387	55	9	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	84	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	287	62	38	228	311	161	65	390	55	9	85
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	78	17	10	62	78	40	16	98	15	2	23
Total Analysis Volume [veh/h]	84	312	67	41	248	311	161	65	390	60	9	92
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	272			156			356			568		
Exiting Flow Rate [veh/h]	712			576			95			176		
Demand Flow Rate [veh/h]	84	287	62	38	228	311	161	65	390	55	9	85
Adjusted Demand Flow Rate [veh/h]	84	312	67	41	248	311	161	65	390	60	9	92

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	473	295	0	629	165
Capacity of Entry and Bypass Lanes [veh/h]	1046	1177	1253	960	774
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1025	1154	1229	941	758
X, volume / capacity	0.45	0.25	0.25	0.65	0.21

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	B	A
95th-Percentile Queue Length [veh]	2.39	0.99	1.01	5.06	0.80
95th-Percentile Queue Length [ft]	59.78	24.83	25.21	126.42	20.02
Approach Delay [s/veh]	8.63	5.30		14.04	7.09
Approach LOS	A	A		B	A
Intersection Delay [s/veh]	9.22				
Intersection LOS	A				

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	4.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.320

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	r			r			r			rr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	180.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	0	896	327	103	743	354	274	0	214	0	0	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	111	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	44	0	0	36	0	0	22	0	0	11
Total Hourly Volume [veh/h]	0	902	396	104	748	320	276	0	193	0	0	99
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	245	0	28	203	87	75	0	0	0	0	27
Total Analysis Volume [veh/h]	0	980	0	113	813	348	300	0	0	0	0	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	45
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow												
Signal Group	0	2	0	1	6	0	7	4	6	0	8	4
Auxiliary Signal Groups												
Maximum Green [s]	0	19	0	7	19	0	8	16	19	0	15	16
Amber [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	5.0	5.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No			No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	0.0	35.0	0.0	50.0	35.0	0.0	50.0	10.0	35.0	0.0	50.0	10.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	7	5	0	7	5	5	0	5	5
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	3.0
Minimum Recall		No			No				No			No
Maximum Recall		Yes			Yes				Yes			No
Pedestrian Recall		No			No				No			No

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	C	R	R	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	3.00
g_i, Effective Green Time [s]	30.2	30.2	30.2	30.2	30.2	3.8
g / C, Green / Cycle	0.67	0.67	0.67	0.67	0.67	0.08
(v / s)_i Volume / Saturation Flow Rate	0.28	0.00	0.23	0.22	0.00	0.04
s, saturation flow rate [veh/h]	3503	1602	3503	1577	1589	2700
c, Capacity [veh/h]	2346	1073	2346	1056	1064	232
d1, Uniform Delay [s]	3.41	0.00	3.20	3.15	0.00	19.58
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.00	0.41	0.84	0.00	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.42	0.00	0.35	0.33	0.00	0.47
d, Delay for Lane Group [s/veh]	3.96	0.00	3.60	3.99	0.00	21.03
Lane Group LOS	A	A	A	A	A	C
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.86	0.00	0.66	0.69	0.00	0.54
50th-Percentile Queue Length [ft/ln]	21.42	0.00	16.49	17.25	0.00	13.53
95th-Percentile Queue Length [veh/ln]	1.54	0.00	1.19	1.24	0.00	0.97
95th-Percentile Queue Length [ft/ln]	38.55	0.00	29.69	31.05	0.00	24.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	3.96	0.00	0.00	3.60	3.99	0.00	0.00	0.00	0.00	0.00	21.03
Movement LOS		A	A		A	A			A			C
d_A, Approach Delay [s/veh]	3.96				3.72		0.00		21.03			
Approach LOS	A				A		A		C			
d_I, Intersection Delay [s/veh]	4.65											
Intersection LOS	A											
Intersection V/C	0.320											

**Emissions**

Vehicle Miles Traveled [mph]	113.03	0.00	70.71	30.27	0.00	8.44
Stops [stops/h]	137.07	0.00	105.55	55.20	0.00	86.60
Fuel consumption [US gal/h]	6.13	0.00	4.09	1.85	0.00	1.17
CO [g/h]	428.39	0.00	285.57	129.40	0.00	82.07
NOx [g/h]	83.35	0.00	55.56	25.18	0.00	15.97
VOC [g/h]	99.28	0.00	66.18	29.99	0.00	19.02

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
I_b,int, Bicycle LOS Score for Intersection	2.404	2.547	1.560	1.560
Bicycle LOS	B	B	A	A

**Sequence**

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	22.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.118

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1666	17	0	1010	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1678	17	0	1017	0	26
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	456	5	0	276	0	7
Total Analysis Volume [veh/h]	1824	18	0	1105	0	28
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	22.19
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.40
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	9.88
d_A, Approach Delay [s/veh]	0.00		0.00		22.19	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.21					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.480

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	140	810	197	140	19	126	60	14	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	20	0	0	13	0	0	38
Total Hourly Volume [veh/h]	57	1008	67	0	141	816	178	141	19	114	60	14	87
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	274	18	0	38	222	48	38	5	0	16	4	24
Total Analysis Volume [veh/h]	62	1096	73	0	153	887	193	153	21	0	65	15	95
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	48.0	0.0	0.0	12.0	48.0	0.0	0.0	30.0	0.0	0.0	30.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	61.8	49.9	49.9	61.8	51.1	51.1	18.2	18.2	18.2	18.2	18.2
g / C, Green / Cycle	0.69	0.55	0.55	0.69	0.57	0.57	0.20	0.20	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.09	0.32	0.32	0.22	0.25	0.12	0.12	0.01	0.00	0.05	0.07
s, saturation flow rate [veh/h]	711	1840	1800	688	3503	1577	1252	1870	1589	1391	1597
c, Capacity [veh/h]	513	1020	998	475	1987	894	257	379	322	342	324
d1, Uniform Delay [s]	6.22	13.17	13.18	8.73	11.29	9.60	37.78	28.92	0.00	31.09	30.72
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	2.40	2.46	1.79	0.73	0.55	2.19	0.06	0.00	0.27	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.12	0.58	0.58	0.32	0.45	0.22	0.59	0.06	0.00	0.19	0.34
d, Delay for Lane Group [s/veh]	6.70	15.56	15.63	10.52	12.01	10.16	39.97	28.98	0.00	31.36	31.33
Lane Group LOS	A	B	B	B	B	B	D	C	A	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.37	7.66	7.53	1.03	4.76	1.83	3.36	0.36	0.00	1.20	2.04
50th-Percentile Queue Length [ft/ln]	9.32	191.53	188.17	25.72	119.08	45.67	83.88	9.09	0.00	29.92	51.07
95th-Percentile Queue Length [veh/ln]	0.67	12.20	12.03	1.85	8.34	3.29	6.04	0.65	0.00	2.15	3.68
95th-Percentile Queue Length [ft/ln]	16.77	305.02	300.66	46.29	208.57	82.21	150.98	16.36	0.00	53.85	91.92

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	6.70	15.60	15.63	10.52	10.52	12.01	10.16	39.97	28.98	0.00	31.36	31.33	31.33
Movement LOS	A	B	B	B	B	B	B	D	C	A	C	C	C
d_A, Approach Delay [s/veh]	15.15			11.54			38.64			31.34			
Approach LOS	B			B			D			C			
d_I, Intersection Delay [s/veh]	16.03												
Intersection LOS	B												
Intersection V/C	0.480												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	90.47	88.64	13.77	79.82	17.37	6.01	0.82	0.00	2.94	4.97
Stops [stops/h]	14.91	306.45	301.07	41.15	381.07	73.08	134.20	14.54	0.00	47.87	81.70
Fuel consumption [US gal/h]	0.56	7.62	7.48	1.16	8.08	1.61	2.48	0.26	0.00	0.89	1.51
CO [g/h]	39.06	532.89	523.11	81.21	564.59	112.58	173.54	18.50	0.00	61.98	105.23
NOx [g/h]	7.60	103.68	101.78	15.80	109.85	21.90	33.76	3.60	0.00	12.06	20.47
VOC [g/h]	9.05	123.50	121.23	18.82	130.85	26.09	40.22	4.29	0.00	14.37	24.39

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	956		956		556		556	
d_b, Bicycle Delay [s]	12.27		12.27		23.47		23.47	
I_b,int, Bicycle LOS Score for Intersection	2.582		2.467		1.868		1.911	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	112	10	1	95	13	14	5	6	10	14	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	30	3	0	26	4	4	1	2	3	4	0
Total Analysis Volume [veh/h]	14	122	11	1	103	14	15	5	7	11	15	1
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.15	0.01	0.00	0.13	0.01	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	11.07	10.49	9.35	11.00	10.25	9.12	7.27	0.00	0.00	7.25	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.66	0.66	0.66	0.50	0.50	0.50	0.03	0.03	0.03	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	16.60	16.60	16.60	12.52	12.52	12.52	0.70	0.70	0.70	0.47	0.47	0.47
d_A, Approach Delay [s/veh]	10.46			10.12			4.04			2.95		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.16											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:  
Analysis Method:  
Analysis Period:

Roundabout  
HCM 7th Edition  
15 minutes

Delay (sec / veh):  
Level Of Service:

10.2  
B

**Intersection Setup**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Base Volume Input [veh/h]	0	311	16	87	106	260	184	95	387	75	15	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	111	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	313	16	88	107	262	185	96	390	76	15	75
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	85	4	24	29	66	46	24	98	21	4	20
Total Analysis Volume [veh/h]	111	340	17	96	116	262	185	96	390	83	15	82
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	385			213			301			649		
Exiting Flow Rate [veh/h]	601			619			129			213		
Demand Flow Rate [veh/h]	111	313	16	88	107	262	185	96	390	76	15	75
Adjusted Demand Flow Rate [veh/h]	111	340	17	96	116	262	185	96	390	83	15	82

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	478	217	0	685	184
Capacity of Entry and Bypass Lanes [veh/h]	933	1111	1211	1016	713
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	914	1089	1187	996	699
X, volume / capacity	0.51	0.19	0.22	0.67	0.26

**Movement, Approach, & Intersection Results**

Lane LOS	B	A	A	B	A
95th-Percentile Queue Length [veh]	2.99	0.72	0.84	5.47	1.03
95th-Percentile Queue Length [ft]	74.70	18.02	21.10	136.71	25.65
Approach Delay [s/veh]	10.56	5.03		14.12	8.23
Approach LOS	B	A		B	A
Intersection Delay [s/veh]	10.20				
Intersection LOS	B				

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	5.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.340

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	r			r			r			rr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	180.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	0	896	230	103	743	354	274	0	166	0	0	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	43	8	0	38	26	0	0	0	0	0	19
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	39	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	28	0	0	38	0	0	17	0	0	13
Total Hourly Volume [veh/h]	0	945	251	104	786	344	276	0	150	0	0	116
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	257	0	28	214	93	75	0	0	0	0	32
Total Analysis Volume [veh/h]	0	1027	0	113	854	374	300	0	0	0	0	126
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	45
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow												
Signal Group	0	2	0	1	6	0	7	4	6	0	8	4
Auxiliary Signal Groups												
Maximum Green [s]	0	19	0	7	19	0	8	16	19	0	15	16
Amber [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	5.0	5.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No			No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	0.0	35.0	0.0	50.0	35.0	0.0	50.0	10.0	35.0	0.0	50.0	10.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	7	5	0	7	5	5	0	5	5
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	3.0
Minimum Recall		No			No				No			No
Maximum Recall		Yes			Yes				Yes			No
Pedestrian Recall		No			No				No			No

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	C	R	R	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	3.00
g_i, Effective Green Time [s]	30.0	30.0	30.0	30.0	30.0	4.0
g / C, Green / Cycle	0.67	0.67	0.67	0.67	0.67	0.09
(v / s)_i Volume / Saturation Flow Rate	0.29	0.00	0.24	0.24	0.00	0.05
s, saturation flow rate [veh/h]	3503	1602	3503	1577	1589	2700
c, Capacity [veh/h]	2328	1065	2328	1048	1056	246
d1, Uniform Delay [s]	3.58	0.00	3.35	3.32	0.00	19.50
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	0.00	0.45	0.95	0.00	1.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.00	0.37	0.36	0.00	0.51
d, Delay for Lane Group [s/veh]	4.19	0.00	3.79	4.27	0.00	21.16
Lane Group LOS	A	A	A	A	A	C
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.97	0.00	0.75	0.80	0.00	0.63
50th-Percentile Queue Length [ft/ln]	24.25	0.00	18.64	19.96	0.00	15.82
95th-Percentile Queue Length [veh/ln]	1.75	0.00	1.34	1.44	0.00	1.14
95th-Percentile Queue Length [ft/ln]	43.65	0.00	33.55	35.93	0.00	28.48

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	4.19	0.00	0.00	3.79	4.27	0.00	0.00	0.00	0.00	0.00	21.16
Movement LOS		A	A		A	A			A			C
d_A, Approach Delay [s/veh]	4.19			3.94			0.00			21.16		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	4.96											
Intersection LOS	A											
Intersection V/C	0.340											

**Emissions**

Vehicle Miles Traveled [mph]	118.45	0.00	74.28	32.53	0.00	9.85
Stops [stops/h]	155.19	0.00	119.28	63.87	0.00	101.25
Fuel consumption [US gal/h]	6.56	0.00	4.39	2.05	0.00	1.37
CO [g/h]	458.39	0.00	306.71	142.96	0.00	96.03
NOx [g/h]	89.19	0.00	59.67	27.81	0.00	18.68
VOC [g/h]	106.24	0.00	71.08	33.13	0.00	22.26

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
I_b,int, Bicycle LOS Score for Intersection	2.430	2.604	1.560	1.560
Bicycle LOS	B	B	A	A

**Sequence**

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.172

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	953	15	0	1010	0	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	29	0	38	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-17	0	0	-13	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	949	44	0	1042	0	68
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	258	12	0	283	0	18
Total Analysis Volume [veh/h]	1032	48	0	1133	0	74
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.07
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.61
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	15.32
d_A, Approach Delay [s/veh]	0.00		0.00		15.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	10.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻↵			↵↻↵				↵↻↵			↵↻↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	55	810	54	38	17	126	60	10	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	6	16	22	0	0	0	0	0	24	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	5	0	0	13	0	0	18
Total Hourly Volume [veh/h]	57	1027	73	16	77	816	49	38	17	114	84	10	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	279	20	4	21	222	13	10	5	0	23	3	6
Total Analysis Volume [veh/h]	62	1116	79	17	84	887	53	41	18	0	91	11	25
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	60.0	0.0	0.0	15.0	63.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	70.0	58.5	58.5	70.0	59.5	59.5	10.0	10.0	10.0	10.0	10.0
g / C, Green / Cycle	0.78	0.65	0.65	0.78	0.66	0.66	0.11	0.11	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.08	0.33	0.33	0.16	0.25	0.03	0.03	0.01	0.00	0.07	0.02
s, saturation flow rate [veh/h]	753	1840	1798	649	3503	1577	1339	1870	1589	1394	1639
c, Capacity [veh/h]	635	1195	1167	541	2314	1041	172	208	177	192	182
d1, Uniform Delay [s]	2.99	8.23	8.24	4.16	6.95	5.37	40.23	35.90	0.00	40.73	36.35
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	1.53	1.57	0.76	0.48	0.09	0.70	0.18	0.00	1.81	0.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.10	0.51	0.51	0.19	0.38	0.05	0.24	0.09	0.00	0.47	0.20
d, Delay for Lane Group [s/veh]	3.30	9.76	9.81	4.92	7.43	5.46	40.93	36.08	0.00	42.54	36.88
Lane Group LOS	A	A	A	A	A	A	D	D	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.21	5.58	5.47	0.38	3.35	0.32	0.89	0.36	0.00	2.03	0.73
50th-Percentile Queue Length [ft/ln]	5.28	139.38	136.87	9.41	83.63	8.04	22.16	8.94	0.00	50.81	18.25
95th-Percentile Queue Length [veh/ln]	0.38	9.45	9.31	0.68	6.02	0.58	1.60	0.64	0.00	3.66	1.31
95th-Percentile Queue Length [ft/ln]	9.50	236.19	232.81	16.93	150.54	14.46	39.89	16.09	0.00	91.46	32.85

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	3.30	9.78	9.81	4.92	4.92	7.43	5.46	40.93	36.08	0.00	42.54	36.88	36.88
Movement LOS	A	A	A	A	A	A	A	D	D	A	D	D	D
d_A, Approach Delay [s/veh]	9.47			7.09			39.45			40.93			
Approach LOS	A			A			D			D			
d_I, Intersection Delay [s/veh]	10.79												
Intersection LOS	B												
Intersection V/C	0.413												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	92.52	90.57	9.09	79.82	4.77	1.61	0.71	0.00	4.11	1.63
Stops [stops/h]	8.44	223.01	219.00	15.05	267.63	12.86	35.46	14.30	0.00	81.29	29.20
Fuel consumption [US gal/h]	0.47	6.40	6.28	0.56	6.40	0.34	0.67	0.27	0.00	1.56	0.55
CO [g/h]	32.65	447.61	438.94	39.20	447.12	23.58	46.80	18.64	0.00	108.76	38.57
NOx [g/h]	6.35	87.09	85.40	7.63	86.99	4.59	9.11	3.63	0.00	21.16	7.50
VOC [g/h]	7.57	103.74	101.73	9.09	103.62	5.47	10.85	4.32	0.00	25.21	8.94

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1222		1289		222		222	
d_b, Bicycle Delay [s]	6.81		5.69		35.56		35.56	
I_b,int, Bicycle LOS Score for Intersection	2.603		2.353		1.678		1.799	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	29	0	0	24	45	29	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	81	8	1	133	56	43	2	3	9	7	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	22	2	0	36	15	12	1	1	2	2	0
Total Analysis Volume [veh/h]	12	88	9	1	145	61	47	2	3	10	8	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.12	0.01	0.00	0.20	0.06	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	12.60	10.75	9.21	11.91	11.40	9.86	7.30	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.53	0.53	0.53	1.01	1.01	1.01	0.09	0.09	0.09	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	13.15	13.15	13.15	25.35	25.35	25.35	2.26	2.26	2.26	0.42	0.42	0.42
d_A, Approach Delay [s/veh]	10.83			10.95			6.60			4.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	10.01											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type: Roundabout  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 5.6  
 Level Of Service: A

**Intersection Setup**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕⇌			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Base Volume Input [veh/h]	0	181	49	119	85	235	73	27	94	75	15	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	6	10	0	0	0	26	0	19	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	39	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	184	55	130	86	237	74	53	95	95	15	83
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	50	15	35	23	59	19	13	24	26	4	23
Total Analysis Volume [veh/h]	39	200	60	141	93	237	74	53	95	103	15	90
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	273			160			344			319		
Exiting Flow Rate [veh/h]	297			371			55			259		
Demand Flow Rate [veh/h]	39	184	55	130	86	237	74	53	95	95	15	83
Adjusted Demand Flow Rate [veh/h]	39	200	60	141	93	237	74	53	95	103	15	90

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	305	239	0	227	213
Capacity of Entry and Bypass Lanes [veh/h]	1045	1173	1305	972	997
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1024	1150	1280	953	977
X, volume / capacity	0.29	0.20	0.19	0.23	0.21

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	1.22	0.76	0.68	0.90	0.80
95th-Percentile Queue Length [ft]	30.53	19.05	16.97	22.56	20.12
Approach Delay [s/veh]	6.42	4.66		6.09	5.74
Approach LOS	A	A		A	A
Intersection Delay [s/veh]	5.55				
Intersection LOS	A				

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	4.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.335

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	r			r			r			rr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	180.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	0	896	225	103	743	354	274	0	51	0	0	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	6	0	29	20	0	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	84	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	32	0	0	38	0	0	5	0	0	12
Total Hourly Volume [veh/h]	0	933	285	104	777	338	276	0	46	0	0	112
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	254	0	28	211	92	75	0	0	0	0	30
Total Analysis Volume [veh/h]	0	1014	0	113	845	367	300	0	0	0	0	122
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	45
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow												
Signal Group	0	2	0	1	6	0	7	4	6	0	8	4
Auxiliary Signal Groups												
Maximum Green [s]	0	19	0	7	19	0	8	16	19	0	15	16
Amber [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	5.0	5.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No			No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	0.0	35.0	0.0	50.0	35.0	0.0	50.0	10.0	35.0	0.0	50.0	10.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	7	5	0	7	5	5	0	5	5
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	3.0
Minimum Recall		No			No				No			No
Maximum Recall		Yes			Yes				Yes			No
Pedestrian Recall		No			No				No			No

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	C	R	R	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	3.00
g_i, Effective Green Time [s]	30.0	30.0	30.0	30.0	30.0	4.0
g / C, Green / Cycle	0.67	0.67	0.67	0.67	0.67	0.09
(v / s)_i Volume / Saturation Flow Rate	0.29	0.00	0.24	0.23	0.00	0.05
s, saturation flow rate [veh/h]	3503	1602	3503	1577	1589	2700
c, Capacity [veh/h]	2332	1066	2332	1049	1058	243
d1, Uniform Delay [s]	3.54	0.00	3.32	3.28	0.00	19.52
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.00	0.44	0.92	0.00	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.43	0.00	0.36	0.35	0.00	0.50
d, Delay for Lane Group [s/veh]	4.13	0.00	3.75	4.20	0.00	21.12
Lane Group LOS	A	A	A	A	A	C
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.94	0.00	0.73	0.77	0.00	0.61
50th-Percentile Queue Length [ft/ln]	23.53	0.00	18.17	19.26	0.00	15.31
95th-Percentile Queue Length [veh/ln]	1.69	0.00	1.31	1.39	0.00	1.10
95th-Percentile Queue Length [ft/ln]	42.36	0.00	32.70	34.67	0.00	27.55

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	4.13	0.00	0.00	3.75	4.20	0.00	0.00	0.00	0.00	0.00	21.12
Movement LOS		A	A		A	A			A			C
d_A, Approach Delay [s/veh]	4.13			3.89			0.00			21.12		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	4.89											
Intersection LOS	A											
Intersection V/C	0.335											

**Emissions**

Vehicle Miles Traveled [mph]	116.95	0.00	73.49	31.92	0.00	9.54
Stops [stops/h]	150.62	0.00	116.27	61.64	0.00	97.96
Fuel consumption [US gal/h]	6.44	0.00	4.32	1.99	0.00	1.33
CO [g/h]	450.40	0.00	302.07	139.37	0.00	92.90
NOx [g/h]	87.63	0.00	58.77	27.12	0.00	18.07
VOC [g/h]	104.38	0.00	70.01	32.30	0.00	21.53

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
I_b,int, Bicycle LOS Score for Intersection	2.423	2.591	1.560	1.560
Bicycle LOS	B	B	A	A

**Sequence**

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.172

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1097	17	0	950	0	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	22	0	29	0	33
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-13	0	0	-10	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1097	39	0	976	0	61
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	298	11	0	265	0	17
Total Analysis Volume [veh/h]	1192	42	0	1061	0	66
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.35
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.62
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	15.39
d_A, Approach Delay [s/veh]	0.00		0.00		16.35	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.451

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↻↵			↵↻↵				↵↻↵			↵↻↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	74	810	86	116	25	126	60	25	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	5	12	17	0	0	0	0	0	17	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	9	0	0	13	0	0	40
Total Hourly Volume [veh/h]	57	1022	72	12	92	816	78	117	25	114	77	25	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	278	20	3	25	222	21	32	7	0	21	7	13
Total Analysis Volume [veh/h]	62	1111	78	13	100	887	85	127	27	0	84	27	52
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	56.0	0.0	0.0	12.0	56.0	0.0	0.0	22.0	0.0	0.0	22.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	63.8	52.2	52.2	63.8	53.3	53.3	16.2	16.2	16.2	16.2	16.2
g / C, Green / Cycle	0.71	0.58	0.58	0.71	0.59	0.59	0.18	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.08	0.33	0.33	0.17	0.25	0.05	0.10	0.01	0.00	0.06	0.05
s, saturation flow rate [veh/h]	751	1840	1798	669	3503	1577	1288	1870	1589	1383	1648
c, Capacity [veh/h]	573	1069	1045	499	2077	935	227	335	285	279	295
d1, Uniform Delay [s]	4.87	11.73	11.74	6.45	9.99	7.89	39.16	30.76	0.00	35.14	31.85
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	2.14	2.20	1.05	0.64	0.19	2.15	0.10	0.00	0.60	0.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.11	0.56	0.56	0.23	0.43	0.09	0.56	0.08	0.00	0.30	0.27
d, Delay for Lane Group [s/veh]	5.25	13.87	13.94	7.50	10.64	8.08	41.31	30.87	0.00	35.74	32.33
Lane Group LOS	A	B	B	A	B	A	D	C	A	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.33	7.22	7.09	0.65	4.39	0.69	2.82	0.49	0.00	1.68	1.48
50th-Percentile Queue Length [ft/ln]	8.19	180.43	177.18	16.19	109.79	17.16	70.38	12.15	0.00	42.05	37.07
95th-Percentile Queue Length [veh/ln]	0.59	11.62	11.45	1.17	7.83	1.24	5.07	0.87	0.00	3.03	2.67
95th-Percentile Queue Length [ft/ln]	14.75	290.58	286.33	29.14	195.72	30.88	126.68	21.87	0.00	75.68	66.73

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	5.25	13.90	13.94	7.50	7.50	10.64	8.08	41.31	30.87	0.00	35.74	32.33	32.33
Movement LOS	A	B	B	A	A	B	A	D	C	A	D	C	C
d_A, Approach Delay [s/veh]	13.48			10.11			39.48			34.09			
Approach LOS	B			B			D			C			
d_I, Intersection Delay [s/veh]	14.88												
Intersection LOS	B												
Intersection V/C	0.451												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	92.06	90.12	10.17	79.82	7.65	4.99	1.06	0.00	3.80	3.57
Stops [stops/h]	13.11	288.69	283.49	25.91	351.34	27.45	112.60	19.44	0.00	67.27	59.32
Fuel consumption [US gal/h]	0.53	7.38	7.24	0.75	7.60	0.64	2.10	0.36	0.00	1.26	1.10
CO [g/h]	36.83	515.59	505.78	52.76	531.59	44.58	147.11	24.90	0.00	88.19	77.02
NOx [g/h]	7.17	100.32	98.41	10.27	103.43	8.67	28.62	4.84	0.00	17.16	14.99
VOC [g/h]	8.54	119.49	117.22	12.23	123.20	10.33	34.09	5.77	0.00	20.44	17.85

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1133		1133		378		378	
d_b, Bicycle Delay [s]	8.45		8.45		29.61		29.61	
I_b,int, Bicycle LOS Score for Intersection	2.598		2.380		1.835		1.895	
Bicycle LOS	B		B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	11	98	9	1	83	11	12	4	5	9	12	1
Base Volume Adjustment Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	0	0	17	33	22	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	118	9	1	98	43	33	3	5	9	11	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	32	2	0	27	12	9	1	1	2	3	0
Total Analysis Volume [veh/h]	11	128	10	1	107	47	36	3	5	10	12	1
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.17	0.01	0.00	0.14	0.04	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	11.97	10.91	9.49	11.72	10.77	9.37	7.29	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.72	0.72	0.72	0.69	0.69	0.69	0.07	0.07	0.07	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	18.12	18.12	18.12	17.14	17.14	17.14	1.73	1.73	1.73	0.43	0.43	0.43
d_A, Approach Delay [s/veh]	10.89			10.35			5.97			3.15		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.60											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type:	Roundabout	Delay (sec / veh):	10.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Base Volume Input [veh/h]	0	285	62	38	226	309	160	65	387	55	9	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	5	8	0	0	0	20	0	14	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	84	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	288	67	46	228	311	161	85	390	69	9	91
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	78	18	13	62	78	40	21	98	19	2	25
Total Analysis Volume [veh/h]	84	313	73	50	248	311	161	85	390	75	9	99
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	302			171			380			569		
Exiting Flow Rate [veh/h]	727			584			95			212		
Demand Flow Rate [veh/h]	84	288	67	46	228	311	161	85	390	69	9	91
Adjusted Demand Flow Rate [veh/h]	84	313	73	50	248	311	161	85	390	75	9	99

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	480	304	0	649	187
Capacity of Entry and Bypass Lanes [veh/h]	1015	1159	1253	937	773
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	995	1136	1229	918	758
X, volume / capacity	0.47	0.26	0.25	0.69	0.24

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	C	A
95th-Percentile Queue Length [veh]	2.59	1.06	1.01	5.81	0.94
95th-Percentile Queue Length [ft]	64.67	26.41	25.21	145.30	23.60
Approach Delay [s/veh]	9.19	5.39		15.74	7.47
Approach LOS	A	A		C	A
Intersection Delay [s/veh]	10.00				
Intersection LOS	A				

**Intersection Level Of Service Report**

**Intersection 1: Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct**

Control Type:	Signalized	Delay (sec / veh):	5.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.344

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	r			r			r			rr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	180.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			20.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)			Lusher Ct			Dillon Dam Rd		
Base Volume Input [veh/h]	0	896	327	103	743	354	274	0	214	0	0	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	1.00	2.00	4.00	3.00	5.00	2.00	2.00	0.00	2.00	7.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	53	10	0	48	32	0	0	0	0	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	111	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	45	0	0	39	0	0	22	0	0	13
Total Hourly Volume [veh/h]	0	955	405	104	796	349	276	0	193	0	0	120
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	260	0	28	216	95	75	0	0	0	0	33
Total Analysis Volume [veh/h]	0	1038	0	113	865	379	300	0	0	0	0	130
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	45
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	91.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow												
Signal Group	0	2	0	1	6	0	7	4	6	0	8	4
Auxiliary Signal Groups												
Maximum Green [s]	0	19	0	7	19	0	8	16	19	0	15	16
Amber [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	5.0	5.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	10.0	0.0	0.0	10.0	10.0	0.0	10.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No			No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	0.0	33.0	0.0	50.0	33.0	0.0	50.0	12.0	33.0	0.0	50.0	12.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	7	5	0	7	5	5	0	5	5
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	3.0
Minimum Recall		No			No				No			No
Maximum Recall		Yes			Yes				Yes			No
Pedestrian Recall		No			No				No			No

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	C	R	R	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	3.00
g_i, Effective Green Time [s]	29.9	29.9	29.9	29.9	29.9	4.1
g / C, Green / Cycle	0.66	0.66	0.66	0.66	0.66	0.09
(v / s)_i Volume / Saturation Flow Rate	0.30	0.00	0.25	0.24	0.00	0.05
s, saturation flow rate [veh/h]	3503	1602	3503	1577	1589	2700
c, Capacity [veh/h]	2320	1061	2320	1044	1053	252
d1, Uniform Delay [s]	3.65	0.00	3.41	3.38	0.00	19.43
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.00	0.46	0.98	0.00	1.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.00	0.37	0.36	0.00	0.52
d, Delay for Lane Group [s/veh]	4.28	0.00	3.87	4.36	0.00	21.06
Lane Group LOS	A	A	A	A	A	C
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.00	0.00	0.77	0.83	0.00	0.65
50th-Percentile Queue Length [ft/ln]	25.07	0.00	19.30	20.65	0.00	16.28
95th-Percentile Queue Length [veh/ln]	1.81	0.00	1.39	1.49	0.00	1.17
95th-Percentile Queue Length [ft/ln]	45.13	0.00	34.75	37.16	0.00	29.30

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	4.28	0.00	0.00	3.87	4.36	0.00	0.00	0.00	0.00	0.00	21.06
Movement LOS		A	A		A	A			A			C
d_A, Approach Delay [s/veh]	4.28			4.02			0.00			21.06		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	5.05											
Intersection LOS	A											
Intersection V/C	0.344											

**Emissions**

Vehicle Miles Traveled [mph]	119.72	0.00	75.23	32.96	0.00	10.16
Stops [stops/h]	160.48	0.00	123.55	66.07	0.00	104.19
Fuel consumption [US gal/h]	6.67	0.00	4.48	2.09	0.00	1.41
CO [g/h]	466.47	0.00	313.03	146.07	0.00	98.82
NOx [g/h]	90.76	0.00	60.90	28.42	0.00	19.23
VOC [g/h]	108.11	0.00	72.55	33.85	0.00	22.90

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	1200	311
d_b, Bicycle Delay [s]	3.60	3.60	3.60	16.04
I_b,int, Bicycle LOS Score for Intersection	2.453	2.618	1.560	1.560
Bicycle LOS	B	B	A	A

**Sequence**

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Summit Blvd (SH-9) & Lakepoint Dr**

Control Type:	Two-way stop	Delay (sec / veh):	28.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.371

**Intersection Setup**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	←				←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Summit Blvd (SH-9)		Summit Blvd (SH-9)		Lakepoint Dr	
Base Volume Input [veh/h]	1666	17	0	1010	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0070	1.0070	1.0000	1.0070	1.0000	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	36	0	48	0	56
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	-22	0	0	-16	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1664	53	0	1049	0	82
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	452	14	0	285	0	22
Total Analysis Volume [veh/h]	1809	58	0	1140	0	89
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.37
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	28.57
Movement LOS	A	A		A		D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	1.63
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	40.67
d_A, Approach Delay [s/veh]	0.00		0.00		28.57	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.82					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 3: Summit Blvd (SH-9) & 10 Mile Dr**

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

**Intersection Setup**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵				↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	145.00	100.00	100.00	300.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00				35.00			35.00		
Grade [%]	0.00			0.00				0.00			0.00		
Curb Present	No			No				No			No		
Crosswalk	No			No				No			No		

**Volumes**

Name	Summit Blvd (SH-9)			Summit Blvd (SH-9)				Shopping Ctr			Ten Mile Dr		
Base Volume Input [veh/h]	57	1001	74	0	140	810	197	140	19	126	60	14	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	0.00	2.00	4.00	3.00	5.00	2.00	2.00	2.00	4.00	3.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0070	1.0070	1.0070	1.007	1.007	1.007	1.007	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	8	20	28	0	0	0	0	0	30	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	20	0	0	13	0	0	38
Total Hourly Volume [veh/h]	57	1031	75	20	169	816	178	141	19	114	90	14	87
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	280	20	5	46	222	48	38	5	0	24	4	24
Total Analysis Volume [veh/h]	62	1121	82	22	184	887	193	153	21	0	98	15	95
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0				0			0		
v_co, Outbound Pedestrian Volume crossing	0			0				0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	No			No	No			No			No		
Signal Group	5	2	0	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups													
Maximum Green [s]	7	63	0	0	7	63	0	0	15	0	0	15	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Phasing & Timing: Pattern 1**

Split [s]	12.0	53.0	0.0	0.0	12.0	53.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	5	0	0	7	5	0	0	5	0	0	5	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No	No			No			No	
Maximum Recall	No	Yes			No	Yes			No			No	
Pedestrian Recall	No	No			No	No			No			No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	R	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	60.2	48.2	48.2	60.2	49.7	49.7	19.8	19.8	19.8	19.8	19.8
g / C, Green / Cycle	0.67	0.54	0.54	0.67	0.55	0.55	0.22	0.22	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.09	0.33	0.33	0.30	0.25	0.12	0.12	0.01	0.00	0.07	0.07
s, saturation flow rate [veh/h]	712	1840	1796	683	3503	1577	1252	1870	1589	1391	1597
c, Capacity [veh/h]	517	988	964	472	1936	871	253	410	348	340	350
d1, Uniform Delay [s]	6.24	14.42	14.44	9.70	12.06	10.27	38.09	27.74	0.00	32.01	29.46
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	2.87	2.96	2.92	0.78	0.59	2.33	0.05	0.00	0.46	0.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.12	0.62	0.62	0.44	0.46	0.22	0.61	0.05	0.00	0.29	0.31
d, Delay for Lane Group [s/veh]	6.72	17.30	17.40	12.63	12.85	10.85	40.42	27.79	0.00	32.47	29.97
Lane Group LOS	A	B	B	B	B	B	D	C	A	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.40	8.50	8.34	1.59	5.01	1.92	3.37	0.35	0.00	1.86	1.99
50th-Percentile Queue Length [ft/ln]	9.99	212.42	208.55	39.65	125.37	48.03	84.37	8.85	0.00	46.43	49.65
95th-Percentile Queue Length [veh/ln]	0.72	13.28	13.08	2.86	8.69	3.46	6.07	0.64	0.00	3.34	3.57
95th-Percentile Queue Length [ft/ln]	17.99	331.93	326.96	71.38	217.18	86.45	151.86	15.93	0.00	83.57	89.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	6.72	17.34	17.40	12.63	12.63	12.85	10.85	40.42	27.79	0.00	32.47	29.97	29.97
Movement LOS	A	B	B	B	B	B	B	D	C	A	C	C	C
d_A, Approach Delay [s/veh]	16.83			12.51				38.90			31.15		
Approach LOS	B			B				D			C		
d_I, Intersection Delay [s/veh]	17.26												
Intersection LOS	B												
Intersection V/C	0.504												

**Emissions**

Vehicle Miles Traveled [mph]	9.50	93.17	91.15	18.54	79.82	17.37	6.01	0.82	0.00	4.43	4.97
Stops [stops/h]	15.99	339.87	333.68	63.45	401.17	76.84	134.99	14.16	0.00	74.28	79.43
Fuel consumption [US gal/h]	0.57	8.25	8.09	1.71	8.38	1.67	2.50	0.26	0.00	1.38	1.46
CO [g/h]	39.64	576.53	565.50	119.74	585.67	116.47	174.94	17.94	0.00	96.11	101.90
NOx [g/h]	7.71	112.17	110.03	23.30	113.95	22.66	34.04	3.49	0.00	18.70	19.83
VOC [g/h]	9.19	133.62	131.06	27.75	135.73	26.99	40.54	4.16	0.00	22.28	23.62

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1067			1067			444			444		
d_b, Bicycle Delay [s]	9.80			9.80			27.22			27.22		
I_b,int, Bicycle LOS Score for Intersection	2.610			2.485			1.868			1.966		
Bicycle LOS	B			B			A			A		

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 4: Lakepoint Dr & North Ten Mile Dr**

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

**Intersection Setup**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	North Ten Mile Dr			North Ten Mile Dr			Lakepoint Dr			Lakepoint Dr		
Base Volume Input [veh/h]	10	45	7	1	95	10	12	2	3	8	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460	1.1460
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	36	0	0	30	56	36	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	88	8	1	139	67	50	2	3	9	7	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	24	2	0	38	18	14	1	1	2	2	0
Total Analysis Volume [veh/h]	12	96	9	1	151	73	54	2	3	10	8	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.13	0.01	0.00	0.21	0.07	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	13.19	10.99	9.34	12.37	11.72	10.07	7.31	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.59	0.59	0.59	1.14	1.14	1.14	0.10	0.10	0.10	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	14.74	14.74	14.74	28.59	28.59	28.59	2.61	2.61	2.61	0.42	0.42	0.42
d_A, Approach Delay [s/veh]	11.09			11.19			6.69			4.02		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	10.22											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: Dillon Dam Rd & N Ten Mile Dr**

Control Type: Roundabout  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 11.7  
 Level Of Service: B

**Intersection Setup**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Dillon Dam Rd			Dillon Dam Rd			Ne-70			North Ten Mile Dr		
Base Volume Input [veh/h]	0	311	16	87	106	260	184	95	387	75	15	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070	1.0070
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	8	12	0	0	0	32	0	23	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	111	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	315	24	100	107	262	185	128	390	99	15	85
Peak Hour Factor	1.0000	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	86	7	27	29	66	46	32	98	27	4	23
Total Analysis Volume [veh/h]	111	342	26	109	116	262	185	128	390	108	15	92
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	430			239			340			651		
Exiting Flow Rate [veh/h]	626			631			129			268		
Demand Flow Rate [veh/h]	111	315	24	100	107	262	185	128	390	99	15	85
Adjusted Demand Flow Rate [veh/h]	111	342	26	109	116	262	185	128	390	108	15	92

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	489	230	0	718	220
Capacity of Entry and Bypass Lanes [veh/h]	890	1082	1211	976	711
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	873	1061	1187	957	697
X, volume / capacity	0.55	0.21	0.22	0.73	0.31

**Movement, Approach, & Intersection Results**

Lane LOS	B	A	A	C	A
95th-Percentile Queue Length [veh]	3.42	0.80	0.84	6.84	1.31
95th-Percentile Queue Length [ft]	85.43	20.04	21.10	170.92	32.77
Approach Delay [s/veh]	11.78	5.17		17.08	9.00
Approach LOS	B	A		C	A
Intersection Delay [s/veh]	11.73				
Intersection LOS	B				



Platinum  
Traffic  
Engineering

**Platinum Traffic Engineering, P.C.**  
Castle Rock, CO  
[www.PlatinumTrafficEngineering.com](http://www.PlatinumTrafficEngineering.com)  
303.210.9984

**MCDONALDS RESTAURANT**  
**960 N. Ten Mile Drive**  
**Frisco, Colorado**

**FINAL DRAINAGE REPORT**

Strategic Land Solutions, Inc. JN: 21-0001-211  
Report Date/History: May 30, 2025  
Revised: September 05, 2025

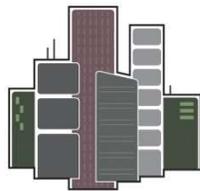
*Prepared for:*



**MCDONALD'S RESTAURANT**  
**960 N. TEN MILE DRIVE**  
Frisco, Colorado  
STORE ID # 51062

**ATTN: Mr. Robert Yagusesky – Area Construction Manager**  
Email: [robert.yagusesky@us.mcd.com](mailto:robert.yagusesky@us.mcd.com)

*Prepared by:*



**Strategic Land Solutions, Inc.**

Civil Engineering • Land Planning • Entitlements

Robert J. Palmer, P.E., as President

*Strategic Land Solutions, Inc.*

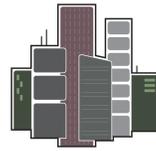
2595 Ponderosa Road  
Franktown, CO 80116  
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## TABLE OF CONTENTS

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<b>TABLE OF CONTENTS</b> .....	<b>i</b>
<b>ENGINEER'S AND DEVELOPER'S CERTIFICATIONS</b> .....	<b>ii</b>
<b>1. GENERAL LOCATION AND DESCRIPTION</b> .....	<b>1</b>
1.1. LOCATION.....	1
1.2. DESCRIPTION OF PROPERTY .....	1
<b>2. DRAINAGE BASINS AND SUB-BASINS</b> .....	<b>1</b>
2.1. MAJOR BASIN DESCRIPTION .....	1
2.2. SUB-BASIN DESCRIPTION .....	2
<b>3. DRAINAGE DESIGN CRITERIA</b> .....	<b>2</b>
3.1. REGULATIONS .....	2
3.2. DEVELOPMENT RESTRAINTS .....	2
3.3. HYDROLOGICAL CRITERIA.....	3
3.4. HYDRAULIC CRITERIA .....	3
3.5. WATER QUALITY REQUIREMENTS.....	3
3.6. WAIVERS FROM CRITERIA .....	3
<b>4. DRAINAGE FACILITY DESIGN</b> .....	<b>3</b>
4.1. GENERAL CONCEPT .....	3
4.2. SPECIFIC DETAILS.....	3
<b>5. CONCLUSIONS</b> .....	<b>4</b>
5.1. COMPLIANCE WITH STANDARDS .....	4
5.2. DESIGN .....	4
<b>6. REFERENCES</b> .....	<b>5</b>

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## LIST OF FIGURES

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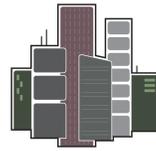
Figure 1 - SITE LOCATION MAP .....	1
Figure 2 - SITE LOCATION ENLARGEMENT .....	1

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## APPENDICES

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APPENDIX A: HYDROLOGIC COMPUTATIONS
APPENDIX B: MAP POCKET



## ENGINEER'S CERTIFICATION

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This **STORMWATER MANAGEMENT REPORT** was prepared by me or under my direct supervision in accordance with the provisions of the Town of Frisco, Storm Drainage Design and Technical Stormwater requirements for the owners thereof. It is understood that the Town of Frisco does not and will not assume liability for the drainage facilities designed by others.

SIGNATURE:

Robert J. Palmer, PE  
CO PE #36320



## DEVELOPER'S CERTIFICATION

---

**MCDONALD'S CORPORATION** (hereinafter **DEVELOPER**) hereby certifies that the drainage facilities for the project detailed within this Report will be constructed according to the design presented. It is understood that the Town of Frisco does not and will not assume liability for the drainage facilities designed and/or certified by my engineer and that the Town of Frisco reviews drainage plans pursuant to Colorado Revised Statutes, Title 24, Article 28; but cannot, on behalf of **DEVELOPER**, guarantee that final drainage design review will absolve **DEVELOPER** and/or their successor and/or assigns of future liability for improper design.

SIGNATURE: \_\_\_\_\_

\_\_\_\_\_  
Printed Name -

\_\_\_\_\_  
Title -

## 1. GENERAL LOCATION AND DESCRIPTION

### 1.1. LOCATION

The planned **McDonald's Restaurant** will consist of the building remodel and site revisions of the First Bank site located at 960 N. Ten Mile Drive, within the northwest ¼ of Section 26, Township 5 South, Range 78 West of the 6<sup>th</sup> Principal Meridian, Town of Frisco, Summit County, State of Colorado.

The site is bounded on the west by Summit Boulevard, on the north by existing commercial/retail, on the east by N. Ten Mile Drive, and on the south by Lakepoint Drive.



Figure 1 - SITE LOCATION MAP



Figure 2 - SITE LOCATION ENLARGEMENT

### 1.2. DESCRIPTION OF PROPERTY

The site currently encompasses approximately 1.05-acres and includes a bank building, surface parking, landscaping, and utilities.

The proposed redevelopment of this property includes remodeling the bank building to operate as a McDonald's restaurant, removal of the remote tellers, the addition of double drive thru, some new landscaping, and repaving of the site. Site landscaping will be increased with this project.

## 2. DRAINAGE BASINS AND SUB-BASINS

### 2.1. MAJOR BASIN DESCRIPTION

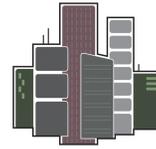
The site lies within the Dillon Reservoir Drainage Basin. Runoff from the site sheet flows to the adjacent streets, where it is conveyed north in the N. Ten Mile Drive gutter to an underground storm drain. The runoff is captured in the public underground storm drain, where it is conveyed through stormwater treatment and to Dillon Reservoir.

There are no adjacent irrigation facilities tributary to this site.

The project is located within Flood Zone X, as shown on the National Flood Insurance Program's Flood Insurance map community panel 08117C0353F with an effective date of November 16, 2018, Summit County.

According to the Natural Resources Conservation Service (NRCS) web site, the onsite soil consists of Histic Cryaquolls, which has a hydraulic rating of A/ D.

As shown in the geotechnical report (see Appendix F), no ground water was encountered in any borings, which ranged in depth from 6.5-feet to 26.5-feet. Therefore, no dewatering is expected with this project.



## 2.2. SUB-BASIN DESCRIPTION

Under proposed conditions, the site is roughly divided into three (3) existing and proposed drainage sub-basins. The proposed basins match closely to the existing basins.

The following is a description of the three existing E1, E2, E3, and three proposed sub-basins A, B, and C.

**Basin E1** contains approximately 0.48 acre, and is comprised of a portion of the building rooftop, landscaping, parking, and drive aisles along the south and east portion of the site. Runoff from this basin sheet flows to the adjacent pavement, where it drains to the gutter in N. Ten Mile Drive at design point E1. The runoff is then conveyed North in N. Ten Mile Drive to a public inlet.

**Basin E2** contains approximately 0.47 acre, and is comprised of a portion of the building rooftop, landscaping, parking, and drive aisles along the west portion of the site. Runoff from this basin sheet flows to the adjacent pavement, where it drains to the onsite gutter. The runoff is then conveyed to the drainage swale along the north portion of the site at Design Point E2. The runoff is then conveyed North in N. Ten Mile Drive in a public storm pipe.

**Basin E3** contains approximately 0.15 acre and is comprised of drainage swale along the north side of the site. Runoff from this area combines with runoff from basin E3 and the storm pipe into the swale at Design Point E3. The runoff is then conveyed North in N. Ten Mile Drive in a public storm pipe.

**Basin A** contains approximately 0.50 acre, and is comprised of a portion of the building rooftop, landscaping, parking, and drive aisles along the south and east portion of the site. Runoff from this basin sheet flows to the adjacent pavement, where it drains to the gutter in N. Ten Mile Drive at design point 1. The runoff is then conveyed North in N. Ten Mile Drive to a public inlet.

**Basin B** contains approximately 0.46 acre, and is comprised of a portion of the building rooftop, landscaping, parking, and drive aisles along the west portion of the site. Runoff from this basin sheet flows to the adjacent pavement, where it drains to the onsite gutter. The runoff is then conveyed to the drainage swale along the north portion of the site at Design Point 2. The runoff is then conveyed North in N. Ten Mile Drive in a public storm pipe.

**Basin C** contains approximately 0.15 acre and is comprised of drainage swale along the north side of the site. Runoff from this area combines with runoff from basin E3 and the storm pipe into the swale at Design Point 3. The runoff is then conveyed North in N. Ten Mile Drive in a public storm pipe.

## DRAINAGE DESIGN CRITERIA

### 2.3. REGULATIONS

This drainage report was prepared in compliance with the following criteria:

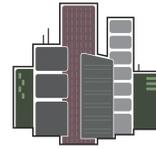
- Town of Frisco, *Storm Drainage Design and Technical Criteria*
- Mile High Flood District (MHFD) *Urban Storm Drainage Criteria Manual*

During construction, disturbed areas will be stabilized for erosion and sediment control in accordance with Town of Frisco and MHFD *Criteria*. The methods used to control erosion and sediment during construction of this project will comply with the non-structural and structural Best Management Practices (BMPs) described within the Town of Frisco and MHFD manuals. A separate Erosion Control Report will be submitted to Town of Frisco for approval.

No deviation from the Town of Frisco *Criteria* is being.

### 2.4. DEVELOPMENT RESTRAINTS

The proposed development is a remodel of the existing site, and the site is located at the corner of two streets. Therefore, the proposed drainage basins are almost identical to the existing drainage basins. The proposed development will increase the amount of pervious (landscaping) area by a small amount. All proposed drainage basins show a minor reduction in runoff intensity and volume compared to the existing drainage basins.



## 2.5. HYDROLOGIC CRITERIA

Runoff was calculated per the Town of Frisco *Criteria*. Rainfall intensity was taken from NOAA Atlas 14 runoff data, and runoff coefficients were taken from MHFD Table RO-3 utilizing soil type "A". The rational method was used to calculate runoff from the proposed development. The following formula was used to determine the runoff values:

$$Q=CIA$$

Where Q = Storm runoff, cubic feet per second (CFS)

C = Runoff coefficient

I = Storm intensity, inches per hour

A = Drainage area, acres

## 2.6. HYDRAULIC CRITERIA

There are no pipe hydraulics associated with this report.

## 2.7. WATER QUALITY REQUIREMENTS

Stormwater quality for the project will be provided by passing site runoff over landscaping where possible. There are no formal existing water quality facilities serving the existing site, and this a remodel of the existing site with an increase in pervious area. Therefore, the addition of formal water quality treatment is not required.

## 2.8. WAIVERS FROM CRITERIA

No deviation from the Town of Frisco *Criteria* or MHFD *Criteria* is being requested.

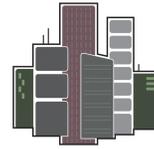
## 3. DRAINAGE FACILITY DESIGN

### 3.1. GENERAL CONCEPT

Runoff from the building will be captured by roof drains and conveyed across the landscape in front of the building to N. Ten Mile Drive. The runoff is then conveyed north to a public storm drain inlet. Runoff from the north portion of the lot is conveyed to the landscaped area at the northeast corner of the site, where it is captured in the public underground storm drain. Runoff from the south portion of the site is conveyed to N. Ten Mile Drive, where it is conveyed north to a public storm drain inlet.

### 3.2. SPECIFIC DETAILS

Runoff from the site sheet flows to gutters, where it is captured by inlets, and conveyed to the public storm drain system in N. Ten Mile Drive. The remodeled site is designed to mimic the existing grading and drainage patterns through the site. The proposed site contains a small increase in pervious area, and it provides a small decrease or no change in stormwater runoff intensity and volume compared to the existing site.



**SITE STATISTICS:**

DESCRIPTION	EXISTING	PROVIDED
Area	1.105 Acres	1.105 Acres
Percent Imperviouness	64.66%	61.95%
5-year Runoff Coefficient	0.49	0.47
100-year Runoff Coefficient	0.61	0.59
5-year South Basin Runoff (Basins E1 & A)	0.49 CFS	0.49 CFS
5-year Middle Basin Runoff (Basins E2 & B)	0.62 CFS	0.62 CFS
5-year South Basin Runoff (Basins E3 & C)	0.03 CFS	0.03 CFS
<b>5-year Total Site Runoff</b>	<b>0.94 CFS</b>	<b>0.94 CFS</b>
25-year South Bsn. Runoff (Basins E1 & A)	0.84 CFS	0.85 CFS
25-year South Bsn. Runoff (Basins E2 & B)	1.03 CFS	1.02 CFS
25-year South Bsn. Runoff (Basins E3 & C)	0.06 CFS	0.06 CFS
<b>25-year Total Site Runoff</b>	<b>1.60 CFS</b>	<b>1.60 CFS</b>
100-year South Bsn. Runoff (Basins E1 & A)	1.30 CFS	1.33
100-year South Bsn. Runoff (Basins E2 & B)	1.54 CFS	1.53
100-year South Bsn. Runoff (Basins E3 & C)	0.15 CFS	0.14
<b>100-year Total Site Runoff</b>	<b>2.52 CFS</b>	<b>2.52 CFS</b>

**3.3. OPERATION AND MAINTENANCE PLAN**

The proposed storm drain system will be inspected weekly to ensure no trash is accumulating in the system, and to ensure the system is operating correctly. The system will be maintenance yearly to remove any sedimentation form landscape areas and gutters.

All maintenance is the responsibility of the property owner. The Town of Frisco is not responsible for maintenance of private onsite facilities. See section 4.2 of this report for maintenance specifications.

**4. CONCLUSIONS**

**4.1. COMPLIANCE WITH STANDARDS**

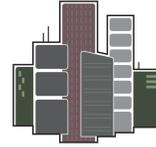
This stormwater Management Report was prepared in compliance with the Town of Frisco *Storm Drainage Design and Technical Criteria* and the MHFD *Urban Storm Drainage Criteria Manual*. No variances will be requested. The proposed total site runoff for the 5-year storm, 25-year storm, and 100-year storm are identical to the existing site.

**4.2. MAINTENANCE**

All proposed drainage facilities proposed with this project are private and will be maintained by the property owner. All periodic maintenance will be performed per Mile Hi Flood District Urban Storm Drainage Criteria Manual Volume 3, Chapter 6, Section 7.0.

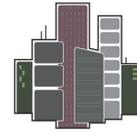
**4.3. DESIGN**

This project meets the requirements shown in the Town of Frisco *Storm Drainage Design and Technical Criteria* and the MHFD *Urban Storm Drainage Criteria Manual*, and it includes a decrease in runoff intensity and volume. Furthermore, as discussed in section 2.1 of this report, groundwater is not expected to affect this project. As such, this project should not have a negative impact on the surrounding developments and existing drainage facilities.



## 5. REFERENCES

1. Town of Frisco, Minimum Street Design and Access Criteria, February 12, 2019.
2. Flood Insurance Rate Map – Town of Frisco, Colorado, Community Panel Number 0800460181G, Effective date of November 16, 2018.
3. Geotechnical Exploration Report McDonalds-Frisco, CO 960 N. 10 Mile Rd. Frisco CO, 80443 – UES, January 21, 2025.
4. Mile High Flood District Criteria Manual (Volumes 1, 2, and 3); Mile High Flood District, 2021 (latest revision).



**APPENDIX**

**A HYDROLOGIC COMPUTATIONS**

**Appendix A – HYDROLOGIC COMPUTATIONS**

960 N. TEN MILE DRIVE FRISCO, CO - Existing Drainage Calculations

**LAND USAGE FOR EACH SUB-BASIN**

LAND USAGE	PERCENT IMPERVIOUS (%)	5-YR RUNOFF COEFF. C <sub>5</sub>	100-YR RUNOFF COEFF. C <sub>100</sub>	AREA						SUM OF AREA (ACRE)
				E1	E2	E3				
LANDSCAPE (clay)	20	0.11	0.26	0.184	0.116	0.153				0.453
ROOF	95	0.81	0.84	0.054	0.046					0.100
DRIVES AND WALKS (IMPERVIOUS)	95	0.81	0.84	0.244	0.308					0.552
Total				0.482	0.470	0.153	0.000	0.000	0.000	1.105

**COMPOSITE % IMPERVIOUSNESS AND RUNOFF COEFFICIENTS**

SUB-BASIN	EFFECTIVE % IMPERVIOUS				AREA acres
E1	66.37				0.482
E2	76.49				0.470
E3	20.00				0.153
Total Existing Site	64.25				1.105

960 N. TEN MILE DRIVE FRISCO, CO - Proposed Drainage Calculations

**LAND USAGE FOR EACH SUB-BASIN**

LAND USAGE	PERCENT IMPERVIOUS (%)	5-YR RUNOFF COEFF. C <sub>5</sub>	100-YR RUNOFF COEFF. C <sub>100</sub>	AREA						SUM OF AREA (ACRE)
				A	B	C				
LANDSCAPE (clay)	20	0.11	0.26	0.204	0.108	0.146				0.458
ROOF	95	0.81	0.84	0.054	0.051					0.105
DRIVES AND WALKS (IMPERVIOUS)	95	0.81	0.84	0.243	0.299					0.542
Total				0.501	0.458	0.146	0.000	0.000	0.000	1.105

**COMPOSITE % IMPERVIOUSNESS AND RUNOFF COEFFICIENTS**

SUB-BASIN	EFFECTIVE % IMPERVIOUS				AREA acres
A	64.46				0.501
B	77.31				0.458
C	20.00				0.146
Total Proposed Site	63.91				1.105

### Calculation of Peak Runoff using Rational Method

Designer: Robert Palmer  
 Company: Strategic Land Solutions  
 Date: 9/10/2025  
 Project: 960 N. TEM MILE, FRISCO, CO - MCDONALD'S  
 Location: 2930 S. PANCRATIA STREET DENVER, CO

Version 2.00 released May 2017

Cells of this color are for required user-input  
 Cells of this color are for optional override values  
 Cells of this color are for calculated results based on overrides

$$t_1 = \frac{0.395(1.1 - C_s)\sqrt{L_1}}{S^{0.33}}$$

$$t_t = \frac{L_1}{60K\sqrt{S_1}} = \frac{L_1}{60V_t}$$

Computed  $t_c = t_1 + t_t$

Regional  $t_c = (26 - 17i) + \frac{L_1}{60(14i + 9)\sqrt{S_1}}$

$t_{\text{minimum}} = 5$  (urban)  
 $t_{\text{minimum}} = 10$  (non-urban)

Selected  $t_c = \max\{t_{\text{minimum}}, \min(\text{Computed } t_c, \text{Regional } t_c)\}$

Select UDFCD location for NOAA Atlas 14 Rainfall Depths from the pulldown list OR enter your own depths obtained from the NOAA website (click this link)

1-hour rainfall depth, P1 (in) =	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
	0.50	0.64	0.78	1.00	1.18	1.38	1.91

Rainfall Intensity Equation Coefficients =  $\frac{a}{b + t_c^c}$   
 a = 28.50, b = 10.00, c = 0.786  
 $I(\text{in/hr}) = \frac{a \cdot P_1}{(b + t_c)^c}$

$Q(\text{cfs}) = CIA$

Subcatchment Name	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	Runoff Coefficient, C							Overland (Initial) Flow Time					Channelized (Travel) Flow Time					Time of Concentration			Rainfall Intensity, I (in/hr)						Peak Flow, Q (cfs)									
				2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	Overland Flow Length L <sub>1</sub> (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S <sub>1</sub> (ft/ft)	Overland Flow Time t <sub>1</sub> (min)	Channelized Flow Length L <sub>1</sub> (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Channelized Flow Slope S <sub>1</sub> (ft/ft)	NRCS Conveyance Factor K	Channelized Flow Velocity V <sub>1</sub> (ft/sec)	Channelized Flow Time t <sub>1</sub> (min)	Computed t <sub>c</sub> (min)	Regional t <sub>c</sub> (min)	Selected t <sub>c</sub> (min)	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
E1	0.48	A	66.4	0.49	0.51	0.53	0.56	0.59	0.63	0.68	66.00			0.053	4.99	216.00			0.012	20	2.14	1.68	6.67	16.55	6.67	1.55	2.01	2.44	3.11	3.68	4.31	5.96	0.37	0.49	0.62	0.84	1.05	1.30	1.96
E2	0.47	A	76.5	0.59	0.61	0.63	0.65	0.68	0.71	0.75	37.00			0.108	2.45	297.00			0.008	20	1.83	2.70	5.15	15.74	5.15	1.67	2.16	2.63	3.35	3.97	4.65	6.43	0.46	0.62	0.78	1.03	1.27	1.54	2.26
E3	0.15	A	20.0	0.10	0.11	0.12	0.14	0.20	0.27	0.38	38.35			0.104	5.11	207.65			0.027	15	2.44	1.42	6.53	24.40	10.00	1.34	1.74	2.12	2.69	3.19	3.73	5.17	0.02	0.03	0.04	0.06	0.10	0.15	0.30
E-TOTAL	1.11	A	64.3	0.47	0.49	0.51	0.54	0.57	0.61	0.67	72.50			0.053	5.41	381.00			0.008	15	1.37	4.62	10.03	18.93	10.03	1.34	1.74	2.11	2.69	3.19	3.73	5.16	0.70	0.94	1.18	1.60	2.02	2.52	3.81
A	0.50	A	64.5	0.47	0.49	0.51	0.54	0.58	0.61	0.67	64.00			0.051	5.13	236.40			0.021	20	2.89	1.36	6.50	16.55	6.50	1.56	2.02	2.46	3.14	3.71	4.34	6.01	0.37	0.49	0.63	0.85	1.07	1.33	2.01
B	0.46	A	77.3	0.60	0.62	0.64	0.66	0.69	0.71	0.75	28.00			0.099	2.15	290.90			0.010	20	2.00	2.42	4.58	15.30	5.00	1.68	2.18	2.65	3.38	4.00	4.68	6.48	0.46	0.62	0.77	1.02	1.26	1.53	2.23
C	0.15	A	20.0	0.10	0.11	0.12	0.14	0.20	0.27	0.38	38.35			0.104	5.11	207.65			0.027	15	2.46	1.40	6.51	24.38	10.00	1.34	1.74	2.12	2.69	3.19	3.73	5.17	0.02	0.03	0.04	0.06	0.09	0.14	0.29
P-TOTAL	1.11	A	63.9	0.47	0.49	0.50	0.53	0.57	0.61	0.67	64.00			0.051	5.18	375.00			0.008	15	1.34	4.66	9.84	19.03	9.84	1.35	1.75	2.13	2.71	3.21	3.76	5.20	0.70	0.94	1.18	1.60	2.03	2.52	3.83

TABLE 6-3. RECOMMENDED IMPERVIOUSNESS BY SURFACE TYPES

SURFACE TYPES		IMPERVIOUSNESS
Roadways and Paved Streets		95%
Concrete Driveways and Walks		95%
Roofs		95%
Gravel	No Traffic (Pedestrian Use)	40%
	Low-traffic Areas (Maintenance Paths and Substations)	60%
	High-traffic Areas (Roadways and Parking)	80%
Disturbed Soil (Including Lawns, Managed/Active Turf, Landscaped Areas with Water-Wise Vegetation, and Uncompacted Gravel/Mulch Planting Beds)		20%
Undisturbed or Decompacted Soil (Native Grasses and Open Space Areas)		5%
Artificial Turfs <sup>1</sup>	Landscape Applications (without Subgrade Drainage Layer)	25% – 45%
	Sport Fields (with Underdrain Pipe System)	60% – 80%
Water Surfaces (Lakes/Reservoirs/Irrigation Ponds)		100%
Solar Fields <sup>2</sup>	Grass Cover (Varies with Panel Orientation Relative to Ground Contours)	10% – 45%
	Gravel Cover (Varies with Panel Orientation Relative to Ground Contours)	50% – 75%
Historic Flow Analysis, Greenbelts, Agricultural		5%
Newly Graded Areas		65%
Stormwater Control Measures <sup>3</sup>	Retention Ponds & Constructed Wetland Ponds	100%
	Rooftop Systems – Blue Roofs	95%
	Rooftop Systems – Green Roofs (extensive)	65%
	Rooftop Systems – Green Roofs (intensive)	50%
	Permeable Pavement – CGP/PGP/RGP	55%
	Permeable Pavement – PICP	45%
	Extended Detention Basins	25%
	Receiving Pervious Areas (incl. Grass Buffers & Grass Swales)	20%
Bioretention & Sand Filters	10%	

<sup>1</sup> Consult with the manufacturer to get a recommended value.

<sup>2</sup> Assumes 1:1 ratio of panels to aisles. See MHFD's technical memorandum regarding *Determination of Solar Panel Field Runoff Coefficients and Imperviousness Values* for additional information on procedures for determining percent imperviousness based on panel width, panel spacing, and panel orientation relative to ground contours and how to reflect other impervious areas such as roads and pads that may be part of a solar field and layouts with wider inter-panel spacing.

<sup>3</sup> See MHFD's technical memorandum regarding *Evaluation of Percent Imperviousness for Stormwater Control Measures* for background information.

Where:

$I$  = Weighted imperviousness of catchment **expressed as a decimal**

$C_A$  = Runoff coefficient for NRCS HSG A soils

$C_B$  = Runoff coefficient for NRCS HSG B soils

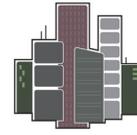
$C_{C/D}$  = Runoff coefficient for NRCS HSG C and D soils

The values for various catchment imperviousness and storm return periods are tabulated in Tables 6-6 through 6-8 and presented graphically in Figures 6-1 through 6-3. These coefficients were developed for the Denver region to work in conjunction with the  $t_c$  criteria in Section 4.4. Use of these coefficients and this procedure outside of the semi-arid climate found in the Denver region may not be valid. The MHFD-Rational Excel workbook performs calculations to determine the runoff coefficient based on the HSG, the design storm return period, and imperviousness and is available at [www.mhfd.org](http://www.mhfd.org).

See Examples 13.1 and 13.2 for application of the Rational Method.

TABLE 6-6. RUNOFF COEFFICIENTS,  $C$ , NRCS HSG A

TOTAL OR EFFECTIVE % IMPERVIOUS	NRCS HSG A						
	WQE & 2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.01	0.01	0.01	0.04	0.13	0.27
5%	0.02	0.02	0.02	0.03	0.07	0.15	0.29
10%	0.04	0.05	0.05	0.07	0.11	0.19	0.32
15%	0.07	0.08	0.08	0.10	0.15	0.23	0.35
20%	0.10	0.11	0.12	0.14	0.20	0.26	0.38
25%	0.14	0.15	0.16	0.19	0.24	0.30	0.42
30%	0.18	0.19	0.20	0.23	0.28	0.34	0.45
35%	0.21	0.23	0.24	0.27	0.32	0.38	0.48
40%	0.25	0.27	0.28	0.32	0.37	0.42	0.51
45%	0.30	0.31	0.33	0.36	0.41	0.46	0.54
50%	0.34	0.36	0.37	0.41	0.45	0.50	0.58
55%	0.39	0.40	0.42	0.45	0.49	0.53	0.61
60%	0.43	0.45	0.47	0.50	0.54	0.57	0.64
65%	0.48	0.50	0.51	0.54	0.58	0.61	0.67
70%	0.53	0.55	0.56	0.59	0.62	0.65	0.71
75%	0.58	0.60	0.61	0.64	0.67	0.69	0.74
80%	0.63	0.65	0.66	0.69	0.71	0.73	0.77
85%	0.68	0.70	0.71	0.74	0.75	0.76	0.80
90%	0.73	0.75	0.77	0.79	0.79	0.80	0.83
95%	0.79	0.81	0.82	0.83	0.84	0.84	0.87
100%	0.84	0.86	0.87	0.88	0.88	0.88	0.90



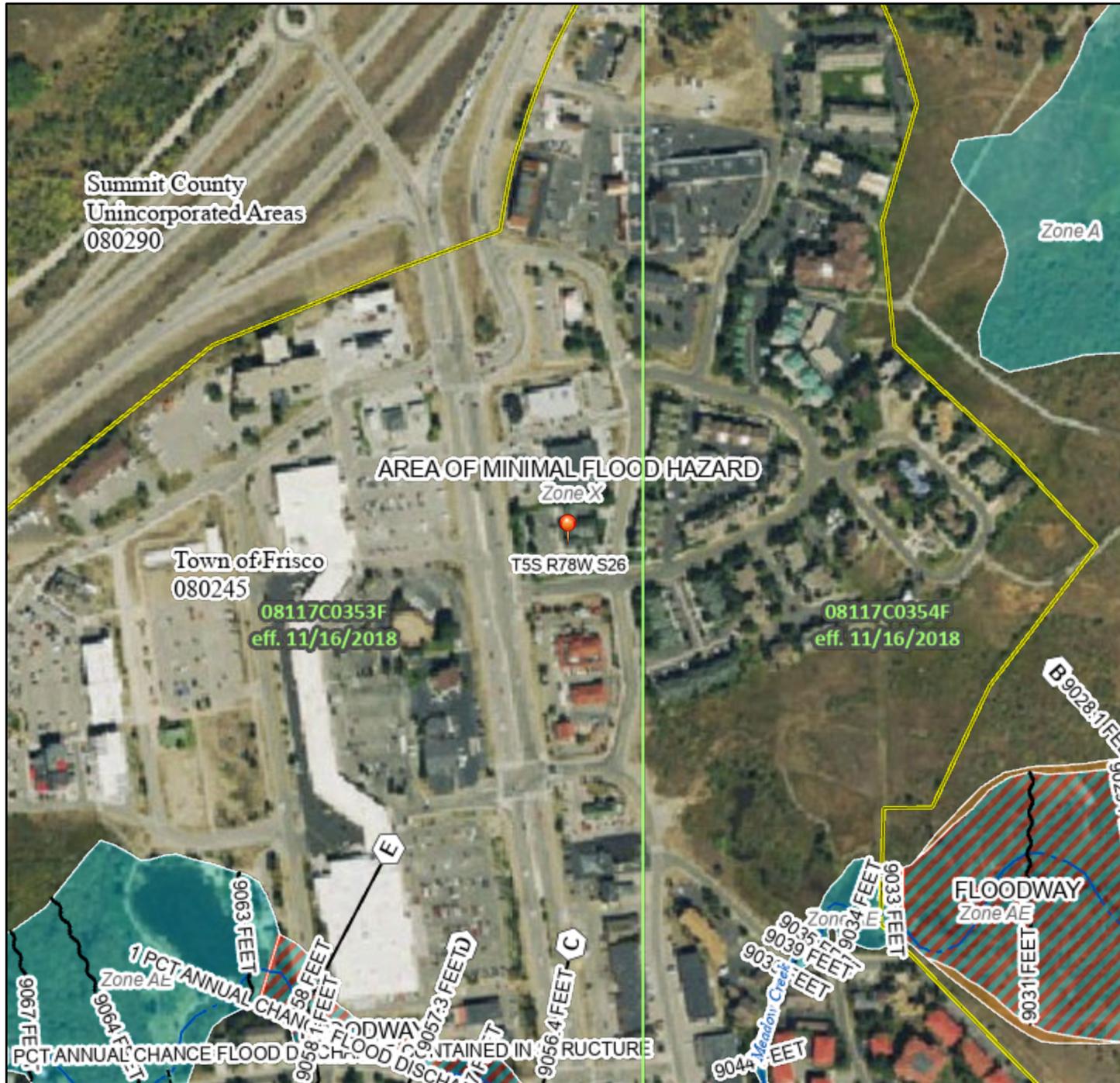
**B. MAP POKED**

*Appendix B – MAP POCKET*

# National Flood Hazard Layer FIRMette



106°5'59"W 39°35'37"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- |                                    |  |   |
|------------------------------------|--|---|
| <b>SPECIAL FLOOD HAZARD AREAS</b>  |  | Without Base Flood Elevation (BFE)<br>Zone A, V, A99  |
|                                    |  | With BFE or Depth Zone AE, AO, AH, VE, AR   |
|                                    |  | Regulatory Floodway   |
| <b>OTHER AREAS OF FLOOD HAZARD</b> |  | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X |
|                                    |  | Future Conditions 1% Annual Chance Flood Hazard Zone X  |
|                                    |  | Area with Reduced Flood Risk due to Levee. See Notes. Zone X  |
|                                    |  | Area with Flood Risk due to Levee Zone D  |
| <b>OTHER AREAS</b>                 |  | NO SCREEN Area of Minimal Flood Hazard Zone X   |
|                                    |  | Effective LOMRs   |
| <b>GENERAL STRUCTURES</b>          |  | Area of Undetermined Flood Hazard Zone D  |
|                                    |  | Channel, Culvert, or Storm Sewer  |
| <b>OTHER FEATURES</b>              |  | Levee, Dike, or Floodwall   |
|                                    |  | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation   |
| <b>MAP PANELS</b>                  |  | 17.5 Coastal Transect   |
|                                    |  | Base Flood Elevation Line (BFE)   |
|                                    |  | Limit of Study  |
|                                    |  | Jurisdiction Boundary   |
|                                    |  | Coastal Transect Baseline   |
|                                    |  | Profile Baseline  |
|                                    |  | Hydrographic Feature  |
|                                    |  | Digital Data Available  |
|                                    |  | No Digital Data Available   |
|                                    |  | Unmapped  |



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/29/2025 at 10:36 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



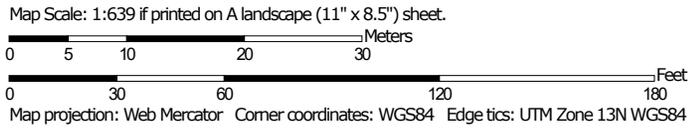
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106°5'21"W 39°35'9"N

Hydrologic Soil Group—Summit County Area, Colorado



Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

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

#### Soil Rating Lines

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

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Summit County Area, Colorado  
 Survey Area Data: Version 16, Aug 29, 2024

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

Date(s) aerial images were photographed: Sep 5, 2021—Sep 7, 2021

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

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
10	Histic Cryaquolls, nearly level	A/D	1.2	100.0%
<b>Totals for Area of Interest</b>			<b>1.2</b>	<b>100.0%</b>

### Description

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

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

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

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

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

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

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

### Rating Options

*Aggregation Method: Dominant Condition*

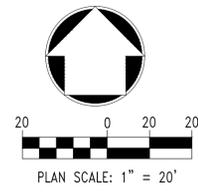
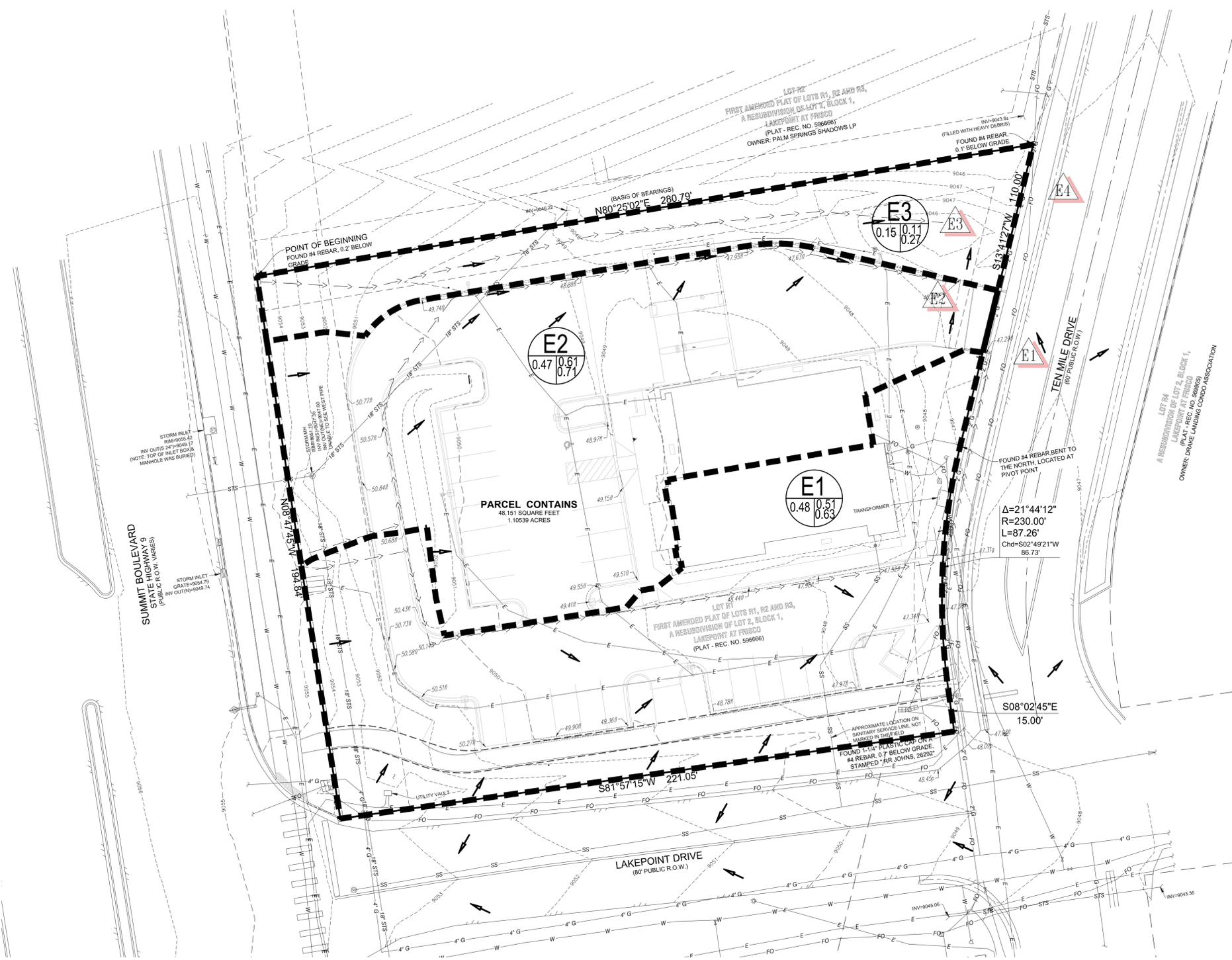
*Component Percent Cutoff: None Specified*

EXISTING SUMMARY RUNOFF TABLE

DESIGN PT	CONTRIBUTING BASINS / AREA (acres)	5-YEAR RUNOFF (cfs)	25-YEAR RUNOFF (cfs)	100-YEAR PEAK RUNOFF (cfs)
E1	E1/0.467	0.49	0.84	1.30
E2	E2/0.485	0.62	1.03	1.54
E3	E3C/0.153	0.03	0.06	0.15
E4	E1-E3/1.105	0.94	1.60	2.52

LEGEND

- TC CALCULATIONS
- BASIN LIMITS
- FLOW DIRECTION
- DESIGN POINT
- BASIN DESIGNATION
- 5 YR COMPOSITE 'C'
- 100YR COMPOSITE 'C'
- BASIN AREA



NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

**Strategic Land Solutions, Inc.**  
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 2595 PONDEROSA ROAD  
 FRANKTOWN, CO 80116  
 720.364.7661 Phone  
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 Robert J. Palmer, PE  
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 36320  
 PROFESSIONAL ENGINEER

BY Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

OFFICE ADDRESS  
 960 N. TEN MILE DRIVE  
 FRISCO, COLORADO  
 SUMMIT, COLORADO  
 51062  
 44322

AS NOTED M&D RE: BAKER  
 DATE: 09/05/2025 M&D P/JCM YAGUESKY  
 DESIGNED BY: RJP  
 DRAWN BY: RJP FILE NAME:  
 CHECKED BY: RJP CURRENT.DWG  
 SLS BY: 24-0001-216

DRAWING TITLE  
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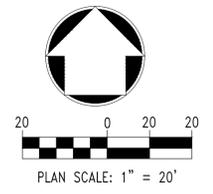
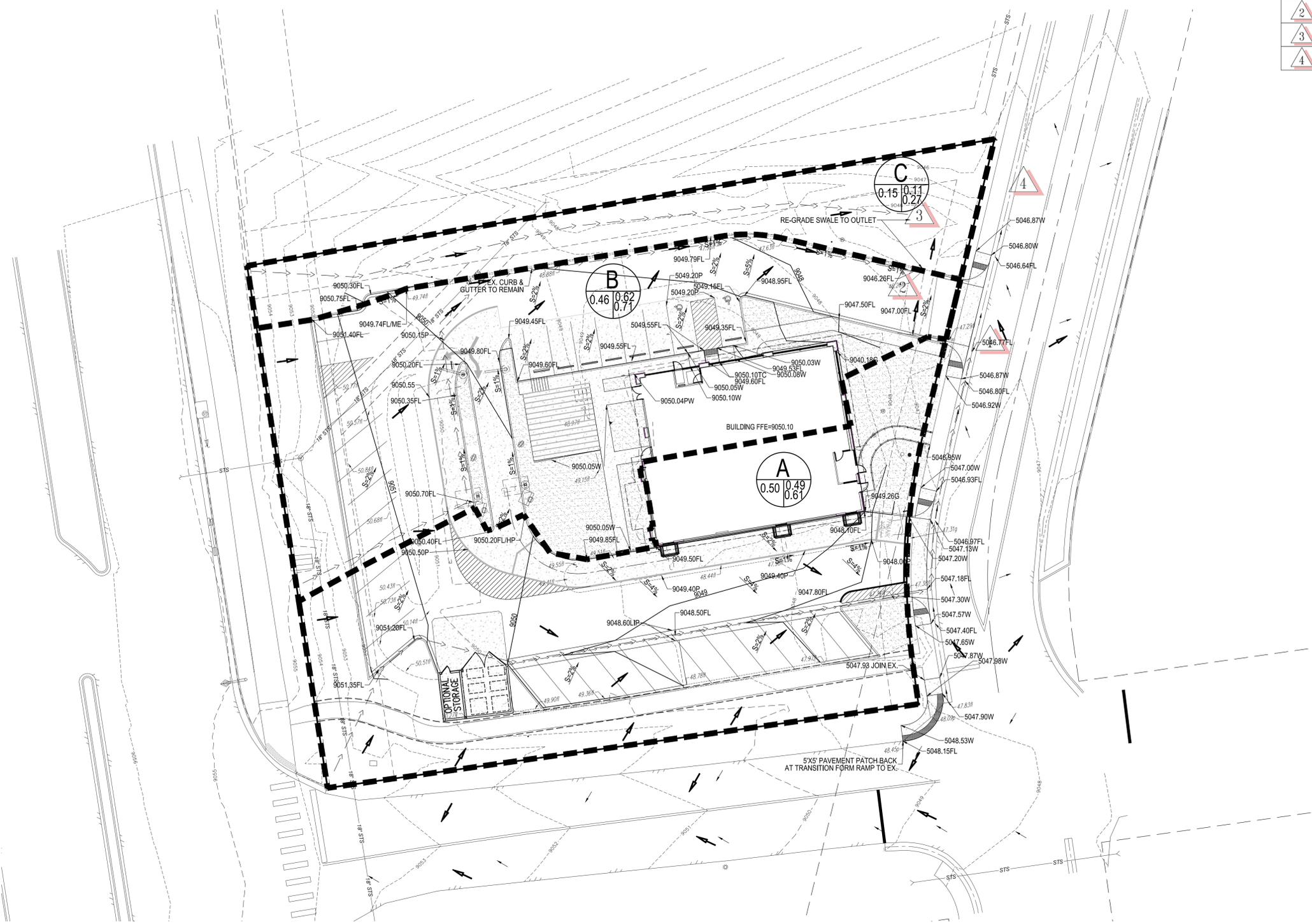
SHEET NO.  
**DR-1**

PROPOSED SUMMARY RUNOFF TABLE

DESIGN PT	CONTRIBUTING BASINS / AREA (acres)	5-YEAR RUNOFF (cfs)	25-YEAR RUNOFF (cfs)	100-YEAR PEAK RUNOFF (cfs)
1	A/0.487	0.50	0.85	1.33
2	B/0.465	0.62	1.02	1.53
3	C/0.153	0.02	0.06	0.14
4	A-C/1.105	0.94	1.60	2.52

LEGEND

- TC CALCULATIONS
- BASIN LIMITS
- DESIGN POINT
- BASIN DESIGNATION
- 5 YR COMPOSITE 'C'
- 100YR COMPOSITE 'C'
- BASIN AREA



NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

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SEAL: PROFESSIONAL ENGINEER

BY Robert J. Palmer, PE  
 Licensed Professional Engineer (CO PE #36320),  
 AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

**McDonald's**  
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STREET ADDRESS: 960 N. TEN MILE DRIVE

CITY: FRISCO

STATE: COLORADO

COUNTY: SUMMIT

CITY: SUMMIT

REGIONAL DWG. NO.: 51062

MARKING D/W: 44322

SCALE: AS NOTED

DATE: 09/05/2025

DESIGNED BY: RJP

DRAWN BY: RJP

CHECKED BY: RJP

MD RE: BAKER

MD P/CM: YAGUESKY

FILE NAME: CURRENT.DWG

SLS BY: 24-0001-216

DRAWING TITLE: PROPOSED DRAINAGE PLAN

SHEET NO.: DR-2