Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements

Wednesday, March 05, 2025

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

RE: 1st 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.

McDonalds 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

2595 Ponderosa Road ● Franktown ● CO ● 80116
Email: rpalmer@strategicls.net
Phone: 720.384.7661
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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.

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 Yaguesesky, OVUR via: robert.yagusesky@us.mcd.com

MCDONALD'S RESTAURANT (FIRST BANK REMODEL)

SITE PLAN PLAN FOR TOWN OF FRISCO

THE NORTHWEST ¼ OF SECTION 26, TOWNSHIP 5 SOUTH, RANGE 78 WEST OF THE SIXTH P.M.
TOWN OF FRISCO, COUNTY OF SUMMIT, STATE OF COLORADO

LOCATED AT: 960 NORTH TEN MILE ROAD FRISCO, COLORADO

LEGAL DESCRIPTION

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 FIRST 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.

ASSURANCE NOTE: THE ABOVE LEGAL DES CR/ PTION DESCRIBES ALL THAT LAND INSURED IN SCHEDULE A(5) OF TITLE COMMITMENT NUMBER ABD20214589-3 PREPARED BY LAND TITLE GUARANTEE COMPANY AS AGENT FOR OLD REPUBUC NATIONAL TITLE INSURANCE COMPANY WITH A COMMITMENT DATE OF DECEMBER 5, 2024 AT5:00P.M.

BASIS OF BEARINGS

BASIS OF BEARING: BEARINGS ARE BASED ON THE NORTHERLY LINE OF LOT R1, FIRST AMENDED PLAT OF LOTS R1, R2 AND R3, RESUBDIVISION OF LOT 2, BLOCK 1, LAKEPOINT AT FRISCO WITH AN ASSUMED BEARING OF N80°25'02"E MONUMENT BY A #4 REBAR, 0.1' BELOW GRADE FOUND AT THE NORTHEASTERLY CORNER OF SAID LOT R1. WITH ALL BEARINGS CONTAINED HEREIN BEING RELATIVE THERETO.

BENCHMARK

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, 0.25 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 1986 DATUM).

FLOOD ZONE

BY GRAPHIC PLOTTING ONLY THE SUBJECT PROPERTY IS SITUATED IN FLOOD ZONE •X• ACCORDING TO FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 08117C0353F WITH AN EFFECTIVE DATE OF NOVEMBER 16, 2018. NO OFFICE CALCULATIONS OR FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS INFORMATION.

OWNER/DEVELOPER
McDONALD'S USA, LLC.
2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
MR. ROBERT YAGUSESKY
206-348-4374

LANDSCAPE ARCHITECT
NATURAL DESIGN SOLUTIONS
ATTN: JASON OLDHAM
JASON@NDSCOLORADO.COM
5539 COLT DRIVE
LONGMONT, CO 80503
303-443-0388

ARCHITECT
ARRIS ARCHITECTURE
285 COMMANDER DR.
ERIE, CO 80516
ATTN: MR. COREY STINAR
970-988-6302

SITE ENGINEER
STRATEGIC LAND SOLUTIONS, INC.
2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
ATTN: ROBERT PALMER, P.E.
(720) 384-7661

LIGHTING
CURRENT LIGHTING
1085 JOHNSON DRIVE
BUFFALO GROVE, IL 60089
SLAPPLICATIONS@
CURRENTLIGHTING.COM

SURVEY
ENGINEERING SERVICE COMPANY
14190 EAST EVANS AVENUE
TOWN OF FRISCO, CO 80014
MR. CHIP BECKSTROM
303-337-1393

REVIEW AGENCY
TOWN OF FRISCO
1 EAST MAIN STREET
FRISCO, CO 80443
ATTN: EMMA HEATH
970-668-4581

REVIEW AGENCY
TOWN OF FRISCO WATER & PUBLIC WORKS
102 SCHOOL HOUSE ROAD
FRISCO, CO 80443
ATTN: CHRIS MCGINNIS
970-668-4579

REVIEW AGENCY
FRISCO SANITATION DISTRICT
111 S. SUMMIT BLVD
FRISCO, CO 80443
ATTN: KATHY MARSHALL
970-668-3723

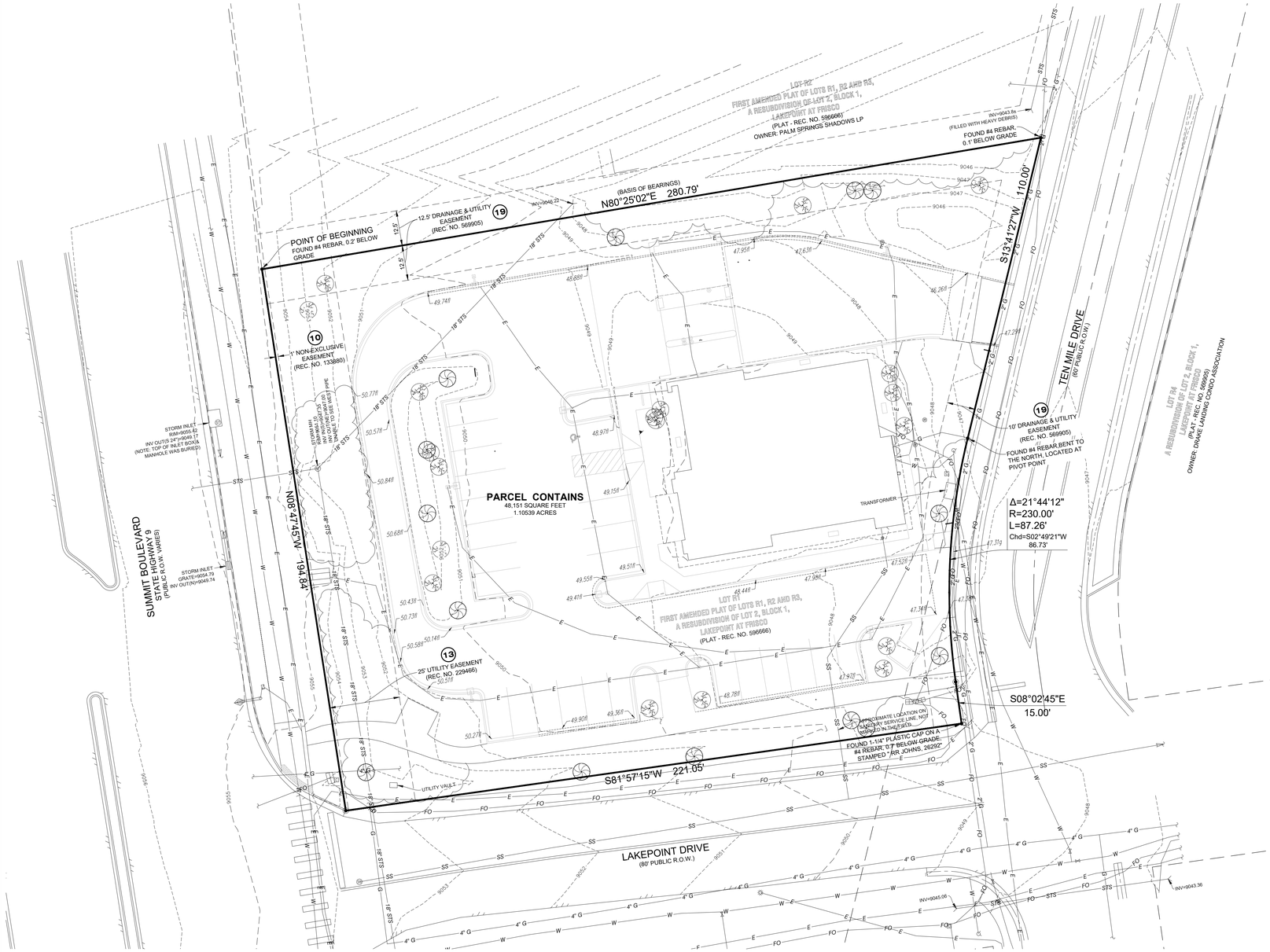
STATISTICAL DATA BLOCK:

DESCRIPTION	EXISTING	PROPOSED
AREA	48,151 S.F.	48,151 S.F.
ZONING	LAKEPOINT PUD	LAKEPOINT PUD
BUILDING AREA (EXTERIOR)	4,370 S.F.	4,575 S.F.
PAVED AREA	24,056 S.F.	24,110 S.F.
LANDSCAPE AREA	19,725 S.F.	19,201 S.F.
NET IMPERVIOUSNESS AREA IMPACT	524 S.F. INCREASE	
PARKING	25 SPACES	PROPOSED
DRIVE THRU STACKING	N/A	15 SPACES
SEATS	N/A	57 SEATS
SNOW STORAGE AREA	N/A	6,254 S.F.
SNOW STORAGE PERCENTAGE OF PARKING	N/A	25.9%

BUILDING GFA CALCULATIONS:

SEATING AREA =1,250 S.F.
ALL OTHER AREAS (KITCHEN, STORAGE, FREEZER, COOLER, ETC.) =3,325 S.F.
TOTAL BUILDING AREA =4,575 S.F.





LEGEND

==========	UNLOCATABLE IMPROVEMENTS
——SS——	UNDERGROUND SANITARY SEWER LINE
——STS——	UNDERGROUND STORM SEWER LINE
——W——	UNDERGROUND WATER LINE
●	BOLLARD
CO	CLEANOUT
C	COMMUNICATIONS PEDESTAL
	ELECTRIC METER
	FIRE HYDRANT
	GAS METER
	HOSE BIB (WATER SPIGOT)
	LIGHT POLE (DIRECTIONAL)
SS	MANHOLE (SANITARY)
ST	MANHOLE (STORM)
0	NUMBER OF PARKING STALLS
	SIGN
	STREET LIGHT
	WATER VALVE
✦ 9090.00	SPOT ELEVATION
	DECIDUOUS TREE
	EVERGREEN TREE

BLDGHT	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

20 0 20 20

PLAN SCALE: 1" = 20'

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

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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: COLORADO REGISTERED 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.

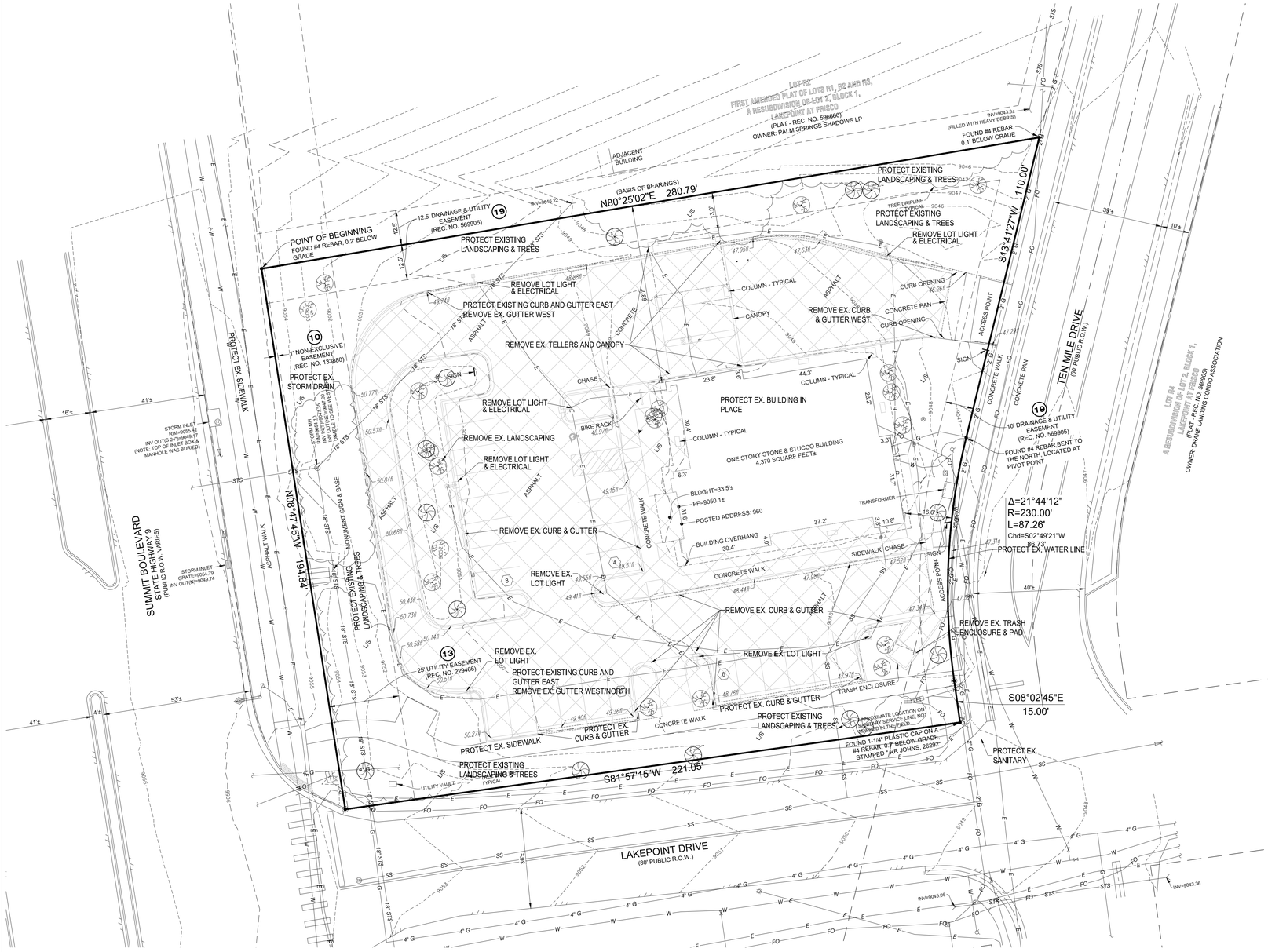
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE ID#: 51062
NATIONAL ID#: 44322
REGIONAL DWG. NO: -

SCALE:	AS NOTED	McD RE:	BAKER
DATE:	05/30/2025	McD P/CM:	YAGUSESKY
DESIGNED BY:	RJP		
DRAWN BY:	RJP	FILE NAME:	CURRENT.DWG
CHECKED BY:	RJP	SLS JN:	24-0001-216

DRAWING TITLE:
EXISTING CONDITIONS

SHEET NO:
EX-1



LEGEND

==========	UNLOCATABLE IMPROVEMENTS
——SS——	UNDERGROUND SANITARY SEWER LINE
——STS——	UNDERGROUND STORM SEWER LINE
——W——	UNDERGROUND WATER LINE
	BOLLARD
CO	CLEANOUT
C	COMMUNICATIONS PEDESTAL
	ELECTRIC METER
	FIRE HYDRANT
	GAS METER
	HOSE BIB (WATER SPIGOT)
	LIGHT POLE (DIRECTIONAL)
SS	MANHOLE (SANITARY)
ST	MANHOLE (STORM)
0	NUMBER OF PARKING STALLS
	SIGN
	STREET LIGHT
	WATER VALVE
✦ 9090.00	SPOT ELEVATION
	DECIDUOUS TREE
	EVERGREEN TREE

BLDGHT	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

20 0 20 20

PLAN SCALE: 1" = 20'

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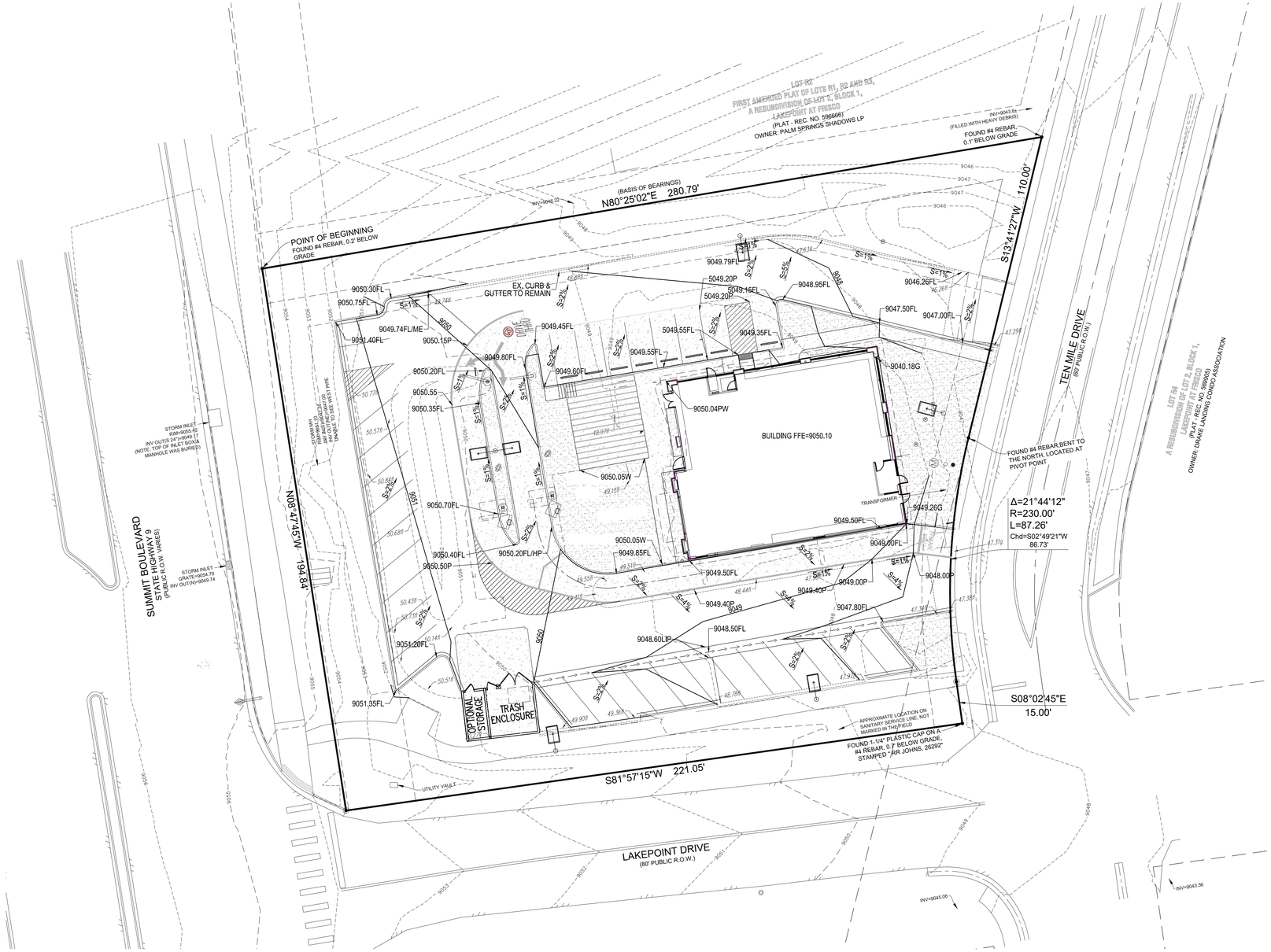
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SCALE:	AS NOTED	McD RE:	BAKER
DATE:	05/30/2025	McD P/CM:	YAGUSESKY
DESIGNED BY:	RJP		
DRAWN BY:	RJP	FILE NAME:	CURRENT.DWG
CHECKED BY:	RJP	SLS JN:	24-0001-216

DRAWING TITLE: DEMOLITION PLAN

SHEET NO: DM1.0

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.



GRADING and DRAINAGE NOTES

1. ALL ONSITE STORM DRAIN AND DETENTION FACILITIES ARE PRIVATE, AND WILL BE MAINTAINED BY THE PROPERTY OWNER.
2. 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 LAN LEADS TO A PUBLIC RIGHT-OF-WAY. NO ONSITE DRIVE LANES LEAD TO A PUBLIC RIGHT-OF-WAY.
3. REFER TO LAYOUT & CONTROL PLAN FOR DIMENSIONS AND IDENTIFICATION OF PROPOSED IMPROVEMENTS.
4. LOT LINE AND EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY PREPARED BY ENGINEERING SERVICES COMPANY, INC.
5. 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.
6. 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 NOTED. 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.
7. ALL FILL AREAS SHALL BE SCARIFIED EIGHT-INCHES AND RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT ±2% FROM OPTIMUM, UNLESS OTHERWISE DIRECTED BY THE GEOTECHNCIAL ENGINEER. THE LOOSE THICKNESS OF EACH LAYER OF FILL MATERIAL SHALL NOT EXCEED EIGHT-INCHES. AREAS TO BE PAVED SHALL BE SCARIFIED AND RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT ±2% FROM OPTIMUM UNLESS DIRECTED OTHERWISE BY THE GEOTECHNICAL ENGINEER. CONTRACTOR SHALL EMPLOY THE ORIGINAL SOILS ENGINEER TO TEST ALL EARTHWORK TO INSURE COMPLIANCE WITH SOILS REPORT.
8. 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.
9. 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.
10. CURB (ACCESSIBLE ACCESSIBLE) RAMPS ARE TO BE PROVIDED AT INTERSECTIONS AND DRIVE ACCESSES, AS SHOWN.
11. 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.
12. ALL CONSTRUCTION WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH CURRENT TOWN OF FRISCO STANDARD CONSTRUCTION SPECIFICATIONS.

GRADING & DRAINAGE LEGEND

5811	EXISTING CONTOUR (1' INTERVAL)
5810	PROPOSED CONTOUR
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
S7	EXISTING STORM DRAIN WITH PIPE SIZE & TYPE NOTED
	EXISTING STORM INLET
	EXISTING STORM MANHOLE
ELEC	PROPOSED ELECTRICAL LINE
	PROPOSED STORM DRAIN
SAN	PROPOSED SANITARY SEWER
WAT	WATER LINE
	EXISTING INTERM CONTOUR
	EXISTING INDEX CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERIM CONTOUR
	PROPOSED SILT FENCE
	PROPERTY LINE
	100-YEAR FLOOD BOUNDARY

FL	FLOW LINE
GB	GRADE BREAK
HP	HIGH POINT
ME	MATCH EXISTING
P	PAVEMENT
TC	TOP OF CURB
W	SIDEWALK

20 0 20 20
PLAN SCALE: 1" = 20'

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

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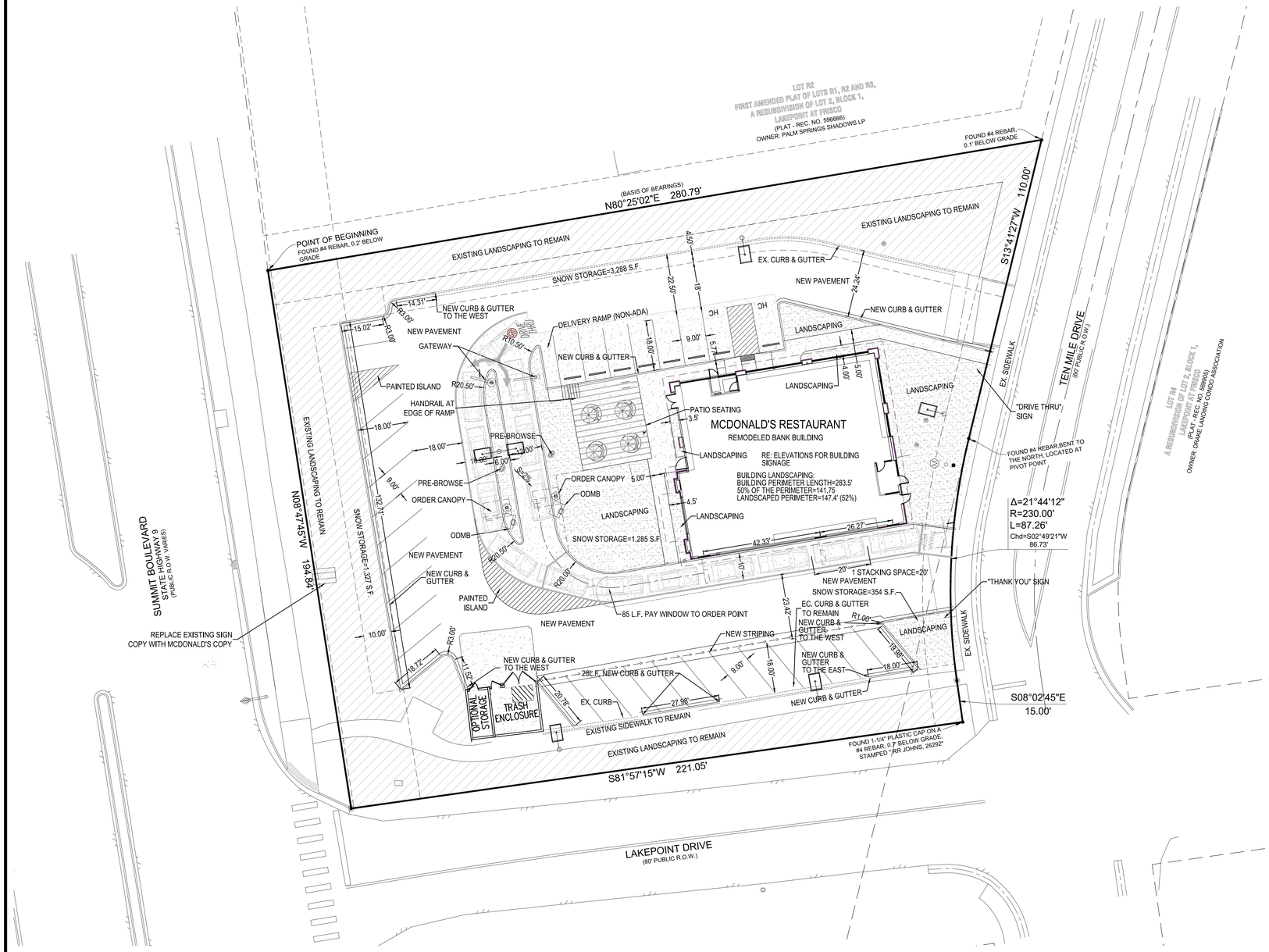
McDonald's®
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF McDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED	McD RE: BAKER
DATE: 05/30/2025	McD P/CM: YAGUSESKY
DESIGNED BY: RJP	
DRAWN BY: RJP	FILE NAME: CURRENT.DWG
CHECKED BY: RJP	SLS JN: 24-0001-216

DRAWING TITLE: GRADING PLAN

SHEET NO: C1.2



SITE PLAN NOTES

1. ALL DIMENSIONS AND RADII ARE TO THE FACE (FOR 6" REVEAL CURB) OR FLOWLINE (FOR CURB & GUTTER) UNLESS OTHERWISE NOTED.
2. PARKING SPACE STRIPING TO BE WHITE, 4" WIDE, UNLESS OTHERWISE NOTED.
3. LOT LINE AND EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM THE SURVEY PREPARED BY CLC, INC.
4. 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.
5. 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).
6. 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 3½" CHAIRS AT 48" O.C.B.W.
7. ALL ACCESSIBLE RAMPS TO INCLUDE DETECTABLE WARNING PANELS.
8. ALL-CONSTRUCTION WITHIN PUBLIC-RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF FRISCO STANDARD CONSTRUCTION SPECIFICATIONS.
9. ALL ACCESS AND ACCESSIBLE PARKING IS DESIGNED TO MEET ADA ACCESSIBILITY REQUIREMENTS.

SITE PLAN LEGEND (PROPOSED)

- SITE PROPERTY LINE (WITH METES & BOUNDS NOTED)
- ADA ACCESSABLE 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
- (XX) PARKING SPACES
- INVERTED "U" BICYCLE RACK
- EXISTING LANDSCAPING TO REMAIN

20 0 20 20

PLAN SCALE: 1" = 20'

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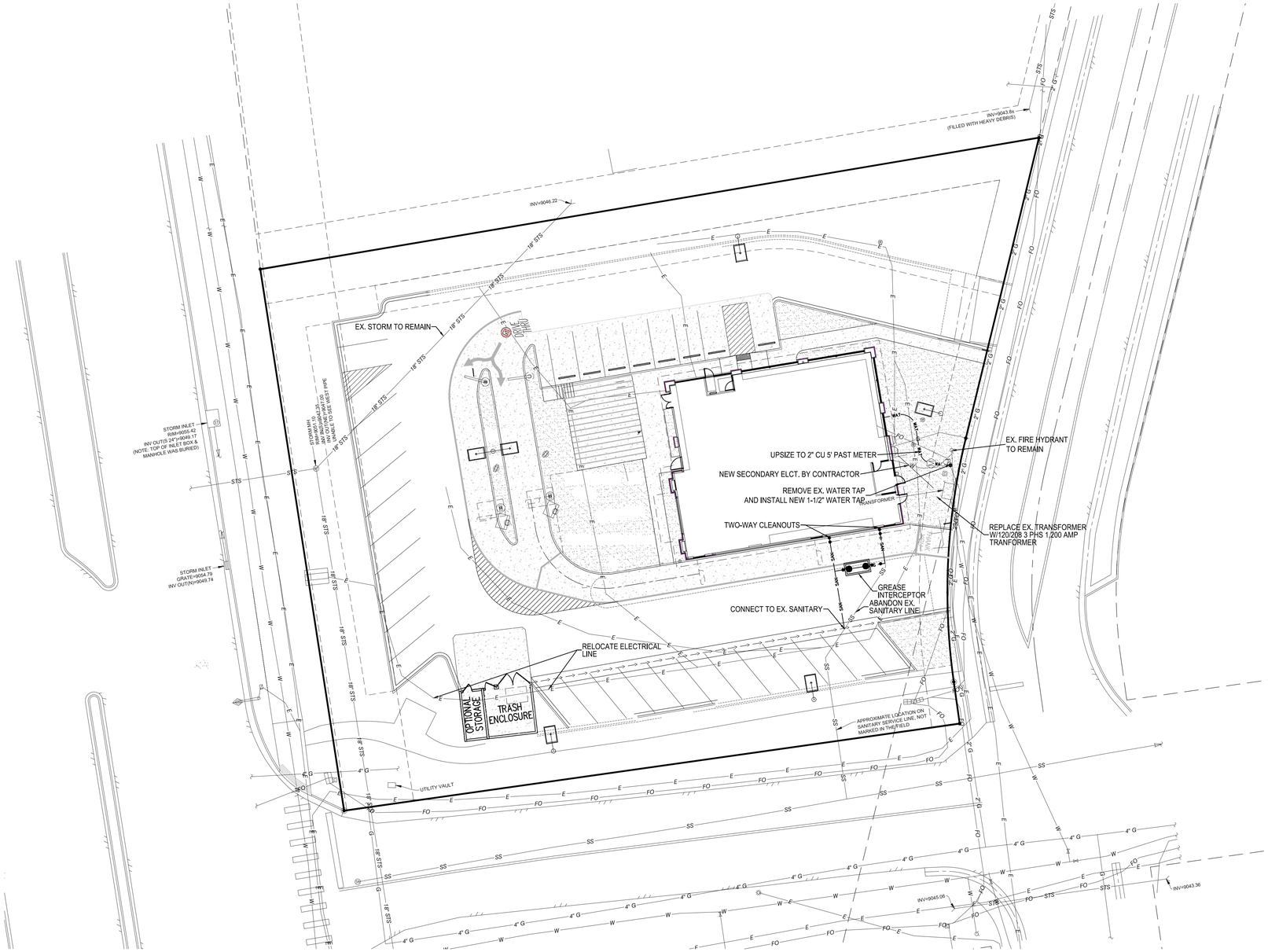
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ADDRESS:

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CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
REGIONAL DWG. NO: -
STATE STORE #: 51062
NATIONAL #: 44322

SCALE: AS NOTED	McD RE: BAKER
DATE: 05/30/2025	McD P/CM: YAGUSESKY
DESIGNED BY: RJP	
DRAWN BY: RJP	FILE NAME: CURRENT.DWG
CHECKED BY: RJP	SLS JN: 24-0001-216

DRAWING TITLE: SITE PLAN

SHEET NO: C1.1



20 0 20 20

PLAN SCALE: 1" = 20'

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

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
2595 PONDEROSA ROAD
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rpalmer@strategicls.net
Robert J. Palmer, PE
President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: COLORADO REGISTERED ROBERT J. PALMER 36320 PROFESSIONAL ENGINEER

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

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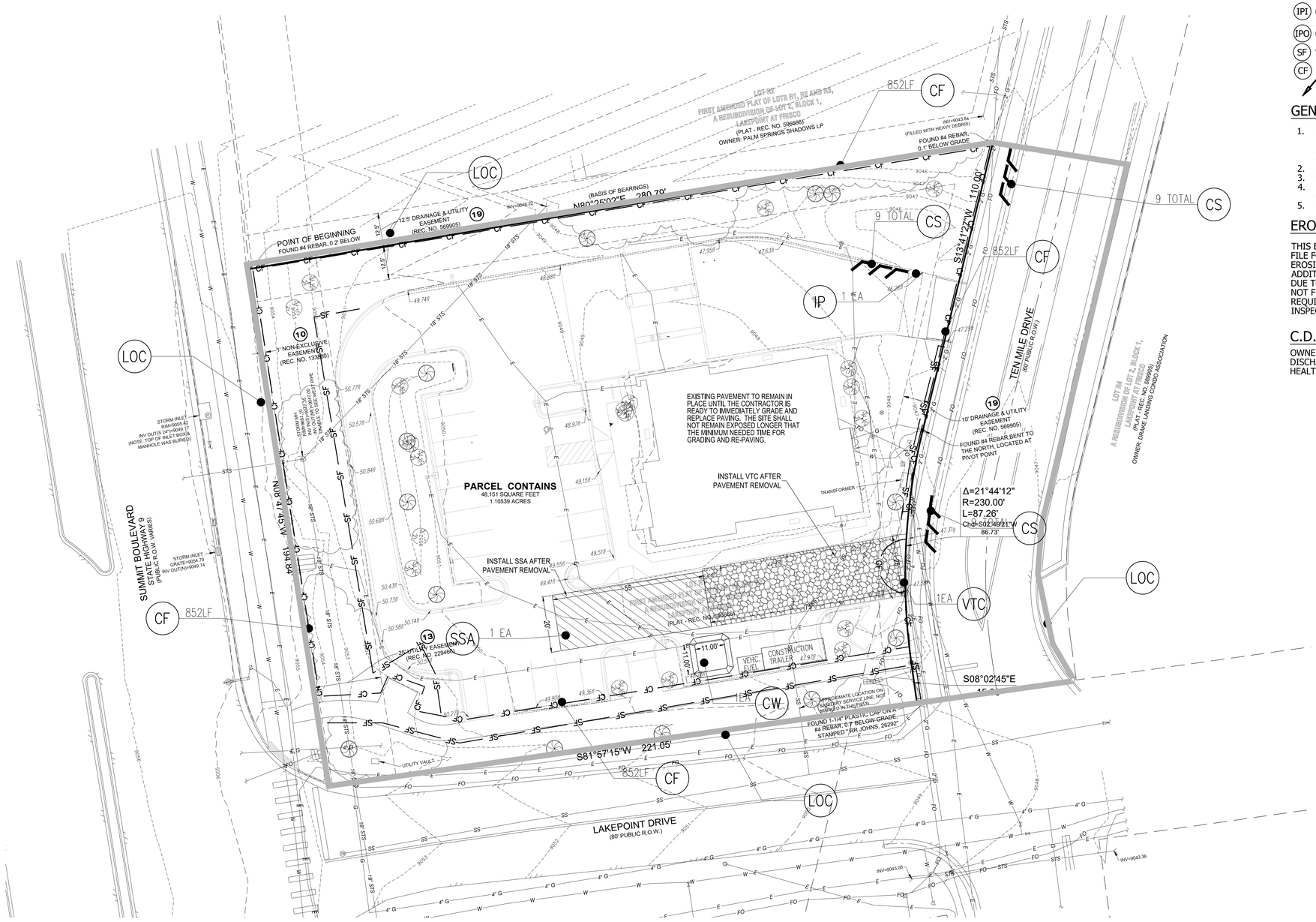
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

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CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

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CONCEPTUAL UTILITY PLAN

SHEET NO:
C1.2



SEDIMENT & EROSION CONTROL LEGEND

VTC	VEHICLE TRACKING PAD	SSA	STABILIZED STAGING AREA
IPA	INLET PROTECTION, AREA	CW	CONCRETE WASHOUT
IPI	INLET PROTECTION, INTERIM		
IPO	INLET PROTECTION, ON-GRADE	CS	CURB SOCK
SF	SILT FENCE	DD	DIVERSION DITCH
CF	CONSTRUCTION FENCE	LOC	LIMIT OF CONSTRUCTION
	DIRECTION OF RUNOFF	CD	CHECK DAM

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:

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 UNDFORESEEN 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.

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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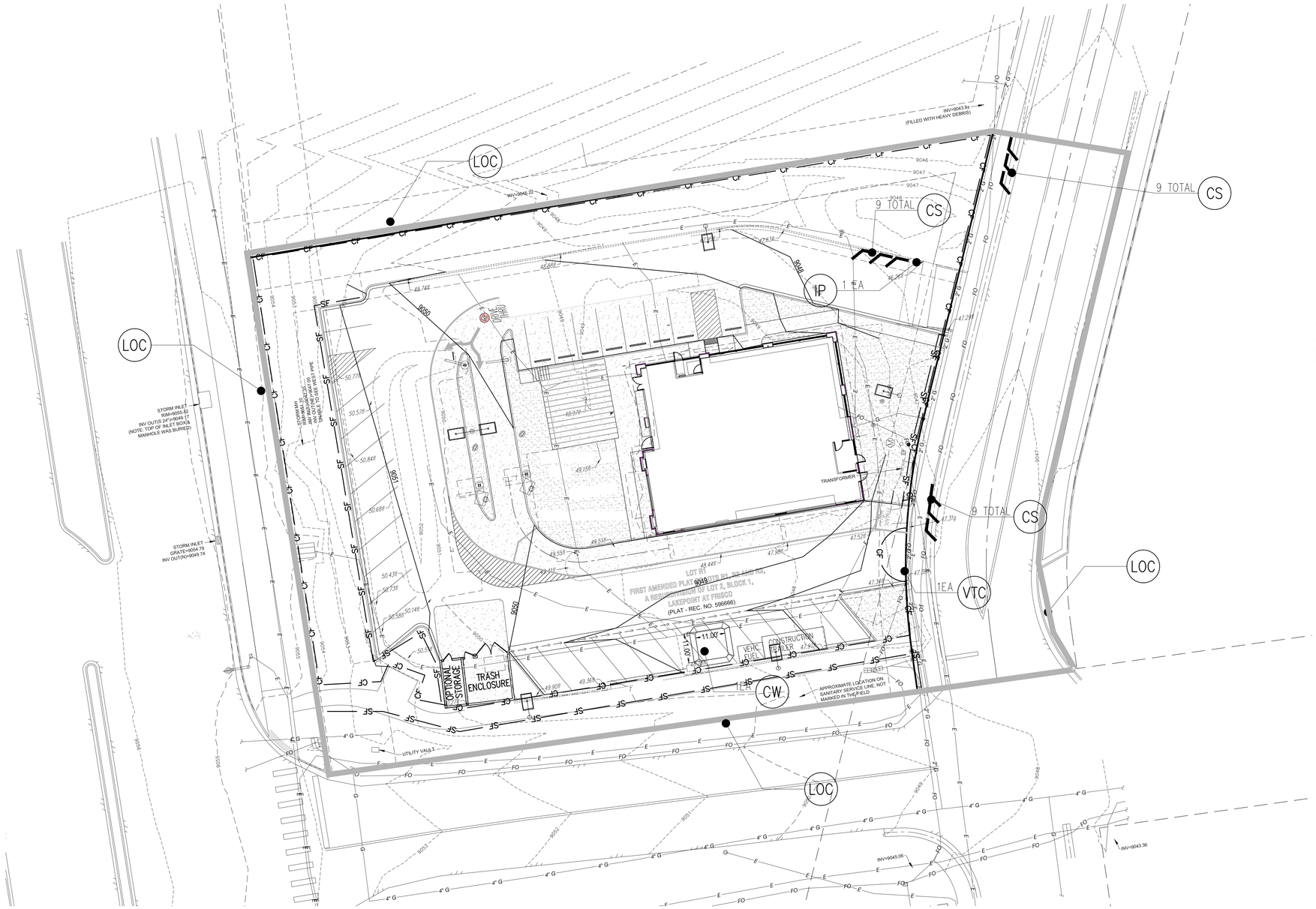
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DRAWING TITLE: EROSION CONTROL INITIAL

SHEET NO: EC1.0



SEDIMENT & EROSION CONTROL LEGEND

VTC	VEHICLE TRACKING PAD	SSA	STABILIZED STAGING AREA
IPA	INLET PROTECTION, AREA	CW	CONCRETE WASHOUT
IPI	INLET PROTECTION, INTERIM		
IPO	INLET PROTECTION, ON-GRADE	CS	CURB SOCK
SF	SILT FENCE	DD	DIVERSION DITCH
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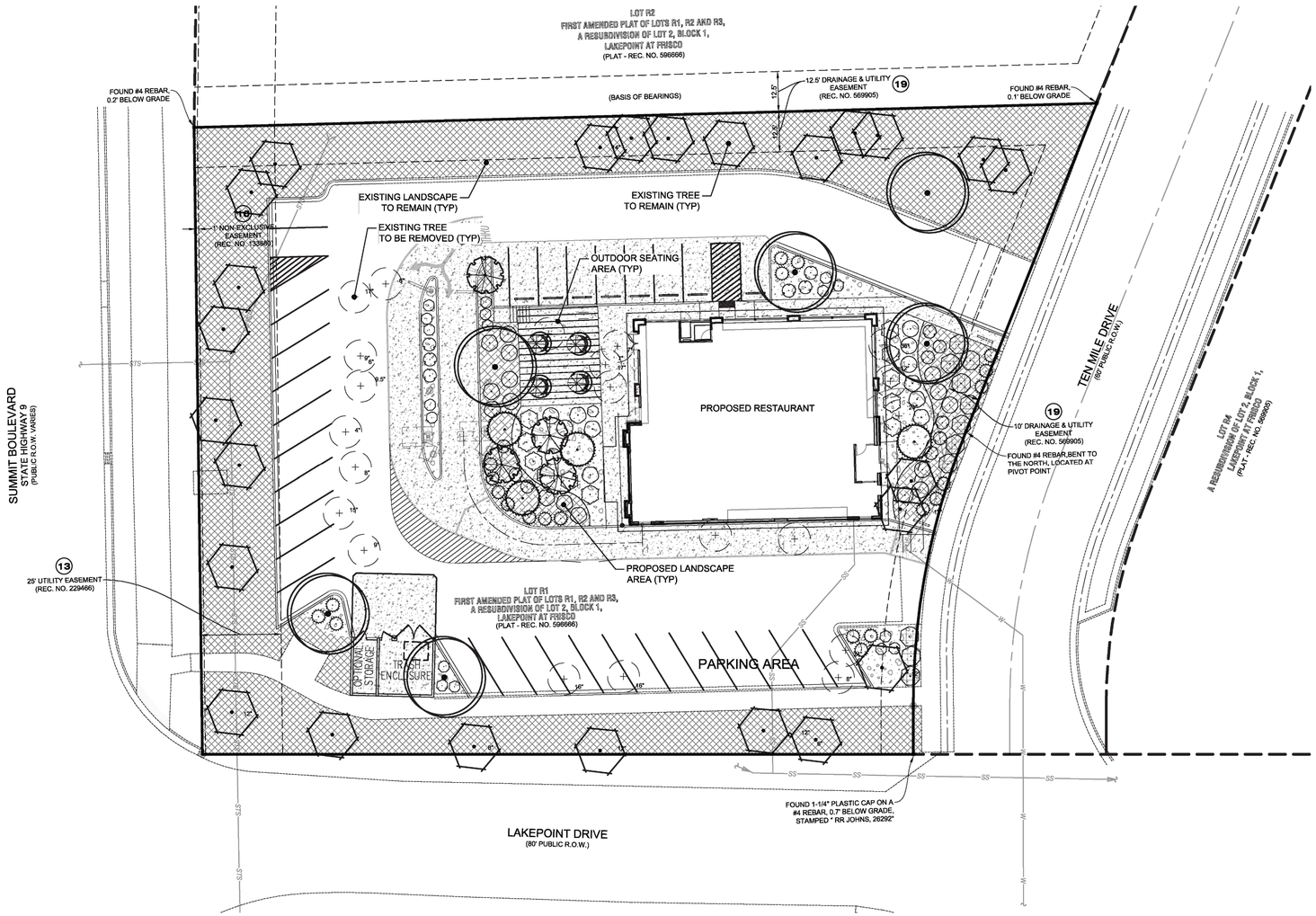
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DRAWN BY:	RJP	FILE NAME:	CURRENT.DWG
CHECKED BY:	RJP	SLS JN:	24-0001-216

DRAWING TITLE:
EROSION CONTROL
UTILITY/PAVING

SHEET NO:
EC1.1



SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
TREES			
	PB	4	PICEA PUNGENS GLAUCA 'HOOPSII' / DWARF BLUE SPRUCE
	PANG	6	POPULUS ANGUSTIFOLIA / NARROWLEAF COTTONWOOD
	PT	4	POPULUS TREMULOIDES / QUAKING ASPEN
	EX-REM	21	REMOVE AS INDICATED / EXISTING TREE TO BE REMOVED
	EX-RET	25	TO REMAIN- PROTECT DURING CONSTRUCTION / EXISTING TREE TO REMAIN

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
SHRUBS			
	CBI	16	CORNUS SERICEA 'IVORY HALO' / RED TWIG DOGWOOD
	CSR	15	CORNUS SERICEA `ARCTIC FIRE / DOGWOOD
	JHH	22	JUNIPERUS HORIZONTALIS 'HUGHES' / CREEPING JUNIPER
	PFF	18	POTENTILLA FRUTICOSA `ABBOTSWOOD' / POTENTILLA
	RG	11	RHUS AROMATICA `GRO-LOW' / GRO-LOW FRAGRANT SUMAC
	RAC	11	RIBES AUREUM / GOLDEN CURRANT
	SM	12	SYRINGA PATULA 'MISS KIM' / MISS KIM KOREAN LILAC

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
GROUND COVERS			
	EX-RS	13,178 SF	EX LANDSCAPE - SHRUB BED / TO REMAIN
MULCHES			
	RM	2,728 SF	ROCK MULCH / RIVER ROCK 1"-2"
	WM	1,964 SF	SHREDDED CEDAR MULCH / WOOD MULCH

IRRIGATION NOTES:

IRRIGATION IS TO BE EXTENDED TO NEW PLANTINGS FROM EXISTING SYSTEM, PI 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

20 0 20 20

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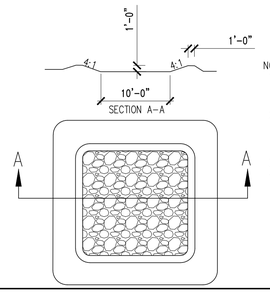
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SLS JN:	24-0001-216

DRAWING TITLE:
EROSION CONTROL FINAL STABILIZATION

SHEET NO:
EC1.2



NOTE:
1. BOTTOM OF CONTAINMENT AREA SHALL BE LINED WITH 12" GRAVEL SUFFICIENT TO HOLD THE EQUIPMENT LOADS.
2. IN CASE OF A MAJOR SPILL NOTIFY THE EMERGENCY CONTACT PERSONS LISTED ON THE COVER SHEET OF THESE PLANS.
3. ALL SIDE SLOPES ARE TO BE 4:1 MAX.
4. FUELING VEHICLES CONTAINING 500 GALLONS OR MORE WILL BE REQUIRED TO OBTAIN A SEPARATE PERMIT FROM LONGMONT FIRE DEPARTMENT.

FUEL CONTAINMENT BERM | 1

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.

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

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 AND DUST CONTROL | 2

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.



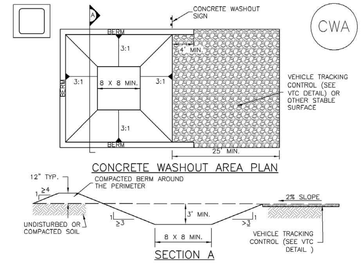
Photograph CWA-2. Prefabricated concrete washout. Photo courtesy of CDOT.



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

CONCRETE WASHOUT AREA | 3

Concrete Washout Area (CWA) MM-1



CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.
2. 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.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. 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.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. 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.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA | 4

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DRAWING TITLE: EROSION CONTROL DETAILS

SHEET NO: EC2.0

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. 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.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. 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.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. 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.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, 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.

CONCRETE WASHOUT AREA | 5

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 Prevent Plan* (EPA 2007).





Photographs GH-1 and GH-2. Proper materials storage and secondary containment for fuel tanks are important good housekeeping practices. Photos courtesy of CDOT and City of Aurora.

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:

Solid or Construction Waste

- Designate trash and bulk waste-collection areas on-site.

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

GOOD HOUSEKEEPING | 6

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 WWE.

GOOD HOUSEKEEPING | 7

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.

GOOD HOUSEKEEPING | 8

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.

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 SPPC at 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.

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.

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.

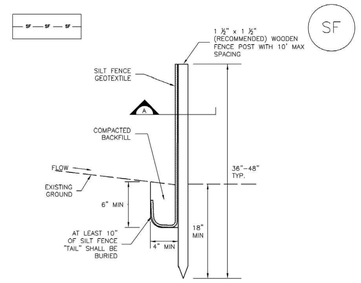
Silt fence may be removed when the upstream area has reached final stabilization.



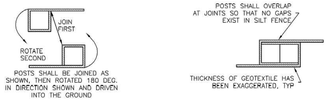
Photograph SF-2. When silt fence is not installed along the contour, a "J-hook" installation may be appropriate to ensure that the BMP does not create concentrated flow parallel to the silt fence. Photo courtesy of Tom Gore.

SILT FENCE 11

Silt Fence (SF) SC-1



SILT FENCE



SECTION A

SF-1. SILT FENCE

SILT FENCE 12

SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. 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.

2. 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.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. 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.

5. 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.

6. 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').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. 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".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

6. 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.

7. 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 PARKER, COLORADO AND CITY OF AURORA, 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.

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.

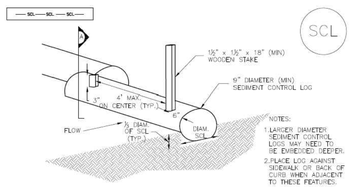
Maintenance and Removal

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.

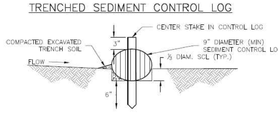
Once the upstream area is stabilized, remove and properly dispose of the logs. Areas disturbed beneath the logs may need to be seeded and mulched. Sediment control logs that are biodegradable may occasionally be left in place (e.g., when logs are used in conjunction with erosion control blankets as permanent 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.

SEDIMENT CONTROL LOG 14

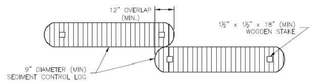
Sediment Control Log (SCL) SC-2



TRENCHED SEDIMENT CONTROL LOG



SECTION A
TRENCHED SEDIMENT CONTROL LOG

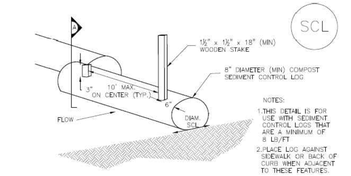


LOG JOINTS

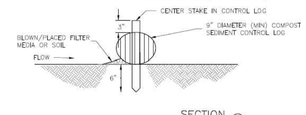
SCL-1. TRENCHED SEDIMENT CONTROL LOG

SEDIMENT CONTROL LOG 15

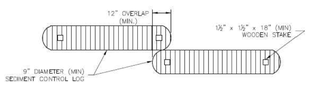
SC-2 Sediment Control Log (SCL)



COMPOST SEDIMENT CONTROL LOG (WEIGHTED)



SECTION A
COMPOST SEDIMENT CONTROL LOG



LOG JOINTS

SCL-2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

SILT FENCE 16

NO.	DATE	REVISION DESCRIPTION

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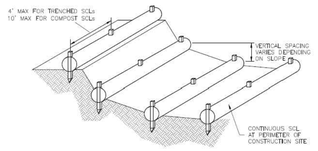
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE:	AS NOTED
DATE:	05/30/2025
DESIGNED BY:	RJP
DRAWN BY:	RJP
CHECKED BY:	RJP
McD RE:	BAKER
McD P/CM:	YAGUSESKY
FILE NAME:	CURRENT.DWG
SLS JN:	24-0001-216

DRAWING TITLE: EROSION CONTROL DETAILS

SHEET NO: EC2.1



SCL-3. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

SEDIMENT CONTROL

17

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.

3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.

4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.

5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ⅓ 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.

6. 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.

7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" 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

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. 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 ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.

5. 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.

SEDIMENT CONTROL

18

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 lineal 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

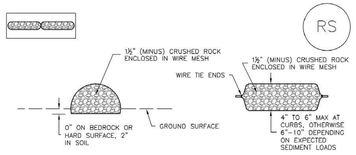
Rock socks are susceptible to displacement and breaking due to vehicle traffic. Inspect rock socks for damage and repair or replace as necessary. Remove sediment by sweeping or vacuuming as needed to maintain the functionality of the BMP, typically when sediment has accumulated behind the rock sock to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

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

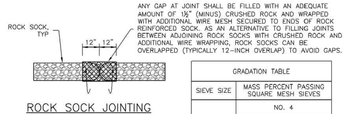
Rock Sock	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No

ROCK SOCK

19



ROCK SOCK SECTION ROCK SOCK PLAN



ROCK SOCK JOINTING

GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1½"	90 - 100
1"	20 - 55
¾"	0 - 15
⅜"	0 - 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

ROCK SOCK INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION(S) OF ROCK SOCKS.

2. CRUSHED ROCK SHALL BE 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1½" MINUS).

3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF ½". RECOMMENDED MINIMUM ROLL WIDTH OF 48"

4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2' CENTERS ON ENDS OF SOCKS.

5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS-1. ROCK SOCK PERIMETER CONTROL

ROCK SOCK

20

NO.	DATE	REVISION DESCRIPTION

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STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
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REGIONAL DWG. NO: -

SCALE: AS NOTED
DATE: 05/30/2025
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP
McD RE: BAKER
McD P/CM: YAGUSESKY
FILE NAME: CURRENT.DWG
SLS JN: 24-0001-216

DRAWING TITLE: EROSION CONTROL DETAILS

SHEET NO: EC2.2

ROCK SOCK MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.

5. 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 ½ OF THE HEIGHT OF THE ROCK SOCK.

6. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. WHEN ROCK SOCKS ARE 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 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 NOR/SES 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.

ROCK SOCK

21

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

Propriety 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.

INLET PROTECTION

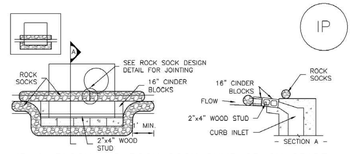
22

- 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.
- Propriety 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.

INLET PROTECTION

23



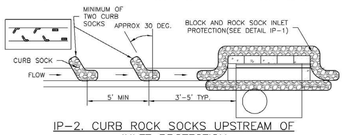
IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.

3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.

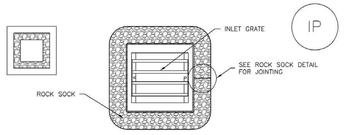
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.

3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.

4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

INLET PROTECTION

24

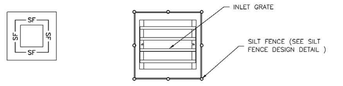


IP-3, ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. 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

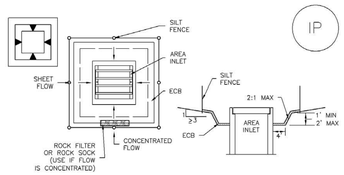
SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

INLET PROTECTION 25



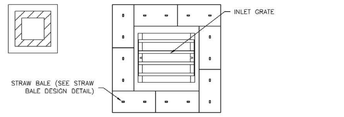
IP-5, OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. 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.

2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.

3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



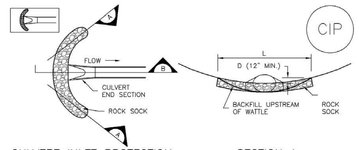
IP-6, STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.

INLET PROTECTION 26



CULVERT INLET PROTECTION PLAN

SECTION A



SECTION B

CIP-1, CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM 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.

INLET PROTECTION 27

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF INLET PROTECTION.
   -TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. 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.

3. 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

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. 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 ¼ OF THE HEIGHT FOR STRAW BALES.

5. 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.

6. 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.

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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.

INLET PROTECTION 28

CIVIL ENGINEERING CONSULTANT:
Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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: COLORADO REGISTERED ROBERT J. PALMER 36320 PROFESSIONAL ENGINEER
BY Robert J. Palmer, PE
Licensed Professional Engineer (CO PE #36320),
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

NO.	DATE	REVISION DESCRIPTION

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

OFFICE ADDRESS: ROCKY MOUNTAIN REGION

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED
DATE: 05/30/2025
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP
McD RE: BAKER
McD P/CM: YAGUSESKY
FILE NAME: CURRENT.DWG
SLS JN: 24-0001-216

DRAWING TITLE: EROSION CONTROL DETAILS

SHEET NO: EC2.3

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.



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

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.

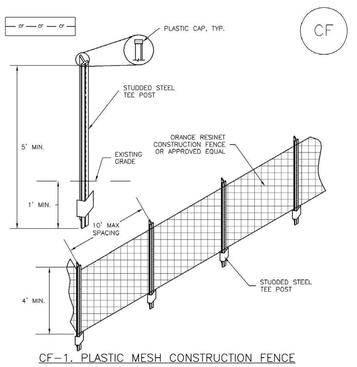
Do not place construction fencing in areas within work limits of machinery.

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.

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

CONSTRUCTION FENCE 29



CF-1, PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.

2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. 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.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION FENCE 30

CONSTRUCTION FENCE MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. 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.

5. 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)

CONSTRUCTION FENCE 31

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.



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

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.

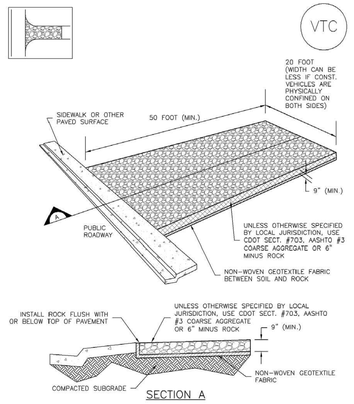
Ensure that drainage ditches at the entrance/exit area remain clear.

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.

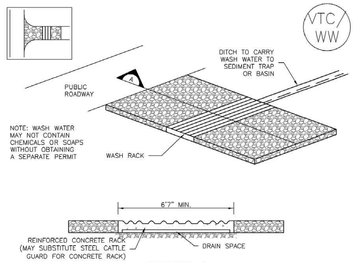
When a construction entrance/exit is removed, excess sediment from the aggregate should be removed and disposed of appropriately. The entrance should be promptly stabilized with a permanent surface following removal, typically by paving.

VEHICLE TRACKING CONTROL 32



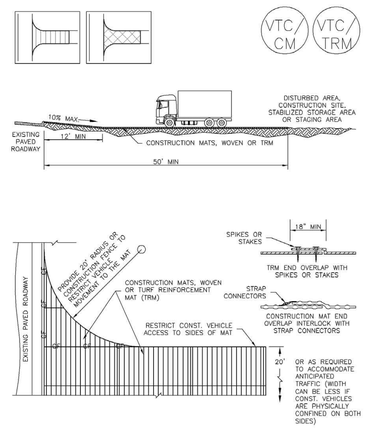
VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

VEHICLE TRACKING CONTROL 33



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

VEHICLE TRACKING CONTROL 34



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

VEHICLE TRACKING CONTROL 35

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   -TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. 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.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

6. 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

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

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.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VEHICLE TRACKING CONTROL 36

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.

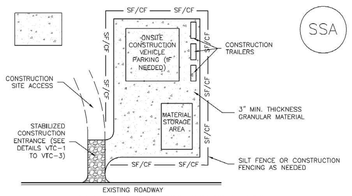
See Detail SSA-1 for a typical stabilized staging area and SSA-2 for a stabilized staging area when materials staging in roadways is required.

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.

STABILIZED STAGING AREA 37



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STABILIZED STAGING AREA 38

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. 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, SEEDED AND MULCHED 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 UDFCD 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)

STABILIZED STAGING AREA 39

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 offsite onto paved roadways.



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

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.

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

STREET SWEEPING & VACUUMING 40

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:
Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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: COLORADO REGISTERED 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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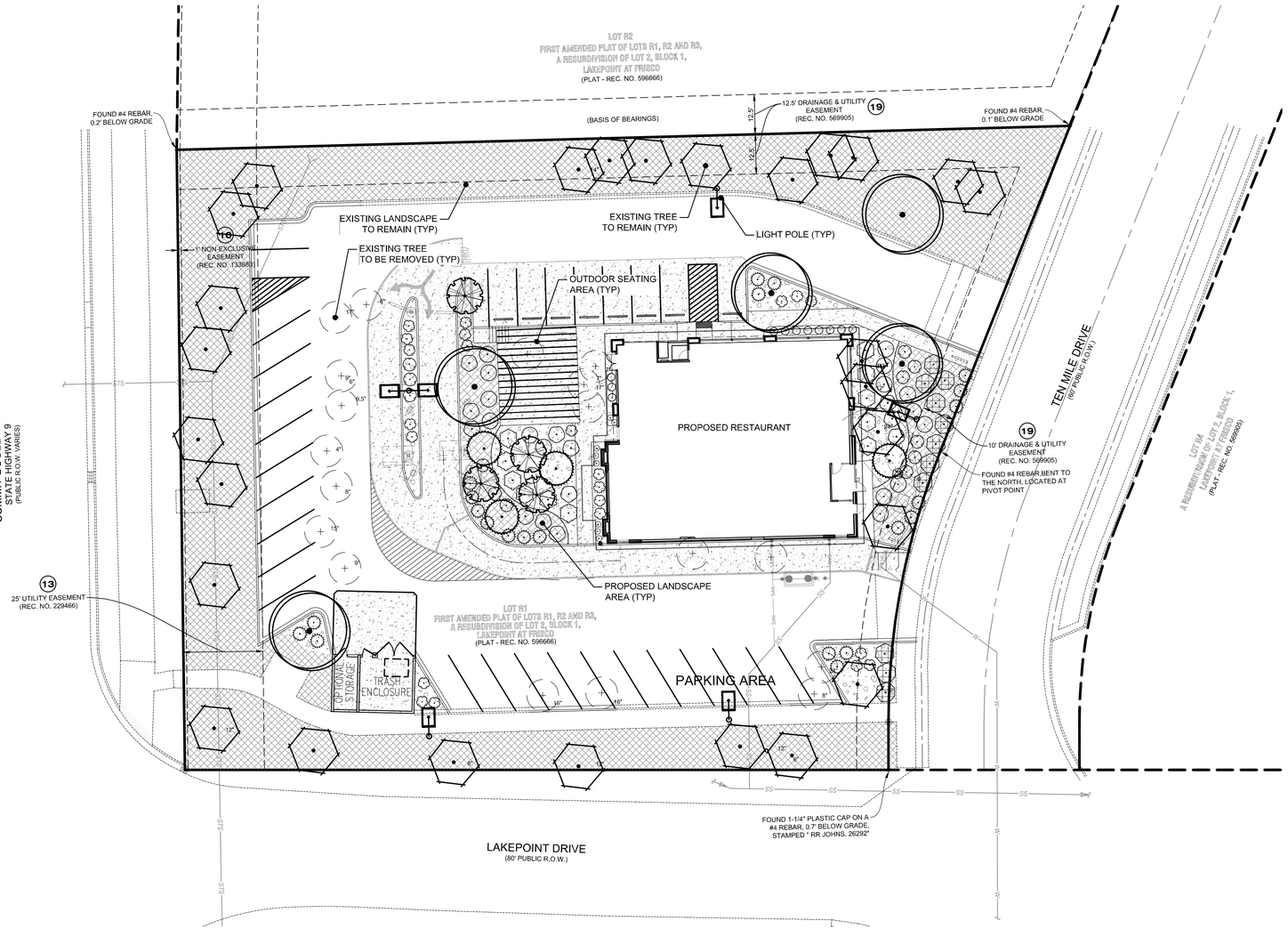
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED
DATE: 05/30/2025
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP
McD RE: BAKER
McD P/CM: YAGUSESKY
FILE NAME: CURRENT.DWG
SLS JN: 24-0001-216

DRAWING TITLE: EROSION CONTROL DETAILS

SHEET NO: EC2.4



LANDSCAPE PLAN

SCALE: 1" = 20'

0 20 40 60

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
TREES				
	PB	4	PICEA PUNGENS GLAUCA 'HOOPSII' / 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

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE
SHRUBS				
	CBI	16	CORNUS SERICEA 'IVORY HALO' / RED TWIG DOGWOOD	5 GAL
	CSR	12	CORNUS SERICEA `ARCTIC FIRE / DOGWOOD	5 GAL
	JHH	22	JUNIPERUS HORIZONTALIS 'HUGHES' / CREEPING JUNIPER	5 GAL
	MR	11	MAHONIA REPENS / CREEPING MAHONIA	5 GAL
	PFF	22	POTENTILLA FRUTICOSA `ABBOTSWOOD' / POTENTILLA	5 GAL
	RG	11	RHUS AROMATICA `GRO-LOW' / GRO-LOW FRAGRANT SUMAC	5 GAL
	RAC	11	RIBES AUREUM / GOLDEN CURRANT	5 GAL
	SM	12	SYRINGA PATULA 'MISS KIM' / MISS KIM KOREAN LILAC	5 GAL
PERENNIALS				
	AQ	8	AQUILEGIA CHRYSANTHA / GOLDEN COLUMBINE	1 GAL

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
GROUND COVERS				
	EX-RS	13,178 SF	EX LANDSCAPE - SHRUB BED / TO REMAIN	EXISTING
MULCHES				
	RM	2,750 SF	ROCK MULCH / RIVER ROCK 1"-2"	MULCH
	WM	1,989 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

CODE REQUIREMENTS

LOT SIZE = 48,151 SF

OVERALL LANDSCAPE: 1 TREE PER 1125 SF LOT AREA + 1 SHRUB PER 17570 SF LOT AREA =
39 TREES / 28 SHRUBS REQUIRED / 39 TREES + 28 SHRUBS PROVIDED

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

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

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:
Strategic Land Solutions, Inc.
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OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STORE #: 51062
NATIONAL #: TBD
REGIONAL DWG. NO: -

SCALE: AS NOTED	McD RE: BAKER
DATE: 02/12/25	McD P/CM: YAGUSESKY
DESIGNED BY: JRO	
DRAWN BY: JRO	FILE NAME: CURRENT.DWG
CHECKED BY: NAM	SLS JN: 24-0001-216

DRAWING TITLE: LANDSCAPE PLAN

SHEET NO: L1.0

GENERAL NOTES

(Note: All references to "Contractor" are specific to "Landscape Contractor" unless notified as "General or other type of Contractor")

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES OF MATERIALS NEEDED TO COMPLETE THIS PLAN IN THE FIELD. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND CONDITIONS IN THE FIELD. SUBSTITUTIONS OF PLANT MATERIAL ARE NOT ALLOWED WITHOUT APPROVAL FROM LANDSCAPE ARCHITECT GIVEN PRIOR TO INSTALLATION. GRAPHIC QTY'S. PREVAIL OVER WRITTEN QTY'S. PRIOR TO COMMENCEMENT OF WORK THE LANDSCAPE CONTRACTOR SHALL CONTACT OWNERS REPRESENTATIVE FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING AND SCOPE OF WORK.
2. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL LANDSCAPE SHOWN ON THIS PLAN. ANY DEFICIENCIES OR DEVIATIONS FROM THIS PLAN ARE TO BE APPROVED BY OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT. ANY CHANGES FROM THE APPROVED PLANS MAY REQUIRE APPROVAL FROM THE CITY OR COUNTY PLANNING DEPARTMENTS. LANDSCAPE CONTRACTOR TO PROVIDE ALL LABOR AND MATERIALS NECESSARY TO FURNISH SCOPE OF WORK AS SHOWN PER PLAN.
3. EXISTING TOPSOIL IS TO BE STOCKPILED AND USED TO ESTABLISH FINAL GRADES WITHIN LANDSCAPE AREAS. ALL STOCKPILED SOIL MUST BE CLEAR OF WEEDS, ROCKS AND DEBRIS BEFORE REUSE. ALL BERMED PLANTING BEDS TO BE CREATED WITH IMPORTED TOPSOIL.
4. GENERAL CONTRACTOR TO RE-SPREAD STOCKPILED SOIL AND ESTABLISH ROUGH GRADE CONDITIONS TO THE FOLLOWING SPECIFICATIONS:
   A. 1" BELOW CURB FOR ALL SEEDED AREAS.
   B. 2.5" BELOW CURB FOR ALL SODDED AREAS.
   C. 4" BELOW CURB FOR ALL PLANTING, ROCK AND MULCH BEDS.
5. CONTRACTOR TO TILL PARKING LOT ISLANDS TO A DEPTH OF 30".
6. AMEND ALL PLANTING BEDS WITH CLASS 1 COMPOST. APPLY AT RATE OF 3 CYDS. PER 1000 SQUARE FEET TO ALL PLANTING BEDS AND MANICURED LAWN AREAS, AND 2 CYDS. PER 1000 SQUARE FEET FOR SEEDED AREAS. TILL, MIXING THOROUGHLY, INTO THE UPPER 8" OF SOIL.
7. FINE GRADE TO BE ESTABLISHED BY LANDSCAPE CONTRACTOR. FINE GRADE SHALL BE FREE OF ROCKS AND DEBRIS. FINE GRADE IN SEED AREAS SHALL BE FREE FROM ROCKS AND DEBRIS ½" AND GREATER. FINE GRADE IN SODDED AREAS SHALL BE FREE FROM ROCKS AND DEBRIS ½"AND GREATER. CONTRACTOR TO REPORT ANY POOR DRAINAGE CONDITIONS PRIOR TO CONSTRUCTION.
8. CONTRACTOR IS TO PROVIDE VERIFICATION THAT ALL SOD AND SEED IS OF THE SPECIES SHOWN ON THIS PLAN. NO SUBSTITUTIONS WILL BE ALLOWED. SOD TO BE LAID WITH TIGHT STAGGERED EDGES AND BE ROLLED AFTER INSTALLATION. SEEDED AREAS CANNOT BE SUBSTITUTED WITH SOD.
9. MULCHS: ALL PLANTING BEDS THAT CALL FOR WOOD MULCH TO RECEIVE 4" ORGANIC SHREDDED BARK MULCH. SHREDDED MULCH IS TO BE OF FIBROUS MATERIAL, NOT CHIPS OR CHUNKS. NO FABRIC IS TO BE PLACED UNDER WOOD/ORGANIC MULCH. ALL MULCHED BEDS ARE TO BE SPRAYED WITH WATER AFTER INSTALLATION TO HELP MULCH TO MAT DOWN.

   ALL AREAS THAT CALL FOR COBBLE/ROCK MULCH TO RECEIVE MIN. 3" DEPTH, UNLESS NOTED OTHERWISE.

   TREES IN COBBLE/ROCK MULCH, SOD AND SEEDED AREAS TO RECEIVE 4' DIAMETER OF WOOD MULCH RING, 3" DEEP. SHRUBS AND GROUNDCOVERS IN COBBLE/ROCK MULCH SOD AND SEEDED AREAS TO RECEIVE A WOOD MULCH RING AT 2X DIAMETER OF ROOT BALL, 3" DEPTH. NO FABRIC UNDERLAYMENT IN WOOD MULCH RINGS.
10. SEED MIX INSTALLATION: CONTRACTOR TO DRILL SEED WITH BRILLION TYPE APPLICATOR AND APPLY 'SOIL GUARD' BONDED FIBER MATRIX (BFM), WHERE INDICATED PER PLAN AND SCHEDULES. APPLY SEED IN TWO DIRECTIONS (PERPENDICULAR OF THE OTHER) ADD SOIL GUARD BFM FOR DRILL SEEDING WHERE NOTED PER PLAN AND ON ALL SLOPES 5:1 TO 3:1. FOR AREAS WITH 3:1 SLOPES OR GREATER CONTRACTOR TO USE SOIL GUARD APPLICATION ONLY (IN LIEU OF HYDROMULCH) CONTRACTOR TO SPOT SEED NON-GERMINATING AREAS (3) MONTHS AFTER INITIAL SEED APPLICATION. CONTRACTOR TO RE-SEED ALL BARE AREAS (6"x6") AND GREATER AFTER (6) MONTHS FROM SEED GERMINATION OR AT THE BEGINNING OF THE FOLLOWING GROWING SEASON. PRIOR TO THE 11-MONTH WARRANTY INSPECTION RE-APPLY SOIL GUARD AND SEED MIX TO ALL BARE AREAS (6"x6" OR GREATER) AND TO ALL BARE AREAS (4"x4" OR GREATER) ON ALL SLOPES 3:1 AND GREATER.
11. REMOVED DEAD TWIGS AND BRANCHES FROM ALL NEW AND EXISTING PLANT MATERIAL IN A MANNER THAT DOES NOT CHANGE THE NATURAL HABIT OF THE PLANT MATERIAL. SCARES OF 1" OR MORE SHALL BE PAINTED WITH ORGANIC TREE PAINT. CENTRAL LEADERS SHALL NOT BE REMOVED AT ANY TIME. NEWLY PLANTED TREES WITHOUT CENTRAL LEADERS WILL BE REJECTED.
12. CONTRACTOR TO APPLY FERTILIZER IN SPRING & LATE SEPTEMBER. WATER THOROUGHLY AFTER APPLICATION OF FERTILIZERS.

    ALL SEEDED AND SODDED AREAS TO HAVE RECOMMEND FERTILIZER APPLICATIONS ADDED ONCE IN MID TO LATE JUNE AND ONCE IN LATE SEPTEMBER. WATER THOROUGHLY AFTER APPLICATION OF FERTILIZERS.
13. ALL PLANT MATERIALS AND UTILITIES ARE SHOWN AT AN APPROXIMATE LOCATIONS. THE CONTRACTOR MAY NEED TO ADJUST LOCATIONS OF PLANT MATERIAL TO ADHERE TO SPECIFIC ON-SITE CONDITIONS AND CODE REQUIREMENTS. ALL TREES AND SHRUBS TO BE PLACES AT 2' MINIMUM BACK OF CURB. CONTRACTOR TO CALL FOR UTILITY LOCATES BEFORE PLANTING (TYP.) 1-800-922-1987, OR CALL 811 BEFORE YOU DIG!
14. STEEL EDGING TO BE USED TO SEPARATE ALL TURF AND/OR SEEDED AREAS FROM PLANTING BEDS. USE PERFORATED EDGING SEGMENTS TO OBTAIN POSITIVE DRAINAGE FOR ALL DRAINAGE SWALES OR AREAS OF STANDING WATER.
15. CONTRACTOR TO PROVIDE COBBLE & UNDERLAYMENT FOR BUILDING DRAINS AND SWALES THROUGH LANDSCAPED AREAS.
16. ALL REQUIRED LANDSCAPING TO BE INSTALLED PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
17. ALL NURSERY STOCK TO CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI z60.1) AND THE COLORADO NURSERY ACT.
18. CONTRACTOR IS RESPONSIBLE FOR CONTACTING LANDSCAPE ARCHITECT FOR ALL REQUIRED INSPECTIONS. PROVIDE AT LEAST 48 HOURS NOTICE TO SCHEDULE AN INSPECTION. REQUIRED INSPECTIONS INCLUDE A LANDSCAPE LAYOUT AND PLANT MATERIAL VERIFICATION AND PLACEMENT INSPECTION, IRRIGATION MAIN LINE INSPECTION, LANDSCAPE AND IRRIGATION PUNCH LIST INSPECTION, AND A LANDSCAPE AND IRRIGATION FINAL INSPECTION.
19. CONTRACTOR IS TO PROVIDE A ONE YEAR WARRANTY ON ALL PLANT MATERIAL, TURF, IRRIGATION COMPONENTS, AND WORKMANSHIP. REPLACEMENT PLANT MATERIALS SHALL BE OF THE SAME SPECIES AND SIZE AS THE DECAYED OR DEAD PLANT MATERIAL. WARRANTY IS VOID IF PLANT MATERIAL ARE UNDER OR OVER-WATERED/FERTILIZED, DAMAGED BY VANDALISM OR NEGLECTED BY OWNER AFTER FINAL MAINTENANCE PERIOD AND FINAL ACCEPTANCE IS PROVIDED.

    REMOVE ALL TREE STAKING MATERIALS AT END OF WARRANTY, PRIOR TO FINAL ACCEPTANCE
20. MAINTENANCE: THE OWNER OF THIS PROPERTY AND ANY FUTURE OWNERS SHALL BE RESPONSIBLE FOR THE PROPER LANDSCAPE AND IRRIGATION MAINTENANCE OF THIS SITE AND ANY RIGHT OF WAY AREAS BETWEEN THE CURB AND PROPERTY LINES OF THIS SITE. MAINTENANCE OF THIS SITE INCLUDES, BUT IS NOT LIMITED TO, IRRIGATION INSPECTIONS AND ADJUSTMENTS, IRRIGATION SYSTEM SHUT DOWN AND START UP, IRRIGATION LEAK REPAIR, LANDSCAPE WEEDING, MOWING, SEEDING, FERTILIZATION, WOOD MULCH AND ROCK COVER REPLACEMENT, PRUNING, AND PLANT MATERIAL REPLACEMENT (INCLUDING ANNUAL BEDS). ALL MAINTENANCE SHOULD BE IN ACCORDANCE WITH STANDARDS SPECIFIED WITHIN THE "ALCC SPECIFICATIONS HANDBOOK" REVISED EDITION- 1996. OWNER SHOULD CONTACT LANDSCAPE CONTRACTOR OR LANDSCAPE ARCHITECT REGARDING ANY QUESTIONS RELATING TO THE LANDSCAPE OR IRRIGATION MAINTENANCE OF THIS SITE.

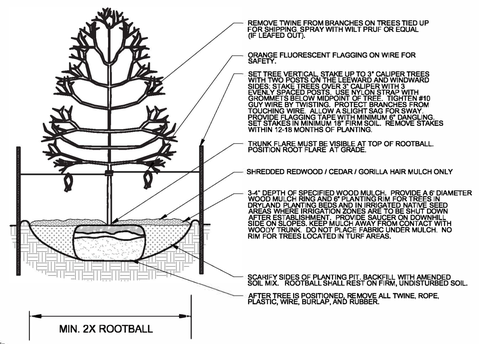
    EXISTING TREES
    EXISTING TREES DESIGNATED ON PLANS AS "TO REMAIN", OR MARKED FOR PROTECTION AND PRESERVATION IN THE FIELD, SHALL NOT BE REMOVED OR DAMAGED.

    NO GRADING TO OCCUR WITHIN THE CRITICAL ROOT ZONE / DRIP LINE OF EXISTING TREES. ALL GRADING AROUND EXISTING TREES TO REMAIN SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT.

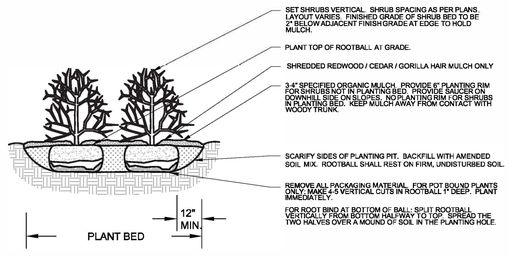
    PRIOR TO CONSTRUCTION, ALL PROTECTED TREES SHALL HAVE ORANGE PROTECTION BARRIER FENCING ERECTED AT A HEIGHT OF 3' OR GREATER. FENCING TO BE SUPPORTED BY STURDY STOCK, CAPABLE OF SUPPORTING FENCING UNTIL ALL CONSTRUCTION OPERATIONS ARE COMPLETED. PLACE NO CLOSER THAN 6' FROM TRUNK, OR ONE HALF (½) OF THE DRIP LINE, WHICHEVER IS GREATER. WITHIN THE PROTECTED ZONE THERE SHALL BE NO MOVEMENT OF EQUIPMENT OR STORAGE OF EQUIPMENT, MATERIALS, WAIST, DEBRIS, OR FILL, UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.

    AVOID CUTTING SURFACE ROOTS WHEREVER POSSIBLE. SIDEWALKS AND PAVING LEVELS SHOULD BE CONTOURED SUFFICIENTLY TO AVOID SUCH. ROOT CUTS FROM EXCAVATION SHOULD BE DONE RAPIDLY. SMOOTHE FLUSH CUTS SHOULD BE MADE. BACKFILL BEFORE ROOTS HAVE A CHANCE TO DRY OUT, AND THOROUGHLY WATER THE TREE IMMEDIATELY.

NOTES:
1. MARK THE NORTH SIDE OF TREE IN THE NURSERY, AND ROTATE TREE TO FACE NORTH AT THE SITE WHENEVER POSSIBLE.
2. AT TIME OF PLANTING, DO NOT REMOVE OR CUT LEADER AND PRUNE ONLY DEAD OR BROKEN BRANCHES, CROSS OVER BRANCHES, AND WEAK OR NARROW CROTCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED. HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
3. STRUCTURAL PRUNING SHOULD NOT BEGIN UNTIL AFTER ESTABLISHMENT PERIOD, USUALLY TWO GROWING SEASONS.
4. KEEP PLANTS MOIST AND SHADED UNTIL PLANTING.
5. DO NOT FERTILIZE FOR AT LEAST ONE GROWING SEASON.
6. AMENDED BACKFILL SHALL BE AS STATED ON THIS SHEET.
7. WRAP TRUNK ON EXPOSED SITES AND SPECIES WITH THIN BARK. USE ELECTRICAL OR DUCT TAPE, NOT TWINE.
8. COORDINATE WITH CITY FORESTRY FOR CURRENT INSECT AND DISEASE RECOMMENDATIONS PRIOR TO PLANTING.
9. DEEP WATER ALL PLANTS AT TIME OF PLANTING.

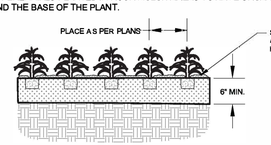


L2.0 DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE — SECTION



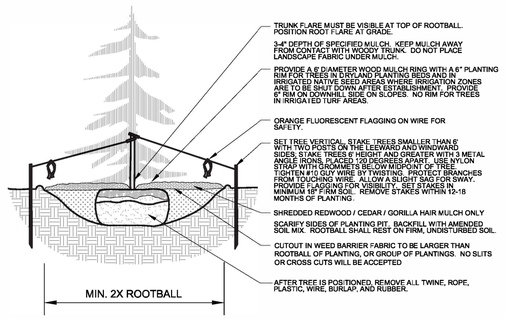
L2.0 SHRUB PLANTING DETAIL
NOT TO SCALE

NOTES:
1. KEEP PLANTS MOIST AND SHADED UNTIL PLANTING.
2. PLANT GROUND COVERS AND PERENNIALS LEVEL AND AT GRADE.
3. PRUNE ALL DEAD OR BROKEN PARTS PRIOR TO PLANTING.
4. AMENDED BACKFILL SHALL BE 1/3 COMPOST (PREFERABLY CLASSIFIED) AND 2/3 NATIVE AND/OR IMPORTED TOPSOIL.
5. ALL PERENNIALS PLANTED IN ROCK MULCH AREAS TO HAVE ORGANIC MULCH RINGS AROUND THE BASE OF THE PLANT.



L2.0 PERENNIAL/GROUNDCOVER PLANTING DETAIL
NOT TO SCALE

NOTES:
1. DO NOT REMOVE OR CUT LEADER.
2. PRUNE ONLY DEAD OR BROKEN BRANCHES IMMEDIATELY PRIOR TO PLANTING.
3. DO NOT REMOVE ANY DOUBLE LEADER, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.
4. KEEP PLANTS MOIST AND SHADED UNTIL PLANTING.
5. AMENDED BACKFILL SHALL BE AS STATED ON THIS SHEET.
6. MARK THE NORTH SIDE OF TREE IN THE NURSERY, AND ROTATE TREE TO FACE NORTH AT THE SITE WHENEVER POSSIBLE.
7. PINE AND SPRUCE TREES TO BE SPRAYED FOR IPS BARK BEETLE PRIOR TO PLANTING. COORDINATE WITH CITY FORESTRYFOR CURRENT INSECT AND DISEASE RECOMMENDATIONS PRIOR TO PLANTING.
8. ALL TREES TO BE DEEP WATERED AT TIME OF PLANTING.



1 L2.0 EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE — SECTION

EXISTING TREE PROTECTION DIRECTIONS:

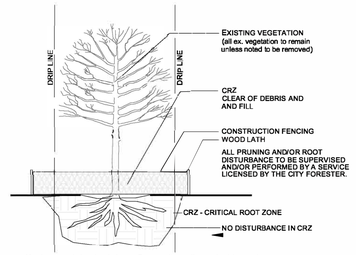
PROTECTIVE FENCING:

FOUR FEET HEIGHT PROTECTIVE FENCING IS TO BE INSTALLED AROUND THE EXISTING TREES TO REMAIN PRIOR TO CONSTRUCTION ON THIS SITE. CONTRACTOR IS TO TAKE PRECAUTIONS TO ENSURE THAT EXISTING ROOTS AND LIMBS ARE NOT DAMAGED DURING EXCAVATION ADJACENT TO TREES. FENCING IS TO BE INSTALLED BELOW THE EDGE OF THE CANOPY OF THE EXISTING TREES TO REMAIN. FENCING IS TO REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION.

IF ROOT PRUNING IS NECESSARY FOR GRADING, EXCAVATING, OR INSTALLATION OF IRRIGATION SYSTEM, ALL ROOT PRUNING IS TO TAKE PLACE OUTSIDE OF THE PROTECTIVE FENCING AROUND EACH TREE. CONTRACTOR IS TO TRENCH 12" AWAY FROM PROTECTIVE FENCING. ANY ROOTS LARGER THAN 2" ARE TO BE SAW CUT. CONTRACTOR IS TO HAND DIG ANY TRENCHES AND SAW CUT ANY INTERFERING ROOTS INSIDE THE PROTECTIVE FENCE AREAS.

WATERING, MULCHING, AND FERTILIZATION:

PRIOR TO CONSTRUCTION CONTRACTOR IS TO PLACE A 4" DEPTH OF WOOD CHIPS OR MULCH INSIDE THE PROTECTIVE FENCING OF EXISTING TREES TO REMAIN. CONTRACTOR IS TO PROVIDE REGULAR DEEP WATERING TO ALL EXISTING TREES TO REMAIN THROUGHOUT CONSTRUCTION. DURING CONSTRUCTION A SLOW-RELEASE NITROGREN FERTILIZER IS TO BE APPLIED AROUND THE BASE OF EACH TREE AT A RATE OF 2 LBS. PER 1000 S.F. (USE DRIP LINE OF TREE TO CALCULATE SQUARE FOOTAGE).



Use trees spade to relocate trees. Preserve the rootball and existing roots. Deep water for three months, provide drip irrigation thereafter.

L1.0 EXISTING TREE PROTECTION DETAIL

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Landscape Architecture
2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
720.384.7661 Phone
rpalmer@strategicls.net
Robert J. Palmer, PE
President

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OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

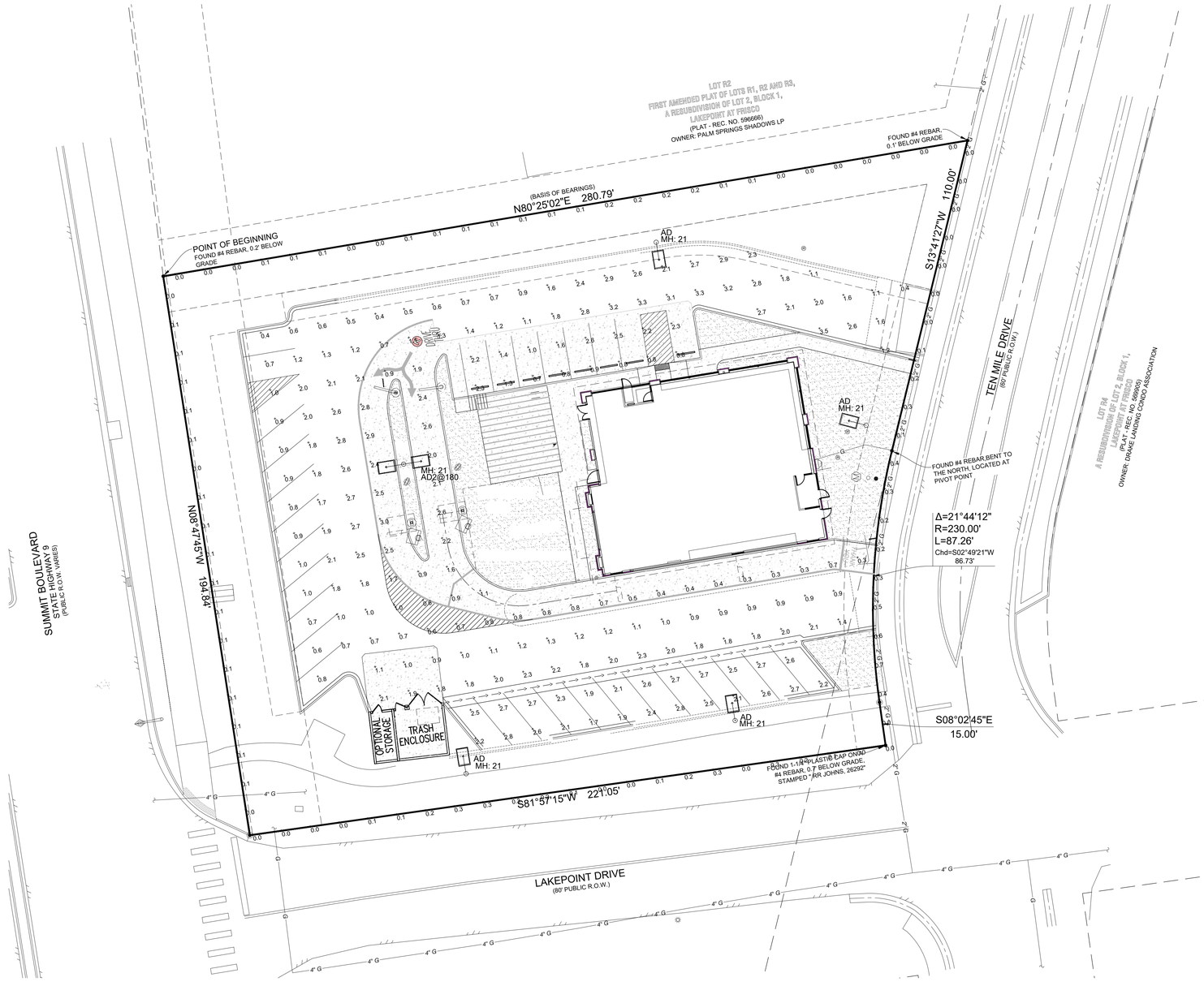
STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STORE NUMBER: 51062
NATIONAL ID#: TBD
REGIONAL DIST. NO: -

SCALE: AS NOTED
DATE: 02/12/25
DESIGNED BY: JRO
DRAWN BY: JRO
CHECKED BY: NAM
McD RE: BAKER
McD PJM: YAGUSESKY
FILE NAME: CURRENT.DWG
SLS Job: 24-0001-216

DRAWING TITLE: LANDSCAPE DETAILS & NOTES

SHEET NO: L1.1

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



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING SURFACE READINGS	Illuminance	Fc	1.64	3.5	0.3	5.47	11.67
PROPERTY LINE READINGS	Illuminance	Fc	0.12	0.7	0.0	N.A.	N.A.

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

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
	4	AD	Single	0.850	RAR-2-320L-140-5K7-4W-BC	133	0.607	21	SES-18-40-1-TA-GL-xx (4")
	1	AD2@180	Back-Back	0.850	RAR-2-320L-140-5K7-4W-BC	133	1.214	21	SES-18-40-1-TA-GL-xx (4")

20 0 20 20

PLAN SCALE: 1" = 20'

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

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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: COLORADO REGISTERED 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: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED
DATE: 05/30/2025
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP
McD RE: BAKER
McD P/CM: YAGUSESKY
FILE NAME: CURRENT.DWG
SLS JN: 24-0001-216

DRAWING TITLE: LIGHTING PLAN

SHEET NO: LI1.0

SECURITY LIGHTING™

RWSC

RADIUS LED WALL SCONCE

The RWSC LED radius wall sconce series offers a combination of light distributions that wash the building facade while the radial soft form housing accentuates building architectural design elements in all commercial and residential applications.

The RWSC LED provides excellent illumination with a high efficiency LED light source of 72 or 36 mid power LEDS that deliver up to 2,635 lumens and up to 109 lumens per watt.

The RWSC LED fixture has become a building standard and is stocked as a quick ship item in many colors and distributions.



Features

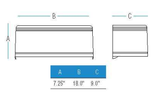
- Durable cast aluminum housing
- Available in various lighting distributions for maximum versatility
- Integrated design eliminates high angle brightness
- Luminaire finished in weatherproof powder-coat paint
- Completely sealed, flat tempered glass lenses, UL listed for use in wet locations
- DLC, Downlight only, full cut-off
- Dark-Sky compliant, Downlight only

Operating Temperature
- -30°C to 40°C

Electrical
- Dimming is an option (consult factory)

Mounting
RWSC features Intelligent Mounting Bracket which helps save time and money by allowing only one person to easily install. The small mounting bracket is very user friendly and features an integrated level bubble on the bracket ensuring fixture installation will always be perfect.

Dimensions



A	B	C
7.25"	18.8"	9.6"

Certifications/Listings

Ordering Information

Ordering Example: RWSC - XXL - XK - XX - U - XX - XX

RWSC

Series	# of LED's	CCT	Distribution	Voltage	Finish	Options
RWSC Radial Wall Sconce	36L* 36 Mid-Power LED's 72L* 72 Mid-Power LED's	3K 3000K 5K 5000K	TD* Down only UD Up/Down	U Universal 120/277V	DB Dark Bronze WH White BK Black PS* Platinum Silver AL* RAL Color* CC* Custom Color*	PC Photocontrol

* 36L only available in 3.5 distribution
* TD, only available in 3.5 distribution
* See remote inverter required to operate every 0 down only (p1) optional fixtures requiring 1W operation
* Must provide RAL color at time of ordering
* Must provide color sample at time of ordering

Quick Ship

RWSC36L06DDBK
RWSC36L06DDWH
RWSC36L06DDDB
RWSC36L06DDPS
RWSC72L06DDWH
RWSC72L06DDBK
RWSC72L06DDDB
RWSC72L06DDPS

Accessories

LG12ST	Remote Emergency Inverter (grid mount only)*
LG12SE	Remote Emergency Inverter (surface mount only)*

Web: www.securitylighting.com
2100 Golf Road, Suite 460, Rolling Meadows, IL 60008-4704
Phone: 1-800-LIGHT IT, 1-800-544-4448, Fax: 847-229-0642
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HUBBELL Lighting

BEACON

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

RATIO Series

AREA/SITE LIGHTER

FEATURES

- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as retail, commercial and campus parking lots
- Featuring Micro Strike Optics which maximizes target zone illumination with minimal losses at the house-side, reducing light trespass issues
- Visual comfort standard
- Compact and lightweight design with low EPA
- 3G rated for high vibration applications including bridges and overpasses
- Control options including photo control, occupancy sensing, NX Distributed Intelligence™ and 7-Pin with networked controls
- Best in class surge protection available



CONTROL TECHNOLOGY

NX LIGHTING CONTROLS™

SPECIFICATIONS

CONSTRUCTION
- Rectilinear form mimics the traditional shoebox form factor keeping a similar but updated style and appearance, ideal for retrofit applications
- Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with powder coat paint finish

OPTICS
- Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance
- 80, 160, 320 or 480 midpower LEDs
- 3000K, 4000K or 5000K (70 CRI) CCT
- Zero uplight at 0 degrees of tilt
- Field rotatable optics

INSTALLATION
- Standard square arm mount, compatible with 183 drill pattern
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option or accessory for square and round poles.
- Knuckle arm fitter option available for 2-3/8" OD tenon. Max tilt of 60 degrees with 4 degree adjustable increments. (Restrictions apply for 7 pin options)

ELECTRICAL
- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40°C to 40°C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/ IEEE C62.41.2 Category C High and Surge Location Category C3. Automatically takes fixture off-line for protection when device is compromised

CONTROLS
- Photo control, occupancy sensor and wireless available for complete on/off and dimming control
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)
- 0- 10 V Dimming Drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than the 6" standard
- NX Distributed Intelligence™ available with in fixture wireless control module, features dimming and occupancy sensor

CERTIFICATIONS
- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 3G rated for ANSI C136.31 high vibration applications
- Fixture is IP66 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt
- This product qualifies as a "designed country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 04/23/2020. See Buy American Solutions

WARRANTY
- 5 year limited warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	3,000–48,000
Wattage Range	25–340
Efficacy Range (LPW)	118–155
Fixture Projected Life (Hours)	L70>60K
Weights lbs. (kg)	13.5–24 (6.1-10.9)

Current

currentlighting.com/beacon

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Page 1 of 11
Rev 07/06/22
NEW_Design_Ratio_Area_Series_High_Output

BEACON

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

RATIO SERIES

AREA/SITE LIGHTER

ORDERING GUIDE

CATALOG #

Example: RAR1-80L-2S-3K7-2-UNV-ASQ-BL-NXWT-BC

ORDERING INFORMATION

Series	# LEDs - Wattage	CCT/CRI	Distribution	Optics Rotation	Voltage
RAR1 Ratio Area Size 1	80L-25 25W - 3,000 Lumens 80L-39 39W - 5,200 Lumens 80L-50 50W - 6,000 Lumens 160L-70 70W - 9,500 Lumens 160L-100 100W - 13,000 Lumens 160L-115 115W - 15,000 Lumens 160L-135 135W - 18,000 Lumens	3K7 3000K, 70 CRI 4K7 4000K, 70 CRI 5K7 5000K, 70 CRI	2 IES TYPE II 3 IES TYPE III 3M IES TYPE IV 4F IES TYPE IV Forward SQW IES TYPE V	Blank for no rotation L Optic rotation left R Optic rotation right	UNV Universal 120-277V 120 120V 208 208V 240 240V 277 277V 347 347V 480 480V
RAR2 Ratio Area Size 2	320L-110 110W - 15,000 Lumens 320L-140 140W - 19,000 Lumens 320L-165 165W - 21,000 Lumens 480L-185 185W - 24,000 Lumens 480L-210 210W - 27,000 Lumens 480L-240 240W - 30,000 Lumens 480L-255 255W - 36,000 Lumens 480L-295 295W - 42,000 Lumens 480L-340 340W - 48,000 Lumens				

Mounting	Color	Control Options Network	Options
ASQ Arm mount for square pole/flat surface ASQU Universal arm mount for square pole/flat surface	BLT Black Matte Textured BLS Black Gloss Smooth DBT Dark Bronze Matte Textured DBS Dark Bronze Gloss Smooth GTT Graphite Matte Textured LGS Light Grey Gloss Smooth PSS Platinum Silver Smooth WHT White Matte Textured WHS White Gloss Smooth VGT Verde Green Textured	NXWE NX Wireless Enabled (module + radio) NXSPM_F NX Wireless, PIR Occ, Sensor, Daylight Harvesting * NXSP_F NX, PIR Occ. Sensor, Daylight Harvesting *	BC Backlight control F Fusing (must specify voltage) TB Terminal block 3PF 2 power feed with 2 drivers²
Mounting Round Poles		Control Options Other	
A_ Arm mount for round pole¹ A_U Universal arm mount for round pole¹		SCP-ADP Programmable occupancy sensor ³ 7PR 7-Pin twist lock receptacle 7PR-SC 7-Pin receptacle with shunting cap 7PR-MD4DF Low voltage sensor for 7PR 7PR-TL 7-Pin PCR with photocontrol ADD AutoDim Timer Based Dimming ADT AutoDim Time of Day Dimming	
Mounting Other	Color Option	Sensors	
WB Wall bracket MAF Mast arm fitter for 2-3/8" OD horizontal arm K Knuckle	CC Custom Color	BTS_F Bluetooth Programmable, PIR Occupancy/Daylight Sensor, 360° lens ³ BTSO_F Bluetooth Programmable, PIR Occupancy/Daylight Sensor, 360° lens, up to 12' mounting height ³	

Notes:
1 Replace "_" with "3" for 3.0"-4.13" OD pole, "4" for 4.18"-5.75" OD pole, "5" for 5.9"-6.5" OD pole
2 Not available with 25, 50, 310, 315 & 340W configurations
3 At least one SCPR/NOTE required to program SCP motion sensor
4 Replace "_" with "H" for up to 14' mounting height, "XD7" for 15-40' mounting height
5 Replace "_" with "7" for up to 17' mounting height

STOCK ORDERING INFORMATION

Catalog Number	Lumens	Wattage	LED Count	CCT/CRI	Voltage	Distribution	Mounting	Finish
RAR1-100-4K-3	12,000	100W	160L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR1-100-4K-4W	12,000	100W	160L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR1-135-4K-3	18,000	135W	160L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR1-135-4K-4W	18,000	135W	160L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR2-165-4K-3	21,000	165W	320L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR2-165-4K-4W	21,000	165W	320L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze

Current

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Page 2 of 11
Rev 07/06/22
NEW_Design_Ratio_Area_Series_High_Output

SECURITY LIGHTING™

SLED

HIGH EFFICIENCY LINEAR LED FACADE FIXTURE

DATE: LOCATION:
TYPE: SLED4-HE 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 while keeping energy usage and maintenance to a minimum.
- Thanks to its intuitive "plug and play" mounting design with integral clever system, installation is quick and simple and only requires that power be brought to one fixture in each continuous row.
- The unique fixture design and the long life Mid-Power LED source minimizes maintenance to only an occasional cleaning of outer lens surfaces.
- This successful system is truly a "sort it and forget it" solution that is only offered from Security Lighting



SPECIFICATIONS

CONSTRUCTION
- Powder-coated mounting brackets that conceal power cables
- Fixture to fixture connections are made external to the fixture

OPTICS
- 5000K color temp standard
- Tempered glass lens
- Down only full cut off

INSTALLATION
- Each order ships with a formed drilling template for accurate and quick installation
- All subsequent fixtures quickly plug together in series
- Fixtures are not opened during the installation process
- Complete instructions for fixture installation posted on web-site at www.securitylighting.com

ELECTRICAL
- Fully integrated driver for completely self-contained lighting system
- Power feed required only at beginning of each continuous row or stand alone fixture

WARRANTY
- 5 year warranty
- See HLI Standard Warranty for additional information

ORDERING GUIDE

Example: S-LED-XX-DD-U-XX-XX

CATALOG #

S	LED	HE	XX	DD	U	XX	XX
Series	Source	Type	Size	Distribution	Voltage	Finish	Options
S Linear Facade Fixture	LED Mid-Powered	HE High Efficiency	48 4 foot 36 3 foot 24 2 foot	DD Downlight Only (ILS Watts per foot)	U Universal 120 to 277 Volt	PB Platinum Silver DB Dark Bronze WH White BK Black IG Iron Ore RL RAL Color *	5K 5000K color temp* 4K 4000K color temp*

Notes:
1 Must Provide RAL color number and powder coat manufacturer name at time of ordering
2 Color paints may would need to be provided at time of quote request
3 Must only use factory supplied whip kit to maintain water tight integrity and product warranty
4 Modular cable: 4 to 5 feet in between
5 Options: 5000K standard
Optional 3000K and 4000K color temp, built to order

Accessories (Order Separately)

☐ 93073538 Hi-af - LED Whip Kit power feed cover/plug
One required per stand alone fixture or linear run for Live with SLED HE †

KEY DATA	
Lumens	834 / 1211
Wattage	30
Efficacy (LPW)	83.6 / 82.9
Reported Life (Hours)	L70 >120,000
Input Current Range (Amps)	.096 - .612

Page 1/2 Rev 01.27.20
SL_SLED_SPEC

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---

SQUARE STRAIGHT STEEL POLES

Specifications

SSP SERIES

- Square straight steel shaft
- One-piece construction
- 2-1/4" OD tenons, or factory-drilled side mount
- Ground lug standard (1/4" 1 6 thread)
- Steel base plate
- Two-piece base cover
- Four L-shaped fully galvanized anchor bolts with nuts and washers, metal template
- Finished in weatherproof powder-coat paint
- Gasketed hand hole standard

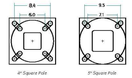


ORDERING INFORMATION

Pole Catalog Number	Height ft	Wind Load Rating* 90mph EPA	100mph EPA	120mph EPA	Pole Size	Base Square	Anchor Bolt Size*	Suggested Bolt Circle	Bolt Circle Range	Bolt Projection	Pole Weight* lbs
11 GAUGE											
SSP-4118-XXX-XX	18	11.5	6	3	4"	10.25"	3/4"	10.5"	8"	4"	147
SSP-4125-XXX-XX	25	5	1.5	–	4"	10.25"	3/4"	10.5"	8"	4"	238
SSP-5125-XXX-XX	25	10.5	4	–	5"	12"	1"	10.5"	10-13.5"	4"	231
7 GAUGE											
SSP-4725-XXX-XX	25	10	4.5	1.4	4"	11"	3/4"	10.5"	8.5–12"	4"	266
SSP-5722-XXX-XX	22	20	11	6	5"	12"	1"	10.5"	10-13.5"	4"	263
SSP-5728-XXX-XX	28	15.6	7.4	3	5"	12"	1"	10.5"	10-13.5"	4"	340
SSP-5730-XXX-XX	30	12	4.5	–	5"	12"	1"	10.5"	10-13.5"	4"	398

1 Catalog Number as listed, does not include tenons or machining for side mounting. Fixture mounting must be specified by substituting for all Xs in Catalog Number. Refer to Catalog Logic for top type and for mounting arrangements.
2 Maximum allowable EPA is based on steady winds of 90 mph with gusts to 104 and 130 mph respectively. 10 mph steady winds with 78 mph gusts. All calculations are based on a minimum yield of 33,000 PSI. Calculations per ASD/LRFD 8th.
3 Factory supplied template must be used when setting anchor bolts. Security Lighting will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template.
4 Anchor bolt weights not included.

BOLT TEMPLATE



CATALOG LOGIC

SAMPLE CATALOG NUMBER

SSP X XX X X X XX

Series	Shaft Size Square	Nominal Height	Top Type	Mounting Arrangement	Fixture Type	Finish

SERIES
SSP Square Straight Steel

SHAFT SIZE SQUARE
41 4.0", 11 ga.
47 4.0", 7 ga.
51 5.0", 11 ga.
57 5.0", 7 ga.

NOMINAL POLE HEIGHT (in feet)
See ordering information above†

TOP TYPE
1 2¾" OD Tenon²
5 Removable Tenon²
6 Side mount

MOUNTING ARRANGEMENT
A One Fixture
B Two Fixtures at 90°
C Two Fixtures at 180°
D Three Fixtures at 90°
F Four Fixtures at 90°
P Tenons only

FIXTURE TYPE
0 None, tenon only
2 ASB-F/RSB-RCS/RCL, WL, MXC, SL, CR1, CM, CM2

FINISH
DB Dark Bronze
BK Black
WH White
PS Platinum Silver

1 Consult factory for other available pole heights.
2 Only for use with optional tenon top mounting brackets or ASB mounting brackets.

NOTES: • *Aluminum poles available, consult factory.*
• *All factory stocked poles are shipped as tenon-tops and require a tenon top mounting bracket.*
• *Consult factory for available pole options (receptacle, mid-pole brackets, and banner mounting arms)*

ACCESSORY: TENON TOP MOUNTING BRACKET

Catalog Number	Description
TTF-10	Single
TTF-29	Twin 90°
TTF-2B	Twin 180°
TTF-39	Triple 90°
TTF-30	Triple 120°
TTF-49	Quad 90°

SECURITY LIGHTING SYSTEMS
A MCNICHOLS LIGHTING, INC. COMPANY
Performance Designed Lighting Products
1085 Johnson Drive • Buffalo Grove, IL 60089 • TOLL-FREE: 800-544-4848 • PHONE: 847-279-0627 • FAX: 847-279-0642
www.securitylighting.com

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING SURFACE READINGS	Illuminance	Fc	1.64	3.5	0.3	5.47	11.67
PROPERTY LINE READINGS	Illuminance	Fc	0.12	0.7	0.0	N.A.	N.A.

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

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
—→	4	AD	Single	0.850	RAR-2-320L-140-5K7-4W-BC	133	0.607	21	SES-18-40-1-TA-GL-xx (4")
←→	1	AD2@180	Back-Back	0.850	RAR-2-320L-140-5K7-4W-BC	133	1.214	21	SES-18-40-1-TA-GL-xx (4")

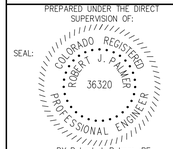
NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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:



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

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OFFICE	ROCKY MOUNTAIN REGION
ADDRESS	44322

STREET ADDRESS	CITY	STATE	COUNTY	STATE STORE ID#	NATIONAL ID#
960 N. TEN MILE DRIVE	FRISCO	COLORADO	SUMMITT	51062	
REGIONAL DMC NO					
-					



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

SCALE:	AS NOTED
DATE:	05/30/2025
DESIGNED BY:	RJP
DRAWN BY:	RJP
CHECKED BY:	RJP
McD RE:	BAKER
McD P/CM:	YAGUSESKY
FILE NAME:	CURRENT.DWG
SLS JN:	24-0001-216

DRAWING TITLE:
LIGHTING DETAILS

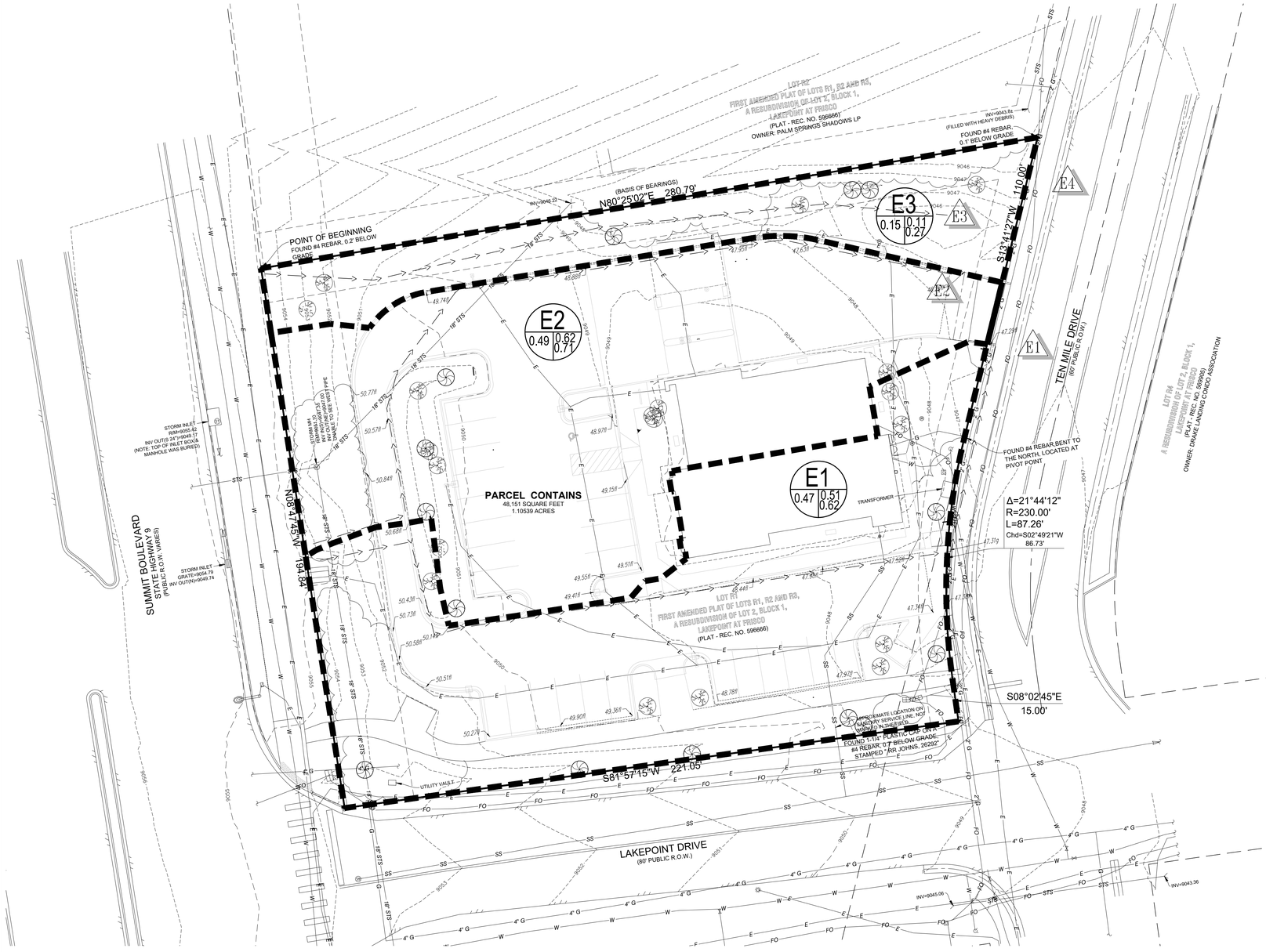
SHEET NO:
LI1.1

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
- E1 — DESIGN POINT
- E1 (Ac, 5 YR, 100YR) — BASIN DESIGNATION
- 5 YR COMPOSITE 'C'
- 100YR COMPOSITE 'C'
- BASIN AREA



20 0 20 20

PLAN SCALE: 1" = 20'

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

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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: COLORADO REGISTERED ROBERT J. PALMER PE 36320 PROFESSIONAL ENGINEER

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

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OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED	McD RE: BAKER
DATE: 05/30/2025	McD P/CM: YAGUSESKY
DESIGNED BY: RJP	
DRAWN BY: RJP	FILE NAME: CURRENT.DWG
CHECKED BY: RJP	SLS JN: 24-0001-216

DRAWING TITLE: EXISTING DRAIANGE

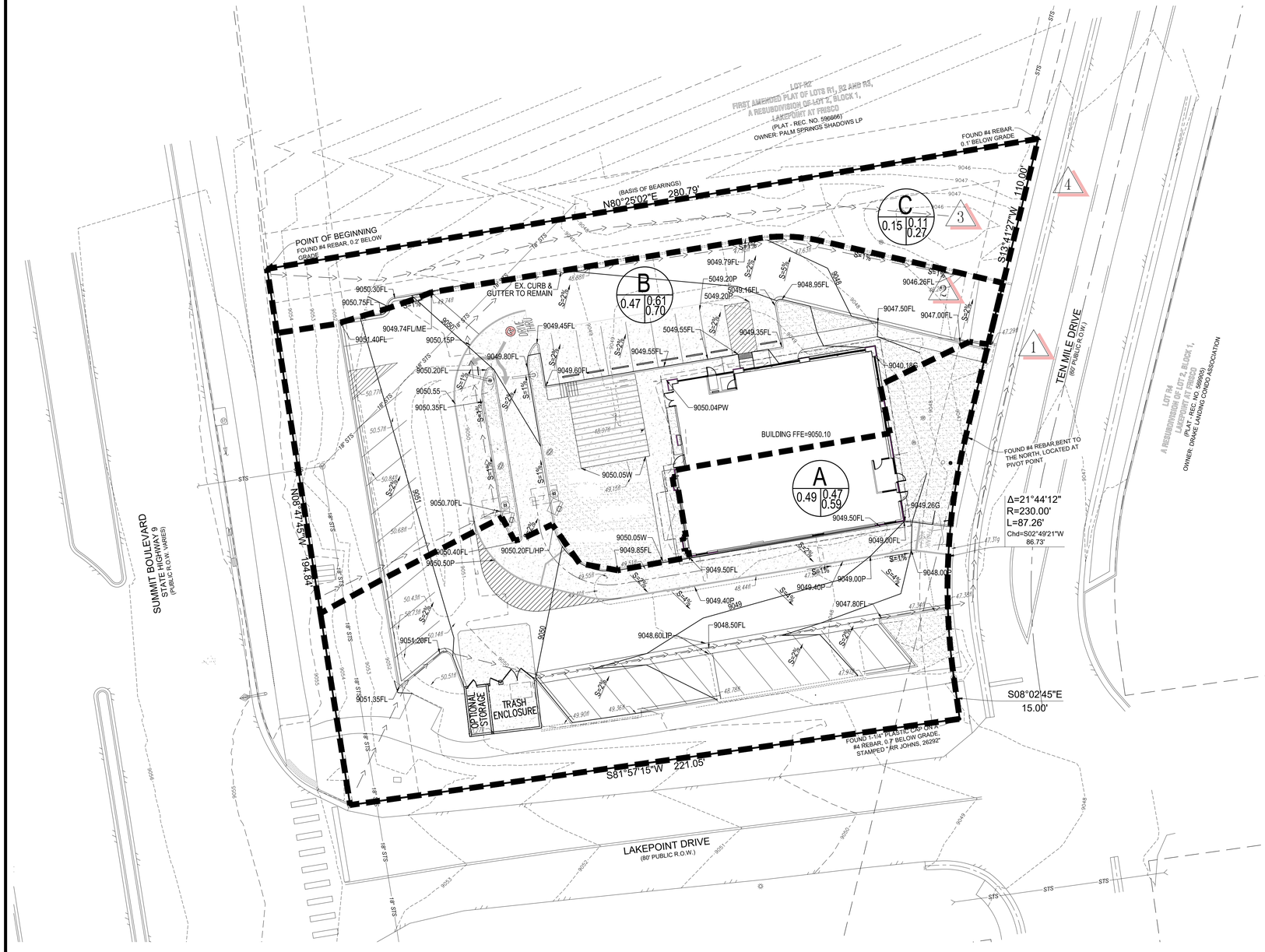
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PROPOSED SUMMARY RUNOFF TABLE

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
- E1 — DESIGN POINT
- A — BASIN DESIGNATION
- Ac — BASIN AREA
- CSC — 5 YR COMPOSITE 'C'
- C100 — 100YR COMPOSITE 'C'



20 0 20 20

PLAN SCALE: 1" = 20'

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

NO.	DATE	REVISION DESCRIPTION

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Civil Engineering • Land Planning • Entitlements
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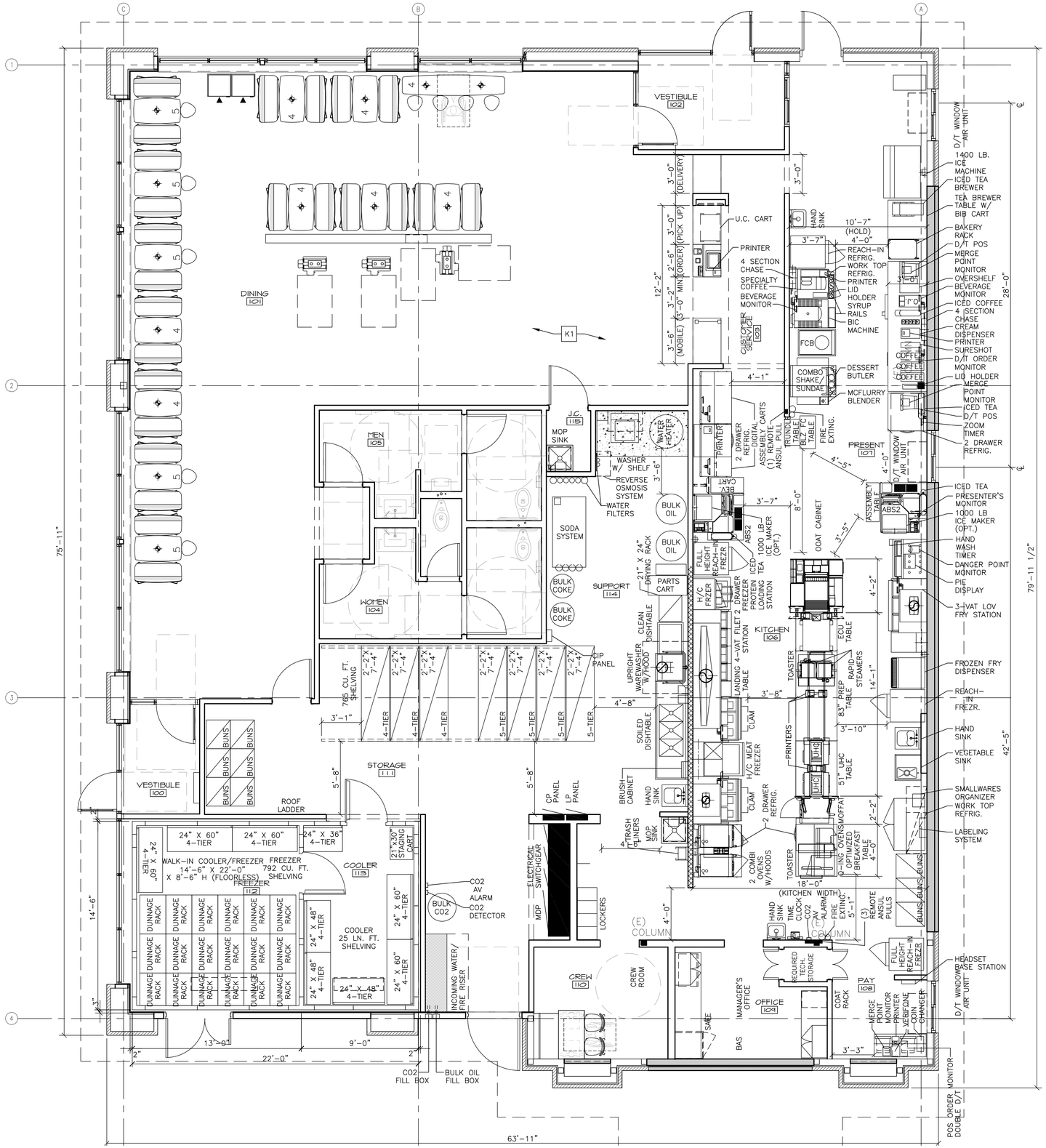
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED	McD RE: BAKER
DATE: 05/30/2025	McD P/CM: YAGUSESKY
DESIGNED BY: RJP	
DRAWN BY: RJP	FILE NAME: CURRENT.DWG
CHECKED BY: RJP	SLS JN: 24-0001-216

DRAWING TITLE: PROPOSED DRAINAGE PLAN

SHEET NO: DR-2



1 FLOOR PLAN
SCALE: 1/4" = 1'-0"

NORTH

NO.	DATE	REVISION DESCRIPTION
1	-	-

ARCHITECTURAL CONSULTANT:

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

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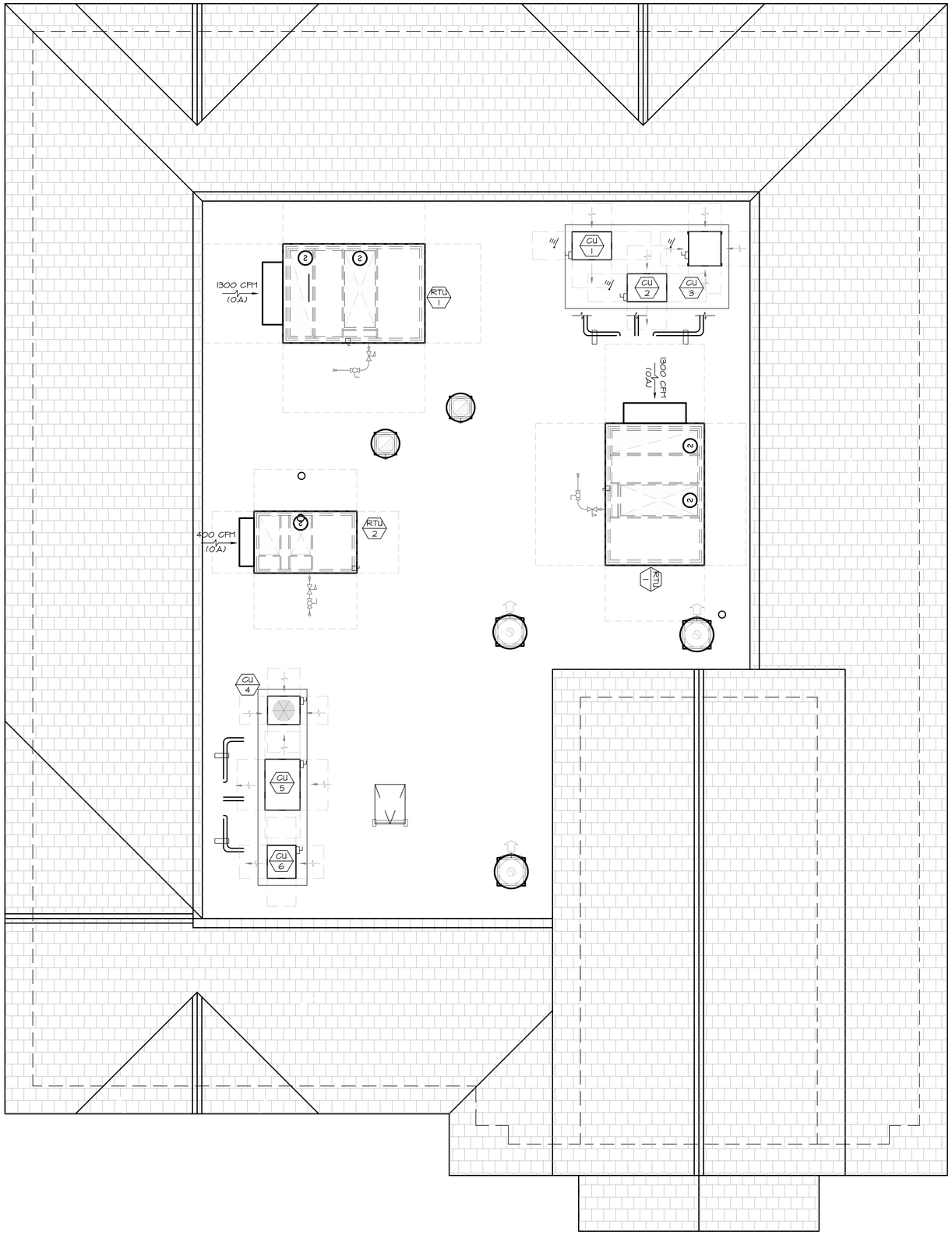
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ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL ENG. NO:

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

DRAWING TITLE: FLOOR PLAN

SHEET NO: A1.1



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

NORTH

NO.	DATE	REVISION DESCRIPTION
1	-	-

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

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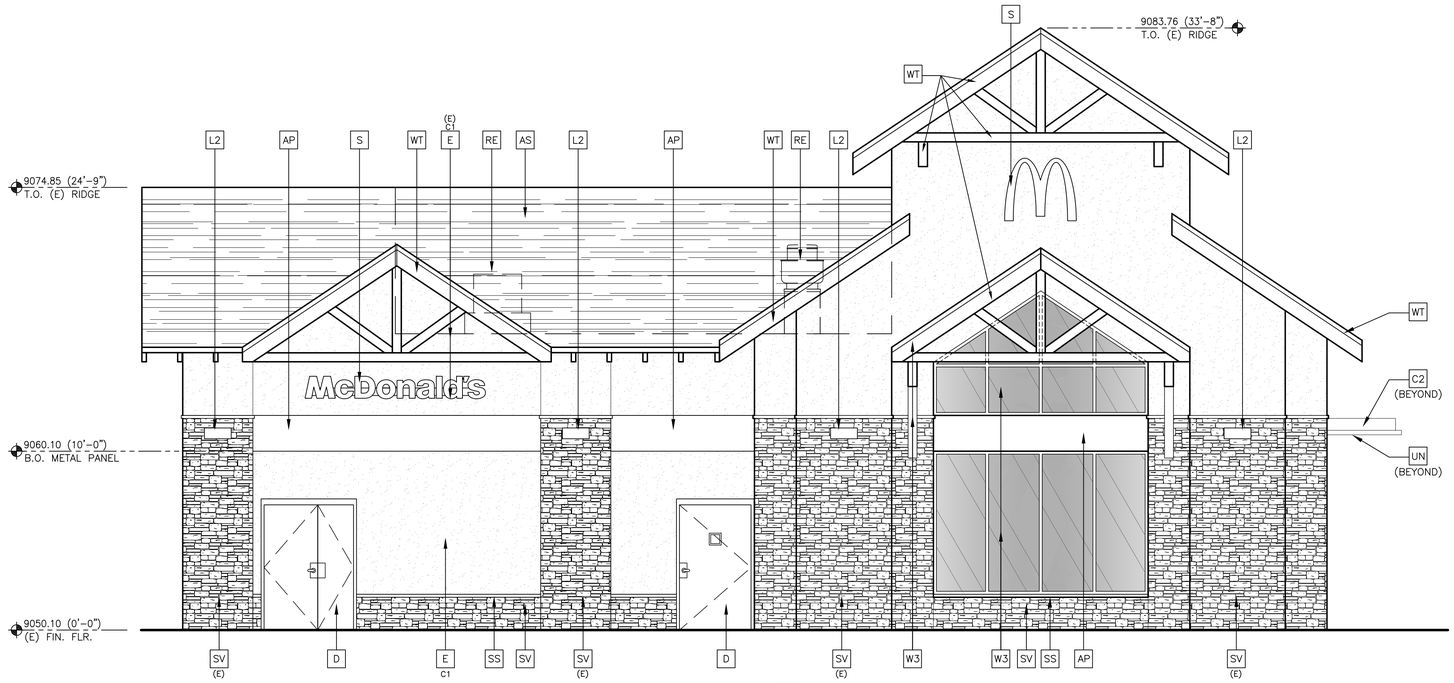
OFFICE ROCKY MOUNTAIN REGION
ADDRESS

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO:

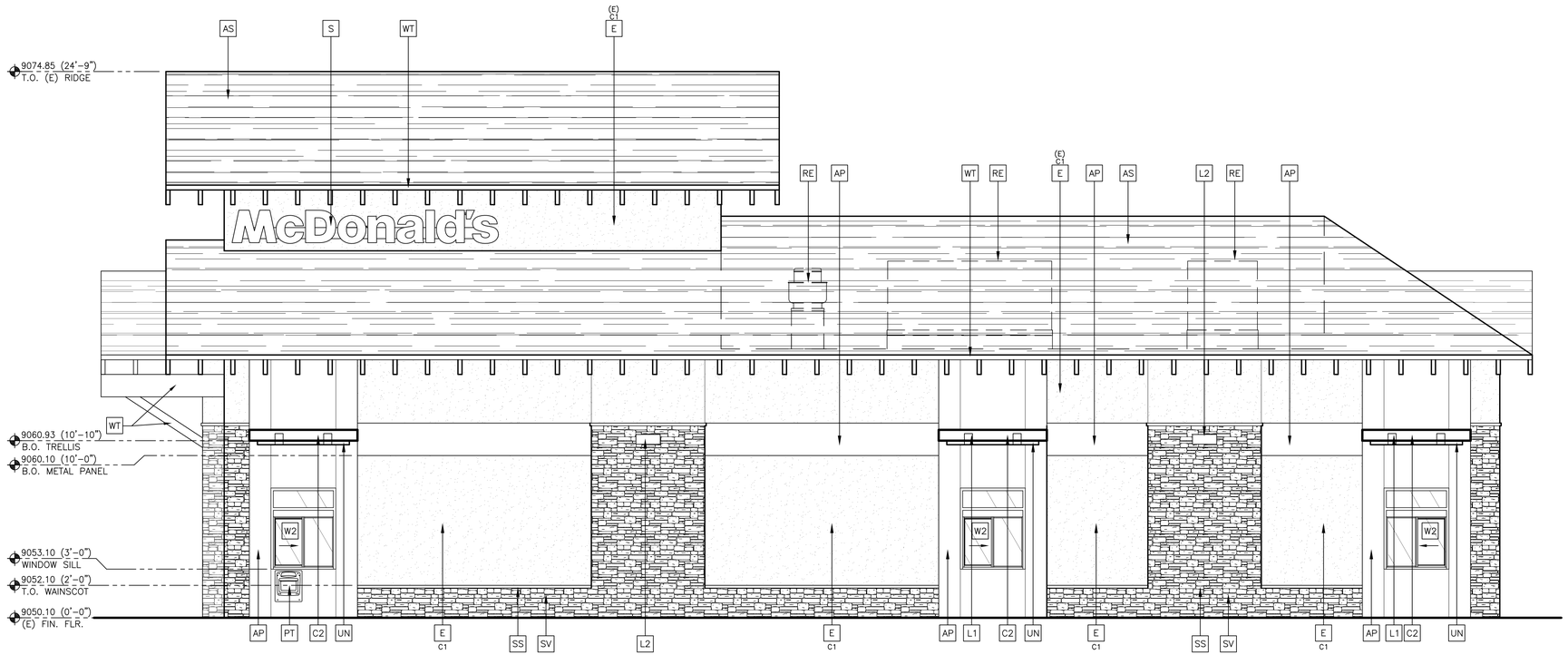
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DATE: 02/07/2025	McD P/CM: YAGUSESKY
DESIGNED BY: CS	
DRAWN BY: CS	FILE NAME:
CHECKED BY: CS	

DRAWING TITLE: ROOF PLAN

SHEET NO: A1.3



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



2 A2.0 **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:
  (E) 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: GOLD
- 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
  XX — 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

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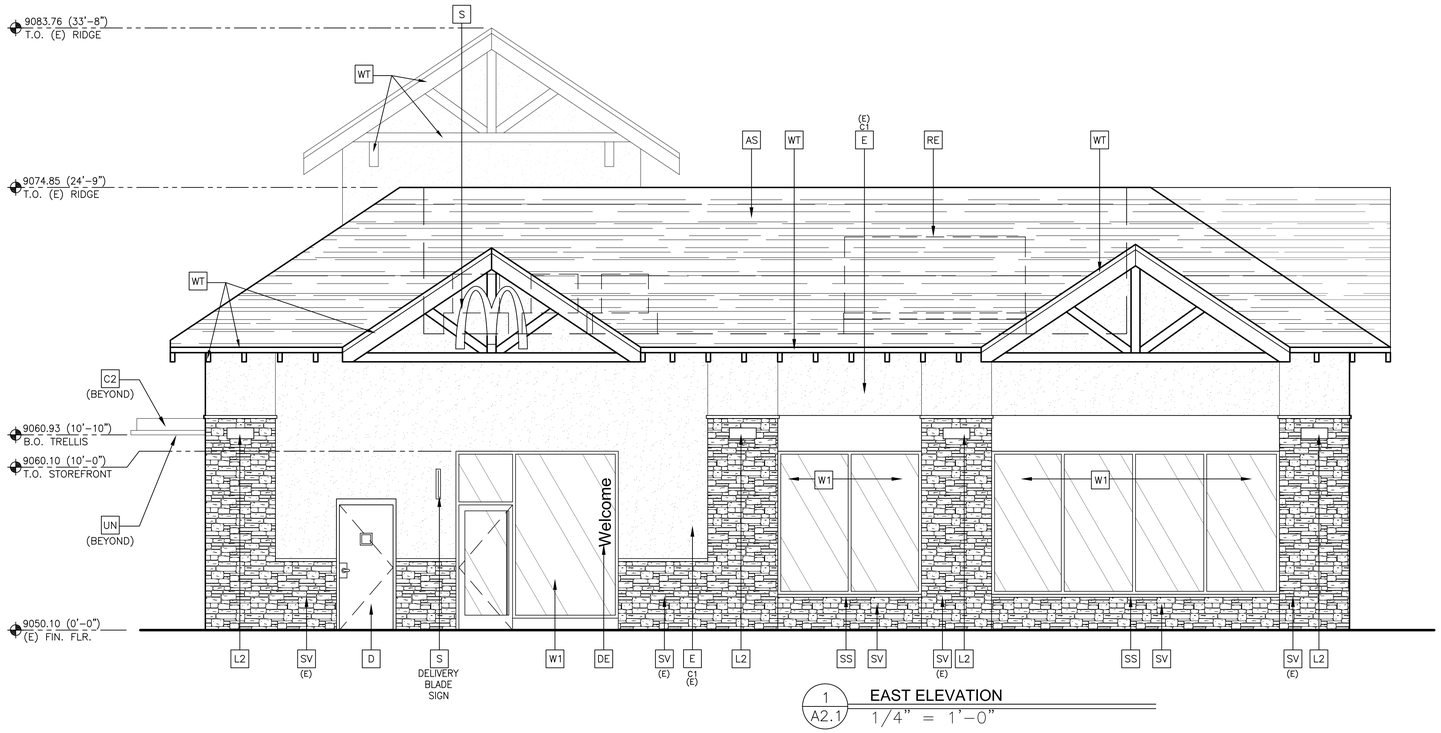
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL ENG. NO:

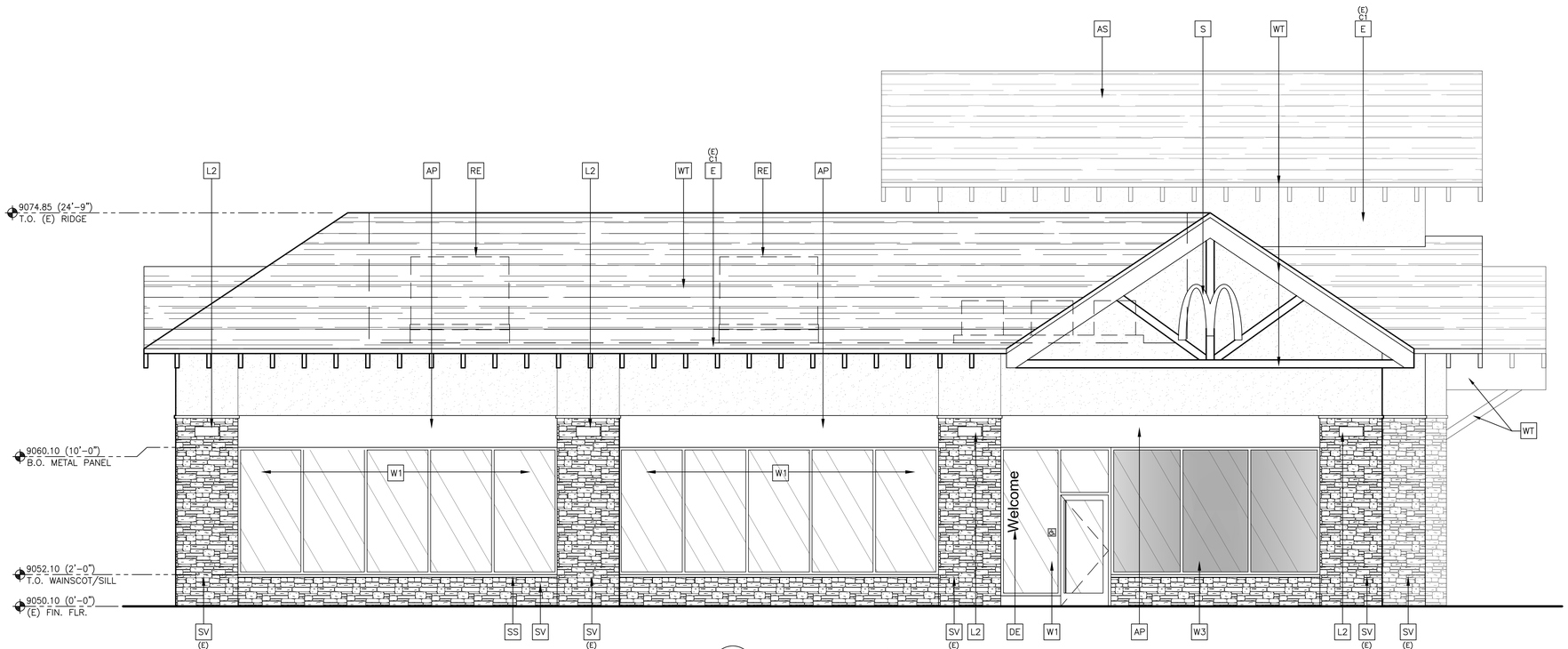
SCALE: AS NOTED	McD RE: BAKER
DATE: 02/07/2025	McD PJM: YAGUSESKY
DESIGNED BY: CS	
DRAWN BY: CS	FILE NAME:
CHECKED BY: CS	

DRAWING TITLE:
EXTERIOR ELEVATIONS

SHEET NO:
A2.0



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



2 A2.1 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:
  (E) 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: GOLD
- 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
  XX — 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

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: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL ENG. NO:

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

DRAWING TITLE:
EXTERIOR ELEVATIONS

SHEET NO:
A2.1



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



2 A2.0 SOUTH ELEVATION
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
- EXTERIOR WINDOW ASSEMBLY COLOR: EXTRA DARK BRONZE
- ALPOLIC METAL PANEL / DRIVE THRU CANOPIES: COLOR: RAL 7022
- SPANDREL GLASS: #1-0016 CHARCOAL - 6MM PPG CLEAR OPACI-COAT-300 (ICD HIGH PERFORMANCE COATINGS) OR EQUAL

NO.	DATE	REVISION DESCRIPTION
1	-	-

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

DRAWING TITLE:
EXTERIOR ELEVATIONS

SHEET NO:
A2.0



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



2 A2.1 NORTH ELEVATION
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
- 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
- SPANDREL GLASS: #1-0016 CHARCOAL - 6MM PPG CLEAR OPACI-COAT-300 (ICD HIGH PERFORMANCE COATINGS) OR EQUAL

NO.	DATE	REVISION DESCRIPTION
1	-	-

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970.988.6302
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McDonald's

OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

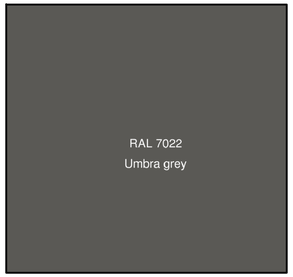
STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
MCD#: 44322
REGIONAL DIR. #:

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

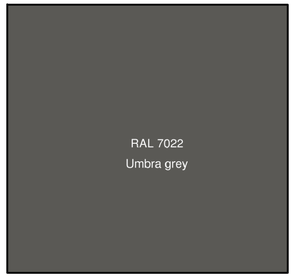
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EXTERIOR ELEVATIONS

SHEET NO:
A2.1

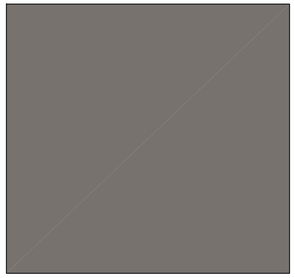
MATERIAL SAMPLES



AP ALPOLIC METAL PANEL
(COLOR: RAL 7022)



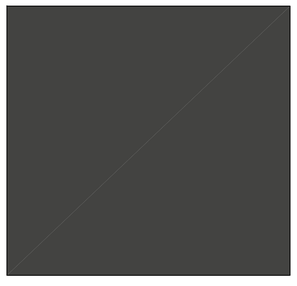
C2 ALUMINUM CANOPY SYSTEM
(COLOR: RAL 7022)



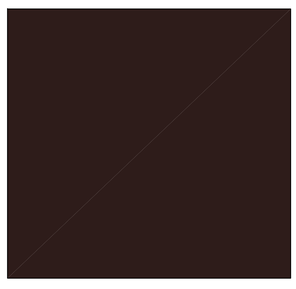
E EIFS, NEW AND EXISTING
(COLOR: SHERWIN WILLIAMS
#7017I GAUNTLET GRAY



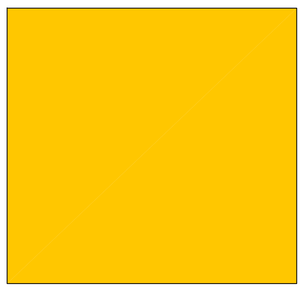
SV STONE VENEER:
MATCH EXISTING



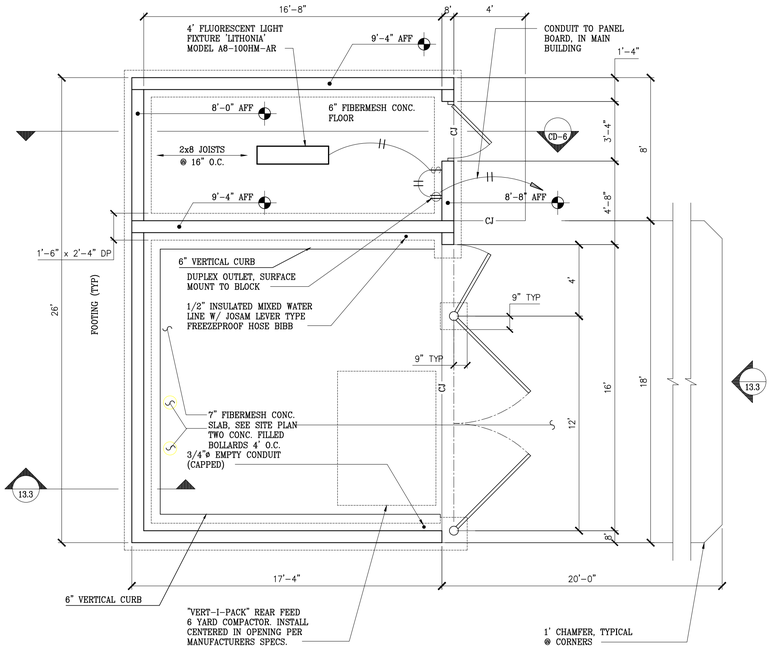
WT WOOD TRIM
(COLOR: SHERWIN WILLIAMS
#7069 IRON ORE)



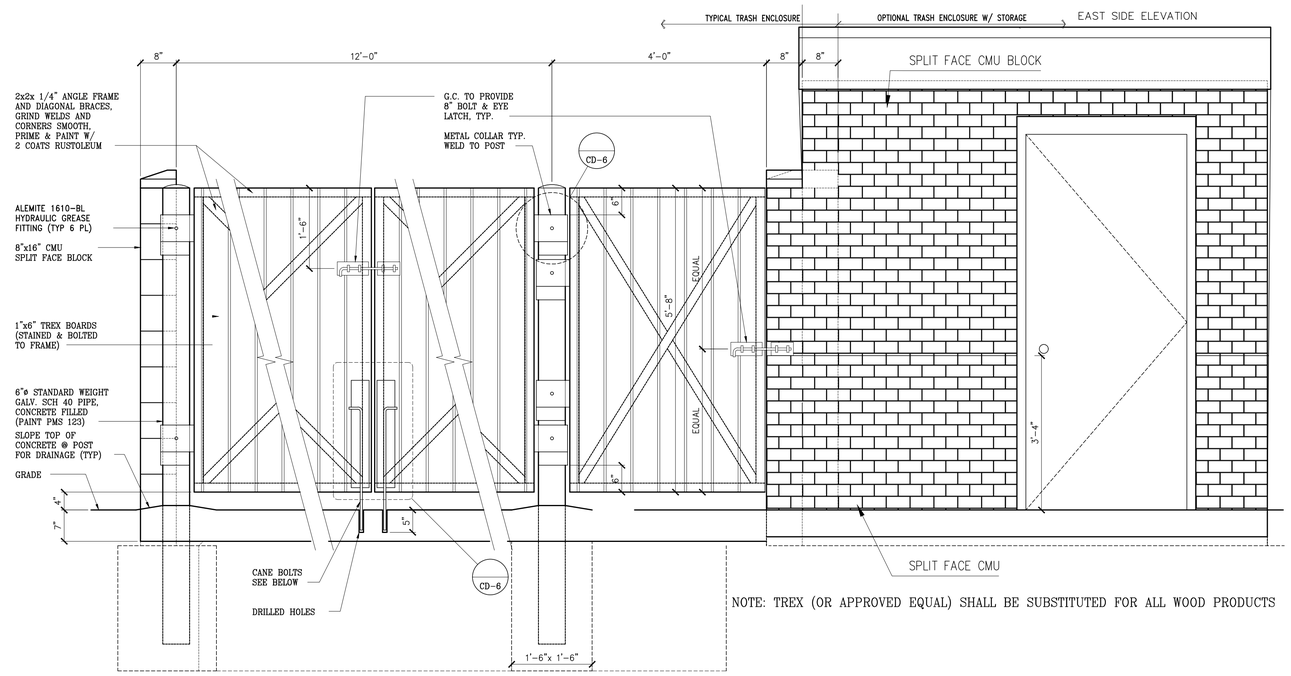
WI STOREFRONT
(COLOR: EXTRA DARK BRONZE)



UN CANOPY UNDERSCORE
(COLOR: PANTONE 109U)

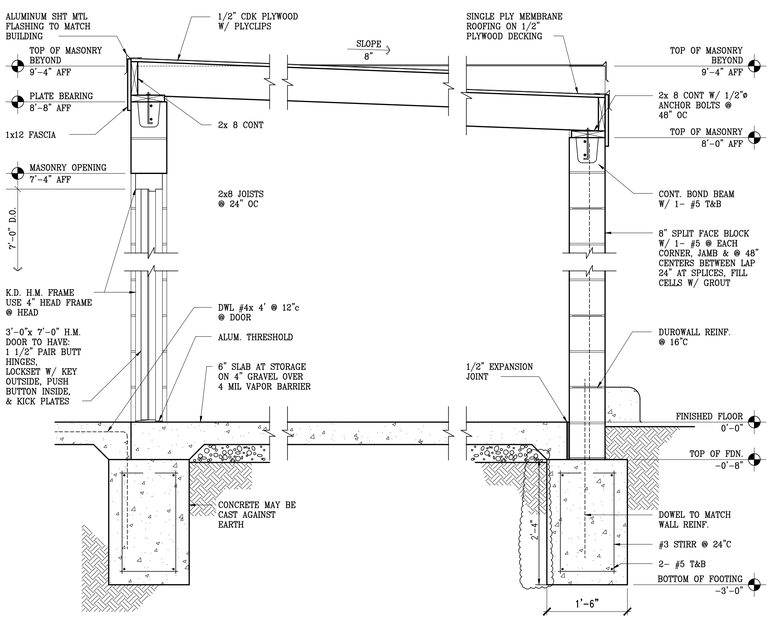


TRASH ENCLOSURE WITH LOCKABLE STORAGE | 1

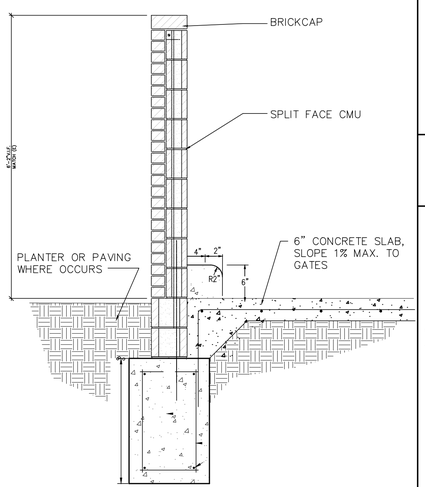


NOTE: TREX (OR APPROVED EQUAL) SHALL BE SUBSTITUTED FOR ALL WOOD PRODUCTS

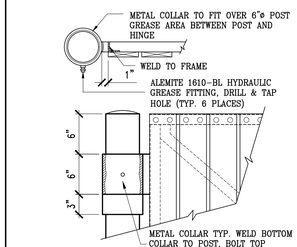
TRASH ENCLOSURE GATE AND MOUNTING DETAILS (WITH LOCKABLE STORAGE AREA) | 2



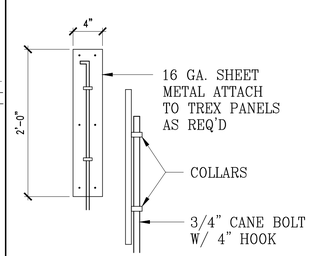
SECTION THROUGH STORAGE AREA | 3



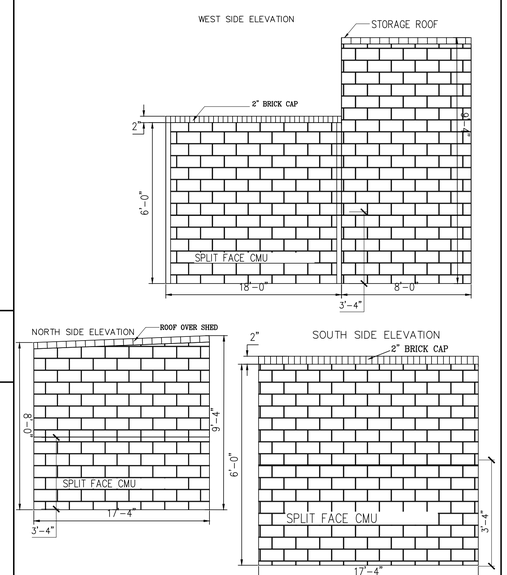
TYPICAL WALL SECTION | 4



GATE HINGE | 5



CANE BOLT | 6



ELEVATIONS | 7

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering • Land Planning • Entitlements
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: COLORADO REGISTERED ROBERT J. PALMER 36320 PROFESSIONAL ENGINEER

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

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OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS	960 N. TEN MILE DRIVE
CITY	FRISCO
STATE	COLORADO
COUNTY	SUMMIT
STATE STORE #:	51062
NATIONAL #:	44322
REGIONAL DWG. NO	-

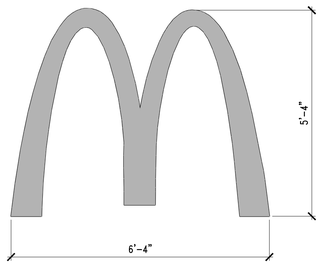
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DATE:	05/30/2025
DESIGNED BY:	RJP
DRAWN BY:	RJP
CHECKED BY:	RJP
McD RE:	BAKER
McD P/CM:	YAGUSESKY
FILE NAME:	CURRENT.DWG
SLS JN:	24-0001-216

DRAWING TITLE:

TRASHE ENCLOSURE

SHEET NO:

CD.1



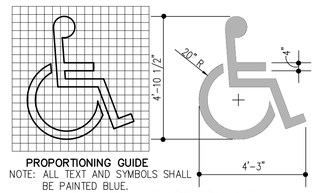
NOTE: THE McDONALD'S ARCH IS PAINTED YELLOW (PMS 123)

PAINTED ARCH | 8



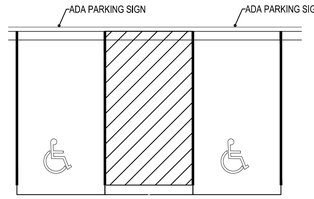
NOTE: ALL TEXT SHALL BE PAINTED YELLOW (PMS 123)

PAINTED 'THANK YOU' | 9



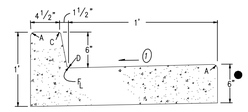
PROPORTIONING GUIDE
NOTE: ALL TEXT AND SYMBOLS SHALL BE PAINTED BLUE.

ACCESSIBLE ACCESSIBLE
PARKING PAVEMENT MARKING

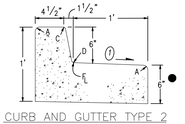


ALL ADA STRIPING SHALL BE 4" WIDE STRIPING PAINTED BLUE

PAINTED ACCESSIBLE PARKING | 10

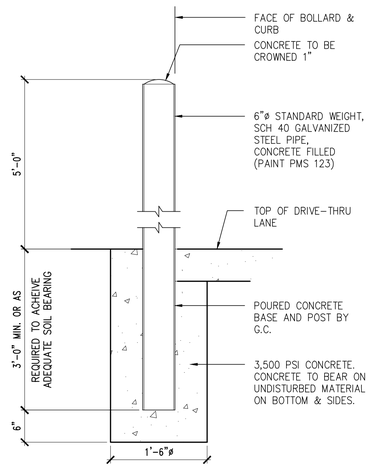


CURB AND GUTTER TYPE 2
(SECTION IIB)
(6" BARRIER – 2' GUTTER)

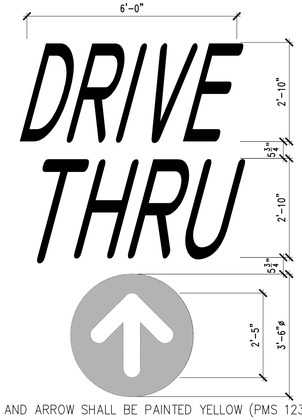


CURB AND GUTTER TYPE 2
(SECTION IB)
(6" BARRIER – 1' GUTTER)

ONSITE CURB & GUTTER | 11

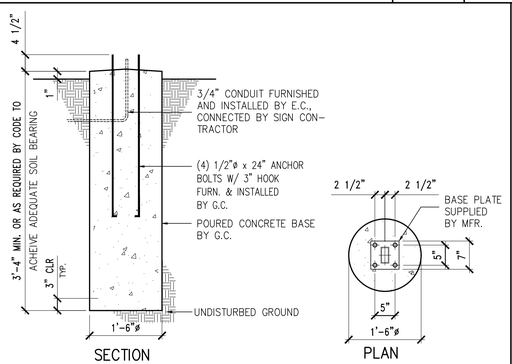


DRIVE THRU BOLLARD FOUNDATION | 12



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

PAINTED 'DRIVE THRU' WITH ARROW | 13



NOTES:

1. THIS DETAIL TO BE USED WITH SITE SIGNS FROM: TENCON, EVERBRITE, OR YESCO. CONTRACTOR TO COORDINATE DETAILS WITH SIGN COMPANY.

2. 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.

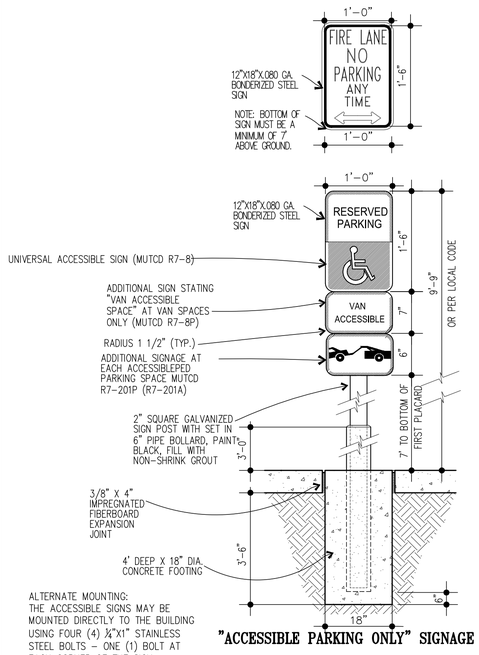
DIRECTIONAL SIGN FOUNDATION | 14

NOT USED | 15

NOTES:

1. 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.
2. FOUNDATION DEPTH AS REQUIRED BY CODE OR TO ACHIEVE ADEQUATE SOIL BEARING CAPACITY, (6' DEPTH MINIMUM).
3. 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



ALTERNATE MOUNTING:
THE ACCESSIBLE SIGNS MAY BE MOUNTED DIRECTLY TO THE BUILDING USING FOUR (4) ¼"X1" STAINLESS STEEL BOLTS – ONE (1) BOLT AT EACH CORNER OF THE SIGN.

"ACCESSIBLE PARKING ONLY" SIGNAGE

"ACCESSIBLE PARKING ONLY" SIGNAGE | 17

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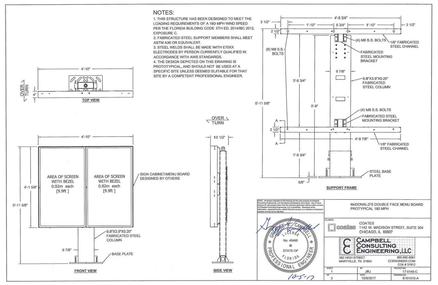
OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
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COUNTY: SUMMIT
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REGIONAL DWG. NO: -

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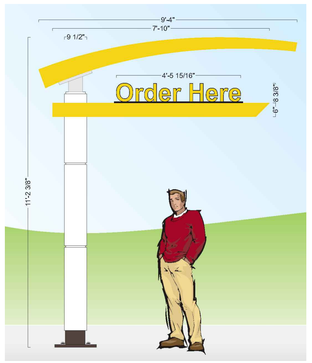
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CONSTRUCTION DETAILS

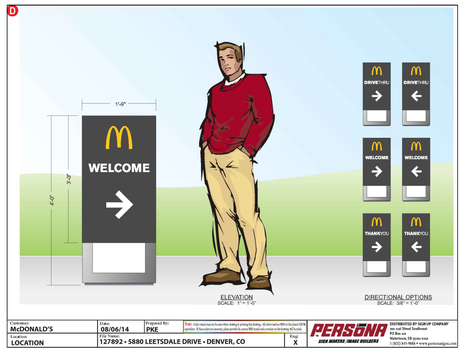
SHEET NO:
CD.2

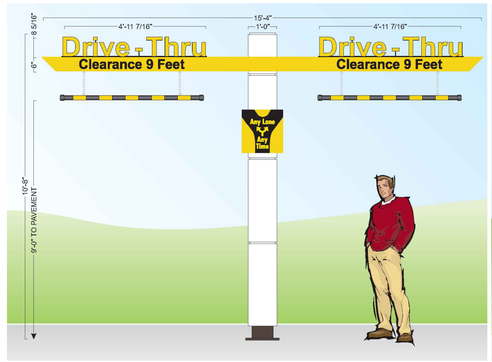


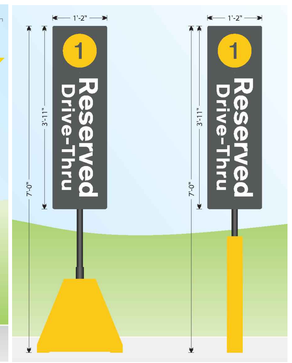
NOTES:

1. SIGNAGE DETAILS SHOWN HEREON ARE FOR INFORMATION ONLY. ACTUAL SIGNAGE WILL BE REVIEWED AND APPROVED UNDER A SEPARATE PERMIT. FINAL SIGNAGE DETAILS WILL REQUIRE ADDITIONAL ITEMS INCLUDING STONE COLUMNS OR WAINSCOT TO MATCH THE BUILDING.
2. NEW MENU AND OPO DETAILS WILL BE ISSUED BY MCDONALD'S PRIOR TO INSTALLATION AT THIS SITE. THE DETAILS WERE NOT AVAILABLE AT TIME OF THESE DRAWINGS.





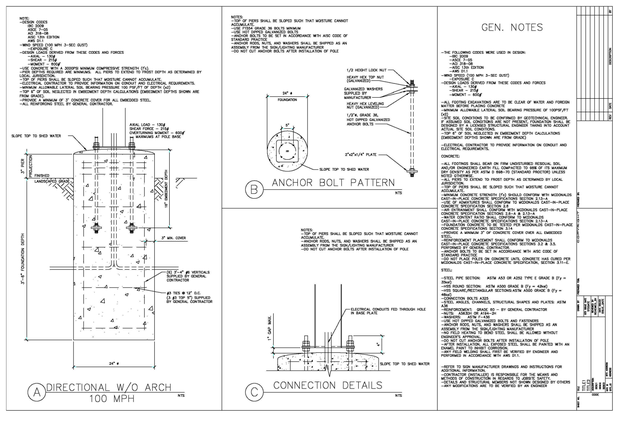


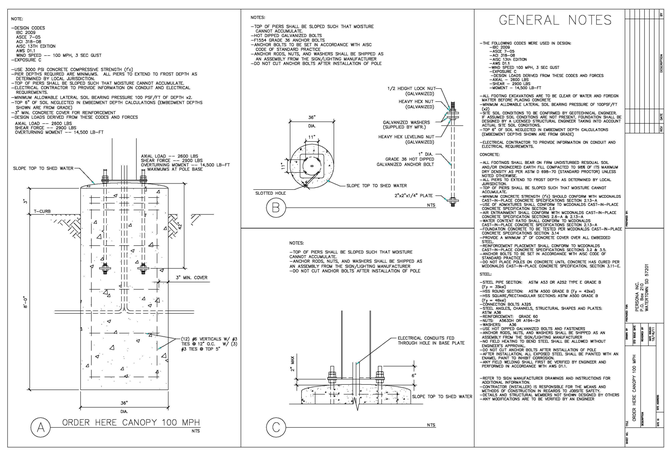


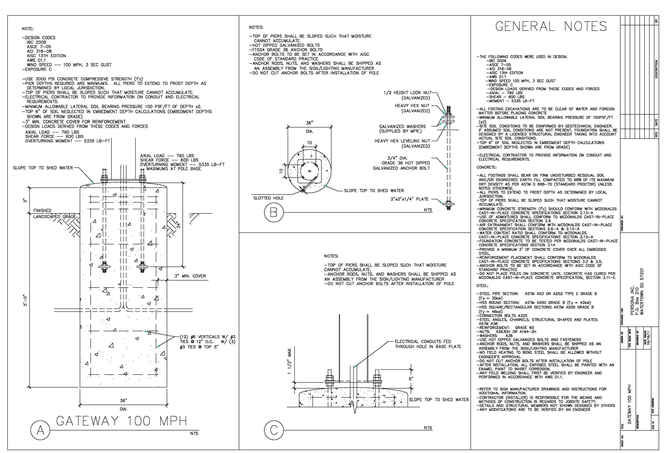


SIGNAGE

18







ODMB/DOUBLE GATEWAY / HEIGHT DETECTOR SIGN BASE DETAILS

19

NO.	DATE	REVISION DESCRIPTION

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REGIONAL DMKT. NO:

SCALE:	AS NOTED	McD RE:	BAKER
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DESIGNED BY:	RJP		
DRAWN BY:	RJP	FILE NAME:	CURRENT.DWG
CHECKED BY:	RJP	SLS JN:	24-0001-216

DRAWING TITLE:

CONSTRUCTION DETAILS

SHEET NO:

CD.3

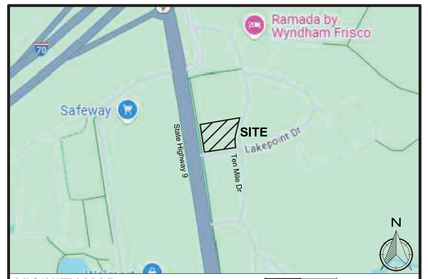
N

0 20 40

Scale: 1" = 20'

LEGEND

E	UNDERGROUND ELECTRICAL LINE		LIGHT POLE (DIRECTIONAL)
FO	UNDERGROUND FIBER-OPTIC LINE		MANHOLE (SANITARY)
G	UNDERGROUND GAS LINE	ST	MANHOLE (STORM)
SS	UNDERGROUND SANITARY SEWER LINE	0	NUMBER OF PARKING STALLS
STS	UNDERGROUND STORM SEWER LINE		SIGN
T	UNDERGROUND TELEPHONE LINE		STREET LIGHT
W	UNDERGROUND WATER LINE		WATER VALVE
	CONTOUR LINE		DECIDUOUS TREE
	EDGE OF ASPHALT PAVEMENT		
	BOLLARD		EVERGREEN TREE
C	CLEANOUT		
	COMMUNICATIONS PEDESTAL	BLDGHT	BUILDING HEIGHT (FF - HIGHEST POINT)
	COMMUNICATIONS VAULT	FF	FINISHED FLOOR
	ELECTRIC BOX	L/S	LANDSCAPING
	ELECTRIC METER	R.O.W.	RIGHT-OF-WAY
E	ELECTRIC PEDESTAL	REC. NO.	RECEPTION NUMBER
	ELECTRIC VAULT		SET 5/8"x24" REBAR & 1-1/4" YELLOW PLASTIC CAP STAMPED "ESC LS 38421"
	FIRE HYDRANT		FOUND MONUMENT AS DESCRIBED
	GAS METER		
	HOSE BIB (WATER SPIGOT)		
	IRRIGATION VALVE		
	LIGHT POLE (AREA)		



VICINITY MAP

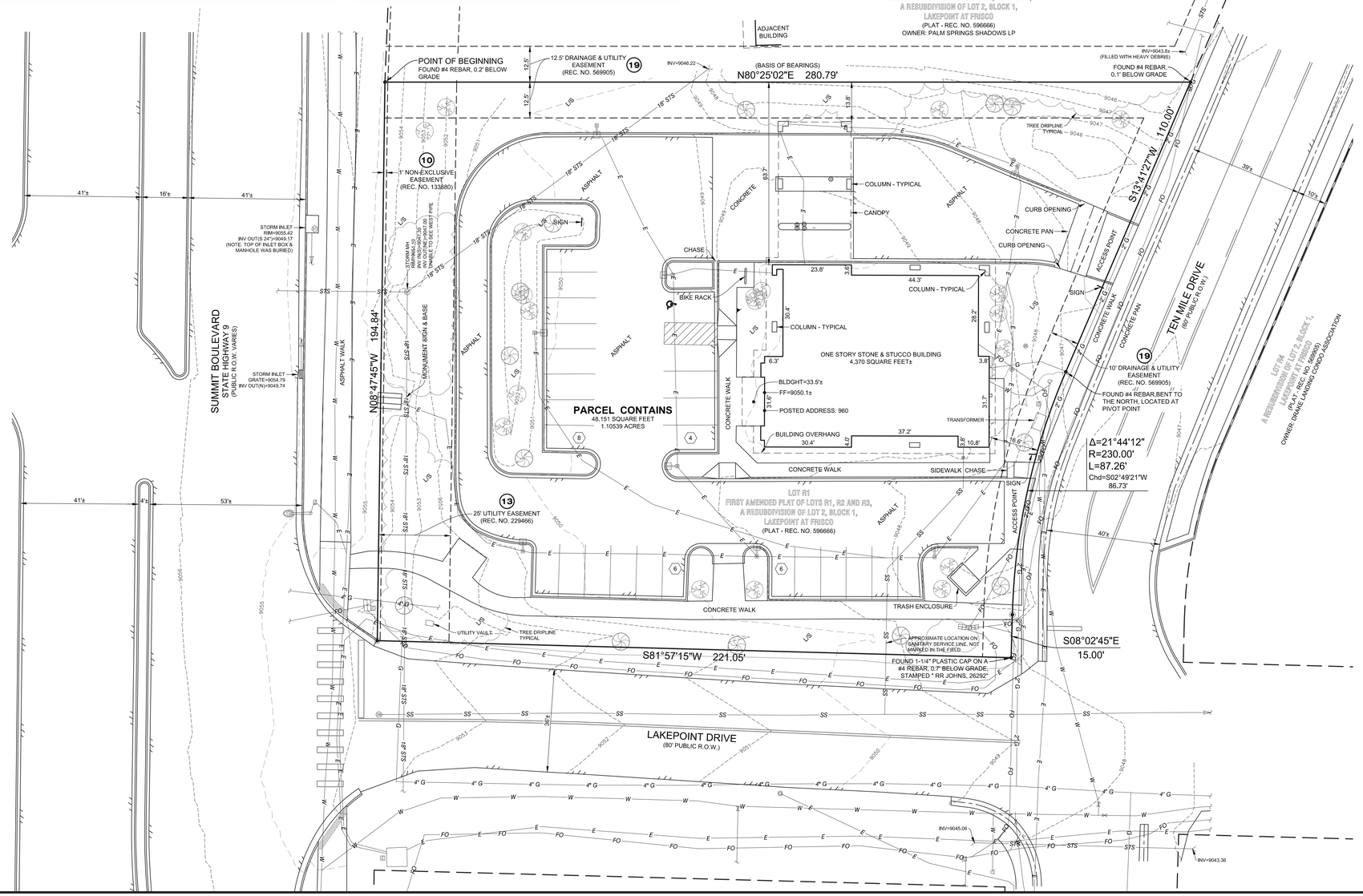
0 500 SCALE: 1" = 500'

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 MCDONALDS SITE INVESTIGATION REPORT DATED DECEMBER 23, 2024, PROJECT NUMBER 100876.	

GENERAL NOTES:

1. 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.
2. 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 GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
3. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE ENTITIES NAMED IN THE SURVEYOR'S CERTIFICATION HEREON. SAID CERTIFICATE DOES NOT EXTEND TO ANY UNNAMED PERSON OR ENTITY WITHOUT AN EXPRESS WRITTEN RECERTIFICATION BY THE SURVEYOR OF RECORD NAMING SAID PERSON OR ENTITY.
4. 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.
5. THE ADDRESS OF THE SURVEYED PROPERTY IS: 960 NORTH TEN MILE DRIVE AS POSTED ON THE BUILDING.
6. BY GRAPHIC PLOTTING ONLY THE SUBJECT PROPERTY IS SITUATED IN FLOOD ZONE "X" ACCORDING TO FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 08117C0353F WITH AN EFFECTIVE DATE OF NOVEMBER 16, 2018. NO OFFICE CALCULATIONS OR FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS INFORMATION.
7. 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, 0.25 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).
8. THE SUBJECT PROPERTY HAS DIRECT ACCESS TO TEN MILE DRIVE, A PUBLIC RIGHT-OF-WAY.
9. THERE ARE 24 REGULAR PARKING SPACES AND 1 HANDICAP PARKING SPACES ON THE SURVEYED PROPERTY.
10. 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.
11. ALL UNDERGROUND UTILITIES SHOULD BE FIELD VERIFIED PRIOR TO ANY DESIGN AND CONSTRUCTION.
12. 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 GUARANTY OR WARRANTY, EITHER EXPRESS 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 HEREIN 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 POTHOLING. 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.
13. THERE WAS NO VISIBLE EVIDENCE OF CEMETERIES, GRAVESITES OR BURIAL GROUNDS LOCATED ON THE SUBJECT PROPERTY.
14. ALL PARCELS SHOWN HEREON ARE CONTIGUOUS AND CONTAIN NO GORES, GAPS OR OVERLAPS ALONG THEIR COMMON BOUNDARIES.
15. 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.
16. ALL BOUNDARY MEASURED DIMENSIONS SHOWN MATCH THE RECORD DIMENSIONS.
17. NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS WERE OBSERVED AT THE TIME OF SURVEY (TABLE A, ITEM 16).
18. 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 78 WEST OF THE 6TH PRINCIPAL MERIDIAN, TOWN OF FRISCO, COUNTY OF SUMMIT, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING 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 N80°25'02"E ALONG THE NORTH LINE OF SAID LOT R1, A DISTANCE OF 280.79 FEET TO THE NORTHEAST CORNER OF SAID LOT R1;
THENCE ALONG THE EAST LINE OF SAID LOT R1 AND THE WEST RIGHT-OF-WAY (R.O.W.) LINE OF TEN MILE DRIVE THE FOLLOWING THREE (3) COURSES:

1. THENCE S13°41'27"W A DISTANCE OF 110.00 FEET TO A POINT OF CURVE;
2. 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;
3. 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 S81°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(5) 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; MCDONALDS 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/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(a), 7(a), 7(b.1), 7(c), 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 GUARANTY 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: justinc@engineeringservicecо.com

COLORADO LICENSED JUSTIN A. CONNER 38421 PROFESSIONAL LAND SURVEYOR 5/27/2025

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.

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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)

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(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. 226882.
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13 TERMS, CONDITIONS AND PROVISIONS OF PUBLIC SERVICE EASEMENT RECORDED SEPTEMBER 29, 1981 UNDER RECEPTION NO. 229466.
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20 (THIS ITEM WAS INTENTIONALLY DELETED)

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22 EXISTING LEASES AND TENANCIES.
(NOT ADDRESSED.)

23 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.)

24 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DECLARATION OF RESTRICTIVE USE COVENANT RECORDED _____ UNDER RECEPTION NO. _____.
(NOT ADDRESSED.)

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Revisions:

Description	Date

Prepared For:

McDonald's USA, LLC
4643 South Ulster Street, Suite 1300
Denver, Colorado 80237

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, T.5S., 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.: 981, 982	Scale: 1" = 20'
Sheet No.: 1 OF 1	

File Name: N:\Projects\McDonald's Corporation\2025\Frisco-960 North Ten Mile Dr. #10062\CAD\Survey\960 N Ten Mile Dr Frisco - Survey.dwg | Plot Date: 5/27/2025 | Company: ESC | User: John Perry

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:

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2876 Amyvale Court
Castle Rock, CO 80109

(PTE Ref # 25001)



02/24/2025

February 24, 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 6-27
7 Conclusions & Recommendations 7-28
8 References 8-31
Appendix 32

Appendix

- 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 Roadway Improvements
- Proposed Drive Through Queue Capacity
- Driveway Spacing
- Driveway Lines of Sight
- CDOT Access Permit (Draft)
- Traffic Analysis Reports

List of Figures

Figure 1-a: Vicinity Map 1-1
Figure 1-b: Proposed Project Site Plan (February 7, 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] 2
Figure A 2 Estimated Traffic Volumes "CDOT Figure 4-1 No-Build Opening Year" [3] 3
Figure A 3 Forecasted 2045 Traffic Volumes "CDOT Figure 5-11 Horizon Year Alternative 1" [3] 3
Figure A 4 Aug 2023 Traffic Volumes CDOT Route 009C, Sta 100513 (Near I-70) [4] 4
Figure A 5 Snapshot of Video used for Westbound RTOR Observations (from SE Corner) 8
Figure A 6 ITE 934 AM Pass-By Rates [5] 10
Figure A 7 ITE 934 PM Pass-By Rates [5] 10
Figure A 8 Annual Traffic Volume Totals 2015-2024 - CDOT Route 009C, Sta 240 (S/O Tiger Rd) [4] . 11
Figure A 9 Proposed 2028 Background Roadway Improvements [3] 13
Figure A 10 Study Location # 1 - Proposed Southbound Left Turn Movement Re-Routing (2028) [3] 14
Figure A 11 Proposed Project Drive-Through Layout 15
Figure A 12 Existing Driveway Spacing 16
Figure A 13 Proposed Sight Triangles 18
Figure A 14 Departure Sight Lines– Motorist's Perspective Looking Left/North 19
Figure A 15 Departure Sight Lines – Motorist's Perspective Looking Right/South to Lake Point Dr ... 19

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 95th Percentile Queue Lengths and Queue Ratios – 2026 5-23
Table 5-C: Estimated Maximum 95th Percentile Queue Lengths and Queue Ratios – 2046.....5-24
Table 7-A: Summary of Recommended Improvement Measures.....7-28
Table 7-B: Key Issues Identified by the Agency and Addressed in this TIS 7-29

Appendix

Table A 1 Summary of Frisco Gateway Recommendation (Trail Master Plan – 2023 Update) [1].....1
Table A 2 Aug 2023 Traffic Volumes CDOT Route 009C, Sta100513 (S/O I-70, Frisco) [4].....4
Table A 3 Historic Monthly Traffic Volumes CDOT Route 009C, Sta240 (S/O Tiger Rd), 2006-2024 [4]5
Table A-4: LOS Meaning for Signalized and Unsignalized Intersections [9].....7
Table A 5 Summary of RTOR Observations.....8
Table A 6 Summary of ITE Land Use Descriptions [5].....9
Table A 7 Summary of Primary Site-Generated Trips.....9
Table A 8 Estimated Traffic Volume Seasonal Adjustment Factor (Jan 2024 to Oct 2024)*.....11
Table A-9: Estimated Traffic Volume Growth Factors [4] 12
Table A-10 Trip Generation Summary – Former Drive-Thru Bank Use. 20
Table A 11 Project Notes - Vistro Traffic Volume Input 22
Table A 12 Vistro Traffic Volume Input Parameters 23
Table A 13 Vistro Traffic Analysis Reports – Heading #s Numbers by Analysis Scenario.....24

Revision History

Submittal Date	Notes
February 24, 2025	Draft – for Town Review

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, CO.

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

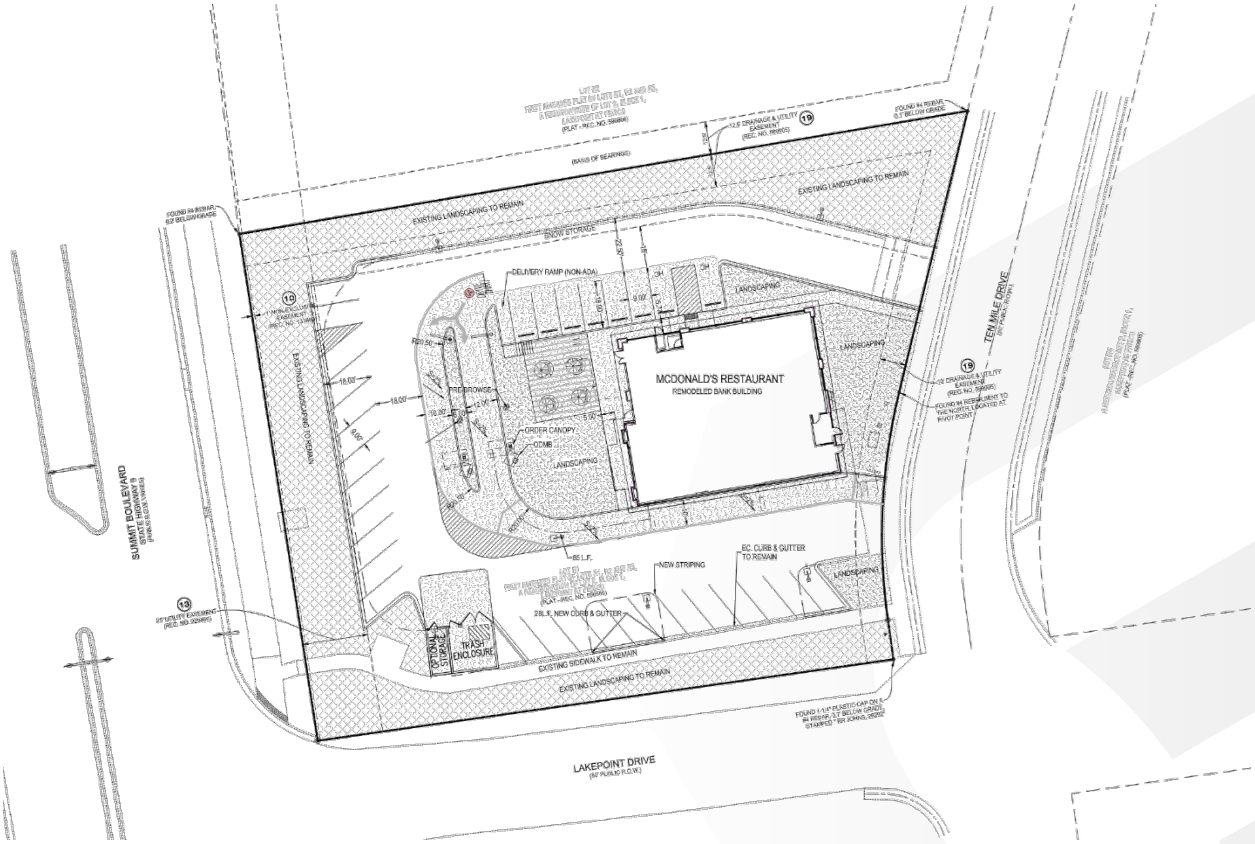
Figure 1-a: Vicinity Map



Project Scale. The gross floor area of the proposed restaurant is 4,364 square feet (SF). The proposed site plan is illustrated in ***Figure 1-b***.

Project Timing. The proposed Project opening year is 2026.

Figure 1-b: Proposed Project Site Plan (February 7, 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 proposed.

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.).

Refer to *5 Analysis of Proposed Conditions* for information about and analysis of 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 re-used. The site plan limits pedestrian access from adjacent sidewalks to specific locations to focus pedestrian / vehicle activity at specific locations 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 in which it provides a visible location for customers to securely park their bicycles.

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 intersections near the site are included for analysis in this TIS (Study Locations). The Study Locations are summarized in ***Table 1-A***.
- **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
AM	Weekday Morning Peak Period	7:00 AM – 9:00 AM	October
PM	Weekday Afternoon Peak Period	4:00 PM – 6:00 PM	October
Sat	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, first 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 have a currently 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

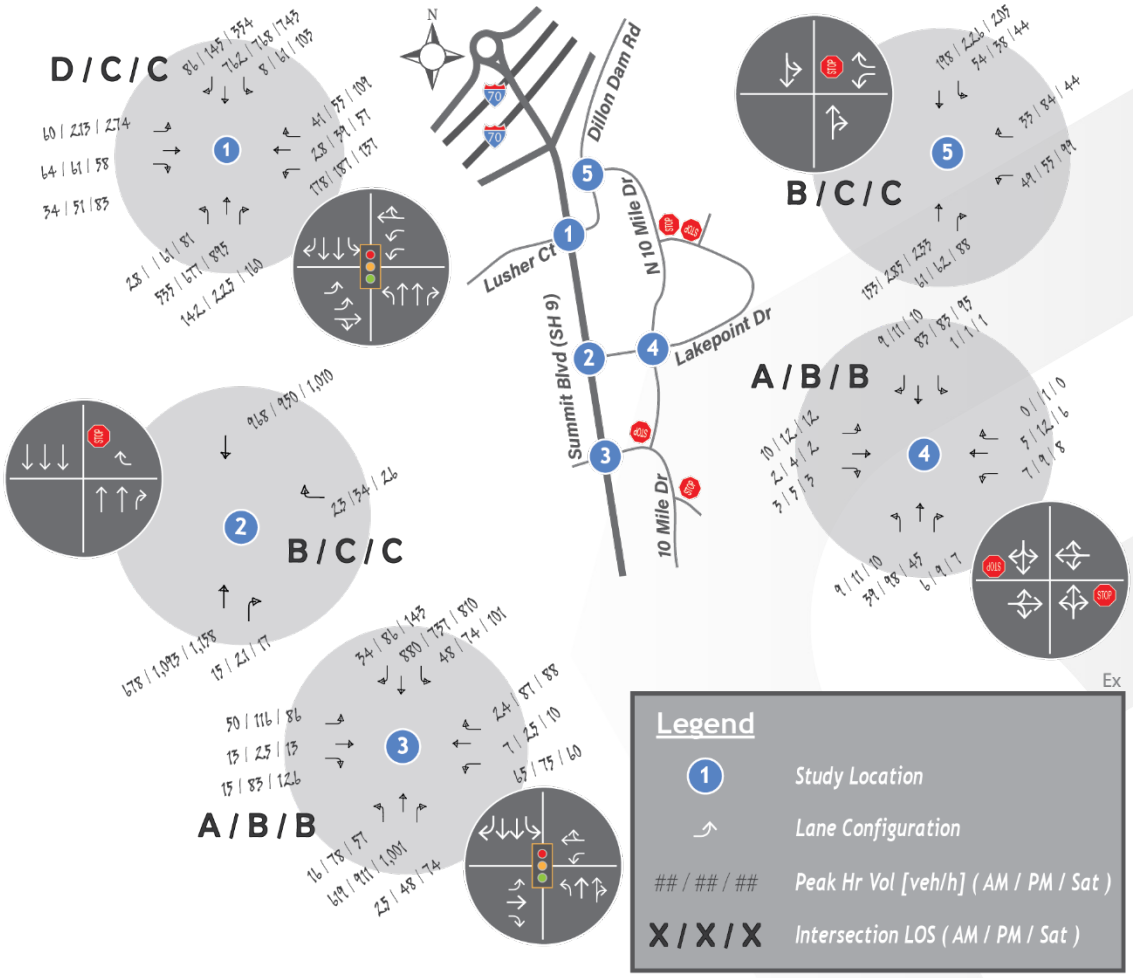


Table 2-A: 2025 Existing Intersection Delay and Level of Service (LOS) Summary

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

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 95th 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
	WBL	240
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
	WBL*	240
	WBR*	240
4 - Lakepoint Dr & North Ten Mile Dr	NB*	205
	SB*	35
5 - Dillon Dam Rd & North Ten Mile Dr	WBL*	150
	WBR	100

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

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

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%)	**42 (25%)**
		NBR	72 (45%)	**142 (89%)**	99 (62%)
		SBL	39 (22%)	54 (30%)	**56 (31%)**
		SBR	196 (60%)	233 (72%)	**240 (74%)**
		WBL	138 (58%)	**144 (60%)**	106 (44%)
		EBL	**410 (234%)**	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*	**33 (23%)**	*< 1 veh*
		SBL	*< 1 veh*	**59 (20%)**	30 (10%)
		SBR	*< 1 veh*	**113 (21%)**	56 (10%)
		WBL	**91 (38%)**	80 (33%)	82 (34%)
		EBL	75 (47%)	**174 (109%)**	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%)	**34 (34%)**
		WBR	*< 1 veh*	29 (29%)	**34 (34%)**

Notes:

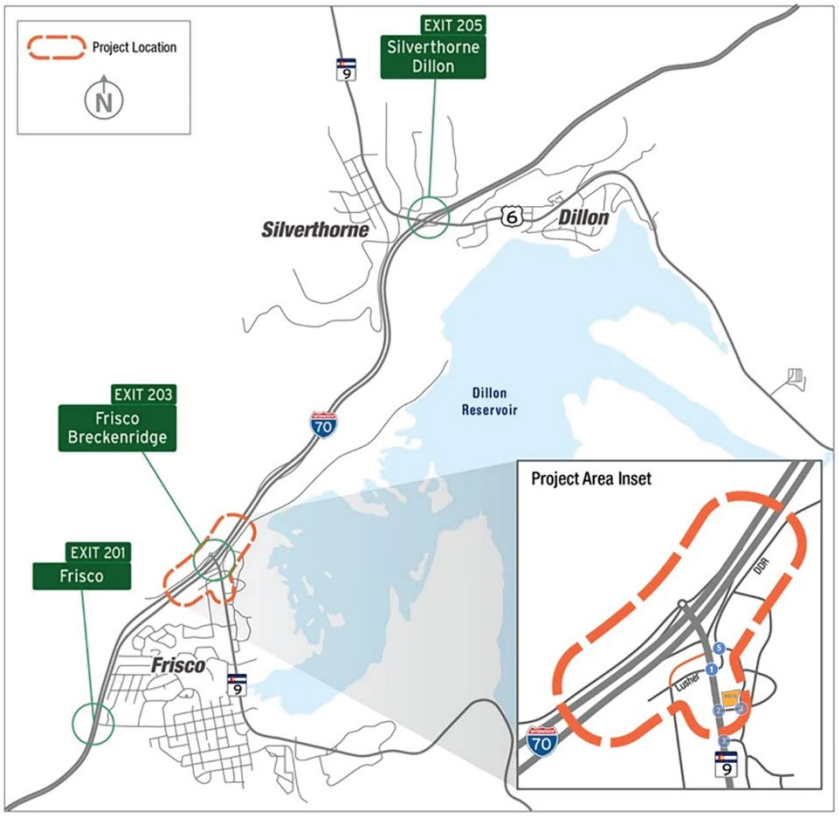
- XXX (YY%) = 95th Percentile Queue [ft/ln] (Queue Ratio)
- Bold indicates Maximum Queue for the Study Periods

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.

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



- 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.

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 (11th 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 results and the net Project trips analyzed in this TIS.

Table 3-A: Trip Generation Summary

		AM Trips [veh/h]				PM Trips [veh/h]				Sat Trips [veh/h]			
ITE Code	Qty	Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
934 [1]	4.364	44.61	99	96	195	33.03	75	69	144	55.25	123	118	241
Pass-By Rate [2]			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*
   - Independent Variable: 1000 Sq. Ft. GFA
   - AM: 51% In, 49% Out
   - PM: 52% In, 48% Out
   - Sat: 51% In, 49% Out
   - 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.

3.2 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)

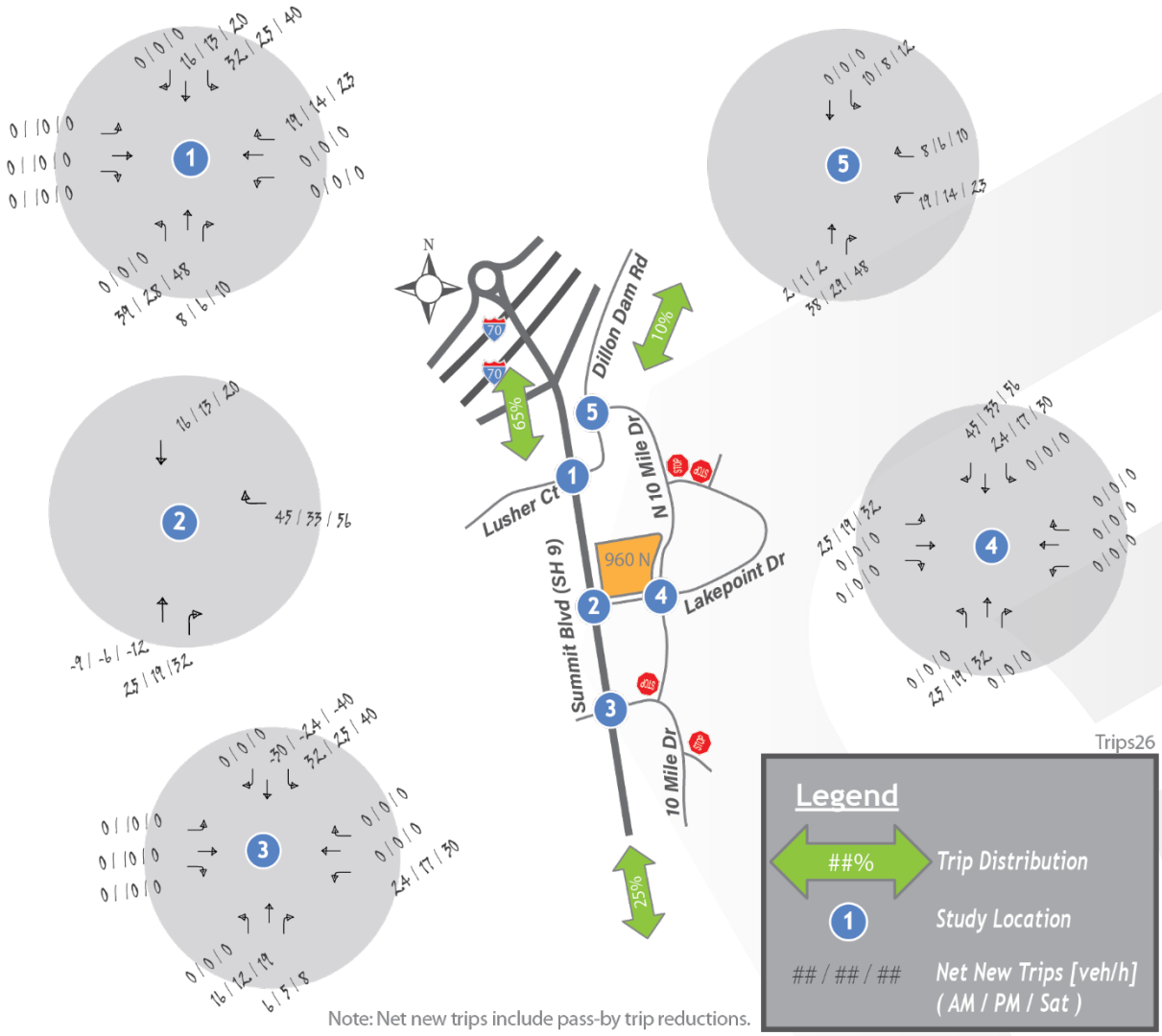
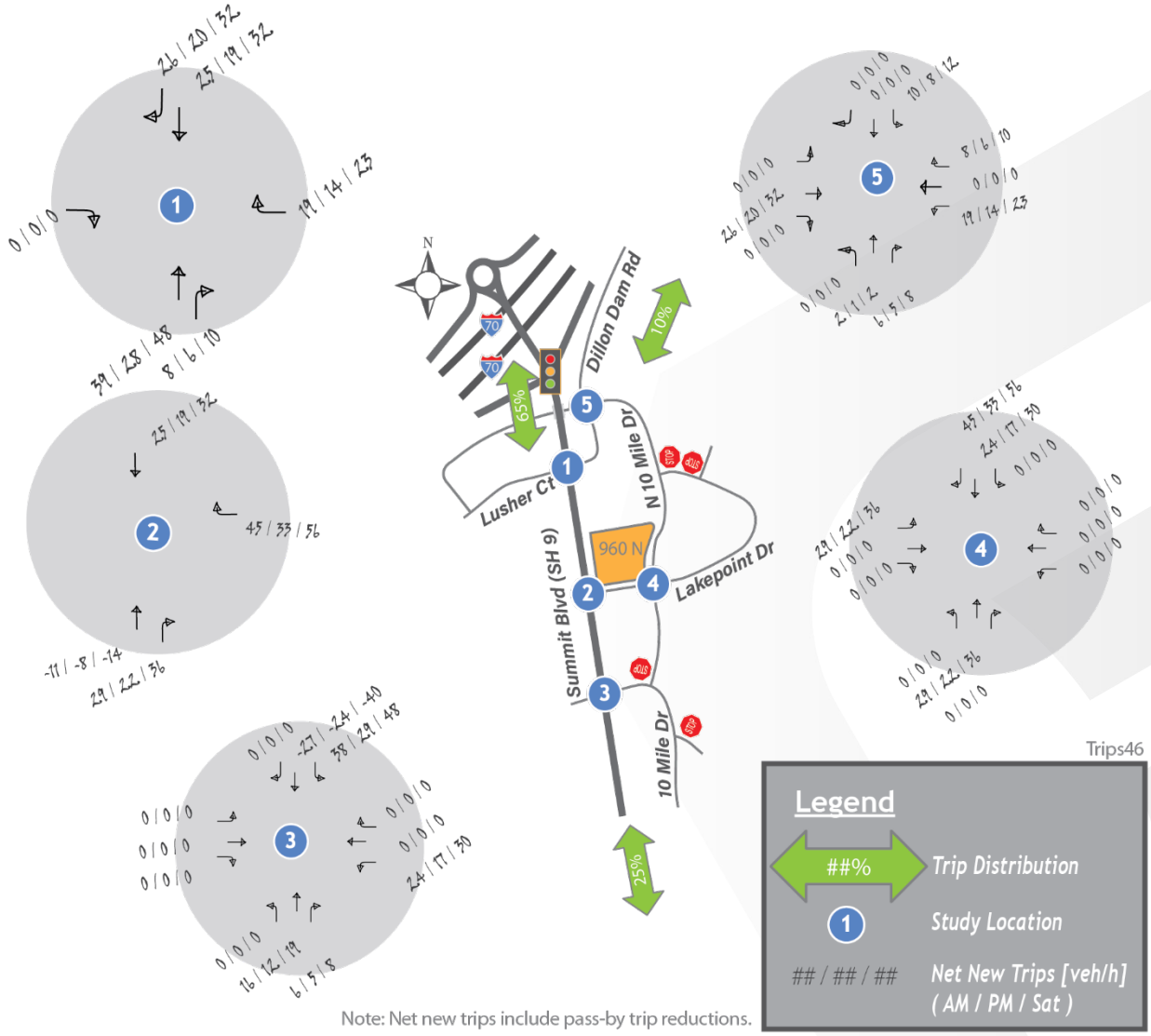


Figure 3-b: Estimated Net New Site-Generated Trip Distribution and Assignment (2046)



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

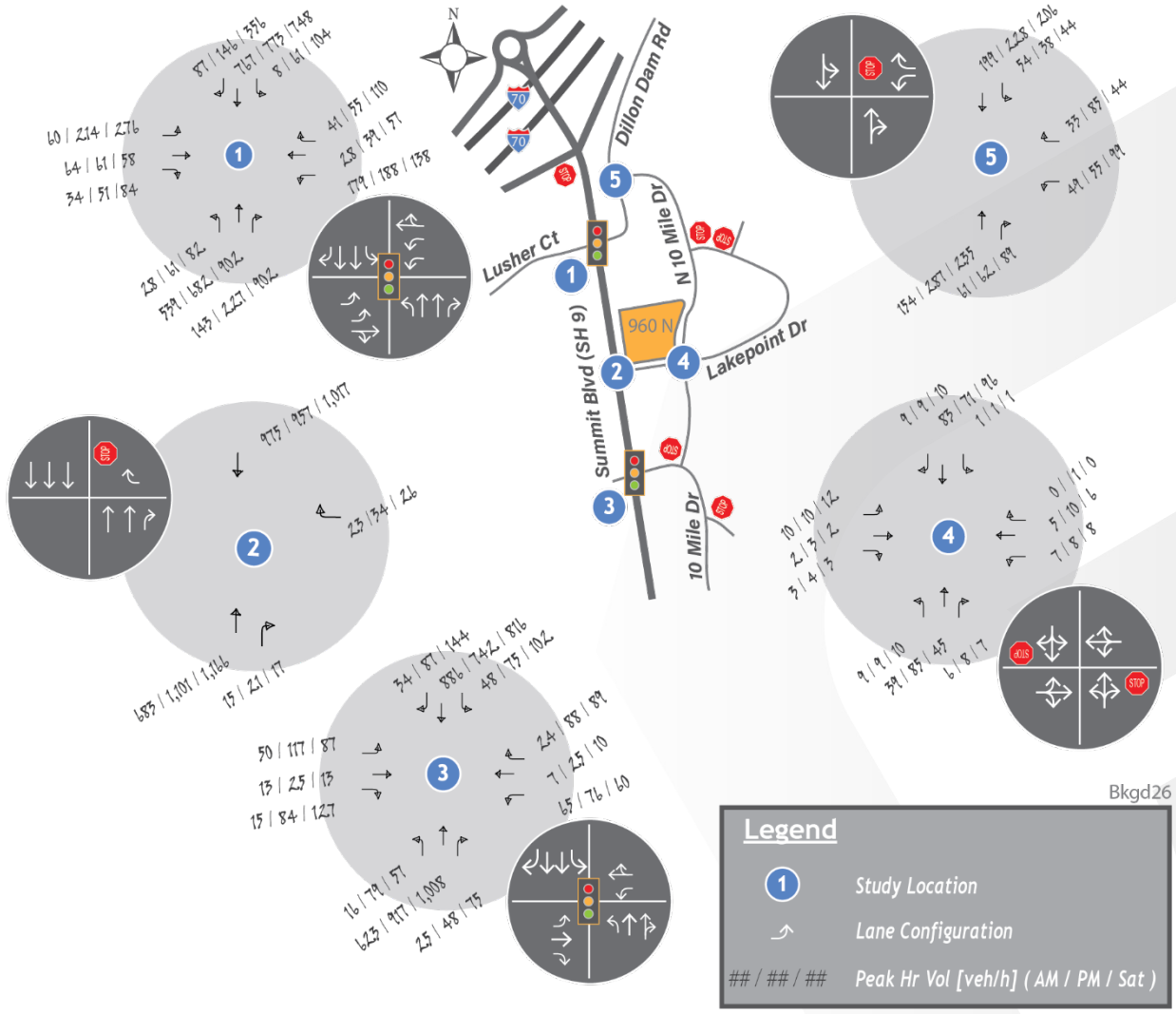
This section addresses the development of estimated Background Traffic volumes, referring to the traffic volumes that would be present without the Project (Project's no-build scenario). Background Traffic conditions, including traffic volumes and intersection lane configurations expected in the Short-Term 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 treason. 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.

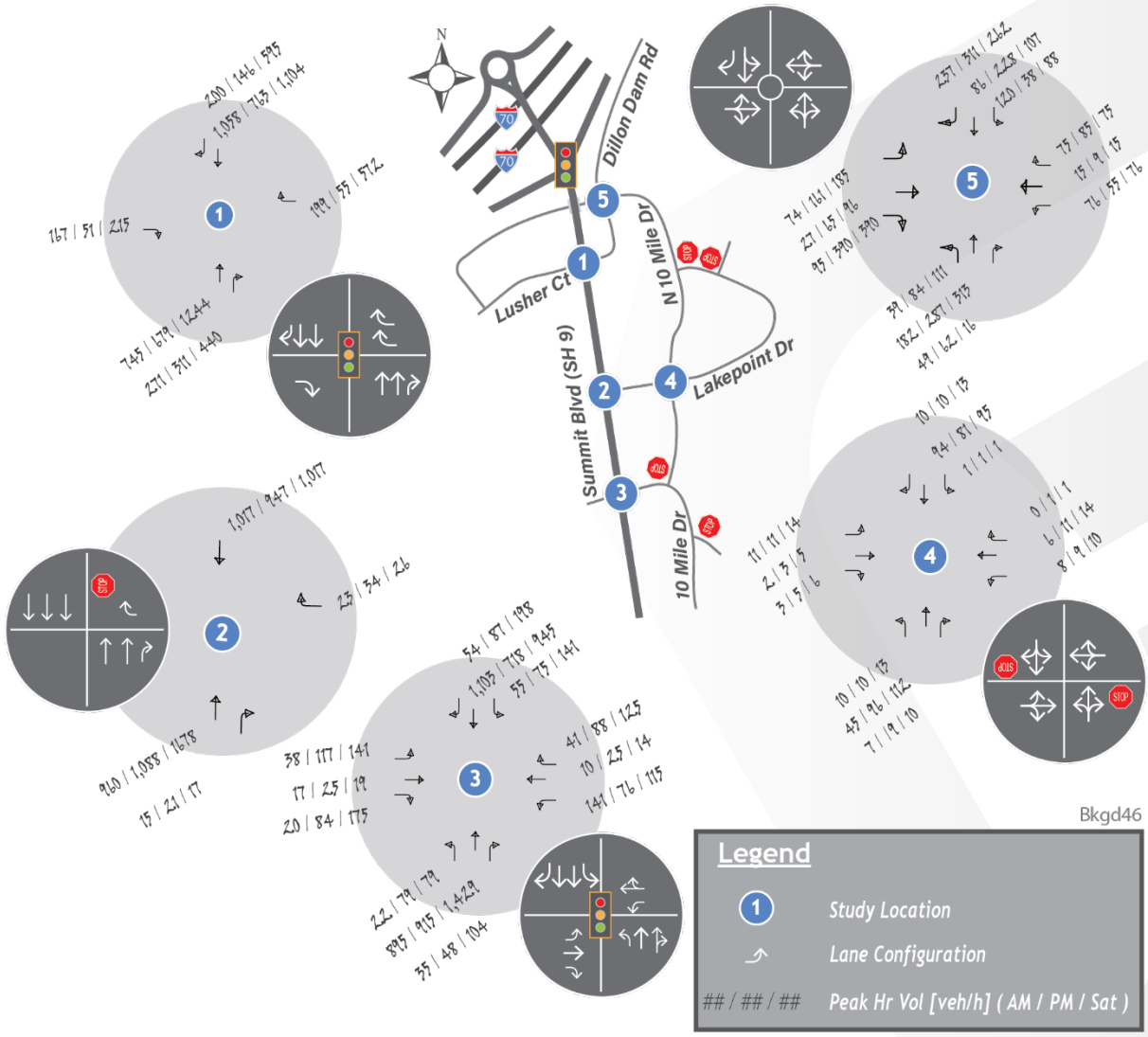
Figure 4-a: Short-Term Background Traffic Conditions (2026)



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)



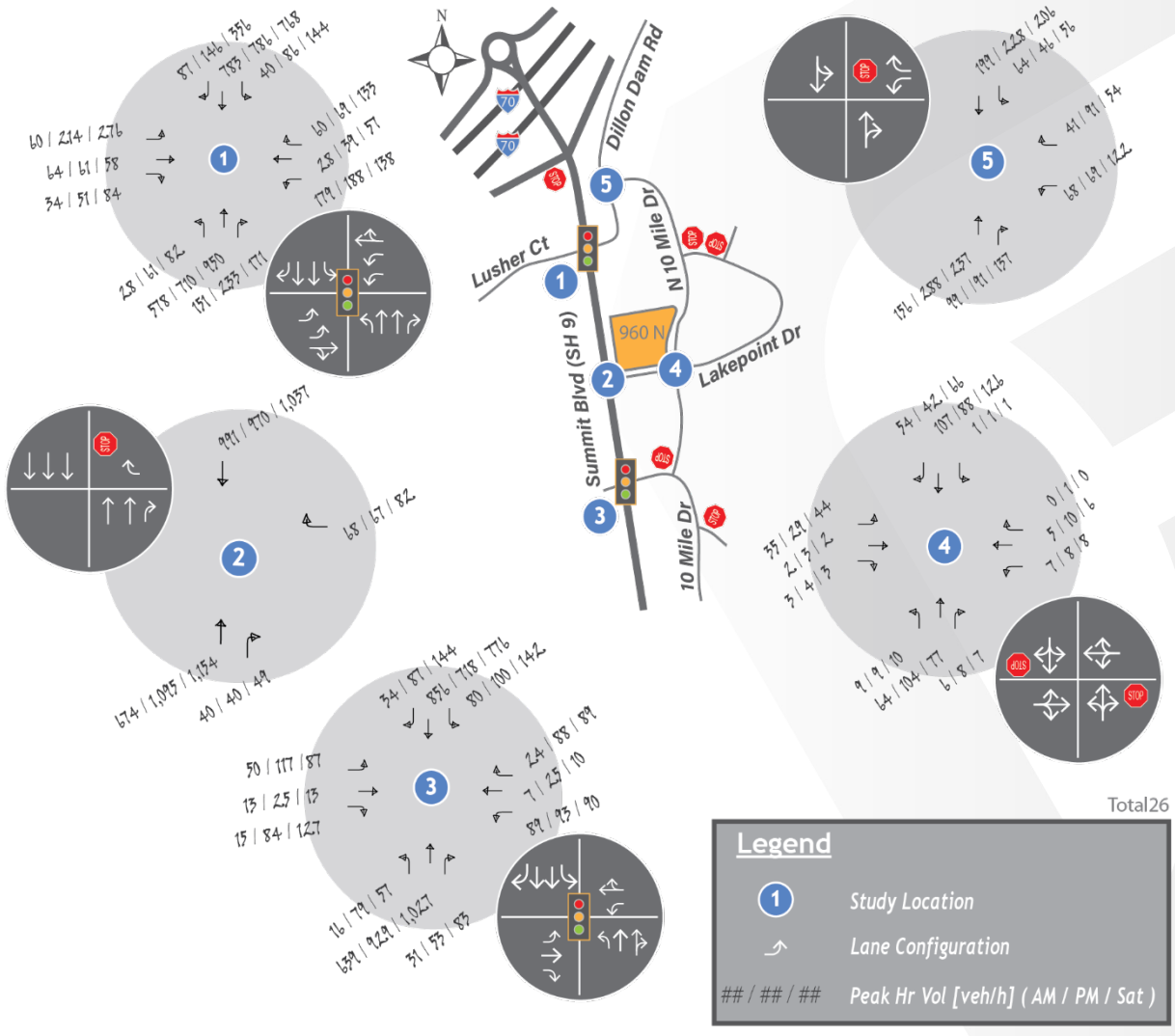
Long-Term Background Conditions – Estimated Traffic Volumes. The study performed by CDOT in November 2023 presents forecasted 2045 traffic volume data for three Study Locations, *#1 - Summit Blvd (SH 9) & Dillon Dam Rd / Lusher Ct*, *#3 - Summit Blvd (SH 9) & Ten Mile Dr (South)*, and *#5 - Dillon Dam 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.

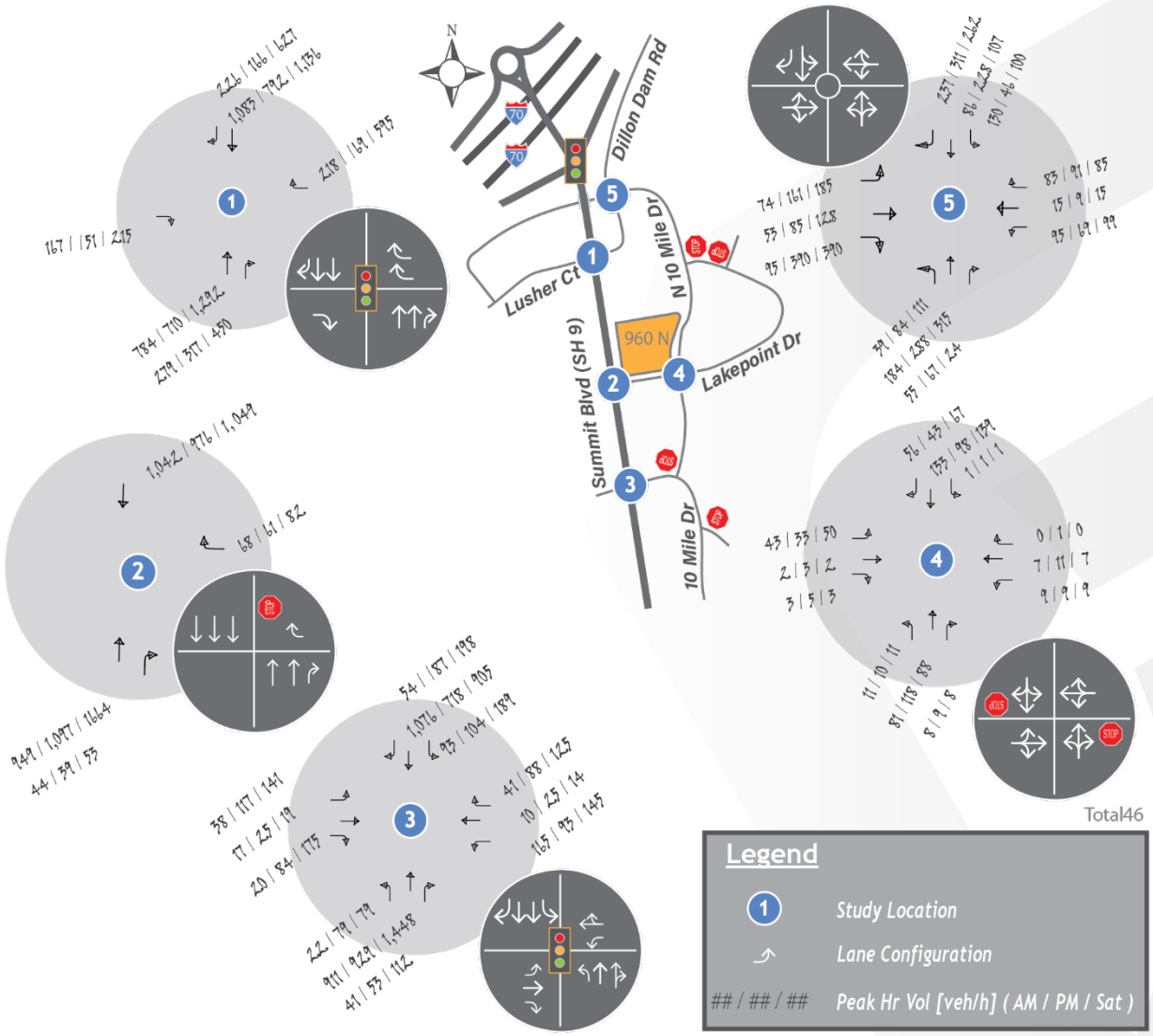
Figure 4-c: Short-Term Total Traffic Conditions (2026)



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
1 - Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct	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
2 - Summit Blvd (SH-9) & Lakepoint Dr	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
3 - Summit Blvd (SH-9) & Ten Mile Dr	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
4 - Lakepoint Dr & North Ten Mile Dr	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
5 - Dillon Dam Rd & North Ten Mile Dr	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	-	-	-	-	-	-

Figure 5-a: Background Traffic LOS

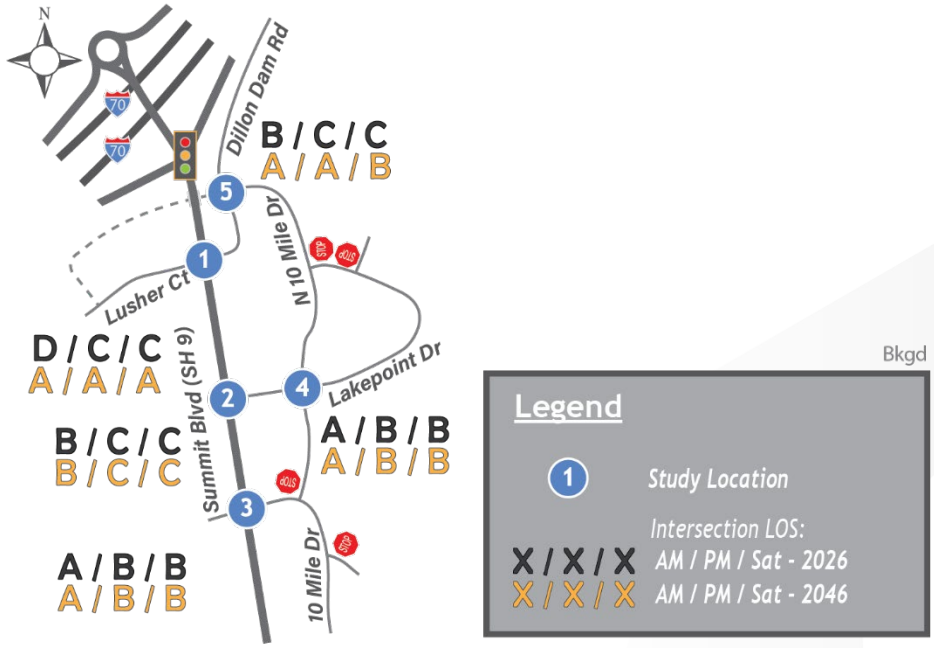
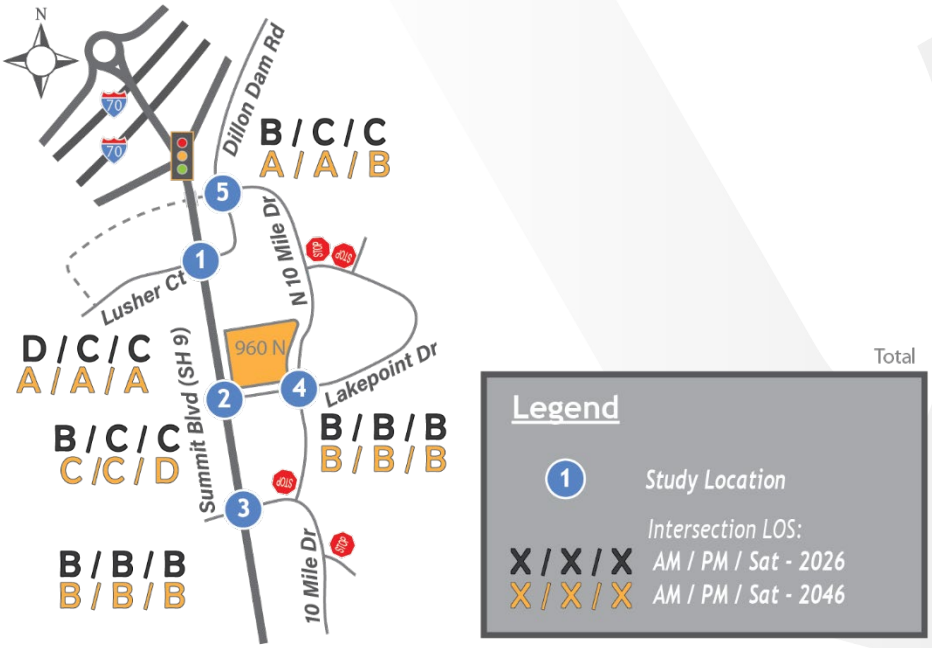


Figure 5-b: Total Traffic LOS



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 95th Percentile Queue Lengths and Queue Ratios – 2026

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

Notes:

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

Table 5-C: Estimated Maximum 95th Percentile Queue Lengths and Queue Ratios – 2046

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

Note:

- XXX (YY%) = Maximum 95th 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 3rd window

400 feet total storage capacity, or 20 vehicles

The Project's proposed drive-thru provides queue storage of 400 feet or 20 vehicles exceeds the Agency's requirement to support 15 queued vehicles.

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 [7]. 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.

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
D	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 [8] 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 [8] 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 4,364 square-foot restaurant with vehicular access along North Ten Mile Rd at two existing driveways. The proposed site will use one-way circulation due to the re-use of the existing building and other site conditions. (Refer *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
Pre-App Comment: CDOT Access	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.	*5 Analysis of Proposed Conditions*
Pre-App Comment: Existing Driveway	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.	*5 Analysis of Proposed Conditions*

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 (11th 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 6-27 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).

8 References

[1] Town of Frisco, "Trails Master Plan," 2017 (updated 2023). [Online]. Available: https://www.friscogov.com/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.

[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] Town of Frisco, "Minimum Street Design and Access Criteria," 12 March 2019. [Online]. Available: https://www.friscogov.com/wp-content/uploads/2024/03/155-1.-Street-Design-and-Access-2019.pdf. [Accessed Jan 2025].

[8] 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. [Accessed Nov 2024].

[9] 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.

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

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

Appendix

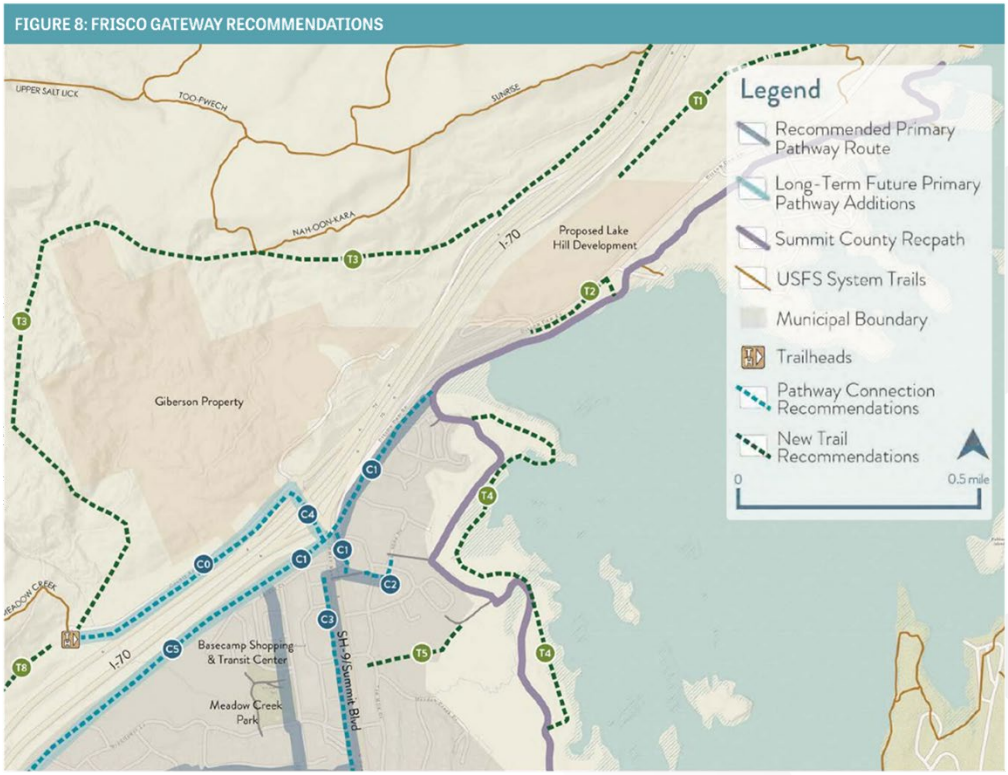
FRISCO TRAILS MASTER PLAN

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
New Trails (T5)	*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.*
Frisco Pathway Connection (C1)	*Work with CDOT to establish designated bicycle and pedestrian infrastructure to improve the connection between the Frisco Transit Center & 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.*
Frisco Pathway Connection (C2)	*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.*
Frisco Pathway Connection (C3)	*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.*

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]

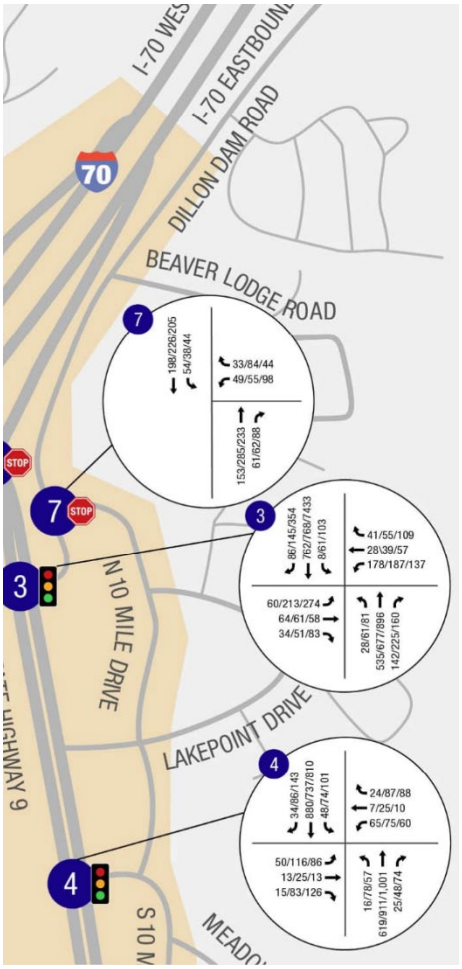
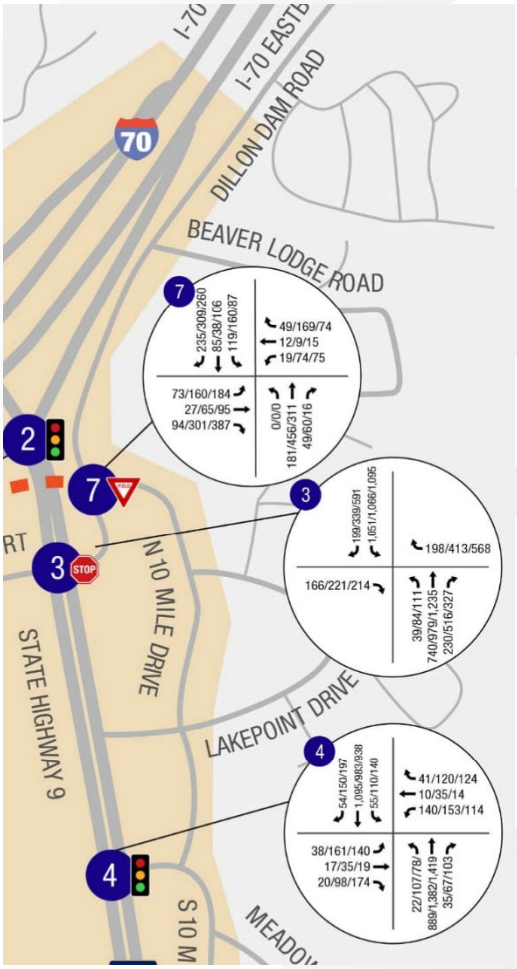


Figure A 3 Forecasted 2045 Traffic Volumes "CDOT Figure 5-11 Horizon Year Alternative 1" [3]

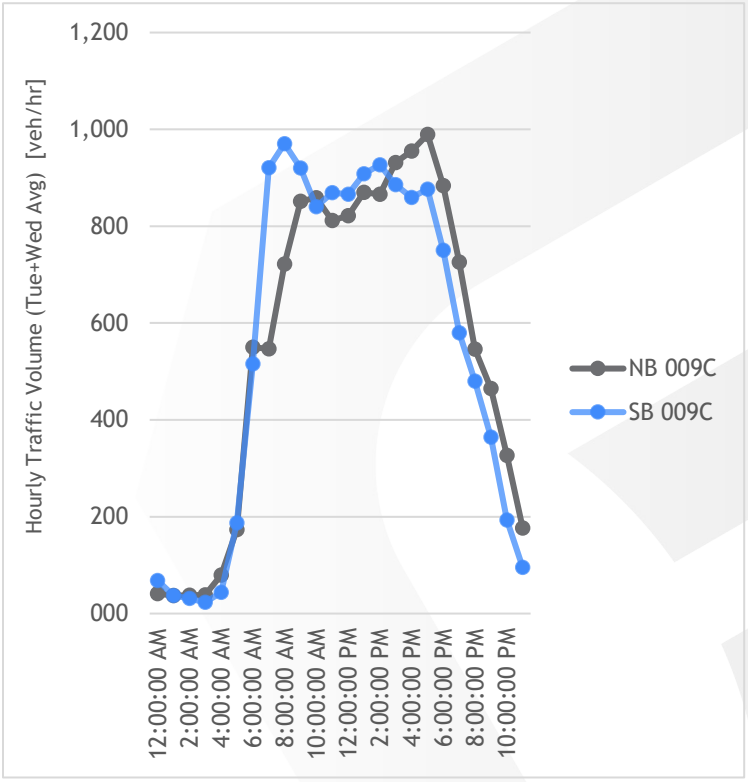


Bi-Directional Volume Data. ***Table A 2*** and ***Figure A 4*** summarize the average hourly volumes from 48 hours of directional traffic volume data collected by CDOT along Summit Blvd August 23-24, 2023.

Table A 2 Aug 2023 Traffic Volumes CDOT Route 009C, Sta100513 (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
Grand Total	**13,306**	**13,213**
		26,519

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***.

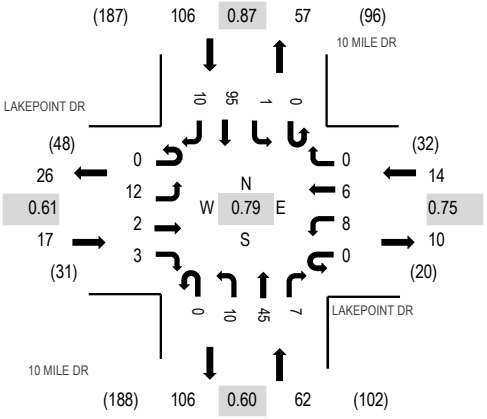
Table A 3 Historic Monthly Traffic Volumes
CDOT Route 009C, Sta240 (S/O Tiger Rd), 2006-2024 [4]

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

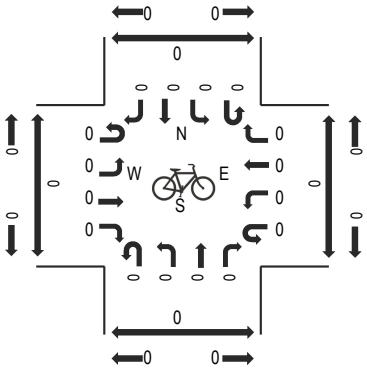
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

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

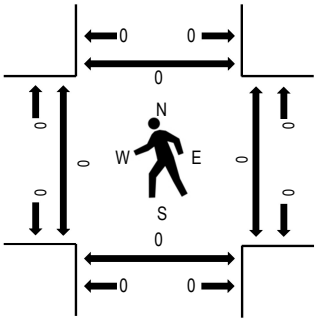
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

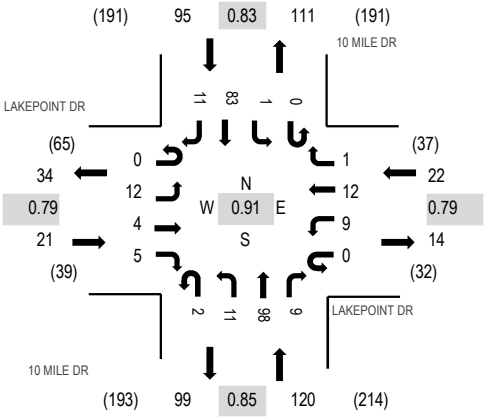
Traffic Counts - Motorized Vehicles

Interval Start Time	LAKEPOINT DR Eastbound				LAKEPOINT DR Westbound				10 MILE DR Northbound				10 MILE DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		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

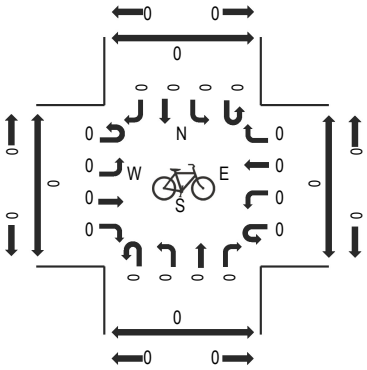
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 10 MILE DR & LAKEPOINT DR PM
Date: Thursday, January 30, 2025
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

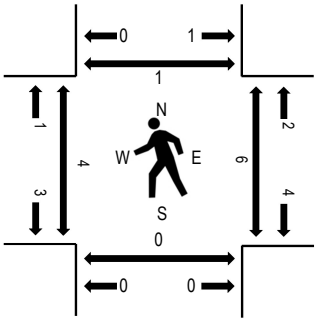
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

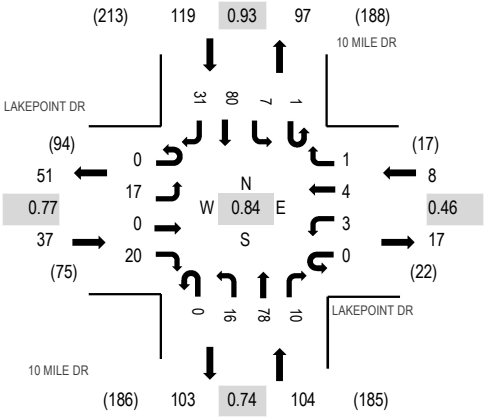
Traffic Counts - Motorized Vehicles

Interval Start Time	LAKEPOINT DR Eastbound				LAKEPOINT DR Westbound				10 MILE DR Northbound				10 MILE DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		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

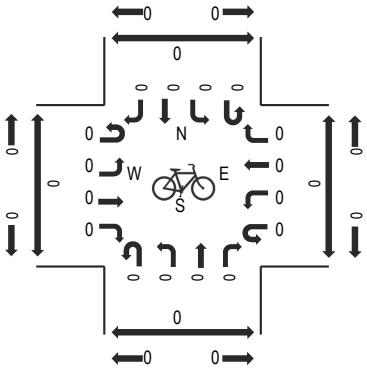
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

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

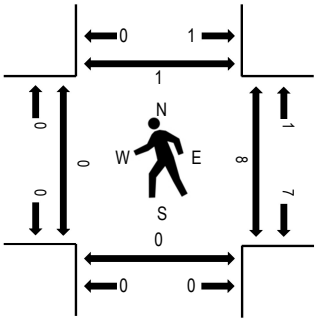
Peak Hour - Motorized Vehicles



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					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		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

Source: Lake Hill Development TIA (Sep 2022)
RE: 2025 McDonald's TIS Study Location # 1 - PM

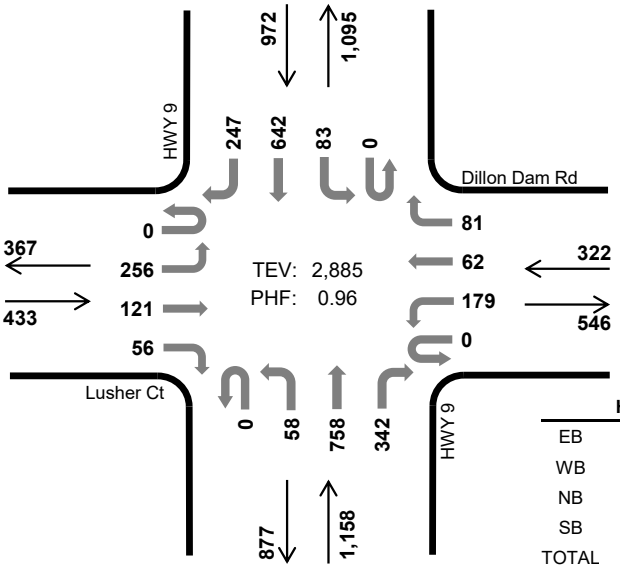
HWY 9
Lusher Ct

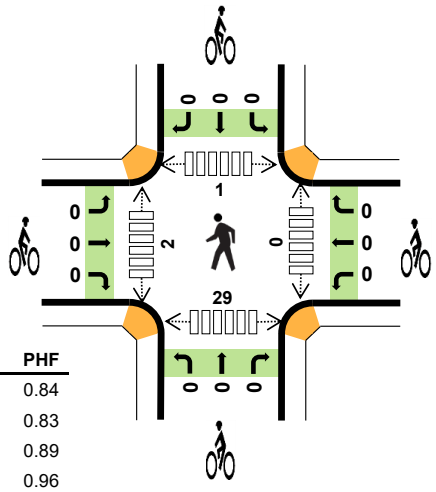
PM Tue, July 2022

Date: 07/12/2022

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	3.5%	0.84
WB	2.2%	0.83
NB	3.1%	0.89
SB	3.7%	0.96
TOTAL	3.3%	0.96

Two-Hour Count Summaries

Interval Start		Lusher Ct Eastbound				Dillon Dam Rd Westbound				HWY 9 Northbound				HWY 9 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	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***

Two-Hour Count Summaries - Heavy Vehicles

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**

Two-Hour Count Summaries - Bikes

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
4:15 PM	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
4:45 PM	**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
5:15 PM	**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
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Count Total	0	0	0	0	1	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**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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 7th 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 [9]

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 . These use of these and other traffic volume reductions described in the HCS are 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 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%*
Total								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
934	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 illustrated in ***Figure 3-a*** and ***Figure 3-b*** above because Pass-By trips are not included.

Table A 7 Summary of Primary Site-Generated Trips

		2026 TOTAL			2046 TOTAL		
Study Location	Movement	AM	PM	SAT	AM	PM	SAT
1 - Summit Blvd (SH-9) & Dillon Dam Rd / Lusher Ct	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
2 - Summit Blvd (SH-9) & Lakepoint Dr	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
3 - Summit Blvd (SH-9) & Ten Mile Dr	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
4 - Lakepoint Dr & North Ten Mile Dr	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
5 - Dillon Dam Rd & North Ten Mile Dr	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*.

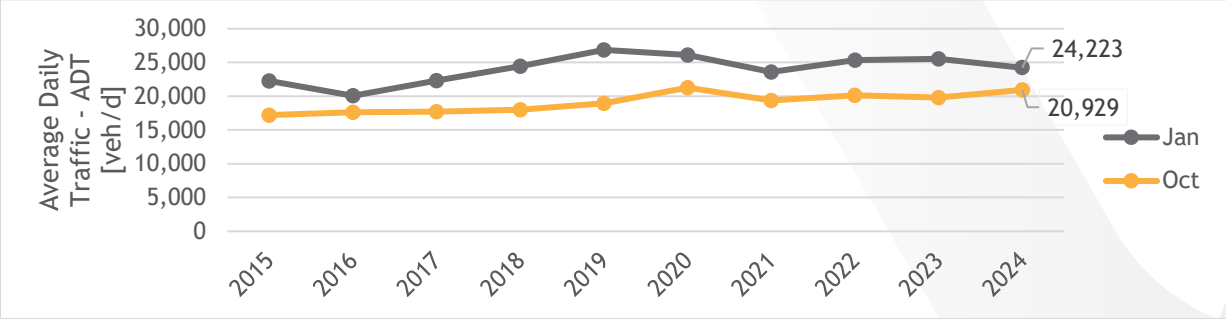
Seasonal Adjustments. As described in *2 Existing and Planned Conditions* seasonal adjustment factors were applied to AM & PM data collected for this TIS in January 2025. The majority of TMC data used for the AM and PM study periods used in this TIS was collected by others in October [3]. The seasonal 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*	**0.86**

*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 Tear 2)
2025	2026	1.007
2045	2046	1.007
2025	2046	1.146

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.*

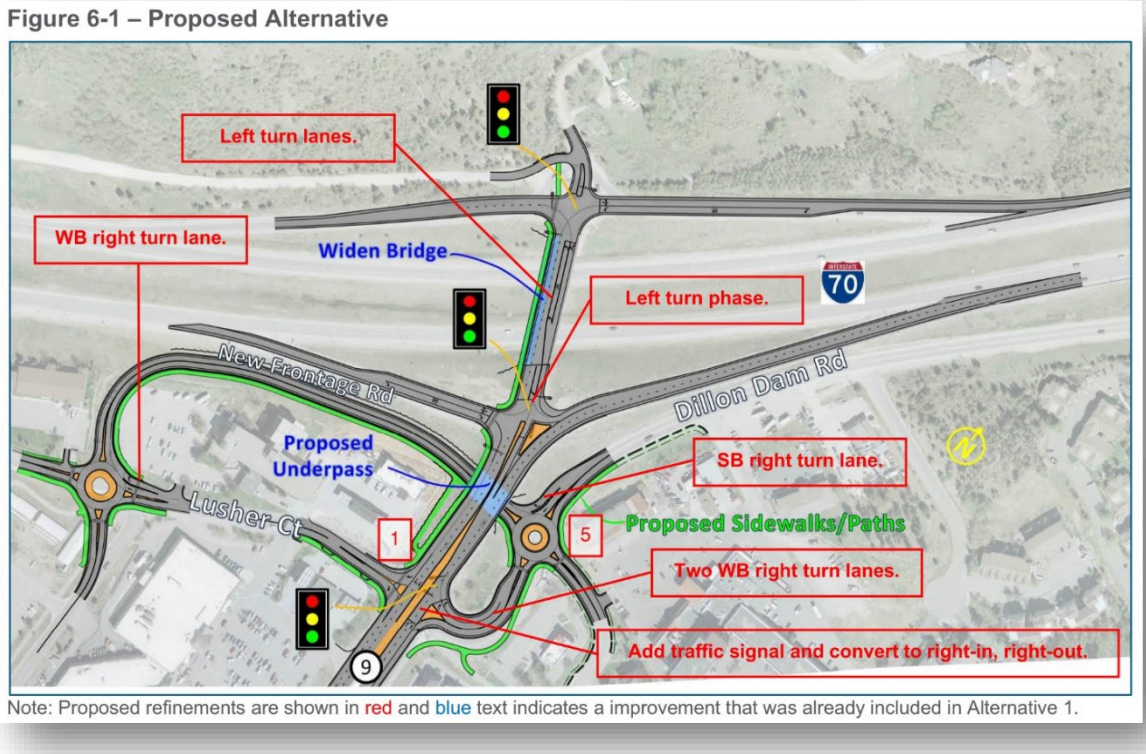
BACKGROUND ROADWAY IMPROVEMENTS (CDOT)

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.

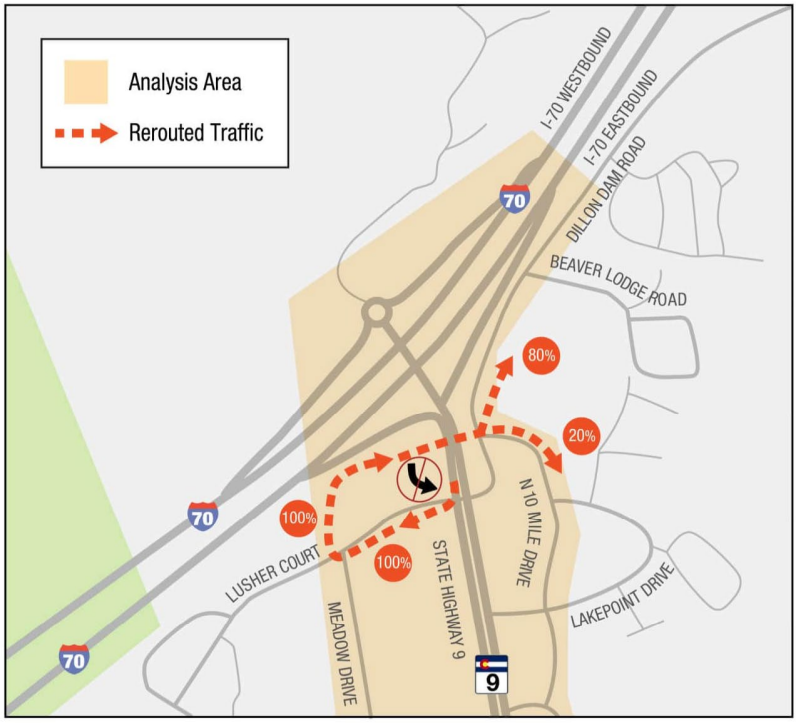
Figure A 9 Proposed 2028 Background Roadway Improvements [3]



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.

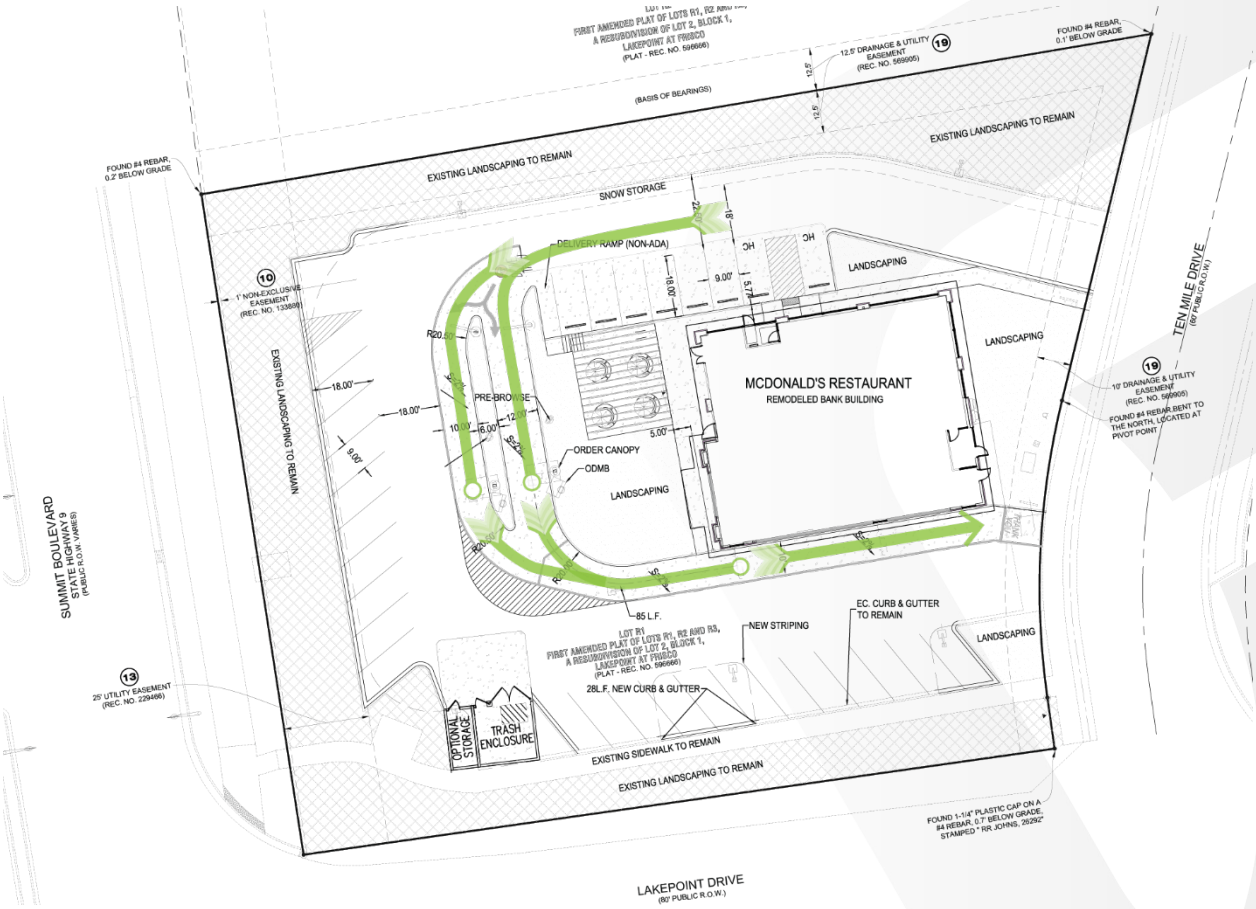
The rerouting assumptions for this movement are shown in Figure 5-4. All SB left turns are assumed to make a right turn at Lusher Court, a right turn onto the Frontage Road using the roundabout at the Meadow Drive/Lusher Court intersection, 80 percent of drivers would turn right onto DDR at the new roundabout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



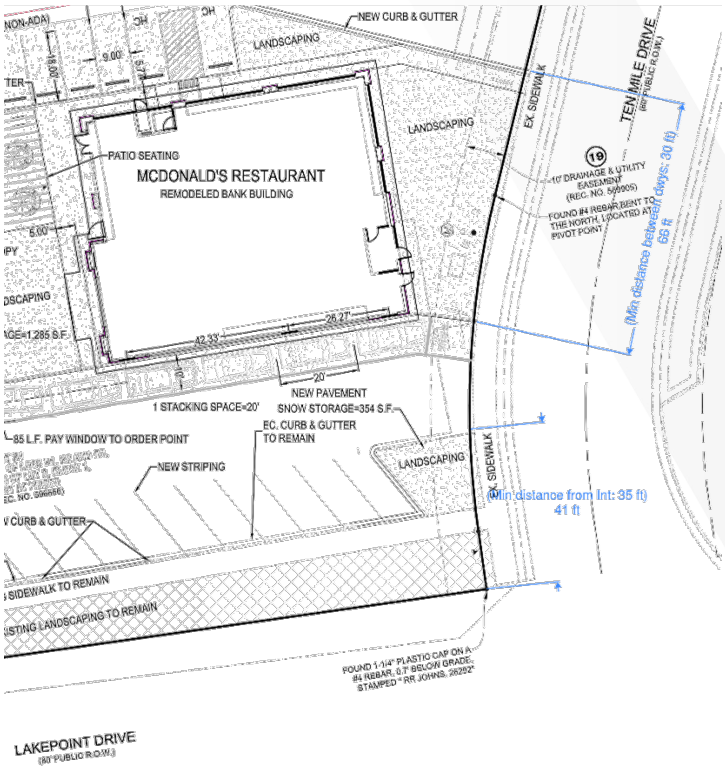
DRIVEWAY SPACING

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 [7]. 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 [10]. 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

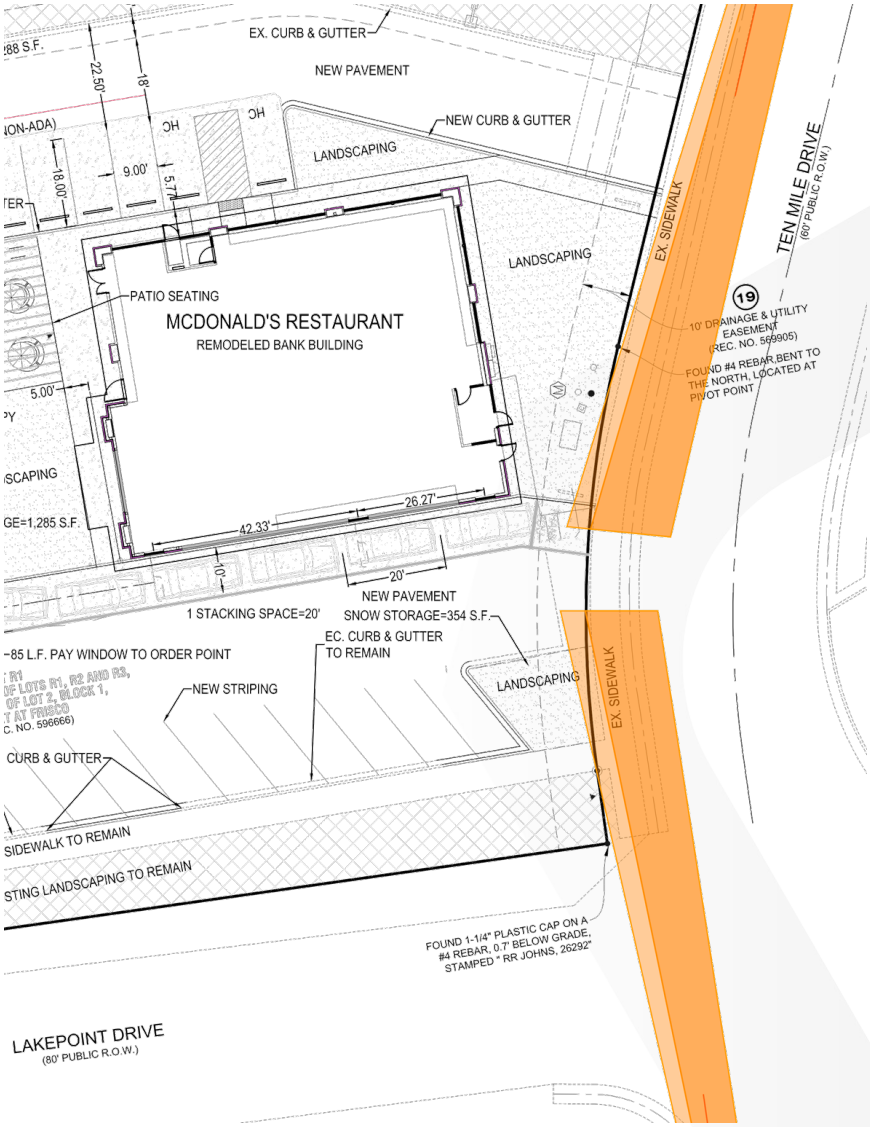


Figure A 14 Departure Sight Lines– Motorist's Perspective Looking Left/North



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.

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-Thru Bank Use.

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

Notes:

1. ITE Code 912: Drive-In Bank
   - AM (Oct): 58% In, 42% Out
   - PM (Oct): 50% In, 50% Out
   - 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)	
McDonald's Corporation		Robert Palmer	
Street Address*		Mailing Address	
67 Inverness Dr E, Unit D		2595 Ponderosa Rd	
City, State & Zip*	Phone #	City, State & Zip	Phone #
Englewood, CO 80112		Franktown, CO 80116	(720) 384-7661
E-mail Address*		E-mail Address (if available)	
		rpalmer@strategicls.net	

3) Address of property to be served by permit*
960 N 10 Mile Dr, Frisco, CO 80443

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

county	subdivision	block	lot	section	township	range
Summit	Lakepoint	1	2			

5) What State Highway are you requesting access from?*	6) What side of the highway?*
009C	☐ N ☐ S ☐ E ☐ W

7) How many feet is the proposed access from the nearest milepost (or cross street if mile post unknown)?*
475 feet (☒ N ☐ S ☐ E ☐ W) from: 10 Mile Road (Milepost 96-97)

8) What is the approximate date you intend to begin construction?
01/01/2026

9) Check here if you are requesting a:*
☐ New Access ☐ Temporary Access (duration anticipated: _____) ☐ Improvement to Existing Access
☐ Change in Access Use ☐ Removal of Access ☐ Relocation of an Existing Access (provide detail)

10) Provide existing property use
Vacant (former Bank with Drive Thru)

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

12) Does the property owner own or have any interests in any adjacent property?*
☒ No ☐ Yes, if yes – please describe:

13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?*
☐ No ☐ Yes, if yes – list them on your plans and indicate the proposed and existing access points.

14) If you are requesting agriculture field access – how many acres will the access serve?
n/a

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

Business/Land Use	Square Footage	Business/Land Use	Square Footage
Fast Food Restaurant (with Drive Thru)	4800		

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
n/a	n/a		

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

Indicate if your counts are	# of passenger cars and light trucks at peak hour volumes	# of multi-unit trucks at peak hour volumes
☐ peak hour volumes or ☐ average daily volumes.	2,244	0
# of single unit vehicles in excess of 30 ft.	**# of farm vehicles (field equipment)**	**Total count of all vehicles**
9	0	2253

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)

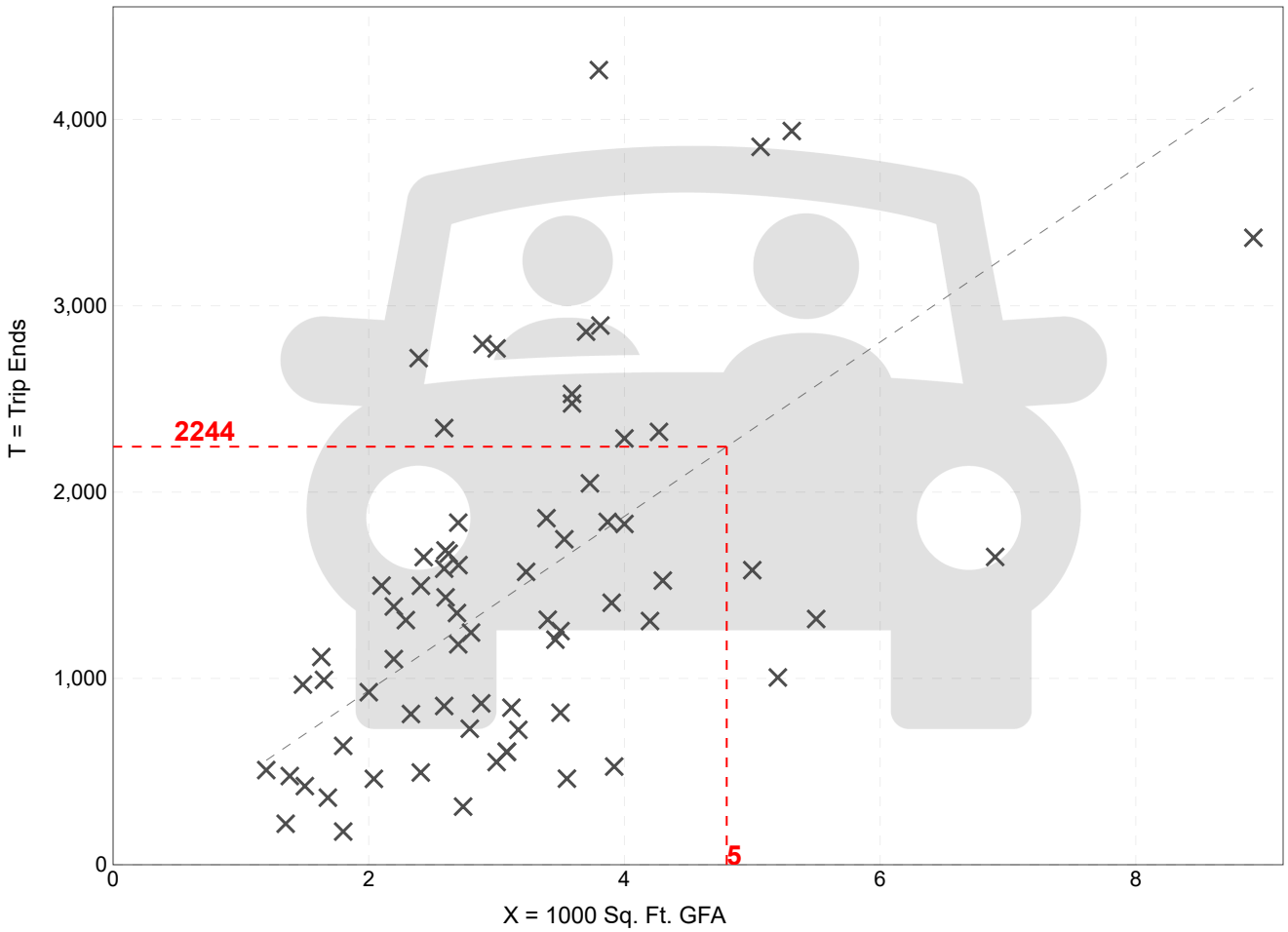
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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



Fitted Curve Equation: Not Given

R^2= **

Fast-Food Restaurant with Drive-Through Window
(934)

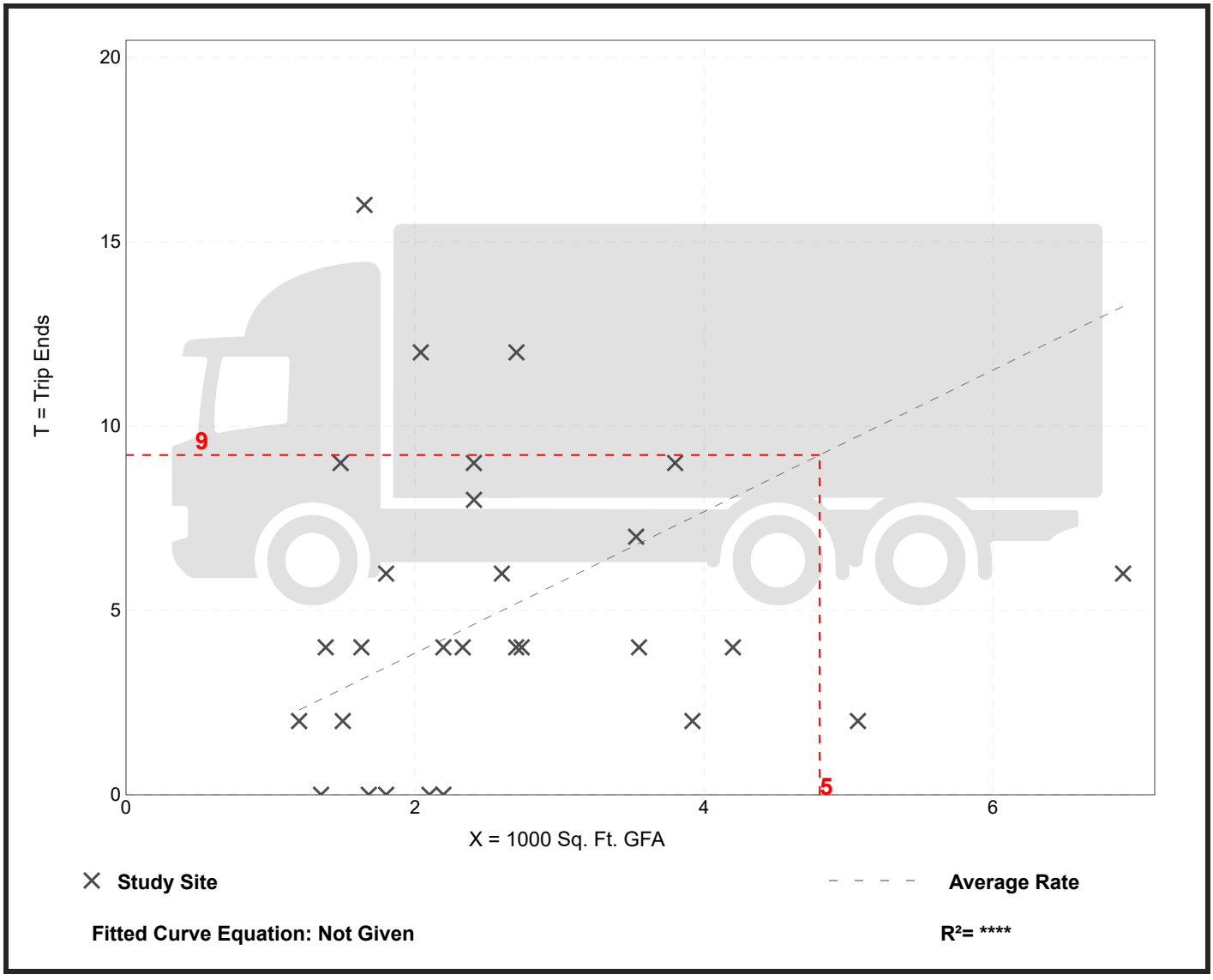
Truck Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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

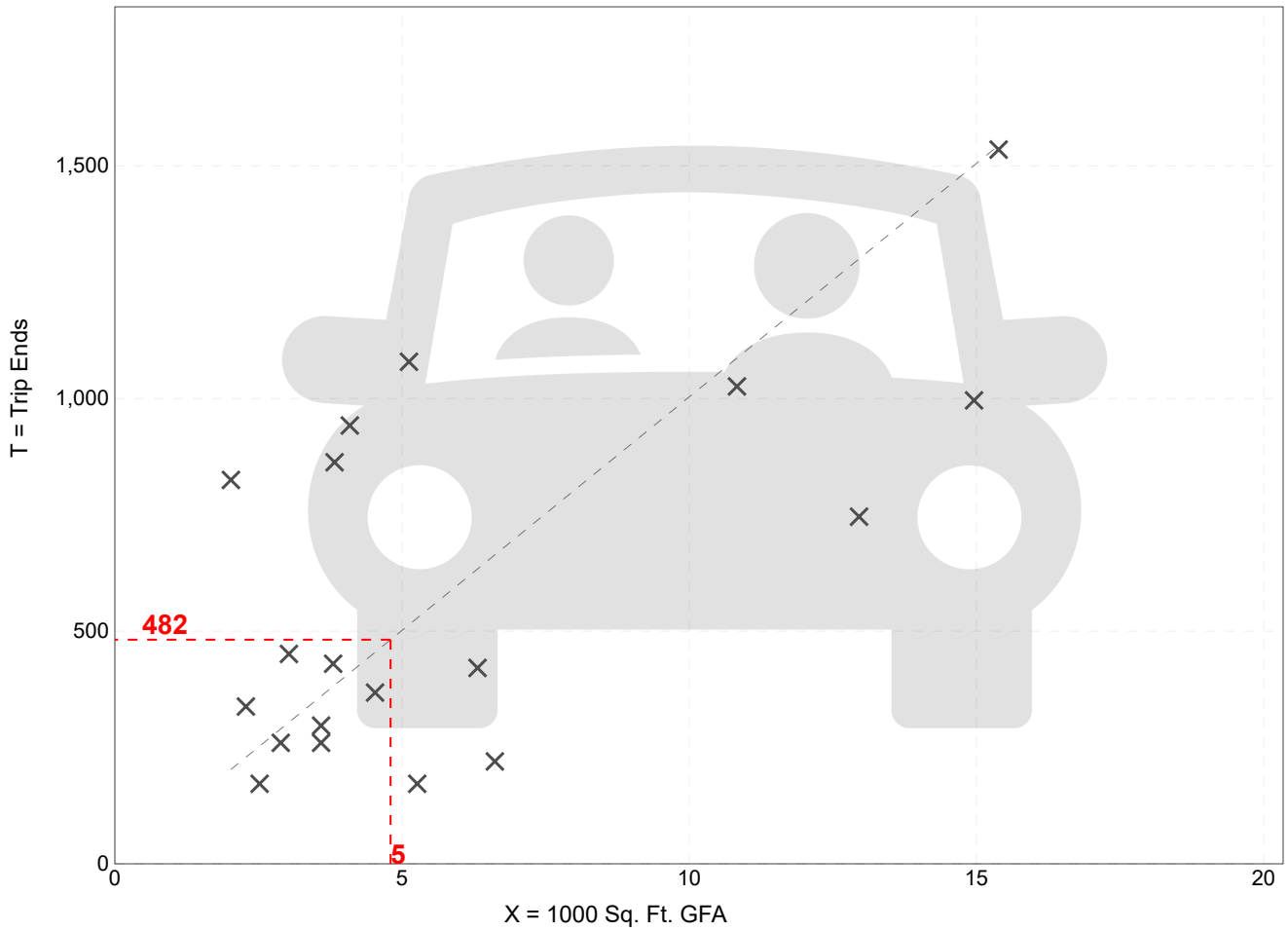
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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



Fitted Curve Equation: Not Given

R^2= **

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
Base Volume Input	*Used for available TMC data.*	•	•	•	•	•
Base Volume Adj factor	*Used as a seasonal factor at Study Location 4 in AM & PM Study Periods.*				•	
Heavy Vehicles %	*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) [11]*. HV%= 2.0% used elsewhere.*	•		•		
Growth Factor	*Used to factor available volume data to study years.*	•	•	•	•	•
In-Process Volume	*Not used.*					
Diverted Trips	*Not used.*					
Pass-by Trips	*Used to apply pass-by trips as noted in the body of the report.*	•	•	•		
Existing Site Adj Volume	*Not used.*					
Other Volume	*Used to re-distribute background volumes due to Future Background Conditions.*					•
Right-Turn on Red Volume	*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).*	•		•		
Peak Hour Factor	*Data not available, so defaults used (0.92).*	•	•	•	•	•
Other Adj Factor	*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?
Base Volume Input	Summary of Base Volume Input, description below.	veh/h	0	User (PTE)
Base Volume Adj factor	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)
Final Base Volume	Base volume representing the base condition. *= Base Volume Input * Base Volume Adjustment Factor*	veh/h	-	Calc
Heavy Vehicles %	Percent of heavy vehicles for each turn movement. Default = 2. Range = 0 – 100	%	2.00	User (PTE)
Growth Rate	Growth rate to be applied as multiplicative factor to adjust volume to future year analysis. Default = 1.000	-	1.00	User (PTE)
In-Process Volume	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)
Future Background Volume	Future volumes before any trips are added for the new development. *= Final Base Volume * Growth Rate + In-Process Volume*	veh/h	-	Calc
Site-Generated Trips	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
Diverted Trips	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)
Pass-by Trips	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)
Existing Site Adj Volume	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)
Net New Trips	Total new trips added to the system after accounting for all adjustments. *= Site Generated + Diverted + Pass-by + Existing Site Adjustment Volume*	veh/h	-	Calc
Other Volume	User definable volume not accounted for by other volume parameters	veh/h	0.00	User (PTE)
Future Total Volume	Total future volume after all site generated trips and volume adjustments have been made. *= Future Background Volume + Net New Trips + other volume*	veh/h	-	Calc
Right-Turn on Red Volume	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 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)
Total Hourly Volume	Total hourly future volume after accounting for right-turn on red.	veh/h	-	Calc
Peak Hour Factor	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)
Other Adj Factor	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)
Total 15-Minute Volume	Estimated total vehicles during the highest 15-minute period of the peak hour. *= (Total Hourly Volume * 0.25 / PHF) * Other Adjustment Factor*	veh	-	Calc
Total Analysis Volume	Calculated total analysis volume, including all volume adjustments and factors defined. *= Total 15-Minute Volume * 4*	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
Existing			
AM	1		
PM	4		
Sat	7		
Background			
AM		10	2
PM		11	5
Sat		12	8
Total Traffic			
AM		13	3
PM		14	6
Sat		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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	783	783	583	633
d_b, Bicycle Delay [s]	22.20	22.20	30.10	28.02
l_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
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
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 [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
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]	1417	1417	217	217
d_b, Bicycle Delay [s]	5.10	5.10	47.70	47.70
l_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												
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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	967	967	367	300
d_b, Bicycle Delay [s]	16.02	16.02	40.02	43.35
l_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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	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
I, 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 [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
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]	1217	1217	417	417
d_b, Bicycle Delay [s]	9.20	9.20	37.60	37.60
l_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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	950	950	200	367
d_b, Bicycle Delay [s]	16.54	16.54	48.60	40.02
l_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
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
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 [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
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	2.418	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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	783	783	567	633
d_b, Bicycle Delay [s]	22.20	22.20	30.82	28.02
l_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
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
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 [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
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]	1417	1417	217	217
d_b, Bicycle Delay [s]	5.10	5.10	47.70	47.70
l_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)								
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):	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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	967	967	367	300
d_b, Bicycle Delay [s]	16.02	16.02	40.02	43.35
l_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
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
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 [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
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]	1217	1217	417	417
d_b, Bicycle Delay [s]	9.20	9.20	37.60	37.60
l_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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	950	950	200	367
d_b, Bicycle Delay [s]	16.54	16.54	48.60	40.02
l_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
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
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 [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
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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	717	717	633	700
d_b, Bicycle Delay [s]	24.70	24.70	28.02	25.35
l_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
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
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 [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
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	2.603	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)								
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	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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	600	600	200	667
d_b, Bicycle Delay [s]	29.40	29.40	48.60	26.67
l_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
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
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 [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
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]	1217	1217	417	417
d_b, Bicycle Delay [s]	9.20	9.20	37.60	37.60
l_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)								
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	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	-	-	Lead	-	-	Lead	-	-	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		No	No		No	No		No	No	
Maximum Recall	No	Yes		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		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	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
I, 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 [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
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]	717	717	167	600
d_b, Bicycle Delay [s]	24.70	24.70	50.42	29.40
l_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
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
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 [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
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	2.610	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)								
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	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												
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
I, 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 [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
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]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
l_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
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
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 [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
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]	1356	1333	156	156
d_b, Bicycle Delay [s]	4.67	5.00	38.27	38.27
l_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	Delay (sec / veh):	5.2
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	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

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite 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												
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
I, 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 [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
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]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
l_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
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
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 [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
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]	1089	1089	422	422
d_b, Bicycle Delay [s]	9.34	9.34	28.01	28.01
l_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	Delay (sec / veh):	9.2
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	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

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite 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												
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
I, 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 [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
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]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
l_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
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
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 [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
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]	956	956	556	556
d_b, Bicycle Delay [s]	12.27	12.27	23.47	23.47
l_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:	Roundabout	Delay (sec / veh):	10.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
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	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

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite 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												
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
I, 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 [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
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]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
l_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
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
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
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]	1222	1289	222	222
d_b, Bicycle Delay [s]	6.81	5.69	35.56	35.56
l_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	Delay (sec / veh):	5.6
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	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

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite 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												
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
I, 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 [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
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]	1289	1289	1289	222
d_b, Bicycle Delay [s]	2.84	2.84	2.84	17.78
l_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
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
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 [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
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]	1133	1133	378	378
d_b, Bicycle Delay [s]	8.45	8.45	29.61	29.61
l_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

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite 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												
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
I, 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 [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
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]	1200	1200	1200	311
d_b, Bicycle Delay [s]	3.60	3.60	3.60	16.04
l_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
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
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 [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
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]	1067	1067	444	444
d_b, Bicycle Delay [s]	9.80	9.80	27.22	27.22
l_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	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
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	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

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite 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				

AFTER CREATING PDF:

INSERT TRAFFIC ANALYSIS REPORTS

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Platinum Traffic Engineering

Platinum Traffic Engineering, P.C.
Castle Rock, CO
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

Prepared for:

MCDONALD'S RESTAURANT
960 N. TEN MILE DRIVE
Frisco, Colorado
STORE ID # 51062
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TABLE OF CONTENTS

TABLE OF CONTENTS i

ENGINEER'S AND DEVELOPER'S CERTIFICATIONS ii

1. GENERAL LOCATION AND DESCRIPTION 1
- **1.1. LOCATION** 1
- **1.2. DESCRIPTION OF PROPERTY** 1

2. DRAINAGE BASINS AND SUB-BASINS 1
- **2.1. MAJOR BASIN DESCRIPTION** 1
- **2.2. SUB-BASIN DESCRIPTION** 2

3. DRAINAGE DESIGN CRITERIA 2
- **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

4. DRAINAGE FACILITY DESIGN 3
- **4.1. GENERAL CONCEPT** 3
- **4.2. SPECIFIC DETAILS** 3

5. CONCLUSIONS 4
- **5.1. COMPLIANCE WITH STANDARDS** 4
- **5.2. DESIGN** 4

6. REFERENCES 5

LIST OF FIGURES

Figure 1 - SITE LOCATION MAP 1
Figure 2 - SITE LOCATION ENLARGEMENT 1

APPENDICES

APPENDIX A: HYDROLOGIC COMPUTATIONS
APPENDIX B: MAP POCKET

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ENGINEER'S CERTIFICATION

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

COLORADO REGISTERED ROBERT J. PALMER 36320 PROFESSIONAL ENGINEER
05/30/2025

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 –

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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 6th 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

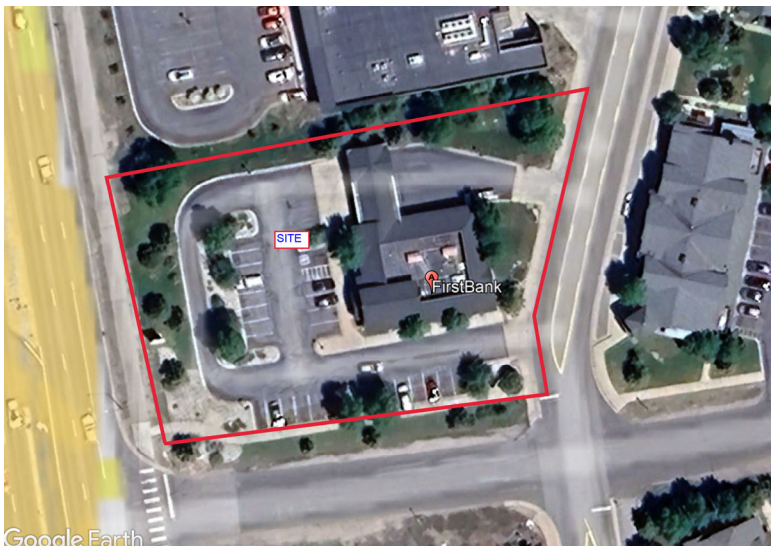


Figure 2 - SITE LOCATION ENLARGEMENT

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 0.47 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 0.49 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 0.49 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 B 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 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 E3. The runoff is then conveyed North in N. Ten Mile Drive in a public storm pipe.

Runoff form this site will be conveyed to the existing gutter in 5th Avenue, and ultimately the public underground storm drain east of the site in 5th Avenue.

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 Denver Wastewater 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

The 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 strom 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 form 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)	0.48 CFS	0.46 CFS
5-year Middle Basin Runoff (Basins E2 & B)	0.65 CFS	0.61 CFS
5-year South Basin Runoff (Basins E3 & C)	0.03 CFS	0.03 CFS
5-year Total Site Runoff	0.95 CFS	0.90 CFS
100-year South Bsn. Runoff (Basins E1 & A)	1.26 CFS	1.24 CFS
100-year South Bsn. Runoff (Basins E3 & C)	1.61 CFS	1.53 CFS
100-year South Bsn. Runoff (Basins E3 & C	0.15 CFS	0.15 CFS
100-year Total Site Runoff	2.53 CFS	2.45 CFS

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.

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_5	100-YR RUNOFF COEFF. C_{100}	AREA						SUM OF AREA (ACRE)
				E1	E2	E3				
LANDSCAPE (clay)	20	0.11	0.26	0.180	0.114	0.153				0.447
ROOF	95	0.81	0.84	0.054	0.072					0.126
DRIVES AND WALKS (IMPERVIOUS)	95	0.81	0.84	0.233	0.299					0.532
Total				0.467	0.485	0.153	0.000	0.000	0.000	1.105

COMPOSITE % IMPERVIOUSNESS AND RUNOFF COEFFICIENTS

SUB-BASIN	EFFECTIVE % IMPERVIOUS				AREA acres
E1	66.09				0.467
E2	77.37				0.485
E3	20.00				0.153
Total Existing Site	64.66				1.105

960 N. TEN MILE DRIVE FRISCO, CO - ProposedDrainage Calculations

LAND USAGE FOR EACH SUB-BASIN

LAND USAGE	PERCENT IMPERVIOUS (%)	5-YR RUNOFF COEFF. C_5	100-YR RUNOFF COEFF. C_{100}	AREA						SUM OF AREA (ACRE)
				A	B	C				
LANDSCAPE (clay)	20	0.11	0.26	0.216	0.118	0.153				0.487
ROOF	95	0.81	0.84	0.054	0.053					0.107
DRIVES AND WALKS (IMPERVIOUS)	95	0.81	0.84	0.217	0.294					0.511
Total				0.487	0.465	0.153	0.000	0.000	0.000	1.105

COMPOSITE % IMPERVIOUSNESS AND RUNOFF COEFFICIENTS

SUB-BASIN	EFFECTIVE % IMPERVIOUS				AREA acres
A	61.74				0.487
B	75.97				0.465
C	20.00				0.153
Total Proposed Site	61.95				1.105

Calculation of Peak Runoff using Rational Method

Designer: Robert Palmer
Company: Strategic Land Solutions
Date: 5/30/2025
Project: 960 N. TEM MILE, FRISCO, CO - MCDONA
Location: 2930 S. PANCRATIA STREET DENVER, C

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

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S_i^{0.33}}$$

$$t_t = \frac{L_t}{60K\sqrt{S_t}} = \frac{L_t}{60V_t}$$

Computed $t_c = t_i + t_t$

Regional $t_c = (26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$

$t_{minimum}$= 5 (urban)
$t_{minimum}$= 10 (non-urban)

Selected $t_c = \max\{t_{minimum}, \min(\text{Computed } t_c, \text{Regional } t_c)\}$

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)

	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
1-hour rainfall depth, P1 (in) =	0.50	0.64	0.78	1.00	1.18	1.38	1.91
	a	b	c				
Rainfall Intensity Equation Coefficients =	28.50	10.00	0.786				

$$I(in/hr) = \frac{a * P_1}{(b + t_c)^c}$$

$$Q(cfs) = CIA$$

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_i (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S_i (ft/ft)	Overland Flow Time t_i (min)	Channelized Flow Length L_t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Channelized Flow Slope S_t (ft/ft)	NRCS Conveyance Factor K	Channelized Flow Velocity V_t (ft/sec)	Channelized Flow Time t_t (min)	Computed t_c (min)	Regional t_c (min)	Selected t_c (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	0.47	A	66.1	0.49	0.51	0.52	0.55	0.59	0.62	0.68	66.00			0.053	5.01	216.00			0.012	20	2.14	1.68	6.69	16.60	6.69	1.54	2.01	2.44	3.11	3.68	4.30	5.96	0.35	0.48	0.60	0.81	1.01	1.26	1.89
E2	0.49	A	77.4	0.60	0.62	0.64	0.66	0.69	0.71	0.75	37.00			0.108	2.40	297.00			0.008	20	1.83	2.70	5.10	15.57	5.10	1.67	2.17	2.64	3.36	3.98	4.66	6.44	0.49	0.65	0.81	1.08	1.32	1.61	2.35
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	64.7	0.48	0.49	0.51	0.54	0.58	0.61	0.67	72.50			0.053	5.38	381.00			0.008	15	1.37	4.62	10.00	18.85	10.00	1.34	1.74	2.12	2.70	3.19	3.73	5.17	0.70	0.95	1.19	1.61	2.04	2.53	3.83
A	0.49	A	61.7	0.45	0.47	0.48	0.51	0.55	0.59	0.65	64.00			0.051	5.35	236.40			0.021	20	2.89	1.36	6.72	17.05	6.72	1.54	2.00	2.44	3.10	3.68	4.30	5.95	0.34	0.45	0.57	0.78	0.99	1.24	1.89
B	0.47	A	76.0	0.59	0.61	0.62	0.65	0.67	0.70	0.74	28.00			0.099	2.21	290.90			0.010	20	2.00	2.42	4.64	15.55	5.00	1.68	2.18	2.65	3.38	4.00	4.68	6.48	0.46	0.61	0.77	1.02	1.25	1.53	2.24
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	0.10	0.15	0.30
P-TOTAL	1.11	A	62.0	0.45	0.47	0.48	0.52	0.55	0.59	0.65	64.00			0.051	5.34	375.00			0.008	15	1.34	4.66	10.00	19.42	10.00	1.34	1.74	2.12	2.70	3.19	3.73	5.17	0.67	0.90	1.13	1.54	1.95	2.45	3.73

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[1]	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[2]	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[3]	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%

[1] Consult with the manufacturer to get a recommended value.

[2] 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.

[3] 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.

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

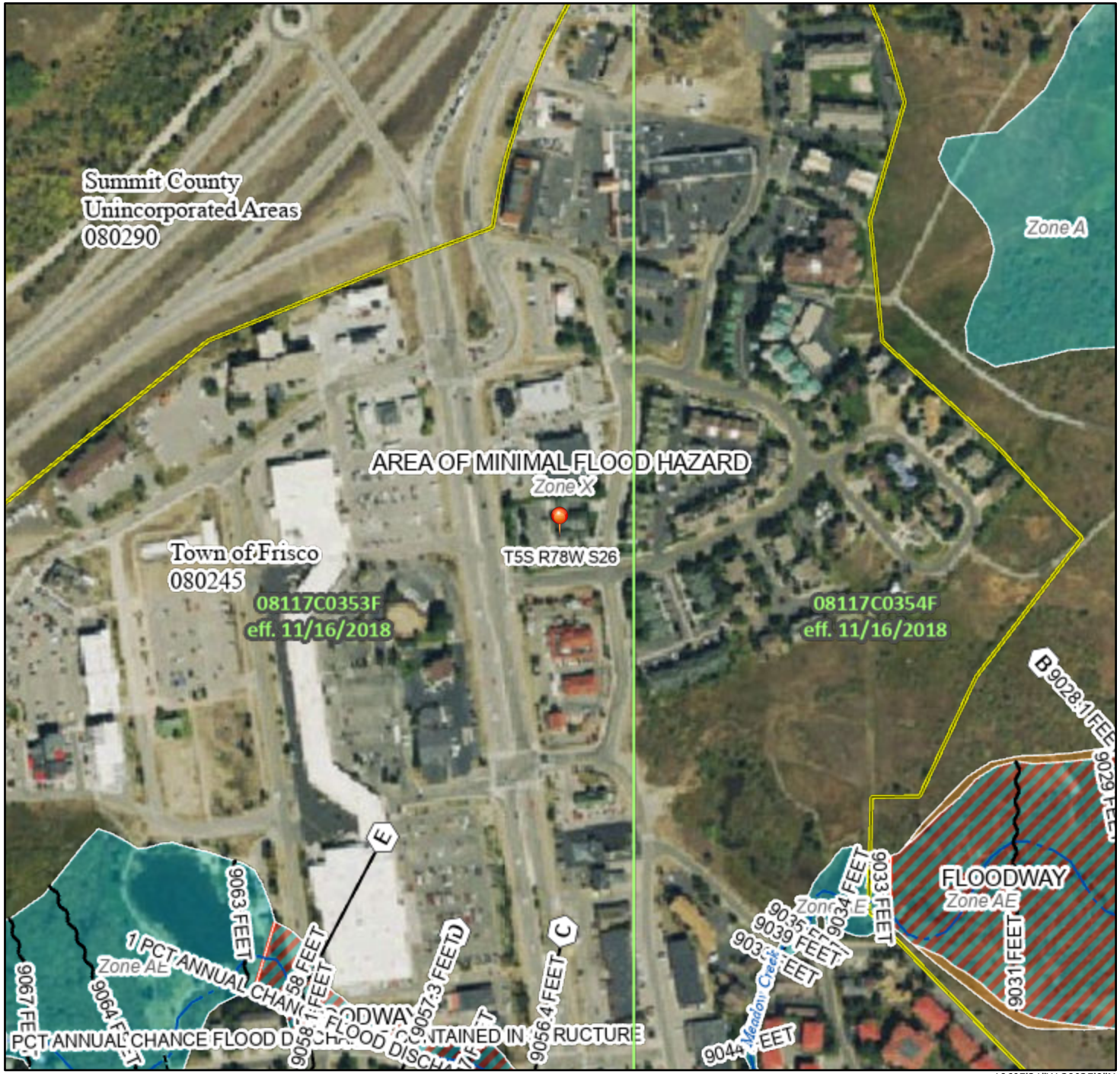
B. MAP POCKED

Appendix B – MAP POCKET

National Flood Hazard Layer FIRMette

FEMA

106°5'59"W 39°35'37"N



106°5'21"W 39°35'9"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 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*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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.


106° 5' 43" W
106° 5' 37" W
39° 35' 24" N
39° 35' 21" N
405950
405960
405970
405980
405990
406000
406010
406020
406030
406040
406050
406060
406070
406080
4382840
4382830
4382820
4382810
4382800
4382790
4382780
4382770
4382760
4382750
6
10
N Ten Mile Dr
Connecting
Soil Map may not be valid at this scale.
Map Scale: 1:639 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 5 10 20 30
Feet
0 30 60 120 180
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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%
Totals for Area of Interest			**1.2**	**100.0%**

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

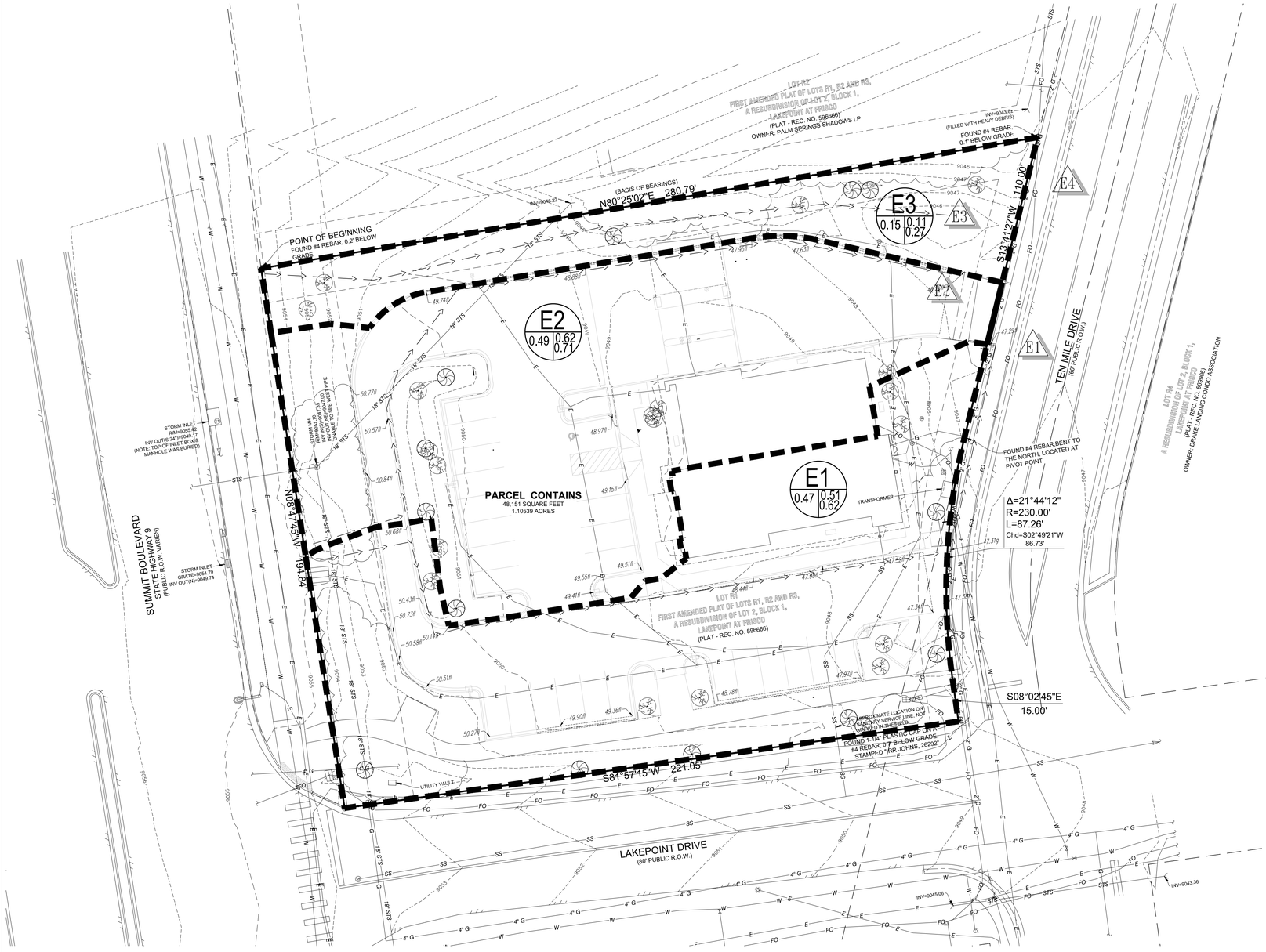
Component Percent Cutoff: None Specified

EXISTING SUMMARY RUNOFF TABLE

DESIGN PT	CONTRIBUTING BASINS / AREA (acres)	5-YEAR RUNOFF (cfs)	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
- E1 — DESIGN POINT
- E1 (Ac, 5 YR, 100YR) — BASIN DESIGNATION
- 5 YR COMPOSITE 'C'
- 100YR COMPOSITE 'C'
- BASIN AREA



20 0 20 20

PLAN SCALE: 1" = 20'

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

NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
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2595 PONDEROSA ROAD
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PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: COLORADO REGISTERED ROBERT J. PALMER PE 36320 PROFESSIONAL ENGINEER

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

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OFFICE: ROCKY MOUNTAIN REGION
ADDRESS:

STREET ADDRESS: 960 N. TEN MILE DRIVE
CITY: FRISCO
STATE: COLORADO
COUNTY: SUMMIT
STATE STORE #: 51062
NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED	McD RE: BAKER
DATE: 05/30/2025	McD P/CM: YAGUSESKY
DESIGNED BY: RJP	
DRAWN BY: RJP	FILE NAME: CURRENT.DWG
CHECKED BY: RJP	SLS JN: 24-0001-216

DRAWING TITLE: EXISTING DRAIANGE

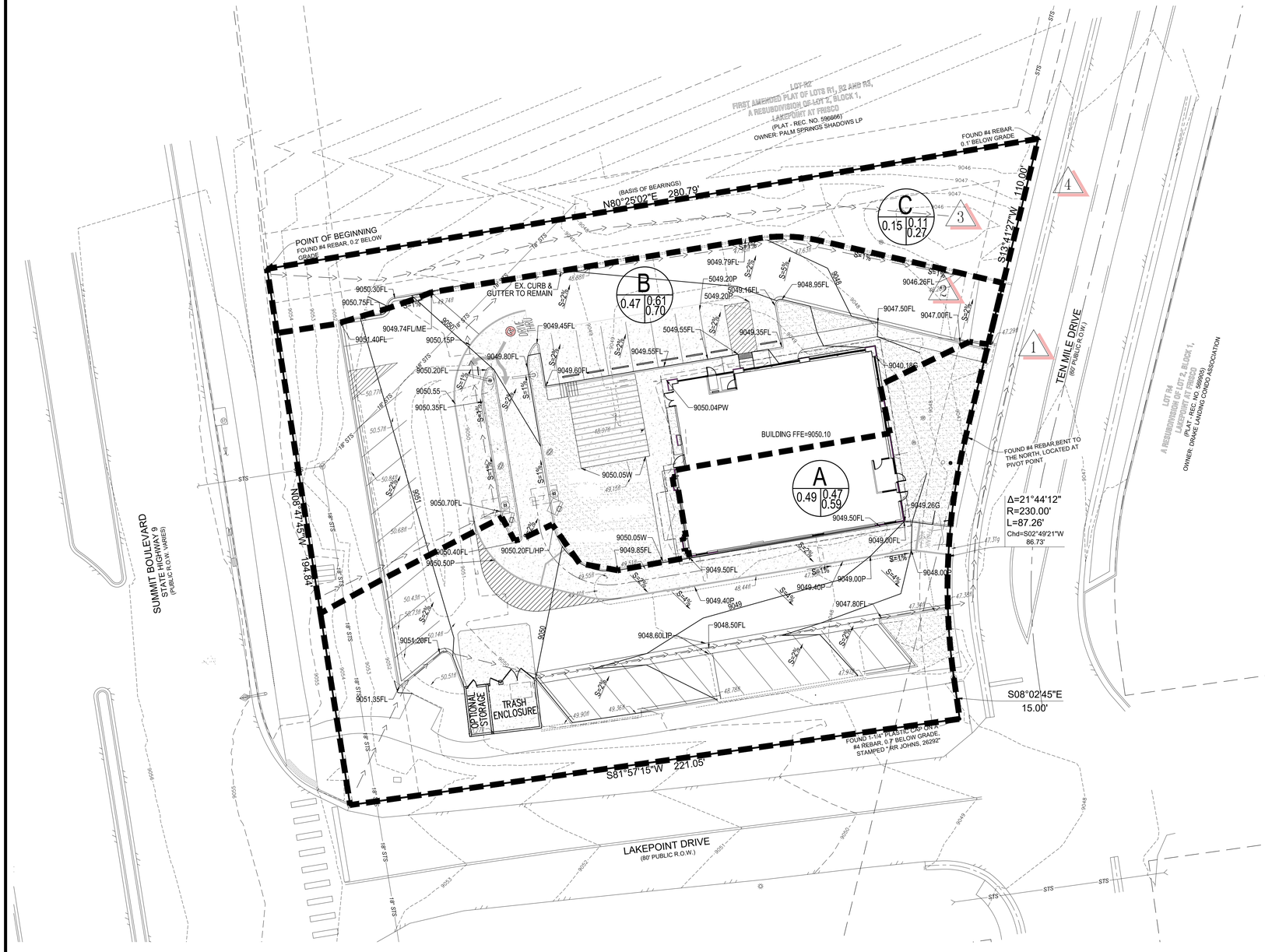
SHEET NO: DR-1

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
- E1 — DESIGN POINT
- A — BASIN DESIGNATION
- Ac — BASIN AREA
- CSC — 5 YR COMPOSITE 'C'
- C100 — 100YR COMPOSITE 'C'



20 0 20 20

PLAN SCALE: 1" = 20'

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NO.	DATE	REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

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NATIONAL #: 44322
REGIONAL DWG. NO: -

SCALE: AS NOTED	McD RE: BAKER
DATE: 05/30/2025	McD P/CM: YAGUSESKY
DESIGNED BY: RJP	
DRAWN BY: RJP	FILE NAME: CURRENT.DWG
CHECKED BY: RJP	SLS JN: 24-0001-216

DRAWING TITLE: PROPOSED DRAINAGE PLAN

SHEET NO: DR-2

GEOTECHNICAL EXPLORATION REPORT

MCDONALDS – FRISCO, CO
960 N 10 Mile Rd
Frisco CO, 80443

DRAFT

Prepared for:
McDonald's USA
577 South 200 East
Salt Lake City, Utah 84075

Prepared By:
UES
477 Parkland Drive
Sandy, UT 84070

January 21, 2025
Project No. 4430.2400047

UES
477 Parkland Drive
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January 21, 2025

McDonald's USA
577 South 200 East
Salt Lake City, Utah 84075

Attention: Robert Yagusesky
206-348-4374, robert.yagusesky@us.mcd.com

Reference: Geotechnical Engineering Report
McDonalds – Frisco, CO
960 N 10 Mile Dr.
Frisco, CO 80443
Project No: 4430.2400047

DRAFT

UES is pleased to submit this Geotechnical Engineering Report for the referenced project. This report includes the results from the field exploration and laboratory testing program, along with recommendations for use in the preparation of the appropriate design and construction documents for this project.

UES appreciates the opportunity to provide this Geotechnical Engineering Report and looks forward to continuing participation during the design and construction phases of this project. UES also has great interest in providing construction services, including materials testing and inspection services during the construction of this project, and will be glad to meet with you to further discuss how we can be of assistance as the project advances.

If there are questions pertaining to this report, or if UES may be of further service, please contact us at your convenience.

Respectfully,
UES

Trae D. Boman, G.I.T.
Project Geologist

Martin D. Jensen, P.E.
Principal Geotechnical Engineer

Table of Contents

1.0 Introduction 1
1.1 Authorization 1
1.2 Proposed Development 1
1.3 Scope of Work 1
2.0 Site Information 2
2.1 Site Description 2
2.2 Site History 2
2.3 Geological Setting 2
2.4 Seismic Design Parameters 2
3.0 Field Exploration & Laboratory Program 3
3.1 Field Activities 3
3.2 Lab Program 3
3.3 Subsurface Conditions 3
3.4 Groundwater 4
3.4.1 Groundwater Effect on Development and Seasonal Water 4
3.5 Corrosion 5
3.5.1 Soil Corrosion Potential 5
3.6 Infiltration 5
4.0 Conclusions and Recommendations 6
4.1 Geotechnical Discussion 6
4.2 Site Preparation 6
4.3 Earthwork 6
4.3.1 Subgrade Preparation 7
4.3.2 Engineered Fill Materials and Placement 7
4.3.3 Permanent Slopes 8
4.4 Excavations 9
4.4.1 Excavation Conditions 9
4.4.2 Utility Trench Backfill 9
4.5 Foundations 10

DRAFT

4.5.1 Shallow Foundations 10
4.6 Interior Floor Slab Support 11
4.6.1 Floor Slab Moisture Penetration Resistance 12
4.7 Exterior Flatwork Construction 12
4.8 Drainage Considerations 13
4.9 Retaining Walls 13
4.10 Pavement Design 16
4.10.1 Pavement Subgrade Quality 16
4.10.2 Pavement Design Recommendations 16
4.11 Plan Review 17
5.0 Geotechnical Risk and Limitations 17

FIGURES
Vicinity Map
Site Plan
APPENDIX A – Log of Borings
Unified Soil Classification System
APPENDIX B – Laboratory Testing and Results
Laboratory Testing Summary
Gradation Charts
Plasticity Chart
Corrosion Results

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1.0 INTRODUCTION

We have completed geotechnical engineering for the expansion of the existing building at 960 N 10 Mile Rd in Frisco Colorado. The purposes of this study have been to explore the existing soil, geologic, and groundwater conditions at the site, and to provide geotechnical engineering conclusions and recommendations for use by the other members of the design team for design and construction of the proposed project. This report presents the results of our study.

1.1 AUTHORIZATION

UES (Consultant) has completed a field exploration and geotechnical evaluation for the McDonalds - Frisco CO project. Mr. Robert Yagusesky, representing McDonalds USA, authorized UES services on December 11, 2024, via email.

1.2 PROPOSED DEVELOPMENT

We understand the project will consist of two drive-through window additions to the existing building onsite. Review of Conceptual Site Plan 3, dated November 17th, 2024, prepared by Strategic Land Solutions, Inc. shows the square footage of the existing building as 5,070 s.f.

Associated improvements will consist of new asphalt concrete parking areas and exterior concrete flatwork. We anticipate the additions will develop relatively light structural loads based on this type of addition.

A grading plan was not available when this report was prepared. However, based on existing site topography and our understanding of the proposed additions, we anticipate cuts and fills will be minimal to establish final subgrade levels across the site.

1.3 SCOPE OF WORK

Our scope of work included the following:

- Review of United States Geological Survey (USGS) topographic maps, select aerial photographs and available groundwater data
- Review of geologic maps and fault maps
- Subsurface exploration, including the drilling and sampling of four borings to depths ranging from approximately 5 to 26½ feet below the ground surface (bgs).
- Laboratory testing selected soil samples
- Engineering analyses
- Preparation of this report

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2.0 SITE INFORMATION

2.1 SITE DESCRIPTION

The building site is located on a developed lot, located 960 N 10 Mile Rd in Frisco CO. The project property is bound on the north and south by commercial developments; to the west by Summit Blvd, beyond which is commercial development; and to the east by residential development.

At the time of our field explorations on December 19, 2024, the new additions will be located on the east and south side of the existing building. The existing drive through on the north side will be demolished. The rest of the site consists of asphalt concrete driveways and parking areas, trash enclosure, along with some landscaped areas on the boundaries of the site.

The topography of the site is relatively flat, sloping downward from east to west. The average surface elevation within the project area is about 9060 feet above mean sea level based on review of Google Earth imagery dated to 2023.

2.2 SITE HISTORY

We reviewed historical aerial photographs of the site available from the Historicaerials.com website and Google Earth. Available photographs were taken in 1969, 1983, 1985, 1999, 1998, 2005, 2006, 2007, 2009, 2011, 2015, 2016, 2018, 2019, and 2023. Prior to 1999 the site was an undeveloped field. Construction on the current building began in 1999 and the building was fully constructed by the 2005 picture. The site has remained essentially unchanged since the 2005 photograph until our field explorations in December of 2024.

2.3 GEOLOGICAL SETTING

The site is in the city of Frisco, Colorado, located in central Colorado approximately 60 miles west of Denver. Frisco is along I-70, bounded on the west by the Gore range and the Continental Divide and Lake Dillion to the west.

The Southern Rocky Mountains are massive mountains that rise over 4,267 m (14,000 ft). Characteristic structures of the Southern Rockies include anticlinal arches and intermontane basins.

According to the Geologic map of the Frisco quadrangle, Summit County, Colorado, the building sites are underlain by Pinedale Glacial Till and Outwash (Qtp and Qop) [1].

The mapped geology was found to be consistent with the subsurface soil conditions encountered within our borings performed at the site to the explored depths of approximately 5 to 26 ½ feet below existing site grades.

2.4 SEISMIC DESIGN PARAMETERS

The Site Class was estimated using generalized soil characteristics given in Table 20.3-1 of ASCE Standard 7. Based on the results of our geophysical exploration, Site Class D may be used for determining seismic

[1] Kellogg, K.S., et. al, 2002, Geologic map of the Frisco quadrangle, Summit County, Colorado. MF-2340. USGS. 1:24,000 scale.

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design criteria. The site is located at approximately the following latitude and longitude: 39.589756, -106.094282.

A search of the USGS Earthquake Hazards Program's ASCE 7-16 data, as published by the ASCE 7 Hazard Tool (https://asce7hazardtool.online/), indicated the following spectral acceleration parameters for the location indicated above and a Site Class D:

Table 2-1: Ground Motion Values

Period (sec)	Mapped MCE Spectral Response Acceleration (g)		Site Coefficients		Adjusted MCE_R Spectral Response Acceleration (G)		Design Spectral Response Acceleration (g)	
0.2	S_s	0.329	F_a	1.537	S_{Ms}	0.505	S_{Ds}	0.337
1.0	S_1	0.084	F_v	2.4	S_{M1}	0.202	S_{D1}	0.135

3.0 FIELD EXPLORATION & LABORATORY PROGRAM

3.1 FIELD ACTIVITIES

The scope of our services for this project included a subsurface exploration program. The subsurface exploration program consisted of drilling four (4) borings to depths of approximately 5 to 26 ½ feet below existing site grades. The borings were logged during drilling by a project geologist and samples were obtained to aid in material classification and for possible laboratory testing. The approximate locations of the borings are shown in the Project Site Plan. The locations of the boring were determined in the field by using a tablet GPS. The locations of the borings should be considered accurate only to the degree implied by the method used. Results of the boring are presented in the Appendix.

3.2 LAB PROGRAM

The soil samples collected in the field as part of our field exploration were transported to our lab. Laboratory tests were conducted to determine certain physical and chemical properties of the soil. Further discussion of the laboratory testing and the laboratory testing result will be discussed later in this report. The laboratory testing data is also included in the Appendix. Laboratory testing for this project included gradation, Atterberg limits, moisture content, expansion index and corrosion analysis.

3.3 SUBSURFACE CONDITIONS

Four (4) exploratory borings (B-01 to B-04) were performed on December 19th, 2024, at the approximate locations shown on the attached Site Plan.

The soil conditions at the boring locations generally consist of

1) near surface cap of medium to dense GRAVEl (GP) with varying amounts of sand and silt, with SPT or N-Values ranging from 20 to 50 blows per foot (bpf) to depths of 5 to 6 ½ feet below the ground surface (bgs), underlain by

2) a layer of medium dense SAND (SP) with varying amounts of silts, and/or gravels with N-Values ranging from 14 to 30 bpf to depths of 26.5 feet bgs;

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Table 3-1: Generalized Subsurface Profile

Top	Bottom	Soil Description	Consistency	Plasticity	Moisture %
0	5 to 6 ½	Medium to dense GRAVEl (GP) with varying amounts of sand and silt	Medium Dense to Dense	NP to medium plasticity	3 – 20
5 to 6 ½	26 ½	Medium dense SAND (SP) with varying amounts of silts, and/or gravels	Medium Dense to Dense	NP	6 - 13

Note: Range NP = non-plastic

The soil conditions described above are generally consistent with mapped geology. At the completion of our field explorations, the borings holes were backfilled with auger cuttings and the asphalt was patched with cold patch.

For specific information regarding the soil conditions at a specific exploration location, please refer to the Logs of Soil Borings, in the Appendix.

3.4 GROUNDWATER

Groundwater was encountered at 15 feet in the borings performed on December 18th, 2024.

To supplement the groundwater data, we reviewed available groundwater data published by the Colorado Department of Water Resources (DWR) from a monitoring well (SC00507835BBC) located about 1 mile southwest of the site. DWR has water levels in the well ranging from approximately 12 to 19 feet bgs.

3.4.1 Groundwater Effect on Development and Seasonal Water

Groundwater levels at the site should be expected to fluctuate throughout the year based on variations in seasonal precipitation, local pumping, and other factors. Locally perched shallower groundwater may be encountered.

Based on our subsurface exploration, experience at the site, and review of groundwater information near the site, the permanent groundwater table will not likely be a significant factor in construction for excavations extending less than 25 feet below the ground surface. However, it is possible that perched groundwater may be encountered in excavations if construction begins in the winter and early spring months. If groundwater is encountered, the use of sumps, submersible pumps, deep wells or a well point system could be used as methods to lower the groundwater level. The dewatering method used will depend on the soil conditions, depth of the excavation and amount of groundwater present within the excavation. Dewatering, if required, should be the contractor's responsibility. The dewatering system should be designed and constructed by a dewatering contractor with local experience. We recommend the selected dewatering system lower the groundwater level to at least two feet below the bottom of the proposed excavations.

During the wet season, infiltrating surface runoff water can create saturated surface conditions. Earthwork operations attempted following the onset of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents.

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Soil beneath existing pavements will likely be at an elevated moisture content regardless of the time of year and will require drying before compaction or use as fill. Such soils, intended for use as engineered fill, will require considerable aeration and/or drying to reach a moisture content that will permit the soils to be properly compacted.

3.5 CORROSION

3.5.1 Soil Corrosion Potential

One soil sample was tested to determine minimum resistivity, pH, chloride, and sulfate concentrations to help evaluate the potential for corrosive attack upon reinforced concrete and buried metal. Copies of the corrosion potential test results performed by ChemTech-Ford are presented in the Appendix.

A site is generally considered to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 1500 ppm, or the pH is 5.5 or less. Based on this criterion, the on-site, near-surface soil should be considered damaging to normal strength concrete and corrosive to steel reinforcement properly embedded within PCC for the samples tested.

Using the American Concrete Institute (ACI) 318 Table 19.3.1.1 - Exposure Categories and Classes, we recommend the exposure categories provided in Table 3-3. The project Structural Engineer should review the requirements of ACI 318 and determine their applicability to the site.

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Table 3-2: Concrete exposure categories and classes (ACI 318)

Category	Class	Condition
Freezing and thawing	F3	Concrete exposed to freezing-and-thawing cycles with frequent exposure to water and exposure to deicing chemicals
Sulfates	S1	Moderate
In contact with water	W1	Concrete contact with water and low permeability is required
Corrosion Protection of reinforcements	C2	Concrete exposed to moisture and chlorides from deicing chemicals

UES are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site, a Corrosion Engineer should be consulted.

3.6 INFILTRATION

One infiltration test, in general accordance with Method 2 - based on EPA 1980, was performed at the location shown on the Project Site Plan in the Appendix. The details of the infiltration test are provided in Appendix. The infiltration test result showed that the infiltration rate was 11.3 inches per hour. The presented field infiltration test values should be reduced by a factor of safety for design.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 GEOTECHNICAL DISCUSSION

Our recommendations assume that the soil conditions are like those disclosed by explorations. If variations are noted during construction or if changes are made in the site plan, structural loading, foundation type or floor level, we should be notified so we can supplement our recommendations, as applicable.

Our subsurface explorations revealed that the project site's coarse-grained soils are typical of the vicinity's mapped geology. We consider these materials suitable for structural fills**.** On-site non-expansive sand and gravel, minus oversized and otherwise unsuitable materials such as organics and debris, may be repurposed for use within the subject site, provided that the recommendations within this report are adhered to. Placement of fine-grained soils in non-structural areas such as areas of landscaping is acceptable. The fill materials' location should be notated on the as-built plans.

4.2 SITE PREPARATION

Strip and remove existing vegetation, debris, uncontrolled fill, all loose or disturbed natural soils, and other deleterious materials from proposed building areas, adjacent walks and slabs, and in areas to be paved. Excavations should extend at least 5 feet beyond the areas to be improved in plan view. Uncontrolled fill is defined as any existing fill that was not properly placed, observed and tested.

All exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

If unexpected fills or abandoned structures/improvements are encountered during site clearing, such features should be removed and the excavation thoroughly cleaned and backfilled. All excavations should be observed by the geotechnical engineer prior to backfill placement.

Demolition of existing structures/improvements should include removal of any foundation system and utilities. Any excavations as a result of demolition and removal should be properly filled.

All materials derived from the demolition of existing structures/improvements should be removed from the site, and not be allowed for use in any fills. In some cases, existing pavements, if properly broken up, can be used in required fills. The geotechnical engineer should determine the suitability for use based on conditions in the field.

4.3 EARTHWORK

Earthwork should be performed in accordance with the guidelines presented in Chapter 18 of the 2021 IBC, except where specific recommendations are presented in this report. It is recommended that contractors perform their own reconnaissance of the site. If the contractors have any questions regarding site conditions, site preparation, or recommendations in this report, they should contact a representative of UES.

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4.3.1 Subgrade Preparation

Following site clearing activities, areas designated to receive fill, at-grade areas, or those achieved by excavation should be scarified to a depth of at least 12 inches, moisture conditioned and compacted as recommended in the Fill Placement and Compaction Section of this report.

Difficulty in achieving the recommended compaction may require drying the near-surface subgrade to a compactable moisture content, removal and replacement. In addition, difficulty in subgrade compaction may be an indication of loose, soft or unstable soil conditions that could require additional excavation. If these conditions exist, additional subgrade stabilization recommendations may be required at the time of construction.

Recommendations to achieve the recommended compaction can be made during construction and will depend on the conditions encountered in the field and other factors, such as project schedule and prevailing weather conditions.

Compaction of all subgrade soils should be performed using a heavy, self-propelled, sheepsfoot compactor capable of achieving the required compaction and must be performed in the presence of the Geotechnical Engineer's representative who will evaluate the performance of subgrade under compactive load. Difficulty in achieving subgrade compaction may be an indication of loose, soft, or unstable soil conditions that could require additional excavation. If these conditions exist, additional subgrade stabilization recommendations may be required at the time of construction.

4.3.2 Engineered Fill Materials and Placement

The on-site coarse grained soils encountered in our borings are considered suitable for use in engineered fill construction, provided these materials do not contain rubble, rubbish, significant organic concentrations, and are at a workable moisture content appropriate for compaction.

Clayey soils should not be allowed to dry out such that cracking occurs during or after grading. Sufficient moisture contents should be maintained, to prevent cracking, at least until foundations, floor slabs, flatwork, and pavements are constructed. Any significantly dried or cracked soils could be wetted until they reach acceptable moisture contents, or they could be excavated and replaced with acceptable properly compacted fill.

In building areas where the clay soils are within 3 feet of the final grade, tests should be performed to determine the degree of soil expansion as soon as possible during grading. If soil expansion within this zone exceeds exceeds an expansion Index of 20, our foundation recommendations will need to be revised. These tests should be performed on representative samples to determine the expansion index from oven-dried moisture content to approximately saturated moisture content.

Imported fill materials, if required, should be granular, compactable materials with a Plasticity Index of 15 or less when tested in accordance with ASTM D4318; an Expansion Index of 20 or less when tested in accordance with ASTM D4829; an organic content less than four percent; does not contain particles greater than three inches in maximum dimension, and be within a compactable moisture content. Imported fill should be observed and approved by the Geotechnical Engineer at least three business days prior to being transported to the site. Also, if import fills are required (other than aggregate base), the contractor must provide appropriate documentation that the import is clean of known contamination and within acceptable corrosion limits.

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Structural fill should be observed and tested as necessary to determine compliance with the compaction requirements presented in this report. In general, one compaction test should be performed for approximately every 500 cubic yards of fill, one for one foot of fill placed, or change in material. Structural fill should be placed in lifts not exceeding six inches in compacted thickness with each lift being uniformly moisture conditioned to at least the optimum moisture content and compacted to not less than 90 percent of the maximum dry density per ASTM D1557.

The upper six inches of pavement subgrade should be moisture conditioned to at least the optimum moisture content and compacted to no less than 95 percent relative compaction, regardless of whether final subgrade is achieved by excavation, filling or left at existing grade. Final pavement subgrade processing and compaction should be performed after completion of underground utilities and must be stable under construction prior to aggregate base placement.

Earthwork operations should be accomplished in accordance with the recommendations contained within this report. We recommend the Geotechnical Engineer's representative be present on a regular basis during all earthwork operations to observe and test the engineered fill and to verify compliance with the recommendations of this report and the project plans and specifications.

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Table 5-1: Compaction Criteria and Testing Frequency

Material Type (location)	Per Modified Proctor Test (ASTM D1557)			
	Minimum Compaction (%)	Moisture Content Range		Testing Frequency (min. 3 per lift)
		Minimum	Maximum	
Engineered Fill (Fine Grained)	90	Optimum	+3%	1 per 2,500 sf
Engineered Fill (Coarse Grained)	95	-2%	+2%	1 per 2,500 sf
Subgrade	95	-2%	+2%	1 per 5,000 sf
Aggregate base (pavements)	98	-3%	+3%	1 per 5,000 sf

Notes: OMC = Optimum Moisture Content

1. For compaction, fine-grained soils are soils with at least 30 percent passing the No. 200 sieve and/or soils having an expansion of less than 4 percent.
2. All fill placed deeper than 5 feet below the final grade should be compacted to a minimum of 95 percent at a moisture content of optimum or greater.
3. Street/pavement subgrade and retaining wall backfill only need to be compacted to a minimum of 90 percent.
4. Moderately to highly expansive clays, if encountered, should not be used as structural fill.

4.3.3 Permanent Slopes

Earthwork activities to construct slopes at the site should be done in accordance with the following:

- Permanent excavation and cut and/or fill slopes should be constructed no steeper than 2 horizontals to 1 vertical and should be vegetated as soon as practical following grading to minimize erosion.
- The surfaces of slopes should be compacted to the minimum specifications recommended in the Earthwork section of this report until the slopes are stable and there are no loose soils on the slopes. Alternatively, fill slopes could be constructed by over-filling and cutting back to expose fully compacted soil.

- As a minimum, the following erosion control measures should be considered: placement of straw bale sediment barriers or construction of silt filter fences in areas where surface run-off may be concentrated. Slopes should be overbuilt and cutback to design grades and inclinations. The final decision of erosion control measures should be made by the Project Stormwater Pollution Prevention Plan Engineer.

4.4 EXCAVATIONS

4.4.1 Excavation Conditions

The surface and near-surface soils at the site should be readily excavatable with conventional earthmoving and trenching equipment. Subsurface remnants from existing and/or previous development of the site, if any, may be encountered, and can be slow to excavate with a standard, rubber-tired backhoe; however, experience has shown that excavators can remove these materials with moderate effort.

Based on our borings, excavations associated with building foundations, shallow trenches for utilities, and other excavations less than five feet deep associated with the proposed construction, should stand vertically for short periods of time (i.e., less than one day) required for construction, unless cohesionless, saturated or disturbed soils are encountered. These unstable conditions may result in caving or sloughing; therefore, the contractor should be prepared to brace or shore the excavations, if necessary.

Excavations deeper than five feet that will be entered by workers should be sloped, braced or shored in accordance with current OSHA regulations. The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state, and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground.

Temporarily sloped excavations should be constructed no steeper than one horizontal to one vertical (1H:1V) inclination. Temporary slopes likely will stand at this inclination for the short-term duration of construction, provided significant pockets of loose and/or saturated granular soils are not encountered. Flatter slopes would be required if these conditions are encountered.

Excavated materials should not be stockpiled directly adjacent to an open excavation to prevent surcharge loading of the excavation sidewalls. Excessive truck and equipment traffic should be avoided near excavations. If material is stored or heavy equipment is stationed and/or operated near an excavation, a shoring system must be designed to resist the additional pressure due to the superimposed loads.

4.4.2 Utility Trench Backfill

Utility trench backfill should be mechanically compacted as engineered fill in accordance with the following recommendations. Bedding and initial backfill around and over the pipe should conform to the pipe manufacturers' recommendations for the pipe materials selected and applicable sections of the governing agency standards.

Utility trench backfill should be placed in thin lifts, thoroughly moisture conditioned to at least the optimum moisture content and compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557. The lift thickness will depend on the type of compaction equipment used to backfill utility trenches.

Within the upper six inches of pavement subgrade soils, compaction should be increased to at least 95 percent relative compaction at no less than two percent above the optimum moisture content.

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Backfill for the upper 12 inches of trenches must match the adjacent materials.

We recommend that all underground utility trenches aligned nearly parallel with new foundations be at least three feet from the outer edge of foundations, wherever possible. Trenches should not encroach into the zone extending outward at a one horizontal to one vertical (1H:1V) inclination below the bottom of foundations. The intent of these recommendations is to prevent loss of both the lateral and vertical support of foundations, resulting in possible settlement.

4.5 FOUNDATIONS

If the grading recommendations presented in the Earthwork section of this report are complied with, the proposed structures and any block walls or retaining walls may be supported by conventional type foundations. Any proposed retaining walls or block walls may be established on conventional footings. Foundations should be established on undisturbed natural soils having a consistency of at least medium dense (granular) or very stiff (fine-grained soils) and/or properly compacted fill or bedrock. If bedrock deposits are encountered at foundation elevations, foundations for the structure should be supported entirely on bedrock deposits. Foundations for a portion of a structure should not be established partly on bedrock deposits and partly on natural soils and/or properly compacted fill. Foundation design parameters are summarized below.

Soil-moisture changes below foundations and floor slabs are the major factor in damages relating to soils. Settlement of the proposed structures, supported as recommended, should be within acceptable limits as provided above. However, if the soils beneath foundations experience an increase in moisture, settlement could occur and cause additional movement of a structure. Therefore, it is important that the recommendations presented in the Drainage and Moisture Protection section of this report be adhered to.

Individual foundations should not be established partly on bedrock and partly on natural soils and/or properly compacted fill. In some instances, bedrock will be deeper than the design elevation of the bottom of the foundations. In such cases, the following three alternatives can be considered:

1. The column foundation should be extended to bedrock so that all foundations are supported on bedrock.
2. Rather than extending the column foundation to bedrock, lean concrete or controlled low-strength material (CLSM) may be used between the planned design bottom of the foundation and the top of the caliche. Lean concrete shall have a minimum design strength of 1,000 psi. CLSM shall have a minimum design strength of 100 to 300 psi. One test should be performed for every 50 cubic yards of CLSM or one test per placement day, whichever is more frequent. The sampling and testing of CLSM should be performed in accordance with ASTM D5971 and ASTM D4832, respectively.

4.5.1 Shallow Foundations

Any additional foundations for the proposed additions should match the existing foundations in type and depth to prevent differential settlement. Foundations in the upper 5 feet may be designed for allowable bearing pressures of 2,000 psf.

Table 5-5.1: Foundation Design Parameters

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Description	Parameter
Allowable bearing pressure [1,2]	2,000 psf (soil)
Minimum width [3]	12 inches
Minimum embedment depth [3, 4]	42 inches
Anticipated total settlement	Less than 1 inch
Anticipated differential settlement[5]	Less than ½ inch

Notes:
1. The bearing value may be increased by 2,000 psf for each additional 12 inches of embedment up to a maximum of 4,000 psf.
2. A one-third increase may be used for wind or seismic loads.
3. Minimum width and embedment depth are for conventional spread footings or the thickened edge of post-tension slab foundations.
4. Below the lowest adjacent final compacted subgrade (generally pad grade before landscaping; exterior footings) or the top of the finished floor slab (interior footings).
5. Differential settlements may be as much as ½ total settlement within a distance of 50 feet or the least dimension of the structure, whichever is less.

We recommend that all foundations be adequately reinforced to provide structural continuity, mitigate cracking and permit spanning of local soil irregularities. The structural engineer or civil engineering consultant should determine final foundation reinforcing requirements.

Resistance to lateral displacement of shallow foundations may be computed using an allowable friction factor of 0.36 multiplied by the effective vertical load on each foundation. Additional lateral resistance may be achieved using an allowable passive earth pressure against the vertical projection of the foundation equal to an equivalent fluid pressure of 280 psf per foot of depth. These two modes of resistance should not be added unless the frictional component is reduced by 50 percent since mobilization of the passive resistance requires some horizontal movement, effectively reducing the frictional resistance.

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4.6 Interior Floor Slab Support

Interior concrete slab-on-grade floors can be supported upon the soil subgrade prepared in accordance with the recommendations in this report and maintained in that condition (optimum moisture) and are protected from disturbance. Slabs-on-grade should be at least four inches thick, and final thickness, reinforcement and joint spacing should be determined by the slab designer. Proper and consistent location of the reinforcement near mid-slab is essential to its performance. The risk of uncontrolled shrinkage cracking is increased if the reinforcement is not properly located within the slab.

Interior floor slabs should be underlain by a layer of free-draining gravel/crushed rock, serving as a deterrent to migration of capillary moisture. The gravel/crushed rock layer should be between four and six inches thick and graded such that 100 percent passes a one-inch sieve and less than five percent passes a No. 4 sieve. Additional moisture protection may be provided by placing a plastic, water vapor retarder (at least 10-mils thick) directly over the gravel/crushed rock. The water vapor retarder should meet or exceed the minimum specifications for plastic water vapor retarders as outlined in ASTM E1745 and be installed in strict conformance with the manufacturer's recommendations.

Floor slab construction practice over the past 30 years or more has included placement of a thin layer of sand or pea gravel over the vapor retarder membrane. The intent of the sand/pea gravel is to aid in the proper curing of the slab concrete. However, recent debate over excessive moisture vapor emissions from floor slabs includes concern of water trapped within the sand/pea gravel. Therefore, we consider use of the sand/pea gravel layer as optional and not required from a geotechnical perspective. The concrete curing benefits should be weighed against efforts to reduce slab moisture vapor transmission.

The recommendations presented above are intended to reduce significant soil-related cracking of slab-on-grade floors. Also important to the performance and appearance of a PCC slab is the quality of the concrete, the workmanship of the concrete contractor, the curing techniques utilized and the spacing of control joints.

4.6.1 Floor Slab Moisture Penetration Resistance

It is considered likely that floor slab subgrade soils will become wet to near saturated at some time during the life of structures. This is a certainty when slabs are constructed during the wet seasons, or when constantly wet ground or poor drainage conditions exist adjacent to structures. For this reason, it should be assumed that interior slabs intended for moisture-sensitive floor coverings or materials, require protection against moisture or moisture vapor penetration. Standard practice includes the gravel/crushed rock and vapor retarder as suggested above. However, the gravel/crushed rock and plastic membrane offer only a limited, first line of defense against soil-related moisture; they do not moisture-proof the slab. Recommendations contained in this report concerning foundation and floor slab design are presented as minimum requirements, only from the geotechnical engineering standpoint.

It is emphasized that the use of gravel/crushed rock and plastic membrane below the slab will not "moisture proof" the slab, nor does it assure that slab moisture transmission levels will be low enough to prevent damage to floor coverings or other building components. If increased protection against moisture vapor penetration of slabs is desired, a concrete moisture protection specialist should be consulted. The design team should consider all available measures for slab moisture protection. It is commonly accepted that maintaining the lowest practical water-cement ratio in the slab concrete is one of the most effective ways to reduce future moisture vapor penetration of the completed slabs.

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4.7 Exterior Flatwork Construction

The upper 12 inches of final soil subgrade for exterior concrete flatwork areas should consist of approved, imported, compactable, very low-expansive (Expansion Index ≤ 20 or less than 4% swell) granular soils and compacted in accordance with the Engineered Fill Construction recommendations included in this report. Exterior flatwork subgrade soils should be maintained in a moist condition and protected from disturbance. Exterior flatwork should be underlain by at least four inches of Class 2 aggregate base compacted to at least 95 percent relative compaction. The aggregate base can be included in the 12 inches of very-low expansive granular soils.

Proper moisture conditioning of the subgrade soils is considered important to the performance of exterior flatwork. Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of the perimeter building foundation and isolated column foundations by the placement of a layer of felt material between the flatwork and the foundation.

Exterior flatwork concrete should be at least four inches thick in pedestrian traffic areas and underlain by at least four inches of aggregate base compacted to at least 95 percent of the ASTM D1557 maximum dry density. The four inches of aggregate base is not required if the low expansion imported fill below the flatwork consists of aggregate base.

Consideration should be given to thickening the edges of the slabs at least twice the slab thickness where wheel traffic is expected over the slabs. Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of other structural elements by the placement of a layer of felt material between the flatwork and the structural element. The slab designer should determine the final thickness, strength and joint spacing of exterior slab-on-grade concrete. The slab designer should also determine if slab reinforcement for crack control is required and determine final slab reinforcing requirements.

Our recommendations are intended to reduce the effects of variable soil subgrade conditions in exterior concrete flatwork areas. However, some seasonal movement of exterior flatwork should be anticipated where flatwork is adjacent to landscape areas.

Areas adjacent to new exterior flatwork should be landscaped to maintain more uniform soil moisture conditions adjacent to and beneath flatwork. We recommend final landscaping plans not allow fallow ground adjacent to exterior concrete flatwork.

4.8 Drainage Considerations

Foundation soils should generally not be allowed to become saturated during or after construction, except when necessary to increase moisture contents prior to construction. Infiltration of water into foundation or utility excavations should be prevented during construction. Utility lines should be properly installed and the backfill properly compacted to avoid possible sources for subsurface saturation.

Positive drainage away from the structures should be provided during construction and maintained throughout the life of the structure. Any downspouts, roof drains or scuppers should discharge into splash blocks or extensions and away from the structures. Backfill against footings, exterior walls, and in utility trenches should be properly compacted and free of all construction debris to reduce the possibility of moisture infiltration.

If the above recommendations are not followed there would be an increased risk/potential for increasing moisture below foundations and slabs, resulting in additional movement and distress to structures and slabs.

4.9 Retaining Walls

For soils above any free water surface, with level backfill and no surcharge loads, we recommend the following equivalent fluid pressures and coefficient of friction:

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Table 5-2: Soil Parameters

Soil Parameter	Value
Soil Unit Weight	140 pcf
Internal Angle of Friction	30°
Cohesion	0 psf
Coefficient of Friction	0.36

Table 5-3: Lateral Seismic Pressure

Loading Condition	Lateral Earth Coefficient		Equivalent Fluid Pressures (pcf)
Horizontal backfill	K_0	.50	70
	K_a	.33	47
	K_p	3.00	420

Notes:
1. The above values do not include a factor of safety. The designer should employ an adequate factor of safety
2. The above values assume no hydrostatic pressure.
3. Active pressure assumes unrestrained (cantilever) wall and assumes no loading from heavy compaction equipment.
4. Passive pressure should not exceed a maximum of 2,500 psf. A one-third increase may be used for wind or seismic loads.
5. The passive pressure and the frictional resistance of the soils may be combined with a reduction of half of the frictional resistance in determining the total lateral resistance.
6. Passive earth pressures should be considered negligible for block or retaining walls within 5-feet of a descending slope.

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If required by the 2021 IBC, the lateral seismic pressure acting on an unrestrained wall can be estimated by the method presented in the following equation, where the dynamic (seismic) lateral thrust, ΔPAE, per linear foot of wall may be determined as follows:

$$\Delta P_{AE} = {}^{3}/_{8}(k_h)H^2\gamma$$

- k_h is equal to $S_{DS}/2.5$
- H is the height of the wall in feet
- γ is equal to the unit weight of the backfill material, in pcf

The resultant dynamic force acts at 0.6H above the base of the wall. This equation applies to level backfill and walls that retain no more than 15 feet.

Where the design includes unrestrained walls, above any free water, with level backfill and no surcharge loads, we recommend the wall be designed to resist an earth pressure with the distribution shown below:

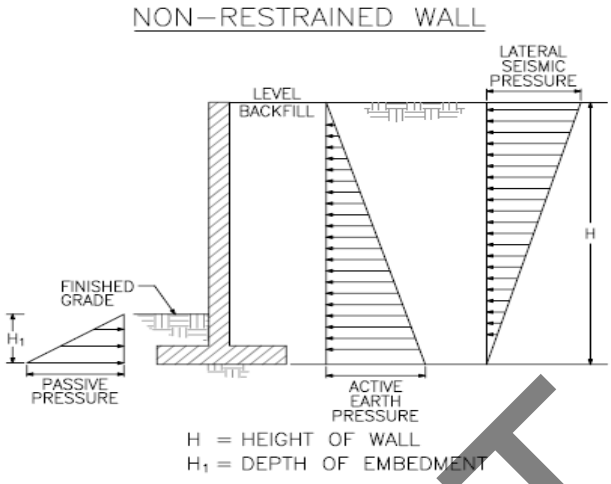


Figure 5-1: Non-restrained Wall

Any surcharge from adjacent loadings should be added to the retaining wall pressures using the Ka factor for non-restrained walls. Ka is presented in the table above. As indicated, the pressures assume that there will be no build-up of hydrostatic pressure. Therefore, if walls are subject to saturated conditions, we recommend weep holes (if practical) and a wall drainage system. The wall drainage may consist of a minimum of 2 cubic feet of drain rock per foot of length of retaining wall wrapped in filter fabric, Mirafi 140N or equivalent, placed at the base of the wall and discharge to an appropriate outlet. Drain rock should consist of clean, uniformly sized gravel, ¾-inch in nominal size. Alternatively, a drainage system including perforated pipe with filter sock placed within the drain rock is also acceptable. The structural fill immediately behind the retaining walls (6 to 12 inches) should be granular and free draining. The upper 2 feet of the backfill should consist of compacted native soils. As an option, a prefabricated drain could be used behind the walls. The wall drainage system is an integral part of the retaining wall design. The retaining wall designer is ultimately responsible for the retaining wall design and shall ensure that the above recommended drainage system is compatible with the design of the wall or select a different drainage system at their discretion. All walls below grade should be waterproof or at least dampproof.

Fill against foundations, grade beams and retaining walls should be properly placed and compacted. Backfill should be mechanically compacted in layers (12 inches maximum thickness); flooding should not be permitted. Backfill within a lateral distance equal to the height of retaining walls should be compacted to at least 90 percent of the maximum dry density obtainable by the ASTM D1557 method. The backfill materials within this zone should consist of none too low expansive soils. If expansive soils are used within this backfill zone, the wall should be designed to resist the additional pressure that may be exerted by the expansive soils. Backfill outside this zone should be compacted as outlined in the Fill Placement and Compaction section of this report. Care should be taken when placing backfill so as not to damage the walls. Compaction of each lift adjacent to walls should be accomplished with hand-operated tampers or other lightweight compactors. Over-compaction may cause excessive lateral earth pressures which could result in wall movements. Retaining walls should not be backfilled until the concrete or masonry has reached an adequate strength as specified by the wall designer.

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4.10 PAVEMENT DESIGN

4.10.1 Pavement Subgrade Quality

Based on laboratory test results for the surface and near-surface clay soils present at the site, we used a Resistance ("R") value of feet for pavement subgrades. Pavement sections presented in Table 8 have been calculated using the above R-values and traffic indices (TIs) assumed to be appropriate for this project. The project civil engineer should determine the appropriate traffic index for pavements based on anticipated traffic conditions. If needed, we can provide additional pavement sections for different traffic indices.

4.10.2 Pavement Design Recommendations

Based on laboratory test results for the surface and near-surface clay soils present at the site, we used a Resistance ("R") value of 72 for pavement subgrades. Pavement sections presented in the table below have been calculated using the above R-values and traffic indices (TIs) assumed to be appropriate for this project. The project civil engineer should determine the appropriate traffic index for pavements based on anticipated traffic conditions. If needed, we can provide additional pavement sections for different traffic indices.

Table 5-4: Pavement Design Alternatives

Traffic Index (TI)	Pavement Use	Subgrades R-values = 72		
		Type A Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Portland Cement Concrete (inches)
6.5	Automobile Parking Only	3½	4	--
		--	5	4

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We emphasize that the performance of pavements is critically dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavements. We recommend that pavement subgrade preparation (i.e., scarification, moisture conditioning and compaction) be performed after underground utility construction is completed and just prior to aggregate base placement. All aggregate bases should be compacted to at least 95 percent of the ASTM D1557 maximum dry density.

In the summer heat, high axle loads coupled with shear stresses induced by sharply turning tire movements can lead to failure in asphalt concrete pavements. Therefore, we recommend that consideration be given to using the Portland cement concrete (PCC) pavements in areas subjected to concentrated heavy wheel loading, such as truck turning areas and in front of trash enclosures. These PCC pavements should be designed in accordance with the pavement sections provided in the table above.

We suggest concrete slabs be constructed with thickened edges in accordance with ACI design standards. Reinforcing for crack control, if desired, should consist of No. 4 reinforcing bars placed on maximum 24-inch centers each way throughout the slab. Reinforcement must be located at mid-slab depth to be effective. Joint spacing and details should conform with the current PCA or ACI guidelines. Portland cement concrete should achieve a minimum compressive strength of 3500 pounds per square inch at 28 days.

Pavement subgrades must be stable and unyielding under heavy wheel loads of construction equipment. A proof-roll test using a fully loaded water truck should be performed prior to placement of aggregate base to help identify areas that are unstable, as observed by our representative. Areas that are found to be unstable should be excavated to firm, undisturbed materials and restored to grade with compacted aggregate base.

Materials quality and construction within the structural section of the pavement should conform to the applicable provisions of the latest edition of the Caltrans Standard Specifications.

It has been our experience that pavement failures may occur where a non-uniform or disturbed subgrade soil condition is created. Subgrade disturbances can result if pavement subgrade preparation is performed prior to underground utility construction and/or if a significant time passes between subgrade preparation and placement of aggregate base. Therefore, we recommend that final pavement subgrade preparation (i.e., sacrifice, moisture conditioning, and compaction) be performed just prior to aggregate base placement.

4.11 Plan Review

We recommend that our firm be retained to review the final plans and specifications to determine if the intent of our recommendations has been implemented in those documents. We are pleased to submit a proposal to provide these services upon request.

5.0 GEOTECHNICAL RISK AND LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed construction, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used prudent engineering and geologic judgment based upon the information provided and the data generated from our investigation. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist around the project at the time the report was prepared. No warranty, either express or implied, is provided.

If the proposed construction is modified or relocated or, if it is found during construction that subsurface conditions differ from those we encountered at our boring and/or CPT locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

We emphasize that this report is applicable only to the proposed construction and the investigated site. This report should not be utilized for construction on any other site. This report is considered valid for the proposed construction for a period of two years following the date of this report. If construction has not started within two years, we must re-evaluate the recommendations of this report and update the report, if necessary.

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FIGURES

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UES™

PREPARED BY
UES
Sandy, Utah

PROJECT
Name: McDonalds - Frisco CO
Number: 4430.2400047.0000

LOCATION
39.589635, -106.094464
Frisco, CO

SYMBOL KEY
Soil Boring
Site Location



UES	**PREPARED BY** UES Sandy, Utah	**PROJECT** Name: McDonalds - Frisco CO Number: 4430.2400047.0000	**LOCATION** 39.589635, -106.094464 Frisco, CO	**SYMBOL KEY** Soil Boring Site Location

APPENDIX A

DRAFT

UES TM
477 Parkland Drive
Office: -

McDonalds - Frisco CO

Lat/Lon: 39.589537/-106.094716

SOIL BORING: B-01

Date Started:	12/19/2024	Date Completed:	12/19/2024	Lat Lng:	39.589537, -106.094716
Location Accuracy:	Tablet GPS	Project No:	4430.2400047.0000	Client Name:	McDonalds
Checked By:	TDB	Drilling Firm:	Dakota	Hammer Drop:	30
Hammer Type:	Cathead	Hammer Weight:	140	Method:	Auger

Rig Type: CME-55
Tooling: 4" Solid Stem Auger
Surface Elevation: ~N/A

Depth (ft)	Visual Classification and Remarks	Lab: % Fines	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Samples: Sample Type	Samples: Blow Counts	Pocket Penetrometer (tsf)
	FILL, **Asphalt** 0.5				SPT	32 17 11	
	Orangish brown, moist, **Clayey Sand** (SC) 2.5						
	Orangish brown, moist, **Silty Sand** with **Gravel**	48	28-17-11	13.7	SPT	10 10 17	
5	5.5				SPT	9 11 12	
	Brown, moist, **Silty Sand** (SM)	25	NV	13.3	SPT	7 3 4	
	10.0						
10	Dark grey				SPT	7 25 4	
	16.5						
15	15.5				SPT	50/3"	
	Dark grey, coarse grained, **Poorly Graded Sand** (SP)						
	Boring Ended at 16.5						
20							
25							

DRAFT

Graphics Legend

- Asphalt
- SC
- SC
- SM
- SP

Water Levels

- No free water encountered
- -

UES TM
477 Parkland Drive
Office: -

McDonalds - Frisco CO

Lat/Lon: 39.589875/-106.094719

SOIL BORING: B-02

Date Started:	12/19/2024	Date Completed:	12/19/2024	Lat Lng:	39.589875, -106.094719
Location Accuracy:	Tablet GPS	Project No:	4430.2400047.0000	Client Name:	McDonalds
Checked By:	TDB	Drilling Firm:	Dakota	Hammer Drop:	30
Hammer Type:	Cathead	Hammer Weight:	140	Method:	Auger

Rig Type: CME-55
Tooling: 4" Solid Stem Auger
Surface Elevation: ~N/A

Depth (ft)	Graphic Log	Visual Classification and Remarks	Lab: % Fines	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Samples: Sample Type	Samples: Blow Counts	Samples: Pocket Penetrometer (tsf)
		FILL, **Asphalt** 0.5				SPT	50/5"	
		Orangish brown, moist, **Silty Sand** with **Gravel** (SM)				SPT	50/2"	
5			15	NV	3.1	SPT	31 21 20	
		6.5						
		Boring Ended at 6.5'						
10								
15								
20								
25								

DRAFT

Graphics Legend

Asphalt

SM

Water Levels

- -
- -

UES TM
477 Parkland Drive
Office: -

McDonalds - Frisco CO

Lat/Lon: 39.589698/-106.094641

SOIL BORING: B-03

Date Started:	12/19/2024	Date Completed:	12/19/2024	Lat Lng:	39.589698, -106.094641
Location Accuracy:	Tablet GPS	Project No:	4430.2400047.0000	Client Name:	McDonalds
Checked By:	TDB	Drilling Firm:	Dakota	Hammer Drop:	30
Hammer Type:	Cathead	Hammer Weight:	140	Method:	Auger

Rig Type: CME-55
Tooling: 4" Solid Stem Auger
Surface Elevation: ~N/A

Depth (ft)	Graphic Log	Visual Classification and Remarks	Lab: % Fines	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Samples: Sample Type	Samples: Blow Counts	Samples: Pocket Penetrometer (tsf)
		FILL, **Asphalt** 0.5				SPT	50/2"	
		Brown, moist, **Gravel** with **Sand**				SPT	20 9 10	
		4.5						
5		Brown, moist, **Clay** with **Sand**				SPT	6 9 10	
		7.5						
		Orangish brown, moist, **Silty Sand** with **Gravel** (SM)				SPT	8 8 10	
10						SPT	14 16 17	
		14.0						
		Orangish brown, moist, **Silty Sand** with **Gravel** (SM)				SPT	24 16 17	
15		16.5						
20								
25								

DRAFT

Graphics Legend

- Asphalt
- Gravel
- CL
- SM

Water Levels

- No free water encountered
- -

UES
477 Parkland Drive
Office: -

McDonalds - Frisco CO

Lat/Lon: 39.589618/-106.094325

SOIL BORING: B-04

Date Started:	12/19/2024	Date Completed:	12/19/2024	Lat Lng:	39.589618, -106.094325
Location Accuracy:	Tablet GPS	Project No:	4430.2400047.0000	Client Name:	McDonalds
Checked By:	TDB	Drilling Firm:	Dakota	Hammer Drop:	30
Hammer Type:	Cathead	Hammer Weight:	140	Method:	Auger

Rig Type: CME-55
Tooling: 4" Solid Stem Auger
Surface Elevation: ~N/A

Depth (ft)	Visual Classification and Remarks	% Fines	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Sample Type	Blow Counts	Pocket Penetrometer (tsf)
	FILL, **Asphalt** 0.5						
	Brown, moist, **Gravel** with **Sand**			7.0	SPT	17 50/3"	
					SPT	50/1"	
5	5.0						
	Orangish brown, moist, **Gravel** with **Sand**			10.5	SPT	7 10 9	
	7.5						
	Orangish brown, moist, **Silty Sand** (SM)	21	NV	9.3	SPT	11 7 8	
	9.0						
10	Orangish brown, moist, **Sand** with **Gravel**			5.8	SPT	25 23 20	
▽ 15	15.0						
	Wet			11.9	SPT	12 10 10	
	19.0						
20		4	NV	9.3	SPT	17 10 10	
25				13.4	SPT	7 3 4	
	26.5						

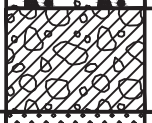
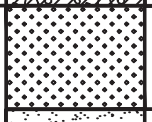
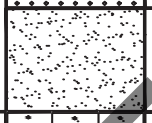
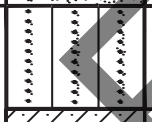
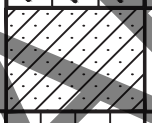
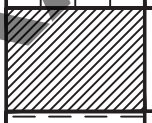
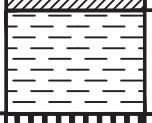
DRAFT

Graphics Legend

- At Time of Drilling (ATD)
- Asphalt
- Gravel
- SM
- SM

Water Levels

- Water encountered @ 15' on 12/19
- -

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

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UES™

CLIENT:

PROJECT:

Materials Classification

PROJECT NO.

PLATE NO.:

APPENDIX B

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Laboratory Results Summary

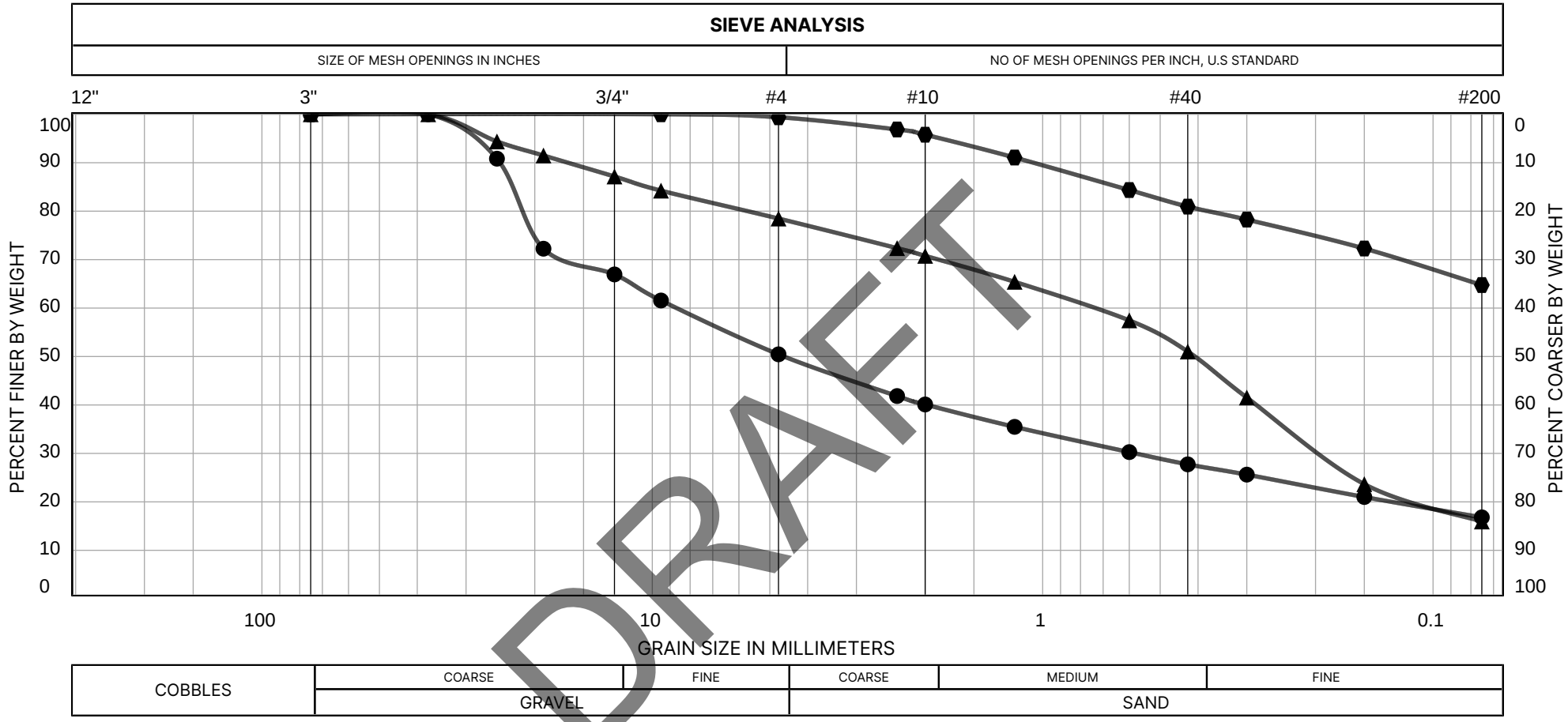
PROJECT McDonalds - Frisco CO
CLIENT McDonalds
PROJECT NO. 4430.2400047.0000
LOCATION Frisco, CO

Boring ID	Sample ID	Depth (ft)	Moisture Content (%)	LL	PL	PI	%Gravel	% Sand	% Fines	USCS
B-01	B1-2.5	2.5-4	13.7	28	17	11	18	34	48	SC
B-01	B1-7.5	7.5-9	13.3	0	NP	NP	12	63	25	SM
B-02	B2-5	5-6.5	3.1	0	NP	NP	28	56	15	SM
B-03	B3-2.5	2.5-4	7.4	0	NP	NP	50	34	17	GM
B-03	B3-5	5-6.5	19.9	33	18	15	1	35	65	CL
B-03	B3-15	15-16.5	11.3	0	NP	NP	22	63	16	SM
B-04	B4-0.5	0.5-1.3	7							
B-04	B4-5	5-6.5	10.5							
B-04	B4-7.5	7.5-9	9.3	0	NP	NP	11	68	21	SM
B-04	B4-10	10-11.5	5.8							
B-04	B4-15	15-16.5	11.9							
B-04	B4-20	20-21.5	9.3	0	NP	NP	35	62	4	SP
B-04	B4-25	25-26.5	13.4							

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GRAIN SIZE DISTRIBUTION TEST RESULTS

McDonalds - Frisco CO
Frisco, CO

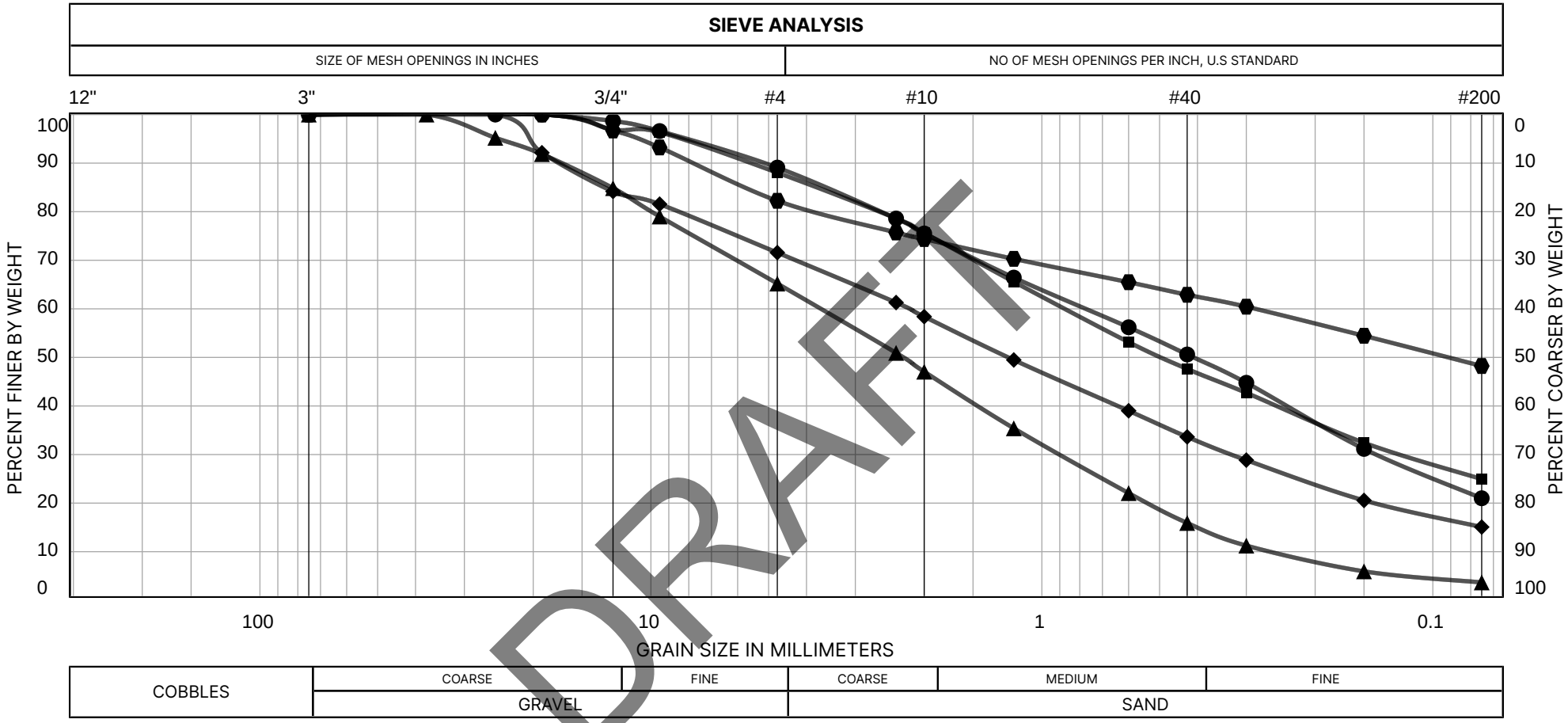


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	EXPLORATION	SAMPLE NUMBER	DEPTH	UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) GROUP NAME	USCS SYMBOL	COBBLE (%)	GRAVEL (%)	SAND (%)	FINES (%)	CF (%)	D10	D15	D30	D50	D60	D85	D90	D100
▲	B-03	B3-15	15	Silty SAND with Gravel	SM		22	63	16				0.21	0.41	0.79	10.29	16.8	56.25
⬢	B-03	B3-5	5	Sandy LEAN CLAY	CL		1	35	65							0.66	1.09	42.25
●	B-03	B3-2.5	2.5	Silty GRAVEL with Sand	GM		50	34	17				0.58	4.64	8.89	23.26	24.76	56.25

GRAIN SIZE DISTRIBUTION TEST RESULTS

McDonalds - Frisco CO
Frisco, CO

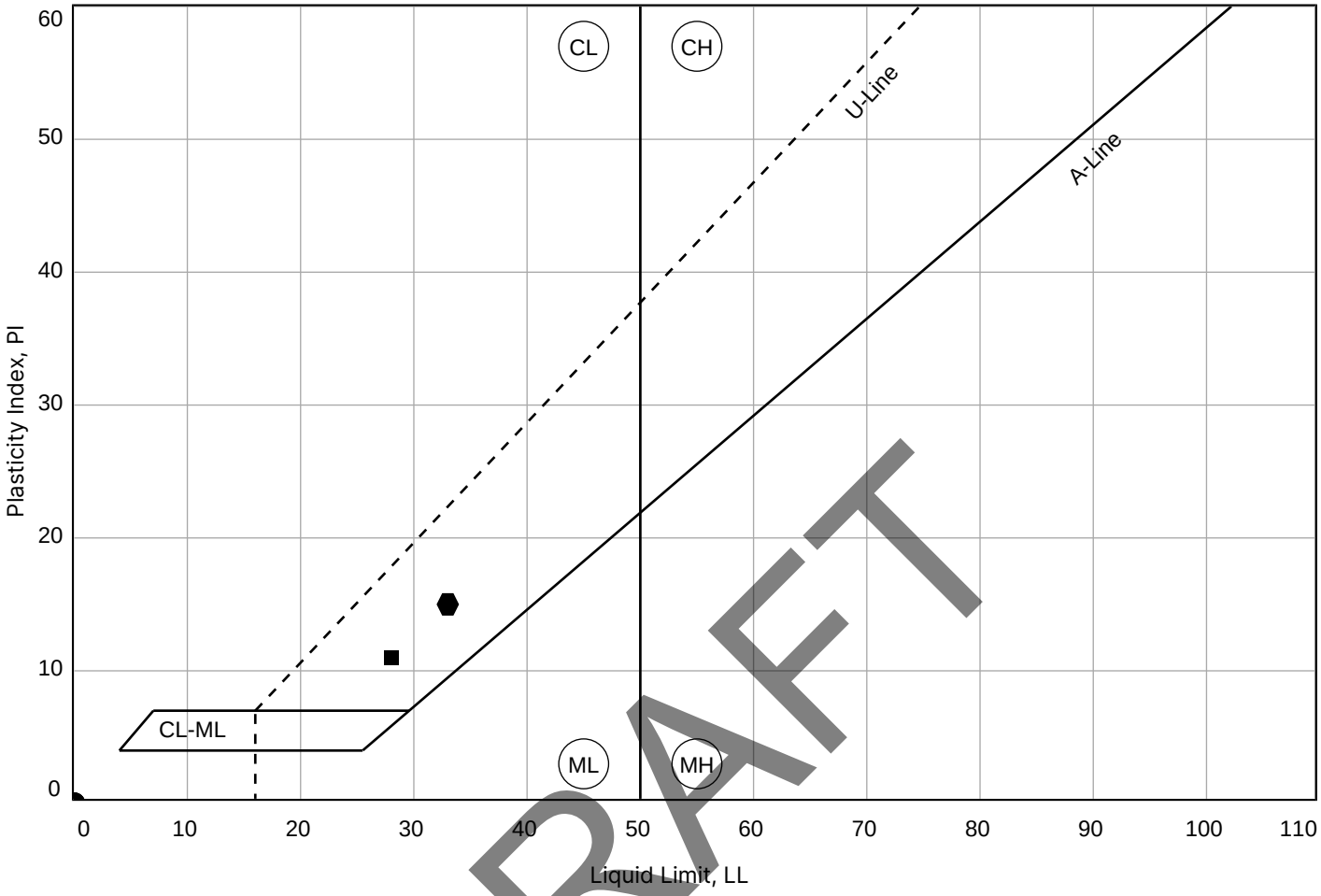


DRAFT

	EXPLORATION	SAMPLE NUMBER	DEPTH	UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) GROUP NAME	USCS SYMBOL	GRAVEL (%)	SAND (%)	FINES (%)	CF (%)	D10	D15	D30	D50	D60	D85	D90	D100
■	B-01	B1-7.5	7.5	Silty SAND	SM	12	63	25				0.13	0.5	0.93	4.01	5.91	47
⬣	B-01	B1-2.5	2.5	Clayey SAND with Gravel	SC	18	34	48					0.1	0.29	6	8.16	47
◆	B-02	B2-5	5	Silty SAND with Gravel	SM	28	56	15				0.33	1.23	2.2	13.21	17.32	50
▲	B-04	B4-20	20	Poorly graded SAND with Gravel	SP	35	62	4		0.27	0.4	0.98	2.28	3.95	12.64	17.33	56.25
●	B-04	B4-7.5	7.5	Silty SAND	SM	11	68	21				0.14	0.41	0.83	3.85	5.35	50

ATTERBERG LIMITS TEST RESULTS

PROJECT McDonalds - Frisco CO
CLIENT McDonalds
PROJECT NO. 4430.2400047.0000
LOCATION Frisco, CO



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EXPLORATION	SAMPLE NUMBER	DEPTH	UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) GROUP NAME	USCS SYMBOL	LL	PL	PI	FINES (%)	NAT MC (%)	TEST BY/RVW	TEST STD	TEST NOTE
B-01	B1-2.5	2.5	Clayey SAND with Gravel	SC	28	17	11	48			D4318	
B-01	B1-7.5	7.5	Silty SAND	SM	0	NP	NP	25			D4318	
B-02	B2-5	5	Silty SAND with Gravel	SM	0	NP	NP	15			D4318	
B-03	B3-2.5	2.5	Silty GRAVEL with Sand	GM	0	NP	NP	17			D4318	
B-03	B3-5	5	Sandy LEAN CLAY	CL	33	18	15	65			D4318	
B-03	B3-15	15	Silty SAND with Gravel	SM	0	NP	NP	16			D4318	
B-04	B4-7.5	7.5	Silty SAND	SM	0	NP	NP	21			D4318	
B-04	B4-20	20	Poorly graded SAND with Gravel	SP	0	NP	NP	4			D4318	

CHEMTECH-FORD
LABORATORIES

1/8/2025

Work Order: 24L1961
Project: Frisco CO McDonalds

DRAFT

Universal Engineering Science
Attn: Trae Boman
477 Parkland Drive
Sandy, UT 84070

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

NELAP ACCREDITED TNI LABORATORY

Approved By:



Reed Hendricks, Lab Director

Chemtech-Ford Laboratories
Serving the Intermountain West Since 1953

9632 South 500 West
Sandy, UT 84070
O:(801) 262-7299 F: (866) 792-0093
www.ChemtechFord.com

Certificate of Analysis

Universal Engineering Science
Trae Boman
477 Parkland Drive
Sandy, UT 84070

PO#:
Receipt: **12/30/24 13:45 @ 19.9** °C
Date Reported: 1/8/2025
Project Name: **Frisco CO McDonalds**

Sample ID: **B4 @ 5**

Matrix: **Solid**
Lab ID: **24L1961-01**
Date Sampled: **12/19/24 0:00**
Sampled By: **Trae Boman**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Inorganic							
Chloride, Soluble (IC)	38	mg/kg dry	11	EPA 300.0	1/3/25	1/3/25	
pH	7.6	pH Units	0.1	EPA 9045D	12/30/24 14:47	12/30/24 15:35	
Resistivity	55.6	ohm m	1.0	SSSA 10-3.3	1/6/25	1/6/25	
Sulfate, Soluble (IC)	16	mg/kg dry	11	EPA 300.0	1/3/25	1/3/25	
Total Solids	92.2	%	0.1	CTF8000	12/31/24	12/31/24	

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Sandy, UT 84070

PO#:
Receipt: **12/30/24 13:45 @ 19.9** °C
Date Reported: 1/8/2025
Project Name: **Frisco CO McDonalds**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.
On calculated parameters, there may be a slight difference between summing the rounded values shown on the report vs the unrounded values used in the calculation.

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Hole No.: B-02

Location: 39.589859°, -106.094755°, Elev. 9060'

Technician: TB

Soil Tested: Silty SAND with Gravel

Dimensions: 4" Inner Diameter PVC Pipe

Date: Set-Up 12/19/24 Run 12/19/24

Conditions: Sunny, 50°F

LOG

Time		Measured Drop [in]	Water Added (gal.)	Remarks
0:00	11:00 AM	Start		Presoak = 7 gal
0:30	11:30 AM	10 1/8	5 gal	
0:30	12:00 PM	10 1/8	3 gal	
0:30	12:30 PM	9 7/8	3 gal	
0:30	1:00 PM	9 1/8	1 gal	
0:30	1:30 PM	8 7/8	1 gal	
0:30	2:00 PM	7 7/8	0.5 gal	
0:30	2:30 PM	5 5/8	0.5 gal	
0:30	3:00 PM	5 5/8		Test Stopped, Parameters Met

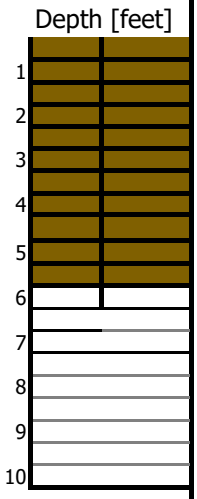
INFILTRATION RATE: [in/hr] **11.3**
(Sum of Last Hour of Test = Stabilized Rate)

TEST PERFORMED AT: **6**

PIT EVALUATED BY: Dakota

Test Pit Log

Silty SAND with Gravel



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UES™

Falling-Head Infiltrometer

Job No: 4430.2400047

McDonalds - Frisco, CO