



Application Type:

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

PROJECT NAME:

APPLICANT

Name(s): Phone #:

Address:

City, State, Zip:

2nd Phone #: Email:

OWNER

Name(s): Phone #:

Address:

City, State, Zip:

2nd Phone #: Email:

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

Name: Phone #:

Address:

City, State, Zip:

2nd Phone #: Email:

DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor Parcel Number

Existing Zoning:

Existing Land Use:

Proposed Land Use:

Have you attended a Conceptual Review? YES NO

If Yes, please list PRE#:

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

Name:

Date:

Owner's Printed Name

Name:

Owner's Signature

Explanation of Project

Albert Frei & Sons – Henderson Aggregate, LTD. – Stagecoach Inert Fill
12601 Brighton Rd, Henderson, CO 80640
CERTIFICATE OF DESIGNATION PERMIT APPLICATION
INERT FILLING

This purpose of this permit application is to fill a previously mined sand and gravel pit to raise the grade of the land surface to match adjacent property. A certificate of designation (CD) permit is applied for to fill the property due to the length of time (up to 20 years) and the volume of inert materials needed to restore the site to original grades. The entire approximately 40 acre mined pit will be filled with approximately 2.5 million cubic yards of fill materials to bring the surface to an elevation matching the adjacent property grades. All parcels are owned by Henderson Aggregate, LTD.

The parcels are:

Parcel	Zoning	Assessor Lot Size
0157135015002	A-3	2.5 acres
0157135015001	A-3	22.3 acres
0157135202001	A-3	22.8 acres
0157126000018	C-2	78.1 acres
Total		125.7 acres

Total area is approximately 125.7 acres.

Adam County regulation 2-02-04-05(8) describes the purposes of a hearing for information on impacts on the surrounding land uses, access and traffic impacts and conformance with standards and regulations and the Adams County Comprehensive Plan. The land use for an inert fill is compatible with the surrounding area that consists of A-1 and A-3 zoning in adjacent areas. The South Platte River is to the west with ponds and Adams County Regional Park beyond the river, sparse residences to the south and east along with reservoirs to the east. The Worthing Fill site, aka. Henderson Inert Fill site, which is to the north, is an existing CD site operated by Henderson Aggregate, LTD. Considering that the existing Henderson Inert Fill site and the proposed Stagecoach Inert Fill site have the same entrance and are in the same general area that was once mined, it stands to reason that the Stagecoach site is now in need of fill to bring to grade. The proposed Stagecoach Inert Fill site conforms with Adams County land uses in the area, and the Adams County Comprehensive Plan.

At the end of the filling process, the site will be graded and available for compatible land uses. Currently, the conceptual view of the site is low density high end residential development. The upper three feet of fill at the Stagecoach Inert Fill site will only include materials free of larger pieces of rock, concrete, asphalt and other aggregate to help facilitate future installation of utilities and to allow for more flexibility for structural designs.

Site aspects of the proposal are as follows:

1. Slurry Wall – The mined pit where the proposed inert filling will be done, is surrounded with a clay slurry wall. The clay slurry wall provides a barrier to groundwater infiltration and significantly limits future contact and flow of groundwater into or out of the proposed inert fill.
2. Design and Operations Plan – The filling operations will be done in conformance with a Design and Operations Plan (DOP) that will be approved by the Colorado Department of Public Health and Environment (CDPHE) and Adams County. The DOP assures that the filling and operational activities comply with State and County regulations.
3. Water and Sewer – The site does not have or need water and sewer for the inert fill. Dust suppression water will be available from the Stagecoach pit and a portable toilet will be supplied at the entrance. Public water service is available along Brighton Road. Future septic systems will be put in place as needed.
4. Utility Service – United Power provides electric service to the property.
5. Fire Protection – Brighton Fire Protection District provides emergency services to the property. There are no building plans or property improvements that require approvals from the District.
6. Geologic and Soils Conditions – Houses and highways have been constructed on adjacent and nearby property. There are no geologic conditions or concerns associated with the property. Future buildings will require soils and subsurface conditions testing for foundation designs that will be part of the building permit process. It should be noted that AFS intends to maintain an inert fill free of larger pieces of rock, concrete, asphalt of other aggregate. By doing this, installation of utilities will be easier, and houses can be built either slab on grade or with basement with a minor grade change to a future lot.
7. Floodplain and Drainage – The 100-year floodplain is delineated on the FIRM Map. The west side of the site is within the floodplain of the South Platte River. The purpose of the inert fill is to bring the grades to similar elevations that existed prior to mining. During the filling, all stormwater drainage will be into the mined pit and not run-off of the site. The area within the floodplain will be brought to grade, but not above grade and thus a floodplain use permit will not be required.
8. Road Improvements – There is no need for road improvements. The existing entrance to the Worthing Inert Fill site (aka Henderson Inert Fill) at 13205

Brighton Rd will be used to access the Stagecoach Inert Fill site. The existing entrance is located at approximately 132nd and Brighton Road. No public road improvements are needed or proposed with the request. A traffic engineer report from LSC Consulting is attached and indicates that no additional roadway improvements are needed with existing traffic or conditions well into the future.

9. Neighborhood Meeting – A neighborhood meeting was held on February 2, 2022. Approximately 40 neighbors were sent notices with a complete notice list provided in the summary. The primary issues discussed were related to traffic, dust suppression, noise from trucks, and future proposed use.

AFS has a long history of working with inert fill sites. Since the early 1980s, AFS has held permits exclusively for inert fill, setting a permitting trend for facilities. Permits allow for a secure, well managed site with a known closure condition and filling without environmental impacts. The proposed CD is compatible with the surrounding A-1 and A-3 zoned properties, the Adams County Comprehensive Plan and requirements of Adams County's Standards and Regulations. The proposal is harmonious and not detrimental to the surrounding area, to the character of the neighborhood, and respects the health, safety, and welfare of the inhabitants of the area and of the County. The applicant respectfully requests a favorable recommendation from the County Staff, and favorable approvals from the Planning Commission and Board of County Commissioners.

Attachments include:

1. Land Survey Plat – Stagecoach
2. Entrance and Traffic Flow Map
3. Legal Description
4. Certificate of Taxes Paid
5. Proof of Ownership
6. Title Commitment
7. Neighborhood Meeting
8. Traffic Engineering Report

Upcoming activities for submittals:

Preparation of Inert Fill Design and Operation Plan

Certificate of Notice to Mineral Estate Owners/and Lessees – will be submitted once hearing date is set

Certificate of Surface Development – will be submitted once hearing date is set

Highlights of the proposed inert fill application are:

- Clay slurry wall barrier surrounding the pit meeting DWR standards for water storage
- Only the mined pit is being filled
- Restoring the property to pre-mining grades is needed to have usable land for future development
- Upper 3 feet of surface will be filled with materials meeting the geotechnical needs for a slab on grade concrete pad and utility installation
- Traffic impacts will not change in that truck traffic going to the currently operating Worthing fill site will instead go to the Stagecoach site through the same entrance off Brighton Road
- A traffic study by LSC Consultants generally concludes that no road improvements are needed for existing traffic or conditions well into the future.
- Consistent with the Adam County 2012 Comprehensive Plan
- Neighborhood Meeting Summary indicates that the project is generally acceptable to the neighbors

The applicant is aware of required submittals including but not limited to:

- Site plans for development
- Certificates of notice to mineral estate owners
- Certificate of surface development
- Fire protection report
- School impact analysis

OWNER REPRESENTATIVE:
Henderson Aggregate, LTD.
Ben Frei – 303-913-6532
bfrei@albertfreiandsons.com

CONSULTANT:
Mark Molen – 303-450-1600
mark@molenandassociates.com

Attachment 1

Land Survey Plat – Stagecoach

LAND SURVEY PLAT

LOCATED IN THE SOUTH 1/2 OF SECTION 26 AND THE NORTHWEST 1/4 OF SECTION 35,
TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SCHEDULE B - SECTION II EXCEPTION NOTES (CONTINUED)

- 48 ROYALTIES AND OVERRIDING ROYALTIES AND LEASES CONTAINED IN ASSIGNMENT AND BILL OF SALE RECORDED APRIL 12, 2018 AT RECEPTION NO. 201800029832. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO ALL PARCELS
RECEPTION NO. 201300096955 IS LISTED IN EXHIBIT A (SHEETS 81 AND 88 OF 131) WHICH IS LISTED IN EXCEPTION #28, ABOVE. AFFECTS PARCELS IA AND IB. NOT PLOTTED.
- 49 RESERVATIONS AS SHOWN IN MINERAL DEED RECORDED NOVEMBER 28, 2018 AT RECEPTION NO. 201800095303. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
PARCEL IIB LIES WITHIN THE PROPERTY DESCRIBED IN DEED. NOT PLOTTED.
- 50 RESERVATIONS AS SHOWN IN MINERAL DEED RECORDED APRIL 30, 2019 AT RECEPTION NO. 201900031902. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
RESERVATION DESCRIBES LAND IN RECEPTION NO. 1975010081147 (BEING THE SAME LAND DESCRIPTION AS SUBJECT PROPERTY PARCEL IIB) LYING WEST OF THE CENTERLINE OF THE SOUTH PLATTE RIVER. THE CURRENT CENTERLINE OF THE SOUTH PLATTE RIVER IS HELD TO ILLUSTRATE THIS EXCEPTION. AS SHOWN AND LABELED HEREON.
- 51 MEMORANDUM OF AGREEMENT RECORDED JULY 15, 2019 AT RECEPTION NO. D9069166. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: ARAPAHOE COUNTY RECORDS NOTE: AS TO PARCEL IIB
EASEMENT LIES ON PARCEL IIB, AS SHOWN AND LABELED HEREON.
- 52 ASSIGNMENT AND ASSUMPTION OF CARRIAGE CAPACITY (UNITED RESERVOIR NO. 3 DIVERSION AND RETURN FACILITY) RECORDED JULY 17, 2019 AT RECEPTION NO. 201900056212 AND RECORDED JULY 17, 2019 AT RECEPTION NO. 201900056213. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
THE LOCATION OF DIVERSION FACILITY NO. 3 IS NOT MATHEMATICALLY DEFINED, HOWEVER THE REFERENCED EASEMENT IS SHOWN AND LABELED ON PARCEL IIB PER EXCEPTION 19, ABOVE.
- 53 RESERVATIONS/WATER RIGHTS AS SHOWN IN GENERAL WARRANTY DEED RECORDED MAY 31, 2019 AT RECEPTION NO. 2019000041573. NOTE: AS TO PARCEL IIB
LOCATION OF UNITED DIVERSION NO. 3 IS NOT MATHEMATICALLY LOCATED BUT IS ASSUMED TO BE THE SAME FACILITY AS MENTIONED IN EXCEPTION 52, ABOVE. APPEARS TO AFFECT PARCEL IIB.
- 54 RESERVATIONS AS SHOWN IN MINERAL DEED RECORDED JULY 30, 2019 AT RECEPTION NO. 2019000060693. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
RESERVATION DESCRIBES LAND IN RECEPTION NO. 1975010081147 (BEING THE SAME LAND DESCRIPTION AS SUBJECT PROPERTY PARCEL IIB) LYING WEST OF THE CENTERLINE OF THE SOUTH PLATTE RIVER. THE CURRENT CENTERLINE OF THE SOUTH PLATTE RIVER IS HELD TO ILLUSTRATE THIS EXCEPTION. AS SHOWN AND LABELED HEREON.
- 55 RESERVATIONS AS SHOWN IN MINERAL DEED RECORDED OCTOBER 4, 2019 AT RECEPTION NO. 2019000085171. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
LAND DESCRIBED IN DEED IS THE SAME DESCRIPTION AS SUBJECT PROPERTY PARCEL IIB, AS SHOWN AND LABELED HEREON.
- 56 DECREE DETERMINING HEIRSHIP AS TO MINERAL RIGHTS RECORDED JULY 29, 2020 AT RECEPTION NO. 202000072059. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
THE APPROXIMATE LOCATION OF PARCEL NO. 1 OF DECREE IS SHOWN AND LABELED HEREON, HOLDING THE CURRENT CENTERLINE OF THE SOUTH PLATTE RIVER. AFFECTS PARCEL IIB.
- 57 MEMORANDUM OF WATER SUPPLY AGREEMENT RECORDED JULY 30, 2020 AT RECEPTION NO. 202000072946, 202000072947, 202000072948, 202000072949, 202000072950, 202000072951. NOTE: AS TO PARCEL IIB
SUBJECT PROPERTY PARCEL IIB LIES WITHIN THE PAD SITES DESCRIBED IN EXHIBIT A OF MEMORANDUMS. NOT PLOTTED.
- 58 ACCESS AND UTILITY EASEMENT RECORDED OCTOBER 6, 2020 AT RECEPTION NO. 202000100676. NOTE: AS TO ALL PARCELS
EASEMENT SHOWN AND LABELED HEREON. AFFECTS PARCELS IB AND IIB.
- 59 NON-EXCLUSIVE EASEMENT AGREEMENT RECORDED OCTOBER 6, 2020 AT RECEPTION NO. 202000100677. NOTE: AS TO ALL PARCELS
EASEMENT SHOWN AND LABELED HEREON. AFFECTS PARCELS IA, IB AND IIB.
- 60 LEASE FOR CONSTRUCTION PURPOSES RECORDED OCTOBER 6, 2020 AT RECEPTION NO. 202000100678. NOTE: AS TO ALL PARCELS
LEASE AREA BOUNDARIES IN EXHIBIT A ARE NOT ALL MATHEMATICALLY DEFINED BUT ARE SCALED FROM THE RECORDED LEASE AS SHOWN AND LABELED HEREON. EXHIBIT B IS NOT INCLUDED IN RECORDED DOCUMENT AND CANNOT BE REVIEWED. APPEARS TO AFFECT PARCELS IA, IB AND IIB.
- 61 RESERVATIONS, INGRESS, EGRESS AND MINING AS SHOWN IN MINERAL DEED RECORDED OCTOBER 14, 2020 AT RECEPTION NO. 202000104147. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
EXHIBIT A DESCRIBES 'PTS SEC 26 AND 34 T1S, R67W', BUT IS NOT MATHEMATICALLY DEFINED. SUBJECT PROPERTY PARCEL IIB LIES WITHIN SECTION 26 AND MAY BE AFFECTED BY SAID DEED. NOT PLOTTED.
- 62 RESERVATIONS AS SHOWN IN MINERAL DEED RECORDED DECEMBER 17, 2020 AT RECEPTION NO. 202000132526. NOTE: THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED. NOTE: AS TO PARCEL IIB
PARCEL IIB LIES WITHIN SECTION 26 AND THEREFORE MAY BE AFFECTED BY SAID DEED. NOT PLOTTED.
- 63 EASEMENT HOLDERS CONSENT RECORDED FEBRUARY 19, 2021 AT RECEPTION NO. 202100020357. NOTE: AS TO PARCELS IB, IIB
SEE EXCEPTION 16, ABOVE FOR EASEMENT RECEPTION #C1074107 REFERRED TO IN CONSENT. PROPERTY SHOWN IN EXHIBIT A IS NOT MATHEMATICALLY DEFINED AND IS NOT SHOWN HEREON, BUT APPEARS TO AFFECT SUBJECT PROPERTY PARCEL IIB. NOT PLOTTED.

1	NO	CLIENT COMMENTS			REVISION RECORD		DATE		ALB		BY											

LAND SURVEY PLAT
STAGECOACH PIT
ADAMS COUNTY, COLORADO



Gillians

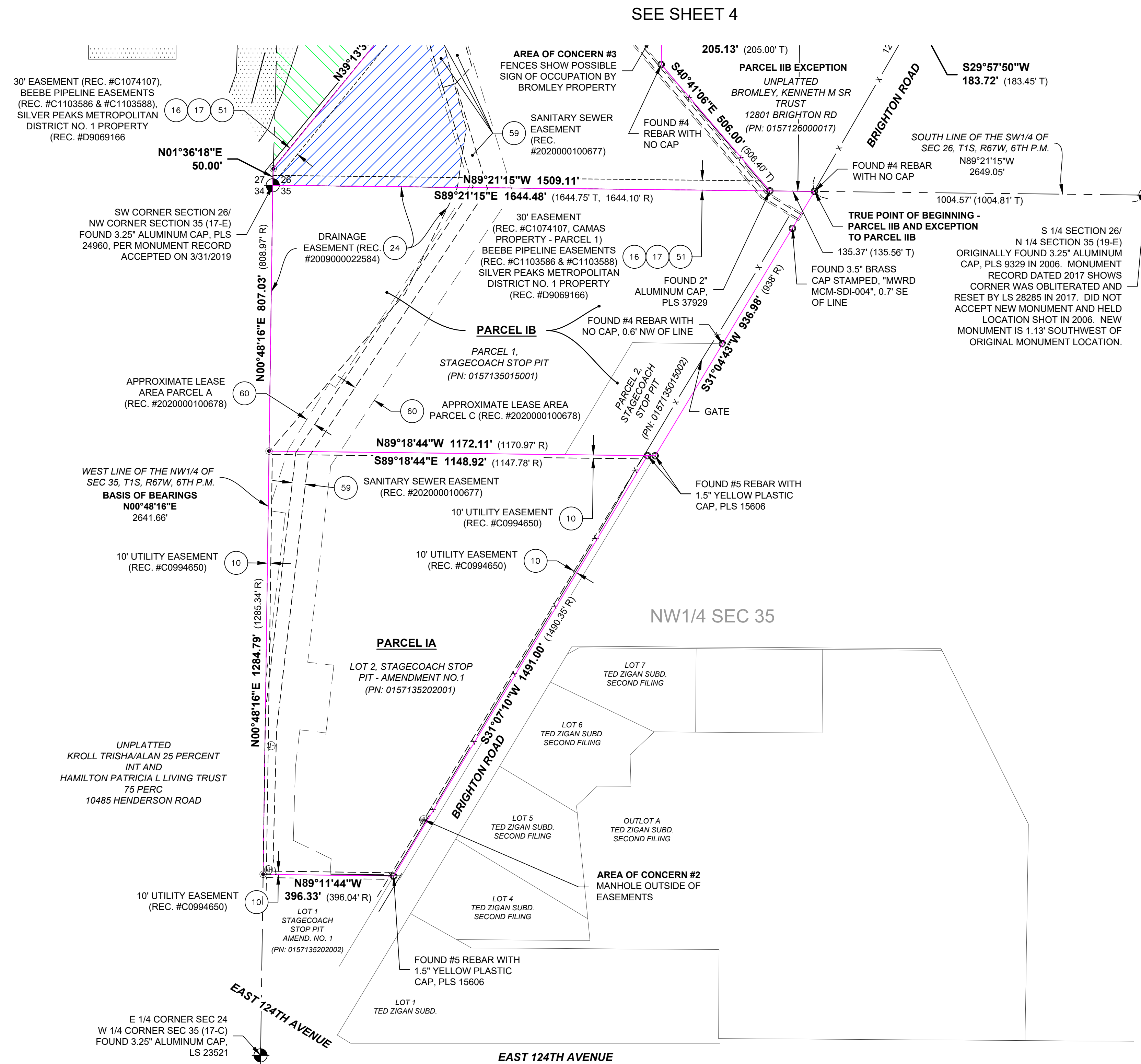
GILLIANS LAND CONSULTANTS
P.O. BOX 746358
ARVADA, CO 80006-6358
303-972-8640
www.gillianslc.com

LAND SURVEYING
ALTIMETERS SURVEYS
TOPOGRAPHIC MAPS
CONSULTING SERVICES

JOB NO: 21171
DRAWN: ALB
CHECKED: REH
FIELD: JW
ISSUE DATE: 8/24/2021
SCALE: N/A
FILE: 21171 LSP

LAND SURVEY PLAT

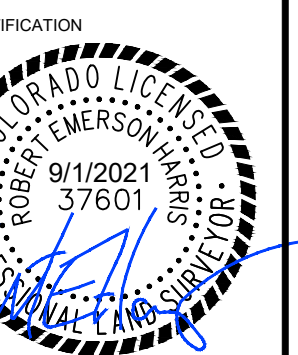
LOCATED IN THE SOUTH 1/2 OF SECTION 26 AND THE NORTHWEST 1/4 OF SECTION 35,
TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO



SEE SHEET 4

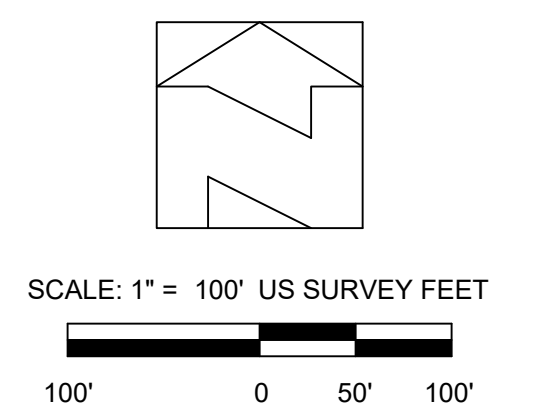
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NO			REVISION RECORD

LAND SURVEY PLAT
STAGECOACH PIT
ADAMS COUNTY, COLORADO



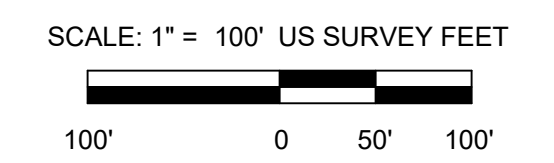
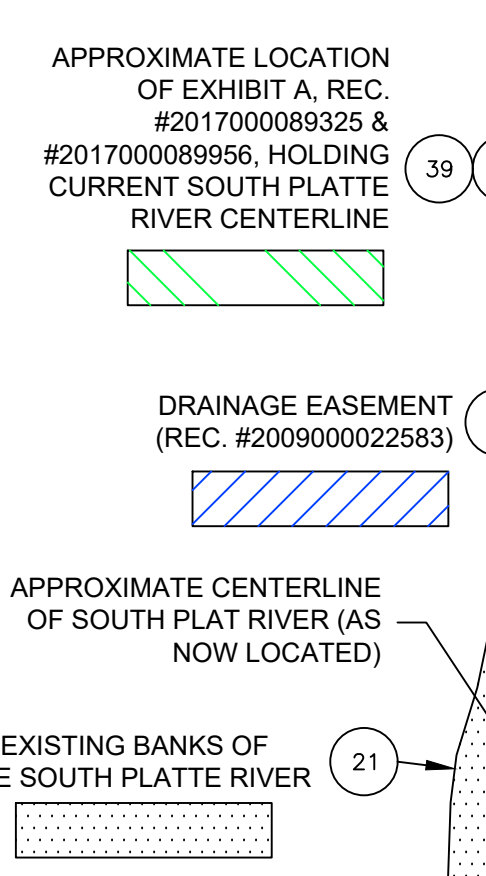
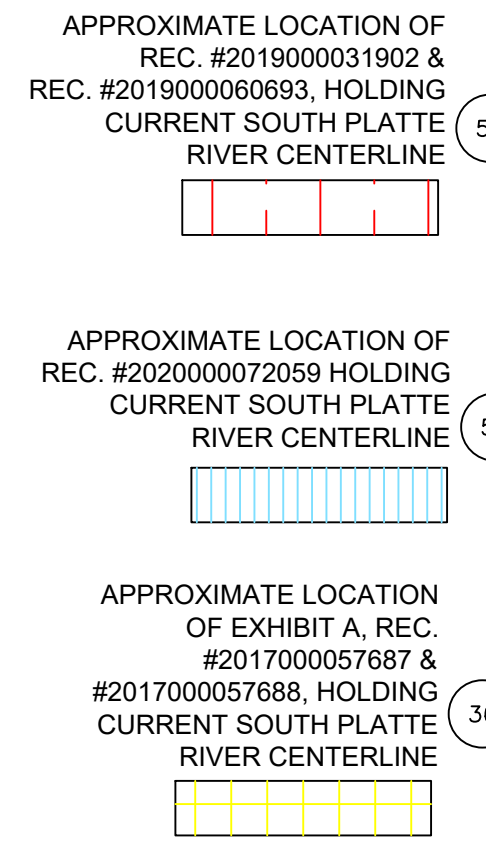
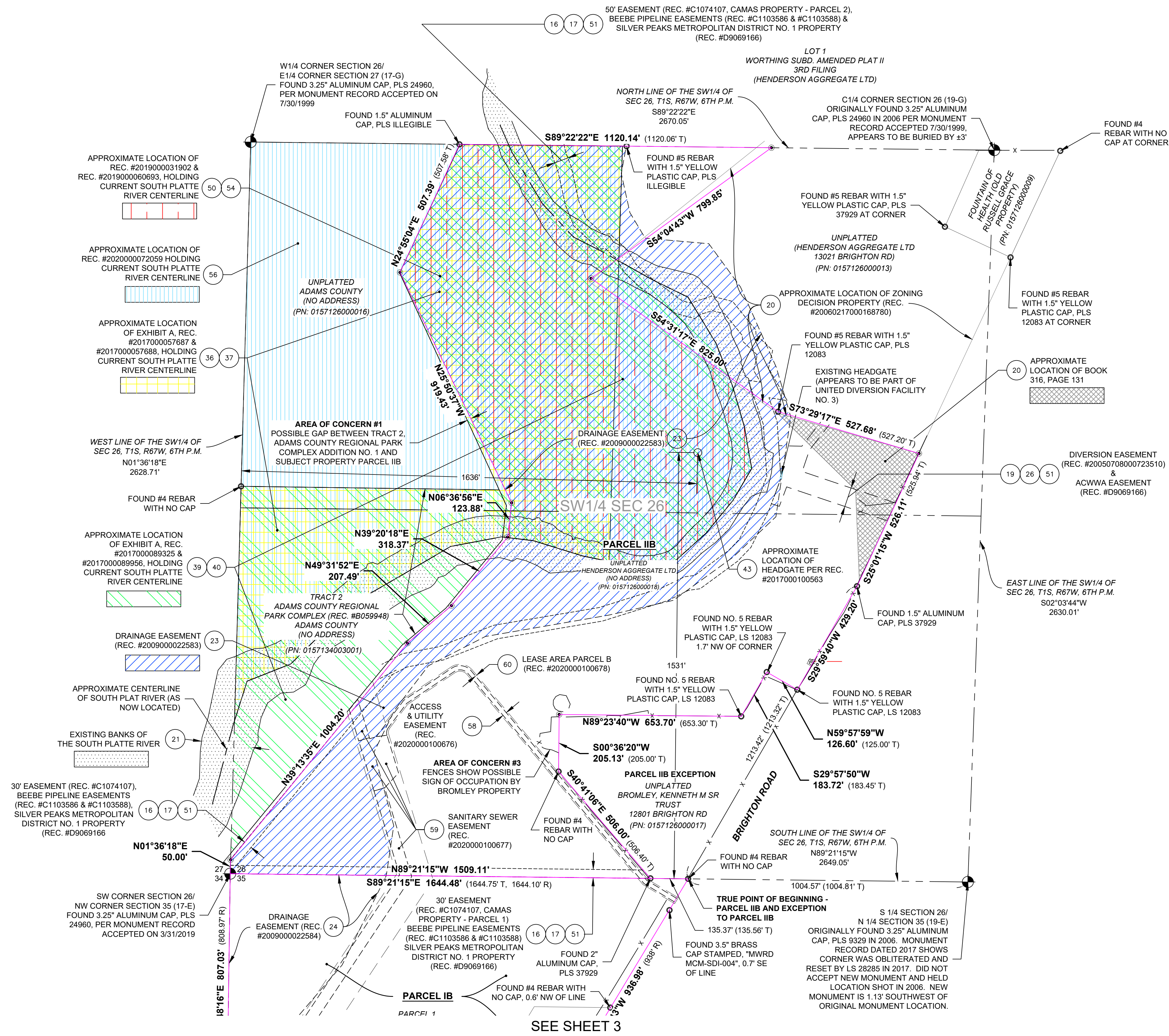
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LAND SURVEY PLAT

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TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO



SEE SHEET 3

NO	DATE	BY	REVISION RECORD
1	9/1/2021	ALB	CLIENT COMMENTS
NO			REVISION RECORD

LAND SURVEY PLAT
STAGECOACH PIT
ADAMS COUNTY, COLORADO



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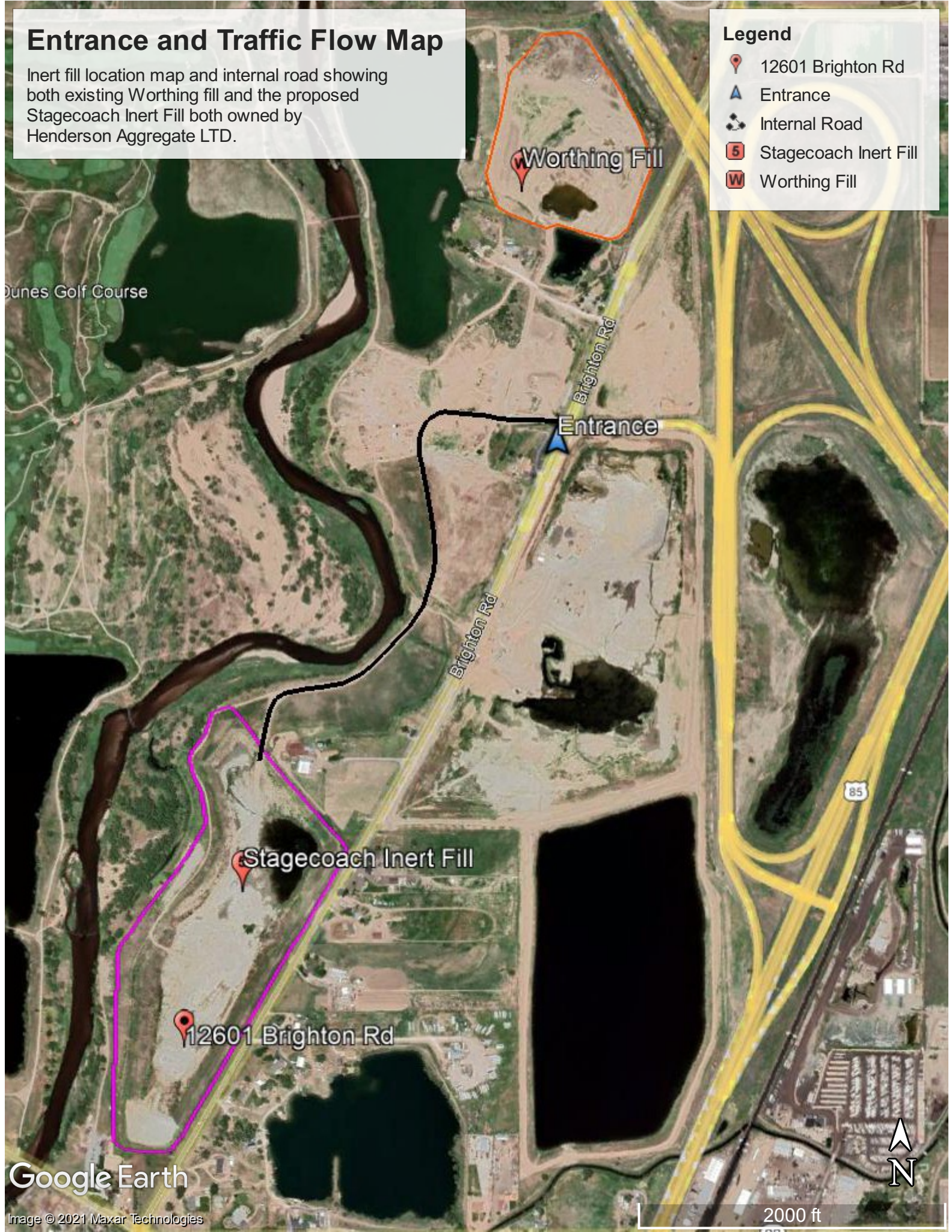
Attachment 2
Entrance and Traffic Flow Map

Entrance and Traffic Flow Map

Inert fill location map and internal road showing both existing Worthing fill and the proposed Stagecoach Inert Fill both owned by Henderson Aggregate LTD.

Legend

-  12601 Brighton Rd
-  Entrance
-  Internal Road
-  Stagecoach Inert Fill
-  Worthing Fill



Dunes Golf Course

Worthing Fill

Brighton Rd

Entrance

Brighton Rd

Stagecoach Inert Fill

12601 Brighton Rd

85

Google Earth

Image © 2021 Maxar Technologies

2000 ft



Attachment 3
Legal Description

SUBJECT PROPERTY LEGAL DESCRIPTION

PARCEL IA [AKA Assessor's Parcel ID 0157135202001]:

Lot 2,
STAGECOACH STOP PIT - AMENDMENT NO. 1,
County of
Adams, State of
Colorado

PARCEL IB [AKA Assessor's Parcel IDs 0157135015001; 0157135015002]:

Parcels 1 and 2,
STAGECOACH STOP PIT,
County of Adams,
State of Colorado

PARCEL IIB [AKA Assessor's Parcel ID 0157126000018]:

That part of the Southwest one-quarter of Section 26, Township 1 South, Range 67 West of the 6th Principal Meridian, lying North and West of County Road No. 31 and South and East of the centerline of the South Platte River (as now located), more particularly described as follows:

Beginning at the Southeast corner of said Southwest one-quarter of Section 26;

Thence North 89 degrees 57'15" West on an assumed bearing along the South line of said Southwest one-quarter of

Section 26, a distance of 1004.81 feet to a point on the Northwesterly R.O.W. line of County Road No. 31, said point being the true point of beginning;

Thence North 29 degrees 13'01" East along said Northwesterly R.O.W. line, a distance of 1213.32 feet;

Thence North 24 degrees 44'50" East and along said Northwesterly R.O.W. line, a distance of 525.94 feet to a point; Thence North 74 degrees 04'00" West a distance of 527.20 feet;

Thence North 55 degrees 06'00" West a distance of 825.00 feet;

Thence North 53 degrees 30'00" East a distance of 799.85 feet to a point on the North line of said Southwest one-quarter of Section 26;

Thence North 90 degrees 00'00" West along said North line a distance of 1120.06 feet to a point on the centerline of the South Platte River (as now located);

Thence along said centerline by the following courses and distances:

South 24 degrees 20'31" West, 507.58 feet;

South 26 degrees 25'10" East, 919.43 feet;

South 06 degrees 02'23" West, 123.88 feet;

South 38 degrees 45'45" West, 318.37 feet;

South 48 degrees 57'19" West, 207.49 feet;

South 38 degrees 39'02" West, 1004.20 feet to a point on the West line of said Southwest one-quarter of Section 26; Thence South 00 degrees 23' 00" West along said West line a distance of 50.00 feet to the southwest corner of said Section 26;

Thence South 89 degrees 57'15" East along the South line of said Southwest one-quarter of said Section 26, a distance of 1644.75 feet to the true point of beginning,

EXCEPT the following tract:

That part of the Southwest one-quarter of Section 26, Township 1 South, Range 67 West of the 6th Principal Meridian, describe as follows:

Beginning at the Southeast corner of said Southwest one-quarter;
Thence North 89 degrees 57'15" West on an assumed bearing along the South line of said Section 26, a distance of
1004.81 feet to a point on the Northwesterly R.O.W. line of County Road No. 31, said point being the true point of beginning;
Thence North 29 degrees 13'01" East along said Northwesterly R.O.W. line, a distance of 784.42 feet;
Thence North 60 degrees 46'59" West, a distance of 125.00 feet;
Thence South 29 degrees 13'01" West, a distance of 183.45 feet;
Thence North 89 degrees 57'15" West, a distance of 653.30 feet;
Thence South 00 degrees 02'45" West, a distance of 205.00 feet;
Thence South 41 degrees 12' 52" East, a distance of 506.40 feet to a point on the South line of said Southwest one-quarter;
Thence South 89 degrees 57'15" East along said South line a distance of 135.56 feet to the true point of beginning,
County of Adams,
State of Colorado.

Attachment 4
Certificate of Taxes Paid



Statement Of Taxes Due

Account Number R0144750
Assessed To

Parcel 0157135202001
HENDERSON AGGREGATE LTD
7321 E 88TH AVE
HENDERSON, CO 80640-8137

Legal Description	Situs Address
SUB:STAGECOACH STOP PIT-AMENDMENT NO 1 LOT:2	12601 BRIGHTON RD

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2020	\$616.46	\$0.00	\$0.00	(\$616.46)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 10/19/2021					\$0.00

Tax Billed at 2020 Rates for Tax Area 292 - 292

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6700000	\$24.26	UNIM LND 10-34.99	\$22,777	\$6,610
CENTRAL COLO WATER CONSERVA	1.1560000	\$7.64	AC		
FIRE DISTRICT 6 - GREATER B	11.7950000	\$77.96	Total	\$22,777	\$6,610
GENERAL	22.7730000	\$150.53			
RETIREMENT	0.3140000	\$2.08			
ROAD/BRIDGE	1.3000000	\$8.59			
DEVELOPMENTALLY DISABLED	0.2570000	\$1.70			
SD 27 BOND (Brighton)	22.0690000	\$145.87			
SD 27 GENERAL (Brighton)	26.6760000*	\$176.33			
URBAN DRAINAGE SOUTH PLATTE	0.1000000	\$0.66			
URBAN DRAINAGE & FLOOD CONT	0.9000000	\$5.95			
SOCIAL SERVICES	2.2530000	\$14.89			
Taxes Billed 2020	93.2630000	\$616.46			

* Credit Levy

Tax amounts are subject to change due to endorsement, advertising, or fees.
Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer & Public Trustee
4430 S Adams County Parkway, Suite W1000
Brighton, CO 80601
720-523-6160



Statement Of Taxes Due

Account Number R0013788

Parcel 0157135015002

Assessed To

HENDERSON AGGREGATE LTD
7321 E 88TH AVE STE 100
HENDERSON, CO 80640-8137

Legal Description	Situs Address
SUB:STAGECOACH STOP PIT DESC: PARCEL 2	12735 BRIGHTON RD

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2020	\$1,420.40	\$0.00	\$0.00	(\$1,420.40)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 10/19/2021					\$0.00

Tax Billed at 2020 Rates for Tax Area 292 - 292

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6700000	\$55.89	INDUS UNIMPROVED	\$52,500	\$15,230
CENTRAL COLO WATER CONSERVA	1.1560000	\$17.61	LND		
FIRE DISTRICT 6 - GREATER B	11.7950000	\$179.64	Total	\$52,500	\$15,230
GENERAL	22.7730000	\$346.84			
RETIREMENT	0.3140000	\$4.78			
ROAD/BRIDGE	1.3000000	\$19.80			
DEVELOPMENTALLY DISABLED	0.2570000	\$3.91			
SD 27 BOND (Brighton)	22.0690000	\$336.11			
SD 27 GENERAL (Brighton)	26.6760000*	\$406.28			
URBAN DRAINAGE SOUTH PLATTE	0.1000000	\$1.52			
URBAN DRAINAGE & FLOOD CONT	0.9000000	\$13.71			
SOCIAL SERVICES	2.2530000	\$34.31			
Taxes Billed 2020	93.2630000	\$1,420.40			

* Credit Levy

Tax amounts are subject to change due to endorsement, advertising, or fees.

Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer & Public Trustee
4430 S Adams County Parkway, Suite W1000
Brighton, CO 80601
720-523-6160



Statement Of Taxes Due

Account Number R0013787

Parcel 0157135015001

Assessed To

HENDERSON AGGREGATE LTD
7321 E 88TH AVE STE 100
HENDERSON, CO 80640-8137

Legal Description	Situs Address
STAGECOACH PIT M-1983-067 SUB:STAGECOACH STOP PIT DESC: PARCEL 1	0 STAGECOACH PIT M-1983-067

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2020	\$6,318.56	\$0.00	\$0.00	(\$6,318.56)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 10/19/2021					\$0.00

Tax Billed at 2020 Rates for Tax Area 292 - 292

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6700000	\$248.64	INDUS UNIMPROVED	\$233,625	\$67,750
CENTRAL COLO WATER CONSERVA	1.1560000	\$78.32	LND		
FIRE DISTRICT 6 - GREATER B	11.7950000	\$799.11	Total	\$233,625	\$67,750
GENERAL	22.7730000	\$1,542.89			
RETIREMENT	0.3140000	\$21.27			
ROAD/BRIDGE	1.3000000	\$88.07			
DEVELOPMENTALLY DISABLED	0.2570000	\$17.41			
SD 27 BOND (Brighton)	22.0690000	\$1,495.17			
SD 27 GENERAL (Brighton)	26.6760000*	\$1,807.30			
URBAN DRAINAGE SOUTH PLATTE	0.1000000	\$6.77			
URBAN DRAINAGE & FLOOD CONT	0.9000000	\$60.97			
SOCIAL SERVICES	2.2530000	\$152.64			
Taxes Billed 2020	93.2630000	\$6,318.56			

* Credit Levy

Tax amounts are subject to change due to endorsement, advertising, or fees.

Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer & Public Trustee
4430 S Adams County Parkway, Suite W1000
Brighton, CO 80601
720-523-6160



Statement Of Taxes Due

Account Number R0009198

Parcel 0157126000018

Assessed To

HENDERSON AGGREGATE LTD
PO BOX 700
HENDERSON, CO 80640

Legal Description

Situs Address

SECT,TWN,RNG:26-1-67 DESC: BEG 1004/81 FT W OF SE COR SW4 SEC 26 SD PT BEING ON NWLY ROW LN OF COUNTY RD 0
NO 31 TH N 29D 13M E 1213/32 FT TH N 24D 44M E 525/94 FT TH N 74D 04M W 527/20 FT TH N 55D 06M W 825 FT TH N 53D
30M E 799/85 FT TO A PT ON N LN SW4 SD SEC TH W 1120/06 FT TO A PT ON C/L OF S... Additional Legal on File

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2020	\$2,112.40	\$0.00	\$0.00	(\$2,112.40)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 10/19/2021					\$0.00

Tax Billed at 2020 Rates for Tax Area 292 - 292

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6700000	\$83.13	UNIM LND 35-99.99	\$78,090	\$22,650
CENTRAL COLO WATER CONSERVA	1.1560000	\$26.18	AC		
FIRE DISTRICT 6 - GREATER B	11.7950000	\$267.16	Total	\$78,090	\$22,650
GENERAL	22.7730000	\$515.82			
RETIREMENT	0.3140000	\$7.11			
ROAD/BRIDGE	1.3000000	\$29.44			
DEVELOPMENTALLY DISABLED	0.2570000	\$5.82			
SD 27 BOND (Brighton)	22.0690000	\$499.86			
SD 27 GENERAL (Brighton)	26.6760000*	\$604.21			
URBAN DRAINAGE SOUTH PLATTE	0.1000000	\$2.26			
URBAN DRAINAGE & FLOOD CONT	0.9000000	\$20.38			
SOCIAL SERVICES	2.2530000	\$51.03			
Taxes Billed 2020	93.2630000	\$2,112.40			

* Credit Levy

Tax amounts are subject to change due to endorsement, advertising, or fees.

Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer & Public Trustee
4430 S Adams County Parkway, Suite W1000
Brighton, CO 80601
720-523-6160

Attachment 5
Proof of Ownership

SPECIAL WARRANTY DEED

THIS DEED, dated this 31st day of August, 2009, between ZBES 0901150, LLC, a Colorado limited liability company, Grantor of the County of _____ and State of Colorado and HENDERSON AGGREGATE, LTD., a Colorado limited partnership Grantee of the County of Adams and State of Colorado, whose legal address is 7321 East 88th Ave., Suite 100, Henderson, CO 80640

WITNESS, that the Grantor, for and in consideration of the sum of Ten and 00/100 dollars (\$10.00), the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm unto the Grantee, its successors and assigns forever, all the real property, together with improvements, if any, situate, lying and being in the County of Adams and State of Colorado, described as follows:

SEE ATTACHED EXHIBIT "A" FOR LEGAL DESCRIPTION.

Also known by street and number as: 12601 Brighton Road, Henderson, CO 80640

ZBES 0901150, LLC, A COLORADO LIMITED LIABILITY COMPANY conveys title "subject to the Deed of Trust in favor of Vectra Bank Colorado, National Association, recorded on February 13, 2009 in Adams County under reception no. 2009000010216 and the Assignment of Rents recorded February 13, 2009 in Adams County under reception no. 2009000010217, and HENDERSON AGGREGATE, LTD., A COLORADO LIMITED PARTNERSHIP agrees to be bound by said Deed of Trust and Assignment of Rents, and acknowledges that Lender has prior and superior interest in the subject property by virtue of that Deed of Trust and Assignments of Rents.

TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the Grantor, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances;

TO HAVE AND TO HOLD the said premises above bargained and described, with the appurtenances, unto the Grantee, its successors and assigns forever. The Grantor, for itself, its successors and assigns, does covenant and agree to and with the Grantee, its successors and assigns, and will WARRANT AND FOREVER DEFEND the above-bargained premises in quiet and peaceable possession of the Grantee, its successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the Grantor. The singular number shall include the plural, the plural and the singular, and the use of any gender shall be applicable to all genders.

IN WITNESS WHEREOF, the Grantor has executed this deed on the date set forth above.

ZBES 0901150, LLC, a Colorado limited liability company

By: Exchange Services, LLC,
its Manager
By: [Signature]
Michael Anderson, President

STATE OF ~~COLORADO~~ Utah
COUNTY OF Salt Lake



The foregoing instrument was acknowledged before me this 31st day of August, 2009 by Michael Anderson as President of Exchange Services, LLC, Manager of ZBES 0901150, LLC, a Colorado limited liability company.

WITNESS MY HAND AND OFFICIAL SEAL.

My commission expires: 10/19/2009

[Signature]
Notary Public
9012200 \$11.00



THIS DEED IS BEING RECORDED FOR TITLE PURPOSES ONLY

EXHIBIT "A"
Legal Description

Parcel I A:

Lot 2,
STAGECOACH STOP PIT - AMENDMENT NO. 1,
County of Adams,
State of Colorado

Parcel I B:

Parcels 1 and 2,
STAGECOACH STOP PIT,
County of Adams,
State of Colorado.

20041222031304110 Adams Co 1/3
12/22/2004 03:12:35PM \$71.04
Carol Snyder, Clerk \$16.00

SPECIAL WARRANTY DEED

THIS DEED, Made this 17th day of December, 2004, between
AGGREGATE INDUSTRIES-WCR, INC., A COLORADO CORPORATION,
SUCCESSOR BY MERGER OF CAMAS COLORADO, INC., AN INDIANA
CORPORATION F/K/A COOLEY GRAVEL COMPANY, AN INDIANA CORPORATION
of the County of JEFFERSON and State of COLORADO, grantor, and
HENDERSON AGGREGATE, LTD., A COLORADO LIMITED PARTNERSHIP

X whose legal address is ~~11521 BRIGHTON ROAD~~ P.O. Box 700
HENDERSON, CO 80640
of the County of ADAMS and State of COLORADO, grantee:

WITNESS, that the grantor, for and in consideration of the sum of (\$ 710,424.00) SEVEN HUNDRED TEN
THOUSAND FOUR HUNDRED TWENTY-FOUR & 00/100

DOLLARS, the receipt and sufficiency of which is hereby
acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm, unto the
grantee, his heirs and assigns forever, all the real property, together with improvements, if any, situate, lying and being in the said
County of ADAMS and State of Colorado described as follows:

See Exhibit "A"

Date
\$ 71.04
State Doc. Fee

3
1
2

as known by street and number as: AGGREGATE RESERVE COLORADO

TOGETHER with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining, and the reversion
and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand what-
soever of the grantor, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances.

TO HAVE AND TO HOLD the said premises above bargained and described with the appurtenances, unto the grantee, his heirs and
assigns forever. The grantor, for himself, his heirs, and personal representatives or successors, do covenant and agree that he shall and will
WARRANT AND FOREVER DEFEND the above-bargained premises in the quiet and peaceable possession of the grantee, his heirs and
assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the grantor. The singular
number shall include the plural, the plural and the singular, and the use of any gender shall be applicable to all genders.

IN WITNESS WHEREOF, the grantor has executed this deed on the date set forth above.

AGGREGATE INDUSTRIES-WCR, INC., A COLORADO CORPORATION

Michael C. Reperas

BY: NAME: MICHAEL C. REPERAS TITLE: VICE PRESIDENT

State of COLORADO)
County of JEFFERSON) ss.



The foregoing instrument was acknowledged before me this 17th day of Dec, 2004,
by MICHAEL C. REPERAS V.P. OF AGGREGATE INDUSTRIES-WCR, INC., A
COLORADO CORPORATION.

My commission expires October 13, 2007 Witness my hand and official seal.

Melissa A. Hutchins
Notary Public

90168647

②
\$16.00
\$71.04

EXHIBIT A

Order Number: 90168647

LEGAL DESCRIPTION

PARCEL A:

That part of the South 1/2 of Section 26, Township 1 South, Range 67 West of the 6th P.M., described as follows:

Beginning at a point which is the center of said Section 26; thence East along the East-West centerline of said Section 26, 237 feet to a point on the West right of way line County Road #31; thence Southwesterly along said West right of way line of said County Road #31, 1468 feet; thence North 45 degrees 28' West, 554.0 feet; thence North 55 degrees 06' West, 825.0 feet; thence North 51 degrees 19' East, 808 feet to a point on the East-West centerline of said Section 26; thence East along the East-West centerline of said Section 26, 800 feet, more or less, to the point of beginning,

EXCEPT that part described in Book 316 at Page 131 and EXCEPT that part of said Section 26 described as follows:

Beginning at a point which is center of said Section 26; thence East along the East-West centerline of said Section 26, 237 feet to a point on the West right of way of County Road #31; thence South 20 degrees 30' West, 422 feet; thence North 69 degrees 30' West, 260 feet; thence North 20 degrees 30' East, 302 feet to the East-West centerline of said Section 26; thence East 55 feet to the point of beginning, County of Adams, State of Colorado

PARCEL B:

That part of the Southwest one-quarter of Section 26, Township 1 South, Range 67 West of the 6th Principal Meridian, lying North and West of County Road No. 31 and South and East of the centerline of the South Platte River (as now located), more particularly described as follows:

Beginning at the Southeast corner of said Southwest one-quarter of Section 26; thence North 89 degrees 57'15" West on an assumed bearing along the South line of said Southwest one-quarter of Section 26, a distance of 1004.81 feet to a point on the Northwesterly R.O.W. line of County Road No. 31, said point being the true point of beginning; thence North 29 degrees 13'01" East along said Northwesterly R.O.W. line, a distance of 1213.32 feet; thence North 24 degrees 44'50" East and along said Northwesterly R.O.W. line, a distance of 525.94 feet to a point; thence North 74 degrees 04'00" West a distance of 527.20 feet; thence North 55 degrees 06'00" West a distance of 825.00 feet; thence North 53 degrees 30'00" East a distance of 799.85 feet to a point on the North line of said Southwest one-quarter of Section 26; thence North 90 degrees 00'00" West along said North line a distance of 1120.06 feet to a point on the

Continued on next page

Continuation of Schedule A - Legal Description
Order Number: 90168647

centerline of the South Platte River (as now located); thence along said centerline by the following courses and distances:

South 24 degrees 20'31" West, 507.58 feet;
South 26 degrees 25'10" East, 919.43 feet;
South 06 degrees 02'23" West, 123.88 feet;
South 38 degrees 45'45" West, 318.37 feet;
South 48 degrees 57'19" West, 207.49 feet;
South 38 degrees 39'02" West, 1004.20 feet to a point on the West line of said Southwest one-quarter of Section 26; thence South 00 degrees 23'00" West along said West line a distance of 50.00 feet to the Southwest corner of said Section 26; thence South 89 degrees 57'15" East along the South line of said Southwest one-quarter of said Section 26, a distance of 1644.75 feet to the true point of beginning,

EXCEPT the following tract:

That part of the Southwest one-quarter of Section 26, Township 1 South, Range 67 West of the 6th Principal Meridian, described as follows:

Beginning at the Southeast corner of said Southwest one-quarter; thence North 89 degrees 57'15" West on an assumed bearing along the South line of said Section 26, a distance of 1004.81 feet to a point on the Northwesterly R.O.W. line of County Road No. 31, said point being the true point of beginning; thence North 29 degrees 13'01" East along said Northwesterly R.O.W. line, a distance of 784.42 feet; thence North 60 degrees 46'59" West, a distance of 125.00 feet; thence South 29 degrees 13'01" West, a distance of 183.45 feet; thence North 89 degrees 57'15" West, a distance of 653.30 feet; thence South 00 degrees 02'45" West, a distance of 205.00 feet; thence South 41 degrees 12'52" East, a distance of 506.40 feet to a point on the South line of said Southwest one-quarter; thence South 89 degrees 57'15" East along said South line a distance of 135.56 feet to the true point of beginning,

County of Adams, State of Colorado

Attachment 6
Title Commitment



Stewart Title Guaranty Company Commercial Services
(Denver)
55 Madison Street, Suite 400
Denver, CO 80206

Date: August 26, 2021
File Number: 21000310684- Revision No. 3
Property: 12601 Brighton Road, Henderson, CO 80640

Please direct all Title inquiries to:

Andy Baker
Phone: (303) 467-8043
Email Address: andy.baker@stewart.com

SELLER:
HENDERSON AGGREGATE, LTD., a Colorado limited
partnership

CUSTOMER:
Albert Frei & Sons, Inc.
Contact: Becky Jo Rigo
Phone: 303-475-4101
Email: Brigo@Albertfreiansons.com
Delivery Method: Emailed

THIS REVISION OF THE TITLE COMMITMENT INCLUDES THE FOLLOWING CHANGES:

Schedule A - Amended legal description. Updated the effective date.
Schedule B-II - Amended exceptions to remove Parcel IIA

We Appreciate Your Business and Look Forward to Serving You in the Future.



ALTA COMMITMENT FOR TITLE INSURANCE

ISSUED BY
STEWART TITLE GUARANTY COMPANY

NOTICE

IMPORTANT - READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACTIONAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY’S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I - Requirements; Schedule B, Part II - Exceptions; and the Commitment Conditions, STEWART TITLE GUARANTY COMPANY, a Texas corporation (the “Company”), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I - Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company’s liability and obligation end.


Countersigned by:


Authorized Countersignature

Stewart Title Guaranty Company
55 Madison Street, Suite 400
Denver, CO 80206
(303) 331-0333
Agent ID: 06J050




Frederick H. Eppinger
President and CEO


David Hisey
Secretary

This page is only a part of a 2016 ALTA® Commitment for Title Insurance. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I - Requirements; and Schedule B, Part II - Exceptions; and a countersignature by the Company or its issuing agent that may be in electronic form.

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COMMITMENT CONDITIONS

1. DEFINITIONS

- (a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
- (b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
- (c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
- (d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
- (e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
- (f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
- (g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
- (h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I - Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:

- (a) the Notice;
- (b) the Commitment to Issue Policy;
- (c) the Commitment Conditions;
- (d) Schedule A;
- (e) Schedule B, Part I - Requirements;
- (f) Schedule B, Part II - Exceptions; and
- (g) a countersignature by the Company or its issuing agent that may be in electronic form.

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

- (a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
 - (i) comply with the Schedule B, Part I - Requirements;
 - (ii) eliminate, with the Company's written consent, any Schedule B, Part II - Exceptions; or
 - (iii) acquire the Title or create the Mortgage covered by this Commitment.
- (b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
- (c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I - Requirements; and Schedule B, Part II - Exceptions; and a countersignature by the Company or its issuing agent that may be in electronic form.

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File No. 21000310684

ALTA Commitment For Title Insurance 8-1-16 (4-2-18)

Page 2 of 3



- (d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
- (e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
- (f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I - Requirements have been met to the satisfaction of the Company.
- (g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

- (a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
- (b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
- (c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
- (d) The deletion or modification of any Schedule B, Part II - Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
- (e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
- (f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at <<http://www.alta.org/arbitration>>.

STEWART TITLE GUARANTY COMPANY

All notices required to be given the Company and any statement in writing required to be furnished the Company shall be addressed to it at P.O. Box 2029, Houston, Texas 77252-2029.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I - Requirements; and Schedule B, Part II - Exceptions; and a countersignature by the Company or its issuing agent that may be in electronic form.

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File No. 21000310684

ALTA Commitment For Title Insurance 8-1-16 (4-2-18)

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**ALTA COMMITMENT FOR TITLE INSURANCE
SCHEDULE A**

ISSUED BY
STEWART TITLE GUARANTY COMPANY

Transaction Identification Data for reference only:

Issuing Agent: Stewart Title Guaranty Company
Issuing Office: 55 Madison Street, Suite 400, Denver, CO 80206
Issuing Office's ALTA® Registry ID: 1027978
Loan ID Number: N/A
Commitment Number: 21000310684
Issuing Office File Number: 21000310684
Property Address: 12601 Brighton Road, Henderson, CO 80640
Revision Number: 3

1. Commitment Date: August 19, 2021 at 5:30 P.M.

2. Policy to be issued:

Proposed Policy Amount

(a) ALTA Owner's Policy

(b) ALTA Loan Policy

3. The estate or interest in the Land described or referred to in this Commitment is:

Fee Simple

4. The Title is, at the Commitment Date, vested in:

HENDERSON AGGREGATE, LTD., a Colorado limited partnership

5. The Land is described as follows:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

STEWART TITLE GUARANTY COMPANY

STATEMENT OF CHARGES

These charges are due and payable before a policy can be issued


Authorized Countersignature

Informational Commitment Rate
Informational Commitment Fee: \$500.00

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**ALTA COMMITMENT FOR TITLE INSURANCE
SCHEDULE A**

ISSUED BY
STEWART TITLE GUARANTY COMPANY

**EXHIBIT "A"
SCHEDULE A**

LEGAL DESCRIPTION

PARCEL IA:

Lot 2,
STAGECOACH STOP PIT - AMENDMENT NO. 1,
County of Adams,
State of Colorado

PARCEL IB:

Parcels 1 and 2,
STAGECOACH STOP PIT,
County of Adams,
State of Colorado

PARCEL IIB:

That part of the Southwest one-quarter of Section 26, Township 1 South, Range 67 West of the 6th Principal Meridian, lying North and West of County Road No. 31 and South and East of the centerline of the South Platte River (as now located), more particularly described as follows:

Beginning at the Southeast corner of said Southwest one-quarter of Section 26;
Thence North 89 degrees 57'15" West on an assumed bearing along the South line of said Southwest one-quarter of Section 26, a distance of 1004.81 feet to a point on the Northwesterly R.O.W. line of County Road No. 31, said point being the true point of beginning;
Thence North 29 degrees 13'01" East along said Northwesterly R.O.W. line, a distance of 1213.32 feet;
Thence North 24 degrees 44'50" East and along said Northwesterly R.O.W. line, a distance of 525.94 feet to a point;
Thence North 74 degrees 04'00" West a distance of 527.20 feet;
Thence North 55 degrees 06'00" West a distance of 825.00 feet;
Thence North 53 degrees 30'00" East a distance of 799.85 feet to a point on the North line of said Southwest one-quarter of Section 26;
Thence North 90 degrees 00'00" West along said North line a distance of 1120.06 feet to a point on the centerline of the South Platte River (as now located);
Thence along said centerline by the following courses and distances:

South 24 degrees 20'31" West, 507.58 feet;
South 26 degrees 25'10" East, 919.43 feet;
South 06 degrees 02'23" West, 123.88 feet;
South 38 degrees 45'45" West, 318.37 feet;
South 48 degrees 57'19" West, 207.49 feet;
South 38 degrees 39'02" West, 1004.20 feet to a point on the West line of said Southwest one-quarter of Section 26;
Thence South 00 degrees 23' 00" West along said West line a distance of 50.00 feet to the southwest corner of said Section 26;

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ALTA COMMITMENT FOR TITLE INSURANCE SCHEDULE A

ISSUED BY
STEWART TITLE GUARANTY COMPANY

Thence South 89 degrees 57'15" East along the South line of said Southwest one-quarter of said Section 26, a distance of 1644.75 feet to the true point of beginning,

EXCEPT the following tract:

That part of the Southwest one-quarter of Section 26, Township 1 South, Range 67 West of the 6th Principal Meridian, describe as follows:

Beginning at the Southeast corner of said Southwest one-quarter;
Thence North 89 degrees 57'15" West on an assumed bearing along the South line of said Section 26, a distance of 1004.81 feet to a point on the Northwesterly R.O.W. line of County Road No. 31, said point being the true point of beginning;
Thence North 29 degrees 13'01" East along said Northwesterly R.O.W. line, a distance of 784.42 feet;
Thence North 60 degrees 46'59" West, a distance of 125.00 feet;
Thence South 29 degrees 13'01" West, a distance of 183.45 feet;
Thence North 89 degrees 57'15" West, a distance of 653.30 feet;
Thence South 00 degrees 02'45" West, a distance of 205.00 feet;
Thence South 41 degrees 12' 52" East, a distance of 506.40 feet to a point on the South line of said Southwest one-quarter;
Thence South 89 degrees 57'15" East along said South line a distance of 135.56 feet to the true point of beginning,
County of Adams,
State of Colorado.

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ALTA COMMITMENT FOR TITLE INSURANCE SCHEDULE B PART I

ISSUED BY
STEWART TITLE GUARANTY COMPANY

Requirements

File No.: 21000310684- Revision No. 3

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.
2. Pay the agreed amount for the estate or interest to be insured.
3. Pay the premiums, fees, and charges for the Policy to the Company.
4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.
5. Proper instrument(s) creating the estate or interest to be insured must be executed and duly filed for record:

NONE

NOTE: This product is for informational purposes only. It is not a title insurance product and does not provide any form of coverage. This product is not a guarantee or assurance and does not warrant, or otherwise insure any condition, fact or circumstance. This product does not obligate this Company to issue any policies of title insurance for any subsequent transaction based on the information provided or involving the property described herein. This Company's sole liability for any error(s) relating to this product is limited to the amount that was paid for this product.

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ALTA COMMITMENT FOR TITLE INSURANCE

SCHEDULE B PART II

ISSUED BY
STEWART TITLE GUARANTY COMPANY

Exceptions

File No.: 21000310684- Revision No. 3

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Rights or claims of parties in possession, not shown by the public records.
2. Easements, or claims of easements, not shown by the public records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the Land and not shown by the public records.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.
5. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I - Requirements are met.
6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) minerals of whatsoever kind, subsurface and surface substances, in, on, under and that may be produced from the Land, together with all rights, privileges, and immunities relating thereto, whether or not the matters excepted under (a), (b) or (c) are shown by the Public Records or listed in Schedule B.
7. Water rights, claims or title to water.
8. Any and all unpaid taxes and assessments and any unredeemed tax sales.
9. Right of Way easement for Mountain State Telephone and Telegraph Company recorded March 10, 1931 in [Book 194 at Page 431](#).
NOTE: As to Parcels IA and IB
10. The Plat, Mining Plan and Reclamation Plan of Stagecoach Stop Pit recorded April 20, 1983 at [Reception No. F431146](#) and the Plat, Rezoning and Recreational Use Permit of Stagecoach Stop Pit - Amendment No. 1 recorded July 10, 2002 at [Reception No. C0994650](#).
NOTE: As to Parcels IA and IB
11. Ordinance No. 1302 recorded April 25, 1988 in [Book 3439 at Page 94](#).
NOTE: As to Parcels IA and IB

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ALTA COMMITMENT FOR TITLE INSURANCE

SCHEDULE B PART II

ISSUED BY
STEWART TITLE GUARANTY COMPANY

Exceptions

12. Zoning Hearing Decision, Case No. PRJ-2001-00060 recorded March 21, 2002 at [Reception No. C0943921](#) and Case No. RCU2006-00029 recorded September 25, 2006 at [Reception No. 20060925000966550](#).
NOTE: As to Parcels IA and IB
13. Amendment to Certificate of Organization for the E-470 Public Highway recorded December 19, 1995 in [Book 4646 at Page 979](#).
NOTE: As to all Parcels
14. Reservations of oil and gas as contained in Warranty Deed recorded May 16, 1975 in [Book 1994 at Page 563](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
15. Water Quit Claim Deed recorded April 1, 1992 in [Book 3885 at Page 833](#) and Special Warranty Deed recorded April 1, 1992 in [Book 3885 at Page 808](#).
NOTE: As to Parcel IIB
16. An easement granted to Bromley Park Metropolitan District No. 1 in instrument recorded December 31, 2002 at [Reception No. C1074107](#).
NOTE: As to Parcel IIB
17. Inclusion within the Bromley Park Metropolitan District No. 1 and the Silver Peaks Metropolitan District No. 1 recorded February 28, 2003 at [Reception No. C1103586](#) and [Reception No. C1103588](#).
NOTE: As to Parcel IIB
18. Nontributary Ground Water Consent Landownership Statement recorded August 1, 2003 at [Reception No. C1185248](#).
NOTE: As to Parcel IIB
19. Diversion Structure Easement Agreement recorded July 9, 2005 at [Reception No. 20050708000723510](#).
NOTE: As to Parcel IIB
20. Zoning Hearing Decision Case No. EXC2005-00005, Worthing Pit Expansion recorded February 17, 2006 at [Reception No. 20060217000168780](#).
NOTE: As to Parcel IIB
21. The following in regards to the South Platte River:
 - a) All right, title or claim or any character by the United States, state, local government or by the public generally in and to any portion of the land lying within the current or former bed, or below the ordinary high water mark, or between the cut banks of the South Platte River navigable in fact or in law.
 - b) Right of riparian water rights owners to the use and flow of the water.
 - c) The consequence of any past or future change in the location of the bed.NOTE: As to all Parcels
22. The following matter disclosed by Land Survey Plat date February 5, 2009, prepared by Born Engineering, as Job Number 09005, to wit:

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ALTA COMMITMENT FOR TITLE INSURANCE

SCHEDULE B PART II

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STEWART TITLE GUARANTY COMPANY

Exceptions

- a) Right of other in and to that portion of land between the fence line and the property line.
23. Easements as shown in Easement Deed recorded April 1, 2009 at [Reception No. 2009000022583](#).
NOTE: As to Parcel IIB
24. Easements as shown in Easement Deed recorded April 1, 2009 at [Reception No. 2009000022584](#).
NOTE: As to Parcels IA and IB
25. Zoning Hearing Decision - Case #RCU2009-00003, Stagecoach Worthing Pit Permit recorded July 22, 2009 at [Reception No. 2009000053953](#).
NOTE: As to all Parcels
26. Easement Deeds (Pipeline) recorded January 8, 2010 at [Reception No. 2010000001544](#) and [Reception No. 2010000001547](#).
NOTE: As to Parcels IA and IB
27. Zoning Hearing Decision - Case #PLN2010-00012, Metro Wastewater Assi/IGA Permit recorded February 1, 2011 at [Reception No. 2011000007684](#).
NOTE: Zoning Hearing Decision - Case #PLN2010-00012, Metro Wastewater Assi/IGA Permit recorded July 26, 2013 at [Reception No. 2013000065086](#).
NOTE: As to all Parcels
28. Oil and Gas Lease Agreement recorded November 12, 2013 at [Reception No. 2013000096955](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to all Parcels
29. Memorandum of Surface Use Agreement recorded November 12, 2013 at [Reception No. 2013000096956](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to all Parcels
30. Request for Notification of Application for Development recorded July 13, 2016 at [Reception No. 2016000055794](#).
NOTE: As to Parcel IIB
31. Reservations as shown in Mineral Deed recorded December 16, 2016 at [Reception No. 2016000110142](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
32. Memorandum of Crude Oil Purchase Agreement recorded February 3, 2017 at [Reception No. 2017000011080](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IA
33. Reservations as shown in Mineral Deed recorded February 22, 2017 at [Reception No. 2017000016105](#).

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SCHEDULE B PART II

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STEWART TITLE GUARANTY COMPANY

Exceptions

NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

NOTE: As to Parcel IIB

34. Reservations as shown in Mineral Deed recorded February 28, 2017 at [Reception No. 2017000017963](#).
NOTE: As to Parcel IIB
35. Reservations as shown in Mineral Deed recorded March 6, 2017 at [Reception No. 2017000019802](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
36. Oil and Gas Lease recorded July 5, 2017 at [Reception No's. 2017000057687](#) and [201757688](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
37. Oil and Gas Lease recorded July 6, 2017 at Reception No's. [2017000057968](#), [2017000057969](#), [2017000057970](#), [2017000057972](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
38. Oil and Gas Lease recorded July 31, 2017 at [Reception No. 2017000065921](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
39. Oil and Gas Lease recorded October 12, 2017 at [Reception No. 2017000089325](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
40. Oil and Gas Lease recorded October 13, 2017 at [Reception No. 2017000089956](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
41. Memorandum of Agreement Gas Gathering, Processing and Purchase Agreement recorded October 19, 2017 at [Reception No. 2017000091626](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to all Parcels
42. Non-Exclusive Easement as shown in General Warranty Deed recorded November 14, 2017 at [Reception No. 2017000100562](#).

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ALTA COMMITMENT FOR TITLE INSURANCE

SCHEDULE B PART II

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STEWART TITLE GUARANTY COMPANY

Exceptions

NOTE: Correction of General Warranty Deed recorded November 15, 2017 at [Reception No. 2017000100907](#).
NOTE: As to Parcel IIB

43. Non-Exclusive Easement as shown in General Warranty Deed recorded November 14, 2017 at [Reception No. 2017000100563](#).

NOTE: Correction of General Warranty Deed recorded November 15, 2017 at [Reception No. 2017000100908](#).
NOTE: As to Parcel IIB

44. Easements and Water Rights as shown in General Warranty Deed recorded November 14, 2017 at [Reception No. D7129563](#).

NOTE: Arapahoe County Records
NOTE: As to Parcel IIB

45. Easements and Water Rights as shown in General Warranty Deed recorded November 14, 2017 at [Reception No. D7129564](#).

NOTE: Arapahoe County Records
NOTE: As to Parcel IIB

46. Reaffirmation, Supplement and Amendment to Second Amended and Restated Deed of Trust, Assignment of Production, Security Agreement, Financing Statement and Fixture Filing recorded June 7, 2018 at [Reception No. 2018000046118](#).

NOTE: As to Parcel IA

47. Declaration of Pooling recorded August 16, 2018 at [Reception No. 2018000066534](#).

NOTE: Affidavit of Scrivener's Error recorded February 21, 2020 at [Reception No. 2020000016397](#).

NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

NOTE: As to all Parcels

48. Royalties and Overriding Royalties and Leases contained in Assignment and Bill of Sale recorded April 12, 2018 at [Reception No. 2018000029832](#).

NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

NOTE: As to all Parcels

49. Reservations as shown in Mineral Deed recorded November 28, 2018 at [Reception No. 2018000095303](#).

NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

NOTE: As to Parcel IIB

50. Reservations as shown in Mineral Deed recorded April 30, 2019 at [Reception No. 2019000031902](#).

NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

NOTE: As to Parcel IIB

51. Memorandum of Agreement recorded July 15, 2019 at [Reception No. D9069166](#).

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Exceptions

NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

NOTE: Arapahoe County Records

NOTE: As to Parcel IIB

52. Assignment and Assumption of Carriage Capacity (United Reservoir No. 3 Diversion and Return Facility) recorded July 17, 2019 at [Reception No. 2019000056212](#) and recorded July 17, 2019 at [Reception No. 2019000056213](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
53. Reservations/Water Rights as shown in General Warranty Deed recorded May 31, 2019 at [Reception No. 2019000041573](#).
NOTE: As to Parcel IIB
54. Reservations as shown in Mineral Deed recorded July 30, 2019 at [Reception No. 2019000060693](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
55. Reservations as shown in Mineral Deed recorded October 4, 2019 at [Reception No. 2019000085171](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
56. Decree Determining Heirship as to Mineral Rights recorded July 29, 2020 at [Reception No. 2020000072059](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
57. Memorandum of Water Supply Agreement recorded July 30, 2020 at Reception No. [2020000072946](#), [2020000072947](#), [2020000072948](#), [2020000072949](#), [2020000072950](#), [2020000072951](#).
NOTE: As to Parcel IIB
58. Access and Utility Easement recorded October 6, 2020 at [Reception No. 2020000100676](#).
NOTE: As to all Parcels
59. Non-Exclusive Easement agreement recorded October 6, 2020 at [Reception No. 2020000100677](#).
NOTE: As to all Parcels
60. Lease for Construction Purposes recorded October 6, 2020 at [Reception No. 2020000100678](#).
NOTE: As to all Parcels
61. Reservations, Ingress, Egress and Mining as shown in Mineral Deed recorded October 14, 2020 at [Reception No. 2020000104147](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be

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ALTA COMMITMENT FOR TITLE INSURANCE SCHEDULE B PART II

ISSUED BY
STEWART TITLE GUARANTY COMPANY

Exceptions

leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB

62. Reservations as shown in Mineral Deed recorded December 17, 2020 at [Reception No. 2020000132526](#).
NOTE: The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.
NOTE: As to Parcel IIB
63. Easement Holders Consent recorded February 19, 2021 at [Reception No. 2021000020357](#).
NOTE: As to Parcels IB, IIB
64. Any increase or decrease in the area of the land and any adverse claim to any portion of the land which has been created by or caused by accretion or reliction, whether natural or artificial, and the effect of the gain or loss or area by accretion or reliction upon the marketability to the title of the land.
65. Existing leases and tenancies.

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Stewart Title Guaranty Company -
Commercial Services
55 Madison Street, Suite 400
Denver, CO 80206
Phone
Fax

MINERAL DISCLOSURE

To comply with the provisions of C.R.S. 10-11-123, the Company makes the following disclosure:

- a. That there is recorded evidence that a mineral estate has been severed, leased or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and
- b. That such mineral estate may include the right to enter and use the property without the surface owner's permission.

NOTE: THIS DISCLOSURE APPLIED ONLY IF SCHEDULE B, SECTION 2 OF THE TITLE COMMITMENT HEREIN INCLUDES AN EXCEPTION FOR SEVERED MINERALS.

STG Privacy Notice Stewart Title Companies

WHAT DO THE STEWART TITLE COMPANIES DO WITH YOUR PERSONAL INFORMATION?

Federal and applicable state law and regulations give consumers the right to limit some but not all sharing. Federal and applicable state law regulations also require us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand how we use your personal information. This privacy notice is distributed on behalf of the Stewart Title Guaranty Company and its title affiliates (the Stewart Title Companies), pursuant to Title V of the Gramm-Leach-Bliley Act (GLBA).

The types of personal information we collect and share depend on the product or service that you have sought through us. This information can include social security numbers and driver's license number.

All financial companies, such as the Stewart Title Companies, need to share customers' personal information to run their everyday business—to process transactions and maintain customer accounts. In the section below, we list the reasons that we can share customers' personal information; the reasons that we choose to share; and whether you can limit this sharing.

Reasons we can share your personal information.	Do we share	Can you limit this sharing?
For our everyday business purposes — to process your transactions and maintain your account. This may include running the business and managing customer accounts, such as processing transactions, mailing, and auditing services, and responding to court orders and legal investigations.	Yes	No
For our marketing purposes — to offer our products and services to you.	Yes	No
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes — information about your transactions and experiences. Affiliates are companies related by common ownership or control. They can be financial and non-financial companies. <i>Our affiliates may include companies with a Stewart name; financial companies, such as Stewart Title Company</i>	Yes	No
For our affiliates' everyday business purposes — information about your creditworthiness.	No	We don't share
For our affiliates to market to you — For your convenience, Stewart has developed a means for you to opt out from its affiliates marketing even though such mechanism is not legally required.	Yes	Yes, send your first and last name, the email address used in your transaction, your Stewart file number and the Stewart office location that is handling your transaction by email to optout@stewart.com or fax to 1-800-335-9591.
For non-affiliates to market to you. Non-affiliates are companies not related by common ownership or control. They can be financial and non-financial companies.	No	We don't share

We may disclose your personal information to our affiliates or to non-affiliates as permitted by law. If you request a transaction with a non-affiliate, such as a third party insurance company, we will disclose your personal information to that non-affiliate. [We do not control their subsequent use of information, and suggest you refer to their privacy notices.]

SHARING PRACTICES

How often do the Stewart Title Companies notify me about their practices?	We must notify you about our sharing practices when you request a transaction.
How do the Stewart Title Companies protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer, file, and building safeguards.
How do the Stewart Title Companies collect my personal information?	We collect your personal information, for example, when you <ul style="list-style-type: none"> ▪ request insurance-related services ▪ provide such information to us We also collect your personal information from others, such as the real estate agent or lender involved in your transaction, credit reporting agencies, affiliates or other companies.
What sharing can I limit?	Although federal and state law give you the right to limit sharing (e.g., opt out) in certain instances, we do not share your personal information in those instances.

Contact us: If you have any questions about this privacy notice, please contact us at: Stewart Title Guaranty Company, 1360 Post Oak Blvd., Ste. 100, Privacy Officer, Houston, Texas 77056

Privacy Notice for California Residents

Pursuant to the California Consumer Privacy Act of 2018 ("CCPA"), Stewart Information Services Corporation and its subsidiary companies (collectively, "Stewart") are providing this **Privacy Notice for California Residents** ("CCPA Notice"). This CCPA Notice supplements the information contained in Stewart's existing privacy notice and applies solely to all visitors, users and others who reside in the State of California or are considered California Residents ("consumers" or "you"). Terms used but not defined shall have the meaning ascribed to them in the CCPA.

Information Stewart Collects

Stewart collects information that identifies, relates to, describes, references, is capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular consumer, household, or device. Most of the information that Stewart collects in the course of its regular business is already protected pursuant to the Gramm-Leach-Bliley Act (GLBA). Additionally, much of this information comes from government records or other information already in the public domain. Personal information under the CCPA does not include:

- Publicly available information from government records.
- Deidentified or aggregated consumer information.
- Certain personal information protected by other sector-specific federal or California laws, including but not limited to the Fair Credit Reporting Act (FCRA), GLBA and California Financial Information Privacy Act (FIPA).

Specifically, Stewart has collected the following categories of personal information from consumers within the last twelve (12) months:

Category	Examples	Collected?
A. Identifiers.	A real name, alias, postal address, unique personal identifier, online identifier, Internet Protocol address, email address, account name, Social Security number, driver's license number, passport number, or other similar identifiers.	YES
B. Personal information categories listed in the California Customer Records statute (Cal. Civ. Code § 1798.80(e)).	A name, signature, Social Security number, physical characteristics or description, address, telephone number, passport number, driver's license or state identification card number, insurance policy number, education, employment, employment history, bank account number, credit card number, debit card number, or any other financial information, medical information, or health insurance information. Some personal information included in this category may overlap with other categories.	YES
C. Protected classification characteristics under California or federal law.	Age (40 years or older), race, color, ancestry, national origin, citizenship, religion or creed, marital status, medical condition, physical or mental disability, sex (including gender, gender identity, gender expression, pregnancy or childbirth and related medical conditions), sexual orientation, veteran or military status, genetic information (including familial genetic information).	YES
D. Commercial information.	Records of personal property, products or services purchased, obtained, or considered, or other purchasing or consuming histories or tendencies.	YES
E. Biometric information.	Genetic, physiological, behavioral, and biological characteristics, or activity patterns used to extract a template or other identifier or identifying information, such as, fingerprints, faceprints, and voiceprints, iris or retina scans, keystroke, gait, or other physical patterns, and sleep, health, or exercise data.	YES
F. Internet or other similar network activity.	Browsing history, search history, information on a consumer's interaction with a website, application, or advertisement.	YES
G. Geolocation data.	Physical location or movements.	YES
H. Sensory data.	Audio, electronic, visual, thermal, olfactory, or similar information.	YES
I. Professional or employment-related information.	Current or past job history or performance evaluations.	YES
J. Non-public education information (per the Family Educational Rights and Privacy Act (20 U.S.C. Section 1232g, 34 C.F.R. Part 99)).	Education records directly related to a student maintained by an educational institution or party acting on its behalf, such as grades, transcripts, class lists, student schedules, student identification codes, student financial information, or student disciplinary records.	YES
K. Inferences drawn from other personal information.	Profile reflecting a person's preferences, characteristics, psychological trends, predispositions, behavior, attitudes, intelligence, abilities, and aptitudes.	YES

Stewart obtains the categories of personal information listed above from the following categories of sources:

- Directly and indirectly from customers, their designees or their agents (For example, realtors, lenders, attorneys, etc.)
- Directly and indirectly from activity on Stewart's website or other applications.
- From third-parties that interact with Stewart in connection with the services we provide.

Use of Personal Information

Stewart may use or disclose the personal information we collect for one or more of the following purposes:

- To fulfill or meet the reason for which the information is provided.
- To provide, support, personalize, and develop our website, products, and services.
- To create, maintain, customize, and secure your account with Stewart.
- To process your requests, purchases, transactions, and payments and prevent transactional fraud.
- To prevent and/or process claims.
- To assist third party vendors/service providers who complete transactions or perform services on Stewart's behalf.
- As necessary or appropriate to protect the rights, property or safety of Stewart, our customers or others.
- To provide you with support and to respond to your inquiries, including to investigate and address your concerns and monitor and improve our responses.
- To personalize your website experience and to deliver content and product and service offerings relevant to your interests, including targeted offers and ads through our website, third-party sites, and via email or text message (with your consent, where required by law).
- To help maintain the safety, security, and integrity of our website, products and services, databases and other technology assets, and business.
- To respond to law enforcement or regulator requests as required by applicable law, court order, or governmental regulations.
- Auditing for compliance with federal and state laws, rules and regulations.
- Performing services including maintaining or servicing accounts, providing customer service, processing or fulfilling orders and transactions, verifying customer information, processing payments, providing advertising or marketing services or other similar services.
- To evaluate or conduct a merger, divestiture, restructuring, reorganization, dissolution, or other sale or transfer of some or all of our assets, whether as a going concern or as part of bankruptcy, liquidation, or similar proceeding, in which personal information held by us is among the assets transferred.

Stewart will not collect additional categories of personal information or use the personal information we collected for materially different, unrelated, or incompatible purposes without providing you notice.

Disclosure of Personal Information to Affiliated Companies and Nonaffiliated Third Parties

Stewart does not sell your personal information to nonaffiliated third parties. Stewart may share your information with those you have designated as your agent in the course of your transaction (for example, a realtor or a lender). Stewart may disclose your personal information to a third party for a business purpose. Typically, when we disclose personal information for a business purpose, we enter a contract that describes the purpose and requires the recipient to both keep that personal information confidential and not use it for any purpose except performing the contract.

We share your personal information with the following categories of third parties:

- Service providers and vendors (For example, search companies, mobile notaries, and companies providing credit/debit card processing, billing, shipping, repair, customer service, auditing, marketing, etc.)
- Affiliated Companies
- Litigation parties and attorneys, as required by law.
- Financial rating organizations, rating bureaus and trade associations.
- Federal and State Regulators, law enforcement and other government entities

In the preceding twelve (12) months, Stewart has disclosed the following categories of personal information for a business purpose:

- Category A: Identifiers
- Category B: California Customer Records personal information categories
- Category C: Protected classification characteristics under California or federal law
- Category D: Commercial Information
- Category E: Biometric Information
- Category F: Internet or other similar network activity
- Category G: Geolocation data
- Category H: Sensory data
- Category I: Professional or employment-related information
- Category J: Non-public education information
- Category K: Inferences

Consumer Rights and Choices

The CCPA provides consumers (California residents) with specific rights regarding their personal information. This section describes your CCPA rights and explains how to exercise those rights.

Access to Specific Information and Data Portability Rights

You have the right to request that Stewart disclose certain information to you about our collection and use of your personal information over the past 12 months. Once we receive and confirm your verifiable consumer request, Stewart will disclose to you:

- The categories of personal information Stewart collected about you.
- The categories of sources for the personal information Stewart collected about you.
- Stewart's business or commercial purpose for collecting that personal information.
- The categories of third parties with whom Stewart shares that personal information.
- The specific pieces of personal information Stewart collected about you (also called a data portability request).
- If Stewart disclosed your personal data for a business purpose, a listing identifying the personal information categories that each category of recipient obtained.

Deletion Request Rights

You have the right to request that Stewart delete any of your personal information we collected from you and retained, subject to certain exceptions. Once we receive and confirm your verifiable consumer request, Stewart will delete (and direct our service providers to delete) your personal information from our records, unless an exception applies.

Stewart may deny your deletion request if retaining the information is necessary for us or our service providers to:

1. Complete the transaction for which we collected the personal information, provide a good or service that you requested, take actions reasonably anticipated within the context of our ongoing business relationship with you, or otherwise perform our contract with you
2. Detect security incidents, protect against malicious, deceptive, fraudulent, or illegal activity, or prosecute those responsible for such activities.
3. Debug products to identify and repair errors that impair existing intended functionality.
4. Exercise free speech, ensure the right of another consumer to exercise their free speech rights, or exercise another right provided for by law.
5. Comply with the California Electronic Communications Privacy Act (Cal. Penal Code § 1546 *seq.*).
6. Engage in public or peer-reviewed scientific, historical, or statistical research in the public interest that adheres to all other applicable ethics and privacy laws, when the information's deletion may likely render impossible or seriously impair the research's achievement, if you previously provided informed consent.
7. Enable solely internal uses that are reasonably aligned with consumer expectations based on your relationship with us.
8. Comply with a legal obligation.
9. Make other internal and lawful uses of that information that are compatible with the context in which you provided it.

Exercising Access, Data Portability, and Deletion Rights

To exercise the access, data portability, and deletion rights described above, please submit a verifiable consumer request to us either:

- Calling us Toll Free at 1-866-571-9270
- Emailing us at Privacyrequest@stewart.com
- Visiting <http://stewart.com/ccpa>

Only you, or someone legally authorized to act on your behalf, may make a verifiable consumer request related to your personal information. You may also make a verifiable consumer request on behalf of your minor child.

To designate an authorized agent, please contact Stewart through one of the methods mentioned above.

You may only make a verifiable consumer request for access or data portability twice within a 12-month period. The verifiable consumer request must:

- Provide sufficient information that allows us to reasonably verify you are the person about whom we collected personal information or an authorized representative.
- Describe your request with sufficient detail that allows us to properly understand, evaluate, and respond to it.

Stewart cannot respond to your request or provide you with personal information if we cannot verify your identity or authority to make the request and confirm the personal information relates to you.

Making a verifiable consumer request does not require you to create an account with Stewart.

Response Timing and Format

We endeavor to respond to a verifiable consumer request within forty-five (45) days of its receipt. If we require more time (up to an additional 45 days), we will inform you of the reason and extension period in writing.

A written response will be delivered by mail or electronically, at your option.

Any disclosures we provide will only cover the 12-month period preceding the verifiable consumer request's receipt. The response we provide will also explain the reasons we cannot comply with a request, if applicable. For data portability requests, we will select a format to provide your personal information that is readily useable and should allow you to transmit the information from one entity to another entity without hindrance.

Stewart does not charge a fee to process or respond to your verifiable consumer request unless it is excessive, repetitive, or manifestly unfounded. If we determine that the request warrants a fee, we will tell you why we made that decision and provide you with a cost estimate before completing your request.

Non-Discrimination

Stewart will not discriminate against you for exercising any of your CCPA rights. Unless permitted by the CCPA, we will not:

- Deny you goods or services.
- Charge you a different prices or rates for goods or services, including through granting discounts or other benefits, or imposing penalties.
- Provide you a different level or quality of goods or services.
- Suggest that you may receive a different price or rate for goods or services or a different level or quality of goods or services.

Changes to Our Privacy Notice

Stewart reserves the right to amend this privacy notice at our discretion and at any time. When we make changes to this privacy notice, we will post the updated notice on Stewart's website and update the notice's effective date. **Your continued use of Stewart's website following the posting of changes constitutes your acceptance of such changes.**

Contact Information

If you have questions or comments about this notice, the ways in which Stewart collects and uses your information described here, your choices and rights regarding such use, or wish to exercise your rights under California law, please do not hesitate to contact us at:

Phone: Toll Free at 1-866-571-9270

Website: <http://stewart.com/ccpa>

Email: Privacyrequest@stewart.com

Postal Address: Stewart Information Services Corporation
Attn: Mary Thomas, Deputy Chief Compliance Officer
1360 Post Oak Blvd., Ste. 100, MC #14-1
Houston, TX 77056

Attachment 7
Neighborhood Meeting

HENDERSON AGGREGATE, LTD. PRE2021-00038 APPLICATION

NEIGHBORHOOD MEETING SUMMARY

Applicant obtained the applicable mailing list of property owners and site addresses within 750ft from Adams County Planning Department Staff on October 28, 2021 (See Henderson Application Mailing List attached hereto as **EXHIBIT A**). Notice of the Neighborhood Meeting was mailed to all on the mailing list on January 18, 2022 (See copy of Notice attached hereto as **EXHIBIT B**) reflecting the Neighborhood Meeting to be held virtually using Microsoft Teams, Wednesday, February 2, 2022 at 5:00pm.

The Neighborhood Meeting was held on the date and time and at the location set forth above. The following people attended the meeting:

- 1) **Norman J. & Charlene R. Einspahr**, 12840 Brighton Rd, Brighton, CO 80601; 303-808-4419;
nceinspahr@gmail.com
- 2) **Larry L. & Sharon E. Arnold**, 12700 Brighton Rd, Brighton, CO 80601; 303-659-1443;
larry57@aol.com
- 3) **Winifred Lee Bromley**, 12801 Brighton Rd, Brighton, CO 80601; 303-659-0038;
wbromley2@gmail.com
- 4) **Tom Walahoski**, current resident, 12389 Brighton Rd, Henderson, CO 80640; 303-659-7244;
secondcrk@hotmail.com

No written comments or questions were received in advance of the meeting.

Applicant presented the PowerPoint presentation attached hereto as **EXHIBIT C** and provided copies of same to all attendees and then opened the discussion for feedback, questions, and concerns.

The following questions were raised and responses provided:

<u>QUESTION:</u>	<u>APPLICANT RESPONSE:</u>
How long of a project will this be?	10-20yrs
Will you control the dust?	Yes, will be controlled with our water trucks.
Is it going to be water storage?	No, it was on the market for 10yrs and there was no interest given it is relatively small for a reservoir.
How soon will we start?	It all depends on when the Worthing inert fill site is full and we get our permits. Most likely to begin 2023.
Will all the other construction here related to the Metro Wastewater Reclamation District be done before you start?	Likely Yes
Will the entry way for the sewer line be finished and closed up before we start?	Yes
How many trucks/day?	Same as what we have today, i.e. 40-50 loads/day
Will it hurt the roads? Concern about the 8 ton weight limit on Brighton Rd.	No, same type of traffic as currently with the Worthing inert fill site.
What about noise and jake brakes?	I don't believe there will be any change given the same amount of traffic. Once on site, the speed limit is 10mph so there should be no need for jake brakes.
What will be the traffic pattern?	We can designate that they come in off of 136 th and Brighton Road to avoid 124 th . NOTE: Current detour on 120 th to the east is causing more congestion on 124 th , not related to Stagecoach or Worthing.

Which direction will the trucks enter off of Brighton Rd?	Both ways
Can the entrance be designated as up on 136 th ?	Yes, we will direct traffic to go this way.
What is the post-fill proposal?	Proposing residential estates - 2.5 acre sites; approx. 10-20 residences after rezoning and subdivision change.
What will be their water source?	Likely city water will be there in 20yrs as a lot can change in 20yrs. However, this is not within the scope of this application.
What will be their sewer system as Zigan owners expressed interest in sewer for their nearby homes as well?	Possibly septic unless city sewer is installed along Brighton Rd. However, this is not within the scope of this application.

Applicant advised all attendees that it would keep them apprised via email of updates on the Application. Shortly after the meeting ended, Applicant provided all attendees with a follow up email with a copy of the power point presentation along with Ben Frei and Mark Molen's contact information in case they have any questions or concerns in the future.

EXHIBIT A

ADAMS COUNTY			4430 SOUTH ADAMS COUNTY PKWY	BRIGHTON CO 80601-8204
BROMLEY DISTRICT WATER PROVIDERS LLC	C/O BROMLEY COMPANIES LLC		8301 E PRENTICE AVE STE 100	GREENWOOD VILLAGE CO 80111-2904
BROMLEY KENNETH M JR AND	BROMLEY LOU ELLEN		12600 BRIGHTON RD RT 3	BRIGHTON CO 80601
COUNTY OF ADAMS THE			4430 S ADAMS COUNTY PKWY	BRIGHTON CO 80601-8222
CUTLER ROBERT L AND	CUTLER SHIRLEY E		12395 BRIGHTON RD	HENDERSON CO 80640
HAMILTON PATRICIA L LIVING TRUST THE			10485 HENDERSON RD	BRIGHTON CO 80601-8111
HEINZ ERIC BRAAD			12730 BRIGHTON RD	BRIGHTON CO 80601-7346
HENDERSON AGGREGATE LTD			35715 HIGHWAY 40 BLDG B	STE 120 EVERGREEN CO 80439-9678
HENDERSON WATER SKI CLUB LLC	C/O TOM KRUEGER		15037 W 49TH PLACE	GOLDEN CO 80403
MCCARTY TRAVIS K AND	MCCARTY SHANTEL M		12730 BRIGHTON RD	BRIGHTON CO 80601-7346
NELSON ANNE J			17227 W 12TH AVE	GOLDEN CO 80401-2899
PENA MANUELA VERONICA MOLINA			1201 W THORNTON PKWY LOT 197	THORNTON CO 80260-5420
ZIGAN HOMEOWNERS ASSOCIATION			10801 E 124TH AVE	BRIGHTON CO 80601-7114
ARNOLD LARRY L AND	ARNOLD SHARON E	OR CURRENT RESIDENT	12700 BRIGHTON RD	BRIGHTON CO 80601-7346
BELUSCAK CONNIE JEAN AND	BELUSCAK VINCENT J	OR CURRENT RESIDENT	10757 E 124TH AVE	BRIGHTON CO 80601-7138
BLISS WILLIAM G AND	BLISS CHARLENE M	OR CURRENT RESIDENT	12460 BRIGHTON RD	BRIGHTON CO 80601-7350
BOSTROM SHARON A		OR CURRENT RESIDENT	12550 BRIGHTON RD	BRIGHTON CO 80601-7350
BROMLEY WINIFRED LEE		OR CURRENT RESIDENT	12801 BRIGHTON RD	BRIGHTON CO 80601-7341
CHAVEZ JESUS IGNACIO AND	CHAVEZ LUZ ALEJANDRA	OR CURRENT RESIDENT	12350 BRIGHTON RD	HENDERSON CO 80640-9748
CLARK MELVIN M/VICKI L	REVOCABLE TRUST THE	OR CURRENT RESIDENT	10381 E 123RD AVE	HENDERSON CO 80640-7436
COOPER SCOTT RICHARD AND	COOPER TRACY DANEEN	OR CURRENT RESIDENT	12420 BRIGHTON RD	BRIGHTON CO 80601-7350
CUTLER ROBERT L AND	CUTLER SHIRLEY E	OR CURRENT RESIDENT	12395 BRIGHTON RD	HENDERSON CO 80640-9747
EINSPAHR NORMAN J AND	EINSPAHR CHARLENE R	OR CURRENT RESIDENT	12840 BRIGHTON RD	BRIGHTON CO 80601
GARCIA ALFREDO AND	GARCIA ADELINA R	OR CURRENT RESIDENT	10321 E 123RD AVE	HENDERSON CO 80640-7436
JONES CALLAN MICHAEL		OR CURRENT RESIDENT	10371 E 123RD AVE	HENDERSON CO 80640-7436
KREMHELLER DIANNA O AND	KREMHELLER DAVID B	OR CURRENT RESIDENT	10391 E 123RD AVE	HENDERSON CO 80640-7436
KROLL TRISHA/ALAN 25 PERCENT INT AND	HAMILTON PATRICIA L LIVING TRUST 75 PERC	OR CURRENT RESIDENT	10485 HENDERSON RD	BRIGHTON CO 80601-8111
MONTOYA MICHAEL AND SANDRA		OR CURRENT RESIDENT	10800 E 126TH AVE	BRIGHTON CO 80601
PAWLAK MATTHEW AND NATHALIE		OR CURRENT RESIDENT	12500 BRIGHTON RD	BRIGHTON CO 80601
PRILL MICHAEL J AND	PRILL JOLENE L	OR CURRENT RESIDENT	12375 BRIGHTON RD	HENDERSON CO 80640-9747
RUSSELL GRACE G AND	RUSSELL KENNETH L	OR CURRENT RESIDENT	13185 BRIGHTON RD	BRIGHTON CO 80601-7341
SHURTLEFF JOSEPH W AND	SHURTLEFF MINDY	OR CURRENT RESIDENT	12770 BRIGHTON RD	BRIGHTON CO 80601
ZIGAN FLORIAN B		OR CURRENT RESIDENT	10801 E 124TH AVE	BRIGHTON CO 80601-7114
ZIGAN STEVEN AND JONI		OR CURRENT RESIDENT	10900 E 126TH AVE	BRIGHTON CO 80601
CURRENT RESIDENT			10800 E 124TH AVE	BRIGHTON CO 80601-7114
CURRENT RESIDENT			12840 BRIGHTON RD	BRIGHTON CO 80601-7342
CURRENT RESIDENT			12735 BRIGHTON RD	BRIGHTON CO 80601-7345
CURRENT RESIDENT			12600 BRIGHTON RD	BRIGHTON CO 80601-7351
CURRENT RESIDENT			9755 HENDERSON RD	BRIGHTON CO 80601-8114
CURRENT RESIDENT			12389 BRIGHTON RD	HENDERSON CO 80640-9747

EXHIBIT B



35715 HWY 40
BLDG B STE 120
EVERGREEN CO 80439

January 17, 2022

Delivery via USPS First Class Postage Mail

CURRENT RESIDENT
12735 BRIGHTON RD
BRIGHTON CO 80601-7342

**Re: PRE2021-00038: Henderson Aggregate, Ltd.-Application for Certificate of Designation
12601 Brighton Rd., Henderson, CO 80640 (125.617 acres) ("Property")**

Dear Neighbor:

Henderson Aggregate, Ltd. invites you to attend a neighborhood meeting regarding its prospective land use application of the Property and related project details. With the ongoing issues related to COVID-19, this meeting will be conducted virtually using the Microsoft Teams access information below:

DATE: Wednesday, February 2, 2022
TIME: 5:00 p.m. to 6:00 p.m.
LINK: Microsoft Teams meeting
Join on your computer or mobile app
[Click here to join the meeting](#)
Or call in (audio only)
[+1 719-582-5267,,858353025#](#) United States, Pueblo
Phone Conference ID: 858 353 025#

If you intend to attend or participate in the virtual meeting, please RSVP by contacting Michelle A. Stein at (720) 413-3186 or email at mstein@albertfreiandsons.com and provide your email address so that we may send the meeting link directly to you as well as any updates related to the meeting or the Application. We look forward to meeting with you.

Thank you and have a good day!

Sincerely,

A handwritten signature in black ink, appearing to read 'Ben Frei', with a stylized flourish at the end.

Ben Frei






Enc: Property Map

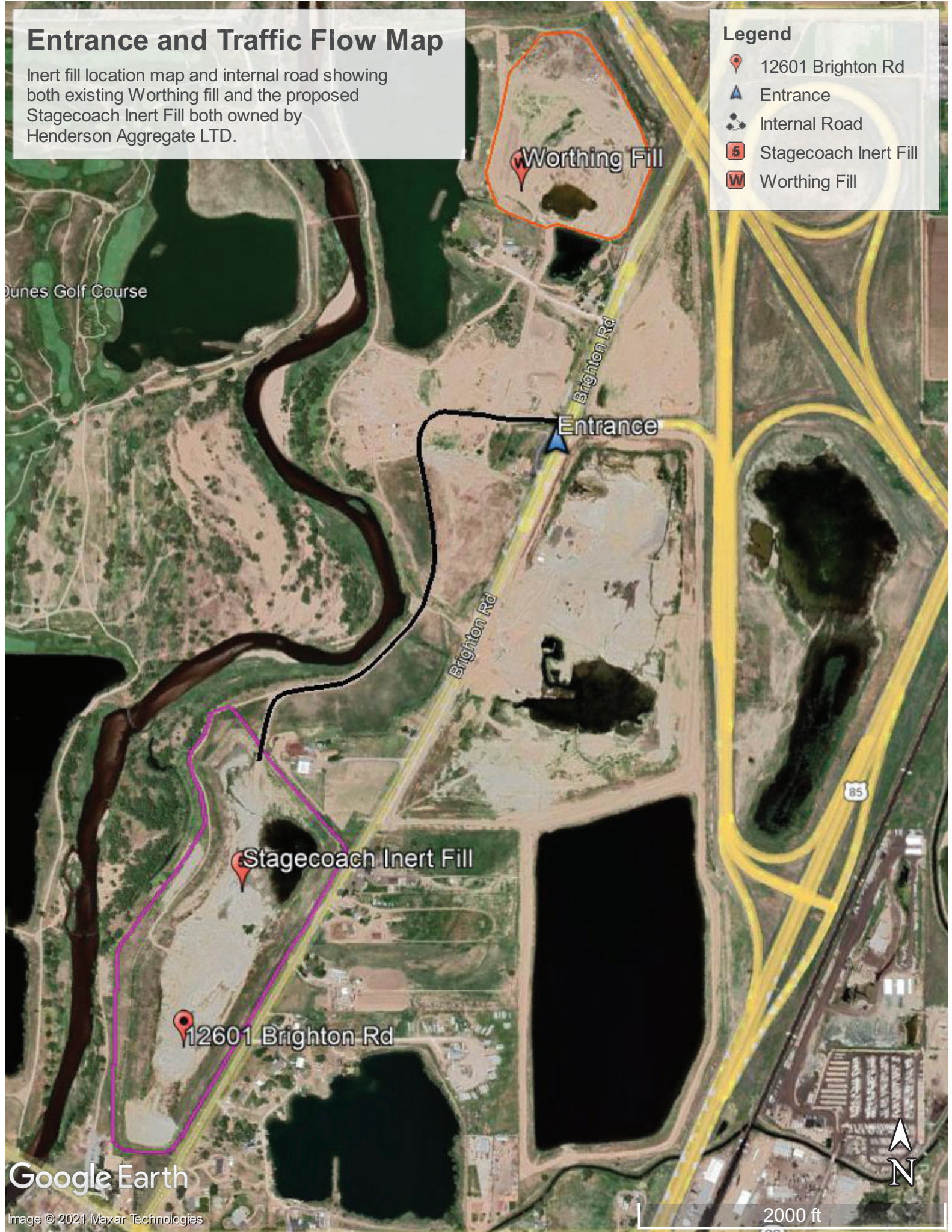
Note: If you wish to be removed from this mailing list, please send an email to mstein@albertfreiandsons.com.

Entrance and Traffic Flow Map

Inert fill location map and internal road showing both existing Worthing fill and the proposed Stagecoach Inert Fill both owned by Henderson Aggregate LTD.

Legend

-  12601 Brighton Rd
-  Entrance
-  Internal Road
-  Stagecoach Inert Fill
-  Worthing Fill



Dunes Golf Course

Worthing Fill

Brighton Rd

Entrance

Brighton Rd

Stagecoach Inert Fill

12601 Brighton Rd

85

Google Earth

Image © 2021 Maxar Technologies

2000 ft



EXHIBIT C

A F S

A L B E R T F R E I & S O N S

Proposed Stagecoach Inert
Fill

PRE2021-00038

ADAMS COUNTY

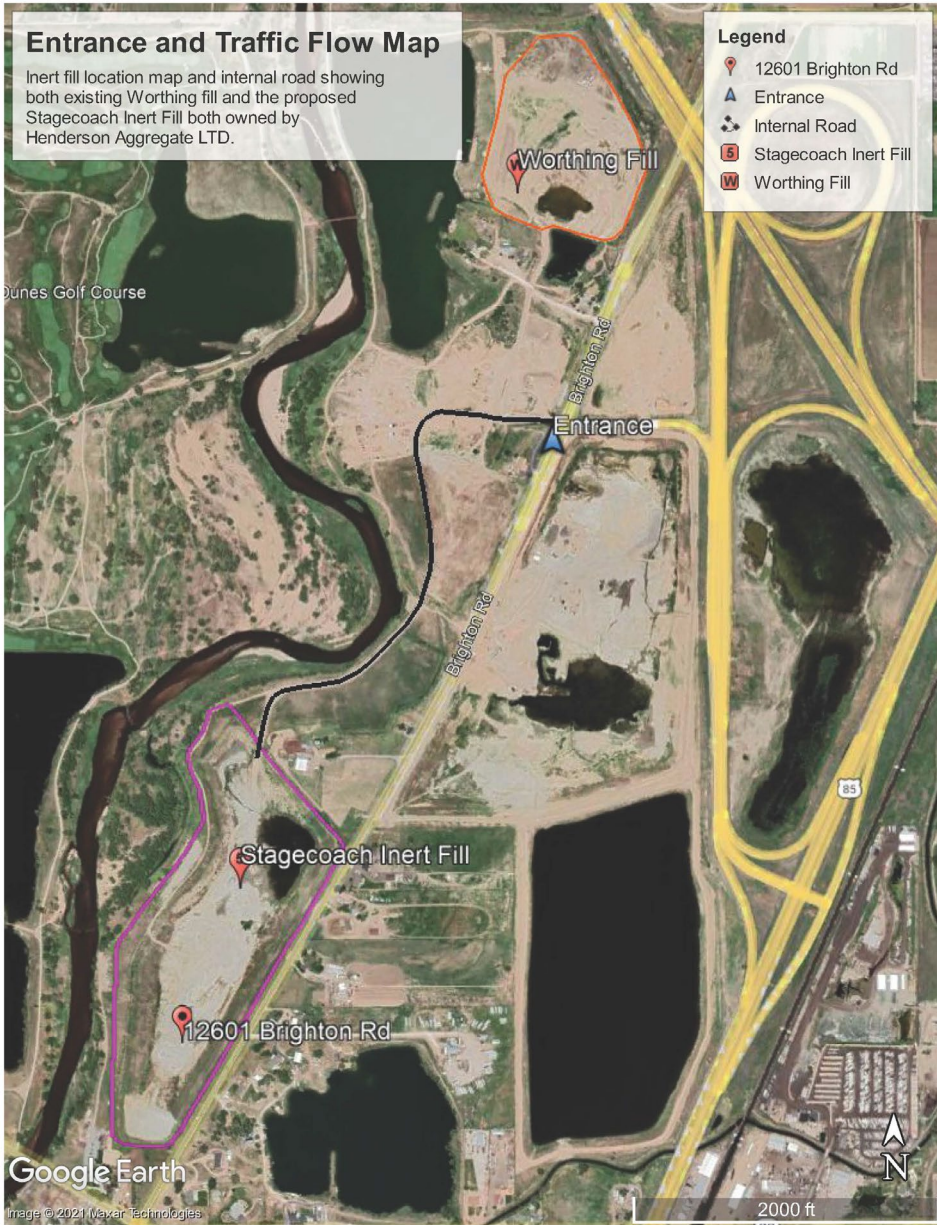
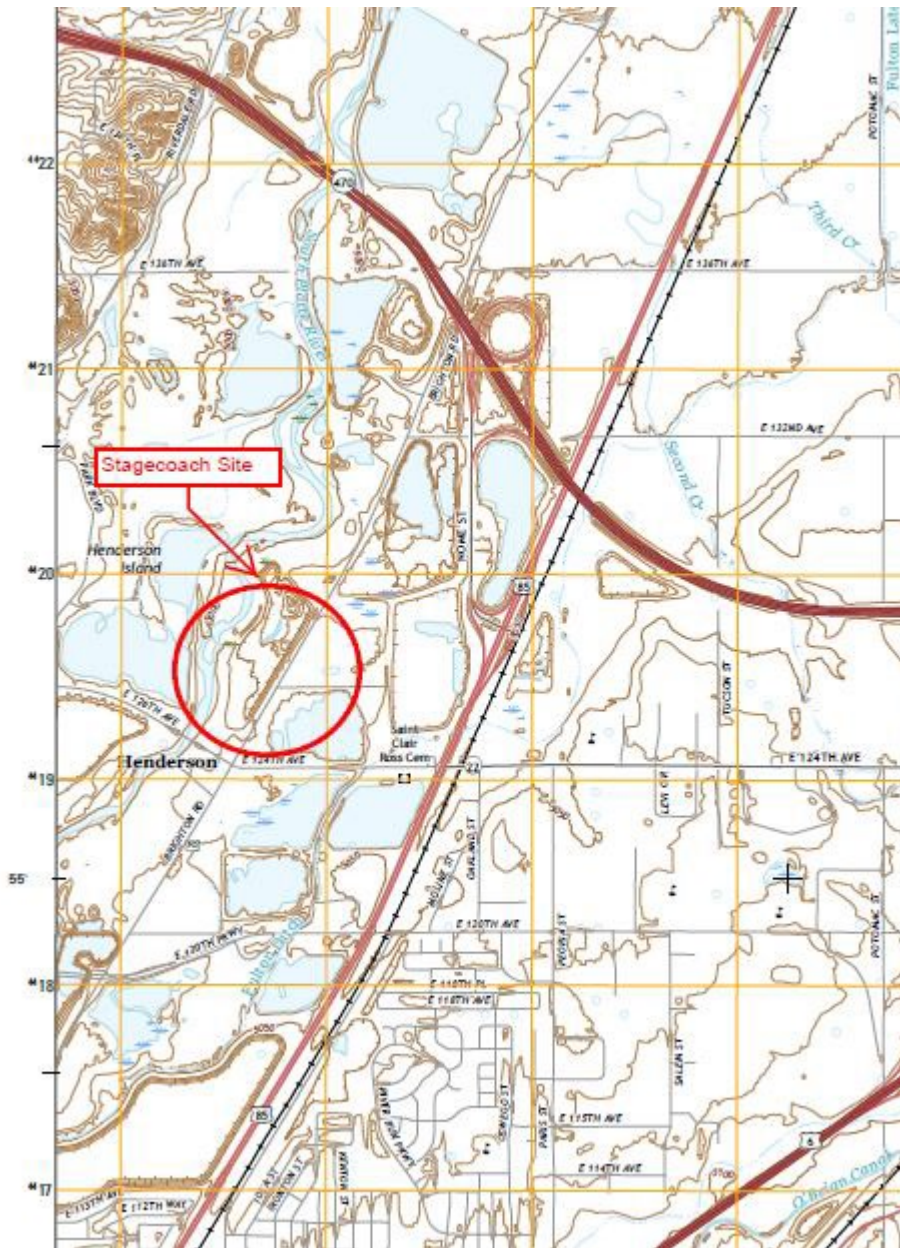
NEIGHBORHOOD MEETING

FEBRUARY 2, 2022

About Albert Frei & Sons

Founded in 1962 when the family farm in Henderson, Colorado was converted to a gravel pit supplying material for the construction of Interstate 76. Albert Frei & Sons is now in its 3rd generation of providing Colorado and the Denver area with the high-quality aggregates it demands in order to maintain and build its infrastructure. The 3rd generation consists of Albert Sr.'s children Al, Ben, Joe, Lisa and Tommy.





Stagecoach Excavation Pit



Henderson, CO

Inert Fill Mined Excavation Pit

- Inert fill to bring grade level to approximately Brighton Road
- Inert filling the same as the Worthing Henderson Inert Fill Site
- Use of existing entrance - same as Worthing Inert Fill Site
- Inert fill is earthen material - dirt, soil, rock, brick, concrete, asphalt
- Typical inert fill is basement excavations or utility line excavations
- Operation hours 7 am to 4 pm M-F and 7 am to 12 pm Saturday, closed on Sundays and Holidays
- Fill will commence from South to North

Reclamation Examples



Brighton, CO

Reclamation Examples



RTD Station, Commerce City, CO

Post-Reclamation Appearance



Summary & Questions

- Inert filling to reclaim the site to pre-mining conditions
- Operations the same as Worthing Inert Fill Site
- Phased filling from South to North
- Questions?
- Contact Mark Molen
mark@molenandassociates.com



Attachment 8
Traffic Study



LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
FAX (303) 333-1107
E-mail: lsc@lscdenver.com

March 1, 2022

Mr. Mark A. Molen
Molen and Associates, LLC
2090 E. 104th Avenue, Suite 101
Thornton, CO 80233

Re: Stagecoach Inert Fill
Level 2 Traffic
Impact Analysis
Adams County, CO
LSC #211070

Dear Mr. Molen:

In response to your request, LSC Transportation Consultants, Inc. has prepared this Level 2 traffic impact analysis for the proposed Stagecoach Inert Fill development. As shown on Figure 1, the site is located west of Brighton Road and south of E. 132nd Avenue in Adams County, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site for both an average and maximum day; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the site's traffic impacts.

LAND USE AND ACCESS

The site has been used as a fill site for several decades and is currently proposing to extend the permitting for several more years. The extension of the permit will not increase the traffic volumes historically generated by the site. Full movement access exists to Brighton Road. Figure 2 shows the conceptual site plan.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

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

- **Brighton Road** is a north-south, two-lane arterial roadway east of the site. The intersections with E. 124th Avenue and E. 136th Avenue are stop-sign controlled. The posted speed limit is 45 mph in the vicinity of the site.

Existing Traffic Conditions

Figure 3 shows the existing traffic volumes, lane geometries, traffic controls, and posted speed limits in the vicinity of the site on a typical weekday. The weekday peak-hour traffic and daily traffic volumes are from the attached traffic counts conducted by Counter Measures in November 2021.

2022 and 2042 Background Traffic

Figure 4 shows the estimated 2022 background traffic and Figure 5 shows the estimated 2042 background traffic. The background traffic is based on an annual rate of two percent less the existing site-generated trips. Figures 4 and 5 also show the assumed lane geometry and traffic control which is the same as the existing conditions shown in Figure 3.

Existing, 2022, and 2042 Background Levels of Service

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

The intersections in the study area were analyzed to determine the existing, 2022, and 2042 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

1. **Brighton Road/E. 136th Avenue:** All movements at this unsignalized intersection currently operate at LOS "C" or better and are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2042 with the following exception: By 2042, the westbound left-turn movement is expected to operate at LOS "F" in the afternoon peak-hour.
2. **Brighton Road/Site Access:** All movements at this unsignalized intersection currently operate at LOS "D" or better and are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2042.
3. **Brighton Road/Henderson Road/E. 124th Avenue:** This all-way stop-controlled intersection currently operates at an overall LOS "C" during the morning peak-hour and LOS "E" during the afternoon peak-hour. By 2022, it is expected to operate at LOS "C" during the morning peak-hour and LOS "F" during the afternoon peak-hour. By 2042, both peak-hours are expected to operate at LOS "F".

TRIP GENERATION

Table 2 shows the estimated average weekday trip generation for the proposed site based on information from the applicant for two scenarios (average and maximum round-trips per day).

On an average day, the site is projected to continue to generate about 200 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 10 vehicles would enter and about 10 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 10 vehicles would enter and about 10 vehicles would exit.

On a maximum day, the site is projected to continue to generate about 300 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 15 vehicles would enter and about 15 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 15 vehicles would enter and about 15 vehicles would exit.

TRIP DISTRIBUTION

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

TRIP ASSIGNMENT

Figure 7a shows the estimated site-generated traffic volumes for an average day based on the directional distribution percentages (from Figure 6) and the average day trip generation estimate (from Table 2).

Figure 7b shows the estimated site-generated traffic volumes for a maximum day based on the directional distribution percentages (from Figure 6) and the maximum day trip generation estimate (from Table 2).

2022 and 2042 TOTAL TRAFFIC

Figure 8a shows the 2022 total traffic for an average day which is the sum of the 2022 background traffic volumes (from Figure 4) and the average day site-generated traffic volumes (from Figure 7a). Figure 8a also shows the existing lane geometry and traffic control plus the potential mitigation.

Figure 8b shows the 2022 total traffic for a maximum day which is the sum of the 2022 background traffic volumes (from Figure 4) and the maximum day site-generated traffic volumes (from Figure 7b). Figure 8b also shows the existing lane geometry and traffic control plus the potential mitigation.

Figure 9a shows the 2042 total traffic for an average day which is the sum of 2042 background traffic volumes (from Figure 5) and the average day site-generated traffic volumes (from Figure

7a). Figure 9a also shows the the existing lane geometry and traffic control plus the potential mitigation.

Figure 9b shows the 2042 total traffic for a maximum day which is the sum of 2042 background traffic volumes (from Figure 5) and the maximum day site-generated traffic volumes (from Figure 7b). Figure 9b also shows the the existing lane geometry and traffic control plus the potential mitigation.

PROJECTED LEVELS OF SERVICE

The intersections in the study area were analyzed to determine the 2022 and 2042 total levels of service for both an average and a maximum day. Table 1 shows the level of service analysis results. The level of service reports are attached.

- 1. Brighton Road/E. 136th Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better for both scenarios during both morning and afternoon peak-hours through 2042 with the following exception: By 2042, the westbound left-turn movement is expected to operate at LOS “F” in the afternoon peak-hour in either scenario. All movements would be LOS “D” or better with the potential mitigation.
- 2. Brighton Road/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better for both scenarios during both morning and afternoon peak-hours through 2042.
- 3. Brighton Road/Henderson Road/E. 124th Avenue:** This all-way stop-controlled intersection is expected to operate at an overall LOS “D” during the morning peak-hour and LOS “F” during the afternoon peak-hour in either scenario through 2022. By 2042, it is expected to operate at LOS “F” during both peak-hours in either scenario. With the potential mitigation including traffic signal control it is expected to operate at LOS “C” during both peak-hours through 2042.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. On an average day, the site is projected to continue to generate about 200 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 10 vehicles would enter and about 10 vehicles would exit the site. During the afternoon peak-hour, about 10 vehicles would enter and about 10 vehicles would exit.
2. On a maximum day, the site is projected to continue to generate about 300 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 15 vehicles would enter and about 15 vehicles would exit the site. During the afternoon peak-hour, about 15 vehicles would enter and about 15 vehicles would exit.

Projected Levels of Service

- 3. All movements at the unsignalized intersections are expected at LOS “D” or better during both peak-hours through 2042 with the following exception: The westbound left-turn movement at the Brighton Road/E. 136th Avenue is expected to operate at LOS “F” in the afternoon peak-hour in either scenario with the existing lane geometry and traffic control. This movement would improve to LOS “D” or better with the potential mitigation which is providing a westbound to southbound acceleration lane.
- 4. The all-way stop-controlled Brighton Road/Henderon Road/E. 124th avenue is expected to operate at LOS “F” in either scenario by 2042. With the recommended improvements which include traffic signal control for this intersection, it is expected to operate at LOS “C” through 2042.

Conclusions

- 5. The continued impact of the proposed Stagecoach Inert Fill development can be accommodated by the existing roadway network. The following recommended improvements would mitigate existing and future background traffic issues. The site is expected to have minimal impact so any contribution or mitigation provided by the applicant should be minimal.

Recommendations

- 6. A westbound to southbound left-turn acceleration lane on Brighton Road departing E. 136th Avenue would mitigate background traffic growth and be needed with or without development of the site. Site traffic is expected to comprise less than three percent of the traffic making this movement in 2042.
- 7. Separate left-turn lanes for the eastbound and westbound approaches (100 feet each) would mitigate 2022 background traffic and be needed with or without development of the site. Separate left-turn lanes on each approach (100 feet each) plus traffic signal control at the Brighton Road/Henderson Road/E. 124th Avenue intersection would mitigate growth in 2042 background traffic and be needed with or without development of the. Site traffic is expected to comprise less than one percent of the peak-hour traffic at this intersection in 2042.

* * * * *

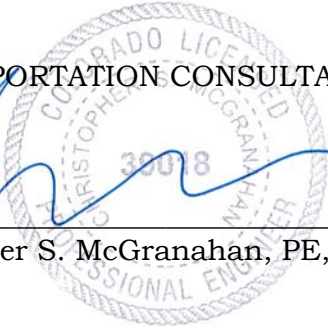
We trust our findings will assist you in gaining approval of the proposed Stagecoach Inert Fill development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By 

Christopher S. McGranahan, PE, PTOE
Principal



CSM/wc

3-1-22

Enclosures: Tables 1 and 2
Figures 1 - 9b
Traffic Count Reports
Level of Service Definitions
Level of Service Reports

**Table 1
Intersection Levels of Service Analysis
Stagecoach Inert Fill
Adams County, CO
LSC #211070; March, 2022**

Intersection No. & Location	Traffic Control	Existing Traffic		2022 Background Traffic		2022 Total Traffic Average Day		2022 Total Traffic Maximum Day		2022 Total Traffic Maximum Day Mitigated ⁽¹⁾		2042 Background Traffic		2042 Total Traffic Average Day		2042 Total Traffic Maximum Day		2042 Total Traffic Maximum Day Mitigated ^{(2) (3)}	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1) <u>Brighton Road/E. 136th Avenue</u>	TWSC																		
WB Left		B	C	B	C	B	C	B	C			C	F	C	F	C	F	C	D
WB Right		A	B	A	B	A	B	A	B			A	B	A	B	A	B	A	B
SB Left		A	A	A	A	A	A	A	A			A	A	A	A	A	A	A	A
Critical Movement Delay		13.3	19.8	13.4	20.1	13.5	20.4	13.6	20.6			18.6	70.4	18.9	73.8	19.0	74.6	15.6	28.8
2) <u>Brighton Road/Site Access/ E. 132nd Avenue</u>	TWSC																		
NB Left		A	A	A	A	A	A	A	A			A	A	A	A	A	A		
EB Approach		B	D	A	A	B	C	B	C			A	A	B	C	B	C		
WB Approach		A	B	B	C	B	C	B	C			B	C	B	C	B	C		
SB Left		A	A	A	A	A	A	A	A			A	A	A	A	A	A		
Critical Movement Delay		11.0	25.0	10.5	15.5	12.3	18.4	12.5	18.9			10.5	15.5	12.3	18.4	12.5	18.9		
3) <u>Brighton Road/Henderson Road/ E. 124th Avenue</u>	AWSC																		
NB Left/Through		C	C	C	C	C	C	C	C	C	C	D	E	D	E	D	E		
NB Right		A	B	A	B	A	B	B	B	A	B	B	B	B	B	B	B		
EB Approach		D	F	D	F	E	F	E	F	--	--	F	F	F	F	F	F		
EB Left		--	--	--	--	--	--	--	--	B	B	--	--	--	--	--	--		
EB Through/Right		--	--	--	--	--	--	--	--	C	D	--	--	--	--	--	--		
WB Left/Through		C	E	C	E	C	E	C	E	--	--	F	F	F	F	F	F		
WB Left		--	--	--	--	--	--	--	--	B	B	--	--	--	--	--	--		
WB Right		A	A	A	A	A	A	A	A	--	--	B	B	B	B	B	B		
WB Through/Right		--	--	--	--	--	--	--	--	C	D	--	--	--	--	--	--		
SB Left		B	B	B	B	B	B	B	B	B	B	B	C	B	C	B	C		
SB Through/Right		B	C	B	C	B	C	B	C	B	C	D	D	D	E	D	D		
Entire Intersection Delay (sec /veh)		24.4	47.9	24.6	52.7	25.4	55.4	25.9	56.6	18.3	24.2	140.3	>240	143.9	>240	145.3	>240		
Entire Intersection LOS		C	E	C	F	D	F	D	F	C	C	F	F	F	F	F	F		
	Signalized																		
EB Left																		B	B
EB Through/Right																		B	B
WB Left																		B	B
WB Through/Right																		C	C
NB Left																		C	C
NB Through/Right																		B	B
SB Left																		C	C
SB Through/Right																		C	C
Entire Intersection Delay (sec /veh)																		20.4	23.2
Entire Intersection LOS																		C	C

(1) Potential 2022 mitigation is converting the east-west approaches to have dedicated left-turn lanes (100 feet each) and a shared through/right lane.

(2) Potential 2042 mitigation is traffic signal control and having a dedicated left-turn lane on each approach. The proposed site is expected to comprise about one percent of 2022 total traffic and about 0.7 percent of 2042 total traffic.

(3) Potential mitigation is a westbound to southbound acceleration lane on Brighton Road. The proposed site is expected to comprise less than three percent of 2042 total traffic.

Table 2
ESTIMATED TRAFFIC GENERATION
Stagecoach Inert Fill
Adams County, CO
LSC #211070; March, 2022

Trip Generating Category	Vehicle-Trips Generated ⁽¹⁾				
	Average	AM Peak-Hour		PM Peak-Hour	
	Weekday	In	Out	In	Out
CURRENTLY PROPOSED LAND USE					
Average Round Trips Per Day = 100					
Round Trips	200	10	10	10	10
Maximum Round Trips Per Day = 150					
Round Trips	300	15	15	15	15

Notes:

(1) Assumes 10% of the daily trips occur during each peak-hour.



North Arrow
Approximate Scale
Scale: 1"=3,000'

Figure 1
Vicinity Map

Stagecoach Inert Fill (LSC #211070)

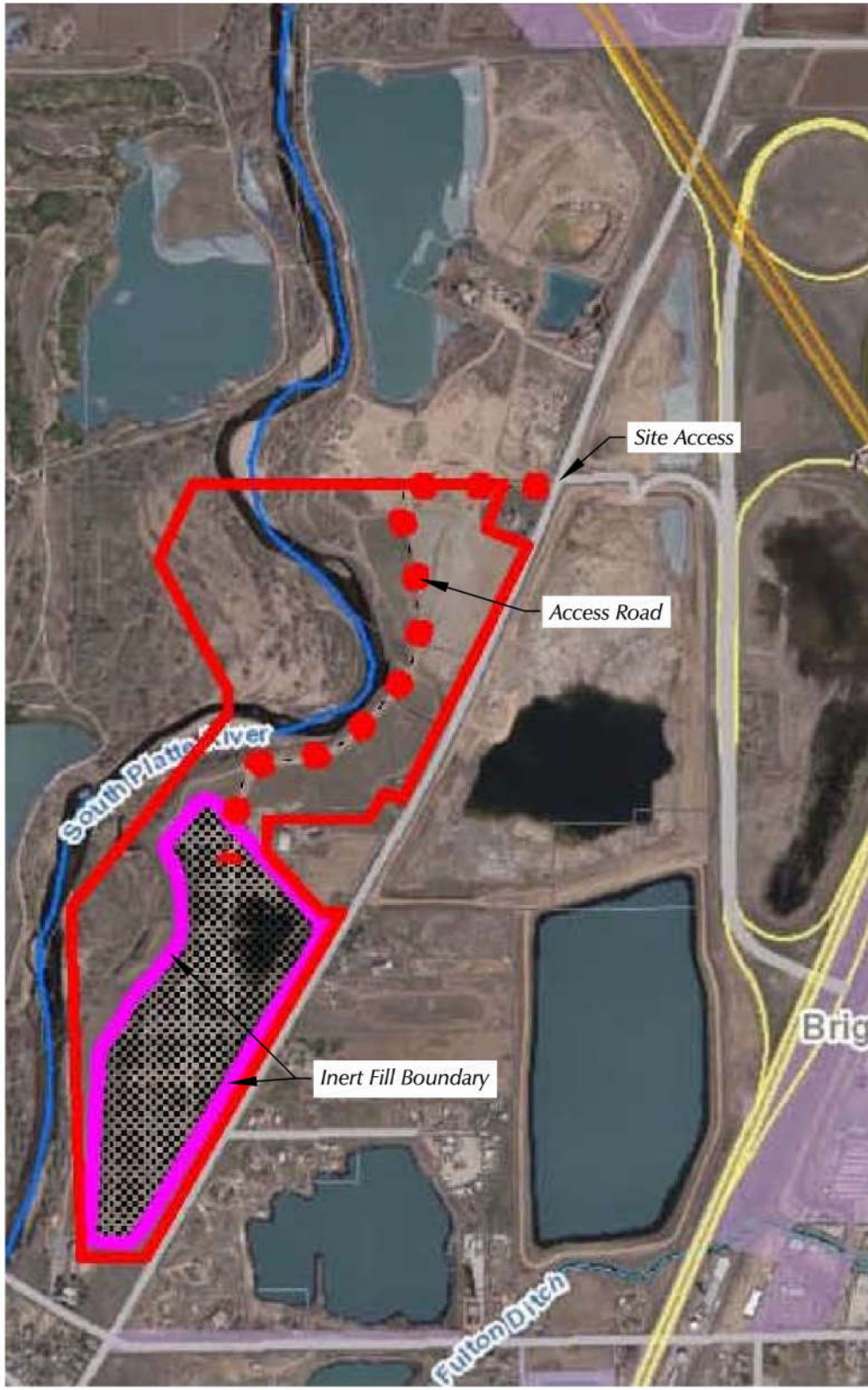
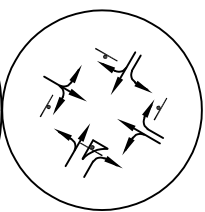
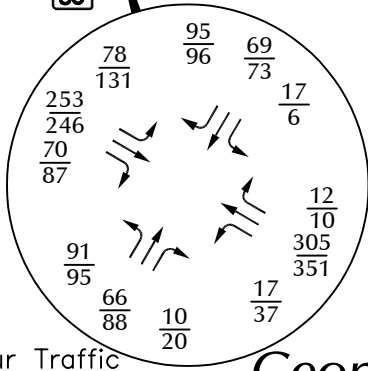
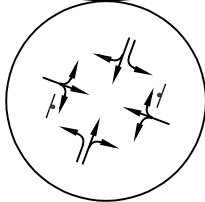
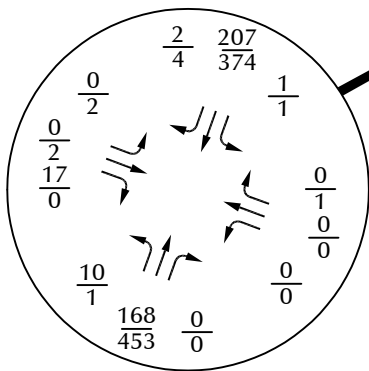
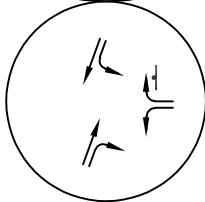
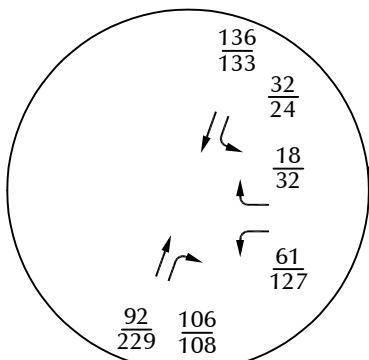


Figure 2

Site Plan

Stagecoach Inert Fill (LSC #211070)





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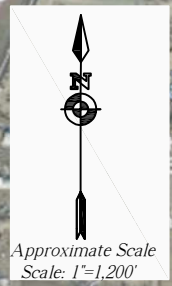
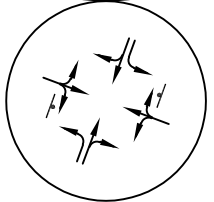
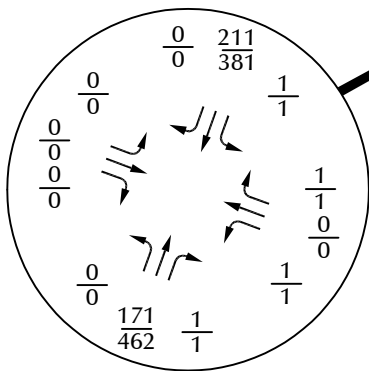
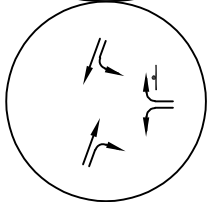
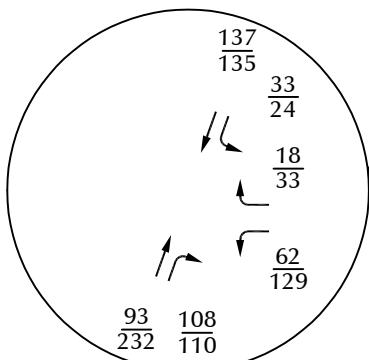
- = Stop Sign
- = Speed Limit
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1.000 = Average Daily Traffic



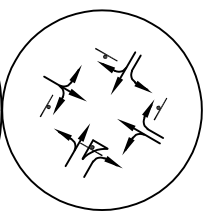
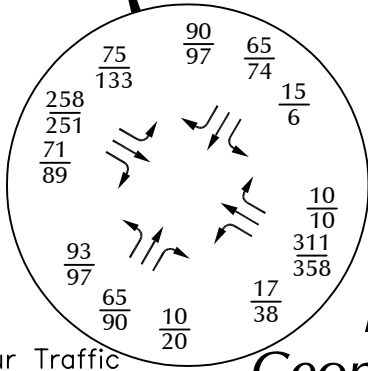
Figure 3

Existing Traffic, Lane Geometry and Traffic Control

Stagecoach Inert Fill (LSC #211070)



Note: Assumes annual growth rate of two percent less the existing site trips.



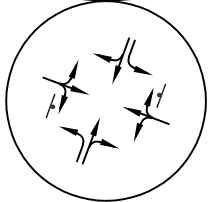
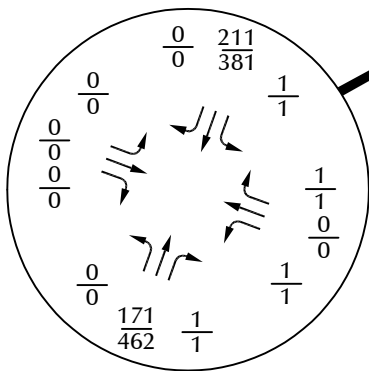
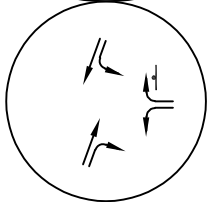
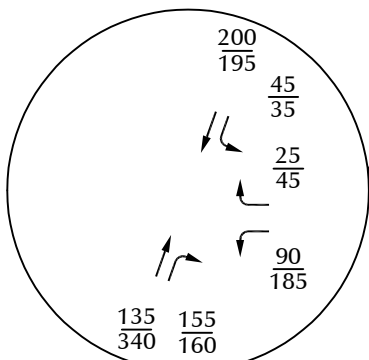
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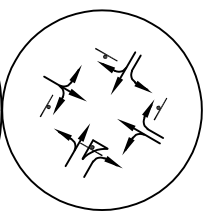
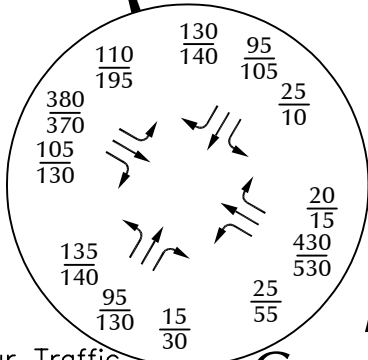
- ⊥ = Stop Sign
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1.000 = Average Daily Traffic

Figure 4
 Year 2022
 Background Traffic, Lane
 Geometry and Traffic Control

Stagecoach Inert Fill (LSC #211070)



Note: Assumes annual growth rate of two percent less the existing site trips.



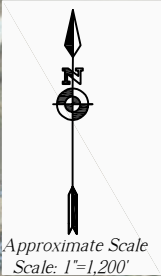
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- ⊥ = Stop Sign
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1.000 = Average Daily Traffic

Figure 5
Year 2042
Background Traffic, Lane
Geometry and Traffic Control

Stagecoach Inert Fill (LSC #211070)



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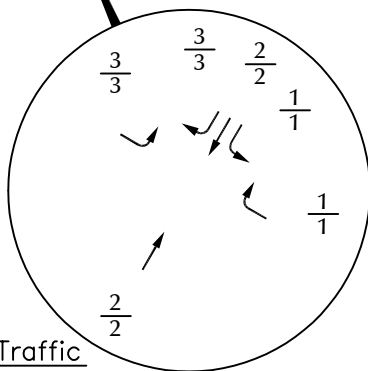
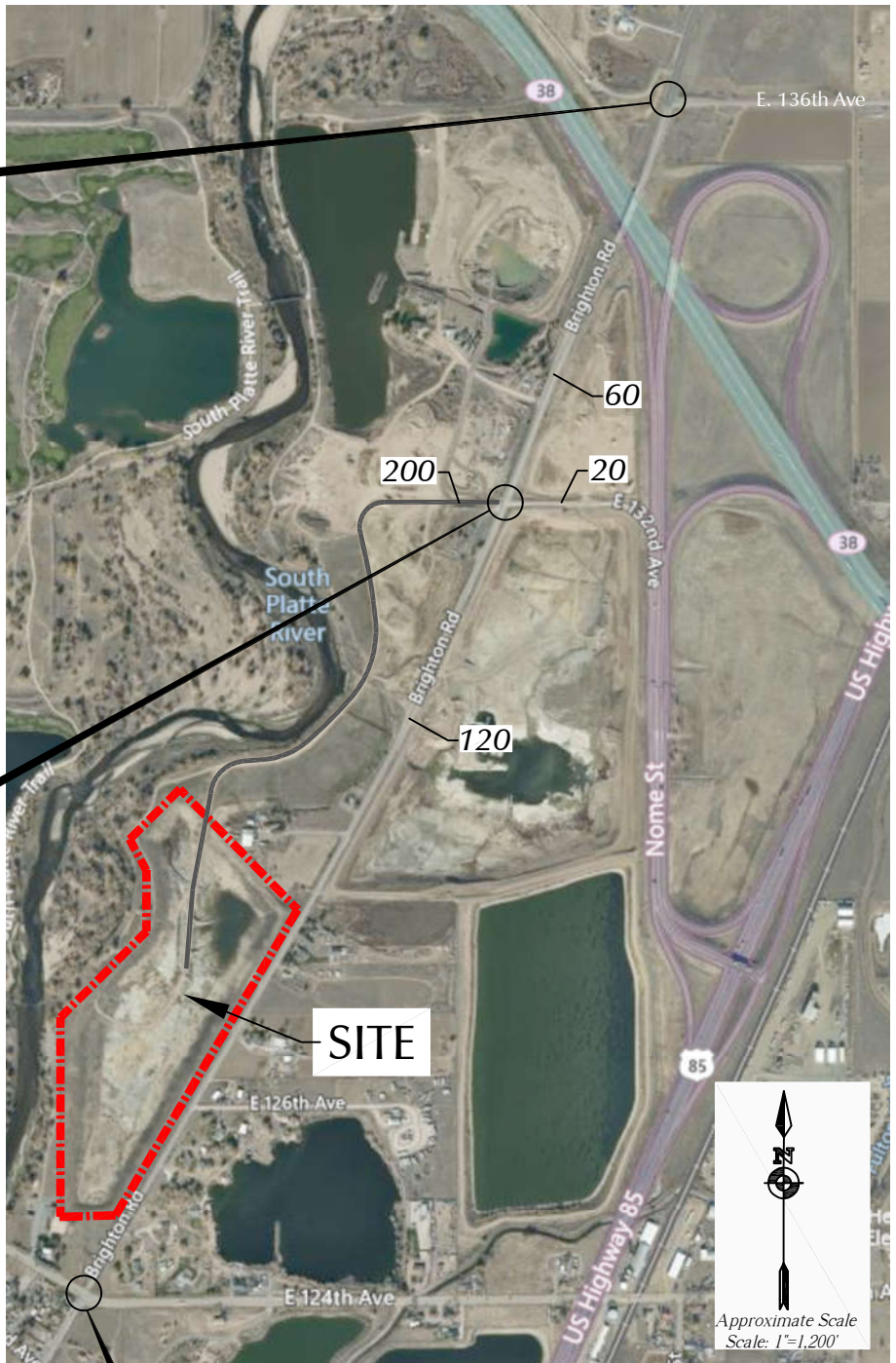
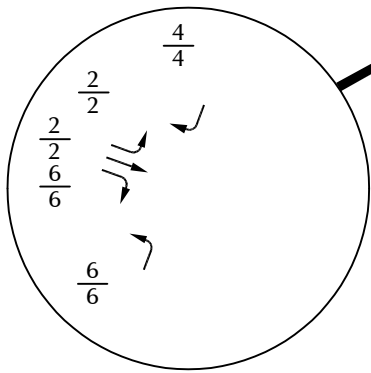
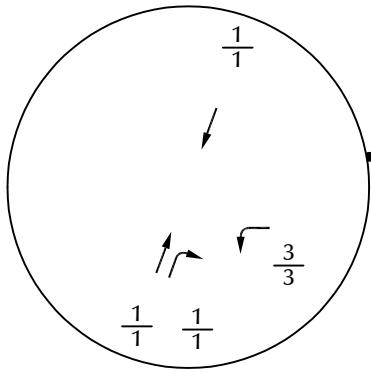
↔ = Percent Directional Distribution



Figure 6

Directional Distribution of Site-Generated Traffic

Stagecoach Inert Fill (LSC #211070)




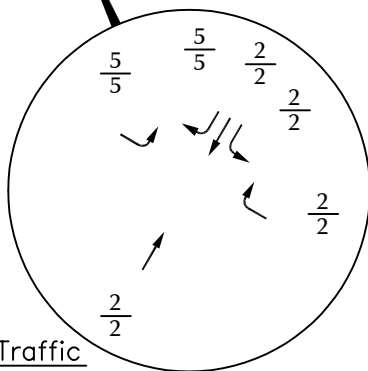
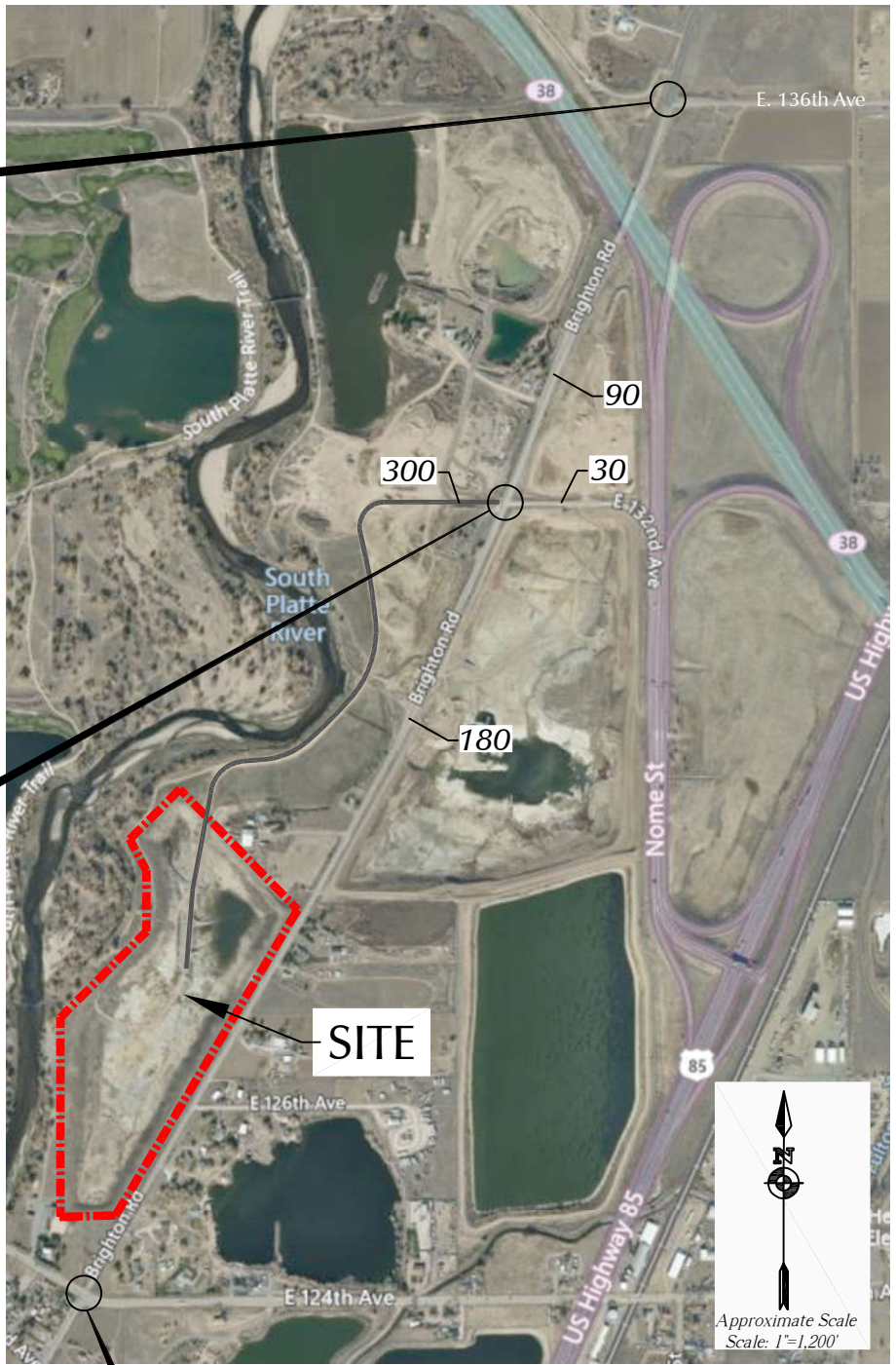
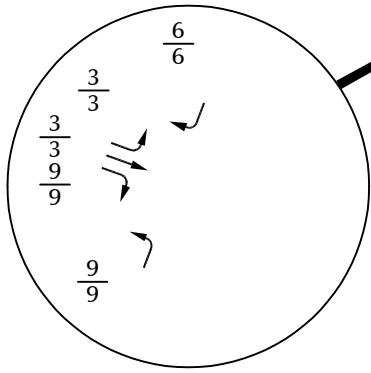
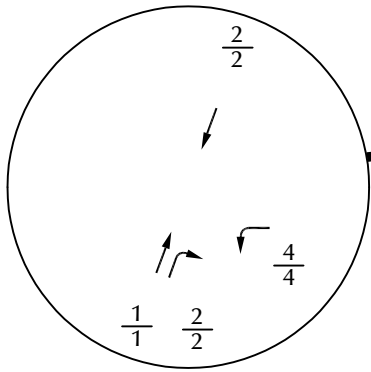

LEGEND:
 $\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{35}$ = PM Peak Hour Traffic
 1.000 = Average Daily Traffic

Figure 7a
**Assignment of
 Site-Generated Traffic
 for an Average Day**
 Stagecoach Inert Fill (LSC #211070)




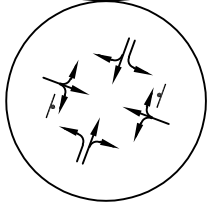
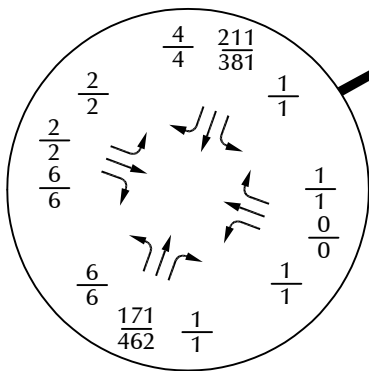
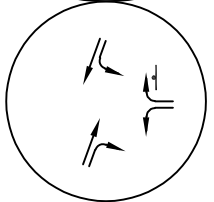
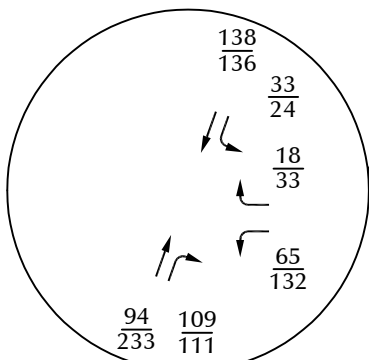
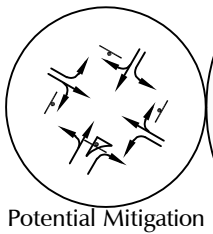

LEGEND:
 $\frac{26}{35}$ = AM Peak Hour Traffic
 $\frac{35}{35}$ = PM Peak Hour Traffic
 1.000 = Average Daily Traffic

Figure 7b
**Assignment of
 Site-Generated Traffic
 for a Maximum Day**
 Stagecoach Inert Fill (LSC #211070)



Note: These volumes are the sum of the volumes in Figures 4 and 7a.



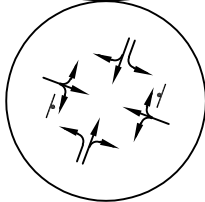
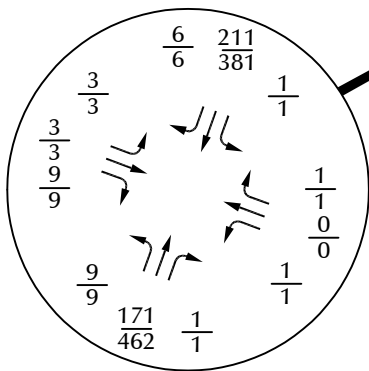
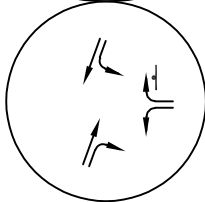
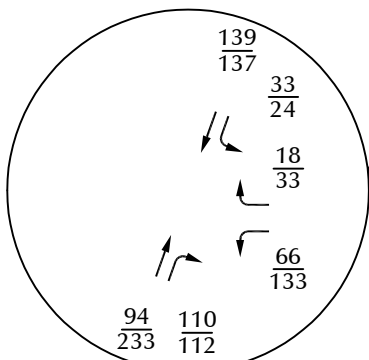
LEGEND:



- † = Stop Sign
- $\frac{26}{35}$ = AM Peak Hour Traffic
- $\frac{35}{26}$ = PM Peak Hour Traffic
- 1.000 = Average Daily Traffic

Figure 8a
Year 2022
Total Traffic, Lane
Geometry and Traffic Control
for an Average Day

Stagecoach Inert Fill (LSC #211070)



Note: These volumes are the sum of the volumes in Figures 4 and 7b.



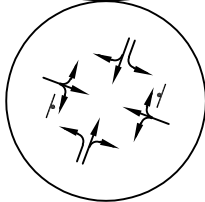
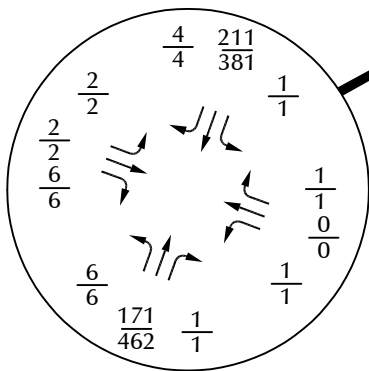
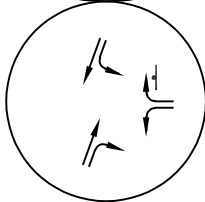
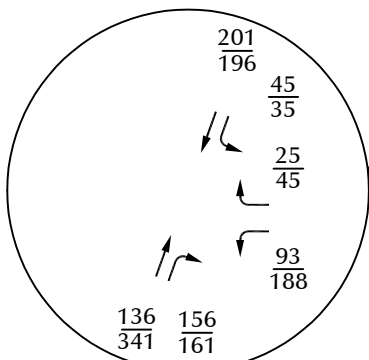
LEGEND:



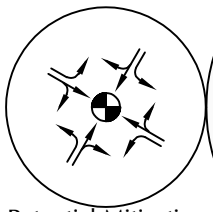
- † = Stop Sign
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1.000 = Average Daily Traffic

Figure 8b
Year 2022
Total Traffic, Lane
Geometry and Traffic Control
for a Maximum Day

Stagecoach Inert Fill (LSC #211070)



Note: These volumes are the sum of the volumes in Figures 5 and 7a.

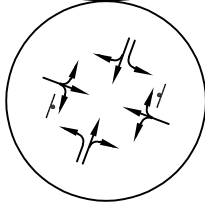
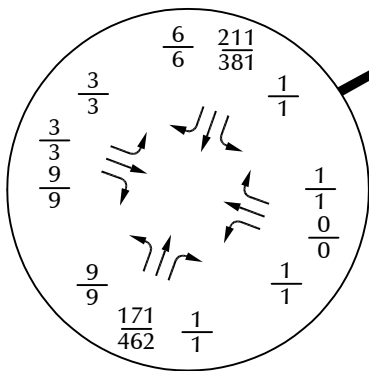
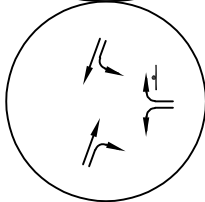
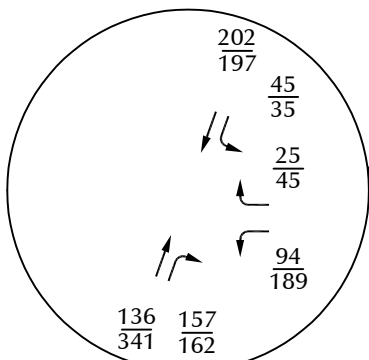


LEGEND:

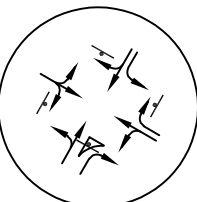
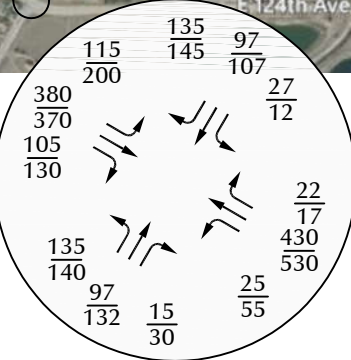
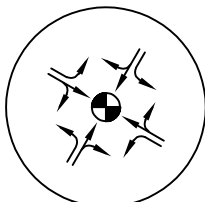
- = Stop Sign
- = Traffic Signal
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1.000 = Average Daily Traffic



Figure 9a
Year 2042
Total Traffic, Lane
Geometry and Traffic Control
for an Average Day
 Stagecoach Inert Fill (LSC #211070)



Note: These volumes are the sum of the volumes in Figures 5 and 7b.



LEGEND:

- = Stop Sign
- = Traffic Signal
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1.000 = Average Daily Traffic



Figure 9b
Year 2042
Total Traffic, Lane
Geometry and Traffic Control
for a Maximum Day
 Stagecoach Inert Fill (LSC #211070)

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 124TH AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD124TH
Site Code : 00000017
Start Date : 11/30/2021
Page No : 1

Groups Printed- VEHICLES

Start Time	BRIGHTON ROAD Southbound				124TH AVENUE Westbound				BRIGHTON ROAD Northbound				124TH AVENUE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	1	18	8	0	3	29	0	0	8	11	1	0	11	49	6	0	145
06:45 AM	3	21	17	0	3	52	4	0	10	12	2	0	10	45	8	0	187
Total	4	39	25	0	6	81	4	0	18	23	3	0	21	94	14	0	332
07:00 AM	0	11	13	0	5	47	11	0	9	14	1	0	10	65	8	0	194
07:15 AM	3	19	20	0	6	69	2	0	8	20	3	0	13	58	10	0	231
07:30 AM	8	15	24	0	3	73	4	0	22	15	2	0	19	48	18	0	251
07:45 AM	3	19	22	0	2	88	4	0	34	15	2	0	24	64	18	0	295
Total	14	64	79	0	16	277	21	0	73	64	8	0	66	235	54	0	971
08:00 AM	3	16	29	0	6	75	2	0	27	16	3	0	22	83	24	0	306
08:15 AM	1	12	23	0	2	40	0	0	18	13	2	0	22	60	27	0	220
Total	4	28	52	0	8	115	2	0	45	29	5	0	44	143	51	0	526
04:00 PM	1	23	35	0	15	77	2	0	38	21	6	0	24	55	14	0	311
04:15 PM	3	19	24	0	7	73	3	0	28	13	8	0	28	55	24	0	285
04:30 PM	0	15	20	0	10	91	2	0	29	20	5	0	37	63	21	0	313
04:45 PM	2	17	25	0	9	74	2	0	18	22	7	0	40	59	31	0	306
Total	6	74	104	0	41	315	9	0	113	76	26	0	129	232	90	0	1215
05:00 PM	3	19	27	0	7	79	1	0	21	28	7	0	33	70	22	0	317
05:15 PM	1	22	24	0	11	107	5	0	27	18	1	0	21	54	13	0	304
05:30 PM	0	10	27	0	10	78	2	0	22	19	4	0	37	61	10	0	280
05:45 PM	0	8	23	0	8	83	0	0	17	16	4	0	21	42	9	0	231
Total	4	59	101	0	36	347	8	0	87	81	16	0	112	227	54	0	1132
Grand Total	32	264	361	0	107	1135	44	0	336	273	58	0	372	931	263	0	4176
Apprch %	4.9	40.2	54.9	0.0	8.3	88.3	3.4	0.0	50.4	40.9	8.7	0.0	23.8	59.5	16.8	0.0	
Total %	0.8	6.3	8.6	0.0	2.6	27.2	1.1	0.0	8.0	6.5	1.4	0.0	8.9	22.3	6.3	0.0	

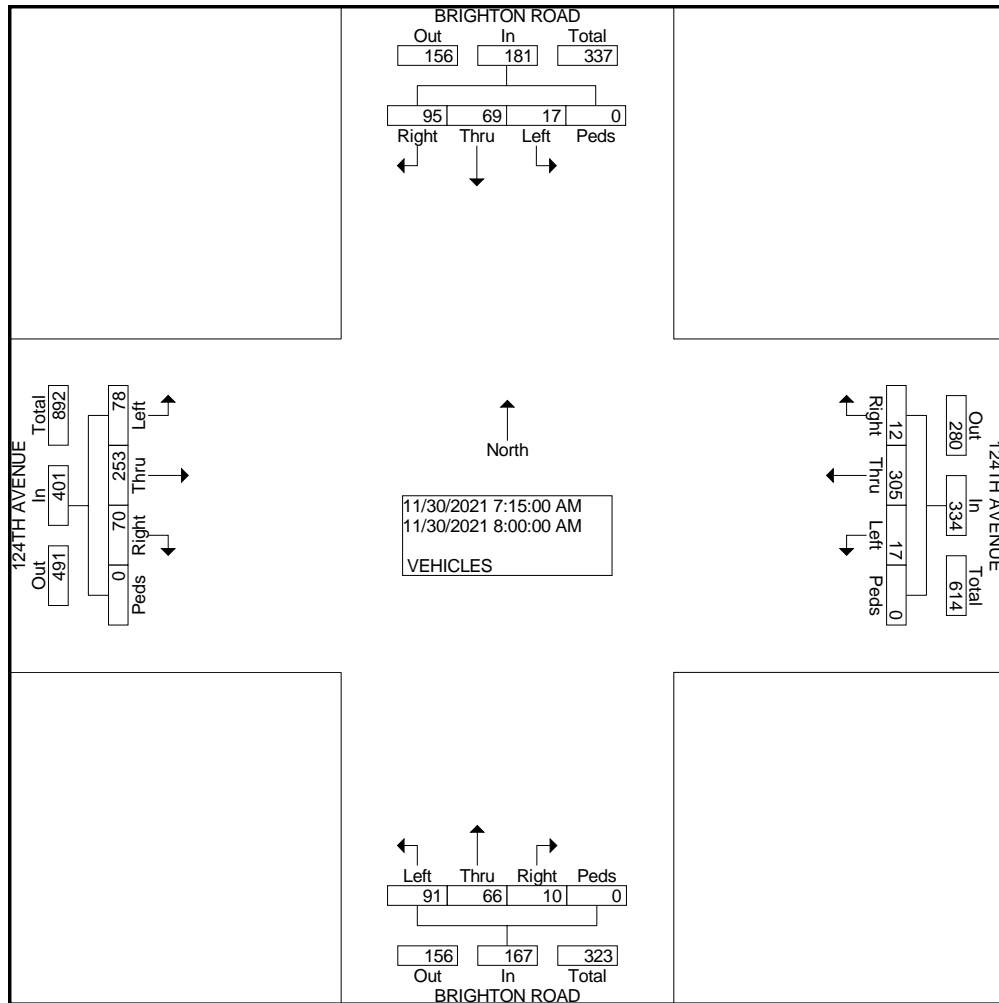
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 124TH AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD124TH
Site Code : 00000017
Start Date : 11/30/2021
Page No : 2

Start Time	BRIGHTON ROAD Southbound					124TH AVENUE Westbound					BRIGHTON ROAD Northbound					124TH AVENUE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	17	69	95	0	181	17	305	12	0	334	91	66	10	0	167	78	253	70	0	401	1083
Percent	9.4	38.1	52.5	0.0		5.1	91.3	3.6	0.0		54.5	39.5	6.0	0.0		19.5	63.1	17.5	0.0		
08:00 Volume	3	16	29	0	48	6	75	2	0	83	27	16	3	0	46	22	83	24	0	129	306
Peak Factor																					
High Int. Volume	08:00 AM					07:45 AM					07:45 AM					08:00 AM					
Peak Factor																					0.885
	3	16	29	0	48	2	88	4	0	94	34	15	2	0	51	22	83	24	0	129	129
	0.94					0.88					0.81					0.77					
	3					8					9					7					



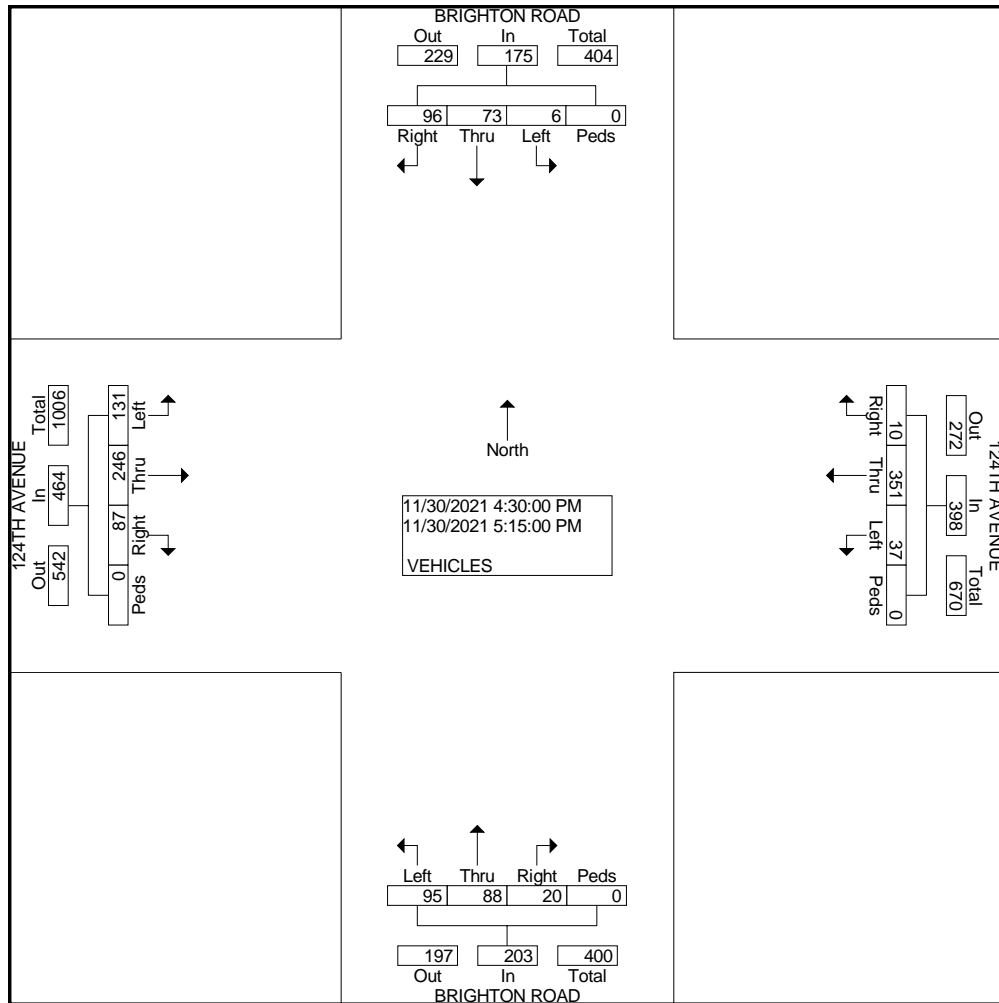
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 124TH AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD124TH
Site Code : 00000017
Start Date : 11/30/2021
Page No : 2

Start Time	BRIGHTON ROAD Southbound					124TH AVENUE Westbound					BRIGHTON ROAD Northbound					124TH AVENUE Eastbound					Int. Total		
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total			
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																							
Intersection	04:30 PM																						
Volume	6	73	96	0	175	37	351	10	0	398	95	88	20	0	203	131	246	87	0	464	1240		
Percent	3.4	41.7	54.9	0.0		9.3	88.2	2.5	0.0		46.8	43.3	9.9	0.0		28.2	53.0	18.8	0.0				
05:00 Volume	3	19	27	0	49	7	79	1	0	87	21	28	7	0	56	33	70	22	0	125	317		
Peak Factor	0.978																						
High Int. Volume	05:00 PM																						
Peak Factor	0.89																						
05:15 PM	3	19	27	0	49	11	107	5	0	123	05:00 PM	21	28	7	0	56	04:45 PM	40	59	31	0	130	0.89
05:00 PM	0.90																						
05:15 PM	0.90																						
05:00 PM	0.90																						
05:15 PM	0.90																						



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 132ND AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD132ND
Site Code : 00000016
Start Date : 11/18/2021
Page No : 1

Groups Printed- VEHICLES

Start Time	BRIGHTON ROAD Southbound				132ND AVENUE Westbound				BRIGHTON ROAD Northbound				Eastbound				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	28	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	43
06:45 AM	0	41	1	0	0	0	0	0	0	27	0	0	0	0	0	0	0	69
Total	0	69	1	0	0	0	0	0	0	42	0	0	0	0	0	0	0	112
07:00 AM	0	57	0	0	0	0	0	0	3	43	0	0	0	0	1	0	0	104
07:15 AM	0	50	1	0	0	0	0	0	1	30	0	0	0	0	4	0	0	86
07:30 AM	0	55	1	0	0	0	0	0	2	50	0	0	0	0	2	0	0	110
07:45 AM	1	63	0	0	0	0	0	0	6	36	0	0	0	0	8	0	0	114
Total	1	225	2	0	0	0	0	0	12	159	0	0	0	0	15	0	0	414
08:00 AM	0	39	0	0	0	0	0	0	1	52	0	0	0	0	3	0	0	95
08:15 AM	0	52	0	0	0	0	1	0	3	45	0	0	0	2	5	0	0	108
Total	0	91	0	0	0	0	1	0	4	97	0	0	0	2	8	0	0	203
04:00 PM	1	69	0	0	1	0	0	0	11	41	2	0	0	5	2	0	0	132
04:15 PM	2	85	2	1	0	0	1	0	4	51	0	0	0	4	2	0	0	152
04:30 PM	1	102	1	0	0	0	1	0	1	94	0	0	0	1	0	0	0	201
04:45 PM	0	88	0	0	0	0	0	0	0	129	0	0	2	1	0	0	0	220
Total	4	344	3	1	1	0	2	0	16	315	2	0	2	11	4	0	0	705
05:00 PM	0	86	0	0	0	0	0	0	0	97	0	0	0	0	0	0	0	183
05:15 PM	0	98	3	0	0	0	0	0	0	133	0	0	0	0	0	0	0	234
05:30 PM	2	134	0	0	1	0	0	0	0	107	0	0	0	0	0	0	0	244
05:45 PM	0	119	0	0	0	0	0	0	0	110	1	0	0	0	0	0	0	230
Total	2	437	3	0	1	0	0	0	0	447	1	0	0	0	0	0	0	891
Grand Total	7	1166	9	1	2	0	3	0	32	1060	3	0	2	13	27	0	0	2325
Apprch %	0.6	98.6	0.8	0.1	40.0	0.0	60.0	0.0	2.9	96.8	0.3	0.0	4.8	31.0	64.3	0.0	0.0	
Total %	0.3	50.2	0.4	0.0	0.1	0.0	0.1	0.0	1.4	45.6	0.1	0.0	0.1	0.6	1.2	0.0	0.0	

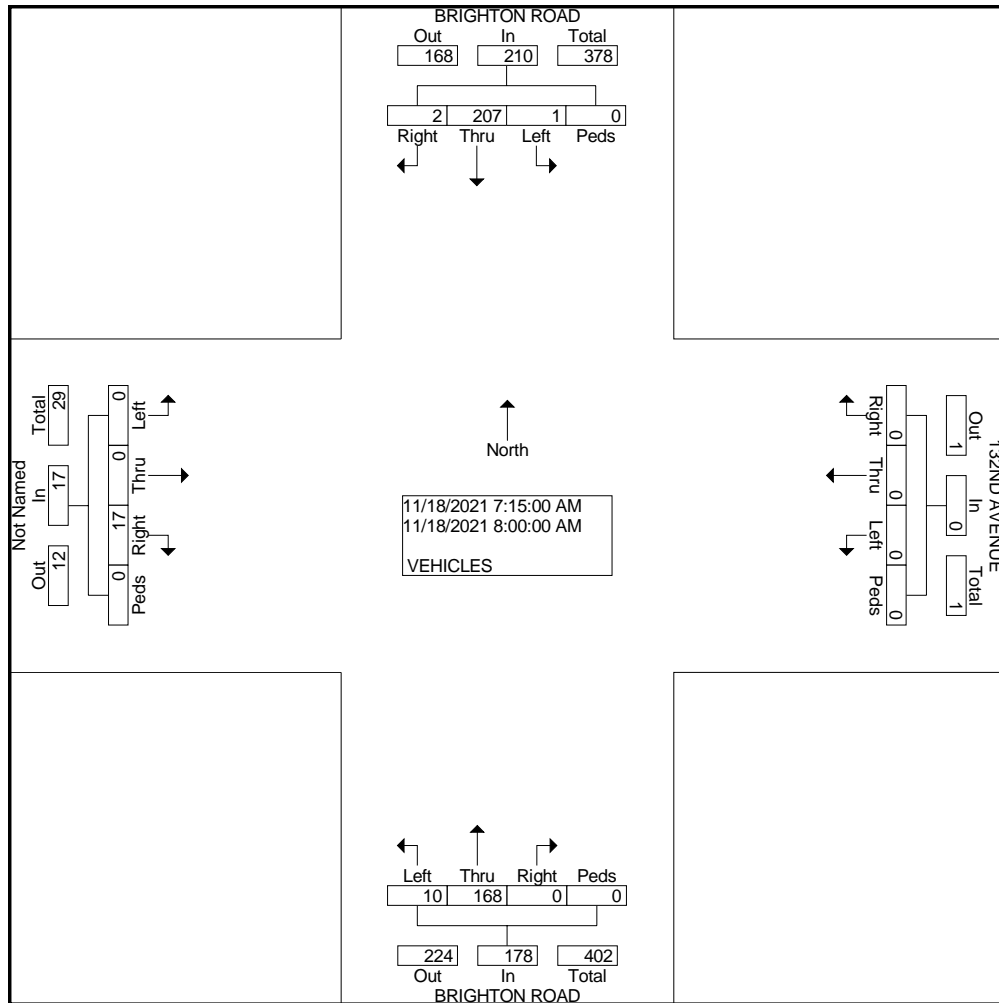
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 132ND AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD132ND
Site Code : 00000016
Start Date : 11/18/2021
Page No : 2

Start Time	BRIGHTON ROAD Southbound					132ND AVENUE Westbound					BRIGHTON ROAD Northbound					Eastbound					Int. Total
	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersecti on	07:15 AM																				
Volume	1	207	2	0	210	0	0	0	0	0	10	168	0	0	178	0	0	17	0	17	405
Percent	0.5	98.6	1.0	0.0		0.0	0.0	0.0	0.0		5.6	94.4	0.0	0.0		0.0	0.0	100.0	0.0		
07:45 Volume	1	63	0	0	64	0	0	0	0	0	6	36	0	0	42	0	0	8	0	8	114
Peak Factor																					
High Int. Factor	0.888																				
07:45 AM											08:00 AM					07:45 AM					
Volume	1	63	0	0	64	0	0	0	0	0	1	52	0	0	53	0	0	8	0	8	114
Peak Factor	0.82										0.84					0.53					1



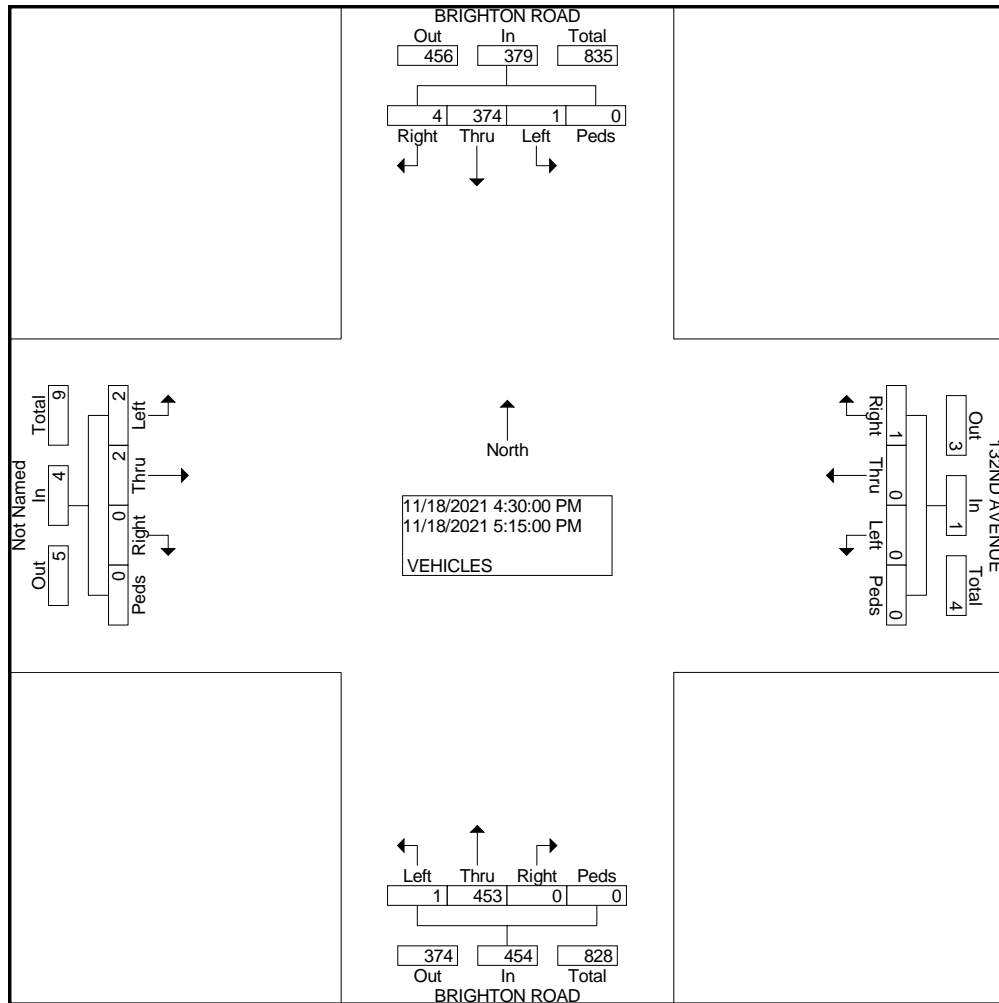
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 132ND AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD132ND
Site Code : 00000016
Start Date : 11/18/2021
Page No : 2

Start Time	BRIGHTON ROAD Southbound					132ND AVENUE Westbound					BRIGHTON ROAD Northbound					Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	1	374	4	0	379	0	0	1	0	1	1	453	0	0	454	2	2	0	0	4	838
Percent	0.3	98.7	1.1	0.0		0.0	0.0	100.0	0.0		0.2	99.8	0.0	0.0		50.0	50.0	0.0	0.0		
05:15 Peak Factor																					
High Int. Volume	0	98	3	0	101	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	234
Peak Factor																					
High Int. Volume	04:30 PM					04:30 PM					05:15 PM					04:45 PM					
Peak Factor	1	102	1	0	104	0	0	1	0	1	0	133	0	0	133	2	1	0	0	3	0.895
Factor	0.91					0.25					0.85					0.33					3
Factor	1					0					3					3					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 136TH AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD136TH
Site Code : 00000022
Start Date : 11/30/2021
Page No : 1

Groups Printed- VEHICLES

Start Time	BRIGHTON ROAD Southbound				136TH AVENUE Westbound				BRIGHTON ROAD Northbound				136TH AVENUE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	4	21	0	0	9	0	4	0	0	9	10	0	0	0	0	0	57
06:45 AM	5	33	0	2	7	0	4	0	0	13	15	0	0	0	0	0	79
Total	9	54	0	2	16	0	8	0	0	22	25	0	0	0	0	0	136
07:00 AM	5	23	0	0	7	0	4	0	0	23	11	0	0	0	0	0	73
07:15 AM	10	36	0	0	16	0	2	0	0	18	24	0	0	0	0	0	106
07:30 AM	13	27	0	0	15	0	9	0	0	25	25	0	0	0	0	0	114
07:45 AM	3	41	0	0	21	0	3	0	0	26	27	0	0	0	0	0	121
Total	31	127	0	0	59	0	18	0	0	92	87	0	0	0	0	0	414
08:00 AM	6	32	0	0	9	0	4	0	0	23	30	0	0	0	0	0	104
08:15 AM	7	31	0	2	18	0	9	0	0	29	27	0	0	0	0	0	123
Total	13	63	0	2	27	0	13	0	0	52	57	0	0	0	0	0	227
04:00 PM	3	51	0	0	31	0	9	0	0	44	12	0	0	0	0	0	150
04:15 PM	2	28	0	0	25	0	13	0	0	49	16	3	0	0	0	0	136
04:30 PM	4	44	0	0	13	0	11	0	0	52	28	0	0	0	0	0	152
04:45 PM	6	24	0	0	22	0	4	0	0	46	21	2	0	0	0	0	125
Total	15	147	0	0	91	0	37	0	0	191	77	5	0	0	0	0	563
05:00 PM	5	30	0	0	58	0	9	1	0	86	35	0	0	0	0	0	224
05:15 PM	9	35	0	0	34	0	8	0	0	45	24	0	0	0	0	0	155
05:30 PM	2	18	0	0	27	0	6	0	0	26	22	0	0	0	0	0	101
05:45 PM	1	9	0	0	11	0	4	0	0	13	6	0	0	0	0	0	44
Total	17	92	0	0	130	0	27	1	0	170	87	0	0	0	0	0	524
Grand Total	85	483	0	4	323	0	103	1	0	527	333	5	0	0	0	0	1864
Apprch %	14.9	84.4	0.0	0.7	75.6	0.0	24.1	0.2	0.0	60.9	38.5	0.6	0.0	0.0	0.0	0.0	
Total %	4.6	25.9	0.0	0.2	17.3	0.0	5.5	0.1	0.0	28.3	17.9	0.3	0.0	0.0	0.0	0.0	

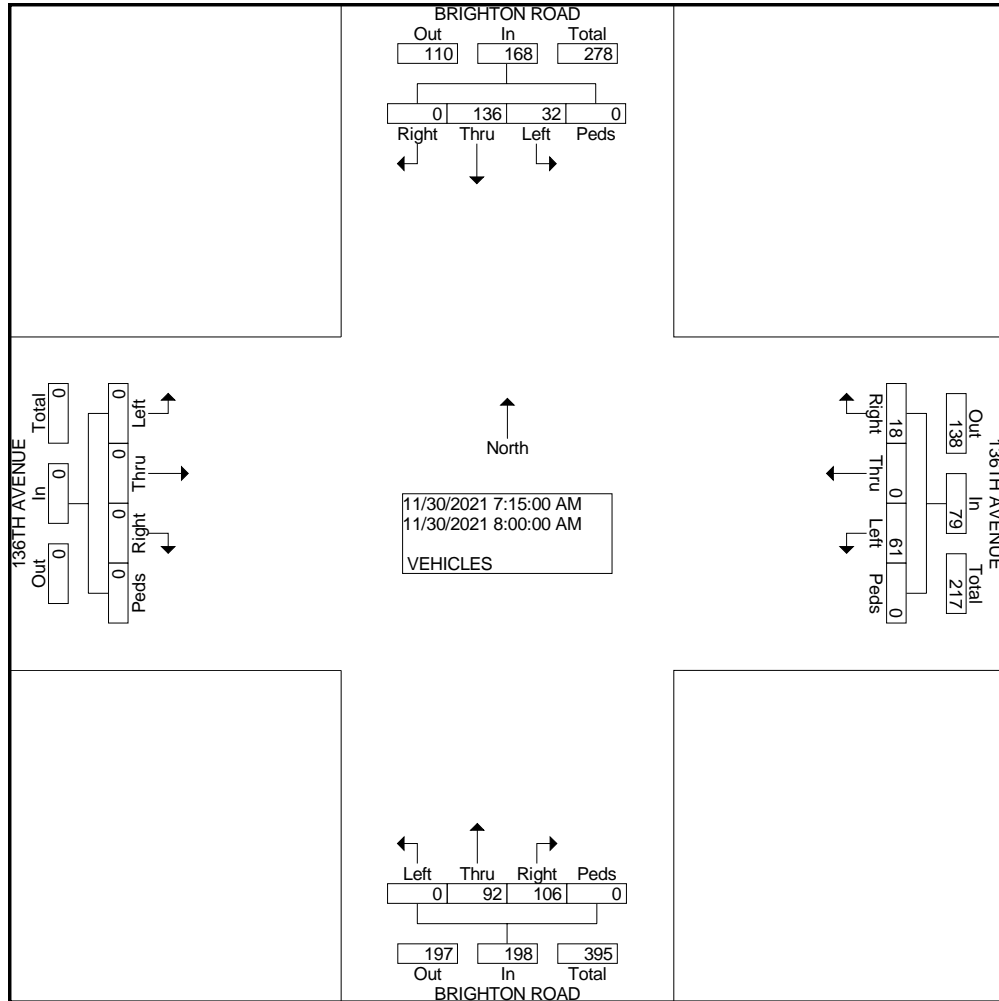
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
E/W STREET: E. 136TH AVENUE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : BRITRD136TH
Site Code : 0000022
Start Date : 11/30/2021
Page No : 2

Start Time	BRIGHTON ROAD Southbound					136TH AVENUE Westbound					BRIGHTON ROAD Northbound					136TH AVENUE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	32	136	0	0	168	61	0	18	0	79	0	92	106	0	198	0	0	0	0	0	445
Percent	19.0	81.0	0.0	0.0		77.2	0.0	22.8	0.0		0.0	46.5	53.5	0.0		0.0	0.0	0.0	0.0		
07:45 Volume	3	41	0	0	44	21	0	3	0	24	0	26	27	0	53	0	0	0	0	0	121
Peak Factor	0.919																				
High Int. Volume	07:15 AM					07:30 AM					07:45 AM										
Peak Factor	0.913										0.823					0.934					



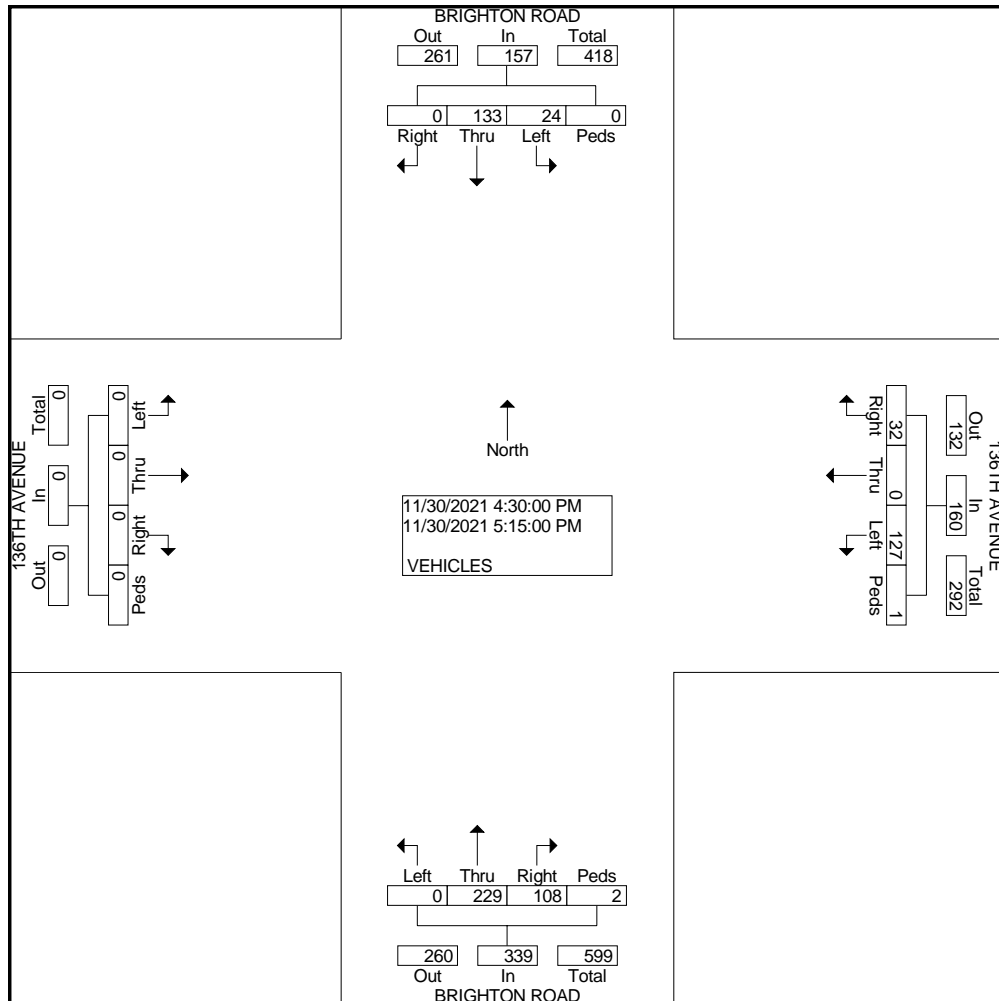
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: BRIGHTON ROAD
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Start Time	BRIGHTON ROAD Southbound					136TH AVENUE Westbound					BRIGHTON ROAD Northbound					136TH AVENUE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	24	133	0	0	157	127	0	32	1	160	0	229	108	2	339	0	0	0	0	0	656
Percent	15.3	84.7	0.0	0.0		79.4	0.0	20.0	0.6		0.0	67.6	31.9	0.6		0.0	0.0	0.0	0.0		
05:00 Volume	5	30	0	0	35	58	0	9	1	68	0	86	35	0	121	0	0	0	0	0	224
Peak Factor	0.732																				
High Int. Volume	04:30 PM					05:00 PM					05:00 PM										
Peak Factor	0.818					0.588					0.700										



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

Location: BRIGHTON ROAD S-0 132 AVE
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 211513
 Station ID: 211513

Start Time	16-Nov-21 Tue	NORTHBOU	SOUTHBOU							Total
12:00 AM		4	7							11
01:00		2	2							4
02:00		6	5							11
03:00		1	6							7
04:00		5	8							13
05:00		18	35							53
06:00		61	106							167
07:00		133	155							288
08:00		124	130							254
09:00		76	77							153
10:00		95	102							197
11:00		80	113							193
12:00 PM		98	129							227
01:00		96	116							212
02:00		135	155							290
03:00		175	151							326
04:00		210	200							410
05:00		213	173							386
06:00		104	117							221
07:00		63	58							121
08:00		37	29							66
09:00		23	16							39
10:00		15	17							32
11:00		10	5							15
Total		1784	1912							3696
Percent		48.3%	51.7%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	133	155	-	-	-	-	-	-	288
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	213	200	-	-	-	-	-	-	410
Grand Total		1784	1912							3696
Percent		48.3%	51.7%							
ADT		ADT 3,696	AADT 3,696							

LEVEL OF SERVICE DEFINITIONS

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

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

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

LEVEL OF SERVICE DEFINITIONS

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

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

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

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

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

Existing
AM Peak

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↖	↗	↑
Traffic Vol, veh/h	61	18	92	106	32	136
Future Vol, veh/h	61	18	92	106	32	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	66	20	100	115	35	148

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	318	100	0	0	215	0
Stage 1	100	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	513	909	-	-	1337	-
Stage 1	843	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	500	909	-	-	1337	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	500	909	1337
HCM Lane V/C Ratio	-	-	0.133	0.022	0.026
HCM Control Delay (s)	-	-	13.3	9	7.8
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

Existing
AM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	17	0	0	0	10	168	0	1	207	2
Future Vol, veh/h	0	0	17	0	0	0	10	168	0	1	207	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	100	5	5	2	100	5	5	5	5	100
Mvmt Flow	0	0	18	0	0	0	11	183	0	1	225	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	433	433	226	442	434	183	227	0	0	183	0	0
Stage 1	228	228	-	205	205	-	-	-	-	-	-	-
Stage 2	205	205	-	237	229	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	7.2	7.15	6.55	6.22	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	4.2	3.545	4.045	3.318	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	528	511	621	521	511	859	927	-	-	1374	-	-
Stage 1	768	710	-	790	726	-	-	-	-	-	-	-
Stage 2	790	726	-	760	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	523	504	621	501	504	859	927	-	-	1374	-	-
Mov Cap-2 Maneuver	523	504	-	501	504	-	-	-	-	-	-	-
Stage 1	759	709	-	781	717	-	-	-	-	-	-	-
Stage 2	781	717	-	737	708	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11		0		0.5		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	927	-	-	621	-	1374	-
HCM Lane V/C Ratio	0.012	-	-	0.03	-	0.001	-
HCM Control Delay (s)	8.9	-	-	11	0	7.6	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

Existing
 AM Peak

Intersection	
Intersection Delay, s/veh	24.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	78	253	70	17	305	12	91	66	10	17	69	95
Future Vol, veh/h	78	253	70	17	305	12	91	66	10	17	69	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	85	275	76	18	332	13	99	72	11	18	75	103
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	34.3	22.5	15.5	14.1
HCM LOS	D	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	58%	0%	19%	5%	0%	100%	0%
Vol Thru, %	42%	0%	63%	95%	0%	0%	42%
Vol Right, %	0%	100%	17%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	10	401	322	12	17	164
LT Vol	91	0	78	17	0	17	0
Through Vol	66	0	253	305	0	0	69
RT Vol	0	10	70	0	12	0	95
Lane Flow Rate	171	11	436	350	13	18	178
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.383	0.021	0.823	0.675	0.022	0.043	0.365
Departure Headway (Hd)	8.089	7.067	6.801	6.939	6.197	8.312	7.377
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	444	504	532	521	576	430	487
Service Time	5.861	4.838	4.857	4.697	3.954	6.084	5.148
HCM Lane V/C Ratio	0.385	0.022	0.82	0.672	0.023	0.042	0.366
HCM Control Delay	15.8	10	34.3	23	9.1	11.5	14.4
HCM Lane LOS	C	A	D	C	A	B	B
HCM 95th-tile Q	1.8	0.1	8.2	5	0.1	0.1	1.7

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

Existing
PM Peak

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	127	32	229	108	24	133
Future Vol, veh/h	127	32	229	108	24	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	138	35	249	117	26	145

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	446	249	0	0	366	0
Stage 1	249	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	389	705	-	-	1176	-
Stage 1	638	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	380	705	-	-	1176	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.9	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	380	705	1176	-
HCM Lane V/C Ratio	-	-	0.363	0.049	0.022	-
HCM Control Delay (s)	-	-	19.8	10.4	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.2	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

Existing
PM Peak

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	2	0	0	0	1	1	453	0	1	374	4
Future Vol, veh/h	2	2	0	0	0	1	1	453	0	1	374	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	2	2	0	0	0	1	1	492	0	1	407	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	906	905	409	906	907	492	411	0	0	492	0	0
Stage 1	411	411	-	494	494	-	-	-	-	-	-	-
Stage 2	495	494	-	412	413	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	176	194	476	254	193	571	770	-	-	1056	-	-
Stage 1	463	457	-	551	414	-	-	-	-	-	-	-
Stage 2	411	414	-	611	456	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	194	476	251	193	571	770	-	-	1056	-	-
Mov Cap-2 Maneuver	175	194	-	251	193	-	-	-	-	-	-	-
Stage 1	463	457	-	550	414	-	-	-	-	-	-	-
Stage 2	410	414	-	608	456	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	25			11.3			0			0		
HCM LOS	D			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	770	-	-	184	571	1056	-
HCM Lane V/C Ratio	0.001	-	-	0.024	0.002	0.001	-
HCM Control Delay (s)	9.7	-	-	25	11.3	8.4	-
HCM Lane LOS	A	-	-	D	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

Existing
 PM Peak

Intersection	
Intersection Delay, s/veh	47.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	131	246	87	37	351	10	95	88	20	6	73	96
Future Vol, veh/h	131	246	87	37	351	10	95	88	20	6	73	96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	142	267	95	40	382	11	103	96	22	7	79	104
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	78	41.6	18.6	16.6
HCM LOS	F	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	52%	0%	28%	10%	0%	100%	0%
Vol Thru, %	48%	0%	53%	90%	0%	0%	43%
Vol Right, %	0%	100%	19%	0%	100%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	20	464	388	10	6	169
LT Vol	95	0	131	37	0	6	0
Through Vol	88	0	246	351	0	0	73
RT Vol	0	20	87	0	10	0	96
Lane Flow Rate	199	22	504	422	11	7	184
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.476	0.046	1.036	0.866	0.02	0.016	0.412
Departure Headway (Hd)	8.89	7.89	7.394	7.603	6.833	9.309	8.372
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	408	457	489	481	527	387	434
Service Time	6.59	5.59	5.44	5.303	4.533	7.009	6.072
HCM Lane V/C Ratio	0.488	0.048	1.031	0.877	0.021	0.018	0.424
HCM Control Delay	19.4	11	78	42.4	9.7	12.2	16.8
HCM Lane LOS	C	B	F	E	A	B	C
HCM 95th-tile Q	2.5	0.1	14.8	9.1	0.1	0	2

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2022 Background
AM Peak

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↑	↗	↙	↑
Traffic Vol, veh/h	62	18	93	108	33	137
Future Vol, veh/h	62	18	93	108	33	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	67	20	101	117	36	149

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	322	101	0	0	218	0
Stage 1	101	-	-	-	-	-
Stage 2	221	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	509	907	-	-	1334	-
Stage 1	842	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	495	907	-	-	1334	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	495	907	1334	-
HCM Lane V/C Ratio	-	-	0.136	0.022	0.027	-
HCM Control Delay (s)	-	-	13.4	9.1	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2022 Background
AM Peak

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	1	0	1	0	171	1	1	211	0
Future Vol, veh/h	0	0	0	1	0	1	0	171	1	1	211	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	0	0	0	1	0	1	0	186	1	1	229	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	418	418	229	418	418	187	229	0	0	187	0	0
Stage 1	231	231	-	187	187	-	-	-	-	-	-	-
Stage 2	187	187	-	231	231	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	408	403	618	540	403	847	925	-	-	1369	-	-
Stage 1	595	564	-	808	594	-	-	-	-	-	-	-
Stage 2	633	594	-	765	564	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	407	403	618	539	403	847	925	-	-	1369	-	-
Mov Cap-2 Maneuver	407	403	-	539	403	-	-	-	-	-	-	-
Stage 1	595	563	-	808	594	-	-	-	-	-	-	-
Stage 2	632	594	-	764	563	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	0		10.5		0			0		
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	925	-	-	-	659	1369	-
HCM Lane V/C Ratio	-	-	-	-	0.003	0.001	-
HCM Control Delay (s)	0	-	-	0	10.5	7.6	-
HCM Lane LOS	A	-	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-

Intersection	
Intersection Delay, s/veh	24.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	75	258	71	17	311	10	93	65	10	15	65	90
Future Vol, veh/h	75	258	71	17	311	10	93	65	10	15	65	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	82	280	77	18	338	11	101	71	11	16	71	98
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	34.3	22.9	15.5	13.9
HCM LOS	D	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	59%	0%	19%	5%	0%	100%	0%
Vol Thru, %	41%	0%	64%	95%	0%	0%	42%
Vol Right, %	0%	100%	18%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	10	404	328	10	15	155
LT Vol	93	0	75	17	0	15	0
Through Vol	65	0	258	311	0	0	65
RT Vol	0	10	71	0	10	0	90
Lane Flow Rate	172	11	439	357	11	16	168
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.385	0.021	0.825	0.683	0.019	0.038	0.346
Departure Headway (Hd)	8.07	7.043	6.763	6.895	6.153	8.33	7.394
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	445	506	536	524	580	429	485
Service Time	5.842	4.815	4.82	4.652	3.91	6.103	5.165
HCM Lane V/C Ratio	0.387	0.022	0.819	0.681	0.019	0.037	0.346
HCM Control Delay	15.8	10	34.3	23.3	9	11.4	14.1
HCM Lane LOS	C	A	D	C	A	B	B
HCM 95th-tile Q	1.8	0.1	8.2	5.2	0.1	0.1	1.5

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2022 Background
PM Peak

Intersection						
Int Delay, s/veh	4.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	129	33	232	110	24	135
Future Vol, veh/h	129	33	232	110	24	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	140	36	252	120	26	147

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	451	252	0	0	372	0
Stage 1	252	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	385	702	-	-	1170	-
Stage 1	635	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	702	-	-	1170	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	686	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	377	702	1170	-
HCM Lane V/C Ratio	-	-	0.372	0.051	0.022	-
HCM Control Delay (s)	-	-	20.1	10.4	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.2	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2022 Background
PM Peak

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	1	0	1	0	462	1	1	381	0
Future Vol, veh/h	0	0	0	1	0	1	0	462	1	1	381	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	0	0	0	1	0	1	0	502	1	1	414	0

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	919	919	414	919	919	503	414	0	0	503	0	0
Stage 1	416	416	-	503	503	-	-	-	-	-	-	-
Stage 2	503	503	-	416	416	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	172	190	472	249	190	563	768	-	-	1046	-	-
Stage 1	459	454	-	545	409	-	-	-	-	-	-	-
Stage 2	406	409	-	608	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	171	190	472	249	190	563	768	-	-	1046	-	-
Mov Cap-2 Maneuver	171	190	-	249	190	-	-	-	-	-	-	-
Stage 1	459	454	-	545	409	-	-	-	-	-	-	-
Stage 2	405	409	-	607	454	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	0		15.5			0			0		
HCM LOS	A		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	768	-	-	-	345	1046	-	-
HCM Lane V/C Ratio	-	-	-	-	0.006	0.001	-	-
HCM Control Delay (s)	0	-	-	0	15.5	8.4	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2022 Background
 PM Peak

Intersection	
Intersection Delay, s/veh	52.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	133	251	89	38	358	10	97	90	20	6	74	97
Future Vol, veh/h	133	251	89	38	358	10	97	90	20	6	74	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	145	273	97	41	389	11	105	98	22	7	80	105
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	88.3	43.9	19	16.9
HCM LOS	F	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	52%	0%	28%	10%	0%	100%	0%
Vol Thru, %	48%	0%	53%	90%	0%	0%	43%
Vol Right, %	0%	100%	19%	0%	100%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	187	20	473	396	10	6	171
LT Vol	97	0	133	38	0	6	0
Through Vol	90	0	251	358	0	0	74
RT Vol	0	20	89	0	10	0	97
Lane Flow Rate	203	22	514	430	11	7	186
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.486	0.046	1.07	0.88	0.02	0.016	0.417
Departure Headway (Hd)	8.983	7.982	7.494	7.683	6.912	9.416	8.478
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	404	451	488	473	521	382	428
Service Time	6.683	5.682	5.494	5.383	4.612	7.116	6.178
HCM Lane V/C Ratio	0.502	0.049	1.053	0.909	0.021	0.018	0.435
HCM Control Delay	19.9	11.1	88.3	44.8	9.8	12.3	17.1
HCM Lane LOS	C	B	F	E	A	B	C
HCM 95th-tile Q	2.6	0.1	16.1	9.4	0.1	0	2

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2022 Total - Average Day
AM Peak

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	65	18	94	109	33	138
Future Vol, veh/h	65	18	94	109	33	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	71	20	102	118	36	150

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	324	102	0	0	220
Stage 1	102	-	-	-	-
Stage 2	222	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15
Critical Hdwy Stg 1	8.45	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	507	906	-	-	1332
Stage 1	840	-	-	-	-
Stage 2	671	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	493	906	-	-	1332
Mov Cap-2 Maneuver	493	-	-	-	-
Stage 1	840	-	-	-	-
Stage 2	653	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	493	906	1332	-
HCM Lane V/C Ratio	-	-	0.143	0.022	0.027	-
HCM Control Delay (s)	-	-	13.5	9.1	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2022 Total - Average Day
AM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	2	6	1	0	1	6	171	1	1	211	4
Future Vol, veh/h	2	2	6	1	0	1	6	171	1	1	211	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	2	2	7	1	0	1	7	186	1	1	229	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	434	434	231	439	436	187	233	0	0	187	0	0
Stage 1	233	233	-	201	201	-	-	-	-	-	-	-
Stage 2	201	201	-	238	235	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	397	394	616	523	393	847	921	-	-	1369	-	-
Stage 1	594	563	-	794	584	-	-	-	-	-	-	-
Stage 2	621	584	-	759	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	394	390	616	512	389	847	921	-	-	1369	-	-
Mov Cap-2 Maneuver	394	390	-	512	389	-	-	-	-	-	-	-
Stage 1	589	562	-	788	579	-	-	-	-	-	-	-
Stage 2	615	579	-	748	561	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	12.3		10.7		0.3			0		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	921	-	-	501	638	1369	-	-
HCM Lane V/C Ratio	0.007	-	-	0.022	0.003	0.001	-	-
HCM Control Delay (s)	8.9	-	-	12.3	10.7	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th AWSC
3: Brighton Road & Henderson Road/E. 124th Avenue

2022 Total - Average Day
AM Peak

Intersection	
Intersection Delay, s/veh	25.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	78	258	71	17	311	11	93	67	10	16	67	93
Future Vol, veh/h	78	258	71	17	311	11	93	67	10	16	67	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	85	280	77	18	338	12	101	73	11	17	73	101
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	36.1	23.3	15.7	14.1
HCM LOS	E	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	58%	0%	19%	5%	0%	100%	0%
Vol Thru, %	42%	0%	63%	95%	0%	0%	42%
Vol Right, %	0%	100%	17%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	10	407	328	11	16	160
LT Vol	93	0	78	17	0	16	0
Through Vol	67	0	258	311	0	0	67
RT Vol	0	10	71	0	11	0	93
Lane Flow Rate	174	11	442	357	12	17	174
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.393	0.021	0.838	0.689	0.021	0.04	0.359
Departure Headway (Hd)	8.126	7.102	6.822	6.959	6.216	8.377	7.439
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	442	502	531	517	574	426	482
Service Time	5.899	4.875	4.879	4.719	3.976	6.153	5.214
HCM Lane V/C Ratio	0.394	0.022	0.832	0.691	0.021	0.04	0.361
HCM Control Delay	16.1	10	36.1	23.8	9.1	11.5	14.4
HCM Lane LOS	C	A	E	C	A	B	B
HCM 95th-tile Q	1.8	0.1	8.6	5.3	0.1	0.1	1.6

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2022 Total - Average Day
PM Peak

Intersection						
Int Delay, s/veh	4.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	132	33	233	111	24	136
Future Vol, veh/h	132	33	233	111	24	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	143	36	253	121	26	148

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	453	253	0	0	374	0
Stage 1	253	-	-	-	-	-
Stage 2	200	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	383	701	-	-	1168	-
Stage 1	634	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	375	701	-	-	1168	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	375	701	1168
HCM Lane V/C Ratio	-	-	0.383	0.051	0.022
HCM Control Delay (s)	-	-	20.4	10.4	8.2
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	1.8	0.2	0.1

HCM 6th TWSC
 2: Brighton Road & Site Access/E. 132nd Avenue

2022 Total - Average Day
 PM Peak

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	2	6	1	0	1	6	462	1	1	381	4
Future Vol, veh/h	2	2	6	1	0	1	6	462	1	1	381	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	2	2	7	1	0	1	7	502	1	1	414	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	935	935	416	940	937	503	418	0	0	503	0	0
Stage 1	418	418	-	517	517	-	-	-	-	-	-	-
Stage 2	517	517	-	423	420	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	167	185	471	241	185	563	765	-	-	1046	-	-
Stage 1	458	453	-	536	402	-	-	-	-	-	-	-
Stage 2	398	402	-	603	452	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	165	183	471	234	183	563	765	-	-	1046	-	-
Mov Cap-2 Maneuver	165	183	-	234	183	-	-	-	-	-	-	-
Stage 1	454	453	-	531	398	-	-	-	-	-	-	-
Stage 2	394	398	-	591	452	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.4		15.9		0.1		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	765	-	-	279	331	1046	-
HCM Lane V/C Ratio	0.009	-	-	0.039	0.007	0.001	-
HCM Control Delay (s)	9.7	-	-	18.4	15.9	8.4	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2022 Total - Average Day
 PM Peak

Intersection	
Intersection Delay, s/veh	55.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	136	251	89	38	358	11	97	92	20	7	76	100
Future Vol, veh/h	136	251	89	38	358	11	97	92	20	7	76	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	148	273	97	41	389	12	105	100	22	8	83	109
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	94.4	45.4	19.4	17.4
HCM LOS	F	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	0%	29%	10%	0%	100%	0%
Vol Thru, %	49%	0%	53%	90%	0%	0%	43%
Vol Right, %	0%	100%	19%	0%	100%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	20	476	396	11	7	176
LT Vol	97	0	136	38	0	7	0
Through Vol	92	0	251	358	0	0	76
RT Vol	0	20	89	0	11	0	100
Lane Flow Rate	205	22	517	430	12	8	191
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.494	0.046	1.088	0.888	0.022	0.019	0.432
Departure Headway (Hd)	9.062	8.062	7.567	7.767	6.996	9.48	8.541
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	401	447	481	469	515	380	425
Service Time	6.762	5.762	5.567	5.467	4.696	7.18	6.241
HCM Lane V/C Ratio	0.511	0.049	1.075	0.917	0.023	0.021	0.449
HCM Control Delay	20.3	11.2	94.4	46.4	9.9	12.4	17.6
HCM Lane LOS	C	B	F	E	A	B	C
HCM 95th-tile Q	2.6	0.1	16.8	9.6	0.1	0.1	2.1

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2022 Total - Maximum Day
AM Peak

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	66	18	94	110	33	139
Future Vol, veh/h	66	18	94	110	33	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	72	20	102	120	36	151

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	325	102	0	0	222	0
Stage 1	102	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	506	906	-	-	1329	-
Stage 1	840	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	492	906	-	-	1329	-
Mov Cap-2 Maneuver	492	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	492	906	1329	-
HCM Lane V/C Ratio	-	-	0.146	0.022	0.027	-
HCM Control Delay (s)	-	-	13.6	9.1	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2022 Total - Maximum Day
AM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	3	3	9	1	0	1	9	171	1	1	211	6
Future Vol, veh/h	3	3	9	1	0	1	9	171	1	1	211	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	3	3	10	1	0	1	10	186	1	1	229	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	442	442	233	448	445	187	236	0	0	187	0	0
Stage 1	235	235	-	207	207	-	-	-	-	-	-	-
Stage 2	207	207	-	241	238	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	392	389	614	516	388	847	919	-	-	1369	-	-
Stage 1	592	562	-	788	580	-	-	-	-	-	-	-
Stage 2	616	580	-	756	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	388	384	614	500	383	847	919	-	-	1369	-	-
Mov Cap-2 Maneuver	388	384	-	500	383	-	-	-	-	-	-	-
Stage 1	585	561	-	779	574	-	-	-	-	-	-	-
Stage 2	609	574	-	739	559	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.5		10.7		0.4		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	919	-	-	497	629	1369	-	-
HCM Lane V/C Ratio	0.011	-	-	0.033	0.003	0.001	-	-
HCM Control Delay (s)	9	-	-	12.5	10.7	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th AWSC
3: Brighton Road & Henderson Road

2022 Total - Maximum Day
AM Peak

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	80	258	71	17	311	12	93	67	10	17	67	95
Future Vol, veh/h	80	258	71	17	311	12	93	67	10	17	67	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	87	280	77	18	338	13	101	73	11	18	73	103
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	37	23.6	15.8	14.2
HCM LOS	E	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	58%	0%	20%	5%	0%	100%	0%
Vol Thru, %	42%	0%	63%	95%	0%	0%	41%
Vol Right, %	0%	100%	17%	0%	100%	0%	59%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	10	409	328	12	17	162
LT Vol	93	0	80	17	0	17	0
Through Vol	67	0	258	311	0	0	67
RT Vol	0	10	71	0	12	0	95
Lane Flow Rate	174	11	445	357	13	18	176
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.394	0.022	0.845	0.692	0.023	0.043	0.365
Departure Headway (Hd)	8.154	7.13	6.843	6.984	6.241	8.396	7.455
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	500	529	517	571	425	481
Service Time	5.932	4.908	4.906	4.749	4.006	6.175	5.233
HCM Lane V/C Ratio	0.395	0.022	0.841	0.691	0.023	0.042	0.366
HCM Control Delay	16.2	10.1	37	24.1	9.2	11.6	14.5
HCM Lane LOS	C	B	E	C	A	B	B
HCM 95th-tile Q	1.8	0.1	8.8	5.3	0.1	0.1	1.7

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2022 Total - Maximum Day
PM Peak

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	133	33	233	112	24	137
Future Vol, veh/h	133	33	233	112	24	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	145	36	253	122	26	149

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	454	253	0	0	375	0
Stage 1	253	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	382	701	-	-	1167	-
Stage 1	634	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	374	701	-	-	1167	-
Mov Cap-2 Maneuver	374	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	374	701	1167	-
HCM Lane V/C Ratio	-	-	0.387	0.051	0.022	-
HCM Control Delay (s)	-	-	20.6	10.4	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.8	0.2	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2022 Total - Maximum Day
PM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	3	3	9	1	0	1	9	462	1	1	381	6
Future Vol, veh/h	3	3	9	1	0	1	9	462	1	1	381	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	3	3	10	1	0	1	10	502	1	1	414	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	943	943	418	949	946	503	421	0	0	503	0	0
Stage 1	420	420	-	523	523	-	-	-	-	-	-	-
Stage 2	523	523	-	426	423	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	165	183	469	237	182	563	763	-	-	1046	-	-
Stage 1	457	452	-	532	399	-	-	-	-	-	-	-
Stage 2	395	399	-	601	450	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	163	180	469	226	179	563	763	-	-	1046	-	-
Mov Cap-2 Maneuver	163	180	-	226	179	-	-	-	-	-	-	-
Stage 1	451	452	-	525	394	-	-	-	-	-	-	-
Stage 2	389	394	-	584	450	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.9		16.2		0.2		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	763	-	-	276	323	1046	-	-
HCM Lane V/C Ratio	0.013	-	-	0.059	0.007	0.001	-	-
HCM Control Delay (s)	9.8	-	-	18.9	16.2	8.4	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 6th AWSC
3: Brighton Road & Henderson Road/E. 124th Avenue

2022 Total - Maximum Day
PM Peak

Intersection	
Intersection Delay, s/veh	56.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	138	251	89	38	358	12	97	92	20	8	76	102
Future Vol, veh/h	138	251	89	38	358	12	97	92	20	8	76	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	150	273	97	41	389	13	105	100	22	9	83	111
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	97.1	45.9	19.5	17.5
HCM LOS	F	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	0%	29%	10%	0%	100%	0%
Vol Thru, %	49%	0%	53%	90%	0%	0%	43%
Vol Right, %	0%	100%	19%	0%	100%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	20	478	396	12	8	178
LT Vol	97	0	138	38	0	8	0
Through Vol	92	0	251	358	0	0	76
RT Vol	0	20	89	0	12	0	102
Lane Flow Rate	205	22	520	430	13	9	193
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.496	0.046	1.096	0.891	0.025	0.022	0.437
Departure Headway (Hd)	9.096	8.096	7.593	7.799	7.028	9.505	8.562
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	399	445	483	469	512	379	424
Service Time	6.796	5.796	5.594	5.499	4.728	7.205	6.262
HCM Lane V/C Ratio	0.514	0.049	1.077	0.917	0.025	0.024	0.455
HCM Control Delay	20.4	11.2	97.1	47	9.9	12.4	17.7
HCM Lane LOS	C	B	F	E	A	B	C
HCM 95th-tile Q	2.7	0.1	17.1	9.7	0.1	0.1	2.2

HCM 6th AWSC
3: Brighton Road & Henderson Road

2022 Total - Maximum Day - mitigated
AM Peak

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷	↶	↷	
Traffic Vol, veh/h	80	258	71	17	311	12	93	67	10	17	67	95
Future Vol, veh/h	80	258	71	17	311	12	93	67	10	17	67	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	87	280	77	18	338	13	101	73	11	18	73	103
Number of Lanes	1	1	0	1	1	0	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	19.1	21.3	15.1	13.6
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	58%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	42%	0%	0%	78%	0%	96%	0%	41%
Vol Right, %	0%	100%	0%	22%	0%	4%	0%	59%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	10	80	329	17	323	17	162
LT Vol	93	0	80	0	17	0	17	0
Through Vol	67	0	0	258	0	311	0	67
RT Vol	0	10	0	71	0	12	0	95
Lane Flow Rate	174	11	87	358	18	351	18	176
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.381	0.021	0.175	0.653	0.038	0.662	0.042	0.351
Departure Headway (Hd)	7.88	6.862	7.236	6.572	7.329	6.792	8.119	7.183
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	456	521	496	551	488	530	441	500
Service Time	5.633	4.615	4.982	4.318	5.077	4.54	5.872	4.936
HCM Lane V/C Ratio	0.382	0.021	0.175	0.65	0.037	0.662	0.041	0.352
HCM Control Delay	15.4	9.8	11.5	20.9	10.4	21.9	11.2	13.8
HCM Lane LOS	C	A	B	C	B	C	B	B
HCM 95th-tile Q	1.8	0.1	0.6	4.7	0.1	4.8	0.1	1.6

HCM 6th AWSC
3: Brighton Road & Henderson Road/E. 124th Avenue

2022 Total - Maximum Day - mitigated
PM Peak

Intersection	
Intersection Delay, s/veh	24.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷	↶	↷	
Traffic Vol, veh/h	138	251	89	38	358	12	97	92	20	8	76	102
Future Vol, veh/h	138	251	89	38	358	12	97	92	20	8	76	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	150	273	97	41	385	13	105	100	22	9	83	111
Number of Lanes	1	1	0	1	1	0	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	23.1	32.3	18	16.1
HCM LOS	C	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	49%	0%	0%	74%	0%	97%	0%	43%
Vol Right, %	0%	100%	0%	26%	0%	3%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	20	138	340	38	370	8	178
LT Vol	97	0	138	0	38	0	8	0
Through Vol	92	0	0	251	0	358	0	76
RT Vol	0	20	0	89	0	12	0	102
Lane Flow Rate	205	22	150	370	41	398	9	193
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.48	0.045	0.325	0.728	0.09	0.809	0.021	0.422
Departure Headway (Hd)	8.405	7.416	7.789	7.088	7.853	7.317	8.781	7.848
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	480	461	506	455	494	406	457
Service Time	6.188	5.199	5.567	4.865	5.629	5.092	6.569	5.635
HCM Lane V/C Ratio	0.48	0.046	0.325	0.731	0.09	0.806	0.022	0.422
HCM Control Delay	18.8	10.6	14.3	26.7	11.4	34.5	11.8	16.3
HCM Lane LOS	C	B	B	D	B	D	B	C
HCM 95th-tile Q	2.5	0.1	1.4	6	0.3	7.7	0.1	2.1

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2042 Background
AM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	90	25	135	155	45	200
Future Vol, veh/h	90	25	135	155	45	200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	98	27	147	168	49	217

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	462	147	0	0	315	0
Stage 1	147	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	376	839	-	-	1228	-
Stage 1	772	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	361	839	-	-	1228	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	361	839	1228	-
HCM Lane V/C Ratio	-	-	0.271	0.032	0.04	-
HCM Control Delay (s)	-	-	18.6	9.4	8.1	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.1	0.1	-

HCM 6th TWSC
 2: Brighton Road & Site Access/E. 132nd Avenue

2042 Background
 AM Peak

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	1	0	1	0	171	1	1	211	0
Future Vol, veh/h	0	0	0	1	0	1	0	171	1	1	211	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	0	0	0	1	0	1	0	186	1	1	229	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	418	418	229	418	418	187	229	0	0	187	0	0
Stage 1	231	231	-	187	187	-	-	-	-	-	-	-
Stage 2	187	187	-	231	231	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	408	403	618	540	403	847	925	-	-	1369	-	-
Stage 1	595	564	-	808	594	-	-	-	-	-	-	-
Stage 2	633	594	-	765	564	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	407	403	618	539	403	847	925	-	-	1369	-	-
Mov Cap-2 Maneuver	407	403	-	539	403	-	-	-	-	-	-	-
Stage 1	595	563	-	808	594	-	-	-	-	-	-	-
Stage 2	632	594	-	764	563	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	0		10.5		0			0		
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	925	-	-	-	659	1369	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	0.001	-	-
HCM Control Delay (s)	0	-	-	0	10.5	7.6	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Background
 AM Peak

Intersection	
Intersection Delay, s/veh	140.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	110	380	105	25	430	20	135	95	15	25	95	130
Future Vol, veh/h	110	380	105	25	430	20	135	95	15	25	95	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	120	413	114	27	467	22	147	103	16	27	103	141
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	259.1	109.6	29.2	24.6
HCM LOS	F	F	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	59%	0%	18%	5%	0%	100%	0%
Vol Thru, %	41%	0%	64%	95%	0%	0%	42%
Vol Right, %	0%	100%	18%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	230	15	595	455	20	25	225
LT Vol	135	0	110	25	0	25	0
Through Vol	95	0	380	430	0	0	95
RT Vol	0	15	105	0	20	0	130
Lane Flow Rate	250	16	647	495	22	27	245
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.638	0.037	1.497	1.126	0.045	0.071	0.582
Departure Headway (Hd)	10.616	9.561	8.713	9.137	8.377	10.948	9.987
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	343	377	420	401	430	329	364
Service Time	8.316	7.261	6.713	6.837	6.077	8.648	7.687
HCM Lane V/C Ratio	0.729	0.042	1.54	1.234	0.051	0.082	0.673
HCM Control Delay	30.3	12.6	259.1	113.9	11.5	14.5	25.7
HCM Lane LOS	D	B	F	F	B	B	D
HCM 95th-tile Q	4.2	0.1	32.8	16.4	0.1	0.2	3.5

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2042 Background
PM Peak

Intersection						
Int Delay, s/veh	14.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	185	45	340	160	35	195
Future Vol, veh/h	185	45	340	160	35	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	201	49	370	174	38	212

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	658	370	0	0	544	0
Stage 1	370	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	245	573	-	-	1010	-
Stage 1	508	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	236	573	-	-	1010	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	570	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	236	573	1010	-
HCM Lane V/C Ratio	-	-	0.852	0.085	0.038	-
HCM Control Delay (s)	-	-	70.4	11.9	8.7	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	6.8	0.3	0.1	-

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2042 Background
PM Peak

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	1	0	1	0	462	1	1	381	0
Future Vol, veh/h	0	0	0	1	0	1	0	462	1	1	381	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	0	0	0	1	0	1	0	502	1	1	414	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	919	919	414	919	919	503	414	0	0	503	0	0
Stage 1	416	416	-	503	503	-	-	-	-	-	-	-
Stage 2	503	503	-	416	416	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	172	190	472	249	190	563	768	-	-	1046	-	-
Stage 1	459	454	-	545	409	-	-	-	-	-	-	-
Stage 2	406	409	-	608	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	171	190	472	249	190	563	768	-	-	1046	-	-
Mov Cap-2 Maneuver	171	190	-	249	190	-	-	-	-	-	-	-
Stage 1	459	454	-	545	409	-	-	-	-	-	-	-
Stage 2	405	409	-	607	454	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		15.5		0		0	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	768	-	-	-	345	1046	-	-
HCM Lane V/C Ratio	-	-	-	-	0.006	0.001	-	-
HCM Control Delay (s)	0	-	-	0	15.5	8.4	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Background
 PM Peak

Intersection	
Intersection Delay, s/veh	248.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	195	370	130	55	530	15	140	130	30	10	105	140
Future Vol, veh/h	195	370	130	55	530	15	140	130	30	10	105	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	212	402	141	60	576	16	152	141	33	11	114	152
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	404.6	261.8	40.8	33
HCM LOS	F	F	E	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	52%	0%	28%	9%	0%	100%	0%
Vol Thru, %	48%	0%	53%	91%	0%	0%	43%
Vol Right, %	0%	100%	19%	0%	100%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	30	695	585	15	10	245
LT Vol	140	0	195	55	0	10	0
Through Vol	130	0	370	530	0	0	105
RT Vol	0	30	130	0	15	0	140
Lane Flow Rate	293	33	755	636	16	11	266
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.757	0.075	1.824	1.507	0.035	0.029	0.655
Departure Headway (Hd)	11.866	10.835	9.945	10.208	9.419	12.513	11.543
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	308	333	370	362	383	288	317
Service Time	9.566	8.535	7.945	7.908	7.119	10.213	9.243
HCM Lane V/C Ratio	0.951	0.099	2.041	1.757	0.042	0.038	0.839
HCM Control Delay	43.7	14.4	404.6	268.2	12.5	15.6	33.7
HCM Lane LOS	E	B	F	F	B	C	D
HCM 95th-tile Q	5.8	0.2	43	29.2	0.1	0.1	4.3

HCM 6th TWSC
 1: Brighton Road & E. 136th Avenue

2042 Total - Average Day
 AM Peak

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	93	25	136	156	45	201
Future Vol, veh/h	93	25	136	156	45	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	101	27	148	170	49	218

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	464	148	0	0	318
Stage 1	148	-	-	-	-
Stage 2	316	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15
Critical Hdwy Stg 1	8.45	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	374	838	-	-	1225
Stage 1	771	-	-	-	-
Stage 2	563	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	359	838	-	-	1225
Mov Cap-2 Maneuver	359	-	-	-	-
Stage 1	771	-	-	-	-
Stage 2	540	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	359	838	1225
HCM Lane V/C Ratio	-	-	0.282	0.032	0.04
HCM Control Delay (s)	-	-	18.9	9.4	8.1
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1	0.1

HCM 6th TWSC
2: Brighton Road & Site Access/E. 132nd Avenue

2042 Total - Average Day
AM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	2	6	1	0	1	6	171	1	1	211	4
Future Vol, veh/h	2	2	6	1	0	1	6	171	1	1	211	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	2	2	7	1	0	1	7	186	1	1	229	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	434	434	231	439	436	187	233	0	0	187	0	0
Stage 1	233	233	-	201	201	-	-	-	-	-	-	-
Stage 2	201	201	-	238	235	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	397	394	616	523	393	847	921	-	-	1369	-	-
Stage 1	594	563	-	794	584	-	-	-	-	-	-	-
Stage 2	621	584	-	759	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	394	390	616	512	389	847	921	-	-	1369	-	-
Mov Cap-2 Maneuver	394	390	-	512	389	-	-	-	-	-	-	-
Stage 1	589	562	-	788	579	-	-	-	-	-	-	-
Stage 2	615	579	-	748	561	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	12.3		10.7		0.3			0		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	921	-	-	501	638	1369	-	-
HCM Lane V/C Ratio	0.007	-	-	0.022	0.003	0.001	-	-
HCM Control Delay (s)	8.9	-	-	12.3	10.7	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Average Day
 AM Peak

Intersection	
Intersection Delay, s/veh	143.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	113	380	105	25	430	21	135	97	15	26	97	133
Future Vol, veh/h	113	380	105	25	430	21	135	97	15	26	97	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	123	413	114	27	467	23	147	105	16	28	105	145
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	267	112.1	29.8	25.3
HCM LOS	F	F	D	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	58%	0%	19%	5%	0%	100%	0%
Vol Thru, %	42%	0%	64%	95%	0%	0%	42%
Vol Right, %	0%	100%	18%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	15	598	455	21	26	230
LT Vol	135	0	113	25	0	26	0
Through Vol	97	0	380	430	0	0	97
RT Vol	0	15	105	0	21	0	133
Lane Flow Rate	252	16	650	495	23	28	250
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.645	0.037	1.515	1.133	0.048	0.074	0.596
Departure Headway (Hd)	10.694	9.642	8.783	9.224	8.463	11.009	10.048
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	340	374	423	396	426	328	363
Service Time	8.394	7.342	6.783	6.924	6.163	8.709	7.748
HCM Lane V/C Ratio	0.741	0.043	1.537	1.25	0.054	0.085	0.689
HCM Control Delay	30.9	12.7	267	116.7	11.6	14.6	26.5
HCM Lane LOS	D	B	F	F	B	B	D
HCM 95th-tile Q	4.2	0.1	33.4	16.5	0.2	0.2	3.7

HCM 6th TWSC
 1: Brighton Road & E. 136th Avenue

2042 Total - Average Day
 PM Peak

Intersection						
Int Delay, s/veh	15.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	188	45	341	161	35	196
Future Vol, veh/h	188	45	341	161	35	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	204	49	371	175	38	213

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	660	371	0	0	546	0
Stage 1	371	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	244	572	-	-	1008	-
Stage 1	507	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	235	572	-	-	1008	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	570	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.8	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	235	572	1008
HCM Lane V/C Ratio	-	-	0.87	0.086	0.038
HCM Control Delay (s)	-	-	73.8	11.9	8.7
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	7	0.3	0.1

HCM 6th TWSC
 2: Brighton Road & Site Access/E. 132nd Avenue

2042 Total - Average Day
 PM Peak

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	2	6	1	0	1	6	462	1	1	381	4
Future Vol, veh/h	2	2	6	1	0	1	6	462	1	1	381	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	2	2	7	1	0	1	7	502	1	1	414	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	935	935	416	940	937	503	418	0	0	503	0	0
Stage 1	418	418	-	517	517	-	-	-	-	-	-	-
Stage 2	517	517	-	423	420	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	167	185	471	241	185	563	765	-	-	1046	-	-
Stage 1	458	453	-	536	402	-	-	-	-	-	-	-
Stage 2	398	402	-	603	452	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	165	183	471	234	183	563	765	-	-	1046	-	-
Mov Cap-2 Maneuver	165	183	-	234	183	-	-	-	-	-	-	-
Stage 1	454	453	-	531	398	-	-	-	-	-	-	-
Stage 2	394	398	-	591	452	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.4		15.9		0.1		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	765	-	-	279	331	1046	-
HCM Lane V/C Ratio	0.009	-	-	0.039	0.007	0.001	-
HCM Control Delay (s)	9.7	-	-	18.4	15.9	8.4	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Average Day
 PM Peak

Intersection	
Intersection Delay, s/veh	255.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	198	370	130	55	530	16	140	132	30	11	107	143
Future Vol, veh/h	198	370	130	55	530	16	140	132	30	11	107	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	215	402	141	60	576	17	152	143	33	12	116	155
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	422.8	265.1	42	34.3
HCM LOS	F	F	E	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	0%	28%	9%	0%	100%	0%
Vol Thru, %	49%	0%	53%	91%	0%	0%	43%
Vol Right, %	0%	100%	19%	0%	100%	0%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	30	698	585	16	11	250
LT Vol	140	0	198	55	0	11	0
Through Vol	132	0	370	530	0	0	107
RT Vol	0	30	130	0	16	0	143
Lane Flow Rate	296	33	759	636	17	12	272
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.765	0.076	1.865	1.515	0.038	0.032	0.67
Departure Headway (Hd)	11.994	10.963	10.034	10.348	9.558	12.621	11.649
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	305	329	372	356	377	285	312
Service Time	9.694	8.663	8.034	8.048	7.258	10.321	9.349
HCM Lane V/C Ratio	0.97	0.1	2.04	1.787	0.045	0.042	0.872
HCM Control Delay	45	14.6	422.8	272	12.6	15.7	35.1
HCM Lane LOS	E	B	F	F	B	C	E
HCM 95th-tile Q	5.9	0.2	44.4	29.2	0.1	0.1	4.5

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2042 Total - Maximum Day
AM Peak

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	94	25	136	157	45	202
Future Vol, veh/h	94	25	136	157	45	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	102	27	148	171	49	220

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	466	148	0	0	319
Stage 1	148	-	-	-	-
Stage 2	318	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15
Critical Hdwy Stg 1	8.45	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	373	838	-	-	1224
Stage 1	771	-	-	-	-
Stage 2	561	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	358	838	-	-	1224
Mov Cap-2 Maneuver	358	-	-	-	-
Stage 1	771	-	-	-	-
Stage 2	539	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	358	838	1224
HCM Lane V/C Ratio	-	-	0.285	0.032	0.04
HCM Control Delay (s)	-	-	19	9.4	8.1
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0.1

HCM 6th TWSC
 2: Brighton Road & Site Access/E. 132nd Avenue

2042 Total - Maximum Day
 AM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	3	3	9	1	0	1	9	171	1	1	211	6
Future Vol, veh/h	3	3	9	1	0	1	9	171	1	1	211	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	3	3	10	1	0	1	10	186	1	1	229	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	442	442	233	448	445	187	236	0	0	187	0	0
Stage 1	235	235	-	207	207	-	-	-	-	-	-	-
Stage 2	207	207	-	241	238	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	392	389	614	516	388	847	919	-	-	1369	-	-
Stage 1	592	562	-	788	580	-	-	-	-	-	-	-
Stage 2	616	580	-	756	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	388	384	614	500	383	847	919	-	-	1369	-	-
Mov Cap-2 Maneuver	388	384	-	500	383	-	-	-	-	-	-	-
Stage 1	585	561	-	779	574	-	-	-	-	-	-	-
Stage 2	609	574	-	739	559	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.5		10.7		0.4		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	919	-	-	497	629	1369	-
HCM Lane V/C Ratio	0.011	-	-	0.033	0.003	0.001	-
HCM Control Delay (s)	9	-	-	12.5	10.7	7.6	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Maximum Day
 AM Peak

Intersection	
Intersection Delay, s/veh	145.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	115	380	105	25	430	22	135	97	15	27	97	135
Future Vol, veh/h	115	380	105	25	430	22	135	97	15	27	97	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	125	413	114	27	467	24	147	105	16	29	105	147
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	270.5	112.6	30	25.5
HCM LOS	F	F	D	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	58%	0%	19%	5%	0%	100%	0%
Vol Thru, %	42%	0%	63%	95%	0%	0%	42%
Vol Right, %	0%	100%	17%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	15	600	455	22	27	232
LT Vol	135	0	115	25	0	27	0
Through Vol	97	0	380	430	0	0	97
RT Vol	0	15	105	0	22	0	135
Lane Flow Rate	252	16	652	495	24	29	252
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.646	0.037	1.523	1.135	0.05	0.077	0.601
Departure Headway (Hd)	10.727	9.675	8.805	9.256	8.494	11.029	10.065
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	340	372	417	396	424	327	361
Service Time	8.427	7.375	6.805	6.956	6.194	8.729	7.765
HCM Lane V/C Ratio	0.741	0.043	1.564	1.25	0.057	0.089	0.698
HCM Control Delay	31.1	12.7	270.5	117.5	11.6	14.6	26.8
HCM Lane LOS	D	B	F	F	B	B	D
HCM 95th-tile Q	4.3	0.1	33.7	16.6	0.2	0.2	3.7

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2042 Total - Maximum Day
PM Peak

Intersection						
Int Delay, s/veh	15.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	189	45	341	162	35	197
Future Vol, veh/h	189	45	341	162	35	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	205	49	371	176	38	214

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	661	371	0	0	547
Stage 1	371	-	-	-	-
Stage 2	290	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15
Critical Hdwy Stg 1	8.45	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	244	572	-	-	1007
Stage 1	507	-	-	-	-
Stage 2	591	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	235	572	-	-	1007
Mov Cap-2 Maneuver	235	-	-	-	-
Stage 1	507	-	-	-	-
Stage 2	569	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	62.5	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	235	572	1007
HCM Lane V/C Ratio	-	-	0.874	0.086	0.038
HCM Control Delay (s)	-	-	74.6	11.9	8.7
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	7.1	0.3	0.1

HCM 6th TWSC
 2: Brighton Road & Site Access/E. 132nd Avenue

2042 Total - Maximum Day
 PM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	3	3	9	1	0	1	9	462	1	1	381	6
Future Vol, veh/h	3	3	9	1	0	1	9	462	1	1	381	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	100	100	5	100	5	100	5	5	5	5	100
Mvmt Flow	3	3	10	1	0	1	10	502	1	1	414	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	943	943	418	949	946	503	421	0	0	503	0	0
Stage 1	420	420	-	523	523	-	-	-	-	-	-	-
Stage 2	523	523	-	426	423	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.15	7.5	6.25	5.1	-	-	4.15	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.15	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.545	4.9	3.345	3.1	-	-	2.245	-	-
Pot Cap-1 Maneuver	165	183	469	237	182	563	763	-	-	1046	-	-
Stage 1	457	452	-	532	399	-	-	-	-	-	-	-
Stage 2	395	399	-	601	450	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	163	180	469	226	179	563	763	-	-	1046	-	-
Mov Cap-2 Maneuver	163	180	-	226	179	-	-	-	-	-	-	-
Stage 1	451	452	-	525	394	-	-	-	-	-	-	-
Stage 2	389	394	-	584	450	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.9		16.2		0.2		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	763	-	-	276	323	1046	-
HCM Lane V/C Ratio	0.013	-	-	0.059	0.007	0.001	-
HCM Control Delay (s)	9.8	-	-	18.9	16.2	8.4	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-

HCM 6th AWSC
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Maximum Day
 PM Peak

Intersection	
Intersection Delay, s/veh	252.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	200	370	130	55	530	17	140	132	30	12	107	145
Future Vol, veh/h	200	370	130	55	530	17	140	132	30	12	107	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	217	402	141	60	576	18	152	143	33	13	116	158
Number of Lanes	0	1	0	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	419.5	260.4	41.3	33.9
HCM LOS	F	F	E	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	0%	29%	9%	0%	100%	0%
Vol Thru, %	49%	0%	53%	91%	0%	0%	42%
Vol Right, %	0%	100%	19%	0%	100%	0%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	30	700	585	17	12	252
LT Vol	140	0	200	55	0	12	0
Through Vol	132	0	370	530	0	0	107
RT Vol	0	30	130	0	17	0	145
Lane Flow Rate	296	33	761	636	18	13	274
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.761	0.075	1.858	1.505	0.04	0.035	0.67
Departure Headway (Hd)	11.915	10.885	9.95	10.273	9.483	12.522	11.548
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	307	331	373	362	380	288	315
Service Time	9.615	8.585	7.95	7.973	7.183	10.222	9.248
HCM Lane V/C Ratio	0.964	0.1	2.04	1.757	0.047	0.045	0.87
HCM Control Delay	44.3	14.5	419.5	267.6	12.6	15.7	34.8
HCM Lane LOS	E	B	F	F	B	C	D
HCM 95th-tile Q	5.8	0.2	44.5	29	0.1	0.1	4.5

HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2042 Total - Maximum Day - mitigated
AM Peak

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	94	25	136	157	45	202
Future Vol, veh/h	94	25	136	157	45	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	102	27	148	171	49	220

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	466	148	0	0	319
Stage 1	148	-	-	-	-
Stage 2	318	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15
Critical Hdwy Stg 1	8.45	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	373	838	-	-	1224
Stage 1	771	-	-	-	-
Stage 2	561	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	358	838	-	-	1224
Mov Cap-2 Maneuver	442	-	-	-	-
Stage 1	771	-	-	-	-
Stage 2	539	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	442	838	1224
HCM Lane V/C Ratio	-	-	0.231	0.032	0.04
HCM Control Delay (s)	-	-	15.6	9.4	8.1
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	0.1

Lanes, Volumes, Timings
3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Maximum Day - mitigated
AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	380	105	25	430	22	135	97	15	27	97	135
Future Volume (vph)	115	380	105	25	430	22	135	97	15	27	97	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		85	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.968			0.993			0.980			0.912	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1752	0	1719	1797	0	1719	1773	0	1719	1650	0
Flt Permitted	0.280			0.467			0.261			0.679		
Satd. Flow (perm)	507	1752	0	845	1797	0	472	1773	0	1229	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			3			10				76
Link Speed (mph)		45			35			35				45
Link Distance (ft)		1704			1859			543				5706
Travel Time (s)		25.8			36.2			10.6				86.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	125	413	114	27	467	24	147	105	16	29	105	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	527	0	27	491	0	147	121	0	29	252	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	

Lanes, Volumes, Timings
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Maximum Day - mitigated
 AM Peak

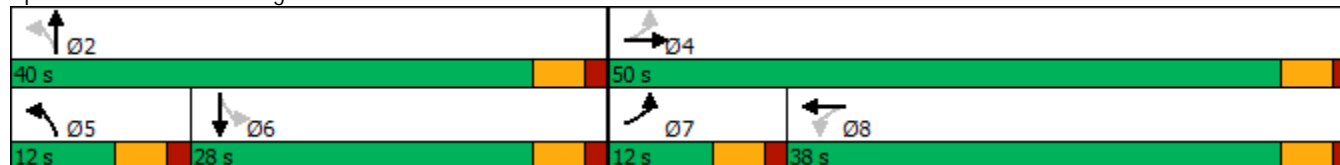


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		23.0	23.0		10.0	23.0		23.0	23.0	
Total Split (s)	12.0	50.0		38.0	38.0		12.0	40.0		28.0	28.0	
Total Split (%)	13.3%	55.6%		42.2%	42.2%		13.3%	44.4%		31.1%	31.1%	
Maximum Green (s)	7.0	45.0		33.0	33.0		7.0	35.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	46.2	46.2		36.7	36.7		27.3	27.3		15.3	15.3	
Actuated g/C Ratio	0.57	0.57		0.45	0.45		0.33	0.33		0.19	0.19	
v/c Ratio	0.31	0.53		0.07	0.61		0.53	0.20		0.13	0.68	
Control Delay	11.6	13.8		17.0	23.1		26.3	18.0		27.7	30.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.6	13.8		17.0	23.1		26.3	18.0		27.7	30.7	
LOS	B	B		B	C		C	B		C	C	
Approach Delay		13.3			22.8			22.6			30.4	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	81.5
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	20.4
Intersection LOS:	C
Intersection Capacity Utilization:	64.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Brighton Road & Henderson Road/E. 124th Avenue



HCM 6th TWSC
1: Brighton Road & E. 136th Avenue

2042 Total - Maximum Day - mitigated
PM Peak

Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	189	45	341	162	35	197
Future Vol, veh/h	189	45	341	162	35	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	215	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	15	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	205	49	371	176	38	214

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	661	371	0	0	547	0
Stage 1	371	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	9.45	7.75	-	-	4.15	-
Critical Hdwy Stg 1	8.45	-	-	-	-	-
Critical Hdwy Stg 2	8.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	244	572	-	-	1007	-
Stage 1	507	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	235	572	-	-	1007	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	569	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.5	0	1.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	351	572	1007	-
HCM Lane V/C Ratio	-	-	0.585	0.086	0.038	-
HCM Control Delay (s)	-	-	28.8	11.9	8.7	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	3.5	0.3	0.1	-

Lanes, Volumes, Timings
 3: Brighton Road & Henderson Road/E. 124th Avenue

2042 Total - Maximum Day - mitigated
 PM Peak



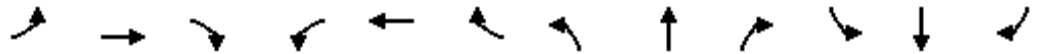
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	370	130	55	530	17	140	132	30	12	107	145
Future Volume (vph)	200	370	130	55	530	17	140	132	30	12	107	145
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		85	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.961			0.995			0.972			0.914	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1790	0	1770	1853	0	1770	1811	0	1770	1703	0
Flt Permitted	0.175			0.461			0.207			0.646		
Satd. Flow (perm)	326	1790	0	859	1853	0	386	1811	0	1203	1703	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			2			15			72	
Link Speed (mph)		45			35			35			45	
Link Distance (ft)		1704			1859			543			5706	
Travel Time (s)		25.8			36.2			10.6			86.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	402	141	60	576	18	152	143	33	13	116	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	543	0	60	594	0	152	176	0	13	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

2042 Total - Maximum Day - mitigated

3: Brighton Road & Henderson Road/E. 124th Avenue

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		23.0	23.0		9.5	23.0		23.0	23.0	
Total Split (s)	13.0	52.0		39.0	39.0		12.0	38.0		26.0	26.0	
Total Split (%)	14.4%	57.8%		43.3%	43.3%		13.3%	42.2%		28.9%	28.9%	
Maximum Green (s)	8.0	47.0		34.0	34.0		7.5	33.0		21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.5		1.5	1.5	
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0		0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.0		4.0	3.0		4.5	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effect Green (s)	49.2	48.1		35.2	36.2		27.6	28.1		16.1	16.1	
Actuated g/C Ratio	0.58	0.57		0.42	0.43		0.33	0.33		0.19	0.19	
v/c Ratio	0.60	0.52		0.17	0.75		0.61	0.29		0.06	0.72	
Control Delay	17.0	13.5		18.6	28.4		31.7	19.8		27.3	34.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.0	13.5		18.6	28.4		31.7	19.8		27.3	34.1	
LOS	B	B		B	C		C	B		C	C	
Approach Delay		14.5			27.5			25.3			33.8	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	84.3
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	23.2
Intersection LOS:	C
Intersection Capacity Utilization:	76.0%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 3: Brighton Road & Henderson Road/E. 124th Avenue

