CITY OF MISSION PLANNING COMMISSION
AGENDA

March 27, 2023
7:00 PM
City Hall, 6090 Woodson

I. Call to Order

II. Roll Call

III. Approval of Minutes from the February 27, 2023, Meeting

IV. New Business

1. **Public Hearing** – Case# 23-03 - Consideration of a Preliminary Plat (Re-plat) for Morrison Ridge Park – Klassen Construction, Applicant.
   - Staff Report
   - Letter Summarizing Applicant's Request
   - Preliminary Plat

2. Case #23-04 - Consideration of an Application for a Final Development Plan for 5665 Foxridge Drive Multi-Family Development – Block Real Estate Services, Applicant.
   - Staff Report
   - Application
   - Final Development Plan
   - Traffic Report
   - Storm Water Study

3. Case #23-05 - Consideration of an Application for a Wall Mural at 6620 Martway – American Honey Salon, Applicant.
   - Staff Report
   - Application
   - Mural Depiction
   - Mural Guidelines

V. Old Business

VI. Planning Commission Comments

VII. Staff Updates

Questions concerning this meeting may be addressed to staff contact, Karie Kneller, City Planner, at (913) 676-8366 or kkneller@missionks.org.

March 27, 2023

Planning Commission

Staff Report

AT A GLANCE

Applicant:
Klassen Construction

Location:
Riggs Road between 52nd and 53rd Street

Property ID:
KP425000000357; KP425000000351

Current Zoning:
R-1

Proposed Zoning:
N/A

Current Land Use:
Vacant

Proposed Land Use:
Single-Family

[X] Public Hearing Required

Legal Notice Date:
March 4, 2023

Published in the Legal Record

Case Number:
23-03

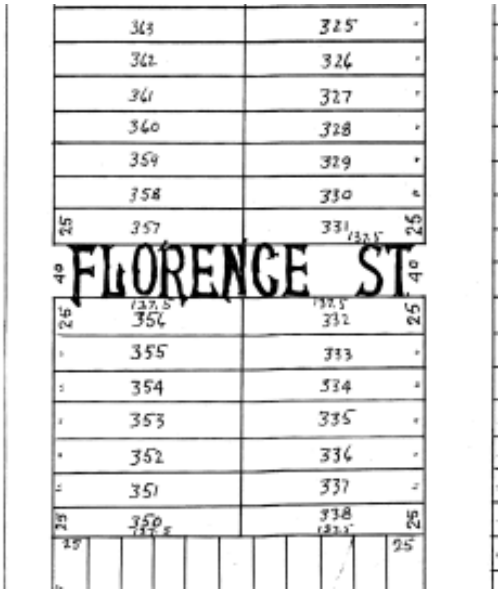
Project Name:
Preliminary Plat of Morrison Ridge Park

Project Summary:
The applicant is requesting approval of the preliminary plat for two properties that are currently vacant. The proposed plat splits the two current lots into four lots in preparation for construction of four new single-family homes.

Staff Contact: Karie Kneller

Background and Property Information

The subject property is located at approximately Riggs Street, half a block north of 53rd Street and west of properties on the west side of Riggs Street. Each of the properties are .47 acres. The lots are zoned R-1 “Single-Family Residential” and are surrounded by R-4/RP-4 “Garden Apartment District” zoning on the west and R-1 zoning on the east with multi-family and single-family uses.



The original 1913 plat of Morrison Ridge Park includes the lots on the north (labeled 357-362) and lots on the south (351-356), and provides a 40-foot right-of-way for a public street, “Florence Street,” that was not constructed. These lots are under ownership by the applicant. The original plat does not provide for public utility easements.

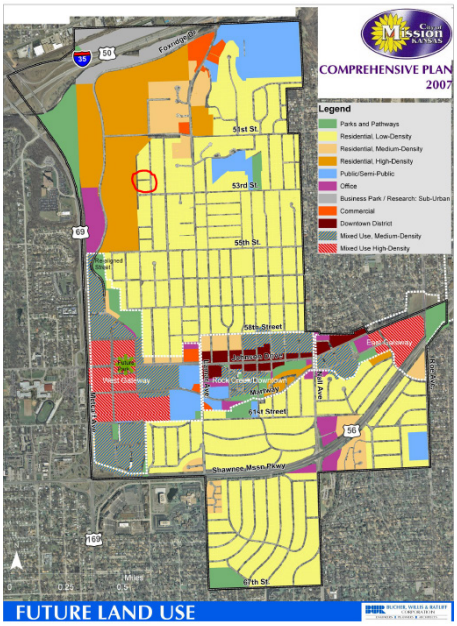
There is underground private storm water infrastructure that runs between two single-family homes at 5230 Riggs Street and 5234 Riggs Street, which currently empties in a storm water inlet at the back of the properties and into a drainage ditch to the west. Additionally, sanitary sewer infrastructure is located in the public right-of-way (Florence Street) and west of the subject properties.

Project Proposal

This re-plat will consolidate lots 357-362 and lots 351-356 and split the consolidated lots north to south to create four lots. Lot 1 and Lot 2 are north of the public right-of-way, and Lot 3 and Lot 4 are south of the public right-of-way. The original 40-foot right-of-way will remain public, but a private driveway is proposed to be constructed that will be privately maintained. Public utility rights-of-way are also proposed.

Plan Review and Analysis

Mission Comprehensive Plan



The Comprehensive Plan (2007) designates the property as "low-density residential." Single-family homes fall into this category with 3.5 to 6 dwelling units per acre.

Analysis: The plat as proposed will accommodate single-family residential construction. The applicant proposes four single-family dwellings. The proposal conforms with the Comprehensive Plan.

Municipal Code

Section 440.220 of the Mission Municipal Code provides that preliminary plats shall be approved by the Planning Commission if it determines that:

1. The proposed preliminary plat conforms to the requirements of this Title, the applicable zoning district regulations, and any other applicable provisions of this Code, subject only to acceptable rule exceptions.

According to District Regulations for R-1 zoning, lot size shall not be less than 6,000 square feet per dwelling unit. The proposed lot size is 10,065 square feet. Lot width for split lots can be a minimum of 60 feet if it complements the surrounding neighborhood character. Adjacent lots to the south on the same block and on adjacent blocks range from 60-foot width to 150-foot width. The proposed plat indicates a minimum 67.21-foot width for Lots 1 and 2, and a minimum 67.10-foot width for Lots 3 and 4.

It is Staff's determination that the proposed plat is in conformance with Mission's Municipal Code.

2. The subdivision or plat represents an overall development pattern consistent with the Master Plan and the Official Street Map.

It is Staff's determination that the plat represents a development pattern already established and supported by the Comprehensive Plan.

3. The plat contains a sound, well-conceived parcel and land subdivision layout consistent with good land planning and site engineering design principles.

It is Staff's determination that the plat supports good land planning and allows for future redevelopment in compliance with adopted standards.

Plan Review and Analysis, cont'd.

4. The spacing and design of proposed curb cuts and intersection locations is consistent with good traffic engineering design and public safety considerations.

It is Staff's determination that the plat is consistent with good traffic engineering and safety standards.

5. All submission requirements have been satisfied.

All the requirements of 440.220-Submission of Preliminary Plats have been satisfied.

Recommendation

Staff recommends that the Planning Commission approve Case # 23-03, the Preliminary Plat for Morrison Ridge Park, Second Plat with the following conditions:

(A) Prior to submittal of the final plat, the applicant is required to obtain a permanent drainage easement from the existing property to the east of Lot 4 in order to tie into existing storm water infrastructure.

(B) Prior to submittal of the final plat, the applicant is required to obtain a permanent drainage easement for the existing property to the west of Lot 3 in order to install rip-rap.

(C) Prior to submittal of the final plat, the applicant is required to submit a storm water management study that documents existing versus proposed storm water flow and analysis that shows that the additional storm water flow does not have an adverse impact on downstream properties.

(D) The final plat shall note that the private drive shall be maintained in perpetuity by the property owner(s) of Lots 1-4.

(E) A maintenance agreement shall be recoreded with the Johnson County Register of Deeds.

Planning Commision Action

To be considered by the Planning Commission for approval at a public hearing on March 27, 2023.

City Council Action

None

PRELIMINARY PLAT OF

MORRISON RIDGE PARK, SECOND PLAT

A REPLAT OF LOTS 351 THROUGH 362, MORRISON RIDGE PARK
CITY OF MISSION, JOHNSON COUNTY, KANSAS

NOTES:

1. Basis of bearings: Kansas State Plane, North Zone
2. Sanitary sewer service will be provided by existing Johnson County Wastewater mains in the area.
3. The proposed driveway in the unimproved right-of-way in Florence Street will be a private drive serving the future homes on proposed Lots 1, 2, 3, and 4. The driveway will be 20' wide concrete.
4. All of subject property lies within "Zone X, areas determined to be outside the 0.2% annual chance flood" as shown on FEMA FIRM Number 20091C0008G, revised 8/3/2009.
5. Fire hydrant and proposed water line to be coordinated with and installed by WaterOne.
6. Distances shown are record and measured unless noted.

SITE INFORMATION

Plat area: 40,215 square feet

Existing/proposed Zoning: R-1

Proposed use: Single family residential

Minimum Ground Floor Area Classification: B

Utilities:
Sewer: Johnson County Wastewater
Water: WaterOne
Power: Evergy, Kansas Metro
Gas: Kansas Gas Service

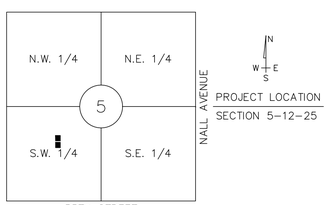
LOT	SQ. FT.
1	10,112
2	10,112
3	10,001
4	9,989

LEGEND

- ▲ MONUMENT FOUND AS DESCRIBED
- ● BAR FOUND AS DESCRIBED ORIGIN UNKNOW UNLESS NOTED
- ◎ SET ½" X 24" REBAR WITH PLASTIC KS CLS 93 CAP
- B/L BUILDING LINE
- D/E DRAINAGE EASEMENT
- U/E UTILITY EASEMENT
- R/W RIGHT-OF-WAY
- (P) PLATTED DISTANCE
- (M) MEASURED DISTANCE
- (CM) CALCULATED MEASUREMENT
- EXISTING POWER POLE
- GUY ANCHOR
- SANITARY SEWER MANHOLE
- STORM SEWER STRUCTURE
- EXISTING OVERHEAD POWER
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED WATERLINE
- EXISTING GRADE CONTOUR

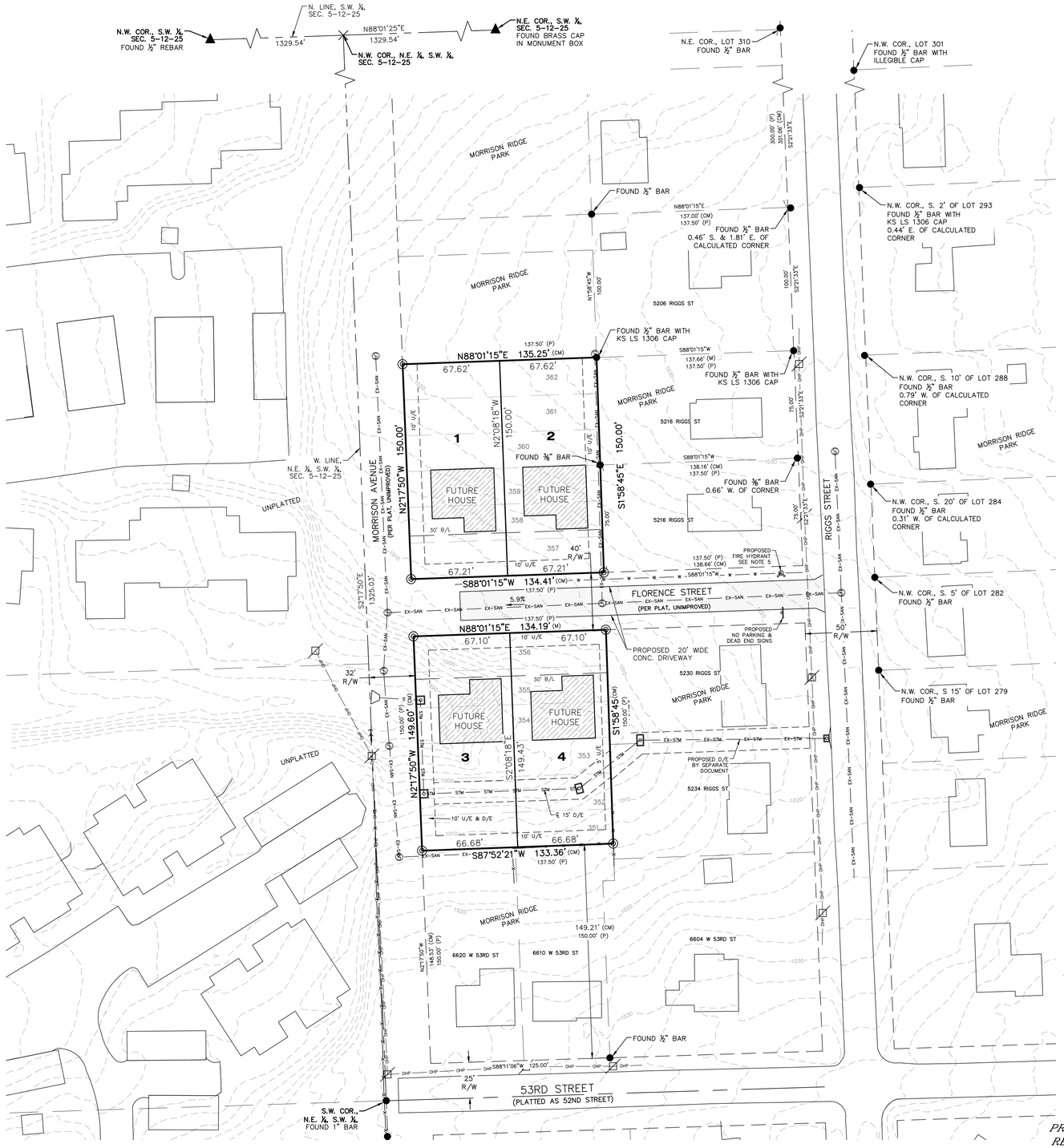
THIS IS TO CERTIFY THAT ON THE 1ST DAY OF SEPTEMBER 2022, THIS FIELD SURVEY WAS COMPLETED ON THE GROUND BY ME OR UNDER MY DIRECT SUPERVISION AND THAT SAID SURVEY MEETS OR EXCEEDS THE "KANSAS MINIMUM STANDARDS" FOR BOUNDARY SURVEYS PURSUANT TO K.A.R. 66-12-1.

MATTHEW R. COX LICENSED 3/16/23 P.S. - 1637 KANSAS PROFESSIONAL SURVEYOR



PROJECT LOCATION
SECTION 5-12-25

55TH STREET
VICINITY MAP
SCALE: 1" = 2000'



NORTH

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

PREPARED: 1/3/2023
REVISED: 2/28/2023
REVISED: 3/16/2023

LEGAL DESCRIPTION

All of Lots 351 through 356, inclusive and all of Lots 357 through 362, inclusive of Morrison Ridge Park, a subdivision in the City of Mission, Johnson County, Kansas.

The undersigned proprietors to the above described tract of land have caused the same to be subdivided in the manner as shown on the accompanying plat, which subdivision and plat shall hereafter be known as "MORRISON RIDGE PARK, SECOND PLAT".

DEDICATION

The proprietors, successors, and assigns, of property described on this plat hereby dedicate for public use all land described on this plat as streets or public ways not heretofore dedicated. Acceptance of the dedication of land for public right-of-way purposes described on this plat is for the sole purpose of maintaining right-of-way, and does not constitute acceptance of any terms or conditions set forth in any agreement not shown on this plat.

In accordance with KSA 12-512b, all rights, obligations, reservations, easements, or interest not shown on this plat shall be vacated as to use and as to title, upon filing and recording of this plat. The proprietors, successors, and assigns, of property shown on this plat hereby absolve and agree, jointly and severally, to indemnify the City of Mission, Kansas, of any expense incident to the relocation of any existing utility improvements heretofore installed and required to be relocated in accordance with proposed improvements described in this plat.

An easement is granted to the City of Mission, Kansas to enter upon, construct, maintain, use and authorize the location of conduits for providing water, gas, cable, electric, sewers and othe utility services, including related facilities and appurtenances thereto, and drain facilities, upon, over, under and across those areas outlined and designated on this plat as "Utility Easement" or "U/E", and further, subject to administration and regulation by tthe City, the subordinate use of such areas by other governmental entities and utilities, franchised or authorized to do business in the City of Mission, Kansas.

CONSENT TO LEVY

The undersigned proprietor of the above described land hereby consents and agrees that the governing body of any special assessment district shall have the power to release such land proposed to be dedicated for streets and roads, or parts thereof, for public use, from the lien and effect of any special assessments, and that the amount of the unpaid special assessments on such land dedicated, shall become and remain a lien on the remainder of this land fronting or abutting on such dedicated road or street.

EXECUTION

IN TESTIMONY WHEREOF, Klassen Construction, LLC has caused this instrument to be executed this _____ day of _____ 20___.

KLASSEN CONSTRUCTION, LLC

By: _____
Kevin Klassen, Managing Member

ACKNOWLEDGEMENT

STATE OF KANSAS)
) SS:
COUNTY OF JOHNSON)

BE IT REMEMBERED that on this _____ day of _____ 20___, before me, the undersigned, a Notary Public in and for said County and State, came Kevin Klassen, Managing Member of Klassen Construction, LLC, personally known to be such person who executed the within instrument, and such person duly acknowledged the execution of the same to be the act and deed of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal the day and year last above written.

_____ _____
Notary Public My Appointment Expires

APPROVAL

APPROVED BY the City of Mission Planning Commission this _____ day of _____, 20____.

By: _____ Attest: _____
Mike Lee, Chairperson Kimberly Steffens, Secretary

PREPARED FOR:
KLASSEN CONSTRUCTION
5540 MAPLE STREET
MISSION, KANSAS 66202
PHONE: (913) 217-8673
CONTACT: KEVIN KLASSEN

PREPARED BY:
ALLENBRAND-DREWS & ASSOCIATES, INC.
122 N. WATER STREET
OLATHE, KANSAS 66061
PHONE: (913) 764-1076
FAX: (913) 764-8635

MORRISON RIDGE PARK, SECOND PLAT

CIVIL ENGINEERS
LAND SURVEYORS - LAND PLANNERS

122 N. WATER STREET
OLATHE, KANSAS 66061
PHONE: (913) 764-1076
FAX: (913) 764-8635

14 W. PEORIA
PAOLA, KANSAS 66071
PHONE: (913) 557-1076
FAX: (913) 557-6904

Allenbrand-Drews & Associates, Inc.

AD PROJECT #36656 **5-12-25** **PRELIMINARY PLAT**

MORRISON RIDGE PARK

BEING A SUBDIVISION OF THE FOLLOWING DESCRIBED TRACTS OF LAND IN JOHNSON COUNTY, KANSAS.

STATE OF KANSAS } ss.
Johnson County
This instrument was filed for record on the 30" day of April A.D. 1913 at 11 30 o'clock A M., and duly recorded in Book 5 of Plats at page 3
Frank D. Hedrick
Register of Deeds.

30th. April. '13
W. J. Moore
Clerk

Description

All of lots 6. 7. 8 and 9 of Morrison Ridge and lots 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11 and 12 of Block 1 and lots 1. 3. 4. 5. 6. 7. 8. 9. 11. 13. and 15 of Block 2 of Morrison Ridge No. 2 Subdivisions in South west quarter of Section 5. TOWNSHIP 12. South Range 25 East.

Strang Land Company, a corporation organized under the laws of the State of Missouri, proprietor of the above described tracts of land, has caused the same to be subdivided in the manner as represented on this plat, which subdivision shall be hereafter known as MORRISON RIDGE PARK.

The streets and avenues as represented on this plat are hereby dedicated to the public use forever

IN TESTIMONY WHEREOF, Strang Land Company has caused this instrument to be signed in its corporate name by its President, and its corporate seal to be hereunto affixed and attested by its Secretary this 30th day of April 1913

Strang Land Company
By W. B. Strang President

ATTEST Wm Borrien Secretary

SEAL

STATE OF MISSOURI } S. S.
COUNTY OF JACKSON

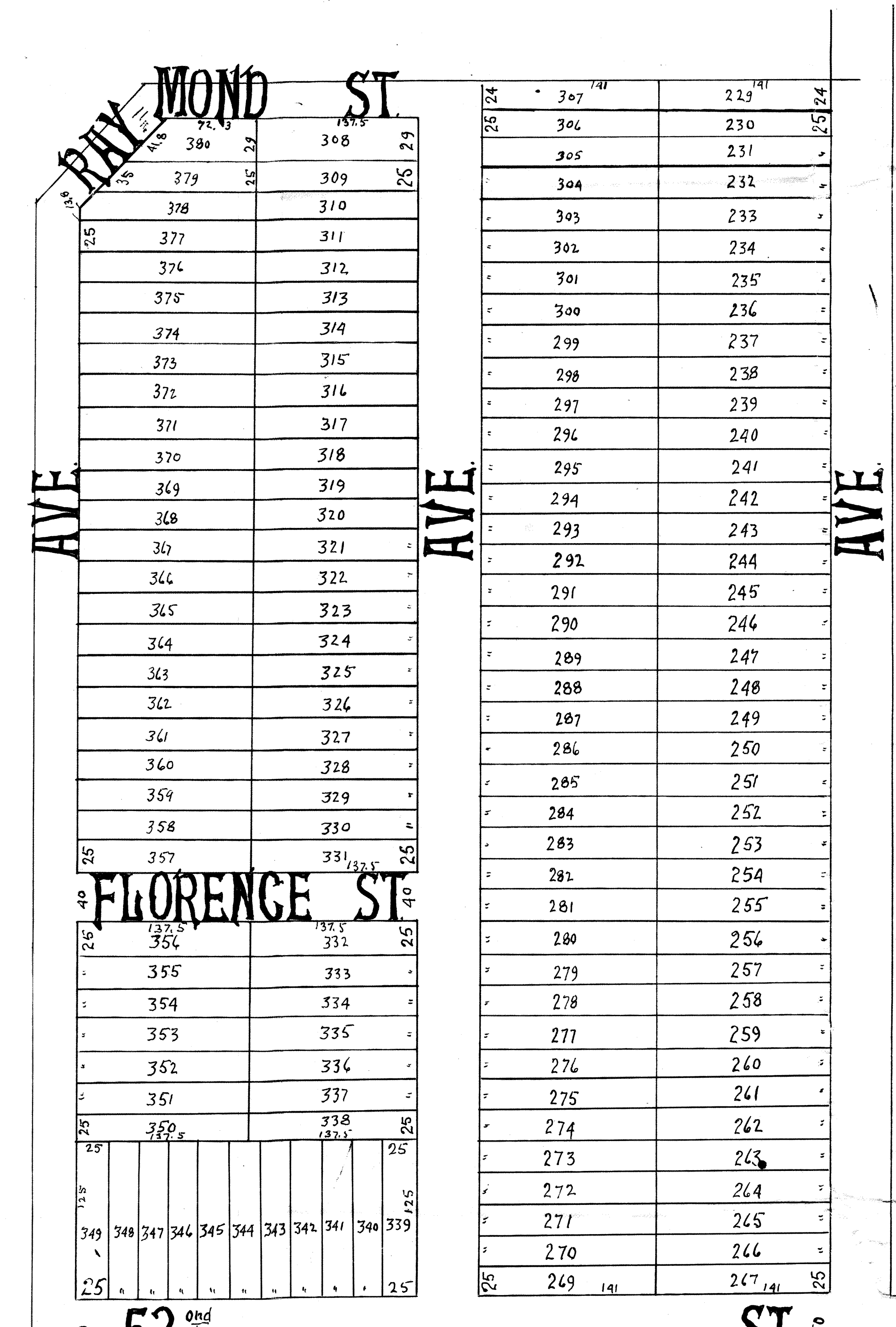
BE IT REMEMBERED. that on the 30 day of April 1913, before me. the undersigned, a Notary Public in and for the County and State aforesaid, came W. B. Strang President of the Strang Land Company, a corporation, who is personally known to me to be the same person who executed the foregoing instrument, and duly acknowledged the same to be the voluntary act and deed of said Strang Land Company.

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed my notarial seal the day and year above mentioned,

My Commission Expires April 8th 1914

Burton S. Palmer
Notary Public in and for Jackson County Missouri

Notarial Seal



Community Development Department
6090 Woodson Street
Mission, KS 66202
913-676-8360

Development Application

Permit #_____

Applicant Name: Kenneth Block	Company: BK Properties, LLC
Address: 4622 Pennsylvania Ave, Suite 700	
City/State/Zip: Kansas City, MO 64112	
Telephone: 816.412.5858	
Email: amesmer@blockllc.com	
Property Owner Name: Kenneth Block	Company: BK Properties, LLC
Address: 4622 Pennsylvania Ave, Suite 700	
City/State/Zip: Kansas City, MO 64112	
Telephone: 816.412.5858	
Email: amesmer@blockllc.com	
Firm Preparing Application: Timothy Homburg	Company: NSPJ Architects
Address: 3515 W. 75th Street, Suite 201	
City/State/Zip: Prairie Village, KS 66208	
Telephone: 913.831.1415	
Email: thomburg@nspj.com	
*All correspondence on this application should be sent to (check one) ☑ Applicant ☑ Owner ☑ Firm	

Application Type

Rezoning ☐ Plat ☑ Site Plan ☑ SUP ☐ Lot Split ☐ Other (Specify): Final Development Plan

Description of Request

Please provide a brief description of the request:

To construct a 5-story multi-family building on an already developed site at the southeast corner of 56th street and Foxridge Drive in Mission, KS. The existing building, pavement and private utility connections will be removed with the proposed development.

Development Application includes Final Development Plans and Final Plat submission.

Project Details

General Location or Address of Property: Southeast corner of 56th Street and Foxridge Drive

Present zoning of property: M-P

Present use of property: Office (call center)

Agreement to Pay Expenses

Applicant intends to file an application with the Community Development Department of the City of Mission, Kansas (City). As a result of the filing of said application, City may incur certain expenses, such as but not limited to publication costs, consulting fee, attorney fee, and court reporter fees. Applicant hereby agrees to be responsible for and to reimburse City for all cost incurred by City as a result of said application. Said costs shall be paid within ten (10) days of the receipt of any bill submitted by City to Applicant. It is understood that no requests granted by City or any of its commissions will be effective until all costs have been paid. Costs will be owed whether or not Applicant obtains the relief requested in the application.

Affidavit of Ownership and/or Authorization of Agent

I, Kenneth Block, BK Properties, LLC certify that I am the owner or contract purchaser of the subject property. I give my permission for the undersigned to act as my agent on behalf of the application hereby being submitted.

X Kenneth H Block Date 1/17/2023

Signature (Owner)

X Date 1/17/2023

Signature (Owner's Agent) (NSPJ Architects)

**********FOR OFFICE USE ONLY**********

File Fee: $	**Meeting Date**
	PC CC
Total:	**Date Notices Sent**
Receipt #	
Notes:	**Date Published**
	Decision

March 27, 2023

Planning Commission

Staff Report

AT A GLANCE

Applicant:
BK Properties, LLC

Location:
5665 Foxridge Drive

Property ID:
KF251208-1021

Current Zoning:
M-P

Proposed Zoning:
N/A

Current Land Use:
Office

Proposed Land Use:
Multi-family Residential

N/A Public Hearing Required

Legal Notice Date:
N/A

Case Number:
23-04

Project Name:
5665 Foxridge Final Development Plan

Project Summary:
The applicant is requesting approval of a Final Development plan (FDP) for a multi-family development project on the property at 5665 Foxridge Drive. The Planning Commission recommended approval of the project at its July 25, 2022 meeting and the City Council approved the Preliminary Development Plan (PDP) and Non-Conforming Situation Permit at its September 21, 2022 meeting.

Staff Contact: Karie Kneller

Background and Property Information

The project is located at the southeast corner of 56th Street and Foxridge Drive. The subject property is approximately five acres and it is zoned M-P "Industrial Park District." The property also lies in the Form Based Code District. The underlying zoning code permits multi-family developments in Industrial Districts, but the project required a Non-Conforming Situation Permit for its deviation from the Form Based Code regulations. The City Council approved the PDP and the Non-Conforming Situation Permit at its September 21, 2022 hearing.

Project Proposal

The project proposal is a five-story 307-unit multi-family development with 466 parking spaces; 22 parking spaces are located in a surface lot on the west side fronting the "club house" lobby, and the remaining 444 parking spaces are within a central parking garage. Accessible parking spaces per ADA standards are provided; 2 are provided in the surface lot and 7 are provided in the parking garage. This project will increase the impervious surface of the existing conditions and decrease the green space by 10% overall.

The photometric plan estimates that zero foot-candles will impact the exterior off-site surrounding conditions. Exterior lighting is shielded and provides down-lighting per International Dark Sky Standards and are certified IDA Dark Sky Approved by the International Dark Sky Association.

The Landscaping Plan specifies native shade and ornamental trees that meet the number and placement as required by the municipal code. There are nine street trees provided on Foxridge Drive, 13 trees provided on 56th Street, and nine trees on Broadmoor Street, equaling the number required to meet the stipulation of one tree for each 50 feet of street frontage. There are seven trees provided in landscaped open space, two trees provided within surface parking, and six-percent of the parking areas are landscaped. Other landscaping includes evergreen and deciduous shrubs, grasses, and perennials. Annuals will be planted seasonally, and all plant beds will be irrigated.

A traffic impact study was submitted with the final development plan. The recommendations are generally the same as the report that was submitted with the PDP that include lengthening the deceleration land for the south bound, left turn movement on Metcalf and adding a deceleration for the north bound right turn movement from Metcalf to 56th Street and adding an acceleration lane for the north bound movement form 56th Street to Metcalf. KDOT has expressed support for these recommendations. It should also be noted that KDOT has embarked on an initial study for the replacement of the Metcalf bridge over Johnson Drive, which may have an impact on the 56th/58th and Foxridge intersections. The last recommendation in the initial report submitted with the PDP has been omitted from the report submitted with the FDP. That recommendation states, "Install yield line pavement markings for the southbound left-turn movement to provide drivers with guidance for where the yield should be made." Additionally, the report notes that the left-turn movement at 56th Street and Metcalf Avenue will not operate at an acceptable level of service (LOS) without change in the form of intersection control. The report recommends partial signalization at the intersection, and this recommendation was discussed with KDOT, which has authority over movement

on Metcalf Avenue (I-635) at this intersection. KDOT does not support signalization of the intersection, citing concerns with safety and speeds on Metcalf Avenue within close proximity to the Foxridge Drive intersection.

A drainage report was also submitted with this FDP that shows while impervious area has increased with the proposed plan, peak flow rates within underground infrastructure will decrease due to an altered drainage pattern and a proposed underground storm water detention facility. Additionally, an ADS underground isolator row will be installed for water treatment, and these water quality improvements meet the Mid-America Regional Council's (MARC) Best Management Practice (BMP) Manual water quality requirements.

Plan Review and Analysis

Municipal Code

The municipal code at §410.060 provides the parking regulations for a high-rise apartment. The required minimum is 461 stalls, or 1.5 stalls per unit.

The proposed parking exceeds the minimum requirement for on-site parking.

The municipal code at §415.090 and at §415.110 provides stipulations for required landscaping.

The landscaping requirements per municipal code have been met with the proposal.

Preliminary Development Plan Conditions of Approval

The following conditions of approval were identified during the Planning Commission and were included in the vote of approval:

(A) The Landscaping Plan shall be in accordance with the Municipal Code for native and non-invasive species.

(B) The Landscaping Plan shall be in accordance with the Municipal Code for continual maintenance and disease prevention.

(C) International Dark Sky lighting standards for 2022 shall be applied to the exterior lighting on building frontages and interior courtyard areas and submitted with the Final Development Plan.

(D) Signage will be submitted with the Final Development Plan for Planning Commission approval for private sign criteria.

(E) Window glazing shall be clear glass on frontage facing Broadmoor. No more than 25 percent of the remaining glazing shall be obscured on the rest of the other frontages and facades.

(F) Include a pet waste station near the dog run on the southwest corner and indicated the owner or owner's agent will maintain it.

(G) An ADS underground isolator row shall be installed for water quality treatment. A final Storm water Drainage Plan shall be submitted.

At the time of this report, conditions A, C, E, F, and G listed above as part of the PDP have been met with the FDP submittal. Condition D of the PDP stipulated that private sign criteria shall be submitted as part of the FDP; sign dimensions and materials for the monument sign are detailed in the FDP, which partially satisfies the condition as set forth during the public hearing. Staff will review a full signage package as required by municipal code at §430.040; the development as proposed does not meet the criteria prescribed under §430.120 "Private Sign Criteria." Staff will review the signage for the site upon submittal of a full sign permit application.

Recommendation

Staff recommends approval of the 5665 Foxridge Final Development Plan with the following conditions:

(A) The developer shall sign a binding agreement to maintain improvements throughout the site, including all Landscaping, prior to permit issuance.

(B) All signage shall be submitted to Staff with a sign permit application prior to installation.

Planning Commision Action

The Planning Commission will hear Case #23-04 5665 Foxridge Final Development Plan at its March 27, 2023 meeting.

City Council Action

None

56TH & FOXRIDGE | MISSION, KS

INDEX OF DRAWINGS

01 - ARCHITECTURAL

02 - LANDSCAPE

03 - CIVIL

04 - ELECTRICAL

PROJECT TEAM

ARCHITECT:
NSPJ ARCHITECTS, P.A.
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
TEL: (913)-831-1415
FAX: (913)-831-1563
EMAIL: THOMBURG@NSPJARCH.COM
CONTACT: TIM HOMBURG

LANDSCAPE ARCHITECT:
NSPJ ARCHITECTS, P.A.
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
TEL: (913)-831-1415
FAX: (913)-831-1563
EMAIL: KMARTINOVIC@NSPJARCH.COM
CONTACT: KATIE MARTINOVIC

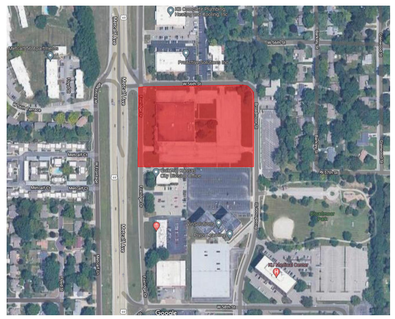
CIVIL ENGINEER:
MKEC ENGINEERING, INC.
11827 W. 112TH ST. STE. 200
OVERLAND PARK, KANSAS 66210
TEL: (913) 317-9390
EMAIL: BHILL@MKEC.COM
CONTACT: BRIAN HILL

DEVELOPER:
BK PROPERTIES, LLC
4622 PENNSYLVANIA AVE., STE. 700
KANSAS CITY, MISSOURI 64112
TEL: (816) 756-1400
EMAIL: AMESMER@BLOCKLLC.COM
CONTACT: AARON MESMER

PROJECT INFORMATION

PROJECT ADDRESS:
56TH ST & FOXRIDGE DR
CITY, STATE: MISSION, KS
COUNTY: JOHNSON

VICINITY MAP



Final Development Plan

NSPJ
ARCHITECTS PA
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

ARCHITECTURE
LANDSCAPE ARCHITECTURE
INTERIORS
ENERGY SERVICES

NOT FOR CONSTRUCTION

A MULTIFAMILY DEVELOPMENT FOR:
56TH & FOXRIDGE
MISSION, KS

DRAWING RELEASE LOG
04.11.22 PDP SUBMITTAL
06.10.22 PDP RESUBMITTAL
01.20.23 FDP SUBMITTAL

REVISIONS:

DATE:
01/20/23
JOB NO.
715322
DRAWN BY:
LG/RK
SHEET NO.
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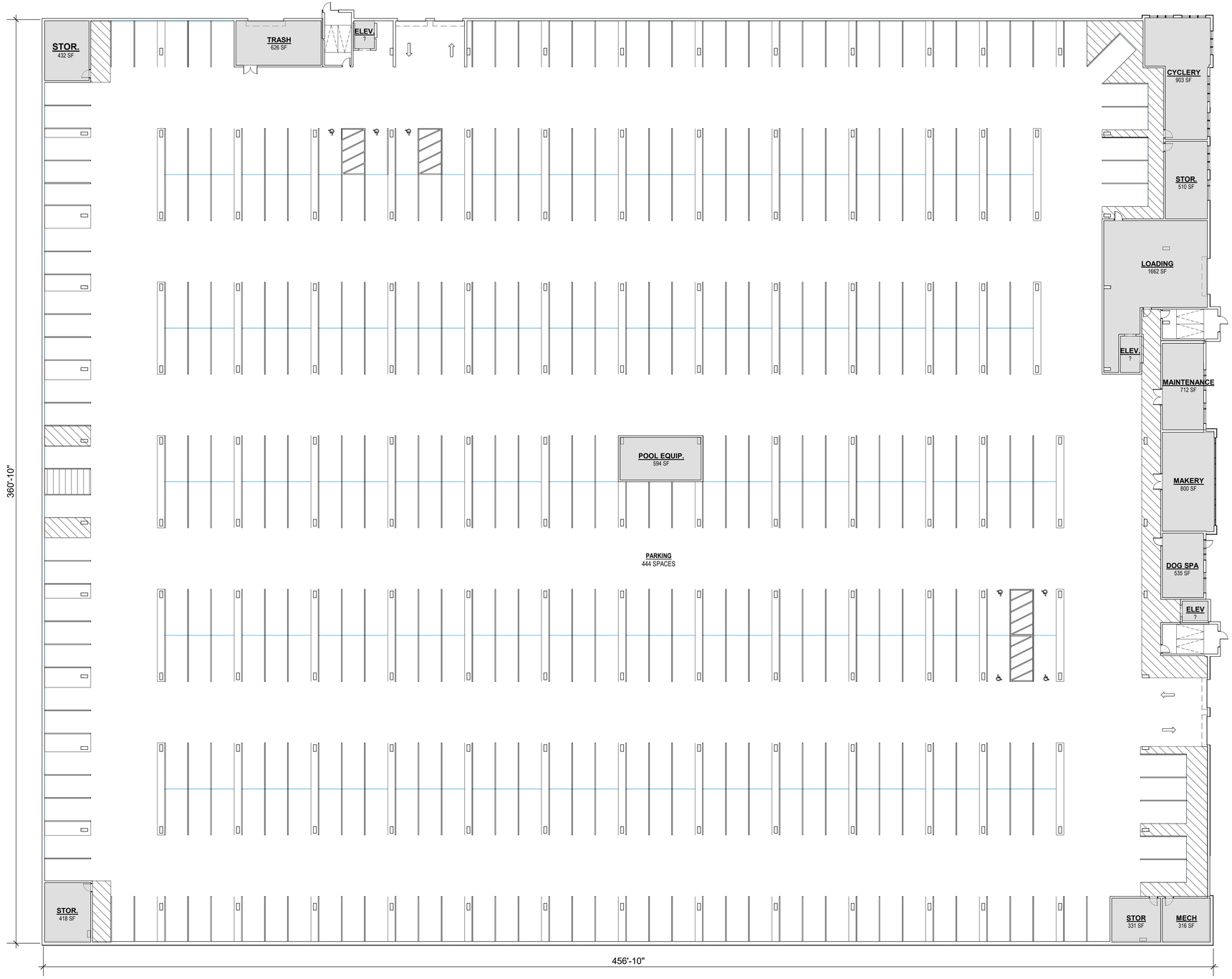

1 GARAGE PLAN
1" = 20'-0"

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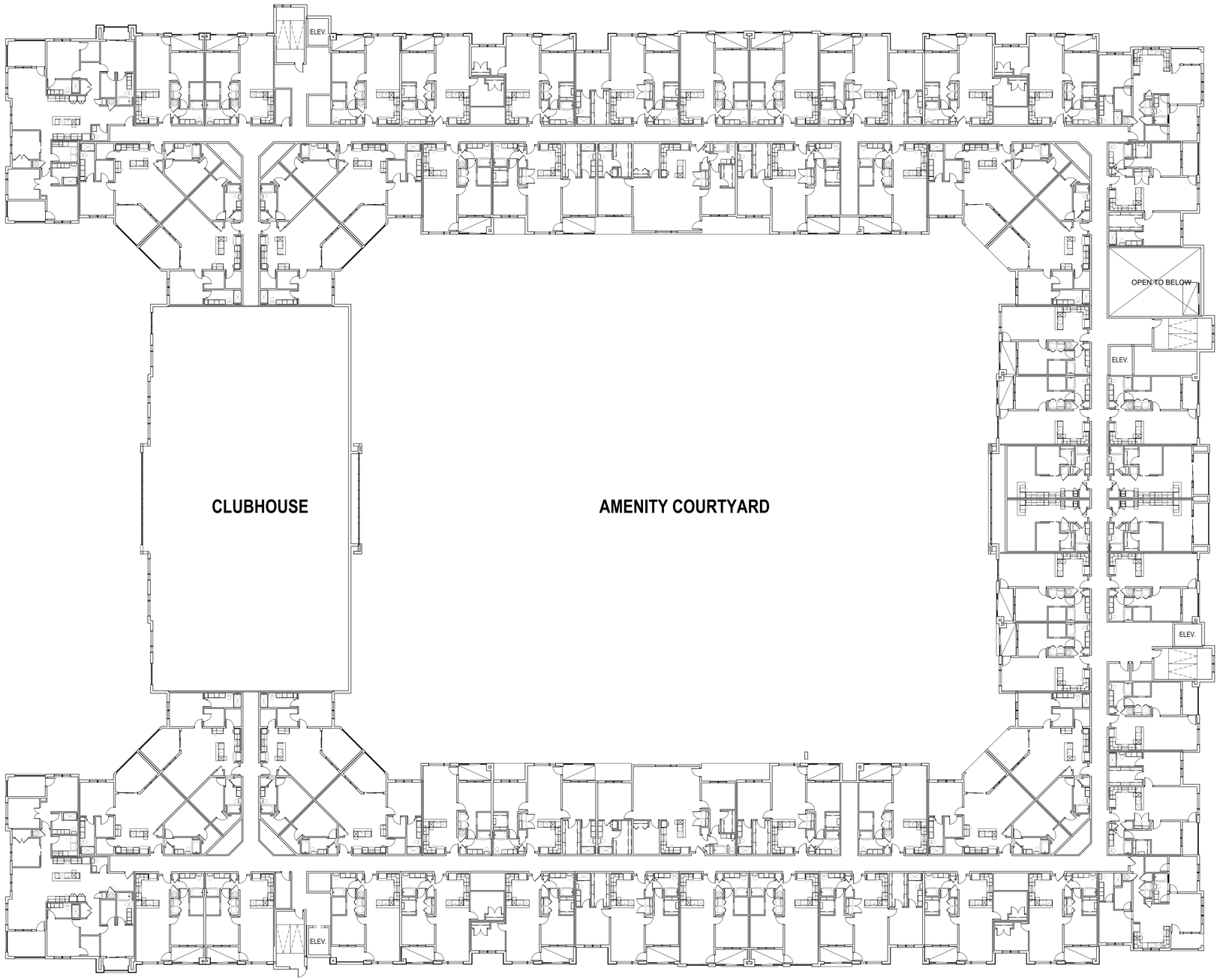

1 1ST FLOOR PLAN
1" = 20'-0"

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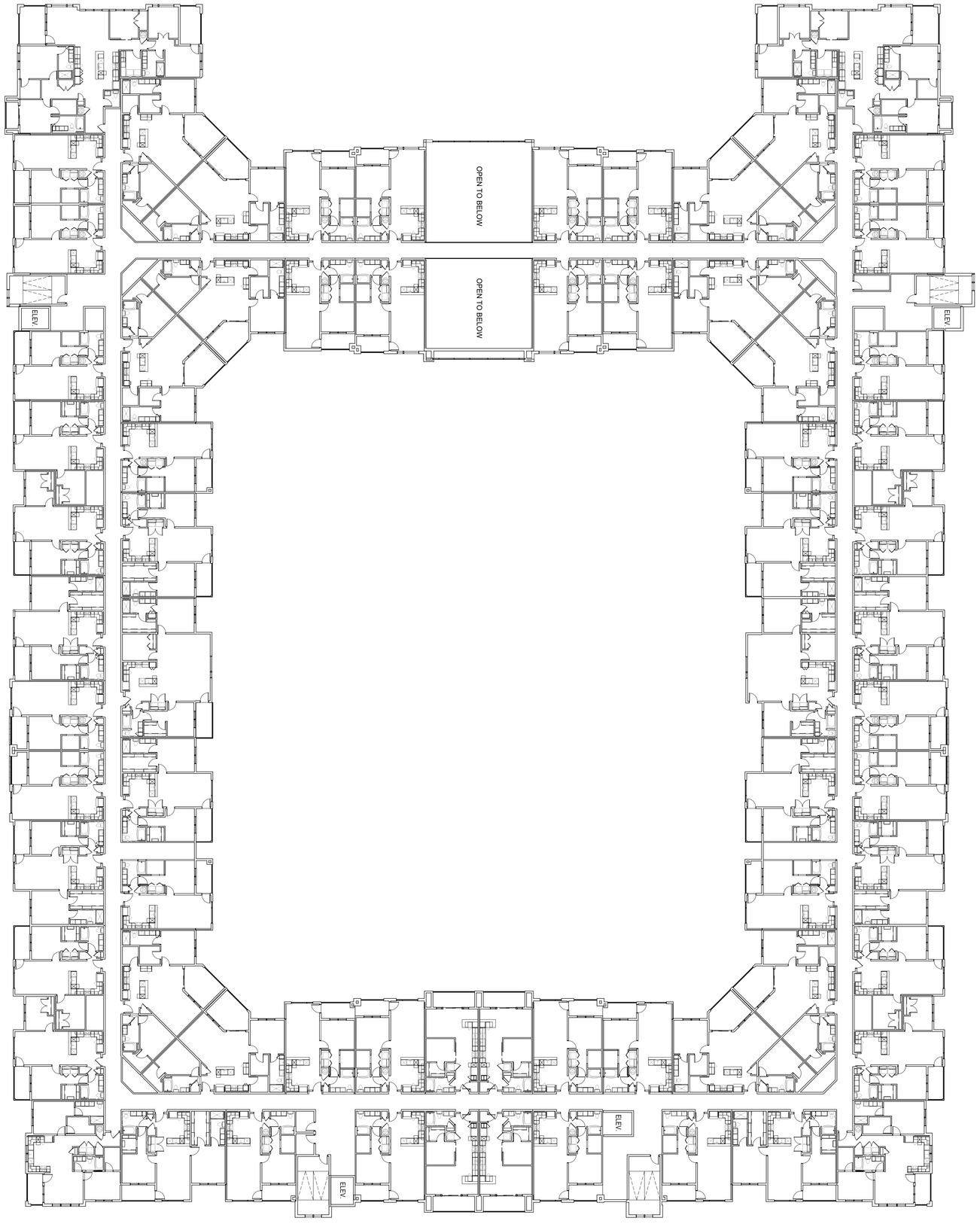
1 2ND FLOOR PLAN
1" = 20'-0"



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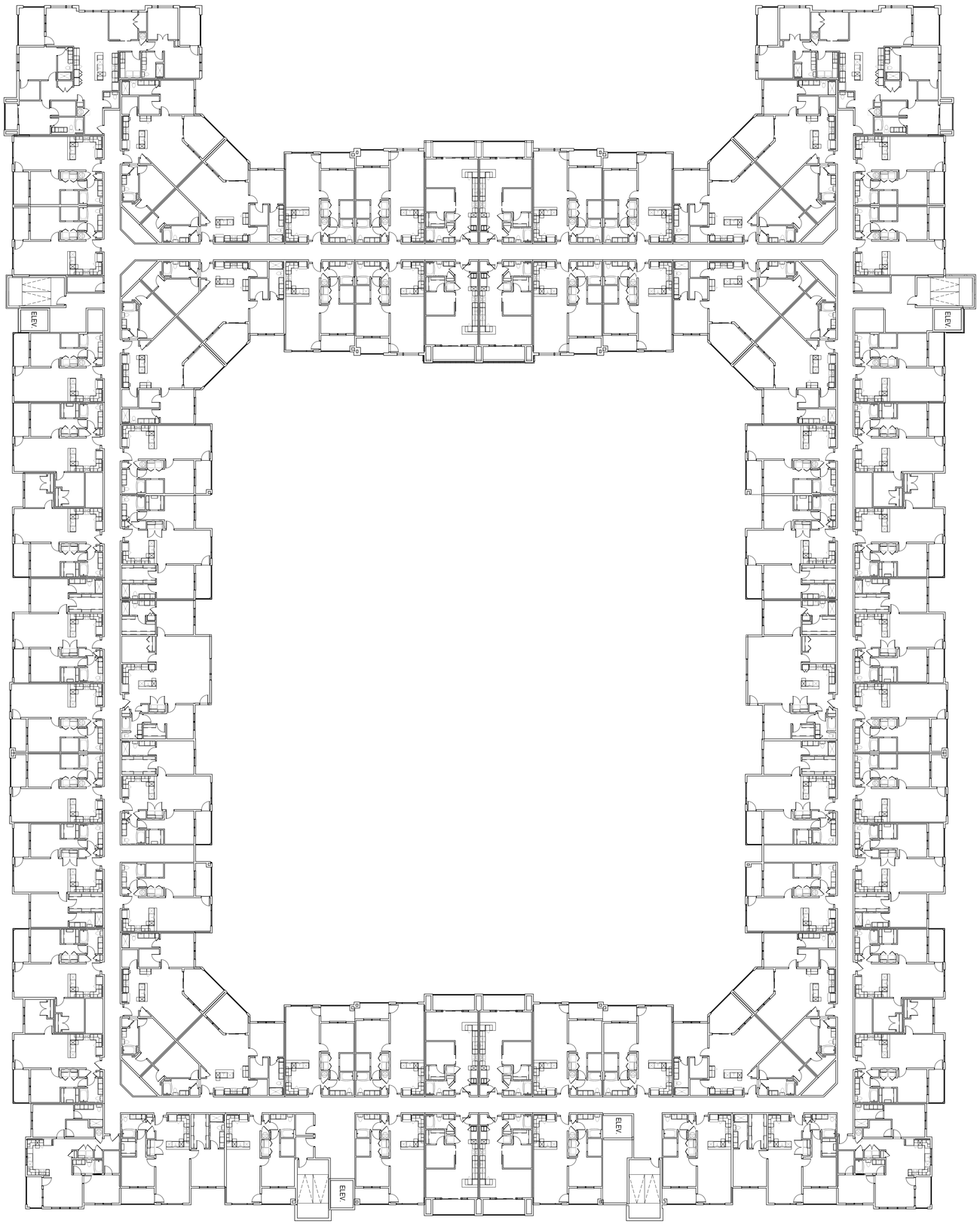

1 3RD FLOOR PLAN
1" = 20'-0"

17

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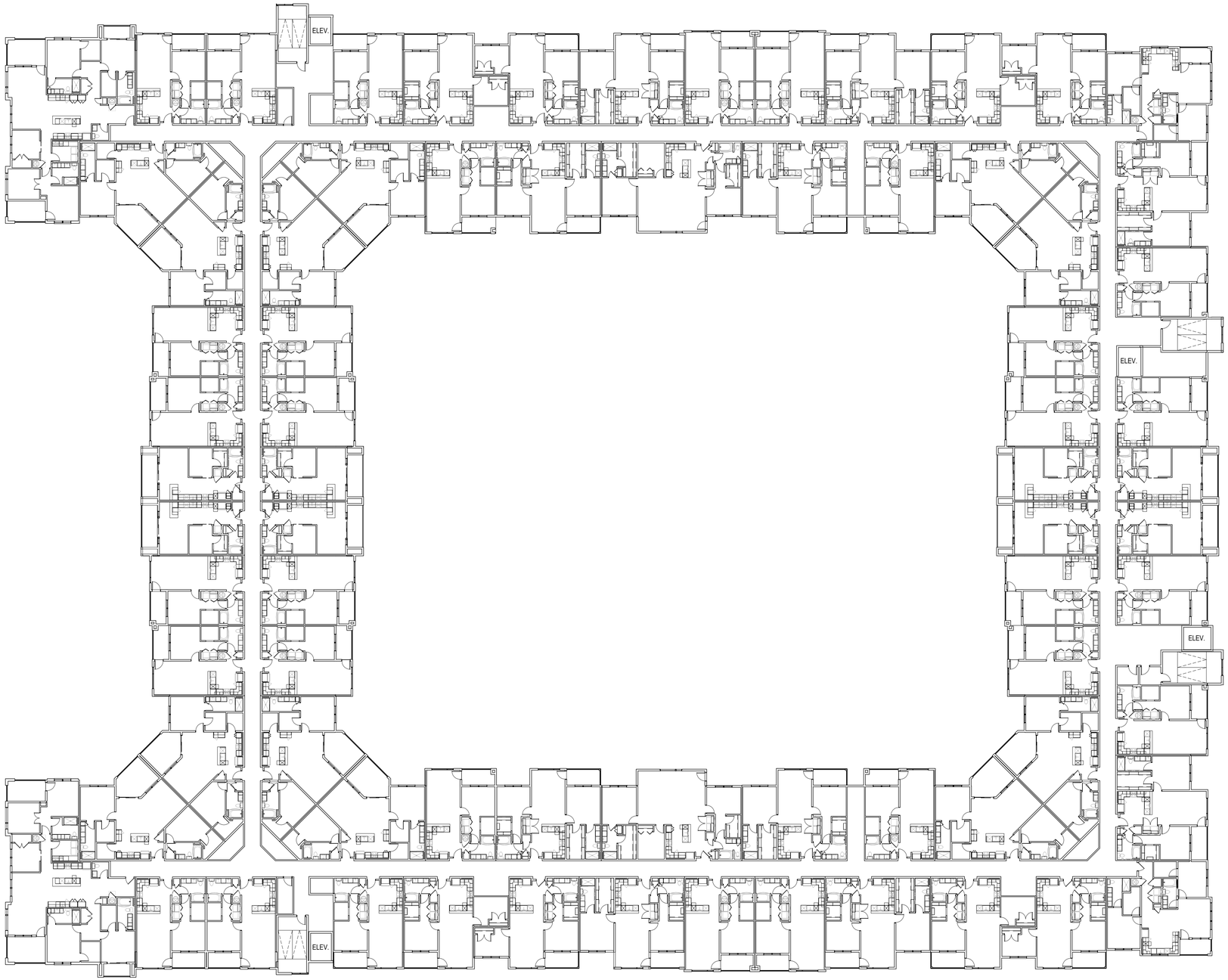

1 4TH FLOOR PLAN
1" = 20'-0"

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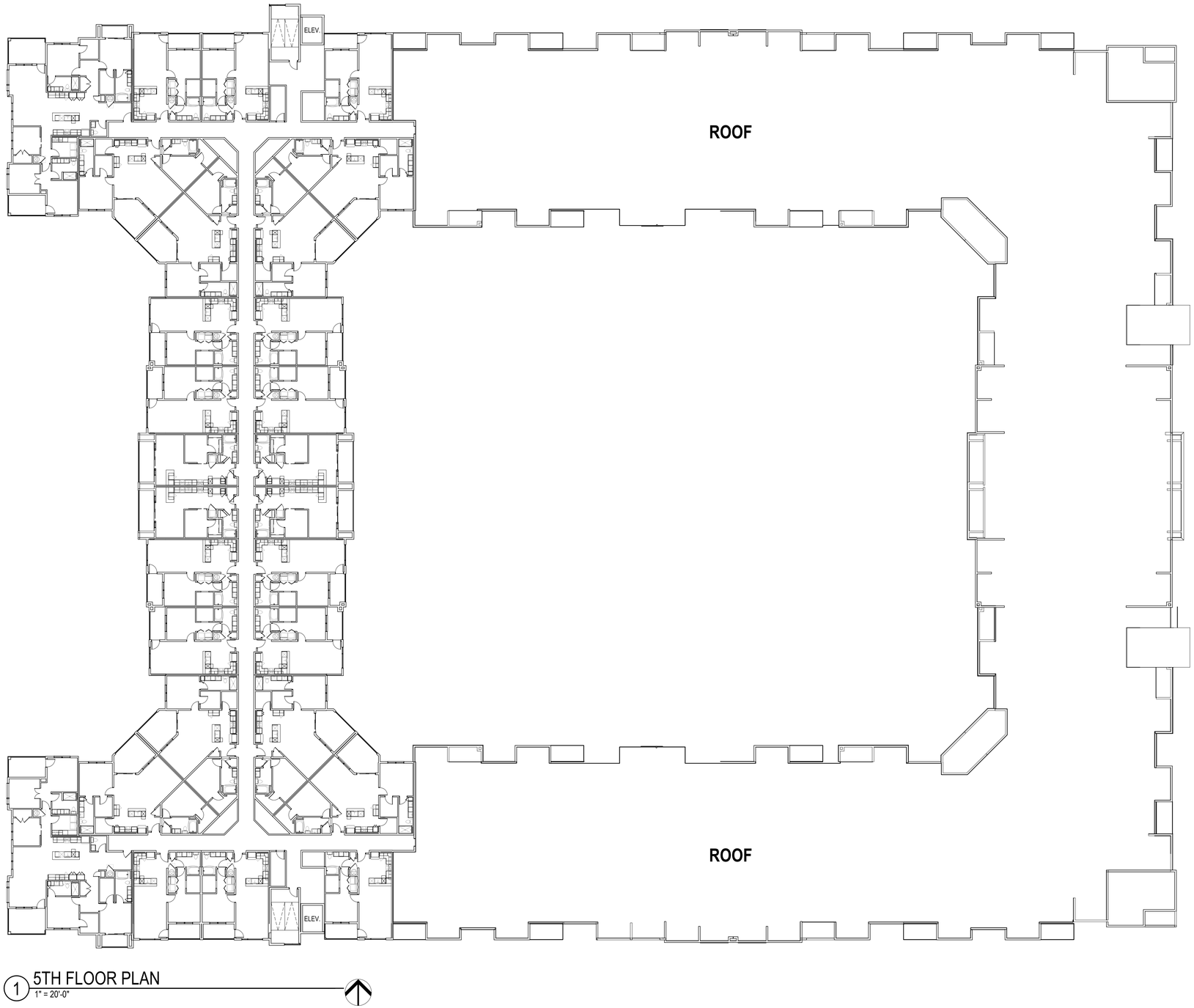

1 5TH FLOOR PLAN
1" = 20'-0"

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Final Development Plan

NW CORNER PERSPECTIVE
12" = 1'-0"

ENTRY COURTYARD AERIAL PERSPECTIVE
12" = 1'-0"

SE CORNER PERSPECTIVE
12" = 1'-0"

NE CORNER PERSPECTIVE
12" = 1'-0"

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BROADMOOR CLOSE-UP PERSPECTIVE
12" = 1'-0"

BROADMOOR PERSPECTIVE
12" = 1'-0"

SOUTH UNIT PATIOS
12" = 1'-0"

NEIGHBOR PERSPECTIVE
12" = 1'-0"

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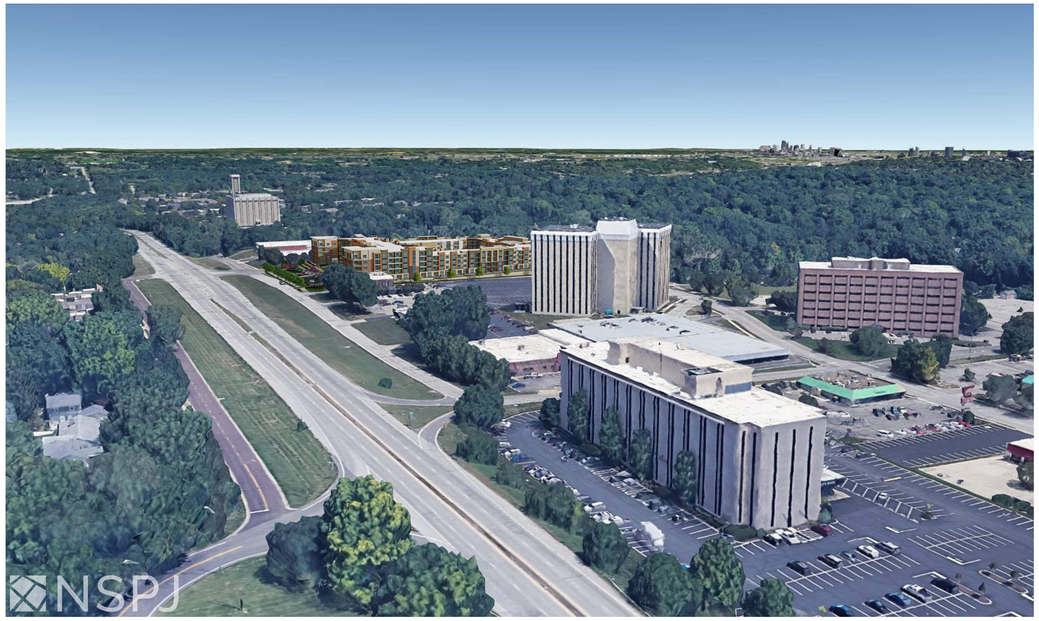
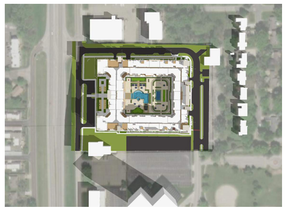
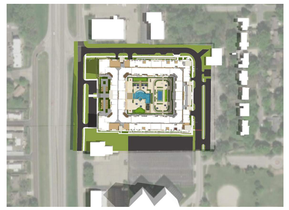


AERIAL VIEW
12" = 1'-0"



MARCH - 9 AM

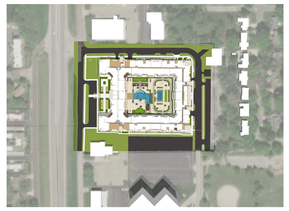


JUNE - 9 AM

SEPTEMBER - 9 AM

DECEMBER - 9 AM

MARCH - 12 PM



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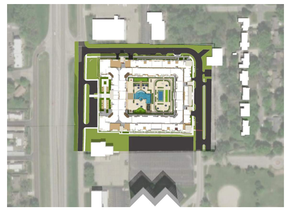

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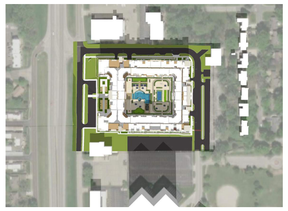

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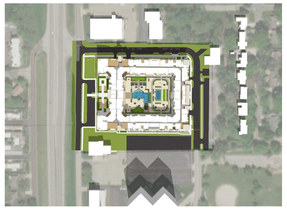
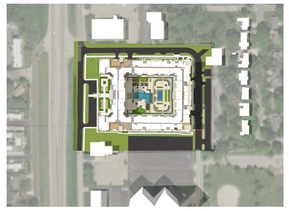


MARCH - 4 PM



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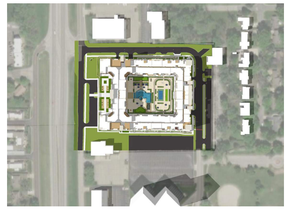

SEPTEMBER - 4 PM

DECEMBER - 4 PM

SUN STUDY
6" = 1'-0"

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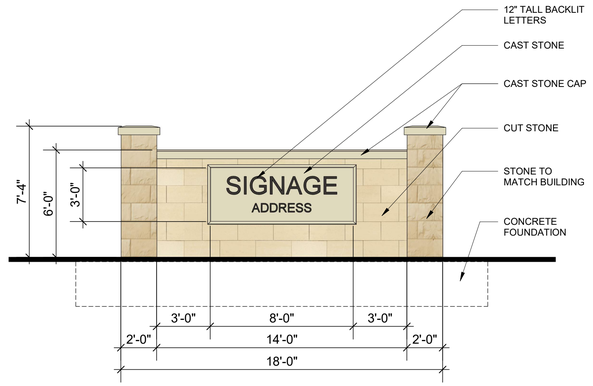
Final Development Plan

3 EAST ELEVATION
1/16" = 1'-0"

2 WEST ELEVATION
1/16" = 1'-0"



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

EXTERIOR MATERIAL LEGEND:

1. BRICK | CUSTOM BLEND ENDICOTT 'DESERT IRONSPOT'
2. BRICK | CUSTOM BLEND ENDICOTT 'MEDIUM IRONSPOT'
3. CUT STONE | CUSTOM BLEND MATCH THE ROYALE & THE APEX
4. SPLIT-FACE STONE | CUSTOM BLEND MATCH THE ROYALE & THE APEX
5. GLASS | LOW-E COATING (TRANSPARENT)
6. STUCCO | SW 6120 'BELIEVABLE BUFF'
7. STUCCO | SW 2813 'DOWNING STRAW'
8. STUCCO | SW 6363 'GINGERY'
9. STUCCO | SW 6103 'TEA CHEST'
10. TRIM & METAL FLASHING | SW 7035 'AESTHETIC WHITE'
11. FIBERGLASS WINDOWS & ALUMINUM STOREFRONT | DARK BRONZE

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ARCH D 24" x 36"

2 NORTH ELEVATION
1/16" = 1'-0"

1 SOUTH ELEVATION
1/16" = 1'-0"

EXTERIOR MATERIAL LEGEND:

1. BRICK | CUSTOM BLEND ENDICOTT 'DESERT IRONSPOT'
2. BRICK | CUSTOM BLEND ENDICOTT 'MEDIUM IRONSPOT'
3. CUT STONE | CUSTOM BLEND MATCH THE ROYALE & THE APEX
4. SPLIT-FACE STONE | CUSTOM BLEND MATCH THE ROYALE & THE APEX
5. GLASS | LOW-E COATING (TRANSPARENT)
6. STUCCO | SW 6120 'BELIEVABLE BUFF'
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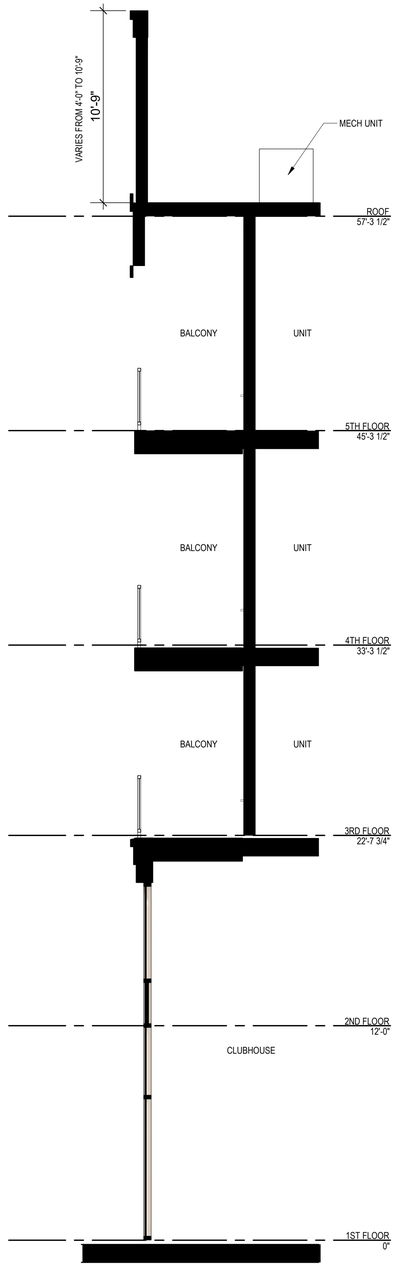

1 WALL SECTION
SECTION 1
1/4" = 1'-0"

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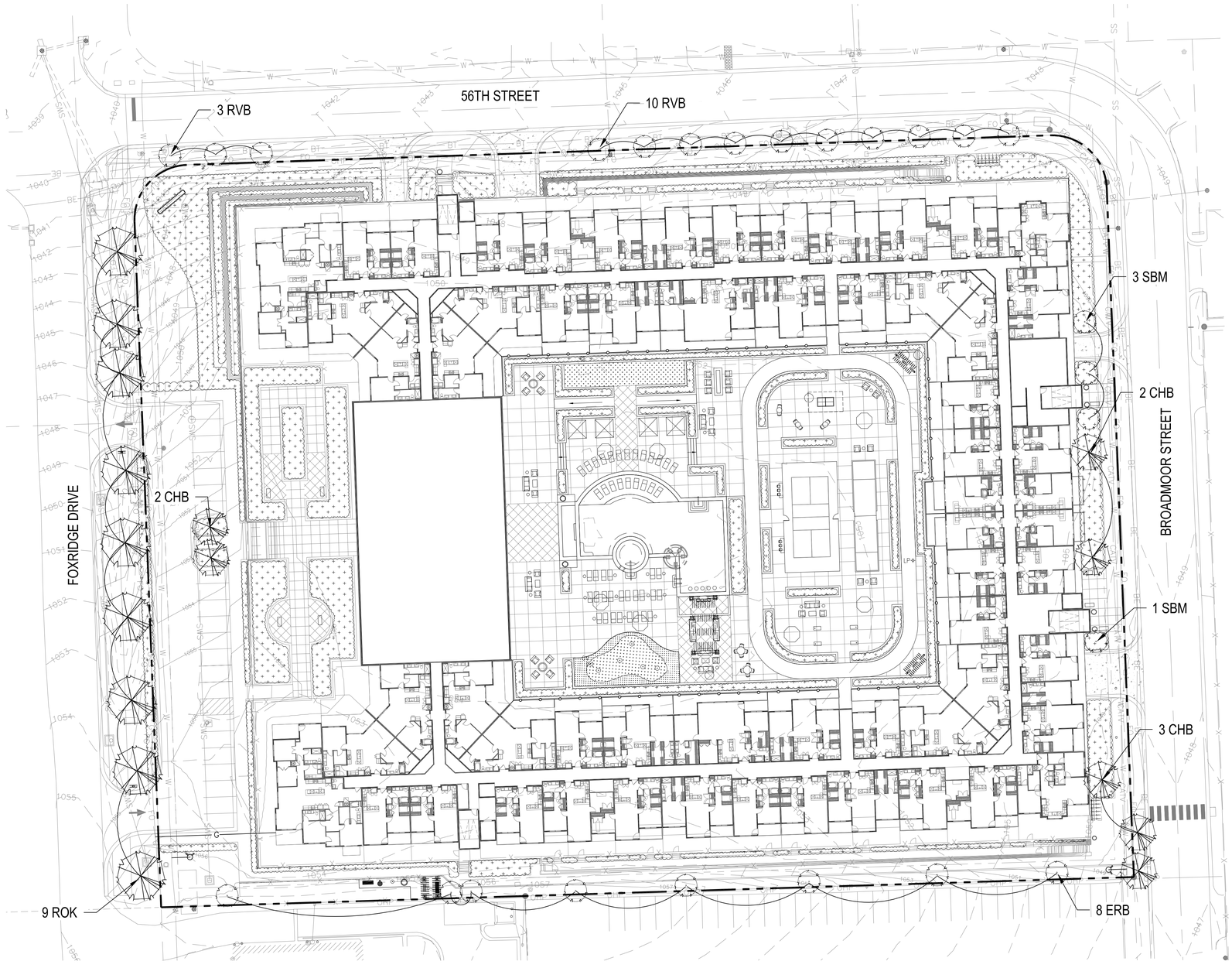
Final Development Plan



TREE PLANTING PLAN
1"=30'-0"

PLANT LIST:

	Common Name	Botanical Name	Size	Notes
Columnar Trees				
CHB	Columnar Hornbeam (Native)	Carpinus betulus 'Fastigiata'	2" Cal.	B&B
Shade Trees				
ROK	Red Oak (Native)	Quercus shumardii	2" Cal.	B&B
Ornamental Trees				
ERB	Eastern Redbud (Native)	Cercis Canadensis	6' ht.	B&B
RVB	River Birch (Native)	Betula Nigra	6' ht.	B&B
SBM	Sweetbay Magnolia (Native)	Magnolia virginiana v .australis	6' ht.	B&B

GENERAL NOTES:

1. EACH BIDDER SHALL VISIT THE SITE OF THE PROPOSED WORK AND EXAMINE THE SITE CONDITIONS. HE SHALL ALSO CAREFULLY EXAMINE THE DRAWINGS FOR THE PROPOSED WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS, WHICH MAY AFFECT THE PROPOSED WORK.

2. THE PLANTING PLAN GRAPHICALLY ILLUSTRATES OVERALL PLANT MASSINGS. EACH PLANT SPECIES MASSING SHALL BE PLACED IN THE FIELD TO UTILIZE GREATEST COVERAGE OF GROUND PLANE. THE FOLLOWING APPLIES FOR INDIVIDUAL PLANTINGS:
   A. CREEPING GROUNDCOVER SHALL BE A MINIMUM OF 6" FROM PAVING EDGE.
   B. ALL TREES SHALL BE A MINIMUM OF 3' FROM PAVING EDGE.
   C. ALL PLANTS OF THE SAME SPECIES SHALL BE EQUALLY SPACED APART AND PLACED FOR BEST AESTHETIC VIEWING.
   D. ALL SHRUBS SHALL BE A MINIMUM OF 2' FROM PAVED EDGE.

3. NOTIFY LANDSCAPE ARCHITECT 1 WEEK PRIOR TO ANTICIPATED START OF PLANT MATERIAL INSTALLATION. LANDSCAPE CONTRACTOR SHALL STAKE ALL PROPOSED PLANTING BED EDGES, SET OUT SHRUBS IN INTENDED LOCATIONS, AND STAKE TREE LOCATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

4. ALL NEW PLANT BED AREAS TO BE IRRIGATED. REFER TO SPECIFICATIONS FOR IRRIGATION SYSTEM DESCRIPTION.

5. REFER TO L1.00 SERIES SHEETS FOR TREE PLANTINGS.

6. IN THE EVENT OF WORK IN OR ON THE JCW SANITARY MAIN. ANY TREES OR PLANTINGS PLACED WITHIN THE SEWER EASEMENT MAY BE REMOVED WITHOUT REPLACEMENT OR COMPENSATION THERE OF AND SHALL BE REPLACED BY THE PROPERTY OWNER AS REQUIRED BY THE CITY.

7. STRIP TOP SOIL & SAVE FOR PLANTING AREAS. EXCAVATE TO A DEPTH OF 18" FOR ALL PLANTING BEDS AND REPLACE WITH PLANTING SOIL MIX. REFER TO L3.00 FOR PLANTING SOIL MIX.

8. ROCK BEDS SHALL BE SALT & PEPPER COBBLES, 5"-10" SIZE, BY SEMCO DISTRIBUTORS OR APPROVED EQUAL. ALL ROCK BED AREAS SHALL HAVE FILTER FABRIC & BE 4" MIN. DEPTH.

LANDSCAPE REQUIREMENTS (MISSION, KS)

MINIMUM TREE REQUIREMENTS PER ZONING DISTRICT (SECTION 415.090):

1. 1 TREE PER 50 LF OF STREET FRONTAGE.

	REQUIRED:	PROVIDED:
FOXRIDGE DRIVE = +/- 406 LF/ 50 LF =	9 TREES	9 TREES
56TH STREET = +/- 533 LF/ 50 LF =	11 TREES	13 TREES
BROADMOOR STREET = +/- 407 LF/ 50 LF =	9 TREES	9 TREES

2. 1 TREE PER DWELLING UNIT OR EVERY 3,000 SF OF LANDSCAPED OPEN SPACE (SECTION 415.090):

	REQUIRED:	PROVIDED:
21,147 SF LANDSCAPED OPEN SPACE / 3,000 SF =	7 TREES	7 TREES

ADDITIONALLY ONE TREE FOR EVERY 20 CARS OF PARKING AREA SHALL BE INCLUDED

	REQUIRED:	PROVIDED:
22 CARS	2 TREE	2 TREE

3. ALL PARKING LOTS CONTAINING TWENTY FIVE OR MORE SPACES SHALL INCLUDE THE FOLLOWING LANDSCAPING. (SECTION 415.110):

	REQUIRED:	PROVIDED:
22 SPACES X 270= 4,590 SF X 6%=	356 SF	358 SF

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KATHLEEN M. MARTINOVICH LICENSED LANDSCAPE ARCHITECT L-1723
01-20-2023

A NEW MULTIFAMILY DEVELOPMENT FOR:
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MISSION, KANSAS

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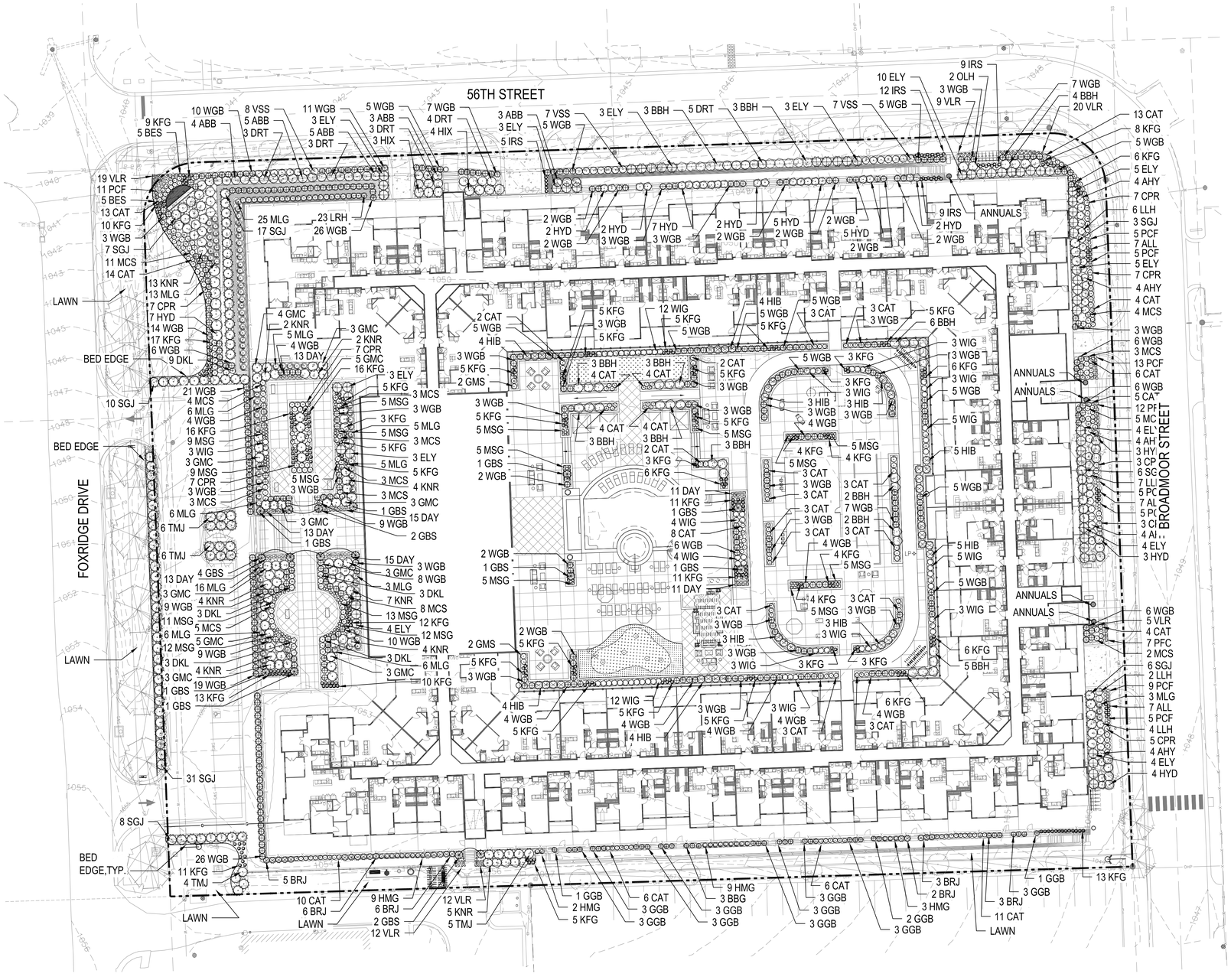
FINAL DEVELOPMENT PLAN



SHRUB PLANTING PLAN
1"=30'-0"

PLANT LIST:

	Common Name	Botanical Name	Size	Notes
Evergreen Shrubs				
BRJ	Blue Rug Juniper	Juniperus horizontalis 'Blue Rug'	5 Gal.	
ELY	Everlow Yew	Taxus x media 'Everlow'	5 Gal.	
GBS	Globe Blue Spruce	Picea pungens 'Glauca Globosa'	5 Gal.	
GGB	Green Gem Boxwood	Buxus microphylla 'Green Gem'	5 Gal.	
GMC	Gold Mop Cypress	Chamaecyparis pisifera 'Yellow Thread Branch'	5 Gal.	
HIX	Hick's Yew	Taxus x media 'Hicksii'	5 Gal.	
LRH	Little Rascal Holly	Ilex x meserveae 'Mondo'	5 Gal.	
PRB	Green Mountain Boxwood (Pyramidal)	Buxus microphylla 'Green Mountain'	5 Gal.	
SGJ	Sea Green Juniper	Juniperus chinensis 'Sea Green'	5 Gal.	24-30"
TMJ	Tam Juniper	Juniperus sabina 'Tamariscifolia'	5 Gal.	
WGB	Winter Green Boxwood	Buxus microphylla 'Winter Green'	5 Gal.	24-36"
Decidious Shrubs				
ABB	American Beauty Berry	Callicarpa americana	2 Gal.	
AHY	Annabelle Hydrangea	Hydrangea arborescens 'Annabelle'	2 Gal.	
BBH	Bobo Hydrangea	Hydrangea paniculata 'Bobo'	2 Gal.	
CPR	Carpet Rose	Rose 'Flower Carpet Pink'	2 Gal.	
DKL	Dwarf Korean Lilac	Syringa meyeri 'Palibin'	2 Gal.	
DRT	Dwarf Red Twig Dogwood	Cornus alba 'Ivory Halo'	2 Gal.	
GMS	Goldmound spirea	Spirea japonica 'Goldmound'	2 Gal.	
GLS	Grow Low Sumac	Rhus aromatica 'Gro-Low'	2 Gal.	
HIB	Hardy Hibiscus	Hibiscus lasiocarpos	2 Gal.	
HYD	Hydrangea 'Endless Summer'	Hydrangea macrophylla 'Endless Summer'	2 Gal.	
KNR	Knockout Rose	Rosa knockout	2 Gal.	
LHS	Little Henry Sweetspire	Itea virginica 'Little Henry's Garnet'	2 Gal.	
LLH	Limelight Hydrangea	Hydrangea paniculata 'Limelight'	2 Gal.	
MCS	Magic Carpet Spirea	Spirea japonica 'Magic Carpet'	2 Gal.	
VSS	Virginia Sweetspire	Itea virginica 'Henry's Garnet'	2 Gal.	
WIG	Spilled Wine Weigela	Weigela florida 'Spilled Wine'	2 Gal.	
Grasses				
KFG	Karl Foerster Grass	Calamagrostis x acutiflora 'Karl Foerster'	2 Gal.	
HMG	Heavy Metal Switch Grass	Panicum virgatum 'Heavy Metal'	2 Gal.	
MLG	Morning Light Maiden Grass	Miscanthus sinensis 'Morning Light'	2 Gal.	
VLR	Varigated Liriope	Liriope muscari variegata	6" pot	
Perennials				
ALL	Summer Beauty Allium	Allium 'Summer Beauty'		
BES	Black Eyed Susan	Rudbeckia hirta	1 Gal.	
CAT	Catmint	Nepeta x faassenii 'Walker's Low'	1 Gal.	
DAY	Daylily	Hemercallis 'Black Eyed Stella' or 'Little Business'	1 Gal.	
IRS	Blue Flag Iris	Iris virginica v. shrevei	1 Gal.	
MSG	Meadow Sage	Salvia nemorosa	1 Gal.	
PCF	Purple Cone Flower	Echinadea purpurea	1 Gal.	
Annuals				
	To be determined		6" pot	12" o.c.

GENERAL NOTES:

1. EACH BIDDER SHALL VISIT THE SITE OF THE PROPOSED WORK AND EXAMINE THE SITE CONDITIONS. HE SHALL ALSO CAREFULLY EXAMINE THE DRAWINGS FOR THE PROPOSED WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS, WHICH MAY AFFECT THE PROPOSED WORK.

2. THE PLANTING PLAN GRAPHICALLY ILLUSTRATES OVERALL PLANT MASSINGS. EACH PLANT SPECIES MASSING SHALL BE PLACED IN THE FIELD TO UTILIZE GREATEST COVERAGE OF GROUND PLANE. THE FOLLOWING APPLIES FOR INDIVIDUAL PLANTINGS:
   A. CREEPING GROUNDCOVER SHALL BE A MINIMUM OF 6" FROM PAVING EDGE.
   B. ALL TREES SHALL BE A MINIMUM OF 3' FROM PAVING EDGE.
   C. ALL PLANTS OF THE SAME SPECIES SHALL BE EQUALLY SPACED APART AND PLACED FOR BEST AESTHETIC VIEWING.
   D. ALL SHRUBS SHALL BE A MINIMUM OF 2' FROM PAVED EDGE.

3. NOTIFY LANDSCAPE ARCHITECT 1 WEEK PRIOR TO ANTICIPATED START OF PLANT MATERIAL INSTALLATION. LANDSCAPE CONTRACTOR SHALL STAKE ALL PROPOSED PLANTING BED EDGES, SET OUT SHRUBS IN INTENDED LOCATIONS, AND STAKE TREE LOCATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

4. ALL NEW PLANT BED AREAS TO BE IRRIGATED. REFER TO SPECIFICATIONS FOR IRRIGATION SYSTEM DESCRIPTION.

5. REFER TO L1.00 SERIES SHEETS FOR TREE PLANTINGS.

6. IN THE EVENT OF WORK IN OR ON THE JCW SANITARY MAIN. ANY TREES OR PLANTINGS PLACED WITHIN THE SEWER EASEMENT MAY BE REMOVED WITHOUT REPLACEMENT OR COMPENSATION THERE OF AND SHALL BE REPLACED BY THE PROPERTY OWNER AS REQUIRED BY THE CITY.

7. STRIP TOP SOIL & SAVE FOR PLANTING AREAS. EXCAVATE TO A DEPTH OF 18" FOR ALL PLANTING BEDS AND REPLACE WITH PLANTING SOIL MIX. REFER TO L3.00 FOR PLANTING SOIL MIX.

8. ROCK BEDS SHALL BE SALT & PEPPER COBBLES, 5"-10" SIZE, BY SEMCO DISTRIBUTORS OR APPROVED EQUAL. ALL ROCK BED AREAS SHALL HAVE FILTER FABRIC & BE 4" MIN. DEPTH.

9. DOG RUN AREA AND PET WASTE STATION SHALL BE MAINTAINED BY OWNER.

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ARCHITECT
01-20-2023

A NEW MULTIFAMILY DEVELOPMENT FOR:

56TH & FOXRIDGE

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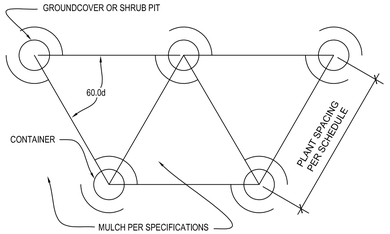
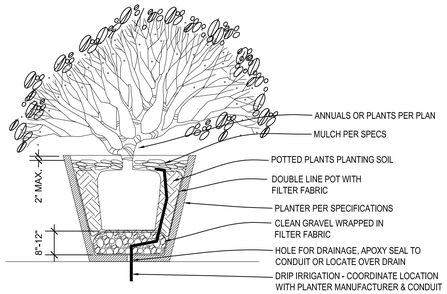
FINAL DEVELOPMENT PLAN

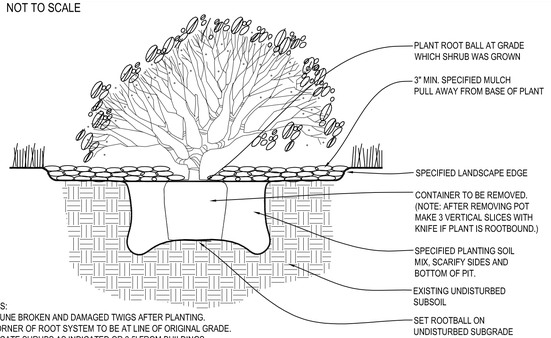


NOTES: 1. SPACING FOR GROUNDCOVERS, SHRUBS, AND PERENNIALS NOTED ON PLANS.
2. TILL SOIL IN BED TO A 12" MINIMUM DEPTH AND THOROUGHLY MIX IN SOIL AMENDMENTS AS SPECIFIED.

9 PLANT SPACING DETAIL
NOT TO SCALE

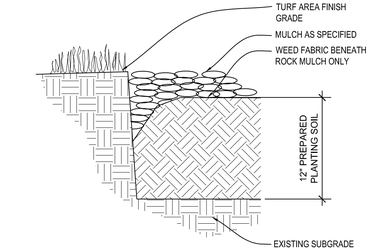


3 TYPICAL FREESTANDING PLANTER
NOT TO SCALE

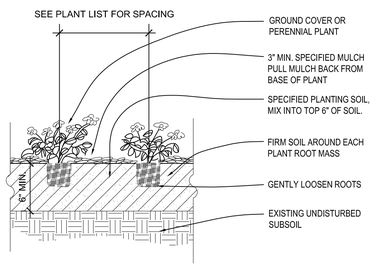


NOTES:
1. PRUNE BROKEN AND DAMAGED TWIGS AFTER PLANTING.
2. CORNER OF ROOT SYSTEM TO BE AT LINE OF ORIGINAL GRADE.
3. LOCATE SHRUBS AS INDICATED OR 3.5' FROM BUILDINGS, SIDEWALKS, CURBS OR OTHER EDGE CONDITIONS.

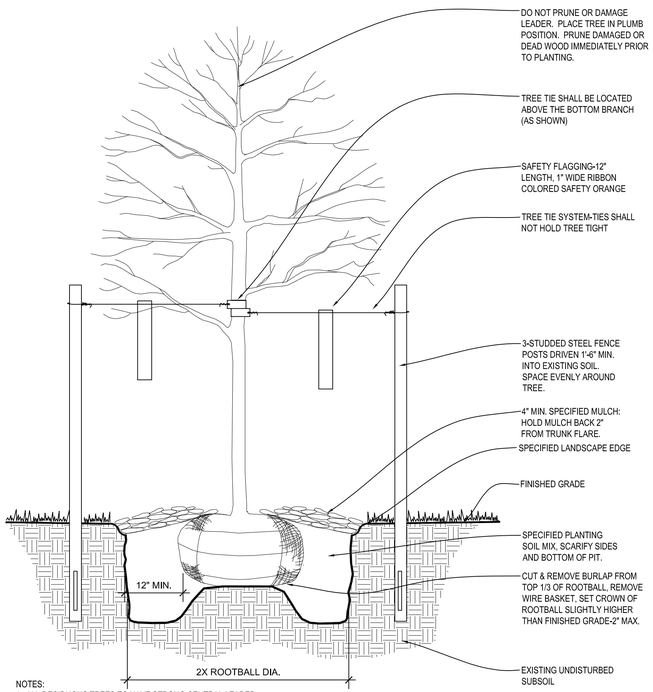
2 SHRUB PLANTING DETAIL
NOT TO SCALE



7 V-CUT EDGING DETAIL
NOT TO SCALE

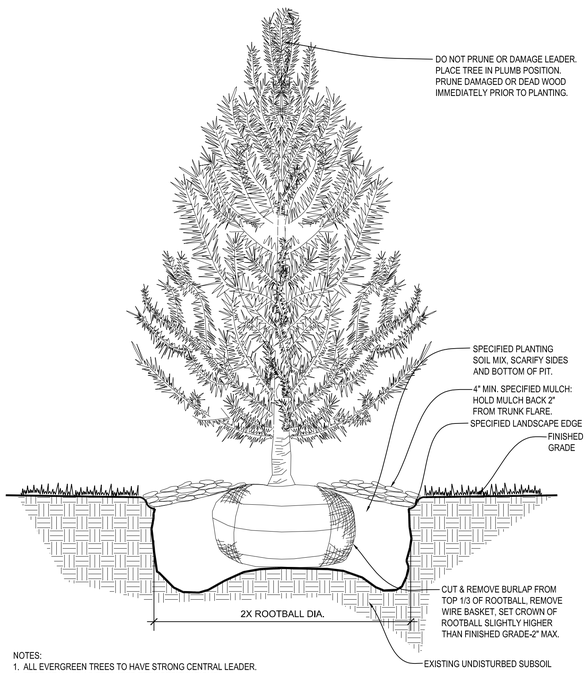


6 PERENNIAL & GROUND COVER PLANTING
NOT TO SCALE



NOTES:
1. ALL DECIDUOUS TREES TO HAVE STRONG CENTRAL LEADER.
2. TREE STAKING AS REQUIRED PER SPECIFICATIONS.

4 DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



NOTES:
1. ALL EVERGREEN TREES TO HAVE STRONG CENTRAL LEADER.
2. TREE STAKING AS REQUIRED PER SPECIFICATIONS.

1 EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

GENERAL NOTES:

1. EACH BIDDER SHALL VISIT THE SITE OF THE PROPOSED WORK AND EXAMINE THE SITE CONDITIONS. HE SHALL ALSO CAREFULLY EXAMINE THE DRAWINGS FOR THE PROPOSED WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS, WHICH MAY AFFECT THE PROPOSED WORK.
2. THE PLANTING PLAN GRAPHICALLY ILLUSTRATES OVERALL PLANT MASSING. EACH PLANT SPECIES MASSING SHALL BE PLACED IN THE FIELD TO UTILIZE GREATEST COVERAGE OF GROUND PLANE. THE FOLLOWING APPLIES FOR INDIVIDUAL PLANTINGS:
   A. CREEPING GROUNDCOVER SHALL BE A MINIMUM OF 6" FROM PAVING EDGE.
   B. ALL TREES SHALL BE A MINIMUM OF 3' FROM PAVING EDGE.
   C. ALL PLANTS OF THE SAME SPECIES SHALL BE EQUALLY SPACED APART AND PLACED FOR BEST AESTHETIC VIEWING.
   D. ALL SHRUBS SHALL BE A MINIMUM OF 2' FROM PAVED EDGE.
3. NOTIFY LANDSCAPE ARCHITECT 1 WEEK PRIOR TO ANTICIPATED START OF PLANT MATERIAL INSTALLATION. LANDSCAPE CONTRACTOR SHALL STAKE ALL PROPOSED PLANTING BED EDGES, SET OUT SHRUBS IN INTENDED LOCATIONS, AND STAKE TREE LOCATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
4. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY AND ALL PLANT MATERIALS PROPOSED FOR USE ON THE PROJECT.
5. CONTRACTOR WILL BE RESPONSIBLE FOR PLANTING ALL PLANT MATERIAL INDICATED ON THE PLANS. PLANT SCHEDULE IS FOR SUMMARY ONLY. VERIFY ALL PLANT QUANTITIES PRIOR TO BIDDING.
6. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF EXISTING TREES & PLANT MATERIAL AS INDICATED ON PLAN AND AS DIRECTED BY LANDSCAPE ARCHITECT. RELOCATE PERENNIALS & SHRUBS TO LOCATION INDICATED ON PLAN AND AS DIRECTED BY LANDSCAPE ARCHITECT.
7. REPORT ANY DISCREPANCIES FOUND WITH REGARD TO EXISTING CONDITIONS OR PROPOSED DESIGN IMMEDIATELY TO THE LANDSCAPE ARCHITECT. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHERE IT IS FOUND THAT KNOWN DISCREPANCIES EXIST. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER RELATED SITE WORK BEING PERFORMED TO ACCOMPLISH SITE CONSTRUCTION OPERATIONS.
9. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
10. PLANT MATERIAL SHALL BE MAINTAINED AND GUARANTEED FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE OF FINISHED JOB. ALL DEAD OR DAMAGED PLANT MATERIAL SHALL BE REPLACED AT LANDSCAPE CONTRACTOR'S EXPENSE PRIOR TO ACCEPTANCE. RECOMMENDED DATES FOR PLANT MATERIAL INSTALLATION SHALL BE FEBRUARY 15 - MAY 15 AND SEPTEMBER 15 - DECEMBER 15.
11. THE PROJECT MAY BE AWARDED COMPLETION IN PHASES BUT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER & LANDSCAPE ARCHITECT WHEN A PHASE IS COMPLETE & A FINAL WALK THROUGH CAN TAKE PLACE. CONTRACTOR SHALL IDENTIFY ON THE PLANS THE LIMITS OF COMPLETED WORK AND/OR PHASES PRIOR TO THE WALK THROUGH.
12. LANDSCAPE CONTRACTOR SHALL MAINTAIN ALL PLANT MATERIAL UNTIL FINAL ACCEPTANCE, AT WHICH POINT THE ONE YEAR GUARANTEE BEGINS.

MATERIALS:

13. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF DISEASE AND INSECTS AS PER AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS.
14. PLANT MATERIAL SHALL NOT BE PRUNED PRIOR TO INSTALLATION. AFTER PLANTS HAVE BEEN INSTALLED, EACH PLANT SHALL BE PRUNED TO UNIFORMITY.
15. SHREDDED BARK MULCH SHALL BE FINELY CHIPPED AND SHREDDED DARK BROWN HARDWOOD CHIPS CONSISTING OF PURE WOOD PRODUCTS AND FREE OF ALL FOREIGN SUBSTANCES.
16. CONTRACTOR SHALL USE AN APPROVED TREE TIE SYSTEM THAT IS EASILY ADJUSTABLE, STRONG IN ALL WEATHER, AND EASILY ATTACHED AND REMOVED. HOSE AND WIRE ARE NOT ACCEPTABLE FOR STAKED TREES. PROVIDE THE FOLLOWING OR APPROVED EQUAL: "CINCH TIES" BY J. LICHTENTHALER, "ADJA-TYPE" BY HEAVYWEIGHT ONLY, A PLASTIC CHAIN TWIST TIE, OR "PLASTIC BINDER TYE" A TIE WITH TAPERED BEADS THAT SNAP LOCK BY A.M. LEONARD AND SONS.
17. SOD SHALL BE CERTIFIED TURFGRASS SOD COMPLYING WITH ASPA SPECIFICATIONS FOR MACHINE-CUT THICKNESS, SIZE, STRENGTH, MOISTURE CONTENT, AND MOWED HEIGHT, AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. SOD SHALL BE A BLEND OF NOT LESS THAN 3 IMPROVED KENTUCKY BLUEGRASS (POSPARATENSIS) VARIETIES, A NATIVE MIXTURE OF HOUNDOG, REBEL, OR FALCON, FINE LEAFED TALL FESCUE (FESTUCA ARUNDINACEA), AND RYE (LOLIUM JULTIFLORUM AND PERENE DOMESTIC). IT SHALL BE A MIX OF 20% KENTUCKY BLUEGRASS, 70% FINELEAFED TALL FESCUE, AND 10% RYE. SOD SHALL BE WELL ROOTED, 2 YEAR OLD STOCK, HARVESTED IN ROLLS, FERTILIZED 2-3 WEEKS PRIOR TO CUTTING. ALL SOD SHALL BE MACHINE CUT AND VIGOROUSLY GROWING (NOT DORMANT). MAXIMUM TIME FROM STRIPPING TO PLANTING SHALL BE 24 HOURS.
18. ALL NEW PLANT BED AREAS TO BE IRRIGATED. REFER TO SPECIFICATIONS.
19. STEPPING STONES SHALL BE JAMES CREEK (RECTILINEAR OR ASHLAR AS IDENTIFIED IN THE PLANS), BY HOUSE OF ROCKS OR APPROVED EQUAL. 1"-3" THICK.
20. ROCK BEDS SHALL SHALL BE BUFFALO RIVER ROCK, 1"-2.5", BY HOUSE OF ROCKS OR APPROVED EQUAL. ALL ROCK BED AREAS SHALL HAVE FILTER FABRIC & BE 4" MIN. DEPTH.

INSTALLATION:

11. STRIP TOP SOIL & SAVE FOR PLANTING AREAS. EXCAVATE TO A DEPTH OF 12" FOR ALL PLANTING BEDS AND REPLACE WITH PLANTING SOIL MIX. A 10-10-10 FERTILIZER SHALL BE SPREAD OVER ALL PLANTING AREAS PRIOR TO PLANTING, AT A RATE OF 50 POUNDS PER 2,000 SQUARE FEET.
12. AFTER PLANTS HAVE BEEN INSTALLED, ALL PLANTING BEDS SHALL BE TREATED WITH DACTHAL PRE-EMERGENT HERBICIDE PRIOR TO MULCH APPLICATION.
13. PLANT PIT BACKFILL FOR TREES AND SHRUBS SHALL BE 25% COTTON BOLL COMPOST, AND 25% TOPSOIL, AND 50% EXISTING SOIL. TOPSOIL SHALL BE NATURAL FERTILE, FRIABLE SOIL POSSESSING CHARACTERISTICS OF REPRESENTATIVE PRODUCTIVE SOILS IN THE AREA. SOIL SHALL NOT BE EXCESSIVELY ACID, ALKALINE OR TOXIC THAT MAY BE HARMFUL TO PLANT GROWTH. ALSO, FREE OF CLAY LUMPS, STONES, STUMPS, ROOTS OR SUBSTANCE 2" OR MORE IN DIAMETER.
14. PLANTED BED EDGES SHALL BE IN STRAIGHT LINES OR GENTLE FLOWING CURVES. SUDDEN CURVES OR SHARP ANGLES SHOULD BE AVOIDED.
15. V-CUT EDGE SHALL BE DUG TO 6" DEPTH WITH ANGLED EDGE ON LANDSCAPE BED SIDE, AND VERTICAL EDGE ON TURF SIDE. BACKFILL V-CUT EDGE WITH SHREDDED HARDWOOD MULCH TO GRADE.
16. MULCH ALL PLANTING BED AREAS TO A MINIMUM DEPTH OF 3". MULCH INDIVIDUAL TREES TO A MINIMUM DEPTH OF 4".

IRRIGATION PERFORMANCE SPECIFICATIONS:

PROVIDE 100% COVERAGE COMPLETE WORKING IRRIGATION SYSTEM FOR ALL NEW TURF AREAS (SEED AND/OR SOD), ALL NEW PLANTING BEDS, AND ALL NEW TREES AND EXISTING TREES TO REMAIN. INCLUDE ELECTRICAL CONNECTION AND IRRIGATION SLEEVES AS NECESSARY. DRIP IRRIGATE ALL PLANTING BEDS. PRIOR TO INSTALLATION, PROVIDE PLAN SHOWING ALL IRRIGATION MATERIALS INCLUDING ALL EQUIPMENT SIZES AND DETAILS TO LANDSCAPE ARCHITECT FOR APPROVAL. COMPLY WITH REQUIREMENTS OF AUTHORITY WITH JURISDICTION FOR IRRIGATION SYSTEMS & BACKFLOW PREVENTOR. CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TO LANDSCAPE ARCHITECT & OWNER AFTER FINAL INSTALLATION AND PRIOR TO FINAL ACCEPTANCE. INCLUDING ALL HEAD & EQUIPMENT LOCATIONS & MAINTENANCE DATA FOR ALL EQUIPMENT PROVIDED. CONTRACTOR SHALL PROVIDE AN ON-SITE WALK THROUGH OF THE SYSTEM AND FULLY DESCRIBE ITS OPERATION WITH OWNER. CONTRACTOR SHALL ACHIEVE FINAL ACCEPTANCE WHEN SYSTEM IS FULLY OPERATIONAL, AND APPROVED BY OWNER, AND AS-BUILT DRAWINGS AND PROJECT MANUALS HAVE BEEN ACCEPTED AND APPROVED.

PIPING SPECIFICATIONS:

A. MINIMUM WORKING PRESSURE RATINGS:
   1. PRESSURE PIPING: 150 PSIG (1035 KPA).
   2. CIRCUIT AND DRAIN PIPING: 100 PSIG (690 KPA)
B. MAIN LINE TO BE CL-200 POLYVINYL CHLORIDE PIPE OR ASTM D 1785, PVC 1120, SCHEDULE 40, SOCKET-TYPE FITTINGS; AND SOLVENT-CEMENTED JOINTS OR APPROVED EQUAL.
   1. PIPE UP TO AND INCLUDING 2-1/2 INCHES IN DIAMETER SHALL HAVE BELL AND SOCKET JOINTS.
   2. PIPE GREATER THAT 2-1/2 INCHES IN DIAMETER SHALL HAVE SNAP CONNECTIONS WITH RUBBER GASKET JOINTS.
      A. THRUST BLOCKS SHALL BE REQUIRED IN CONJUNCTION WITH RUBBER GASKET JOINT PIPE.
C. LATERAL LINES TO BE CL-200 PVC PIPE OR APPROVED EQUAL.
D. DRIP TUBING: POLY TUBING OR APPROVED EQUAL
E. SLEEVES: MINIMUM DIAMETER OF 2 TIMES LARGER THAN THE PIPE OR PIPE(S) SCHEDULED TO PASS THROUGH THEM. SLEEVES SHALL BE A MINIMUM OF 2 INCH DIAMETER AND SHALL BE SCHEDULE 40 PVC PIPE.
F. PLASTIC FITTINGS:
   1. UTILIZED THROUGHOUT THE SYSTEM (MAINS AND LATERALS) IN WARM CLIMATES AND MAIN LINES IN COLDER CLIMATES: SCHEDULE 40 PVC PIPE.
   2. UTILIZED FOR LATERALS OF FLEXIBLE POLYETHYLENE PIPE, TYPE 1 PVC INSERT FITTINGS DESIGNED FOR USE WITH THIS TYPE OF PIPE CONFORMING TO ASTM D 2609.
      A. PIPE AND FITTINGS SHALL BE JOINED WITH STAINLESS STEEL LOCKING PINCH CLAMPS OR STAINLESS STEEL SCREW CLAMPS.
G. MINIMUM COVER:
   1. IN LAWN AND PLANTING AREAS:
      A. MAINS - MINIMUM 18 INCHES BELOW FINISH GRADE.
      B. LATERALS AND CONTROL VALVES - MINIMUM 12 INCHES BELOW FINISH GRADE.
   2. ROADWAYS OR PARKING AREAS: MINIMUM 24 INCHES BELOW FINISH GRADE.
H. CLEARANCES: MINIMUM OF 3-INCHES BETWEEN PARALLEL LINES IN THE SAME TRENCH OR VERTICAL CLEARANCE BETWEEN LINES CROSSING AT ANGLES.

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KATHLEEN MARTINOVICH LICENSED LANDSCAPE ARCHITECT 1373
01.20.2023

DEVELOPMENT FOR:
56TH & FOXRIDGE
A NEW MULTIFAMILY DEVELOPMENT
MISSION, KANSAS

DRAWING RELEASE LOG
- 01.20.23 FDP SUBMITTAL

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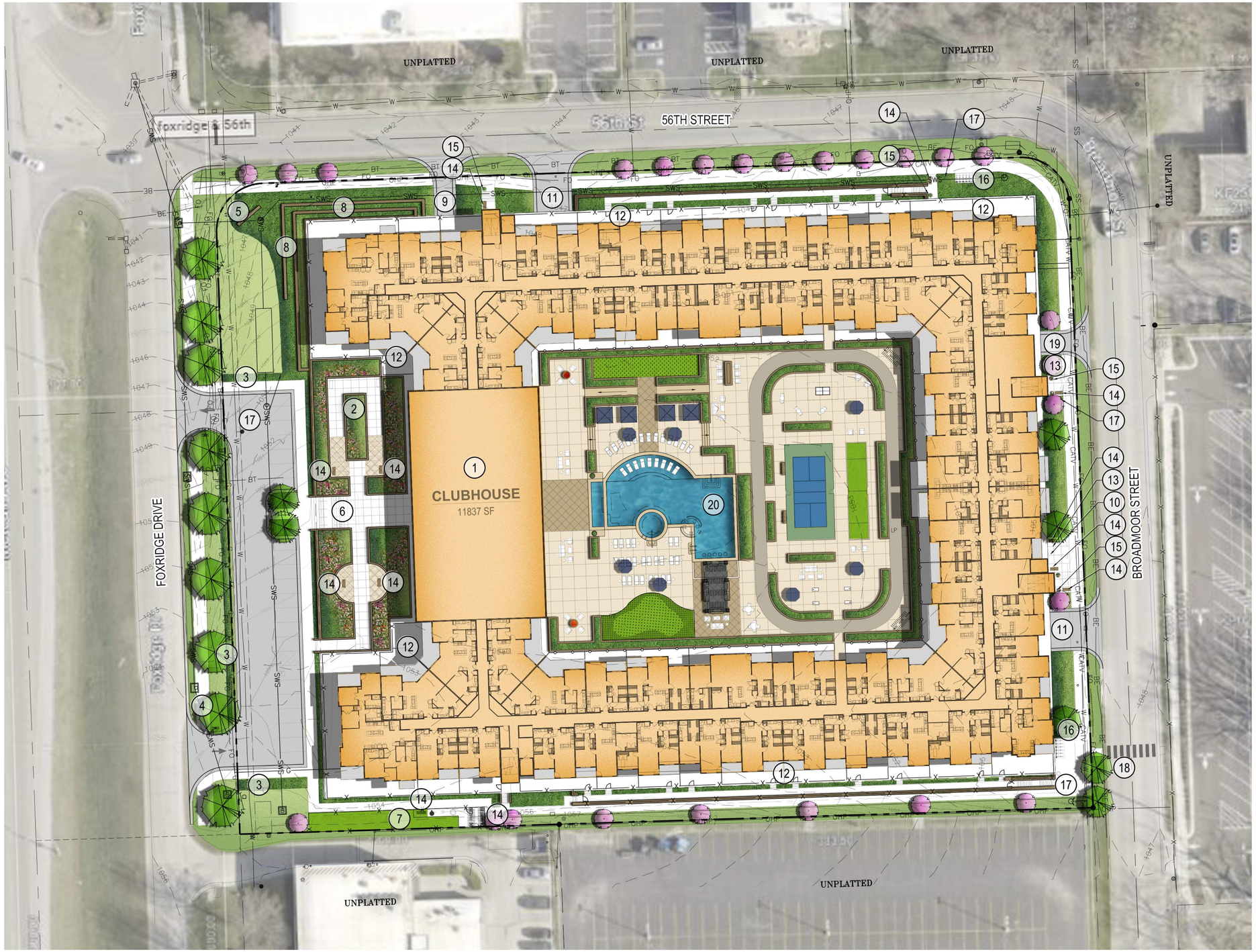
FINAL DEVELOPMENT PLAN



AMENITIES

1. CLUBHOUSE - SEE ARCHITECTURE
2. SCULPTURE
3. LANDSCAPE HEDGE - SEE LANDSCAPE PLANS
4. 8' CONCRETE TRAIL
5. SIGN WALL - SEE ARCHITECTURE DETAILS
6. ENTRY PLAZA
7. DOG RUN W/ PET WASTE STATION & BENCH TO BE MAINTAINED BY OWNERSHIP
8. RETAINING WALL - SEE CIVIL
9. TRASH ENTRANCE - SEE ARCHITECTURE
10. DOG SPA ENTRANCE - SEE ARCHITECTURE
11. GARAGE ENTRANCE - SEE ARCHITECTURE
12. UNIT PATIOS W/ FENCES & GATES
13. SPECIAL PAVING
14. BENCH, TYP.
15. PLANTER, TYP.
16. BIKE RACKS
17. PET WASTE STATION
18. CROSSWALK TO PARK - SEE CIVIL
19. LOADING - SEE ARCHITECTURE
20. AMENITY COURTYARD - SEE SP1.01

SITE PLAN
1"=30'-0"

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KATHLEEN M. MARTINOVICH LICENSED KANSAS ARCHITECT L-1723
01.20.2023

A NEW MULTIFAMILY DEVELOPMENT FOR:

56TH & FOXRIDGE

MISSION, KANSAS

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FINAL DEVELOPMENT PLAN

AMENITIES

1. CLUBHOUSE - SEE ARCHITECTURE
2. STAMPED & COLORED CONCRETE PAVEMENT
3. WATER FEATURE
4. RAISED PLANTER
5. POOL W/ SHALLOW LEDGE, SWIM UP BAR & LAP LANE
6. SPA
7. ADA LIFT
8. PUTTING GREEN
9. ROOF COVERED GRILL STRUCTURE
10. TRELLIS W/ SWINGS
11. BAGS GAMES
12. PICKLEBALL COURT
13. BOCCE COURT
14. PING PONG TABLE
15. RUNNING TRACK
16. TV WALL W/ FIREPLACE
17. ADA RAMP
18. CABANAS
19. SYNTHETIC TURF AREA
20. EXTENDED UNIT PATIOS
21. POOL FENCE

COURTYARD ENLARGEMENT PLAN
1"=10'-0"

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KATHERINE M. MARTINOVICH
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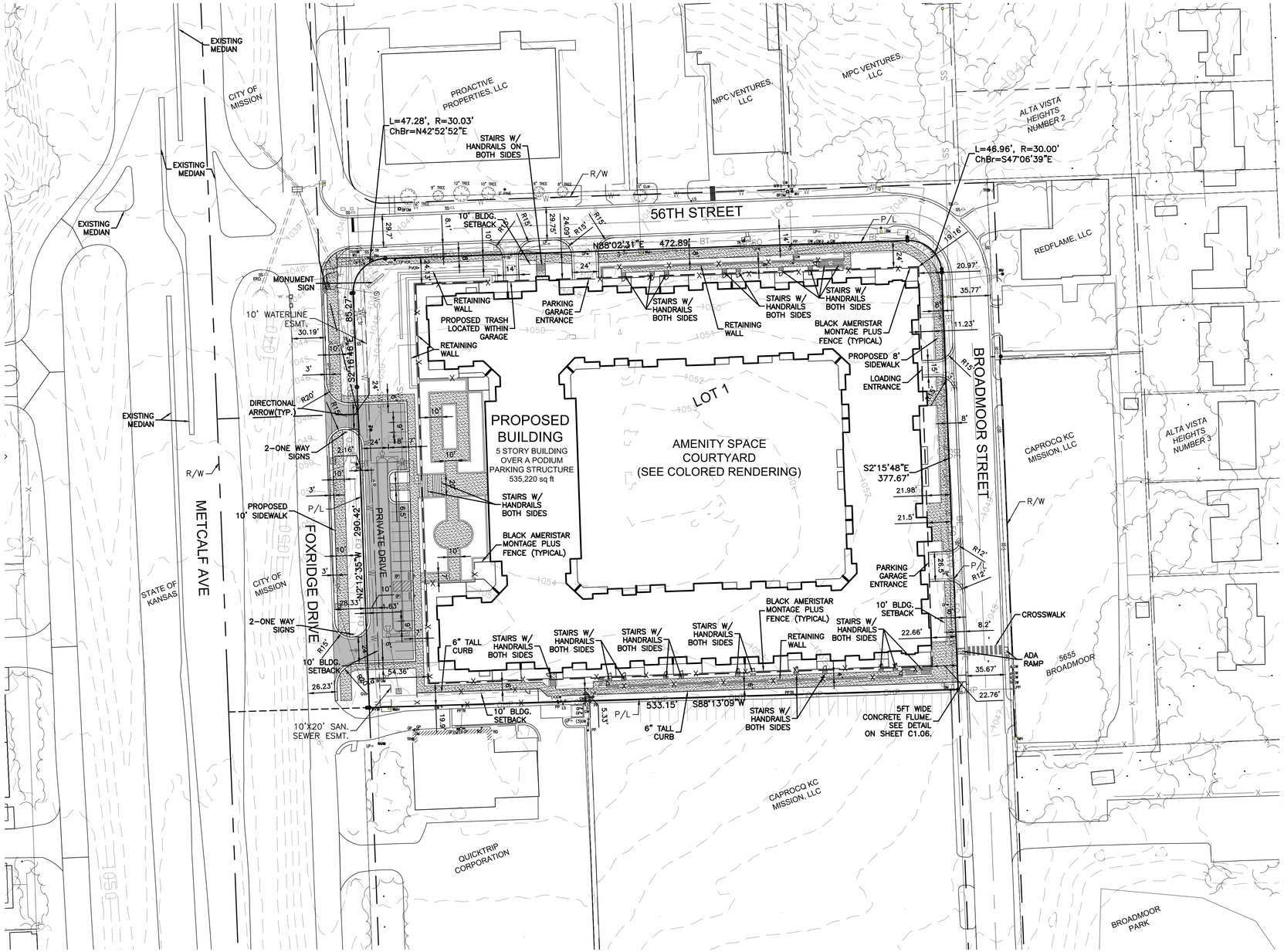
FINAL DEVELOPMENT PLAN

Lot Summary		Building Summary								Parking Summary	
Lot Number	Lot Area	Use/Zoning	Stories	Lot Coverage (ac)	Lot Coverage %	Building Floor Area (sf)	Floor Area Ratio	Total Units	Total Density	Provided	Required
Lot 1	4.97 Ac.	HIGH-RISE APARTMENT/M-P	5 Story	3.85	77.4	535,220	2.47	**307**	**61.8 units/acre**	466*	461

*TOTAL OF 9 ADA PARKING SPACES REQUIRED AND PROVIDED. 2 ADA SPACES IN THE EXTERIOR PARKING LOT. 7 ADA SPACES IN THE INTERIOR GARAGE PARKING LOT.

NOTES:

1. SEE SHEET C1.02 FOR UTILITIES AND EASEMENT LABELS.
2. EXISTING 4.97–ACRE SITE CONTAINS 3.40 ACRES OF IMPERVIOUS AREA ASSOCIATED WITH PARKING LOT, SIDEWALK, AND BUILDING. THE PERCENTAGE OF GREENSPACE FOR THE EXISTING SITE IS 32%.
3. PROPOSED PROJECT ON 4.97–ACRE SITE CONTAINS 3.93 ACRES OF IMPERVIOUS AREA ASSOCIATED WITH PARKING LOT, SIDEWALK, AND BUILDING. THE PERCENTAGE OF GREENSPACE FOR THE PROPOSED PROJECT IS 22%.



PROPERTY DESCRIPTION:

All that part of the Northwest corner of Section 8, Township 12 South, Range 25 East of the 6th Principal Meridian in the City of Mission, Johnson County, Kansas, described as follows:

Commencing at the Southwest corner of the Northwest Quarter of said Section 8; thence along the West line thereof N2°15'08"W a distance of 1355.05'; thence departing said line N88°13'09"E a distance of 127.35' to a point on the East right-of-way of US 69 Highway (Metcalf Road), as now established, and Point of Beginning: thence continuing N88°13'09"E a distance of 533.15' to a point on the West right-of-way of Broadmoor Street, as now established; thence along said line N2°15'48"W a distance of 377.67'; thence along a curve to the left having a radius of 30.00', a chord bearing of N47°06'39"W an arc length of 46.96'; thence continuing along and becoming the South right-of-way of 56th Street, as now established, S88°02'31"W a distance of 472.89'; thence continuing along said right-of-way along a curve to the left having a radius of 30.03'; a chord bearing of S42°52'52"W and an arc length of 47.28' to a point on the East right-of-way of Foxridge Drive, as now established; thence along said East line S2°16'46"E a distance of 85.27'; thence continuing along said line S2°12'35"E a distance of 290.42' to the Point of Beginning, containing 216,363 square feet or 4.967 acres, more or less, subject to easements and restrictions of record.

PAVING LEGEND

- CONCRETE SIDEWALK
- CONCRETE SECTION
- ASPHALT SECTION

N

SCALE: 1"=50'
0 50 100

REVISIONS

DATE
01.20.2023
JOB NO.
700321
DRAWN BY:
JLB
SHEET NO.
C1.01

SITE PLAN
NOT FOR CONSTRUCTION

A MULTI-FAMILY DEVELOPMEN FOR:
56TH AND FOXRIDGE
MISSION, KANSAS

DRAWING RELEASE LOG
● 01.20.23 - FDP SUBMITTAL

NOT FOR CONSTRUCTION

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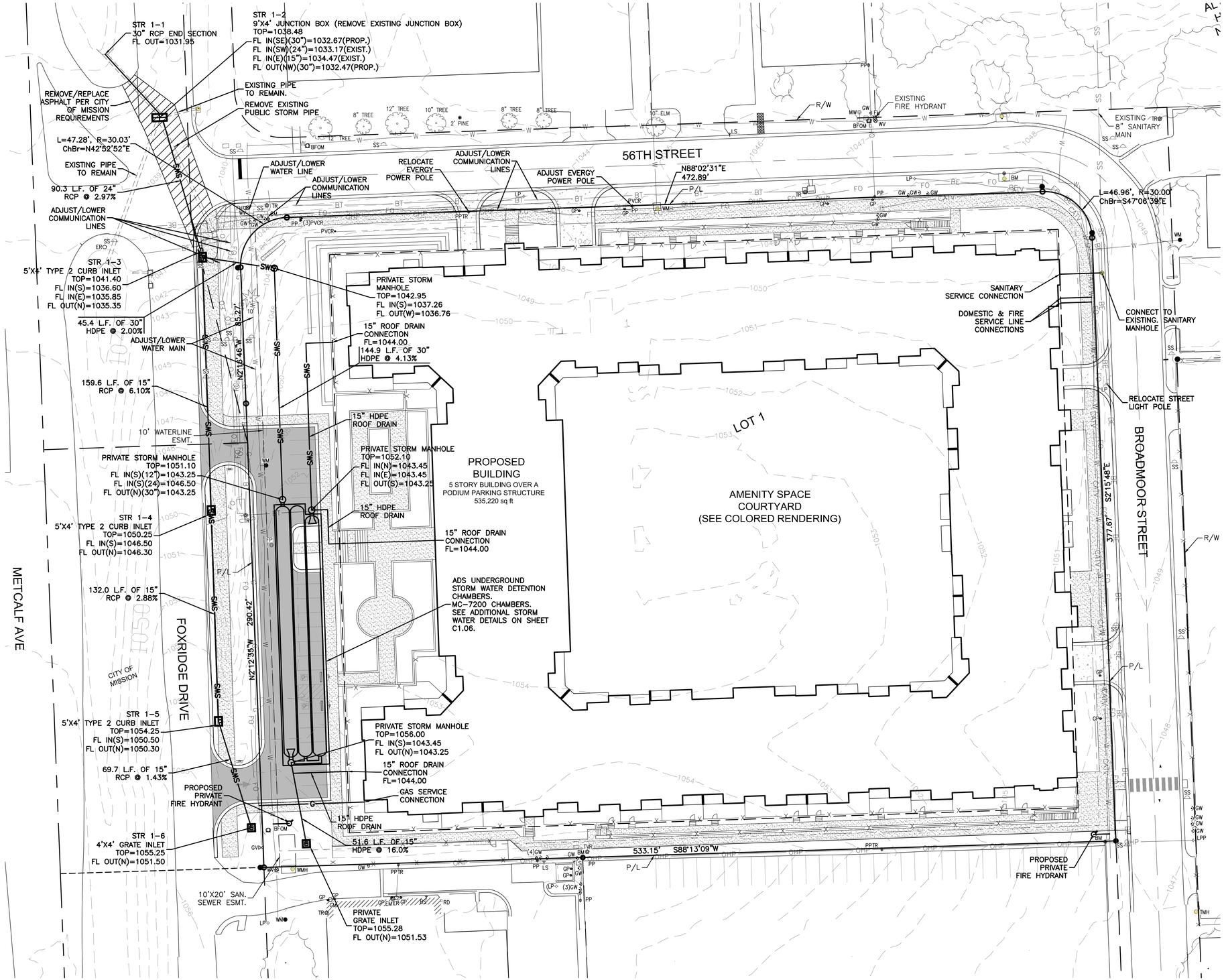

NOTES:

1. SEE SHEET C1.06 FOR ADDITIONAL STORMWATER DETENTION AND DRAINAGE PLAN DETAILS.
2. STORM WATER SEWER SYSTEM DESIGN INFORMATION IS APPROXIMATE AND WILL BE FINALIZED WITH CONSTRUCTION DOCUMENTS.

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A MULTI-FAMILY DEVELOPMEN FOR:
56TH AND FOXRIDGE
MISSION, KANSAS

DRAWING RELEASE LOG
● 01.20.23 - FDP SUBMITTAL

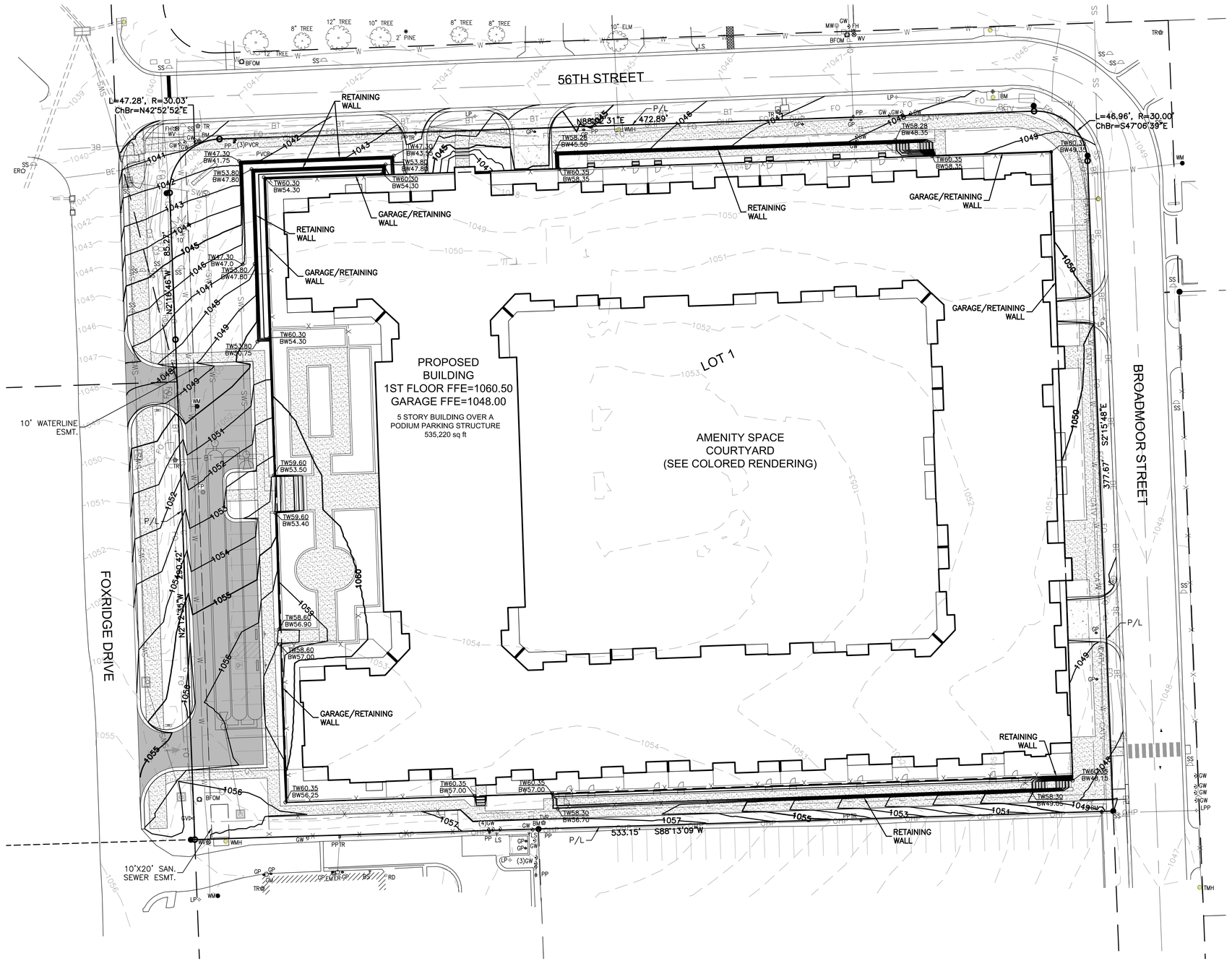
N

SCALE: 1"=30'
0 30 60

REVISIONS

DATE
01.20.2023
JOB NO.
700321
DRAWN BY:
JLB
SHEET NO.
C1.02

UTILITY PLAN
NOT FOR CONSTRUCTION



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A MULTI-FAMILY DEVELOPMEN FOR:

56TH AND FOXRIDGE
MISSION, KANSAS

DRAWING RELEASE LOG

● 01.20.23 -FDP SUBMITTAL

N

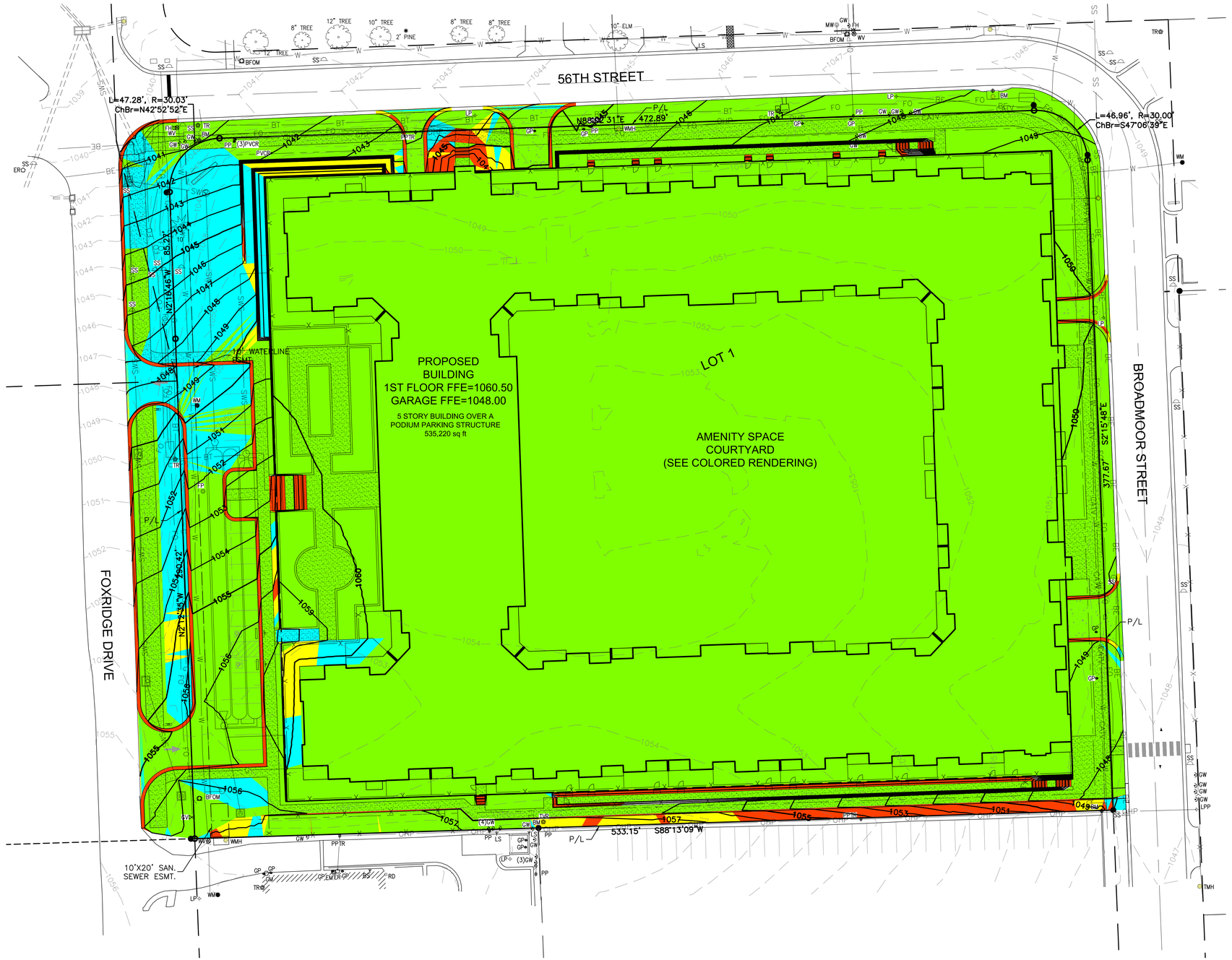
SCALE: 1"=30'
0 30 60

REVISIONS

DATE
01.20.2023
JOB NO.
700321
DRAWN BY:
JLB
SHEET NO.

GRADING PLAN
NOT FOR CONSTRUCTION

C1.03



Slopes Table				
Number	Minimum Slope	Maximum Slope	Area	Color
1	0.00%	5.99%	211191.56	
2	6.00%	10.99%	15319.83	
3	11.00%	17.99%	2985.34	
4	18.00%	100.00%	6439.50	

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A MULTI-FAMILY DEVELOPMEN FOR:

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MISSION, KANSAS

DRAWING RELEASE LOG
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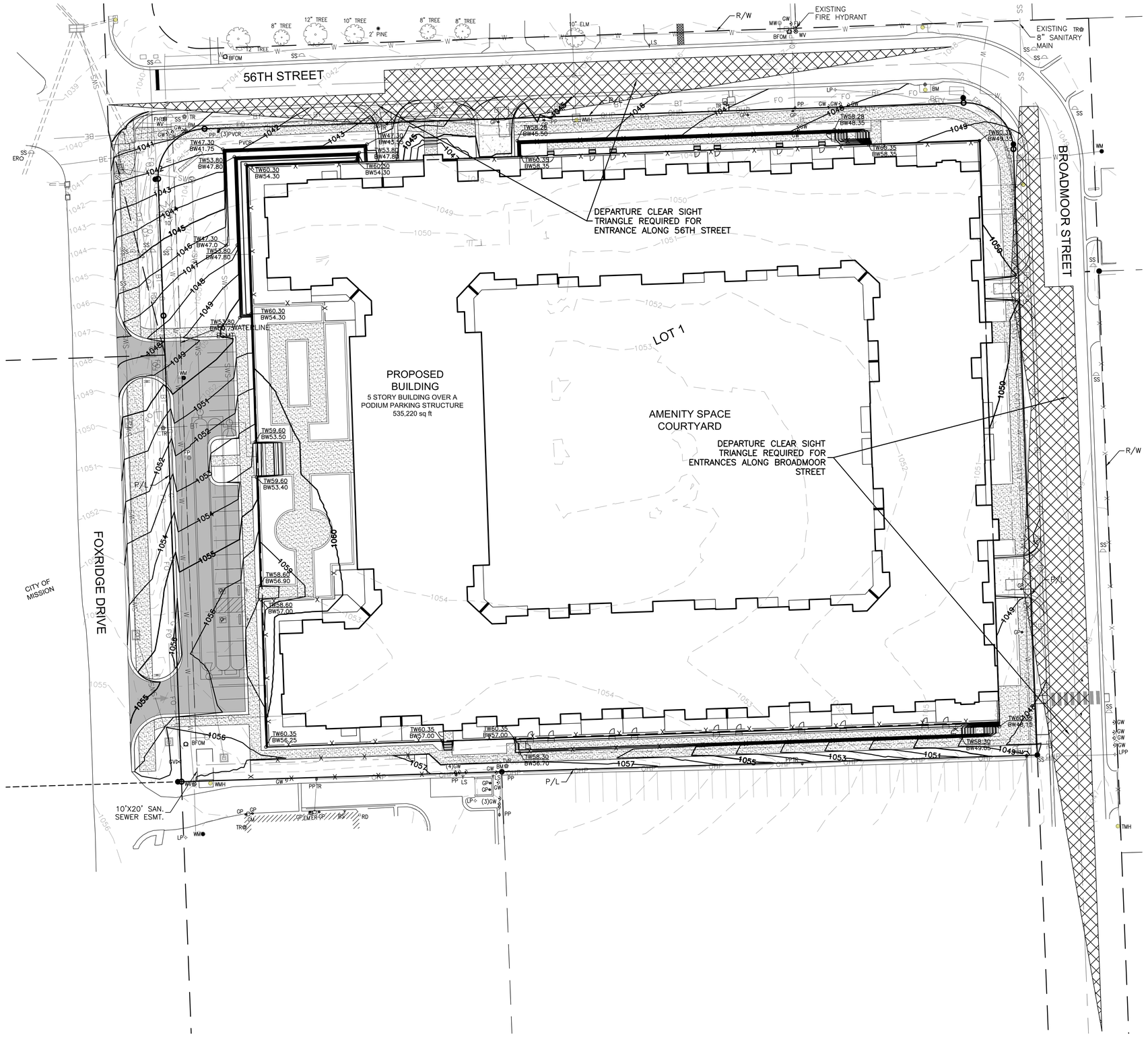
N

SCALE: 1"=30'
0 30 60

REVISIONS

DATE
01.20.2023
JOB NO.
700321
DRAWN BY:
JLB
SHEET NO.
C1.04

SLOPE ANALYSIS
NOT FOR CONSTRUCTION



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DRAWING RELEASE LOG
- 01.20.23 - FDP SUBMITTAL

N

SCALE: 1"=30'
0 30 60

REVISIONS

DATE
01.20.2023
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CLEAR SIGHT TRIANGLES
NOT FOR CONSTRUCTION

C1.05

PROPOSED SITE- NW
UNDETAINED
1.06 AC

ADS UNDERGROUND
ISOLATOR ROW
CHAMBER
(WATER QUALITY BMP)

BUILDING ROOF DRAIN
CONNECTION.
WATERSHED AREA=±1.16 AC

PROPOSED BUILDING

BUILDING ROOF DRAIN
CONNECTION.
WATERSHED AREA=±1.16 AC

LOT 1

PROPOSED SITE- NW
DETAINED
3.64 AC

BUILDING ROOF DRAIN
CONNECTION.
WATERSHED AREA=±1.16 AC

5' WIDE CONCRETE
FLUME. SEE DETAIL
THIS SHEET.

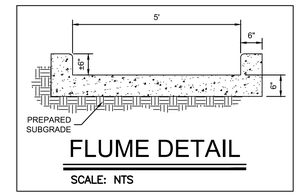
PROPOSED SITE- SE
0.29 AC

ADS UNDERGROUND
DETENTION FACILITY
STORMTECH MC-7200 CHAMBERS
INSTALLED VOLUME PROVIDED=
19,970 CF

56TH STREET

FOXRIDGE DRIVE

BROADMOOR STREET



FLUME DETAIL

SCALE: NTS

NOTES:

1. SEE THE FINAL DRAINAGE REPORT INCLUDED WITH THE FINAL DEVELOPMENT PLAN SUBMITTAL FOR ADDITIONAL WATERSHED, DETENTION FACILITY, AND GENERAL STORM WATER DETAILS/INFORMATION.

LEGEND

- FLOW ARROW
- DRAINAGE AREA
- EXIST. STORMWATER SEWER
- PROP. STORMWATER SEWER

N

SCALE: 1"=30'
0 30 60

STORMWATER & DRAINAGE PLAN
NOT FOR CONSTRUCTION

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DRAWING RELEASE LOG
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DATE
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700321
DRAWN BY:
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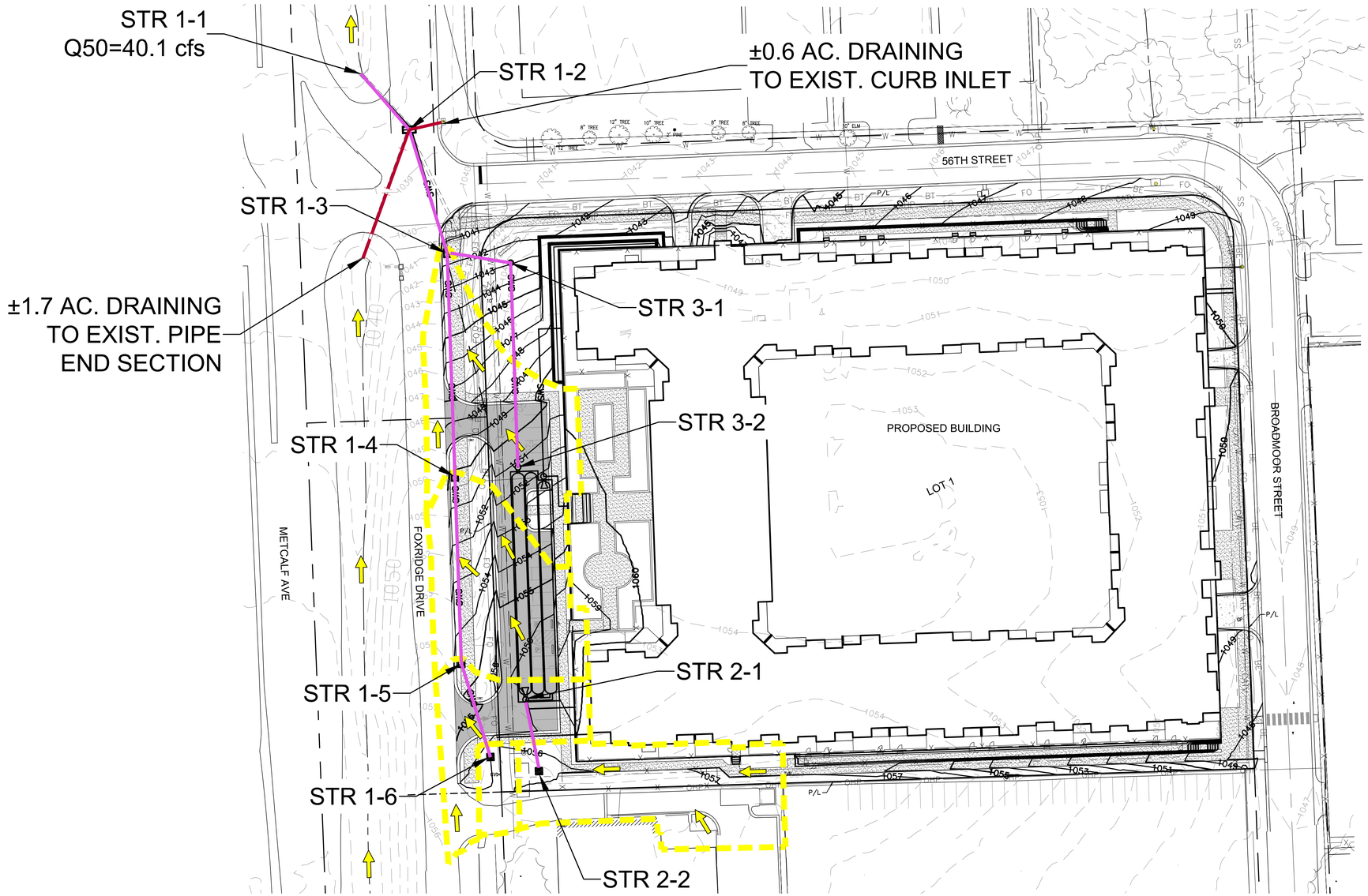
C1.06



LEGEND

- FLOW ARROW
- DRAINAGE AREA
- EXIST. STORMWATER SEWER
- PROP. STORMWATER SEWER

NOTES:

1. SEE THE FINAL DRAINAGE REPORT INCLUDED WITH THE FINAL DEVELOPMENT PLAN SUBMITTAL FOR ADDITIONAL WATERSHED, DETENTION FACILITY, AND GENERAL STORM WATER DETAILS/INFORMATION.

STR ID				DRAINAGE AREA "A"		RUNOFF COEFF "C"	RETURN FREQ.	K	A x C x K		K_{100}	A x C x K (100-yr)		TIME OF CONCENTRATION		RAIN "I"	RAIN "I_{100}"	**RUNOFF "Q" (CFS)**	RUNOFF "Q_{100}" (CFS)	PIPE DIA. (IN)	PIPE TYPE	LENGTH (FT)	TOP ELEV. (FEET)	INVERT ELEVATION		SLOPE (FT/FT)	Q_{FULL} **(CFS)**	Q_{INLT} **(CFS)**	VELOCITY		
LINE NO.	TYPE	**FROM**	TO	INC (AC)	TOTAL (AC)				INC. (AC)	TOTAL (AC)		INC. (AC)	TOTAL (AC)	INLET (MIN)	SYSTEM (MIN)	"I" (IN/HR)	"I_{100}" (IN/HR)							U/S (FEET)	D/S (FEET)				FULL (FPS)	d_n (IN)	DESIGN (FPS)
1	GI	**1-6**	1-5	0.1	0.1	0.55	50	1.20	0.1	0.1	1.25	0.1	0.1	5.0	5.0	9.4	10.3	**0.6**	0.7	12	RCP	69.70	1055.25	1051.50	1050.50	0.0143	**4.3**	**6.1**	5.4	*3.1*	3.9
	CI	**1-5**	1-4	0.2	0.3	0.80	50	1.20	0.2	0.3	1.25	0.2	0.3	5.0	5.3	9.3	10.2	**2.4**	2.7	12	RCP	132.00	1054.25	1050.30	1046.50	0.0288	**6.0**	**6.4**	7.7	*5.2*	7.3
	CI	**1-4**	1-3	0.3	0.6	0.80	50	1.20	0.3	0.5	1.25	0.3	0.6	5.0	5.6	9.2	10.1	**5.0**	5.7	12	RCP	159.60	1050.25	1046.30	1036.60	0.0608	**8.8**	**6.4**	8.1	*6.5*	11.6
	CI	**1-3**	1-2	0.3	4.5	0.70	50	1.20	0.3	3.5	1.25	0.3	3.6	5.0	5.8	9.1	10.0	**32.2**	35.7	24	RCP	90.30	1041.40	1035.35	1032.67	0.0297	**39.0**	**34.1**	10.8	*16.6*	13.9
	JB	**1-2**	1-1	2.3*	6.8	0.45	50	1.20	1.2	4.8	1.25	1.3	4.9	8.0	8.0	8.4	9.2	**40.1**	44.8	30	RCP	52.20	1038.48	1032.47	1031.95	0.0100	**41.0**	**53.0**	8.4	*24.0*	9.5
			1-1																												
2	GI	**2-2**	2-1	1.5	1.5	0.85	100	1.25	1.6	1.6	1.25	1.6	1.6	5.0	5.0	10.3	10.3	**16.5**	16.5	15	HDPE	51.60	1055.28	1051.53	1043.45	0.1566	**27.7**	**9.6**	7.8	*8.3*	23.5
			2-1																												
3	JB	**3-2**	3-1	3.6**	3.6	0.60**	100	1.25	2.7	2.7	1.25	2.7	2.7	5.0	5.0	10.3	10.3	**28.3****	28.3	24	HDPE	144.90	1051.10	1043.25	1037.26	0.0413	**49.8**	**40.0**	12.7	*12.9*	16.4
	JB	**3-1**	1-3	0.0	3.6	0.00	100	1.25	0.0	2.7	1.25	0.0	2.7	5.0	5.1	10.3	10.3	**28.3**	28.3	24	HDPE	45.40	1042.95	1036.76	1035.85	0.0200	**34.7**	**34.6**	11.0	*16.5*	12.3

*2.3 ACRES DRAINING TO STR 1–2 IS THE APPROXIMATE AREA THAT DRAINS TO EXISTING PIPE END SECTION AND EXISTING CURB INLET (1.7ac.+ 0.6ac.)
**FLOW OUT OF STR 3–2 IS THE Q100 FROM THE UNDERGROUND DETENTION FACILITY, 28.3 CFS. SWS LINE 3 IS DESIGNED FOR THE 100–YR STORM.

GUTTER RUNOFF "Q" (CFS)	U/S BYPASS "Q" (CFS)	TOTAL GUTTER "Q" (CFS)	STREET GRADE (FT/FT)	STREET CROSS SLOPE (FT/FT)	INLET LENGTH (FT)	GUTTER SPREAD (FT)	DOWNSTREAM BYPASS "Q" (CFS)	DOWNSTREAM BYPASS D/S STR
1.8	0.0	1.8	0.024	0.02	5.0	7.8	0.3	1-4
2.7	0.3	3.0	0.045	0.02	5.0	8.3	1.2	1-3
2.4	1.2	3.6	0.059	0.02	5.0	8.4	1.8	1-1

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NOT FOR CONSTRUCTION

A MULTI-FAMILY DEVELOPMEN FOR:
56TH AND FOXRIDGE
MISSION, KANSAS

DRAWING RELEASE LOG
● 01.20.23 - FDP SUBMITTAL

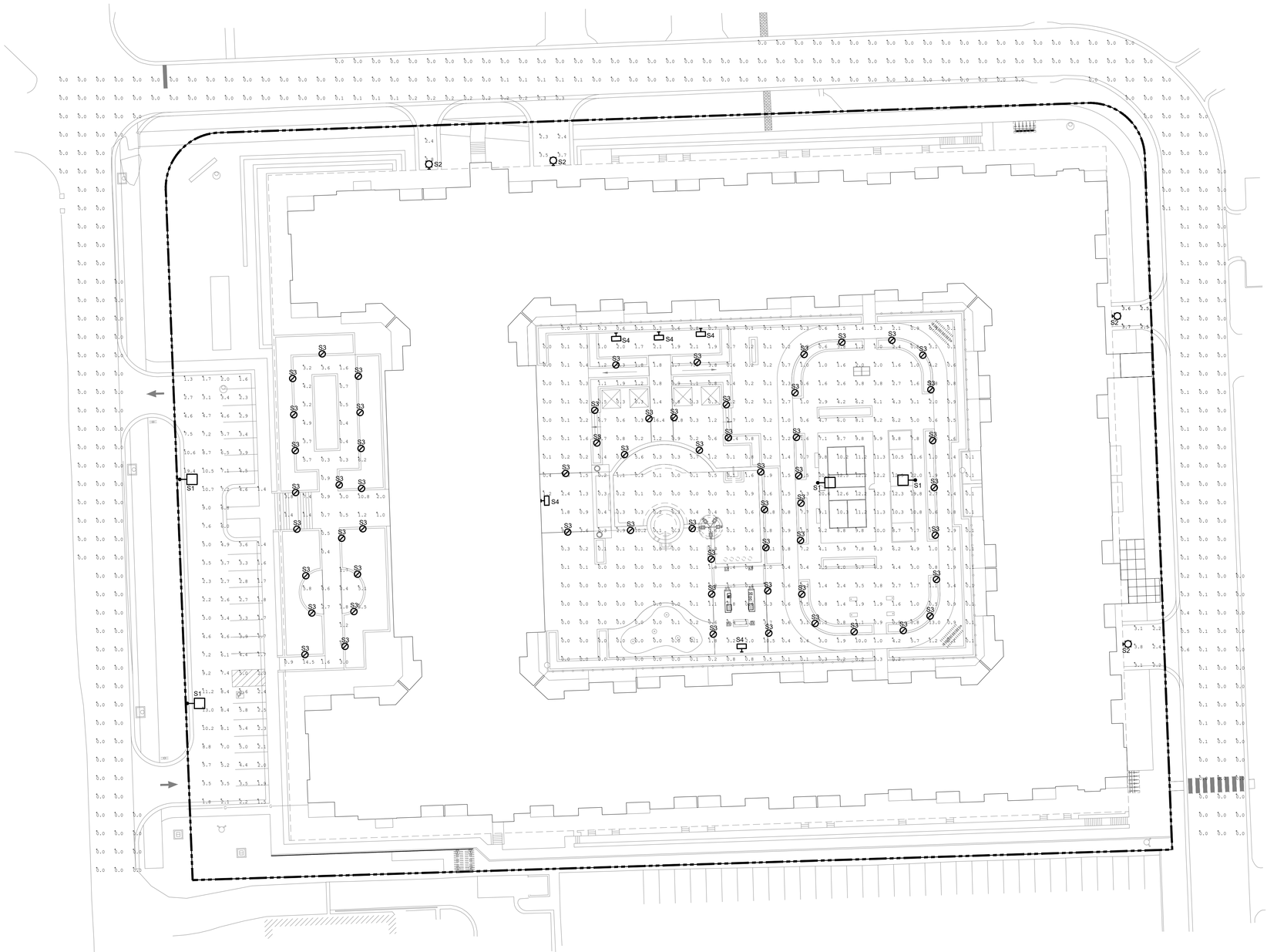
N

SCALE: 1"=30'
0 30 60

REVISIONS

DATE
01.20.2023
JOB NO.
700321
DRAWN BY:
JLB
SHEET NO.
C1.07

SWS MAP & CALCULATIONS
NOT FOR CONSTRUCTION



SITE PLAN - PHOTOMETRICS

SCALE: 1" = 30'-0"

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A NEW MULTIFAMILY DEVELOPMENT FOR:

56TH & FOXRIDGE

MISSION, KANSAS

DRAWING RELEASE OG

- 01.20.23 FDP SUBMITTAL

△ REVISIONS

DATE
01/20/2023
JOB NO.
715322
DRAWN BY:
PM / DRFT
SHEET NO.
E0.01

FINAL DEVELOPMENT PLAN

S1 - 20'-0" MOUNTING HEIGHT

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

GLEON Galleon

Area / Site Luminaire

Product Features

LumenSafe Technology · Light Allshines™ · BAA

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 4
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 9

Product Certifications

DLC · DLC Premium · 3G VIB · IP66 · UL Certified · IDA · 5 YEAR

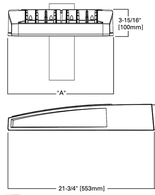
Quick Facts

- Lumen packages range from 4,200 - 80,800 (34W - 640W)
- Efficacy up to 156 lumens per watt
- Options to meet Buy American and other domestic preference requirements

Connected Systems

- WaveLinx
- Enlighted

Dimensional Details



Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length [1]	"B" Quick Mount Arm Length	"B" Quick Mount Extended Arm Length
1-4	15-1/2"	7"	10"	10-5/8"	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	--
9-10	33-3/4"	7"	16"	--	--

NOTES:
For arm selection requirements and additional line art, see Mounting Details section.

NOTES:
1. Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified for 3000K CCT and warmer only.

S2 - 20'-0" MOUNTING HEIGHT

Project		Catalog #		Type	
Prepared by		Notes		Date	

Streetworks

GAW Galleon Wall

Wall Mount Luminaire

Product Features

Light Allshines™ · BAA

Interactive Menu

- Ordering Information page 2
- Product Specifications page 2
- Optical Distributions page 3
- Energy and Performance Data page 4
- Control Options page 6

Product Certifications

DLC Listed [1] · DLC Premium [1] · TSD · UL Certified · FC · IP66 · IDA [2] · 5 YEAR

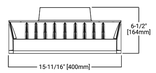
Quick Facts

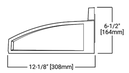
- Choice of thirteen high-efficiency, patented AccuLED Optics
- Downward and inverted wall mounting configurations
- Eight lumen packages from 3,215 up to 17,056
- Efficacies up to 154 lumens per watt

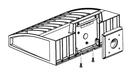
Connected Systems

- WaveLinx
- Enlighted

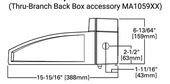
Dimensional Details



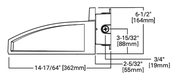




GAW with CBP option installed
(Thru-Branch Back Box accessory MA1059XX)



GAW with accessory BB/GAWXX Back Box installed



NOTES:
1. Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified for 3000K CCT and warmer only.

S3 - 3'-6" MOUNTING HEIGHT

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

BRT6 Bollard

Round LED Pedestrian Luminaire

Interactive Menu

- Ordering Information page 2
- Product Specifications page 2
- Optical Distributions page 2
- Energy and Performance Data page 3

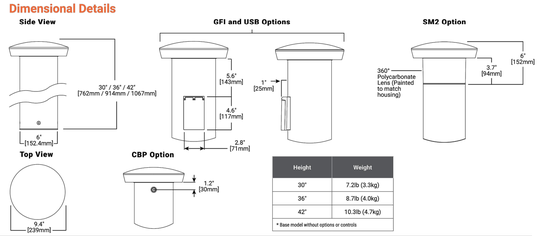
Product Certifications

DLC Premium · 3G VIB · IP66 · IK10 · UL Certified · IDA · 5 YEAR · BAA

Quick Facts

- 4 Optical Distributions
- Available in 30", 36", and 42"
- Lumen packages range from 560 - 4400 (5W - 49W)
- Efficacy up to 122 lumens per watt
- Zero uplight on all configurations

Dimensional Details



Height	Weight
30"	7.2lb (3.3kg)
36"	8.7lb (4.0kg)
42"	10.3lb (4.7kg)

* Base model without options or controls

S4 - 15'-0" MOUNTING HEIGHT

LED wall luminaire - shielded with forward throw

BEGA

Application
This wall mounted LED luminaire features a forward throw light distribution and is designed for the general illumination of pathways and walkways from various mourning heights. Downlight applications only.

Materials
Luminaire housing constructed of die-cast marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Clear safety glass with optical texture
High temperature silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP64
Weight: 3.7 lbs

Electrical

Operating voltage	120-277V AC
Minimum start temperature	-30° C
LED module wattage	13.9W
System wattage	17W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	1659 lumens (3000K)
Lifetime at Ta = 15° C	>500,000 h (L70)
Lifetime at Ta = 50° C	101,000 h (L70)

LED color temperature
☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3**
☐ 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

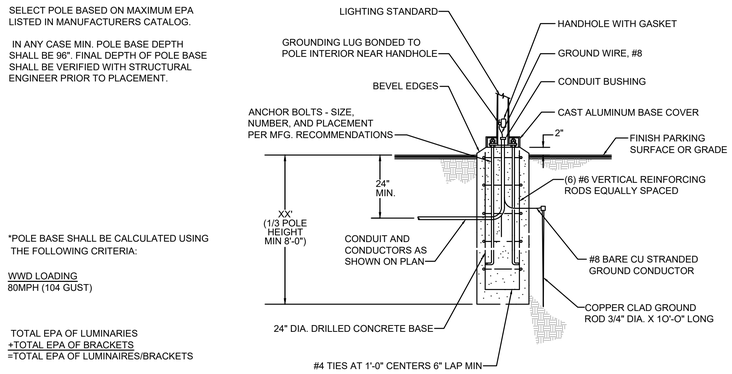
Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

Type:
BEGA Product:
Project:
Modified:

LED wall luminaire - shielded with forward throw				
	LED	A	B	C
33817	13.9W	5 ⅛	9 ⅜	5 ⅝

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com



LIGHTING POLE BASE DETAIL

NO SCALE

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CONSULTANT FOR:

56TH & FOXRIDGE

A NEW MULTIFAMILY DEVELOPMENT FOR:

MISSION, KANSAS

DRAWING RELEASE OG

- 01.20.23 FDP SUBMITTAL

△ REVISIONS

DATE
01/20/2023
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PM / DRFT
SHEET NO.
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FINAL DEVELOPMENT PLAN

Calculation Summary

E Garage Drive

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	2.80
Maximum	3.8
Minimum	2.2
Avg/Min	1.27
Max/Min	1.73

Entry Courtyard

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	2.96
Maximum	14.5
Minimum	0.3
Avg/Min	9.87
Max/Min	48.33

Interior Courtyard

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Calculation Summary - Cont.

Illuminance (Fc)	
Average	2.50
Maximum	22.0
Minimum	0.0
Avg/Min	N.A.
Max/Min	N.A.

Loading Drive

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	3.08
Maximum	3.7
Minimum	2.5
Avg/Min	1.23
Max/Min	1.48

N Garage Drive

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	2.98
Maximum	3.7
Minimum	2.3
Avg/Min	1.30
Max/Min	1.61

Parking Lot

Project: Project_1
Polygon

Calculation Summary - Cont.

Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	4.80
Maximum	19.4
Minimum	1.3
Avg/Min	3.69
Max/Min	14.92

Public Roadway

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing L-R	10
Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	0.02
Maximum	0.6
Minimum	0.0
Avg/Min	N.A.
Max/Min	N.A.

Trash Drive

Project: Project_1
Polygon
Coordinates in Feet

Point Spacing T-B	10
Grid Orient	0
Grid Tilt	0
Meter Type	Horizontal

Illuminance (Fc)	
Average	3.10
Maximum	3.8
Minimum	2.4
Avg/Min	1.29

Calculation Summary - Cont.

Max/Min	1.58

Luminaire Definition(s)

GLEON-SA5D-735-U-SL3-HSS
GLEON-SA5D-735-U-SL3-HSS

Filename	GLEON-SA5D-735-U-SL3-HSS.ies
Lumens Per Lamp	N.A.
Number of Lamps	80
Total Lamp Lumens	N.A.
Arrangement Lamp Lumens	N.A.
Arrangement Luminaire Lumens	30862
Luminaire Lumens	30862
Luminaire Efficiency (%)	N.A.
Total Light Loss Factor	1.000
Luminaire Watts	320
Arrangement Watts	320
Arrangement	SINGLE
Arm Length	0
Offset	0
Road Classification	Type III, Medium, N.A. (deprecated)
Upward Waste Light Ratio	0.00

Luminaire Classification System (LCS)	Lumens	% Lamp	% Luminaire
LCS-FL	3306.0	N.A.	10.7
LCS-FM	12311.4	N.A.	39.9
LCS-FH	12089.0	N.A.	39.2
LCS-FVH	514.6	N.A.	1.7
LCS-BL	1061.1	N.A.	3.4
LCS-BM	1007.5	N.A.	3.3
LCS-BH	568.0	N.A.	1.8
LCS-BVH	4.5	N.A.	0.0
LCS-UL	0.0	N.A.	0.0
LCS-UH	0.0	N.A.	0.0
Total	30862.1	N.A.	100.0
BUG Rating	B3-U0-G5		
Indoor Classification	Direct		
LER	96		
Max UGR	42.6		

GAW-SA1B-735-U-T3
GAW-SA1B-735-U-T3

Filename	GAW-SA1B-735-U-T3.ies
Lumens Per Lamp	N.A.
Number of Lamps	16
Total Lamp Lumens	N.A.
Arrangement Lamp Lumens	N.A.
Arrangement Luminaire Lumens	5735
Luminaire Lumens	5735
Luminaire Efficiency (%)	N.A.
Total Light Loss Factor	1.000
Luminaire Watts	44
Arrangement Watts	44

Luminaire Definition(s) - Cont.

Arrangement	SINGLE
Arm Length	0
Offset	0
Road Classification	Type III, Short, N.A. (deprecated)
Upward Waste Light Ratio	0.00

Luminaire Classification System (LCS)	Lumens	% Lamp	% Luminaire
LCS-FL	408.2	N.A.	7.1
LCS-FM	2039.0	N.A.	35.6
LCS-FH	1944.5	N.A.	33.9
LCS-FVH	66.2	N.A.	1.2
LCS-BL	315.6	N.A.	5.5
LCS-BM	580.4	N.A.	10.1
LCS-BH	334.9	N.A.	5.8
LCS-BVH	46.2	N.A.	0.8
LCS-UL	0.0	N.A.	0.0
LCS-UH	0.0	N.A.	0.0
Total	5735.0	N.A.	100.0
BUG Rating	B1-U0-G2		
Indoor Classification	Direct		
LER	130		
Max UGR	41.6		

DISCLAIMER:
These calculation have been performed according to IES standards and good practice. There may be differences between measured values and results presented herin, based on the extent in which field condition deviate from the input data. All attached drawing(s) images are for photometric reference only.

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A NEW MULTIFAMILY DEVELOPMENT FOR:
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SHEET NO.
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FINAL DEVELOPMENT PLAN

Traffic Impact Study

Foxridge Mission

MISSION, KANSAS

JULY 2022

Prepared By:

7/20/2022

Kimley»Horn

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1.0 INTRODUCTION

This report serves as the traffic analysis for the Foxridge Mission development, located at the southeast corner of the 56th Street & Foxridge Drive intersection in Mission, Kansas. The location of the development is shown on **Exhibit 1** in **Appendix A**.

The following traffic analysis focused on two analysis years: The Existing Year (2022) and the Horizon Year (2042).

1.1 REPORT PURPOSE AND OBJECTIVES

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the City of Mission. The following information is provided:

- A description and map of the existing and proposed street network to be affected by the proposed development. This information includes existing and proposed roadway characteristics and existing year (2022) traffic volumes and horizon year (2042) traffic volumes.
- Trip generation calculations based on the Institute of Traffic Engineers (ITE) Trip Generation Manual, 11th Edition, for the proposed development. In addition, projected trip distributions onto the street network are provided.
- Analysis of impacts of the traffic generated by the proposed development on the street network, including analysis of peak period levels of service (LOS), delay times, and queuing at study area intersections.
- Evaluation of sight distances at site driveway intersections.
- Review crash data for the 56th Street & Metcalf Avenue intersection area.
- Discussion of potential improvements and traffic management measures identified to mitigate operational concerns.

In summary, the study is to determine the trip generation of the Foxridge Mission development, assign new development trips to the street network, analyze various scenarios to determine the impacts of proposed site traffic, and identify potential mitigation measures needed to achieve acceptable operations at the study intersections.

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

The proposed development site is in Mission, Kansas. The 5-acre site currently consists of a vacant office building and large surface parking lot. The 39,800 square foot office building was formerly a call center for a retail chain. North and south of the proposed site there are commercial developments consisting predominately of office uses. Broadmoor Park is a city park located to the southeast of the site. A parking lot for the park and single-family homes are located to the east of the site. West of the site across Metcalf Avenue there are multifamily residential developments.

Through discussion with the City of Mission, the following intersections were included within the study area for the traffic analysis. The list provides the existing intersection control for each of the study intersections.

- 56th Street & Metcalf Avenue (Side Street Stop)
- 56th Street & Foxridge Drive (Three-Way Stop)
- 58th Street & Metcalf Avenue (Side Street Yield)
- 58th Street & Foxridge Drive (Side Street Stop)
- Johnson Drive and Broadmoor Street (Signalized)

2.2 STREET NETWORK

The existing street network within the study area includes Metcalf Avenue (US-69 Highway), 56th Street, Foxridge Drive, 58th Street, Broadmoor Street, and Johnson Drive. Each of these roadways are part of one or more of the study intersections. The following provides a summary of the characteristics of the existing streets within the study area:

Metcalf Avenue is a north-south expressway that is part of the state highway system, designated at US-69 Highway. Metcalf Avenue continues north of the study area to become I-635 at the interchange with I-35. According to the Kansas Department of Transportation (KDOT) the section of US-69 within the study area is a Class D route with partial access control. This segment of US-69 is part of the National Highway System but KDOT does not have a corridor plan for it. KDOT maps indicate that the average daily traffic volume is 34,800, with approximately 3% being truck traffic.

Metcalf Avenue is a four-lane, divided roadway with 11-foot paved shoulders on both sides of the road. There are ditches along both sides of the roadway and there are no sidewalks. The median is turf, and it is depressed. Near the intersection with 56th Street, the roadway widens to develop north-south left-turn lanes with raised median islands for channelization. The 56th Street & Metcalf Avenue intersection is limited to left-in/right-in/right-out access. The horizontal alignment of the roadway is straight, and the vertical alignment has a slight crest vertical curve to the south of 56th Street. The posted speed limit is 55 miles per hour (mph).

56th Street is an east-west local road, located at the northern boundary of the development site. The two-lane road has curbs and gutters and is 30-feet wide, measured between the backs of curbs. There are no sidewalks or bicycle facilities. Parking is prohibited along the south side of the road. 56th Street extends approximately 650 feet east from Metcalf Avenue, then there is a 90-degree horizontal turn to the south and the street name changes to Broadmoor Street. Other than the 90-degree turn, the horizontal and vertical alignments of the roadway can be characterized as straight and level. There is no posted speed limit on 56th Street.

Broadmoor Street is a north-south local street that runs along the east side of the development site. The two-lane road has curbs and gutters and is 36-feet wide, measured between the backs of curbs. There is a sidewalk along the east side of Broadmoor Street adjacent to the development site, but there are no bicycle facilities. Parking is prohibited along both sides of the road. The horizontal alignment is generally straight, with a slight downhill grade when traveling from north to south. There is no posted speed limit on Broadmoor Street within the study area.

Foxridge Drive is a north-south local street located on the western boundary of the proposed site. Foxridge Drive serves as a two-lane frontage road along the east side of Metcalf Avenue, and the street is maintained by the City of Mission. There is approximately 60 feet between the edges of pavement on Metcalf Avenue and Foxridge Drive. Due to the close spacing, the intersection of 56th Street & Foxridge Drive is controlled with stop signs for the northbound, southbound, and westbound approaches, with eastbound traffic being uncontrolled. This form of three-way stop control is intended to eliminate the potential for eastbound traffic to queue back to Metcalf Avenue.

Adjacent to the development site, Foxridge Drive is 24 feet in width with turf slopes to ditches along each side. There are currently no sidewalks or bicycle facilities south of 56th Street. To the north of 56th Street, Foxridge Drive has curbs and gutters with a sidewalk on along the east side of the street. There are also pavement markings indicating that it is a bicycle route. “Sharrow” pavement markings designate that bicycles are to share the lanes with vehicular traffic. The horizontal alignment of the road is straight, but the vertical alignment is characterized by a crest vertical curve to the south of 56th Street. The posted speed limit on Foxridge Drive is 35 mph.

Johnson Drive is an east-west minor arterial roadway that is a commercial corridor providing access to Downtown Mission. The roadway has two through lanes in each direction There is a partial interchange with Metcalf Avenue (US-69) at Johnson Drive.

58th Street is an east-west local road extending east from Metcalf Avenue. At the intersection with Metcalf Avenue, 58th Street is limited to right-turns only with a large channelizing island. The right turns serve as exit ramps to/from the northbound lanes, completing the interchange with Johnson Drive.

2.3 DATA COLLECTION

Turning Movement Counts (TMCs) were collected the study intersections on Tuesday, February 1st, 2022. The turning movement count data collected is included in **Appendix B**. The AM peak hour occurred between 7:30 AM and 8:30 AM, and the PM peak hour occurred between 4:45 PM and 5:45 PM. The existing conditions peak hour turning movement volumes are shown on **Exhibit 2**. The existing geometry with lane configurations and intersection control at the study intersections is shown in **Exhibit 3**.

3.0 CRASH ANALYSIS

The City of Mission provided crash reports for the 56th Street & Metcalf Avenue intersection area. From January 1, 2017 to January 31, 2022 a total of 16 crashes were reported. Upon review of the reports, it was determined that some of the crashes occurred at the 56th Street & Foxridge Drive intersection, which is in close proximity to Metcalf Avenue. Twelve of the crashes occurred at the Metcalf Avenue intersection and four occurred at Foxridge Drive. This corresponds to a rate of 0.21 crashes per million entering vehicles (MEV) at 56th Street & Metcalf Avenue, and 0.45 crashes per MEV at 56th Street & Foxridge Drive during the 49-month analysis period. For comparison purposes, the average crash rate at intersections along the state highway system is 0.4 crashes per MEV.

To assist in identifying crash patterns or tendencies, a crash diagram was prepared and is shown on **Exhibit 4** in **Appendix A**. Some pertinent information regarding the crash analysis is provided below.

- There were six rear end crashes reported in the channelized westbound right-turn lane on 56th Street at Metcalf Avenue. The narratives in several of the crash reports indicate that stopped westbound drivers would start to move forward to complete the right-turn movement but would suddenly stop resulting in a rear end crash. This appears to be attributed to westbound drivers having difficulty identifying gaps in the flow of northbound traffic on Metcalf Avenue.
- Three crashes reported involved a southbound left-turn driver colliding with a northbound through vehicle. Two of the three crashes resulted in a personal injury. Left turn and angle crashes are a concern because they are typically the most severe types of intersection related crashes.
- Two other crashes were reported in the northbound lanes of Metcalf Avenue just north of 56th Street. Both crashes were related to westbound right turn traffic merging onto northbound Metcalf Avenue. This situation resulted in a side-swipe collision and a rear end collision. One of the crashes occurred shortly after one of the southbound left-turn crashes previously described.

The crash analysis indicates that safety improvements should be considered to address some of the concerns related to the westbound right-turn maneuver.

4.0 PROPOSED DEVELOPMENT

4.1 SITE DESCRIPTION

The proposed development site is bounded by 56th Street on the north, Broadmoor Street on the east, Foxridge Drive on the west, and an office building and surface parking lot on the south. The proposed Foxridge Mission development includes a five-story multifamily residential building that wraps around an amenity courtyard in the center. There will be a parking garage for residents below the building. Surface parking is provided in a small lot for visitors and guests on the west side of the building. The proposed development site plan is included in **Appendix C** for reference.

4.2 SITE CIRCULATION

The proposed development has several access points along the north, east, and west sides of the site. The parking garage has two proposed full accesses, one is located on 56th Street and the other is located on Broadmoor Street. The proposed Access A on 56th Street is to be located approximately 260 feet east of Foxridge Drive, at the location of an existing driveway. Access A is generally aligned with the existing access on the north side of 56th Street The other garage access, Access B, is to be located on Broadmoor Street, approximately 320 feet south of 56th Street.

Two accesses are proposed on Foxridge Drive. Access C is located approximately 170 feet south of 56th Street on Foxridge Drive and will serve as the exit only to the surface parking lot on the west side of the site. Access D is located approximately 200 feet south of Access C on Foxridge Drive and will serve as the entrance to the surface parking lot.

There are two other accesses proposed that will be for service uses only. An access for garbage trucks is located on 56th Street 65 feet west of Access A. An access for loading moving or delivery trucks is located on Broadmoor Street roughly 140 feet south of 56th Street. Neither of these accesses were analyzed because they will be seldom used. Single-unit truck (SU-30), similar to a rental moving truck, is the largest vehicle expected to access the site.

As part of the development plan, new sidewalks will be constructed around the entire perimeter of the development. Along the east side of Foxridge Drive, the sidewalk will be wider to encourage bicycle and pedestrian traffic. A crosswalk is proposed across Broadmoor Street in the southeast corner of the development to connect to the existing sidewalk network along the west side of Broadmoor Street.

4.3 TRIP GENERATION

Trip generation estimates were prepared using the *ITE Trip Generation Manual*, 11th Edition. **Table 1** shows the expected trips to be generated by the proposed development. The total trip generation is anticipated to be 1,418 daily trips, 123 trips during the AM peak hour (28 entering and 95 exiting), and 120 trips during the PM peak hour (73 entering and 47 exiting).

TABLE 1: DEVELOPMENT TRIP GENERATION

Land Use Description	ITE LUC	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Multifamily Housing (Mid-Rise)	221	307 Dwelling Units	1,418	28	95	123	73	47	120

Appendix D provides the calculations from the *ITE Trip Generation Manual* that were used to determine the trip generation for the proposed development.

4.4 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The estimated trips generated by the proposed development were assigned to the street network based on the trip distribution summarized in **Table 2**. This distribution is based on existing traffic patterns, commuting patterns, and engineering judgment. The detailed distribution patterns through the study intersections are shown in **Exhibit 5** in **Appendix A**.

TABLE 2: DEVELOPMENT TRIP DISTRIBUTION

Direction To/From	Percentage
North on Metcalf Avenue	35%
North on Foxridge Drive	5%
East on Johnson Drive	10%
South on Broadmoor Street	5%
South on Metcalf Avenue	35%
West on Johnson Drive	10%
Total	**100%**

Exhibit 6 shows the development trip assignment. In general, most of the site traffic was assigned to Metcalf Avenue, due to the roadway's connection to the regional highway system and the high mobility of Metcalf Avenue. Fewer trips were assigned to Johnson Drive, Foxridge Drive, and Broadmoor Street.

The proposed development trip assignments were added to the existing conditions traffic volumes. **Exhibit 7** illustrates the Existing plus Proposed Development peak hour traffic volumes.

5.0 FUTURE CONDITIONS

The traffic analysis focused on two analysis years: Existing Year (2022) and Horizon Year (2042).

5.1 FUTURE TRAFFIC FORECASTING

For the horizon year, background traffic growth was added to the existing traffic volumes, then the proposed development site trips were added. To estimate background traffic growth, the existing traffic volumes at the study intersections were assumed to increase at a rate of 0.5% per year. The annual growth rate was determined by analyzing traffic volumes on Metcalf Avenue over the past 20 years. The historical data on Metcalf fluctuated from year to year but was generally stagnant. Therefore, the 0.5% annual growth rate is a conservative assumption for this area and reflects the mature nature of the surrounding community.

Exhibit 8 provides the Horizon Year (2042) peak hour traffic volumes.

6.0 ACCESS MANAGEMENT

The City of Mission does not have access management guidelines. For the purposes of this study, the Kansas Department of Transportation's *Access Management Policy* was used to evaluate access spacing and the need for turn lanes at intersections.

6.1 ACCESS SPACING

The *Access Management Policy* includes criteria for minimum spacing between access points. The criteria depend on the type of roadway, area type, and posted speed limit. There is no posted speed limit on 56th Street or Broadmoor Street, so the speed limit is assumed to be 30 mph. For unsignalized access points in developed areas, the minimum spacing is generally 125 feet for a 30-mph roadway and 165 feet for a 35-mph roadway.

Based on this criteria, Access A is appropriately spaced from Foxridge Drive. There are two existing accesses on the north side of 56th Street. One aligns with Access A and the other is offset 75 feet to the east. This offset is less than the KDOT minimum access spacing, however this is an existing condition. It should be noted that Access A does align with one existing access, which follows good access management practice. In general, 56th Street is characterized by low speeds and low traffic volumes. The chances for conflicts are low, and should they arise drivers have adequate time to identify and, therefore no safety or operational issues are expected due to the close spacing of these access points.

Access B is spaced appropriately from the nearest driveway along the west side of Broadmoor Street. The access is located between two driveways to a parking lot for Broadmoor Park along the east side of the street. Access B is spaced 145 feet from the north parking lot access and 135 feet from the south park access. These spacings meet KDOT minimum spacing criteria.

Access C and D are spaced appropriately from 56th Street and from each other according to the 35 mph criteria. There is an existing access to an office building located 80 feet south of Access D along Foxridge Drive. Access D is expected to have a low volume of turning traffic and will be limited to entering traffic only. With no exiting traffic, the number of potential conflict points at the driveway is reduced. Therefore, safety or operational issues are expected due to the close spacing of these access points.

6.2 AUXILLARY LANE ANALYSIS

The need for turn lanes are based on capacity, level of service, and safety factors. The *Access Management Policy* provides turn lane warrants for right- and left-turn lanes based on traffic volumes and operating speeds. The traffic volumes developed for this study were compared to the turn warranting volume thresholds. All traffic volumes at the site accesses were found to be well below the warranting thresholds. Therefore, turn lanes are not warranted at any of the site driveway intersections.

There are several existing turn lanes at the 56th Street & Metcalf Avenue intersection. The existing southbound left-turn lane measures roughly 350 feet in length. According to the *Access Management Policy*, left-turn lanes on a 55-mph roadway should provide 400 feet of deceleration distance plus storage length for the 95th percentile queue length. Given this information, the existing turn lane does not meet KDOT turn lane length requirements.

The existing northbound right-turn lane at the intersection measures 225 feet in length. The *Access Management Policy* indicates that a right-turn lane on a 55-mph roadway should have 335 feet of

deceleration distance plus a minimum of 50 feet of storage for a total of 385 feet. Therefore, the existing turn lane does not meet KDOT requirements.

According to the *Access Management Policy*, acceleration lanes are typically used at unsignalized intersections that experience a high rate of accidents related to the speed differential caused by vehicles making a turning maneuver onto the highway or where large trucks frequently turn onto the highway. Guidance for the use of acceleration lanes includes in undeveloped areas with free-flow right-turn lanes, where there are 45 large trucks turning right onto a highway during the peak hour, or where there is a crash history involving right-turn vehicles.

For the westbound right-turn movement at 56th Street and Metcalf Avenue, there have been several crashes that may be attributed to the speed differential between through traffic and turning traffic. The speed differential may be the reason why drivers are having difficulty identifying gaps in the flow of northbound traffic. While the crash rate at the intersection is not high and there is a very low volume of trucks making the westbound right-turn movement, an acceleration lane for this movement would improve safety. The need for an acceleration lane will be further discussed in the operational analysis section of this study.

6.3 SIGHT DISTANCE

Sight distances is the length of a roadway that is visible to a driver. Sufficient sight distances should be provided to allow drivers to control their vehicles and avoid collisions. There are several aspects of sight distances that are applicable to the study intersections. First, stopping sight distance is the length to enable a driver to react and stop their vehicle before reaching an object in its path. Second, intersection sight distance is provided to allow the drivers of stopped vehicles to depart from their intersection approach and enter or cross the uncontrolled street. Intersections sight distances are generous, allowing enough distance for the stopped driver to complete their turning or crossing maneuver without requiring through traffic on the uncontrolled street to reduce their speed.

Sight distances were measured in the field at the proposed site driveway intersections along Foxridge Drive, 56th Street, and Broadmoor Street and are provided in **Table 3**. The measured sight distances were compared to the recommended stopping and intersection sight distances from *A Policy on Geometric Design of Highways and Streets*, 7th Edition, also referred to as the AASHTO Green Book published by the American Association of State Highway and Transportation Officials (AASHTO). The recommended sight distances for 30 mph are shown in the table for the 56th Street and the Broadmoor Street accesses, since there are no posted speed limits on those roadways. The recommended sight distances for 35 mph are shown for the accesses on Foxridge Drive, which corresponds to the posted speed limit.

TABLE 3: SIGHT DISTANCES

Intersection	Direction Looking	Intersection Sight Distance (feet)		Stopping Sight Distance (feet)	
		Field Measurement	Recommended	Field Measurement	Recommended
56th Street & Access A	East	290	335*	290	200
	West	330	290	330	200
Broadmoor Street & Access B	North	315	290	315	200
	South	> 500	335	> 500	200
Foxridge Drive & Access C	North	> 500	390	> 500	235
	South	420	335	350	265
Foxridge Drive & Access D	South	380	285	330	250

* Vehicle speeds are lower at this location, therefore intersection sight distance can be reduced

There are several variations in the recommended distances in **Table 3**. The recommended intersection sight distances are slightly different for left-turn and right-turn movements. For left turns from a stop controlled minor street approach, sight distance is longer than for a right turn because a vehicle must travel farther to complete the left-turn movement. At Access C, the recommended stopping sight distance was adjusted for the 4% grade of the roadway. For Access D the recommended intersection sight distance is for a left turn from the uncontrolled major street approach. Sight distances were not provided in **Table 3** for westbound movements at Access D because it will be an entry drive in the eastbound direction only.

Based on the results in **Table 3**, all sight distances are adequate at the proposed access points. The intersection sight distance in looking to the east from Access A is limited by the tight horizontal curve located at the northeast corner of the site. It is worth noting that drivers must reduce their speeds to between 10 and 15 mph to travel through the curve. Therefore, the measured sight distance is appropriate for the lower speeds that vehicles are likely traveling at when exiting the curve. Several on street parking spaces are

proposed on 56th Street and on Broadmoor Street as part of the development plan. Sight distances looking to the east from Access A and looking to the north from Access B may be reduced when parked vehicles are present in these spaces.

Sight distances were not measured at the existing 56th Street & Metcalf Avenue intersection. No modifications are considered in this study that would affect sight distances at the intersection.

7.0 INTERSECTION CAPACITY ANALYSIS

7.1 LEVEL OF SERVICE OVERVIEW

Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Year (2022)
- Existing plus Proposed Development
- Existing plus Proposed Development with Mitigation
- Future Year (2042) with Mitigation

The capacity analysis was performed for the weekday AM and PM peak hours using Synchro traffic modeling software to determine intersection delay and level of service (LOS). Calculations were performed based on the methodologies outlined in the *Highway Capacity Manual (HCM*, 6th Edition Microsimulation with SimTraffic software was used for the 56th Street and Foxridge Drive intersections because the 6th Edition is not compatible with the unique three-way stop control at this location.

LOS is a quantitative measure used by traffic engineers to describe the operations of an intersection. It ranges from A to F, with A being the best and F being the worst level of operation. LOS A conditions are characterized by minimal vehicle delay and free-flow conditions, while LOS F is characterized by long vehicle delay – usually when demand exceeds available roadway capacity. **Table 4** shows the definition of LOS for unsignalized and signalized intersections.

TABLE 4: LEVEL OF SERVICE

Level of Service	Average Control Delay (seconds/vehicle) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Levels of service are evaluated based on the movement groupings which are required to yield to other traffic. Typically, these are left turns off the major street and the side street approaches for two-way stop-controlled intersections. For signalized intersections each movement grouping is evaluated, and LOS is evaluated for the intersection as a whole.

Although LOS E is defined as at-capacity, LOS D is generally considered the minimum acceptable level of operation at an intersection. At unsignalized intersections LOS E, or even F are often considered acceptable for low to moderate traffic volumes where the installation of a traffic signal is not warranted by the conditions at the intersection, or the location has been deemed undesirable for signalization.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts on operations. The 95th percentile vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn

lanes. The 95th percentile queue represents the queue length that has only a 5% chance of being exceeded during the analysis period.

7.2 EXISTING YEAR (2022) LEVEL OF SERVICE ANALYSIS

Capacity analysis was conducted for Existing Year (2022) traffic conditions at the study intersections to determine baseline conditions for the existing analysis year and to calibrate the models. The analysis was performed for weekday AM and PM peak hours and is based on the lane configurations, traffic controls, and traffic volumes shown on **Exhibits 2** and **3**.

The model results were compared to actual conditions at the study intersections to determine the accuracy of the model. Significant discrepancies were identified for the southbound left-turn movement at the intersection of 56th Street & Metcalf Avenue. The Synchro model indicated that delays were 25 seconds and 95th percentile queue lengths were less than 50 feet. However, queues of up to 10 vehicles, approximately 250 feet, were observed during the PM peak hour.

The discrepancies between the analysis and actual conditions are likely due to variability in the gaps that drivers will accept when making the southbound left-turn movement. There are several possible reasons for this variability. First, given the higher speeds on Metcalf Avenue, some drivers are more hesitant than others when identifying adequate gaps in the heavy flow of northbound through traffic. Additionally, sight distances looking to the south along Metcalf Avenue appear to be adequate but are somewhat limited by a crest vertical curve. Lastly, the geometry of the raised channelizing island on 56th Street is awkward and could be causing some hesitation and confusion for drivers.

To model operations more accurately for the southbound left-turn movement at 56th Street & Metcalf Avenue, an intersection delay study was conducted. The delay study was performed using the video recorded for the PM peak hour turning movement counts. The results of the delay study found that the average delay for the movement is 48 seconds. The delay study is included in **Appendix E**.

The Synchro model was then calibrated to actual conditions. The critical gap time in the Synchro analysis was increased until the delay for the southbound left-turn movement more closely matched the actual delay results of the delay study. This resulted in the critical gap increasing from 4.1 seconds to 4.8 seconds.

The adjustments to the critical gap time do more accurately model delays, but the queueing results from the Synchro model for this movement are still less than actual conditions. It is worth noting that the long queue lengths observed during the PM peak hour occurred only between 5:05 and 5:15 PM. These queues did eventually clear, and queues were not as long during the remainder of the analysis period.

Table 5 provides a summary of the capacity analysis at the study intersections. The Synchro reports are provided in **Appendix F**.

The results in **Table 5** indicate that there are two movements that operate at lower levels of service during the PM peak hour. All other study intersections currently operate at acceptable levels of service.

The westbound right-turn at 58th Street & Metcalf Avenue operates at LOS F during the PM peak hour with lengthy queues. The queues spill back through the adjacent Foxridge Drive intersection. This is likely due to the office employees exiting the nearby office buildings in the PM peak hour and using 58th Street to access Metcalf Avenue. It is not uncommon for minor street stop-controlled movements to operate at lower LOS during peak times along high volume streets. Therefore, no improvements are identified to address existing LOS F conditions at 58th Street & Metcalf Avenue.

TABLE 5: EXISTING YEAR (2022) PEAK HOUR CONDITIONS

Intersection		Control	Approach	Operational Analysis Results					
				AM Peak Hour			PM Peak Hour		
				Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
1	56th Street & Metcalf Avenue	Side Street Stop	EB	20.8	C	< 50'	18.6	C	< 50'
			WB	17.8	C	< 50'	28.1	D	< 50'
			NBL	18.2	C	< 50'	16.7	C	< 50'
			SBL	27.1	D	60'	46.5	E	80'
2	56th Street & Foxridge Drive [1]	Three-Way Stop	WB	2.9	A	< 50'	4.0	A	68'
			NB	3.0	A	< 50'	3.7	A	< 50'
			SB	3.2	A	67'	3.5	A	72'
3	58th Street & Metcalf Avenue	Side Street Yield	WB	31.4	D	93'	112.6	F	250'
4	58th Street & Foxridge Drive	Side Street Stop	EBL	7.6	A	< 50'	7.8	A	< 50'
			SB	10.5	B	< 50'	10.8	B	< 50'
5	Johnson Drive & Broadmoor Street	Traffic Signal	EBL	12.1	B	< 50'	14.3	B	60'
			EB T/R	15.7	B	115'	20.5	C	218'
			WBL	12.7	B	< 50'	15.1	B	< 50'
			WB T/R	16.2	B	75'	19.2	B	153'
			NBL	17.3	B	< 50'	20.8	C	83'
			NB T/R	20.7	C	< 50'	24.6	C	105'
			SBL	17.6	B	< 50'	22.0	C	< 50'
			SBT	19.7	B	< 50'	25.4	C	50'
			SBR	21.7	C	< 50'	30.0	C	100'
			Overall	16.2	B	--	20.7	C	--

[1] SimTraffic results provided because HCM will not model 3-way stop control

The southbound left-turn at 56th Street & Metcalf Avenue currently operates at LOS E during the PM peak hour. The volume to capacity ratio (v/c) for this movement is 0.58, indicating that the movement is below capacity. As previously mentioned, southbound left turn queue lengths were observed to be approximately 250 feet during the PM peak hour, while the analysis results indicate a 95th percentile queue of 80 feet. The results of the delay study indicate that 250 feet is representative of the actual 95th percentile queue length, and queues are contained within the 350-foot storage length of the existing left-turn lane, but there is limited space for deceleration.

The existing raised channelizing island on the east leg of 56th Street and Metcalf Avenue may be causing some operational inefficiencies at the intersection. The southwest corner of the island is close to the wheel path of southbound left-turning vehicles. This may be causing drivers to have some hesitation when making the southbound left-turn, leading to the increased critical gap time. Additionally, the shape of the island directs westbound traffic in a sweeping right-turn movement. This geometry results in an acute angle of intersection, which is less desirable for a yield-controlled movement because drivers have to look over their shoulder to identify gaps in the flow of oncoming traffic. The westbound right turn operates at LOS C and D during the AM and PM peak hours, respectively.

Based on the deficiencies observed, several mitigations are identified to improve safety and operations at 56th Street & Metcalf Avenue. These improvements are based on current KDOT standards.

- Lengthen the southbound left-turn lane to provide a total length of 650 feet plus a 180-foot straight line taper to accommodate deceleration and storage for 250-foot queues.

- Lengthen the northbound right-turn lane to provide a total length of 385 feet plus a 180-foot straight line taper.
- Construct a 565-foot acceleration lane with a 300-foot straight line taper on northbound Metcalf Avenue for the westbound right-turn movement to enter the highway as a free-flow movement.
- Reconfigure the east leg of the intersection including the raised channelizing island to better accommodate turning movements. A conceptual layout of the improvements at the intersection shown on **Figure 10** in the **Appendix**. Illustrations of the associated vehicular turning movements are shown on **Figures 11** through **15**. The truck turning movements to/from Metcalf Avenue to 56th Street are shown using a WB-67 vehicle since Metcalf Avenue is part of the state highway system. The turning movements to/from Foxridge Drive are shown with a SB-40 vehicle, which is similar to a large school bus or fire truck. It is worth noting that the existing geometry at the intersection does not accommodate the WB-67 or SB-40 for most turning movements.

The acceleration lane length of 565 feet is based on information from Tables 10-4 and 10-5 in the AASHTO Green Book. Table 10-4 in the Green Book indicates that for a 55-mph highway and a ramp speed of 15 mph (free-flow right-turn speed), the acceleration lane length needed is 900 feet. Table 10-5 provides adjustment factors based on grades. For a 3% downgrade on a 55-mph highway, the adjustment factor is 0.625. Multiplying 900 feet by 0.625 results in 565 feet for the length of the acceleration lane.

Table 6 provides a summary of the capacity analysis at the 56th Street & Metcalf Avenue study intersection with the mitigations identified. The Synchro reports are provided in **Appendix F**.

TABLE 6: EXISTING MITIGATED PEAK HOUR CONDITIONS

Intersection		Control	Approach	Operational Analysis Results					
				AM Peak Hour			PM Peak Hour		
				Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
1	56th Street & Metcalf Avenue	Side Street Stop	EB	20.8	C	< 50'	18.6	C	< 50'
			WB	0.0	A	0'	0.0	A	0'
			NBL	18.2	C	< 50'	16.7	C	< 50'
			SBL	27.1	D	60'	46.5	**E**	80'

The mitigations identified will have several benefits. Lengthening the turn lanes will improve safety by allowing turning traffic additional distance to move out of the through lanes of Metcalf Avenue. The acceleration lane will create a free-flow movement for the westbound right-turn and eliminate the potential for the westbound right-turn movement to queue back through the Foxridge Drive intersection. Additionally, if the delays at 58th Street & Metcalf Avenue are unacceptable for westbound drivers, they can instead use Broadmoor Street and 56th Street as an alternate route to access the acceleration lane. This could improve the level of service at 58th Street & Metcalf Avenue. There is ample capacity along both Broadmoor Street and 56th Street to accommodate additional traffic should some level of diversion occur. The geometric improvements to the east leg of the intersection will better accommodate turning traffic, which could reduce the critical gap time and provide some operational benefit for the southbound left-turn movement.

The southbound left-turn movement at the intersection is projected to operate at LOS E with the mitigations identified. None of the mitigations will create gaps in the flow of northbound Metcalf Avenue, therefore operations for this movement are expected to be similar to existing conditions. The southbound left-turn movement at 56th Street & Metcalf Avenue will not operate at an acceptable level of service without a change in the form of intersection control.

Given the low level of service for the southbound left-turn and the indication from the crash analysis that drivers were having difficulty identifying adequate gaps in the flow of northbound traffic, signal warrant analysis was performed for the 56th Street & Metcalf Avenue intersection. The existing traffic volumes collected for this study were compared to the Four-Hour Vehicular Volume warrant of the *Manual on Uniform Traffic Control Devices* (MUTCD). The warrant analysis is included in **Appendix G**.

Since the southbound left-turn movement is the primary reason to evaluate signalization, the volume for this movement was considered the minor street and the combined northbound right-turn and through volume was considered the major street volume for the purpose of this warrant analysis. This methodology is described in the optional guidance of Section 4C.01 of the MUTCD. Using these volumes, the Four-Hour Vehicular Volume warrant is satisfied for existing conditions.

The entire 56th Street & Metcalf Avenue intersection would not require signalization, since controlling the southbound left-turn movement would not impact southbound through traffic. Only partial signalization of the intersection would be needed. The northbound right-turn and through movements, westbound right-turn movement and southbound left-turn movements could be signal controlled while the southbound through, northbound left-turn, or eastbound right-turn movements could remain as side street stop controlled.

Partial signalization would be expected to have several safety and operational benefits. The signal would create gaps in the flow of northbound traffic and assign the right-of-way for southbound left-turn traffic. The crash analysis in this study found that some drivers have had difficulty identifying adequate gaps when making the southbound left-turn and the westbound right-turn movements. Protected signal phasing for the southbound left-turn movement would also reduce the risk for left-turn crashes, which tend to be a more severe crash type. Partial signalization would be expected to improve the level of service and reduce queue lengths for the southbound left-turn movement.

Potential improvements at the 56th Street & Metcalf Avenue intersection were discussed at a meeting with KDOT staff. KDOT staff does not support a traffic signal installation at this intersection. KDOT staff cited concerns about safety because of the speeds of traffic on Metcalf Avenue and the close proximity of the Foxridge Drive intersection. Since the intersection is KDOT's jurisdiction, a traffic signal will not be evaluated as a potential mitigation.

7.3 EXISTING + DEVELOPMENT LEVEL OF SERVICE ANALYSIS

Capacity analysis was conducted for Existing plus Proposed Development traffic conditions at the study intersections to determine the impacts of the proposed development site traffic. The analysis was performed for weekday AM and PM peak hours and is based on the lane configurations, traffic controls, and traffic volumes shown on **Exhibits 7** and **8**.

Table 7 provides a summary of the capacity analysis at the study intersections. The Synchro reports are provided in **Appendix F**.

The analysis results in **Table 7** indicate that all site accesses are projected to operate acceptably. Delays and queues are projected to increase slightly at the other study intersections with the addition of development site traffic. During the PM peak hour, delays are projected to increase to LOS F conditions for the southbound left-turn movement at 56th Street & Metcalf Avenue. The v/c ratio is projected to increase to 0.79. The 95th percentile queue length for the southbound left-turn movement is also projected to increase. The actual queue length would likely be longer than the 95th percentile length from the Synchro analysis shown in **Table 7**. This is because the existing queues were observed to be as long as 250 feet in length.

TABLE 7: EXISTING + DEVELOPMENT PEAK HOUR CONDITIONS

Intersection		Control	Approach	Operational Analysis Results					
				AM Peak Hour			PM Peak Hour		
				Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
1	56th Street & Metcalf Avenue	Side Street Stop	EB	20.8	C	< 50'	19.1	C	< 50'
			WB	19.6	C	< 50'	32.5	D	63'
			NBL	18.2	C	< 50'	17.2	C	< 50'
			SBL	29.3	D	70'	74.5	F	135'
2	56th Street & Foxridge Drive [1]	Three-Way Stop	WB	2.8	A	55'	3.9	A	79'
			NB	7.0	A	< 50'	3.6	A	< 50'
			SB	3.0	A	67'	3.5	A	71'
3	58th Street & Metcalf Avenue	Side Street Yield	WB	32.7	D	98'	141.4	F	285'
4	58th Street & Foxridge Drive	Side Street Stop	EBL	7.7	A	< 50'	7.8	A	< 50'
			SB	10.6	B	< 50'	11.0	B	< 50'
5	Johnson Drive & Broadmoor Street	Signalized	EBL	12.8	B	50'	15.1	B	68'
			EB T/R	16.5	B	123'	21.5	C	230'
			WBL	13.5	B	< 50'	16.1	B	< 50'
			WB T/R	17.2	B	80'	20.5	C	170'
			NBL	17.0	B	< 50'	20.9	C	88'
			NB T/R	20.3	C	< 50'	24.8	C	115'
			SBL	17.1	B	< 50'	22.0	C	< 50'
			SBT	19.3	B	< 50'	25.5	C	55'
			SBR	23.1	C	63'	31.0	C	123'
			Overall	17.0	B	--	21.7	C	--
6	56th Street & Access A	Side Street Stop	WBL	7.6	A	< 50'	7.7	A	< 50'
			NB	10.0	B	< 50'	10.4	B	< 50'
7	Broadmoor Street & Access B	Side Street Stop	EB	9.7	A	< 50'	9.6	A	< 50'
			NBL	7.6	A	< 50'	7.6	A	< 50'
8	Foxridge Drive & Access C	Side Street Stop	WB	8.6	A	< 50'	8.7	A	< 50'

[1] SimTraffic results provided because HCM will not model 3-way stop control

Table 8 provides a summary of the capacity analysis at the 56th Street & Metcalf Avenue study intersection with the mitigations previously identified. The Synchro reports are provided in **Appendix F**.

TABLE 8: EXISTING + DEVELOPMENT MITIGATED PEAK HOUR CONDITIONS

Intersection		Control	Approach	Operational Analysis Results					
				AM Peak Hour			PM Peak Hour		
				Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
1	56th Street & Metcalf Avenue	Side Street Stop	EB	20.8	C	< 50'	19.1	C	< 50'
			WB	0.0	A	0'	0.0	A	0'
			NBL	18.2	C	< 50'	17.2	C	< 50'
			SBL	29.3	D	70'	74.5	F	135'

As shown in the previous scenario, the mitigations will greatly benefit the westbound right-turn since it becomes a free-flow movement. The southbound left-turn is projected to operate at LOS F with the mitigations. Given the low level of service projected, conditions at this intersection should be monitored on a regular basis. With the mitigation of lengthening the southbound left-turn lane to 650 feet, there will be ample storage to contain long queues within the lane.

7.5 HORIZON YEAR (2042) LEVEL OF SERVICE ANALYSIS

Capacity analysis was performed for Horizon Year (2042) traffic conditions at the study intersections to determine how the study area is expected to operate in the horizon year and where the network may need improvements in the future. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes shown on **Exhibit 9**. The lane configurations and traffic controls are the same as the previous scenario, which are shown on **Exhibit 8**. This analysis includes the mitigations previously identified.

Table 9 provides a summary of the capacity analysis at the study intersections. The Synchro reports are provided in **Appendix F**.

TABLE 9: HORIZON YEAR (2042) PEAK HOUR CONDITIONS

Intersection		Control	Approach	Operational Analysis Results					
				AM Peak Hour			PM Peak Hour		
				Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
1	56th Street & Metcalf Avenue	Side Street Stop	EB	23.7	C	< 50'	21.7	C	< 50'
			WB	0.0	A	0'	0.0	A	0'
			NBL	21.3	C	< 50'	20.1	C	< 50'
			SBL	45.3	E	108'	157.7	F	205'
2	56th Street & Foxridge Drive [1]	Three-Way Stop	WB	3.2	A	53'	4.7	A	83'
			NB	0.5	A	< 50'	4.6	A	< 50'
			SB	3.9	A	77'	4.6	A	83'
3	58th Street & Metcalf Avenue	Side Street Stop	WB	49.9	E	145'	> 200	F	420'
4	58th Street & Foxridge Drive	Side Street Stop	EBL	7.7	A	< 50'	7.9	A	< 50'
			SB	10.9	B	< 50'	11.4	B	< 50'
5	Johnson Drive & Broadmoor Street	Signalized	EBL	13.0	B	58'	16.2	B	83'
			EB T/R	17.1	B	143'	23.5	C	275'
			WBL	13.8	B	< 50'	17.6	B	< 50'
			WB T/R	17.8	B	95'	22.1	C	200'
			NBL	17.7	B	< 50'	22.1	C	108'
			NB T/R	21.3	C	< 50'	26.4	C	138'
			SBL	17.8	B	< 50'	23.7	C	< 50'
			SBT	20.1	C	< 50'	27.4	C	65'
			SBR	24.3	C	73'	33.7	C	145'
			Overall	17.6	B	--	23.4	C	--
6	56th Street & Access A	Side Street Stop	WBL	7.7	A	< 50'	7.7	A	< 50'
			NB	10.2	B	< 50'	10.6	B	< 50'
7	Broadmoor Street & Access B	Side Street Stop	EB	9.9	A	< 50'	9.7	A	< 50'
			NBL	7.7	A	< 50'	7.6	A	< 50'
8	Foxridge Drive & Access C	Side Street Stop	WB	8.7	A	< 50'	8.7	A	< 50'

[1] SimTraffic results provided because HCM will not model 3-way stop control

The analysis results indicate that the lower LOS continue to be projected at the 56th Street & Metcalf Avenue intersection as well as the 58th Street & Metcalf Avenue intersection. Additionally, the southbound left-turn volume is projected to exceed its capacity, with a volume to capacity ratio of 1.07. It is unusual for a left-turn movement from a major street to operate with this level of delay. Long-term improvements for the Metcalf Avenue corridor should be evaluated, including at the Metcalf Avenue study intersections.

8.0 CONCLUSIONS AND RECOMMENDATIONS

A traffic impact study for the Foxridge Mission development has been prepared by Kimley-Horn. The proposed development site is located at the southeast corner of the 56th Street & Foxridge Drive intersection in Mission, Kansas. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system.

The following provides a summary of the analysis. Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Year (2022)
- Existing plus Proposed Development
- Horizon Year (2042)

Counts were collected in February 2022 to serve as the baseline for analysis. Two movements at the study intersections were found to currently be operating at lower levels of service (LOS). The westbound right-turn movement at 58th Street & Metcalf Avenue currently operates at LOS F during the peak hour. The southbound left-turn movement at 56th Street & Metcalf Avenue is currently operating at LOS E during the PM peak hour with queues of up to 250 feet in length.

A review of conditions determined that the existing geometry at the 56th Street & Metcalf Avenue intersection does not meet KDOT standards. Based on the deficiencies observed and the results of the crash analysis, the following mitigations are identified to improve safety and operations at 56th Street & Metcalf Avenue.

- Lengthen the southbound left-turn lane to provide a total length of 650 feet plus a 180-foot straight line taper to accommodate deceleration and storage for 250-foot queues.
- Lengthen the northbound right-turn lane to provide a total length of 385 feet plus a 180-foot straight line taper.
- Construct a 565-foot acceleration lane with a 300-foot straight line taper on northbound Metcalf Avenue for the westbound right-turn movement to enter the highway as a free-flow movement.
- Reconfigure the east leg of the intersection including the raised channelizing island to better accommodate turning movements.

The southbound left-turn movement at 56th Street and Metcalf Avenue will not operate at an acceptable level of service without a change in the form of intersection control. Warrant analysis found that existing traffic volumes satisfy the Four-Hour signal warrant. Partial signalization of the southbound left-turn and northbound through movements would provide operational and safety benefits for the southbound left-turn movement.

Potential improvements at the 56th Street & Metcalf Avenue intersection were discussed at a meeting with KDOT staff. KDOT staff does not support a traffic signal installation at this intersection. KDOT staff cited concerns about safety because of the speeds of traffic on Metcalf Avenue and the close proximity of the Foxridge Drive intersection. Since the intersection is KDOT's jurisdiction, a traffic signal will not be evaluated as a potential mitigation.

The proposed development is projected to generate 1,418 daily trips, 123 trips in the AM peak hour, and 120 trips in the PM peak hour. The site trips were added to the street network for the Existing plus Development analysis, and all site accesses are projected to operate acceptably. Delays and queues are

projected to increase slightly at the other study intersections with the addition of development site traffic. However, during the PM peak hour, delays are projected to increase to LOS F conditions for the southbound left-turn movement at 56th Street & Metcalf Avenue. Given the low level of service projected, conditions at this intersection should be monitored on a regular basis.

In the Horizon Year (2042) scenario, the existing traffic volumes were grown at a rate of 0.5% per year, and the proposed site trips were included. The capacity analysis results were similar to the Existing plus Development conditions scenario, with increased delays for the controlled movements at the Metcalf Avenue study intersections. Long-term improvements for the Metcalf Avenue corridor should be evaluated, including at the Metcalf Avenue study intersections.

APPENDIX

Appendix A: EXHIBITS

Appendix B: TRAFFIC COUNT DATA

Appendix C: SITE PLAN

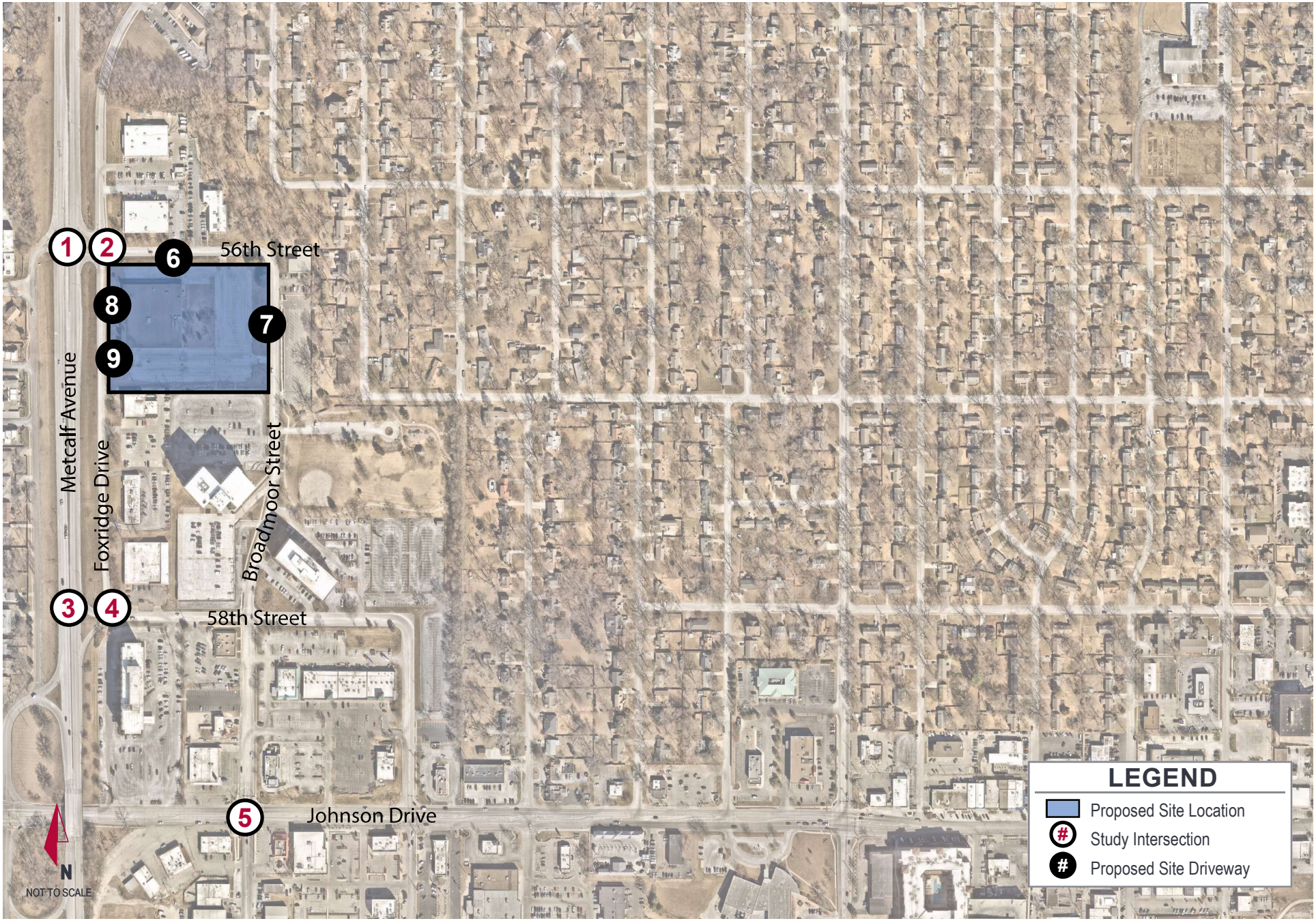
Appendix D: ITE TRIP GENERATION

Appendix E: DELAY STUDY

Appendix F: SYNCHRO REPORTS

Appendix G: TRAFFIC SIGNAL WARRANT ANALYSIS

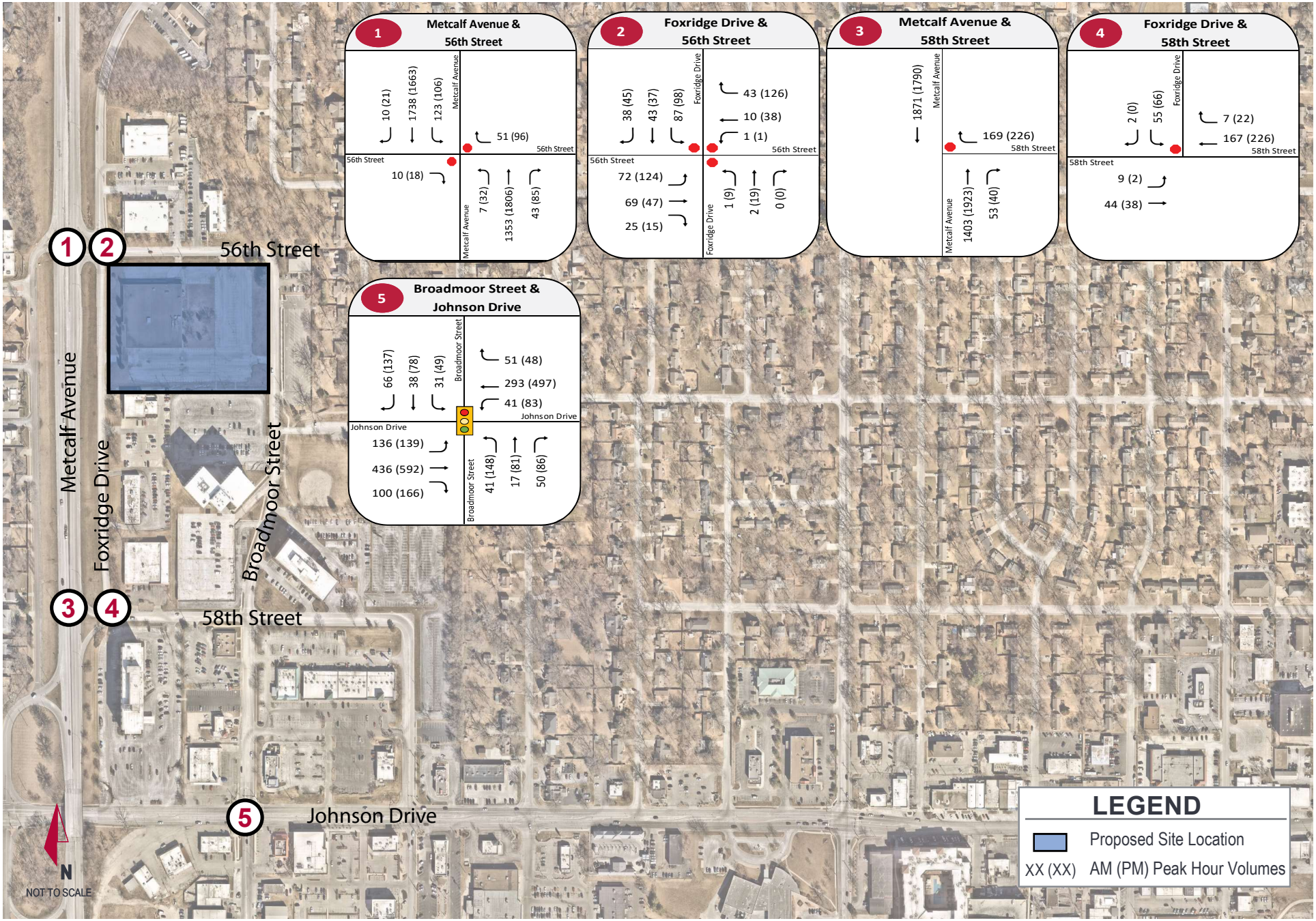
Appendix A: Exhibits



Kimley»Horn

EXHIBIT 1

PROJECT SITE LOCATION AND STUDY AREA



Kimley»Horn

EXHIBIT 2

EXISTING YEAR (2022) PEAK HOUR TRAFFIC VOLUMES

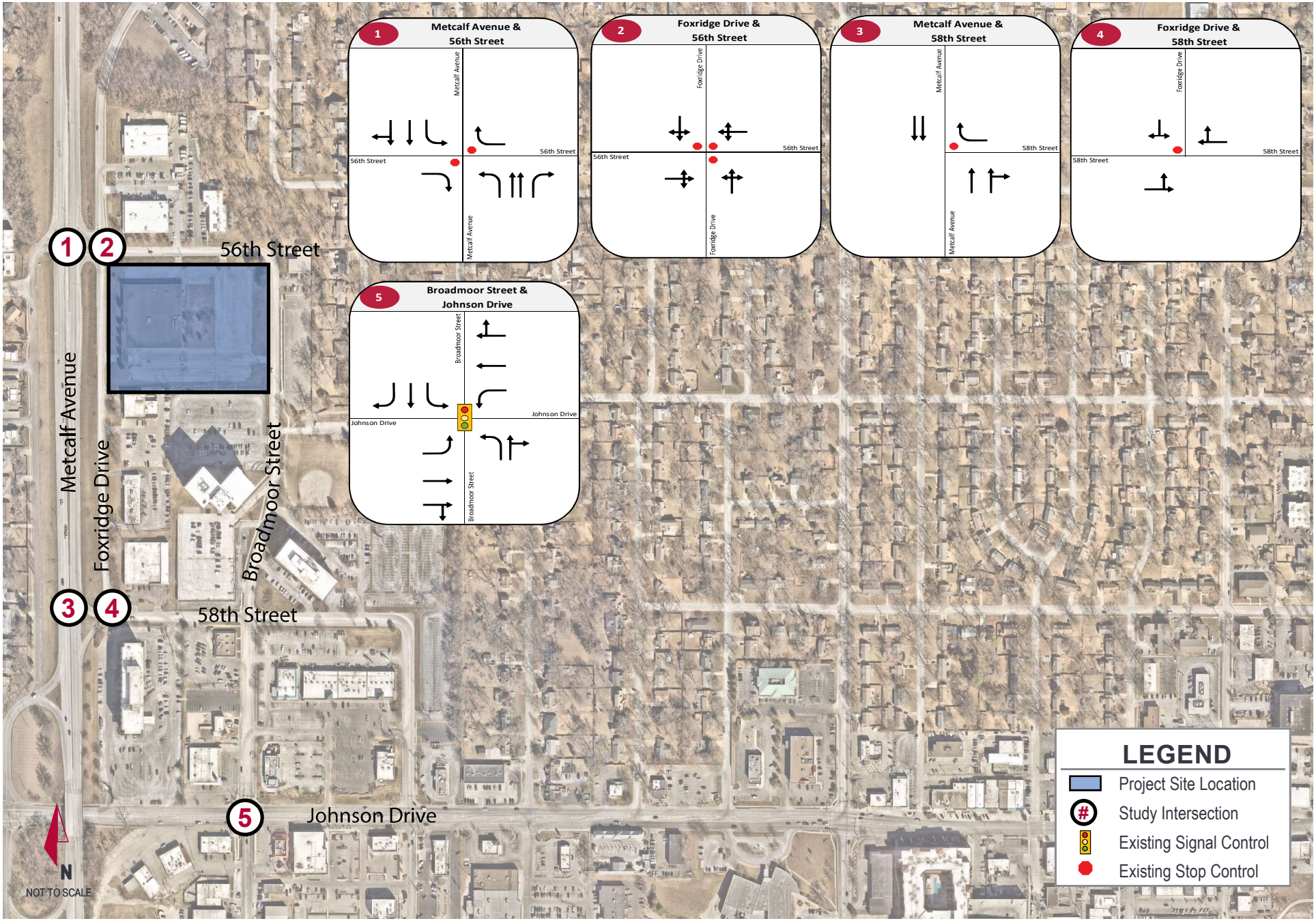


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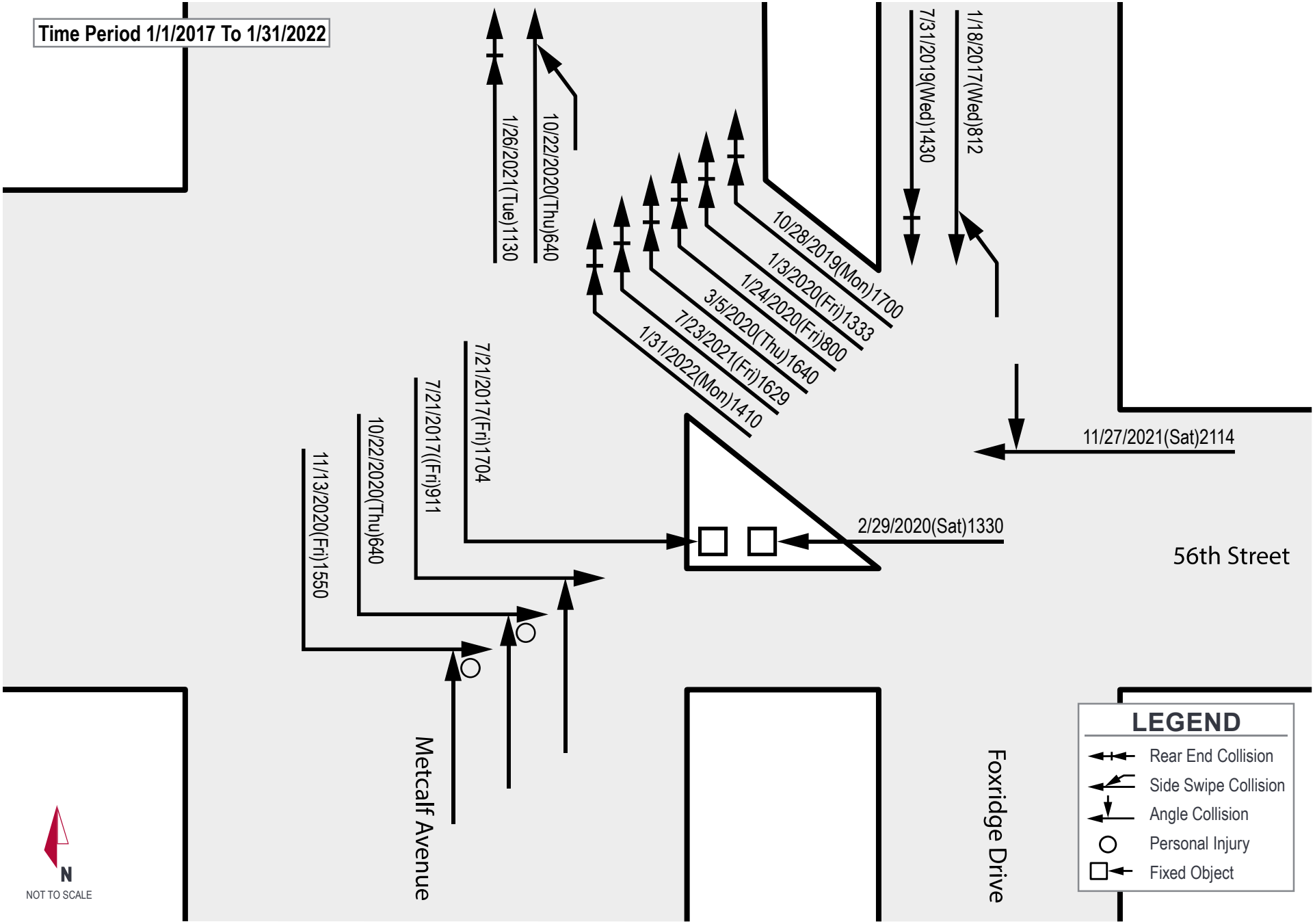
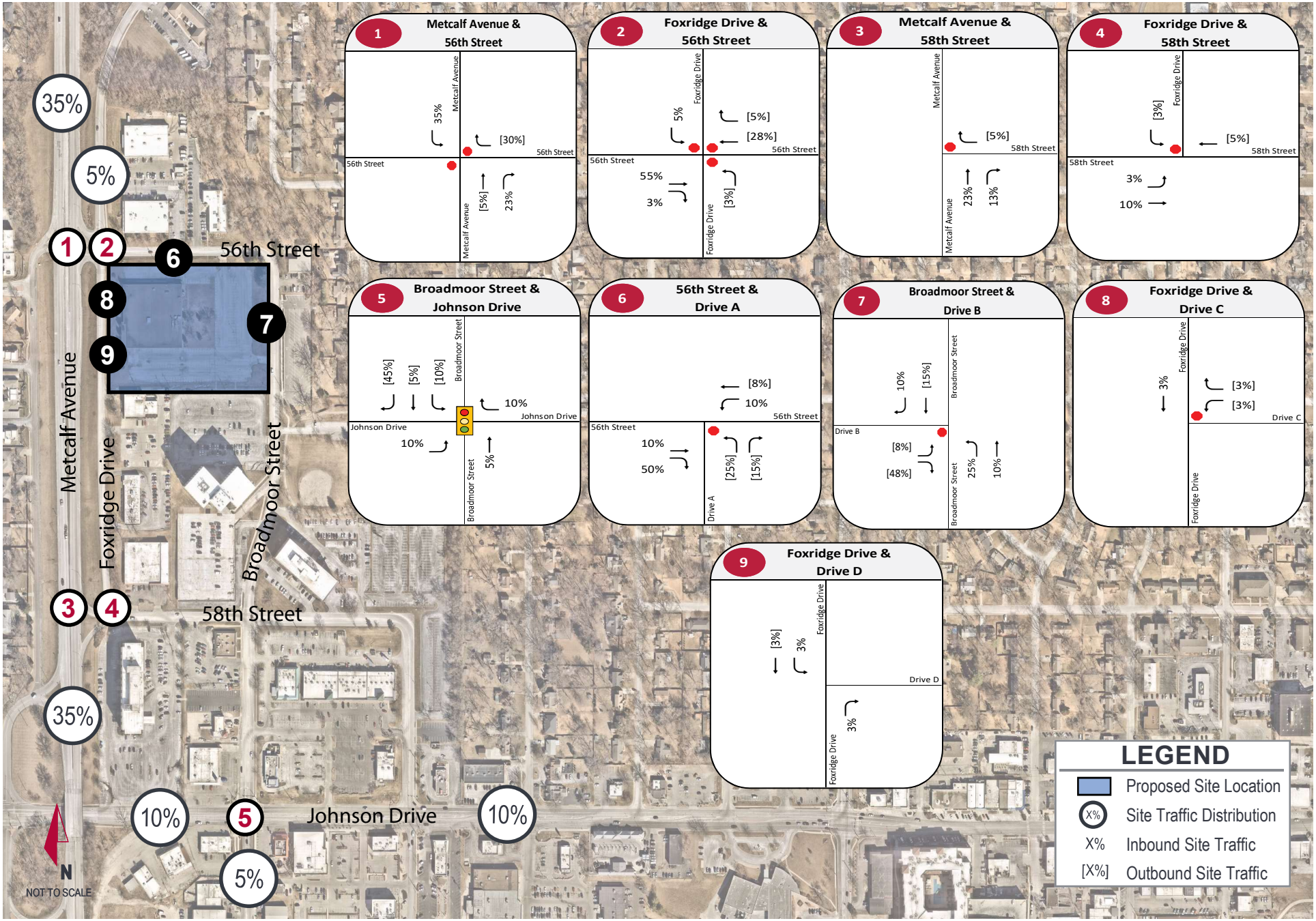
EXHIBIT 3

EXISTING GEOMETRY AND INTERSECTION CONTROL



Kimley»Horn

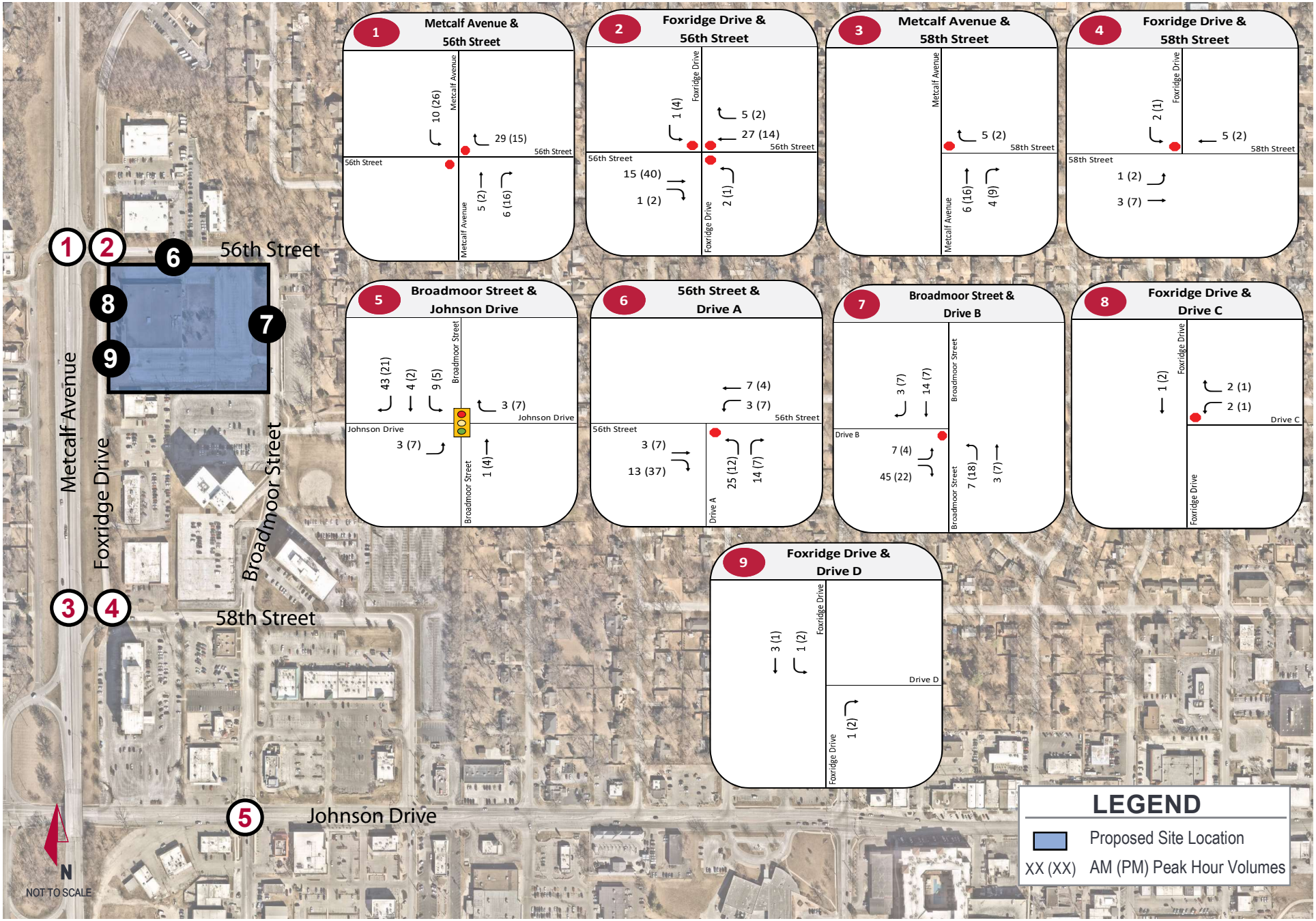
EXHIBIT 4
CRASH DIAGRAM



Kimley»Horn

EXHIBIT 5

SITE TRIP DISTRIBUTION



Kimley»Horn

EXHIBIT 6

PROJECT TRAFFIC

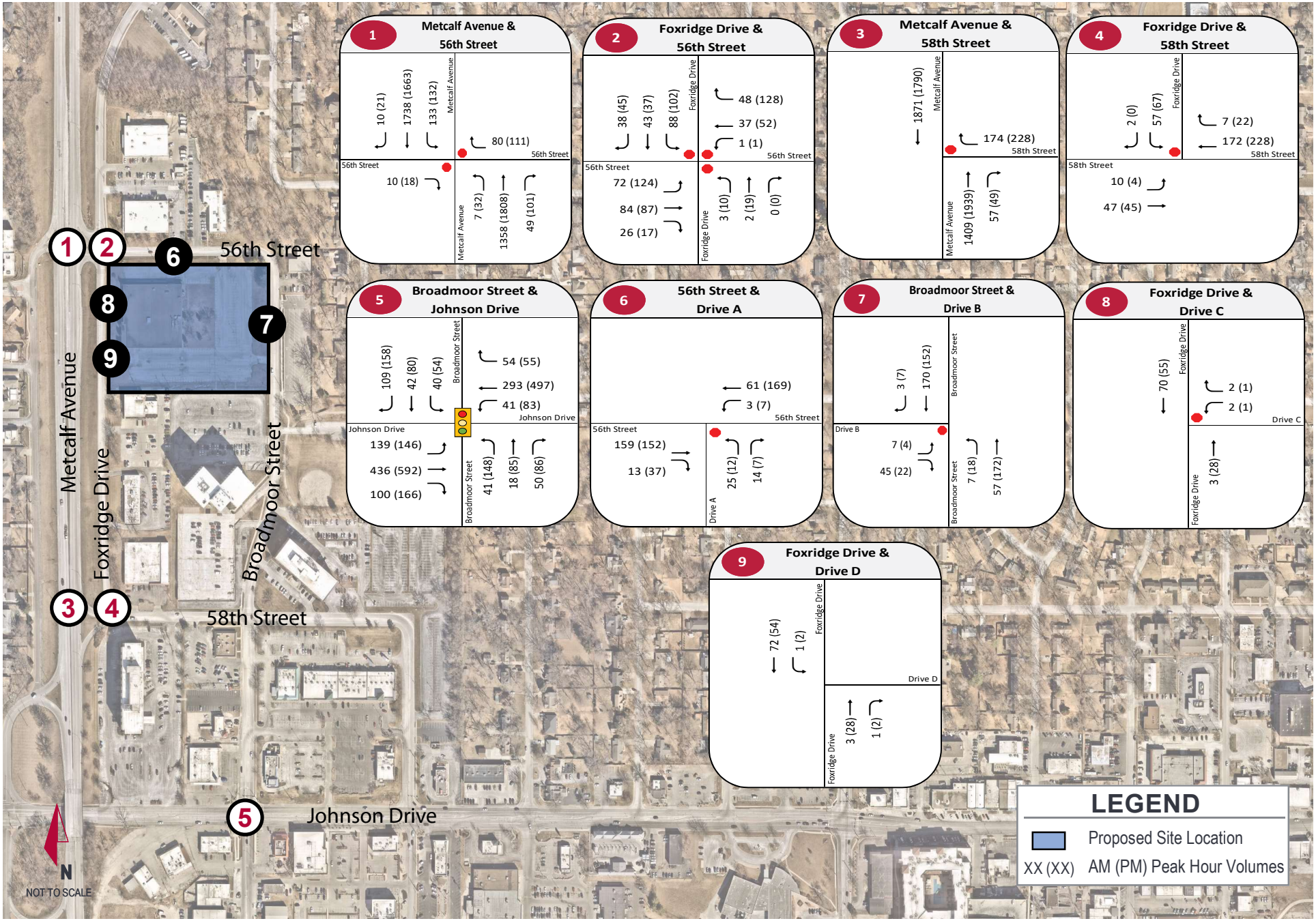


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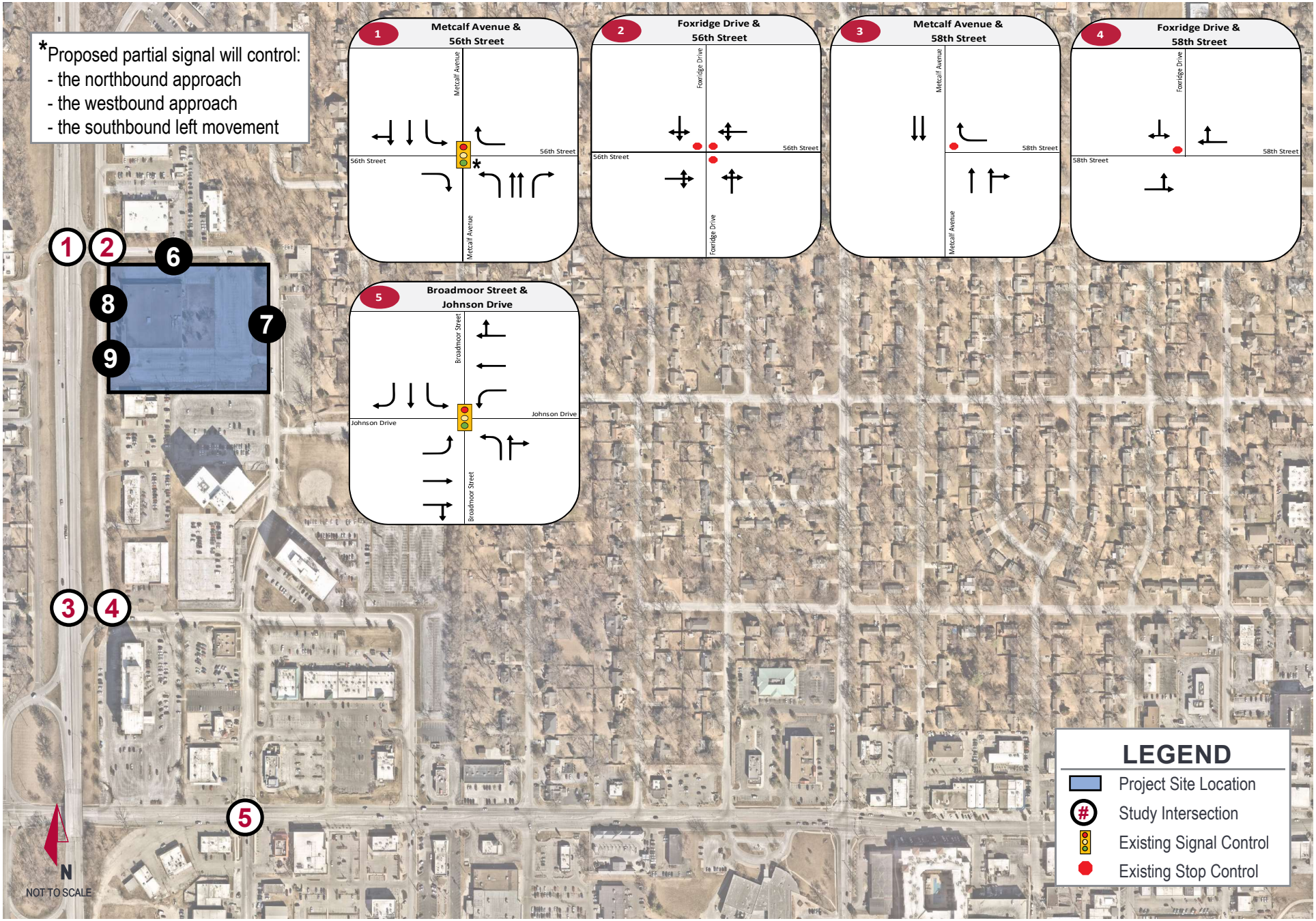
EXHIBIT 7

EXISTING PLUS PROPOSED DEVELOPMENT PEAK HOUR TRAFFIC VOLUMES



Kimley»Horn

EXHIBIT 8

EXISTING PLUS PROPOSED DEVELOPMENT GEOMETRY AND INTERSECTION CONTROL

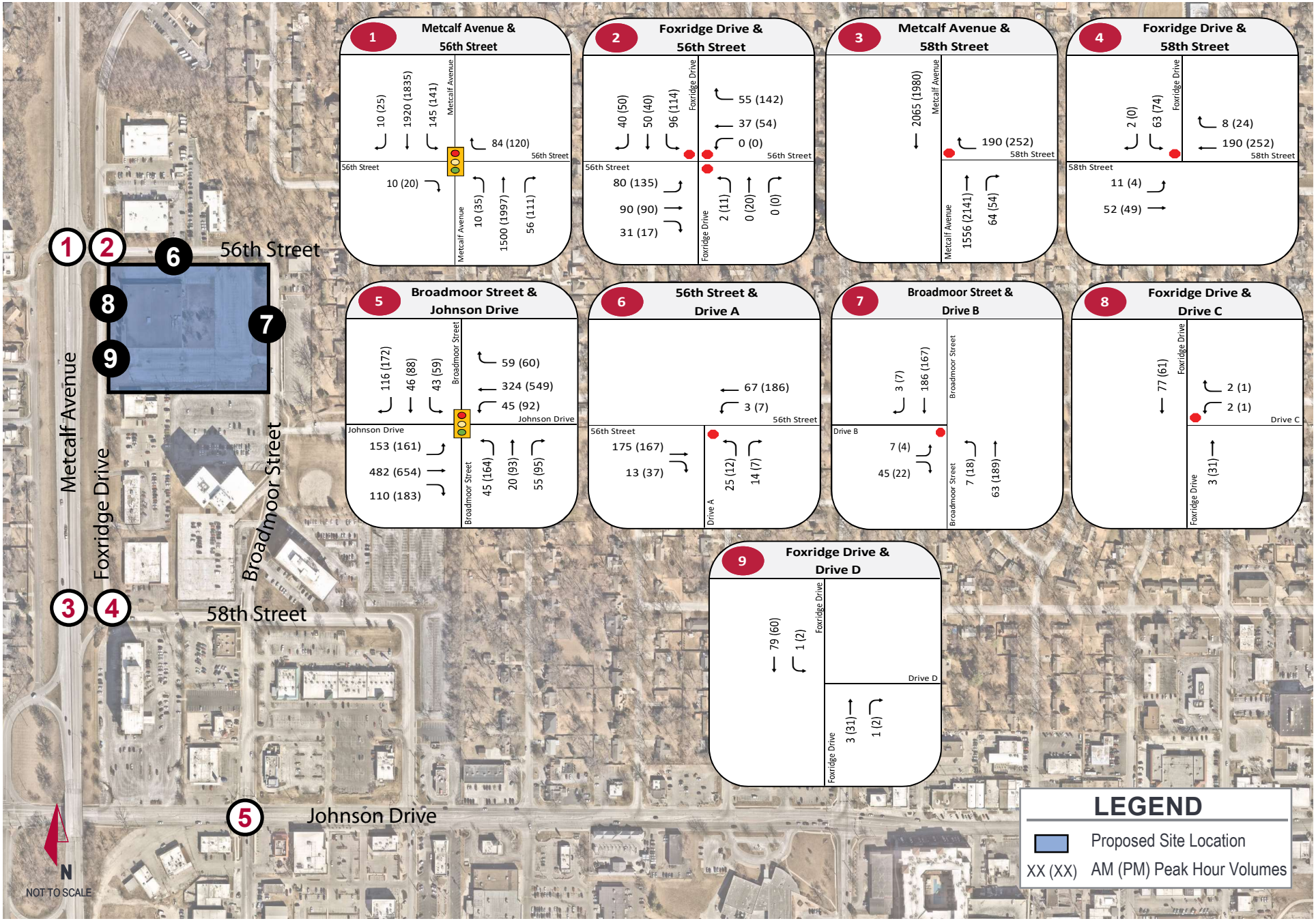


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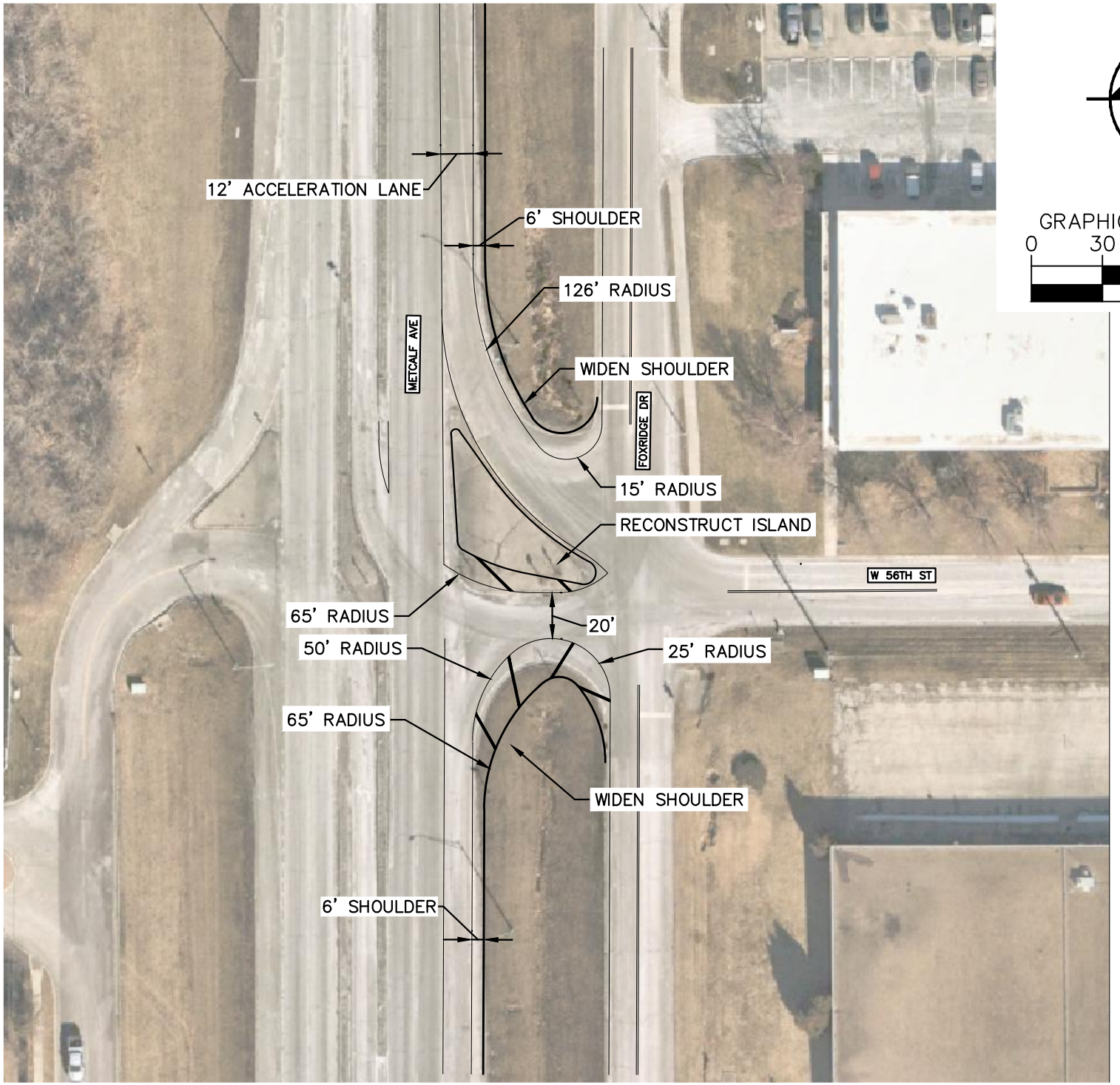
EXHIBIT 9

HORIZON YEAR (2042) PEAK HOUR TRAFFIC VOLUMES



NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

Kimley»Horn

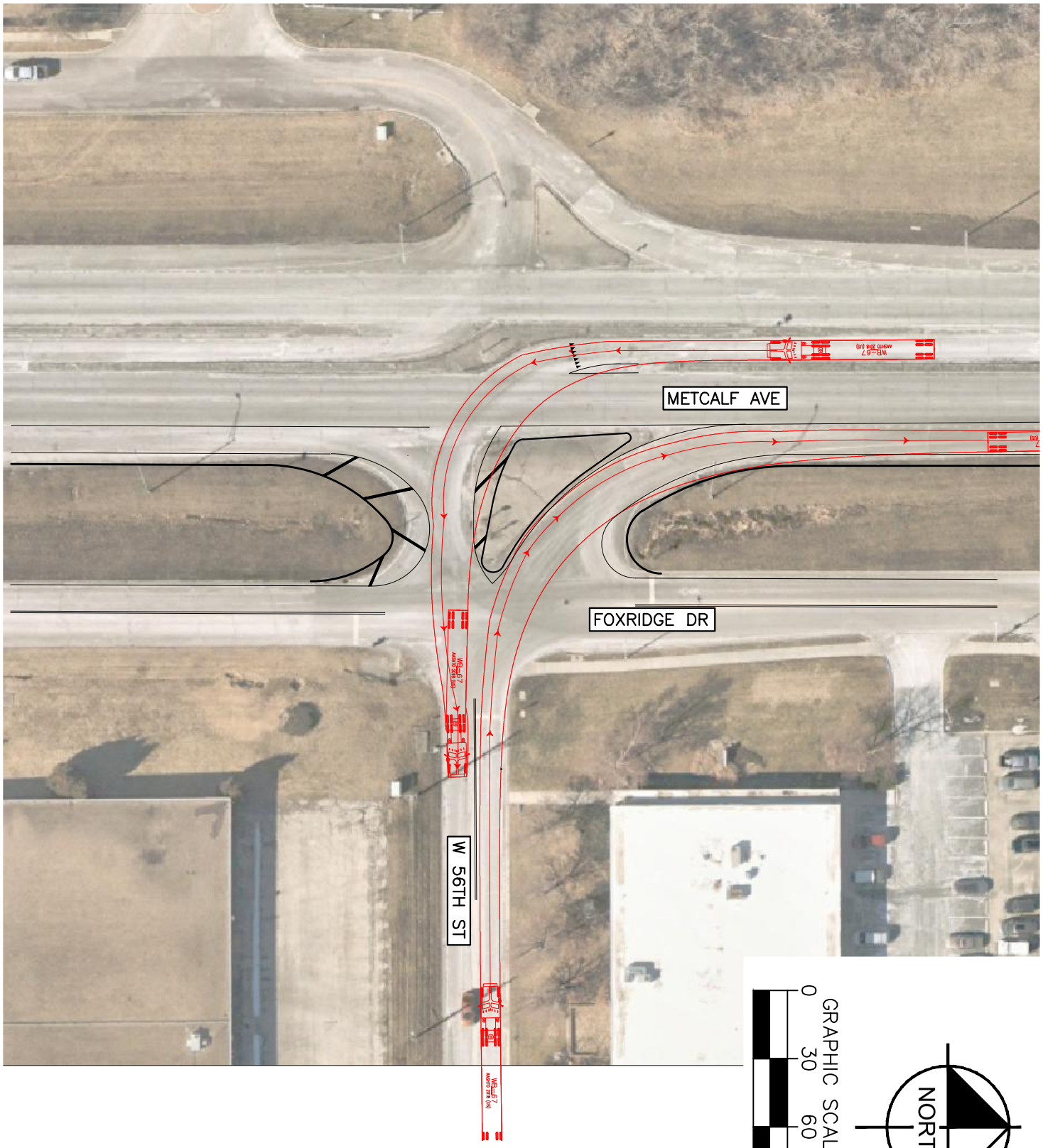
805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM

56TH ST & METCALF AVE IMPROVEMENTS

LAYOUT

SHEET NUMBER

FIGURE 10



77

56TH ST & METCALF AVE IMPROVEMENTS

WB-67 SB LEFT AND WB-67 WB RIGHT TURNING MOVEMENT

SHEET NUMBER

FIGURE 11

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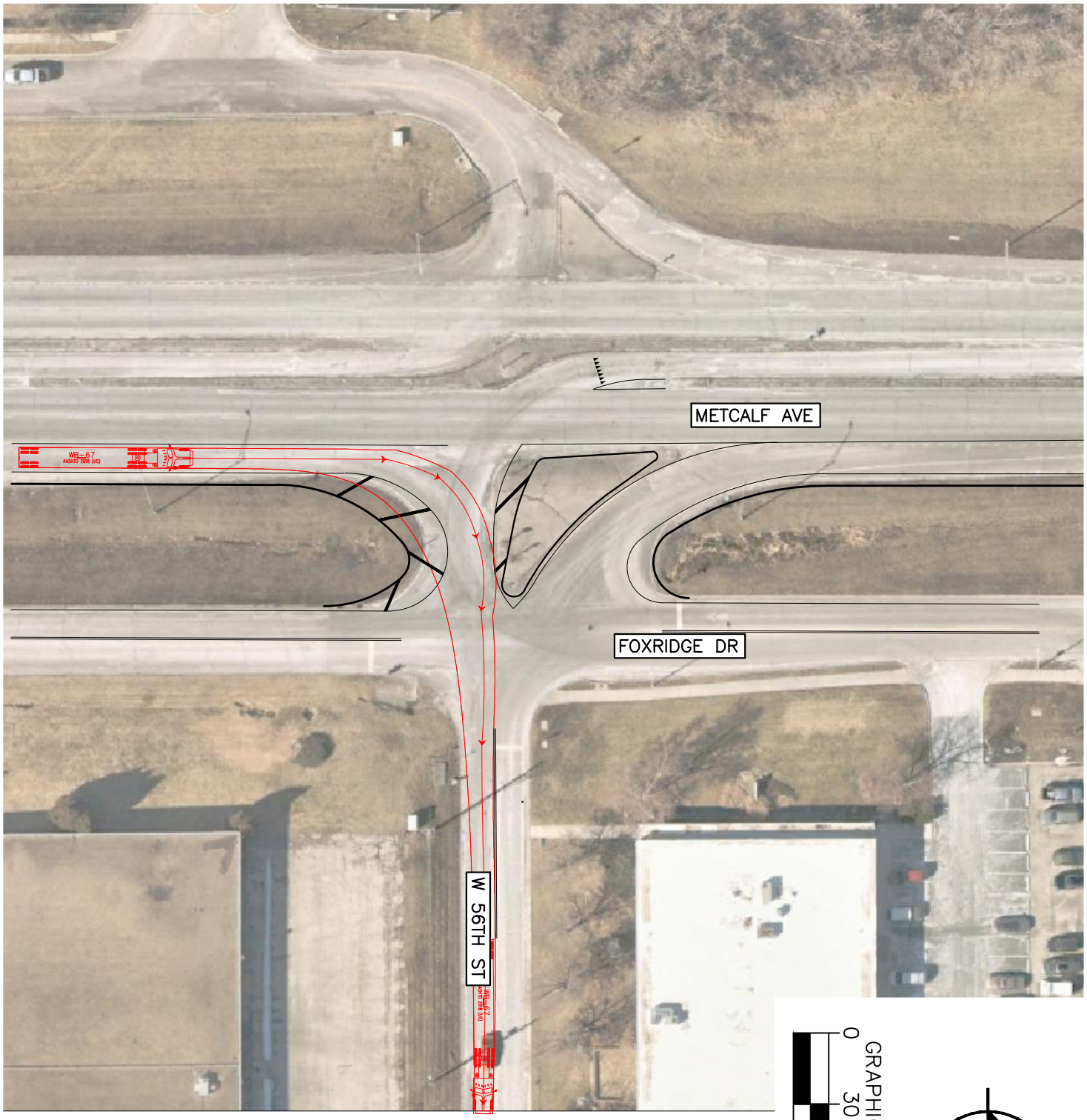
805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM



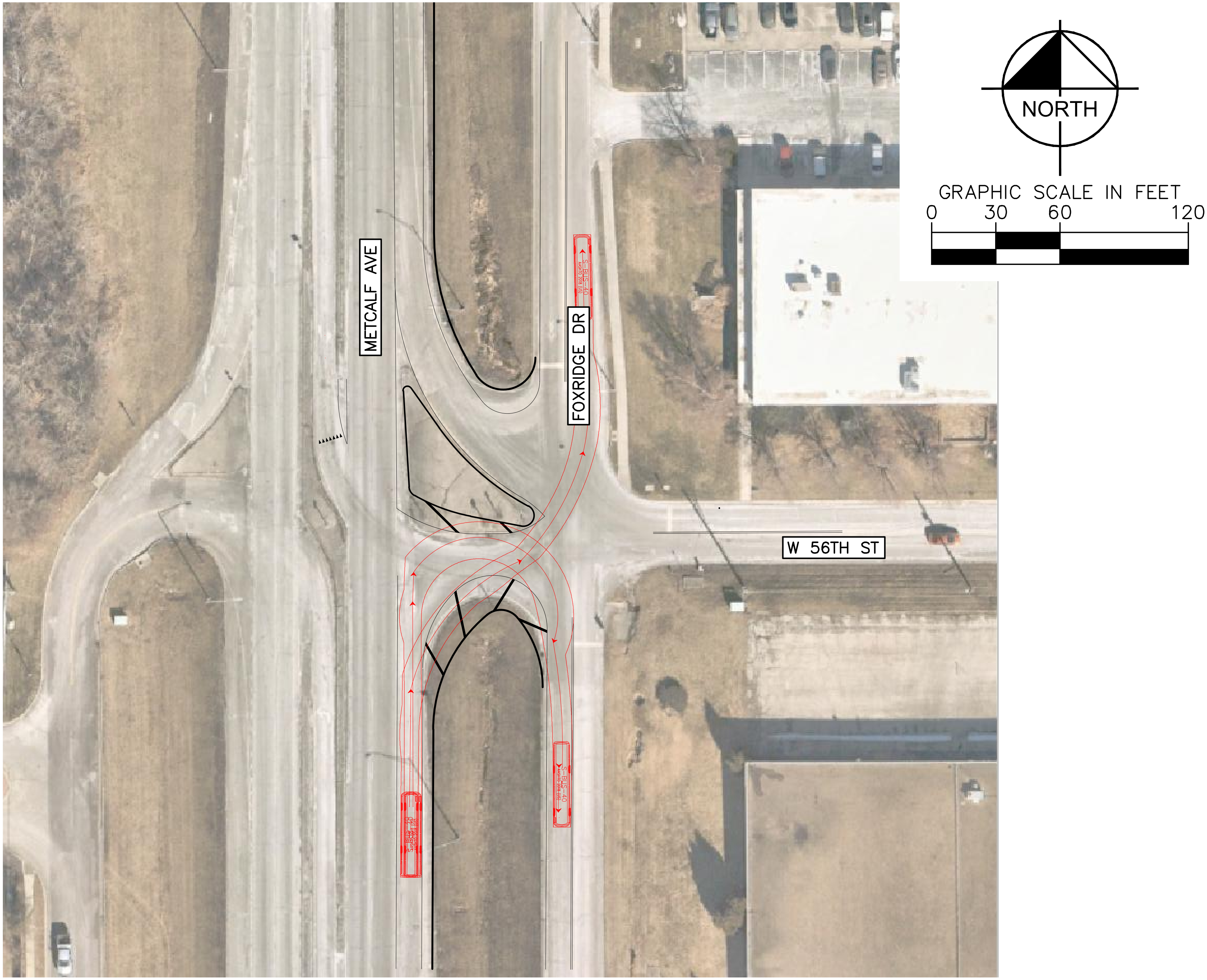
78

FIGURE 12

SHEET NUMBER

56TH ST & METCALF AVE IMPROVEMENTS

WB-67 NB RIGHT



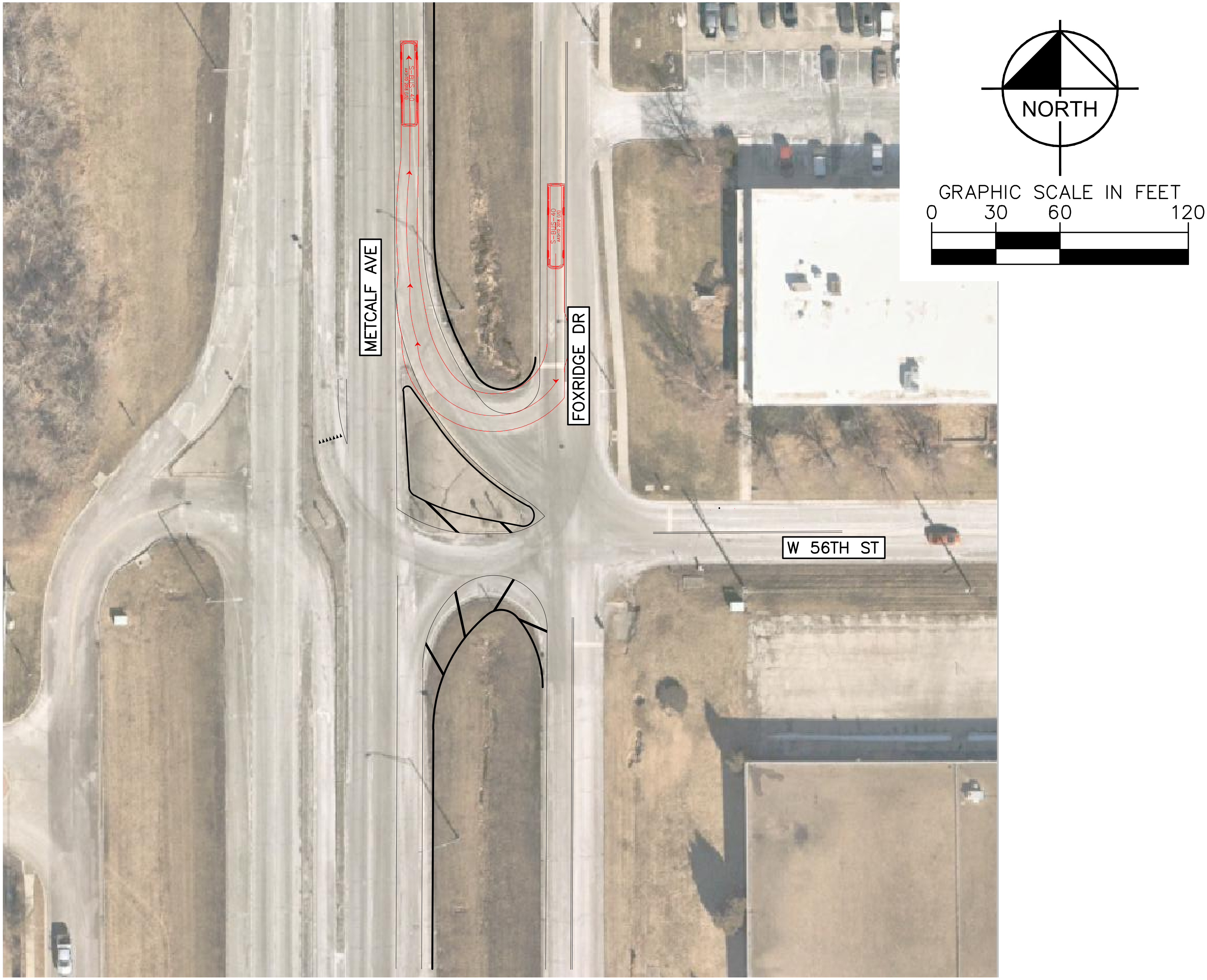
805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM

56TH ST & METCALF AVE IMPROVEMENTS

SB-40 NB RIGHT

SHEET NUMBER

FIGURE 13



Kimley»Horn

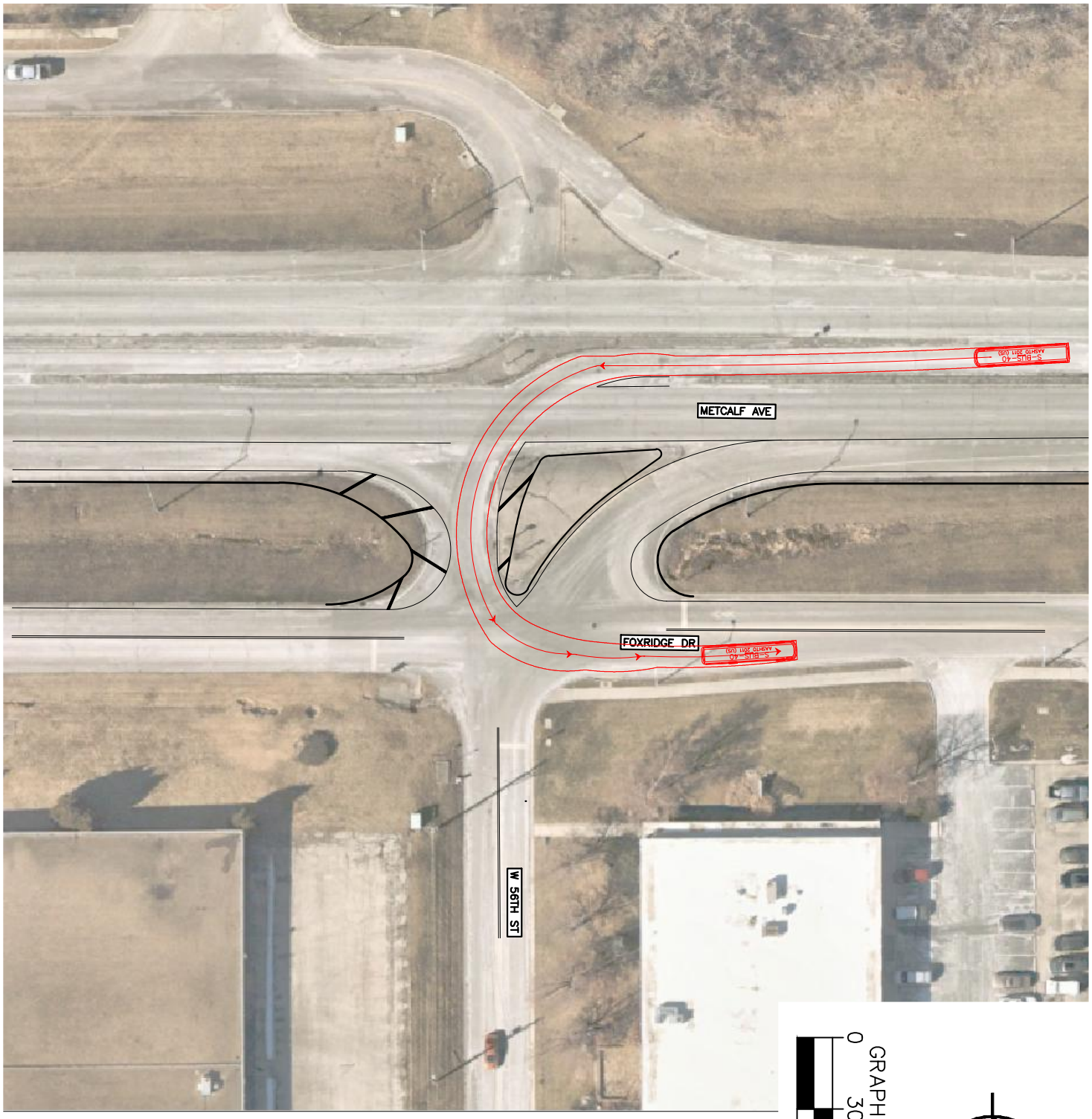
805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM

56TH ST & METCALF AVE IMPROVEMENTS

SB-40 SB RIGHT

SHEET NUMBER

FIGURE 14



GRAPHIC SCALE IN FEET
0
30
60
120

NORTH

56TH ST & METCALF AVE IMPROVEMENTS

SB-40 SB METCALF LEFT ONTO FOXRIDGE

SHEET NUMBER
FIGURE 15

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805 PENNSYLVANIA AVENUE, SUITE 150
KANSAS CITY, MO 64105
PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM

Appendix B: Traffic Count Data

56th & Metcalf - TMC

Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918022, Location: 39.027161, -94.66781

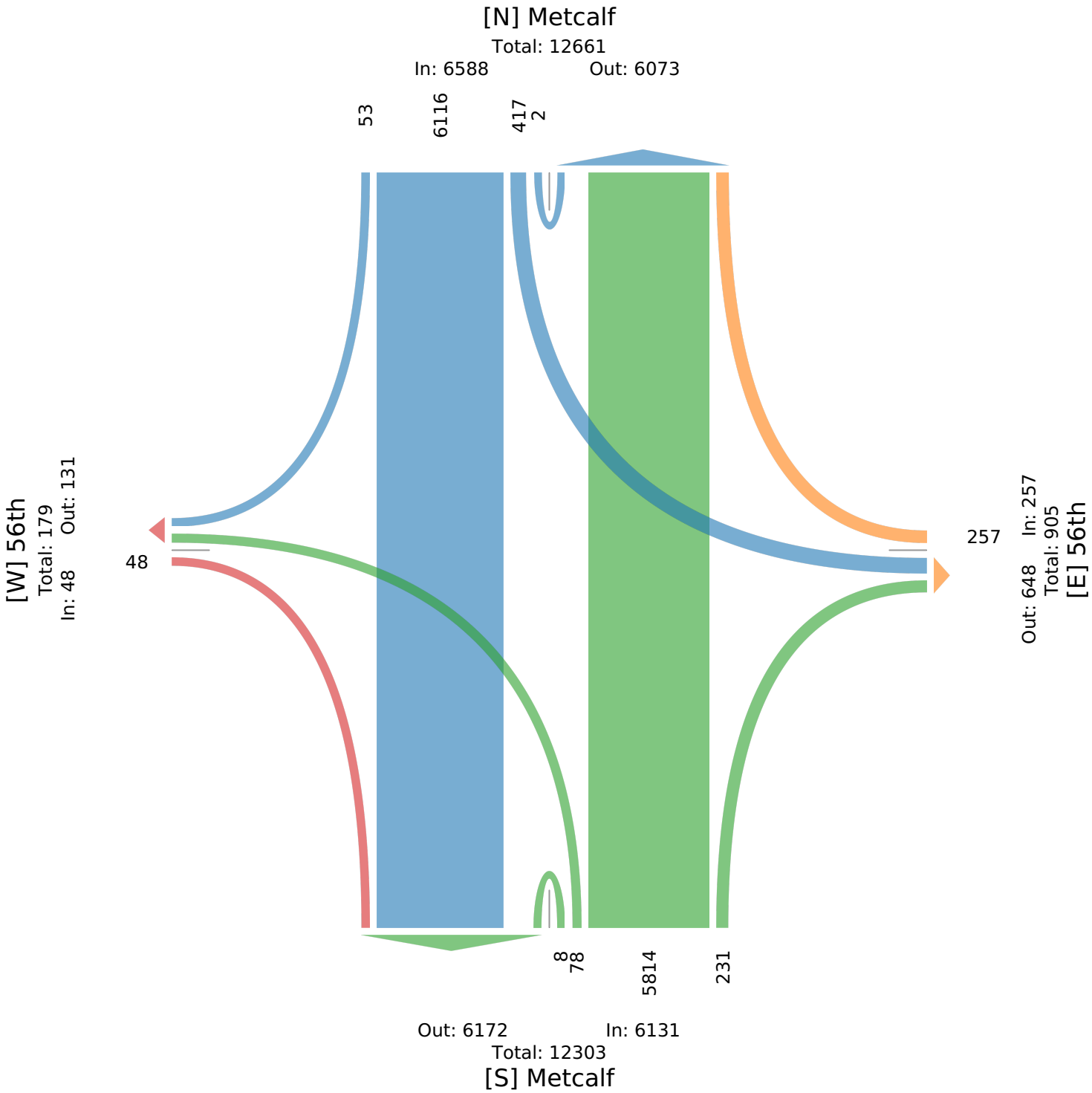
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	56th					56th					Metcalf					Metcalf					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 7:00AM	0	0	2	0	**2**	0	0	11	0	**11**	2	254	8	0	**264**	15	258	0	1	**274**	**551**
7:15AM	0	0	4	0	**4**	0	0	14	0	**14**	2	270	4	0	**276**	22	374	1	0	**397**	**691**
7:30AM	0	0	4	0	**4**	0	0	18	0	**18**	2	331	6	1	**340**	25	488	2	0	**515**	**877**
7:45AM	0	0	2	0	**2**	0	0	17	0	**17**	2	382	13	0	**397**	43	534	2	0	**579**	**995**
Hourly Total	0	0	12	0	**12**	0	0	60	0	**60**	8	1237	31	1	**1277**	105	1654	5	1	**1765**	**3114**
8:00AM	0	0	2	0	**2**	0	0	3	0	**3**	2	313	11	1	**327**	35	362	5	0	**402**	**734**
8:15AM	0	0	2	0	**2**	0	0	13	0	**13**	1	327	13	0	**341**	20	354	1	0	**375**	**731**
8:30AM	0	0	2	0	**2**	0	0	9	0	**9**	2	255	5	1	**263**	30	317	2	0	**349**	**623**
8:45AM	0	0	1	0	**1**	0	0	13	0	**13**	4	233	15	0	**252**	18	323	1	0	**342**	**608**
Hourly Total	0	0	7	0	**7**	0	0	38	0	**38**	9	1128	44	2	**1183**	103	1356	9	0	**1468**	**2696**
4:00PM	0	0	3	0	**3**	0	0	8	0	**8**	10	396	13	1	**420**	29	329	5	0	**363**	**794**
4:15PM	0	0	0	0	**0**	0	0	21	0	**21**	5	429	17	0	**451**	26	419	8	0	**453**	**925**
4:30PM	0	0	3	0	**3**	0	0	21	0	**21**	6	414	14	2	**436**	29	365	2	0	**396**	**856**
4:45PM	0	0	5	0	**5**	0	0	12	0	**12**	12	409	14	1	**436**	28	442	8	1	**479**	**932**
Hourly Total	0	0	11	0	**11**	0	0	62	0	**62**	33	1648	58	4	**1743**	112	1555	23	1	**1691**	**3507**
5:00PM	0	0	4	0	**4**	0	0	37	0	**37**	7	487	22	0	**516**	29	448	4	0	**481**	**1038**
5:15PM	0	0	4	0	**4**	0	0	31	0	**31**	7	462	22	0	**491**	20	411	3	0	**434**	**960**
5:30PM	0	0	5	0	**5**	0	0	16	0	**16**	6	448	27	0	**481**	29	362	6	0	**397**	**899**
5:45PM	0	0	5	0	**5**	0	0	13	0	**13**	8	404	27	1	**440**	19	330	3	0	**352**	**810**
Hourly Total	0	0	18	0	**18**	0	0	97	0	**97**	28	1801	98	1	**1928**	97	1551	16	0	**1664**	**3707**
Total	0	0	48	0	**48**	0	0	257	0	**257**	78	5814	231	8	**6131**	417	6116	53	2	**6588**	**13024**
% Approach	0%	0%	100%	0%	**-**	0%	0%	100%	0%	**-**	1.3%	94.8%	3.8%	0.1%	**-**	6.3%	92.8%	0.8%	0%	**-**	-
% Total	0%	0%	0.4%	0%	**0.4%**	0%	0%	2.0%	0%	**2.0%**	0.6%	44.6%	1.8%	0.1%	**47.1%**	3.2%	47.0%	0.4%	0%	**50.6%**	-
Lights	0	0	47	0	**47**	0	0	249	0	**249**	75	5752	225	8	**6060**	410	6023	48	2	**6483**	12839
% Lights	0%	0%	97.9%	0%	**97.9%**	0%	0%	96.9%	0%	**96.9%**	96.2%	98.9%	97.4%	100%	**98.8%**	98.3%	98.5%	90.6%	100%	**98.4%**	98.6%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	13	0	0	**13**	1	15	0	0	**16**	29
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0.2%	0%	0%	**0.2%**	0.2%	0.2%	0%	0%	**0.2%**	0.2%
Buses and Single-Unit Trucks	0	0	1	0	**1**	0	0	8	0	**8**	3	49	6	0	**58**	6	78	5	0	**89**	156
% Buses and Single-Unit Trucks	0%	0%	2.1%	0%	**2.1%**	0%	0%	3.1%	0%	**3.1%**	3.8%	0.8%	2.6%	0%	**0.9%**	1.4%	1.3%	9.4%	0%	**1.4%**	1.2%

*L: Left, R: Right, T: Thru, U: U-Turn

56th & Metcalf - TMC
Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918022, Location: 39.027161, -94.66781

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



56th & Metcalf - TMC

Tue Feb 1, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918022, Location: 39.027161, -94.66781

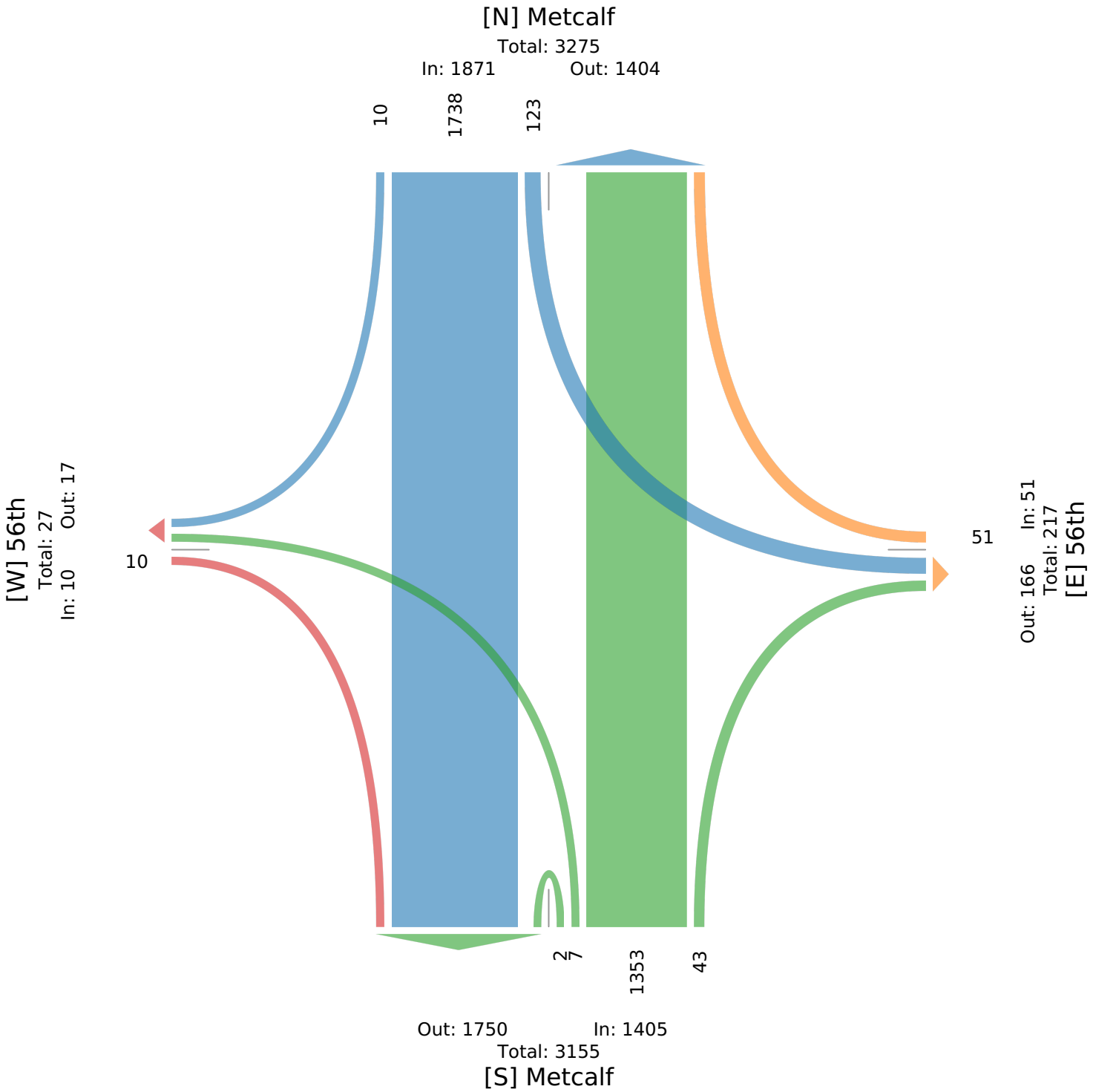
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	56th					56th					Metcalf					Metcalf					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 7:30AM	0	0	4	0	**4**	0	0	18	0	**18**	2	331	6	1	**340**	25	488	2	0	**515**	**877**
7:45AM	0	0	2	0	**2**	0	0	17	0	**17**	2	382	13	0	**397**	43	534	2	0	**579**	**995**
8:00AM	0	0	2	0	**2**	0	0	3	0	**3**	2	313	11	1	**327**	35	362	5	0	**402**	**734**
8:15AM	0	0	2	0	**2**	0	0	13	0	**13**	1	327	13	0	**341**	20	354	1	0	**375**	**731**
Total	0	0	10	0	**10**	0	0	51	0	**51**	7	1353	43	2	**1405**	123	1738	10	0	**1871**	**3337**
% Approach	0%	0%	100%	0%	**-**	0%	0%	100%	0%	**-**	0.5%	96.3%	3.1%	0.1%	**-**	6.6%	92.9%	0.5%	0%	**-**	-
% Total	0%	0%	0.3%	0%	**0.3%**	0%	0%	1.5%	0%	**1.5%**	0.2%	40.5%	1.3%	0.1%	**42.1%**	3.7%	52.1%	0.3%	0%	**56.1%**	-
PHF	-	-	0.625	-	**0.625**	-	-	0.708	-	**0.708**	0.875	0.885	0.827	0.500	**0.885**	0.715	0.814	0.500	-	**0.808**	0.838
Lights	0	0	9	0	**9**	0	0	45	0	**45**	7	1336	42	2	**1387**	120	1697	7	0	**1824**	3265
% Lights	0%	0%	90.0%	0%	**90.0%**	0%	0%	88.2%	0%	**88.2%**	100%	98.7%	97.7%	100%	**98.7%**	97.6%	97.6%	70.0%	0%	**97.5%**	97.8%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	2	0	0	**2**	1	6	0	0	**7**	9
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0.1%	0%	0%	**0.1%**	0.8%	0.3%	0%	0%	**0.4%**	0.3%
Buses and Single-Unit Trucks	0	0	1	0	**1**	0	0	6	0	**6**	0	15	1	0	**16**	2	35	3	0	**40**	63
% Buses and Single-Unit Trucks	0%	0%	10.0%	0%	**10.0%**	0%	0%	11.8%	0%	**11.8%**	0%	1.1%	2.3%	0%	**1.1%**	1.6%	2.0%	30.0%	0%	**2.1%**	1.9%

*L: Left, R: Right, T: Thru, U: U-Turn

56th & Metcalf - TMC
Tue Feb 1, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918022, Location: 39.027161, -94.66781

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



56th & Metcalf - TMC

Tue Feb 1, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918022, Location: 39.027161, -94.66781

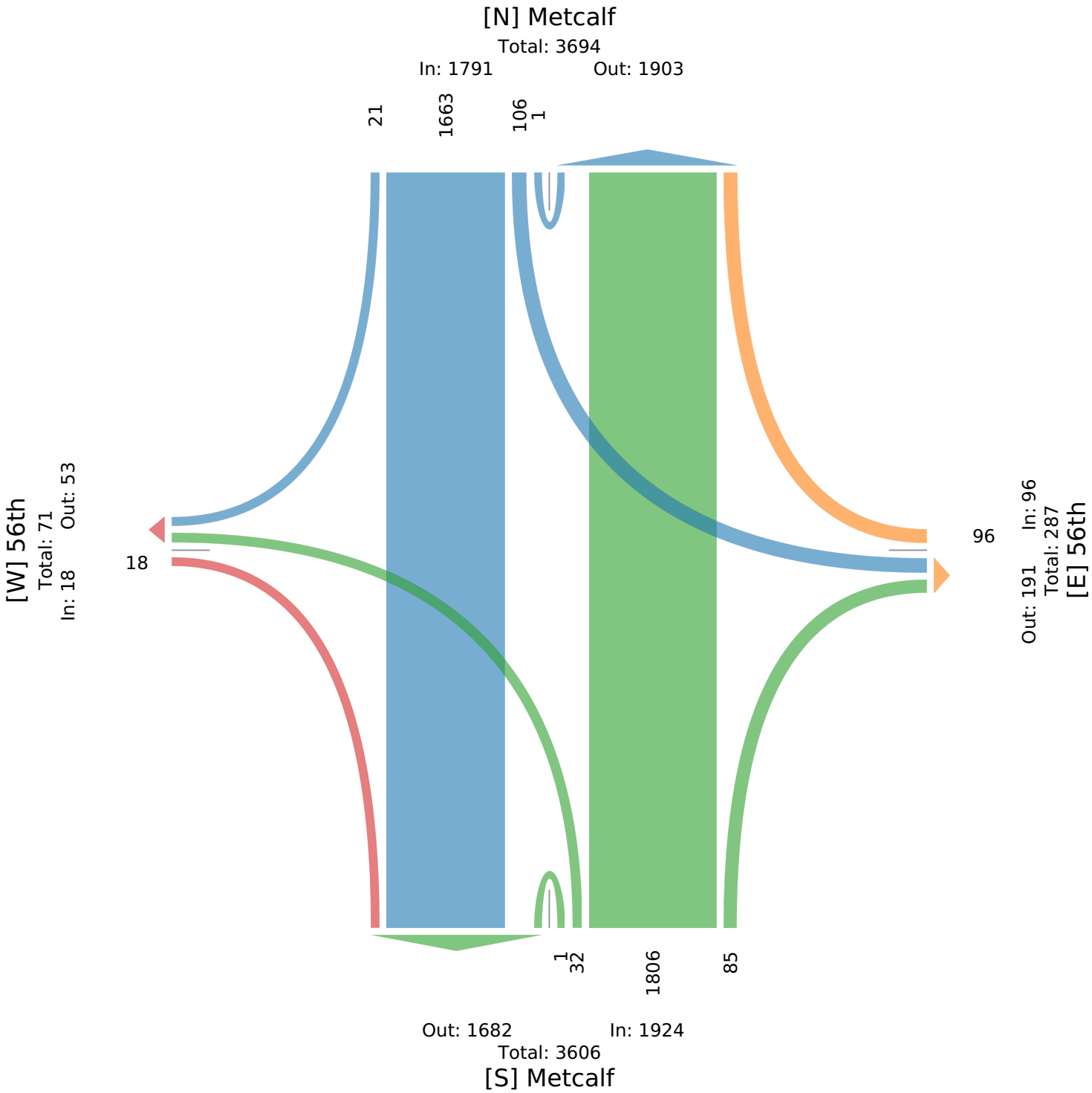
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	56th					56th					Metcalf					Metcalf					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-01 4:45PM	0	0	5	0	**5**	0	0	12	0	**12**	12	409	14	1	**436**	28	442	8	1	**479**	**932**
5:00PM	0	0	4	0	**4**	0	0	37	0	**37**	7	487	22	0	**516**	29	448	4	0	**481**	**1038**
5:15PM	0	0	4	0	**4**	0	0	31	0	**31**	7	462	22	0	**491**	20	411	3	0	**434**	**960**
5:30PM	0	0	5	0	**5**	0	0	16	0	**16**	6	448	27	0	**481**	29	362	6	0	**397**	**899**
Total	0	0	18	0	**18**	0	0	96	0	**96**	32	1806	85	1	**1924**	106	1663	21	1	**1791**	**3829**
% Approach	0%	0%	100%	0%	**-**	0%	0%	100%	0%	**-**	1.7%	93.9%	4.4%	0.1%	**-**	5.9%	92.9%	1.2%	0.1%	**-**	-
% Total	0%	0%	0.5%	0%	**0.5%**	0%	0%	2.5%	0%	**2.5%**	0.8%	47.2%	2.2%	0%	**50.2%**	2.8%	43.4%	0.5%	0%	**46.8%**	-
PHF	-	-	0.900	-	**0.900**	-	-	0.649	-	**0.649**	0.667	0.927	0.787	0.250	**0.932**	0.914	0.928	0.656	0.250	**0.931**	0.922
Lights	0	0	18	0	**18**	0	0	95	0	**95**	31	1792	84	1	**1908**	106	1650	20	1	**1777**	3798
% Lights	0%	0%	100%	0%	**100%**	0%	0%	99.0%	0%	**99.0%**	96.9%	99.2%	98.8%	100%	**99.2%**	100%	99.2%	95.2%	100%	**99.2%**	99.2%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	5	0	0	**5**	0	5	0	0	**5**	10
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0.3%	0%	0%	**0.3%**	0%	0.3%	0%	0%	**0.3%**	0.3%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	1	0	**1**	1	9	1	0	**11**	0	8	1	0	**9**	21
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0%	1.0%	0%	**1.0%**	3.1%	0.5%	1.2%	0%	**0.6%**	0%	0.5%	4.8%	0%	**0.5%**	0.5%

*L: Left, R: Right, T: Thru, U: U-Turn

56th & Metcalf - TMC
Tue Feb 1, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918022, Location: 39.027161, -94.66781

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



56th & Foxridge - TMC

Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918023, Location: 39.027129, -94.667374

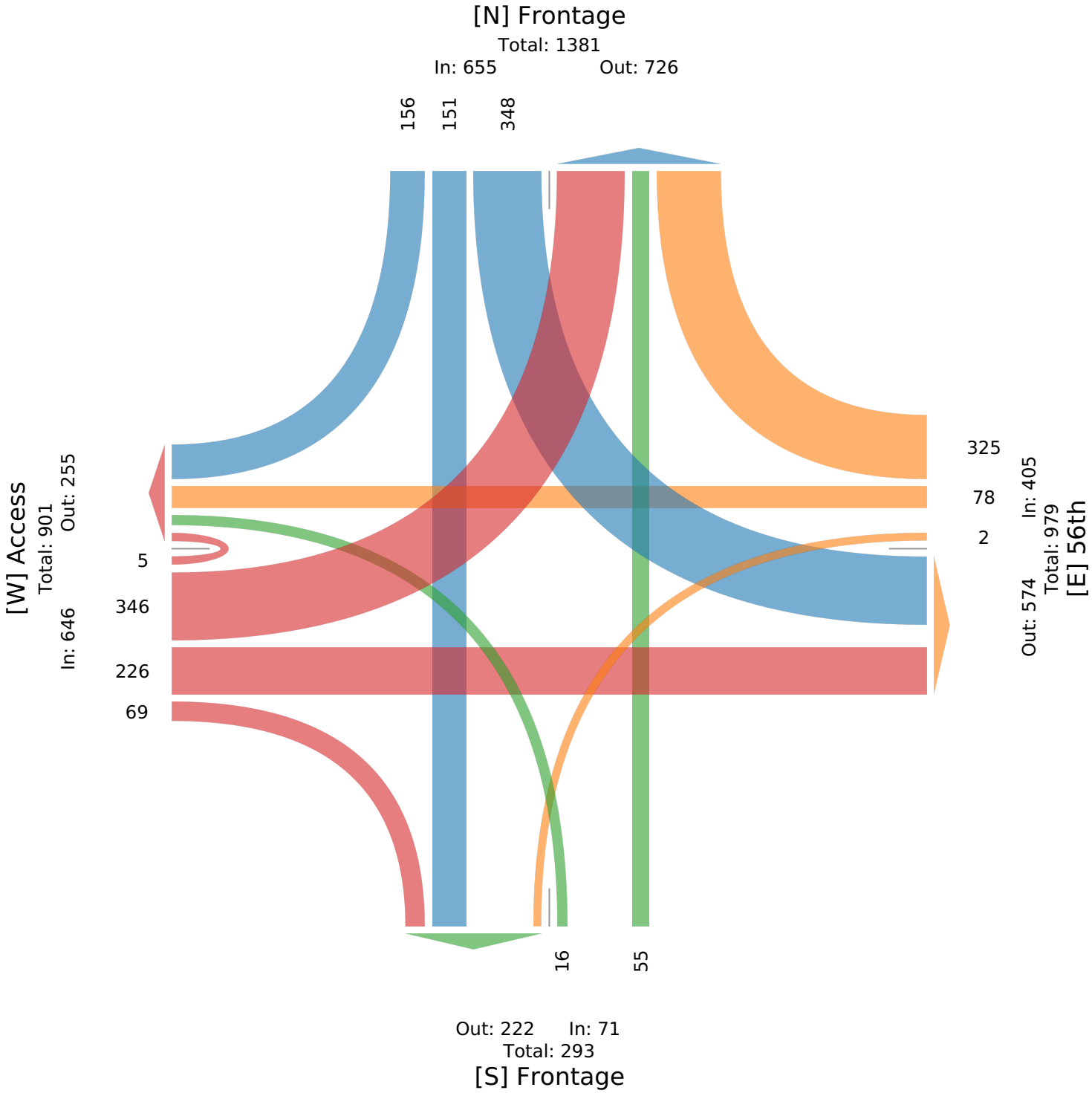
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Access					56th					Frontage					Frontage					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-01 7:00AM	11	8	4	0	**23**	0	0	3	0	**3**	0	0	0	0	**0**	11	5	11	0	**27**	**53**
7:15AM	11	11	3	1	**26**	0	1	3	0	**4**	0	1	0	0	**1**	28	16	12	0	**56**	**87**
7:30AM	17	10	4	0	**31**	0	3	5	0	**8**	1	1	0	0	**2**	33	14	14	0	**61**	**102**
7:45AM	23	22	10	1	**56**	0	5	11	0	**16**	0	0	0	0	**0**	24	12	11	0	**47**	**119**
Hourly Total	62	51	21	2	**136**	0	9	22	0	**31**	1	2	0	0	**3**	96	47	48	0	**191**	**361**
8:00AM	20	20	8	0	**48**	0	0	14	0	**14**	0	1	0	0	**1**	15	9	2	0	**26**	**89**
8:15AM	12	17	3	0	**32**	1	2	13	0	**16**	0	0	0	0	**0**	15	8	11	0	**34**	**82**
8:30AM	6	23	6	0	**35**	0	3	12	0	**15**	0	2	0	0	**2**	17	8	6	0	**31**	**83**
8:45AM	15	14	3	0	**32**	0	2	9	0	**11**	1	2	0	0	**3**	15	10	10	0	**35**	**81**
Hourly Total	53	74	20	0	**147**	1	7	48	0	**56**	1	5	0	0	**6**	62	35	29	0	**126**	**335**
4:00PM	22	15	4	0	**41**	0	3	30	0	**33**	0	5	0	0	**5**	28	6	5	0	**39**	**118**
4:15PM	25	17	1	0	**43**	0	10	35	0	**45**	1	8	0	0	**9**	21	9	10	0	**40**	**137**
4:30PM	28	11	4	0	**43**	0	5	38	0	**43**	2	7	0	0	**9**	19	8	14	0	**41**	**136**
4:45PM	28	11	1	2	**42**	0	5	33	0	**38**	0	3	0	0	**3**	19	13	5	0	**37**	**120**
Hourly Total	103	54	10	2	**169**	0	23	136	0	**159**	3	23	0	0	**26**	87	36	34	0	**157**	**511**
5:00PM	34	12	4	0	**50**	0	17	32	0	**49**	4	3	0	0	**7**	33	8	16	0	**57**	**163**
5:15PM	27	8	7	0	**42**	0	12	27	0	**39**	3	4	0	0	**7**	23	6	16	0	**45**	**133**
5:30PM	35	16	3	1	**55**	1	4	34	0	**39**	2	9	0	0	**11**	23	10	8	0	**41**	**146**
5:45PM	32	11	4	0	**47**	0	6	26	0	**32**	2	9	0	0	**11**	24	9	5	0	**38**	**128**
Hourly Total	128	47	18	1	**194**	1	39	119	0	**159**	11	25	0	0	**36**	103	33	45	0	**181**	**570**
Total	346	226	69	5	**646**	2	78	325	0	**405**	16	55	0	0	**71**	348	151	156	0	**655**	**1777**
% Approach	53.6%	35.0%	10.7%	0.8%	**-**	0.5%	19.3%	80.2%	0%	**-**	22.5%	77.5%	0%	0%	**-**	53.1%	23.1%	23.8%	0%	**-**	-
% Total	19.5%	12.7%	3.9%	0.3%	**36.4%**	0.1%	4.4%	18.3%	0%	**22.8%**	0.9%	3.1%	0%	0%	**4.0%**	19.6%	8.5%	8.8%	0%	**36.9%**	-
Lights	334	223	69	5	**631**	2	78	322	0	**402**	16	54	0	0	**70**	338	147	148	0	**633**	1736
% Lights	96.5%	98.7%	100%	100%	**97.7%**	100%	100%	99.1%	0%	**99.3%**	100%	98.2%	0%	0%	**98.6%**	97.1%	97.4%	94.9%	0%	**96.6%**	97.7%
Articulated Trucks	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1
% Articulated Trucks	0%	0.4%	0%	0%	**0.2%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%
Buses and Single-Unit Trucks	12	2	0	0	**14**	0	0	3	0	**3**	0	1	0	0	**1**	10	4	8	0	**22**	40
% Buses and Single-Unit Trucks	3.5%	0.9%	0%	0%	**2.2%**	0%	0%	0.9%	0%	**0.7%**	0%	1.8%	0%	0%	**1.4%**	2.9%	2.6%	5.1%	0%	**3.4%**	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

56th & Foxridge - TMC
Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918023, Location: 39.027129, -94.667374

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



56th & Foxridge - TMC

Tue Feb 1, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918023, Location: 39.027129, -94.667374

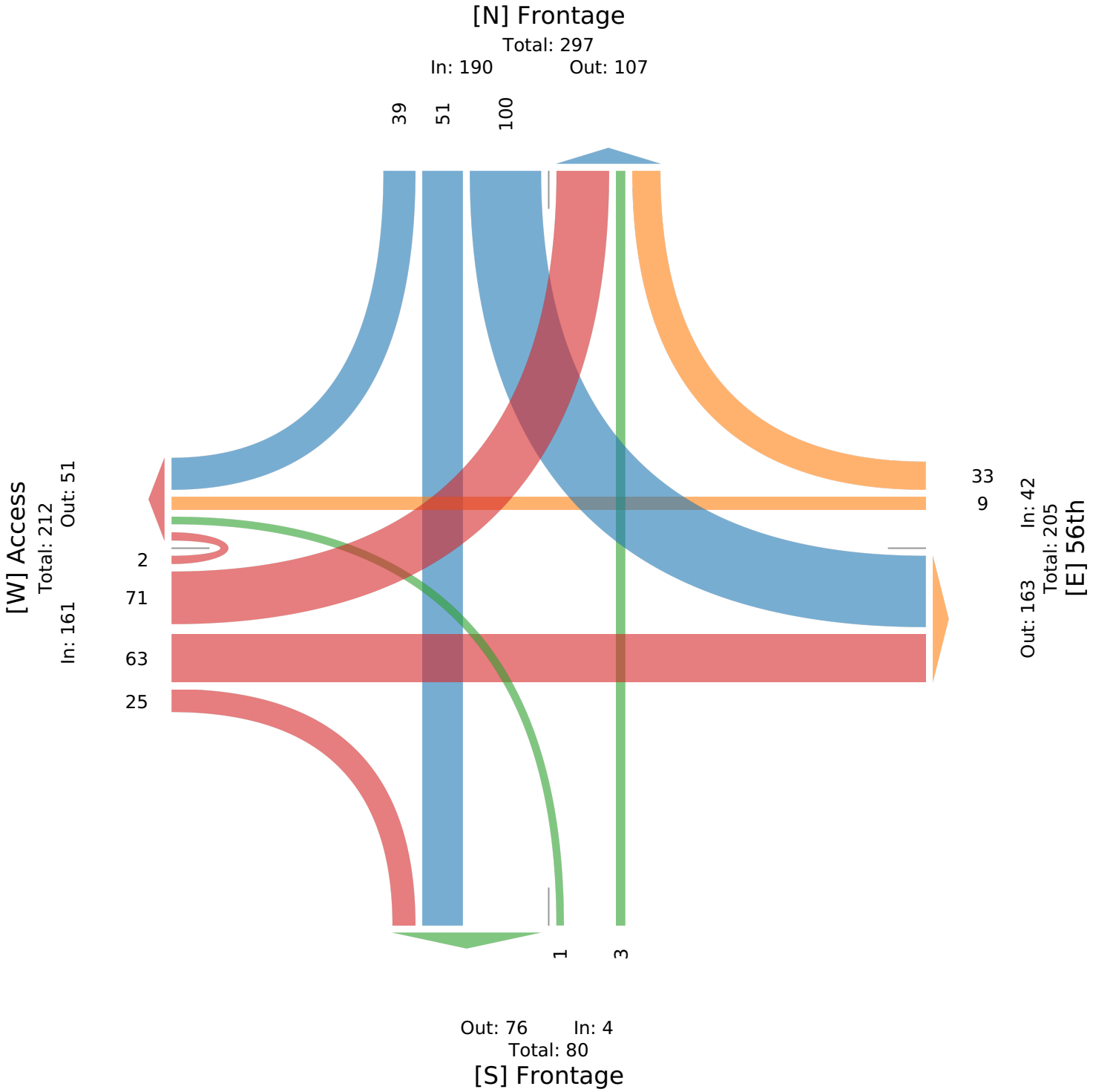
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Access					56th					Frontage					Frontage					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 7:15AM	11	11	3	1	**26**	0	1	3	0	**4**	0	1	0	0	**1**	28	16	12	0	**56**	**87**
7:30AM	17	10	4	0	**31**	0	3	5	0	**8**	1	1	0	0	**2**	33	14	14	0	**61**	**102**
7:45AM	23	22	10	1	**56**	0	5	11	0	**16**	0	0	0	0	**0**	24	12	11	0	**47**	**119**
8:00AM	20	20	8	0	**48**	0	0	14	0	**14**	0	1	0	0	**1**	15	9	2	0	**26**	**89**
Total	71	63	25	2	**161**	0	9	33	0	**42**	1	3	0	0	**4**	100	51	39	0	**190**	**397**
% Approach	44.1%	39.1%	15.5%	1.2%	**-**	0%	21.4%	78.6%	0%	**-**	25.0%	75.0%	0%	0%	**-**	52.6%	26.8%	20.5%	0%	**-**	-
% Total	17.9%	15.9%	6.3%	0.5%	**40.6%**	0%	2.3%	8.3%	0%	**10.6%**	0.3%	0.8%	0%	0%	**1.0%**	25.2%	12.8%	9.8%	0%	**47.9%**	-
PHF	0.772	0.716	0.625	0.500	**0.719**	-	0.450	0.589	-	**0.656**	0.250	0.750	-	-	**0.500**	0.758	0.797	0.696	-	**0.779**	0.834
Lights	66	62	25	2	**155**	0	9	31	0	**40**	1	3	0	0	**4**	98	50	35	0	**183**	382
% Lights	93.0%	98.4%	100%	100%	**96.3%**	0%	100%	93.9%	0%	**95.2%**	100%	100%	0%	0%	**100%**	98.0%	98.0%	89.7%	0%	**96.3%**	96.2%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	5	1	0	0	**6**	0	0	2	0	**2**	0	0	0	0	**0**	2	1	4	0	**7**	15
% Buses and Single-Unit Trucks	7.0%	1.6%	0%	0%	**3.7%**	0%	0%	6.1%	0%	**4.8%**	0%	0%	0%	0%	**0%**	2.0%	2.0%	10.3%	0%	**3.7%**	3.8%

*L: Left, R: Right, T: Thru, U: U-Turn

56th & Foxridge - TMC
Tue Feb 1, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918023, Location: 39.027129, -94.667374

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



56th & Foxridge - TMC

Tue Feb 1, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918023, Location: 39.027129, -94.667374

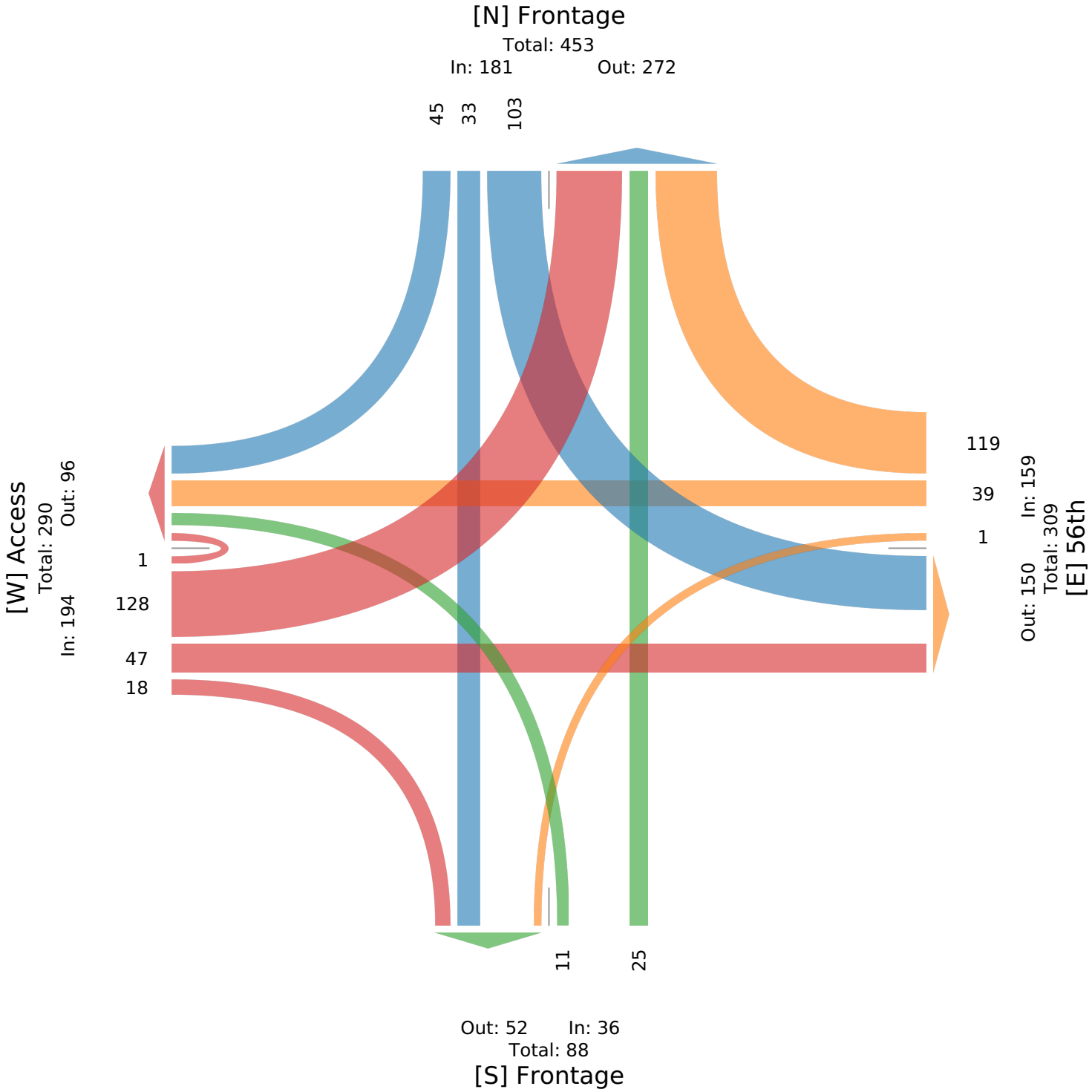
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Access					56th					Frontage					Frontage					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-01 5:00PM	34	12	4	0	**50**	0	17	32	0	**49**	4	3	0	0	**7**	33	8	16	0	**57**	**163**
5:15PM	27	8	7	0	**42**	0	12	27	0	**39**	3	4	0	0	**7**	23	6	16	0	**45**	**133**
5:30PM	35	16	3	1	**55**	1	4	34	0	**39**	2	9	0	0	**11**	23	10	8	0	**41**	**146**
5:45PM	32	11	4	0	**47**	0	6	26	0	**32**	2	9	0	0	**11**	24	9	5	0	**38**	**128**
Total	128	47	18	1	**194**	1	39	119	0	**159**	11	25	0	0	**36**	103	33	45	0	**181**	**570**
% Approach	66.0%	24.2%	9.3%	0.5%	**-**	0.6%	24.5%	74.8%	0%	**-**	30.6%	69.4%	0%	0%	**-**	56.9%	18.2%	24.9%	0%	**-**	-
% Total	22.5%	8.2%	3.2%	0.2%	**34.0%**	0.2%	6.8%	20.9%	0%	**27.9%**	1.9%	4.4%	0%	0%	**6.3%**	18.1%	5.8%	7.9%	0%	**31.8%**	-
PHF	0.914	0.734	0.643	0.250	**0.882**	0.250	0.574	0.875	-	**0.811**	0.688	0.694	-	-	**0.818**	0.780	0.825	0.703	-	**0.794**	0.874
Lights	128	47	18	1	**194**	1	39	119	0	**159**	11	25	0	0	**36**	103	33	45	0	**181**	570
% Lights	100%	100%	100%	100%	**100%**	100%	100%	100%	0%	**100%**	100%	100%	0%	0%	**100%**	100%	100%	100%	0%	**100%**	100%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%

*L: Left, R: Right, T: Thru, U: U-Turn

56th & Foxridge - TMC
Tue Feb 1, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918023, Location: 39.027129, -94.667374

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



58th & Foxridge - TMC

Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918024, Location: 39.02396, -94.667314

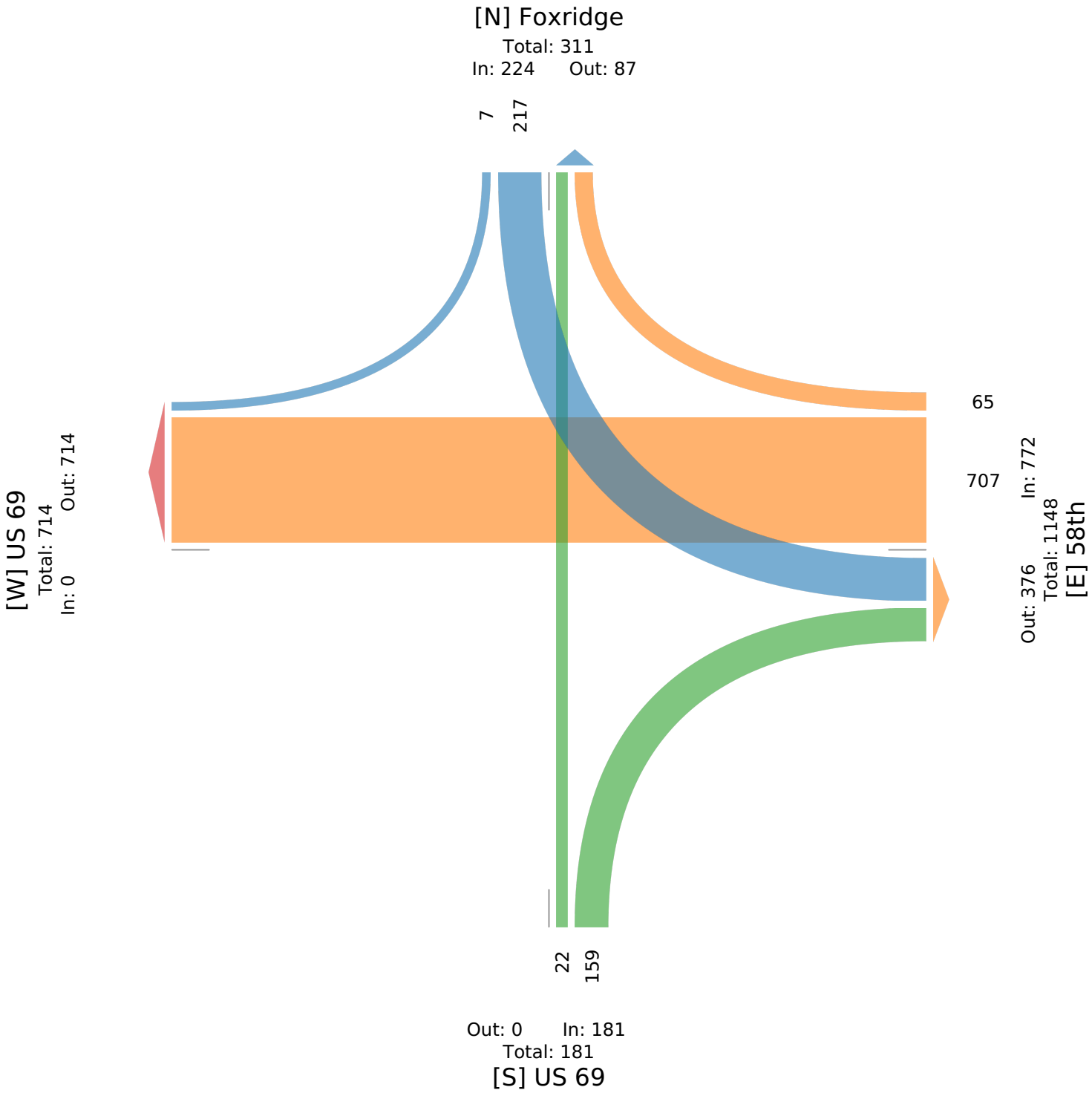
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	US 69					58th					US 69					Foxridge					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 7:00AM	0	0	0	0	**0**	0	30	0	0	**30**	0	3	10	0	**13**	8	0	0	0	**8**	**51**
7:15AM	0	0	0	0	**0**	0	31	2	0	**33**	0	1	15	0	**16**	17	0	0	0	**17**	**66**
7:30AM	0	0	0	0	**0**	0	59	1	0	**60**	0	2	12	0	**14**	11	0	0	0	**11**	**85**
7:45AM	0	0	0	0	**0**	0	35	2	0	**37**	0	3	16	0	**19**	21	0	0	0	**21**	**77**
Hourly Total	0	0	0	0	**0**	0	155	5	0	**160**	0	9	53	0	**62**	57	0	0	0	**57**	**279**
8:00AM	0	0	0	0	**0**	0	36	3	0	**39**	0	1	9	0	**10**	11	0	2	0	**13**	**62**
8:15AM	0	0	0	0	**0**	0	37	1	0	**38**	0	3	7	0	**10**	12	0	0	0	**12**	**60**
8:30AM	0	0	0	0	**0**	0	28	5	0	**33**	0	1	9	0	**10**	10	0	1	0	**11**	**54**
8:45AM	0	0	0	0	**0**	0	28	3	0	**31**	0	3	13	0	**16**	13	0	0	0	**13**	**60**
Hourly Total	0	0	0	0	**0**	0	129	12	0	**141**	0	8	38	0	**46**	46	0	3	0	**49**	**236**
4:00PM	0	0	0	0	**0**	0	52	6	0	**58**	0	2	9	0	**11**	13	0	2	0	**15**	**84**
4:15PM	0	0	0	0	**0**	0	53	6	0	**59**	0	0	6	0	**6**	9	0	1	0	**10**	**75**
4:30PM	0	0	0	0	**0**	0	49	8	0	**57**	0	0	9	0	**9**	13	0	0	0	**13**	**79**
4:45PM	0	0	0	0	**0**	0	55	3	0	**58**	0	0	8	0	**8**	20	0	0	0	**20**	**86**
Hourly Total	0	0	0	0	**0**	0	209	23	0	**232**	0	2	32	0	**34**	55	0	3	0	**58**	**324**
5:00PM	0	0	0	0	**0**	0	65	4	0	**69**	0	0	10	0	**10**	12	0	0	0	**12**	**91**
5:15PM	0	0	0	0	**0**	0	54	5	0	**59**	0	2	9	0	**11**	16	0	0	0	**16**	**86**
5:30PM	0	0	0	0	**0**	0	52	10	0	**62**	0	0	11	0	**11**	18	0	0	0	**18**	**91**
5:45PM	0	0	0	0	**0**	0	43	6	0	**49**	0	1	6	0	**7**	13	0	1	0	**14**	**70**
Hourly Total	0	0	0	0	**0**	0	214	25	0	**239**	0	3	36	0	**39**	59	0	1	0	**60**	**338**
Total	0	0	0	0	**0**	0	707	65	0	**772**	0	22	159	0	**181**	217	0	7	0	**224**	**1177**
% Approach	0%	0%	0%	0%	**-**	0%	91.6%	8.4%	0%	**-**	0%	12.2%	87.8%	0%	**-**	96.9%	0%	3.1%	0%	**-**	-
% Total	0%	0%	0%	0%	**0%**	0%	60.1%	5.5%	0%	**65.6%**	0%	1.9%	13.5%	0%	**15.4%**	18.4%	0%	0.6%	0%	**19.0%**	-
Lights	0	0	0	0	**0**	0	706	63	0	**769**	0	22	159	0	**181**	212	0	7	0	**219**	1169
% Lights	0%	0%	0%	0%	**-**	0%	99.9%	96.9%	0%	**99.6%**	0%	100%	100%	0%	**100%**	97.7%	0%	100%	0%	**97.8%**	99.3%
Articulated Trucks	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	1
% Articulated Trucks	0%	0%	0%	0%	**-**	0%	0.1%	0%	0%	**0.1%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	2	0	**2**	0	0	0	0	**0**	5	0	0	0	**5**	7
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**-**	0%	0%	3.1%	0%	**0.3%**	0%	0%	0%	0%	**0%**	2.3%	0%	0%	0%	**2.2%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

58th & Foxridge - TMC
Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918024, Location: 39.02396, -94.667314

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



58th & Foxridge - TMC

Tue Feb 1, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918024, Location: 39.02396, -94.667314

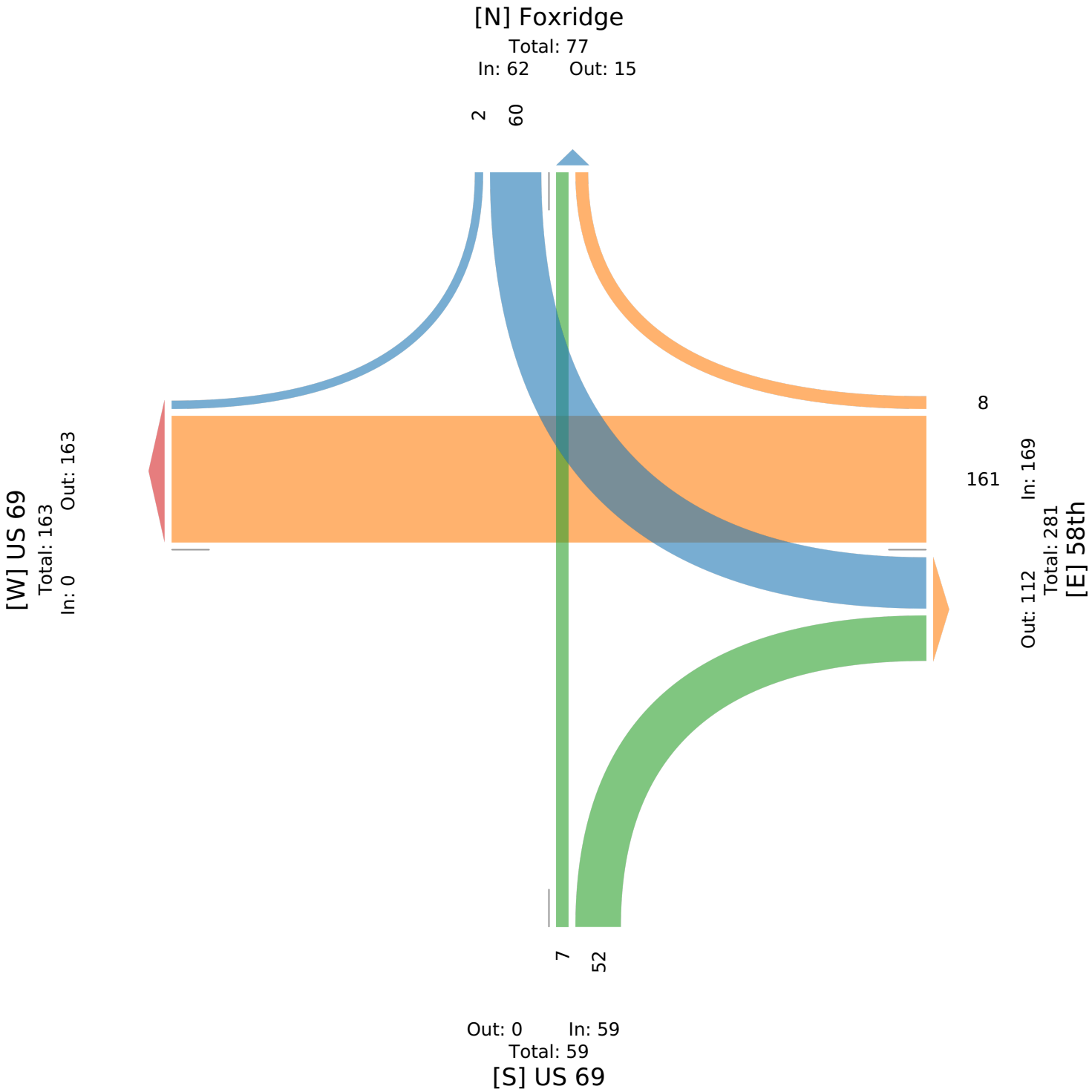
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	US 69					58th					US 69					Foxridge					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-01 7:15AM	0	0	0	0	**0**	0	31	2	0	**33**	0	1	15	0	**16**	17	0	0	0	**17**	**66**
7:30AM	0	0	0	0	**0**	0	59	1	0	**60**	0	2	12	0	**14**	11	0	0	0	**11**	**85**
7:45AM	0	0	0	0	**0**	0	35	2	0	**37**	0	3	16	0	**19**	21	0	0	0	**21**	**77**
8:00AM	0	0	0	0	**0**	0	36	3	0	**39**	0	1	9	0	**10**	11	0	2	0	**13**	**62**
Total	0	0	0	0	**0**	0	161	8	0	**169**	0	7	52	0	**59**	60	0	2	0	**62**	**290**
% Approach	0%	0%	0%	0%	**-**	0%	95.3%	4.7%	0%	**-**	0%	11.9%	88.1%	0%	**-**	96.8%	0%	3.2%	0%	**-**	-
% Total	0%	0%	0%	0%	**0%**	0%	55.5%	2.8%	0%	**58.3%**	0%	2.4%	17.9%	0%	**20.3%**	20.7%	0%	0.7%	0%	**21.4%**	-
PHF	-	-	-	-	**-**	-	0.682	0.667	-	**0.704**	-	0.583	0.813	-	**0.776**	0.714	-	0.250	-	**0.738**	0.853
Lights	0	0	0	0	**0**	0	161	8	0	**169**	0	7	52	0	**59**	59	0	2	0	**61**	289
% Lights	0%	0%	0%	0%	**-**	0%	100%	100%	0%	**100%**	0%	100%	100%	0%	**100%**	98.3%	0%	100%	0%	**98.4%**	99.7%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**-**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	1
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**-**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	1.7%	0%	0%	0%	**1.6%**	0.3%

*L: Left, R: Right, T: Thru, U: U-Turn

58th & Foxridge - TMC
Tue Feb 1, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918024, Location: 39.02396, -94.667314

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



58th & Foxridge - TMC

Tue Feb 1, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918024, Location: 39.02396, -94.667314

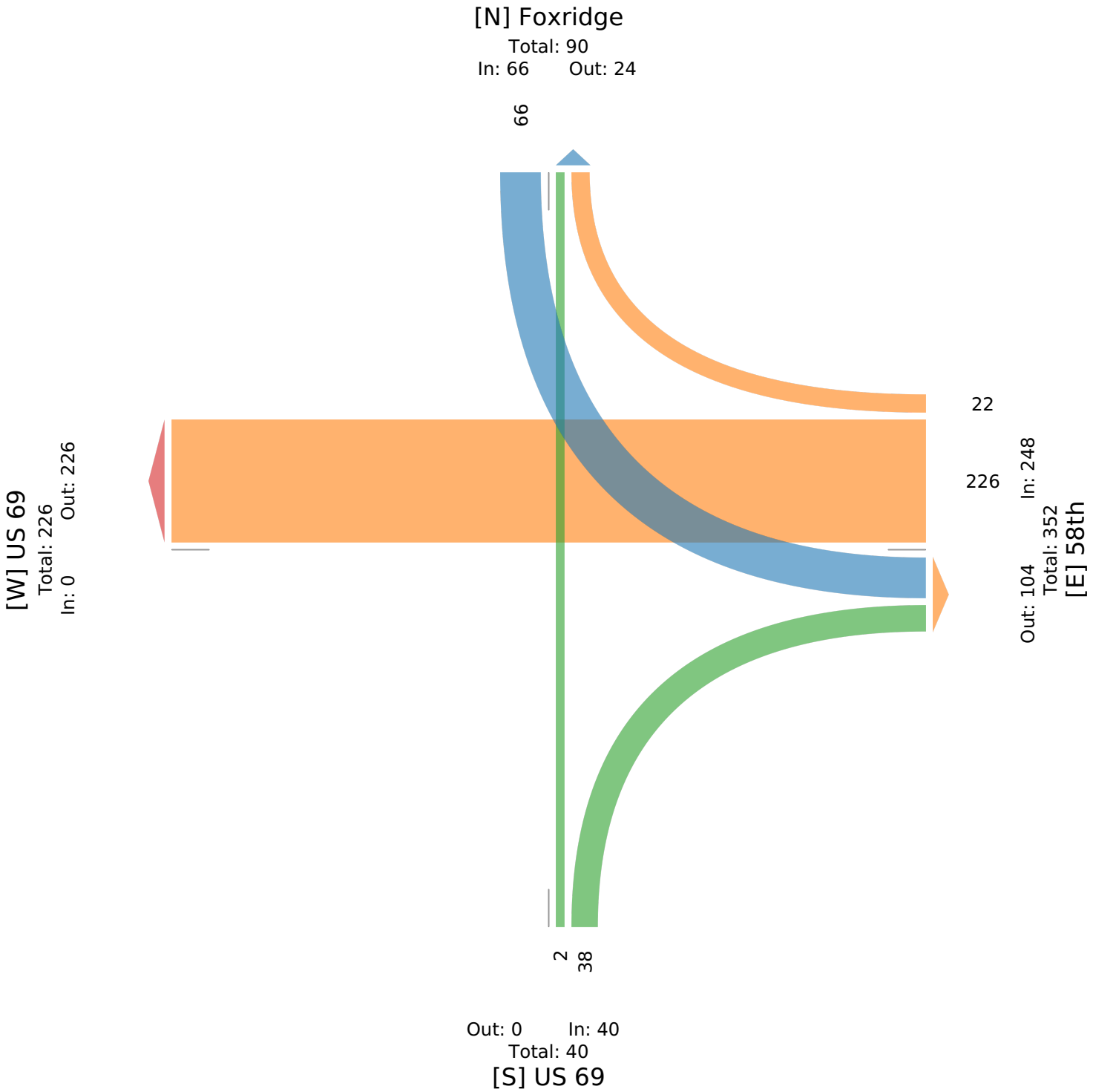
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	US 69					58th					US 69					Foxridge					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-01 4:45PM	0	0	0	0	**0**	0	55	3	0	**58**	0	0	8	0	**8**	20	0	0	0	**20**	**86**
5:00PM	0	0	0	0	**0**	0	65	4	0	**69**	0	0	10	0	**10**	12	0	0	0	**12**	**91**
5:15PM	0	0	0	0	**0**	0	54	5	0	**59**	0	2	9	0	**11**	16	0	0	0	**16**	**86**
5:30PM	0	0	0	0	**0**	0	52	10	0	**62**	0	0	11	0	**11**	18	0	0	0	**18**	**91**
Total	0	0	0	0	**0**	0	226	22	0	**248**	0	2	38	0	**40**	66	0	0	0	**66**	**354**
% Approach	0%	0%	0%	0%	**-**	0%	91.1%	8.9%	0%	**-**	0%	5.0%	95.0%	0%	**-**	100%	0%	0%	0%	**-**	-
% Total	0%	0%	0%	0%	**0%**	0%	63.8%	6.2%	0%	**70.1%**	0%	0.6%	10.7%	0%	**11.3%**	18.6%	0%	0%	0%	**18.6%**	-
PHF	-	-	-	-	**-**	-	0.869	0.550	-	**0.899**	-	0.250	0.864	-	**0.909**	0.825	-	-	-	**0.825**	0.973
Lights	0	0	0	0	**0**	0	226	22	0	**248**	0	2	38	0	**40**	66	0	0	0	**66**	354
% Lights	0%	0%	0%	0%	**-**	0%	100%	100%	0%	**100%**	0%	100%	100%	0%	**100%**	100%	0%	0%	0%	**100%**	100%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**-**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**-**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%

*L: Left, R: Right, T: Thru, U: U-Turn

58th & Foxridge - TMC
Tue Feb 1, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918024, Location: 39.02396, -94.667314

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Johnson Drive and Broadmoor - TMC

Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918025, Location: 39.022226, -94.665648

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

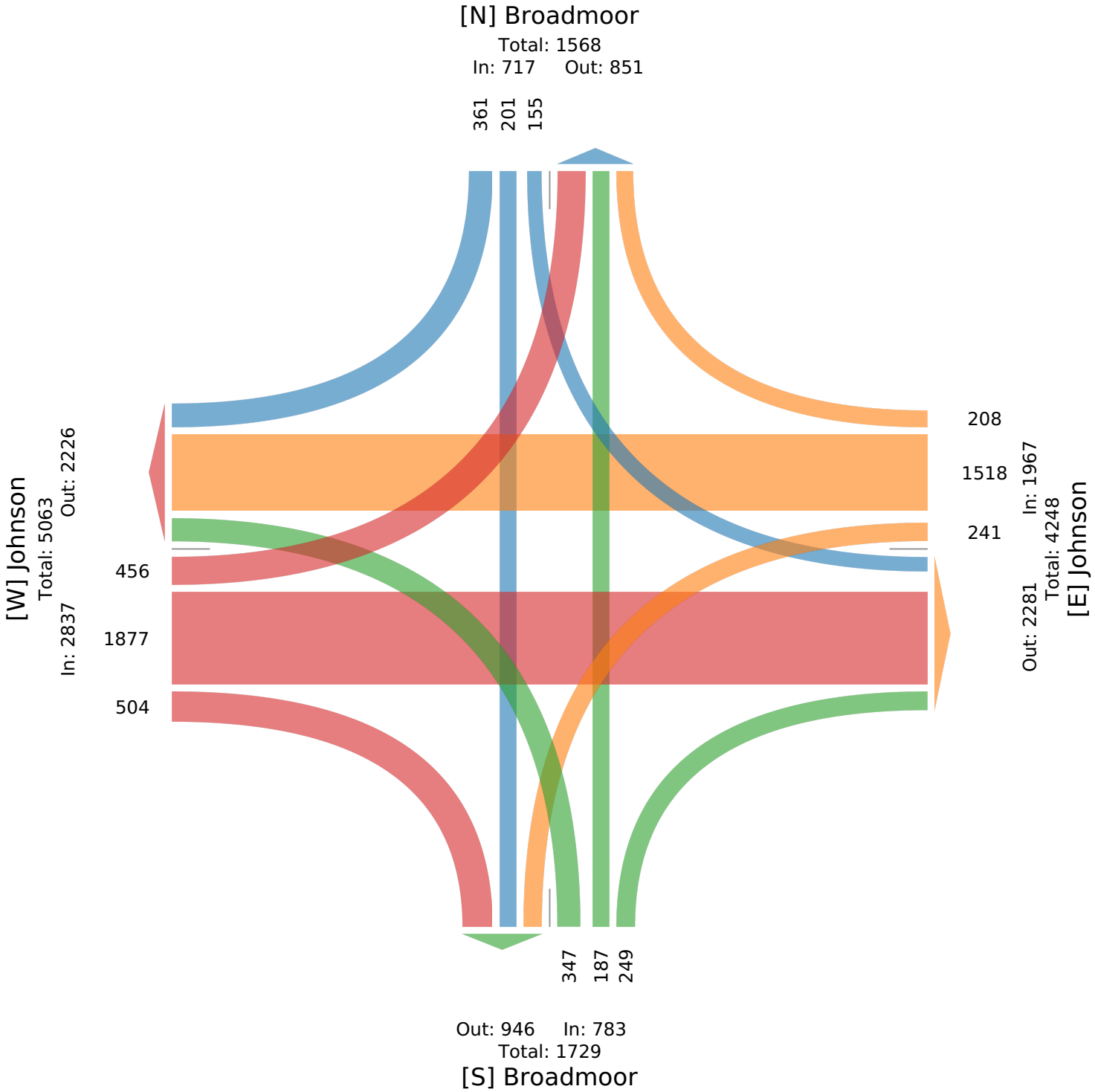
Leg	Johnson					Johnson					Broadmoor					Broadmoor					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 7:00AM	17	51	16	0	**84**	3	52	8	0	**63**	8	4	3	0	**15**	1	6	9	0	**16**	**178**
7:15AM	20	74	22	0	**116**	2	86	7	0	**95**	7	3	6	0	**16**	8	5	25	0	**38**	**265**
7:30AM	48	132	23	0	**203**	10	119	8	0	**137**	13	2	13	0	**28**	8	10	29	0	**47**	**415**
7:45AM	34	112	27	0	**173**	6	52	16	0	**74**	3	4	10	0	**17**	9	16	16	0	**41**	**305**
Hourly Total	119	369	88	0	**576**	21	309	39	0	**369**	31	13	32	0	**76**	26	37	79	0	**142**	**1163**
8:00AM	30	99	31	0	**160**	13	74	11	0	**98**	13	5	15	0	**33**	6	6	12	0	**24**	**315**
8:15AM	24	93	19	0	**136**	12	48	16	0	**76**	12	6	12	0	**30**	8	6	9	0	**23**	**265**
8:30AM	14	107	29	0	**150**	9	68	15	0	**92**	14	3	10	0	**27**	13	5	13	0	**31**	**300**
8:45AM	20	98	22	0	**140**	9	73	16	0	**98**	12	4	8	0	**24**	10	6	10	0	**26**	**288**
Hourly Total	88	397	101	0	**586**	43	263	58	0	**364**	51	18	45	0	**114**	37	23	44	0	**104**	**1168**
4:00PM	24	143	31	0	**198**	20	105	18	0	**143**	28	21	19	0	**68**	9	19	25	0	**53**	**462**
4:15PM	35	116	40	0	**191**	23	130	16	0	**169**	32	23	20	0	**75**	11	18	28	0	**57**	**492**
4:30PM	31	126	40	0	**197**	21	109	17	0	**147**	33	13	28	0	**74**	11	14	28	0	**53**	**471**
4:45PM	34	165	45	0	**244**	21	124	10	0	**155**	36	19	26	0	**81**	13	12	36	0	**61**	**541**
Hourly Total	124	550	156	0	**830**	85	468	61	0	**614**	129	76	93	0	**298**	44	63	117	0	**224**	**1966**
5:00PM	34	149	46	0	**229**	18	129	11	0	**158**	33	21	20	0	**74**	14	25	44	0	**83**	**544**
5:15PM	32	153	38	0	**223**	27	114	12	0	**153**	32	20	23	0	**75**	7	22	27	0	**56**	**507**
5:30PM	39	125	37	0	**201**	17	130	15	0	**162**	47	21	17	0	**85**	15	19	30	0	**64**	**512**
5:45PM	20	134	38	0	**192**	30	105	12	0	**147**	24	18	19	0	**61**	12	12	20	0	**44**	**444**
Hourly Total	125	561	159	0	**845**	92	478	50	0	**620**	136	80	79	0	**295**	48	78	121	0	**247**	**2007**
Total	456	1877	504	0	**2837**	241	1518	208	0	**1967**	347	187	249	0	**783**	155	201	361	0	**717**	**6304**
% Approach	16.1%	66.2%	17.8%	0%	-	12.3%	77.2%	10.6%	0%	-	44.3%	23.9%	31.8%	0%	-	21.6%	28.0%	50.3%	0%	-	-
% Total	7.2%	29.8%	8.0%	0%	**45.0%**	3.8%	24.1%	3.3%	0%	**31.2%**	5.5%	3.0%	3.9%	0%	**12.4%**	2.5%	3.2%	5.7%	0%	**11.4%**	-
Lights	452	1856	500	0	**2808**	240	1492	207	0	**1939**	343	186	249	0	**778**	155	196	348	0	**699**	6224
% Lights	99.1%	98.9%	99.2%	0%	**99.0%**	99.6%	98.3%	99.5%	0%	**98.6%**	98.8%	99.5%	100%	0%	**99.4%**	100%	97.5%	96.4%	0%	**97.5%**	98.7%
Articulated Trucks	0	4	0	0	**4**	0	6	0	0	**6**	0	0	0	0	**0**	0	0	0	0	**0**	10
% Articulated Trucks	0%	0.2%	0%	0%	**0.1%**	0%	0.4%	0%	0%	**0.3%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.2%
Buses and Single-Unit Trucks	4	17	4	0	**25**	1	20	1	0	**22**	4	1	0	0	**5**	0	5	13	0	**18**	70
% Buses and Single-Unit Trucks	0.9%	0.9%	0.8%	0%	**0.9%**	0.4%	1.3%	0.5%	0%	**1.1%**	1.2%	0.5%	0%	0%	**0.6%**	0%	2.5%	3.6%	0%	**2.5%**	1.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Johnson Drive and Broadmoor - TMC

Tue Feb 1, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918025, Location: 39.022226, -94.665648

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Johnson Drive and Broadmoor - TMC

Tue Feb 1, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918025, Location: 39.022226, -94.665648

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Johnson					Johnson					Broadmoor					Broadmoor					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 7:15AM	20	74	22	0	**116**	2	86	7	0	**95**	7	3	6	0	**16**	8	5	25	0	**38**	**265**
7:30AM	48	132	23	0	**203**	10	119	8	0	**137**	13	2	13	0	**28**	8	10	29	0	**47**	**415**
7:45AM	34	112	27	0	**173**	6	52	16	0	**74**	3	4	10	0	**17**	9	16	16	0	**41**	**305**
8:00AM	30	99	31	0	**160**	13	74	11	0	**98**	13	5	15	0	**33**	6	6	12	0	**24**	**315**
Total	132	417	103	0	**652**	31	331	42	0	**404**	36	14	44	0	**94**	31	37	82	0	**150**	**1300**
% Approach	20.2%	64.0%	15.8%	0%	**-**	7.7%	81.9%	10.4%	0%	**-**	38.3%	14.9%	46.8%	0%	**-**	20.7%	24.7%	54.7%	0%	**-**	-
% Total	10.2%	32.1%	7.9%	0%	**50.2%**	2.4%	25.5%	3.2%	0%	**31.1%**	2.8%	1.1%	3.4%	0%	**7.2%**	2.4%	2.8%	6.3%	0%	**11.5%**	-
PHF	0.688	0.790	0.831	-	**0.803**	0.596	0.695	0.656	-	**0.737**	0.692	0.700	0.733	-	**0.712**	0.861	0.578	0.707	-	**0.798**	0.783
Lights	130	411	102	0	**643**	31	323	42	0	**396**	35	14	44	0	**93**	31	36	79	0	**146**	1278
% Lights	98.5%	98.6%	99.0%	0%	**98.6%**	100%	97.6%	100%	0%	**98.0%**	97.2%	100%	100%	0%	**98.9%**	100%	97.3%	96.3%	0%	**97.3%**	98.3%
Articulated Trucks	0	1	0	0	**1**	0	2	0	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	3
% Articulated Trucks	0%	0.2%	0%	0%	**0.2%**	0%	0.6%	0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.2%
Buses and Single-Unit Trucks	2	5	1	0	**8**	0	6	0	0	**6**	1	0	0	0	**1**	0	1	3	0	**4**	19
% Buses and Single-Unit Trucks	1.5%	1.2%	1.0%	0%	**1.2%**	0%	1.8%	0%	0%	**1.5%**	2.8%	0%	0%	0%	**1.1%**	0%	2.7%	3.7%	0%	**2.7%**	1.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Johnson Drive and Broadmoor - TMC
Tue Feb 1, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918025, Location: 39.022226, -94.665648

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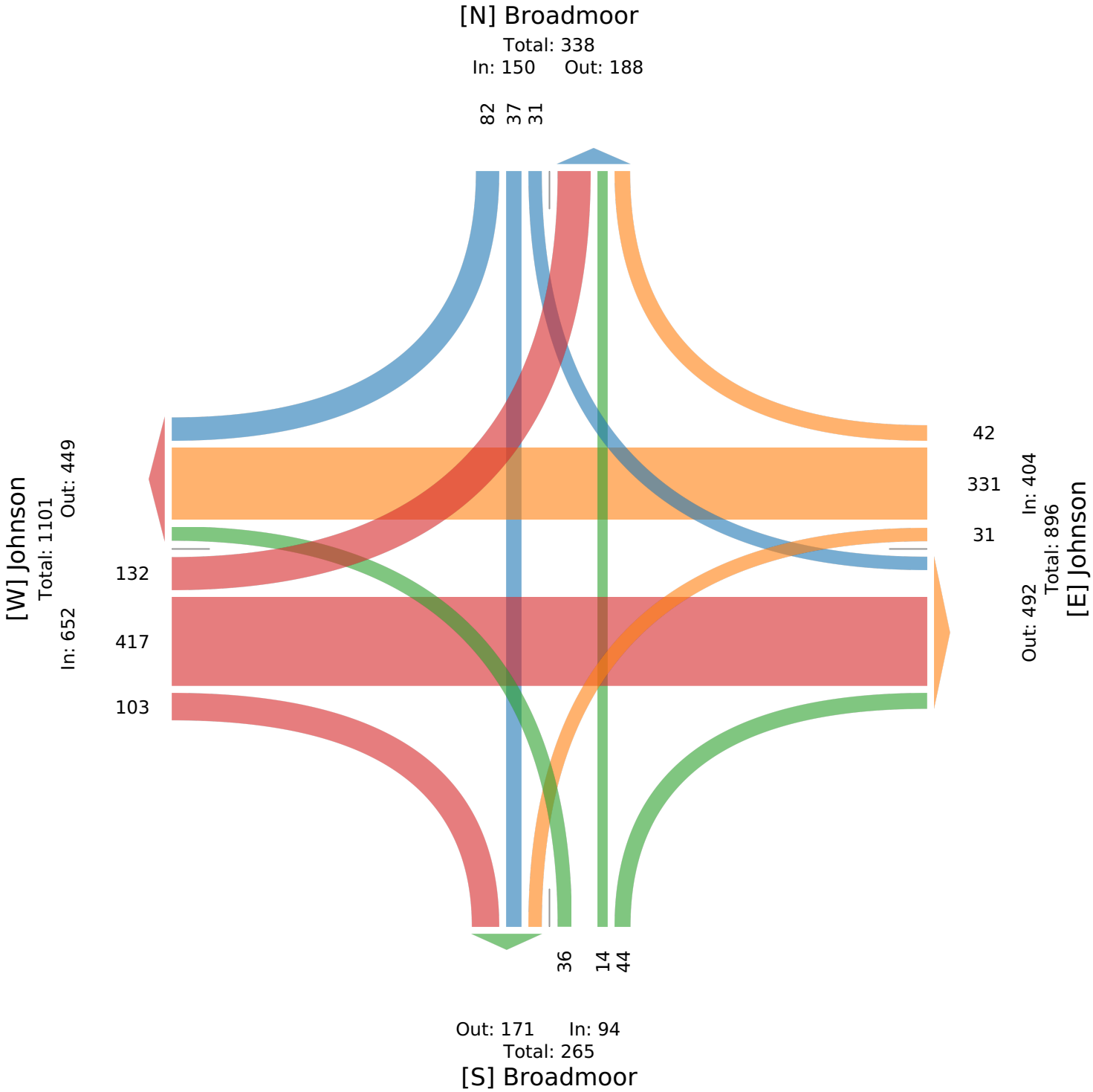
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Johnson Drive and Broadmoor - TMC

Tue Feb 1, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 918025, Location: 39.022226, -94.665648

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Johnson					Johnson					Broadmoor					Broadmoor					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-01 4:45PM	34	165	45	0	**244**	21	124	10	0	**155**	36	19	26	0	**81**	13	12	36	0	**61**	**541**
5:00PM	34	149	46	0	**229**	18	129	11	0	**158**	33	21	20	0	**74**	14	25	44	0	**83**	**544**
5:15PM	32	153	38	0	**223**	27	114	12	0	**153**	32	20	23	0	**75**	7	22	27	0	**56**	**507**
5:30PM	39	125	37	0	**201**	17	130	15	0	**162**	47	21	17	0	**85**	15	19	30	0	**64**	**512**
Total	139	592	166	0	**897**	83	497	48	0	**628**	148	81	86	0	**315**	49	78	137	0	**264**	**2104**
% Approach	15.5%	66.0%	18.5%	0%	**-**	13.2%	79.1%	7.6%	0%	**-**	47.0%	25.7%	27.3%	0%	**-**	18.6%	29.5%	51.9%	0%	**-**	-
% Total	6.6%	28.1%	7.9%	0%	**42.6%**	3.9%	23.6%	2.3%	0%	**29.8%**	7.0%	3.8%	4.1%	0%	**15.0%**	2.3%	3.7%	6.5%	0%	**12.5%**	-
PHF	0.891	0.897	0.902	-	**0.919**	0.769	0.956	0.800	-	**0.969**	0.787	0.964	0.827	-	**0.926**	0.817	0.780	0.778	-	**0.795**	0.967
Lights	139	589	166	0	**894**	83	492	48	0	**623**	147	80	86	0	**313**	49	78	137	0	**264**	2094
% Lights	100%	99.5%	100%	0%	**99.7%**	100%	99.0%	100%	0%	**99.2%**	99.3%	98.8%	100%	0%	**99.4%**	100%	100%	100%	0%	**100%**	99.5%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	3	0	0	**3**	0	5	0	0	**5**	1	1	0	0	**2**	0	0	0	0	**0**	10
% Buses and Single-Unit Trucks	0%	0.5%	0%	0%	**0.3%**	0%	1.0%	0%	0%	**0.8%**	0.7%	1.2%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Johnson Drive and Broadmoor - TMC

Tue Feb 1, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
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GEWALT HAMILTON ASSOCIATES, INC.
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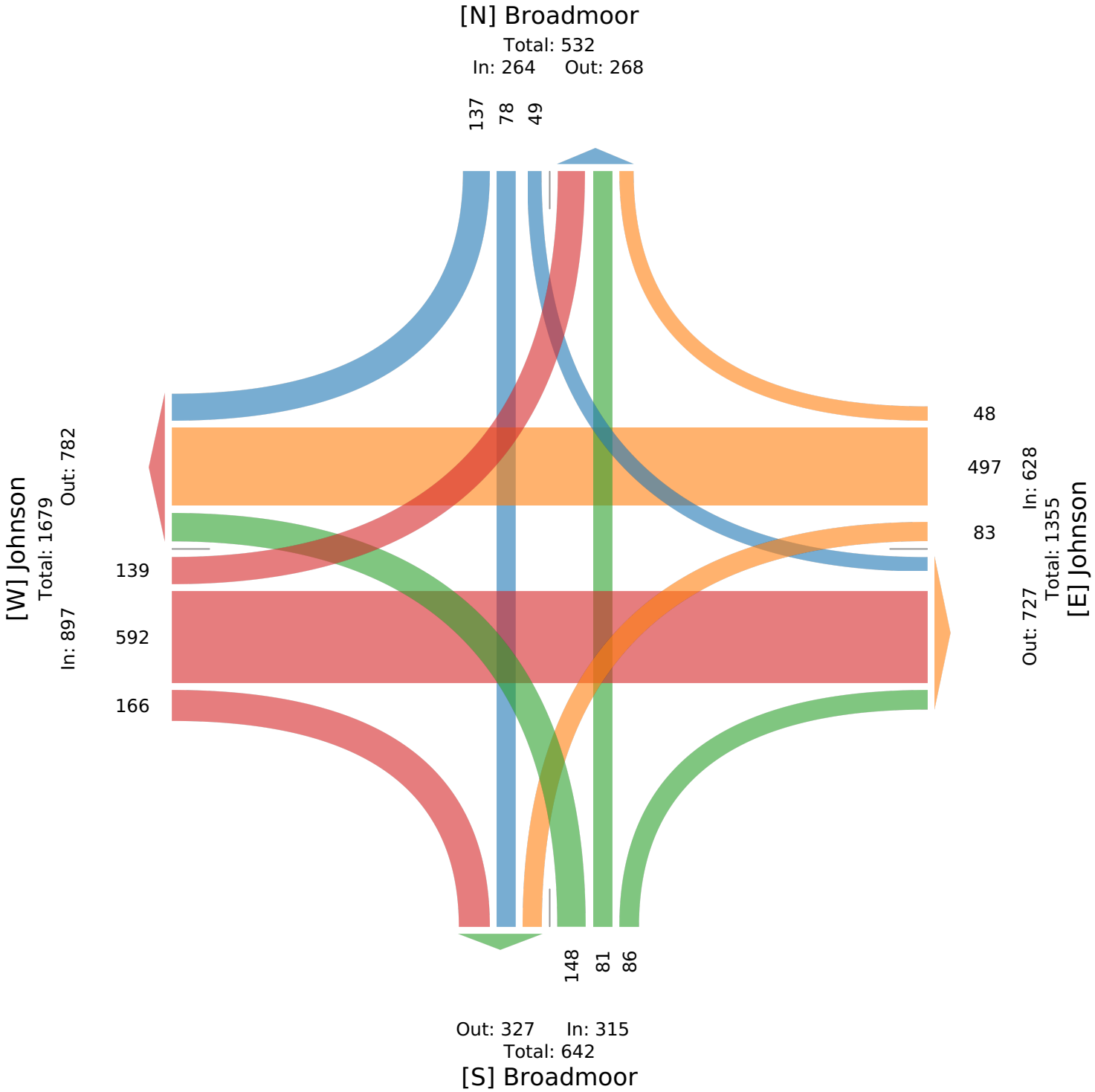
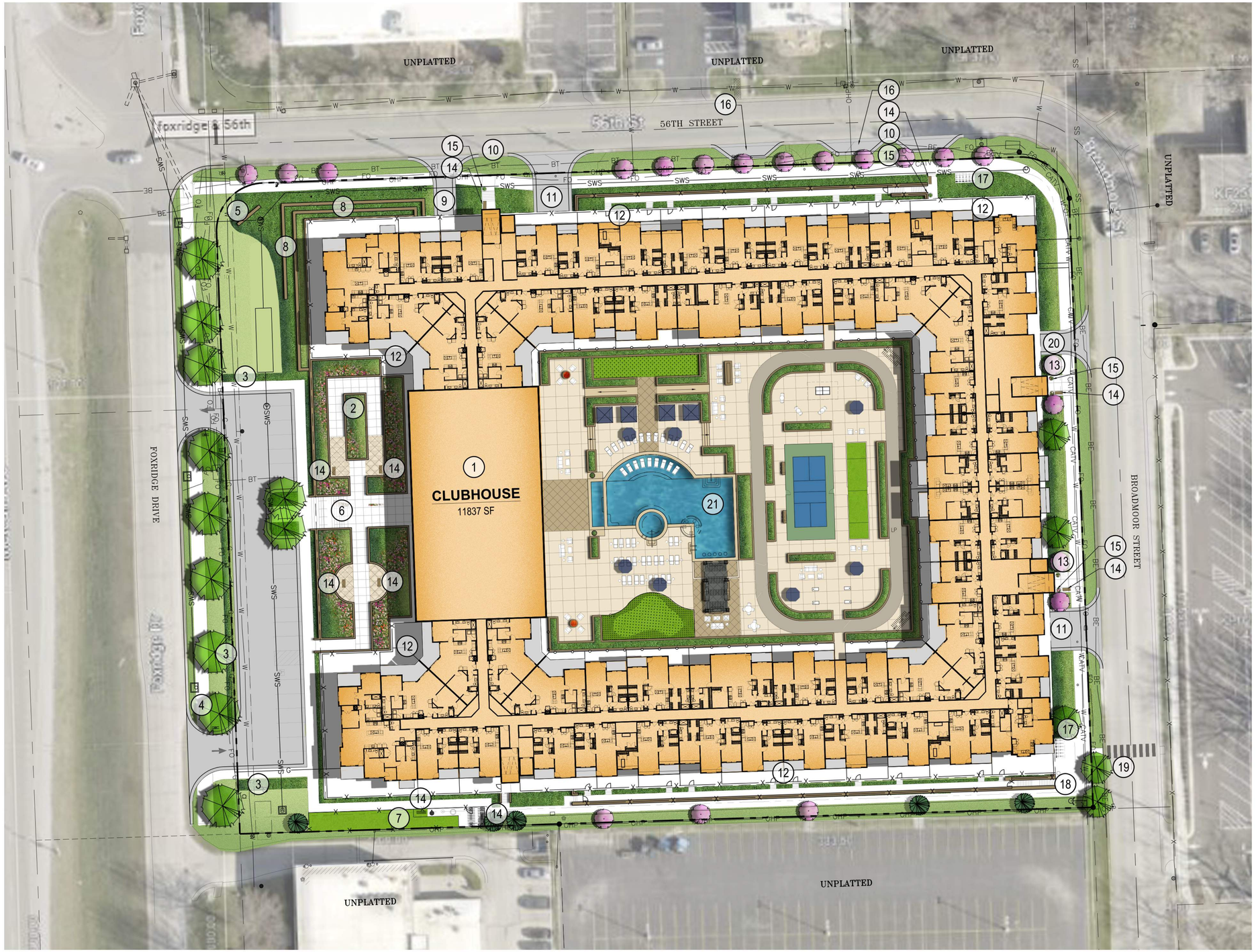


Appendix C: Site Plan



AMENITIES

1. CLUBHOUSE - SEE ARCHITECTURE
2. SCULPTURE
3. LANDSCAPE HEDGE
4. 8' TRAIL
5. SIGN WALL
6. ENTRY PLAZA
7. DOG RUN
8. RETAINING WALL
9. TRASH
10. EXISTING STREET LIGHT
11. GARAGE ENTRY
12. UNIT PATIOS
13. SPECIAL PAVING
14. BENCH, TYP.
15. PLANTER, TYP.
16. ON-STREET PARKING, TYP.
17. BIKE RACKS
18. PET WASTE STATION
19. CROSSWALK TO PARK
20. LOADING
21. AMENITY COURTYARD

SITE PLAN
1"=30'-0"

NSPJ ARCHITECTS
ARCHITECTURE
LANDSCAPE ARCHITECTURE
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

NOT FOR CONSTRUCTION

A NEW MULTIFAMILY DEVELOPMENT FOR:

56TH & FOXRIDGE

MISSION, KANSAS

DRAWING RELEASE LOG
- 04.11.22 PDP SUBMITTAL
- 06.10.22 PDP RESUBMITTAL

△ REVISIONS

DATE
04/11/2022
JOB NO.
XXXXXX
DRAWN BY:
PM / DRFT
SHEET NO.
SP1.00

PRELIMINARY DEVELOPMENT PLAN

Appendix D: ITE Trip Generation

Land Use: 221
Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

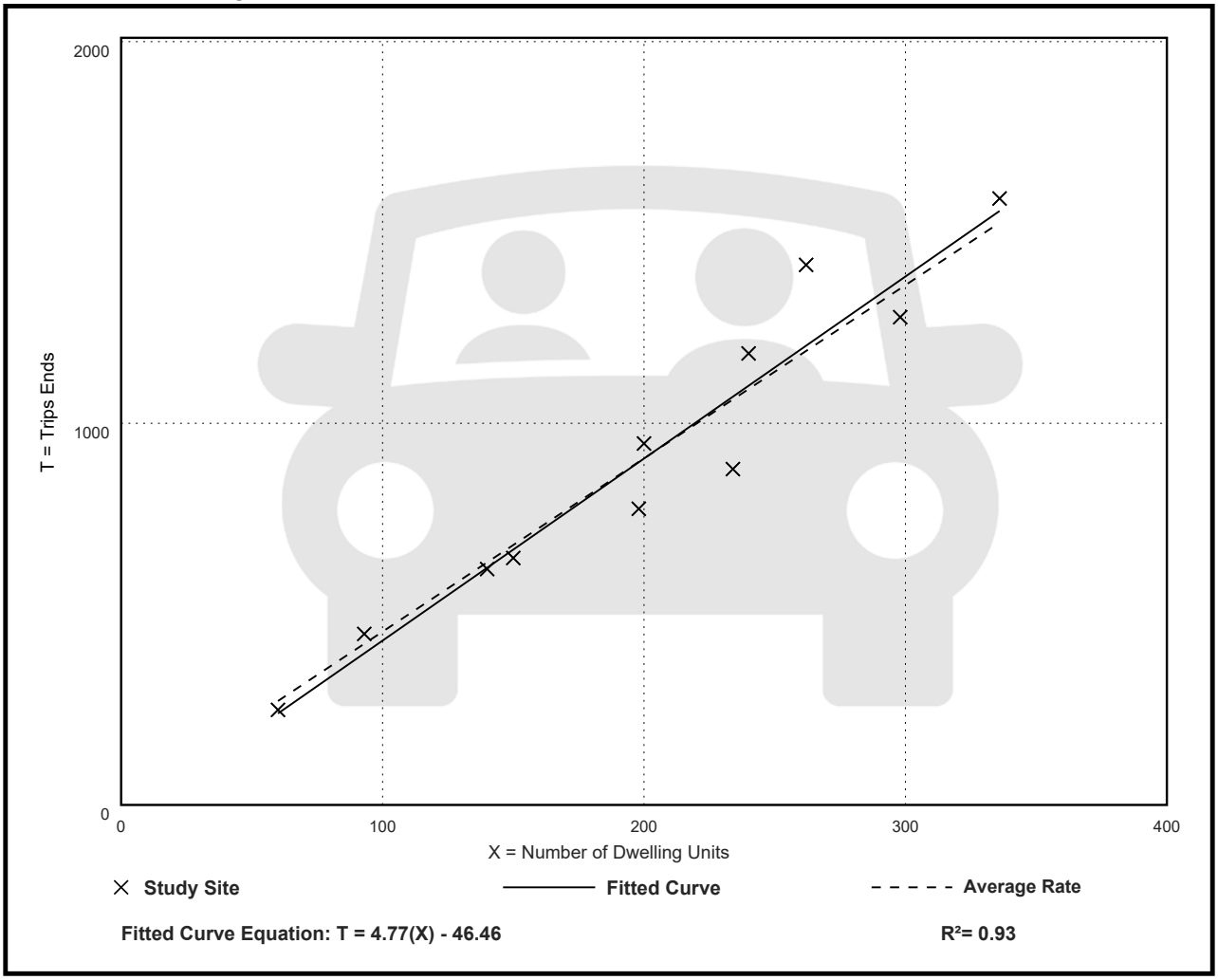
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 11
Avg. Num. of Dwelling Units: 201
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

Data Plot and Equation



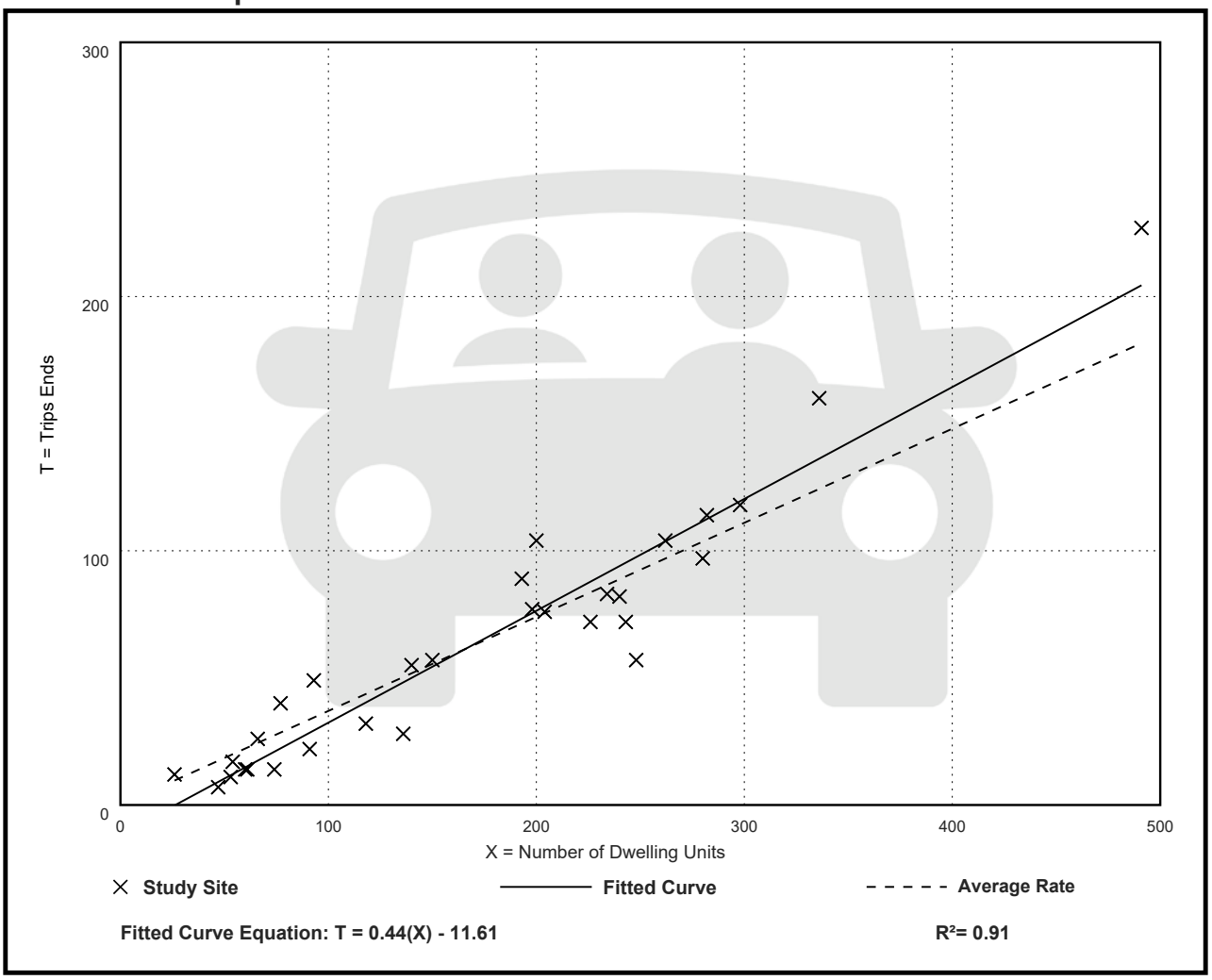
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 30
Avg. Num. of Dwelling Units: 173
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



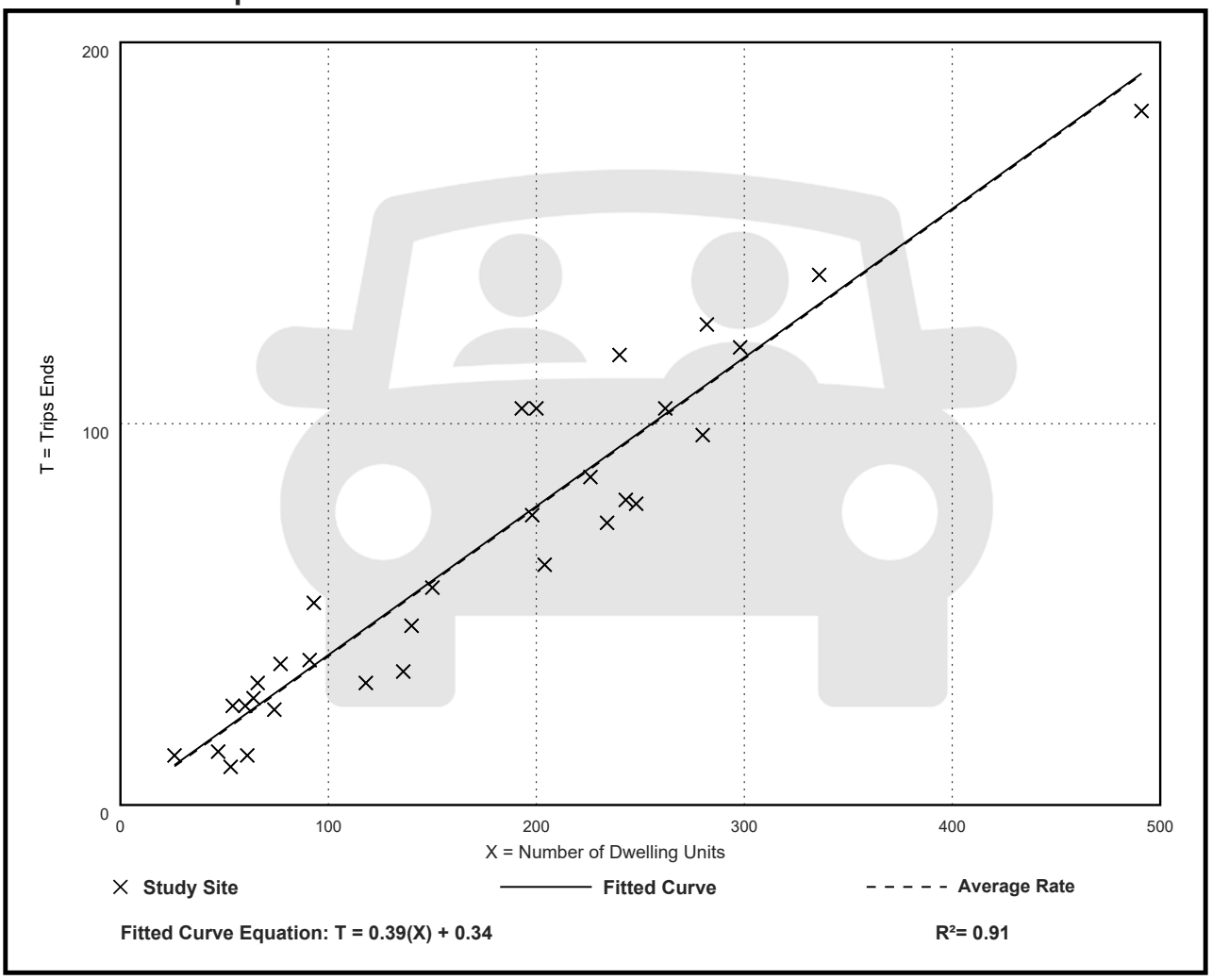
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 169
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



Appendix E: Delay Study

Intersection Control Delay Study

Intersection: 56th Street & Metcalf Avenue
Movement: Southbound Left-Turn
Data Date: Tuesday, February 1, 2022
Time Period: 4:45 - 5:45 PM
Analyst: Kimley-Horn

	# of Vehicles in Queue																			
	0:00:00	0:00:15	0:00:30	0:00:45	0:01:00	0:01:15	0:01:30	0:01:45	0:02:00	0:02:15	0:02:30	0:02:45	0:03:00	0:03:15	0:03:30	0:03:45	0:04:00	0:04:15	0:04:30	0:04:45
4:45 PM	3	2	1	0	0	0	0	0	1	1	0	0	0	1	1	1	1	0	0	0
4:50 PM	0	1	1	1	2	0	1	2	2	2	0	0	0	0	0	0	1	1	0	0
4:55 PM	0	0	2	2	1	1	2	2	0	0	0	1	2	2	2	1	0	0	0	0
5:00 PM	0	0	1	0	0	1	0	1	0	0	1	1	2	4	4	4	6	5	6	8
5:05 PM	9	9	10	9	8	7	5	4	4	4	3	2	2	1	1	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	1	3	3	2	2	4	5	5	4	3	1	1	1	1
5:15 PM	0	0	0	0	0	0	0	1	2	3	3	3	0	1	0	0	0	1	1	1
5:20 PM	1	0	0	0	1	1	2	2	2	1	2	3	2	0	0	1	3	3	3	3
5:25 PM	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0
5:30 PM	0	1	1	1	1	2	2	2	0	0	1	1	0	0	0	0	0	1	1	0
5:35 PM	2	2	3	3	3	3	2	2	2	0	0	0	1	2	2	1	0	1	0	1
5:40 PM	2	3	2	3	2	2	2	3	2	2	3	4	2	2	3	2	0	0	0	0

Total # of Queued Veh
339

Total Delay (s)
5085

Total Volume
106

Average Delay/Veh (s/veh)
48.0

Appendix F: Synchro Reports

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	0	0	51	7	1353	43	123	1738	10
Future Vol, veh/h	0	0	10	0	0	51	7	1353	43	123	1738	10
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	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	200	315	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	59	8	1555	49	141	1998	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1005	-	-	778	2009	0	0	1604	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	240	0	0	339	281	-	-	301	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	240	-	-	339	281	-	-	301	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.8	17.8	0.1	1.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	281	-	-	240	339	301	-	-
HCM Lane V/C Ratio	0.029	-	-	0.048	0.173	0.47	-	-
HCM Control Delay (s)	18.2	-	-	20.8	17.8	27.1	-	-
HCM Lane LOS	C	-	-	C	C	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.6	2.4	-	-

2: Foxridge Drive & 56th Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	All
Stop Del/Veh (s)	0.4	0.4	0.5		2.9	2.4	3.0	0.5	3.1	3.2	2.5	1.8

Intersection: 2: Foxridge Drive & 56th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	11	43	30	75
Average Queue (ft)	0	26	3	42
95th Queue (ft)	6	44	18	67
Link Distance (ft)	17	508	1099	432
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	169	1403	53	0	1871
Future Vol, veh/h	0	169	1403	53	0	1871
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	194	1613	61	0	2151

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	807	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	324	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	324	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	324	-
HCM Lane V/C Ratio	-	0.6	-
HCM Control Delay (s)	-	31.4	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	3.7	-

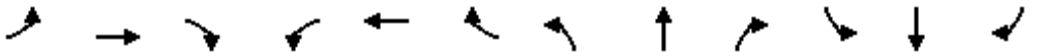
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	44	167	7	55	2
Future Vol, veh/h	9	44	167	7	55	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	51	192	8	63	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	200	0	-	0	267	196
Stage 1	-	-	-	-	196	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1372	-	-	-	722	845
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1372	-	-	-	717	845
Mov Cap-2 Maneuver	-	-	-	-	717	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1372	-	-	-	721
HCM Lane V/C Ratio	0.008	-	-	-	0.091
HCM Control Delay (s)	7.6	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	436	100	41	293	51	41	17	50	31	38	66
Future Volume (veh/h)	136	436	100	41	293	51	41	17	50	31	38	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	156	501	115	47	337	59	47	20	57	36	44	76
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	810	185	347	706	122	345	48	136	316	192	162
Arrive On Green	0.10	0.28	0.28	0.05	0.23	0.23	0.05	0.11	0.11	0.04	0.10	0.10
Sat Flow, veh/h	1781	2873	656	1781	3028	525	1781	429	1222	1781	1870	1585
Grp Volume(v), veh/h	156	309	307	47	196	200	47	0	77	36	44	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1752	1781	1777	1776	1781	0	1650	1781	1870	1585
Q Serve(g_s), s	3.0	7.0	7.1	0.9	4.4	4.5	1.1	0.0	2.0	0.8	1.0	2.1
Cycle Q Clear(g_c), s	3.0	7.0	7.1	0.9	4.4	4.5	1.1	0.0	2.0	0.8	1.0	2.1
Prop In Lane	1.00		0.37	1.00		0.30	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	464	501	494	347	414	414	345	0	184	316	192	162
V/C Ratio(X)	0.34	0.62	0.62	0.14	0.47	0.48	0.14	0.00	0.42	0.11	0.23	0.47
Avail Cap(c_a), veh/h	828	1265	1247	528	997	996	527	0	961	591	1170	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	14.5	14.5	12.5	15.3	15.4	17.2	0.0	19.2	17.4	19.1	19.6
Incr Delay (d2), s/veh	0.4	1.2	1.3	0.2	0.8	0.9	0.2	0.0	1.5	0.2	0.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	4.6	4.6	0.6	3.0	3.0	0.7	0.0	1.4	0.6	0.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	15.7	15.8	12.7	16.2	16.2	17.3	0.0	20.7	17.6	19.7	21.7
LnGrp LOS	B	B	B	B	B	B	B	A	C	B	B	C
Approach Vol, veh/h		772			443			124			156	
Approach Delay, s/veh		15.0			15.8			19.4			20.2	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	11.2	8.3	19.1	8.3	10.8	10.5	16.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	33.0	7.0	29.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	2.8	4.0	2.9	9.1	3.1	4.1	5.0	6.5
Green Ext Time (p_c), s	0.0	0.4	0.0	4.0	0.0	0.4	0.3	2.2

Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	18	0	0	96	32	1806	85	106	1663	21
Future Vol, veh/h	0	0	18	0	0	96	32	1806	85	106	1663	21
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	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	200	315	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	102	34	1921	90	113	1769	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	896	-	-	961	1791	0	0	2011	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	283	0	0	256	342	-	-	194	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	283	-	-	256	342	-	-	194	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	28.1	0.3	2.8
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	342	-	-	283	256	194	-	-
HCM Lane V/C Ratio	0.1	-	-	0.068	0.399	0.581	-	-
HCM Control Delay (s)	16.7	-	-	18.6	28.1	46.5	-	-
HCM Lane LOS	C	-	-	C	D	E	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	1.8	3.2	-	-

2: Foxridge Drive & 56th Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	All
Stop Del/Veh (s)	0.3	0.3	0.3	1.5	4.0	3.2	3.7	3.7	3.5	3.3	3.0	2.4

Intersection: 2: Foxridge Drive & 56th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	8	84	36	90
Average Queue (ft)	0	42	19	44
95th Queue (ft)	4	68	44	72
Link Distance (ft)	17	508	1099	432
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	226	1923	40	0	1790
Future Vol, veh/h	0	226	1923	40	0	1790
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	240	2046	43	0	1904

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1023	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	~ 233	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 233	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	112.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	233	-
HCM Lane V/C Ratio	-	1.032	-
HCM Control Delay (s)	-	112.6	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	10	-

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

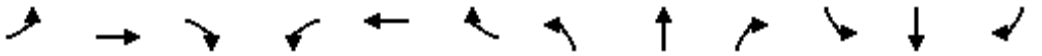
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	38	226	22	66	0
Future Vol, veh/h	2	38	226	22	66	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	40	240	23	70	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	263	0	-	0	296	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1301	-	-	-	695	787
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1301	-	-	-	694	787
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1301	-	-	-	694
HCM Lane V/C Ratio	0.002	-	-	-	0.101
HCM Control Delay (s)	7.8	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	592	166	83	497	48	148	81	86	49	78	137
Future Volume (veh/h)	139	592	166	83	497	48	148	81	86	49	78	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	630	177	88	529	51	157	86	91	52	83	146
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	876	246	305	977	94	402	155	164	311	247	210
Arrive On Green	0.08	0.32	0.32	0.06	0.30	0.30	0.10	0.19	0.19	0.05	0.13	0.13
Sat Flow, veh/h	1781	2740	769	1781	3276	315	1781	832	880	1781	1870	1585
Grp Volume(v), veh/h	148	408	399	88	286	294	157	0	177	52	83	146
Grp Sat Flow(s),veh/h/ln	1781	1777	1732	1781	1777	1814	1781	0	1712	1781	1870	1585
Q Serve(g_s), s	3.5	12.7	12.7	2.1	8.4	8.5	4.6	0.0	5.9	1.5	2.5	5.5
Cycle Q Clear(g_c), s	3.5	12.7	12.7	2.1	8.4	8.5	4.6	0.0	5.9	1.5	2.5	5.5
Prop In Lane	1.00		0.44	1.00		0.17	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	401	568	554	305	530	541	402	0	319	311	247	210
V/C Ratio(X)	0.37	0.72	0.72	0.29	0.54	0.54	0.39	0.00	0.56	0.17	0.34	0.70
Avail Cap(c_a), veh/h	593	995	970	393	853	871	535	0	740	426	688	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	18.8	18.8	14.6	18.3	18.4	20.2	0.0	23.1	21.7	24.6	25.9
Incr Delay (d2), s/veh	0.6	1.7	1.8	0.5	0.9	0.8	0.6	0.0	1.5	0.3	0.8	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	8.7	8.5	1.4	5.9	6.1	3.3	0.0	4.2	1.1	2.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	20.5	20.6	15.1	19.2	19.2	20.8	0.0	24.6	22.0	25.4	30.0
LnGrp LOS	B	C	C	B	B	B	C	A	C	C	C	C
Approach Vol, veh/h		955			668			334			281	
Approach Delay, s/veh		19.6			18.7			22.8			27.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	17.6	9.9	26.0	12.3	14.3	11.3	24.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	27.0	7.0	35.0	11.0	23.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	3.5	7.9	4.1	14.7	6.6	7.5	5.5	10.5
Green Ext Time (p_c), s	0.0	0.9	0.0	5.3	0.1	0.8	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	0	0	51	7	1353	43	123	1738	10
Future Vol, veh/h	0	0	10	0	0	51	7	1353	43	123	1738	10
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	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	385	650	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	59	8	1555	49	141	1998	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1005	-	-	-	2009	0	0	1604	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	-	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	-	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	240	0	0	0	281	-	-	301	-	-
Stage 1	0	0	-	0	0	0	-	-	-	-	-	-
Stage 2	0	0	-	0	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	240	-	-	-	281	-	-	301	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.8	0	0.1	1.8
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	281	-	-	240	-	301	-	-
HCM Lane V/C Ratio	0.029	-	-	0.048	-	0.47	-	-
HCM Control Delay (s)	18.2	-	-	20.8	0	27.1	-	-
HCM Lane LOS	C	-	-	C	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	2.4	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	18	0	0	96	32	1806	85	106	1663	21
Future Vol, veh/h	0	0	18	0	0	96	32	1806	85	106	1663	21
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	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	385	650	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	102	34	1921	90	113	1769	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	896	-	-	-	1791	0	0	2011	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	-	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	-	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	283	0	0	0	342	-	-	194	-	-
Stage 1	0	0	-	0	0	0	-	-	-	-	-	-
Stage 2	0	0	-	0	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	283	-	-	-	342	-	-	194	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	0	0.3	2.8
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	342	-	-	283	-	194	-	-
HCM Lane V/C Ratio	0.1	-	-	0.068	-	0.581	-	-
HCM Control Delay (s)	16.7	-	-	18.6	0	46.5	-	-
HCM Lane LOS	C	-	-	C	A	E	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	3.2	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	0	0	80	7	1358	49	133	1738	10
Future Vol, veh/h	0	0	10	0	0	80	7	1358	49	133	1738	10
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	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	200	315	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	92	8	1561	56	153	1998	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1005	-	-	781	2009	0	0	1617	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	240	0	0	338	281	-	-	297	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	240	-	-	338	281	-	-	297	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.8	19.6	0.1	2.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	281	-	-	240	338	297	-	-
HCM Lane V/C Ratio	0.029	-	-	0.048	0.272	0.515	-	-
HCM Control Delay (s)	18.2	-	-	20.8	19.6	29.3	-	-
HCM Lane LOS	C	-	-	C	C	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.1	2.8	-	-

2: Foxridge Drive & 56th Street Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Stop Del/Veh (s)	0.4	2.8	7.0	3.0	1.9

Intersection: 2: Foxridge Drive & 56th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	19	54	29	74
Average Queue (ft)	1	34	2	43
95th Queue (ft)	6	55	14	67
Link Distance (ft)	17	184	130	432
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	174	1409	57	0	1871
Future Vol, veh/h	0	174	1409	57	0	1871
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	200	1620	66	0	2151

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	810	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	323	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	323	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	323	-
HCM Lane V/C Ratio	-	0.619	-
HCM Control Delay (s)	-	32.7	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	3.9	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	47	172	7	57	2
Future Vol, veh/h	10	47	172	7	57	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	54	198	8	66	2

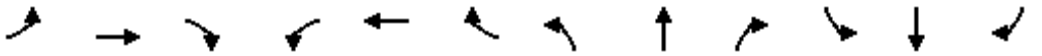
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	206	0	-	0	278	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1365	-	-	-	712	839
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1365	-	-	-	706	839
Mov Cap-2 Maneuver	-	-	-	-	706	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	947	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1365	-	-	-	710
HCM Lane V/C Ratio	0.008	-	-	-	0.096
HCM Control Delay (s)	7.7	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	160	616	47	399	47	78	46	48	125
v/c Ratio	0.26	0.36	0.10	0.29	0.14	0.28	0.13	0.18	0.29
Control Delay	10.1	15.6	10.1	18.9	17.3	15.2	17.1	27.2	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	15.6	10.1	18.9	17.3	15.2	17.1	27.2	1.7
Queue Length 50th (ft)	32	98	9	63	12	7	11	16	0
Queue Length 95th (ft)	66	153	25	111	35	43	34	46	0
Internal Link Dist (ft)		712		564		550		1548	
Turn Bay Length (ft)	170		170		100		275		190
Base Capacity (vph)	741	2274	492	1911	361	971	438	1122	1045
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.27	0.10	0.21	0.13	0.08	0.11	0.04	0.12

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	436	100	41	293	54	41	18	50	40	42	109
Future Volume (veh/h)	139	436	100	41	293	54	41	18	50	40	42	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	501	115	47	337	62	47	21	57	46	48	125
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	453	798	182	336	679	124	362	57	154	346	237	201
Arrive On Green	0.10	0.28	0.28	0.05	0.23	0.23	0.05	0.13	0.13	0.05	0.13	0.13
Sat Flow, veh/h	1781	2873	656	1781	3002	546	1781	445	1208	1781	1870	1585
Grp Volume(v), veh/h	160	309	307	47	198	201	47	0	78	46	48	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1752	1781	1777	1772	1781	0	1653	1781	1870	1585
Q Serve(g_s), s	3.2	7.3	7.4	0.9	4.7	4.8	1.1	0.0	2.1	1.1	1.1	3.6
Cycle Q Clear(g_c), s	3.2	7.3	7.4	0.9	4.7	4.8	1.1	0.0	2.1	1.1	1.1	3.6
Prop In Lane	1.00		0.37	1.00		0.31	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	453	493	487	336	402	401	362	0	211	346	237	201
V/C Ratio(X)	0.35	0.63	0.63	0.14	0.49	0.50	0.13	0.00	0.37	0.13	0.20	0.62
Avail Cap(c_a), veh/h	793	1219	1202	509	960	957	534	0	927	594	1127	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	15.2	15.2	13.3	16.2	16.3	16.8	0.0	19.2	16.9	18.8	19.9
Incr Delay (d2), s/veh	0.5	1.3	1.4	0.2	0.9	1.0	0.2	0.0	1.1	0.2	0.4	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	4.9	4.9	0.6	3.2	3.2	0.7	0.0	1.4	0.7	0.8	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	16.5	16.6	13.5	17.2	17.2	17.0	0.0	20.3	17.1	19.3	23.1
LnGrp LOS	B	B	B	B	B	B	B	A	C	B	B	C
Approach Vol, veh/h		776			446			125			219	
Approach Delay, s/veh		15.8			16.8			19.1			21.0	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	12.1	8.3	19.4	8.3	12.1	10.8	16.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	33.0	7.0	29.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	3.1	4.1	2.9	9.4	3.1	5.6	5.2	6.8
Green Ext Time (p_c), s	0.0	0.4	0.0	4.0	0.0	0.6	0.3	2.2

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	159	13	3	61	25	14
Future Vol, veh/h	159	13	3	61	25	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	183	15	3	70	29	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	198	0	267	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1375	-	722	851
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1375	-	721	851
Mov Cap-2 Maneuver	-	-	-	-	721	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	945	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	763	-	-	1375	-
HCM Lane V/C Ratio	0.059	-	-	0.003	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	45	7	57	170	3
Future Vol, veh/h	7	45	7	57	170	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	52	8	66	195	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	279	197	198	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	711	844	1375	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	707	844	1375	-	-	-
Mov Cap-2 Maneuver	707	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1375	-	823	-	-
HCM Lane V/C Ratio	0.006	-	0.073	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	3	0	0	70
Future Vol, veh/h	2	2	3	0	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	3	0	0	80

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	83	3	0	-	-	-
Stage 1	3	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	919	1081	-	0	0	-
Stage 1	1020	-	-	0	0	-
Stage 2	943	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	919	1081	-	-	-	-
Mov Cap-2 Maneuver	919	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	943	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	993	-
HCM Lane V/C Ratio	-	0.005	-
HCM Control Delay (s)	-	8.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	18	0	0	111	32	1808	101	132	1663	21
Future Vol, veh/h	0	0	18	0	0	111	32	1808	101	132	1663	21
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	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	200	315	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	20	0	0	121	35	1965	110	143	1808	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	916	-	-	983	1831	0	0	2075	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	275	0	0	248	329	-	-	181	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	275	-	-	248	329	-	-	181	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	32.5	0.3	5.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	329	-	-	275	248	181	-	-
HCM Lane V/C Ratio	0.106	-	-	0.071	0.487	0.793	-	-
HCM Control Delay (s)	17.2	-	-	19.1	32.5	74.5	-	-
HCM Lane LOS	C	-	-	C	D	F	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	2.5	5.4	-	-

2: Foxridge Drive & 56th Street Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Stop Del/Veh (s)	0.3	3.9	3.6	3.5	2.6

Intersection: 2: Foxridge Drive & 56th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	14	98	36	91
Average Queue (ft)	1	52	20	45
95th Queue (ft)	7	79	45	71
Link Distance (ft)	17	184	130	432
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	8.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	228	1939	49	0	1790
Future Vol, veh/h	0	228	1939	49	0	1790
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	248	2108	53	0	1946

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1054	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	~ 222	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 222	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	141.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	222	-
HCM Lane V/C Ratio	-	1.116	-
HCM Control Delay (s)	-	141.4	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	11.4	-

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

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	45	228	22	67	0
Future Vol, veh/h	4	45	228	22	67	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	49	248	24	73	0

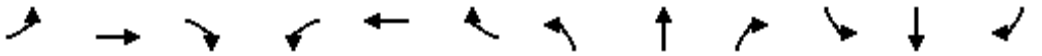
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	272	0	-	0	317	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1291	-	-	-	676	779
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1291	-	-	-	674	779
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	966	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1291	-	-	-	674
HCM Lane V/C Ratio	0.003	-	-	-	0.108
HCM Control Delay (s)	7.8	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	159	823	90	600	161	185	59	87	172
v/c Ratio	0.41	0.65	0.31	0.61	0.39	0.40	0.19	0.38	0.50
Control Delay	14.1	23.0	14.1	25.8	22.6	24.0	21.0	37.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	23.0	14.1	25.8	22.6	24.0	21.0	37.6	11.3
Queue Length 50th (ft)	39	168	21	123	54	58	19	38	0
Queue Length 95th (ft)	79	250	48	194	116	134	50	89	56
Internal Link Dist (ft)		712		564		550		1548	
Turn Bay Length (ft)	170		170		100		275		190
Base Capacity (vph)	448	1668	301	1446	421	671	318	590	618
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.49	0.30	0.41	0.38	0.28	0.19	0.15	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	592	166	83	497	55	148	85	86	54	80	158
Future Volume (veh/h)	146	592	166	83	497	55	148	85	86	54	80	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	643	180	90	540	60	161	92	93	59	87	172
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	392	879	246	295	946	105	410	170	171	323	276	234
Arrive On Green	0.09	0.32	0.32	0.06	0.29	0.29	0.10	0.20	0.20	0.05	0.15	0.15
Sat Flow, veh/h	1781	2742	767	1781	3225	357	1781	853	862	1781	1870	1585
Grp Volume(v), veh/h	159	416	407	90	297	303	161	0	185	59	87	172
Grp Sat Flow(s),veh/h/ln	1781	1777	1732	1781	1777	1806	1781	0	1715	1781	1870	1585
Q Serve(g_s), s	3.9	13.5	13.6	2.2	9.2	9.3	4.9	0.0	6.3	1.8	2.7	6.8
Cycle Q Clear(g_c), s	3.9	13.5	13.6	2.2	9.2	9.3	4.9	0.0	6.3	1.8	2.7	6.8
Prop In Lane	1.00		0.44	1.00		0.20	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	392	570	555	295	521	530	410	0	341	323	276	234
V/C Ratio(X)	0.41	0.73	0.73	0.31	0.57	0.57	0.39	0.00	0.54	0.18	0.32	0.74
Avail Cap(c_a), veh/h	562	955	931	377	818	832	530	0	711	424	660	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	19.6	19.6	15.5	19.5	19.5	20.2	0.0	23.4	21.7	24.8	26.5
Incr Delay (d2), s/veh	0.7	1.8	1.9	0.6	1.0	1.0	0.6	0.0	1.3	0.3	0.6	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	9.2	9.1	1.6	6.6	6.8	3.5	0.0	4.6	1.3	2.2	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	21.5	21.5	16.1	20.5	20.5	20.9	0.0	24.8	22.0	25.5	31.0
LnGrp LOS	B	C	C	B	C	C	C	A	C	C	C	C
Approach Vol, veh/h		982			690			346			318	
Approach Delay, s/veh		20.5			19.9			22.9			27.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	19.0	10.0	26.9	12.6	15.6	11.8	25.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	27.0	7.0	35.0	11.0	23.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	3.8	8.3	4.2	15.6	6.9	8.8	5.9	11.3
Green Ext Time (p_c), s	0.0	1.0	0.0	5.3	0.1	0.9	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	152	37	7	169	12	7
Future Vol, veh/h	152	37	7	169	12	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	40	8	184	13	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	205	0	385	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	200	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1366	-	618	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	834	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1366	-	614	857
Mov Cap-2 Maneuver	-	-	-	-	614	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	686	-	-	1366	-
HCM Lane V/C Ratio	0.03	-	-	0.006	-
HCM Control Delay (s)	10.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	22	18	172	152	7
Future Vol, veh/h	4	22	18	172	152	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	24	20	187	165	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	396	169	173	0	-	0
Stage 1	169	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	609	875	1404	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	599	875	1404	-	-	-
Mov Cap-2 Maneuver	599	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1404	-	817	-	-
HCM Lane V/C Ratio	0.014	-	0.035	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	28	0	0	55
Future Vol, veh/h	1	1	28	0	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	30	0	0	60

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	90	30	0	-	-	-
Stage 1	30	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	910	1044	-	0	0	-
Stage 1	993	-	-	0	0	-
Stage 2	963	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	910	1044	-	-	-	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	963	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	972	-
HCM Lane V/C Ratio	-	0.002	-
HCM Control Delay (s)	-	8.7	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	0	0	80	7	1358	49	133	1738	10
Future Vol, veh/h	0	0	10	0	0	80	7	1358	49	133	1738	10
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	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	385	650	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	92	8	1561	56	153	1998	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1005	-	-	-	2009	0	0	1617	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	-	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	-	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	240	0	0	0	281	-	-	297	-	-
Stage 1	0	0	-	0	0	0	-	-	-	-	-	-
Stage 2	0	0	-	0	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	240	-	-	-	281	-	-	297	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.8	0	0.1	2.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	281	-	-	240	-	297	-	-
HCM Lane V/C Ratio	0.029	-	-	0.048	-	0.515	-	-
HCM Control Delay (s)	18.2	-	-	20.8	0	29.3	-	-
HCM Lane LOS	C	-	-	C	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	2.8	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	18	0	0	111	32	1808	101	132	1663	21
Future Vol, veh/h	0	0	18	0	0	111	32	1808	101	132	1663	21
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	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	385	650	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	20	0	0	121	35	1965	110	143	1808	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	916	-	-	-	1831	0	0	2075	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	-	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	-	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	275	0	0	0	329	-	-	181	-	-
Stage 1	0	0	-	0	0	0	-	-	-	-	-	-
Stage 2	0	0	-	0	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	275	-	-	-	329	-	-	181	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	0	0.3	5.4
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	329	-	-	275	-	181	-	-
HCM Lane V/C Ratio	0.106	-	-	0.071	-	0.793	-	-
HCM Control Delay (s)	17.2	-	-	19.1	0	74.5	-	-
HCM Lane LOS	C	-	-	C	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-	5.4	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	0	0	84	10	1500	56	145	1920	10
Future Vol, veh/h	0	0	10	0	0	84	10	1500	56	145	1920	10
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	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	385	650	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	97	11	1724	64	167	2207	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1109	-	-	-	2218	0	0	1788	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	-	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	-	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	204	0	0	0	232	-	-	247	-	-
Stage 1	0	0	-	0	0	0	-	-	-	-	-	-
Stage 2	0	0	-	0	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	204	-	-	-	232	-	-	247	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.7	0	0.1	3.2
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	232	-	-	204	-	247	-	-
HCM Lane V/C Ratio	0.05	-	-	0.056	-	0.675	-	-
HCM Control Delay (s)	21.3	-	-	23.7	0	45.3	-	-
HCM Lane LOS	C	-	-	C	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	4.3	-	-

2: Foxridge Drive & 56th Street Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Stop Del/Veh (s)	0.2	3.2	0.5	3.9	2.2

Intersection: 2: Foxridge Drive & 56th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	60	12	101
Average Queue (ft)	2	32	1	45
95th Queue (ft)	15	53	9	77
Link Distance (ft)	17	184	130	432
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	190	1556	64	0	2065
Future Vol, veh/h	0	190	1556	64	0	2065
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	218	1789	74	0	2374

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	895	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	284	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	284	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	49.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	284	-
HCM Lane V/C Ratio	-	0.769	-
HCM Control Delay (s)	-	49.9	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	5.8	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	52	190	8	63	2
Future Vol, veh/h	11	52	190	8	63	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	60	218	9	72	2

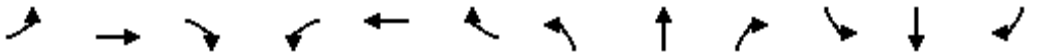
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	227	0	-	0	309	223
Stage 1	-	-	-	-	223	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1341	-	-	-	683	817
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1341	-	-	-	676	817
Mov Cap-2 Maneuver	-	-	-	-	676	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	937	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	680
HCM Lane V/C Ratio	0.009	-	-	-	0.11
HCM Control Delay (s)	7.7	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	176	680	52	440	52	86	49	53	133
v/c Ratio	0.30	0.39	0.13	0.47	0.16	0.30	0.15	0.19	0.31
Control Delay	10.3	15.8	10.3	20.9	18.4	15.6	18.1	28.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	15.8	10.3	20.9	18.4	15.6	18.1	28.3	2.2
Queue Length 50th (ft)	36	114	10	73	14	8	13	19	0
Queue Length 95th (ft)	73	174	27	125	39	46	37	50	0
Internal Link Dist (ft)		712		564		550		1548	
Turn Bay Length (ft)	170		170		100		275		190
Base Capacity (vph)	702	2201	446	1823	348	932	418	1087	1019
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.31	0.12	0.24	0.15	0.09	0.12	0.05	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	482	110	45	324	59	45	20	55	43	46	116
Future Volume (veh/h)	153	482	110	45	324	59	45	20	55	43	46	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	554	126	52	372	68	52	23	63	49	53	133
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	848	192	329	718	130	359	59	161	341	244	207
Arrive On Green	0.11	0.29	0.29	0.05	0.24	0.24	0.05	0.13	0.13	0.05	0.13	0.13
Sat Flow, veh/h	1781	2878	652	1781	3005	544	1781	442	1211	1781	1870	1585
Grp Volume(v), veh/h	176	341	339	52	219	221	52	0	86	49	53	133
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1781	1777	1772	1781	0	1652	1781	1870	1585
Q Serve(g_s), s	3.6	8.5	8.6	1.1	5.4	5.5	1.3	0.0	2.4	1.2	1.3	4.0
Cycle Q Clear(g_c), s	3.6	8.5	8.6	1.1	5.4	5.5	1.3	0.0	2.4	1.2	1.3	4.0
Prop In Lane	1.00		0.37	1.00		0.31	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	456	524	517	329	425	424	359	0	219	341	244	207
V/C Ratio(X)	0.39	0.65	0.66	0.16	0.51	0.52	0.14	0.00	0.39	0.14	0.22	0.64
Avail Cap(c_a), veh/h	756	1154	1138	483	909	907	513	0	878	569	1067	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	15.6	15.7	13.5	16.8	16.8	17.5	0.0	20.2	17.6	19.8	21.0
Incr Delay (d2), s/veh	0.5	1.4	1.4	0.2	1.0	1.0	0.2	0.0	1.1	0.2	0.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	5.7	5.7	0.7	3.7	3.8	0.9	0.0	1.7	0.8	1.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	17.0	17.1	13.8	17.7	17.8	17.7	0.0	21.3	17.8	20.2	24.3
LnGrp LOS	B	B	B	B	B	B	B	A	C	B	C	C
Approach Vol, veh/h		856			492			138			235	
Approach Delay, s/veh		16.2			17.4			20.0			22.0	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	12.7	8.6	21.0	8.6	12.6	11.4	18.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	33.0	7.0	29.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	3.2	4.4	3.1	10.6	3.3	6.0	5.6	7.5
Green Ext Time (p_c), s	0.0	0.4	0.0	4.4	0.0	0.7	0.3	2.5

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	175	13	3	67	25	14
Future Vol, veh/h	175	13	3	67	25	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	15	3	77	29	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	292	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1354	-	699	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	940	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	698	831
Mov Cap-2 Maneuver	-	-	-	-	698	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	938	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	741	-	-	1354	-
HCM Lane V/C Ratio	0.06	-	-	0.003	-
HCM Control Delay (s)	10.2	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	45	7	63	186	3
Future Vol, veh/h	7	45	7	63	186	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	52	8	72	214	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	304	216	217	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	688	824	1353	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	684	824	1353	-	-	-
Mov Cap-2 Maneuver	684	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1353	-	802	-	-
HCM Lane V/C Ratio	0.006	-	0.075	-	-
HCM Control Delay (s)	7.7	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	3	0	0	77
Future Vol, veh/h	2	2	3	0	0	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	3	0	0	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	92	3	0	-	-	-
Stage 1	3	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	908	1081	-	0	0	-
Stage 1	1020	-	-	0	0	-
Stage 2	934	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	908	1081	-	-	-	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	934	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	987	-
HCM Lane V/C Ratio	-	0.005	-
HCM Control Delay (s)	-	8.7	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	20	0	0	120	35	1997	111	141	1835	25
Future Vol, veh/h	0	0	20	0	0	120	35	1997	111	141	1835	25
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	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	385	650	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	22	0	0	130	38	2171	121	153	1995	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1011	-	-	-	2022	0	0	2292	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	-	4.14	-	-	4.8	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	-	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	237	0	0	0	277	-	-	~ 143	-	-
Stage 1	0	0	-	0	0	0	-	-	-	-	-	-
Stage 2	0	0	-	0	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	237	-	-	-	277	-	-	~ 143	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

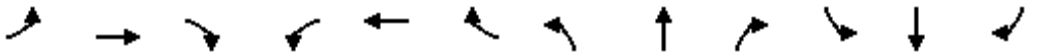
Approach	EB	WB	NB	SB
HCM Control Delay, s	21.7	0	0.3	11.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	277	-	-	237	-	~ 143	-	-
HCM Lane V/C Ratio	0.137	-	-	0.092	-	1.072	-	-
HCM Control Delay (s)	20.1	-	-	21.7	0	157.7	-	-
HCM Lane LOS	C	-	-	C	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-	8.2	-	-

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	175	910	100	662	178	204	64	96	187
v/c Ratio	0.46	0.69	0.36	0.63	0.45	0.50	0.21	0.40	0.51
Control Delay	15.1	24.0	15.4	26.6	24.5	28.2	22.0	38.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	24.0	15.4	26.6	24.5	28.2	22.0	38.9	10.9
Queue Length 50th (ft)	44	196	24	143	65	71	22	45	0
Queue Length 95th (ft)	89	292	55	222	127	148	53	96	57
Internal Link Dist (ft)		712		564		550		1548	
Turn Bay Length (ft)	170		170		100		275		190
Base Capacity (vph)	428	1596	281	1383	414	643	313	563	609
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.57	0.36	0.48	0.43	0.32	0.20	0.17	0.31

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	654	183	92	549	60	164	93	95	59	88	172
Future Volume (veh/h)	161	654	183	92	549	60	164	93	95	59	88	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	711	199	100	597	65	178	101	103	64	96	187
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	928	260	275	988	107	413	180	184	316	288	244
Arrive On Green	0.09	0.34	0.34	0.06	0.31	0.31	0.11	0.21	0.21	0.05	0.15	0.15
Sat Flow, veh/h	1781	2742	767	1781	3233	351	1781	849	866	1781	1870	1585
Grp Volume(v), veh/h	175	461	449	100	328	334	178	0	204	64	96	187
Grp Sat Flow(s),veh/h/ln	1781	1777	1732	1781	1777	1807	1781	0	1715	1781	1870	1585
Q Serve(g_s), s	4.6	16.4	16.4	2.7	11.1	11.2	5.8	0.0	7.6	2.1	3.2	8.0
Cycle Q Clear(g_c), s	4.6	16.4	16.4	2.7	11.1	11.2	5.8	0.0	7.6	2.1	3.2	8.0
Prop In Lane	1.00		0.44	1.00		0.19	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	382	601	586	275	543	552	413	0	364	316	288	244
V/C Ratio(X)	0.46	0.77	0.77	0.36	0.60	0.61	0.43	0.00	0.56	0.20	0.33	0.77
Avail Cap(c_a), veh/h	517	876	854	343	751	764	496	0	652	402	606	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	21.0	21.0	16.8	21.0	21.0	21.4	0.0	25.0	23.4	26.8	28.8
Incr Delay (d2), s/veh	0.9	2.5	2.5	0.8	1.1	1.1	0.7	0.0	1.4	0.3	0.7	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	11.0	10.8	1.9	8.0	8.1	4.3	0.0	5.5	1.6	2.6	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	23.4	23.5	17.6	22.1	22.1	22.1	0.0	26.4	23.7	27.4	33.7
LnGrp LOS	B	C	C	B	C	C	C	A	C	C	C	C
Approach Vol, veh/h		1085			762			382			347	
Approach Delay, s/veh		22.3			21.5			24.4			30.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	21.1	10.3	30.0	13.7	16.9	12.6	27.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	27.0	7.0	35.0	11.0	23.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	4.1	9.6	4.7	18.4	7.8	10.0	6.6	13.2
Green Ext Time (p_c), s	0.0	1.1	0.0	5.6	0.1	0.9	0.2	3.8

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	16.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	252	2141	54	0	1980
Future Vol, veh/h	0	252	2141	54	0	1980
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	274	2327	59	0	2152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1164	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	~ 188	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 188	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	279	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	188	-
HCM Lane V/C Ratio	-	1.457	-
HCM Control Delay (s)	-	279	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	16.8	-

Notes

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

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	49	252	24	74	0
Future Vol, veh/h	4	49	252	24	74	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	53	274	26	80	0

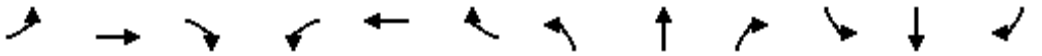
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	300	0	-	0	348	287
Stage 1	-	-	-	-	287	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1261	-	-	-	649	752
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1261	-	-	-	647	752
Mov Cap-2 Maneuver	-	-	-	-	647	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	962	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1261	-	-	-	647
HCM Lane V/C Ratio	0.003	-	-	-	0.124
HCM Control Delay (s)	7.9	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	175	910	100	662	178	204	64	96	187
v/c Ratio	0.46	0.69	0.36	0.63	0.45	0.50	0.21	0.40	0.51
Control Delay	15.1	24.0	15.4	26.6	24.5	28.2	22.0	38.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	24.0	15.4	26.6	24.5	28.2	22.0	38.9	10.9
Queue Length 50th (ft)	44	196	24	143	65	71	22	45	0
Queue Length 95th (ft)	89	292	55	222	127	148	53	96	57
Internal Link Dist (ft)		712		564		550		1548	
Turn Bay Length (ft)	170		170		100		275		190
Base Capacity (vph)	428	1596	281	1383	414	643	313	563	609
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.57	0.36	0.48	0.43	0.32	0.20	0.17	0.31

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	654	183	92	549	60	164	93	95	59	88	172
Future Volume (veh/h)	161	654	183	92	549	60	164	93	95	59	88	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	711	199	100	597	65	178	101	103	64	96	187
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	928	260	275	988	107	413	180	184	316	288	244
Arrive On Green	0.09	0.34	0.34	0.06	0.31	0.31	0.11	0.21	0.21	0.05	0.15	0.15
Sat Flow, veh/h	1781	2742	767	1781	3233	351	1781	849	866	1781	1870	1585
Grp Volume(v), veh/h	175	461	449	100	328	334	178	0	204	64	96	187
Grp Sat Flow(s),veh/h/ln	1781	1777	1732	1781	1777	1807	1781	0	1715	1781	1870	1585
Q Serve(g_s), s	4.6	16.4	16.4	2.7	11.1	11.2	5.8	0.0	7.6	2.1	3.2	8.0
Cycle Q Clear(g_c), s	4.6	16.4	16.4	2.7	11.1	11.2	5.8	0.0	7.6	2.1	3.2	8.0
Prop In Lane	1.00		0.44	1.00		0.19	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	382	601	586	275	543	552	413	0	364	316	288	244
V/C Ratio(X)	0.46	0.77	0.77	0.36	0.60	0.61	0.43	0.00	0.56	0.20	0.33	0.77
Avail Cap(c_a), veh/h	517	876	854	343	751	764	496	0	652	402	606	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	21.0	21.0	16.8	21.0	21.0	21.4	0.0	25.0	23.4	26.8	28.8
Incr Delay (d2), s/veh	0.9	2.5	2.5	0.8	1.1	1.1	0.7	0.0	1.4	0.3	0.7	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	11.0	10.8	1.9	8.0	8.1	4.3	0.0	5.5	1.6	2.6	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	23.4	23.5	17.6	22.1	22.1	22.1	0.0	26.4	23.7	27.4	33.7
LnGrp LOS	B	C	C	B	C	C	C	A	C	C	C	C
Approach Vol, veh/h		1085			762			382			347	
Approach Delay, s/veh		22.3			21.5			24.4			30.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	21.1	10.3	30.0	13.7	16.9	12.6	27.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	27.0	7.0	35.0	11.0	23.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	4.1	9.6	4.7	18.4	7.8	10.0	6.6	13.2
Green Ext Time (p_c), s	0.0	1.1	0.0	5.6	0.1	0.9	0.2	3.8

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	37	7	186	12	7
Future Vol, veh/h	167	37	7	186	12	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	40	8	202	13	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	420	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	218	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1347	-	590	839
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	818	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	586	839
Mov Cap-2 Maneuver	-	-	-	-	586	-
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	659	-	-	1347	-
HCM Lane V/C Ratio	0.031	-	-	0.006	-
HCM Control Delay (s)	10.6	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	22	18	189	167	7
Future Vol, veh/h	4	22	18	189	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	24	20	205	182	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	431	186	190	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	581	856	1384	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	572	856	1384	-	-	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1384	-	795	-	-
HCM Lane V/C Ratio	0.014	-	0.036	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	31	0	0	61
Future Vol, veh/h	1	1	31	0	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	34	0	0	66

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	100	34	0	-	-	-
Stage 1	34	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	899	1039	-	0	0	-
Stage 1	988	-	-	0	0	-
Stage 2	957	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	899	1039	-	-	-	-
Mov Cap-2 Maneuver	899	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	957	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	964	-
HCM Lane V/C Ratio	-	0.002	-
HCM Control Delay (s)	-	8.7	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

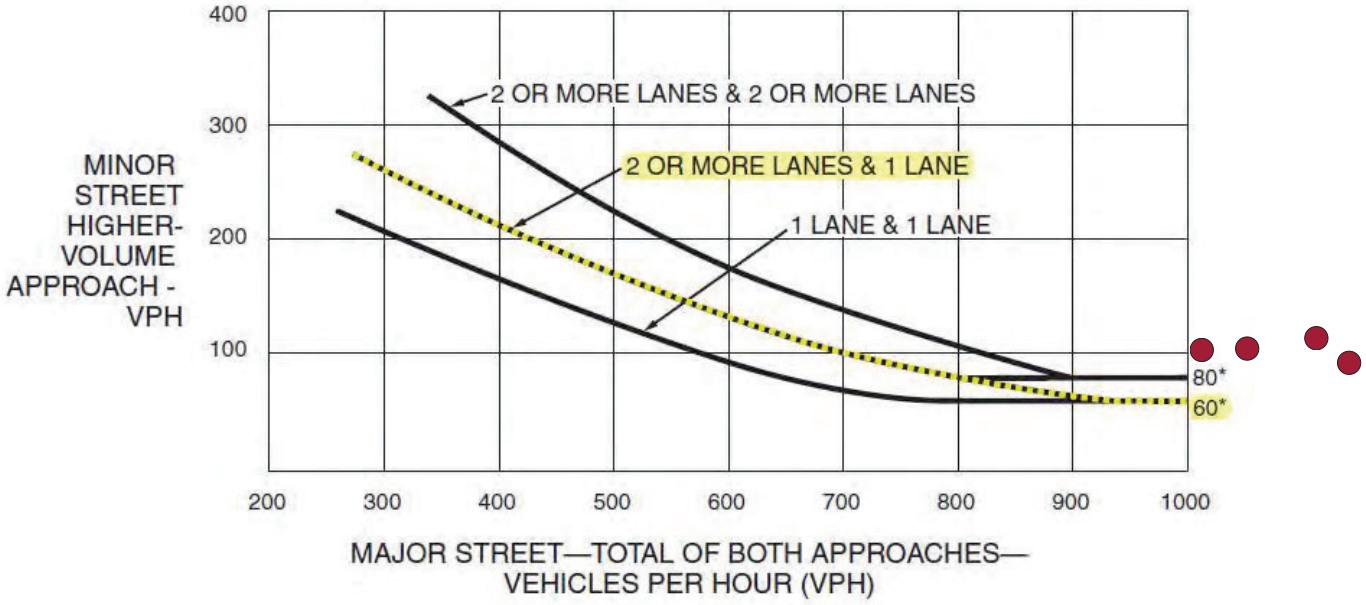
Appendix G: Signal Warrant Analysis

56th Street & Metcalf Avenue Signal Warrant Analysis

Traffic Counts	Direction = NB		Direction = SBLT	
	Approach Major Volume	Turn Volume	Approach Minor Volume	Turn Volume
07:00 - 08:00	1237	31	105	
08:00 - 09:00	1128	44	103	
16:00 - 17:00	1648	58	112	
17:00 - 18:00	1801	98	97	

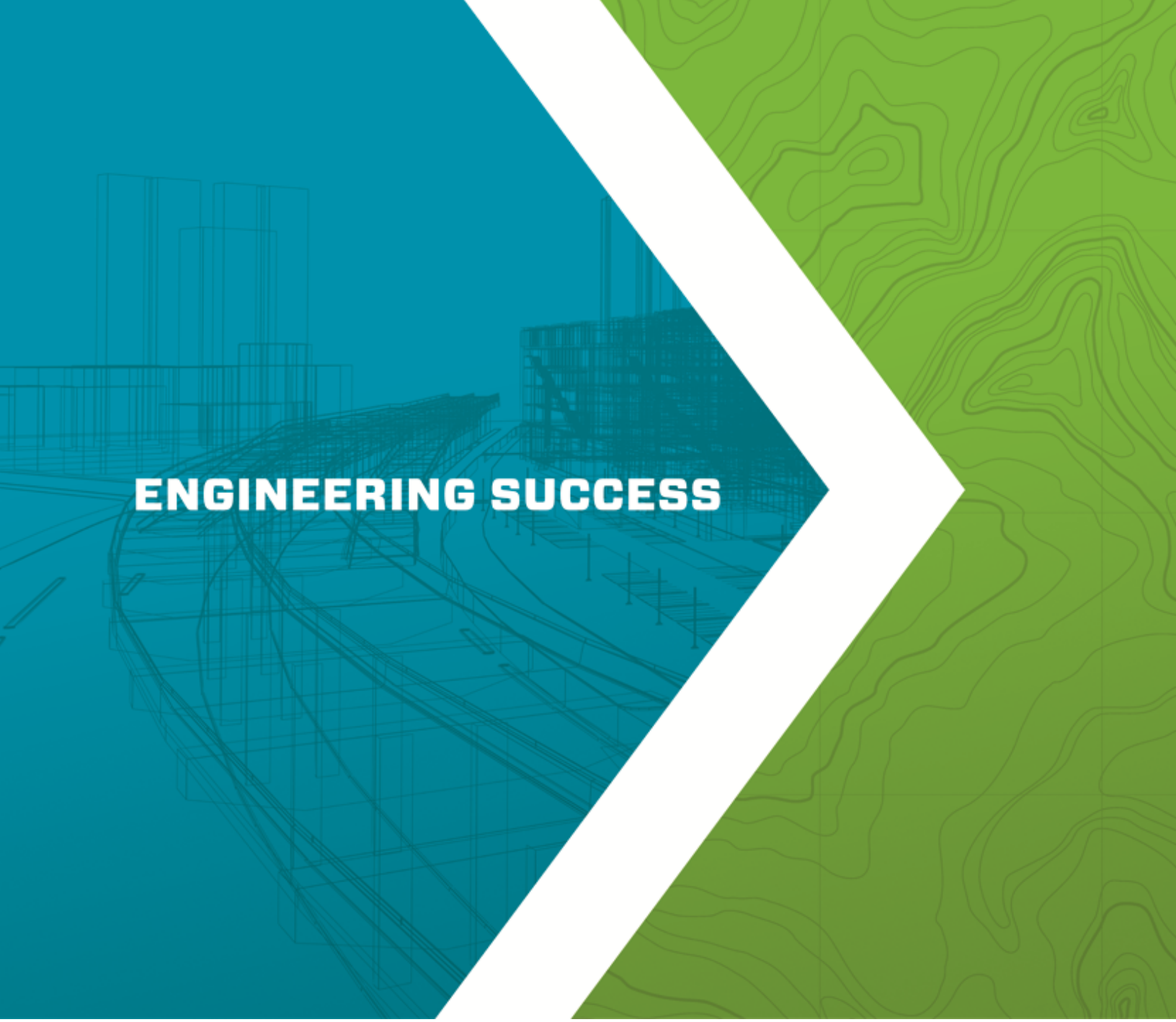
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

The plotted points from all four hours of count data collected exceed 1000 VPH on the major street and exceed the 60 VPH threshold for the minor street (southbound left-turn). The volumes satisfy the Four-Hour vehicular Volume Warrant (Warrant #2).



FINAL DEVELOPMENT PLAN
DRAINAGE REPORT FOR

56th and Foxridge Multifamily
Mission, Kansas

MKEC

11827 W. 112th St., Ste. 200
Overland Park, KS 66210
913.317.9390

PROJECT NUMBER: 2102010201
DATE: January 2023

Table of Contents

General Information

Purpose

The purpose of this report is to evaluate drainage conditions for a proposed multifamily development in Mission, KS. This report reviews existing drainage conditions and evaluates proposed drainage conditions as a result of the proposed improvements to the site and its conformance with the City requirements for managing stormwater runoff. This Final Drainage Report is included with the Final Development Plan submittal. An updated Final Drainage Report will be provided with the construction documents submitted for building permit.

Location

The proposed development is 4.97 acres and located at the southeast corner of 56th and Foxridge Drive in the City of Mission, Johnson County, Kansas. The property is in Section 8, Township 12 South, Range 25 East and is shown on the USGS Quadrangle, Appendix A and Aerial Photograph, Appendix B.

Development

The site is on an existing urban lot that is developed with an existing general office building. The existing site contains 3.4 acres of existing impervious area associated with the existing parking lot, sidewalk, and building. The proposed development includes multifamily complex with associated amenities. The site plan is included as Appendix C.

Datum

The site is shown in NAVD 88.

Soils

The drainage areas on site are comprised of the following soil types according to the Natural Resources Conservation Service (NRCS) Soil Survey, Appendix D:

- Sharpsburg-Urban land complex, 4 to 8 percent slopes, HSG “C”

The Hydraulic Soil Group (HSG) for selection of runoff curve numbers (CN) is HSG “C”.

Flood Insurance Rate Map (FIRM)

The site is shown on FEMA FIRM Panels 20091C0023G, effective August 3, 2009, Appendix E. This site is in Zone X (unshaded), areas determined to be outside the 1% annual chance floodplain.

Drainage Patterns

Hydrologic Methods

The existing and proposed drainage areas were modeled using Hydraflow Hydrographs by AutoCAD, Appendix F. The SCS Method was used in calculations with rainfall depths determined from the NOAA Atlas 14 Johnson County, as shown in Table 1. Time of Concentration was calculated using the TR-55 Method in Hydroflow Hydragraphs, Appendix F.

Table 1. Rainfall Depths (inches) for 24- Hour Design Storm

	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
Johnson County	3.1	3.6	4.6	5.3	6.2	7.0	8.5

Drainage Conditions

Existing Conditions

Under existing conditions, the site drains in two directions. Existing Site- NW is approximately 3.75 acres and drains from south to the northwest where it eventually drains to the roadside ditch located east of Metcalf Avenue, northwest of the site area. Existing Site- SE is approximately 1.24 acres and drains from west to east as it sheet flows to Broadmoor Street. Flows from Broadmoor Street drain to the south. The existing drainage conditions can be seen in Table 2. Appendix G provides the Existing Watershed Areas.

Table 2. Existing Drainage Conditions

	Area (acres)	Tc (min)	CN	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
Existing Site- NW	3.75	5.0	90	15.5	20.7	24.6	29.7	33.5	37.3
Existing Site- SE	1.24	5.0	90	5.1	6.8	8.1	9.8	11.1	12.4

Proposed Conditions

Under proposed conditions, the site will continue to drain in two directions. Drainage patterns have shifted due to the proposed site plans and to reduce the peak flow in each direction. The overall on-site watershed draining northwest is approximately 4.70 acres, while the overall on-site watershed draining southeast is 0.29 acres. The proposed site improvements will increase impervious area on the site by 0.53 acres and the proposed site curve numbers have increased to reflect the site improvements. The northwest half of the site is divided into two separate watersheds, area that is draining to an underground detention facility (Detained), and area that surface drains northwest and is not collected in the underground stormwater detention facility (Undetained). The proposed watersheds are described in more detail below, and Table 3 describes proposed drainage area conditions. Appendix H provides the Proposed Watershed Areas.

Proposed Site- NW Detained is approximately 3.64 acres, and primarily drains the roof and proposed building area. This drainage will be routed from building roof drains to an ADS underground detention chamber facility, located beneath the parking lot west of the building. Roof drain design and connections are approximate, and shown in the Final Development Plans. The underground stormwater detention facility will be constructed with the proposed improvements on site due to the increase in impervious area and will provide storage volume to reduce peak flows from the site. See Appendix I for the proposed detention facility location and design documents provided by Advanced Drainage Systems (ADS). Detention basin and allowable release rates are designed in conformance with the KC Metro APWA 5600 Storm Drainage Systems & Facilities, 2011. Details for the ADS detention facility are shown in Table 4.

Proposed Site- NW Undetained is approximately 1.06 acres. The watershed is primarily areas north and west of the building, between the building and street right of way. Stormwater will surface drain to 56th Street and Foxridge Drive. Storm water within the watershed will ultimately drain northwest. The stormwater will bypass the underground detention facility and will drain to the street and ultimately be collected and piped northwest to an existing channel east of Metcalf Ave., located within public right of way.

Proposed Site- SE is approximately 0.29 acres. The watershed is primarily areas south and east of the building, between the building and the property line. Storm water will surface drain to the southeast and ultimately collect in Broadmoor St. matching existing drainage patterns. The watershed area surface draining southeast will be significantly reduced compared to existing conditions, from 1.24 acres to 0.29 acres, respectively, due to the proposed site plans.

Tables 5 and 6 provide the peak flow comparison between existing and proposed conditions for overall stormwater draining northwest and southeast, respectively. The proposed flowrates area decreased in proposed conditions for all storm events in each watershed.

Table 7 provides the site flow comparison for the entire site. The flow rate is the combination of the total flow northwest and southeast compared in existing and proposed conditions. The values shown in Table 7 are not a straight mathematical addition due to the time of concentrations of each watershed, and when the peak flow rates combine. Total peak flow from the site is reduced in all storm events.

Table 3. Proposed Drainage Conditions

	Area (acres)	Tc (min)	CN	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
Prop. Site- NW Detained	3.64	5.0	93	16.3	21.3	25.0	29.9	33.5	37.2
Prop. Site- NW Undetained	1.06	5.0	93	4.7	6.2	8	9.5	10.7	11.9
Prop. Site- SE	0.29	5.0	93	1.3	1.7	2.0	2.4	2.7	3.0

Table 4. Underground Detention Facility.

	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
Flow In (cfs)	16.3	21.3	25.0	29.9	33.5	37.2
Flow Out (cfs)	5.9	9.0	13.9	20.3	24.7	28.3
Storage Volume (cu-ft)	9,600	12,900	14,500	16,200	17,300	18,400
Outlet Structure	12” outlet pipe @ 1043.25’, 24” outlet pipe @ 1046.50’					

Table 5. Site Flow Rate Comparison to Northwest

	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
Existing Site- NW	15.5	20.7	24.6	29.7	33.5	37.3
Prop. Site- NW (*Combined Flow: Flow out of Detention & Prop. Site-NW Undetained)*	9.9	12.6	18.7	26.8	32.0	37.1
Decrease	36%	39%	24%	10%	4%	1%

Table 6. Site Flow Rate Comparison to Southeast

	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
Existing Site- SE	5.1	6.8	8.1	9.8	11.1	12.4
Prop. Site- SE	1.3	1.7	2.0	2.4	2.7	3.0
Decrease	75%	75%	75%	76%	76%	76%

Table 7. Site Flow Rate Comparison for Overall Site

	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
Existing Site	20.6	27.5	32.7	39.5	44.6	49.7
Proposed Site	11.1	13.9	20.1	28.6	34.4	39.9
Decrease	46%	49%	39%	28%	23%	20%

Utilities

Water

A proposed water line will extend to service the proposed building.

Sanitary Sewer

A sanitary sewer line will be extended to service the proposed building.

Stormwater Sewer

Proposed stormwater sewer lines will convey runoff from the proposed site improvements. The proposed parking lot system will convey stormwater runoff from the lot to the existing drainage channel.

The storm sewer system will be designed using APWA 5600 design criteria. These systems will be sized for a minimum of a 10-year design storm with escape routes for larger storm events.

Water Quality

For the increase in impervious surfaces on-site, an ADS underground isolator row chamber will be utilized for Water Quality calculations. The isolator row will treat a majority of the storm runoff that drains to the Northwest corner of the site. The isolator row has a VR=9.0. The sizing for the ADS isolator are provided in Appendix I. Updated final sizing for the isolator row with be provided in the final drainage report included with the building permit submittal. See Appendix J for MARC BMP LOS Worksheets.

Permitting

U.S. Army Corps of Engineers

There is no blue line stream located on the site, therefore permitting through the U.S. Army Corps of Engineers will not be required.

Federal Emergency Management Agency (FEMA)

There are no FEMA floodplains on the site; therefore permitting through FEMA will not be required.

Kansas Department of Health and Environment (KDHE)

Since the site disturbs more than 1.0 acre, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) will be required.

Kansas Department of Wildlife, Parks, and Tourism (KDWPT)

The KDWPT will be contacted during the KDHE NOI permitting process. It is not anticipated there will be any concerns.

Kansas Historical Society (KSHS)

The KHS will be contacted during the KDHE NOI permitting process. Since there are no historical buildings on site, it is not anticipated there will be any concerns.

Kansas Division of Water Resources (DWR)

Water Structure, Channel Changes, and Floodplain Fill

Since all the drainage areas draining through the site are under 640 acres, water structures, channel change, and floodplain fill permits are not required.

Water Appropriations

There will not be a facility with a permanent pool of greater than 15 acre-feet; therefore, a water appropriations permit will not be needed.

Summary

The 56th & Foxridge multifamily development is located in Mission, Kansas. The site is on an existing developed urban lot that will be redeveloped to a multifamily complex with associated amenities. The site improvements will replace the existing building and parking lot currently on the site and will increase impervious area on the site.

Peak flow rates are decreased to the northwest and southeast. Peak flow rates to the southeast have decreased due to shift in drainage patterns and will improve downstream conditions due to the reduced peak flows from the site. Peak flow rates to the northwest have decreased due to a proposed underground storm water detention facility included with the proposed improvements.

An ADS underground isolator row will be installed for water quality treatment. Water quality requirements meet the BMP MARC Manual.

Appendix A – USGS Quadrangle

MKEC
Overland Park, KS · 913.317.9390

USGS QUAD EXHIBIT
FOXRIDGE
MISSION, JOHNSON COUNTY, KANSAS

SEC: 08
TWP: T12S
RNG: R25E

PROJECT NO.	2102010852
DATE	Feb 2022
SCALE	1"=2000'

DESIGNED	DRAWN	CHECKED
LES	LES	KLA

NO.	REVISION	DATE

SHEET NO.
1 OF 1

N

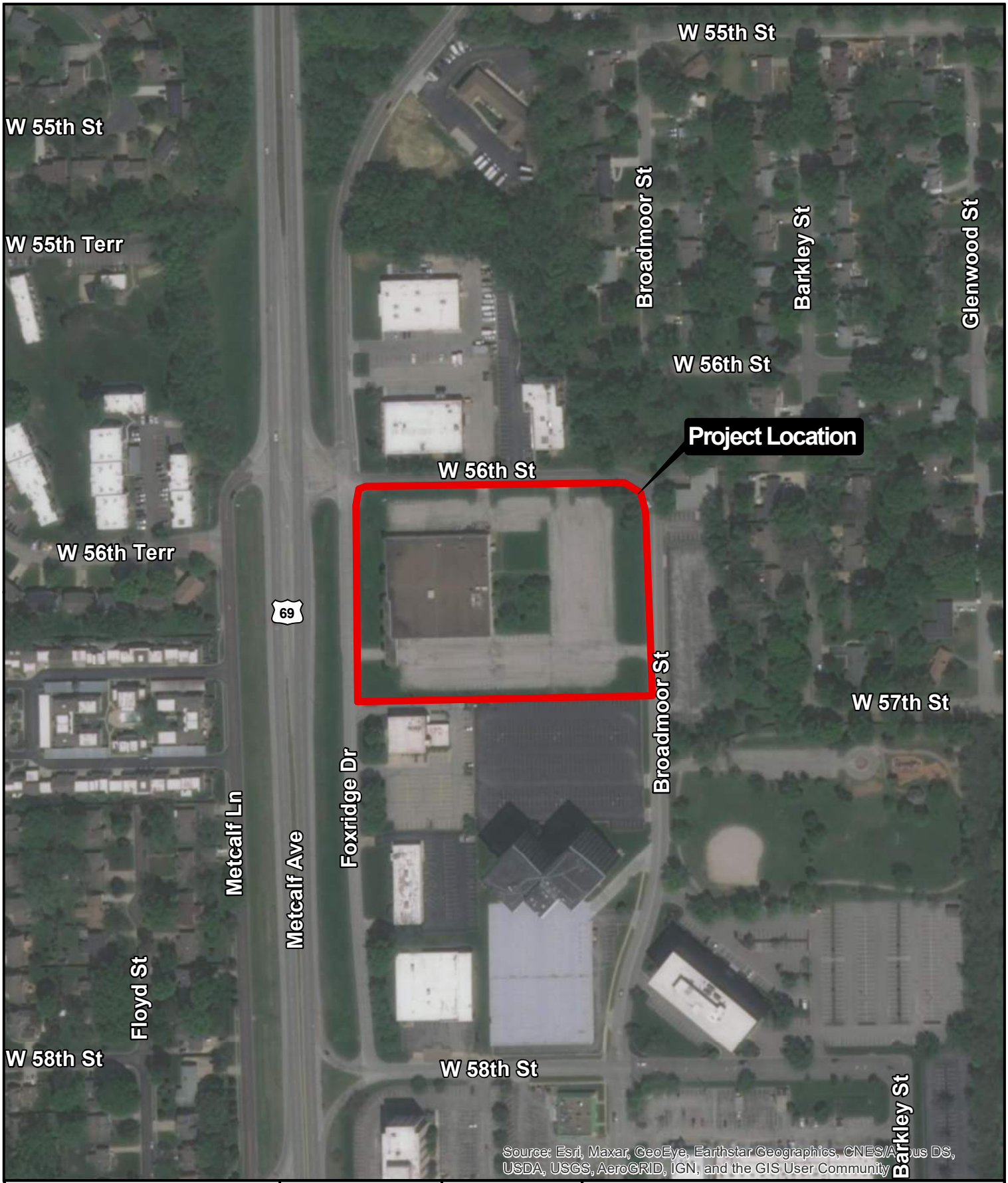
1 0.5 0 1 Miles

1,000 500 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

Path: \\KCSVR1\Vol1\PROJECTS\2021\2102010852_Block_56th & Foxridge Multifamily\05 Civil\GIS\USGS Quad Exhibit-KC.mxd - Date: 2/22/2022

Appendix B – Aerial Photograph



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RNG: R25E

1 "=250 ' / 1:3000

0 62.5 125 250

MKEC
Overland Park, KS - 913.317.9390

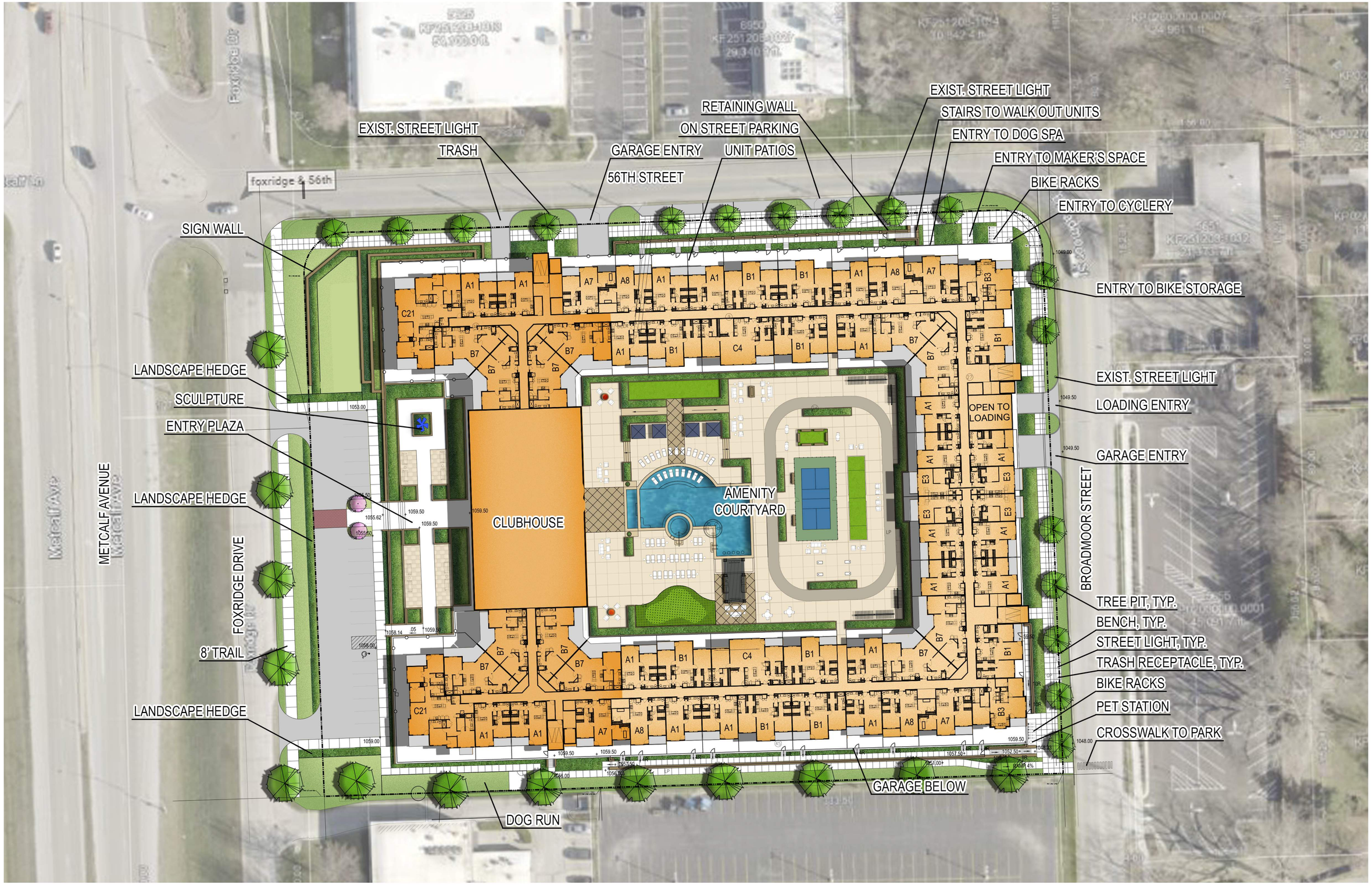
AERIAL EXHIBIT
FOXRIDGE
MISSION, JOHNSON COUNTY, KANSAS

PROJECT NO.	DATE	SHEET NO.
2102010852	February 2022	1 OF 1

DRAWN BY:	DESIGNED BY:	APPROVED BY:
LES	LES	KLA

Path: \\KCSVR1\Vol1\PROJECTS\2021\2102010852_Block_56th & Foxridge Multifamily\05 Civil\GIS\Aerial Exhibit-KC.mxd - Date: 2/23/2022

Appendix C – Site Plan

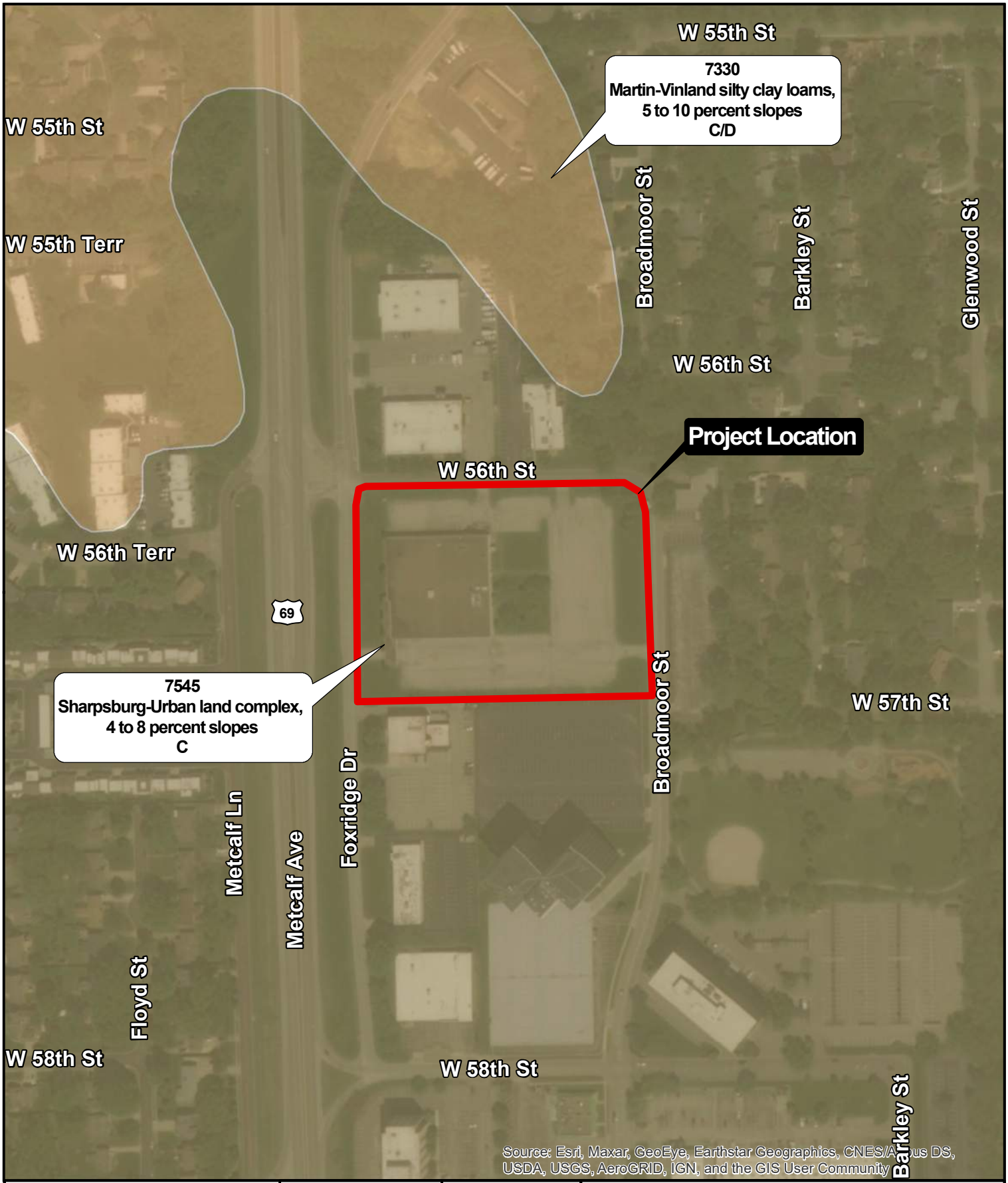


SITE PLAN RENDER

FOXRIDGE MISSION 56TH & METCALF AVE, MISSION, KANSAS

NSPJ ARCHITECTS

Appendix D – Soil Survey



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RNG: R25E

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0 62.5 125 250

MKEC
Overland Park, KS - 913.317.9390

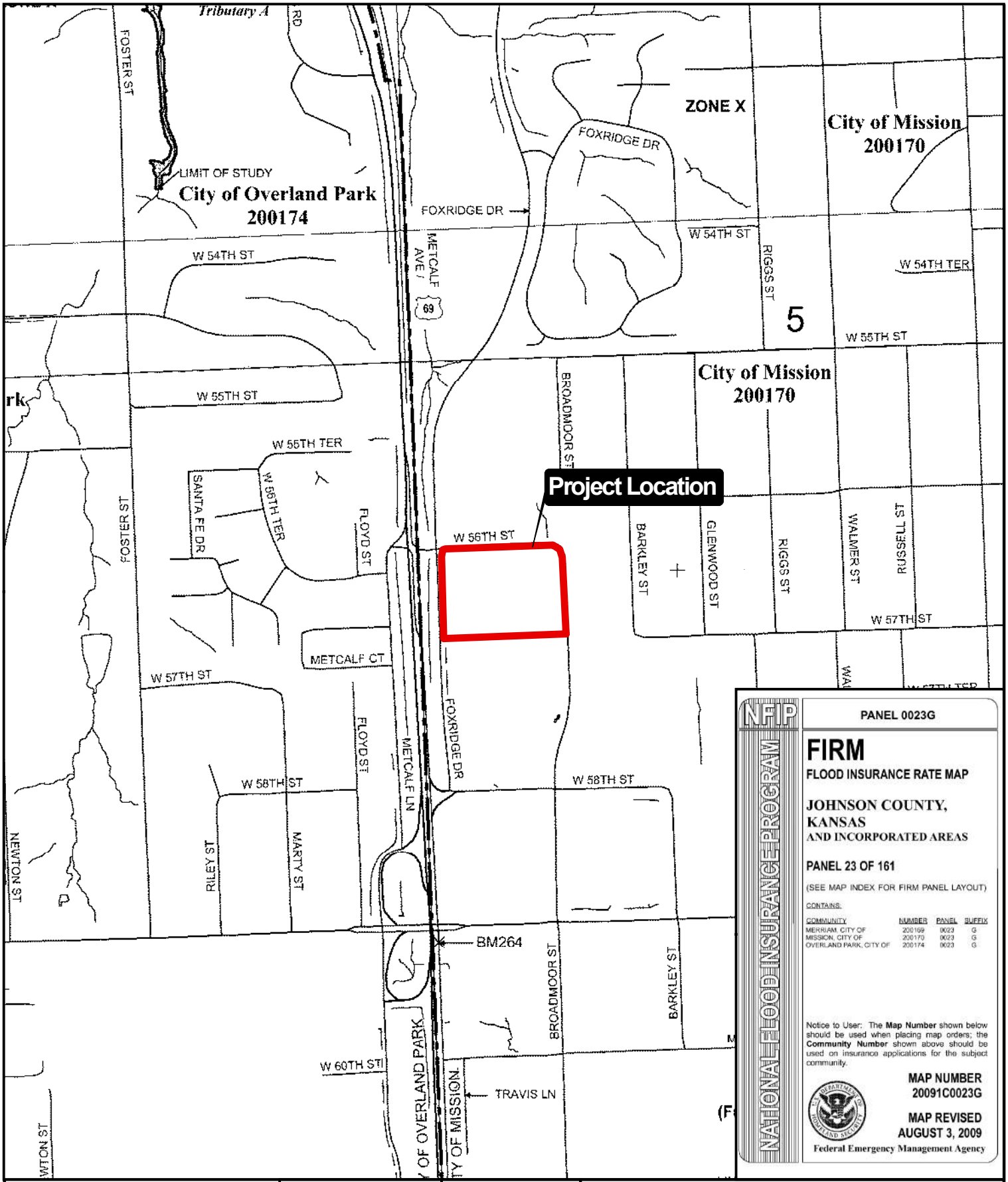
NRCS SOIL SURVEY EXHIBIT
FOXRIDGE
MISSION, JOHNSON COUNTY, KANSAS

PROJECT NO.	DATE:	SHEET NO.
2102010852	February 2022	1 OF 1

DRAWN BY:	DESIGNED BY:	APPROVED BY:
LES	LES	KLA

Path: \\KCSVR1\Vol1\PROJECTS\2021\2102010852_Block_56th & Foxridge Multifamily\05 Civil\GIS\NRCS Soil Survey Exhibit-KC.mxd - Date: 2/23/2022

Appendix E – FEMA FIRM



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RNG: R25E

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MKEC
Overland Park, KS - 913.317.9390

FEMA FIRM EXHIBIT
FOXRIDGE
MISSION, JOHNSON COUNTY, KANSAS

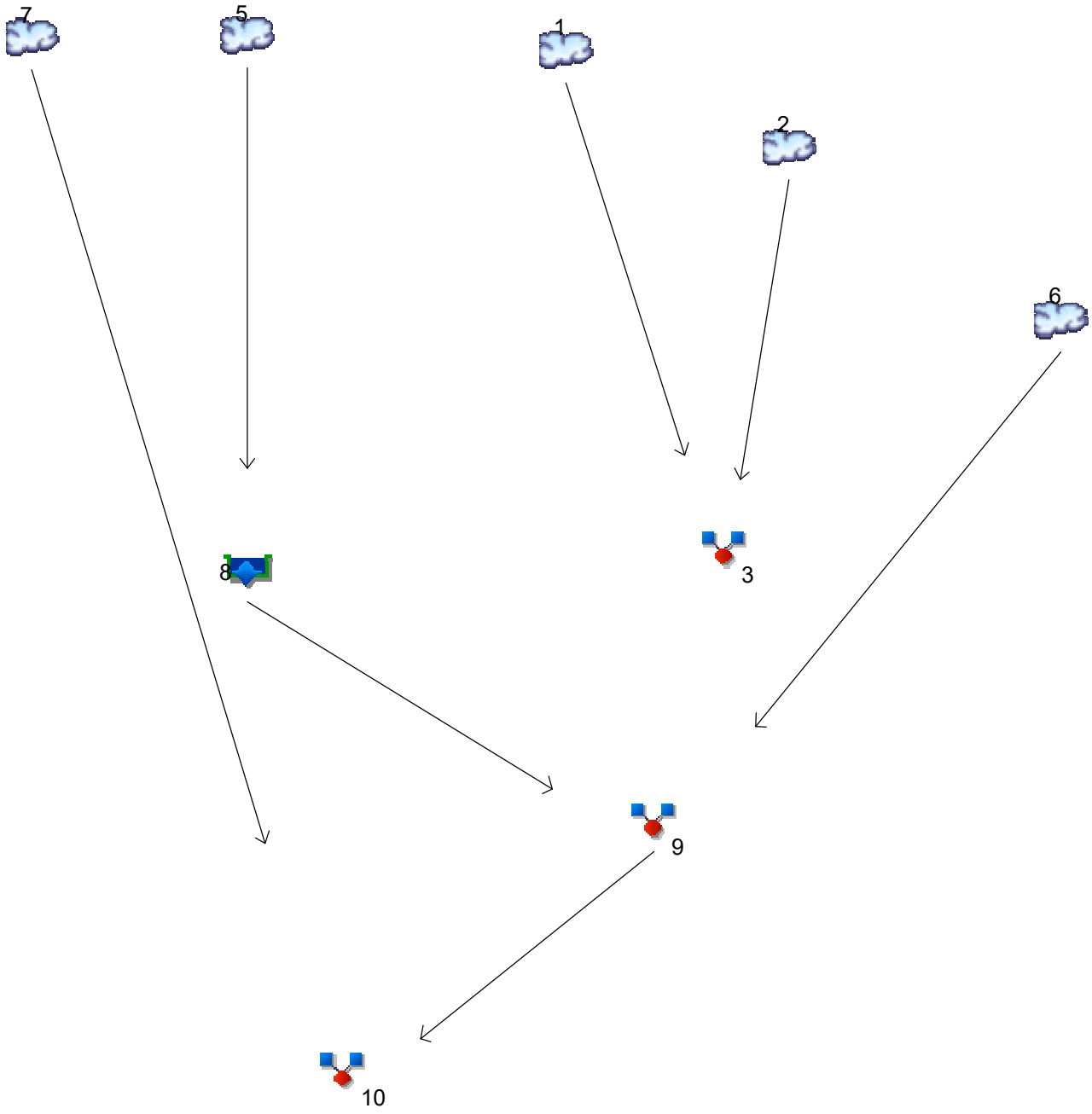
PROJECT NO.	DATE	SHEET NO.
2102010852	February 2022	1 OF 1

DRAWN BY:	DESIGNED BY:	APPROVED BY:
LES	LES	KLA

Path: \\KCSVR1\Vol1\PROJECTS\2021\2102010852_Block_56th & Foxridge Multifamily\05 Civil\GIS\FEMA FIRM Exhibit-KC.mxd - Date: 2/23/2022

Appendix F – Hydraflow Hydrograph Outputs

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	SCS Runoff	EX SITE - NW
2	SCS Runoff	EX SITE - SE
3	Combine	Exist Site- Combined
5	SCS Runoff	PROP SITE - NW - Detained
6	SCS Runoff	PROP SITE - NW - Undetained
7	SCS Runoff	PROP SITE - SE
8	Reservoir	UG Detention Pond
9	Combine	TOTAL PROP - NW(Combined Det. Facility + Undetain)
10	Combine	Prop Site-Combined

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	15.50	-------	20.69	24.56	29.70	33.53	37.34	EX SITE - NW
2	SCS Runoff	------	-------	5.125	-------	6.841	8.121	9.819	11.09	12.35	EX SITE - SE
3	Combine	1, 2	-------	20.62	-------	27.53	32.68	39.51	44.61	49.69	Exist Site- Combined
5	SCS Runoff	------	-------	16.27	-------	21.25	24.95	29.86	33.53	37.19	PROP SITE - NW - Detained
6	SCS Runoff	------	-------	4.738	-------	6.187	7.266	8.697	9.765	10.83	PROP SITE - NW - Undetained
7	SCS Runoff	------	-------	1.296	-------	1.693	1.988	2.379	2.671	2.963	PROP SITE - SE
8	Reservoir	5	-------	5.855	-------	8.989	13.92	20.31	24.69	28.33	UG Detention Pond
9	Combine	6, 8	-------	9.892	-------	12.55	18.65	26.80	31.97	37.09	TOTAL PROP - NW(Combined Det. F
10	Combine	7, 9	-------	11.14	-------	13.92	20.14	28.58	34.35	39.92	Prop Site-Combined

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v2018.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	37.34	2	716	82,833	------	------	------	EX SITE - NW
2	SCS Runoff	12.35	2	716	27,390	------	------	------	EX SITE - SE
3	Combine	49.69	2	716	110,223	1, 2	------	------	Exist Site- Combined
5	SCS Runoff	37.19	2	716	84,794	------	------	------	PROP SITE - NW - Detained
6	SCS Runoff	10.83	2	716	24,693	------	------	------	PROP SITE - NW - Undetained
7	SCS Runoff	2.963	2	716	6,756	------	------	------	PROP SITE - SE
8	Reservoir	28.33	2	720	84,766	5	1044.19	18,387	UG Detention Pond
9	Combine	37.09	2	718	109,459	6, 8	------	------	TOTAL PROP - NW(Combined Det. F
10	Combine	39.92	2	718	116,214	7, 9	------	------	Prop Site-Combined

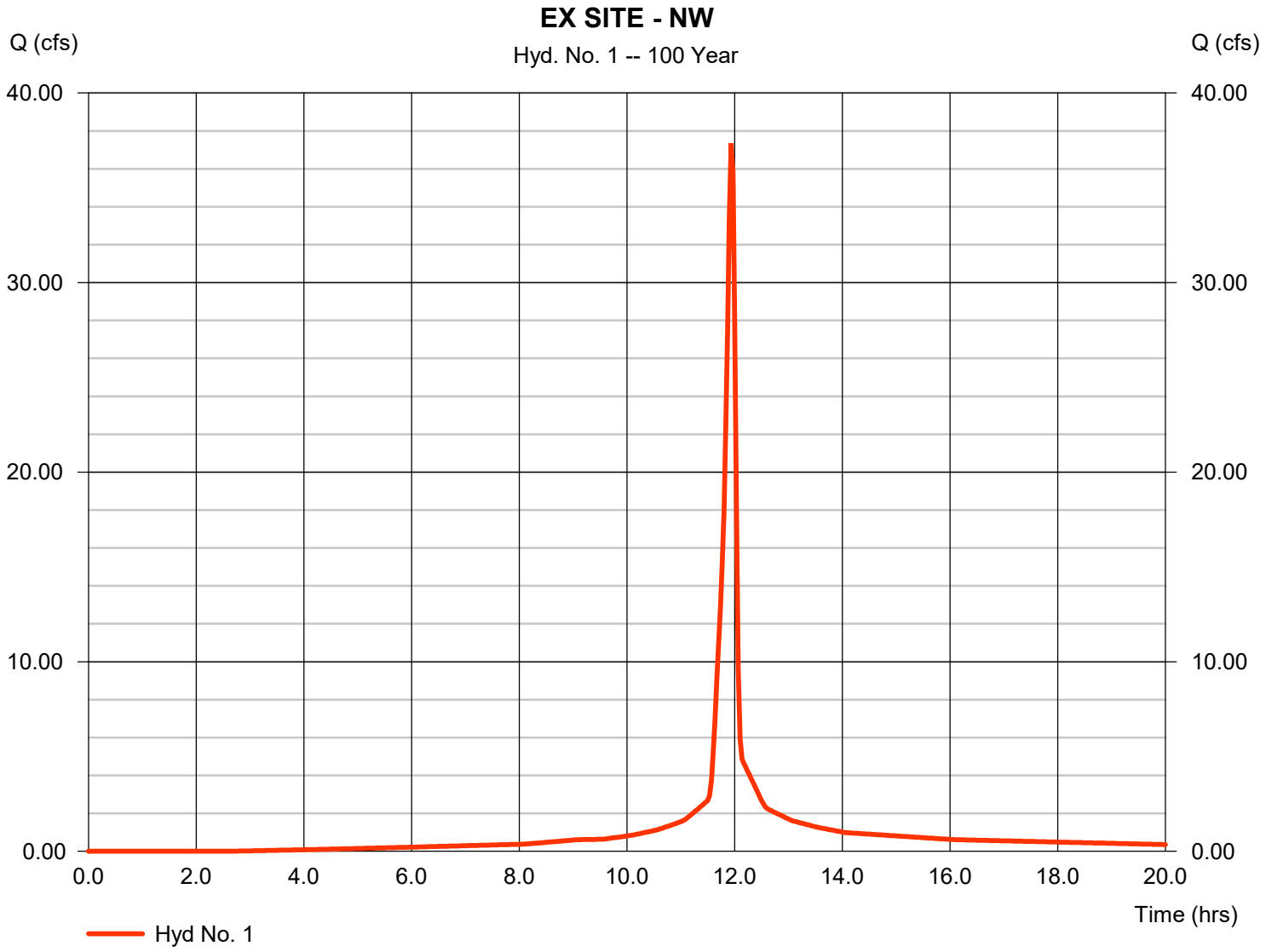
Hydrograph Report

Hyd. No. 1

EX SITE - NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.34 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	82,833 cuft
Drainage area	=	3.750 ac	Curve number	=	90*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.68 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.400 x 98) + (1.590 x 74)] / 3.750



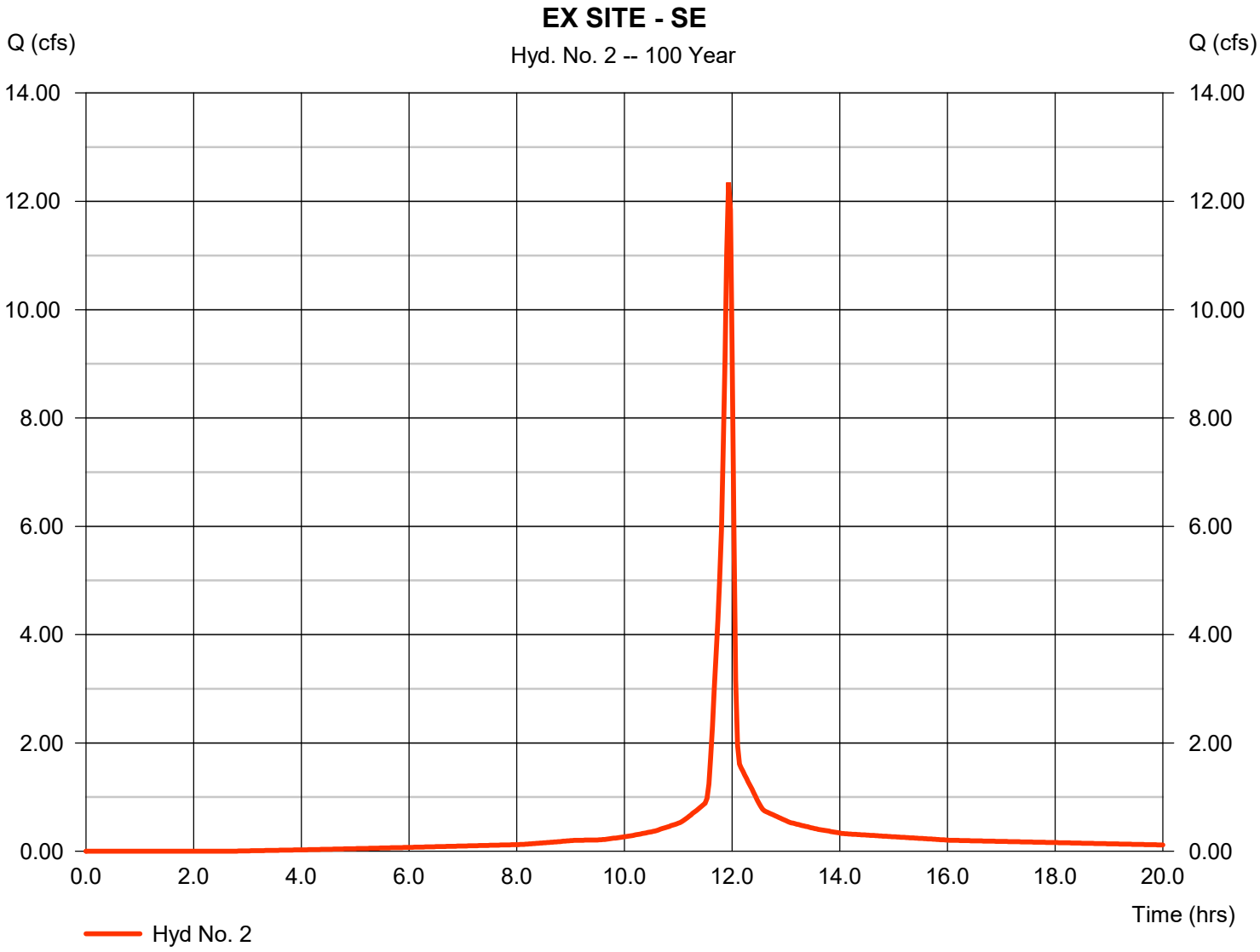
Hydrograph Report

Hyd. No. 2

EX SITE - SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.35 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	27,390 cuft
Drainage area	=	1.240 ac	Curve number	=	90*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.68 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.400 x 98) + (1.590 x 74)] / 1.240

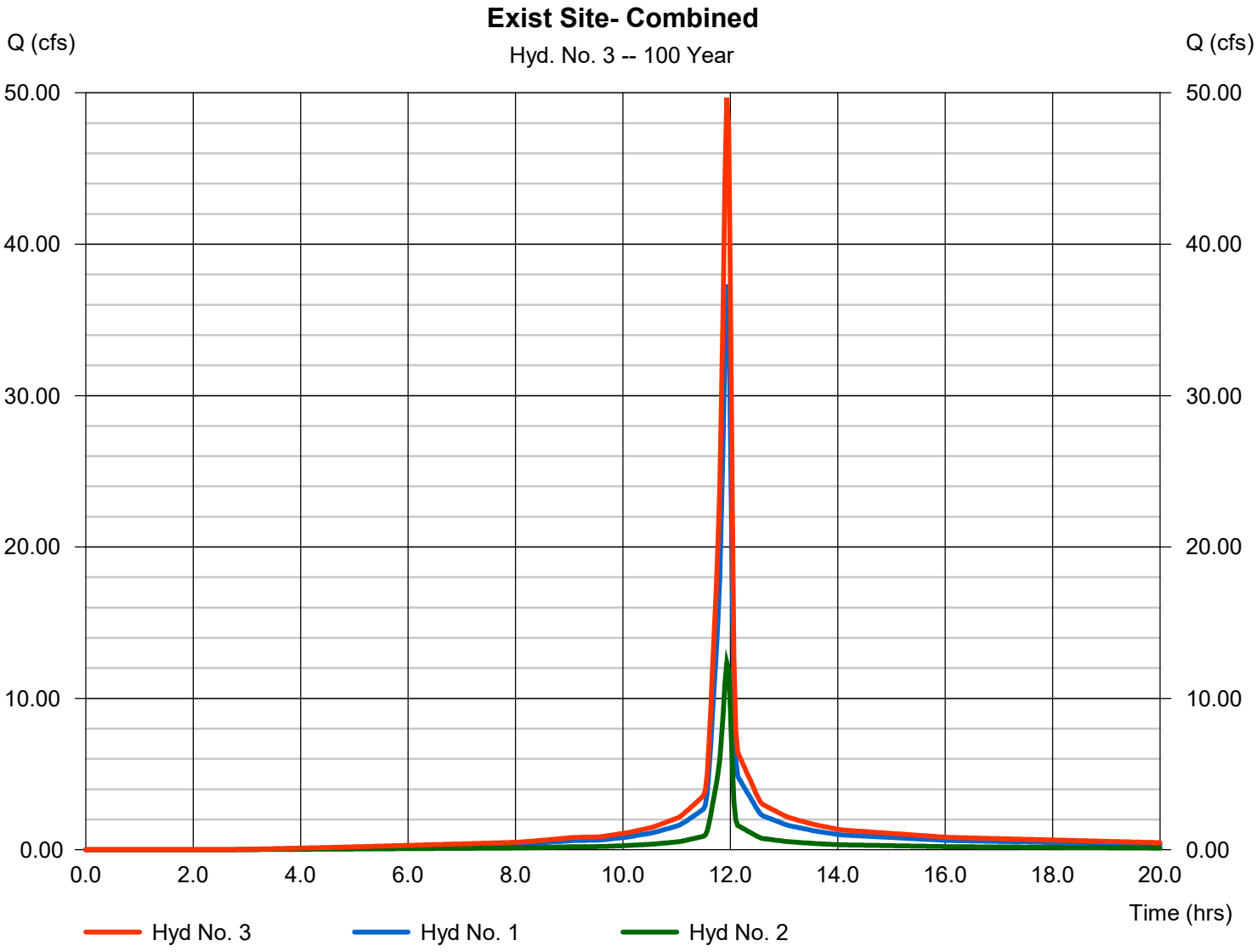


Hydrograph Report

Hyd. No. 3

Exist Site- Combined

Hydrograph type	= Combine	Peak discharge	= 49.69 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 110,223 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 4.990 ac

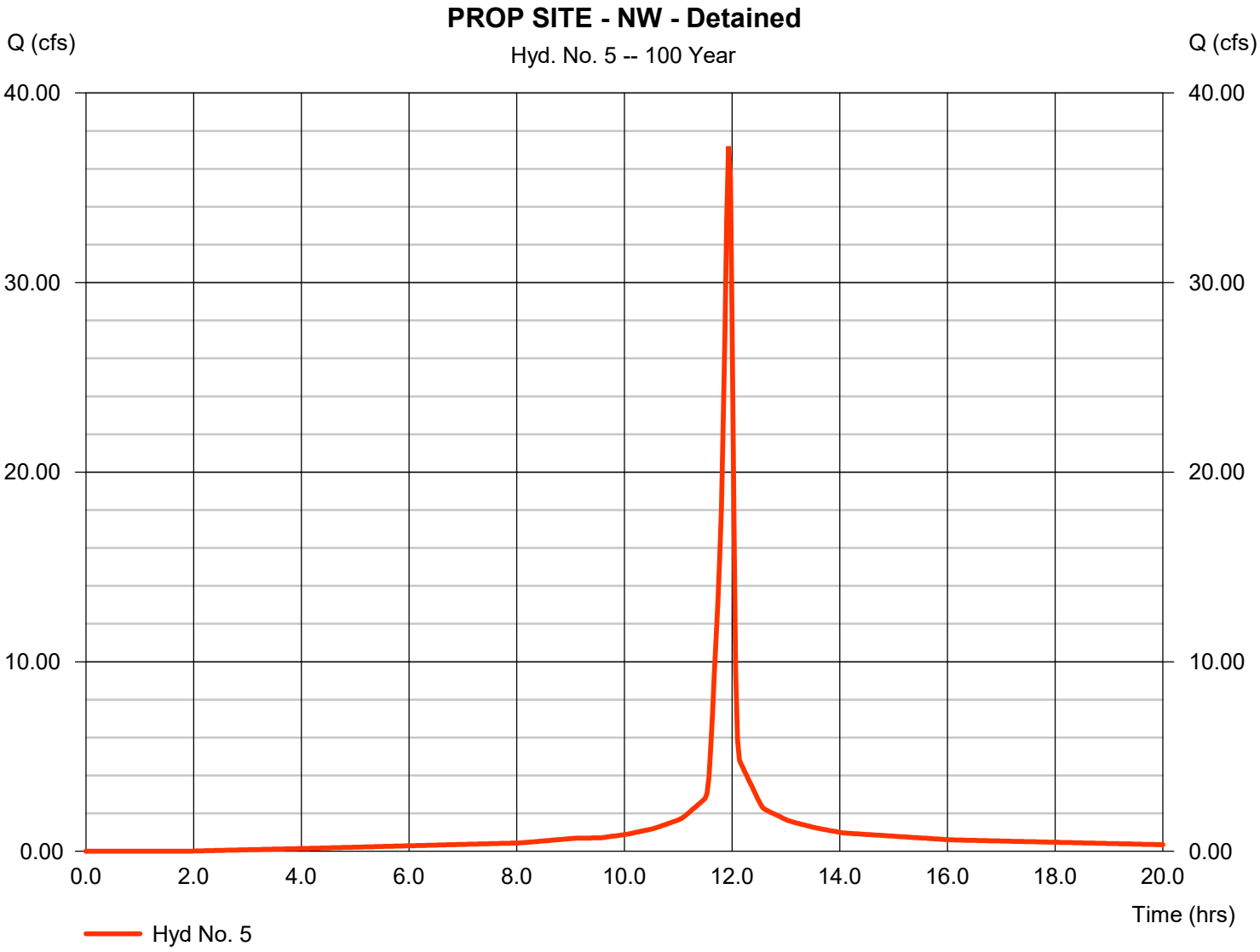


Hydrograph Report

Hyd. No. 5

PROP SITE - NW - Detained

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.19 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	84,794 cuft
Drainage area	=	3.640 ac	Curve number	=	93
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.68 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

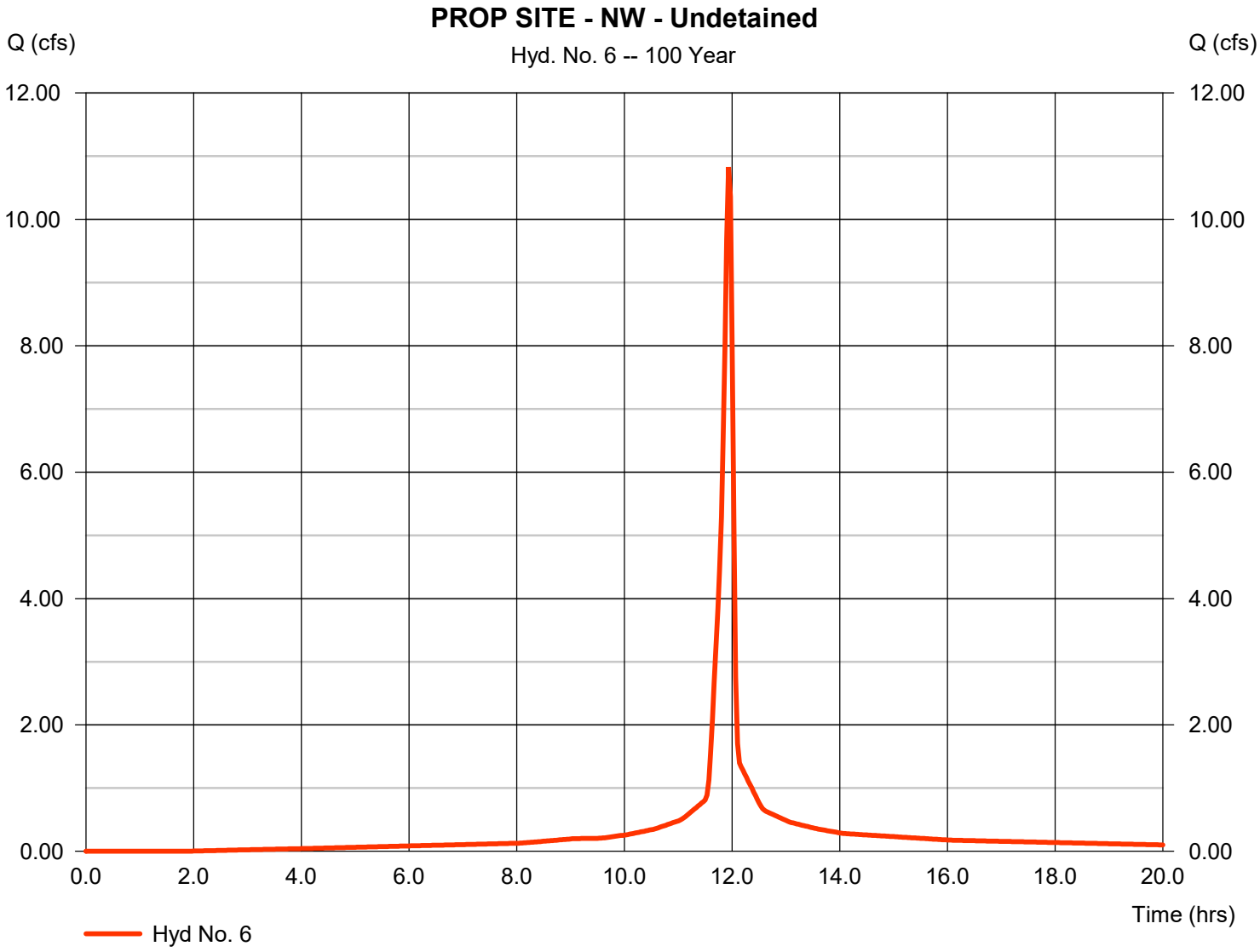


Hydrograph Report

Hyd. No. 6

PROP SITE - NW - Undetained

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.83 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	24,693 cuft
Drainage area	=	1.060 ac	Curve number	=	93
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.68 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



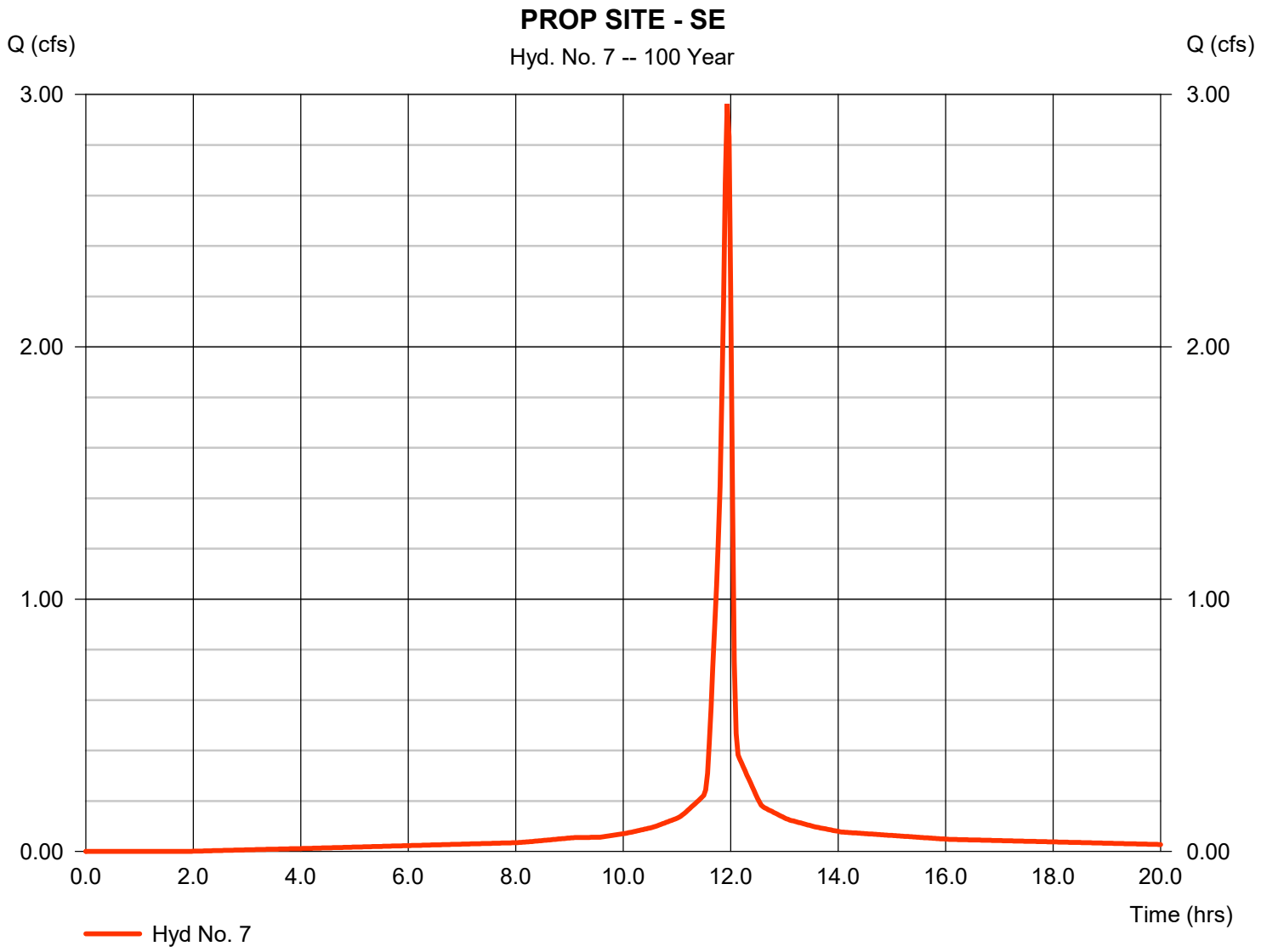
Hydrograph Report

Hyd. No. 7

PROP SITE - SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.963 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	6,756 cuft
Drainage area	=	0.290 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.68 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.160 x 98) + (0.130 x 74)] / 0.290



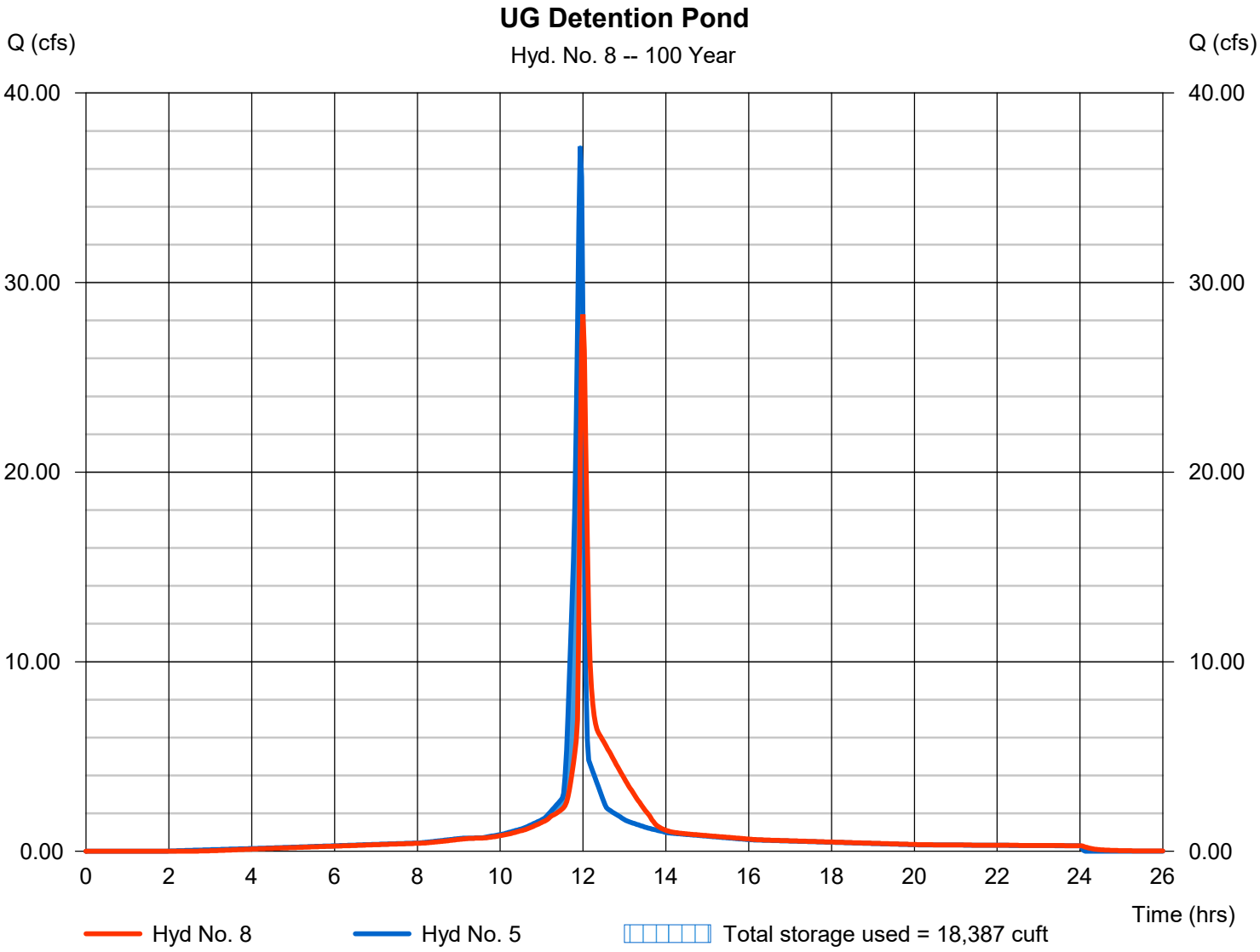
Hydrograph Report

Hyd. No. 8

UG Detention Pond

Hydrograph type	=	Reservoir	Peak discharge	=	28.33 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	84,766 cuft
Inflow hyd. No.	=	5 - PROP SITE - NW - Detained	Max. Elevation	=	1044.19 ft
Reservoir name	=	ADS Underground (UG) Detention	Max. Storage	=	18,387 cuft

Storage Indication method used.



Pond No. 1 - ADS Underground (UG) Detention Facility

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1038.25	n/a	0	0
0.08	1038.33	n/a	156	156
0.16	1038.41	n/a	156	312
0.75	1039.00	n/a	1,093	1,405
0.83	1039.08	n/a	330	1,735
0.91	1039.16	n/a	330	2,065
1.00	1039.25	n/a	329	2,394
2.00	1040.25	n/a	3,886	6,280
3.00	1041.25	n/a	3,719	9,999
4.00	1042.25	n/a	3,445	13,444
5.00	1043.25	n/a	2,997	16,441
6.00	1044.25	n/a	2,122	18,563
6.50	1044.75	n/a	937	19,500
6.75	1045.00	n/a	468	19,968

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	24.00	0.00
Span (in)	= 12.00	0.00	24.00	0.00
No. Barrels	= 1	0	1	0
Invert El. (ft)	= 1038.25	0.00	1041.50	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .012	.013	.012	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

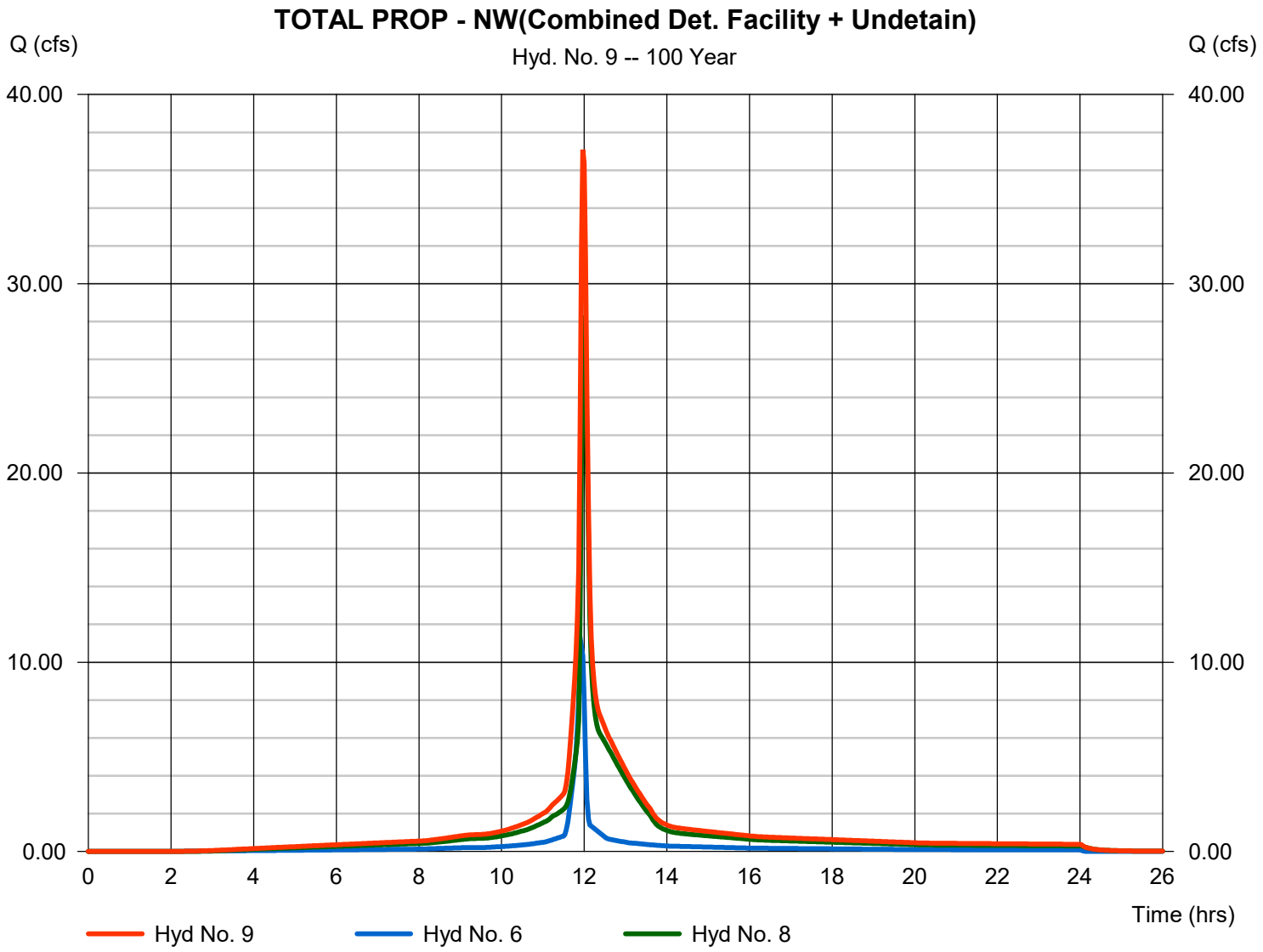
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1038.25	0.00	---	0.00	---	---	---	---	---	---	---	0.000
0.08	156	1038.33	0.03 ic	---	0.00	---	---	---	---	---	---	---	0.029
0.16	312	1038.41	0.11 ic	---	0.00	---	---	---	---	---	---	---	0.111
0.75	1,405	1039.00	1.86 ic	---	0.00	---	---	---	---	---	---	---	1.864
0.83	1,735	1039.08	2.16 ic	---	0.00	---	---	---	---	---	---	---	2.162
0.91	2,065	1039.16	2.44 ic	---	0.00	---	---	---	---	---	---	---	2.438
1.00	2,394	1039.25	2.67 ic	---	0.00	---	---	---	---	---	---	---	2.674
2.00	6,280	1040.25	4.63 ic	---	0.00	---	---	---	---	---	---	---	4.631
3.00	9,999	1041.25	5.98 ic	---	0.00	---	---	---	---	---	---	---	5.979
4.00	13,444	1042.25	7.07 ic	---	3.18 ic	---	---	---	---	---	---	---	10.25
5.00	16,441	1043.25	8.02 ic	---	13.13 ic	---	---	---	---	---	---	---	21.15
6.00	18,563	1044.25	8.87 ic	---	20.01 ic	---	---	---	---	---	---	---	28.88
6.50	19,500	1044.75	9.26 ic	---	22.69 ic	---	---	---	---	---	---	---	31.95
6.75	19,968	1045.00	9.45 ic	---	23.91 ic	---	---	---	---	---	---	---	33.37

Hydrograph Report

Hyd. No. 9

TOTAL PROP - NW(Combined Det. Facility + Undetain)

Hydrograph type	= Combine	Peak discharge	= 37.09 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 109,459 cuft
Inflow hyds.	= 6, 8	Contrib. drain. area	= 1.060 ac

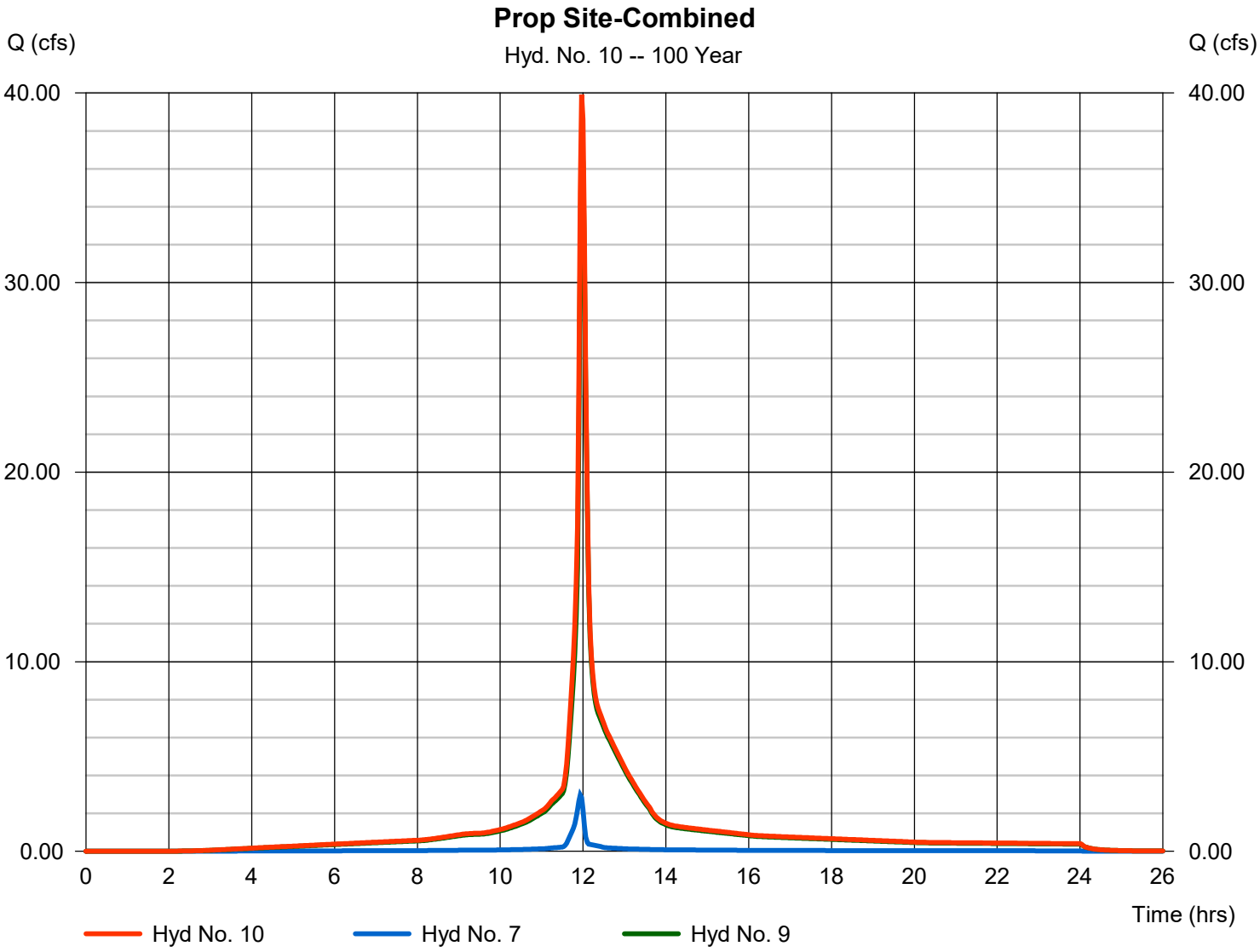


Hydrograph Report

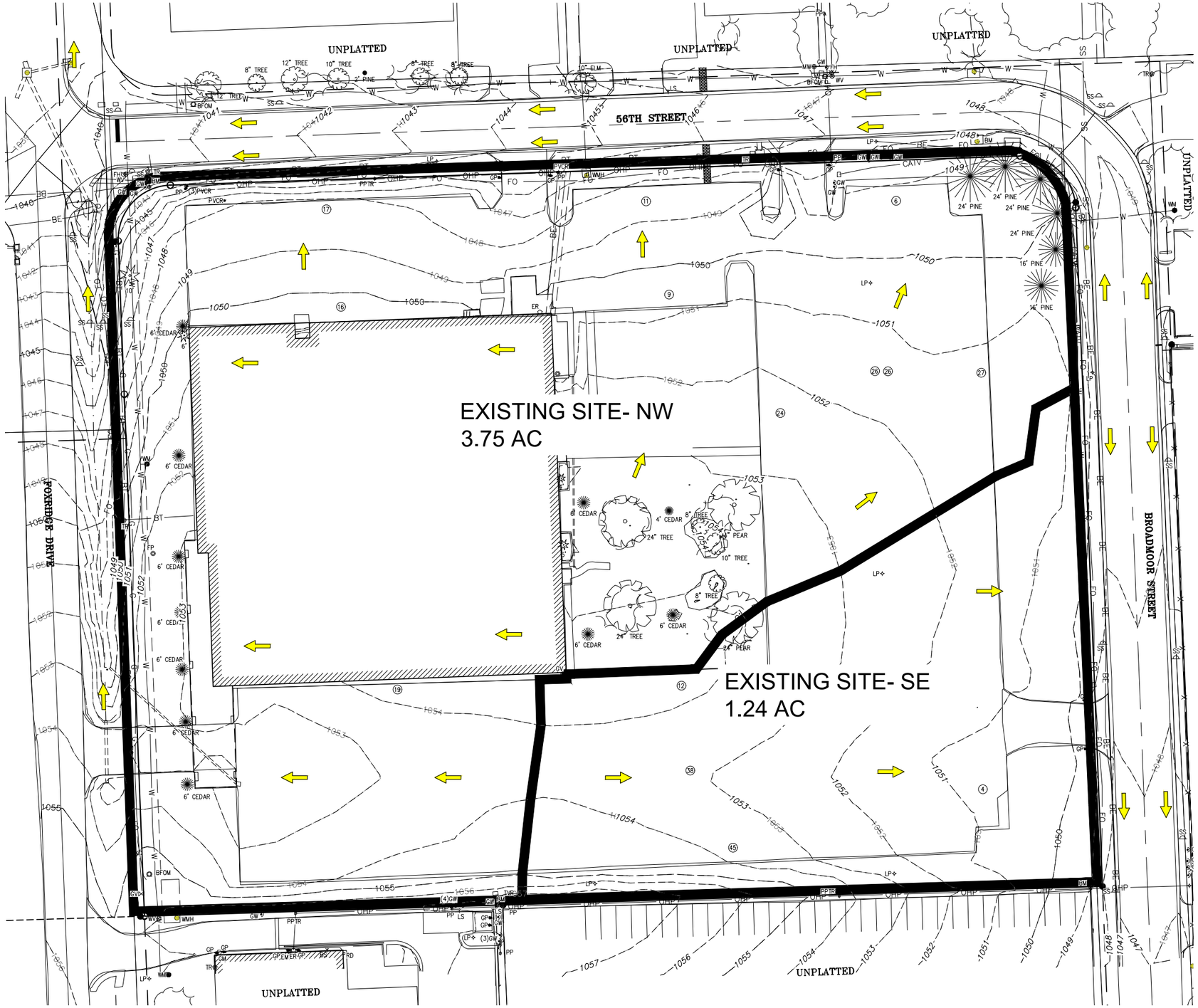
Hyd. No. 10

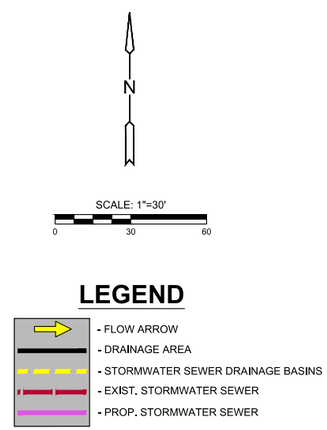
Prop Site-Combined

Hydrograph type	= Combine	Peak discharge	= 39.92 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 116,214 cuft
Inflow hyds.	= 7, 9	Contrib. drain. area	= 0.290 ac



Appendix G – Existing Drainage Areas





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EXISTING DRAINAGE PLAN FOR

56TH AND FOXRIDGE

MISSION, KANSAS

EXISTING DRAINAGE PLAN

PROJECT NO.	2102010852
DATE	FEB 2022
SCALE	AS NOTED

DESIGNED	DRAWN	CHECKED
ABW	ABW	BSH

NO.	REVISION	DATE

SHEET NO.

01 OF 01

Appendix H – Proposed Drainage Areas

PROPOSED SITE- NW
UNDETAINED
1.06 AC

ADS UNDERGROUND
ISOLATOR ROW
CHAMBER
(WATER QUALITY BMP)

BUILDING ROOF DRAIN
CONNECTION.
WATERSHED AREA=±1.16 AC

PROPOSED BUILDING

BUILDING ROOF DRAIN
CONNECTION.
WATERSHED AREA=±1.16 AC

LOT 1

PROPOSED SITE- NW
DETAINED
3.64 AC

BUILDING ROOF DRAIN
CONNECTION.
WATERSHED AREA=±1.16 AC

5' WIDE CONCRETE
FLUME. SEE DETAIL
THIS SHEET.

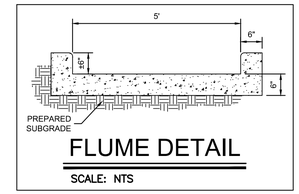
PROPOSED SITE- SE
0.29 AC

ADS UNDERGROUND
DETENTION FACILITY
STORMTECH MC-7200 CHAMBERS
INSTALLED VOLUME PROVIDED=
19,970 CF

56TH STREET

FOXRIDGE DRIVE

BROADMOOR STREET



FLUME DETAIL

SCALE: NTS

NOTES:

1. SEE THE FINAL DRAINAGE REPORT INCLUDED WITH THE FINAL DEVELOPMENT PLAN SUBMITTAL FOR ADDITIONAL WATERSHED, DETENTION FACILITY, AND GENERAL STORM WATER DETAILS/INFORMATION.

LEGEND

- FLOW ARROW
- DRAINAGE AREA
- EXIST. STORMWATER SEWER
- PROP. STORMWATER SEWER

N

SCALE: 1"=30'
0 30 60

STORMWATER & DRAINAGE PLAN
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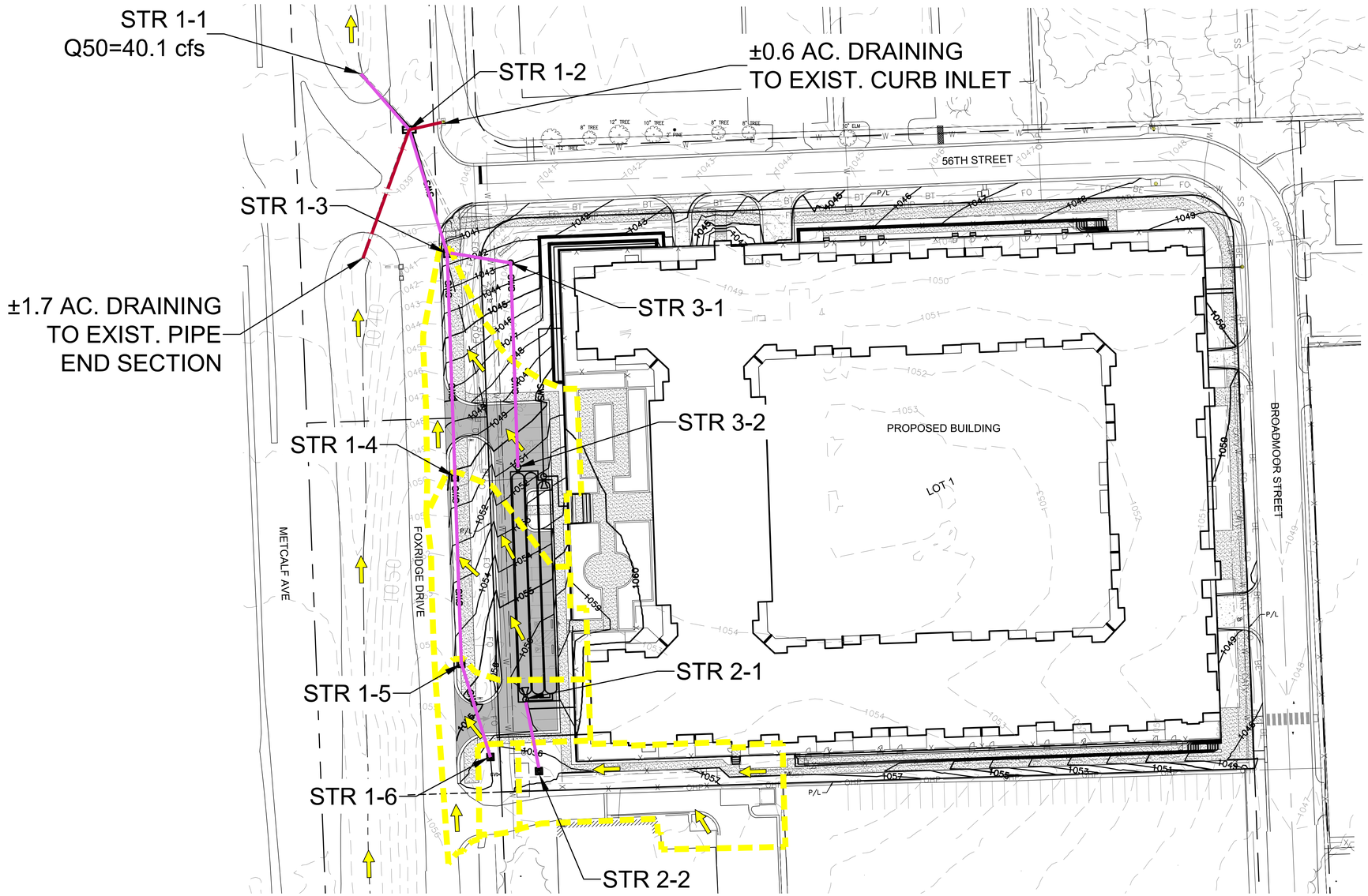

NOTES:

1. SEE THE FINAL DRAINAGE REPORT INCLUDED WITH THE FINAL DEVELOPMENT PLAN SUBMITTAL FOR ADDITIONAL WATERSHED, DETENTION FACILITY, AND GENERAL STORM WATER DETAILS/INFORMATION.

LEGEND

- FLOW ARROW
- DRAINAGE AREA
- EXIST. STORMWATER SEWER
- PROP. STORMWATER SEWER

STR ID				DRAINAGE AREA "A"		RUNOFF COEFF "C"	RETURN FREQ.	K	A x C x K		K_{100}	A x C x K (100-yr)		TIME OF CONCENTRATION		RAIN "I"	RAIN "I_{100}"	RUNOFF "Q"	RUNOFF "Q_{100}"	PIPE DIA.	PIPE TYPE	LENGTH	TOP ELEV.	INVERT ELEVATION		SLOPE	Q_{FULL}	Q_{INLT}	VELOCITY		
LINE NO.	TYPE	FROM	TO	INC (AC)	TOTAL (AC)				INC. (AC)	TOTAL (AC)		INC. (AC)	TOTAL (AC)	INLET (MIN)	SYSTEM (MIN)	(IN/HR)	(IN/HR)	(CFS)	(CFS)	(IN)		(FT)	(FEET)	U/S (FEET)	D/S (FEET)	(FT/FT)	(CFS)	(CFS)	FULL (FPS)	d_n (IN)	DESIGN (FPS)
1	GI	1-6	1-5	0.1	0.1	0.55	50	1.20	0.1	0.1	1.25	0.1	0.1	5.0	5.0	9.4	10.3	0.6	0.7	12	RCP	69.70	1055.25	1051.50	1050.50	0.0143	4.3	6.1	5.4	*3.1*	3.9
	CI	1-5	1-4	0.2	0.3	0.80	50	1.20	0.2	0.3	1.25	0.2	0.3	5.0	5.3	9.3	10.2	2.4	2.7	12	RCP	132.00	1054.25	1050.30	1046.50	0.0288	6.0	6.4	7.7	*5.2*	7.3
	CI	1-4	1-3	0.3	0.6	0.80	50	1.20	0.3	0.5	1.25	0.3	0.6	5.0	5.6	9.2	10.1	5.0	5.7	12	RCP	159.60	1050.25	1046.30	1036.60	0.0608	8.8	6.4	8.1	*6.5*	11.6
	CI	1-3	1-2	0.3	4.5	0.70	50	1.20	0.3	3.5	1.25	0.3	3.6	5.0	5.8	9.1	10.0	32.2	35.7	24	RCP	90.30	1041.40	1035.35	1032.67	0.0297	39.0	34.1	10.8	*16.6*	13.9
	JB	1-2	1-1	2.3*	6.8	0.45	50	1.20	1.2	4.8	1.25	1.3	4.9	8.0	8.0	8.4	9.2	40.1	44.8	30	RCP	52.20	1038.48	1032.47	1031.95	0.0100	41.0	53.0	8.4	*24.0*	9.5
			1-1																												
2	GI	2-2	2-1	1.5	1.5	0.85	100	1.25	1.6	1.6	1.25	1.6	1.6	5.0	5.0	10.3	10.3	16.5	16.5	15	HDPE	51.60	1055.28	1051.53	1043.45	0.1566	27.7	9.6	7.8	*8.3*	23.5
			2-1																												
3	JB	3-2	3-1	3.6**	3.6	0.60**	100	1.25	2.7	2.7	1.25	2.7	2.7	5.0	5.0	10.3	10.3	28.3**	28.3	24	HDPE	144.90	1051.10	1043.25	1037.26	0.0413	49.8	40.0	12.7	*12.9*	16.4
	JB	3-1	1-3	0.0	3.6	0.00	100	1.25	0.0	2.7	1.25	0.0	2.7	5.0	5.1	10.3	10.3	28.3	28.3	24	HDPE	45.40	1042.95	1036.76	1035.85	0.0200	34.7	34.6	11.0	*16.5*	12.3

*2.3 ACRES DRAINING TO STR 1–2 IS THE APPROXIMATE AREA THAT DRAINS TO EXISTING PIPE END SECTION AND EXISTING CURB INLET (1.7ac.+ 0.6ac.)
**FLOW OUT OF STR 3–2 IS THE Q100 FROM THE UNDERGROUND DETENTION FACILITY, 28.3 CFS. SWS LINE 3 IS DESIGNED FOR THE 100–YR STORM.

GUTTER RUNOFF "Q" (CFS)	U/S BYPASS "Q" (CFS)	TOTAL GUTTER "Q" (CFS)	STREET GRADE (FT/FT)	STREET CROSS SLOPE (FT/FT)	INLET LENGTH (FT)	GUTTER SPREAD (FT)	DOWNSTREAM BYPASS "Q" (CFS)	DOWNSTREAM BYPASS D/S STR
1.8	0.0	1.8	0.024	0.02	5.0	7.8	0.3	1-4
2.7	0.3	3.0	0.045	0.02	5.0	8.3	1.2	1-3
2.4	1.2	3.6	0.059	0.02	5.0	8.4	1.8	1-1

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MISSION, KANSAS

DRAWING RELEASE LOG
● 01.20.23 - FDP SUBMITTAL

N
SCALE: 1"=30'
0 30 60

REVISIONS

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SHEET NO.
C1.07

SWS MAP & CALCULATIONS
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Appendix I – ADS Underground Detention Details

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

Advanced Drainage Systems, Inc.

SiteAssist™
FOR STORMTECH
INSTALLATION INSTRUCTIONS
VISIT OUR APP

56TH FOXRIDGE MF

MISSION, KS, USA

NOT FOR CONSTRUCTION

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-7200.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

1. STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

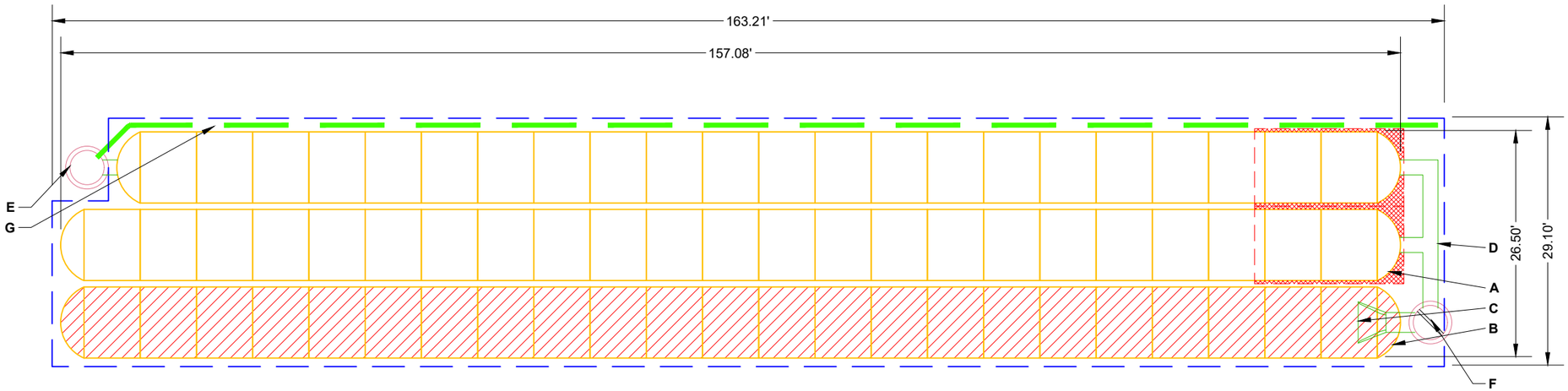
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS	
68	STORMTECH MC-7200 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.75
6	STORMTECH MC-7200 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	8.25
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	7.75
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	7.75
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	7.75
19970	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	6.75
		TOP OF MC-7200 CHAMBER:	5.75
		24" ISOLATOR ROW PLUS INVERT:	0.94
		18" x 18" BOTTOM MANIFOLD INVERT:	0.91
4686	SYSTEM AREA (SF)	18" BOTTOM CONNECTION INVERT:	0.91
384.6	SYSTEM PERIMETER (ft)	BOTTOM OF MC-7200 CHAMBER:	0.75
		UNDERDRAIN INVERT:	0.00
		BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	18" BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP18B / TYP OF ALL 18" BOTTOM CONNECTIONS	1.97"	
PREFABRICATED END CAP	B	24" BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.26"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MC720024RAMP		
MANIFOLD	D	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.97"	
CONCRETE STRUCTURE	E	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		4.0 CFS OUT
CONCRETE STRUCTURE W/WEIR	F	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		11.0 CFS IN
UNDERDRAIN	G	6" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		



ISOLATOR ROW PLUS
(SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

56TH FOXRIDGE MF
MISSION, KS, USA
DATE:
DRAWN: BU
CHECKED: N/A
PROJECT #:

DATE	DRW	CHK	DESCRIPTION

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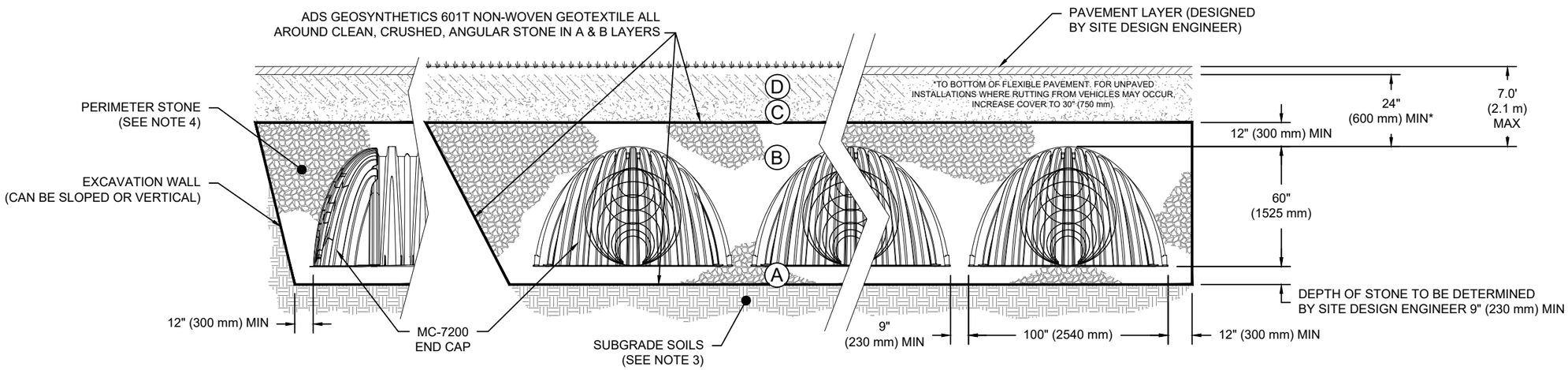
0 15 30

SHEET
2 OF 5

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

56TH FOXRIDGE MF
MISSION, KS, USA
DATE: DRAWN: BU CHECKED: N/A
PROJECT #:

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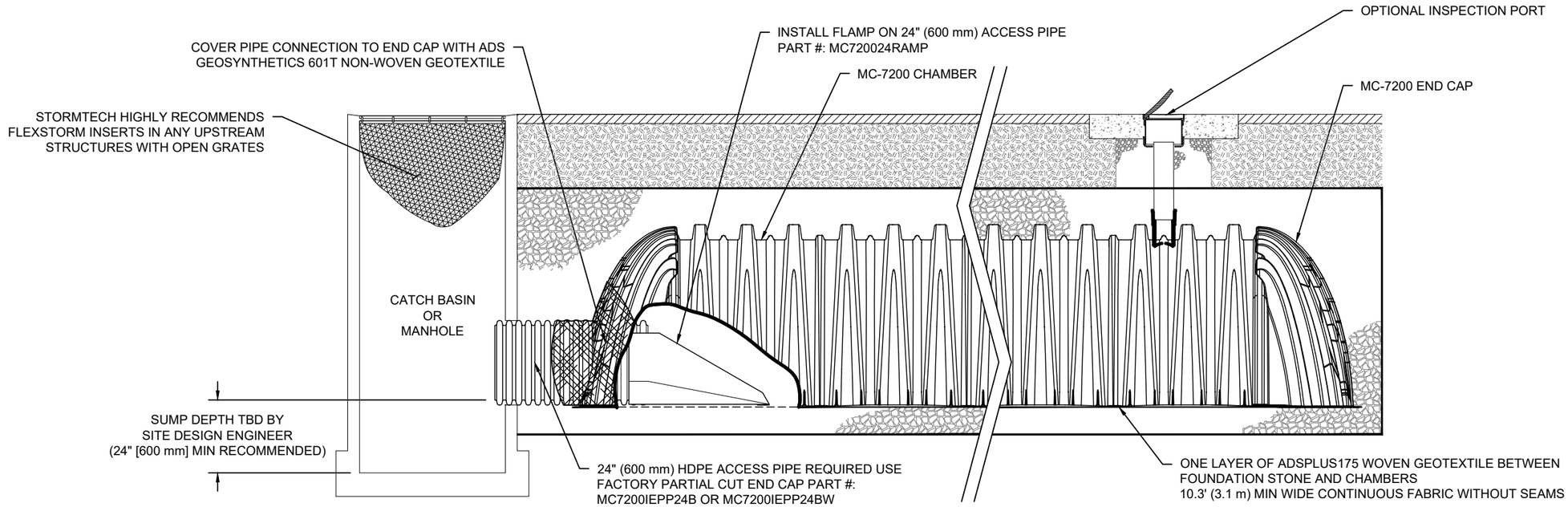
3 OF 5



MC-7200 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

56TH FOXRIDGE MF
MISSION, KS, USA
DATE:
DRAWN: BU
PROJECT #:
CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

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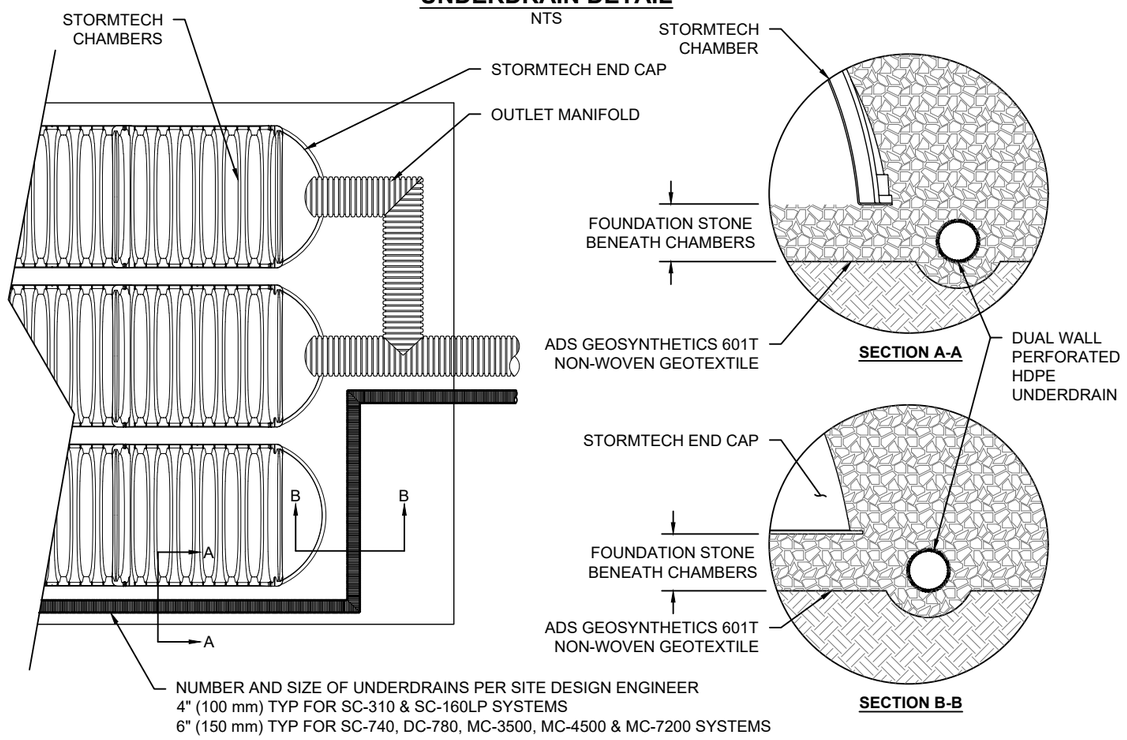
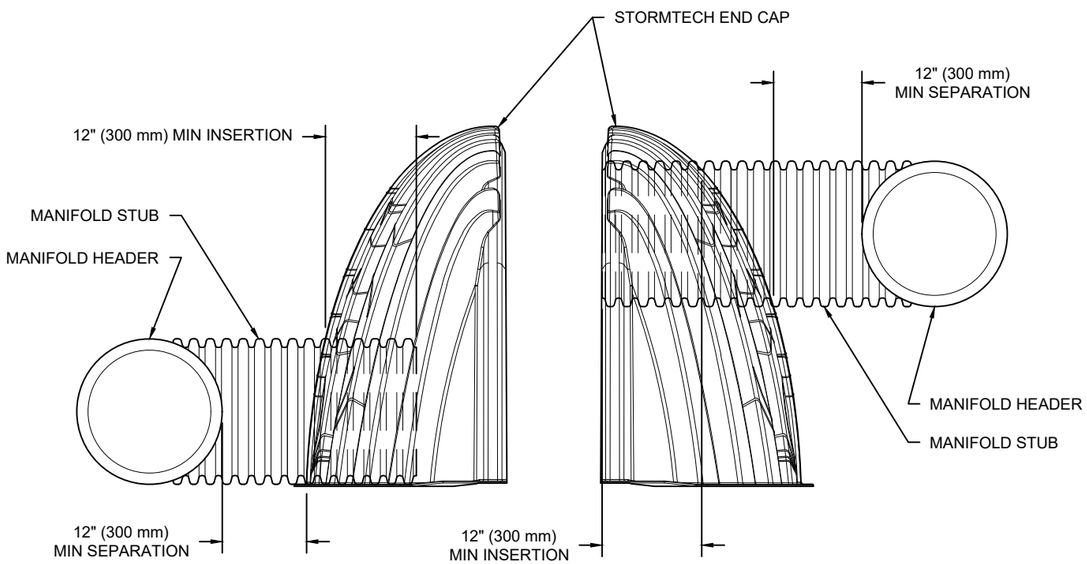
UNDERDRAIN DETAIL

NTS



MC-SERIES END CAP INSERTION DETAIL

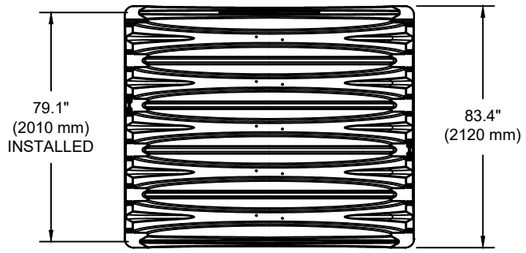
NTS

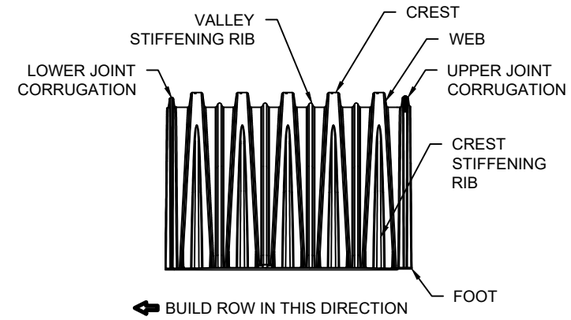


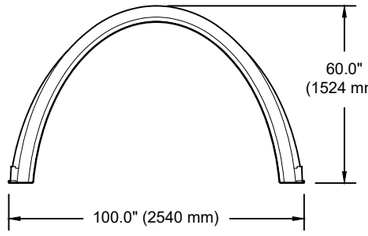
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

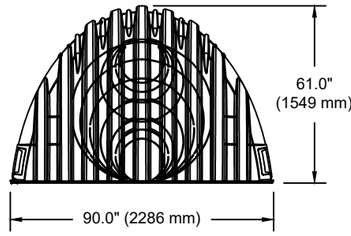
MC-7200 TECHNICAL SPECIFICATION

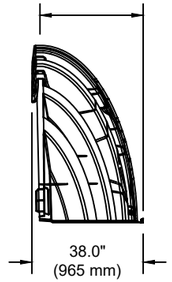
NTS











NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

NOMINAL END CAP SPECIFICATIONS

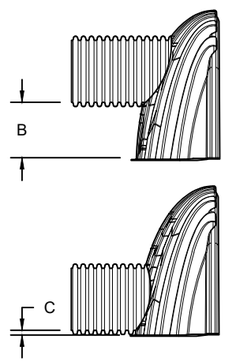
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW			
MC7200IEPP18B		---	1.97" (50 mm)
MC7200IEPP18BW			
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW			
MC7200IEPP24B		---	2.26" (57 mm)
MC7200IEPP24BW			
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

56TH FOXRIDGE MF
MISSION, KS, USA
DATE: DRAWN: BU CHECKED: N/A
PROJECT #:

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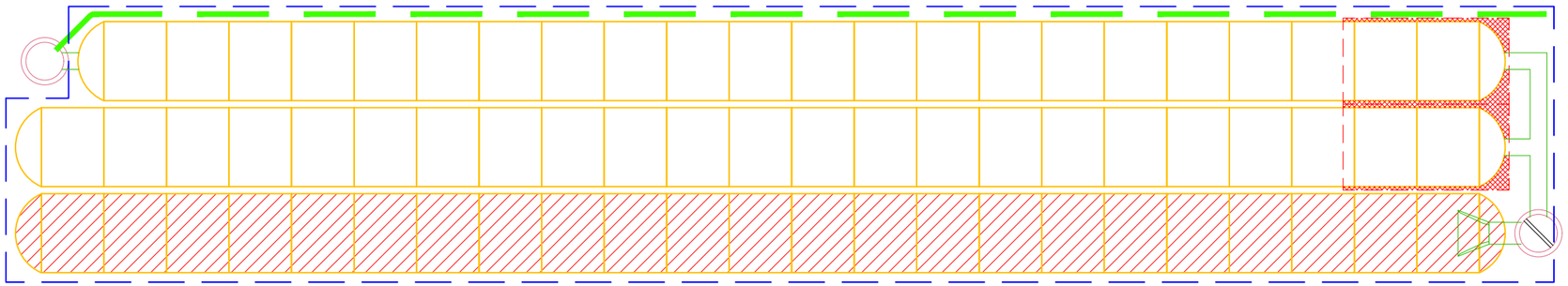


Appendix J – MARC BMP LOS Worksheets

WORKSHEET 1A: REQUIRED LEVEL OF SERVICE - DEVELOPED SITE

Project: By: Date:

Location: Checked: Date:

1. Required Treatment Area

A. Total Area Disturbed by Redevelopment Activity (ac.)

Disturbed Area Description	Acres
Demolish Existing building, and construct new site	4.99
"1A" Total:	

B. Existing Impervious Area Inside Disturbed Area (ac.)

Existing Impervious Area Description	Acres
Building, parking, sidewalk, etc.	3.4
"1B" Total:	

C Required Treatment Area (ac.)

"1A" Total Less "1B" Total "1C" 3.4

2. Percent Impervious in Postdevelopment Condition and Level of Service (LS)

A. Total Postdevelopment Impervious Area Inside Disturbed Area (ac.)

Postdevelopment Impervious Area Description	Acres
Building, parking, sidewalk, etc.	4.1
"2A" Total:	

B. Existing Impervious Area Inside Disturbed Area (ac.)

"1B" Total: 3.4

C. Net Increase in Impervious Area (ac.)

"2A" Total Less "1B" Total "2C" 0.7

D. Percent Impervious

Net Increase in Impervious Area / Required Treatment Area "2C"/"1C" x 100 21 (Round to Integer)

E. Level of Service

Use Percent Impervious to Enter Table XX **LS =** 4.7

3. Minimum Required Total Value Rating of BMP Package

Total Value Rating = LS x Required Treatment Area **VR =** 15.98

WORKSHEET 2: DEVELOP MITIGATION PACKAGE(S) THAT MEET THE REQUIRED LS

Project: By: Date:
Location: Checked: Date:
Sheet _ **of** _

1. **Required LS (New Development, Wksht 1) or Total VR (Redevelopment, Wksht 1A):** 15.98

   Note: Various BMPs may alter CN of proposed development, and LS; recalculate both if applicable.

2. **Proposed BMP Option Package No.** _

Cover/BMP Description	Treatment Area	VR from Table 4.4 or 4.6[1]	Product of VR x Area
ADS BMP Isolator Row	1.8	9.0	16.2
Total[2]:		**Total:**	
		***Weighted VR:**	16.2 = total product/total a

The required treatment area is only 1.8 ac. The approximate tributary area to UG Detention is 3.6 ac.

[1] VR calculated for final BMP only in Treatment Train.
[2] Total treatment area cannot exceed 100 percent of the actual site area.
* Blank In Redevelopment

Meets required LS (Yes/No)? YES (If No, or if additional options are being tested, proceed below.)

3. **Proposed BMP Option Package No.** _

Cover/BMP Description	Treatment Area	VR from Table 4.4 or 4.6[1]	Product of VR x Area
Total[2]:		**Total:**	
		***Weighted VR:**	= total product/total a

[1] VR calculated for final BMP only in Treatment Train.
[2] Total treatment area cannot exceed 100 percent of the actual site area.
* Blank In Redevelopment

Meets required LS (Yes/No)? (If No, or if additional options are being tested, move to next sheet.)

ADS ISOLATOR CHAMBER CALCULATIONS	
Calculations & Info Summary	
Tributary Area to Isolator Row, AC.	1.8
Water Quality Volume (WQV)	7609
Short Cut Method - Section 6 BMP Manual	
Treatment Area, AC.	1.8
Impervious, AC.	1.6
Pervious, AC.	0.20
% Impervious	89
RV= 0.05 + 0.009(I) =	0.85
WQV=P(1.37") X RV (inch)	1.16
WQV=(FT^3)	**7609**

Water Quality Volume Required

PROPOSED LAYOUT	
68	STORMTECH MC-7200 CHAMBERS
6	STORMTECH MC-7200 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
19970	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
4686	SYSTEM AREA (SF)
384.6	SYSTEM PERIMETER (ft)

The ADS underground detention chamber system has a maximum volume of 19,970 CF, which is greater than the required WQV of 7,609 CF, and showing it is sized to accommodate the capacity for the first flush volume.

AT A GLANCE

Applicant:
American Honey Hair Co.

Location:
6620 Martway Street

Property ID:
KF251208-2056

Current Zoning:
C-2A

Proposed Zoning:
N/A

Current Land Use:
Retail

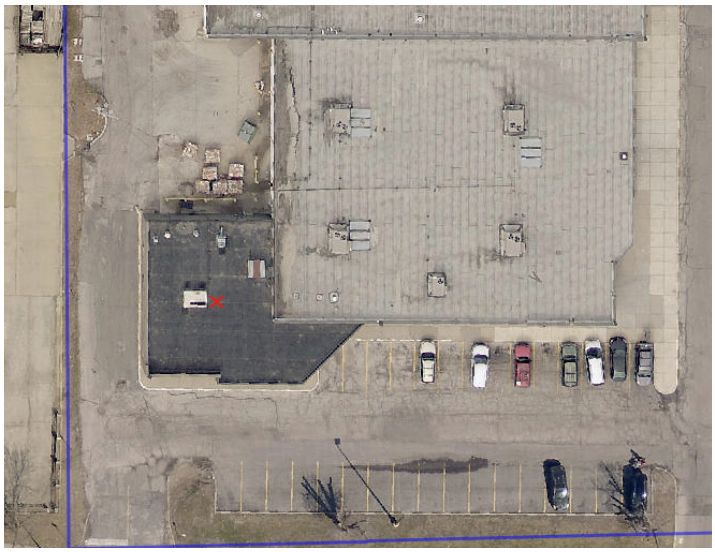
Proposed Land Use:
N/A

Case Number:
23-05

Project Name:
American Honey Mural

Project Summary:
The applicant is requesting approval of a Mural on the south facade of the American Honey Hair Salon currently in operation at 6620 Martway Street.

Staff Contact: Karie Kneller



N/A Public Hearing Required

Legal Notice Date:
N/A

Background and Property Information

American Honey Hair Salon, located at 6620 Martway, is a new business in Mission and has renovated the space on the south side of the Planet Fitness and Dollar Tree building, facing Martway Street. The business would like to include a mural on the south facade of the building to add an attractive piece of art along Martway Street.

Project Proposal

A local painter, Whitney Kerr, has been contracted by American Honey Hair Salon to paint a mural that depicts a rider on horseback with a landscape scene. Colors are terracotta and neutral beiges, with white space on the left-hand side of the wall for a wall sign if the business chooses to add it at a later date.

Plan Review and Analysis

Municipal Code

Section 430.020 of the municipal code defines wall murals as "any mosaic, painting, or graphic art or combination thereof which is professionally applied to a building, and which does not convey a commercial message." Section 430.050 further provides that certain signs are excluded from the City's sign code including "integral decorative or architectural features of buildings or works of art, so long as such features or works do not contain letters, trademarks, moving parts or lights."

It is Staff's determination that the mural as proposed meets stipulations of the municipal code.

Mural Guidelines

The design standards in the Wall Mural Guidelines state the following:

- Murals shall be an original work of art.
- Murals may be two-dimensional or three-dimensional.
- Murals shall be designed and constructed under the supervision of a qualified artist/muralist or individual who has knowledge and experience in the design and execution of such projects, as well as the application of the selected medium.
- Murals must exhibit the highest quality design, content, materials, and application.
- Mural materials shall be durable and weather resistant to prevent premature deterioration, fading, or other unintended change in appearance.
- Mural materials must be appropriate for outdoor application with consideration for location, climate, weather conditions, longevity, and resistance to vandalism (including graffiti).

- Murals shall not contain a logo or trademark symbol, nor shall any mural include commercial text or products displaying, mimicking, or construed as symbolizing a specific brand. Murals shall not contain material that is protected under copyright law unless permission has been granted and evidence of such is provided to the City.
- Murals shall not incorporate recognized symbols of hatred or discrimination against any race, color, sex, age, religion, national origin, ancestry, disability, marital status, familial status, gender identity or expression, or sexual orientation.
- Murals shall not incorporate anything that would be considered inappropriate and/or indecent by contemporary community standards.

It is Staff's determination that the mural as proposed meets design standards as stipulated in the Mural Guidelines.

Further, the guidelines state that a mural shall be located on a side or rear of a building, and may be placed on the front facade if it complements the overall front facade and does not compete with architectural details. Murals should also avoid creating harsh edges where there are no present architectural features. Murals can be placed on walls to define the edge of a property, and they should be located and sized to encourage pedestrian engagement.

The diagonal line of the mural without a wall sign on the left-hand side of the building could be subjectively considered a "harsh" line, but a wall sign would compliment the facade in the white space. Additionally, the design of the mural outline may be considered a motif of the west that complements the image itself, such as the outline of a mountain/mesa.

The artist who submitted the application for the mural has completed several local projects of the same or similar scope. The artist and the business tenant have received written permission from the property owner to proceed with the project.

Recommendation

Staff recommends that the Planning Commission approve the installation of the mural with consideration to the following conditions:

(A) The property owner or designee shall sign a maintenance agreement with the City before work may begin.

(B) Current white space that is primer paint shall be painted with a durable exterior paint of the same color as determined by Staff prior to installation.

(C) Applied topcoats, superficial layers, or graffiti coats do not compromise the painting

Planning Commisison Action

The Planning Commission will consider Case # 23-05 at its March 27, 2023 meeting.

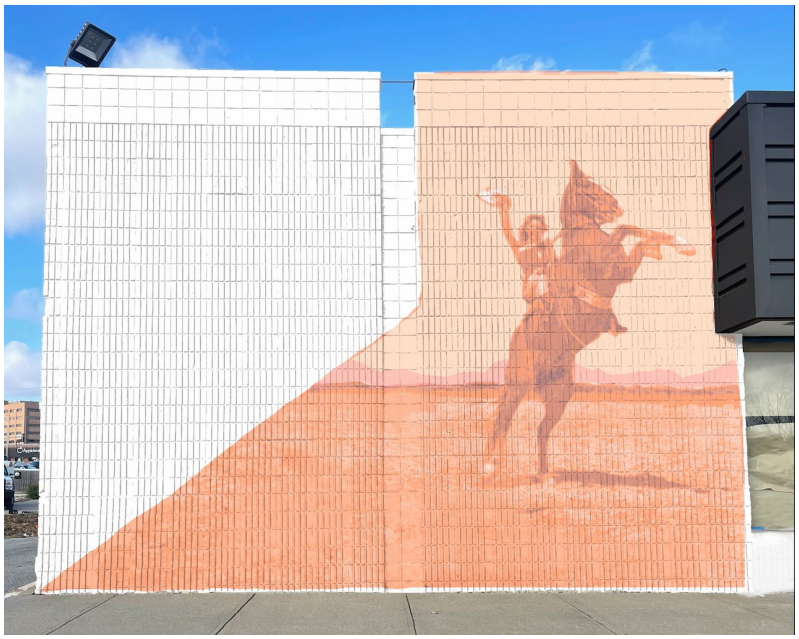
City Council Action

None

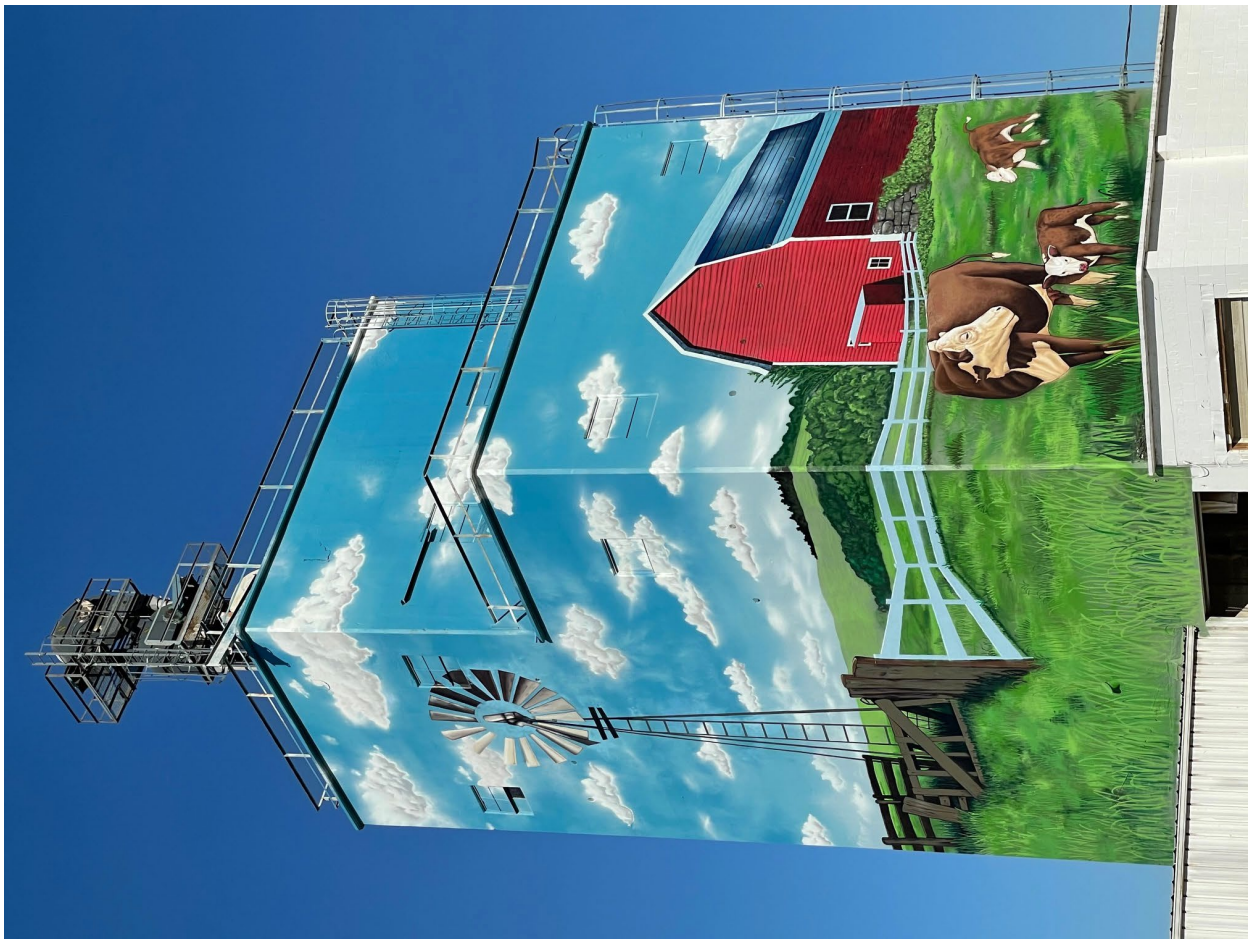
From: Whitney Kerr
To: Karia Knaller
Subject: Revised Mural Application
Date: Friday, January 20, 2023 6:45:14 PM
Attachments: Mural Application Form.pdf

This message came from outside City of Mission, Kansas - please use caution when opening attachments or links.

Example of mural



Previous work




LONGFORD, KS

#HERO
LIEUTENANT

Maintenance plan: The mural will last up to 20 years with the premium paints I'm using as well as a top clear coat that will protect it from the sun and elements. I plan on resealing it every 4-5 years.

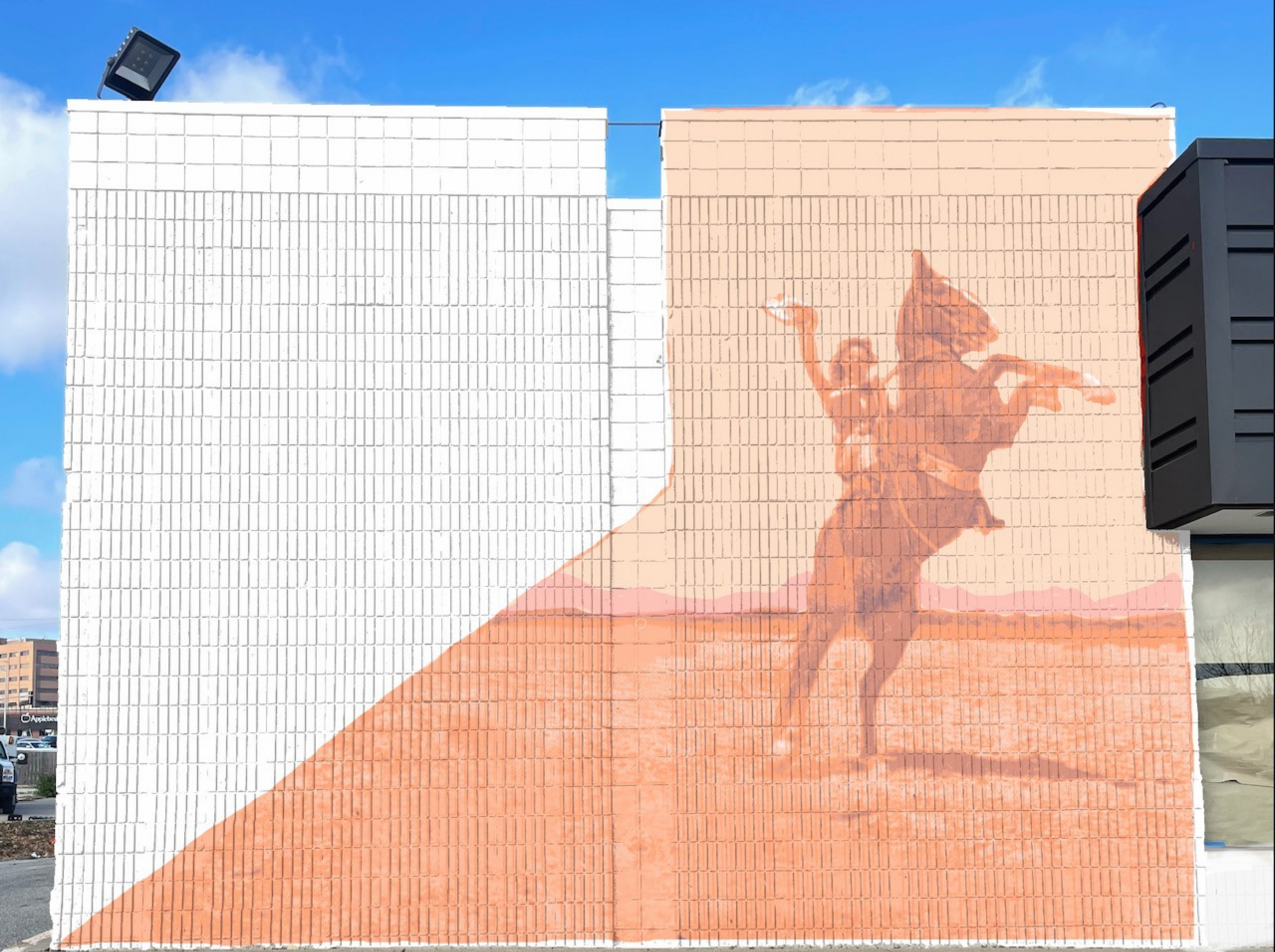
Timeline: The mural will only take 2-3 days to paint. So as soon as it is approved and the weather cooperates it will be done in a short amount of time.

Updated application:

The only thing I'm waiting on is a signature from David Block the property owner. Should have it very soon. Hopefully that's everything you need.

Thanks,

Whitney Kerr



Greetings From...

KANSAS CITY

18 VINE

PAINTED BY:
Whitney Kerr
Chase Hunter
Jeremy Ben
2019


LIEUTENANT
@JACRISPY_SIGNCOMPANY
#HEROE


LONGFORD, KS


GREETINGS FROM
WALDO
BUSCH

Letter of Permission.

This is a letter from Whitney Kerr requesting permission from David Block, the owner of 6620 Martway St. Mission, KS 6620 to paint a mural on the south facing wall of the building. Attached is a rendering of what the mural will look like and where on the wall it will be painted. The mural is being commissioned by American Honey Hair Co. and is set to be installed by the end of March, 2023. Please sign below to agree to the terms above. Thanks.

I David Block give Whitney Kerr and anyone working with him permission to paint the mural which is attached above on the south facing wall of 6620 Martway St. Mission, KS 66202.

Signed,

Whitney Kerr (Painter)

_____

David Block (Property Owner)

DocuSigned by:
David Block
54264EB3D4F2492...

2/7/2023