IV.A.

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Planning Commission Public Hearing Report

Project Type: Ordinance Amendment

Meeting Date: August 23, 2021

From: Chris Dietz, Planner

Location: 17519 Chesterfield Airport Road

Description: **P.Z. 14-2020 84 Lumber (17519 Chesterfield Airport Road):** An ordinance amendment to modify development criteria contained in City of Chesterfield Ordinance 2575 which established a "PC" Planned Commercial District on a 7.42-acre tract of land located at 17519 Chesterfield Airport Road (17U510073).

PROPOSAL SUMMARY

Doster Ullom & Boyle, LLC. has submitted a request for an Ordinance Amendment, on behalf of MASE, LLC., to modify the development criteria for a tract of land located along Chesterfield Airport Road, east of its intersection with Long Road and south of Interstate 64.

Figure 1: Subject Site Aerial

The applicant is proposing three (3) changes to the development criteria as part of this request:

1. Increasing the total allowable square footage for buildings,
2. Modifying conditional language pertaining to vehicular access from Chesterfield Airport Road and,
3. Removing setback requirements for stormwater detention areas.

These changes are being requested to accommodate redevelopment of the site to feature a total of 60,000 square foot building space for expansion of operations. No changes to Permitted Uses for this site are proposed with this request.

HISTORY OF SUBJECT SITE

1995 – Subject site was rezoned from "NU" – Non-Urban District to "C-8" – Planned Commercial District to accommodate the development of a retail lumber yard. A Site Development Plan was approved later that same year. A Record Plat was also approved that year which depicted the 7.42-acre subject site as Lot 2 in a 20.25-acre subdivision known as 84 Lumber. Lot 2 (known as TSG Chesterfield Airport Road subdivision today) accounted for the remaining 12.83 acres on the Record Plat.

2009 – A request to change the zoning from "C-8" – Planned Commercial District to "PI" – Planned Industrial was amended by the applicant at the time at City Council's request to change the new district to a "PC" – Planned Commercial District to allow for the Permitted Uses the applicant was requesting. Ordinance 2575 was the result of this request and is the governing ordinance for this development today.

LAND USE AND ZONING

The land use and zoning for the properties surrounding the subject site are as follows:

Direction	Zoning	Land Use
North	"NU"—Non-Urban (Beyond I-64)	Vacant
South	"PC"—Planned Commercial	Vehicle Repair and Service Facility
East	"PC"—Planned Commercial	Automotive Dealership
West	"PC"—Planned Commercial	Automotive Dealership (Under Construction)

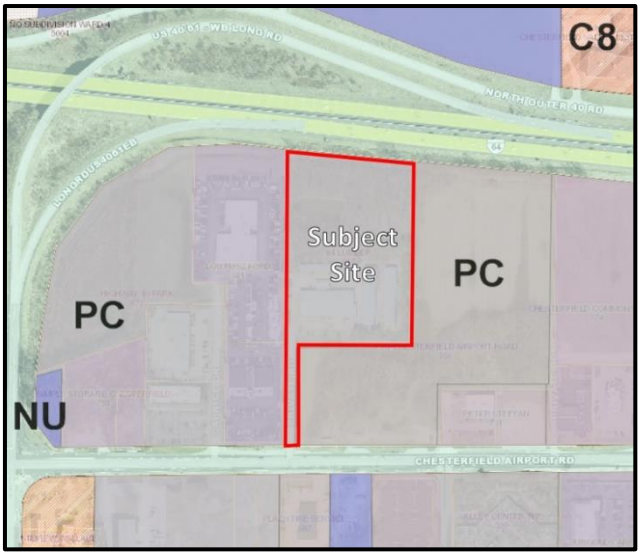


Figure 2: Zoning Map

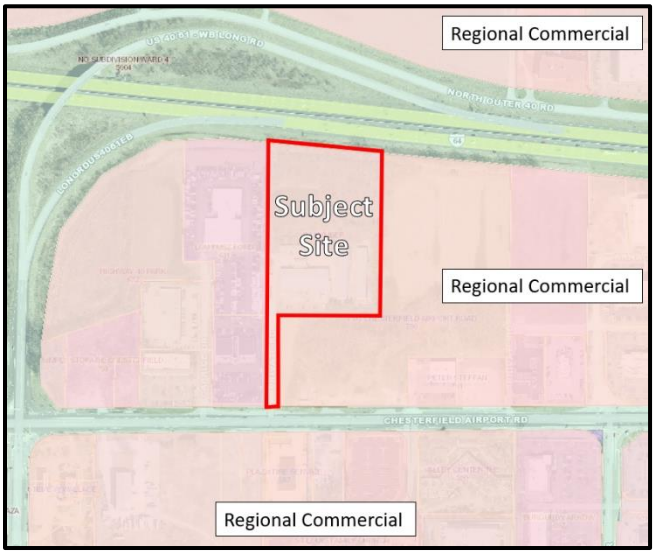


Figure 3: Land Use Map

COMPREHENSIVE PLAN

The subject site is within the Regional Commercial Character Area of the City of Chesterfield Comprehensive Land Use map, which emphasizes retail, dining, entertainment, hotel, limited office/warehouse and leisure uses that draw visitors from both Chesterfield and surrounding areas.

Specific Development Policies for Regional Commercial that pertain to this request include:

- Limiting curb cuts on arterial streets, and where possible, concentrate access at shared entrance points.
- Aligning primary entrance points with access points immediately across the street.
- Promoting the re-invention of existing tenant space to accommodate different users to increase the mix of uses and redefine the centers, allowing them to be modernized and remain relevant in the market.
- Utilizing landscape buffering between roadways to screen areas of surface parking.
- Maintaining pedestrian connectivity from transit stops to facilitate the large employment centers.

STAFF ANALYSIS

Since Ordinance 2575 (adopted in 2009) predates the adoption of the Unified Development Code (UDC), the current language found within it no longer reflects current standards in the City's Attachment A language. Through this Ordinance Amendment, there are several areas that Staff has identified in the current ordinance's development criteria that may either be removed, or carried over into the new ordinance. These areas include:

Permitted Uses: Although the applicant is not requesting modification of Permitted Uses, some uses currently found in the language of Ordinance 2575 are no longer consistent with the uses permitted in the "PC"—Planned Commercial District. For example, changes to the UDC pertaining to the definitions and applicability to vehicular uses to expand the definition of certain vehicles and their associated storage, and define which zoning district they would be permitted in was recently approved. As a result, some uses are no longer permitted in the "PC"—Planned Commercial District.

Open Space: The current governing ordinance requires 30% open space. However, the UDC has a minimum requirement of 35% for the "PC" Planned Commercial District.

Lighting: The current ordinance allows for a maximum height of lighting standards of 24'0". However, the UDC permits a maximum of only 20'0".

Signage: While standard ordinannce language would state that all signage must comply with the UDC, specific language exists in the Attachment A regarding signage requirements for this development.

The applicant is requesting changes to three (3) sections of the ordinance:

1. Section I.B.2. (Building Square Footage),
2. Section I.I.1.(Conditional removal of access from Chesterfield Airport Rd.), and,
3. The deletion of Section I.J.4. (Setback requirements for stormwater detention areas).

An explanation of each request is provided below.

Request #1: Increase Total Combined Square Footage of Buildings

The current development criteria allow a total footprint of all buildings on site a maximum of 40,000 square feet, including any storage sheds and loading docks. The applicant is requesting to increase the maximum total combined building square footage for this site to 60,000 square feet, as indicated on the Preliminary Development Plan. If an Amended Site Development Section Plan for this site is ever submitted, the Architectural Review Board will review the project for compliance with Architectural Review Design Standards prior to proceeding to Planning Commission review.

Request #2: Removal of Setback Requirement for Stormwater Detention Areas

The applicant is requesting that language under Section I.J.4 of the Attachment "A" be removed from the governing ordinance restricting detention areas to be located outside of structure setbacks. The section requested to be removed states:

All drainage detention storage facilities shall be placed outside of the standard governmental agencies planning and zoning setbacks, or fifteen (15) feet from the new or existing right-of-way line, whichever is greater.

This language is typically not included in the City's standard Attachment A language. The location of any stormwater detention facilities will be reviewed in the Site Plan review stage once plans are submitted.

Request #3: Access from Chesterfield Airport Road

The Applicant is requesting to modify Section I.I.1 of the Attachment "A", which currently states:

The existing direct access to Chesterfield Airport Road shall be permitted until such time that access to the site is provided via a proposed connector road to either Arnage Boulevard or to Caprice Drive.

Since Arnage Boulevard (Arnage Road) is now constructed, the language is proposed to be modified to allow the site to retain access from Chesterfield Airport Rd. as a right-in, right-out access until a connector road is provided to Caprice Drive. The proposed language under Section I.I.1 would state:

The existing full access to Chesterfield Airport Road shall be converted to a right-in, right-out access. Upon such conversion, direct access to this development from Chesterfield Airport Road shall be permitted via the right-in, right-out access as approved by the St. Louis County Department of Transportation. The right-in, right-out access shall be vacated at such time that Arnage Boulevard connects to Caprice Drive.

The applicant has provided a traffic impact study that has been reviewed by St. Louis County to accommodate this request. As Chesterfield Airport Road is owned and maintained by St. Louis County, the City continues to coordinate with St. Louis County Department of Transportation regarding this petition. The site will also have two (2) access points along Arnage, as indicated on the Preliminary Development Plan.

PRELIMINARY DEVELOPMENT PLAN

A Preliminary Plan has been submitted in conjunction with this request and depicts the proposed changes to the development criteria listed in the Attachment A section of the governing ordinance.

Location of parking in relation to the building is shown on the plan, as required by code. The plan depicts three (3) structures, with the largest of them measuring approximately 41,800 ft^2 located toward the southwestern corner of the site with the other buildings measuring 8,000 $ft.^2$ each. Proposed parking and structure setbacks are illustrated as well. A Tree Stand Delineation has also been provided with the Preliminary Plan. Arnage Road will be extended through the flagpole portion of the property in the southwest corner. The current access point and driveway from Chesterfield Airport Road is shown as Right-In, Right-Out access on the Plan, with two (2) other access points on Arnage Road. Items including, but not limited to, Site Design, Lighting, Landscaping and Architecture, will be reviewed in full detail with the submission of a Site Development Plan at a later time.

A Public Hearing further addressing the request will be held at the August 23, 2021 City of Chesterfield Planning Commission meeting. This petition is currently under Staff review and will ultimately come before the Planning Commission for a formal recommendation at a later date.

Attached please find a copy of the Public Hearing Notice, Applicant's Narrative Statement, Preliminary Development Plan, Survey, Tree Stand Delineation and Traffic Impact Study submitted by the applicant for further consideration.

Attachments:
- Public Hearing Notice
- Project Narrative
- Preliminary Development Plan
- Survey
- Tree Stand Delineation
- Traffic Impact Study

NOTICE OF PUBLIC HEARING
CITY OF CHESTERFIELD PLANNING COMMISSION

NOTICE IS HEREBY GIVEN that the Planning Commission of the City of Chesterfield will hold a Public Hearing on August 23, 2021 at 7:00 p.m. Due to the recommendations of the Center for Disease Control, the meeting will be conducted virtually athttps://us06web.zoom.us/j/83605771641 or call in at (312) 626-6799 and enter meeting ID 836 0577 1641.

Said Hearing will be as follows:

P.Z. 14-2020 84 Lumber (17519 Chesterfield Airport Road) – An ordinance amendment to modify development criteria contained in City of Chesterfield Ordinance 2575 which established a “PC” Planned Commercial District on a 7.42 acre tract of land located at 17519 Chesterfield Airport Road.

PROPERTY DESCRIPTION

Lot 1 of 84 Lumber Subdivision, according to the plat thereof recorded in plat book 339 page 80 of the St. Louis County Records.

City of Chesterfield
690 Chesterfield Parkway West
Chesterfield, MO 63017

Information on this Public Hearing may be found on the City’s website at http://www.chesterfield.mo.us/public-notice.html or by contacting Planner Chris Dietz at 636.537.4745 or via e-mail at cdietz@chesterfield.mo.us. All interested parties will be given an opportunity to be heard at the Public Hearing.

NARRATIVE STATEMENT

MASE, L.L.C. ("Applicant") is requesting the following amendments to Ordinance 2575:

- Amend Section I.B.2. to increase the total square footage of buildings to 60,000 square feet.
- Amend Section I.I.1. to read as follows: "The existing full access to Chesterfield Airport Road shall be converted to a right-in, right-out access. Upon such conversion, direct access to this development from Chesterfield Airport Road shall be permitted via the right-in, right-out access as approved by the St. Louis County Department of Transportation. The right-in, right-out access shall be vacated at such time that Arnage Boulevard connects to Caprice Drive."
- Delete Section I.J.4. requiring that all drainage detention storage facilities shall be placed outside of the standard governmental agencies planning and zoning setbacks, or fifteen (15) feet from the new or existing right-of-way line, whichever is greater.

Applicant has operated its business at 17519 Chesterfield Airport Road (the "Property") since 2012. The Property is the only parcel subject to the Ordinance. The requested amendments will allow Applicant to expand its facilities at the Property to accommodate the growth in its business, and will allow Applicant to continue operating in Chesterfield for the years to come.

Applicant is not requesting to change the permitted uses at the Property. Applicant is not seeking exception or variation from any requirements of the Unified Development Code. Applicant will meet the tree preservation and landscape requirements of the City of Chesterfield, and will submit a conceptual landscape plan and tree preservation plan with its site development plan.

The plan for buildings 1 to 3 are:

Building 1: Enclose the covered area on the south side of the existing building and expand the building north to the limits of the existing northern most building which will create one building that is 41,800 s.f. +/-

Building 2 & 3: It has not been determined at this time if the two buildings will remain as is or be enclosed with walls.

PRELIMINARY DEVELOPMENT PLAN

for a

CAR CRAFT AUTOBODY

84 LUMBER SUBDIVISION

CITY OF CHESTERFIELD
ST LOUIS COUNTY, MISSOURI

LEGEND

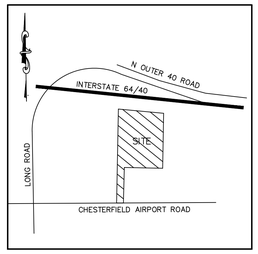
EXISTING CONTOURS
PROPOSED CONTOURS
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
RIGHT-OF-WAY
EASEMENT
CENTERLINE
EXISTING TREE
EXISTING SPOT ELEVATION
PROPOSED SPOT ELEVATION
SWALE
TO BE REMOVED
TO BE REMOVED & RELOCATED
TO BE USED IN PLACE
ADJUST TO GRADE
BACK OF CURB
FACE OF CURB
WATER MAIN
GAS MAIN
UNDERGROUND TELEPHONE
OVERHEAD WIRE
UNDERGROUND ELECTRIC
SILTATION CONTROL
FIRE HYDRANT
POWER POLE
WATER VALVE
LIGHT STANDARD

SYMBOLS

WV WATER VALVE
WMH WATER MANHOLE
TMH TELEPHONE MANHOLE
BRUSH & SHRUB LINE
SIGN
ELECTRIC YARD LIGHT
MB MAIL BOX
EB ELECTRIC BOX
PP POWER POLE
PP POWER POLE & GUY
CO CLEAN OUT
GV GAS VALVE
GM GAS METER
GD GAS DRIP

ABBREVIATIONS

N	NORTH
S	SOUTH
E	EAST
W	WEST
CONC	CONCRETE
ASPH	ASPHALT
PB	PLAT BOOK
DB	DEED BOOK
PG	PAGE
SF	SQUARE FEET
AC	ACRES
ELEV	ELEVATION
FF	FINISH FLOOR
FL	FLOWLINE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
STM	STORM
SAN	SANITARY
(S)	SAVE
(R)	REMOVE



LOCATION MAP

N.T.S.

PROPERTY DATA

OWNER	= MACE LLC
ADDRESS	= 17519 CHESTERFIELD AIRPORT ROAD CHESTERFIELD, MISSOURI 63005
LOCATOR NO.	= 17U510073
TOTAL ACREAGE	= 7.42± Ac.
PROPOSED ZONING	= PC – PLANNED COMMERCIAL (ORDINANCE 2575)
FIRE DISTRICT	= MONARCH FIRE PROTECTION DISTRICT
SCHOOL DISTRICT	= ROCKWOOD
SEWER DISTRICT	= METRO. ST. LOUIS SEWER DISTRICT
WATER SHED	= MISSOURI RIVER
FEMA MAP	= 29189C0165K, 02/04/2015
ELECTRIC COMPANY	= AMERENUE
GAS COMPANY	= LACLEDE GAS COMPANY
PHONE COMPANY	= SOUTHWESTERN BELL TELEPHONE
WATER COMPANY	= MISSOURI AMERICAN WATER COMPANY

PROJECT BENCHMARK

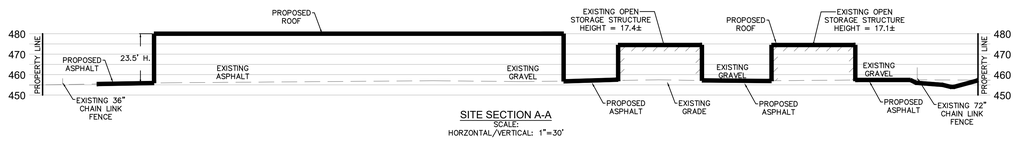
ST. LOUIS COUNTY BENCHMARK 12-16B ELEV. = 459.91' NAVD 88(ELEV = 460.06' NGVD29) STANDARD DNR ALUMINUM DISK STAMPED SL-38 SITUATED IN A GRASSY AREA NORTHWEST OF THE INTERSECTION OF CHESTERFIELD AIRPORT ROAD AND CAPRICE DRIVE, SOUTH OF THE PARKING FOR A RETAIL STRIP CENTER APPROXIMATELY 0.1 MILES EAST OF LONG ROAD; ROUGHLY 58 FEET WEST OF THE CENTERLINE OF CAPRICE DRIVE, 43 FEET NORTH OF THE CENTERLINE OF CHESTERFIELD AIRPORT ROAD, AND 69 FEET EAST OF A FIRE HYDRANT.

SITE BENCHMARK

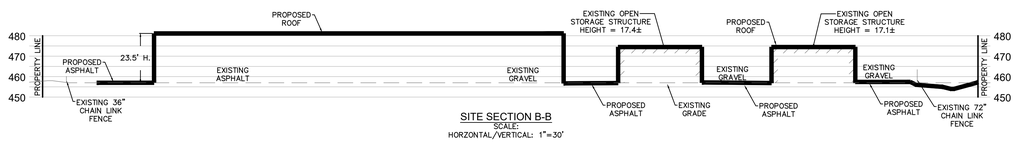
ELEV. 460.76' "O" IN OPEN ON FIRE HYDRANT AS SHOWN ON THIS SURVEY.

FLOOD ZONE NOTES

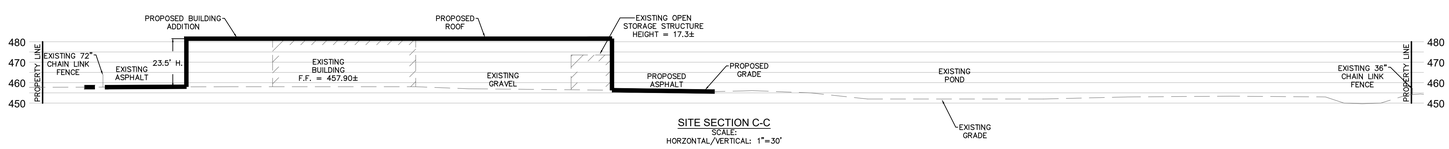
BY GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN SHADED ZONE X (AREAS OF 0.2% ANNUAL FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD) AND ZONE AH FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY AREAS OF PONDING) BASE FLOOD AREAS DETERMINED ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL NUMBER 29189C0165K, (ST. LOUIS COUNTY, MISSOURI) WHICH BEARS AN EFFECTIVE OF FEBRUARY 4, 2015.



SITE SECTION A-A
SCALE:
HORZONTAL/VERTICAL: 1"=30'



SITE SECTION B-B
SCALE:
HORZONTAL/VERTICAL: 1"=30'



SITE SECTION C-C
SCALE:
HORZONTAL/VERTICAL: 1"=30'

Prepared For:

Car Craft Autobody
3900 Lemay Ferry Road
St. Louis, MO 63125
Mr. Gary Goddard

Prepared By:

CEDC
CIVIL ENGINEERING
DESIGN CONSULTANTS
10820 Sunset Office Drive
Suite 200
Saint Louis, Missouri 63127
314.729.1400
Fax: 314.729.1404
www.cedc.net

SHEET INDEX

GENERAL NOTES

1.) ALL UTILITIES SHOWN HAVE BEEN LOCATED FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED. THE CONTRACTOR SHALL BE ON RECORD WITH THE MISSOURI ONE CALL SYSTEM.

2.) ALL ELEVATIONS ARE BASED ON M.S.D. BENCHMARK

3.) BOUNDARY AND TOPOGRAPHIC SURVEY BY MARLER SURVEYING CO.

4.) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE DIRECTOR OF PUBLIC WORKS FOR THE CITY OF CHESTERFIELD.

5.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF CHESTERFIELD.

6.) PRIOR TO BEGINNING ANY WORK ON THE SITE, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING OF WORK.

7.) GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY THE CITY OF CHESTERFIELD.

8.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.

9.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.

10.) PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.

11.) GRADING & STORM WATER PER M.S.D. STANDARD SPECIFICATIONS AND THE CITY OF CHESTERFIELD STANDARDS.

12.) DRIVE ENTRANCES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF CHESTERFIELD, ST. LOUIS COUNTY & MODOT.

13.) SEEDING, SODDING, MULCHING AND PLANTINGS FOR ALL DISTURBED AREAS SHALL BE SPECIFIED ON THE LANDSCAPE PLAN.

14.) SIDEWALKS ALONG THE ACCESSIBLE ROUTE SHALL NOT HAVE A SLOPE EXCEEDING 1'V:20'H. SLOPES GREATER THAN 1'V:20'H MUST BE DESIGNED AS A RAMP.

15.) SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAC) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ADAAC GUIDELINES AND THE INFORMATION ON THE PLANS, THE ADAAC GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PRIOR TO ANY CONSTRUCTION.

16.) DENSITY CALCULATIONS

Open Space: $\frac{178,981 \text{ s.f.}}{323,240 \text{ s.f. total site}} \times 100 = 55\%$

F.A.R.: $\frac{57,800 \text{ s.f. Bldg}}{323,240 \text{ s.f. total site}} = 0.18$

17.) BY GRAPHIC PLOTTING ONLY, THIS PROPERTY DOES LIE WITHIN SPECIAL FLOOD ZONE AREAS ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL NUMBER 29189C0165K AND COMMUNITY NUMBER 290896 (CITY OF CHESTERFIELD) WHICH BEARS AN EFFECTIVE DATE OF FEBRUARY 4, 2015. THE PROPERTY LIES WITHIN SHADED ZONE X (AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD) AND ZONE AH (FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY AREAS OF PONDING); BASE FLOOD ELEVATIONS DETERMINED).

18.) NO ON-SITE ILLUMINATION SOURCE SHALL BE SO SITUATED THAT LIGHT IS CAST DIRECTLY ON ADJOINING PROPERTIES OR PUBLIC ROADWAYS. ILLUMINATION LEVELS SHALL COMPLY WITH THE PROVISIONS OF SECTION 31.04.03 OF THE UNIFIED DEVELOPMENT CODE.

19.) APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF SIGNAGE. SIGN APPROVAL IS A SEPARATE PROCESS.

20.) ALL PROPOSED UTILITIES SHALL BE PLACED UNDERGROUND

21.) ROOF TOP EQUIPMENT SHALL BE SCREENED

22.) THIS DEVELOPMENT SHALL CONFORM TO MSD REQUIREMENTS FOR WATER QUALITY, IF APPLICABLE.

23.) NO CONSTRUCTION RELATED PARKING SHALL BE PERMITTED WITHIN THE RIGHT-OF-WAY OF EDISON OR LONG ROAD

24.) ALL PROVISIONS OF THE CITY CODE SHALL APPLY

LEGAL DESCRIPTION

(FROM TITLE COMMITMENT)

LOT 1 OF 84 LUMBER SUBDIVISION, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 339 PAGE 80 OF THE ST. LOUIS COUNTY RECORDS.

A TRACT OF LAND BEING ALL OF LOT 1 OF 84 LUMBER SUBDIVISION, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 339 PAGE 80 OF THE ST. LOUIS COUNTY LAND RECORDS OFFICE IN CLAYTON, MISSOURI BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT BEING THE NORTHWEST CORNER OF LOT 1 OF 84 LUMBER SUBDIVISION BEING ON THE SOUTHERN RIGHT OF WAY LINE OF INTERSTATE 64, U.S. HIGHWAY 40-61 (VARIABLE WIDTH), FROM WHICH A FOUND 1/2" IRON PIPE BEARS NORTH 84 DEGREES 09 MINUTES 41 SECONDS WEST 0.16 FEET; THENCE ALONG THE SOUTHERN RIGHT OF WAY LINE OF THE AFORESAID INTERSTATE, SOUTH 84 DEGREES 09 MINUTES 36 SECONDS EAST A DISTANCE OF 458.79 FEET TO A FOUND 1/2" REBAR; THENCE LEAVING SAID RIGHT OF WAY LINE, SOUTH 00 DEGREES 48 MINUTES 46 SECONDS WEST A DISTANCE OF 641.98 FEET TO A POINT FROM WHICH A FOUND 1/2" IRON PIPE BEARS NORTH 77 DEGREES 19 MINUTES WEST 0.21 FEET; THENCE SOUTH 89 DEGREES 35 MINUTES 44 SECONDS WEST A DISTANCE OF 407.09 FEET TO A FOUND 1/2" REBAR; THENCE SOUTH 00 DEGREES 48 MINUTES 46 SECONDS WEST A DISTANCE OF 367.38 FEET TO A SET 1/2" X 18" REBAR WITH CAP STAMPED "MARLER 247-D" BEING ON THE NORTHERN RIGHT OF WAY LINE OF CHESTERFIELD AIRPORT ROAD (100' WIDE); THENCE ALONG THE NORTHERN RIGHT OF WAY LINE OF CHESTERFIELD AIRPORT ROAD, SOUTH 89 DEGREES 35 MINUTES 44 SECONDS WEST A DISTANCE OF 50.01 FEET TO A POINT FROM WHICH A FOUND 1/2" IRON PIPE BEARS NORTH 85 DEGREES 40 MINUTES WEST A DISTANCE OF 0.61 FEET; THENCE LEAVING SAID RIGHT OF WAY, NORTH 00 DEGREES 48 MINUTES 46 SECONDS EAST A DISTANCE OF 1059.68 FEET TO THE POINT OF BEGINNING CONTAINING 323,240 SQ. FT. OR 7.42 ACRES MORE OR LESS AS SURVEYED BY MARLER SURVEYING COMPANY INC. DURING SEPTEMBER 2019.

END OF DESCRIPTION

NOTE:
CIVIL ENGINEERING DESIGN CONSULTANTS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS, METHODS & MATERIALS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. CIVIL ENGINEERING DESIGN CONSULTANTS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

UTILITY NOTE:
UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

NOTE TO CONTRACTOR
CONTRACTOR/SUBCONTRACTOR SHALL INVESTIGATE, ASCERTAIN AND CONFORM TO ANY AND ALL PERMIT REQUIREMENTS OF THE (ANY) VARIOUS AFFECTED UTILITY COMPANIES AND/OR REGULATORY AGENCIES WITH REGARDS TO MAKING CONNECTIONS TO; OR CROSSINGS OF THEIR FACILITIES; WORKING WITHIN THEIR RIGHT-OF-WAY OR EASEMENTS; INSPECTIONS AND ASSOCIATED MONETARY CHARGES; AND/OR SPECIAL BACKFILL REQUIREMENTS. SUCH INVESTIGATION TO INCLUDE BUT NOT LIMITED TO THE MAKING OF NECESSARY APPLICATIONS AND PAYMENTS OF ALL REQUIRED FEES.

THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS OR PROFILES ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR/SUBCONTRACTOR TO VERIFY THE FIELD LOCATIONS, ANTICIPATED CLEARANCES AND THE EXISTENCE OF ANY FACILITIES NOT SHOWN HEREON, AS PART OF THE INVESTIGATIONS IN THE PARAGRAPH ABOVE.

NOTE:
THE UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SOURCES AND THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE ACTUAL LOCATIONS OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THIS DRAWING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO GRADING OR CONSTRUCTION OF IMPROVEMENTS.

Call BEFORE you DIG
TOLL FREE
1-800-DIG-RITE
MISSOURI ONE-CALL SYSTEM, INC.

MISSOURI ONE CALL TICKET NUMBER 192483554

THE UTILITIES CONTACT BY MISSOURI ONE CALL WERE: AMEREN MISSOURI ELECTRIC, ATT DISTRIBUTION, CHARTER COMMUNICATIONS, EXTENET SYSTEMS, MISSOURI AMERICAN WATER COMPANY, MCI, SPIRE MO EAST AND ST LOUIS METROPOLITAN SEWER.

STATE OF MISSOURI
BRANDON ASHER HARP
NUMBER E-28650
REGISTERED PROFESSIONAL ENGINEER

BRANDON A. HARP, P.E. E-28650
PROFESSIONAL ENGINEER
CEDC LICENSE NO.: 2003004674

CEDC
CIVIL ENGINEERING
DESIGN CONSULTANTS
10820 Sunset Office Drive
Suite 200
Saint Louis, Missouri 63127
314.729.1400
Fax: 314.729.1404
www.cedc.net

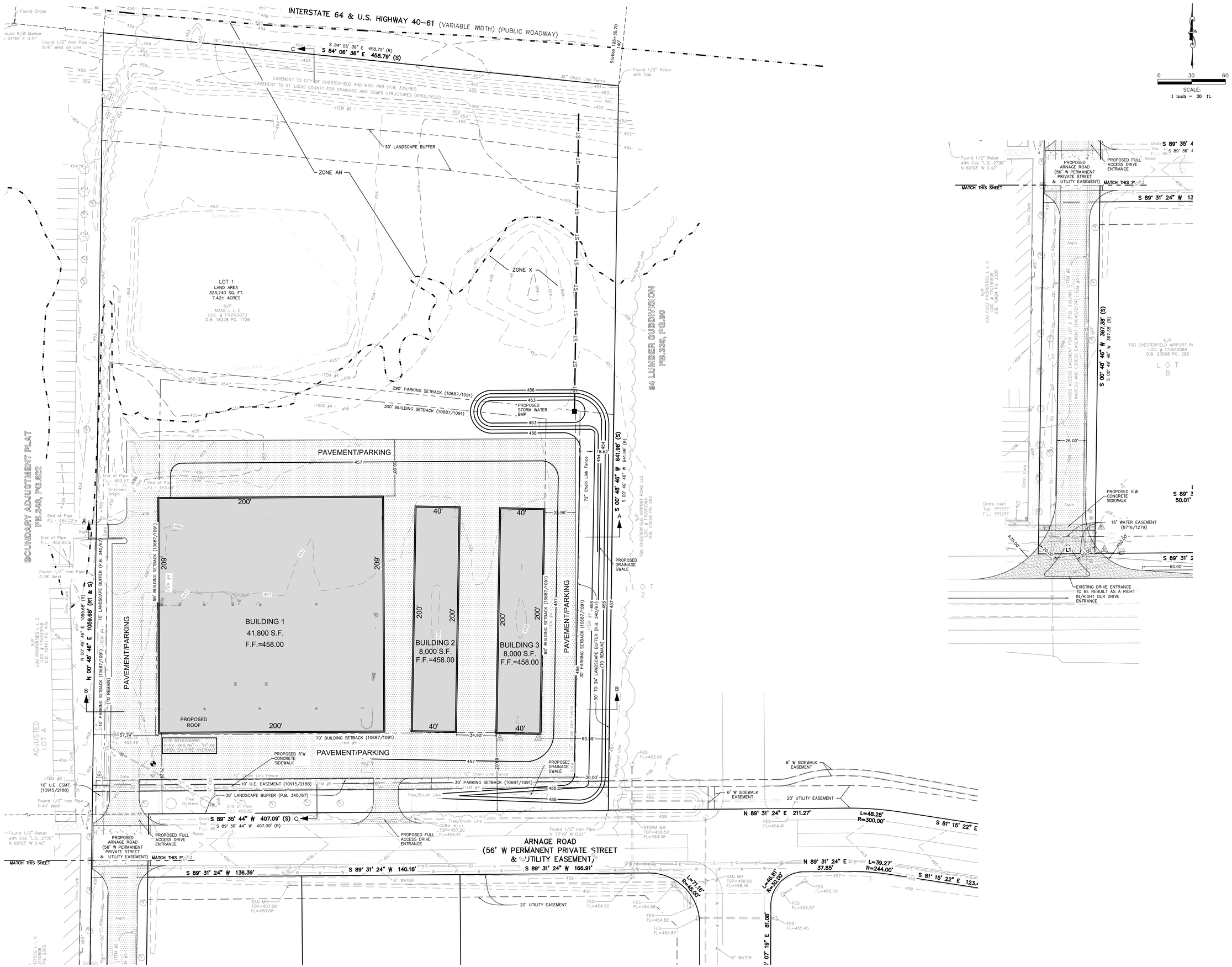
Preliminary Development Plan for
CAR CRAFT AUTOBODY
17519 CHESTERFIELD AIRPORT ROAD
CHESTERFIELD, MISSOURI 63005

Proj. # 1980

No.	Description	Date
	To City	11-18-2020
	To City	3-16-2021
	To City	7-16-2021

TITLE SHEET

C1



BRANDON ASHER HARP NUMBER E-28650 EXPIRATION 12/31/2021 STATE OF MISSOURI PROFESSIONAL ENGINEER

BRANDON A. HARP, P.E. E-28650
PROFESSIONAL ENGINEER
CEDC LICENSE NO.: 2003004674

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Preliminary Development Plan for
CAR CRAFT AUTOBODY
17519 CHESTERFIELD AIRPORT ROAD
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Proj. # 1980		
No.	Description	Date
	To City	11-18-2020
	To City	3-16-2021
	To City	7-16-2021

SITE PLAN

C3

BRANDON A. HARP, P.E. E-28650
PROFESSIONAL ENGINEER
CEDC LICENSE NO.: 2003004674

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Preliminary Development Plan for
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No.	Description	Date
	To City	11-18-2020
	To City	3-16-2021
	To City	7-16-2021

EXISTING CONDITIONS

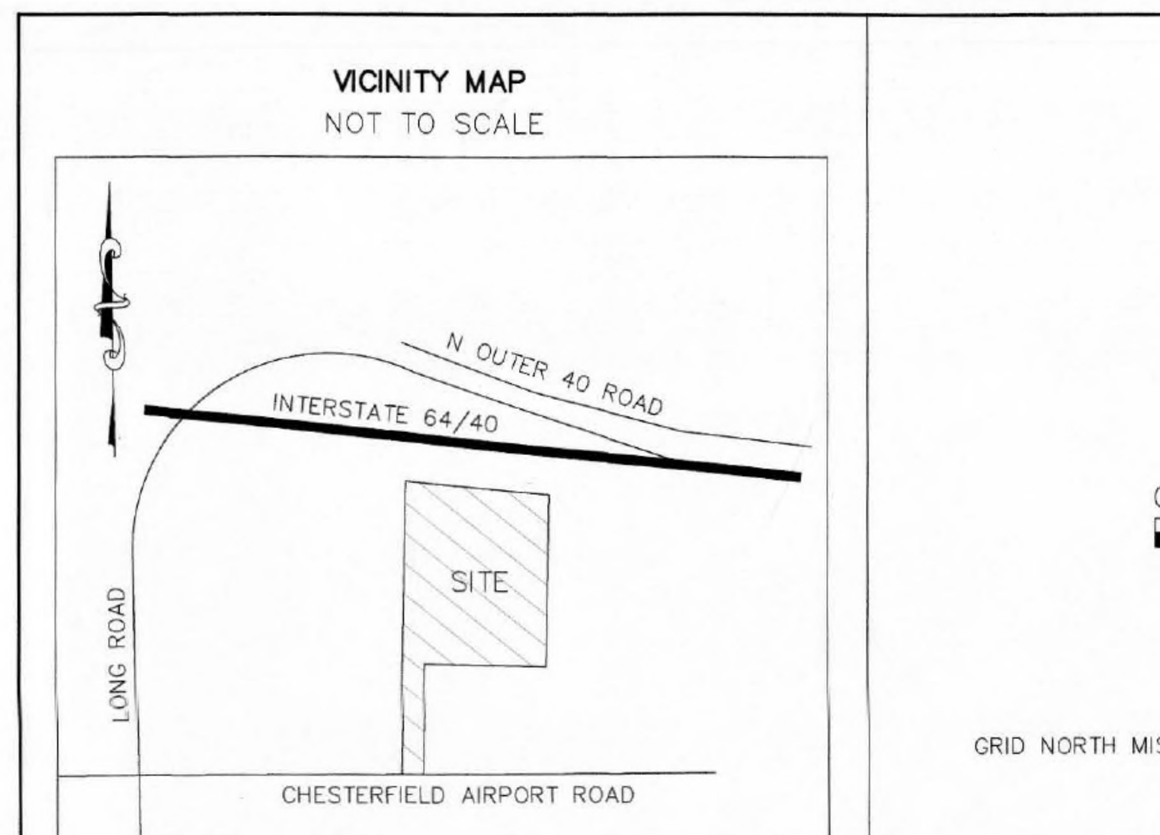
C2

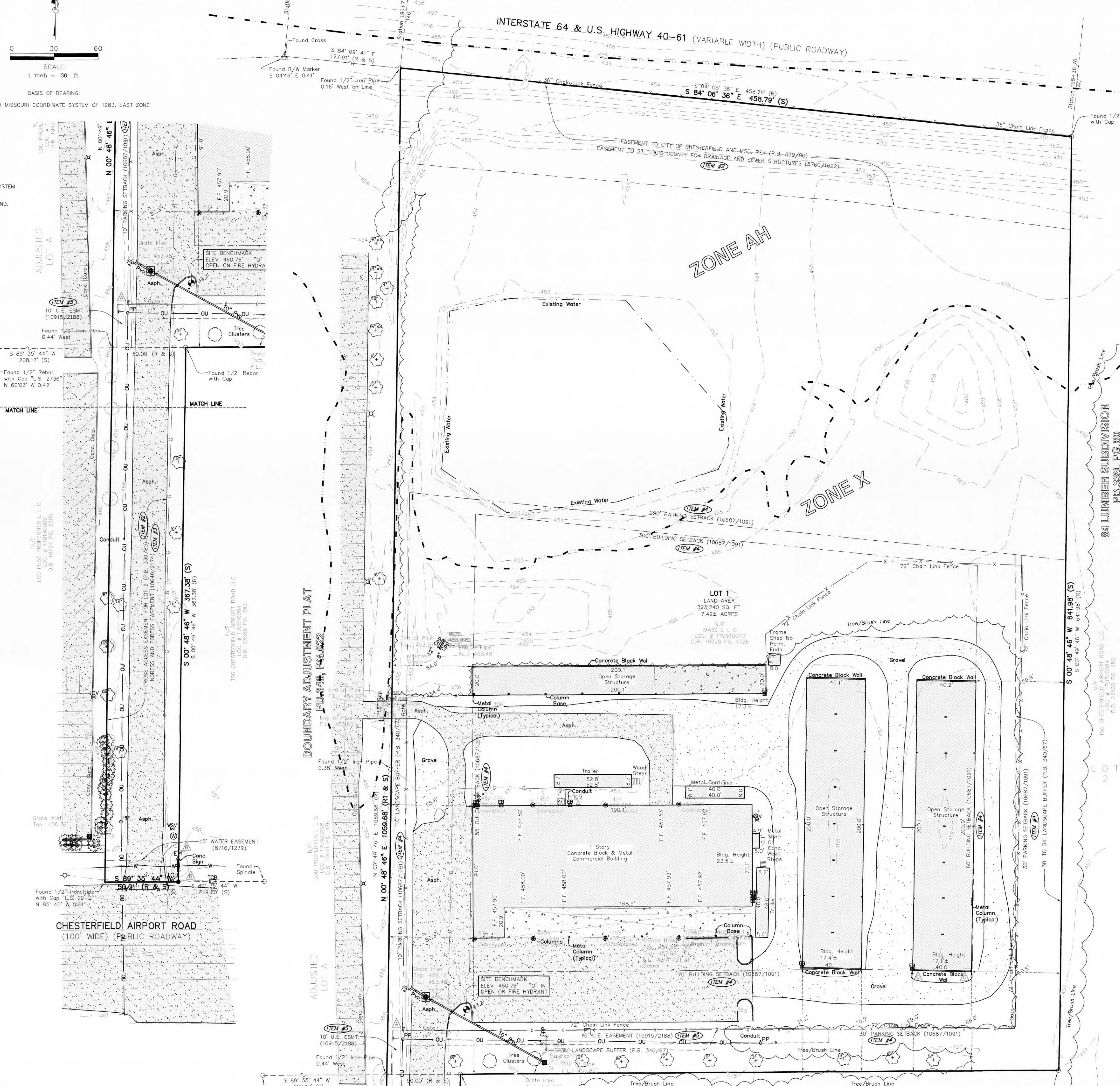
ALTA/NSPS LAND TITLE SURVEY

84 LUMBER SUBDIVISION

CITY OF CHESTERFIELD
ST LOUIS COUNTY, MISSOURI

VICINITY MAP
NOT TO SCALE





LEGEND			
PP	UTILITY POLE	(R. & S.)	RECORD and SURVEYED
	GUY WIRE	D.B.	DEED BOOK
	LIGHT STANDARD	PG.	PAGE
	ELEC. YARD LIGHT	N/F	NOW OR FORMERLY
GM	GAS METER	—T—	TELEPHONE LINE
GV	GAS VALVE	—G—	GAS LINE MARK
	FIRE HYDRANT	—E—	UNDERGROUND ELEC.
WM	WATER METER	—OU—	OVERHEAD UTILITY
	DOWNSPOUT	—W—	WATERLINE
(S)	MANHOLE	12"	TREE WITH SIZE
C.O.	CLEAN-OUT	(W)	WATER MANHOLE
0	HANDICAP PARKING COUNT	WSO	WATER SHUTOFF VALVE
0	REGULAR PARKING SPACES	BH	BORE LOCATION
ITEM #10	REFLECT ITEM NUMBER ON SCHEDULE B II		

GENERAL NOTES

1. THE BASIS OF BEARING OF THIS SURVEY IS GRID NORTH MISSOURI COORDINATE SYSTEM OF 1983, EAST ZONE.
2. THE PROPERTY HAS AN AREA OF 323,240 SQUARE FEET OR 7.42± ACRES OF LAND.
3. THE PROPERTY IS DESIGNATED BY ST. LOUIS COUNTY PARCEL #17U510073.
4. SOURCE OF DEED REFERENCE IS DEED BOOK 18228 PAGE 1726.
5. THIS MAP COMPLIES WITH THE MISSOURI MAP ACCURACY STANDARDS, CLASS III.
6. R.= RECORD AND S. = SURVEYED.

SCHEDULE "B" TITLE EXCEPTION NOTES

THIS SURVEY IS BASED ON A TITLE REPORT PREPARED BY LAFAYETTE TITLE COMPANY FILE NO. 204346, DATED SEPTEMBER 4, 2019. ITEMS NOT LISTED BELOW ARE STANDARD EXCEPTIONS AND/OR ARE NOT MATTERS OR ISSUES THAT PERTAIN TO THIS SURVEY.

(1) – STANDARD EXCEPTIONS, NOT LAND SURVEY RELATED.

(2) BUILDING LINES, EASEMENTS, CONDITIONS AND RESTRICTIONS AS SHOWN ON PLATS RECORDED IN PLAT BOOK 339 PAGE 80 (EASEMENTS AS SHOWN ONT HIS SURVEY) AND PLAT BOOK 340 PAGE 67 (EXISTING BUILDING AND PARKING SETBACKS AS NOTE UNDER ITEM 4 LISTED BELOW AND LANDSCAPE BUFFER ALONG THE THE SOUTHERN LINE OF 30 FEET, 10 FEET ALONG PART OF THE WESTERN LINE AND 30 FEET TO 34 FEET LANDSCAPE BUFFER ALONG PART OF THE EASTERN LINE AS SHOWN AND OTHER NON SURVEY RELATED ITEMS) AND RESTRICTIVE COVENANTS RECORDED IN BOOK 10640 PAGE 2171 (ENCUMBERS THE SUBJECT PARCEL, NOT A LAND SURVEY RELATED ITEM).

(3) EASEMENT AGREEMENT RECORDED IN BOOK 10640 PAGE 2174. (INGRESS AND EGRESS EASEMENT AS SHOWN ON THIS SURVEY)

(4) ZONING ORDINANCE NO. 1010 RECORDED IN BOOK 10687 PAGE 1091. (MAXIMUM OF 4 STRUCTURES/BUILDINGS SHALL BE PERMITTED, NO BUILDING SHALL EXCEED 2 STORIES OR 30 FEET IN HEIGHT WHICHEVER IS LESS. NO BUILDING OR STRUCTURE, OTHER THAN BOUNDARY WALLS, RETAINING WALLS, SIGNS, LIGHT STANDARDS, OR FENCES, SHALL BE LOCATED WITH THE FOLLOWING SETBACKS: 300 FEET FROM THE RIGHT OF WAY OF I-64/US 40-61, 70 FEET FROM THE SOUTHERN PROPERTY LINE, 60 FEET FROM THE EASTERN PROPERTY LINE, 55 FEET FROM THE WESTERN PROPERTY LINE AND NO BUILDING OR STRUCTURE, OTHER THAN BOUNDARY WALLS, SIGNS, LIGHT STANDARDS OR FENCES, SHALL BE LOCATED WITHIN THE ACCESS PORTION OF THE SITE. PARKING REQUIREMENTS, NO PARKING STALL, LOADING/STORAGE AREAS, INTERNAL DRIVE (EXCLUDING POINTS OF INGRESS AND EGRESS OR OTHER ACCESS TO PROPERTY TO THE EAST AS APPROVED ON THE SITE DEVELOPMENT PLAN) SHALL BE LOCATED WITHIN THE FOLLOWING SETBACKS: 290 FEET FROM THE RIGHT OF WAY OF I-64/U.S. 40-61, 30 FEET FROM THE SOUTHERN PROPERTY LINE, 30 FEET FROM THE EASTERN PROPERTY LINE, 10 FEET FROM THE WESTERN PROPERTY LINE AND NO PARKING STALL, LOADING SPACE, INTERNAL DRIVE (EXCEPT INGRESS AND EGRESS) OR LOADING/STORAGE AREA SHALL BE LOCATED WITHIN THE ACCESS PORTION OF THE SITE. ACCESS TO THIS DEVELOPMENT SHALL BE FROM CHESTERFIELD AIRPORT ROAD BY 1 COMMERCIAL ENTRANCE AS APPROVED BY ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC AND THE CITY OF CHESTERFIELD, NO ACCESS TO THIS DEVELOPMENT SHALL BE PERMITTED FROM I-64/U.S. 40-61.

(5) EASEMENT TO UNION ELECTRIC RECORDED IN BOOK 10915 PAGE 2188. (ENCUMBERS THE SUBJECT PARCEL AS SHOWN)

(6) DEED OF TRUST FROM MASE LLC TO JEFFERSON BANK AND TRUST RECORDED IN BOOK 18228 PAGE 1731 (ENCUMBERS THE SUBJECT PARCEL, NOT A LAND SURVEY RELATED ITEM) AND MODIFIED BY AGREEMENT RECORDED IN BOOK 20787 PAGE 150. (ENCUMBERS THE SUBJECT PARCEL, NOT A LAND SURVEY RELATED ITEM)

LEGAL DESCRIPTIONS (FROM TITLE COMMITMENT)

LOT 1 OF 84 LUMBER SUBDIVISION, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 339 PAGE 80 OF THE ST. LOUIS COUNTY RECORDS.

NOTE:

THE UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SOURCES AND THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE ACTUAL LOCATIONS OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THIS DRAWING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO GRADING OR CONSTRUCTION OF IMPROVEMENTS.

MISSOURI ONE CALL TICKET NUMBER 192483554

THE UTILITIES CONTACT BY MISSOURI ONE CALL WERE: AMEREN MISSOURI ELECTRIC, ATT DISTRIBUTION, CHARTER COMMUNICATIONS, EXTENET SYSTEMS, MISSOURI AMERICAN WATER COMPANY, MCI, SPIRE MO EAST AND ST LOUIS METROPOLITAN SEWER.

PROJECT BENCHMARK

ST. LOUIS COUNTY BENCHMARK 12-168 ELEV. = 459.91' NAVD 88(ELEV = 460.06' NGVD29) STANDARD DNR ALUMINUM DISK STAMPED SL-38 SITUATED IN A GRASSY AREA NORTHWEST OF THE INTERSECTION OF CHESTERFIELD AIRPORT ROAD AND CAPRICE DRIVE, SOUTH OF THE PARKING FOR A RETAIL STRIP CENTER APPROXIMATELY 0.1 MILES EAST OF LONG ROAD; ROUGHLY 58 FEET WEST OF THE CENTERLINE OF CAPRICE DRIVE, 43 FEET NORTH OF THE CENTERLINE OF CHESTERFIELD AIRPORT ROAD, AND 69 FEET EAST OF A FIRE HYDRANT.

SITE BENCHMARK

ELEV. 460.76' "O" IN OPEN ON FIRE HYDRANT AS SHOWN ON THIS SURVEY.

ZONING NOTES

ZONED: "PC" PLANNED COMMERCIAL

SEE BILL NO. 2754 ORDINANCE NO. 2575 (P.Z. 10-2009 84 LUMBER, MASE LLC) (AN ORDINANCE REPEALING CITY OF CHESTERFIELD ORDINANCE#1010 TO ALLOW FOR A CHANGE TO ZONING DISTRICT AND THE PERMITTED USE REQUIREMENTS, FOR A 7.42 ACRE TRACT OF LAND ZONED "C-8" PLANNED COMMERCIAL DISTRICT TO BE CHANGED TO A "PC" PLANNED COMMERCIAL DISTRICT, THE SUBJECT PARCEL).

FOR FURTHER INFORMATION CONTACT THE CITY OF CHESTERFIELD PLANNING AND ZONING DEPARTMENT AT (636) 537-4746.
BUILDING AND HEIGHT REQUIREMENTS:
A MAXIMUM OF 4 STRUCTURES/BUILDINGS SHALL BE PERMITTED IN THIS DEVELOPMENT, THE TOTAL SQUARE FOOTAGE OF BUILDINGS IN THIS DEVELOPMENT, INCLUDING STORAGE SHEDS AND LOADING DOCKS, SHALL NOT EXCEED 40,000 SQUARE FEET, NO BUILDING SHALL EXCEED 2 STORIES OR 30 FEET IN HEIGHT WHICHEVER IS LESS AND A MINIMUM OF 30% OPENSPACE IS REQUIRED FRO THIS DEVELOPMENT.
SETBACKS:
NO BUILDING OR STRUCTURE, OTHER THAN A FREESTANDING PROJECT IDENTIFICATION SIGN, LIGHT STANDARDS OR FLAG POLES SHALL BE LOCATED WITHIN THE FOLLOWING SETBACKS:
300 FEET FROM THE RIGHT OF WAY OF I-64/U.S. 40-61.
70 FEET FROM THE SOUTHERN BOUNDARY OF THIS "PC" DISTRICT.
60 FEET FROM THE EASTERN BOUNDARY OF THE "PC" DISTRICT.
55 FEET FROM THE WESTERN BOUNDARY OF THIS "PC" DISTRICT.
NO PARKING STALL, LOADING/STORAGE AREAS, INTERNAL DRIVEWAY OR ROADWAY, EXCEPT POINTS OF INGRESS AND EGRESS, SHALL BE LOCATED WITHIN THE FOLLOWING SETBACKS:
290 FEET FROM THE RIGHT OF WAY OF I-64/U.S. 40-61
30 FEET FROM THE SOUTHERN BOUNDARY OF THIS "PC" DISTRICT
30 FEET FROM THE EASTERN BOUNDARY OF THIS "PC" DISTRICT
10 FEET FROM THE WESTERN BOUNDARY OF THIS "PC" DISTRICT

ZONING INFORMATION HAS BEEN COLLECTED BY THE LAND SURVEYOR AND CONSIDERED TO BE ACCURATE, HOWEVER THIS SHOULD BE VERIFIED BY THE CLIENT. SEE ITEM 6A UNDER TABLE A.

NOTES OF INTEREST

(A) Existing guy wire lies outside the easement as shown on this survey.

(B) Existing concrete wall, sign and landscape area extend onto the adjoiner as shown on this survey.

(C) Existing building extends over the 70' building setback line as shown on this survey.

FLOOD ZONE NOTES

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN SHADED ZONE X (AREAS OF 0.2% ANNUAL FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD) AND ZONE AH FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY AREAS OF PONDING) BASE FLOOD AREAS DETERMINED ACCORDING TO THE FLOOD INSURANCE RATE MAP PANEL NUMBER 29189C0165K, (ST. LOUIS COUNTY, MISSOURI) WHICH BEARS AN EFFECTIVE OF FEBRUARY 4, 2015.

TABLE A

OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS

NOTE: THE TWENTY (20) ITEMS OF TABLE A MAY BE NEGOTIATED BETWEEN THE SURVEYOR AND CLIENT. ANY ADDITIONAL ITEMS NEGOTIATED BETWEEN THE SURVEYOR AND CLIENT SHALL BE IDENTIFIED AS 21(A), 21(B), ETC, AND EXPLAINED PURSUANT TO SECTION 6.D.II.(G). NOTWITHSTANDING TABLE A ITEMS 5 AND 11, IF AN ENGINEERING DESIGN SURVEY IS DESIRED AS PART OF AN ALTA/NSPS LAND TITLE SURVEY, SUCH SERVICES SHOULD BE NEGOTIATED UNDER TABLE A, ITEM 21.

IF CHECKED, THE FOLLOWING OPTIONAL ITEMS ARE TO BE INCLUDED IN THE ALTA/NSPS LAND TITLE SURVEY, EXCEPT AS OTHERWISE QUALIFIED (SEE NOTE ABOVE):

1. __X__ MONUMENTS PLACED (OR A REFERENCE MONUMENT OR WITNESS TO THE CORNER) AT ALL MAJOR CORNERS OF THE BOUNDARY OF THE PROPERTY, UNLESS ALREADY MARKED OR REFERENCED BY EXISTING MONUMENTS OR WITNESSES IN DOSE PROXIMITY TO THE CORNER.
2. __X__ ADDRESS(ES) OF THE SURVEYED PROPERTY IF DISCLOSED IN DOCUMENTS PROVIDED TO OR OBTAINED BY THE SURVEYOR, OR OBSERVED WHILE CONDUCTING THE FIELDWORK.
3. __X__ FLOOD ZONE CLASSIFICATION (WITH PROPER ANNOTATION BASED ON FEDERAL FLOOD INSURANCE RATE MAPS OR THE STATE OR LOCAL EQUIVALENT) DEPICTED BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY.
4. __X__ GROSS LAND AREA (AND OTHER AREAS IF SPECIFIED BY THE CLIENT).
5. __X__ VERTICAL RELIEF WITH THE SOURCE OF INFORMATION (E.G., GROUND SURVEY, AERIAL MAP), CONTOUR INTERVAL, DATUM, AND ORIGINATING BENCHMARK IDENTIFIED.
6. __X__ (A) IF SET FORTH IN A ZONING REPORT OR LETTER PROVIDED TO THE SURVEYOR BY THE CLIENT, LIST THE CURRENT ZONING CLASSIFICATION, SETBACK REQUIREMENTS, THE HEIGHT AND FLOOR SPACE AREA RESTRICTIONS, AND PARKING REQUIREMENTS. IDENTIFY THE DATE AND SOURCE OF THE REPORT OR LETTER.
   _____ (B) IF THE ZONING SETBACK REQUIREMENTS ARE SET FORTH IN A ZONING REPORT OR LETTER PROVIDED TO THE SURVEYOR BY THE CLIENT, AND IF THOSE REQUIREMENTS DO NOT REQUIRE AN INTERPRETATION BY THE SURVEYOR, GRAPHICALLY DEPICT THE BUILDING SETBACK REQUIREMENTS. IDENTIFY THE DATE AND SOURCE OF THE REPORT OR LETTER.
7. __X__ (A) EXTERIOR DIMENSIONS OF ALL BUILDINGS AT GROUND LEVEL.
   (B) SQUARE FOOTAGE OF.
   _____ (1) EXTERIOR FOOTPRINT OF ALL BUILDINGS AT GROUND LEVEL.
   _____ (2) OTHER AREAS AS SPECIFIED BY THE CLIENT.
   __X__ (C) MEASURED HEIGHT OF ALL BUILDINGS ABOVE GRADE AT A LOCATION SPECIFIED BY THE CLIENT. IF NO LOCATION IS SPECIFIED, THE POINT OF MEASUREMENT SHALL BE IDENTIFIED.
8. __X__ SUBSTANTIAL FEATURES OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK (IN ADDITION TO THE IMPROVEMENTS AND FEATURES REQUIRED PURSUANT TO SECTION 5 ABOVE) (E.G., PARKING LOTS, BILLBOARDS, SIGNS, SWIMMING POOLS, LANDSCAPED AREAS, SUBSTANTIAL AREAS OF REFUSE).
9. __X__ NUMBER AND TYPE (E.G., DISABLED, MOTORCYCLE, REGULAR AND OTHER MARKED SPECIALIZED TYPES) OF CLEARLY IDENTIFIABLE PARKING SPACES ON SURFACE PARKING AREAS, LOTS AND IN PARKING STRUCTURES. STRIPING OF CLEARLY IDENTIFIABLE PARKING SPACES ON SURFACE PARKING AREAS AND LOTS.
10. _____ (A) AS DESIGNATED BY THE CLIENT, A DETERMINATION OF THE RELATIONSHIP AND LOCATION OF CERTAIN DIVISION OR PARTY WALLS WITH RESPECT TO ADJOINING PROPERTIES (CLIENT TO OBTAIN NECESSARY PERMISSIONS).
    _____ (B) AS DESIGNATED BY THE CLIENT, A DETERMINATION OF WHETHER CERTAIN WALLS ARE PLUMB (CLIENT TO OBTAIN NECESSARY PERMISSIONS).
11. __X__ LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTY AS DETERMINED BY:
    •OBSERVED EVIDENCE COLLECTED PURSUANT TO SECTION 5. E. IV.
    •EVIDENCE FROM PLANS REQUESTED BY THE SURVEYOR AND OBTAINED FROM UTILITY COMPANIES, OR PROVIDED BY CLIENT (WITH REFERENCE AS TO THE SOURCES OF INFORMATION), AND
    •MARKINGS REQUESTED BY THE SURVEYOR PURSUANT TO AN 811 UTILITY LOCATE OR SIMILAR REQUEST
    REPRESENTATIVE EXAMPLES OF SUCH UTILITIES INCLUDE, BUT ARE NOT LIMITED TO:
    .MANHOLES, CATCH BASINS, VALVE VAULTS AND OTHER SURFACE INDICATIONS OF SUBTERRANEAN USES;
    .WIRES AND CABLES (INCLUDING THEIR FUNCTION, IF READILY IDENTIFIABLE) CROSSING THE SURVEYED PROPERTY, AN ALL POLES ON OR WITHIN TEN FEET OF THE SURVEYED PROPERTY. WITHOUT EXPRESSING A LEGAL OPINION AS TO THE OWNERSHIP OR NATURE OF THE POTENTIAL ENCROACHMENT, THE DIMENSIONS OF ALL ENCROACHING UTILITY POLE CROSSMEMBERS OR OVERHANGS; AND UTILITY COMPANY INSTALLATIONS ON THE SURVEYED PROPERTY.
    NOTE TO THE CLIENT, INSURER, AND LENDER – WITH REGARD TO TABLE A, ITEM 11, SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.IV. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, IN WHICH CASE THE SURVEYOR SHALL NOTE ON THE PLAT OR MAP HOW THIS AFFECTED THE SURVEYOR'S ASSESSMENT OF THE LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY.
12. __X__ AS SPECIFIED BY THE CLIENT, GOVERNMENTAL AGENCY SURVEY-RELATED REQUIREMENTS (E.G., HUD SURVEYS, SURVEYS FOR LEASES ON BUREAU OF LAND MANAGEMENT MANAGED LANDS).
13. __X__ NAMES OF ADJOINING OWNERS ACCORDING TO CURRENT TAX RECORDS. IF MORE THAN ONE OWNER, IDENTIFY THE FIRST OWNER'S NAME LISTED IN THE TAX RECORDS FOLLOWED BY ET AL."
14. _____ AS SPECIFIED BY THE CLIENT, DISTANCE TO THE NEAREST INTERSECTING STREET.
15. _____ RECTIFIED ORTHOPHOTOGRAPHY, PHOTOGRAMMETRIC MAPPING, REMOTE SENSING, AIRBORNE/MOBILE LASER SCANNING AND OTHER SIMILAR PRODUCTS, TOOLS OR TECHNOLOGIES AS THE BASIS FOR THE SHOWING THE LOCATION OF CERTAIN FEATURES (EXCLUDING BOUNDARIES) WHERE GROUND MEASUREMENTS ARE NOT OTHERWISE NECESSARY TO LOCATE THOSE FEATURES TO AN APPROPRIATE AND ACCEPTABLE ACCURACY RELATIVE TO A NEARBY BOUNDARY. THE SURVEYOR SHALL (A) DISCUSS THE RAMIFICATIONS OF SUCH METHODOLOGIES (E.G., THE POTENTIAL PRECISION AND COMPLETENESS OF THE DATA GATHERED THEREBY) WITH THE INSURER, LENDER, AND CLIENT PRIOR TO THE PERFORMANCE OF THE SURVEY, AND (B) PLACE A NOTE ON THE FACE OF THE SURVEY EXPLAINING THE SOURCE, DATE, PRECISION, AND OTHER RELEVANT QUALIFICATIONS OF ANY SUCH DATA.
16. __X__ EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.
17. __X__ PROPOSED CHANGES IN STREET RIGHT OF WAY LINES, IF SUCH INFORMATION IS MADE AVAILABLE TO THE SURVEYOR BY THE CONTROLLING JURISDICTION. EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.
18. __X__ IF THERE HAS BEEN A FIELD DELINEATION OF WETLANDS CONDUCTED BY A QUALIFIED SPECIALIST HIRED BY THE CLIENT, THE SURVEYOR SHALL LOCATE ANY DELINEATION MARKERS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK AND SHOW THEM ON THE FACE OF THE PLAT OR MAP. IF NO MARKERS WERE OBSERVED, THE SURVEYOR SHALL SO STATE.
19. _____ INCLUDE ANY PLOTTABLE OFFSITE (I.E., APPURTENANT) EASEMENTS OR SERVITUDES DISCLOSED IN DOCUMENTS PROVIDED TO OR OBTAINED BY THE SURVEYOR AS A PART OF THE SURVEY PURSUANT TO SECTIONS 5 AND 6 (AND APPLICABLE SEIECTED TABLE A ITEMS) (CLIENT TO OBTAIN NECESSARY PERMISSIONS).
20. __X__ PROFESSIONAL LIABILITY INSURANCE POLICY OBTAINED BY THE SURVEYOR IN THE MINIMUM AMOUNT OF $ ________ TO BE IN EFFECT THROUGHOUT THE CONTRACT TERM. CERTIFICATE OF INSURANCE TO BE FURNISHED UPON REQUEST, BUT THIS ITEM SHALL NOT BE ADDRESSED ON THE FACE OF THE PLAT OR MAP.
21. __X__ REFLECT CURRENT TITLE COMMITMENT AS PROVIDED BY CLIENT.

ADOPTED BY THE BOARD OF GOVERNORS, AMERICAN LAND TITLE ASSOCIATION, ON OCTOBER 8, 2015. AMERICAN LAND TITLE ASSOCIATION, 1800 M ST., N. W., SUITE 300S, WASHINGTON, D. C. 20036-5828. WWW.ALTA.ORG

ADOPTED BY THE BOARD OF DIRECTORS, NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS, ON OCTOBER 9, 2015. NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS, INC., 5119 PEGASUS COURT, SUITE Q, FREDERICK, MD 21704 HTTP.//WWW. NSPS.US.COM/

ALTA/NSPS LAND TITLE SURVEY

17519 CHESTERFIELD AIRPORT ROAD
CITY OF CHESTERFIELD, ST LOUIS COUNTY MISSOURI 63005

TO LAFAYETTE TITLE COMPANY, WFG NATIONAL TITLE INSURANCE GROUP AND MASE LLC:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARDS DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(A), 7(A), 7(C), 8, 9, 11, 12, 13, 16, 17, 18, 20 AND 21 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 10/23/2019. DATE OF MAP OR PLAT 11-26 /2019.

MARLER SURVEYING COMPANY INC.
MISSOURI CORP. NO. L.S. [illegible]7-D

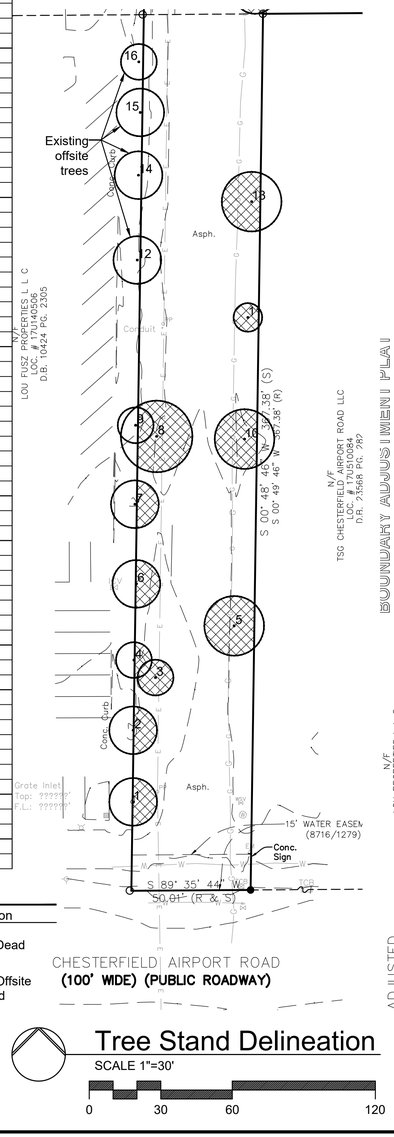
MARTY L. MARLER
MISSOURI [illegible] 2501

STATE OF MISSOURI
MARTY L. MARLER
NUMBER LS-2501
REGISTERED LAND SURVEYOR

PROJECT NAME: CAR CRAFT	PROJECT NO.: 1909-022
ADDRESS: 17519 CHESTERFIELD AIRPORT ROAD	CITY OF CHESTERFIELD, ST LOUIS COUNTY MISSOURI 63005

	REVISION DATES
DATE: 09/12/2019	
SCALE: 1" = 30'	
DRAWN BY: D.G./D.N.	
CHECKED BY: M.L.M.	
DWG. No.: 1909-022	
DEPUTY: M.S.	

MARLER SURVEYING COMPANY, INC.
11402 GRAVOIS RD., STE. 200 ST. LOUIS, MO 63126 (314) 729-1001 PH. (314) 729-1044 FAX
402 EAST SPRINGFIELD ROAD, SULLIVAN, MO (573) 468-4684 PH. (573) 860-8606 FAX
email: marler@marlersurveying.net



Tree Inventory

ID	Tree Name	DBH	Canopy Diam.	Condition Rating	Comment
1	Pear	14	20	3	
2	Pear	12	20	3	
3	Maple	8	15	2	Under power lines
4	Pear	12	15	3	
5	Maple	11	25	3	
6	Maple	10	20	3	Offsite
7	Ash	11	20	2	Offsite
8	Maple	12	30	2	Under power lines
9	Maple	8	15	1	Offsite, split
10	Maple	11	25	3	
11	Oak	6	12	3	
12	Maple	11	20	2	Offsite, girdling roots
13	Maple	12	25	3	
14	Ash	12	20	2	Offsite
15	Maple	10	20	2	Offsite, girdling roots
16	Ash	10	15	1	Offsite, dead limbs
17	Maple	12	20	2	Near fire hydrant
18	Maple	7	18	3	
19	Apple	5	8	2	Multi-stem
20	Apple	5	8	2	Multi-stem
21	Apple	4	8	1	Lean, defoliated
22	Apple	7	10	2	
23	Apple	5	8	2	Multi-stem
24	Apple	5	8	2	
25	Pine	18	30	2	Near power pole
26	Pine	16	30	2	Near power pole
27	Pine	11	30	1	Twin (10+11), vines, dieback
28	Pine	15	30	2	Vines
29	Pine	15	30	2	Vines
30	Apple	5	8	1	Impacted by tree fall
31	Pine	8	15	2	Vines
32	Pine	5	10	2	Vines
33	Pine	5	10	1	Competing vegetation
34	Pine	12	25	1	Vines
35	Cottonwood	5	8	1	Poor structure
36	Pine	10	15	1	Vines
37	Pine	11	15	2	Vines
38	Cottonwood	11	15	1	Vines, lean
39	Cottonwood	19	25	1	Vines
40	Pine	10	20	1	Vines
41	Pine	14	35	2	Vines
42	Pine	11	25	2	Vines
43	Pine	14	0	0	Dead, fungus on trunk
44	Pine	10	0	0	Dead
45	Cottonwood	28	50	2	Vines
46	Pine	15	20	2	Vines
47	Pine	13	20	1	Vines, dieback
48	Pine	14	25	2	Vines
49	Pine	15	20	1	Vines, fungus
50	Pine	14	20	1	Vines, fungus
51	Pine	13	20	1	Vines, fungus
52	Pine	14	20	1	Vines, fungus
53	Pine	13	20	2	Vines
54	Cottonwood	18	30	2	Vines
55	Pine	13	20	1	Vines, dieback
56	Pine	15	20	1	Vines, dieback
57	Cottonwood	14	30	1	Vines
58	Pine	13	25	1	Vines, fungus
59	Pine	16	30	1	Vines, poor structure
60	Pine	15	35	2	Vines, dieback
61	Pine	13	25	2	Vines
62	Pine	9	10	1	Dieback
63	Pine	11	15	1	Vines, dieback
64	Pine	10	15	1	Dieback
65	Pine	11	10	1	Vines, dieback
66	Pine	6	8	1	Vines, dieback
67	Cottonwood	14	25	2	Lean
68	Pine	12	15	2	Vines
69	Pine	9	10	1	Vines, dieback
70	Pine	5	8	1	Vines, dieback
71	Pine	8	8	1	Vines
72	Pine	14	20	1	Vines
73	Sycamore	6	10	1	Near wall, poor structure
74	Sycamore	8	10	1	Near wall, poor structure
75	Cottonwood	10	15	1	Near wall, lean
76	Cottonwood	14	25	2	
77	Sycamore	6	10	1	Near wall, lean
78	Cottonwood	15	30	2	
79	Cottonwood	15	30	2	Vines
80	Cottonwood	14	25	2	
81	Cottonwood	30	45	2	Vines
82	Spruce	5	8	2	Offsite, lean
83	Maple	6	8	2	Offsite
84	Maple	5	8	1	Offsite
85	Maple	5	30	2	Offsite, triple (5+5+5)
86	Maple	6	20	2	Offsite, twin, girdling roots
87	Spruce	4	12	2	Offsite, lean
88	Maple	10	30	2	Offsite, triple (6+6+10)
89	Maple	8	25	2	Offsite, triple (6+7+8)

Tree Condition Rating:

Excellent	4
Good	3
Fair	2
Poor	1
Dead	0

Legend

Symbol	Description	Symbol	Description
⊙	Existing Trees	⊗	Existing Dead Trees
▨	Existing Tree Canopy	☁	Existing Offsite Woodland

Tree Stand Delineation Prepared
under direction of:
Kristin Provinse
Certified Arborist MW-6075A

Kristin Provinse

Tree Stand Delineation Narrative

This project site comprises a total of 7 acres and has a total of 138,098 s.f. of tree canopy. The Tree Stand Delineation map was completed by field inspection.

The individual trees found onsite along the road consist mainly of Maple, Ash and Pear in fair to good condition. Individual trees found onsite along the fence perimeter include primarily Apple and Pine along with some Cottonwood and Sycamore trees in poor to fair condition.

The trees found onsite within the woodland area consist of Ash, Maple, and Cottonwood with some Boxelder, Sycamore, Willow, and young Mulberry trees. The Ash trees are in poor condition overall. There are vines and a Honeysuckle understory throughout the wooded area along with some invasive groundcover vegetation.

There are no Monarch, state champion, or rare trees found onsite.

Total Site Area	=	323,240 s.f. (7.42 acres)
Individual Tree Canopy Area	=	17,977 s.f. (0.41 acres)
Woodland Canopy Area	=	120,121 s.f. (2.76 acres)
Total Existing Tree Canopy Area	=	138,098 s.f. (3.17 acres)

Tree Stand Delineation

SCALE 1"=30'

0 30 60 120

State of Missouri Landscape Architect seal: Jerald A. Saunders, Number LA-7

10/13/2020

Jerald Saunders - Landscape Architect
MO License # LA-007

Consultants:

Car Craft

47 Caprice Drive
Chesterfield, Missouri 63005

Revisions:

Date	Description	No.

Drawn: KP
Checked: RS

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Missouri State Certificate of Authority #: LAC #000019

Sheet Title: Tree Stand Delineation

Sheet No: TSD

Date: 10/13/20
Job #: 584.033

MAY 18, 2021

Revised June 22, 2021

Chesterfield Airport Road Access Study

17519 Chesterfield Airport Road

Chesterfield, Missouri

Prepared for:

Mr. Sam Adler
Staenberg Group, Inc.
2127 Innerbelt Business Center Drive, Suite 200
St. Louis, Missouri

Prepared by:

Lochmueller Group
411 N. 10th Street

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Executive Summary

Lochmueller Group has completed the following traffic impact study for The Staenberg Group (TSG) to assess the feasibility of retaining the existing access drive serving the property at 17519 Chesterfield Airport Road (Car Craft Autobody), located along the north side of Chesterfield Airport Road. Currently, the subject site has a drive that provides full access to Chesterfield Airport Road, approximately 265 feet east of Caprice Drive.

TSG extended Arnage Road in 2020 from its terminus (300 feet west of Arnage Boulevard) westward approximately 900 feet, stopping just east of the existing drive serving 17519 Chesterfield Airport Road. However, the existing access drive and extended Arnage Road do not currently intersect.

Per the City of Chesterfield Ordinance No. 2575, passed in November 2009, the intersection of the drive to 17519 Chesterfield Airport Road with Chesterfield Airport Road is to be removed once access to the site is provided via a proposed connector road to either Arnage Boulevard or to Caprice Drive. The connector road referenced in the ordinance is Arnage Road. Given the successful operation of the Lou Fusz Ford dealership to the west, it is unlikely that Arnage Road will extend further west to Caprice Drive in the near term. Therefore, the concept of retaining and improving the existing drive serving 17519 Chesterfield Airport Road, connecting it to Arnage Road and allowing it to serve as the interim western terminus of the road network serving the area is under consideration. In conjunction with this connection, the intersection with Chesterfield Airport Road would be restricted to right turns only.

The intent of retaining this access would be as an interim condition. Once Arnage Road is able to extend westward to Caprice Drive, this drive and its limited intersection with Chesterfield Airport Road would no longer be necessary and would be removed.

The Preliminary Development Plan for Car Craft Autobody submitted to the City of Chesterfield proposes the connection of Arnage Road to the existing access drive, as well as a secondary access onto Arnage Road further to the east. The Preliminary Development Plan also depicts the improvement of the access drive to 17519 Chesterfield Airport Road to 26 feet in width and restriction of the intersection with Chesterfield Airport Road to right turns only via the installation of a raised island.

The retention and improvement of this access drive would benefit not only the Car Craft Autobody site but also the vacant parcels north of Chesterfield Airport Road that flank extended Arnage Road. Assuming the vacant parcels develop in a commercial manner consistent with the surrounding area more than 750 additional trips would be generated and seeking access to Chesterfield Airport Road.

The impact of these additional trips was evaluated, as requested by the St. Louis County DOT, to determine if the access drive could be retained without negatively impacting Chesterfield Airport Road. Based upon the analysis outlined in this report, the following conclusions were reached:

- The parcels likely to develop or redevelop within the study area could generate a total of 345, 652, 510, and 766 trips during the weekday morning, midday, afternoon, and Saturday midday peak periods. This level of traffic generation would benefit from a western point of access to Arnage Road.

- The increase in traffic due to buildout within the study area does have an impact on traffic operations at the unsignalized intersections to Chesterfield Airport Road. Side street operations

along Caprice Drive and Plaza Tire Service access drives worsen slightly due to the increase in through traffic along Chesterfield Airport Road.

- The greatest impact on traffic operations because of continued development in the area would occur at the unsignalized intersection of Chesterfield Airport Road with the existing access drive adjacent to the AutoZone. This drive is currently comprised of a single lane approach only, albeit wide. Continued development in the area could add 80 or more left turns to the southbound approach, while simultaneously adding to the eastbound left turn onto the drive, which would effectively minimize the available gaps in the traffic flow. Given the single lane approach, oversaturated conditions are likely for the southbound approach during the weekday and Saturday midday peak periods, which would result in lengthy vehicular queues.

- The installation of a dedicated southbound left turn lane along the AutoZone access drive's approach to Chesterfield Airport Road would alleviate the forecasted congestion. Therefore, the drive adjacent to AutoZone should be restriped to accommodate dedicated left and right turn lanes within the existing 36 feet in width (TSG intends to complete this restriping in late May/early June 2021). These lanes should extend back to the adjacent intersection with Arnage Road since a single lane approaching Arnage Road is all that is necessary.

- The proposed restricted intersection of the Car Craft Autobody access drive with Chesterfield Airport Road would operate with acceptable conditions during the peak periods. The proposed right turn only connection is anticipated to serve up to 150 vehicles, depending upon the peak hour considered. The forecasted 95th percentile queue would be less than 100 feet, which would easily be accommodated. It is recommended that this access drive be widened to provide 26 feet in width and that parking be prohibited along the drive and that the right turn restriction at the intersection with Chesterfield Airport Road be enforced via the construction of a raised median within the access drive's approach.

- The existing shoulder along the north side of Chesterfield Airport Road, that is often used as a de-facto right turn lane to Caprice Drive, should be removed to eliminate any concerns regarding weaving between the proposed right turn only drive and Caprice. Conversely, if the County DOT prefers to maintain a shoulder in this section, striping and signage should be installed to discourage the use of the shoulder as a deceleration lane for Caprice Drive.

- The expected crash frequency at the proposed restricted access drive and Chesterfield Airport Road is relatively minimal with less than 2 accidents expected annually. An examination of the existing crash history does not reveal any underlying safety concern at the existing access drive that would warrant additional safety analysis. The restriction of the access drive's intersection with Chesterfield Airport Road to right turns only would remove the potential left turn conflicts, thereby improving the safety conditions at the intersection.

- The introduction of the right turn only drive would, undeniably, increase the expected crashes along Chesterfield Airport Road between the proposed drive and Caprice Drive just due to the

presence of an intersection (as compared to elimination of the drive altogether). However, the expected crash frequency would only increase from 2.313 to 3.396 accidents annually.

- The expected crash frequency at the unsignalized intersection of the AutoZone Drive with Chesterfield Airport Road revealed that if the access drive to the west is not retained, the majority of the traffic expected to utilize that drive would shift to the unsignalized access drive adjacent to the AutoZone. The provision of the right turn only access to the west results in a lower expected crash frequency at the Autozone Drive.

Therefore, it is recommended the existing access drive to 17519 Chesterfield Airport Road be retained, improved, connected to Arnage Road and restricted to right turns only at its intersection with Chesterfield Airport Road. This western terminus of Arnage Road would be an interim condition until such time that Arnage Road can extend westward to Caprice Drive. To do so will provide connectivity north of Chesterfield Airport Road to various commercial entities while alleviating the congestion at the unsignalized intersection adjacent to AutoZone.

Introduction

Lochmueller Group has completed the following traffic impact study for The Staenberg Group (TSG) to assess the feasibility of retaining the existing access drive serving the property at 17519 Chesterfield Airport Road (Car Craft Autobody), located along the north side of Chesterfield Airport Road. Currently, the subject site has a drive that provides full access to Chesterfield Airport Road, a St. Louis County controlled roadway. The intersection of the drive with Chesterfield Airport Road is located approximately 265 feet east of Caprice Drive.

Per Ordinance No. 2575, passed in November 2009, the intersection of this drive with Chesterfield Airport Road is to be removed once access to the site is provided via a proposed connector road to either Arnage Boulevard or to Caprice Drive. The connector road referenced in the ordinance is Arnage Road, which TSG extended in 2020 from its terminus (300 feet west of Arnage Boulevard) westward approximately 900 feet, stopping just east of the existing drive serving 17519 Chesterfield Airport Road. In short, the existing access drive and extended Arnage Road do not intersect.

Given the thriving operation of Lou Fusz Ford dealership to the west, it is unlikely that Arnage Road will extend further west to Caprice Drive in the near term, as originally envisioned. Therefore, the concept of retaining the existing drive serving 17519 Chesterfield Airport Road, connecting it to Arnage Road and allowing it to serve as the interim western terminus of the road network serving the area has been brought forth. In conjunction with this connection, the intersection with Chesterfield Airport Road would be restricted to right turns only.

The following study will demonstrate that to do so will benefit not only TSG parcels in the immediate vicinity, but many existing and future developments served by Arnage Boulevard. The intent would be that once Arnage Road is able to extend westward to Caprice Drive, this drive and its limited intersection with Chesterfield Airport Road would no longer be necessary and would be removed.

This traffic analysis focuses on the following scenarios in order to quantify traffic impacts associated with retaining the access drive to 17519 Chesterfield Airport Road but serving right turns only versus eliminating access to Chesterfield Airport Road altogether:

- Existing conditions (2021);
- 2025 Baseline Conditions (background traffic growth only);
- 2025 Forecasted Conditions – Scenario A (background traffic growth + buildout of developed areas) assuming right turn only access is maintained at subject drive;
- 2025 Forecasted Conditions – Scenario B (background traffic growth + buildout of developed areas) assuming the subject drive is closed.

Given the nature of the developments within the area, the traffic study focuses on the morning, midday, and afternoon peak periods of a typical weekday, as well as the midday peak period of a typical Saturday. These time periods were chosen since they represent the peak periods of operation for the proposed uses as well as peak periods along Chesterfield Airport Road itself.

Development History

The Car Craft Autobody site at 17519 Chesterfield Airport Road was previously the home of 84 Lumber. The 7.42 acres, legally referenced as 84 Lumber Lot 1, was used as a lumber yard for many years before closing prior to 2009. In 2009, Car Craft applied for a change in zoning at the property to allow permitted uses beyond the only allowable use of "a retail lumber/home center with outdoor display areas, outdoor storage areas, and storage sheds". Following approval, Car Craft Autobody extended its collision repair facility located along Caprice Drive to include the subject property and offer luxury car repair. Currently, Car Craft Autobody is seeking approval from the City of Chesterfield to consolidate the services offered at 17519 Chesterfield Airport Road with all uses going "under roof" due to the high-end nature of the vehicles served. PZ 14-2020 84 Lumber (17519 Chesterfield Airport Road) is currently under consideration with the City to allow for amendments to the governing ordinance that modify the development criteria for the "PC" Planned Commercial District. If approved, Car Craft Autobody would be able to provide up to 80,190 SF under roof on the site as a means of servicing and storing luxury vehicles.

Beyond the property located at 17519 Chesterfield Airport Road (84 Lumber Lot 1), there are other surrounding parcels within the study area that should be considered. TSG owns the three lots immediately north of Chesterfield Airport Road and west of the AutoZone drive. These lots vary in size from 1 acre to slightly less than 1.5 acres and are currently being marketed for typical convenience oriented commercial uses (notated as Lots B, C, and D within the report). In addition, TSG owns a lot immediately north of AutoZone that represents less than 0.8 of an acre (Lot E). It is likely that this lot will eventually combine, in some manner, with the vacant 0.89-acre tract just east of AutoZone and be developed as a commercial lot.

North of extended Arnage Road, there are two larger lots that are in varying stages of development. Immediately adjacent to 17519 Chesterfield Airport Road is 84 Lumber Lot 2, 13 acres which is owned by TSG. This lot was approved by the City of Chesterfield in Fall 2020 for construction of a 31,000 SF Jaguar / Land Rover car dealership. The 4.69-acre lot east of the proposed dealership, 23 Arnage Road, is not owned by TSG but is also a likely candidate to be developed as another luxury dealership or similar use.

Prior to 2020, Arnage Road traversed east-west north of Chesterfield Airport Road from its eastern terminus adjacent to the Marriott Courtyard and Culvers (Arnage Road does not extend into the property at 1 McBride & Son Center Drive) to approximately 300 feet west of Arnage Boulevard, which provides signalized access to Chesterfield Airport Road. This approximately 2,200-foot stretch of private roadway provides access to the numerous commercial uses located north of Chesterfield Airport Road. In 2020, TSG extended Arnage Road from its western terminus approximately 900 feet further to the west, stopping just east of the existing drive serving 17519 Chesterfield Airport Road. Currently, the existing access drive to 17519 Chesterfield Airport Road and Arnage Road do not intersect.

Figure 1 depicts the parcels within the study area with the critical access drive under study denoted in red.

Figure 1. Study Area

Within Chesterfield Valley, the vision has been to develop connector roadways that allow for motorists to traverse between the various commercial entities without having to rely solely on Chesterfield Airport Road. Arnage Road is one such connector road, providing connectivity to multiple developments north of Chesterfield Airport Road via signalized access with Arnage Boulevard and Chesterfield Commons West.

In 2009, the 84 Lumber site was rezoned from "C-8" Planned Commercial District to "PC" Planned Commercial District. As part of the rezoning Ordinance No. 2575, Section I.I.1 of Attachment A states:

"The existing direct access to Chesterfield Airport Road shall be permitted until such time that access to the site is provided via a proposed connector road to either Arnage Boulevard or to Caprice Drive."

The intent of the City for some time has been to extend Arnage Road westward to, ultimately, intersect Caprice Drive. This intention was reinforced in the City's Envision Chesterfield Comprehensive Plan 2020, which was approved in September 2020. The plan identified the extension of Arnage Road (#10 on a list provided in the "Defining Goals & Implementing Strategies" section) as a Future Recommended Improvement based upon a network perspective evaluation with the objective of alleviating congestion in a manner that is consistent with the goals and vision of the Comprehensive Plan.

However, the extension of Arnage Road to Caprice Drive would necessitate cutting through the existing Lou Fusz auto dealership. Generally speaking, this is undesirable for the dealership due to security concerns. Dealerships tend to prefer points of access at the front of their properties only so that inventory can be secured. Hence, it is not likely Arnage Road would extend through the Lou Fusz property, to Caprice Drive at this time, and would likely only occur in conjunction with the redevelopment of the property in the future.

Arnage Road was extended by TSG in 2020 approximately 900 feet further to the west, stopping just east of the existing drive serving 17519 Chesterfield Airport Road, as shown in **Figure 2**. Currently, the property at 17519 Chesterfield Airport Road does not have a legal right of access to extended Arnage Road, via easement or otherwise.

Figure 2. Extended Arnage Road looking West towards the Access Drive to 17519 Chesterfield Airport Road and Lou Fusz Dealership

However, the submitted Preliminary Development Plan for Car Craft Autobody proposes the connection of Arnage Road to the existing access drive, as well as a secondary access onto Arnage Road further to the east. The Preliminary Development Plan also depicts the improvement of the access drive to 17519 Chesterfield Airport Road to 26 feet in width and restriction of the intersection with Chesterfield Airport Road to right turns only via the installation of a raised island. **Figure 3** depicts the Preliminary Development Plan for Car Craft Autobody that conveys the intent to connect to Arnage Road and restrict the access at its intersection with Chesterfield Airport Road.

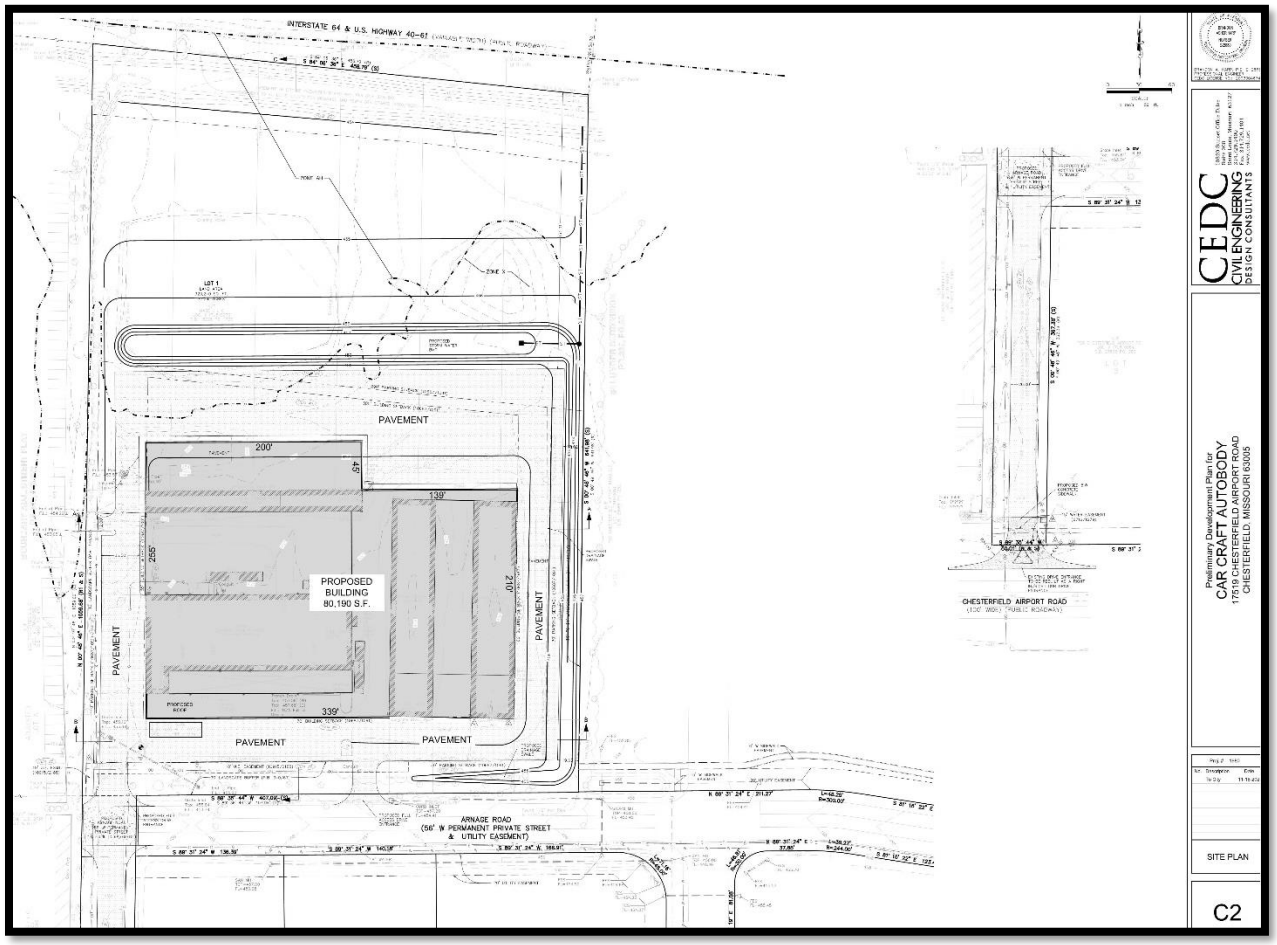

Figure 3. Preliminary Development Plan for Car Craft Autobody (provided by CEDC)

Given that the extension of Arnage Road further to the west to Caprice Drive is not likely to occur in the near term, the connection of the existing drive serving 17519 Chesterfield Airport Road to Arnage Road and allowing it to serve as the interim western terminus of the road network is logical and warrants further evaluation.

Existing Conditions

In order to assess the impacts associated with providing access to Arnage Road at the proposed location, it was first necessary to quantify roadway, traffic, and operating conditions as they currently exist within the study area.

Existing Roadway Network

The study area road system was inventoried to identify existing roadway types, lane configuration, functional classifications, posted speeds, access provisions, and intersection control. The traffic data was collected at the following intersections:

- Chesterfield Airport Road & Arnage Boulevard (signalized)
- Chesterfield Airport Road & AutoZone/Family Church (unsignalized)
- Chesterfield Airport Road & Car Craft Access Drive/Plaza Tire Service Drive (unsignalized)

- Chesterfield Airport Road & Caprice Drive (unsignalized)
- Arnage Boulevard & Arnage Road (unsignalized)

Chesterfield Airport Road is a four-lane roadway traveling in the east-west directions with a center two-way-left-turn lane, controlled and maintained by St. Louis County, and is classified as a minor arterial, with a posted speed limit of 45 miles per hour (mph). At its signalized intersection with Arnage Boulevard and Public Works Drive, Chesterfield Airport Road has both dedicated right and left turn lanes in the eastbound and westbound directions. Similarly, both eastbound and westbound approaches operate under protected plus permissive left turn phasing.

Arnage Boulevard is a two-lane roadway north of Chesterfield Airport Road serving a commercial area. South of Chesterfield Airport Road, the roadway is known as Public Works Drive. Both roads are classified as local roadways with a posted speed limit of 25 mph. At the signalized intersection with Chesterfield Airport Road, both north and south approaches have dedicated left and right turn lanes. Further, both northbound and southbound approaches operate under permissive phasing.

Arnage Road is a two-lane access roadway traveling in the east-west direction, providing connectivity between the commercial developments north of Chesterfield Airport Road. The east and west approaches of Arnage Road at its intersection with Arnage Boulevard are under stop-control while traffic on Arnage Boulevard has the right of way. The eastbound approach of Arnage Road to this intersection has a shared through/left lane and a dedicated right turn lane while all other approaches are comprised of a single lane.

Caprice Drive is a two-lane, local access drive traveling in the north-south directions, serving commercial developments north of Chesterfield Airport Road, including Lou Fusz Ford,, a small retail center and Car Craft Autobody. The approach of Caprice Drive to Chesterfield Airport Road operates under stop-control and all turning movements are permitted. A shoulder exists along the north side of Chesterfield Airport Road for approximately 390 feet to the east of Caprice Drive and is often utilized as a de-facto right turn lane. This shoulder varies in width from 17.5 feet at its widest to a few feet at its narrowest.

Access Drive to 17519 Chesterfield Airport Road (Car Craft Autobody) is a two-lane, private access drive serving the 84 Lumber Lot 1 site. The 24-foot drive currently intersects Chesterfield Airport Road 265 feet east of Caprice Drive and is under stop control. All turning movements are currently permitted at this intersection.

The existing lane configuration and traffic control at the study intersections, are shown in **Figure 4**.

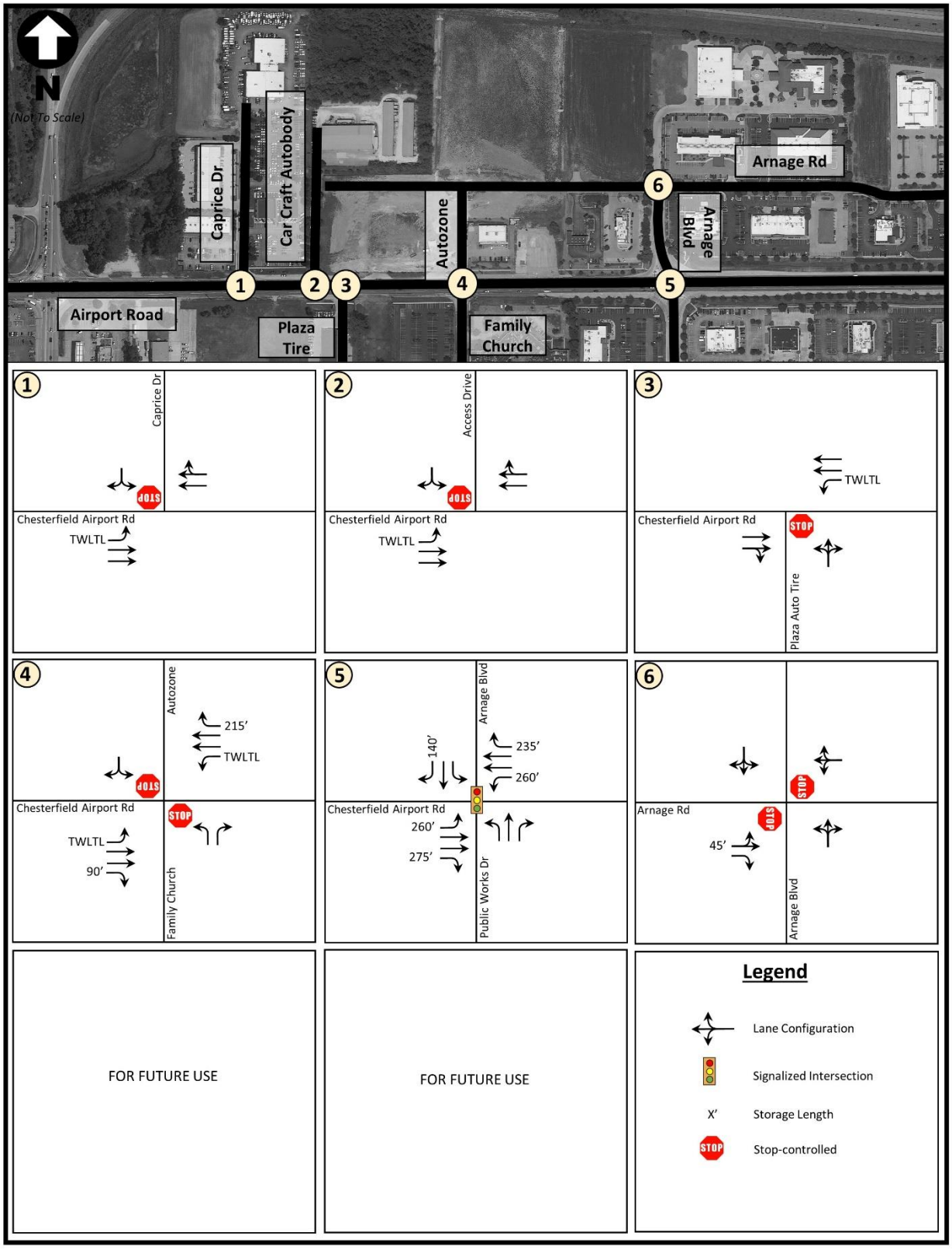

Figure 4. Existing Lane Configurations

Existing Traffic Volumes

Traffic volume counts were conducted on Thursday, April 1, 2021 between 7AM to 9AM, 11AM to 1PM, 4PM to 6PM, and Saturday, April 3, 2021 between 11AM to 2PM. Weather conditions were fair and representative of typical weekday and Saturday conditions for the surrounding area and uses. The weekday morning peak hour occurred between 7:30 and 8:30AM, weekday midday peak hour between 12:00 and1:00PM, weekday afternoon peak hour between 4:30 and 5:30PM, and the Saturday midday peak hour between 12:30 and 1:30PM.

St. Louis County Department of Transportation (DOT) also provided pre-covid traffic counts along Chesterfield Airport Road, just east of Long Road and just west of Boone's Crossing, which were compared to the existing traffic volumes in order to determine an adjustment factor that would remove the impact of COVID-19 on travel patterns in the area. Given the low level of development that has occurred within the study area since 2014 (AutoZone and two hotels), it was determined that traffic would not have grown significantly over the past several years. Therefore, the eastbound and westbound mainline volumes along Chesterfield Airport Road, from the 2021 traffic counts, were averaged over the study locations and compared to the provided 2014 data, thereby revealing a scaling factor for each period which would conservatively upward adjust the 2021 mainline traffic volumes to non-pandemic volumes, as shown in **Table 1**. The calibrated 2021 traffic volumes are illustrated in **Figure 5**.

Table 1. Traffic Volume Adjustment Factors Due to COVID-19

Location	Weekday AM Peak Hour		Weekday MD Peak Hour		Weekday PM Peak Hour		Saturday MD Peak Hour	
	EB	WB	EB	WB	EB	WB	EB	WB
Chesterfield Airport Road - W of Boones Crossing (2014)	266	388	1242	1078	829	756	1385	1250
Chesterfield Airport Road - E of Long Rd (2014)	315	363	935	1257	634	631	714	926
Chesterfield Airport Road - Average of Mainline Traffic Volumes (2021)	333	202	807	562	526	411	685.2	491
Volume Difference - 2021 vs 2014	13%	-86%	-35%	-108%	-39%	-69%	-53%	-122%
Scaling Factor	**1.0**	**2.0**	**1.5**	**2.1**	**1.5**	**1.75**	**1.5**	**2.3**

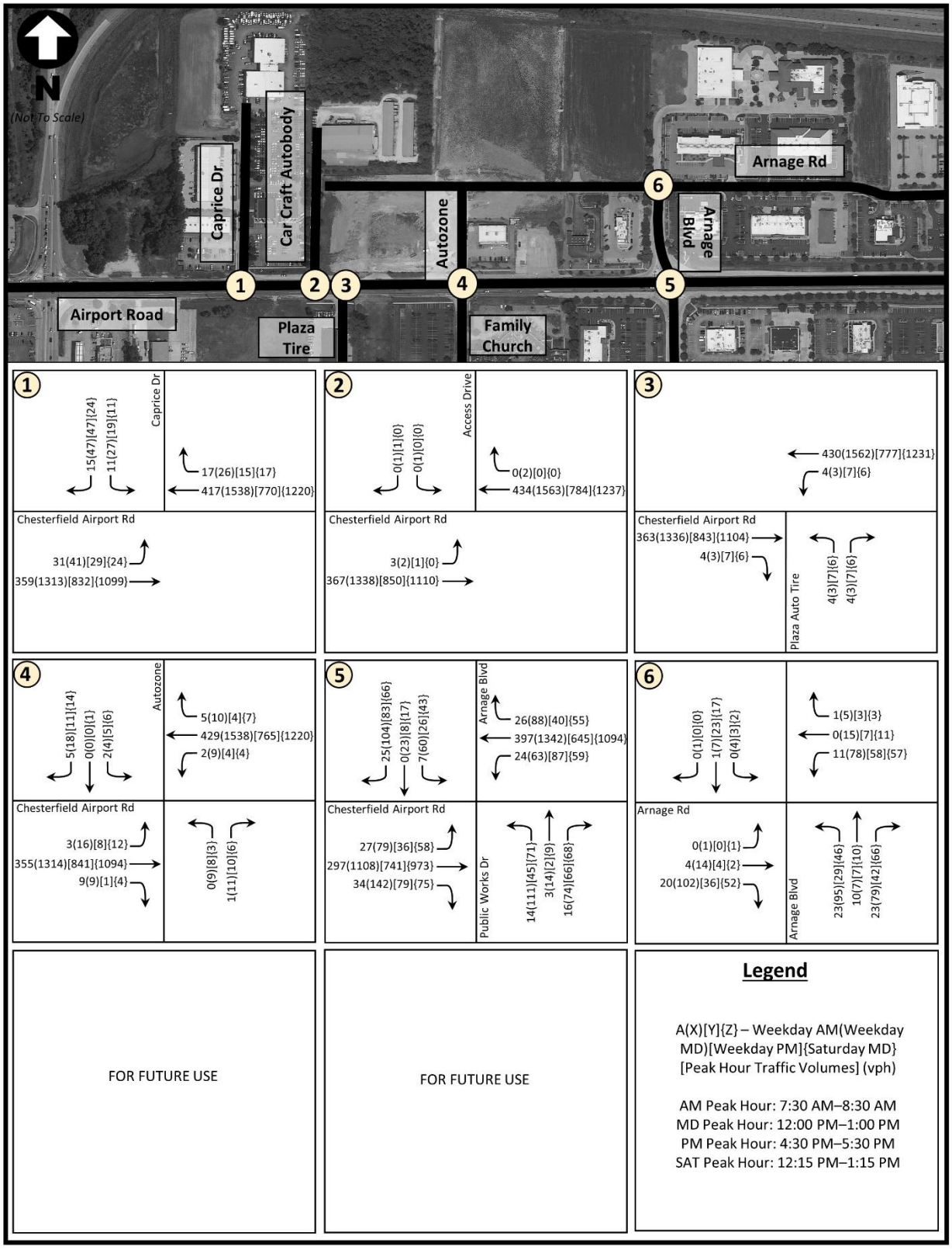

Figure 5. 2021 Calibrated Traffic Volumes

Existing Crash Analysis

Crash data within the study area was obtained from the MoDOT database over a five-year period from 2015 through 2019. A crash dashboard, shown in **Figure 6**, was created in order to identify trends in crash type, contributing circumstances, time-of-day occurrence, or lighting conditions that would be indicative of a correctable safety issue. A total of 36 crashes occurred over the five-year horizon, with eleven crashes occurring in 2019 alone. The predominant crash type throughout this section of the Chesterfield Airport Road corridor is rear end crashes, mainly concentrated at its intersection with Arnage Boulevard/Public Works Drive. Further, nine crashes resulted in disabling or minor injuries, of which, 56% were caused by rear end collisions. Most crashes occurred in typical or fair-weather conditions with clear or cloudy skies and dry surface conditions.

When inspecting crashes within the influence area of the full access drive under study, approximately five crashes occurred over the 5-year period. Four of those crashes resulted in property damage and one crash resulting in minor injuries. It should be noted that two of the crashes within the influence area of the access drive were caused by motorists hitting a deer. The crash which caused minor injuries was a result of a rear end collision just east of the access drive. In summary, there does not appear to be any underlying safety concern at the access drive which would need to be addressed.

Existing Operating Conditions

The existing traffic operating conditions at the study intersections was evaluated based upon the traffic volumes presented in Figure 5. The analysis was completed using Synchro 10 traffic modeling software, which is based upon the methodologies outlined in the Highway Capacity Manual (HCM) 6th Edition, last updated in 2016 by the Transportation Research Board.

The performance of a transportation system is quantified by Levels of Service (LOS), which are measures of traffic flow that consider factors such as speed, delay, interruptions, safety, and driver comfort. There are six levels of service ranging from LOS A (“free flow”) to LOS F (“oversaturated”). LOS C is commonly used for design purposes and represents a roadway with volumes utilizing 70 to 80 percent of its capacity. LOS D is typically considered acceptable for peak period conditions in urban and suburban areas. However, LOS F is not unusual for side street stop-controlled approaches during peak period conditions, especially along major arterials.

Levels of service criteria vary depending upon the roadway component being evaluated. Intersections are most commonly evaluated, since roadway capacity is typically dictated by the number of vehicles that can be served at critical intersections. For intersections, the criteria are based on delay and the type of control (i.e. whether it is signalized or unsignalized). Signalized intersections reflect higher delay tolerances as compared to unsignalized and roundabout locations because motorists are accustomed to, and accepting of, longer delays at signals. For signalized and all-way stop intersections, the average control delay per vehicle is estimated for each movement and then aggregated for each approach and the intersection as a whole. For intersections with side-street stop control, delay is calculated for the side-street approaches and major road left-turns only, since through traffic on the major road is not required to stop. **Table 2** shows the thresholds for intersection levels of service, as defined in the HCM.

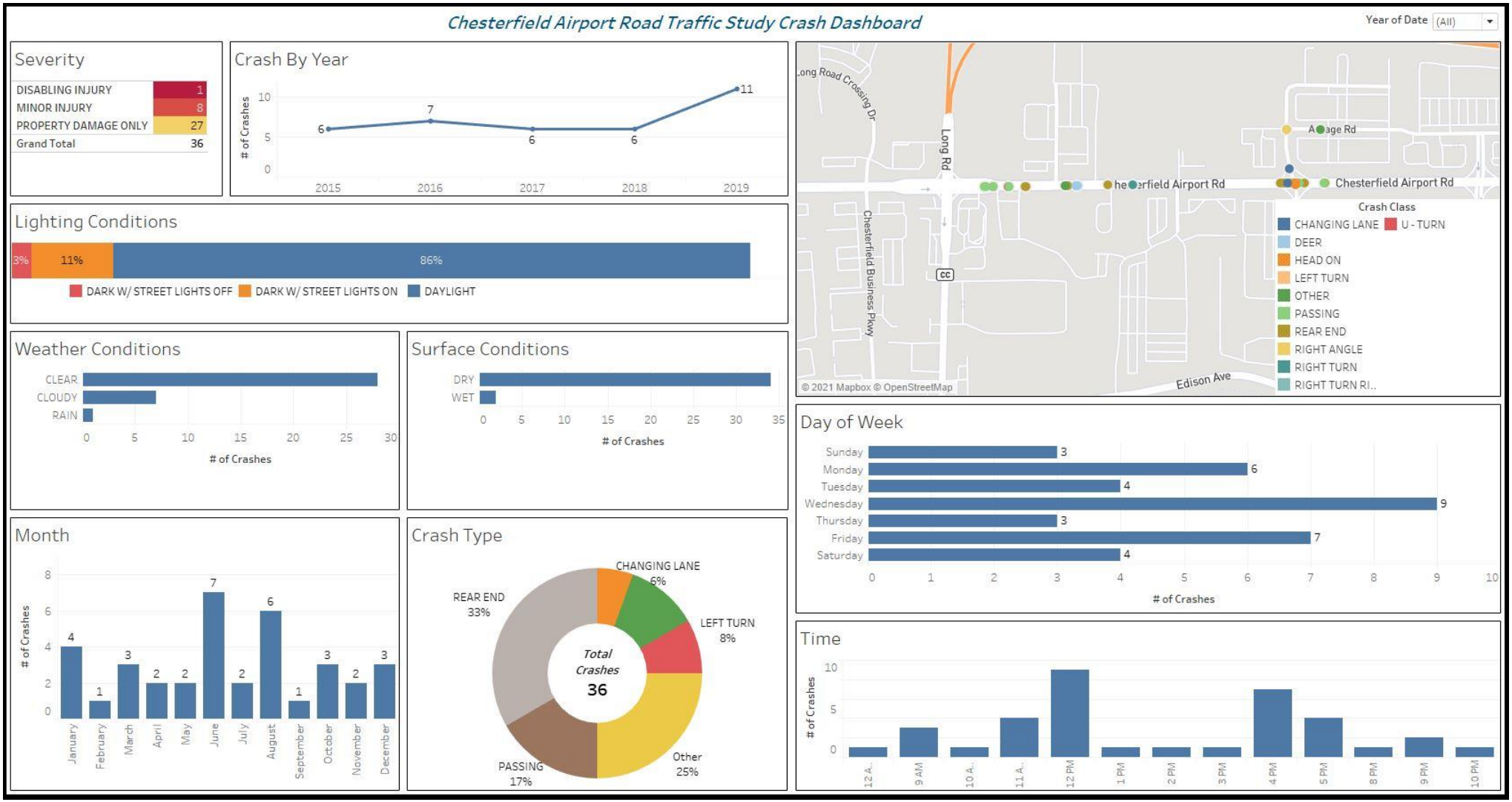

Figure 6. Crash Analysis Dashboard

Table 2. Level of Service Definitions

Level of Service	Control Delay per Vehicle (sec/veh)	
	Signalized	Unsignalized
A	≤ 10	0-10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

The intersections and movements/approaches were evaluated based upon the following measures of effectiveness: level of service, delay (in seconds per vehicle), and 95th percentile queue length (in feet). The existing operating conditions at the intersections included in the study area are summarized in **Table 3**.

During all peak periods, the signalized intersection of Chesterfield Airport Road and Arnage Boulevard operates with LOS B or better. The longest queues at this intersection were experienced during the weekday midday when the eastbound and westbound 95th percentile queues extend approximately 330 and 440 feet, respectively. Similarly, the northbound (Public Works Drive) approach operates with LOS D during the weekday midday peak period and LOS C during all other peak period. Similarly, the southbound (Arnage Boulevard) approach operates at a LOS C or better during all the time periods. The northbound and southbound 95th percentile queues remain minimal; hence, the associated delays for Public Works Drive and Arnage Boulevard are a function of the longer cycle length which accommodates mainline traffic and not a consequence of heavy volumes on either the northbound or southbound approaches to the signalized intersection.

The southbound approach of Caprice Drive and the northbound approach from the St. Louis Family Church to Chesterfield Airport Road both operate with LOS E during the weekday midday peak period, and LOS D or better during all other peak periods. It should be reiterated that this performance is not unusual for side street stop-controlled approaches during peak period conditions. During the weekday midday peak hour, more than 2,700 vehicles travel past on Chesterfield Airport Road, thereby diminishing the available gaps in the traffic for a motorist to turn left as compared to the other time periods.

Similarly, all other side street stop-controlled turning movements within the study area operate with LOS C or better. Further, 95th percentile queues remain minimal with the typical queue length of one vehicle or less.

Table 3. 2021 Existing (Calibrated) Operating Conditions

Intersection/ Approach	Weekday AM Peak Hour		Weekday MD Peak Hour		Weekday PM Peak Hour		Saturday MD Peak Hour	
	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)
Chesterfield Airport Road & Caprice Drive (side-street stop-control)								
• Eastbound Left	A (8.4)	<25	C (15.8)	<25	A (9.7)	<25	B (11.5)	<25
• Southbound Approach	B (11.0)	<25	E (45.7)	75	B (14.3)	<25	C (18.9)	<25
Chesterfield Airport Road & 17519 Chesterfield Airport Road Access Drive (side-street stop-control)								
• Eastbound Left	A (8.3)	<25	C (20.4)	<25	A (9.5)	<25	A (0.0)	<25
• Southbound Approach	A (0.0)	<25	C (24.1)	<25	B (11.3)	<25	A (0.0)	<25
Chesterfield Airport Road & Plaza Tire Service (side-street stop-control)								
• Westbound Left	B (10.4)	<25	C (21.0)	<25	A (9.8)	<25	B (11.1)	<25
• Northbound Approach	A (8.1)	<25	B (12.5)	<25	B (14.2)	<25	C (17.5)	<25
Chesterfield Airport Road & AutoZone/Family Church (side-street stop-control)								
• Eastbound Left	A (8.4)	<25	C (15.4)	<25	A (9.4)	<25	B (11.9)	<25
• Westbound Left	A (8.0)	<25	B (12.5)	<25	A (9.6)	<25	B (10.8)	<25
• Northbound Approach	A (9.4)	<25	E (40.6)	<25	C (19.1)	<25	D (25.8)	<25
• Southbound Approach	B (11.6)	<25	C (23.7)	<25	B (13.5)	<25	C (21.0)	<25
Chesterfield Airport Road & Arnage Boulevard/Public Works Drive (signalized)								
Overall Intersection	A (5.2)		B (15.0)		A (8.0)		B (11.3)	
• Eastbound Approach	A (3.1)	48	B (11.4)	334	A (6.2)	151	A (8.4)	222
• Westbound Approach	A (3.9)	65	B (13.7)	438	A (5.2)	122	A (9.0)	258
• Northbound Approach	C (25.1)	<25	D (37.1)	114	C (26.3)	64	C (33.5)	82
• Southbound Approach	B (10.3)	<25	C (22.2)	69	C (22.2)	42	C (23.1)	59
Arnage Boulevard & Arnage Road (side-street stop-control)								
• Eastbound Left/Thru	A (9.7)	<25	B (12.0)	<25	B (10.1)	<25	B (10.4)	<25
• Westbound Approach	A (9.4)	<25	B (14.3)	<25	B (10.4)	<25	B (11.0)	<25
• Northbound Left	A (7.2)	<25	A (7.4)	<25	A (7.3)	<25	A (7.3)	<25
• Southbound Left	A (0.0)	<25	A (7.4)	<25	A (7.3)	<25	A (7.4)	<25

Delay presented in seconds per vehicle

Development Within the Study Area

As discussed previously, there are numerous undeveloped lots located along the north side of Chesterfield Airport Road between the subject access drive and Arnage Boulevard. These parcels would benefit from the connection of Arnage Road to the access drive in terms of having alternate means of accessing Chesterfield Airport Road. Therefore, it was necessary to assume uses and the associated traffic characteristics for the currently vacant parcels.

Trip Generation

An initial step in developing a traffic forecast for the area was to identify each vacant parcel's trip generation potential, as any impacts to the surrounding road system would be tied to the net increase in trip generation above and beyond the existing traffic. The Trip Generation Manual, Tenth Edition, published by the Institute of Transportation Engineers (ITE), was used to forecast the trip generation of the potential developments with the exception of the Car Craft Autobody expansion. It should be noted that the following intended uses and associated characteristics (trip generation, directional distribution, etc.) were presented to St. Louis County Department of Transportation in the April 13th, 2021 Technical Memorandum.

Given the unconventional luxury use characteristics and the unusually large square footage (80,190 SF) of the Car Craft Autobody expansion, the conventional trip generation methodology outlined in the Trip Generation Manual was deemed not applicable. Rather, the existing traffic volumes at the site's access drive were used to calculate the number of vehicles entering and exiting via Chesterfield Airport Road. The proposed site plan building square footage was compared to the existing facility's square footage, in order to determine a scale factor which could be applied in order to estimate the increase in trip generation due to the site's expansion. Additionally, the scale factor was further inflated to reflect the proximity of the facility to the adjacent luxury car dealerships under construction or in the future, which would likely contribute to an increase in business. Hence, **Table 4** summarizes the net trips generated for the proposed Car Craft development.

Table 4. Proposed Car Craft Trip Generation

	Weekday AM Peak Hour			Weekday MD Peak Hour			Weekday PM Peak Hour			Saturday MD Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Existing Traffic Volume	3	0	3	4	2	6	1	1	2	0	0	0
Additional Trips Generated	13	0	13	16	8	24	5	5	10	0	0	0

Land Use Code 840 (Automobile Sales New) was used for the Jaguar/Land Rover, as well as the future adjacent car dealership just to the east of the proposed Jaguar/Land Rover dealership. Gross floor area was used as the independent variable for both car dealerships. 31,000 SF was assumed for the Jaguar/Land Rover site, per their submitted site development plan. 17,400 SF was assumed for the property to the east given the relative acreage.

The intended land uses for parcels B, C, D, and E are not yet known. For this reason, the following probable uses were assumed to provide a *conservative* estimate of the vehicle trips generated once these parcels are fully developed:

- Lot B – Quick Serve Restaurant; 3,300 SF; ITE LUC: 934 Fast-Food Restaurant with Drive-Thru
- Lot C – Bank with Drive Thru; 5,300 SF; ITE LUC: 912 Drive-in Bank
- Lot D – Sit Down Restaurant; 5,300 SF; ITE LUC: 932 High-Turnover (Sit-Down) Restaurant
- Lot E (Combined) – Quick Serve Restaurant; 3,300 SF; ITE LUC: 934 Fast-Food Restaurant with Drive-Thru

An average gross floor area was assumed for each of the uses based upon data provided in ITE's Trip Generation Manual. It should be noted that the fast-food restaurant with drive-thru, located on Lot E, assumes a restaurant which would not serve breakfast such as a Culvers, Lion's Choice, etc. Furthermore, Lot E assumes that the 0.797-acre lot north of AutoZone and the 0.89-acre lot east of AutoZone would be combined into one developable lot.

For all developments, the average rate was used to calculate the number of trips generated, as either fitted curve equations were not available or the R^2 value of the fitted curve equations was less than 0.85. Similarly, Appendix A provides the percent of daily traffic during a 60-minute period. Hence, to estimate the number of trips generated for each use during the midday peak hour, the total vehicle trips during a weekday were calculated, and then multiplied by the percent of daily traffic for that land use. Wherever Appendix A was lacking Saturday data for a land use, the Saturday peak hour generator was applied for the midday peak period.

It should be emphasized that not all trips would be new to the study area road system. Rather, a portion of the trips would be attracted to some of the proposed developments as part of an existing trip along Chesterfield Airport Road. Studies indicated that convenience-oriented uses such as restaurants, banks, and convenience stores attract a sizeable amount of "pass-by trips". These trips are already traveling past the site on the adjoining public roadways and would turn into the site to patronize the propose uses before continuing on to a different destination. The trips would generate turning movements at the proposed site access driveways but would not represent new trips to the surrounding roadway network.

It should be noted, pass-by trips were not factored into either car dealership or the Car Craft Autobody site given these are destination uses. For all other land uses (Parcels B, C, D, and E), average pass-by trip percentages were referenced within the Trip Generation Handbook, Third Edition, published by ITE. The Handbook does not provide pass-by trips for the Saturday midday peak hour, so the weekday average rates were applied for the corresponding land uses. The applied pass-by trip percentages are summarized in **Table 5**. The proposed trip generation values, including pass-by trips, are summarized in **Table 6**.

Table 5. Pass-By Trip Percentages

Parcel	Intended Land Use	Pass-By Trip Percentage
B	LUC: 934 Fast-Food Restaurant with Drive-Thru Window	49%
C	LUC: 912 Drive-in Bank	35%
D	LUC: 932 High-Turnover (Sit-Down) Restaurant	43%
E	LUC: 934 Fast-Food Restaurant with Drive-Thru Window	49%

Table 6. Trip Generation - Parcels within Study Area

Development	Trip Type	Weekday AM Peak Hour			Weekday MD Peak Hour			Weekday PM Peak Hour			Saturday MD Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Car Craft Autobody	Total Trips	13	0	13	16	8	24	5	5	10	0	0	0
	Pass-By Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Jaguar/Land Rover Car Dealership	Total Trips	42	16	58	39	42	81	30	46	76	62	64	126
	Pass-By Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Adjacent Car Dealership	Total Trips	24	10	34	22	24	46	16	26	42	34	36	70
	Pass-By Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Lot B (1.0 Acre) - QSR with Drive-Thru	Total Trips	68	66	134	91	94	185	56	54	110	94	90	184
	Pass-By Reduction	33	33	66	46	46	92	27	27	54	45	45	90
Lot C (1.002 Acres) - Bank with Drive-Thru	Total Trips	30	22	52	29	30	59	54	56	110	72	70	142
	Pass-By Reduction	9	9	18	11	11	22	20	20	40	25	25	50
Lot D (1.486 Acres) - Sit Down Restaurant	Total Trips	30	24	54	36	36	72	32	20	52	30	30	60
	Pass-By Reduction	12	12	24	16	16	32	11	11	22	13	13	26
Lot E (1.67 Acres) - QSR with Drive-Thru	Total Trips	0	0	0	91	94	185	56	54	110	94	90	184
	Pass-By Reduction	0	0	0	46	46	92	27	27	54	45	45	90
	TOTAL Trips	***207***	***138***	***345***	***324***	***328***	***652***	***249***	***261***	***510***	***386***	***380***	***766***
	Pass-By Trips	54	54	108	119	119	238	85	85	170	128	128	256
	New Trips	153	84	237	205	209	414	164	176	340	258	252	510

Directional Distribution and Trip Assignment

The various uses' new trips were assigned to the study area roadways in accordance with an anticipated directional distribution that reflects the market capture area of the proposed uses and by considering existing prevailing traffic patterns along Chesterfield Airport Road. The proposed directional distribution percentages for new trip are presented in **Table 7**. An aerial image depicting the directional distribution is presented in **Figure 7**.

Table 7. Directional Distribution of New Commercial Trips

Origin/Destination	Percentage
To/From East via Airport Road	60%
To/From West via Airport Road	40%

Figure 7. Directional Distribution of New Trips

Based upon the trip generation calculations and the directional distributions, it was possible to develop traffic assignments for the various assumed developments. **Figure 8** illustrates the additional traffic that would be generated assuming all of the various developments outlined above were constructed. For the purposes of the assignment, it was assumed that Arnage Road was extended to the west so as to intersect the existing access drive serving the expanded Car Craft Autobody site (84 Lumber Lot 1). However, it was assumed that the intersection of the access drive with Chesterfield Airport Road would be limited to right turns only.

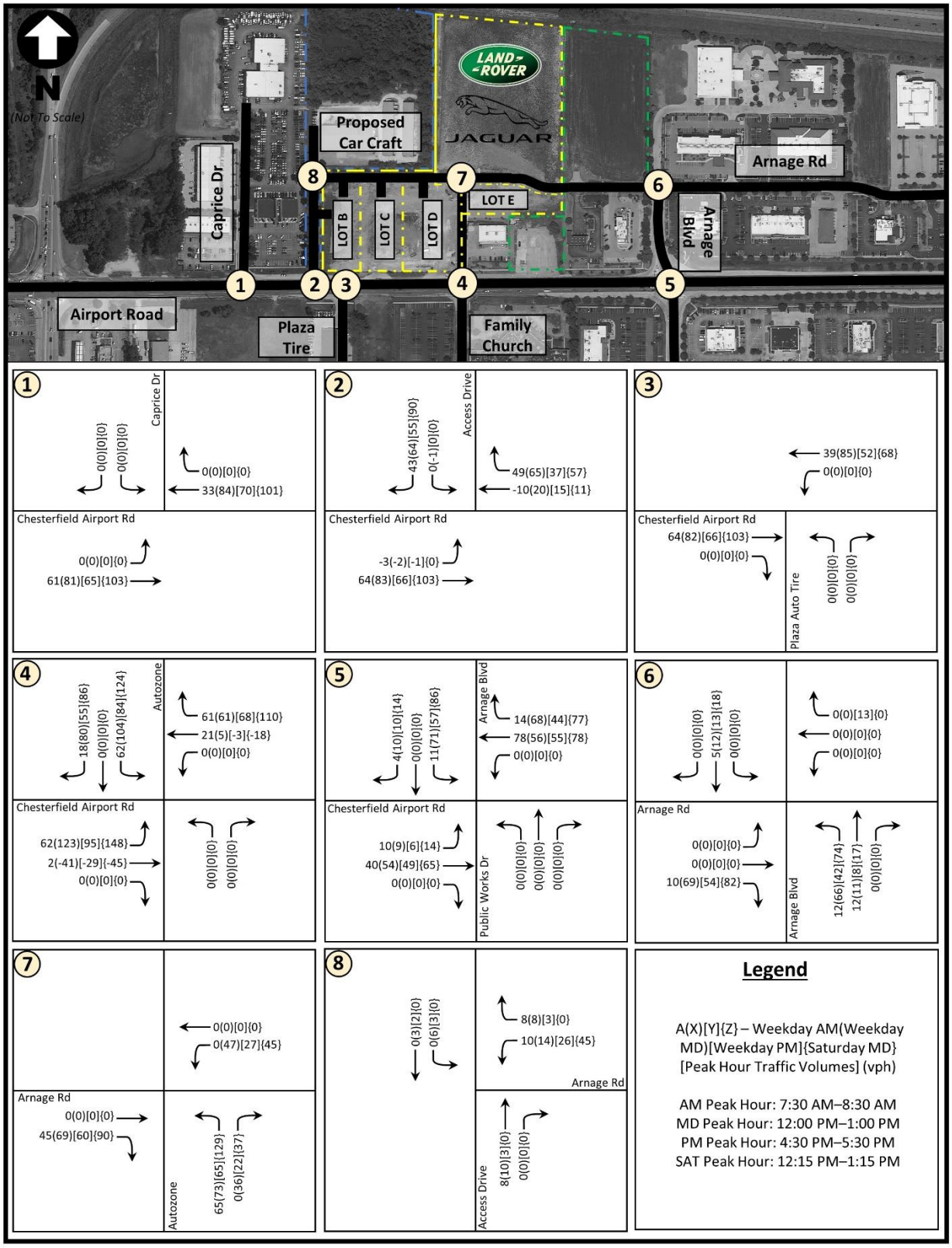

Figure 8. Site Generated Traffic Volumes (Assuming RIRO Access at Western Terminus of Arnage Road)

Year 2025 Conditions

It is anticipated that it would take a few years for the undeveloped lots presented above to achieve approval and construction. Therefore, the year 2025 was agreed upon in discussions with St. Louis County DOT as a reasonable horizon year for the analysis of build out of the area assuming the access drive is retained and limited to right turns only.

Year 2025 Baseline Conditions

Prior to layering on the additional traffic attributable to the development of the vacant parcels within the study area, it was first necessary to develop baseline traffic for the Year 2025. Therefore, the existing traffic volumes along Chesterfield Airport Road (Figure 6) were increased based upon an annual growth rate of 1%, as presented to St Louis County DOT. The 2025 baseline traffic volumes are depicted in **Figure 9**.

The same methodology applied to the existing conditions used to evaluate the 2025 baseline conditions. The 2025 baseline operating conditions are summarized in **Table 8**. As shown, there are minimal traffic impacts resulting from the increased background traffic.

Year 2025 Forecasted Conditions

The 2025 forecasted scenario represents conditions in the year 2025 assuming the proposed Car Craft Autobody facility is expanded as proposed, that the approved Jaguar/Land Rover dealership is constructed and operational, and that the vacant parcels are developed as outlined in the preceding section. Furthermore, this scenario assumes the existing access drive to the expanded Car Craft Autobody site would remain and connect with Arnage Road, thereby creating a tee-intersection. The intersection of the access drive with Chesterfield Airport Road would be restricted to right turns only and the access drive itself would be improved to 26 feet in width. In addition, the existing shoulder along the north side of Chesterfield Airport Road, that is often used as a de-facto right turn lane, should be removed to eliminate any concerns regarding weaving between the proposed right turn only drive and Caprice Lane. Conversely, if the County DOT prefers to maintain a shoulder in this section, striping and signage should be installed to discourage the use of the shoulder as a deceleration lane for Caprice Drive.

The 2025 baseline volumes (Figure 9) were combined with the site generated traffic volumes reflected in Figure 8, resulting in the 2025 forecasted traffic volumes illustrated in **Figure 10**. These forecasted traffic volumes were the basis of the 2025 forecasted conditions analysis.

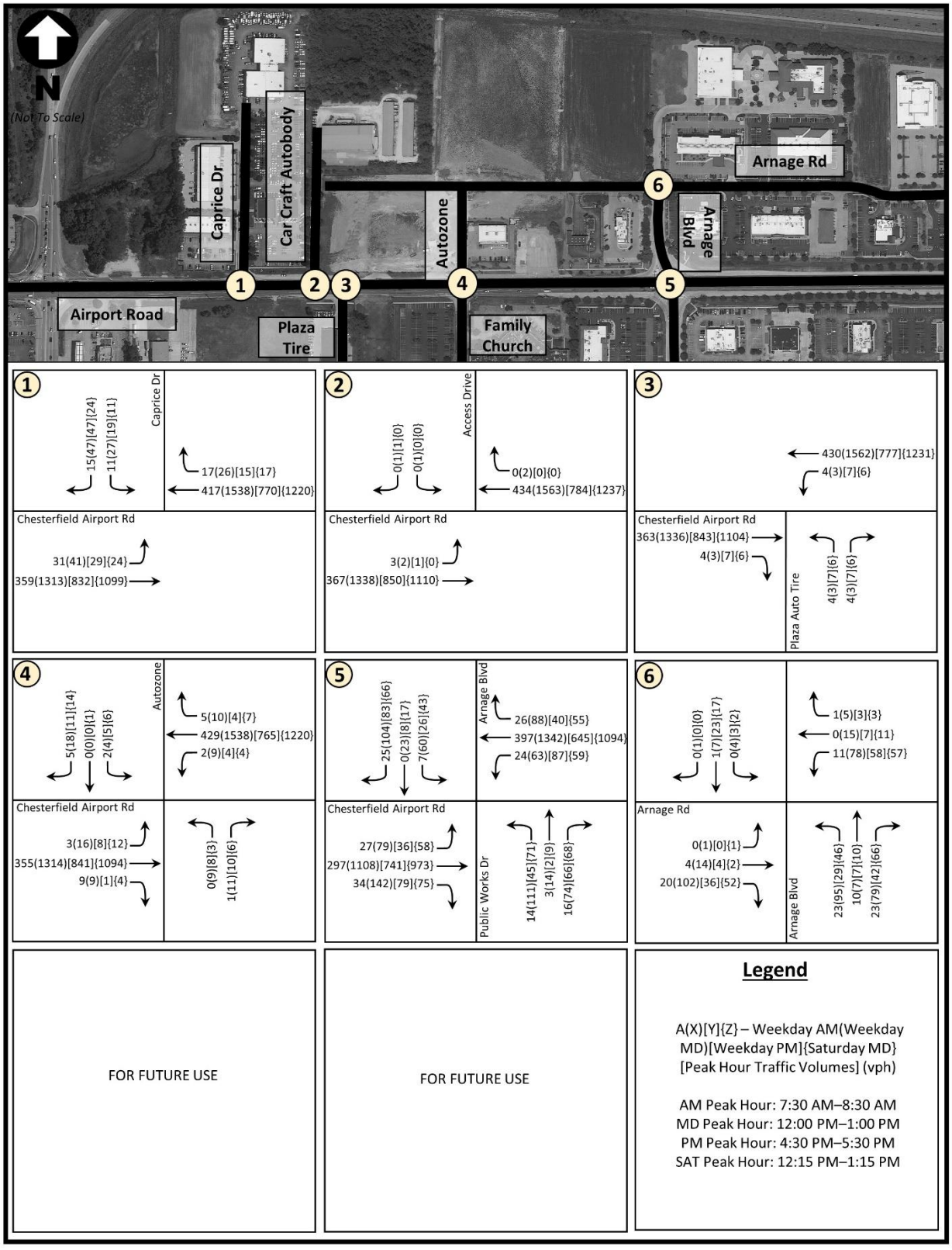

Figure 9. Year 2025 Baseline Traffic Volumes

Table 8. Year 2025 Baseline Operating Conditions

Intersection/ Approach	Weekday AM Peak Hour		Weekday MD Peak Hour		Weekday PM Peak Hour		Saturday MD Peak Hour	
	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)
Chesterfield Airport Road & Caprice Drive (side-street stop-control)								
• Eastbound Left	A (8.5)	<25	C (16.6)	<25	A (9.8)	<25	B (11.8)	<25
• Southbound Approach	B (11.1)	<25	F (55.7)	90	B (14.9)	<25	C (19.7)	<25
Chesterfield Airport Road & 17519 Chesterfield Airport Road Access Drive (side-street stop-control)								
• Eastbound Left	A (3.4)	<25	C (21.6)	<25	A (9.6)	<25	A (0.0)	<25
• Southbound Approach	A (0.0)	<25	D (25.5)	<25	B (11.4)	<25	A (0.0)	<25
Chesterfield Airport Road & Plaza Tire Service (side-street stop-control)								
• Westbound Left	A (8.1)	<25	B (12.8)	<25	A (9.9)	<25	B (11.3)	<25
• Northbound Approach	B (10.5)	<25	C (22.0)	<25	B (14.5)	<25	C (18.2)	<25
Chesterfield Airport Road & AutoZone/Family Church (side-street stop-control)								
• Eastbound Left	A (8.4)	<25	C (16.1)	<25	A (9.5)	<25	B (12.2)	<25
• Westbound Left	A (8.0)	<25	B (12.9)	<25	A (9.7)	<25	B (11.0)	<25
• Northbound Approach	A (9.4)	<25	E (44.5)	<25	C (19.8)	<25	D (27.2)	<25
• Southbound Approach	B (11.8)	<25	D (25.0)	<25	B (13.8)	<25	C (21.8)	<25
Chesterfield Airport Road & Arnage Boulevard/Public Works Drive (signalized)								
Overall Intersection	A (5.5)		B (15.6)		A (8.2)		B (11.6)	
• Eastbound Approach	A (3.7)	51	B (12.0)	358	A (6.3)	158	A (8.8)	236
• Westbound Approach	A (4.0)	69	B (14.5)	472	A (5.3)	128	A (9.4)	276
• Northbound Approach	C (25.2)	<25	D (36.9)	117	C (26.8)	65	C (33.7)	84
• Southbound Approach	A (10.0)	<25	C (21.8)	71	C (22.9)	44	C (23.3)	60
Arnage Boulevard & Arnage Road (side-street stop-control)								
• Eastbound Left/Thru	A (9.8)	<25	B (12.2)	<25	B (10.1)	<25	B (10.4)	<25
• Westbound Approach	A (9.4)	<25	B (14.7)	<25	B (10.5)	<25	B (11.1)	<25
• Northbound Left	A (7.2)	<25	A (7.4)	<25	A (7.3)	<25	A (7.3)	<25
• Southbound Left	A (9.4)	<25	A (7.4)	<25	A (7.3)	<25	A (7.3)	<25

Delay presented in seconds per vehicle

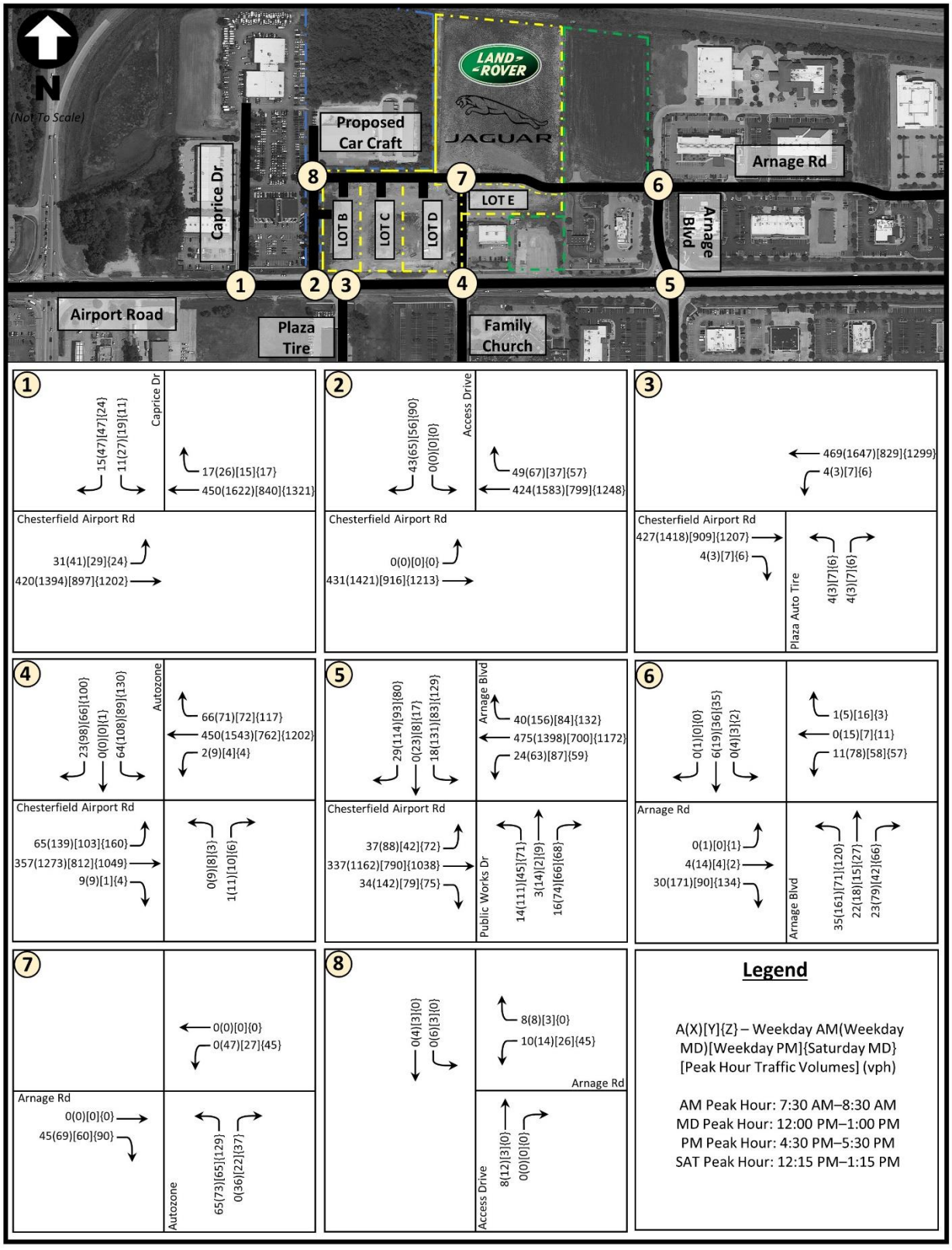

Figure 10. Year 2025 Forecasted Traffic Volumes (Assuming RIRO Access)

Crash Analysis

As requested by St. Louis County DOT, a safety analysis was performed for the Year 2025 in accordance with methodologies outlined in the Highway Safety Manual (HSM). As presented previously in the existing conditions discussion, there does not appear to be any underlying safety concern at the existing access drive which would warrant additional safety analysis. Furthermore, the restriction of the access drive's intersection with Chesterfield Airport Road to right turns only would remove the potential left turn conflicts, thereby improving the safety conditions at the intersection.

However, the HSM provides quantitative analysis to support decision making for improving transportation safety. Its methodology relies upon safety performance functions to correlate crash expectancy with location-specific roadway characteristics, such as the number of lanes, presence of shoulders, speeds, and traffic volumes. The Empirical Bayes Method improves the reliability of the estimate of expected average crash frequency by pooling the estimate from a predictive model with the subject site's observed crash data. This produces an estimate of the expected average crash frequency that combines the model prediction and the site-specific crash data.

Proposed Right Turn Only Intersection

The HSM spreadsheet was utilized for the Chesterfield Airport Road and the proposed intersection with the right turn only access drive to Arnage Road. The HSM predictive methodology forecasts relative changes in crashes under full build conditions when the surrounding area and parcels are fully developed. To reflect the proposed limitation to right turns only at the access drive, the Crash Modification Factor (CMF) of 0.55 (CMF ID: 9821) was applied to the proposed intersection. The expected crash frequency at the proposed restricted access drive and Chesterfield Airport Road is summarized in **Table 9** and is relatively minimal with less than 2 accidents expected annually.

Table 9. HSM Analysis: Intersection of Chesterfield Airport Road & RIRO Access Drive to Arnage Rd

Expected Crash Frequency (Crashes/Year)		
Fatal & Injury	**Property Damage Only**	**Total**
0.634	0.981	1.615

Chesterfield Airport Road Between Proposed Right Turn Only Drive and Caprice Drive

The HSM methodology was also applied to the section of Chesterfield Airport Road between the proposed right turn only drive and Caprice Drive. For the purposes of this analysis, it was assumed that the existing shoulder would be removed or striped/signed to discourage motorists from utilizing the shoulder to decelerate prior to turning onto Caprice Drive. It is imperative that the shoulder not function as an accel/decel lane between the two driveways to eliminate the concerns associated with a weave condition.

Table 10 summarizes the expected crash frequencies results for this section of Chesterfield Airport Road assuming the right turn only intersection is in place as compared to the scenario where the drive is removed altogether. Please be advised that the summary results reflect both the intersections and roadway segments that were inputted into HSM's spreadsheets.

Table 10. HSM Analysis: Chesterfield Airport Road – RIRO to Caprice Drive

Expected Crash Frequency (Crashes/Year)			
Scenario	**Fatal & Injury**	**Property Damage Only**	**Total**
With RIRO Access to Arnage Road	1.306	2.091	3.396
Without RIRO Access to Arnage Road	0.858	1.455	2.313

Chesterfield Airport Road & Autozone Drive

In addition, the expected crash frequency at the unsignalized intersection of the AutoZone Drive with Chesterfield Airport Road was also evaluated; with and without the right turn only drive to the west in place. It is undeniable that if the access drive to the west is not retained, most of the traffic expected to utilize that drive would shift to the unsignalized access drive adjacent to the AutoZone. **Table 11** compares the expected crash frequency at this location. The provision of the right turn only access to the west results in a lower expected crash frequency at the Autozone Drive.

Table 11. HSM Analysis: Intersection of Chesterfield Airport Road & Autozone Drive

Expected Crash Frequency (Crashes/Year)			
Scenario	**Fatal & Injury**	**Property Damage Only**	**Total**
With RIRO Access to the West	1.950	2.430	4.379
Without RIRO Access to the West	2.027	2.506	4.533

Operating Conditions

The 2025 forecasted operating conditions at the critical intersections within the study area were analyzed using the same methodology applied to the existing and baseline conditions. Again, the access drive's intersection with Chesterfield Airport Road was assumed to be restricted to right turns only. The 2025 forecasted operating conditions are summarized in **Table 12**.

As shown, the increase due to traffic generated by the buildout within the study area does have an impact on traffic operations in the surrounding area. Side street operations along Caprice Drive and Plaza Tire Service access drives worsen slightly due to the increase in through traffic along Chesterfield Airport Road. Forecasted conditions at the signalized intersection of Chesterfield Airport Road and Arnage Boulevard remains at a LOS B or better overall. A slight deterioration in performance can be seen on the southbound approach, as this approach has in increase in traffic volumes due to the continued development within the study area. However, the 95th percentile queue would be approximately 140 feet for the worst peak period condition and would easily be accommodated by the provided storage bay.

The proposed restricted intersection of the Car Craft Autobody access drive with Chesterfield Airport Road would operate with acceptable conditions during the peak periods. The proposed right turn only connection is anticipated to serve up to 150 vehicles, depending upon the peak hour considered. The forecasted 95th percentile queue would be less than 100 feet, which would easily be accommodated. It

is recommended that this access drive be widened to provide 26 feet in width and that no parking be allowed along the drive. Furthermore, it is recommended that the right turn restriction be enforced via the construction of a raised median within the access drive's approach.

The greatest impact on traffic operations as a result of continued development in the area would occur at the intersection of Chesterfield Airport Road with the existing AutoZone access drive. This drive is currently comprised of a single lane approach only. The continued development in the area could add 80 or more left turns to the southbound approach, while simultaneously adding to the eastbound left turn onto the drive, which would effectively minimize the available gaps in the traffic flow. Given the single lane approach, oversaturated conditions are likely for the southbound approach during the weekday and Saturday midday peak periods, which would result in lengthy vehicular queues. These conditions are not surprising given mainline traffic and southbound volumes are heaviest during these peak periods.

However, in order to alleviate this possible congestion, the impact of installing a dedicated southbound left turn lane along the AutoZone access drive at Chesterfield Airport Road was explored. Based upon field inspections, the drive adjacent to AutoZone is approximately 36 feet in width, which is more than adequate to stripe the southbound approach to accommodate a dedicated left turn lane. **Table 13** summarizes the conditions at the improved intersection for the critical peak periods. While delays remain appreciable for the southbound left turn, the installation of the dedicated left turn lane allows southbound right turn traffic to bypass the left turn queue, greatly reducing the anticipated 95th percentile queues for the approach. TSG intends to complete this restriping in late May/early June 2021. However, even with this improvement, there are times during the midday peak hours when the southbound queues on this access drive could be excessive.

The additional traffic generated by the continued development in the area was assigned to the road network in a fashion which maximized convenience for the motorist. For example, a motorist traveling to Car Craft Autobody from the west, would likely make a westbound left turn at the AutoZone access drive rather than traveling further east to the signalized intersection at Arnage Boulevard. Or, similarly, the majority of the traffic exiting the potential restaurant on Lot E would opt to exit via the unsignalized access drive adjacent to AutoZone given its close proximity. As a result, this methodology presents a "worst case" analysis. However, as queues build up on the unsignalized drive adjacent to AutoZone and the delays to turn left onto or off of the access drive increase, some motorists will divert to the signalized intersection at Arnage Boulevard for a safe and efficient means of accessing Chesterfield Airport Road.

For this reason, a sensitivity analysis was conducted, shifting southbound left turning traffic away from the AutoZone access drive and to the southbound left turn movement at the signalized intersection on Arnage Boulevard. Traffic volumes were shifted in increments of 20 vehicles until the anticipated southbound peak queue along Arnage Boulevard reached its storage capacity. The analysis was conducted for only the weekday midday peak period, as this peak period represents the most critical traffic conditions for both intersections. If the shift in traffic could be accommodated during this time period, then it stands to reason that it could be accommodated during the other peak periods. It should also be noted that the recommended southbound left turn lane along the AutoZone access drive at its approach to Chesterfield Airport Road was assumed in place for this sensitivity analysis. The results from the sensitivity analysis are summarized in **Table 14**.

Table 12. Year 2025 Forecasted Operating Conditions - (Assuming RIRO Access)

Intersection/ Approach	Weekday AM Peak Hour		Weekday MD Peak Hour		Weekday PM Peak Hour		Saturday MD Peak Hour	
	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)
Chesterfield Airport Road & Caprice Drive (side-street stop-control)								
• Eastbound Left	A (8.6)	<25	C (17.8)	<25	B (10.2)	<25	B (12.5)	<25
• Southbound Approach	B (11.4)	<25	F (68.9)	105	C (15.8)	<25	C (21.8)	<25
Chesterfield Airport Road & 17519 Chesterfield Airport Road Access Drive (side-street stop-control)								
• Southbound Right	B (10.2)	<25	C (21.3)	25	B (12.5)	<25	C (17.0)	25
Chesterfield Airport Road & Plaza Tire Service (side-street stop-control)								
• Westbound Left	A (8.3)	<25	B (13.5)	<25	B (10.2)	<25	B (12.0)	<25
• Northbound Approach	B (10.9)	<25	C (23.7)	<25	C (15.3)	<25	C (19.9)	<25
Chesterfield Airport Road & AutoZone/Family Church (side-street stop-control)								
• Eastbound Left	A (9.0)	<25	D (26.5)	63	B (10.6)	<25	C (17.1)	43
• Westbound Left	A (8.0)	<25	B (12.5)	<25	A (9.6)	<25	B (10.8)	<25
• Northbound Approach	A (9.4)	<25	F (180+)	68	D (27.7)	<25	F (66.0)	<25
• Southbound Approach	C (22.4)	50	F (180+)	828	E (38.1)	108	F (180+)	583
Chesterfield Airport Road & Arnage Boulevard/Public Works Drive (signalized)								
Overall Intersection	A (5.8)		B (16.7)		B (10.5)		B (14.4)	
• Eastbound Approach	A (3.8)	60	B (12.5)	385	A (8.2)	197	B (11.0)	292
• Westbound Approach	A (4.1)	83	B (14.7)	505	A (6.9)	163	B (11.6)	349
• Northbound Approach	C (25.2)	24	D (36.9)	117	C (22.6)	62	C (27.6)	80
• Southbound Approach	B (18.0)	33	C (32.1)	137	C (32.4)	102	D (37.1)	142
Arnage Boulevard & Arnage Road (side-street stop-control)								
• Eastbound Left/Thru	A (8.8)	<25	C (15.1)	<25	B (11.3)	<25	B (13.0)	<25
• Westbound Approach	B (10.1)	<25	C (24.3)	45	B (13.1)	<25	C (16.5)	<25
• Northbound Left	A (7.3)	<25	A (7.5)	<25	A (7.4)	<25	A (7.5)	<25
• Southbound Left	A (0.0)	<25	A (0.0)	<25	A (7.3)	<25	A (7.4)	<25

Delay presented in seconds per vehicle

Table 12 Continued. Year 2025 Forecasted Operating Conditions - (Assuming RIRO Access)

Intersection/ Approach	Weekday AM Peak Hour		Weekday MD Peak Hour		Weekday PM Peak Hour		Saturday MD Peak Hour	
	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)
Arnage Road & AutoZone (all way stop-controlled)								
• Eastbound Thru/Right	A (7.1)	<25	A (7.5)	<25	A (7.3)	<25	A (8.0)	<25
• Westbound left	A (0.0)	<25	A (8.8)	<25	A (8.4)	<25	A (9.1)	<25
• Northbound Approach	A (7.8)	<25	A (8.3)	<25	A (7.9)	<25	A (9.4)	33
• Southbound Approach	A (7.3)	<25	A (7.8)	<25	A (7.6)	<25	A (8.1)	<25
17519 Chesterfield Airport Road Access Drive & Arnage Road (side-street stop-controlled)								
• Southbound Thru/Left	A (0.0)	<25	A (7.2)	<25	A (7.2)	<25	A (7.1)	<25
• Westbound Approach	A (7.8)	<25	A (7.9)	<25	A (8.0)	<25	A (8.1)	<25

Delay presented in seconds per vehicle

Table 13. Year 2025 Forecasted Operating Conditions – AutoZone Drive Improved

Intersection/ Approach	Weekday AM Peak Hour		Weekday MD Peak Hour		Weekday PM Peak Hour		Saturday MD Peak Hour	
	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)
Chesterfield Airport Road & AutoZone/Family Church (side-street stop-control)								
• Southbound Left	C (23.4)	40	F (180+)	455	D (38.4)	68	F (180+)	335
• Southbound Right	B (10.2)	<25	D (27.2)	63	B (12.2)	<25	C (20.0)	38

Table 14. 2025 Forecasted Operating Conditions – Sensitivity Analysis at AutoZone Access Drive

Intersection/ Approach	20 Vehicle Shift		40 Vehicle Shift		60 Vehicle Shift	
	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)	Vehicle LOS (Delay)	95th Queue (ft)
Chesterfield Airport Road & AutoZone Access Drive (side-street stop-control)						
• Southbound Left	F (300+)	363	F (300+)	270	F (300+)	180
Chesterfield Airport Road & Arnage Boulevard (signalized)						
• Southbound Left	D (54.6)	153	D (54.5)	169	E (56.2)	189

As can be seen, the diversion of 60 southbound left turning vehicles from the AutoZone access drive to the signalized intersection at Arnage Boulevard reduces the southbound peak queue length by 50%. At the same time, the diversion of the 60 southbound left turning vehicles only increases the peak queue on Arnage Boulevard by 36 feet. Therefore, the signalized intersection has the capacity necessary to attract some of the southbound traffic away from the AutoZone drive and would be a viable alternative for traffic exiting the study area wanting to turn left onto Chesterfield Airport Road.

Therefore, it is recommended that the southbound approach of the access drive adjacent to AutoZone, as shown in **Figure 11,** be striped to provide two outbound lanes; dedicated left and right (or shared right/through) lanes (TSG intends to complete this restriping in late May/early June 2021). It is recommended that these lanes extend all the way back to the adjacent intersection with Arnage Road since a single lane northbound approach to Arnage Road would operate at a LOS A with minimal queues.

Figure 11. Southbound Approach of Drive Adjacent to AutoZone to Chesterfield Airport Road

It should be noted that a traffic signal could potentially alleviate the forecasted poor traffic operations at the intersection of Chesterfield Airport Road and AutoZone access drive. Ideally, a signal warrant analysis would be conducted in the future that would determine the intersection's eligibility for consideration. However, even if the warrants for signalization are satisfied in the future, there should

be further discussion whether the 775-foot separation between the AutoZone access drive and the adjacent signal at Arnage Boulevard is desirable while maintaining progression along Chesterfield Airport Road given the spacing precedent would be less than currently exists elsewhere along the arterial.

Conclusion

Lochmueller Group has completed the preceding traffic study for The Staenberg Group (TSG) to assess the feasibility of retaining the existing access drive serving the property at 17519 Chesterfield Airport Road (Car Craft Autobody), located along the north side of Chesterfield Airport Road. Currently, the subject site has a drive that provides full access to Chesterfield Airport Road, approximately 265 feet east of Caprice Drive.

Within Chesterfield Valley, the long-term vision has been to develop connector roadways that allow for motorists to traverse between the various commercial entities without having to rely solely on Chesterfield Airport Road. Arnage Road is one such connector road, providing connectivity to multiple developments north of Chesterfield Airport Road via signalized access with Arnage Boulevard and Chesterfield Commons West. TSG extended Arnage Road in 2020 from its terminus (300 feet west of Arnage Boulevard) westward approximately 900 feet, stopping just east of the existing drive serving 17519 Chesterfield Airport Road. However, the existing access drive and extended Arnage Road do not intersect.

Per the City of Chesterfield Ordinance No. 2575, passed in November 2009, the intersection of the drive to 17519 Chesterfield Airport Road with Chesterfield Airport Road is to be removed once access to the site is provided via a proposed connector road to either Arnage Boulevard or to Caprice Drive. The connector road referenced in the ordinance is Arnage Road.

Given the successful operation of the Lou Fusz Ford dealership to the west, it is unlikely that Arnage Road will extend further west to Caprice Drive in the near term, as originally envisioned by Ordinance No. 2575. Therefore, the concept of retaining and improving the existing drive serving 17519 Chesterfield Airport Road, connecting it to Arnage Road and allowing it to serve as the interim western terminus of the road network serving the area is under consideration. In conjunction with this connection, the intersection with Chesterfield Airport Road would be restricted to right turns only. The intent would be that this would be an interim condition. Once Arnage Road is able to extend westward to Caprice Drive, this drive and its limited intersection with Chesterfield Airport Road would no longer be necessary and would be removed.

The Preliminary Development Plan for Car Craft Autobody submitted to the City of Chesterfield proposes the connection of Arnage Road to the existing access drive, as well as a secondary access onto Arnage Road further to the east. The Preliminary Development Plan also depicts the improvement of the access drive to 17519 Chesterfield Airport Road to 26 feet in width and restriction of the intersection with Chesterfield Airport Road to right turns only via the installation of a raised island.

However, the retention and improvement of this access drive would benefit not only the Car Craft Autobody site but also the many vacant parcels north of Chesterfield Airport Road that flank extended Arnage Road. Assuming the vacant parcels develop in a commercial manner consistent with the surrounding area (restaurants and other convenience based uses fronting Chesterfield Airport Road and

auto related dealership similar to the recently approved Jaguar / Land Rover site north of Arnage Road) as many as 766 additional trips would be generated and seeking access to Chesterfield Airport Road.

The impact of these additional trips was evaluated, as requested by the St. Louis County DOT. Given that it would likely take a few years for the undeveloped lots to be constructed, the year 2025 was agreed upon as a reasonable horizon year for the traffic analysis. Based upon the analysis outlined in this report, the following conclusions were reached:

- The parcels likely to develop or redevelop within the study area could generate a total of 345, 652, 510, and 766 trips during the weekday morning, midday, afternoon, and Saturday midday peak periods. This level of traffic generation would benefit from a western point of access to Arnage Road.

- The signalized intersection of Chesterfield Airport Road and Arnage Boulevard operates acceptable under existing, baseline, and forecasted conditions despite the increase in traffic due to continued development in the study area.

- The increase in traffic due to buildout within the study area does have an impact on traffic operations at the unsignalized intersections to Chesterfield Airport Road. Side street operations along Caprice Drive and Plaza Tire Service access drives worsen slightly due to the increase in through traffic along Chesterfield Airport Road.

- The greatest impact on traffic operations as a result of continued development in the area would occur at the unsignalized intersection of Chesterfield Airport Road with the existing access drive adjacent to the AutoZone. This drive is currently comprised of a single lane approach only, albeit wide. Continued development in the area could add 80 or more left turns to the southbound approach, while simultaneously adding to the eastbound left turn onto the drive, which would effectively minimize the available gaps in the traffic flow. Given the single lane approach, oversaturated conditions are likely for the southbound approach during the weekday and Saturday midday peak periods, which would result in lengthy vehicular queues.

- The installation of a dedicated southbound left turn lane along the AutoZone access drive's approach to Chesterfield Airport Road would alleviate the forecasted congestion. Therefore, the drive adjacent to AutoZone should be restriped to accommodate dedicated left and right turn lanes within the existing 36 feet in width (TSG intends to complete this restriping in late May/early June 2021). These lanes should extend back to the adjacent intersection with Arnage Road since a single lane approaching Arnage Road is all that is necessary.

- The proposed restricted intersection of the Car Craft Autobody access drive with Chesterfield Airport Road would operate with acceptable conditions during the peak periods. The proposed right turn only connection is anticipated to serve up to 150 vehicles, depending upon the peak hour considered. The forecasted 95th percentile queue would be less than 100 feet, which would easily be accommodated. It is recommended that this access drive be widened to provide 26 feet in width and that parking be prohibited along the drive and that the right turn

restriction at the intersection with Chesterfield Airport Road be enforced via the construction of a raised median within the access drive's approach.

- The existing shoulder along the north side of Chesterfield Airport Road, that is often used as a de-facto right turn lane to Caprice Drive, should be removed to eliminate any concerns regarding weaving between the proposed right turn only drive and Caprice. Conversely, if the County DOT prefers to maintain a shoulder in this section, striping and signage should be installed to discourage the use of the shoulder as a deceleration lane for Caprice Drive.

- The expected crash frequency at the proposed restricted access drive and Chesterfield Airport Road is relatively minimal with less than 2 accidents expected annually. An examination of the existing crash history does not reveal any underlying safety concern at the existing access drive that would warrant additional safety analysis. The restriction of the access drive's intersection with Chesterfield Airport Road to right turns only would remove the potential left turn conflicts, thereby improving the safety conditions at the intersection.

- The introduction of the right turn only drive would, undeniably, increase the expected crashes along Chesterfield Airport Road between the proposed drive and Caprice Drive just due to the presence of an intersection (as compared to elimination of the drive altogether). However, the expected crash frequency would only increase from 2.313 to 3.396 accidents annually.

- The expected crash frequency at the unsignalized intersection of the AutoZone Drive with Chesterfield Airport Road revealed that if the access drive to the west is not retained, the majority of the traffic expected to utilize that drive would shift to the unsignalized access drive adjacent to the AutoZone. The provision of the right turn only access to the west results in a lower expected crash frequency at the Autozone Drive.

Therefore, it is recommended the existing access drive to 17519 Chesterfield Airport Road be retained, improved, connected to Arnage Road and restricted to right turns only at its intersection with Chesterfield Airport Road. This western terminus of Arnage Road would be an interim condition until such time that Arnage Road can extend westward to Caprice Drive. To do so will provide connectivity north of Chesterfield Airport Road to various commercial entities for over ½ mile and benefit numerous parcels while alleviating the congestion at the unsignalized intersection adjacent to AutoZone.

Please contact our office at (314) 446-3791 if you have any questions or comments concerning this report.

Completed by Lochmueller Group, Inc.