

Planning Commission Staff Report

Meeting Date: September 14, 2020

From: Mike Knight, Assistant City Planner *mk*

Location: West and southwest of the intersection of U.S. Highway 40/ I-64 and Chesterfield Parkway West

Description: **Downtown Chesterfield (Categories A and B) SDCP-Infrastructure Only** : A Site Development Concept Plan for infrastructure only on a 78.4 acre tract of land located south of Wild Horse Creek Road, west of Chesterfield Parkway West, and north and east of Burkhardt Place.

SUMMARY

Stock and Associates Consulting Engineers, Inc. has submitted a Site Development Concept Plan (infrastructure only) for Planning Commission review. This plan depicts the conceptual location of roadway infrastructure including the extension of Burkhardt Place, an internal roadway known as Lake Front Street, along with connecting roadways from Lake Front Street to all exterior roads (Burkhardt Place, Wild Horse Creek Road, and Chesterfield Parkway West). The plan is the first site plan associated with the phased development known as Wildhorse Village. The subject site is located in “Categories A&B” of Downtown Chesterfield. The subject site is zoned “PC&R” Planned Commercial and Residence District and governed under the recently approved terms and conditions of City of Chesterfield Ordinance 3114. A Site Development Concept Plan, Landscape Concept Plan, Signage Concept Plan, and Lighting Fixture Concept Plan is required to be submitted for review and approval before any individual lot can move forward with a Site Development Section Plan.



Figure 1: Aerial Image

SITE HISTORY

Below in Figure 2 is a table that provides a high level historical summary of significant events for the subject site. The events detail the year they occurred, whether they were plan or zoning related, followed by a brief description of the request and the resulting action.

Year	Month	Approval	Description	Action
2008	March	ORD 2449	Consolidation of six zoning districts into one PC&R district creating Downtown Chesterfield	Subsequent site plans were never submitted under zoning regulations of Ordinance 2449
2018	Feb	ORD 2990	Text amendment removing 2.9 acres and adding 3.4 acres	Provided necessary legal description change to facilitate the development for the Aventura development to the north
	Nov	ORD 3023	Incorporated (0.4) acres into PC&R district and amended development criteria	Allowed for separate concept plans north of Wild Horse Creek Road (Category C) and south of Wild Horse Creek Road (Categories A&B).
2019	Feb	SDCP	Concept Plan for Category C	A Site Development Concept Plan, Landscape Concept Plan, Signage Concept Plan, and Lighting Fixture Concept Plan for the 22 acre phased development north of WHCR in which future individual lots may now seek approval to develop
		SDSP	Lot A of Category C	Allowed for development of a mixed-use building containing residential units, retail, and restaurant on Lot A.
2020	Feb	SDSP	Lot B of Category C	Allowed for development of a hotel and conference center on Lot B
	Aug	ORD 3114	Incorporated (0.6) acres into PC&R district and amended development criteria	Ordinance to facilitate the development known as Wildhorse Village

Figure 2: Historical Summary

STAFF ANALYSIS

This SDCP has one main objective. **This objective is to receive approval of the conceptual plan for infrastructure within Categories A and B (78 acres south of Wild Horse Creek Road) of Downtown Chesterfield. Once the approval is received, the applicant may move forward with a plan that permits grading to facilitate the construction of the necessary infrastructure involved within the development**

known as Wildhorse Village. When reviewing the Site Development Concept Plan for infrastructure only, there are a few items to consider. These items are bulleted and then further described below.

- Conformance with Preliminary Development Plan
- Recommendations of Traffic Study
- Outside Agency Approval
- Implications of Tree Removal

Conformance to Preliminary Development Plan (PDP):

The site specific governing ordinance for the subject site was recently approved in August of 2020. The ordinance contains a Preliminary Development Plan (PDP). The PDP is a plan that assists in the conceptual layout of the development criteria contained in the ordinance. The approved plan depicts the conceptual location of roadway infrastructure including the extension of Burkhardt Place, an internal roadway known as Lake Front Street, along with connecting roadways from Lake Front Street to Burkhardt Place, Wild Horse Creek Road, and Chesterfield Parkway West. **The roadway network depicted on the submitted Site Development Concept Plan for infrastructure only substantially conforms to the approved Preliminary Development Plan accompanied with the governing ordinance for the property.**

Recommendations of Traffic Study:

CBB completed a study to address the traffic impacts associated with the proposed development known as Wildhorse Village. The study assessed future impacts of roadway capacity and level of service of existing and proposed intersections. The study also identified a series of improvements associated with the development that were warranted based on the potential impact. These improvements include adding additional turn lanes into the development and three new signals. The signals are located at Wild Horse Creek Road and the future extension of Burkhardt Place, at Wild Horse Creek Road and Old Chesterfield Road, and at Chesterfield Parkway West and Burkhardt Place. All three proposed signals were depicted on the approved Preliminary Development Plan. Although all of the signals are depicted on the approved plan as recommended by the developer’s traffic consultant, city staff is working with the development team and St. Louis County on the timing of installation as all of the signals are on St. Louis County arterial roadways of which they will own and maintain. The study provides a summary on every studied intersection in a full build scenario with and without the recommended improvements. There is one intersection that has one turning movement with a failing level of service after all the recommended improvements are implemented. This is the right turn movement heading westbound on Old Chesterfield Road on to Baxter Road during the PM peak period (4:00 – 6:00p.m. CST). It is important to note two things regarding this movement. First, in the existing conditions this movement produces a failing level of service. Second, developments recently constructed in the area (Aventura and Wildhorse) also completed a traffic study in which this movement failed before and after the recommended improvements. It was in the determination of the traffic consultant for the recently approved aforementioned developments and of the currently proposed development that there is not a specific improvement that would alleviate this failure without reconfiguration of the entire corridor including the complexities of the active railroad, Bonhomme Creek, Monarch Chesterfield levee, and the signalized intersection at Edison Road and Baxter Road all being in close proximity to each other. **The proposed SDCP for infrastructure only incorporates all the recommended improvements that were provided in the traffic consultant’s traffic impact study.**

Outside Agency Approval:

Typical of most new and amended site plans, the City of Chesterfield requires approval of the submitted plan from all applicable outside agencies. The two agencies most relevant to this concept plan for infrastructure only are MSD and St. Louis County DOT given the interaction with the previously mentioned St. Louis County arterial roadway system and the amount of sewer and stormwater infrastructure affiliated with the proposed development. **The City has received comments and/or approval from all the applicable outside jurisdictional agencies including the Monarch Fire Protection District, Spirit of St. Louis Airport, Metropolitan Sewer District, Metro Transit, St. Louis County Department of Transportation, and the Missouri Department of Transportation.** The City will look to obtain these same applicable agency approvals as we move forward with the overall Site Development Concept Plan, individual Site Development Section Plans, and all the associated Improvement Plans that take place throughout the phased development.

Implications of Tree Removal:

The recently approved zoning map amendment included a Tree Stand Delineation and Tree Protection Plan. It was stated through the zoning process that the applicant intends on clear cutting the site to allow for the necessary infrastructure associated with the Wildhorse Village development. **The Site Development Concept Plan for infrastructure only depicts the same removal of trees as depicted on the approved Preliminary Development Plan.** If this SDCP is approved by Planning Commission and City Council, then the applicant will move forward with subsequent grading plans that are administratively approved. The grading plans themselves will provide the authorization to the development team to remove the trees from the subject site. Chesterfield Village, Inc currently has 20.45 acres of Tree Canopy Credits approved by the City of Chesterfield. Chesterfield Village, Inc provided the necessary consent for Wildhorse Village, LP to use 5.25 acres of the tree canopy credits in the southwest quadrant of Chesterfield Village in which the Chesterfield Village, Inc has 15.20 acres remaining in the approved tree canopy account.

DEPARTMENTAL INPUT

Staff has reviewed the submittal and has found the application to be in conformance with the City of Chesterfield Unified Development Code and City of Chesterfield Ordinance 3114. Staff recommends approval of the Downtown Chesterfield (Categories A & B) Site Development Concept Plan-Infrastructure Only.

MOTION

The following options are provided to the Planning Commission for consideration relative to this application:

- 1) "I move to approve (or deny) the Downtown Chesterfield (Categories A & B) Site Development Concept Plan-Infrastructure Only."
- 2) "I move to approve the Downtown Chesterfield (Categories A & B) Site Development Concept Plan-Infrastructure Only with the following conditions..." (Conditions may be added, eliminated, altered or modified)

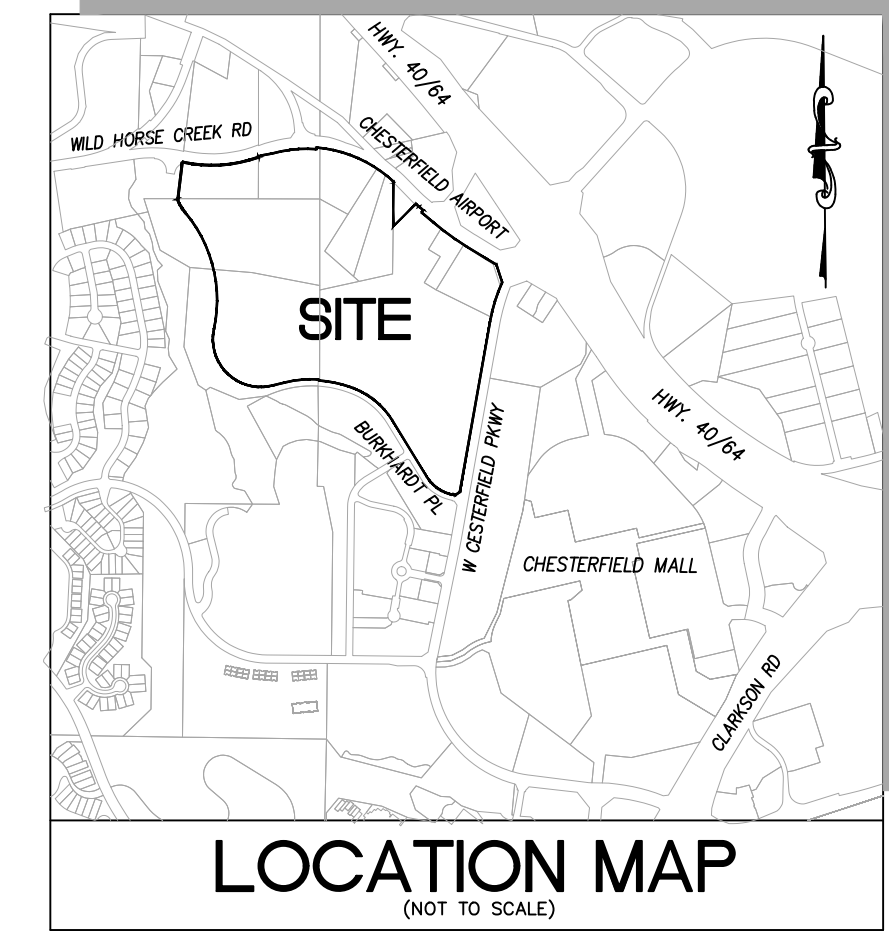
Attachments

1. SDCP – Infrastructure Only
2. Traffic Impact Study

CATEGORIES A & B SITE DEVELOPMENT CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS

A TRACT OF LAND BEING PART OF U.S. SURVEYS 123, 415 AND 2031 AND PART OF LOT C120 OF "CHESTERFIELD VILLAGE AREA A PHASE ONE PLAT TWO" IN TOWNSHIP 45 NORTH RANGE 4 EAST, CITY OF CHESTERFIELD, ST. LOUIS COUNTY, MISSOURI

- PLAN SHEET LEGEND**
- C10 SITE DEVELOPMENT CONCEPT PLAN OVERALL SITE
 - C20 SITE DEVELOPMENT CONCEPT PLAN
 - C30 SITE DEVELOPMENT CONCEPT PLAN
 - C40 SITE DEVELOPMENT CONCEPT PLAN
 - C50 SITE DEVELOPMENT CONCEPT PLAN
 - C60 TYPICAL STREET SECTIONS
 - C70 TRAFFIC SIGNAL CONCEPT PLAN
 - C80 TRAFFIC SIGNAL CONCEPT PLAN
 - C90 TRAFFIC SIGNAL CONCEPT PLAN
 - C10.0 TRAFFIC SIGNAL CONCEPT PLAN
 - TSD-1 SIGNALIZED INTERSECTIONS CONCEPT PLAN
 - TSF-1 TREE STAND DELINEATION
 - TPP-1 TREE PRESERVATION PLAN



PERTINENT DATA

OWNER: WILDHORSE VILLAGE, LP
A MISSOURI LIMITED PARTNERSHIP
BOOK: 23906 - PAGE: 2981

OVERALL AREA: 78.397 Acres ±
EXISTING ZONING: PC & R PER ORDINANCE #3114
LOCATOR NO: 181620206, 181620185, 181630195, 181620053, 181640248, 181640260, 181640271, 181620174, 185410240, 185410206, 181620064, 181630272, 181640883

WUNNERNBERG'S: PG. 21, GRID 18FF & 19EE
SCHOOL DISTRICT: MONARCH FIRE PROTECTION DISTRICT
SEWER DISTRICT: METROPOLITAN ST. LOUIS SEWER DIST.
WATER SHED: MISSOURI RIVER
FEMA MAP: 29199C0165K, FEB 4, 2015
ELECTRIC COMPANY: AMEREN UE
GAS COMPANY: SPIRE INC
PHONE COMPANY: AT&T
WATER COMPANY: MISSOURI AMERICAN WATER COMPANY

PROPERTY DESCRIPTION

AS SURVEYED DESCRIPTION
A TRACT OF LAND BEING PART OF U.S. SURVEYS 123, 415 AND 2031 AND PART OF LOT C120 OF "CHESTERFIELD VILLAGE AREA A PHASE ONE PLAT TWO" IN TOWNSHIP 45 NORTH - RANGE 4 EAST, CITY OF CHESTERFIELD, ST. LOUIS COUNTY, MISSOURI AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF PROPERTY DESCRIBED IN THE DEED TO CHESTERFIELD VILLAGE, INC. RECORDED IN BOOK 6881 PAGE 1748 OF THE ST. LOUIS COUNTY RECORDS; THENCE NORTHWARDLY ALONG THE WEST LINE OF AFORESAID CHESTERFIELD VILLAGE, INC. PROPERTY BEING ALSO THE EAST LINE OF PROPERTY DESCRIBED IN THE DEED TO RICHARD B. COOPER RECORDED IN BOOK 12444 PAGE 731 OF THE ST. LOUIS COUNTY RECORDS NORTH 00 DEGREES 01 MINUTES 02 SECONDS EAST 303.40 FEET TO A POINT ON THE WEST LINE OF RELOCATED WILD HORSE CREEK ROAD VARIABLE WIDTH, IN PLAT BOOK 354 PAGES 865 OF THE ST. LOUIS COUNTY RECORDS; BEING THE POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT; THENCE ALONG THE SOUTH RIGHT OF WAY LINE OF RELOCATED WILD HORSE CREEK ROAD THE FOLLOWING COURSES AND DISTANCES: NORTH 00 DEGREES 02 MINUTES 49 SECONDS EAST 53 FEET TO A POINT ON A CURVE TO THE LEFT, HAVING A RADIUS OF 99.00 FEET, ALONG SAID CURVE AN ARC DISTANCE OF 19.25 FEET AND A CHORD WHICH BEARS NORTH 69 DEGREES 55 MINUTES 45 SECONDS EAST, 19.25 FEET, NORTH 79 DEGREES 48 MINUTES 24 SECONDS EAST 84.71 FEET, TO A POINT ON A CURVE TO THE RIGHT HAVING A RADIUS OF 907.00 FEET, ALONG SAID CURVE AN ARC DISTANCE OF 320.45 FEET, AND A CHORD WHICH BEARS NORTH 54 DEGREES 25 MINUTES 32 SECONDS EAST, 318.79 FEET, NORTH 04 DEGREES 44 DEGREES 49 SECONDS EAST, 12.00 FEET TO A POINT ON A CURVE TO THE RIGHT, HAVING A RADIUS OF 319.00 FEET, AND ALONG SAID CURVE AN ARC DISTANCE OF 623.36 FEET, AND A CHORD WHICH BEARS SOUTH 66 DEGREES 15 MINUTES 18 SECONDS EAST, 611.48 FEET, TO A POINT ON THE WEST LINE OF A ROADWAY, DEDICATION AS RECORDED IN BOOK 8409 PAGE 1232 OF THE ST. LOUIS COUNTY RECORDS; BEING ON THE NORTHERLY EXTENSION OF THE WEST LINE OF LAND CONVEYED TO KERNER PROPERTY HOLDING LLC AS RECORDED IN DEED BOOK 23778 PAGE 3007 OF SAID RECORDS; THENCE SOUTH 00 DEGREES 00 MINUTES 13 SECONDS WEST ALONG THE WEST LINE OF SAID ROADWAY DEDICATION, 6.68 FEET; THENCE ALONG THE SOUTH LINE OF SAID DEDICATION, SOUTH 44 DEGREES 16 MINUTES 55 SECONDS EAST, 222.40 FEET; THENCE NORTH 45 DEGREES 14 MINUTES 26 SECONDS EAST, 9.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF ABOVE SAID RELOCATED WILD HORSE CREEK ROAD; BEING ON A CURVE TO THE LEFT HAVING A RADIUS OF 1181.92 FEET; THENCE THE FOLLOWING COURSES AND DISTANCES: ALONG SAID SOUTH RIGHT OF WAY LINE; ALONG SAID CURVE, AN ARC DISTANCE OF 23.00 FEET, AND A CHORD WHICH BEARS SOUTH 49 DEGREES 04 MINUTES 19 SECONDS EAST, 25.00 FEET; SOUTH 49 DEGREES 46 MINUTES 41 SECONDS EAST 4.14 FEET; SOUTH 44 DEGREES 11 MINUTES 59 SECONDS EAST 3.70 FEET; SOUTH 49 SECONDS 41 MINUTES 26 SECONDS EAST 36.63 FEET; SOUTH 40 DEGREES 25 MINUTES 28 SECONDS WEST 19.97 FEET; SOUTH 49 DEGREES 40 MINUTES 30 SECONDS EAST 112.49 FEET; TO A POINT ON A CURVE TO THE LEFT HAVING A RADIUS OF 1959.86 FEET; ALONG SAID CURVE AN ARC DISTANCE OF 300.82 FEET, AND A CHORD WHICH BEARS SOUTH 54 DEGREES 04 MINUTES 59 SECONDS EAST, 300.52 FEET; SOUTH 58 DEGREES 25 MINUTES 45 SECONDS EAST 164.17 FEET; TO A POINT ON A CURVE TO THE LEFT HAVING A RADIUS OF 1959.86 FEET; ALONG SAID CURVE AN ARC DISTANCE OF 84.52 FEET, AND A CHORD WHICH BEARS SOUTH 59 DEGREES 40 MINUTES 44 SECONDS EAST, 84.52 FEET; AND SOUTH 17 DEGREES 50 MINUTES 47 SECONDS EAST 135.74 FEET TO A POINT ON THE WEST LINE OF CHESTERFIELD VILLAGE PARKWAY, 73 FEET WIDE, BEING ON A CURVE TO THE LEFT HAVING A RADIUS OF 1185.57 FEET; THENCE THE FOLLOWING COURSES AND DISTANCES: ALONG SAID WEST RIGHT OF WAY LINE; ALONG SAID CURVE AN ARC DISTANCE OF 296.68 FEET, AND A CHORD WHICH BEARS SOUTH 17 DEGREES 11 MINUTES 06 SECONDS WEST, 295.91 FEET; SOUTH 10 DEGREES 03 MINUTES 12 SECONDS WEST, 1292.43 FEET, AND SOUTH 55 DEGREES 55 SECONDS WEST 35.38 FEET TO THE NORTH RIGHT OF WAY LINE OF BURKHARDT PLACE, VARIATION AS RECORDED IN DEED BOOK 23778 PAGE 3007 OF SAID RECORDS; THENCE THE FOLLOWING COURSES AND DISTANCES: ALONG SAID NORTH RIGHT OF WAY LINE; SOUTH 10 DEGREES 01 MINUTES 02 SECONDS WEST 3.50 FEET, TO A POINT ON A CURVE, TO THE RIGHT HAVING A RADIUS OF 287.23 FEET; ALONG SAID CURVE, AN ARC DISTANCE OF 244.09 FEET, AND A CHORD WHICH BEARS NORTH 55 DEGREES 47 MINUTES 14 SECONDS WEST 237.35 FEET; NORTH 31 DEGREES 28 MINUTES 20 SECONDS WEST, 472.44 FEET; TO A POINT ON A CURVE TO THE LEFT HAVING A RADIUS OF 588.00 FEET; ALONG SAID CURVE AN ARC DISTANCE OF 301.80 FEET, AND A CHORD WHICH BEARS NORTH 49 DEGREES 10 MINUTES 57 SECONDS WEST, 346.20 FEET; TO A POINT OF COMPOUND CURVE, HAVING A RADIUS OF 818.00 FEET; ALONG SAID CURVE AN ARC DISTANCE OF 281.27 FEET, AND A CHORD WHICH BEARS NORTH 76 DEGREES 46 MINUTES 37 SECONDS WEST, 1279.89 FEET; NORTH 03 DEGREES 22 MINUTES 20 SECONDS EAST, 8.50 FEET; TO A POINT ON A CURVE TO THE LEFT HAVING A RADIUS OF 826.50 FEET; ALONG SAID CURVE, AN ARC DISTANCE OF 244.42 FEET, AND A CHORD WHICH BEARS SOUTH 84 DEGREES 53 MINUTES 57 SECONDS WEST, 243.53 FEET; SOUTH 76 DEGREES 25 MINUTES 53 SECONDS WEST 99.72 FEET; TO A POINT ON A CURVE TO THE RIGHT HAVING A RADIUS OF 345.00 FEET; ALONG SAID CURVE AN ARC DISTANCE OF 697.80 FEET, AND A CHORD WHICH BEARS NORTH 45 DEGREES 37 MINUTES 28 SECONDS WEST, 584.80 FEET; TO A POINT OF REVERSE CURVE TO THE LEFT HAVING A RADIUS OF 985.00 FEET; ALONG SAID CURVE, AN ARC DISTANCE OF 900.56 FEET, AND A CHORD WHICH BEARS NORTH 13 DEGREES 53 MINUTES 58 SECONDS WEST, 869.52 FEET; TO A POINT OF REVERSE CURVE, HAVING A RADIUS OF 900.56 FEET; ALONG SAID CURVE AN ARC DISTANCE OF 284.96 FEET, AND A CHORD WHICH BEARS NORTH 15 DEGREES 34 MINUTES 59 SECONDS WEST, 288.08 FEET; TO THE SOUTH RIGHT OF WAY LINE OF WILD HORSE CREEK ROAD AS DEDICATED BY PLAT BOOK 354 PAGE 365; NORTH 07 DEGREES 22 MINUTES 28 SECONDS EAST, 9.88 FEET; NORTH 07 DEGREES 22 MINUTES 28 SECONDS EAST, 85.54 FEET; NORTH 06 DEGREES 53 MINUTES 40 SECONDS EAST, 12.16 FEET TO THE ABOVE SAID SOUTH RIGHT OF WAY OF WILD HORSE CREEK ROAD; BEING ON A CURVE TO THE LEFT HAVING A RADIUS OF 988.00 FEET; THENCE THE FOLLOWING COURSES AND DISTANCES: ALONG SAID SOUTH RIGHT OF WAY OF WILD HORSE CREEK ROAD, BEING ON A CURVE TO THE LEFT HAVING A RADIUS OF 988.00 FEET; THENCE ALONG SAID CURVE AN ARC DISTANCE OF 559.36 FEET, AND A CHORD WHICH BEARS NORTH 86 DEGREES 04 MINUTES 43 SECONDS EAST, 552.04 FEET TO THE POINT OF BEGINNING AND CONTAINING 78.397 ACRES.

- ST. LOUIS COUNTY NOTES**
- UTILITY WORK WITHIN COUNTY RIGHT-OF-WAY OR EASEMENT REQUIRES A SEPARATE SPECIAL USE PERMIT
 - THE PROPOSED 12' WIDE SHARED USE PATH TO BE MAINTAINED BY THE DEVELOPER.
 - PROPOSED TRAFFIC SIGNALS SHALL BE INSTALLED ONLY WHEN SIGNAL WARRANTS ARE MET. COORDINATE WITH ST. LOUIS COUNTY PRIOR TO ANY TRAFFIC SIGNAL INSTALLATION WORK.
 - COORDINATE WITH COUNTY AR-1817 PRIOR TO THE START OF ANY WORK ON WILD HORSE CREEK ROAD.
 - CHESTERFIELD PARKWAY WEST SIDEWALK IS NOT MAINTAINED BY ST. LOUIS COUNTY.
 - ALL PROPOSED TRAFFIC SIGNALS SHALL BE ADA COMPLIANT, WITH THE NUMBER OF CROSSINGS AS DIRECTED BY COUNTY, AND SIGNAL EQUIPMENT LOCATED AS DIRECTED BY COUNTY, REGARDLESS OF PROPERTY RIGHTS.

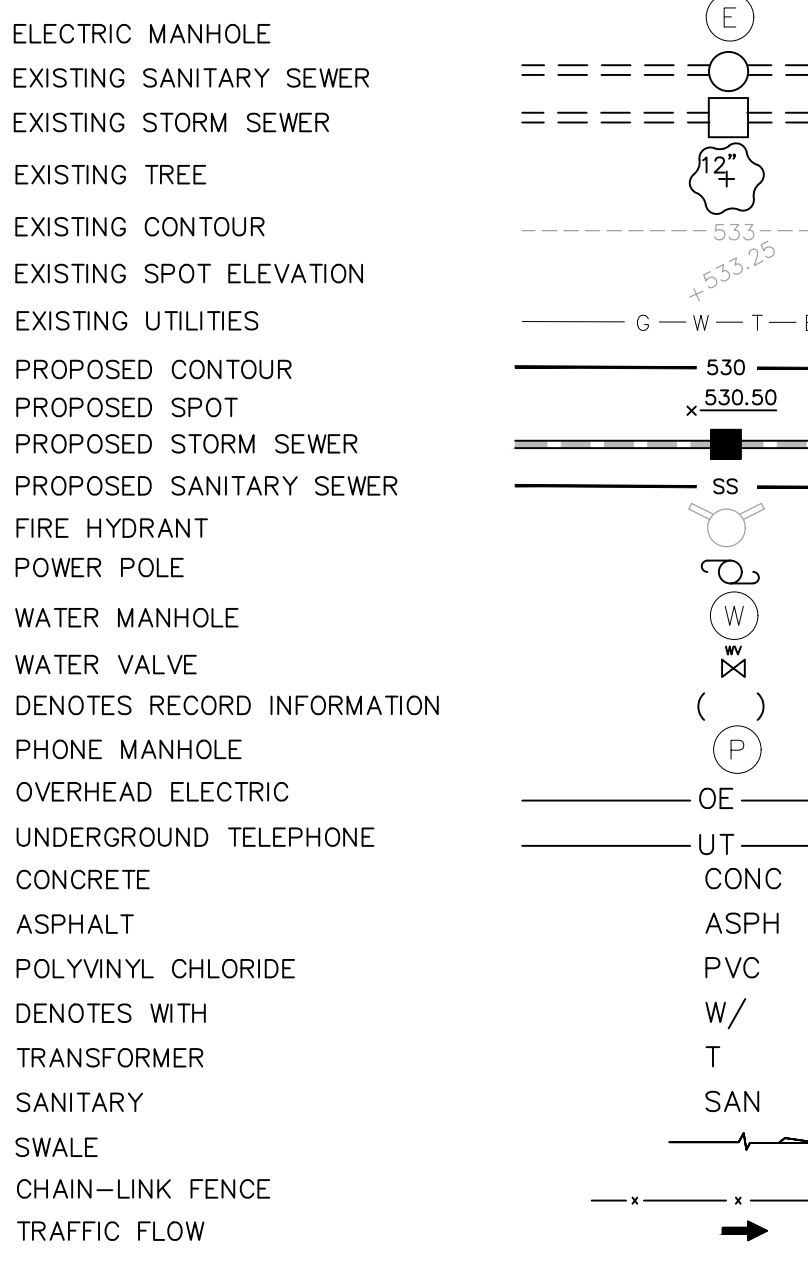
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CATEGORY IDENTIFICATIONS

- (A) - CATEGORY A
 - (B) - CATEGORY B
 - (A/B) - CATEGORY A or B
- METRO**
- (M) - POTENTIAL METRO STOP

LEGEND



ABBREVIATIONS

W	- WATER	DB	- DEED BOOK
OE	- OVERHEAD ELECTRIC	PB	- PLAT BOOK
UE	- UNDERGROUND ELEC.	(F)	- FACE
G	- GAS	(R/C)	- RIGHT-OF-WAY WIDTH
T	- TELEPHONE	(REC)	- RECORD INFORMATION
TBR	- TO BE REMOVED	FT	- FEET
TBR & R	- TO BE REMOVED AND REPLACED	N/O	- NOW OR FORMERLY
UT	- UNDERGROUND TELEPHONE	FND	- FOUND
CONC	- CONCRETE	SD	- SQUARE
ASPH	- ASPHALT	CO	- CLEANOUT
PVC	- POLYVINYL CHLORIDE	MH	- MANHOLE
TW	- TOP OF WALL	AI	- AREA INLET
BWT	- BOTTOM OF WALL	CI	- CURB INLET
PMT	- PAYMENT	GI	- GRATE INLET
ASPH	- ASPHALT	PVC	- POLYVINYL CHLORIDE PIPE
CONC	- CONCRETE	RCP	- REINFORCED CONCRETE PIPE
GRND	- GROUND	CMP	- CORRUGATED METAL PIPE
FG	- FINISHED GRADE	VCP	- CLAY PIPE
FF	- FINISHED FLOOR	FL	- FLOWLINE
LL	- LOWER LEVEL	TL	- TALLSTAKE
TT	- TOP OF TURF	ELEV. EL	- ELEVATION
TC	- TOP OF CURB	PROP. PR	- PROPOSED
SG	- SUBGRADE	EXIST. EX	- EXISTING
MG	- METHANE GAS	TYP	- TYPICAL
		BMP	- BEST MANAGEMENT PRACTICES
		SWPPP	- STORMWATER POLLUTION PREVENTION PLAN

GENERAL NOTES

- BOUNDARY AND TOPOGRAPHIC SURVEY BY STOCK & ASSOCIATES CONSULTING ENGINEERS, INC.
- ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER 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.
- NO GRADE SHALL EXCEED 3:1 SLOPE.
- GRADING AND STORM WATER PER M.S.D., MODOT, ST. LOUIS COUNTY, THE CITY OF CHESTERFIELD AND THE MONARCH CHESTERFIELD LEVEE DISTRICT APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED.
- STORMWATER SHALL BE DISCHARGED AT ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE DISCHARGE POINTS.
- ALL UTILITIES WILL BE INSTALLED UNDERGROUND.
- SITE DEVELOPMENT SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS AS OUTLINED IN THE "REVISED PRELIMINARY GEOTECHNICAL EXPLORATION" PREPARED BY MIDWEST TESTING (MT JOB NO. 14938), DATED APRIL 7, 2020.
- SIGNAGE APPROVAL IS A SEPARATE PROCESS.

GEOTECHNICAL STATEMENT

Midwest Testing at the request of Wildhorse Village, LP has provided limited geotechnical services for the project proposed hereon. A preliminary geotechnical exploration was conducted during December 2019 and revised in April 2020 for the development proposed hereon. Our preliminary findings indicate that the earth-related aspects are suitable for the development proposed pursuant to the geotechnical recommendations set forth in our Job No. 14938 report titled "Revised Preliminary Geotechnical Exploration (MT Job No. 14938) Part A/C" - Downtown Chesterfield, Chesterfield, Missouri".

Richard D. Laughlin, P.E.
PE-20132
March 11, 2020
Date

ST. LOUIS COUNTY BENCHMARK

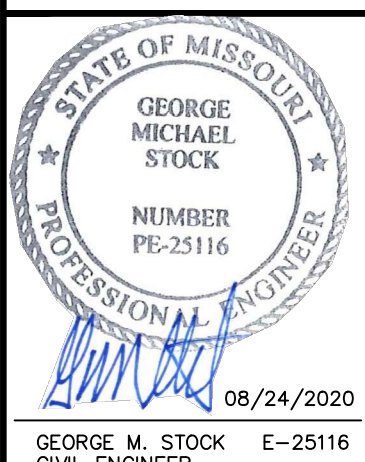
BENCHMARK# 12048
NAD83 Elev = 537.81
5"± on top of curb at end of rounding along the north curb line of the westerly extension of Burkhardt Place on the east side of Chesterfield Village Parkway, 0.2 mile north of Lyda Hills Drive.

PREPARED FOR:
WILDHORSE VILLAGE, LP
A MISSOURI LIMITED PARTNERSHIP
CARE OF CRG
2199 INNERBELT BUSINESS CENTER DR.
ST. LOUIS, MO 63114
PHONE: 314.429.5100
ATTN: JEFF TEGETHOFF - 314.492.2572
OPERATING PARTNER

2577 Chesterfield Business Parkway
St. Louis, MO 63005 PH: (636) 500-9000 FAX: (636) 500-9000
e-mail: general@stockandassociates.com
Web: www.stockandassociates.com

Stock & Associates
Consulting Engineers, Inc.

CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:
WILDHORSE VILLAGE
WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
BURKHARDT PLACE - CHESTERFIELD, MISSOURI



REVISIONS:

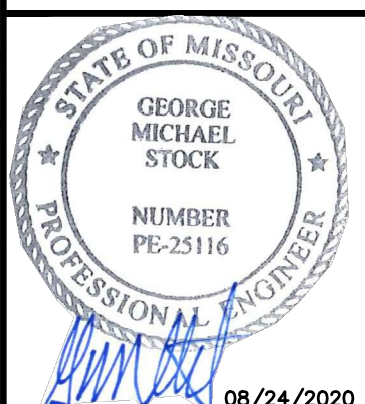
1	4/3/2020	REVISED PER COMMENTS
2	4/17/2020	UPDATED SURVEY BACKGROUND
3	5/29/2020	REVISED PER CITY COMMENTS
4	6/12/2020	REVISED PER CITY PRELIMINARY PLAN COMMENTS
5	6/15/2020	REVISED PER CITY COMMENTS
6	7/23/2020	REVISED PER CITY COMMENTS
7	8/14/2020	REVISED PER CITY COMMENTS
8	8/24/2020	REVISED PER CITY COMMENTS

DRAWN BY: G.M.S.
CHECKED BY: G.M.S.
DATE: 03/11/2020
JOB NO: 219-6670
SCALE: AS SHOWN
S.L.C. PART #: 185/18T
M.D.N.R. #: -
SHEET TITLE: **SITE DEVELOPMENT CONCEPT PLAN (OVERALL SITE)**
SHEET NO.: **C10**

NOTE: SEE SHEET C40 FOR SITE SECTION A-A AND B-B
SEE SHEET C60 FOR TYPICAL STREET SECTIONS

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, IN 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.

MoDOT LOCATE (314) 340-4100



08/24/2020

GEORGE M. STOCK E-25116
 CIVIL ENGINEER
 CERTIFICATE OF AUTHORITY
 NUMBER: 000996

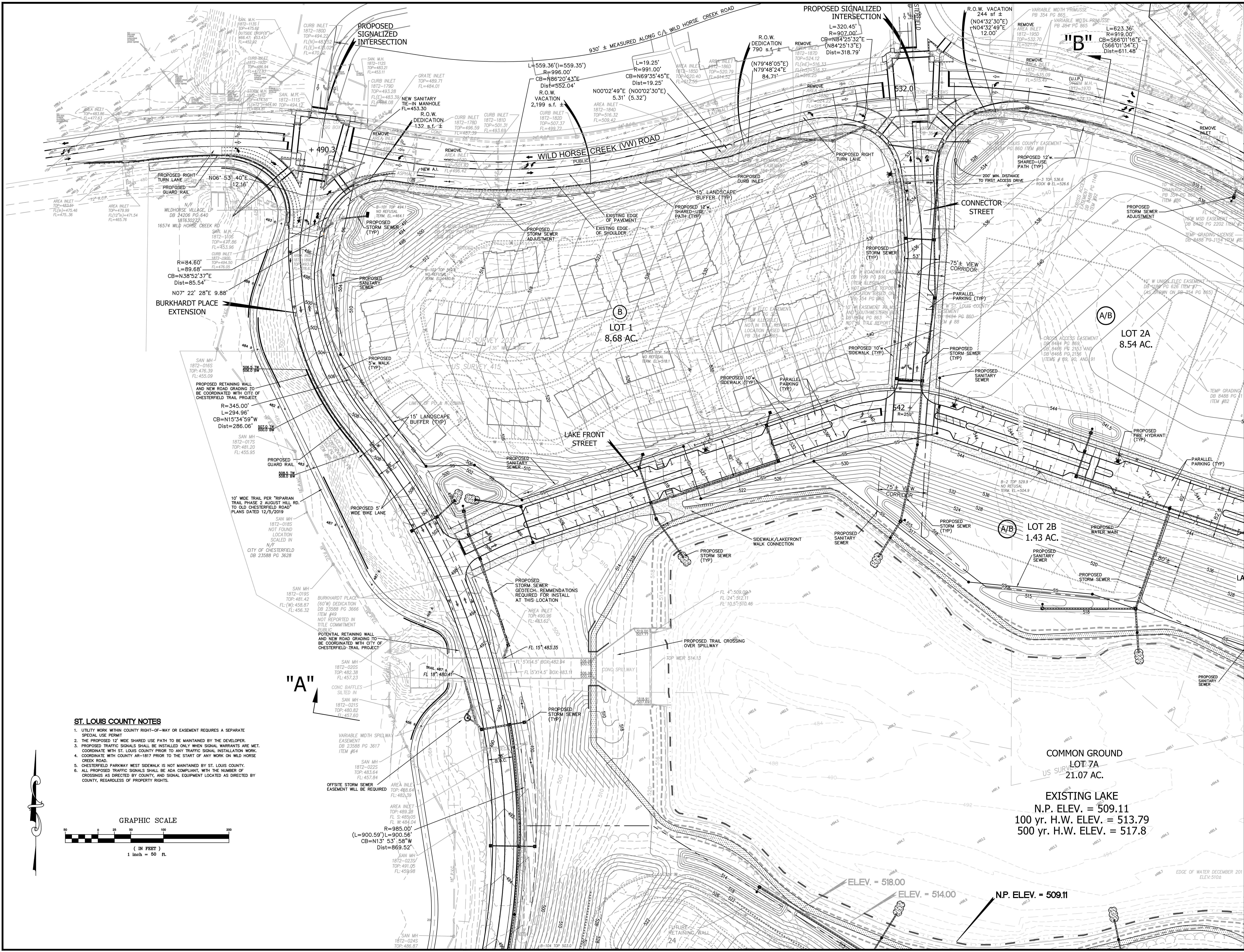
REVISIONS:

1	4/3/2020 REVISED PER COMMENTS
2	4/17/2020 UPDATED SURVEY BACKGROUND
3	5/29/2020 REVISED PER CITY COMMENTS
4	6/12/2020 REVISED PER CITY PRELIMINARY PLAN COMMENTS
5	6/15/2020 REVISED PER CITY COMMENTS
6	7/23/2020 REVISED PER CITY/COUNTY COMMENTS
7	8/14/2020 REVISED PER CITY/COUNTY COMMENTS
8	8/24/2020 REVISED PER COUNTY COMMENTS

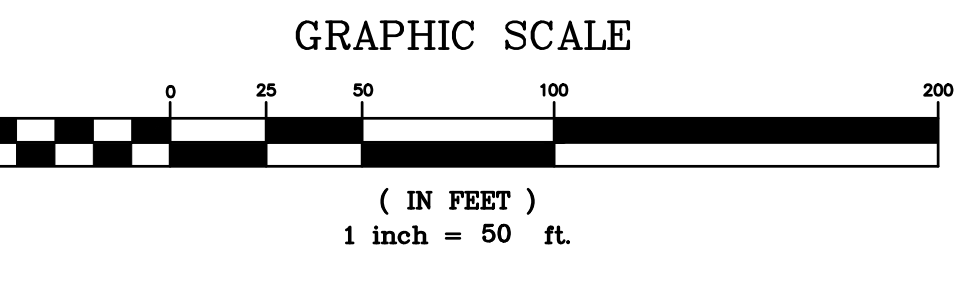
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 DATE: 03/11/2020 JOB NO: 219-6670
 DESIGNED BY: G.M.S. DATE PLOTTED: 185/181
 S.L.C. HWT # HWT S.U.P. #
 M.D.N.R. #

SHEET TITLE:
SITE DEVELOPMENT CONCEPT PLAN

SHEET NO.:
C2.0



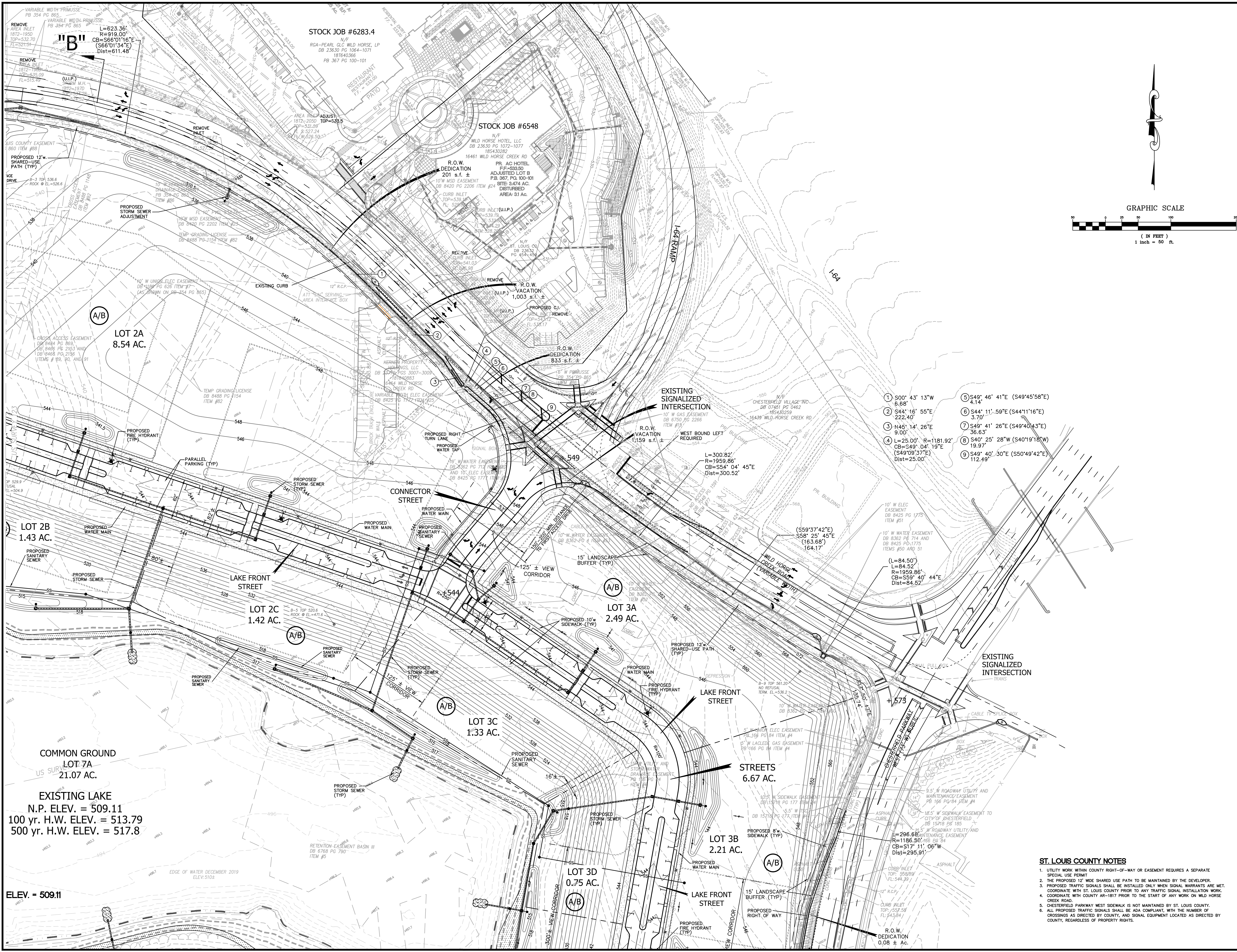
- ST. LOUIS COUNTY NOTES**
- UTILITY WORK WITHIN COUNTY RIGHT-OF-WAY OR EASEMENT REQUIRES A SEPARATE SPECIAL USE PERMIT
 - THE PROPOSED 12' WIDE SHARED USE PATH TO BE MAINTAINED BY THE DEVELOPER.
 - PROPOSED TRAFFIC SIGNALS SHALL BE INSTALLED ONLY WHEN SIGNAL WARRANTS ARE MET. COORDINATE WITH ST. LOUIS COUNTY PRIOR TO ANY TRAFFIC SIGNAL INSTALLATION WORK.
 - COORDINATE WITH COUNTY AR-1817 PRIOR TO THE START OF ANY WORK ON WILD HORSE CREEK ROAD.
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COMMON GROUND
 LOT 7A
 21.07 AC.

EXISTING LAKE
 N.P. ELEV. = 509.11
 100 yr. H.W. ELEV. = 513.79
 500 yr. H.W. ELEV. = 517.8

ELEV. = 518.00
 ELEV. = 514.00
 N.P. ELEV. = 509.11



"B"
 L=623.36'
 R=919.00'
 CB=S66°01'16"E
 (S66°01'34"E)
 Dist=611.48'

STOCK JOB #6283.4
 N/F
 ROA-PEARL OLD WILD HORSE LP
 DB 23630 PG 1064-1071
 181640366
 PB 367 PG 100-101

STOCK JOB #6548
 N/F
 WILD HORSE HOTEL LLC
 DB 23630 PG 1072-1077
 185430282

LOT 2A
 8.54 AC.

LOT 2B
 1.43 AC.

LOT 2C
 1.42 AC.

LOT 3A
 2.49 AC.

LOT 3C
 1.33 AC.

LOT 3D
 0.75 AC.

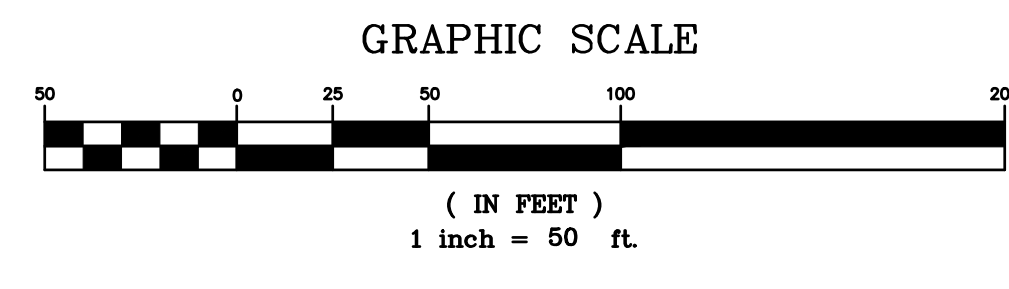
LOT 3B
 2.21 AC.

STREETS
 6.67 AC.

COMMON GROUND
 LOT 7A
 21.07 AC.

EXISTING LAKE
 N.P. ELEV. = 509.11
 100 yr. H.W. ELEV. = 513.79
 500 yr. H.W. ELEV. = 517.8

ELEV. = 509.11



- ① S00° 43' 13"W
6.68'
- ② S44° 16' 55"E
222.40'
- ③ N45° 14' 26"E
9.00'
- ④ L=25.00' R=1181.92'
CB=S49° 04' 19"E
(S49°08'37"E)
Dist=25.00'
- ⑤ S49° 46' 41"E (S49°45'58"E)
3.14'
- ⑥ S44° 11' 59"E (S44°11'16"E)
3.70'
- ⑦ S49° 41' 26"E (S49°40'43"E)
36.63'
- ⑧ S40° 25' 28"W (S40°19'18"W)
19.97'
- ⑨ S49° 40' 30"E (S50°49'42"E)
112.49'

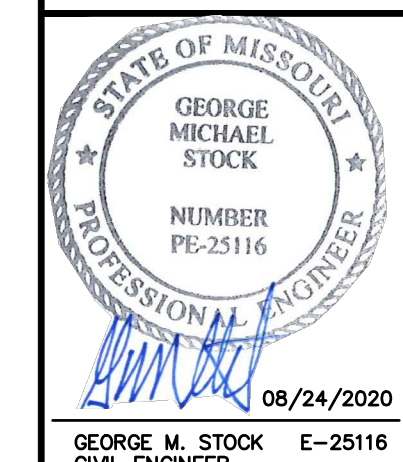
L=300.82'
 R=1959.86'
 CB=S54° 04' 45"E
 Dist=300.52'

(S59°37'42"E)
 S58° 25' 45"E
 (163.68')
 164.17'

(L=84.50')
 L=84.52'
 R=1959.86'
 CB=S59° 40' 44"E
 Dist=84.52'

PREPARED BY:
STOCK & ASSOCIATES
 Consulting Engineers, Inc.
 257 Chesterfield Business Parkway
 St. Louis, MO 63005 PH: (636) 590-9000
 590-9000 FAX: (636) 590-9000
 e-mail: general@stockass.com
 Web: www.stockass.com

CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:
WILDHORSE VILLAGE
 WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
 BURKHARDT PLACE - CHESTERFIELD, MISSOURI



REVISIONS:

NO.	DATE	REVISION
1	4/3/2020	REVISED PER COMMENTS
2	4/17/2020	UPDATED SURVEY BACKGROUND
3	5/29/2020	REVISED PER CITY COMMENTS
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ST. LOUIS COUNTY NOTES

- UTILITY WORK WITHIN COUNTY RIGHT-OF-WAY OR EASEMENT REQUIRES A SEPARATE SPECIAL USE PERMIT.
- THE PROPOSED 12' WIDE SHARED USE PATH TO BE MAINTAINED BY THE DEVELOPER.
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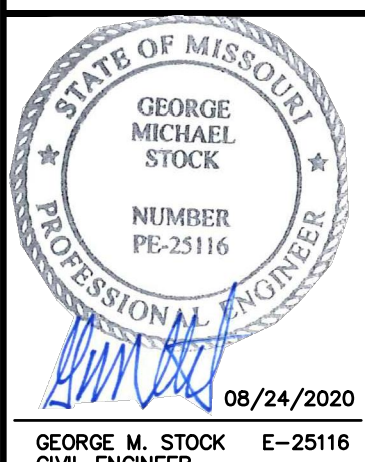
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 DATE: 03/11/2020 JOB NO: 219-6670
 S.C.E.D. # 185/181
 S.L.C. HAT # HAT S.U.P. #
 M.D.N.R. #
SITE DEVELOPMENT CONCEPT PLAN
 SHEET NO.: **C3.0**

PREPARED BY:

CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:

WILDHORSE VILLAGE

WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
 BURKHARDT PLACE - CHESTERFIELD, MISSOURI



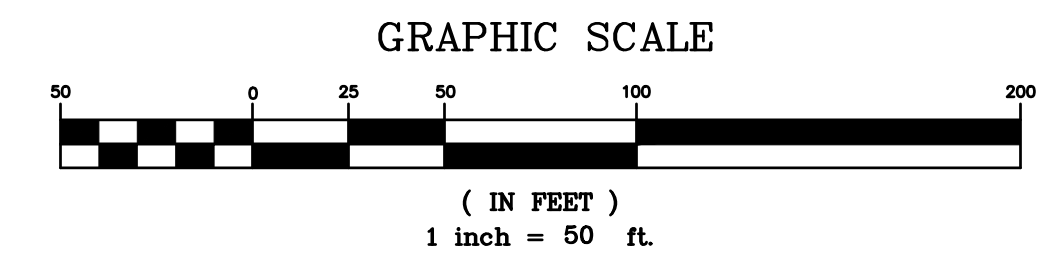
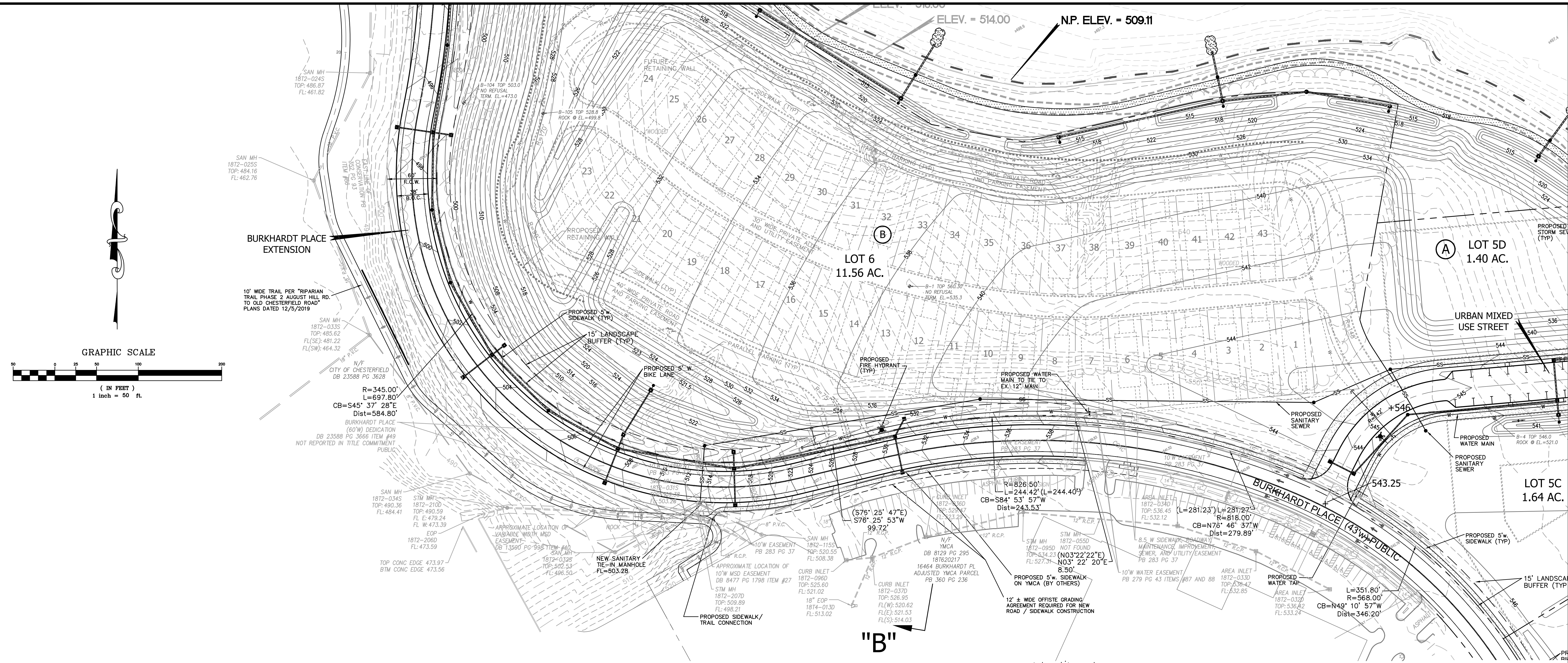
GEORGE M. STOCK E-25116
 CIVIL ENGINEER
 CERTIFICATE OF AUTHORITY
 NUMBER: 00996

REVISIONS:

1	4/3/2020	REVISED PER COMMENTS
2	4/17/2020	UPDATED SURVEY BACKGROUND
3	5/29/2020	REVISED PER CITY COMMENTS
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8	8/24/2020	REVISED PER COUNTY COMMENTS

DRAWN BY: A.C.D. CHECKED BY: G.M.S.
 DATE: 03/11/2020 JOB NO.: 219-6670
 REVISION # 185/181
 S.L.C. HWT # HWT SUP. #
 M.D.N.R. #

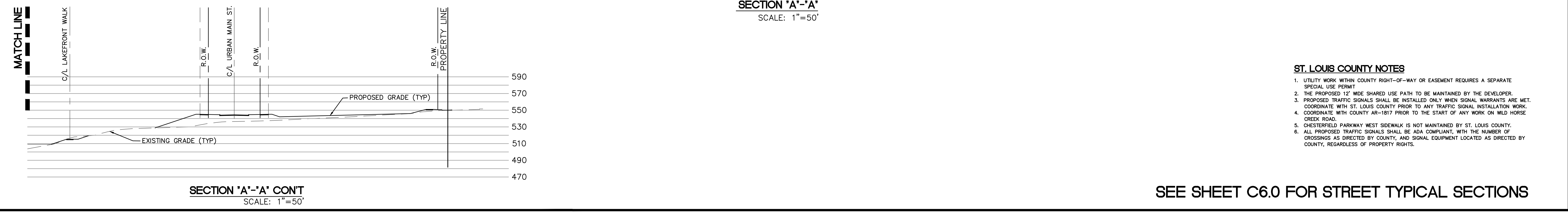
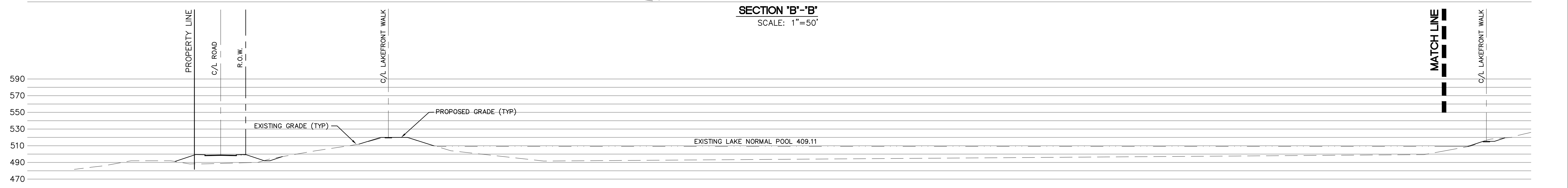
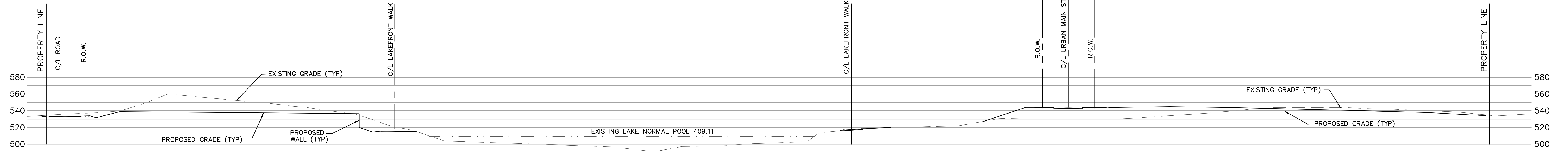
SHEET TITLE:
SITE DEVELOPMENT CONCEPT PLAN
 SHEET NO.: **C40**



BURKHARDT PLACE EXTENSION

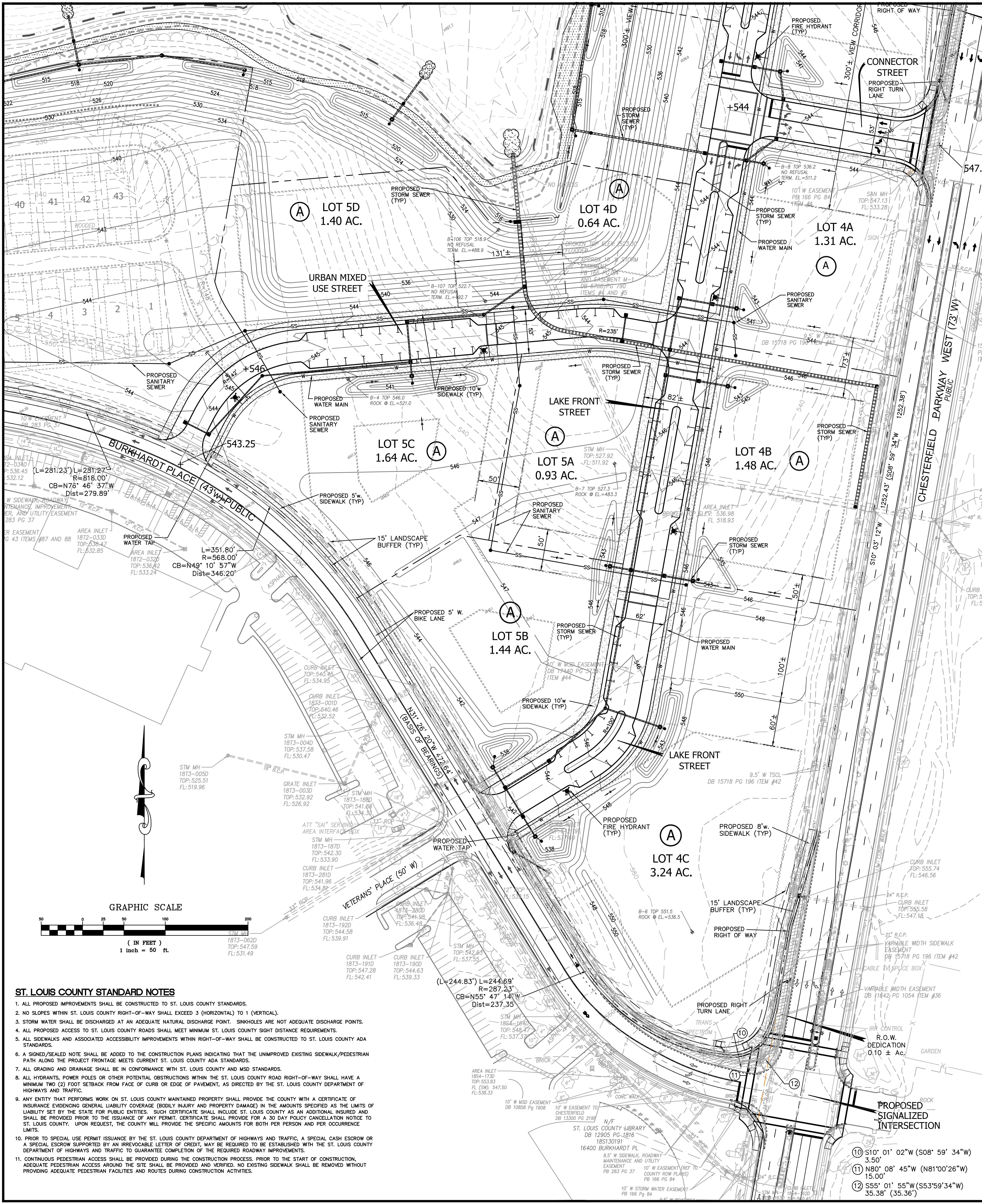
10' WIDE TRAIL PER TRIPARIAN TRAIL PHASE 2 AUGUST HILL RD. TO OLD CHESTERFIELD ROAD PLANS DATED 12/5/2019

R=345.00'
 L=697.80'
 CB=S45° 37' 28"E
 Dist=584.80'
 BURKHARDT PLACE (60' W) DEDICATION DB 23588 PG 368 ITEM #49 NOT REPORTED IN TITLE COMMITMENT PUBLIC



- ST. LOUIS COUNTY NOTES**
- UTILITY WORK WITHIN COUNTY RIGHT-OF-WAY OR EASEMENT REQUIRES A SEPARATE SPECIAL USE PERMIT
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 - ALL PROPOSED TRAFFIC SIGNALS SHALL BE ADA COMPLIANT, WITH THE NUMBER OF CROSSINGS AS DIRECTED BY COUNTY, AND SIGNAL EQUIPMENT LOCATED AS DIRECTED BY COUNTY, REGARDLESS OF PROPERTY RIGHTS.

SEE SHEET C6.0 FOR STREET TYPICAL SECTIONS



GENERAL NOTES

- BOUNDARY AND TOPOGRAPHICAL SURVEY BY STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. (BASIS OF BEARINGS: MISSOURI STATE PLANE, GRID NORTH).
- ALL GRADING AND DRAINAGE TO BE IN CONFORMANCE WITH THE ST. LOUIS COUNTY, MSD AND CITY OF CHESTERFIELD STANDARDS.
- ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER 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, SHOULD ANY CONFLICTS BE EVIDENT, THE CONTRACTOR SHALL NOTIFY THE OFFICE OF THE ENGINEER IMMEDIATELY.
- ARCHITECTURAL ELEVATIONS, SITE LANDSCAPING PLANS, SITE LIGHTING PLANS AND SITE SIGNAGE PLANS SHALL BE SUBMITTED TO THE CITY OF CHESTERFIELD AS INDIVIDUAL LOTS ARE DEVELOPED ON THEIR SITE DEVELOPMENT SECTION PLAN.
- IN ACCORDANCE TO GOVERNING ORDINANCE 3114, A SIGNAGE CONCEPT PLAN, LIGHTING CONCEPT PLAN AND LANDSCAPE CONCEPT PLAN ARE REQUIRED FOR CATEGORIES A & B.
- ON-SITE STORM WATER DRAINAGE REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE SECTION 31-04-12, STORMWATER STANDARDS, IN THE UNIFIED DEVELOPMENT CODE.
- OFF-SITE GRADING EASEMENTS, IF REQUIRED, SHALL BE EXECUTED AND RECORDED PRIOR TO THE COMMENCEMENT OF ANY OFF-SITE GRADING.
- CROSS-ACCESS EASEMENTS WHERE REQUIRED, SHALL BE EXECUTED AND RECORDED AS INDIVIDUAL LOTS ARE DEVELOPED.
- PRIOR TO SPECIAL USE PERMIT ISSUANCE BY THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC, A SPECIAL CASH ESCROW OR A SPECIAL ESCROW SUPPORTED BY AN IRREVOCABLE LETTER OF CREDIT, MUST BE ESTABLISHED WITH THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC TO GUARANTEE COMPLETION OF THE REQUIRED ROADWAY IMPROVEMENTS.
- ALL PROPOSED IMPROVEMENTS WITHIN THE ST. LOUIS COUNTY RIGHT-OF-WAY SHALL BE CONSTRUCTED TO ST. LOUIS COUNTY STANDARDS.
- TREE PRESERVATION AND LANDSCAPING SHALL BE IN ACCORDANCE WITH SECTION 31-04-02, TREE PRESERVATION AND LANDSCAPE REQUIREMENTS, IN THE UNIFIED DEVELOPMENT CODE.
- ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO ST. LOUIS COUNTY AND THE CITY OF CHESTERFIELD STANDARDS.
- APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF SIGNAGE. SIGN APPROVAL IS A SEPARATE PROCESS.
- NO SLOPES WITHIN SAINT LOUIS COUNTY RIGHT-OF-WAY SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL).
- STORM WATER SHALL BE DISCHARGED AS DIRECTED BY THE CITY OF CHESTERFIELD. SINKHOLES ARE NOT ADEQUATE DISCHARGE POINTS.
- A CERTIFICATE OF THE ACTUAL ELEVATION OF THE CONSTRUCTED FLOOR WILL BE REQUIRED PRIOR TO OCCUPANCY OF EACH BUILDING, FOR WHICH A FLOODPLAIN DEVELOPMENT PERMIT IS ISSUED.
- INSTALLATION OF LANDSCAPING AND ORNAMENTAL ENTRANCE MONUMENT OR IDENTIFICATION SIGNAGE CONSTRUCTION SHALL BE REVIEWED BY THE CITY OF CHESTERFIELD AND SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC FOR SIGHT DISTANCE CONSTRUCTION AND APPROVED PRIOR TO INSTALLATION OR CONSTRUCTION.
- THE DEVELOPER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR FACILITIES WITHIN PUBLIC RIGHT-OF-WAY. UTILITY RELOCATION COST SHALL NOT BE CONSIDERED AS AN ALLOWABLE CREDIT AGAINST THE PETITIONER'S TRAFFIC GENERATION ASSESSMENT CONTRIBUTIONS. THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS, SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO ALLOW OCCUPANCY PRIOR TO COMPLETION OF ROAD IMPROVEMENTS.
- ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.

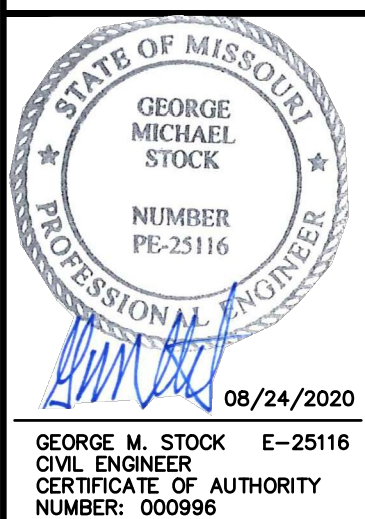
Wildhorse Village, LP, a Missouri Limited Partnership, the owner of the property shown on this plan for and in consideration of being granted a permit to develop property under the provisions of Chapter _____ of the City of Chesterfield (present zoning) _____ ("PC&R" - Planned Commercial & Residence) of the City of Chesterfield (present zoning) _____

Ordinance No. 3114, do hereby agree and declare that said property from the date of recording this plan shall be developed only as shown thereon, unless said plan is amended by the Planning Commission, or voided or vacated by order of ordinance of the City of Chesterfield Council.

Wildhorse Village, LP
by _____
STATE OF MISSOURI }
COUNTY OF ST. LOUIS } ss.

On this _____ day of _____, 2020, before me personally appeared _____, who being by me duly sworn, did say he is the _____ and that said instrument was signed on behalf of said limited liability company, and that said _____ acknowledged said instrument to be the free act and deed of said limited liability company.

IN WITNESS WHEREOF, I have signed and sealed the foregoing the day and year first above written.
Notary Public
Print Name
My commission expires: _____



This Site Development Concept Plan was approved by the City of Chesterfield Planning Commission and duly verified on the _____ day of _____, 2020, by the Chairperson of said Commission, authorizing the recording of this Amended Site Development Section Plan pursuant to Chesterfield Ordinance No. 200, as attested to by the Director of Planning and the City Clerk.

By: Justin Wyse, Director of Planning
By: Vickie McGownd, City Clerk

ST. LOUIS COUNTY NOTES

- UTILITIES WORK WITHIN COUNTY RIGHT-OF-WAY OR EASEMENT REQUIRES A SEPARATE SPECIAL USE PERMIT.
- THE PROPOSED 12' WIDE SHARED USE PATH TO BE MAINTAINED BY THE DEVELOPER.
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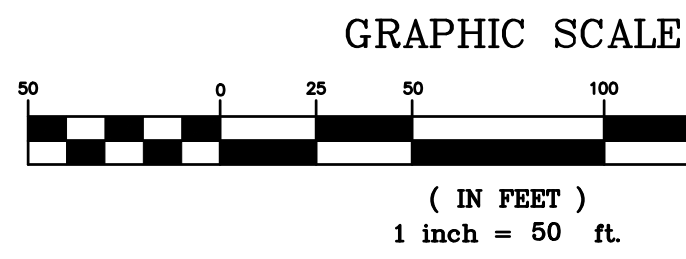
SURVEYOR'S CERTIFICATION

This is to certify that Stock and Associates Consulting Engineers, Inc. has prepared this Site Development Concept Plan from a field survey and does not represent a property boundary survey. The information shown is a correct representation of all existing and proposed land divisions.

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC.
L.S. No. 222-D
Walter J Pfeifer, Missouri L.S. No. 2008000728

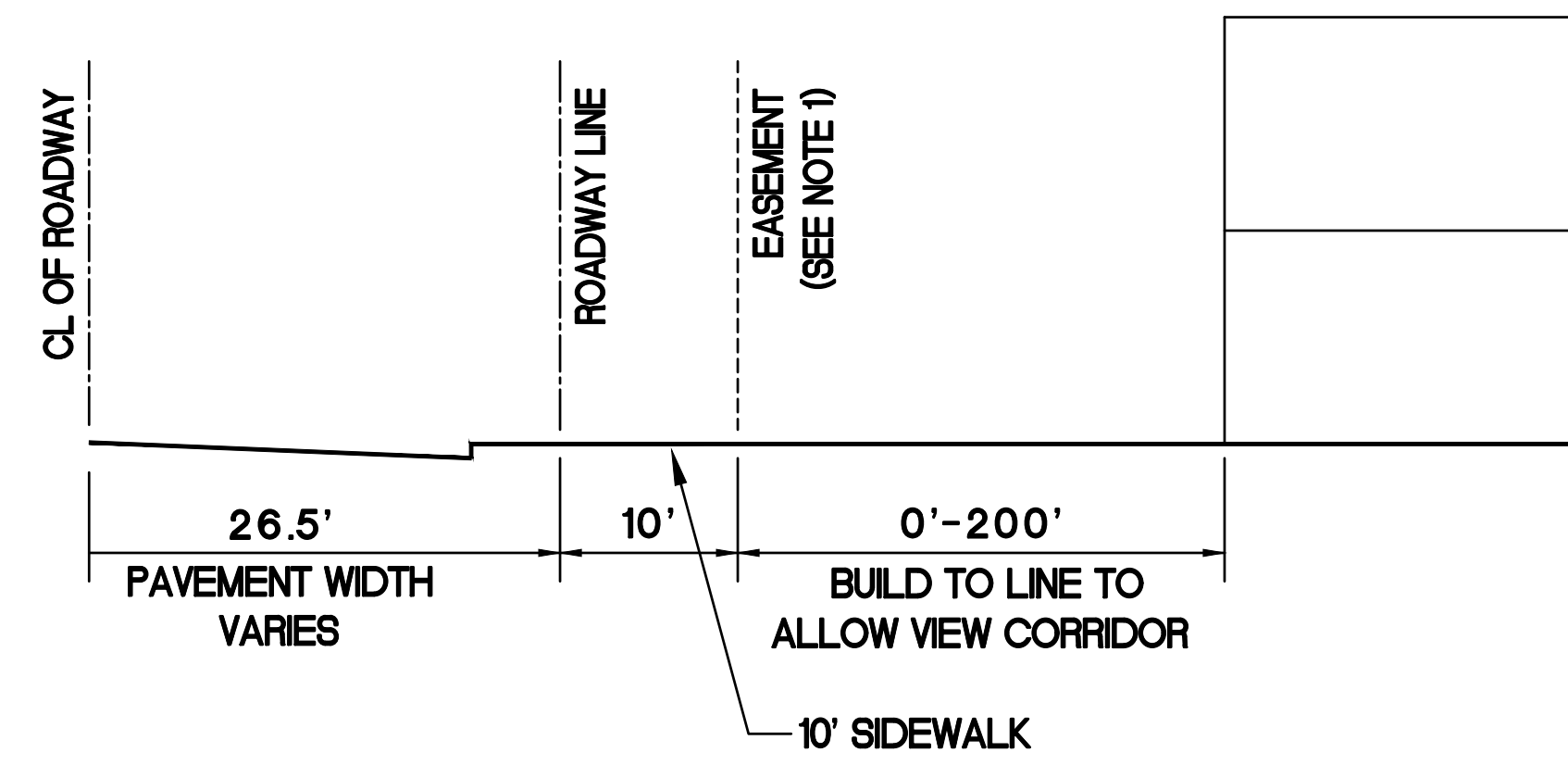
ST. LOUIS COUNTY STANDARD NOTES

- ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO ST. LOUIS COUNTY STANDARDS.
- NO SLOPES WITHIN ST. LOUIS COUNTY RIGHT-OF-WAY SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL).
- STORM WATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE DISCHARGE POINTS.
- ALL PROPOSED ACCESS TO ST. LOUIS COUNTY ROADS SHALL MEET MINIMUM ST. LOUIS COUNTY SIGHT DISTANCE REQUIREMENTS.
- ALL SIDEWALKS AND ASSOCIATED ACCESSIBILITY IMPROVEMENTS WITHIN RIGHT-OF-WAY SHALL BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.
- A SIGNED/SEALED NOTE SHALL BE ADDED TO THE CONSTRUCTION PLANS INDICATING THAT THE UNIMPROVED EXISTING SIDEWALK/PEDESTRIAN PATH ALONG THE PROJECT FRONTAGE MEETS CURRENT ST. LOUIS COUNTY ADA STANDARDS.
- ALL GRADING AND DRAINAGE SHALL BE IN CONFORMANCE WITH ST. LOUIS COUNTY ADA STANDARDS.
- ALL HYDRANTS, POWER POLES OR OTHER POTENTIAL OBSTRUCTIONS WITHIN THE ST. LOUIS COUNTY ROAD RIGHT-OF-WAY SHALL HAVE A MINIMUM TWO (2) FOOT SETBACK FROM FACE OF CURB OR EDGE OF PAVEMENT, AS DIRECTED BY THE ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC.
- ANY ENTITY THAT PERFORMS WORK ON ST. LOUIS COUNTY MAINTAINED PROPERTY SHALL PROVIDE THE COUNTY WITH A CERTIFICATE OF INSURANCE EVIDENCING GENERAL LIABILITY COVERAGE (BODILY INJURY AND PROPERTY DAMAGE) IN THE AMOUNTS SPECIFIED AS THE LIMITS OF LIABILITY SET BY THE STATE FOR PUBLIC ENTITIES. SUCH CERTIFICATE SHALL INCLUDE ST. LOUIS COUNTY AS AN ADDITIONAL INSURED AND SHALL BE PROVIDED PRIOR TO THE ISSUANCE OF ANY PERMIT. CERTIFICATE SHALL PROVIDE FOR A 30 DAY POLICY CANCELLATION NOTICE TO ST. LOUIS COUNTY. UPON REQUEST, THE COUNTY WILL PROVIDE THE SPECIFIC AMOUNTS FOR BOTH PER PERSON AND PER OCCURRENCE LIMITS.
- PRIOR TO SPECIAL USE PERMIT ISSUANCE BY THE ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC, A SPECIAL CASH ESCROW OR A SPECIAL ESCROW SUPPORTED BY AN IRREVOCABLE LETTER OF CREDIT, MAY BE REQUIRED TO BE ESTABLISHED WITH THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC TO GUARANTEE COMPLETION OF THE REQUIRED ROADWAY IMPROVEMENTS.
- CONTINUOUS PEDESTRIAN ACCESS SHALL BE PROVIDED DURING THE CONSTRUCTION PROCESS. PRIOR TO THE START OF CONSTRUCTION, ADEQUATE PEDESTRIAN ACCESS AROUND THE SITE SHALL BE PROVIDED AND VERIFIED. NO EXISTING SIDEWALK SHALL BE REMOVED WITHOUT PROVIDING ADEQUATE PEDESTRIAN FACILITIES AND ROUTES DURING CONSTRUCTION ACTIVITIES.



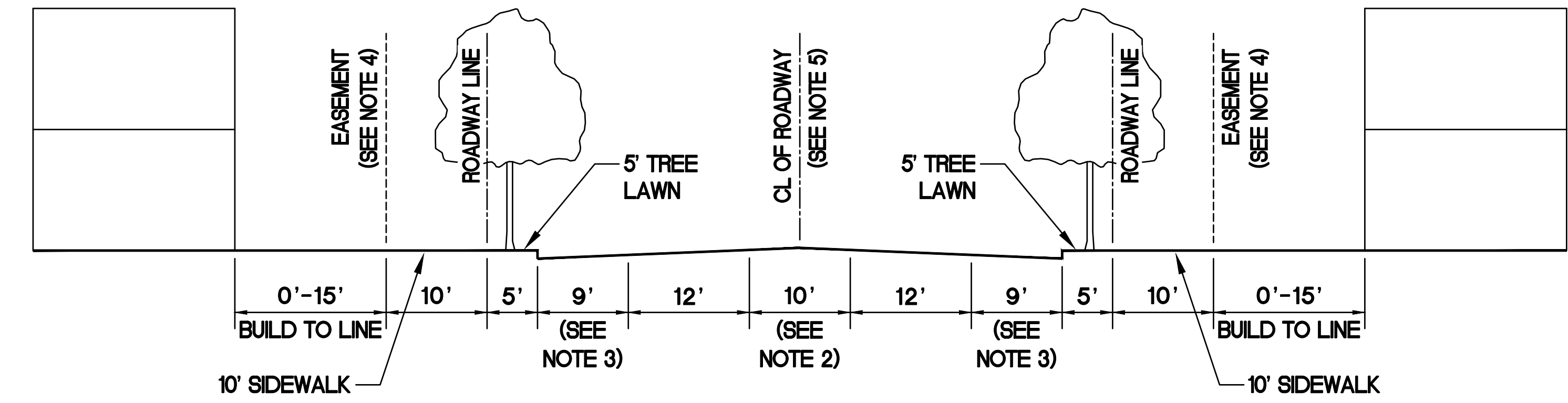
REVISIONS:	DATE:	BY:	DESCRIPTION:
1	4/3/2020	GM/SL	PER COMMENTS
2	4/17/2020	GM/SL	UPDATED SURVEY BACKGROUND
3	5/29/2020	GM/SL	REVISED PER CITY COMMENTS
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8	8/24/2020	GM/SL	REVISED PER CITY COMMENTS

DRAWN BY:	CHECKED BY:	DATE:	JOB NO.:
A.C.D.	GM/SL	03/11/2020	219-6670
SCALE:	DATE PLOTTED:	SHEET #:	TOTAL SHEETS:
1" = 50'	185/187	1	1
SHEET NO.:	TITLE:		
C50	SITE DEVELOPMENT CONCEPT PLAN		



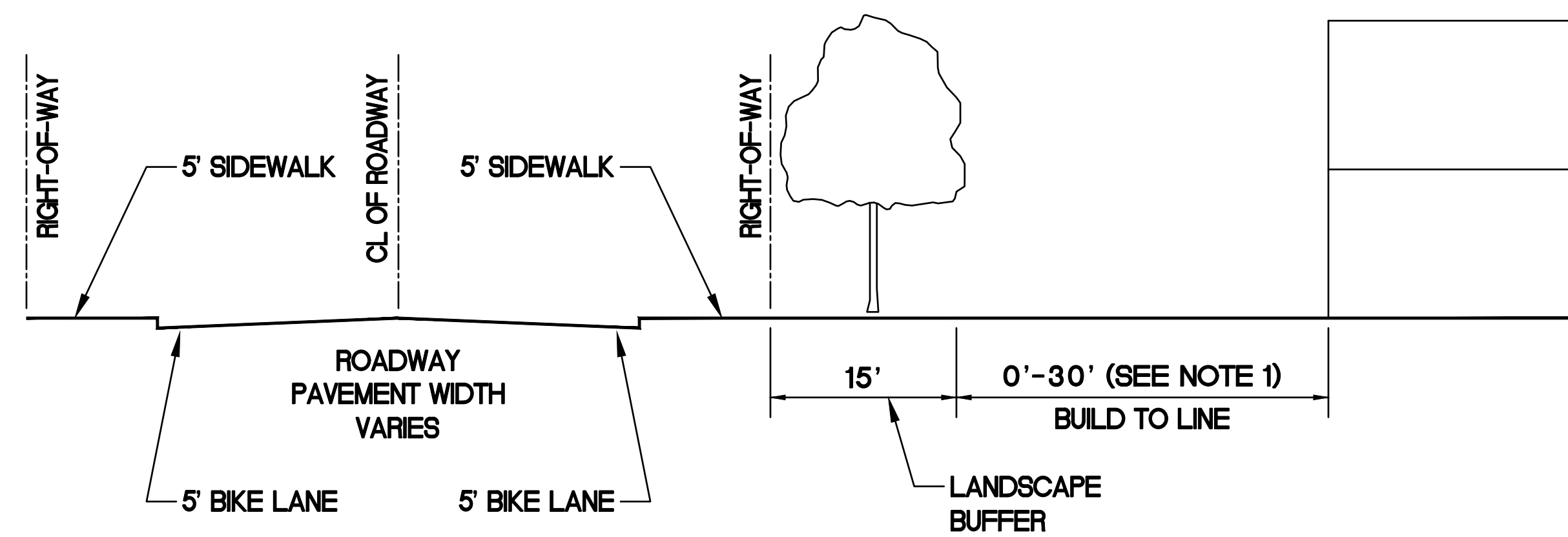
CONNECTOR STREET (53'W)

- NOTES:
1. 10'W SIDEWALK AND UTILITY EASEMENT



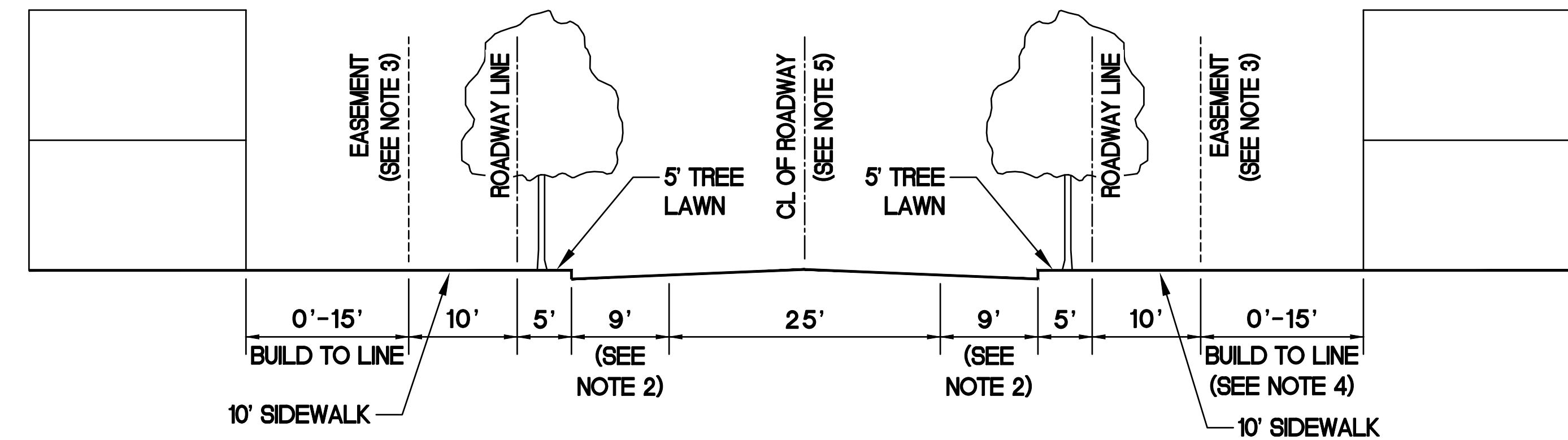
**URBAN MAIN STREET (62'W)
(A.K.A. LAKEFRONT STREET)**

- NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB
2. OPTION OF TURN LANE OR MEDIAN
3. 9' IF PARALLEL PARKING OR ZERO IF NO ON STREET PARKING, GREEN SPACE
4. 10'W SIDEWALK AND UTILITY EASEMENT
5. 100 FOOT MINIMUM CENTER LINE RADIUS



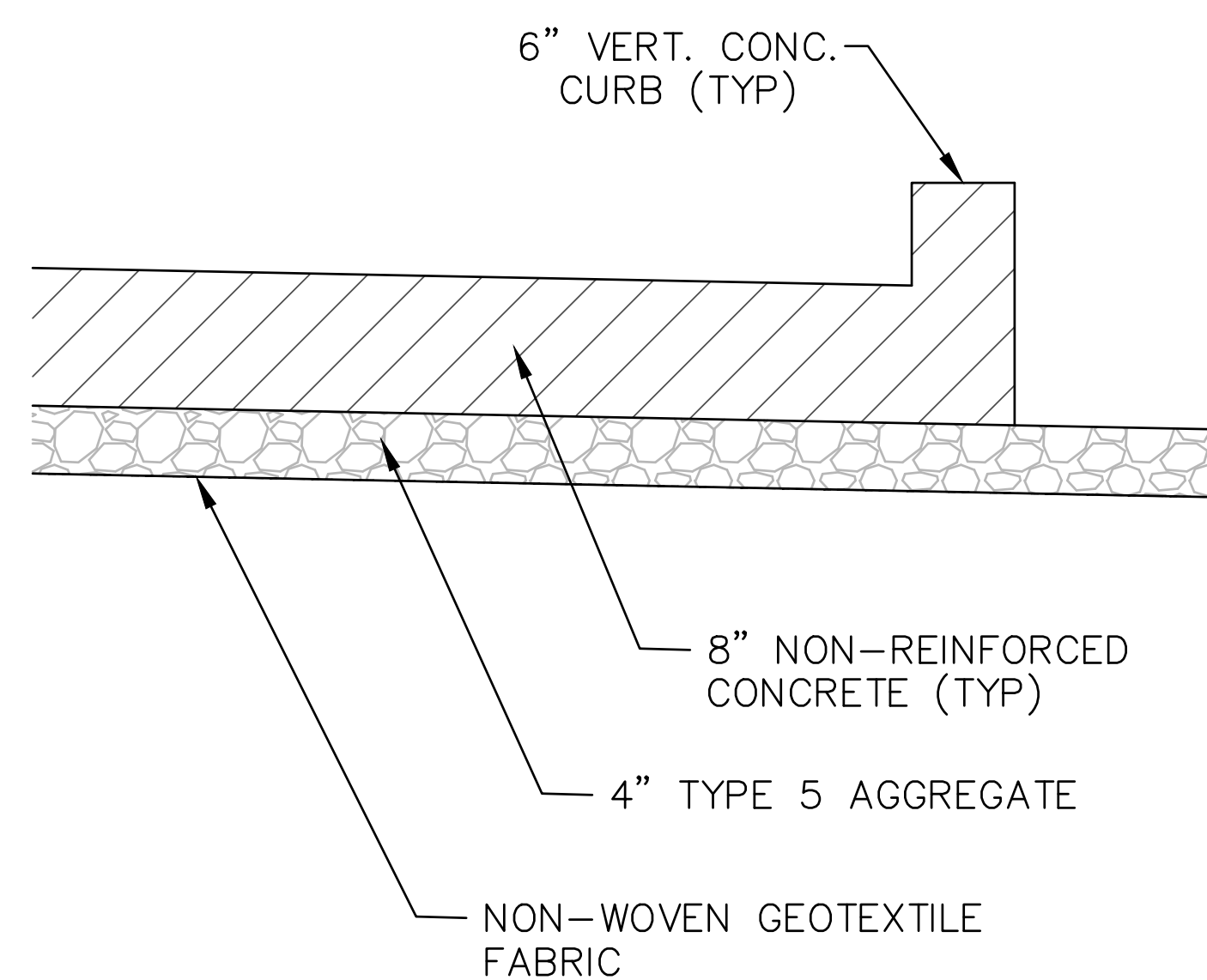
**BURKHARDT PLACE
(PUBLIC)**

- NOTES:
1. BUILD TO LINE NOT APPLICABLE TO RESIDENTIAL DEVELOPMENTS BETWEEN THE URBAN MIXED USE STREET CONNECTION TO BURKHARDT PLACE ACROSS FROM THE YMCA AND CONTINUING WEST TO THE INTERSECTION OF WILD HORSE CREEK ROAD DUE TO TOPOGRAPHICAL AND DAM CONSTRAINTS.

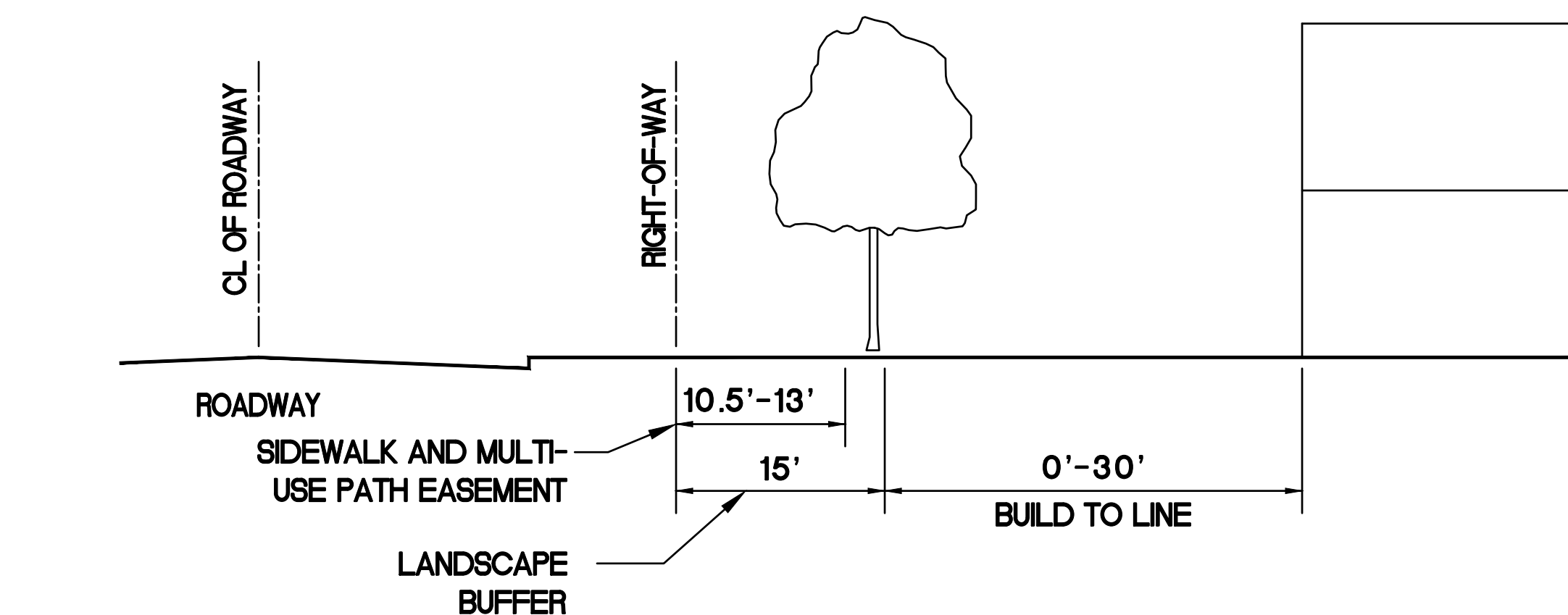


URBAN MIXED USE STREET (53'W)

- NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB
2. 9' IF PARALLEL PARKING OR ZERO IF NO ON STREET PARKING, GREEN SPACE
3. 10'W SIDEWALK AND UTILITY EASEMENT
4. BUILD TO LINE MAY BE EXTENDED TO 160' TO ACCOMMODATE A SMALL SURFACE PARKING LOT SUPPORTING A RETAIL GROCERY USE.
5. 100 FOOT MINIMUM CENTER LINE RADIUS.



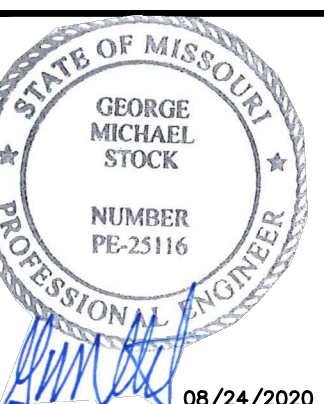
**TYPICAL PAVEMENT SECTION - PUBLIC STREETS
(N.T.S.)**



**WILD HORSE CREEK ROAD AND CHESTERFIELD PARKWAY WEST
(PUBLIC)**

ST. LOUIS COUNTY NOTES

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08/24/2020
GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

REVISIONS:

1	4/3/2020	REVISED PER COMMENTS
2	4/17/2020	UPDATED SURVEY BACKGROUND
3	5/29/2020	REVISED PER CITY COMMENTS
4	6/12/2020	REVISED PER CITY PRELIMINARY PLAN COMMENTS
5	6/15/2020	REVISED PER CITY COMMENTS
6	7/23/2020	REVISED PER CITY/COUNTY COMMENTS
7	8/14/2020	REVISED PER CITY/COUNTY COMMENTS
8	8/24/2020	REVISED PER COUNTY COMMENTS

DRAWN BY: A.C.D.	CHECKED BY: G.M.S.
DATE: 03/11/2020	JOB NO.: 219-6670
SCALE: P. #	DATE PLOTTED: 185/18T
S.L.C. MAT #	MAT SUP. #
M.D.N.R. #	

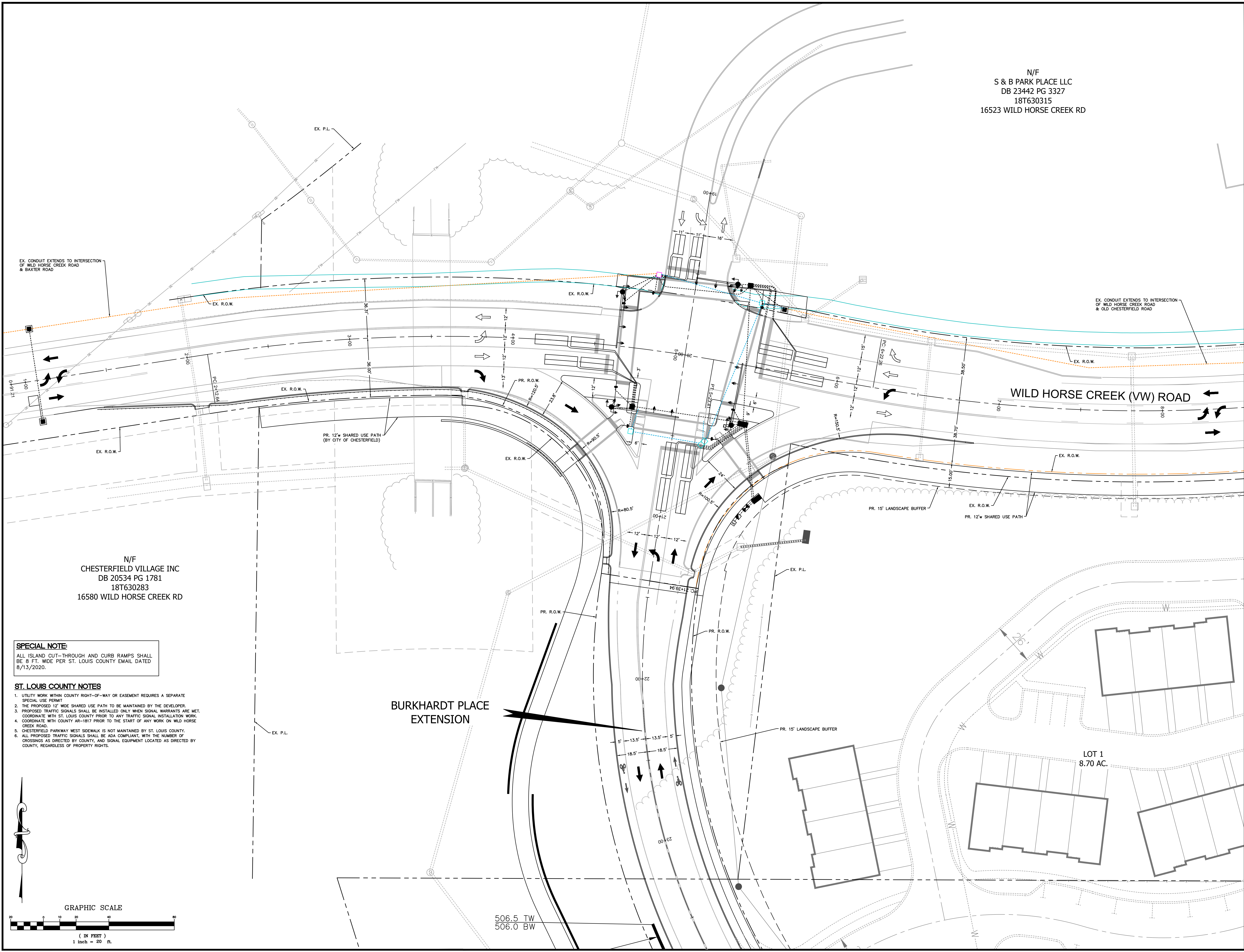
SHEET TITLE:
TYPICAL STREET SECTIONS

SHEET NO.:
C60

N/F
S & B PARK PLACE LLC
DB 23442 PG 3327
18T630315
16523 WILD HORSE CREEK RD

PREPARED BY:
STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005 PH: (636) 590-9000
500-9100 FAX: (636) 590-9000
e-mail: general@stockassoc.com
Web: www.stockassoc.com

CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:
WILDHORSE VILLAGE
WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
BURKHARDT PLACE - CHESTERFIELD, MISSOURI



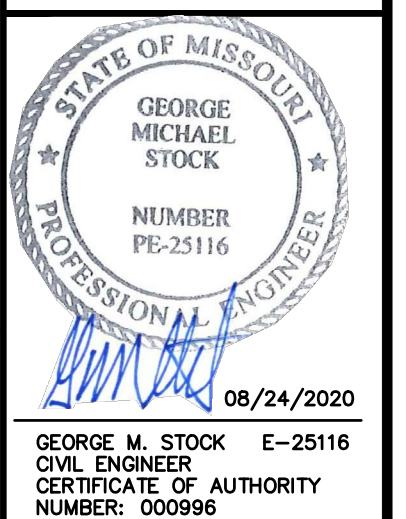
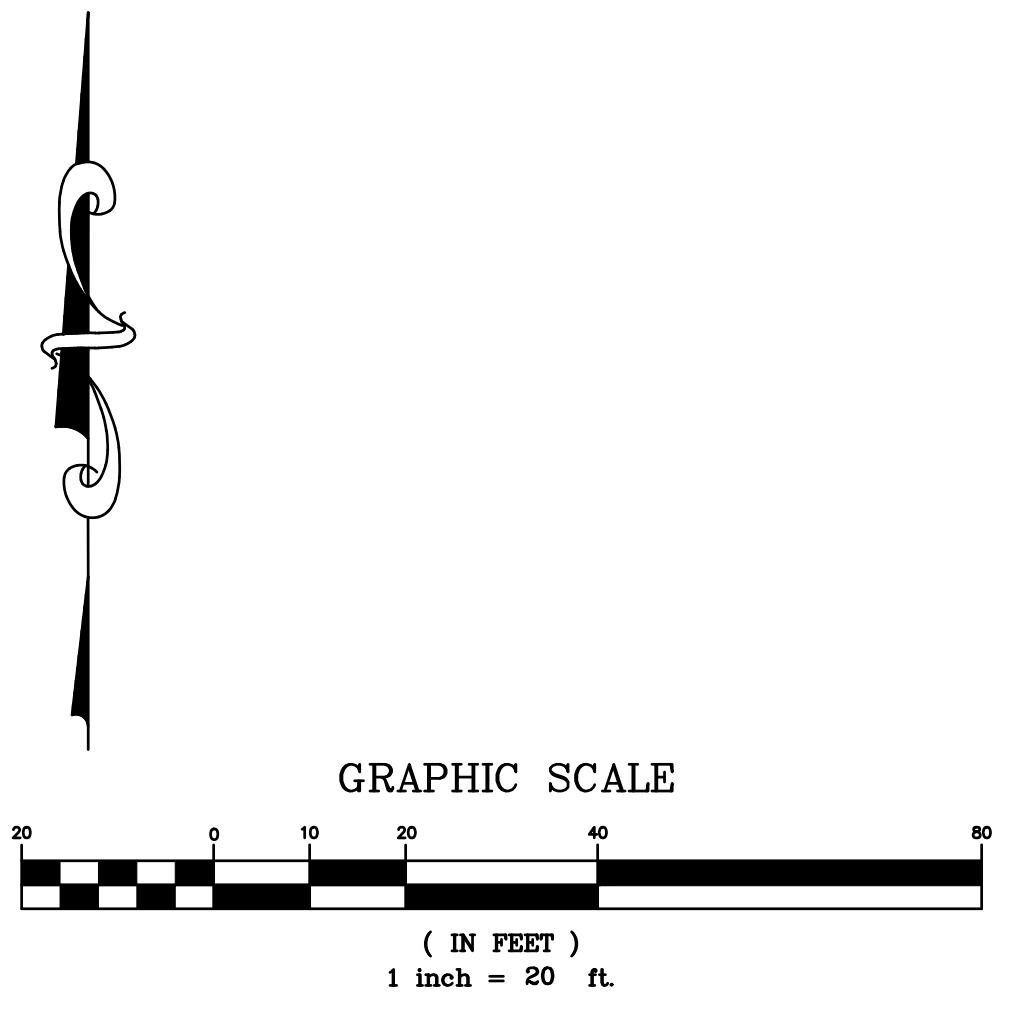
N/F
CHESTERFIELD VILLAGE INC
DB 20534 PG 1781
18T630283
16580 WILD HORSE CREEK RD

SPECIAL NOTE:
ALL ISLAND CUT-THROUGH AND CURB RAMPS SHALL BE 8 FT. WIDE PER ST. LOUIS COUNTY EMAIL DATED 8/13/2020.

- ST. LOUIS COUNTY NOTES**
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 - THE PROPOSED 12' WIDE SHARED USE PATH TO BE MAINTAINED BY THE DEVELOPER.
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 - COORDINATE WITH COUNTY AR-1817 PRIOR TO THE START OF ANY WORK ON WILD HORSE CREEK ROAD.
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**BURKHARDT PLACE
EXTENSION**

**LOT 1
8.70 AC.**



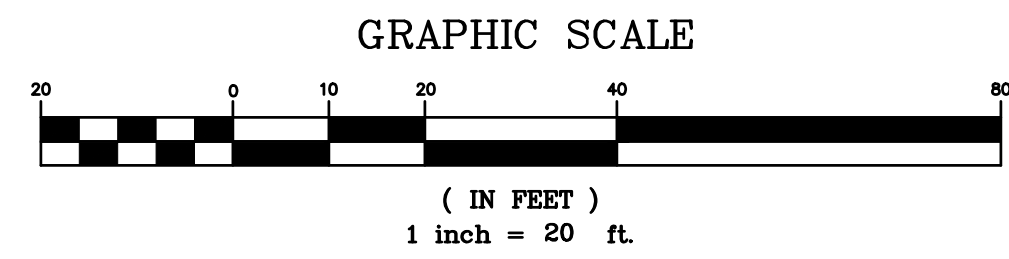
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DRAWN BY: A.C.D.	CHECKED BY: G.M.S.
DATE: 03/11/2020	JOB NO: 219-6670
SCALE: P. #	DATE SUP. #
S.L.C. HWT #	HWT SUP. #
M.D.N.R. #	

SHEET TITLE:
**TRAFFIC SIGNAL
CONCEPT PLAN**

SHEET NO.:
C7.0



ST. LOUIS COUNTY NOTES

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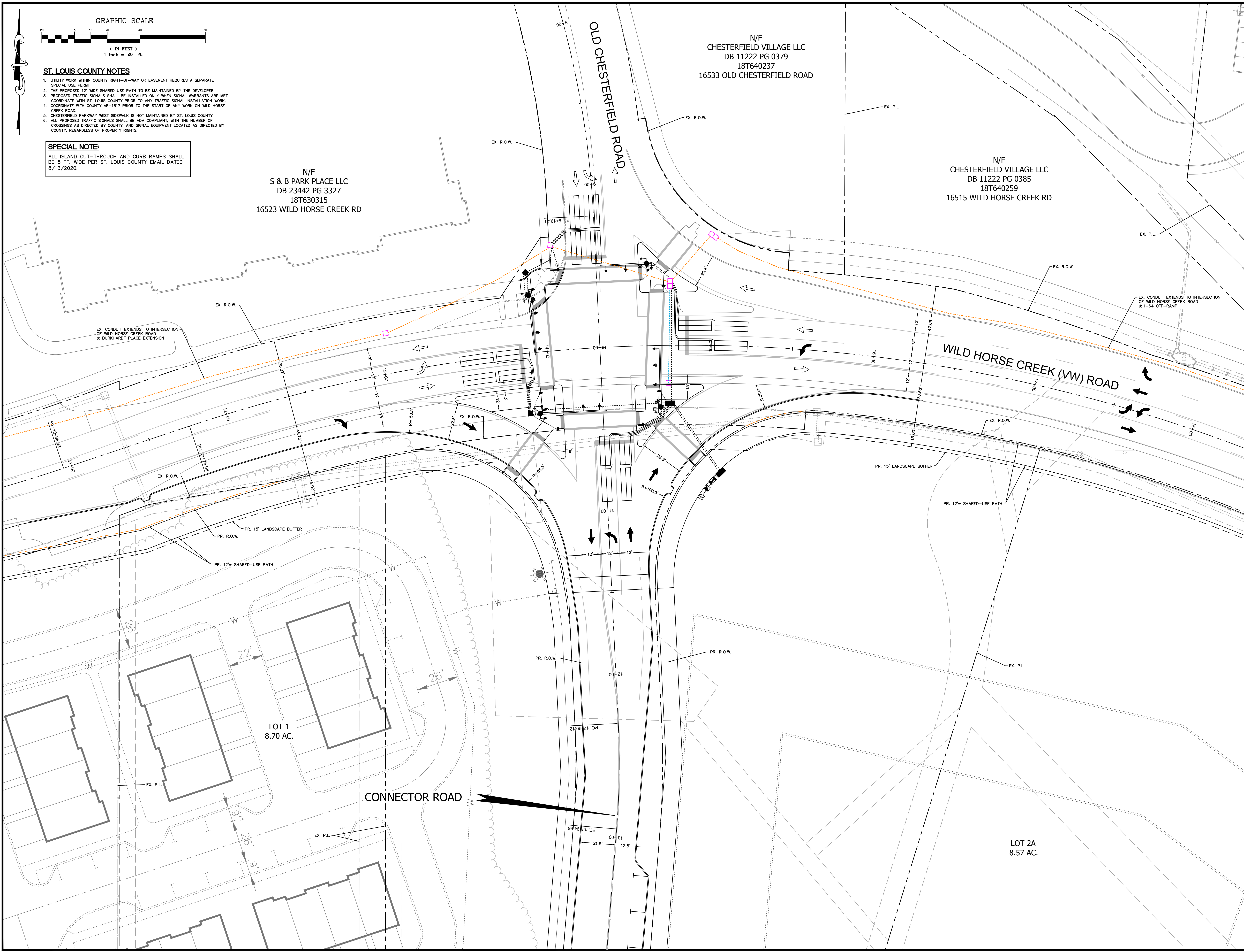
SPECIAL NOTE

ALL ISLAND CUT-THROUGH AND CURB RAMPS SHALL BE 8 FT. WIDE PER ST. LOUIS COUNTY EMAIL DATED 8/13/2020.

N/F
S & B PARK PLACE LLC
DB 23442 PG 3327
18T630315
16523 WILD HORSE CREEK RD

N/F
CHESTERFIELD VILLAGE LLC
DB 11222 PG 0379
18T640237
16533 OLD CHESTERFIELD ROAD

N/F
CHESTERFIELD VILLAGE LLC
DB 11222 PG 0385
18T640259
16515 WILD HORSE CREEK RD



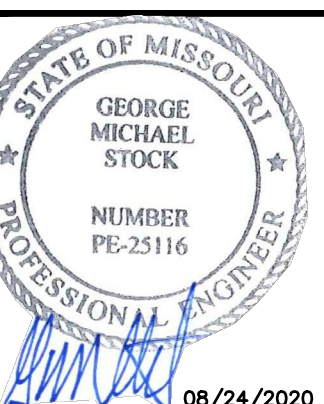
757 Chesterfield Business Parkway
St. Louis, MO 63005 PH: (636) 590-9000 FAX: (636) 590-9000
e-mail: general@stockandassociates.com Web: www.stockandassociates.com

STOCK & ASSOCIATES
Consulting Engineers, Inc.

PREPARED BY:
CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:

WILDHORSE VILLAGE

WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
BURKHARDT PLACE - CHESTERFIELD, MISSOURI



GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

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8	8/24/2020	REVISED PER COUNTY COMMENTS

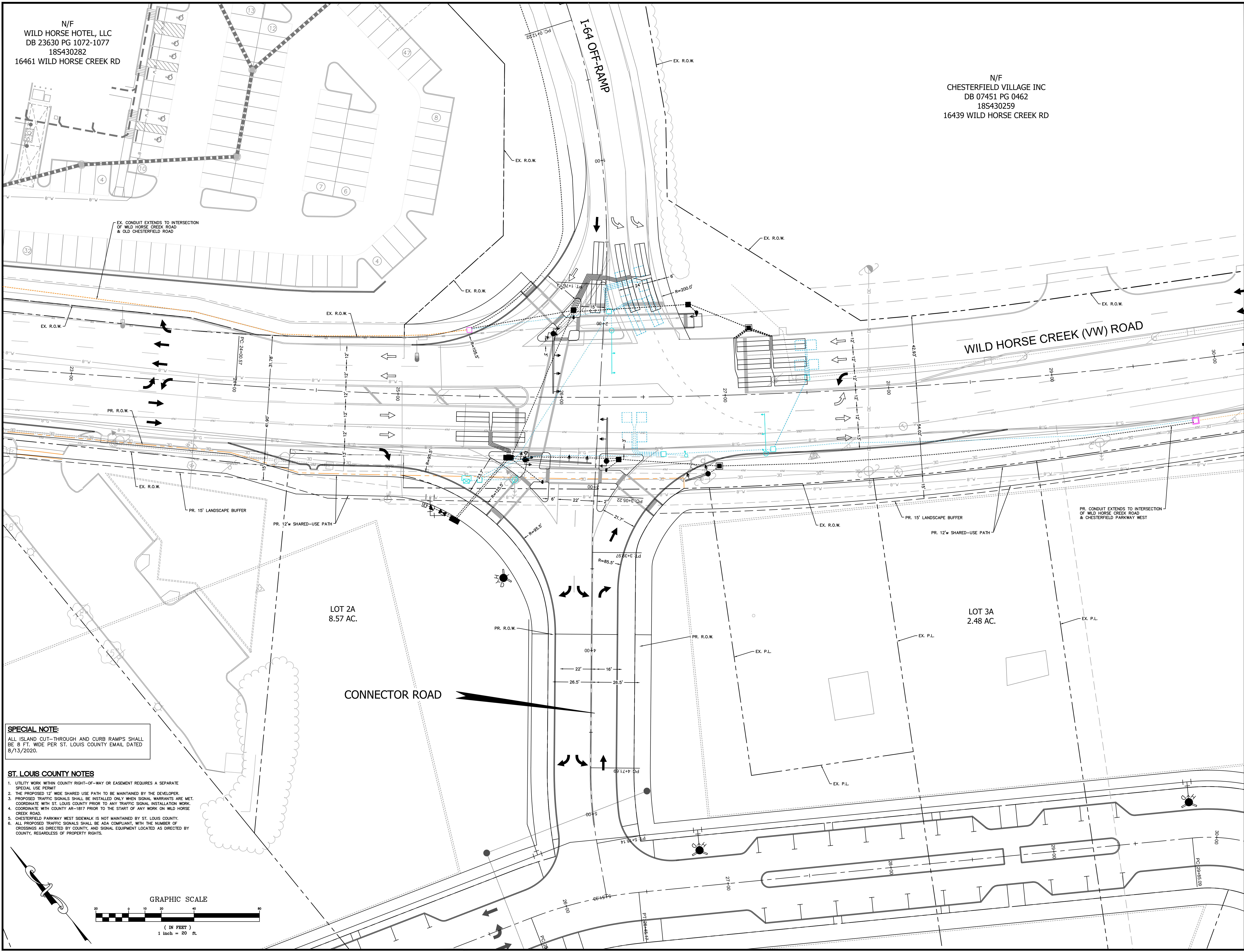
DRAWN BY:	GM.S.	CHECKED BY:	GM.S.
DATE:	03/11/2020	JOB NO.:	219-6670
SCALE:	AS SHOWN	DATE PLOTTED:	18S/18T
S.L.C. HMT #:		HMT SUP. #:	
M.D.N.R. #:			

SHEET TITLE:
TRAFFIC SIGNAL CONCEPT PLAN

SHEET NO.:
C8.0

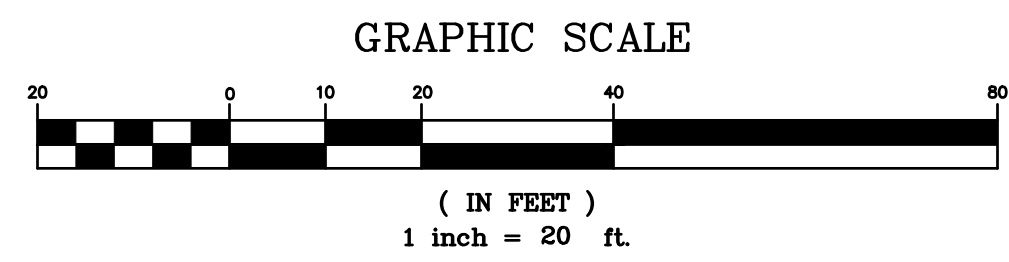
N/F
WILD HORSE HOTEL, LLC
DB 23630 PG 1072-1077
18S430282
16461 WILD HORSE CREEK RD

N/F
CHESTERFIELD VILLAGE INC
DB 07451 PG 0462
18S430259
16439 WILD HORSE CREEK RD



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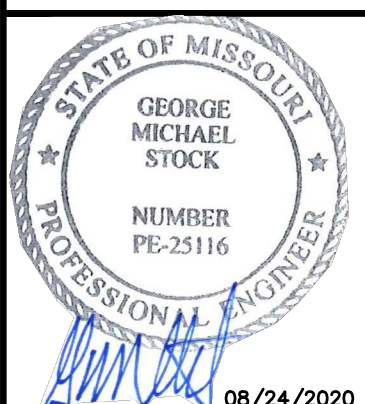
PREPARED BY:



CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:

WILDHORSE VILLAGE

WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
BURKHARDT PLACE - CHESTERFIELD, MISSOURI



GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

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8	8/24/2020	REVISED PER COUNTY COMMENTS

DRAWN BY: A.C.D.	CHECKED BY: G.M.S.
DATE: 03/11/2020	JOB NO: 219-6670
SCALE: AS SHOWN	DATE MAP: 18S/18T
S.L.C. MAP #	MAP SUP. #
M.D.N.R. #	

SHEET TITLE:
TRAFFIC SIGNAL CONCEPT PLAN

SHEET NO.:
C90

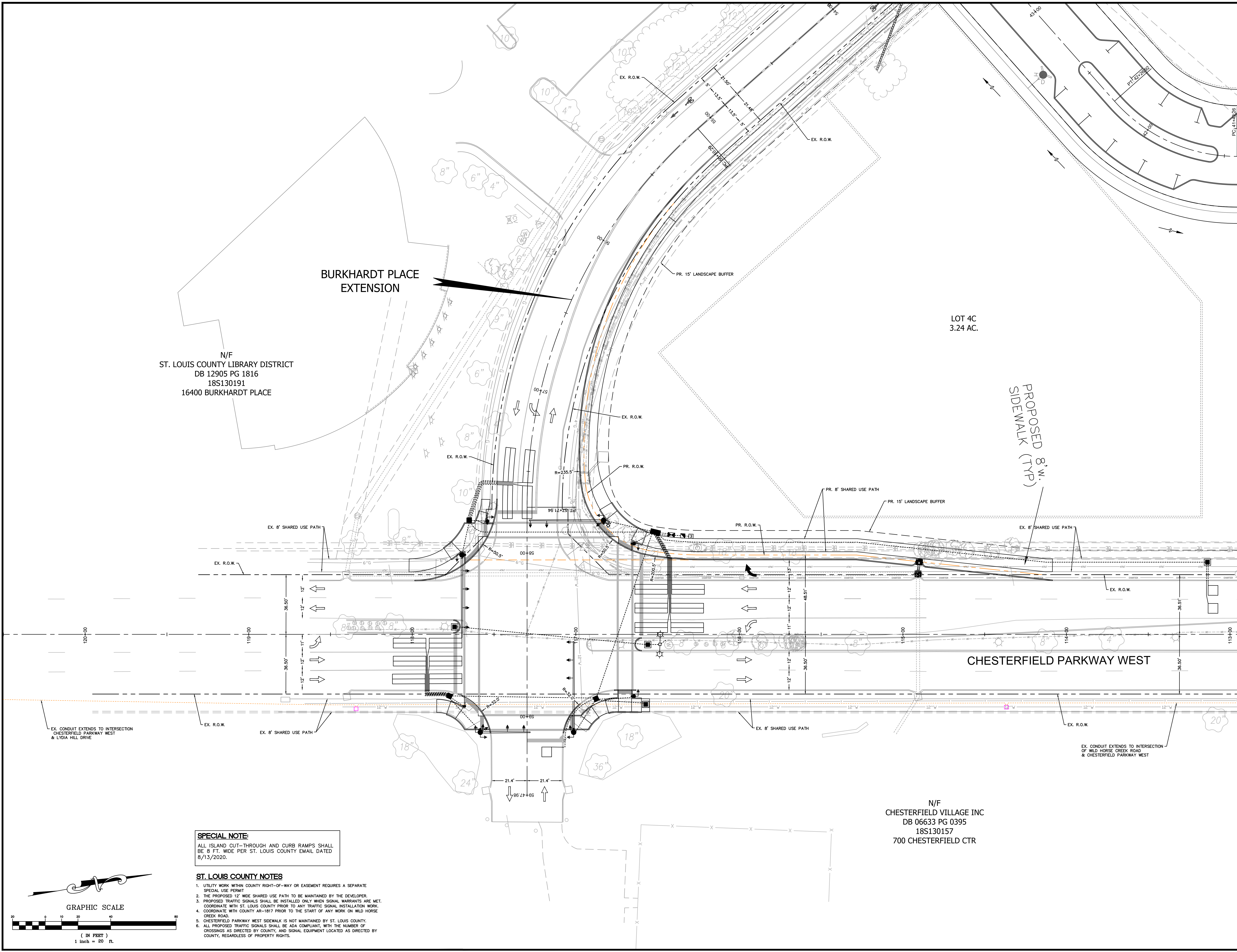
REVISIONS:

1	4/3/2020	REVISED PER COMMENTS
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4	6/12/2020	REVISED PER CITY PRELIMINARY PLAN COMMENTS
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6	7/23/2020	REVISED PER CITY/COUNTY COMMENTS
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DRAWN BY:	C.M.S.	CHECKED BY:	G.M.S.
DATE:	03/11/2020	JOB NO.:	219-6670
AKS: P. #	-	DATE PLOT:	18S/18T
S.L.C. MAT #	-	MAT SUP. #	-
M.D.N.R. #	-		

SHEET TITLE:
TRAFFIC SIGNAL CONCEPT PLAN

SHEET NO.:
C10.0



N/F
 ST. LOUIS COUNTY LIBRARY DISTRICT
 DB 12905 PG 1816
 18S130191
 16400 BURKHARDT PLACE

LOT 4C
 3.24 AC.

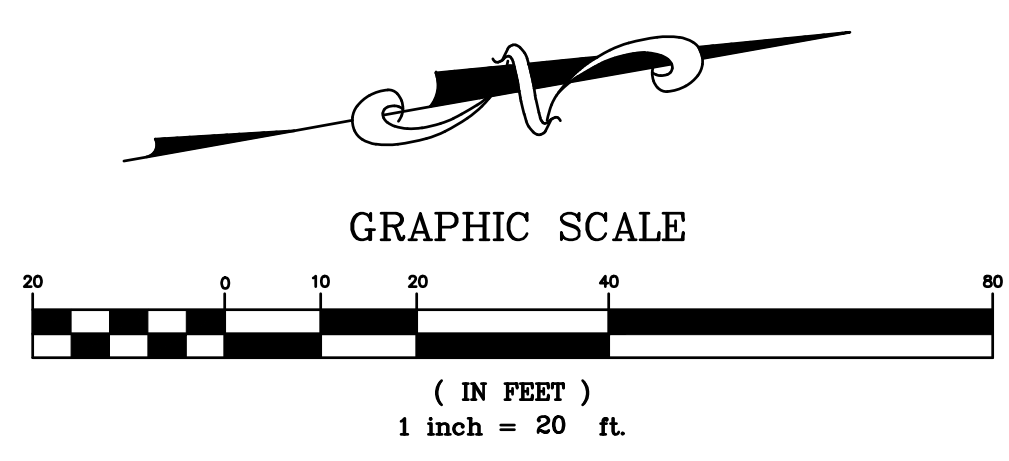
PROPOSED 8' W.
 SIDEWALK (TYP)

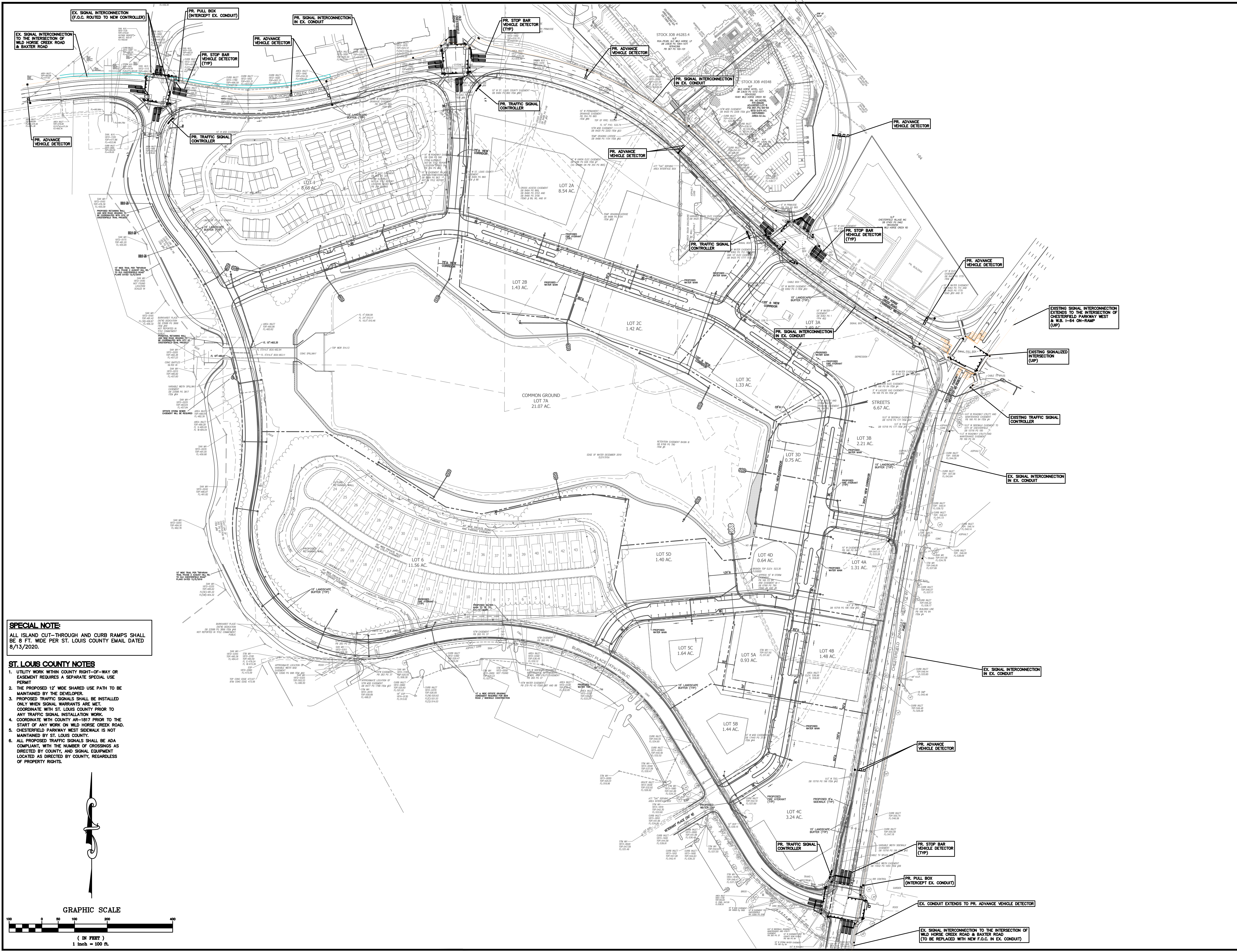
CHESTERFIELD PARKWAY WEST

N/F
 CHESTERFIELD VILLAGE INC
 DB 06633 PG 0395
 18S130157
 700 CHESTERFIELD CTR

SPECIAL NOTE:
 ALL ISLAND CUT-THROUGH AND CURB RAMPS SHALL BE 8 FT. WIDE PER ST. LOUIS COUNTY EMAIL DATED 8/13/2020.

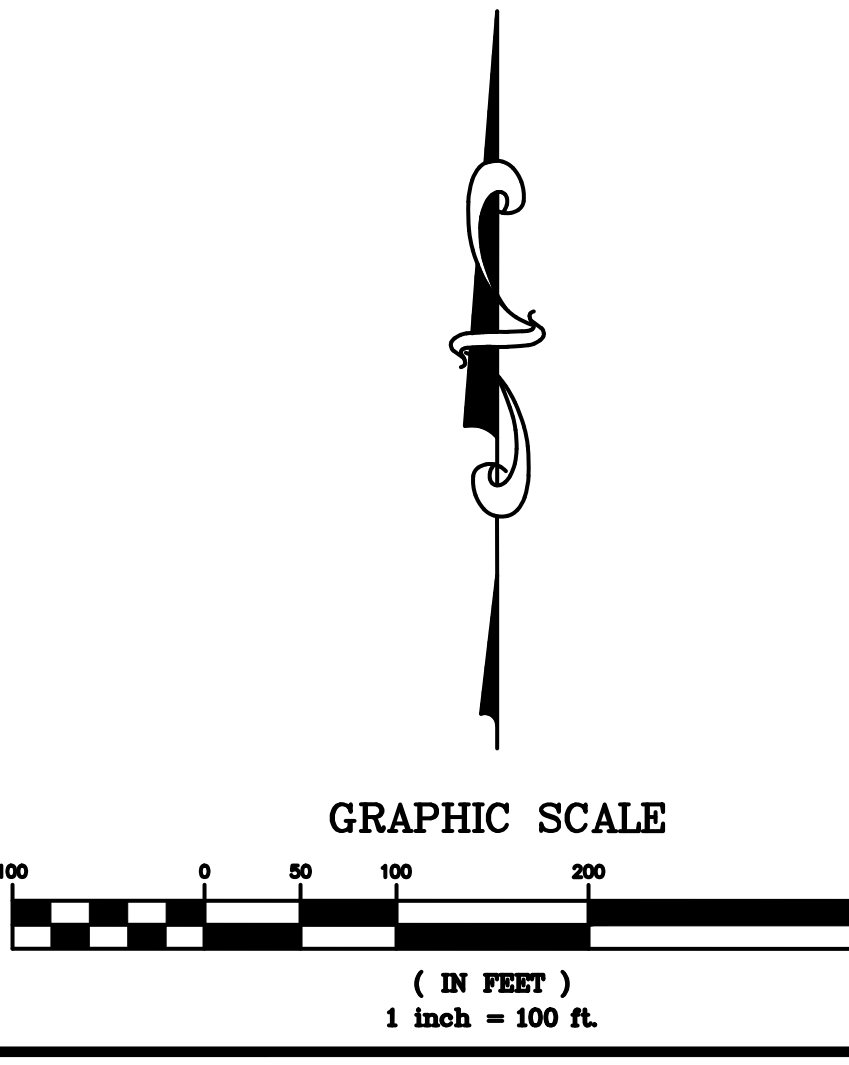
- ST. LOUIS COUNTY NOTES**
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STOCK & ASSOCIATES
 Consulting Engineers, Inc.
 757 Chesterfield Business Parkway
 St. Louis, MO 63105 PH: (636) 590-9000
 590-9000 FAX: (636) 590-9000
 e-mail: general@stockass.com
 Web: www.stockass.com

CATEGORIES A & B SITE CONCEPT PLAN - INFRASTRUCTURE AND ROADWAYS FOR:
WILDHORSE VILLAGE
 WILD HORSE CREEK ROAD, W. CHESTERFIELD PARKWAY
 BURKHARDT PLACE - CHESTERFIELD, MISSOURI

STATE OF MISSOURI
 GEORGE MICHAEL STOCK
 NUMBER: PE-25116
 PROFESSIONAL ENGINEER
 08/24/2020
 GEORGE M. STOCK E-29116
 CIVIL ENGINEER
 CERTIFICATE OF AUTHORITY
 NUMBER: 000996

REVISIONS:

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8	8/24/2020	REVISED PER COUNTY COMMENTS

DATE:	03/11/2020	JOB NO.:	219-6670
SCALE:	1" = 185'/18"	SHEET NO.:	185/18T
SLC. MAT. #:		MAT. SUP. #:	
MAJOR #:			
SHEET TITLE:	SIGNALIZED INTERSECTIONS CONCEPT PLAN		
SHEET NO.:	C11.0		



Jerald Saunders - Landscape Architect
MO License # LA-007
Consultants:

'WILDHORSE VILLAGE' SITE INDIVIDUAL TREES

ID	Tree Name	DBH	Canopy Diam.	Condition Rating	Comment	Onsite	Offsite
1	Red Maple	10	15'	1	Trunk Decay	X	
2	Red Maple	9	20'	1	Trunk Decay	X	
3	Red Maple	9	10'	1	Trunk Decay	X	
4	Red Maple	12	12'	1		X	
5	Red Maple	9	10'	1		X	
6	Green Ash	24	40'	2	Poor structure/form	X	
7	Green Ash	14	30'	2	Poor structure/form	X	
8	Green Ash	14	25'	2	Poor structure/form	X	
9	Green Ash	14	25'	2	Poor structure/form	X	
10	Green Ash	14	25'	2			X
11	Green Ash	8	15'	2			X
12	Green Ash	12	15'	2		X	
13	Green Ash	12	25'	2		X	
14	Green Ash	16	25'	1		X	
15	Green Ash	12	20'	2		X	
16	Green Ash	10	20'	2		X	
17	Green Ash	12	25'	2			X
18	Locust	18	30'	2	Multi-stem	X	
19	Locust	12	20'	2	Multi-stem	X	
20	Allanhus	24	30'	2	Multi-stem	X	
21	Birch	12	15'	2		X	
27	Locust	12	25'	2			X
28	Locust	12	25'	2			X

Condition Rating
1 = Poor
4 = Excellent

'WILDHORSE VILLAGE' SITE TREE NOTES

- Woodland "A" (110,955 sq.ft.) (2.547ac)
 - Primarily Red Oak, Black Cherry, Sugar Maple, Elm, with Honeysuckle understory and some Redbuds.
 - Condition: Fair
 - Average size 8-12" DBH
- Woodland "B" (135,622 sq.ft.) (3.113ac)
 - Primarily Red Oak, Sassafras, Elm
 - Condition: Fair
 - Average size 10" DBH
- Woodland "C" (97,155 sq.ft.) (2.230ac)
 - Cedar/Hardwood mix
- Woodland "D" (101,387 sq.ft.) (2.328ac)
 - Primarily Red Oak, Elm, Cedar
 - Condition: Poor to fair
 - Average size 10" DBH
- Woodland "E" (191,558 sq.ft.) (4.398ac)
 - Primarily Sassafras, Black Cherry, Elm, with Honeysuckle and Russian Olive understory
 - Condition: Poor to fair
 - Average size 6-8" DBH along western portion and 10-12" DBH along eastern portion
- Woodland "F" (52,711 sq.ft.) (1.210ac)
 - Primarily Red Oak, Elm, Cedar
 - Condition: Fair
 - Average size 8-10" DBH

Woodland "A" = 110,955 sq.ft.
Woodland "B" = 135,622 sq.ft.
Woodland "C" = 97,155 sq.ft.
Woodland "D" = 101,387 sq.ft.
Woodland "E" = 191,558 sq.ft.
Woodland "F" = 52,711 sq.ft.
Individual trees outside of woodland boundaries = 7,369 sq.ft.
TOTAL SQ.FT. OF EXISTING CANOPY = 696,757 sq.ft. (16.0 ac)

'FREEDOM TITLE' SITE INDIVIDUAL TREES

ID	Tree Name	DBH	Canopy Diam.	Condition Rating	Comment	Onsite	Offsite
22	Green Ash	15	40'	3			X
23	Green Ash	15	40'	3			X
24	Green Ash	15	30'	2			X
25	Crabapple	10	15'	2			X
26	Crabapple	10	15'	2			X

Total canopy = 3,376sf (0.08ac)

'CVI' SITE TREE NOTES

- Woodland "A" (5,719sf sq.ft.) (0.13ac)
 - Primarily Red Oak, Black Cherry, Sugar Maple, Elm, with Honeysuckle understory and some Redbuds.
 - Condition: Fair
 - Average size 8-12" DBH

'BURKHART R.O.W.' SITE TREE NOTES

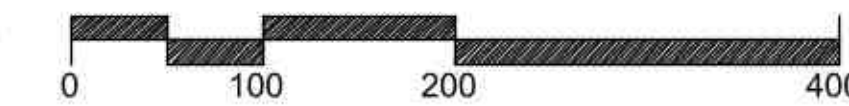
- Woodland "A" (56,175sf sq.ft.) (1.29ac)
 - Primarily Red Oak, Black Cherry, Sugar Maple, Elm, with Honeysuckle understory and some Redbuds.
 - Condition: Fair
 - Average size 8-12" DBH

LEGEND

Symbol	Description
#	Existing individual tree
○	Ex. individual tree canopy
■	Existing On-Site Woodland, see 'WILDHORSE VILLAGE' SITE TREE NOTES
▨	Existing Off-Site Woodland, see 'CVI' SITE TREE NOTES
▩	Existing Off-Site Woodland, see 'BURKHART R.O.W.' SITE TREE NOTES



Tree Stand Delineation
SCALE 1"=100'



Tree Stand Delineation Prepared under direction of: Brian Bage Certified Arborist MW-5033A

Revisions:

Date	Description	No.
5-21-20	Add Tree Info	2

Drawn: LWH
Checked: JAS

loomisAssociates
Landscape Architects/Planners
1000 N. Grand Blvd., Suite 100
St. Louis, MO 63103-1794
636.375.8668
www.loomisassociates.com

Loomis Associates Inc.
Missouri State Certificate of Authority # LAC #000019

Sheet Title: Tree Stand Delineation

Sheet No: TSD-1

Date: 03/04/20
Job #: 813.082

WILDHORSE VILLAGE
WILD HORSE CREEK ROAD, W CHESTERFIELD PARKWAY, AND
BURKHART PLACE - CHESTERFIELD MISSOURI

NOTE:
PER ORDINANCE #2607 OF 2010, TREE CANOPY CREDITS
WERE PROVIDED AS FOLLOWS:

CHESTERFIELD VILLAGE INC. ("CVI") "PARK SITES" PARCEL TREES			
PARCEL	ACREAGE	WOODLAND COVERAGE	Agreement
C226B	10.5	10.5	Ord. 2607
C204	1.0	1.0	Ord. 2607
C207	0.9	0.2	Ord. 2607
TOTAL		11.7	Ord. 2607
70%		8.2	
C121	1.012	0.0	First Amendment
C220A	9.9	9.9	First Amendment
C252W	3.3	3.3	First Amendment
C254W	2.5	2.5	First Amendment
C148	0.4	0.4	First Amendment
C254CS	1.4	1.4	First Amendment
TOTAL	18.512	17.5	First Amendment
70%		12.25	
COMBINED		20.45	

'WILDHORSE VILLAGE' SITE INDIVIDUAL TREES

ID	Tree Name	DBH	Canopy Diam.	Condition Rating	Comment	Onsite	Offsite	Preserved	To Be Removed
1	Red Maple	10	15'	1	Trunk Decay	X			X
2	Red Maple	9	20'	1	Trunk Decay	X			X
3	Red Maple	9	10'	1	Trunk Decay	X			X
4	Red Maple	12	12'	1		X			X
5	Red Maple	9	10'	1		X			X
6	Green Ash	24	40'	2	Poor structure/form	X			X
7	Green Ash	14	30'	2	Poor structure/form	X			X
8	Green Ash	14	25'	2	Poor structure/form	X			X
9	Green Ash	14	25'	2	Poor structure/form	X			X
10	Green Ash	14	25'	2			X		X
11	Green Ash	8	15'	2			X		X
12	Green Ash	12	15'	2		X			X
13	Green Ash	12	25'	2		X			X
14	Green Ash	16	25'	1		X			X
15	Green Ash	12	20'	2		X			X
16	Green Ash	10	20'	2		X			X
17	Green Ash	12	25'	2			X		X
18	Locust	18	30'	2	Multi-stem	X			X
19	Locust	12	20'	2	Multi-stem	X			X
20	Alnus	24	30'	2	Multi-stem	X			X
21	Birch	12	15'	2		X			X
27	Locust	12	25'	2		X			X
28	Locust	12	25'	2		X			X

Condition Rating	
1	= Poor
4	= Excellent

TOTAL SITE AREA: 78.23 Ac.
TOTAL EXISTING TREE CANOPY: 696,757 sq.ft. (16.0 ac.)

30% REQUIRED PRESERVATION: 16.0 ac. x .30 = 4.8 ac. REQUIRED PRESERVATION PRESERVED TREE CANOPY: 0%

THIS PROJECT INTENDS TO UTILIZE 4.8 ACRES OF THE TREE CANOPY CREDIT.

'FREEDOM TITLE' SITE INDIVIDUAL TREES

ID	Tree Name	DBH	Canopy Diam.	Condition Rating	Comment	Onsite	Offsite	Preserved	To Be Removed
22	Green Ash	15	40'	3			X	X	
23	Green Ash	15	40'	3			X	X	
24	Green Ash	15	30'	2			X	X	
25	Crabapple	10	15'	2			X	X	
26	Crabapple	10	15'	2			X	X	

TOTAL EXISTING TREE CANOPY: 3,376 sq.ft. (0.08 ac.)

30% REQUIRED PRESERVATION: 3,376 sq.ft. x .30 = 1,013 sq.ft. (0.02 ac.) REQUIRED PRESERVATION PRESERVED TREE CANOPY: 0%

THIS PROJECT INTENDS TO UTILIZE 0.02 ACRES OF THE TREE CANOPY CREDIT.

'CVI' SITE TREES

TOTAL EXISTING TREE CANOPY: 5,719 sq.ft. (0.13 ac.)

30% REQUIRED PRESERVATION: 5,719 sq.ft. x .30 = 1,718 sq.ft. (0.04 ac.) REQUIRED PRESERVATION PRESERVED TREE CANOPY: 0%

THIS PROJECT INTENDS TO UTILIZE 0.04 ACRES OF THE TREE CANOPY CREDIT.

'BURKHART R.O.W.' SITE TREES

TOTAL EXISTING TREE CANOPY: 56,175 sq.ft. (1.29 ac.)

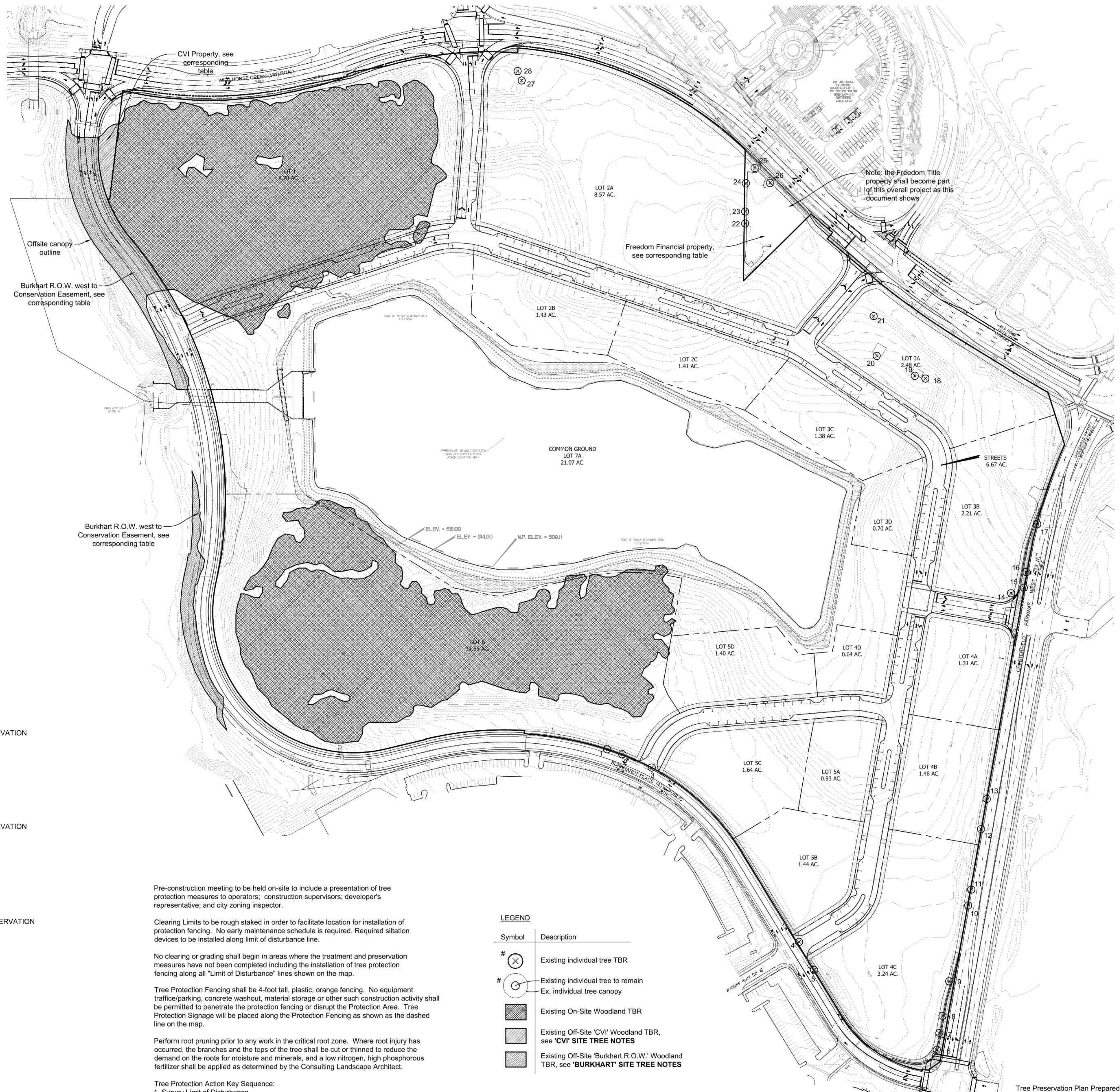
30% REQUIRED PRESERVATION: 56,175 sq.ft. x .30 = 16,853 sq.ft. (0.39 ac.) REQUIRED PRESERVATION PRESERVED TREE CANOPY: 0%

THIS PROJECT INTENDS TO UTILIZE 0.39 ACRES OF THE TREE CANOPY CREDIT.

TOTAL TREE CANOPY CREDITS UTILIZED

WILDHORSE VILLAGE = 4.8 ac.
FREEDOM TITLE = 0.02 ac.
CVI = 0.04 ac.
BURKHART R.O.W. = 0.39 ac.

TOTAL = 5.25 ac. TREE CANOPY CREDITS UTILIZED



Pre-construction meeting to be held on-site to include a presentation of tree protection measures to operators; construction supervisors; developer's representative; and city zoning inspector.

Clearing Limits to be rough staked in order to facilitate location for installation of protection fencing. No early maintenance schedule is required. Required siltation devices to be installed along limit of disturbance line.

No clearing or grading shall begin in areas where the treatment and preservation measures have not been completed including the installation of tree protection fencing along all "Limit of Disturbance" lines shown on the map.

Tree Protection Fencing shall be 4-foot tall, plastic, orange fencing. No equipment traffic/parking, concrete washout, material storage or other such construction activity shall be permitted to penetrate the protection fencing or disrupt the Protection Area. Tree Protection Signage will be placed along the Protection Fencing as shown as the dashed line on the map.

Perform root pruning prior to any work in the critical root zone. Where root injury has occurred, the branches and the tops of the tree shall be cut or thinned to reduce the demand on the roots for moisture and minerals, and a low nitrogen, high phosphorous fertilizer shall be applied as determined by the Consulting Landscape Architect.

Tree Protection Action Key Sequence:

1. Survey Limit of Disturbance
2. Perform root pruning
3. Install Tree Protection Fencing
4. Post Tree Protection Signage on Fence; no signs will be posted on any trees
5. Maintain Tree Protection Area as off-limits zone

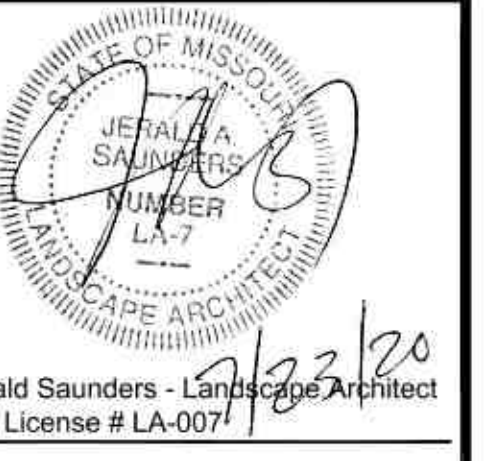
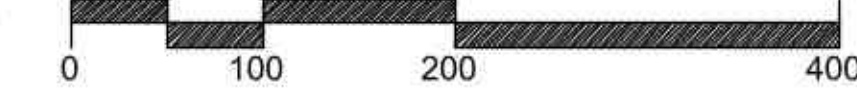
LEGEND

Symbol	Description
# (X)	Existing individual tree TBR
# (O)	Existing individual tree to remain Ex. individual tree canopy
[Hatched Box]	Existing On-Site Woodland TBR
[Dotted Box]	Existing Off-Site 'CVI' Woodland TBR, see 'CVI' SITE TREE NOTES
[Cross-hatched Box]	Existing Off-Site 'Burkhart R.O.W.' Woodland TBR, see 'BURKHART' SITE TREE NOTES



Tree Preservation Plan

SCALE 1"=100'



Jerald Saunders - Landscape Architect
MO License # LA-0071
Consultants:

WILDHORSE VILLAGE
WILD HORSE CREEK ROAD, W CHESTERFIELD PARKWAY, AND
BURKHART PLACE - CHESTERFIELD MISSOURI

Revisions:

Date	Description	No.
4-3-20	Plan Revision	1
5-21-20	Add Tree Info	2
6-15-20	Plan Revision	3
7-23-20	Plan Revision	4

Drawn: LWH
Checked: JAS



Sheet Title: Tree Preservation Plan

Sheet No: **TPP-1**

Date: 03/04/20
Job #: 813.082

Tree Preservation Plan Prepared under direction of: Brian Bage
Certified Arborist MW-5033A

B. Bage

April 1, 2020

Mr. George Stock
Stock & Associates Consulting Engineers, Inc.
257 Chesterfield Business Parkway
Chesterfield, Missouri 63005

RE: Traffic Impact Study
Wild Horse Village Mixed Use Development
Chesterfield, Missouri
CBB Job No. 009-20

Dear Mr. Stock:

As requested, CBB has completed a traffic impact study pertaining to a proposed mixed-use development, known as Wild Horse Village, in Chesterfield, Missouri. The proposed site is generally bound by Chesterfield Parkway on the east, Burkhardt Place on the south and west, and Wild Horse Creek Road on the north. The location of the site in relation to the surrounding road system is depicted in **Figure 1**.

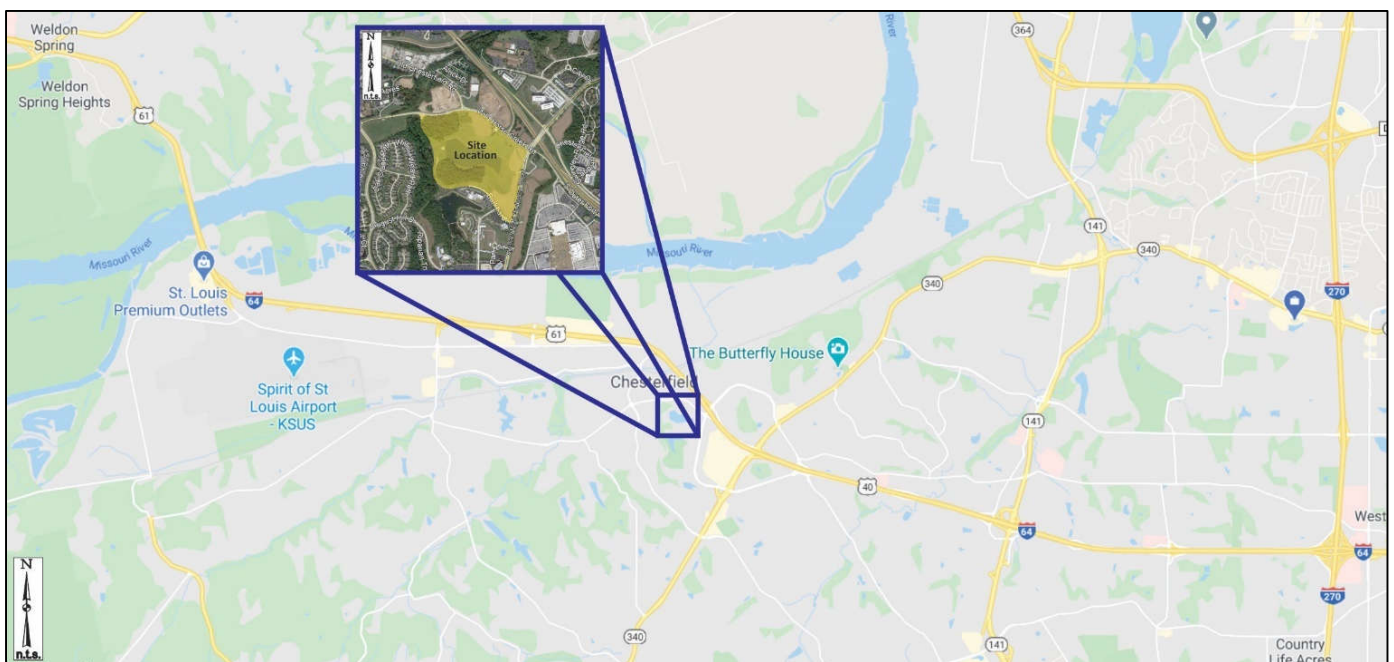


Figure 1: Project Location Map



The subject site is known as Area 1 and is governed by the City of Chesterfield Ordinance #3023 – Planned Commercial and Residence District dated November 5, 2018. The subject site as well as Areas 2 and 3, totaling approximately 99 acres, are entitled to construct up to 1,700,000 square feet (SF) of retail, office, commercial, civic and lodging uses and up to 1,000 residential units. This traffic impact study is being performed to satisfy condition “J. Traffic Study” of Ordinance #3023.

Based on the concept plan and information provided by Stock & Associates, approximately 60 single-family villas, 740 apartment/condo units, 560,000 SF of office space, 196,000 SF of commercial space with a mix of retail and restaurants. In conjunction with the proposed development, Burkhardt Place would be extended from its current terminus near the YMCA to Wild Horse Creek Road, tying in opposite the access for the Aventura at Wild Horse Creek apartments. Based on the concept plan provided by Stock & Associates, the following access points are proposed to accommodate the Wild Horse Village mixed-use development:

- A new access drive on Wild Horse Creek Road opposite the eastbound I-64 off-ramp;
- A new right-in/right-out (RIRO) drive on Wild Horse Creek Road between the eastbound I-64 off-ramp and Old Chesterfield Road;
- A new access drive on Wild Horse Creek Road opposite Old Chesterfield Road;
- The future intersection of Wild Horse Creek Road and Burkhardt Place;
- The existing intersection of Chesterfield Parkway and Burkhardt Place;
- An access drive on Chesterfield Parkway between Wild Horse Creek Road and Burkhardt Place; and
- Several access drives along Burkhardt Place.

A schematic of the site layout provided is shown in **Exhibit 1**.

CBB discussed the scope of work for this study with the City of Chesterfield, St. Louis County Department of Transportation (SLCDOT) and the Missouri Department of Transportation (MoDOT) at the commencement of the study process (Meeting on February 5, 2020). CBB also provided the technical assumptions summarizing the proposed site trip generation and directional distribution estimates, as well as the 20-year background traffic growth assumptions for the proposed development and gained their consensus on the assumptions prior to completing the traffic analyses.

The purpose of this study was to determine the number of trips that would be generated by the proposed development and evaluate the impact of those trips on operating conditions along the adjacent roadways. If necessary, roadway improvements and/or traffic control modifications were recommended to mitigate the impact of the development. The focus of this study was the AM and PM peak hours of a typical weekday.

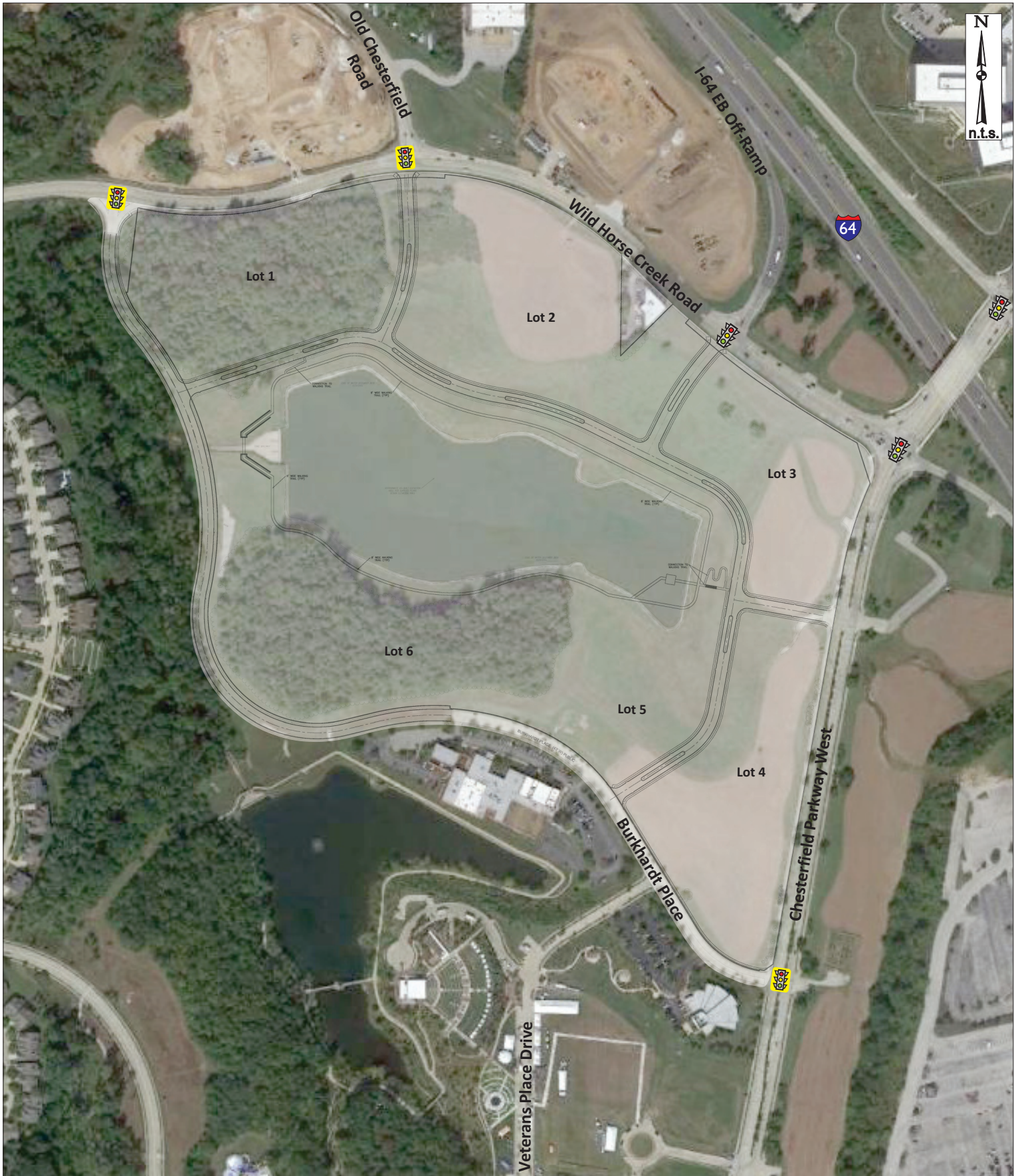


Exhibit 1: Preliminary Site Plan (provided by others)

Job# 009-20
04/01/2020





As requested, the following intersections were included in the study:

1. Baxter Road and Edison Avenue;
2. Baxter Road and Old Chesterfield Road;
3. Wild Horse Creek Road and Baxter Road;
4. Wild Horse Creek Road and Old Chesterfield Road;
5. Wild Horse Creek Road and I-64 EB Off-ramp;
6. Chesterfield Parkway West and I-64 NOR;
7. Chesterfield Parkway West and Wild Horse Creek Road/I-64 SOR;
8. Burkhardt Place and Veterans Place Drive;
9. Chesterfield Parkway West and Burkhardt Place;
10. Chesterfield Parkway West and Lydia Hill Drive;
11. Chesterfield Parkway West and Justus Post Drive;
12. Chesterfield Parkway West and SB Clarkson Road Ramps;
13. Chesterfield Parkway West and NB Clarkson Road Ramps;
14. Wild Horse Creek Road and Burkhardt Place/Aventura;
15. Wild Horse Creek Road and Proposed Site Drive;
16. Chesterfield Parkway West and Proposed Site Drive; and
17. Burkhardt Place and Proposed Site Drive (just north of Veterans Place Drive).

As requested, the following analysis scenarios were evaluated for the weekday AM and PM peak hours:

- 2020 Base Conditions (Existing plus area approved developments);
- 2020 Build Conditions (2020 Base + Wild Horse Village Build Out Trips); and
- 20-Year Design Conditions.
 - 2040 No-Build Conditions (Existing + background growth + area approved developments + Mall Redevelopment)
 - 2040 Build Conditions (2040 No-Build + Wild Horse Village Build Out Trips)

The following report presents the methodology and findings relative to the Base, 2020 Build and 2040 design year conditions.



EXISTING CONDITIONS

Area Roadway System: Wild Horse Creek Road is an east-west Minor Arterial roadway under the jurisdiction of SLCDOT. Wild Horse Creek Road is generally a three-lane roadway (one lane in each direction plus a two-way center left-turn lane) west of Old Chesterfield Road and transitions to a four/five lane roadway (two lanes each direction plus a two-way center left-turn lane) as it approaches the I-64 eastbound off-ramp. The posted speed limit is 40 miles per hour (mph). The study segment of Wild Horse Creek Road is mostly undeveloped, so sidewalks are not provided along the roadway except for a couple of developed parcels on the north side of Wild Horse Creek Road. As development occurs along the road, sidewalks will be constructed along the frontage of those properties. West of Baxter Road, there are Bike Route signs and marked bike lanes on the shoulder of Wild Horse Creek Road. East of Baxter Road, Wild Horse Creek is marked to allow bicycles and vehicles along the roadway (i.e., Bike Route Signs).

Old Chesterfield Road is a north-south two-lane Minor Collector roadway under the jurisdiction of the City of Chesterfield. The posted speed limit is 35 mph on the west half of the roadway and 40 mph on the east half, closer to Wild Horse Creek Road. Sidewalks are not provided along the roadway; and there are no marked bike lanes.

Baxter Road is a north-south five-lane Minor Arterial roadway (two lanes in each direction plus a two-way center left-turn lane) under the jurisdiction of SLCDOT. The posted speed limit is 40 mph. Sidewalks are provided along both sides of the roadway. Baxter Road is marked to allow bicycles and vehicles along the roadway (i.e., Bike Route Signs).

Edison Avenue is an east-west two-lane Major Collector roadway under the jurisdiction of the City of Chesterfield. The posted speed limit is 45 mph. Sidewalks are not provided along the roadway, but there are marked separated bike lanes along both sides of the roadway. Additionally, the Monarch Levee Trail follows along the south side of Edson Road (along the top of the levee).

Chesterfield Parkway West is a circulatory Major Collector roadway under the jurisdiction of SLCDOT that encompasses I-64 with Route 340 in the middle as the north-south route and provides two interchanges to I-64 (Chesterfield Parkway East and Chesterfield Parkway West). In addition, access to Chesterfield Mall and other regional employers are located along the parkway. Chesterfield Parkway is a four-lane median divided roadway with auxiliary lanes provided at most intersections. The posted speed limit is 40 mph. Sidewalks are provided along both sides of the roadway. There are no marked bike lanes.

Burkhardt Place is an east-west two-lane Local roadway under the jurisdiction of the City of Chesterfield. Burkhardt Place provides access to the St. Louis County Library – Samuel C. Sachs Branch and the Chesterfield YMCA. The posted speed limit is 25 mph. Sidewalks are provided along the frontage of the developed parcels on the south side of the roadway. There are no marked bike lanes.



Veterans Place Drive is a north-south two-lane Local roadway under the jurisdiction of the City of Chesterfield. Veterans Place Drive provides access to various commercial sites between Burkhardt Place and Lydia Hill Drive. Sidewalks are provided along both sides of the roadway. There are no marked bike lanes.

Lydia Hill Drive is an east-west two-lane Minor Collector roadway under the jurisdiction of the City of Chesterfield. The posted speed limit is 30 mph. Sidewalks are provided along both sides of the roadway. There are no marked bike lanes. Note, to the east of Chesterfield Parkway West Lydia Hill Drive transitions to Chesterfield Center which provides access to the Chesterfield Mall.

Justus Post Road is a north-south two-lane Local roadway under the jurisdiction of the City of Chesterfield. The posted speed limit is 25 mph. Sidewalks are provided along both sides of the roadway. Justus Post Road is marked to allow bicycles and vehicles along the roadway (i.e., Bike Route Signs).

Fontaine Drive is a north-south roadway under the jurisdiction of the City of Chesterfield located opposite of the southbound Clarkson Road ramps. Fontaine Drive provides access to Chesterfield Center which provides access to the Chesterfield Mall. Sidewalks are not provided along the roadway; and there are no marked bike lanes.

Clarkson Road (Missouri Route 340) is a north-south Principal Arterial under the jurisdiction of MoDOT. Within the study area, Clarkson Road generally consists of a four-lane section (two lanes each direction) separated by a grass median. The posted speed limit is 45 mph and shoulders are provided on both sides of the roadway. There are no marked bike lanes.

The intersection of Edison Road and Baxter Road is controlled by a traffic signal. Separate left and right-turn lanes are provided on for the eastbound Edison Road approach. The northbound approach of Baxter Road consists of a left-turn lane and through lane. The southbound approach of Baxter Road consists of a shared through/right-turn lane. The northbound left-turn movement operates under protected plus permissive phasing. Marked pedestrian crossings and push buttons are provided for all approaches. The Monarch Chesterfield Levee Trail crosses the south leg of the signal. **Figure 2** provides an aerial view of the Edison Road and Baxter Road intersection.

The intersection of Old Chesterfield Road and Baxter Road is side-street stop controlled with Old Chesterfield Road required to stop. Separate left and right-turn lanes are provided for the westbound Old Chesterfield Road approach. The northbound approach of Baxter Road consists of a through lane and right-turn lane. The southbound approach of Baxter Road consists of a left-turn lane and through lane. **Figure 3** provides an aerial view of the Old Chesterfield Road and Baxter Road intersection.

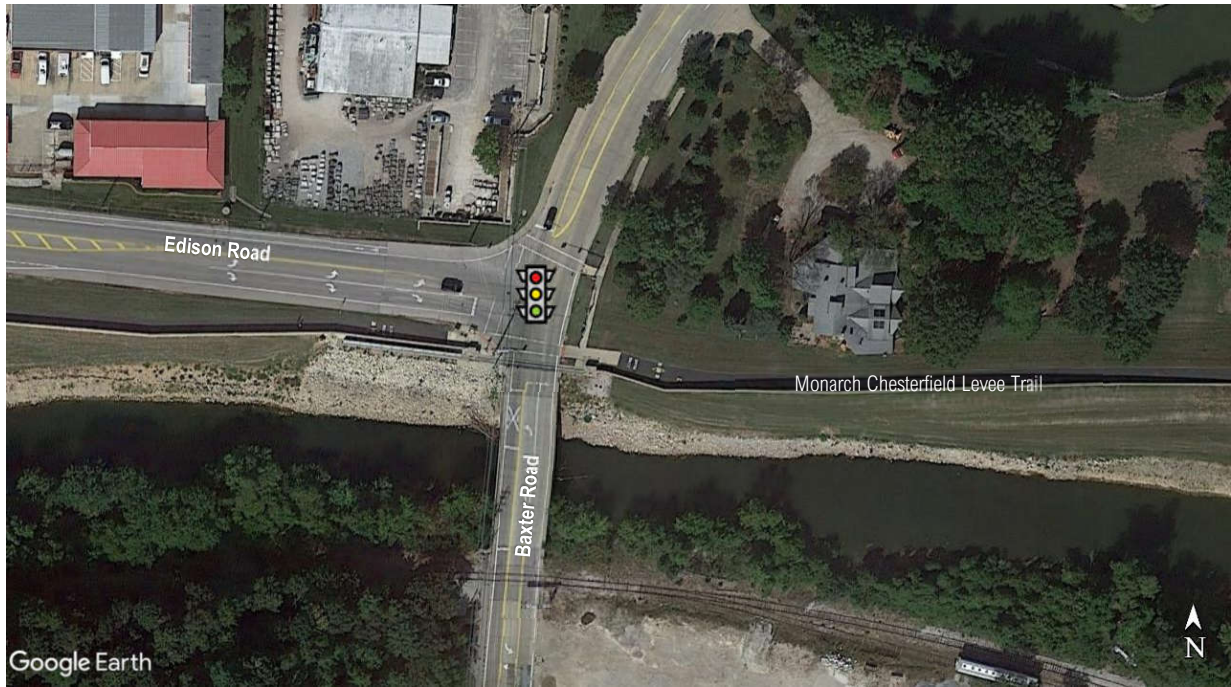


Figure 2: Aerial View of the Edison Road and Baxter Road Intersection

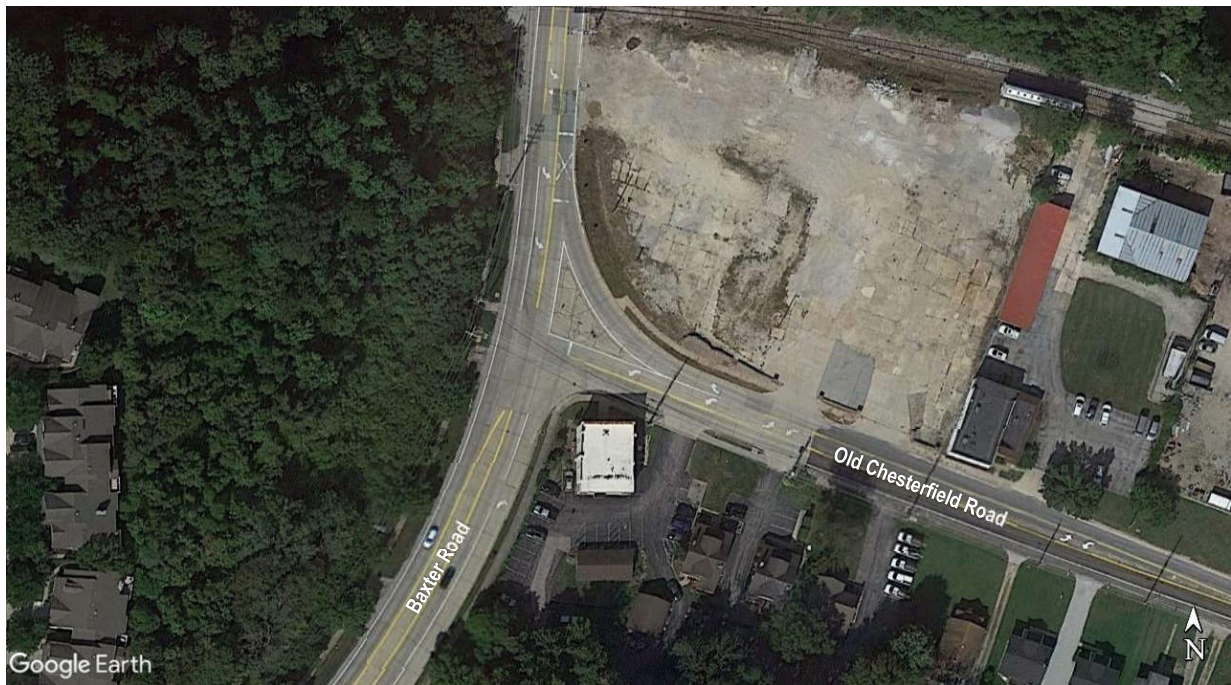


Figure 3: Aerial View of the Old Chesterfield Road and Baxter Road Intersection



The intersection of Wild Horse Creek Road and Baxter Road is controlled by a traffic signal. The northbound and southbound approaches of Baxter Road consist of a left-turn lane, a through lane and a shared through/right-turn lane. The eastbound and westbound approaches of Wild Horse Creek Road consist of a left-turn lane, a through lane and a right-turn lane. Marked pedestrian crossings and push buttons are provided on all approaches. The eastbound and northbound left-turn movements operate under protected plus permissive phasing while the westbound and southbound left-turn movements operate under permissive only phasing. **Figure 4** provides an aerial view of the Wild Horse Creek Road and Baxter Road intersection.

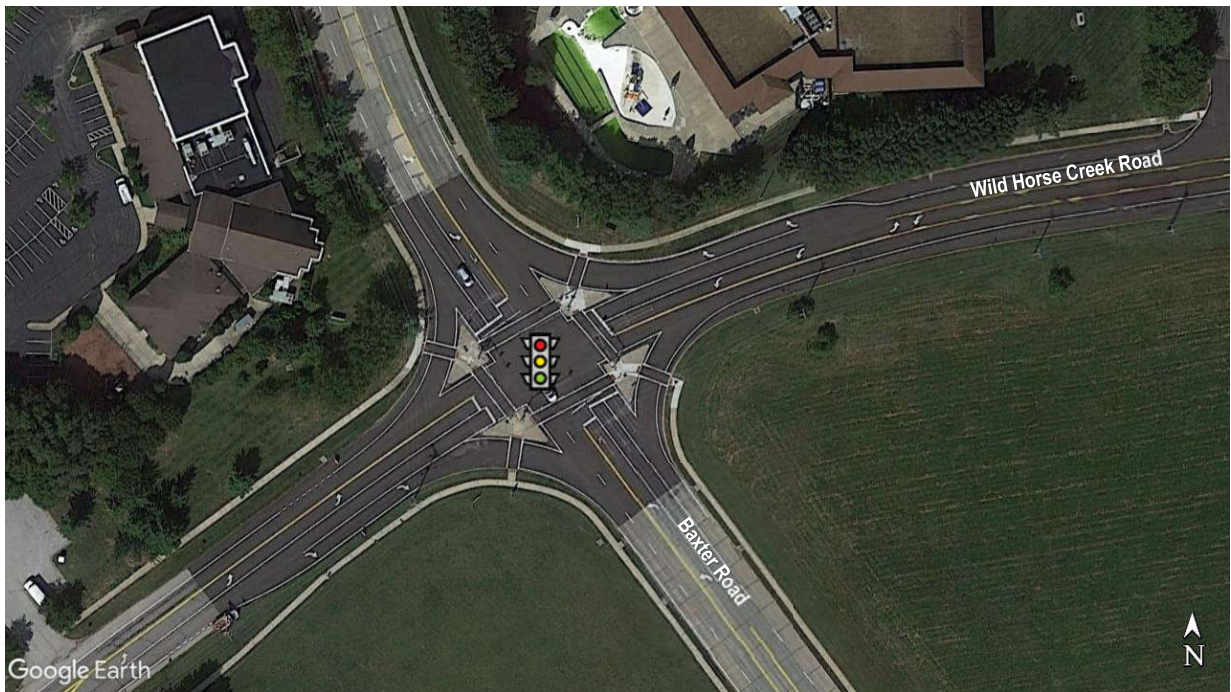


Figure 4: Aerial View of the Wild Horse Creek Road and Baxter Road Intersection

The intersection of Wild Horse Creek Road and Old Chesterfield Road is side-street stop controlled with Old Chesterfield Road required to stop. Separate left and right-turn lanes are provided on Old Chesterfield Road at the approach to Wild Horse Creek Road. The eastbound approach of Wild Horse Creek Road consists of a left-turn lane and a through lane. The westbound approach of Wild Horse Creek Road consists of a through lane and a right-turn lane. **Figure 5** provides an aerial view of the Wild Horse Creek Road and Old Chesterfield Road intersection.



Figure 5: Aerial View of the Wild Horse Creek Road and Old Chesterfield Road Intersection

The intersection of Wild Horse Creek Road and the I-64 EB Off-Ramp is controlled by a traffic signal. The southbound approach of the I-64 EB Off-Ramp consist of a right-turn lane and two left-turn lanes. The eastbound and westbound approaches of Wild Horse Creek Road consist of two through lanes. **Figure 6** provides an aerial view of the Wild Horse Creek Road and I-64 EB Off-Ramp intersection.

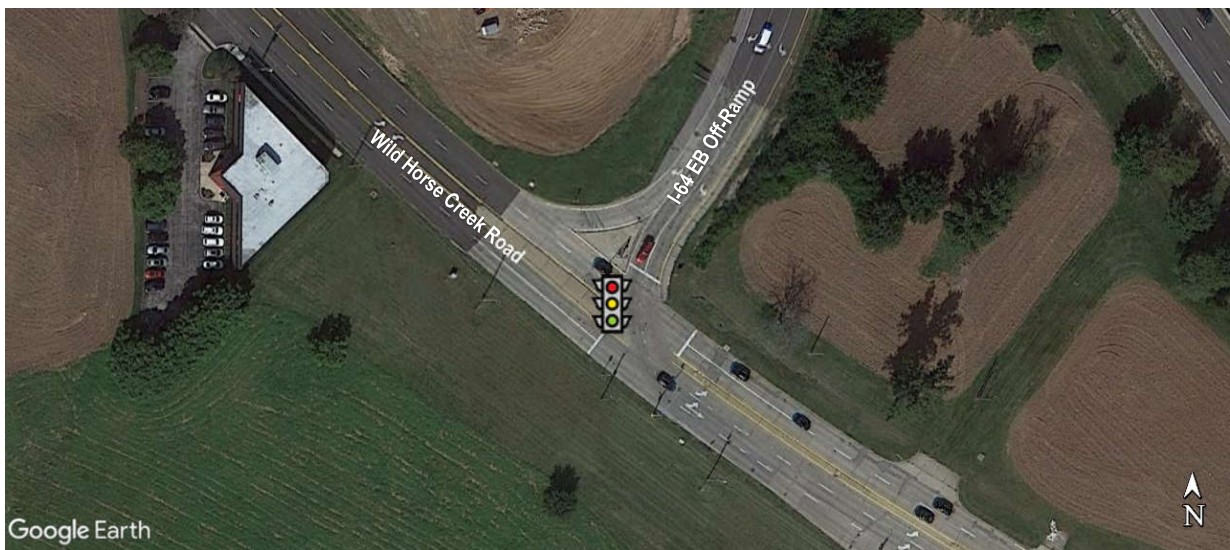


Figure 6: Aerial View of the Wild Horse Creek Road and I-64 EB Off-Ramp Intersection



The intersection of North Outer 40 Road and Chesterfield Parkway is controlled by a traffic signal. The northbound approach of Chesterfield Parkway consists of two left-turn lanes and two through lanes. The southbound approach of Chesterfield Parkway consists of a right-turn lane and three through lanes. The westbound approach of North Outer 40 Road consists of a left-turn lane, a shared left-turn/through lane, a through lane, and a right-turn lane. The northbound left-turn movement operates under protected only phasing. Marked pedestrian crossings and push buttons are provided for the east and west legs of the intersection. **Figure 7** provides an aerial view of the North Outer 40 Road and Chesterfield Parkway intersection.



Figure 7: Aerial View of the North Outer 40 Road and Chesterfield Parkway Intersection

The intersection of Wild Horse Creek Road and Chesterfield Parkway is controlled by a traffic signal. The northbound approach of Chesterfield Parkway consists of a left-turn lane, a through lane and a shared through/right-turn lane. The southbound approach of Chesterfield Parkway consists of a left-turn lane, a through lane, a shared through/right-turn lane and a free-flow right-turn lane. The eastbound approach of Wild Horse Creek Road consists of a left-turn lane, a shared through/left-turn lane, a through lane and a right-turn lane. The northbound and southbound left-turn movements operate under protected only phasing in the AM and PM peak periods and protected plus permissive phasing during the off peak. Marked pedestrian crossings and push buttons are provided on the south, east and west legs. **Figure 8** provides an aerial view of the Wild Horse Creek Road and Chesterfield Parkway intersection.

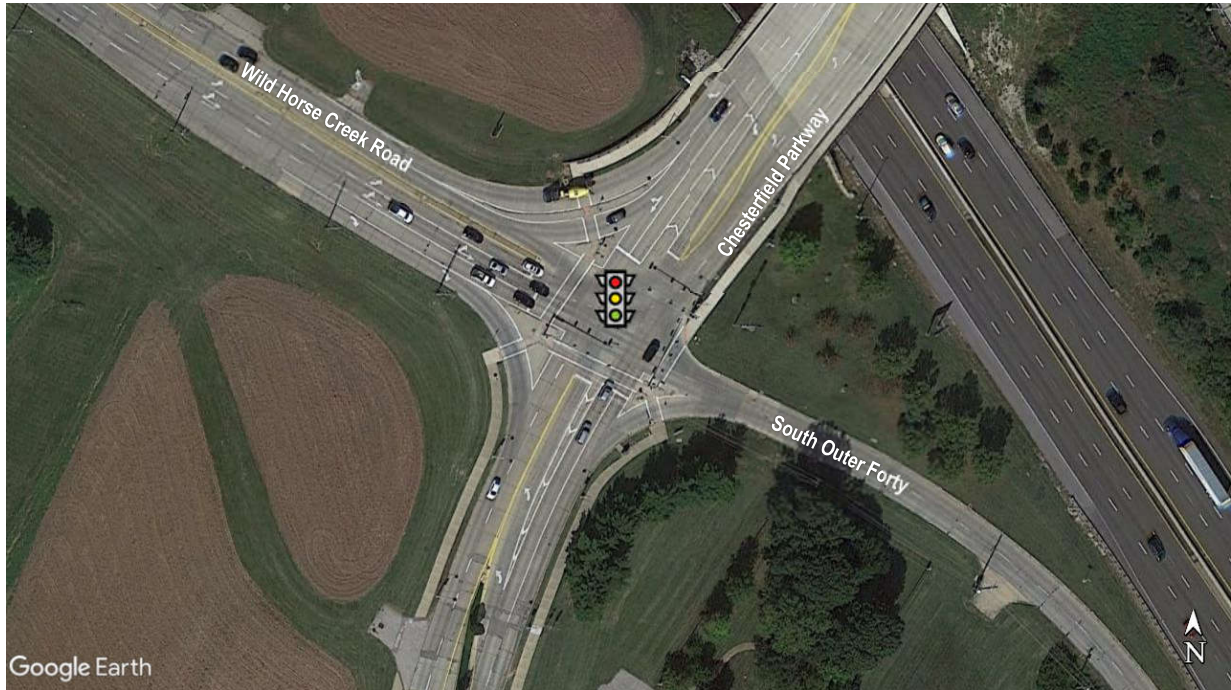


Figure 8: Aerial View of the Wild Horse Creek Road and Chesterfield Parkway Intersection

The intersection of Burkhardt Place and Veterans Place Drive is side-street stop controlled with Veterans Place Drive required to stop. The Veterans Place Drive approach provides a shared left/right-turn lane. The eastbound approach of Burkhardt Place consists of a shared through/right-turn lane. The westbound approach of Burkhardt Place consists of a left-turn lane and through lane. **Figure 9** provides an aerial view of the Burkhardt Place and Veterans Place Drive intersection.

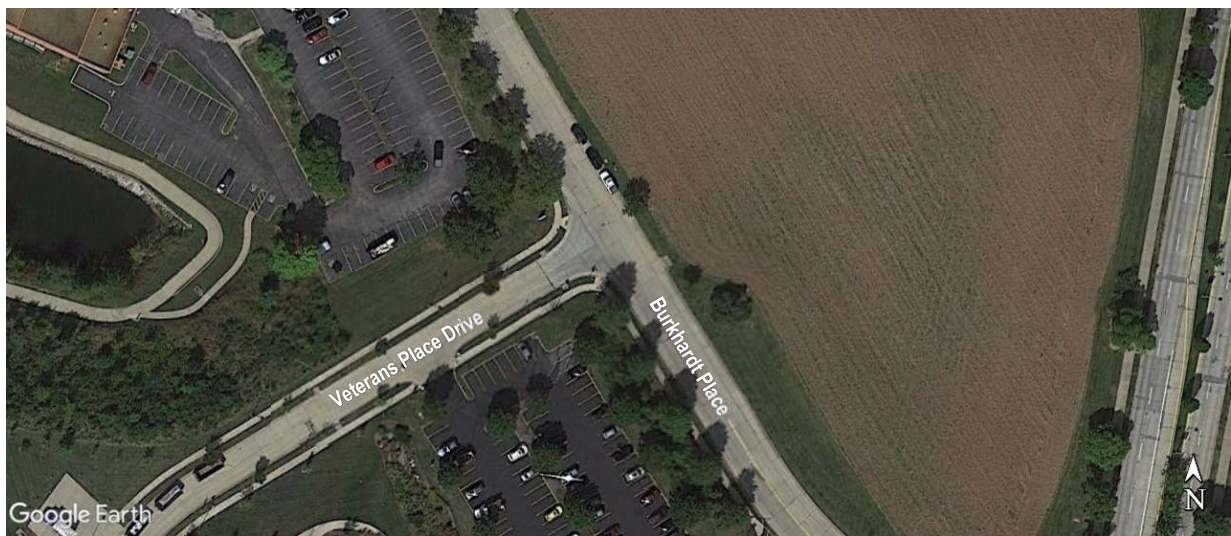


Figure 9: Aerial View of the Burkhardt Place and Veterans Place Drive intersection



The intersection of Burkhardt Place and Chesterfield Parkway is side-street stop controlled with Burkhardt Place required to stop. The northbound approach of Chesterfield Parkway consists of a left-turn lane and two through lanes. The southbound approach of Chesterfield Parkway consists of two through lanes. The eastbound approach of Burkhardt Place consists of a shared left/right-turn lane. **Figure 10** provides an aerial view of the Burkhardt Place and Chesterfield Parkway intersection.

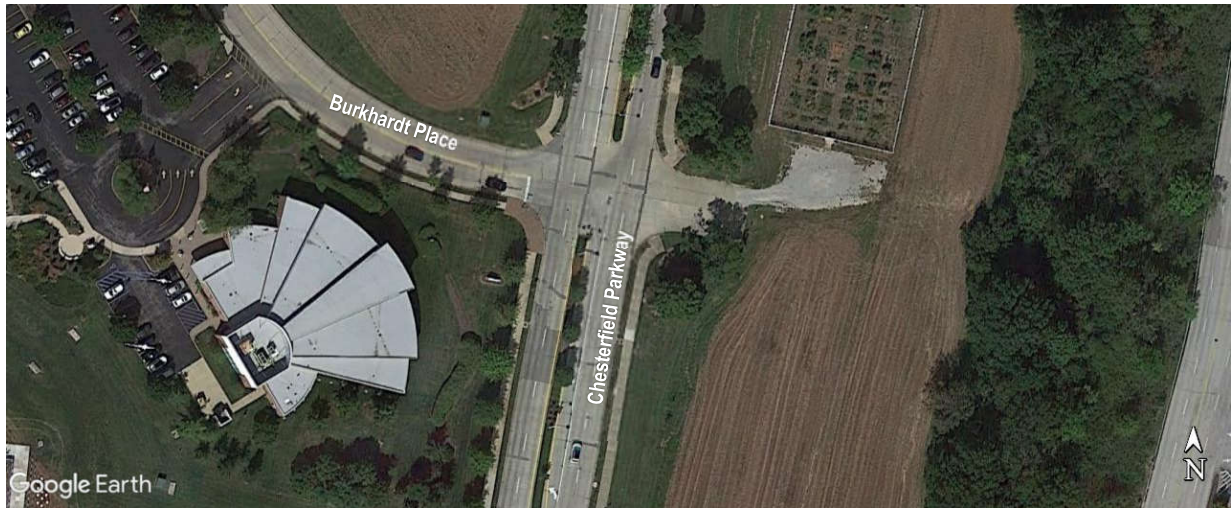


Figure 10: Aerial View of the Burkhardt Place and Chesterfield Parkway Intersection

The intersection of Lydia Hill Drive/Chesterfield Center and Chesterfield Parkway is controlled by a traffic signal. The northbound and southbound approaches of Chesterfield Parkway consist of a left-turn lane, a through lane, and a shared through/right-turn lane. The westbound approach of Chesterfield Center consists of a left-turn lane and a shared through/right-turn lane. The eastbound approach of Lydia Hill Drive consists of a left-turn lane, a through lane, and right-turn lane. The eastbound and westbound approaches operate under permissive only phasing while the northbound and southbound left-turn movements operate under protected plus permissive phasing. Marked pedestrian crossings and push buttons are provided on all approaches. **Figure 11** provides an aerial view of the Lydia Hill Drive/Chesterfield Center and Chesterfield Parkway intersection.

The intersection of Justus Post Road and Chesterfield Parkway is controlled by a traffic signal. The southbound approach of Justus Post Road consists of a left-turn lane and a shared through/right-turn lane, while the northbound approach consists of a shared left-turn/through lane and a right-turn lane. The eastbound and westbound approaches of Chesterfield Parkway consist of a left-turn lane, a through lane, and a shared through/right-turn lane. The eastbound, northbound and southbound approaches operate under permissive only phasing while the westbound left-turn movements operate under protected plus permissive phasing. Marked pedestrian crossings and push buttons are provided on all approaches. **Figure 12** provides an aerial view of the Justus Post Road and Chesterfield Parkway intersection.

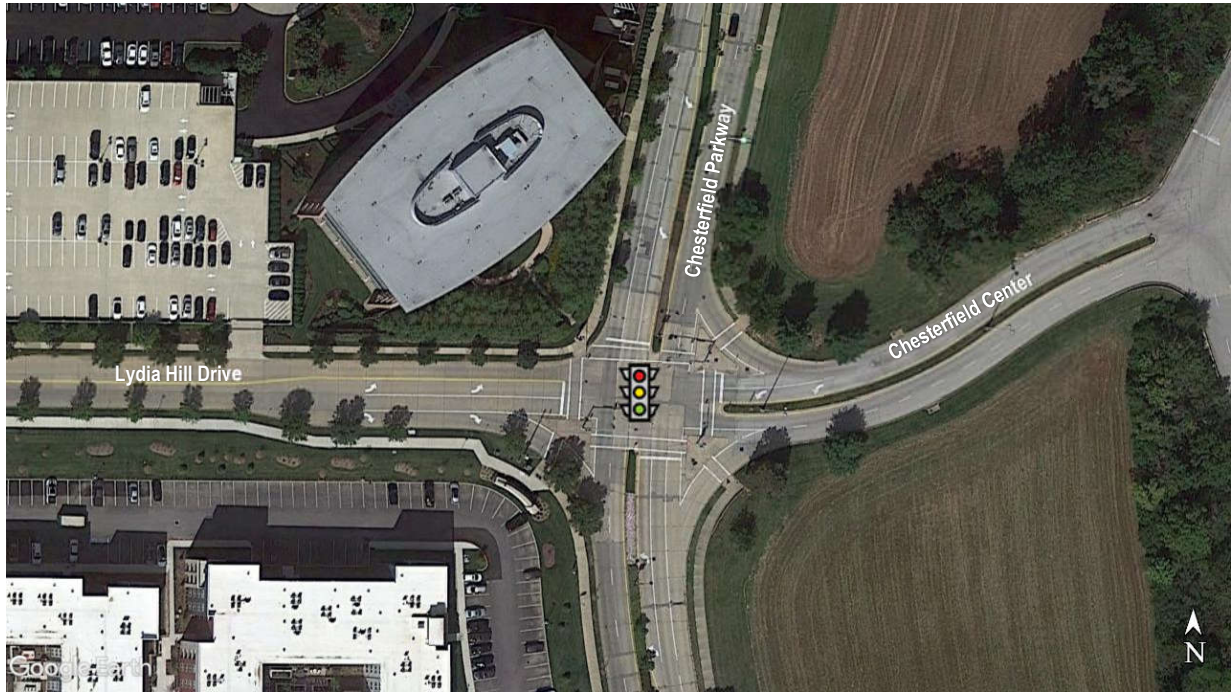


Figure 11: Aerial View of Lydia Hill Drive/Chesterfield Center and Chesterfield Parkway intersection

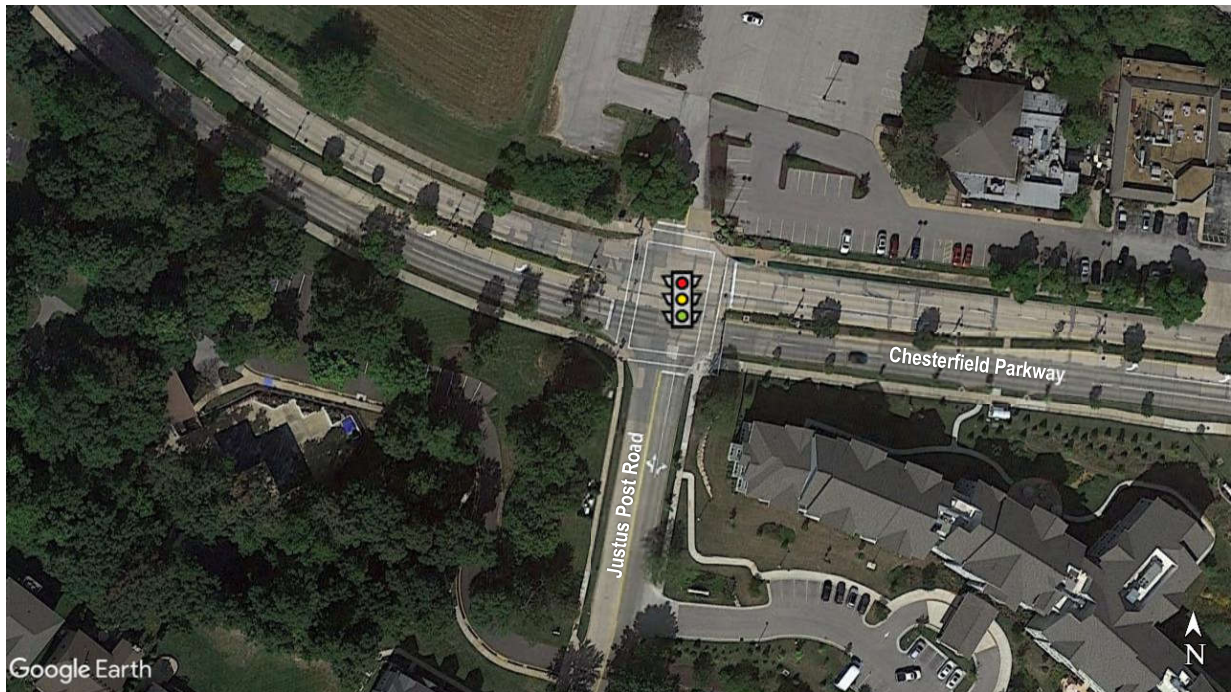


Figure 12: Aerial View of Justus Post Road and Chesterfield Parkway intersection



Clarkson Road and Chesterfield Parkway intersect at a hybrid folded diamond/split diamond interchange where Clarkson Road bridges over Chesterfield Parkway. The southbound Clarkson Road ramps are under a folded diamond configuration while the northbound Clarkson Road Ramps are under a split diamond configuration. **Figure 13** provides an aerial view of the Clarkson Road and Chesterfield Parkway hybrid folded diamond/split diamond interchange.

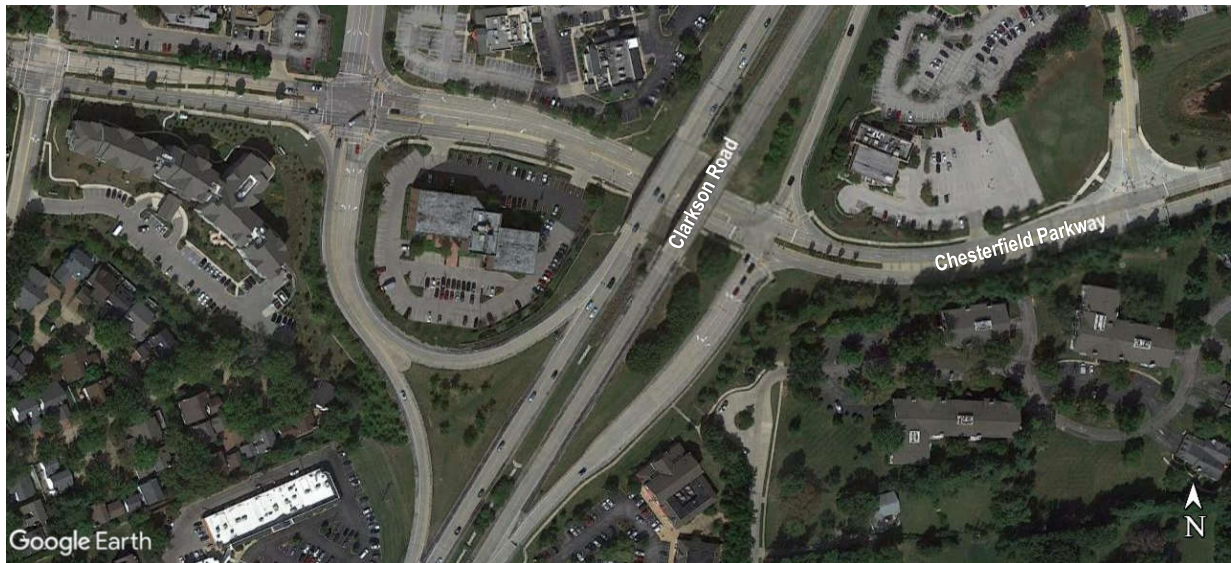


Figure 13: Aerial View of Clarkson Road and Chesterfield Parkway hybrid folded diamond/split diamond interchange

The intersection of Chesterfield Parkway and Clarkson Road SB Ramps/Fontaine Drive is controlled by a traffic signal. The eastbound approach of Chesterfield Parkway consists of a left-turn lane, a through lane and a shared through/right-turn lane. The westbound approach of Chesterfield Parkway consists of a left-turn lane, two through lanes, a right-turn lane. The southbound approach of Fontaine Drive exiting the mall consists of two left-turn lanes, a through lane, and a right-turn lane. The northbound approach of Clarkson Road SB off-ramp consists of a left-turn lane, a through lane, and a right-turn lane. The eastbound and westbound left-turn movements operate under protected plus permissive phasing while the northbound and southbound approaches operate under split phasing. Marked pedestrian crossings and push buttons are provided on all approaches. **Figure 14** provides an aerial view of the Chesterfield Parkway and southbound Clarkson Road Ramp/Fontaine Drive intersection.

The intersection of Chesterfield Parkway and Clarkson Road NB Ramps is controlled by a traffic signal. The eastbound approach of Chesterfield Parkway consists of a left-turn lane and two through lanes. The westbound approach of Chesterfield Parkway consists of a through lane and a shared through/right-turn lane. The Clarkson Road NB off-ramp consists of a left-turn lane, a shared left-turn/through lane, and a right-turn lane. The eastbound left-turn movement operates under protected plus permissive phasing. Marked pedestrian crossings and push buttons are provided on the north and south legs. **Figure 15** provides an aerial view of the Chesterfield Parkway and Clarkson Road NB Ramps intersection.

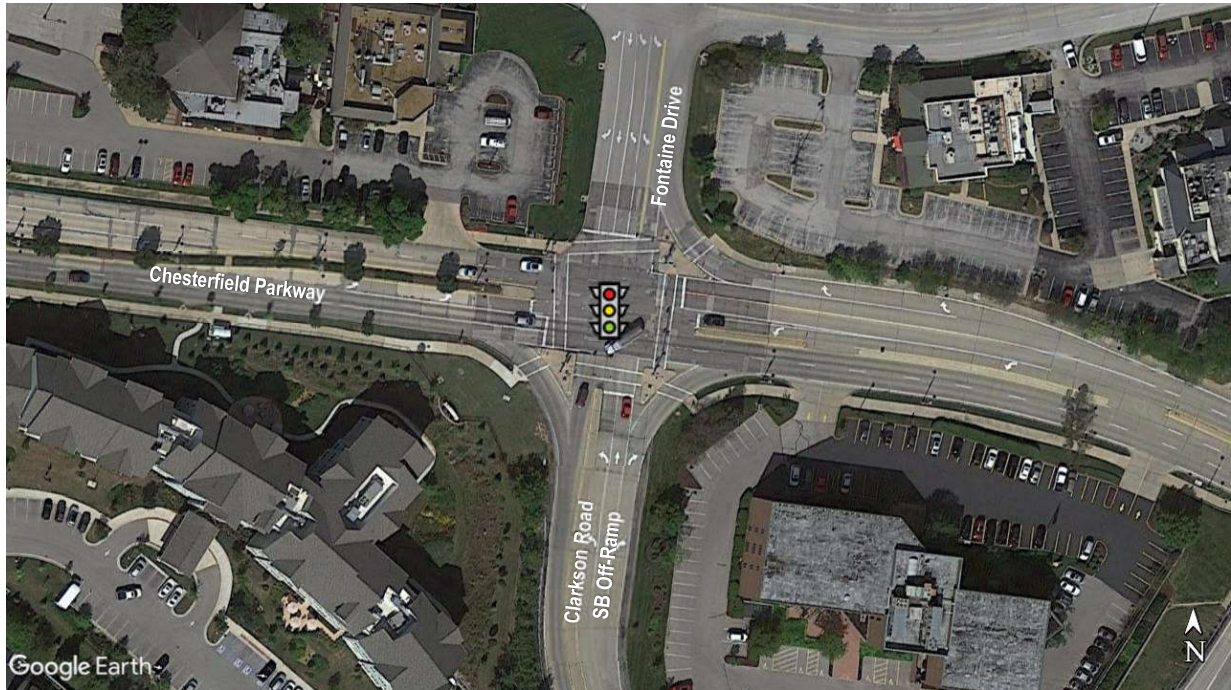


Figure 14: Aerial View of Chesterfield Parkway and Clarkson Road SB Ramps/Fontaine Drive intersection



Figure 15: Aerial View of Chesterfield Parkway and Clarkson Road NB Ramps intersection

Existing Traffic Signal Timings: The signalized intersections along Chesterfield Parkway at Justus Post Road, Fontaine Drive/Clarkson Road southbound ramps, and Clarkson Road



northbound ramps are a part of a coordinated signal system along Chesterfield Parkway during the AM and PM peak hours that operates on a 110 second cycle length.

The signalized intersections of Chesterfield Parkway at the North Outer Road, Chesterfield Parkway at Wild Horse Creek Road, and Wild Horse Creek Road at the I-64 eastbound off-ramp are part of a coordinated signal system during the AM peak hour that operates on a 100 second cycle length. During the PM peak hour Chesterfield Parkway at the North Outer Road and Wild Horse Creek Road are a part of a coordinated signal system that operates on a 120 second cycle length while the Wild Horse Creek Road and I-64 eastbound off-ramp runs free (i.e., actuated uncoordinated).

The signalized intersections of Edison Avenue at Baxter Road, Wild Horse Creek Road at Baxter Road, and Lydia Hill Drive at Chesterfield Parkway all operate under free conditions (i.e., actuated uncoordinated) during the AM and PM peak hours.

Existing Traffic Volumes: Manual, turning movement traffic counts were conducted at the following intersections during the weekday morning (7:00-9:00 a.m.) and weekday afternoon (4:00-6:00 p.m.) peak periods the second and third weeks of February 2020:

- Baxter Road and Edison Avenue;
- Baxter Road and Old Chesterfield Road;
- Wild Horse Creek Road and Baxter Road;
- Wild Horse Creek Road and Old Chesterfield Road;
- Wild Horse Creek Road and I-64 EB Off-ramp;
- Chesterfield Parkway West and I-64 NOR;
- Chesterfield Parkway West and Wild Horse Creek Road/I-64 SOR;
- Burkhardt Place and Veterans Place Drive;
- Chesterfield Parkway West and Burkhardt Place;
- Chesterfield Parkway West and Lydia Hill Drive;
- Chesterfield Parkway West and Justus Post Drive;
- Chesterfield Parkway West and Clarkson Road SB Ramps; and
- Chesterfield Parkway West and Clarkson Road NB Ramps.

The area school academic calendars were reviewed to ensure the data was collected during normal school operations. The traffic count data was also collected during dry weather conditions. The existing weekday AM and PM peak hour volumes are summarized in **Exhibit 2**. Based on the traffic data collected, the morning peak hour occurred between 7:15 and 8:15 a.m. and the afternoon peak hour occurred between 4:45 and 5:45 p.m.

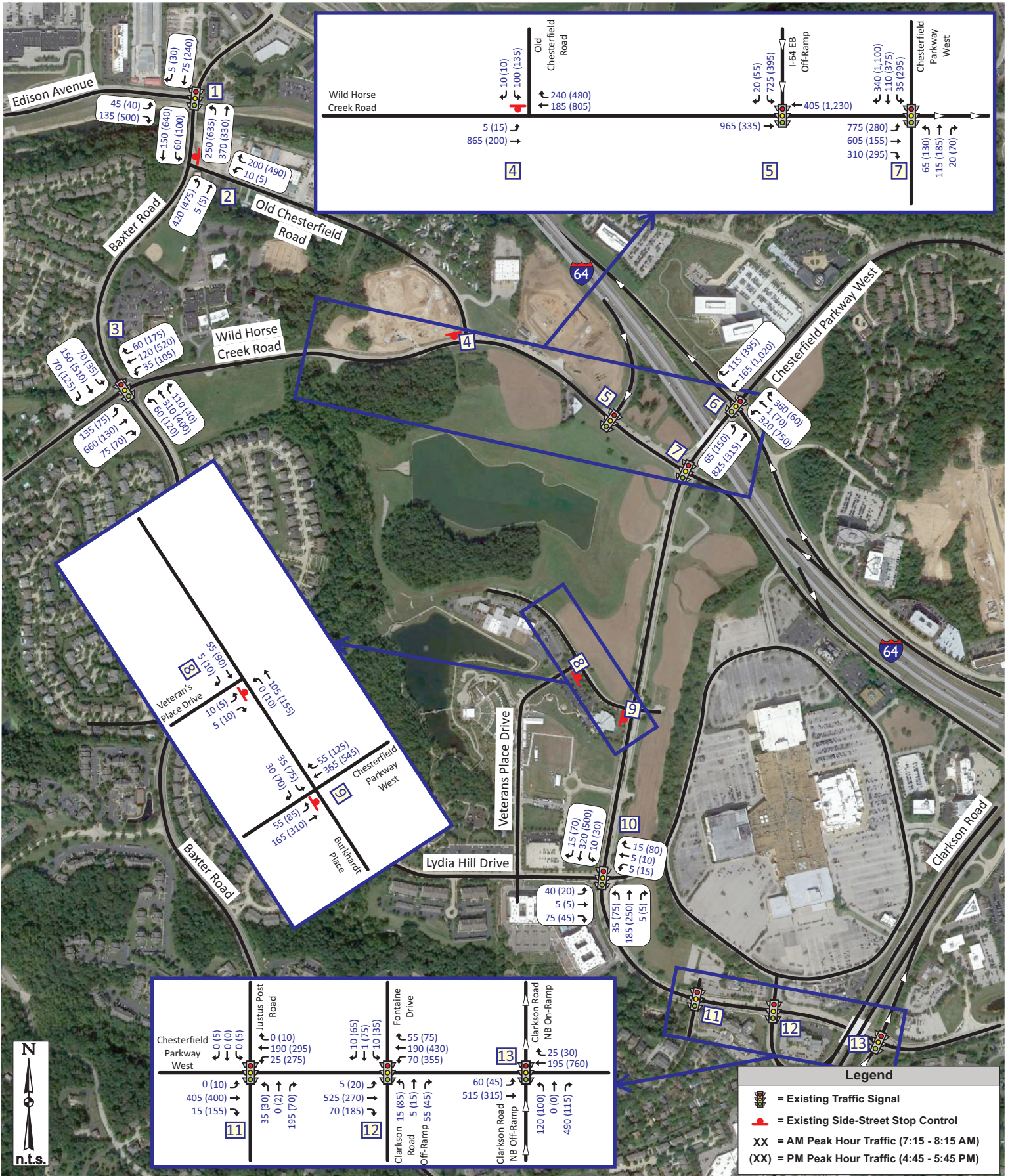


Exhibit 2: Existing Traffic Volumes



Turning movement traffic counts were also conducted during the weekday midday (11:00 a.m. – 1:00 p.m.) peak period at the following intersections:

- Wild Horse Creek Road and Baxter Road;
- Wild Horse Creek Road and Old Chesterfield Road;
- Chesterfield Parkway West and Wild Horse Creek Road/I-64 SOR; and
- Chesterfield Parkway West and Burkhardt Place.

Turning movement traffic counts were also conducted during the Saturday midday (11:00 a.m. – 1:00 p.m.) peak period at the following intersections:

- Wild Horse Creek Road and Baxter Road;
- Wild Horse Creek Road and I-64 EB Off-ramp; and
- Chesterfield Parkway West and NB Clarkson Road Ramps.

Weekday midday and Saturday midday traffic counts were collected to compare to the weekday AM and PM traffic counts at representative intersections to verify that the weekday commuter AM and PM peak periods would in fact represent the worst case conditions. **Table 1** summarizes the total entering volume during the peak hours for the study area intersections. As shown, the AM and PM peak hour traffic volumes are generally higher than the weekday and Saturday midday traffic counts. Note, the weekday midday traffic count at Chesterfield Parkway West and Burkhardt Place is slightly higher than the weekday AM traffic count, but this is the only intersection at which the weekday midday peak hour traffic count is higher than the weekday AM traffic count and the PM traffic count is significantly higher than the weekday midday.

Considering the overall corridor, in our opinion, the analysis scenarios proposed of the weekday AM and PM commuter peak hours would represent a worst-case scenario with regards to traffic impact and would represent the most critical analysis times; thereby dictating potential roadway improvement needs and negating the need to analyze a separate weekday midday or Saturday midday scenario. If traffic operations are acceptable during the weekday AM and PM peak periods, it can be reasoned that conditions would be acceptable throughout the remainder of the day and on Saturday.



Table 1: Traffic Count Comparison

INTERSECTION	TOTALING ENTERING VOLUME FOR INTERSECTION (VPH)			
	WEEKDAY AM PEAK HOUR	WEEKDAY MIDDAY PEAK HOUR	WEEKDAY PM PEAK HOUR	SATURDAY MIDDAY PEAK HOUR
Baxter Road and Edison Avenue	880		1775	
Baxter Road and Old Chesterfield Road	845		1715	
Baxter Road and Wild Horse Creek Road	1855	1640	2305	1790
Wild Horse Creek Road and Old Chesterfield Road	1405	865	1645	
Wild Horse Creek Road and I-64 EB Off-ramp	2115		2015	1165
Wild Horse Creek Road/I-64 SOR and Chesterfield Parkway West	2375	1,615	2885	
Chesterfield Parkway West and I-64 NOR	1851		2760	
Chesterfield Parkway West and Burkhardt Place	705	760	1210	
Burkhardt Place and Veterans Place Drive	180		280	
Chesterfield Parkway West and Lydia Hill Drive	715		1105	
Chesterfield Parkway West and Justus Post Drive	865		1257	
Chesterfield Parkway West and SB Clarkson Road Ramps	1011		1655	
Chesterfield Parkway West and NB Clarkson Road Ramps	1405		1365	915



AREA APPROVED DEVELOPMENTS IN THE STUDY AREA

There are currently several developments under construction within, or near, the study area. Specifically, the trips associated with the Aventura at Wild Horse Creek apartments and the Wild Horse Creek Mixed-Use development across from the study site and the Fienup Tract residential development farther to the west on Wild Horse Creek Road would be included in the base traffic scenario.

Fienup Tract: It is our understanding the Fienup Tract project on the north side of Wild Horse Creek Road between Baxter Road and Kehrs Mill Road is currently under construction. As a result, the site-generated trips from that traffic study, completed by CBB dated August 17, 2017, will be included in the 2020 Base Traffic Volumes.

Aventura at Wild Horse Creek Apartments: We further understand the Aventura at Wild Horse Creek apartment project, located on the north side of Wild Horse Creek Road, west of Old Chesterfield Road, is also currently under construction. As a result, the site-generated trips from the Aventura at Wild Horse Creek traffic study, completed by CBB dated March 19, 2018, will also be included in the 2020 Base Traffic Volumes.

In addition, the Traffic Study recommended a westbound right-turn lane on Wild Horse Creek Road at the proposed site drive which is included in the 2020 Base analyses.

Wild Horse Mixed-Use: Additionally, the Wild Horse Creek mixed-use development located in the northwest quadrant of the intersection of Wild Horse Creek Road and the I-64 Eastbound off ramp is also currently under construction. As a result, the site-generated trips from the Wild Horse Creek mixed-use development traffic study, completed by CBB dated December 14, 2018, will also be included in the 2020 Base Traffic Volumes.

In addition, the Traffic Study recommended a westbound right-turn lane on Wild Horse Creek Road at the proposed site drive which is included in the 2020 Base analyses.

2020 Base Traffic Volumes: The site-generated trips for the Fienup Tract, the Aventura at Wild Horse Creek apartments and the Wild Horse Creek mixed-use development were added to the Existing Traffic Volumes (Exhibit 2) to determine the 2020 Base Traffic Volumes. The 2020 Base Traffic Volumes for the AM and PM peak hours are shown in **Exhibit 3**.

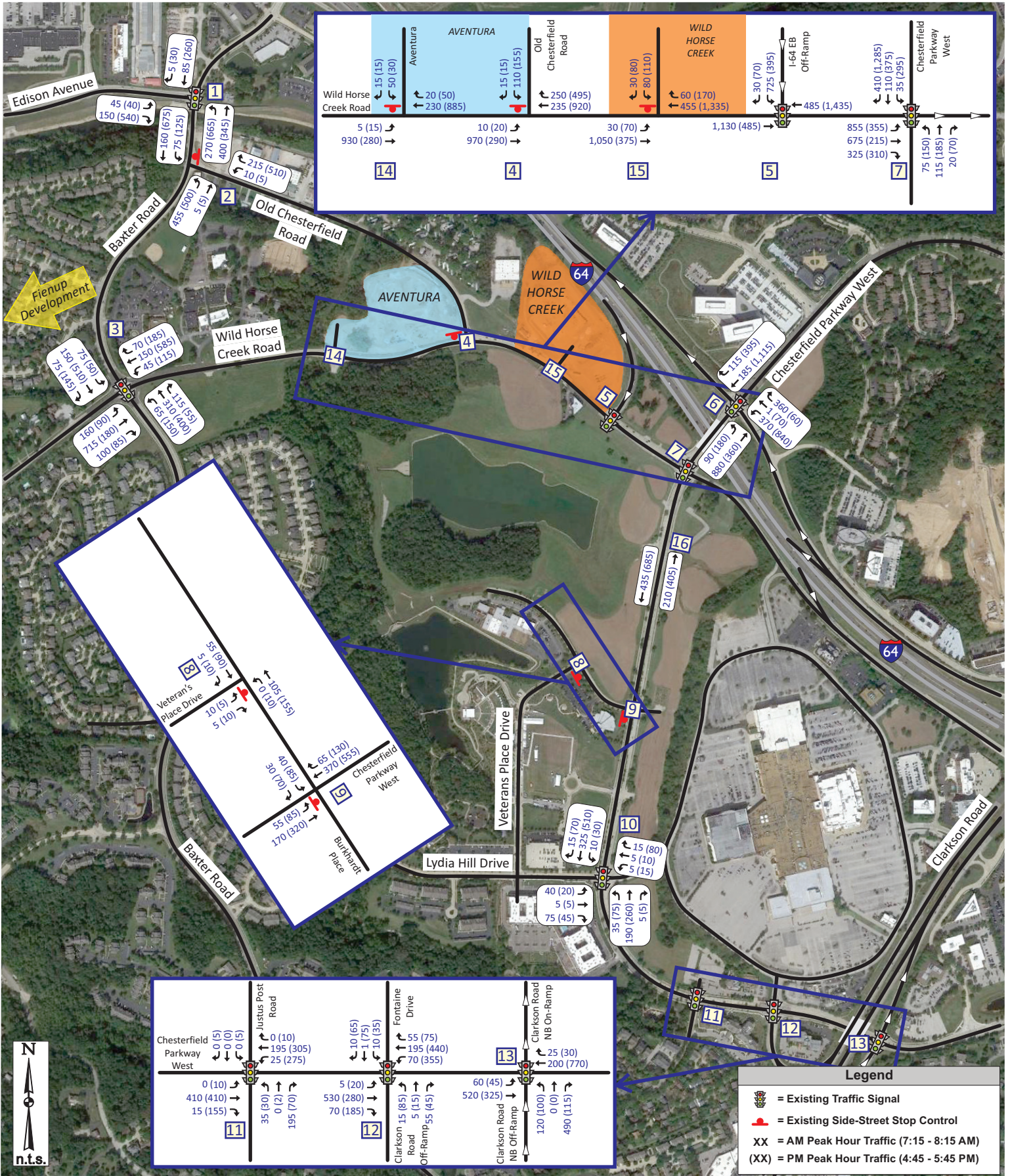


Exhibit 3: 2020 Base Traffic Volumes (Existing plus Approved Developments)

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PROPOSED SITE

Land Use: The development site encompasses of approximately 78 acres in the southwest quadrant of the Wild Horse Creek Road and Chesterfield Parkway intersection. Based on discussions with the development team, the proposed Wild Horse Village development would include a mix of retail, office and residential uses. Specifically, the following uses were assumed for each lot:

Lot 1

- 280 multi-family residential units

Lot 2

- 220 multi-family residential units
- 260,000 ft² office
- 76,000 ft² commercial

Lot 3

- 300,000 ft² office
- 4,000 ft² commercial

Lot 4

- 90,000 ft² commercial

Lot 5

- 150 multi-family residential units
- 26,000 ft² commercial

Lot 6

- 90 multi-family residential units
- 60 single-family residential units

Note: Based on information provided by the owner, it was assumed the commercial square footage would develop as approximately two thirds general retail and one third restaurants. The restaurant square footage was then evenly split between fast casual restaurants, high-turnover sit-down restaurants and quality restaurants. It was further assumed that only half of high-turnover sit-down restaurants would be open in the AM peak hour with none of the fast casual or quality restaurants open.

Site Access: In conjunction with the proposed development, Burkhardt Place would be extended from its current terminus near the YMCA to Wild Horse Creek Road, tying in opposite the access for the Aventura at Wild Horse Creek apartments development currently under



construction. Based on the concept plan provided by Stock & Associates, the following access points are proposed to accommodate the Wild Horse Village mixed-use development:

- A new access drive on Wild Horse Creek Road opposite the eastbound I-64 off-ramp;
- A new right-in/right-out (RIRO) drive on Wild Horse Creek Road between the eastbound I-64 off-ramp and Old Chesterfield Road;
- A new access drive on Wild Horse Creek Road opposite Old Chesterfield Road;
- The future intersection of Wild Horse Creek Road and Burkhardt Place;
- The existing intersection of Chesterfield Parkway and Burkhardt Place;
- An access drive on Chesterfield Parkway between Wild Horse Creek Road and Burkhardt Place; and
- Several access drives along Burkhardt Place.

Sight Distance: Adequate sight distance is necessary at intersections to allow drivers to perceive potentially conflicting vehicles and allow those motorists sufficient time to adjust their speed to avoid a collision or make a choice of when to cross or enter the mainline traffic flow. All drivers approaching or stopped at the intersection should have an unobstructed view of the entire intersection, so that potential collisions can be avoided.

Since Wild Horse Creek Road and Chesterfield Parkway are owned and maintained by SLCDOT, the sight distance requirements detailed in Drawing 40.25.1 (Sight Distance at Intersections-Updated September 1, 2015) in St. Louis County's Design Criteria Manual should be provided for all site drives intersecting Wild Horse Creek Road and Chesterfield Parkway. Note that CBB did not measure the sight distance in the field. It is recommended the civil engineer for the site document the sight distance for the proposed site drives on Wild Horse Creek Road and Chesterfield Parkway to ensure that the recommended intersection sight distance is met.

Adequate sight distance is also important for the proposed site drives along Burkhardt Place as well as the internal intersections within the proposed Wild Horse Village development. The City of Chesterfield Unified Development Code provides guidance for the recommended sight distance at City controlled intersections. It is recommended the civil engineer for the site document the sight distance for the proposed site drives on Burkhardt Place and the main internal site roadway to ensure that the recommended intersection sight distance is met.

Careful consideration should be given to sight distance obstructions when planning future aesthetics enhancements, such as signs, berms, fencing and landscaping, to ensure that these improvements do not obstruct the view of entering and exiting traffic at the site drives on the public roadways, as well as the internal development site intersections. It is generally recommended that all improvements higher than 3 ½ feet above the elevation of the nearest pavement edge be held back at least 20 feet from the traveled roadway.



Pedestrian/Bicycle Accommodations: As typically required by the City and County, it is our understanding that a five (5) foot sidewalk will be constructed in the future along the subject property frontage of Wild Horse Creek Road, Chesterfield Parkway and Burkhardt Place as parcels along those roadways develop. In conjunction with the proposed development, it is our understanding all interior streets will be built with sidewalk along both sides of the roadway with the exception of the interior circular roadway fronting the lake. An 8-foot trail is proposed around the lake with the sidewalk along the same side as the lake shown as future.

It is our understanding the City has a project to construct the Riparian Trail, a 10-foot trail, along the west side of Burkhardt Place within the study area. The Riparian Trail would cross Wild Horse Creek Road on the west side of Burkhardt Place.

An excerpt from the City of Chesterfield Bikeable-Walkable Community Plan: Bicycle Facilities is shown in **Figure 16**. As shown, the recommended bike facility for Wild Horse Creek Road is an on-street marked bike lane. The recommended bike facility for Chesterfield Parkway and Burkhardt Place is a designated bike route (i.e., Share the Road Bike Route signs).

As stated in the City of Chesterfield Bikeable-Walkable Community Plan, “an on-street system of bikeways should be developed to provide alternative transportation facilities providing interconnections to activity generators and to the planned trail system. The system would also help to reduce or completely eliminate the need for some motor vehicle trips to trails.”

Based on public input during the development of the City’s Bikeable-Walkable Community Plan, Wild Horse Creek Road was identified as a priority route in need of a bicycle facility. To facilitate the implementation of the bike plan, the City typically requires developers to implement the segment of the plan along their frontage. Thus, it is recommended that a bike lane be provided on the eastbound lane of Wild Horse Creek Road along the frontage of the proposed development. This lane should be designed in accordance with the guidelines outlined in the City of Chesterfield Bikeable-Walkable Community Plan. Furthermore, it is recommended that Bike Route signs be provided on Chesterfield Parkway and Burkhardt Place along the frontage of the proposed development.

While the proposed Wild Horse Village development will provide sidewalk and trails within the development site, it is recommended the internal intersections be designed to direct pedestrians to appropriate crossing locations. The primary internal intersections should be marked with pedestrian crossings on all approaches. To provide enhanced visibility of the pedestrian crossings, stamped or colored pavement crossings may be advantageous.

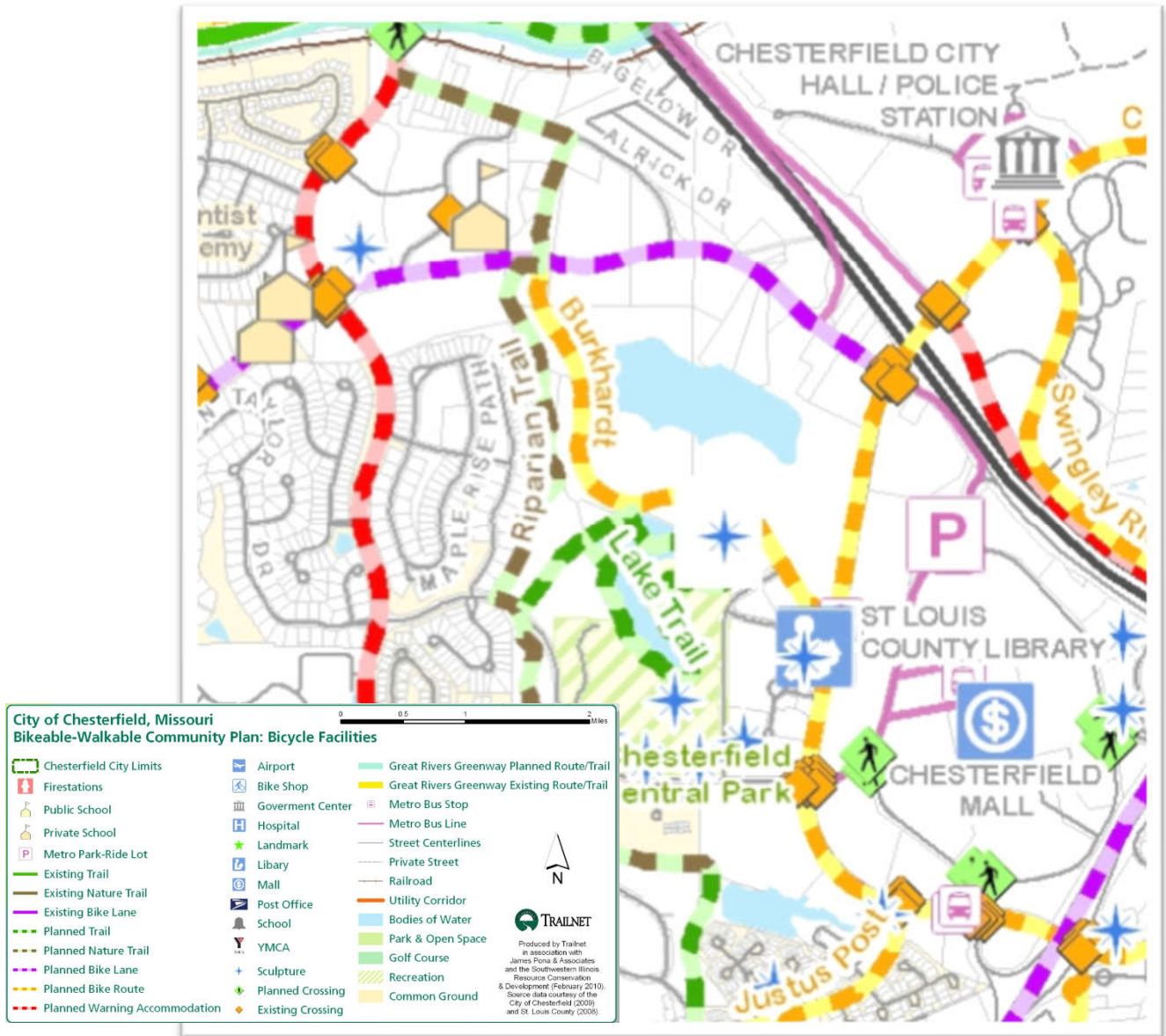


Figure 16: Excerpt from City of Chesterfield Bikeable-Walkable Community Plan: Bicycle Facilities



Trip Generation: Forecasts were prepared to estimate the amount of traffic that the proposed development would generate during the weekday AM and PM peak periods. These forecasts were based upon information provided in the *Trip Generation Manual*, 10th Edition, published by the Institute of Transportation Engineers (ITE). This manual, which is a standard resource for transportation engineers, is based on a compilation of nationwide studies documenting the characteristics of various land uses. Estimates for proposed development were based upon the following land uses:

- Land Use: 210 – Single-Family
- Land Use: 220 – Multi-Family
- Land Use: 710 – General Office
- Land Use: 820 – Shopping Center
- Land Use: 930 – Fast Casual Restaurant
- Land Use: 931 – Quality Restaurant
- Land Use: 932 – High-Turnover Sit-Down Restaurant

The data provided for Peak Hour of the Adjacent Street was used for the traditional weekday AM and PM peak hour forecasts.

It is important to note that ITE estimates assume each of the development's uses would be freestanding. Instead, the uses within the development area would share access to the main roadways surrounding the site and in many cases parking. Published studies show that patrons of multi-use developments often visit more than one use within the development during a single visit. As a result, a portion of the trips generated by the development would be captured internally and not impact the external road system. To account for internal capture trips, ITE recommends using the methodology and procedures outlined in the NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. The NCHRP report provides details on the development of the recommended estimation procedures, its underlying data, and validation of the estimation procedure. Utilizing the NCHRP Report 684, the Wild Horse Village development would be expected to have a total internal capture rate of 18% (15% entering trips and 23% exiting trips) in the AM peak hour and 40% (44% entering trips and 38% exiting trips) in the PM peak hour.

It should also be noted that not all of these trips would represent *new* traffic on the adjacent roadways. Nationwide studies have found that a large percentage of convenience-oriented trips, such as a restaurants and retail uses would already be present on the adjacent roads and would be attracted to the development on their way to or from home, work or another destination (i.e., pass-by or diverted link trips).

Specifically, a portion of the traffic attracted to this site would already be traveling on Wild Horse Creek Road and Chesterfield Parkway as part of another trip (i.e., "pass-by" trip). The



pass-by trips would not increase traffic on the adjacent roadways, but they would increase the turning movements at the access points to the site. Therefore, statistical information provided in the *Trip Generation Handbook, 3rd Edition*, published by ITE, was utilized to estimate pass-by percentages for the proposed uses. The pass-by percentages applied are summarized in **Table 2**. The values shown in blue were derived using the pass-by percentages for similar uses and time periods as specific data was not available.

Table 2: Pass-by Trip Assumptions

Land Use	Pass-By Trip Assumptions	
	Weekday AM Peak Hour	Weekday PM Peak Hour
Shopping Center/Retail	20%	34%
Restaurants	30%	43%

The resulting trip generation estimate for the proposed Wild Horse Village development is summarized in **Table 3** and reflects the estimated internal capture rates and pass-by trips. The ITE *Trip Generation Manual* land use sheet calculations and the NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* are provided in the **Appendix**.

Table 3: Trip Generation Estimate – Wild Horse Village

ITE CODE	LAND USE	FLOOR AREA Sq. Ft.	MISC. Qty	Unit	AM PEAK HOUR (VPH)			PM PEAK HOUR (VPH)		
					IN	OUT	TOTAL	IN	OUT	TOTAL
210	Single Family Dwelling Unit		60	Home	15	35	50	40	25	65
220	Multifamily Housing (Low-Rise)		740	Unit	75	245	320	220	130	350
710	General Office Building	560,000			475	80	555	95	490	585
820	Shopping Center	130,666			135	85	220	320	345	665
930	Fast Casual Restuarant	21,778				No AM		170	140	310
931	Quality Restuarant	21,778				No AM		115	55	170
932	High-Turnover (Sit-Down) Restuarant	10,889			60	50	110	65	40	105
932	High-Turnover (Sit-Down) Restuarant	10,889				No AM		65	40	105
Total Trips					760	495	1,255	1,090	1,265	2,355
Common Trip Rate (per NCHRP Report 684)					15%	23%	18%	44%	38%	40%
Common Trip Reduction					(115)	(115)	(230)	(480)	(480)	(960)
Net Trips					645	380	1,025	610	785	1,395
Pass-By Trips					30	30	60	155	155	310
New Trips					615	350	965	455	630	1,085

~ Trips rounded to nearest 5 vph



The full build-out of the Wild Horse Village development is estimated to attract a total of approximately 60 and 310 trips from traffic already utilizing the surrounding roadway system during the AM and PM peak hours, respectively. In turn, the full build-out is estimated to generate a total of 965 new trips during the AM peak hour and 1,085 new trips during the PM peak hour.

Trip Distribution: The site-generated trips for the proposed development were then assigned into and out of the site based upon an estimated directional distribution. The assumed directional distribution is based on the existing traffic patterns, the prevailing commuter routes to major employment centers in the region and existing travel patterns to local destinations (i.e., schools, grocery stores, shopping or services). The assumed directional distribution for the new site-generated trips is as summarized in **Table 4**.

It should be noted that the pass-by trips were assigned according to the existing traffic volumes on Wild Horse Creek Road and Chesterfield Parkway.

Table 4: Trip Distribution Assumptions (New Trips)

Land Use	Trip Distribution Assumptions	
	Residential/ Office	Commercial
To/from the north on Chesterfield Parkway	10%	15%
To/from the west on Wild Horse Creek Road West of Baxter Road	5%	10%
To/from the north on Baxter Road via Wild Horse Creek Road	8%	6%
To/from the south on Baxter Road via Wild Horse Creek Road	5%	5%
To/from the north on Baxter Road via Old Chesterfield Road	7%	5%
To/from the southwest on Lydia Hill Drive via Chesterfield Parkway	0%	2%
To/from the south on Justice Post Road via Chesterfield Parkway	0%	2%
To/from the east on Chesterfield Parkway	5%	10%
To/from the south on Clarkson Road via Chesterfield Parkway	10%	15%
To/from the west on I-64	20%	15%
To/from the east on I-64	30%	15%

The resulting assignment of site-generated trips for the weekday AM and PM peak hours is summarized in **Exhibit 4**.

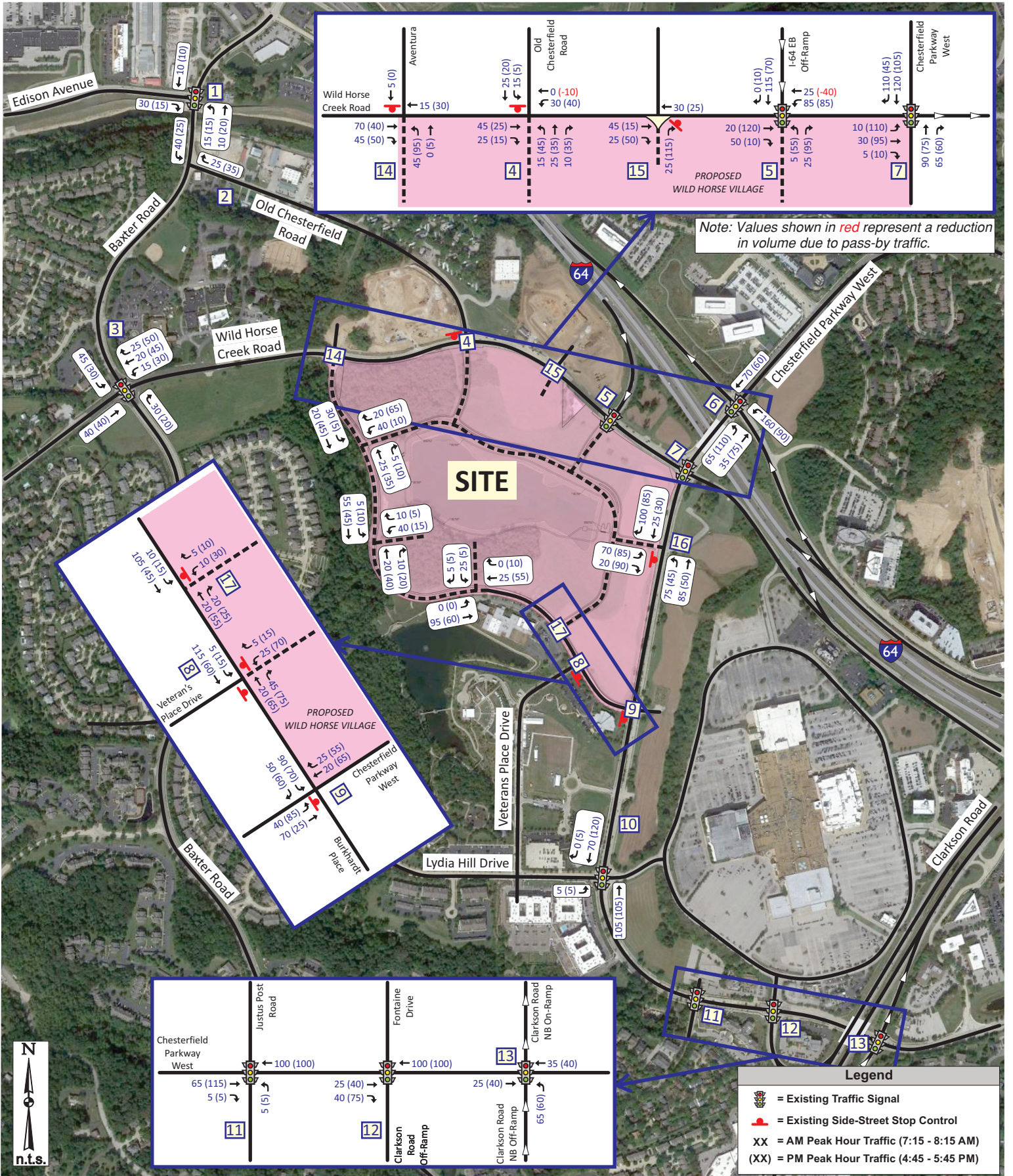


Exhibit 4: Site-Generated Trips (Wild Horse Village Trips)

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NEAR-TERM TRAFFIC ANALYSIS

2020 Build Traffic Volumes: The site-generated trips (Exhibit 4) were added to the 2020 Base Traffic Volumes (Exhibit 3) to determine the total volumes in the forecasted scenario. The 2020 Build Traffic Volumes for the AM and PM peak hours are shown in **Exhibit 5**.

It is important to note that the extension of Burkhardt Place from its current terminus near the YMCA to Wild Horse Creek Road would provide an alternate route for motorists between Chesterfield Parkway and Wild Horse Creek Road. As such, approximately one third of the existing eastbound right-turns from Wild Horse Creek Road to Chesterfield Parkway and one third of the existing northbound left-turns from Chesterfield Parkway to Wild Horse Creek Road were estimated to use Burkhardt Place. This reassignment is reflected in the 2020 Build Traffic Volumes.

2020 Build Signal Warrant Analysis: To determine if a traffic signal would be warranted at any of the development entrances, the 2020 Build traffic volumes were evaluated using criteria outlined in the *Manual on Uniform Traffic Control Devices* (MUTCD), published by the Federal Highway Administration, United States Department of Transportation. Part Four of the MUTCD provides nine different warrants for signalization that are based on hourly traffic volumes, traffic operations, pedestrian volumes or accident experience. SLCDOT bases their criteria for signalization on this same warrant. However, Warrant 1 is typically the primary warrant considered by SLCDOT when evaluating the need for a traffic signal.

A reduction in the full volume requirement is allowed when the major street speeds exceed 40 mph. The posted speed is 40 mph along both Chesterfield Parkway and Wild Horse Creek Road; therefore, the volume reduction would apply along both roadways. The minimum volume requirements are shown in **Figure 17**.

The following volume thresholds apply to the Chesterfield Parkway at Burkhardt Place intersection. The reduced Warrant 1A (Minimum Vehicular Volume) requires hourly approach volumes of at least 420 vehicles per day (vph) on major streets with two or more lanes per direction for any eight hours of a typical day. During this same period, the volume of traffic from the minor street must exceed 105 vph (assuming a single lane approach) or 140 vph (assuming a multi-lane approach). The reduced Warrant 1B (Interruption of Continuous Traffic) requires approach volumes of at least 630 vph on major streets with two lanes or more per direction with a minimum of 53 vph (assuming a single-lane approach) or 70 vph (assuming a multi-lane approach) on the minor street.

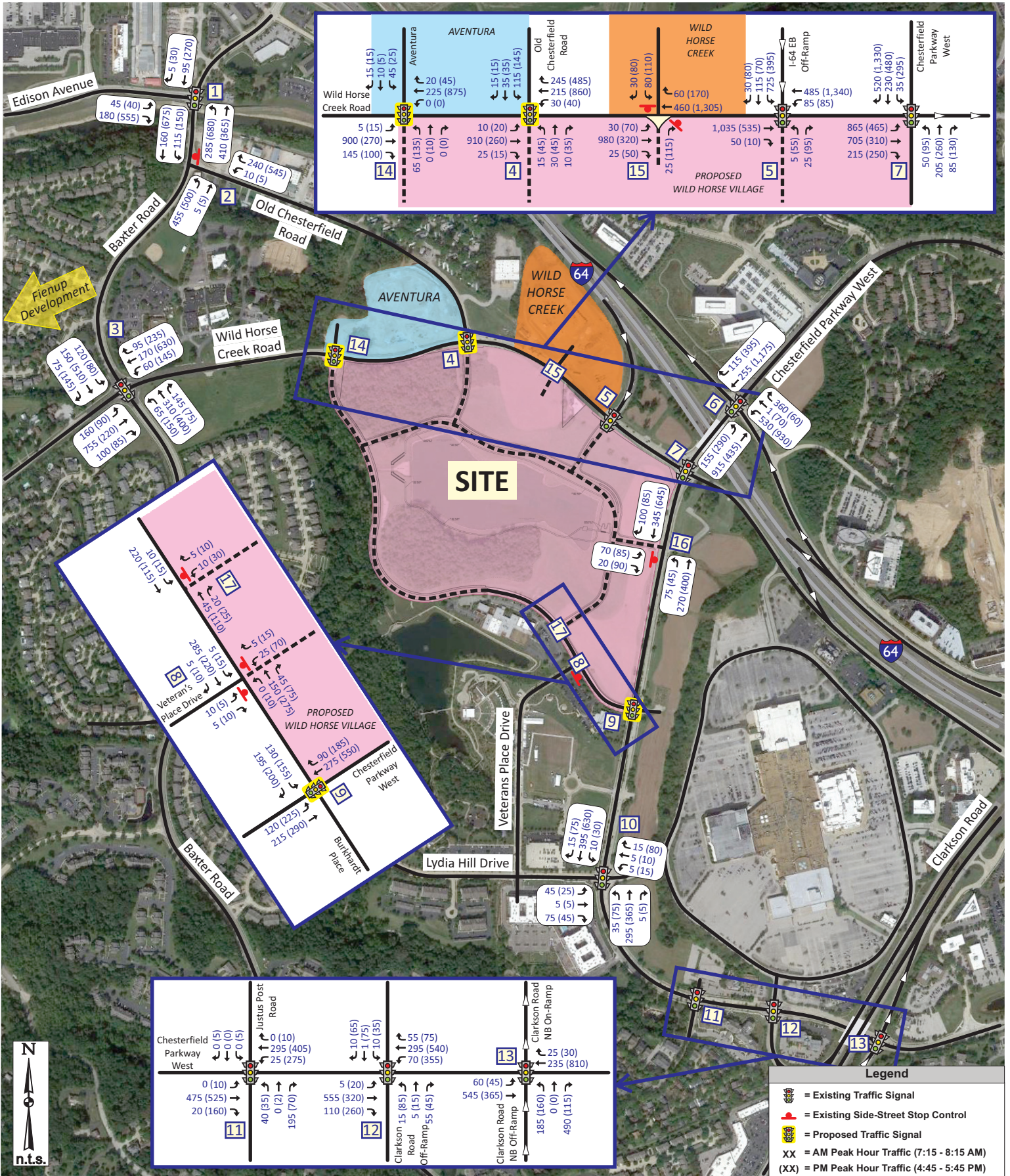


Exhibit 5: 2020 Build Traffic Volumes (Adjusted 2020 Base + Wild Horse Village Site Trips)

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Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume
^b Used for combination of Conditions A and B after adequate trial of other remedial measures
^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less

Figure 17: MUTCD Warrant 1A and 1B, Eight Hour Vehicular Volume

The following volume thresholds apply to Wild Hose Creek Road with Old Chesterfield Road and Wild Hose Creek Road with Burkhardt Place. The reduced Warrant 1A (Minimum Vehicular Volume) requires hourly approach volumes of at least 350 vehicles per day (vph) on major streets with one lane per direction for any eight hours of a typical day. During this same period, the volume of traffic from the minor street must exceed 105 vph (assuming a single lane approach) or 140 vph (assuming a multi-lane approach). The reduced Warrant 1B (Interruption of Continuous Traffic) requires approach volumes of at least 525 vph on major streets with one lane per direction with a minimum of 53 vph (assuming a single-lane approach) or 70 vph (assuming a multi-lane approach) on the minor street.

Chesterfield Parkway at Burkhardt Place: Thirteen-hour traffic counts, from 6:00 a.m. to 7:00 p.m., were performed at Chesterfield Parkway and Burkhardt Place in February 2020 to determine the hourly traffic volumes throughout the day. Based on the existing traffic volumes, the 8th highest traffic hour along the mainline is approximately 52% of the PM peak hour volumes, while the 8th highest traffic hour along the minor road (Burkhardt Place) is approximately 85% of the PM peak hour volumes.

The eighth highest hour of the site-generated traffic volumes was estimated using a proportionate amount of the outbound traffic for the Shopping Center (Land Use 820), Multi-Family Housing (Land Use 220), and General Office (Land Use 710). Based on that data, the 8th highest hour for the proposed development trips would be approximately 63% of the PM peak hour. Since separate left and right-turn lanes are anticipated on the minor street (Burkhardt Place) at Chesterfield Parkway, the signal warrant analysis evaluated the left-turn volume only



from the side street. The forecasted eastbound left-turn for the site generated trips were added to the existing eastbound left-turn volume to estimate the forecasted hourly distribution for the minor approach at the intersection.

The 2020 Build signal warrants analysis for the intersection of Chesterfield Parkway and Burkhardt Place is shown in the **Appendix**. Based on the analysis, the intersection of Chesterfield Parkway and Burkhardt Place is forecasted to exceed the reduced volume requirements for Warrant 1A for 9 hours and Warrant 1B for 10 hours. Therefore, a traffic signal is recommended at the intersection of Chesterfield Parkway and Burkhardt Place in conjunction with the proposed development.

Wild Horse Creek Road at Old Chesterfield Road: Thirteen-hour traffic counts were performed at the intersection of Wild Horse Creek Road and Old Chesterfield Road in February 2020 to document the hourly traffic volumes from 6:00 a.m. to 7:00 p.m. Based on the existing traffic volumes, the 8th highest traffic hour along the mainline is relatively low at approximately 36% of the PM peak hour volumes, while the 8th highest traffic hour along the minor road is approximately 70% of the PM peak hour volumes.

Based on the anticipated directional distribution of the site-generated traffic, the northbound approach exiting the proposed development across from Old Chesterfield Road is not expected to be as heavy as the existing southbound approach of Old Chesterfield Road. Consequently, the need to signalize the intersection of Wild Horse Creek Road and Old Chesterfield Road was based on the southbound approach volumes. The traffic entering the proposed development would add a small amount of southbound left-turn and through traffic at the intersection.

The 8th highest hour of the entering site-generated traffic volumes was estimated using a proportionate amount of the inbound traffic for the Shopping Center (Land Use 820), Multi-Family Housing (Land Use 220), and General Office (Land Use 710). Since separate left and right-turn lanes are provided on Old Chesterfield Road and the new site entrance at Wild Horse Creek Road, the signal warrant analysis evaluated the left-turn volume only from the side street (Old Chesterfield Road).

The 2020 Build signal warrants analysis for the intersection of Wild Horse Creek Road and Old Chesterfield Road/proposed site drive is shown in the **Appendix**. Based on the analysis, the intersection of Wild Horse Creek Road and Old Chesterfield Road/proposed site drive is forecasted to exceed the reduced volume requirements for Warrant 1A for 8 hours and Warrant 1B for 7 hours. Therefore, a traffic signal is recommended at the intersection of Wild Horse Creek Road and Old Chesterfield Road/proposed site drive in conjunction with the proposed development.

It should be noted that the signal warrant analysis did not assume any of the traffic exiting the Wild Horse Creek mixed-use development on the north side of Wild Horse Creek Road west of the I-64 eastbound off ramp would utilize the cross-access connection to Old Chesterfield Road.



Should some of these trips divert to the traffic signal at Wild Horse Creek Road and Old Chesterfield Road, which is very likely, the southbound Old Chesterfield Road left-turn volume would increase, further increasing the need for signalization.

Wild Horse Creek Road and Burkhardt Place: The thirteen-hour traffic count at Wild Horse Creek Road at Old Chesterfield Road was utilized to estimate the mainline traffic volumes at the intersection of Wild Horse Creek Road and Burkhardt Place.

The hourly traffic volumes for the proposed development site-generated trips were estimated using a proportionate amount of the outbound trips for the Shopping Center (Land Use 820), Multi-Family Housing (Land Use 220), and General Office (Land Use 710). Since separate left and right-turn lanes are expected on the minor street (Burkhardt Place) at Wild Horse Creek Road, the signal warrant analysis evaluated the left-turn volume only from the side street.

The 2020 Build signal warrants analysis for the intersection of Wild Horse Creek Road and Burkhardt Place is shown in the **Appendix**. Based on the analysis, the intersection of Wild Horse Creek Road and Burkhardt Place is forecasted to exceed the reduced volume requirements for Warrant 1A for 4 hours and Warrant 1B for 8 hours. Therefore, a traffic signal is recommended at the intersection of Wild Horse Creek Road and Burkhardt Place in conjunction with the proposed development.

Signal Spacing: With the recommendation for additional traffic signals along Wild Horse Creek Road and Chesterfield Parkway, the proposed signal spacing was evaluated using SLCDOT's Access Management Guidelines (AMG).

Section 4.0 At-Grade Intersections Spacing of the SLCDOT AMG provides guidelines for adequate spacing between street intersections. Specifically, a minimum intersection spacing of 660 feet is recommended for Minor Arterials and Collectors.

Chesterfield Parkway is designated as a Major Collector roadway by the East-West Gateway Council of Governments. The recommended traffic signal at Chesterfield Parkway and Burkhardt Place is approximately 1,740 feet south of the signal at Wild Horse Creek Road and 1,200 feet north of the signal at Lydia Hill Drive which far exceeds the recommended minimum spacing of 660 feet.

Wild Horse Creek Road is designated as a Minor Arterial roadway by the East-West Gateway Council of Governments. The recommended traffic signal at Wild Horse Creek and Old Chesterfield Road is approximately 1,200 feet west of the signal at the I-64 EB off-ramp and 940 feet east of the recommended signal at Burkhardt Place which exceeds the recommended minimum spacing of 660 feet. The recommended traffic signal at Wild Horse Creek and Burkhardt Place is approximately 940 feet west of the signal at Old Chesterfield Road and 1,525 feet east of the signal at Baxter Road which exceeds the recommended minimum spacing of 660 feet.



2020 Auxiliary Turn Lane Needs: The need for auxiliary lanes at the proposed unsignalized site drives on Wild Horse Creek Road and Chesterfield Parkway were evaluated using SLCDOT's Access Management Guidelines (AMG). These guidelines consider auxiliary lanes an asset in promoting safety and improved traffic flow at relatively high conflict locations. Separate turn lanes are intended to remove turning vehicles from the through lanes to reduce the potential number of rear-end collisions at intersections.

Right-Turn Lane Evaluations – 2020 Build: The SLCDOT method provides volume guidelines for the consideration of separate right-turn lanes by comparing the total advancing volume (which includes all turning traffic) to the number of right-turns during the design hour with respect to the major road speed.

The need for a eastbound right-turn lane on Wild Horse Creek Road at the proposed RIRO site drive between Old Chesterfield Road and the I-64 EB Ramp was evaluated using the *Right Lane Warrant for Two-Lane Roadway* (SLCDOT AMG Figure 7.2.2). **Figure 18** graphically illustrates the right-turn evaluation assuming the 2020 Build traffic volumes during the AM and PM peak hours. A right-turn lane should be considered when the plotted point lies to the right of the line of the 40 mph line on the graph. As depicted, a separate eastbound right-turn lane on Wild Horse Creek Road is warranted at the RIRO site drive.

The need for a southbound right-turn lane on Chesterfield Parkway at the site drive between Wild Horse Creek Road and Burkhardt Place was evaluated using the *Right Lane Warrant for Four-Lane Roadway* (SLCDOT AMG Figure 7.2.3). **Figure 19** graphically illustrates the right-turn evaluation assuming the 2020 Build traffic volumes during the AM and PM peak hours. A right-turn lane should be considered when the plotted point lies to the right of the line of the 40 mph line on the graph. As depicted, a separate southbound right-turn lane on Chesterfield Parkway is not warranted at the site drive though it is very close to meeting the warrants.

Left-Turn Lane Evaluations - 2020 Build: Left-turn lanes are already provided on Wild Horse Creek Road and Chesterfield Parkway to accommodate the left-turn movements into the site.



Figure 7.2.2. Right Turn Lane Guideline for Two-Lane Roadway

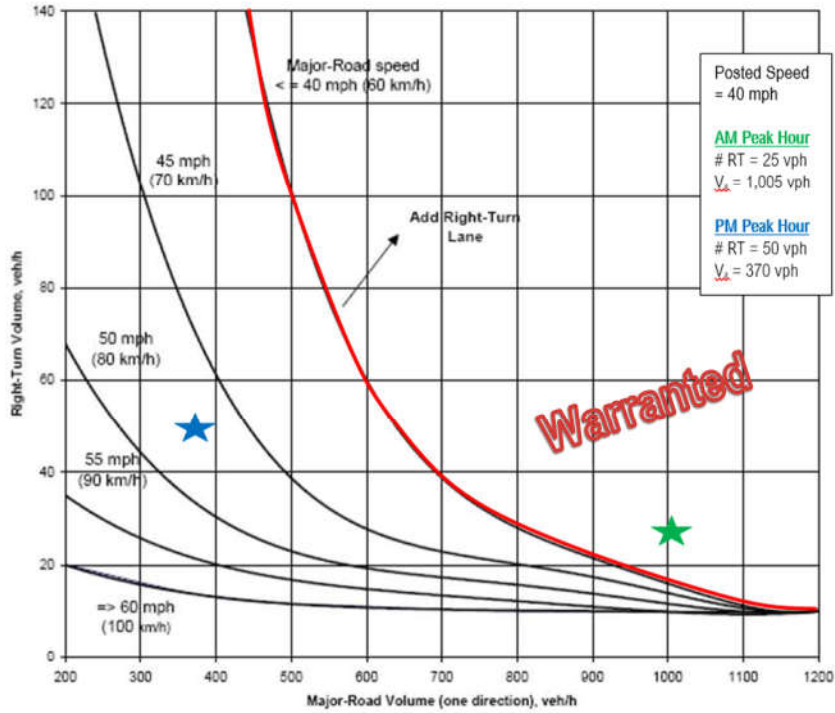


Figure 18: Eastbound Right-Turn Lane Evaluation – Wild Horse Creek Road at RIRO Site Drive

Figure 7.2.3. Right Turn Lane Guideline for Four-Lane Roadway

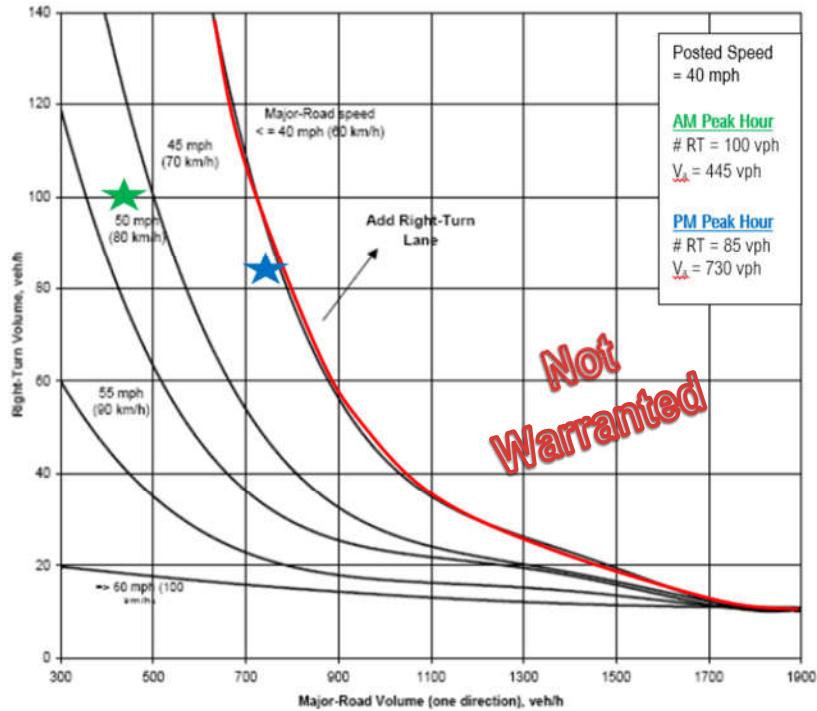


Figure 19: Southbound Right-Turn Lane Evaluation – Chesterfield Parkway at Site Drive



Operational Analysis Study Procedures: The 2020 Base and Build operating conditions were analyzed using SYNCHRO 10, a macro-level analytical traffic flow model. SYNCHRO is based on study procedures outlined in the *Highway Capacity Manual*, published by the Transportation Research Board. This manual, which is used universally by traffic engineers to measure roadway capacity, establishes six levels of traffic service: Level A ("Free Flow"), to Level F ("Fully Saturated"). Levels of service (LOS) are measures of traffic flow, which consider such factors as speed, delay, traffic interruptions, safety, driver comfort, and convenience. Level C, which is normally used for highway design, represents a roadway with volumes ranging from 70% to 80% of its capacity. However, Level D is often considered acceptable for peak period conditions in urban and suburban areas.

The thresholds that define level of service at an intersection are based upon the type of control used (i.e., whether it is signalized or unsignalized) and the calculated delay. For signalized and all-way stop intersections, the average control delay per vehicle is estimated for each movement and aggregated for each approach and then the intersection as a whole. At intersections with partial (side-street) stop control, delay is calculated for the minor movements only since motorists on the main road are not required to stop.

Level of service is directly related to control delay. At signalized intersections, the level of service criteria differ from that at unsignalized intersections primarily because varying transportation facilities create different driver expectations. The expectation is that a signalized intersection is designed to carry higher traffic volumes, and consequently may experience greater delay than an unsignalized intersection. **Table 5** summarizes the thresholds used in the analysis for signalized and unsignalized intersections.

Table 5: Level of Service Thresholds

LEVEL OF SERVICE (LOS)	CONTROL DELAY PER VEHICLE (SEC/VEH)	
	SIGNALIZED INTERSECTIONS	UNSIGNALIZED INTERSECTIONS
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

2020 Operating Conditions: The study intersections were evaluated using the methodologies described above. **Table 6** summarizes the results of this analysis, which reflects the 2020 Base and 2020 Build operating conditions and average delay at the study intersections during the AM and PM peak hours.



Table 6: 2020 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour			Weekday PM Peak Hour		
	2020 Base	2020 Build	2020 Build Improved	2020 Base	2020 Build	2020 Build Improved
1 – Edison Avenue and Baxter Road (Signalized)						
Eastbound Edison Avenue Approach	A (8.0)	A (7.3)	A (7.3)	A (7.8)	A (8.6)	A (8.6)
Northbound Baxter Road Approach	A (5.3)	A (5.3)	A (5.3)	B (10.2)	B (11.2)	B (11.2)
Southbound Baxter Road Approach	B (17.3)	B (17.8)	B (17.8)	C (24.6)	C (24.7)	C (24.7)
Overall	A (7.0)	A (7.0)	A (7.0)	B (11.7)	B (12.5)	B (12.5)
2 – Old Chesterfield Road and Baxter Road (Side-Street STOP)						
Westbound Old Chesterfield Road Left-Turn	B (12.3)	B (13.0)	B (13.0)	C (18.9)	C (20.3)	C (20.3)
Westbound Old Chesterfield Road Right-Turn	C (16.1)	C (17.2)	C (17.2)	F (79.2)	F (102.4)	F (102.4)
Northbound Baxter Road Approach	A (<1.0)	A (<1.0)	A (<1.0)	A (1.0)	A (1.0)	A (1.0)
Southbound Baxter Road Approach	A (2.8)	A (3.7)	A (3.7)	A (1.4)	A (1.7)	A (1.7)
3 – Wild Horse Creek Road and Baxter Road (Signalized)						
Eastbound Wild Horse Creek Road Approach	B (18.6)	C (25.9)	D (35.0)	B (19.9)	C (22.1)	C (22.0)
Westbound Wild Horse Creek Road Approach	C (20.4)	C (31.0)	B (19.1)	D (41.1)	D (46.1)	C (30.2)
Northbound Baxter Road Approach	C (32.3)	C (29.8)	D (50.1)	C (29.5)	C (29.4)	D (38.7)
Southbound Baxter Road Approach	D (45.4)	D (48.7)	D (35.1)	D (50.6)	D (50.8)	D (53.2)
Overall	C (25.8)	C (30.9)	D (36.1)	D (38.0)	D (40.2)	D (37.1)
4 – Wild Horse Creek Road and Proposed Driveway/Old Chesterfield Road (Side-Street STOP)						
Eastbound Wild Horse Creek Road Left-Turn	A (7.9)	A (7.7)		B (11.6)	B (10.9)	
Westbound Wild Horse Creek Road Approach	Free Flow	Free Flow		Free Flow	Free Flow	
Northbound Proposed Driveway Left-Turn		E (46.9)			F (190.1)	
Northbound Proposed Driveway Right-Turn		D (31.9)			E (47.5)	
Southbound Old Chesterfield Road Left-Turn	F (172.3)	F (>200)		F (>200)	F (>200)	
Southbound Old Chesterfield Road Right-Turn	A (10.0)	A (29.4)		C (17.5)	F (51.4)	
4 – Wild Horse Creek Road and Proposed Driveway/Old Chesterfield Road (Signalized)						
Eastbound Wild Horse Creek Road Approach			B (16.5)			A (6.8)
Westbound Wild Horse Creek Road Approach			B (12.8)			A (5.5)
Northbound Old Chesterfield Road Approach			D (41.7)			D (42.4)
Southbound Old Chesterfield Road Approach			C (31.4)			D (41.5)
Overall			B (17.7)			B (11.6)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Table 6 Cont.: 2020 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour			Weekday PM Peak Hour		
	2020 Base	2020 Build	2020 Build Improved	2020 Base	2020 Build	2020 Build Improved
5 – Wild Horse Creek Road and I-64 Eastbound Off-Ramp (Signalized)						
Eastbound Wild Horse Creek Road Approach	B (16.1)	C (30.2)	C (26.6)	A (6.8)	B (16.3)	C (20.2)
Westbound Wild Horse Creek Road Approach	A (7.4)	B (15.3)	A (9.0)	B (12.5)	B (18.6)	B (11.4)
Northbound Proposed Driveway Approach		B (10.4)	A (7.7)		C (27.6)	C (30.4)
Southbound I-64 EB Off-Ramp Approach	D (36.9)	D (40.9)	D (39.5)	C (24.4)	C (28.3)	D (48.7)
Overall	C (21.0)	C (30.3)	C (26.8)	B (13.7)	C (20.6)	C (21.9)
6 – North Outer 40 Road and Chesterfield Parkway (Signalized)						
Westbound North Outer 40 Road Approach	D (37.6)	D (38.9)	D (38.9)	D (37.4)	D (38.0)	D (37.9)
Northbound Chesterfield Parkway Approach	A (8.3)	B (12.1)	B (12.2)	C (31.4)	C (36.9)	C (29.1)
Southbound Chesterfield Parkway Approach	B (10.2)	B (12.6)	B (12.6)	C (23.7)	C (28.7)	C (29.0)
Overall	B (19.3)	C (22.5)	C (22.5)	C (29.5)	C (33.4)	C (31.9)
7 – Wild Horse Creek Road and Chesterfield Parkway (Signalized)						
Eastbound Wild Horse Creek Road Approach	B (12.9)	B (15.0)	B (10.0)	C (32.2)	C (33.8)	D (39.4)
Northbound Chesterfield Parkway Approach	D (41.0)	C (33.6)	D (36.4)	D (37.8)	C (30.9)	C (27.7)
Southbound Chesterfield Parkway Approach	B (15.5)	B (16.5)	B (16.5)	B (17.6)	C (20.4)	C (34.3)
Overall	B (15.7)	B (17.6)	B (14.8)	C (24.1)	C (25.6)	C (34.9)
8 – Burkhardt Place and Veterans Place Drive/Proposed Driveway (Side-Street STOP)						
Eastbound Burkhardt Place Approach	Free Flow	Free Flow	Free Flow	Free Flow	Free Flow	Free Flow
Westbound Burkhardt Place Left-Turn	A (<1.0)	A (<1.0)	A (<1.0)	A (7.5)	A (7.8)	A (7.8)
Northbound Veterans Place Approach	A (9.4)	B (11.9)	B (11.9)	A (9.4)	B (11.5)	B (11.5)
Southbound Proposed Site Drive Approach		B (12.8)	B (12.8)		C (16.7)	C (16.7)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Table 6 Cont.: 2020 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour			Weekday PM Peak Hour		
	2020 Base	2020 Build	2020 Build Improved	2020 Base	2020 Build	2020 Build Improved
9 – Chesterfield Parkway and Burkhardt Place (Side-Street STOP)						
Eastbound Burkhardt Place Left-Turn	C (15.6)	E (38.2)		D (33.8)	F (>200)	
Eastbound Burkhardt Place Right-Turn	C (15.6)	B (11.8)		D (33.8)	B (14.5)	
Northbound Chesterfield Parkway Left-Turn	A (8.8)	A (3.1)		A (2.0)	A (4.9)	
Southbound Chesterfield Parkway Approach	Free Flow	Free Flow		Free Flow	Free Flow	
9 – Chesterfield Parkway and Burkhardt Place (Signalized)						
Eastbound Burkhardt Place Approach			C (27.2)			C (27.7)
Northbound Chesterfield Parkway Approach			A (4.1)			A (6.8)
Southbound Chesterfield Parkway Approach			A (7.0)			B (12.3)
Overall			B (12.5)			B (13.9)
10 – Chesterfield Parkway and Lydia Hill Drive (Signalized)						
Eastbound Lydia Hill Drive Approach	B (11.5)	B (13.3)	C (29.3)	B (11.3)	B (13.7)	C (22.4)
Westbound Lydia Hill Drive Approach	B (13.1)	B (14.0)	C (25.9)	B (13.2)	B (14.7)	C (23.8)
Northbound Chesterfield Parkway Approach	A (6.2)	A (6.3)	A (6.1)	A (6.0)	A (5.7)	A (3.5)
Southbound Chesterfield Parkway Approach	A (8.4)	A (8.6)	A (2.8)	B (10.0)	A (9.9)	A (1.9)
Overall	A (8.4)	A (8.6)	A (8.4)	A (9.2)	A (9.1)	A (5.2)
11 – Chesterfield Parkway and Justus Post Road (Signalized)						
Eastbound Chesterfield Parkway Approach	A (5.2)	A (5.4)	A (3.4)	B (16.7)	B (18.4)	A (8.8)
Westbound Chesterfield Parkway Approach	A (1.9)	A (2.2)	A (1.0)	A (4.8)	A (5.8)	A (5.2)
Northbound Justus Post Road Approach	C (22.6)	C (23.2)	C (21.3)	C (27.9)	C (29.4)	C (24.9)
Southbound Justus Post Road Approach	A (<1.0)	A (<1.0)	A (<1.0)	C (23.7)	C (23.4)	C (20.9)
Overall	A (8.9)	A (8.4)	A (6.7)	B (12.1)	B (13.4)	A (8.4)
12 – Chesterfield Parkway and Fontaine Drive/Clarkson Road SB Ramp (Signalized)						
Eastbound Chesterfield Parkway Approach	A (8.2)	A (8.1)	A (6.1)	B (12.4)	B (13.3)	A (1.7)
Westbound Chesterfield Parkway Approach	A (2.4)	A (2.3)	A (3.5)	A (7.4)	A (9.1)	B (15.2)
Northbound Clarkson Rd Off-Ramp Approach	B (15.6)	B (15.6)	B (13.8)	D (39.3)	D (39.3)	D (35.2)
Southbound Fontaine Drive Approach	C (26.2)	C (26.2)	C (23.5)	C (34.4)	C (34.4)	C (30.8)
Overall	A (7.3)	A (6.8)	A (6.0)	B (14.4)	B (15.1)	B (13.9)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Table 6 Cont.: 2020 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour			Weekday PM Peak Hour		
	2020 Base	2020 Build	2020 Build Improved	2020 Base	2020 Build	2020 Build Improved
13 – Chesterfield Parkway and Clarkson Road NB Ramps (Signalized)						
Eastbound Chesterfield Parkway Approach	A (7.7)	A (8.0)	A (2.2)	A (1.0)	A (1.4)	A (2.2)
Westbound Chesterfield Parkway Approach	B (19.6)	C (20.5)	B (11.5)	A (8.5)	A (9.5)	B (10.2)
Northbound Clarkson Rd Off-Ramp Approach	D (38.3)	D (38.7)	D (45.6)	D (35.1)	D (40.0)	D (36.0)
Overall	C (22.8)	C (23.6)	C (22.8)	B (10.6)	B (12.8)	B (12.7)
14 – Wild Horse Creek Road and Burkhardt Place /Aventura Drive (2020 Base/Build: Side-Street STOP / 2020 Build Improved: Signalized)						
Eastbound Wild Horse Creek Road Approach	A (<1.0)	A (<1.0)	A (7.2)	A (<1.0)	A (<1.0)	B (11.1)
Westbound Wild Horse Creek Road Approach	A (<1.0)	A (<1.0)	A (8.4)	A (<1.0)	A (<1.0)	A (7.4)
Northbound Burkhardt Place Approach		F (69.5)	C (31.8)		F (>200)	D (43.2)
Southbound Aventura Drive Approach	E (37.9)	E (37.2)	D (46.5)	E (35.3)	E (36.5)	D (49.4)
Overall			B (10.4)			B (13.1)
15 – Wild Horse Creek Road and Proposed Site Drive/Wild Horse Creek Mixed Use Driveway (Side-Street STOP)						
Eastbound Chesterfield Parkway Approach	A (<1.0)	A (<1.0)	A (<1.0)	A (2.2)	A (2.2)	A (2.3)
Westbound Chesterfield Parkway Approach	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)
Northbound Proposed Driveway Approach		C (23.8)	C (24.6)		B (11.9)	B (11.5)
Southbound Wild Horse Mixed Use Approach	C (25.0)	E (36.7)	F (52.2)	C (23.3)	D (31.7)	E (35.9)
16 – Chesterfield Parkway and Proposed Site Drive (Side-Street STOP)						
Eastbound Proposed Driveway Approach		C (22.1)	C (22.1)		D (31.8)	D (31.8)
Northbound Chesterfield Parkway Approach		A (2.1)	A (2.1)		A (1.1)	A (1.1)
Southbound Chesterfield Parkway Approach		A (<1.0)	A (<1.0)		A (<1.0)	A (<1.0)
17 – Burkhardt Place and Proposed Site Drive (Side-Street STOP)						
Eastbound Burkhardt Place Left-Turn		A (<1.0)	A (<1.0)		A (7.9)	A (7.9)
Westbound Burkhardt Place Approach		A (<1.0)	A (<1.0)		A (<1.0)	A (<1.0)
Southbound Proposed Driveway Left-Turn		B (11.2)	B (11.2)		B (12.5)	B (12.5)
Southbound Proposed Driveway Right-Turn		A (11.2)	B (11.2)		B (12.5)	B (12.5)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Both the 2020 Base and 2020 Build operating conditions reflect the existing lanes, traffic control, traffic signal timing and phasing discussed previously to depict the forecasted operations if no improvements are made. The 2020 Build Improved operating conditions reflect the following recommendations:

- Construct an eastbound right-turn lane on Wild Horse Creek Road at the proposed RIRO site drive east of Old Chesterfield Road.
- Modify the traffic signal at Wild Horse Creek Road and Baxter Road to provide protected plus permissive phasing for the westbound and southbound left-turn movements which currently operate under permissive only phasing.
- Modify the traffic signal at Wild Horse Creek Road and the I-64 EB off-ramp to add a fourth leg serving the proposed site to the intersection.
 - Restripe the I-64 EB off-ramp to provide dual left-turn lanes and a shared through and right-turn lane.
 - Widen the westbound Wild Horse Creek Road approach to provide a separate left-turn lane. Provide protected plus flashing yellow arrow phasing for the westbound Wild Horse Creek Road left-turn movement.
 - Construct the northbound approach exiting the site with a left-turn lane and a right-turn lane.
- Install a new traffic signal at Wild Horse Creek Road and Burkhardt Place.
 - Construct the northbound approach of Burkhardt Place with a left-turn lane and a shared through and right-turn lane.
 - Construct an eastbound right-turn lane on Wild Horse Creek Road at Burkhardt Place.
 - Provide protected plus flashing yellow arrow phasing for the northbound Burkhardt Place left-turn movement. Since the southbound approach would have only a single shared lane, the southbound approach would operate under a permissive only phase.
 - The eastbound and westbound left-turns are expected to be light (under 20 vph) and have a separate lane as to not significantly impact the through vehicles; therefore, the left-turns were assumed to operate under permissive only phasing.
- Install a new traffic signal at Wild Horse Creek Road and Old Chesterfield Road.
 - Construct the northbound approach exiting the site with a left-turn lane and a shared through/right-turn lane.
 - Provide protected plus flashing yellow arrow phasing for the northbound site drive and southbound Old Chesterfield Road left-turn movements.
 - The eastbound and westbound left-turns are expected to be light (under 50 vph) and have a separate lane as to not significantly impact the through vehicles; therefore, the left-turns were assumed to operate under permissive only phasing.



- Install a new traffic signal at Chesterfield Parkway and Burkhardt Place.
 - Restripe the eastbound Burkhardt Place approach to provide separate left- and right-turn lanes.
 - Provide protected plus flashing yellow arrow phasing for the northbound Chesterfield Parkway left-turn movement.
- Coordinate the traffic signals along Wild Horse Creek Road (i.e., Baxter Road, Burkhardt Place, Old Chesterfield Road, I-64 EB off-ramp, and Chesterfield Parkway).
- Coordinate the traffic signals along Chesterfield Parkway (i.e., Burkhardt Place to the Clarkson Road NB ramps).

Table 6 provides the approach level of service and delay for each intersection. Each study intersection is discussed in greater detail in the following paragraphs.

1 – Edison Avenue and Baxter Road

The overall intersection, as well as each approach, is forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario. However, it is important to note the Synchro estimated northbound left-turn queue is 430 feet in the 2020 Base PM peak hour and increases to 460 feet in the 2020 Build conditions which would result in northbound queues backing through the Old Chesterfield Road intersection at times during the PM peak hour. As the proposed development will have little impact on the current operations, no specific improvements are recommended as a result of the proposed development.

2 – Old Chesterfield Road and Baxter Road

All movements at the intersection are forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario with the exception of the westbound Old Chesterfield Road right-turn movement which would continue to operate at LOS F during the PM peak hour with long queues. The Synchro estimated westbound right-turn queue is 405 feet in the 2020 Base PM peak hour and increases to 485 feet in the 2020 Build conditions. The Wild Horse Mixed-Use Traffic Study evaluated this intersection for roundabout control, which resulted in poor operations, and signal control, which improved the westbound approach but resulted in increased delay for Baxter Road. Consequently, although the westbound queues are forecasted to increase with the proposed development, no specific improvements are recommended since the longer queues are isolated to about a 15-minute period in the PM peak hour.

3 – Wild Horse Creek Road and Baxter Road

The overall intersection, as well as each approach, is forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario. However, in order to provide operations for the permissive only left-turn movements, it is recommended the westbound and southbound left-turn movements which currently operate under permissive only phasing be modified to provide protected plus permissive phasing.



4 – Wild Horse Creek Road and Proposed Site Drive/Old Chesterfield Road

Under side-street STOP control, the southbound Old Chesterfield Road left-turn movement currently operates at LOS F with long delays in the AM and PM peak hours. With the addition of a new south leg of the intersection to serve the proposed development site and the additional site trips, the delay would increase significantly.

As discussed previously, the 2020 Build volumes satisfy the minimum volume requirements for signalization. So, given the forecasted delay and the fact the signal warrants are met, a traffic signal is recommended at the intersection of Wild Horse Creek Road and Old Chesterfield Road/proposed site drive in conjunction with the proposed development. As shown in the table, under signal control the intersection is forecasted to operate at acceptable levels of service. Furthermore, the Synchro estimated 95th percentile queues would not back through the adjacent signalized intersections at Burkhardt Place or the I-64 EB off-ramp. It is recommended this new signal at Old Chesterfield Road be coordinated with the adjacent signals along Wild Horse Creek Road. The proposed traffic signal should provide pedestrian push buttons, crosswalks and ADA accessible sidewalk ramps at the intersection.

Additionally, the southbound left-turn movement exiting the approved Wild Horse Creek Mixed-Use development on the north side of Wild Horse Creek Road is forecasted to operate at LOS F in the peak hours. The development has an access drive to Old Chesterfield Road, so during peak traffic periods patrons of the development could utilize the new traffic signal at Old Chesterfield Road to exit the development.

The 2020 Build Synchro estimated 95th percentile queue for the northbound approach exiting the site opposite Old Chesterfield Road is less than 100 feet in the AM and PM peak hours. As such, the first internal site drive should be a minimum of 150 feet (measured from the northbound stop bar to the center of the site drive) from the intersection of Wild Horse Creek Road and Old Chesterfield Road.

5 – Wild Horse Creek Road and I-64 Eastbound Off-Ramp

As mentioned previously, the traffic signal at Wild Horse Creek Road and the I-64 EB off-ramp would be modified to add a fourth leg serving the proposed site to the intersection. It is further recommended the signal modification include providing pedestrian push buttons, crosswalks and ADA accessible sidewalk ramps to cross the south and west legs of the intersection.

Additionally, it is recommended the westbound Wild Horse Creek Road approach be widened to provide a separate left-turn lane. This westbound left-turn lane should provide 100 feet of storage. Given the eastbound queues from the Chesterfield Parkway signal, it will likely be necessary to widen the roadway to provide this left-turn lane as the eastbound left-turn storage currently provided at the Chesterfield Parkway signal is needed (i.e., the recommended westbound left-turn lane should be side by side to the existing eastbound left-turn lane at the Chesterfield Parkway – not back to back).



With the recommended improvements, the overall intersection, as well as each approach, is forecasted to operate at acceptable levels of service in the 2020 Build scenario.

The 2020 Build Synchro estimated 95th percentile queue for the northbound approach exiting the site opposite the I-64 ramp is less than 100 feet in the AM and PM peak hours. As such, the first internal site drive should be a minimum of 150 feet (measured from the northbound stop bar to the center of the site drive) from the intersection of Wild Horse Creek Road and the I-64 Eastbound Off-Ramp.

6 – North Outer 40 Road and Chesterfield Parkway

The overall intersection, as well as each approach, is forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario with no improvements recommended. The Synchro estimated westbound North Outer 40 left-turn queue is 445 feet in the 2020 Base PM peak hour and increases to 510 feet in the 2020 Build conditions which would not result in any backups onto I-64.

7 – Wild Horse Creek Road and Chesterfield Parkway

The overall intersection, as well as each approach, is forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario with no improvements recommended.

The northbound and southbound left-turn movements operate under protected only phasing in the AM and PM peak periods and protected plus permissive phasing during the off peak. The protected only phasing results in poor levels of serviced during the PM peak hour with the southbound left-turn movement (295 vph in a single lane) operating at LOS F with 189 seconds of delay per vehicle on average. The provision of protected plus permissive phasing in the PM peak hour would improve the southbound left-turn movement to LOS A. As such, since the southbound left-turn already operates under protected plus permissive phasing during the off-peak periods, it is recommended that consideration be given to allowing the southbound left-turn movement to also operate under protected plus permissive phasing in the AM and PM peak hours.

If SLCDOT is against allowing protected plus permissive phasing throughout the day, it appears the bridge could be restriped to accommodate a second southbound left-turn lane, which would improve the southbound left-turn delays and minimize queues. This is an existing condition which could be considered by SCLDOT whether this development occurs or not. The proposed development would have negligible impacts on the southbound left-turn movement.

8 – Burkhardt Place and Veterans Place Drive/Proposed Site Drive

All movements at the intersection are forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario assuming side-street stop control (Burkhardt Place free-flow). In fact, all movements are forecasted to operate at LOS C or better with most operating at LOS A or B with forecasted queues of one vehicle or less.



Furthermore, the Synchro estimated 95th percentile forecasted eastbound queues from the traffic signal at Chesterfield Parkway are 140 feet in the AM peak hour and 165 feet in the PM peak hour. With nearly 500 feet between Chesterfield Parkway and the site drive, opposite Veterans Place Drive, the queues from the signal would not adversely impact the existing or proposed drives along Burkhardt Place.

9 – Chesterfield Parkway and Burkhardt Place

Under side-street STOP control, the eastbound Burkhardt Place left-turn movement is forecasted to operate at LOS E in the AM peak hour and LOS F in the PM peak hours with long delays in the 2020 Build conditions.

As discussed previously, the 2020 Build volumes satisfy the minimum volume requirements for signalization. So, given the forecasted delay and the fact the signal warrants are met, a traffic signal is recommended at the intersection of Chesterfield Parkway and Burkhardt Place in conjunction with the proposed development. As shown in the table, under signal control the intersection is forecasted to operate at overall LOS B with minimal delays. It is recommended this new signal at Burkhardt Place be coordinated with the adjacent signals along Chesterfield Parkway. The proposed traffic signal should provide pedestrian push buttons, crosswalks and ADA accessible sidewalk ramps at the intersection.

The 2020 Build Synchro estimated 95th percentile queue for the eastbound approach of Burkhardt Place is 140 feet in the AM peak hour and 165 feet in the PM peak hour. As such, the first internal site drive should be a minimum of 215 feet (measured from the eastbound stop bar to the center of the site drive) from the intersection of Chesterfield Parkway and Burkhardt Place.

10 – Chesterfield Parkway and Lydia Hill Drive

The overall intersection, as well as each approach, is forecasted to continue to operate at highly desirable levels of service in the 2020 Build scenario. The existing signal at Lydia Hill Drive operates under free conditions. It is recommended the signal at Lydia Hill Drive be coordinated with the new signal at Burkhardt Place to the north and the signals to the southeast along Chesterfield Parkway.

11 – Chesterfield Parkway and Justus Post Road

The overall intersection, as well as each approach, is forecasted to continue to operate at desirable levels of service in the 2020 Build scenario. The existing signals along Chesterfield Parkway at Justus Post Road, Fontaine Drive and the Clarkson Road northbound ramps are coordinated with a system cycle length of 100 seconds. As the traffic volumes are low to moderate, a lower cycle length of 100 seconds is recommended in the AM and PM peak hours.

12 – Chesterfield Parkway and Fontaine Drive

The overall intersection, as well as each approach, is forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario. The existing signals along Chesterfield



Parkway at Justus Post Road, Fontaine Drive and the Clarkson Road northbound ramps are coordinated with a system cycle length of 100 seconds. As the traffic volumes are low to moderate, a lower cycle length of 100 seconds is recommended in the AM and PM peak hours.

13 – Chesterfield Parkway and Clarkson Road NB ramps Fontaine Drive

The overall intersection, as well as each approach, is forecasted to continue to operate at acceptable levels of service in the 2020 Build scenario. The existing signals along Chesterfield Parkway at Justus Post Road, Fontaine Drive and the Clarkson Road northbound ramps are coordinated with a system cycle length of 100 seconds. As the traffic volumes are low to moderate, a lower cycle length of 100 seconds is recommended in the AM and PM peak hours.

14 – Wild Horse Creek Road and Burkhardt Place/Aventura Drive

Under side-street STOP control, the northbound Burkhardt Place left-turn movement is forecasted to operate at LOS F with long delays in the AM and PM peak hours in the 2020 Build conditions.

As discussed previously, the 2020 Build volumes satisfy the minimum volume requirements for signalization. So, given the forecasted delay and the fact the signal warrants are met, a traffic signal is recommended at the intersection of Wild Horse Creek Road and Burkhardt Place in conjunction with the proposed development. As mentioned previously, an eastbound right-turn lane is recommended on Wild Horse Creek Road at Burkhardt Place to shorten the forecasted eastbound queues in the AM peak hour. At signalized intersections a general rule of thumb is to *consider* a separate right-turn lane when the right-turn volume exceeds 100 vph. The right-turn volume in the AM peak hour is 145 vph and in the PM peak hour is 100 vph.

As shown in the table, under signal control the intersection is forecasted to operate at acceptable levels of service. Furthermore, the Synchro estimated 95th percentile queues are relatively short with no impacts on the adjacent signalized intersections at Baxter Road or Old Chesterfield Road. It is recommended this new signal at Burkhardt Place be coordinate with the adjacent signals along Wild Horse Creek Road.

As mentioned previously, the Riparian Trail is planned along the west side of Burkhardt Place and would cross Wild Horse Creek Road at Burkhardt Place. The proposed traffic signal would provide a needed signalized at-grade crossing across Wild Horse Creek Road for the Riparian Trail.

The 2020 Build Synchro estimated 95th percentile queue for the northbound approach of Burkhardt Place is 65 feet in the AM peak hour and 145 feet in the PM peak hour. As such, the first internal site drive should be a minimum of 200 feet (measured from the northbound stop bar to the center of the site drive) from the intersection of Wild Horse Creek Road and Burkhardt Place.



15 – Wild Horse Creek Road and Proposed RIRO Site Drive/Wild Horse Creek Mixed-Use Drive

As mentioned previously, an eastbound right-turn lane on Wild Horse Creek Road at the proposed RIRO site drive meets the SLCDOT AMG warrants and is recommended in conjunction with the proposed development.

As shown in the table, the proposed RIRO site drive operates at acceptable levels of service in the peak hours. The southbound left-turn exiting the Wild Horse Creek Mixed-Use development is forecasted to operate at LOS F in the AM peak hour and LOS E in the PM peak hour. However, with the recommended signal at Wild Horse Creek Road and Old Chesterfield Road, patrons of the Wild Horse Creek Mixed-Use development would have access to this signal during peak traffic periods when it is difficult to make a left turn out of the development.

16 – Chesterfield Parkway and Proposed Site Drive

As mentioned previously, a southbound right-turn lane on Chesterfield Parkway at the proposed unsignalized site drive is just shy of meeting the warrants for a separate southbound right-turn lane. As shown in the table, the proposed site drive operates at acceptable levels of service in the peak hours.

The 2020 Build Synchro estimated 95th percentile queue for the eastbound approach exiting the site drive between Wild Horse Creek Road and Burkhardt Place is less than 50 feet in the AM peak hour and 70 feet in the PM peak hour. As such, the first internal site drive should be a minimum of 120 feet (measured from the eastbound stop bar to the center of the site drive) from the intersection at Chesterfield Parkway.

17 – Burkhardt Place and Proposed Main Site Circular Roadway

As shown in the table, the proposed main site drive on Burkhardt Place is forecasted to operate at desirable levels of service in the peak hours with all movements operating at LOS A or B.

There are additional site drives proposed along Burkhardt Place that are not specifically shown in the Capacity Analysis table. It can be reasoned that if the higher volume intersections on Burkhardt Place at Veterans Place/proposed site drive and the main site roadway operate at highly desirable levels of service, the lower volume site drives would also operate at highly desirable levels of service.

Vacant Parcel – I-64 and Chesterfield Parkway: There is a vacant parcel across Wild Horse Creek Road from the proposed development site that is bordered by I-64 to the north, Chesterfield Parkway (bridge segment) to the east, the I-64 eastbound off-ramp to the west and Wild Horse Creek Road to the south. The only possible access for the site is off Wild Horse Creek Road. However, an access drive on Wild Horse Creek Road would be challenging given the queues on Wild Horse Creek Road from the adjacent traffic signals at Chesterfield Parkway and the I-64 eastbound off-ramp. As such, a right-in/right-out drive is likely the only access possible for the vacant parcel in the northwest quadrant of Wild Horse Creek Road and Chesterfield Parkway.



20-YEAR DESIGN HORIZON

2040 No Build Traffic Volumes: In order to assist the City and County in their long-term traffic plan, background linear traffic growth will be used to develop 20-year traffic volume projections for the “design year”. Based on discussions with the reviewing agencies, an annual growth rate of 0.25% per year was used to account for the 20 years of background growth on the roadways within the study.

Based on prior discussions with the City, it is likely the Chesterfield Mall will redevelop within the next 20 years. It is anticipated the mall will redevelop as a mixed-use development similar in size to the proposed Wild Horse Village development. The same trip estimates shown in Table 3 for the proposed Wild Horse Village development were assumed for the Chesterfield Mall redevelopment. No reductions were made for the existing trips to and from the Chesterfield Mall site. The trips for the Chesterfield Mall redevelopment were assigned to the overall roadway network, though it is important to note that a majority of these mall trips would utilize access points along the South Outer Road and Clarkson Road; and as such, are outside the study intersections for the proposed Wild Horse Village study.

The 2040 No-Build traffic volumes for the AM and PM peak hours are shown in **Exhibit 6**. The 2040 No-Build traffic volumes include the full build-out of the Fienup Tract, the Aventura at Wild Horse Creek apartments, the Wild Horse Creek mixed-use development, and the Chesterfield Mall redevelopment, as well as the 0.25% background growth rate.

2040 Build Traffic Volumes: The proposed Wild Horse Village site-generated trips (Exhibit 4) were added to the 2040 No-Build Traffic Volumes (Exhibit 6) to determine the total volumes in the 20-year design scenario. The 2040 Build Traffic Volumes for the AM and PM peak hours are shown in **Exhibit 7**.

2040 Auxiliary Turn Lane Needs: The need for a southbound right-turn lane on Chesterfield Parkway at the site drive between Wild Horse Creek Road and Burkhardt Place was reevaluated using the *Right Lane Warrant for Four-Lane Roadway* (SLCDOT AMG Figure 7.2.3). **Figure 20** graphically illustrates the right-turn evaluation assuming the 2040 Build traffic volumes during the AM and PM peak hours. A right-turn lane should be considered when the plotted point lies to the right of the line of the 40 mph line on the graph. As depicted, a separate southbound right-turn lane on Chesterfield Parkway is warranted at the site drive with additional through volume on Chesterfield Parkway.



Figure 7.2.3. Right Turn Lane Guideline for Four-Lane Roadway

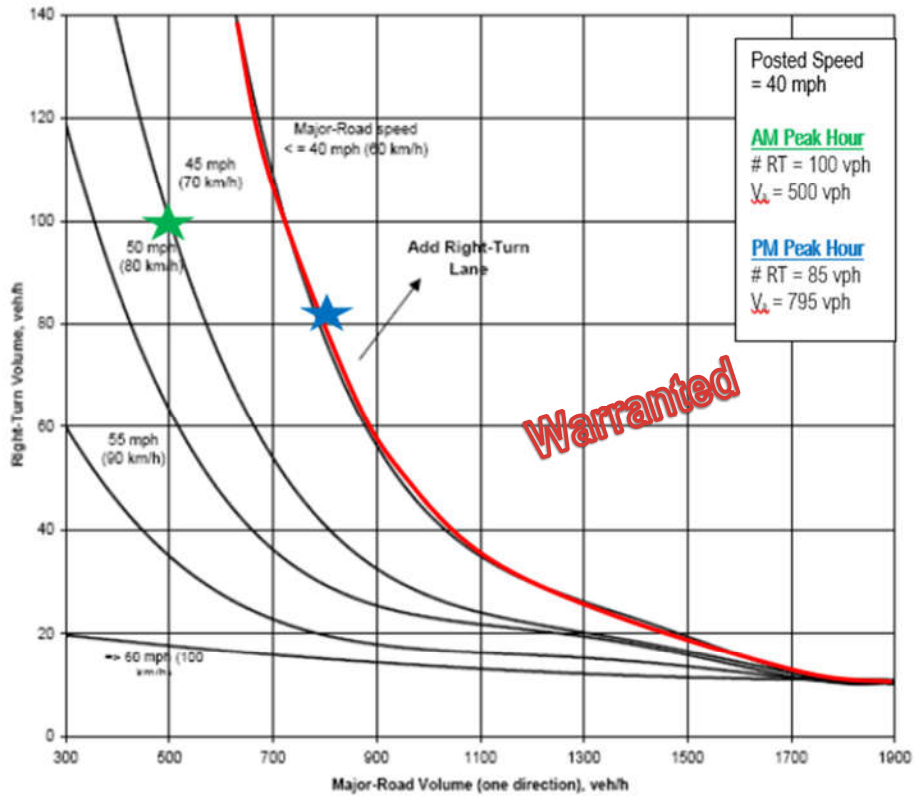


Figure 20: Southbound Right-Turn Lane Evaluation (2040 Build) – Chesterfield Parkway at Site Drive

2040 Operating Conditions: The study intersections were re-evaluated using the methodologies previously described. **Table 7** summarizes the results of this analysis, which reflects the 2040 No-Build and Build operating conditions and average delay at the study intersections during the AM and PM peak hours. The same recommendations discussed for the 2020 Build scenario were assumed in the 2040 Build scenario with the addition of the recommended southbound right-turn lane on Chesterfield Parkway at the proposed site drive south of Wild Horse Creek Road.

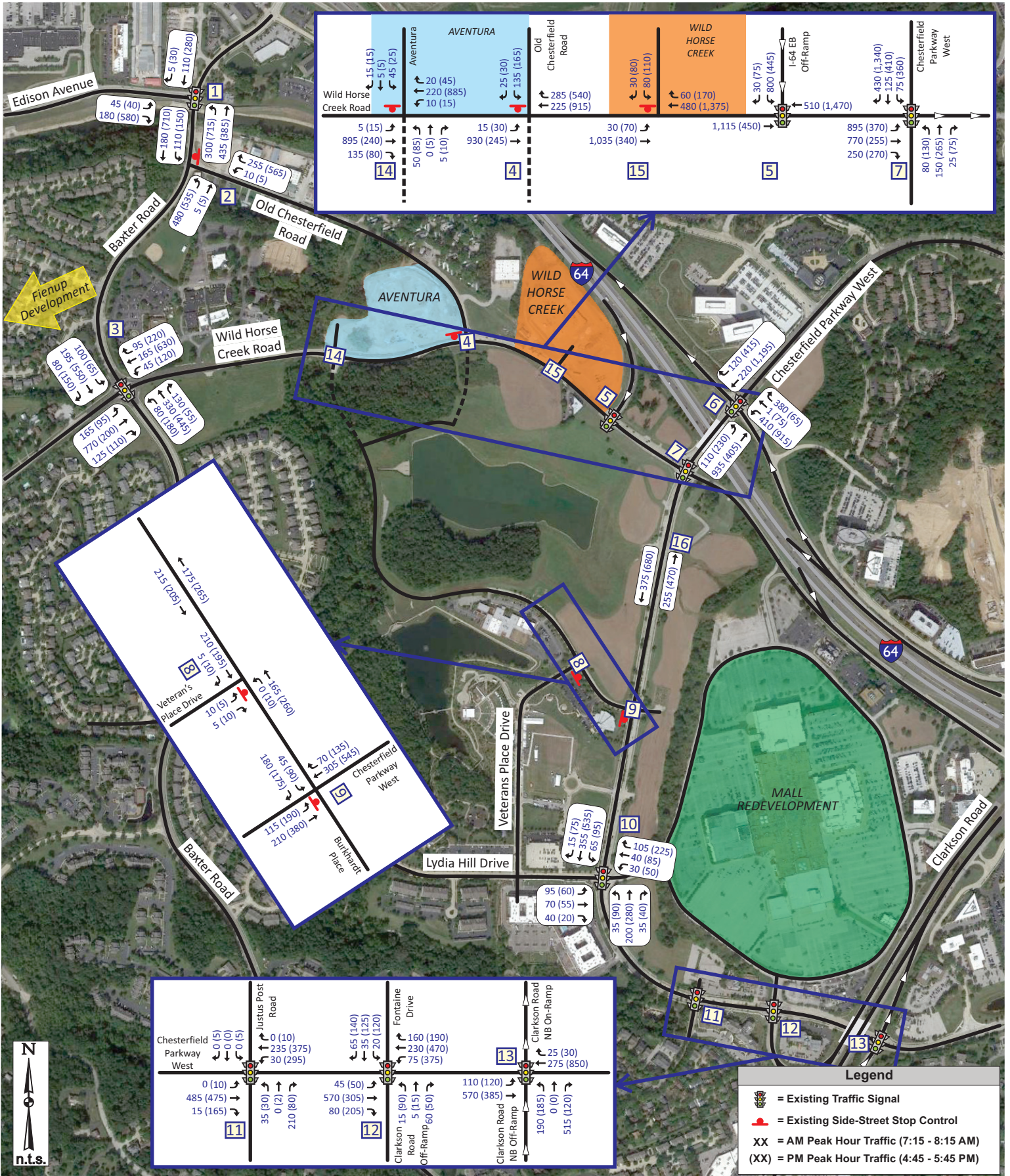


Exhibit 6: 2040 No-Build Traffic Volumes

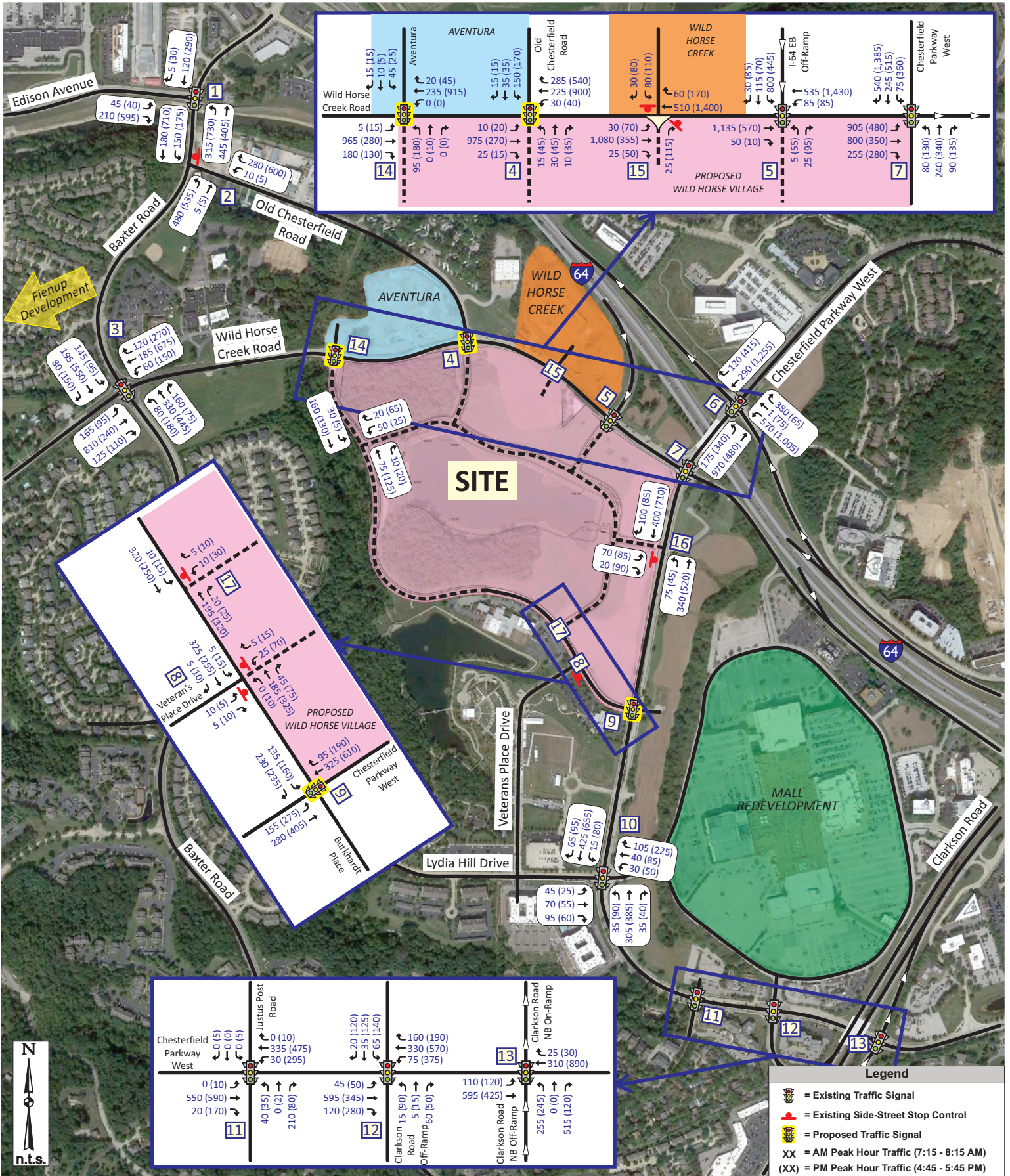


Exhibit 7: 2040 Build Traffic Volumes

Job# 009-20
04/01/2020





Table 7: 2040 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	2040 No-Build	2040 Build	2040 No-Build	2040 Build
1 – Edison Avenue and Baxter Road (Signalized)				
Eastbound Edison Avenue Approach	A (7.3)	A (6.8)	A (9.7)	B (10.7)
Northbound Baxter Road Approach	A (5.3)	A (5.3)	B (13.4)	B (14.7)
Southbound Baxter Road Approach	B (18.1)	B (18.6)	C (24.9)	C (25.1)
Overall	A (7.1)	A (7.1)	B (14.0)	B (15.1)
2 – Old Chesterfield Road and Baxter Road (Side-Street STOP)				
Westbound Old Chesterfield Road Left-Turn	B (13.0)	B (13.8)	C (21.0)	C (22.5)
Westbound Old Chesterfield Road Right-Turn	C (17.8)	C (18.9)	F (132.2)	F (161.0)
Northbound Baxter Road Approach	Free Flow	Free Flow	Free Flow	Free Flow
Southbound Baxter Road Approach	A (3.4)	A (4.1)	A (1.6)	A (1.9)
3 – Wild Horse Creek Road and Baxter Road (Signalized)				
Eastbound Wild Horse Creek Road Approach	C (22.6)	D (38.6)	C (24.2)	C (24.7)
Westbound Wild Horse Creek Road Approach	C (22.9)	B (19.0)	D (52.9)	D (41.0)
Northbound Baxter Road Approach	C (31.2)	D (51.6)	C (31.8)	D (40.5)
Southbound Baxter Road Approach	D (49.0)	D (42.4)	D (53.0)	D (51.6)
Overall	C (28.8)	D (39.2)	D (43.7)	D (41.3)
4 – Wild Horse Creek Road and Old Chesterfield Road (Side-Street STOP – 2040 No-Build)				
Eastbound Wild Horse Creek Road Left-Turn	A (7.8)		B (11.7)	
Westbound Wild Horse Creek Road Approach	A (<1.0)		A (<1.0)	
Southbound Old Chesterfield Road Left-Turn	F (80.3)		F (>200)	
Southbound Old Chesterfield Road Right-Turn	A (9.7)		C (18.2)	
4 – Wild Horse Creek Road and Proposed Driveway/Old Chesterfield Road (Signalized – 2040 Build)				
Eastbound Wild Horse Creek Road Approach		C (24.1)		A (7.1)
Westbound Wild Horse Creek Road Approach		B (12.9)		A (5.0)
Northbound Proposed Site Drive Approach		D (41.7)		D (42.3)
Southbound Old Chesterfield Road Approach		C (33.3)		D (43.4)
Overall		C (22.3)		B (11.6)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Table 7 Cont.: 2040 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	2040 No-Build	2040 Build	2040 No-Build	2040 Build
5 – Wild Horse Creek Road and I-64 Eastbound Off-Ramp/Proposed Site Drive (Signalized)				
Eastbound Wild Horse Creek Road Approach	B (17.6)	C (34.0)	A (7.0)	C (20.9)
Westbound Wild Horse Creek Road Approach	A (9.2)	A (9.0)	B (13.3)	B (15.4)
Northbound Proposed Driveway Approach		A (7.7)		C (30.6)
Southbound I-64 EB Off-Ramp Approach	D (35.8)	D (41.9)	C (25.5)	D (50.5)
Overall	C (22.0)	C (30.8)	B (14.8)	C (24.7)
6 – North Outer 40 Road and Chesterfield Parkway (Signalized)				
Westbound North Outer 40 Road Approach	D (38.3)	D (40.5)	D (37.4)	D (37.1)
Northbound Chesterfield Parkway Approach	A (9.4)	B (12.5)	C (33.3)	C (33.5)
Southbound Chesterfield Parkway Approach	B (11.5)	B (13.5)	C (26.6)	C (33.7)
Overall	C (20.2)	C (23.3)	C (31.3)	C (34.7)
7 – Wild Horse Creek Road and Chesterfield Parkway (Signalized)				
Eastbound Wild Horse Creek Road Approach	B (14.6)	B (11.7)	C (33.6)	D (36.6)
Northbound Chesterfield Parkway Approach	D (45.4)	D (39.8)	D (36.3)	C (32.8)
Southbound Chesterfield Parkway Approach	B (18.5)	B (18.3)	B (19.9)	D (51.4)
Overall	B (18.3)	B (17.0)	C (25.6)	D (47.4)
8 – Burkhardt Place and Veterans Place Drive/Proposed Site Drive (Side-Street STOP)				
Eastbound Burkhardt Place Approach	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)
Westbound Burkhardt Place Left-Turn	A (<1.0)	A (<1.0)	A (7.7)	A (7.9)
Northbound Veterans Place Approach	B (10.7)	B (12.7)	B (10.3)	B (11.8)
Southbound Proposed Site Drive Approach		B (13.7)		C (18.6)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Table 7 Cont.: 2040 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	2040 No-Build	2040 Build	2040 No-Build	2040 Build
9 – Burkhardt Place and Chesterfield Parkway (Side-Street STOP – 2040 No-Build)				
Eastbound Burkhardt Place Left-Turn	B (14.7)		F (137.5)	
Eastbound Burkhardt Place Right-Turn	B (14.7)		F (137.5)	
Northbound Chesterfield Parkway Left-Turn	A (8.5)		B (10.5)	
Southbound Chesterfield Parkway Approach	A (<1.0)		A (<1.0)	
9 – Burkhardt Place and Chesterfield Parkway (Signalized – 2040 Build)				
Eastbound Burkhardt Place Approach		C (27.0)		C (26.4)
Northbound Chesterfield Parkway Approach		A (1.9)		A (7.8)
Southbound Chesterfield Parkway Approach		A (6.1)		B (13.0)
Overall		B (10.8)		B (13.9)
10 – Lydia Hill Drive and Chesterfield Parkway (Signalized)				
Eastbound Lydia Hill Drive Approach	B (14.9)	D (37.3)	B (15.7)	C (23.0)
Westbound Lydia Hill Drive Approach	B (13.2)	C (28.1)	C (25.8)	D (38.0)
Northbound Chesterfield Parkway Approach	A (8.5)	B (14.2)	B (12.1)	A (9.7)
Southbound Chesterfield Parkway Approach	A (7.8)	A (3.0)	B (14.9)	A (5.3)
Overall	B (10.2)	B (15.5)	B (16.7)	B (14.3)
11 – Chesterfield Parkway and Justus Post Road (Signalized)				
Eastbound Chesterfield Parkway Approach	A (5.1)	A (3.8)	B (17.6)	A (6.5)
Westbound Chesterfield Parkway Approach	A (2.2)	A (1.0)	A (6.6)	A (6.9)
Northbound Justus Post Road Approach	C (22.5)	C (21.0)	C (29.3)	C (25.7)
Southbound Justus Post Road Approach	A (<1.0)	A (<1.0)	C (23.7)	C (20.9)
Overall	A (8.6)	A (6.6)	B (13.4)	A (8.1)
12 – Chesterfield Parkway and Fontaine Drive/Clarkson Road SB Ramp (Signalized)				
Eastbound Chesterfield Parkway Approach	A (9.5)	A (8.9)	B (14.8)	A (4.7)
Westbound Chesterfield Parkway Approach	A (3.6)	A (6.8)	B (10.3)	C (23.3)
Northbound Clarkson Road Off-Ramp Approach	B (14.5)	B (12.8)	D (38.8)	C (34.7)
Southbound Fontaine Drive Approach	D (43.8)	D (39.5)	D (36.9)	C (34.2)
Overall	B (10.8)	B (10.7)	B (18.3)	C (20.5)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



Table 7 Cont.: 2040 Capacity Analysis Summary

Intersection / Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	2040 No-Build	2040 Build	2040 No-Build	2040 Build
13 – Chesterfield Parkway and Clarkson Road NB Ramps (Signalized)				
Eastbound Chesterfield Parkway Approach	A (8.4)	A (3.2)	A (2.7)	A (6.0)
Westbound Chesterfield Parkway Approach	C (20.7)	B (12.8)	B (10.7)	B (13.0)
Northbound Clarkson Road Off-Ramp Approach	D (37.7)	D (43.5)	D (40.8)	D (38.7)
Overall	C (22.8)	C (22.1)	B (13.7)	B (16.0)
14 – Wild Horse Creek Road and Proposed Site Drive/Aventura Drive (Side-Street STOP-2040 No-Build/Signalized-2040 Build)				
Eastbound Wild Horse Creek Road Approach	A (<1.0)	A (8.7)	A (<1.0)	B (12.8)
Westbound Wild Horse Creek Road Approach	A (<1.0)	B (10.2)	A (<1.0)	B (10.9)
Northbound Proposed Site Drive Approach	F (52.1)	D (39.1)	F (93.1)	D (48.8)
Southbound Aventura Drive Approach	E (36.6)	D (46.5)	E (35.3)	D (49.4)
Overall		B (12.5)		B (16.9)
15 – Wild Horse Creek Road and Proposed Site Drive/Wild Horse Creek Mixed-Use Drive (Side-Street STOP)				
Eastbound Chesterfield Parkway Approach	A (<1.0)	A (<1.0)	A (2.5)	A (2.3)
Westbound Chesterfield Parkway Approach	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)
Northbound Proposed Site Drive Approach		D (31.3)		B (11.8)
Southbound Wild Horse Creek Drive Approach	C (24.5)	F (125.8)	C (23.9)	E (41.7)
16 – Chesterfield Parkway and Proposed Site Drive (Side-Street STOP)				
Eastbound Proposed Site Drive Approach		C (23.7)		E (39.0)
Northbound Chesterfield Parkway Approach		A (1.7)		A (<1.0)
Southbound Chesterfield Parkway Approach		A (<1.0)		A (<1.0)
17 – Burkhardt Place and Proposed Driveway (Side-Street STOP)				
Eastbound Burkhardt Place Left-Turn		A (7.7)		A (8.1)
Westbound Burkhardt Place Approach		A (<1.0)		A (<1.0)
Southbound Proposed Site Drive Approach		B (11.9)		B (13.6)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)



As shown in **Table 7**, with the recommended improvements, all of the study intersections and individual approaches are forecasted to operate at acceptable levels of service (i.e., LOS D or better) during the AM and PM peak hours with the exception of the following:

- The westbound Old Chesterfield Road right-turn at Baxter Road which would remain at LOS F in the PM peak hour.
- The southbound left-turn exiting the Wild Horse Creek development (currently under construction) onto Wild Horse Creek Road which would also remain at LOS F. However, with the recommended signal at Wild Horse Creek Road and Old Chesterfield Road, patrons of the Wild Horse Creek Mixed-Use development would have access to this signal during peak traffic periods when it is difficult to make a left turn out of the development.
- The eastbound site drive left-turn onto Chesterfield Parkway between Wild Horse Creek Road and Burkhardt Place which would decline to LOS E with the additional through traffic on the parkway. However, patrons also have alternative access to the signals on Wild Horse Creek Road and the signal at Chesterfield Parkway and Burkhardt Place during peak traffic periods when it is difficult to make a left turn out of the development at unsignalized locations.

There are also a few locations that while the approach level of service is acceptable there are other factors to consider as discussed in the following paragraphs.

In the 2040 No-Build PM peak hour conditions, the 95th percentile queue calculated from Synchro is approximately 520 feet, while the available storage for this northbound left-turn movement on Baxter Road at Edison Avenue is approximately 265 feet. If dual northbound left-turns were provided, the queue could be reduced to approximately 315 feet with the LOS remaining essentially the same. However, the provision of dual northbound lefts turns would require widening the existing bridge, as well as widening Edison Avenue to receive two lanes. The additional trips from the proposed Wild Horse Village development would increase the queue approximately 30 feet to 550 feet.

In the 2040 Build AM peak hour conditions, the eastbound Wild Horse Creek Road approach at Old Chesterfield Road operates at LOS C, but the Synchro estimated 95th percentile queue is estimated at 1,005 feet. With approximately 940 feet between the proposed signals at Old Chesterfield Road and Burkhardt Place, there would be a potential for the eastbound queues at Old Chesterfield Road to back through the signal at Burkhardt Place. As such, two eastbound through lanes on Wild Horse Creek Road at Old Chesterfield Road may be necessary in the future to lessen the queues. With two eastbound lanes, the 95th percentile queue drops to 225 feet.

As discussed in the 2020 conditions, the northbound and southbound left-turn movements of Chesterfield Parkway at Wild Horse Creek Road/South Outer 40 operate under protected only phasing during the AM and PM peak periods and protected plus permissive phasing during the



off peak. The protected only phasing results in poor levels of serviced during the PM peak hour with the southbound left-turn movement operating at LOS F with 360 seconds of delay per vehicle on average and a 95th percentile queue of 570 feet in the 2040 Build conditions. The provision of protected plus permissive phasing in the PM peak hour would improve the southbound left-turn movement to LOS B with an estimated queue of only 85 feet. As such, since the southbound left-turn already operates under protected plus permissive phasing during the off-peak periods, it is recommended that consideration be given to allowing the southbound left-turn movement to also operate under protected plus permissive phasing in the AM and PM peak hours. If SLCDOT is opposed to allowing protected plus permitted left-turn phasing during the peak hours, it appears that the bridge could be restriped to provide dual southbound left-turns lanes, which would improve operations and reduce queues. The southbound left-turn movement only increases with the Chesterfield mall redevelopment.



SUMMARY

CBB completed the preceding study to address the traffic impacts associated with the proposed mixed-use development, known as Wild Horse Village, located in the southwest quadrant of the Wild Horse Creek Road and Chesterfield Parkway intersection in Chesterfield, Missouri.

In summary, the following findings and improvements should be considered in conjunction with the proposed development to accommodate the 2020 Build traffic volumes:

- Construct an eastbound right-turn lane on Wild Horse Creek Road at the proposed RIRO site drive east of Old Chesterfield Road.
- Modify the traffic signal at Wild Horse Creek Road and Baxter Road to provide protected plus permissive phasing for the westbound and southbound left-turn movements which currently operate under permissive only phasing.
- Modify the traffic signal at Wild Horse Creek Road and the I-64 EB off-ramp to add a fourth leg serving the proposed site to the intersection.
 - Restripe the I-64 EB off-ramp to provide dual left-turn lanes and a shared through and right-turn lane.
 - Widen the westbound Wild Horse Creek Road approach to provide a separate left-turn lane. Provide protected plus flashing yellow arrow phasing for the westbound Wild Horse Creek Road left-turn movement.
 - Construct the northbound approach exiting the site with a left-turn lane and a right-turn lane.
- Install a new traffic signal at Wild Horse Creek Road and Burkhardt Place.
 - Construct the northbound approach of Burkhardt Place with a left-turn lane and a shared through and right-turn lane.
 - Construct an eastbound right-turn lane on Wild Horse Creek Road at Burkhardt Place.
 - Provide protected plus flashing yellow arrow phasing for the northbound Burkhardt Place left-turn movement.
- Install a new traffic signal at Wild Horse Creek Road and Old Chesterfield Road.
 - Construct the northbound approach exiting the site with a left-turn lane and a shared through/right-turn lane.
 - Provide protected plus flashing yellow arrow phasing for the northbound site drive and southbound Old Chesterfield Road left-turn movements.
- Install a new traffic signal at Chesterfield Parkway and Burkhardt Place.
 - Restripe the eastbound Burkhardt Place approach to provide separate left- and right-turn lanes.
 - Provide protected plus flashing yellow arrow phasing for the northbound Chesterfield Parkway left-turn movement.



- Coordinate the traffic signals along Wild Horse Creek Road (i.e., Baxter Road, Burkhardt Place, Old Chesterfield Road, I-64 EB off-ramp, and Chesterfield Parkway).
- Coordinate the traffic signals along Chesterfield Parkway (i.e., Burkhardt Place to the Clarkson Road NB ramps).
- In accordance with the City's Bikeable-Walkable Community Plan, provide a bike lane on the eastbound lane of Wild Horse Creek Road along the frontage of the proposed development and provide Bike Route signs on Chesterfield Parkway and Burkhardt Place along the frontage of the proposed development.
- It is recommended the civil engineer for the site document the sight distance for the proposed site drives on Wild Horse Creek Road, Chesterfield Parkway and Burkhardt Place, as well as the internal site intersections, to ensure that the recommended intersection sight distance is met. Furthermore, careful consideration should be given to sight distance obstructions when planning future aesthetics enhancements, such as signs, berms, fencing and landscaping, to ensure that these improvements do not obstruct the view of entering and exiting traffic at the site drive on Wild Horse Creek Road.

Based on the 2040 Build analyses, the recommendations for the 2020 Build scenario were assumed with the addition of the recommendation for a southbound right-turn lane on Chesterfield Parkway at the proposed site drive south of Wild Horse Creek Road.

The recommended improvement plan for the 2020 Build and 2040 Build conditions is depicted graphically in **Exhibit 8**.

We trust that this traffic impact study adequately describes the forecasted traffic conditions that should be expected as a result of the proposed Wild Horse Village mixed-use development in Chesterfield, Missouri. If additional information is desired, please feel free to contact me at 314-449-9572 or swhite@cbbtraffic.com.

Sincerely,

Shawn Lerai White, P.E., PTOE
Associate - Senior Traffic Engineer

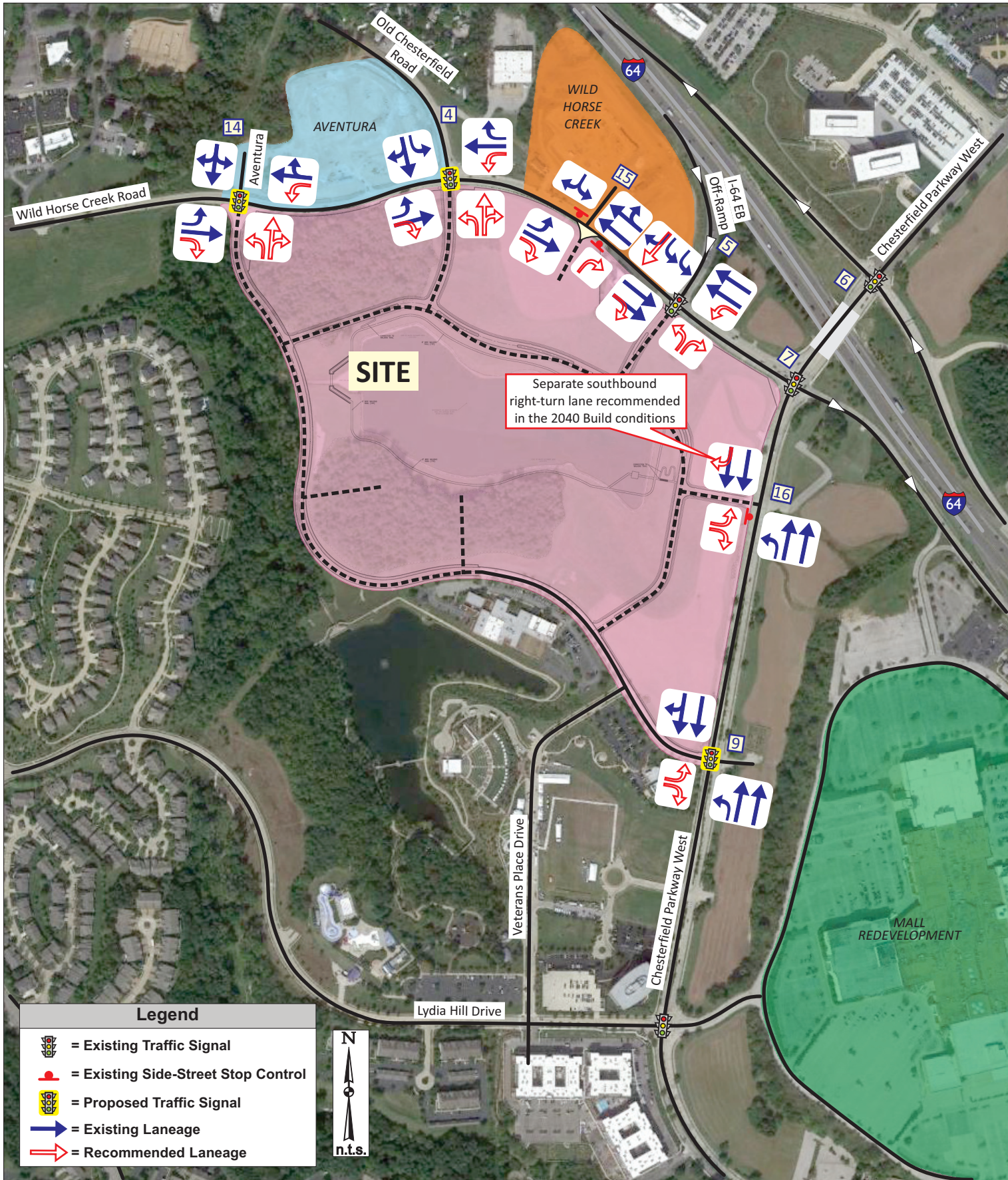


Exhibit 8: 2020/2040 Build Recommended Lane Configuration and Traffic Control