BILL NO. 20-01 **ORDINANCE NO. 8790(a)**

AN ORDINANCE APPROVING A REZONING FROM DISTRICTS R-1 AND RP-3 TO DISTRICT RP-3 AND PRELIMINARY DEVELOPMENT PLAN FOR APPROXIMATELY 27 ACRES LOCATED AT 4060 NE RALPH POWELL ROAD, PROPOSED THE ESTATES OF CHAPEL RIDGE AND THE TOWNHOMES OF CHAPEL RIDGE, IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 33, THE UNIFIED DEVELOPMENT ORDINANCE OF LEE'S SUMMIT CODE OF ORDINANCES, FOR THE CITY OF LEE'S SUMMIT, MISSOURI.

WHEREAS, Application #PL2019-352 submitted by Engineering Solutions, LLC, requesting approval of a rezoning from R-1 (Single-family Residential) and RP-3 (Planned Residential Mixed Use) to RP-3 and preliminary development plan on land located at 4060 NE Ralph Powell Road was referred to the Planning Commission to hold a public hearing; and,

WHEREAS, the Unified Development Ordinance provides for the approval of a rezoning and preliminary development plan by the City following public hearings by the Planning Commission and City Council; and,

WHEREAS, after due public notice in the manner prescribed by law, the Planning Commission held public hearings for the consideration of the rezoning and preliminary development plan on December 12, 2019 and rendered a report to the City Council recommending that the rezoning and preliminary development plan be approved; and,

WHEREAS, after due public notice in the manner prescribed by law, the City Council held a public hearing on January 7, 2020, and rendered a decision to approve the rezoning and preliminary development plan for said property.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF LEE'S SUMMIT, MISSOURI, as follows:

SECTION 1. That a rezoning and preliminary development plan is hereby approved on the following described property:

Legal Description of Rezoning

A tract of land being located in Section 8, Township 48 North, Rage 31 West being more particularly described as follows:

Commencing at the Northeast corner of the Southwest Quarter of said Section 8; thence South 02°30' 10" West, a distance of 1324.60 feet to a point on the South line of Southpointe at East Lake Village, a Subdivision in Lee's Summit, Jackson County, Missouri, said point being the Northeast corner of the Southeast Quarter of the Southwest Quarter of said Section 8; thence South 88° 14' 10" East along said South line, a distance of 239.36 feet to the Point of Beginning: thence South 88° 14' 10" East, continuing along said South line, a distance of 812.33 feet; thence South 3° 13' 20" West, a distance of 327.26 feet; thence South 72° 36' 26" West, a distance of 221.69 feet; thence along a curve to the left, having an Initial Tangent Bearing of South 76° 42' 4" West and a radius of 325.00 feet, an arc distance of 424.82 feet; thence South 1° 49' 33" West, a distance of 115.72 feet; thence North 88° 10' 46" West, a distance of 191.32 feet; thence along a curve to the right, tangent to the preceding course and having a radius of 300.00 feet, an arc distance of 12.18 feet; thence North 4° 08' 51" East, a distance of 78.04 feet; thence

along a curve to the right, tangent to the preceding course and having a radius of 575.00 feet, an arc distance of 107.10 feet; thence North 15° 34' 48" East, a distance of 15.27 feet; thence along a curve to the left, tangent to the preceding course and having a radius of 205.16 feet, an arc distance of 194.47 feet; thence North 39° 29' 31" West, a distance of 92.79 feet; thence along a curve to the right, tangent to the preceding course and having a radius of 300.00 feet, an arc distance of 215.95 feet; thence North 1° 45' 08" East, a distance of 24.84 feet; thence North 17° 50' 50" East, a distance of 26.02 feet; thence North 1° 45' 08" East, 130.54 feet to the Point of Beginning.

Legal Description of Preliminary Development Plan:

A tract of land being located in Section 8, Township 48 North, Rage 31 West being more particularly described as follows:

Commencing at the Northeast corner of the Southwest Quarter of said Section 8; thence South 02°30' 10" West, a distance of 1324.60 feet to a point on the South line of Southpointe at East Lake Village, a Subdivision in Lee's Summit, Jackson County, Missouri, said point being the Northeast corner of the Southeast Quarter of the Southwest Quarter of said Section 8 and the Point of Beginning: thence South 88° 14' 10" East along said South line, a distance of 1252.30 feet; thence South 03° 25' 54" West, leaving said South line, a distance of 640.25 feet; thence North 88° 10' 46" West, a distance of 169.13 feet; thence South 01° 49' 14" West, a distance of 43.00 feet; thence North 88° 10' 46" West, a distance of 443.83 feet; thence along a curve to the left, having an Initial Tangent Bearing of South 7° 48' 40" West and a radius of 300.00 feet, an arc distance of 31.34 feet; thence South 01° 49' 33" West, a distance of 76.72 feet; thence along a curve to the left, tangent to the preceding course and having a radius of 14.00 feet, an arc distance of 21.99 feet; thence North 88° 10' 46" West, a distance of 201.90 feet; thence along a curve to the right, tangent to the preceding course and having a radius of 14.00 feet, an arc distance of 22.56 feet; thence North 04° 08' 51" East, a distance of 37.67 feet; thence along a curve to the right, tangent to the preceding course and having a radius of 550.00 feet, an arc distance of 102.44 feet; thence North 75° 10' 52" West, a distance of 50.00 feet; thence along a curve to the left, having an Initial Tangent Bearing of South 14° 49' 09" West and a radius of 600.00 feet, an arc distance of 24.96 feet; thence North 77° 33' 53" West, a distance of 133.84 feet; thence North 18° 32' 01" East, a distance of 99.41 feet; thence North 64° 01' 33" West, a distance of 156.60 feet; North 43° 27" 11" West, a distance of 90.00 feet; thence North 21° 35' 06" West, a distance of 135.47 feet; thence North 01° 45' 08" East, a distance of 161.19 feet, thence North 88° 14' 52" West, a distance of 45.25 feet, thence North 01° 45' 08" East, a distance of 130.59 feet to a point on the South line of said Southpointe at East Lake Village; thence South 88° 14' 10" East along said South line, a distance of 30.06 feet to the Point of Beginning.

SECTION 2. That the following conditions of approval apply:

1. The architectural style and building materials for the townhomes shall be consistent with the building elevations date stamped October 11, 2019.

SECTION 3. Nonseverability. All provisions of this ordinance are so essentially and inseparably connected with, and so dependent upon, each other that no such provision would be enacted without

all others. If a court of competent jurisdiction enters a final judgment on the merits that is not subject to appeal and that declares any provision or part of this ordinance void, unconstitutional, or unenforceable, then this ordinance, in its collective entirety, is invalid and shall have no legal effect as of the date of such judgment.

SECTION 4. That failure to comply with all of the provisions contained in this ordinance shall constitute violations of both this ordinance and Chapter 33, the City's Unified Development Ordinance, of the Code of Ordinances for the City of Lee's Summit.

SECTION 5. That this ordinance shall be in full force and effect from and after the date of its passage and adoption, and approval by the Mayor.

PASSED by the City Council of the City of Lee's Summit, Missouri, this 14th day of January, 2020.

Mayor *William A. Baird*

ATTEST:

City Clerk *Trisha Fowler Arcuri*

APPROVED by the Mayor of said city this 17th day of January, 2020.

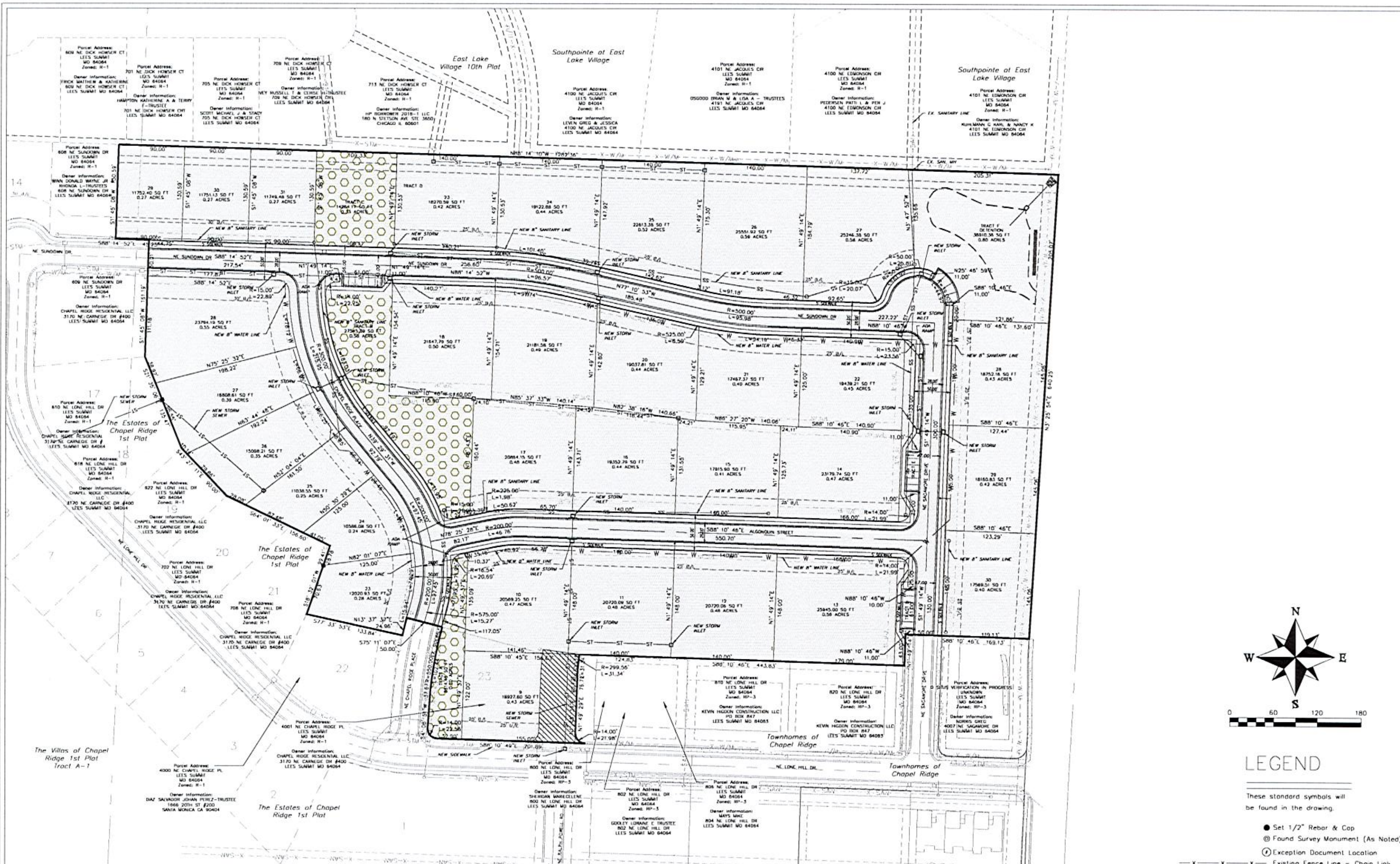
Mayor *William A. Baird*

ATTEST:

City Clerk *Trisha Fowler Arcuri*

APPROVED AS TO FORM:

City Attorney *Brian W. Head*



LEGEND

These standard symbols will be found in the drawing.

- ● Set 1/2" Rebar & Cap
- ◎ Found Survey Monument (As Noted)
- Ⓧ Exception Document Location
- —x——x——x— Existing Fence Line – Chain Link
- —X-W/M— Existing Water Line
- —X-SAN— Existing Sanitary Sewer Main
- —X-STM— Existing Storm Sewer
- —GAS— Existing Gas Line
- —UT— Existing Underground Telephone
- —E— Existing Underground Electric
- —ST——ST— Proposed Storm Sewer
- —SS— Proposed Sanitary Sewer
- —W——W— Proposed 8" D.I.P. Water

ENGINEERING SOLUTIONS — ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P (816) 623-9888 F (816)623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Section 8, Township 48 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: October 12, 2019

DEVELOPMENT SITE PLAN

Preliminary Development Plans for:
THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2008019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

C.101

Grading Plan
Preliminary Development Plans for:
THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE LSMO

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THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
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Oklahoma
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Nebraska
Engineering CA0671

Matthew J. Schlicht
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REVISIONS

C.200

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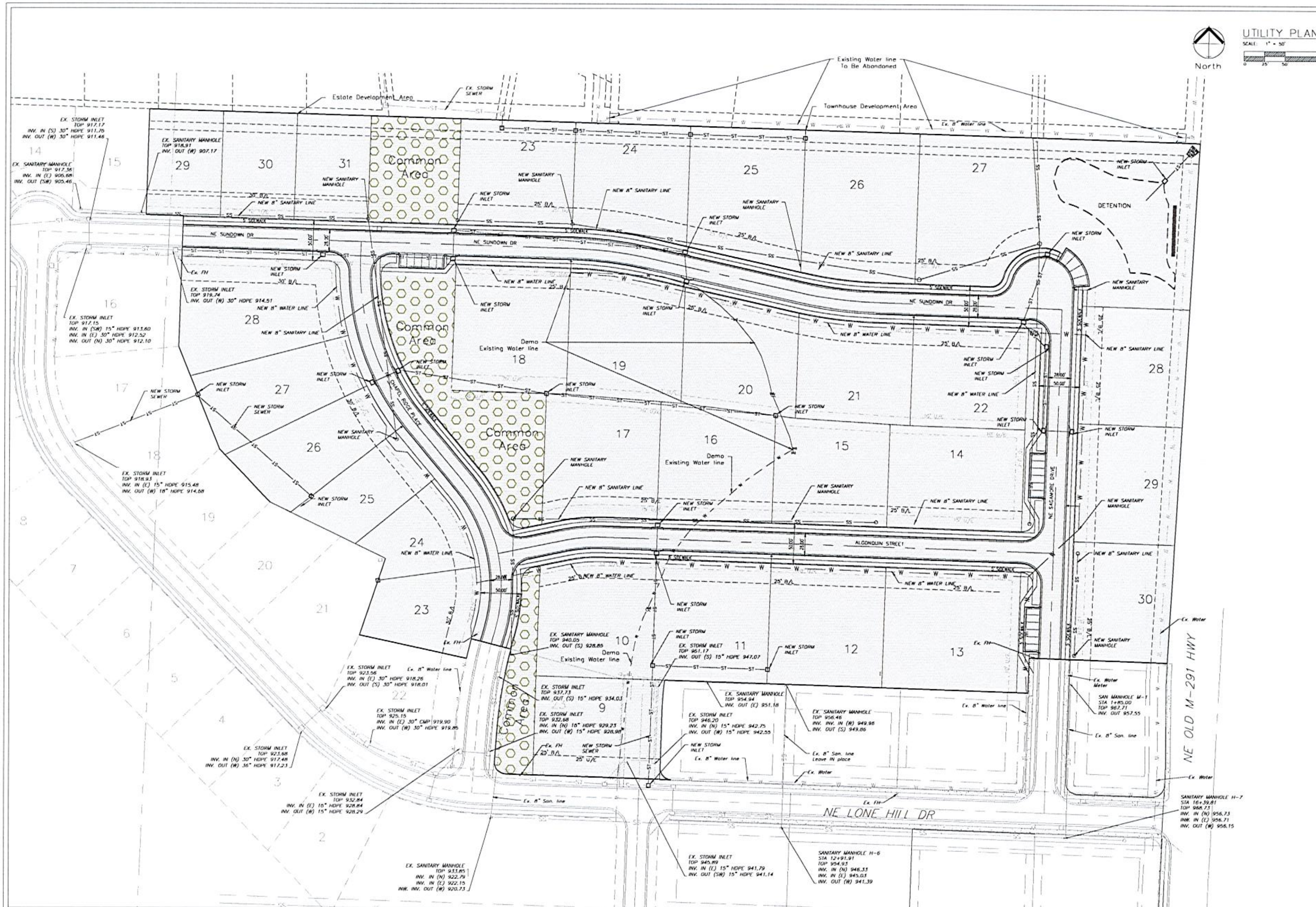
UTILITY PLAN
SCALE: 1" = 50'
North
Existing Water line To Be Abandoned
Estate Development Area
Townhouse Development Area
DETENTION
Common Area
NE SUNDOWN DR
CHAPEL RIDGE PLACE
ALGONQUIN STREET
NE SAGAMORE DRIVE
NE OLD M-291 HWY
NE LONE HILL DR
Demo Existing Water line
NEW STORM INLET
NEW SANITARY MANHOLE
NEW 8" SANITARY LINE
NEW 8" WATER LINE
NEW STORM SEWER
EX. STORM SEWER
EX. STORM INLET
EX. SANITARY MANHOLE
Ex. FH
Ex. Water
Ex. 8" Water line
Ex. 8" San. line
Ex. 8" San. line Leave in place
SAN MANHOLE M-1 STA 1+85.00 TOP 967.71 INV. OUT 957.55
SANITARY MANHOLE H-7 STA 16+39.81 TOP 968.73 INV. IN (N) 956.73 INV. IN (E) 956.71 INV. OUT (W) 956.15
SANITARY MANHOLE H-6 STA 12+91.91 TOP 954.93 INV. IN (N) 946.33 INV. IN (E) 945.03 INV. OUT (W) 941.39

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LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Section 8, Township 48 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LSMO
Issue Date: October 12, 2018

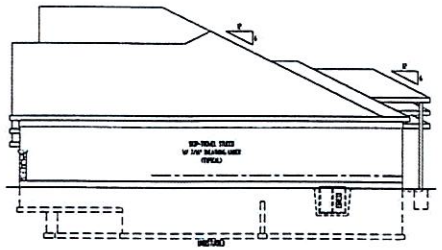
Utility Plan
Preliminary Development Plans for:
THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

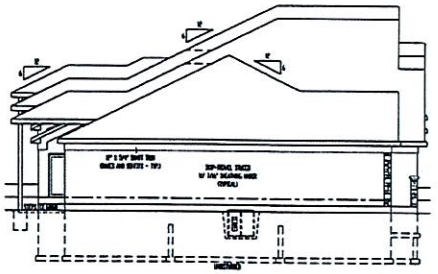
REVISIONS

C.300

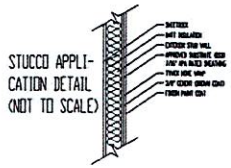
FRONT ELEVATION
SCALE: 1/4" = 1'-0"



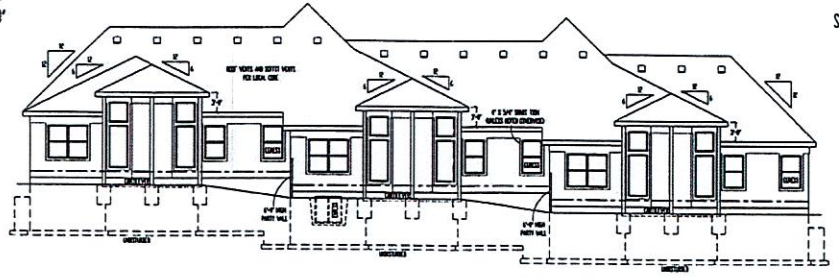
RIGHT ELEVATION
SCALE: 1/8" = 1'-0"



LEFT ELEVATION
SCALE: 1/8" = 1'-0"



STUCCO APPLICATION DETAIL
(NOT TO SCALE)



REAR ELEVATION
SCALE: 1/8" = 1'-0"

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OCT 11 2019
Development Services

VIEWPOINT RESIDENTIAL DESIGN, LLC

Project Title:
TCR007
Kevin Hipdon Construction, LLC

Sheet Title:
ELEVATIONS

Sheet No.:
A-1

MACRO STORM WATER DRAINAGE STUDY

The Townhomes of Chapel Ridge – 2nd Plat
Lots 9 - 30
The Estates of Chapel Ridge – 2nd Plat
Lots 23 – 31

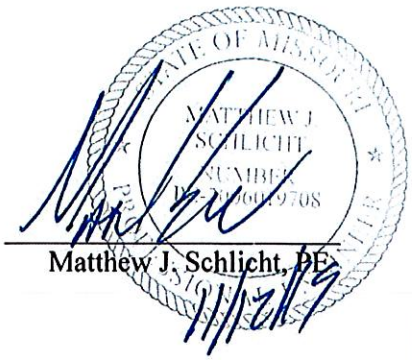
SITE ACREAGE: 18.37 ACRES

Lee's Summit, MO

PREPARED BY:

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 S.E. 30th Street Lee's Summit, MO 64082
816.623.9888 • engineeringsolutionskc.com

Submittal Date: October 11, 2019



Matthew J. Schlicht, PE

Revision

Date	Comment	By
11-12-19	Revised Study Per City Comments	AEP

2019-353--

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NOV 12 2019

Development Services

TABLE OF CONTENTS

3. GENERAL INFORMATION

This storm study has been prepared to evaluate the potential impacts of the revised Development Plan for The Estates of Chapel Ridge 2nd Plat and the Townhome of Chapel Ridge 2nd Plat. The previous Development Plan for this area consisted of 31 Estate style lots and 5 Townhome style lots, while the proposed Development Plan will provide 9 Estate style lots and 22 Townhome style lots. The existing retention facility that was constructed with the first phase will be utilized to serve as the storm water controls for the previously studied Development Plan. The existing Phase I drainage map and storm tables are provided as Exhibit "A" within the appendix of this report. The amount of offsite drainage area that was designed to be conveyed into the existing retention facility is shown in blue on both the Pre and Post Development Drainage Area Maps.

3.1 FEMA FLOODPLAIN DETERMINATION

The property is located in an Area of Minimal Flood Hazard, Zone X, according to FEMA Firm Map Number 29093C0430G, effective January 20, 2017.

See Exhibit B for a FIRMette which includes the proposed project site.

3.2 NRCS SOIL CLASSIFICATION

Soil classifications published by the United States Department of Agriculture/National Resources Conservation Service (USDA/NRCS) website for Jackson County, Missouri, Version 18, September 16, 2017. The existing site contains five major soil types:

10024	Greenton-Urban Land Complex, 5 to 9 Percent Slopes Hydrologic Soils Group (HSG): Type D
10129	Sharpsburg-Urban Land Complex, 5 to 9 Percent Slopes (HSG): Type D
10136	Sibley-Urban Land Complex, 2 to 5 Percent Slopes (HSG): Type C
10143	Snead-Urban Land Complex, 9 to 30 Percent Slopes (HSG): Type D
10183	Udarents-Urban Land Polo-Complex, 5 to 9 Percent Slopes (HSG): Type C

See Exhibit C for a detailed soils report of the proposed project site.

4. METHODOLOGY

This Macro Storm Drainage Study has been prepared to evaluate potential hydrologic impacts from the proposed development and recommend improvements to eliminate potential negative impacts. The study utilized existing city contours to create the Pre-Development Drainage Area Map. The study conforms to the requirements of the City of Lee's Summit, Missouri "Design and Construction Manual" and all applicable codes and criteria referred to therein.

Using the above criteria, the proposed site was evaluated using SCS Methods to calculate storm runoff volumes, peak rates of discharge, pre and post developed hydrographs and required storage volumes for detention facilities. The analysis contains results for the 2, 10 and 100-year design storms.

5. EXISTING CONDITIONS ANALYSIS

The site has four (4) drainage Subareas all consisting of meadow land that drain offsite with the following drainage patterns.

- Subarea A, 2.79 acres, drains to the Northwest and drains into an existing swale that conveys the storm water to an existing road crossing pipe that is located west of the development. Subarea A will be evaluated at Point of Interest A
-Subarea B, 5.76 acres, drains to the north and through an existing residential development area. Subarea B drains to a large swale area to the north for the purposes of this report the subarea will be evaluated at Point of Interest B. No flooding concerns have been raised downstream therefore the evaluation will focus solely on the land that is being proposed for development.
-Subarea C, 6.64 acres, drains to the Northeast and drains into an existing road side ditch channel for the old highway outer road that is no longer in use. A sizeable portion of the subarea consists of offsite property. Subarea C will be evaluated at the offsite roadside ditch known as Point of Interest C. See Exhibit D for details and calculations of composite curve numbers as required.
-Subarea D, 4.92 acres, drains to the southwest where it is intercepted and attenuated by the Phase I retention system.

A Pre-Development Drainage Map may be found in Exhibit E. Hydraflow Hydrograph software was utilized to calculate SCS Method peak discharge rates. A complete breakdown of Existing and Proposed hydrographs may be found in Exhibit F. The following tables summarize the results of the Existing Conditions analysis.

Table 5.1 Existing Conditions Subarea

Subarea	Area (ac.)	Curve Number	Tc (min)
A	2.79	74	11.9
B	5.76	74	12.5
C	6.64	76	10.1
D*	4.92		

*Subarea D consisting entirely of Proposed Phase II Development drains to the Existing Chapel Ridge Phase I Retention System. The Existing Chapel Ridge Phase I Retention System was designed to accept and convey 11.10 acres of the Chapel Ridge Phase II Development.

Table 5.2 Existing Conditions Runoff Data: Peak Discharge Rates

Subarea	Q2 (cfs)	Q10 (cfs)	Q100 (cfs)
A	4.80	9.96	18.26
B	9.90	20.57	37.70
C	13.75	27.40	48.96

Per APWA Section 5608.4 and City of Lee's Summit criteria, the performance criteria for detention is to provide detention to limit peak flow rates at downstream points of interest to maximum release rates:

- 50% storm peak rate less than or equal to 0.5 cfs per site acre
- 10% storm peak rate less than or equal to 2.0 cfs per site acre
- 1% storm peak rate less than or equal to 3.0 cfs per site acre

Allowable release rates are comprised of a combination of peak offsite flows and allowable onsite post development peak flows at each point of interest. The area ratio method will be used to determine allowable release rates.

Allowable Release Example Calculation: Subarea C (2-Yr) = 4.90 x 0.5 + 1.74 / 6.64 x 13.75 = 6.05 cfs

Table 5.3 Existing Conditions APWA Allowable Peak Discharge Release Rates

Subarea	Onsite Area (ac.)	Offsite Area (ac.)	Q2 (cfs)	Q10 (cfs)	Q100 (cfs)
A	2.79	0.003	1.40	2.80	8.39
B	5.76	0	2.88	11.52	17.28
C	4.90	1.74	6.05	16.98	27.53

6. PROPOSED CONDITIONS ANALYSIS

The Proposed Conditions analysis assumes completion of all new estate and townhome construction. The difference between Existing and Proposed Conditions is a direct result of new residential single and multi-family housing. Subareas A and B have been reduced significantly due to redirection of their tributary areas with the use of new streets and storm sewer systems. Subarea C increased slightly. A new detention system shall be used to attenuate post development runoff tributary to Point of Interest C. Subarea D represents area tributary to the Phase I retention system. A Post Development Drainage Map may be found in Exhibit G.

Post-Development Flow Rates

The post development flow rates were calculated with the use of composite curve numbers as applicable. The curve numbers were determined based on APWA Table 5602-3 for residential lots and multi-family lots. A curve number of 88 was used for multi-family areas and a curve number of 82 was used for single family areas.

Table 6.1 Proposed Conditions Subarea Data

Subarea	Area (ac.)	Composite CN	Tc (min)
A	0.83	88	9.8
B	1.60	88	7.3
C	2.98	85	10.1
C1	3.87	86	8.7
D*	10.84		

*Subarea D consisting entirely of Proposed Phase II Development contains 10.84 acres and drains to the Existing Chapel Ridge Phase I Retention System. The Existing Chapel Ridge Phase I Retention System was designed to accept and convey 11.10 acres of the Chapel Ridge Phase II Development. Subarea D will also contain 0.86 acres of Green Space which was not originally anticipated during the Phase I design of the Retention System (See Exhibit A). Conclusion Proposed Subarea D acreage is below that which was originally anticipated during the design of the Phase I Retention System therefore no adverse impacts are anticipated downstream due to the development of this Subarea. No further analysis will be provided for Subarea D.

Table 6.2 Proposed Conditions Runoff Data: Sub-Area Peak Discharge Rates

Subarea	Q2 (cfs)	Q10 (cfs)	Q100 (cfs)
A	2.97	4.92	7.76
B	5.94	9.82	15.49
C	9.14	15.82	25.68
C1	12.91	21.97	35.29

As shown in Table 6.2 above Subarea C1 will require detention to attenuate peak discharge rates below both Existing Conditions and Allowable.

6.1. DETENTION

A new earthen detention basin is being proposed in Sub-basin C1 to attenuate peak discharge rates. The basin shall be grass lined with maximum side slopes of 3:1 and a minimum bottom slope of 2%. The bottom elevation is 930.00 at the 30" HDPE inlet pipe. The top of berm elevation is 940.00. The basin has a maximum storage volume of 73,312 cubic feet. The outlet structure will consist of a 4' wide by 5' deep rectangular concrete box structure with 6" interior weir wall. Six (6) orifices will be placed in the weir wall. Five (5) 1" diameter orifices shall be placed in the wall to release the water quality storm event over a minimum 40 hour timeframe. The first orifice shall be placed at the control structure flowline elevation 929.40. The remaining four (4) water quality control orifices shall be placed on 4" centers for a total height of 1.42 feet. A 6" diameter orifice at elevation 936.00 will be utilized to attenuate the remaining storm events. The interior weir wall crest elevation shall be 938.55. The top of the structure shall be at 939.55. The control structure shall have three (3) 6" openings positioned on the northwest, southwest and southeast sides of the box. The effective crest length for the emergency spillway rectangular weir on the outlet control structure shall be 8.5'. The control structure outlet pipe shall be a 30" HDPE at 3.00% slope. The Detention Basin Plan may be found in Exhibit H.

An emergency spillway consisting of a 50 linear foot broad crested weir shall be located along the eastern berm of Detention Basin C1. The crest elevation for the broad crested weir shall be 938.55 which is more than 6 inches higher than the 100-yr water surface elevation of 938.02. The emergency spillway was analyzed to determine both flowrate and hydraulic grade line of the consecutive 100-yr storm event assuming the primary outlet structure is 100% plugged and there is zero available storage in the basin. The earthen broad crested weir will work in conjunction with the rectangular weir on the outlet control structure to convey the 100 year peak discharge of 35.29 cfs. To be conservative the control structure overflow weir was not included in the emergency spillway calculations. A freeboard of 1-foot is required from the spillway HGL to the top of berm. The proposed bypass HGL is 938.97 allowing 1.03 feet of freeboard to the top of basin. The maximum velocity from the earthen weir is 1.68 feet per second which may be turf lined. Basin C1 emergency spillway calculations may be found in Exhibit I. See Table 6.3 for a summary of detention basin data.

Table 6.3 Proposed Conditions Detention Basin C1 Data

	Peak Q In (cfs)	Tp In (min.)	Peak Q Out (cfs)	Tp Out (min)	Peak W.S.E.	Max. Storage Vol. (cf)
Basin C1						
2-Year	12.91	719	0.59	807	934.51	16,783
10-Year	21.97	719	1.12	788	936.24	29,908
100-Year	35.29	719	2.66	732	938.02	47,717

As shown in the table above all proposed peak flowrates have been attenuated. See Table 6.4 below for a summary of proposed peak discharge rates at point of interest C. Hydrographs tributary to each point of interest have been combined to determine subsequent peak discharge rates.

Table 6.4 Proposed Conditions Post Detention Point of Interest Peak Discharge Rates

Point of Interest	Q2 (cfs)	Q10 (cfs)	Q100 (cfs)
C	9.53	16.48	27.36

As shown in the above table all peak discharge rates attributable to Subareas C & C1 improvements have been attenuated below Existing Peak Discharge rates as outlined in Table 5.2.

Table 6.5 below provides a comparison of runoff data between Proposed, Existing and Allowable Conditions for the Proposed Phase II Development.

Table 6.5 Point of Interest Discharge Comparison

		Q2 (cfs)	Q10 (cfs)	Q100 (cfs)
Point A	Proposed	2.97	4.92	7.76
	Existing	4.80	9.96	18.26
	Difference	-1.83	-5.04	-10.50
	Allowable	1.40	2.80	8.39
	Difference	1.57	2.12	-0.63
Point B	Proposed	5.94	9.82	15.49
	Existing	9.90	20.57	37.70
	Difference	-3.96	-10.75	-22.21
	Allowable	2.88	11.52	17.28
	Difference	3.06	-1.70	-1.79
Point C	Proposed	9.53	16.48	27.36
	Existing	13.75	27.40	48.96
	Difference	-4.22	-10.92	-21.60
	Allowable	6.05	16.98	27.53
	Difference	3.48	-0.50	-0.17

Peak discharge rates at Point A will be reduced below Existing Conditions for all design storms analyzed in addition to the 100-yr Allowable. The 2 and 10-yr Allowable Peak Discharge rates will not be met for this subarea however the tributary area consisting of three (3) estate lots and a portion of common area is minor being easily drained with good lot grading practices. Peak discharge rates at Point B will be reduced below Existing Conditions for all design storms analyzed in addition to the 10 and 100-yr Allowable. The 2-yr discharge is minor in comparison to other events and will be sufficiently conveyed downstream via existing drainage elements. Peak discharge rates at Point C will be reduced below Existing Conditions for all design storms analyzed in addition to the 10 and 100-yr Allowable. The 2-yr discharge is minor in comparison and will be sufficiently conveyed via existing drainage elements downstream.

7. 40 HOUR EXTENDED DETENTION

In addition to mitigation of peak flow rates, APWA Section 5608.4 also requires 40 hour extended detention of runoff from the local 90% mean annual event (1.37"/24-hour rainfall). The proposed detention facility will release the water quality event over a period of 40-72 hours. See Exhibit J for Detention Basin C1 extended detention calculations. The Water Quality Volume is released in approximately 40 hours from Basin C1.

8. CONCLUSIONS & RECOMMENDATIONS

Runoff from the proposed development will be reduced below existing for all subareas. A detention basin will be provided in Subarea C1 to attenuate peak discharge rates at Point of Interest C. Tributary area for Subarea D is below the original design for Phase I retention. No negative impacts are anticipated downstream from the proposed development. Allowable release rates which are peak discharge rate goals will not be met for the 2-yr storm for each subarea and the 10-yr storm for Subarea A. However as previously stated the downstream drainage system and property will not be adversely affected but overall storm drainage for the subarea will be improved by redirection of drainage and the construction of a detention basin. Engineering Solutions recommends approval of this macro storm water drainage study.

Waiver Requests:
A (2-Yr), (10-Yr) Allowable B (2-Yr) Allowable C (2-Yr) Allowable

PLAT BOUNDARY DESCRIPTION

A tract of land being located in Section 8, Township 48 North, Rage 31 West being more particularly described as follows:

Beginning at the Northeast corner of Lot 5, The Townhomes of Chapel Ridge 1st Plat, a subdivision as recorded in the Office of the Recorder, Jackson County, Missouri, thence North 03° 25' 54" East, a distance of 640.25 feet, thence North 88° 14' 10" West, a distance of 1282.36 feet, thence South 01° 45'" 08" West, a distance of 130.59 feet, thence South 88° 14' 52" East, a distance of 45.25 feet, thence South 01° 45' 08" West, a distance of 161.19 feet, thence South 21° 35' 06' East, a distance of 135.47 feet, thence South 43° 27' 11" East, a distance of 90.00 feet, thence South 64° 01' 33" East, a distance of 156.60 feet, thence South 18° 32' 01" West, a distance of 99.41 feet, South 77° 33' 53" East, a distance of 133.84 feet, thence North 13° 37' 37" East, a distance of 24.96 feet, thence South 75° 11' 07" East, a distance of 50.00 feet, thence along a curve to the left, having a radius of 550.00 feet an arc distance of 102.44 feet, thence South 04° 08' 51" West, a distance of 37.67 feet, thence along a curve to the left, having a radius of 14.00 feet, an arc distance of 22.56 feet, thence South 88° 10' 49" East, a distance of 201.89 feet, thence North 01° 49' 29" East, a distance of 76.72 feet, thence along the curve to the right, tangent to the preceding course, having a radius of 300.00', an arc distance of 31.34 feet, thence South 88° 10' 46" East, a distance of 443.83 feet, thence North 01° 49' 14" East, a distance of 43.00 feet, thence South 88° 10' 46" East, a distance of 169.13 feet, returning to the Point of Beginning.

Proposed Preliminary Plat

Villas Development Area

Proposed	
Site Area	360,587.31 sf (8.28 Acres
Lots	34
Density	4.11 lots per acre

Estate Development Area

Site Area	148,606.84 sf (3.41 Acres
Lots	9
Density	2.64 lots per acre

Townhouse Development Area

Site Area	651,552.29 sf (14.96 Acres
Lots	22 Lots (66 Units)
Density	1.47 lots per acre 4.41 units per acre

Overall Development Area

Site Area	1,160,746.449 sf (26.65 Acres
Lots	65 Lots (109 Units)
Density	2.44 lots per acre 4.09 units per acre

Existing Preliminary Plat

Villas Development Area

Proposed	
Site Area	360,587.31 sf (8.28 Acres
Lots	32
Density	3.86 lots per acre

Estate / Townhouse Development Area

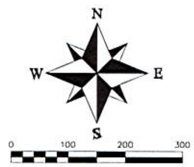
Site Area	800,159.13 sf (18.37 Acres
Lots	31 Estates / 5 Townhouses (46 Units)
Density	1.96 lots per acre 2.50 units per acre

Overall Development Area

Site Area	1,160,746.449 sf (26.65 Acres
Lots	63 Lots (78 Units)
Density	2.36 lots per acre 2.93 units per acre

SURVEY AND PLAT NOTES:

THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 29095C0430G EFFECTIVE DATE: JANUARY 20, 2017.



LEGEND

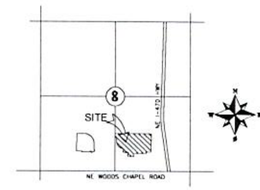
These standard symbols will be found in the drawing.

- Set 1/2" Rebar & Cap
- Found Survey Monument (As Noted)
- Exception Document Location
- Existing Fence Line - Chain Link
- Existing Water Line
- Existing Sanitary Sewer Main
- Existing Storm Sewer
- Existing Gas Line
- Existing Underground Telephone
- Existing Underground Electric
- Proposed Storm Sewer
- Proposed Sanitary Sewer
- Proposed 8" D.I.P. Water

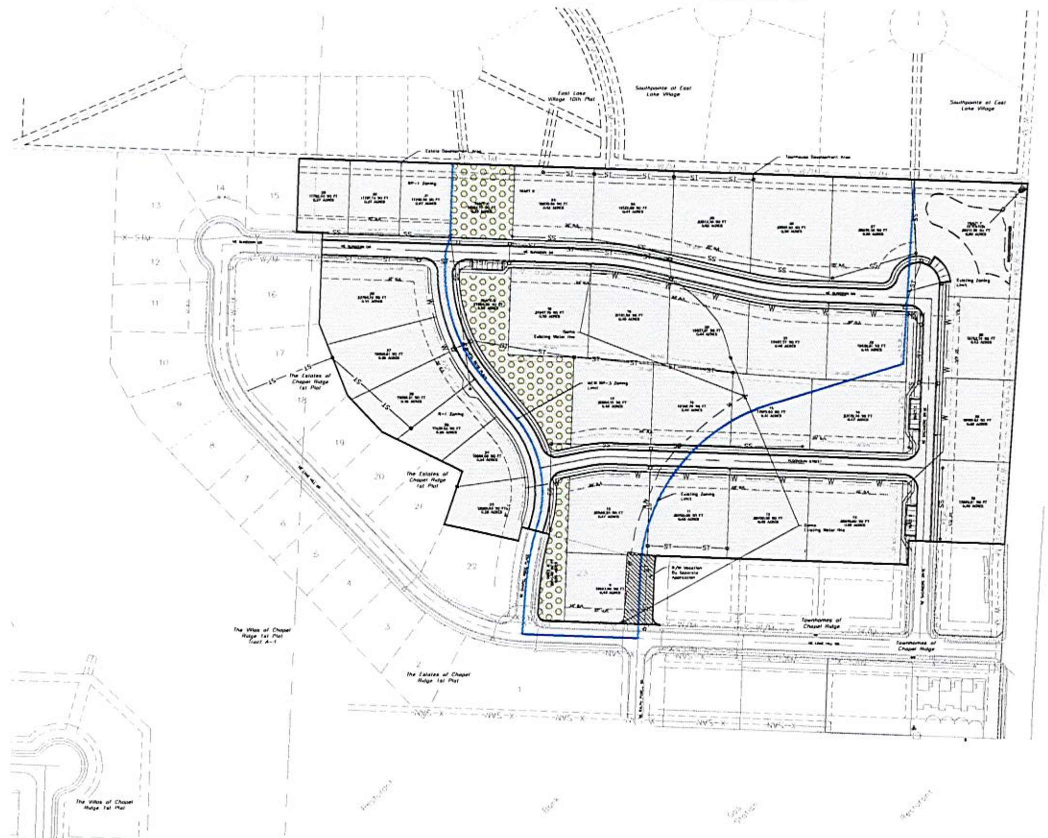
Preliminary Development Plan

THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30

Section 8, Township 48 North, Range 31 West
Lee's Summit, Jackson County, Missouri



LOCATION MAP
SECTION 8-T48N-R31W
Not to Scale



UTILITIES:
THE INFORMATION CONCERNING THE EXISTENCE, LOCATION, SIZE OR TYPE OF MATERIALS OF UNDERGROUND UTILITIES SHOWN HEREON, WHICH ARE NOT VISIBLE FROM THE SURFACE, HAS BEEN COMPILED FROM THE RECORDS OF THE VARIOUS UTILITY COMPANIES OR OTHER SOURCES OF INFORMATION AND HAS NOT BEEN VERIFIED IN THE FIELD BY THIS COMPANY. WHERE RECORD MEASUREMENTS WERE NOT AVAILABLE, THE LOCATION OF THESE UNDERGROUND LINES WAS SCALED FROM THE COMPANY'S RECORDS. THIS INFORMATION IS NOT TO BE CONSTRUED AS ACCURATE, COMPLETE NOR EXACT. ANY INFORMATION CONCERNING UNDERGROUND UTILITIES SHOWN HEREON MUST BE CONFIRMED BY THE DESIGN PROFESSIONAL PRIOR TO DESIGNING ANY IMPROVEMENTS WHICH MAY BE AFFECTED BY THIS INFORMATION OR BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITY.

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

SURVEYOR'S GENERAL NOTES:

1). This survey is based upon the following information provided by the client or researched by this surveyor.
(A). Final Plat of The Estates of Chapel Ridge 1st Plat
(B). Final Plat of The Townhomes of Chapel Ridge 1st Plat
(C). Final Plat of The Villas of Chapel Ridge 1st Plat
(D). Final Plat of East Lake Village 2nd Plat
(E). Final Plat of East Lake Village 10th Plat
(F). Final Plat of Fairfield Green

2). This survey meets or exceeds the accuracy standards of a (SUBURBAN) Property Boundary Survey as defined by the Missouri Standards for Property Boundary Surveys.
3). No Title report was furnished
4). Bearings shown hereon are based upon bearings described in the legal description.
5). This company assumes no responsibility in the location of existing utilities within the subject premises. This is an above-ground survey. The underground utilities, if shown, are based on information provided by the various utility companies and these locations should be considered approximate. There may be additional underground utilities not shown on this drawing. Dig Rite Ticket #150071203, 150071179, 150071171
7). Subsurface and environmental conditions were not surveyed or examined or considered as a part of this survey. No evidence or statement is made concerning the existence of underground or overhead conditions, containers or facilities that may affect the use or development of this property. No attempt has been made to obtain or show data concerning existence, size, depth, conditions, capacity or location of any utility existing on the site, whether private, municipal or public owned.

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Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Section 8, Township 48 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE LSMO
Issue Date: October 12, 2019

OVERALL SITE PLAN
Preliminary Development Plans for:
THE ESTATES OF CHAPEL RIDGE -2ND PLAT
LOTS 23 THRU 31 & TRACTS A-C
THE TOWNHOMES OF CHAPEL RIDGE -2ND PLAT
LOTS 9 THRU 30
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

C.100

LEE'S SUMMIT
MISSOURI

DEVELOPMENT REVIEW FORM
TRANSPORTATION IMPACT

DATE:	December 5, 2019	**CONDUCTED BY:**	Michael K Park, PE, PTOE
SUBMITTAL DATE:	November 12, 2019	**PHONE:**	816.969.1800
APPLICATION #:	PL2019352	**EMAIL:**	Michael.Park@cityofls.net
PROJECT NAME:	THE ESTATES OF CHAPEL RIDGE - 2ND PLAT	**PROJECT TYPE:**	Prel Dev Plan (PDP)

SURROUNDING ENVIRONMENT *(Streets, Developments)*

The proposed residential subdivision is generally located at the northwest corner of I-470 Highway and NE Woods Chapel Road within a previously approved and partially constructed neighborhood. The approved neighborhood and surrounding area consists of similar residential density with a mix of single-family and multi-family lots.

ALLOWABLE ACCESS

The proposed development will be primarily accessed from NE Ralph Powell Road through a proposed network of new residential streets that extend from existing residential streets. Individual lot access within the subdivision will be from the proposed residential streets, not from surrounding arterials or highway. The proposed residential streets will have two lanes, no medians, and a 25 mph speed limit similar to existing street sections. The proposed street intersections will have adequate sight distance.

EXISTING STREET CHARACTERISTICS *(Lanes, Speed limits, Sight Distance, Medians)*

Ralph Powell Road, north of Woods Chapel Road, is a three-lane undivided residential collector/divided commercial collector with a 25 mph speed limit. Ralph Powell Road intersects Woods Chapel Road with traffic signal control with various turn lanes. Lone Hill Drive extends east and west of Ralph Powell Road where a network of residential local streets provide lot access. Currently, there are four local streets constructed from Lone Hill to the property line between the Estates of Chapel Ridge 1st Plat and the subject plat.

ACCESS MANAGEMENT CODE COMPLIANCE? YES ☒ NO ☐

All intersection spacing, turn lanes and other applicable criteria required by the Access Management Code have been satisfied.

TRIP GENERATION

Time Period	Total	In	Out
Weekday	939	470	469
A.M. Peak Hour	61	15	46
P.M. Peak Hour	77	49	28

There will be negligible change in traffic created in comparison to the previously approved plan that was studied in a traffic impact analysis titled 'Traffic Impact Analysis Chapel Ridge Mixed Use Development Lee's Summit, Missouri", dated September, 2005.

TRANSPORTATION IMPACT STUDY REQUIRED? YES ☐ NO ☒

The proposed development will not likely generate more than 100 peak hour trips; a minimum condition in the Access Management Code for Traffic Impact Studies. Refer to the traffic impact analysis titled 'Traffic Impact Analysis Chapel Ridge Mixed Use Development Lee's Summit, Missouri", dated September, 2005, for additional information pertaining to the previously approved development at the subject property.

LIVABLE STREETS *(Resolution 10-17)* **COMPLIANT** ☒ **EXCEPTIONS** ☐

The proposed development includes all Livable Streets elements identified in the City's adopted Comprehensive Plan, associated Greenway Master Plan and Bicycle Transportation Plan attachments, and elements otherwise required by ordinances and standards, including but not limited to sidewalk, street connectivity and accessibility. No exceptions to the Livable Streets Policy adopted by Resolution 10-17 have been proposed.

RECOMMENDATION: **APPROVAL** ☒ **DENIAL** ☐ **N/A** ☐ **STIPULATIONS** ☐
Recommendations for Approval refer only to the transportation impact and do not constitute an endorsement from City Staff.

Staff recommends approval of the proposed development.

PL2019-352 REZ and PDP
Estates of Chapel Ridge and Townhomes of Chapel Ridge