

GUN RANGE DEVELOPMENT Proposed Building Development and Parking 2350 Franklin Road Lawrence, Kansas 66046

7 Step Traffic Impact Analysis

CFS Project No. 165294

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Prepared for:
Paul Werner Architects
123 W. 8th Street
Lawrence, Kansas 66044
785-832-0804



Prepared by: Cook, Flatt & Strobel Engineers, P.A. 2121 Moodie Road || Lawrence, Kansas 66046 785.856.9600

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Introduction

This 7 Step Traffic Impact Analysis for the proposed building and parking lot improvements for the Gun Range development in Lawrence, Kansas, has been prepared in accordance with the City of Lawrence's Traffic Impact Study Guidelines: Ordinance 7650 (Code Chapter 16, Article 29/Chapter 20, Article 9). The proposed 1.08 acre site will improve the existing vacant lot by adding a 11,875 sq ft indoor shooting range. Within the building, 4,000 sq ft will be used for a specialty retail area. The surrounding storage facility and commercial offices to the north and south as well as the 15 acre farm to the west will remain unaltered. The parking for the proposed development will include 21 spaces surrounded by curb and gutter including 2 accessible spaces and 2 bike parking spaces. The current access driveway on Franklin Road, 50 ft south of Thomas Court, will remain in use and a new access driveway is proposed off of Thomas Court located 140 ft east of Franklin Road. Analysis of the projected volumes of traffic to be generated by this proposed development are as follows: the AM peak hour yields approximately 31 vehicles per hour (vph) while the PM peak hour yields approximately 24 vph. Since the maximum volume is less than 100 vph for the peak hours, this 7 Step Analysis satisfies the City of Lawrence's Development Code and a more detailed Traffic Impact Study will not be required to be performed. The analysis of the proposed development does not indicate that there would be any appreciable change in traffic volumes as a result of this project.

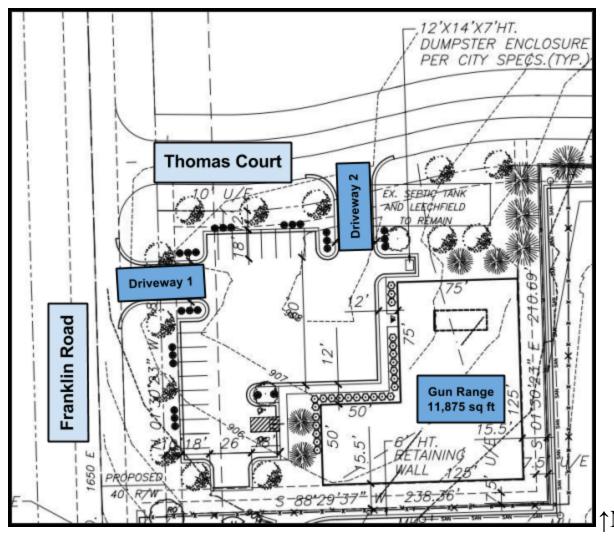


Current Aerial View of Site, Lawrence, Kansas

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STEP 1: Specific Development Plan and Land Uses

The proposed development plan for this site includes the construction of a 11,875 sq ft shooting range building at 2350 Franklin Road, Lawrence, Kansas 66046. The parking surface will be improved to include 19 typical spaces, 2 accessible spaces, and 2 bicycle spaces. The site will include new curb, new landscaping, ease of maneuverability for large trucks, dumpster enclosure, and ADA accessibility. Below is an image of the proposed site layout. Abutting the property to the south is a storage and office facility which is being redeveloped separately as part of the Mt. Blue PID, Phases I and II. Across Thomas Court to the north is a moving and storage facility. Across Franklin Road to the west is an unincorporated agricultural farm.



Proposed Site Layout

STEP 2: Land Uses Shown in Horizon 2020 for the Proposed Development

As shown in the Horizon 2020, The Comprehensive Plan for Lawrence and Unincorporated Douglas County Amendment 12/13/16, the land use for the site is Industrial, specifically Office Research Industrial/Warehouse/Distribution. The site is currently a vacant lot. The proposed land use is Commercial. The Gun Range development is within the incorporated city limits. The flood map for the selected area is number 20045C0179E, effective on 09/02/2015, did not show the site within the 500 year flood zone.

STEP 3: Functional Classification of the Public Streets Bordering the Site

As shown in the Transportation 2040 developed by the Metropolitan Transportation Plan of Lawrence and Douglas County, the functional classification of the surrounding streets are as follows:

- E 23rd Street/N 1400 Road/K-10 Principal Arterial
 - Speed limit of 55 mph to the west of Franklin Road and 65mph to the east of Franklin Road
 - Average daily volume was 31,100 vehicles in 2012
- E 25th Street/N 1360 Road Major Collector
 - Speed limit of 35 mph
- E 25th Terrace Major Collector
 - Speed limit of 35 mph
- Franklin Road Local Road
 - Speed limit of 35 mph
- Thomas Court Local Road
 - Speed limit of 30 mph

There are no known programmed improvements or future planned improvements for any of the roadways listed above in the region directly surrounding the Gun Range development site.

STEP 4: Allowable Access to the Development

Most traffic headed to the site will most likely come via E 23rd Street/N 1400 Road/K-10 since the land to the south of the site is largely undeveloped. 25th Terrace/N 1360 Road is designated as a bike route which provides accessibility to the site, and bicycle parking is proposed at the site to encourage ridership. The City of Lawrence Bus Route 1, Downtown to East Lawrence, includes Franklin Road and already provides access to the site.

STEP 5: Current Public Street Characteristics Adjacent to the Site

The two roadways adjacent to the site are Franklin Road and Thomas Court. Franklin Road is a two-lane local roadway with a 35 mph speed limit. It is 26 ft wide between the edges of pavement and has a curb and gutter system, sidewalks on both sides of the street, and "No Parking" signs along both sides of the street. It connects E 23rd Street/N 1400 Road/K-10 to E 25th Street/N 1360 Road and extends to E 25th Terrace. Thomas Court is a two-lane local roadway with a 30 mph speed limit that connects to Franklin Road but ends in a Cul-de-Sac. It is 24 ft wide between the edges of pavement and has a curb and gutter system and a sidewalk on the northern side of the street. The intersection of Franklin Road & Thomas Court is 420 ft away from the nearest arterial which is E 23rd Street/N 1400 Road/K-10 and there are no sight obstructions for sight distance issues at the intersection.

STEP 6: Proposed Access Compared with AASHTO Criteria

There are two access driveways for the proposed development. The current access driveway on Franklin Road, 50 ft south of Thomas Court, will remain in use and a new access driveway is proposed off of Thomas Court will be 140 ft east of Franklin Road. The proposed access points to the site meets AASHTO criteria and the City of Lawrence Access Management Guidelines. The 140 ft distance between the proposed access point and the intersection of Franklin Road & Thomas Court exceeds the 50 ft minimum requirement. The driveways will both have an throat distance of 50 ft which also meets the requirements of Access Management Guidelines. The

access points will not require a left-turn or right-turn auxiliary lane due to the low volume of generated traffic. There are no sight obstructions or sight distance issues at the driveway intersections. A shared parking lot connection to the businesses to the south is not feasible due to the 6 ft high retaining wall between the properties.

STEP 7: Estimate of Trips Generated by Existing and Proposed Development

The existing site has a 409 sq ft building and is vacant, therefore the existing traffic is negligible. For evaluating traffic impacts from new land developments, transportation engineers typically utilize the Trip Generation Manual (9th Edition) published by the Institute of Transportation Engineers (ITE). The 9th Edition is the most current manual and covers a diverse assortment of commercial, residential, industrial and specialty types of land developments. Since ITE data for a shooting range is unavailable, a substitute ITE category and ITE code was used. It was assumed that the 432 (Golf Driving Range) would be a good comparison since there are similar lanes in which a person performs a solo activity. The Gun Range development will provide 10 shooting lanes. Also, the 4,000 sq ft retail area within the building was categorized as ITE Code 826 (Specialty Retail Center). The 10 lanes and 4 thousand sq ft (ksf) of retail was then multiplied by their ITE Average Trip Generation Rates to determine the increased traffic volumes. Volumes were calculated as follows for the daily total and the AM and PM Peak Hours on a typical weekday:

ITE Trip Generation Manual (9th Edition) Generation Rates and Directional Distributions

		Average Trip Generation Rate	Total Traffic	Traffic Entering	Traffic Exiting
ITE Land Use 432 (Golf Driving Range)	Weekday Total	13.65 vpd/unit	137		
	AM Peak Hour	0.40 vpd/unit	4	2	2
	PM Peak Hour	1.25 vpd/unit	13	6	7
ITE Land Use 826 (Specialty Retail Center)	Weekday Total	44.32 vpd/unit	177		
	AM Peak Hour	6.84 vpd/unit	27	13	14
	PM Peak Hour	2.71 vpd/unit	11	5	6

These volumes are very low and will not significantly change the traffic patterns of the local street network. By-pass traffic will not be generated by these land use categories.

Summary

Analysis of the projected volumes of traffic to be generated by this proposed development are as follows: the AM peak hour yields approximately 31 vehicles per hour (vph) while the PM peak hour yields approximately 24 vph. As the maximum volume is less than 100 vph, this 7 Step Analysis satisfies the City of Lawrence's Development Code and a more detailed Traffic Impact Study will not be required to be performed. The analysis of the proposed development does not indicate that there would be any appreciable change in traffic volumes as a result of this project.

Appendix I - Exhibit Map

0 20 40

original conditions of APPROVAL FOR P.I.D. ZONING

I. USES WILL BE RESTRICTED AS PART OF THE APPROVAL OF THE PRELIMINARY DEVELOPMENT PLAN; BASED ON THE VISUAL AND ENVIRONMENTAL IMPACT ON THE K-IO CORRIDOR AND ADJOINING PROPERTIES; I.I CURRENT ZONING: LOT I: PID

2. MINIMUM 20% OPEN SPACE (EXCLUSIVE OF PARKING AREAS) 3. BUILDING SETBACK STANDARDS: A. COMMERCIAL DEVELOPMENT, 50 FEET FROM K-10 RIGHT-OF-WAY

B. INDUSTRIAL DEVELOPMENT, IOO FEET FROM K-IO RIGHT-OF-WAY 4. LOADING DOCKS MECHANICAL EQUIPMENT, SOLAR PANELS, WASTE STORAGE, AND PRODUCT STORAGE AREAS SHALL NOT BE LOCATED ON THE SIDE OF THE BUILDING FACING K-10, AND IF LOCATED ON A SIDE OF BUILDING FACING K-IO, WILL BE ENTIRELY SCREENED FROM VIEW WITH WALLS THAT ARE CONSISTANT WITH THE ARCHITECTURE OR EVERGREEN VEGETATION. 5. REVERSE FRONTAGE ROADS ARE RECOMMENDED (WHICH LOCATES THE FRONTAGE ROAD TO THE REAR OF PROPERTIES);...SPECIFICS SHALL BE

AT THE DEVELOPMENT PLAN STAGE.

6. BLANK WALLS (WITHOUT DOORS, WINDOWS) SHALL NOT FACE K-10; OR SEE

7. PAINTED ADVERTISING ON STRUCTURES IS NOT PERMITTED. 8. SIGNS ON BUILDINGS IS LIMITED TO COMPANY NAME OR LOGO AND

9. MASONRY (BRICK, STONE, STUCCO) IS REQUIRED FOR DETAILING; IN STRUCTURES LOCATED WITHIN VIEW OF K-10 R.O.W.. IO. FREE STANDING POLE MOUNTED SIGNS ARE NOT PERMITTED ON

PROPERTIES ABUTTING K-10. II. NO SIGNS ON TOP OF BUILDINGS.

12. MAXIMUM OF ONE SIGN FACING K-10.

13. TREES WITH 12" CALIPER AND ABOVE SHALL BE REPLACED. REPLACEMENT REQUIRED I TREE FOR EVERY 12" OR LARGER REMOVED. 14. PLANTING: (CURRENT LANDSCAPE ORDINANCE SUPERCEDES THIS

A. SHADE TREES, 2-1/2"-3" CALIPER.

B. ORNAMENTAL TREES, I-3/4"-2" CALIPER.

C. EVERGREEN TREES, MINIMUM & HEIGHT. 15. LIGHTING SHALL BE NON GLARE, CUT OFF FIXTURES WITH METAL HALIDE BULBS OR OTHER ENERGY EFFECIENT LIGHTS. STANDARDS AND FIXTURES IN PARKING LOTS SHALL BE A MAXIMUM OF 20 FT. IN HEIGHT, 0.8 FOOT

LIGHTING ORDINANCE SUPERCEDES THIS CONDITION) 16. PARKING; INTERIOR LANDSCAPE ISLANDS SHALL EQUAL A MINIMUM OF 0.8% OF THE TOTAL PARKING AREA, ISLANDS WILL BE LANDSCAPED WITH SHADE TREES, ORNAMENTAL TREES AND SHRUBS AT APPROPRIATE LOCATIONS (ENTRIES AND PARKING LOT ISLANDS); (CURRENT LANDSCAPE ORDINANCE SUPERCEDES THIS CONDITION)

17. PARKING LOT ISLANDS SHALL BE A MINIMUM OF 10 FT. WIDTH. 18. BUFFER VIEWS OF PARKING ENTIRELY FROM K-10 AND ADJACENT UNRELATED USES, 42" MINIMUM HEIGHT BERMING AND VEGETATION.

IN ADDITION, THE FOLLOWING USES HAVE BEEN PROHIBITED:

USE GROUP 13. BEER SALES FOR CONSUMPTION ON THE PREMISES; EATING ESTABLISHMENT, ENCLOSED, WITH DANCING OR ENTERTAINMENT; EATING ESTABLISHMENT, PROVIDING ONLY DRIVE-UP SERVICE OR NO SEATING FACILITIES; FOOD CONVIENENCE STORE INCLUDING GASOLINE SALES; OR

PROHIBITED STORAGE MATERIALS AND USES

THE FOLLOWING ARE PROHIBITED STORAGE MATERIALS AND USES. THESE ITEMS SHALL BE INCLUDED AS PART OF ANY LEASE AGREEMENT TO RENT

(I) AUCTIONS, EXCEPT THOSE REQUIRED BY STATE LAW TO DISPOSE OF

(2) COMMERCIAL, WHOLESALE OR RETAIL SALES; OR, MISCELLANEOUS OR

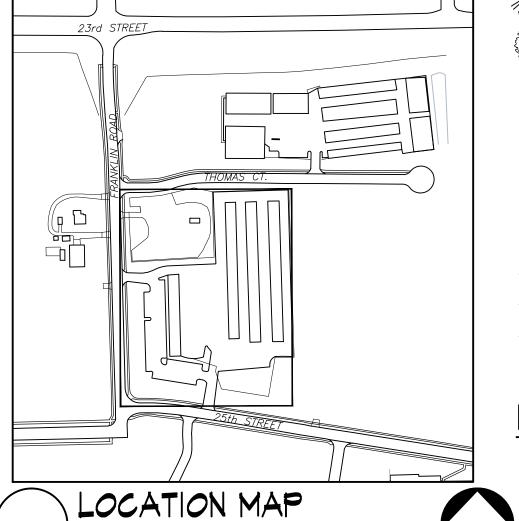
(3) THE SERVICING, REPAIR OR FABRICATION OF MOTOR VEHICLES, BOATS, TRAILERS, LAWN MOWERS, APPLIANCES, OR OTHER SIMILAR EQUIPMENT; (4) THE OPERATION OF POWER TOOLS, SPRAY PAINTING EQUIPMENT, TABLE SAWS, LATHES, COMPRESSORS, WELDING EQUIPMENT, KILNS, OR OTHER SIMILAR EQUIPMENT.

(5) THE ESTABLISHMENT OF A TRANSFER AND STORAGE BUSINESS; AND (6) ANY USE THAT IS NOXIOUS OR OFFENSIVE BECAUSE OF ODORS, DUST, NOISE, FUMES, OR VIBRATIONS.

(H) OFF-STREET PARKING.

(I) OFF-STREET PARKING SHALL BE PROVIDED FOR INDUSTRIAL BUILDINGS IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN USE GROUP 7 -COMMUNITY FACILITIES-PUBLIC UTILITIES; USE GROUP 8 - TEMPORARY USES; USE GROUP 9 - PROFESSIONAL OFFICES; USE GROUP 10 - OFF STREET PARKING; USE GROUP 13 - AUTOMOTIVE SERVICES AND RETAIL SALES; USE GROUP 14 - RETAIL-WHOLESALE SALES AND SERVICES; USE GROUP 17 - MANUFACTURING-LOW NUISANCE; USE GROUP 18 - RESEARCH AND TESTING: USE GROUP 19 - INDUSTRIAL-MEDIUM NUISANCE: USE GROUP 20 - INDUSTRIAL-HIGH NUISANCE.

(2) PARKING SHALL NOT BE ALLOWED WITHIN ANY AREA OF THE PERIPHERY SETBACKS OR THE FRONT YARD SETBACKS.



LAND AREA BUILDING FOOTPRINT: PAVEMENT AREAS: TOTAL IMPERVIOUS: TOTAL PERVIOUS:

409 0.009 0.067 0.108 41,423

PROPOSED CONDITIONS: BUILDING FOOTPRINT: 12,375 PAVEMENT AREAS: TOTAL IMPERVIOUS: TOTAL PERVIOUS:

LEGAL DESCRIPTION:

MT BLUE ADDITION, LOT I AND MT. BLUE ADDITION NO. 2, LOT 9 IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS.

PROJECT SUMMARY:

LOT 9: PID

LOT I: USE GROUPS 12, 13, 14, 17 (MINI STORAGE, OFFICE, RETAIL) 1.2 CURRENT USE:

LOT 9: VACANT

LOT I: USE GROUPS 12, 13, 14, 17 (MINI STORAGE, OFFICE, RETAIL) 1.3 PROPOSED USE:

LOT 9: 1.083 ACRES (47,160 SQ. FT. +/-)

LOT 9: USE GROUP 13 I.4 LAND AREA: LOT I: 5.265 ACRES (229,125 SQ. FT. +/-)

GENERAL NOTES

- 2.1 ALL GROUND MOUNTED MECHANICAL UNITS SHALL BE SCREENED IN ACCORDANCE WITH SECTION 20-14A04.
- 2.2 ALL ACCESSIBLE SIDEWALK RAMPS BY A.D.A. STANDARDS.
- 2.3 SITE PLAN HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDINGS AND FACILITIES, APPENDIX A TO 28CFR PART 36.
- 2.4 THE CITY OF LAWRENCE WILL NOT BE HELD RESPONSIBLE FOR DAMAGE CAUSED BY TRASH TRUCKS.
- 2.5 NO PROPOSED PARKING LOT LIGHTS AT THIS TIME.

PARKING LOT LIGHTS MAY BE INSTALLED IN FUTURE PER CITY CODE.

- 2.6 PLAN FOR CITY APPROVAL ONLY! CONSTRUCTION DOCUMENTS TO BE FURNISHED AT THE REQUEST OF OWNER.
- 2.7 INFORMATION TAKEN FROM AERIAL PHOTOS, AVAILABLE DOCUMENTS AND ON SITE INVESTIGATIONS.
- 2.8 ALL TRAFFIC CONTROL SIGNS PLACED ON PRIVATE PROPERTY OPEN TO THE GENERAL PUBLIC SHALL COMPLY WITH THE "MANUAL ON UNIFORMS TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS," PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION, WITH RESPECT TO SIZE, SHAPE, COLOR, RETROFLECTIVITY, AND POSITION.
- 2.9 ENTIRE COMPLEX TO BE CONSTRUCTED AT ONE TIME (A SINGLE PHASE). OCCUPANCY PERMITS TO BE ISSUED PER BUILDING WHEN NECESSARY IMPROVEMENTS HAVE BEEN COMPLETED FOR EACH STRUCTURE.
- 2.10 SIGN APPROVAL AND PERMITTING IS NOT PART OF THE SITE PLAN APPROVAL. SEPARATE APPROVAL IS REQUIRED THROUGH NEIGHBORHOOD RESOURCES.
- 2.11 APPLICANT REQUESTS TO REDUCE THE PARKING SETBACK ALONG THOMAS CT. TO 15.0'
- 2.12 THIS PROJECT IS DESIGNED, DEVELOPED AND REVIEWED UNDER THE OLD CODE.

PARKING INFORMATION:

3.1 PARKING REQUIRED:

MINI STORAGE: I SPACE FOR EVERY 150 STORAGE UNITS PARKING GROUP 15: I SPACE FOR EVERY 500 SF OF FLOOR AREA AND A MINIMUM OF 3 ADJACENT TO LEASING OFFICE 12,375 SF / 500 = 25 SPACES 271 UNITS / 150 = 2 + 3 = 5 SPACES

OFFICE: I PER 300 SF OF FLOOR AREA 5,985 SF / 300 = 20 SPACES

RETAIL: I PER 200 SF OF FLOOR AREA 3,000 SF / 200 = 15 SPACES

TYPE:	REQUIRED:	PROVIDED:	TYPE:	REQUIRED:	PROVIDED
REGULAR	38	76	REGULAR	24	24
ACCESSIBLE	2	6	ACCESSIBLE	1	1
<u>TOTAL:</u>	<u>40</u>	<u>82</u>	<u>TOTAL:</u>	<u>25</u>	<u>25</u>
BICYCLE	2	2	BICYCLE	5	5

3.2 TYPICAL DIMENSIONS: 'R' SPACES - 9' X 18' (OR 16.5' + 1.5' OVERHANG)

SIDEWALKS SHALL BE 4" CONCRETE - 5' OR 6.5' WIDE DEPENDING UPON THE LOCATION.

'H' SPACES - 8' X 20' (5' OR 8' AISLE)

3.3 PAVEMENT: APPROACHES: 7" - 4000 PSI CONCRETE W/ #5 BARS I2" O.C.B.W. MIN. 6" ASPHALT ON 4" GRAVEL OR 5" CONCRETE DRIVES: PARKING AREAS: MIN. 5" ASPHALT ON 4" GRAVEL OR 4" CONCRETE

3.4 24" CURB & GUTTER AT ENTRANCE.

LANDSCAPING NOTES

SYM.	<u>DESCRIPTION</u>	QTY. APPROVED TYPES	BOTANICAL NAMES	SIZE	<u>CON</u>
+	LOT I TREES	55			
	LOT I SHRUBS	109			

LOT 9 LANDSCAPING:

2"-2 1/2" CAL B & B SAW TOOTH OAK QUERCUS ACUTISSIMA ACER PLATANOIDES 'NORWEGIAN SUNSET' NORWAY MAPLE THORNLESS HONEY LOCUST GLEDITSIA TRIACANTHOS VAR. INERMIS 6'-8' HT. B & B EVERGREEN TREES 3 WHITE PINE PINUS STROBUS BLUE SPRUCE PICEA PUNGENS 1 1/2"-2" CAL B & B ORNAMENTAL TREES 4 CLEVELAND SELECT PEAR PYRUS CALLERYANA 'CHANTIELEER' KOUSA DOGWOOD CORNUS KOUSA CORAL BURST CRABAPPLE MALUS 'CORALBURST'

EASTERN REDBUD CERCIS CANADENSIS DECIDUOUS SHRUBS DWARF JAPANESE BARBERRY BERBERIS THUNBERGII 'CRIMSON PYGMY' 18"-24" HT. CONT LEATHERLEAF VIBURNUM VIBURNUM RHYTIDOPHYLLUM BEAUTY BUSH KOLKWITZIA AMABALIS

DWARF KOREAN LILAC EVERGREEN SHRUBS 42 CARMEL CREEPER CAENOTHUS GRISEUS HORIZONTALIS 24"- 36" HT. CONT CREEPING ROSEMARY ROSEMARY PROSTRATUS BLUE PFITZER JUNIPER JUNIPERUS CHINENSIS 'PFITZERIANA GLAUCA'

BAR HARBOR JUNIPER CREEPER JUNIPERUS HORIZONTALIS 'BAR HARBOR' ENGLISH YEW TAXUS BACCATA

4.1 THERE MUST BE A MIN. OF (2) SPECIES USED IN EACH CATEGORY

4.2 ALL TURF AREAS TO BE SEEDED WITH K-31 FESCUE

4.3 INTERIOR PARKING LANDSCAPING: PERIMETER LOT LANDSCAPING: 40SF x 25 SPACES = 1,000 SF 109.5 LF ON FRANKLIN / 25 = 5 TREES | 189.42 LF ON FRANKLIN / 40 = 5 TREES I SHADE TREE PER 10 SPACES = 3 TREES | 127.5 LF ON THOMAS CT / 25 = 6 TREES | 230.84 LF ON THOMAS CT / 40 = 6 TREES 3 SHRUBS PER 10 SPACES = 8 SHRUBS PERIMETER BERM PROVIDED

IMPERVIOUS SURFACE SUMMARY:

LOT 9: 1.059 ACRES (46,117 SQ. FT. +/-) EXISTING CONDITIONS:

SYRINGA MEYERI 'PALIBIN'

123 W. 8TH STREET

LAWRENCE, KS 66044

OFFICE: 785.832.0804

INFO@PAULWERNERARCHITECTS.COM

FAX: 785.832.0890

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SUITE B2

PROJECT # 216-740 DECEMBER 2016

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