

MEMORANDUM

To: The City of Lee's Summit
From: GBA
Date: 3/10/2022
Subject: LS Industrial Sanitary Study

The proposed LS Industrial development encompasses approximately 50 acres near the southwest corner of the intersection of Missouri Highway 291 and U.S. Highway 50 in Lee's Summit Missouri. The project area is bound by SE Bailey Road to the north, SE 16th Street to the south, Union Pacific railroad tracks to the east, and Missouri Highway 291 to the west. The project will construct two industrial warehouse buildings and associated parking.

A sanitary sewer main extension consisting of approximately 3,000 LF of 12" sewer will be constructed to serve the development as well as the existing Maddox Acres subdivision. The proposed main will connect to an existing manhole north of SE Thompson Drive, where flows will be conveyed south through the Big Creek Watershed. See the attached sanitary exhibit for details.

Section 6500 of the Lee's Summit Design Criteria was used to calculate peak wastewater flows. An equivalent development unit (EDU) of 0.1 per 1,000 SF was selected for the two warehouse buildings per Table 6501-1. The total peak flow for Line A was found to be 3.32 CFS. The proposed development will utilize 66.7% of capacity for Line A. This includes inflow and infiltration for the proposed site as well as approximately 84 acres to the north. See attached sanitary sewer capacity calculations for details.

LS Industrial Sanitary Sewer Capacity (LS - 6500)

3/10/2022

Line A

Line A Inflow: 1.278 CFS (Peak)
 Line A Infiltration: 2.026 CFS (Peak)

Building 1

Use	Quantity		Rate	Flow (EDU)	
Warehouse	201,500	SF	0.1 EDU/1000 SF	2	From Table 6501-1
Total				2.0	

Total Flow (GPD) = 604.5
 Peak Flow (GPD) = 3,022.5
 Peak Flow (CFS) = 0.005

Building 2

Use	Quantity		Rate	Flow (EDU)	
Warehouse	393,120	SF	3.5 EDU/1000 SF	3.9312	From Table 6501-1
Total				3.93	

Total Flow (GPD) = 1,179.4
 Peak Flow (GPD) = 5,896.8
 Peak Flow (CFS) = 0.009

Total Peak Flow Line A (CFS) = 3.318

Line A Peak Flow (CFS) = 3.318

Total Peak Flow - Line A (CFS) 3.318
 Line A Capacity (94% Full) (CFS) 4.98
 12" PVC @ 1.0%

Proposed development will utilize 66.7% of capacity for Line A

LS Industrial Sanitary Sewer Capacity (LS - 6500)

Peak Infiltration

	Area (ac)	Inflow rate cfs/ac	Land Type	Q inflow (cfs)
Line A	134.14	0.00039	Non-residential	2.02551

LS Industrial Sanitary Sewer Capacity (LS - 6500)

Peak Inflow

Storm	50						
Sewer Line	Area (ac)	Land Use	K	Tc (min)	i (iph)	Q CFS	Q gpd
Line A	134.14	Non-Residential	0.003	63.9107	3.1766	1.2783	826,197

Calculations are based on the methods in 6501 C

BIG CREEK WATERSHED

WEST PRAIRIE LEE WATERSHED

LS INDUSTRIAL & EXISTING MADDOX ACRES ANALYSIS AREA

BUILDING 2 INDUSTRIAL WAREHOUSE
393,120 SF

BUILDING 1 INDUSTRIAL WAREHOUSE
201,500 SF

OFFSITE FLOW

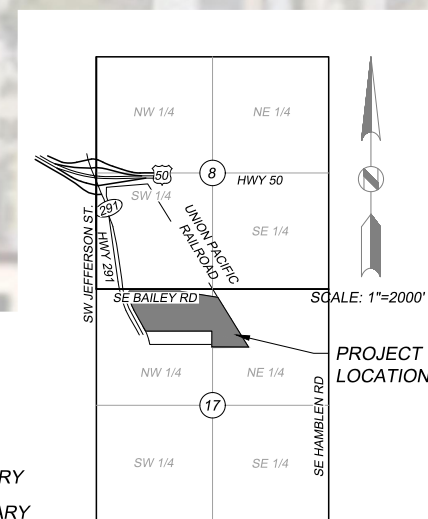
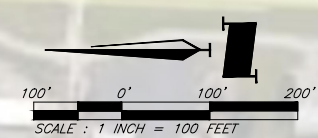
EXISTING MADDOX ACRES AREA TO BE CONNECTED TO PROPOSED GRAVITY SEWER SYSTEM

PROPOSED CONNECTION TO EXISTING MANHOLE

EXISTING 8" SANITARY MAIN

EXISTING 12" SANITARY MAIN

EXISTING 8" SANITARY MAIN



LEGEND

	PROPERTY LINE
	WATERSHED LIMITS
	PROPOSED DEVELOPMENT BOUNDARY
	ANALYSIS AREA BOUNDARY
	PROPOSED SANITARY MAIN
	EXISTING SANITARY MAIN

VICINITY MAP
SECTION 17-T47S-R31E

LS INDUSTRIAL SANITARY EXHIBIT

MO 291 HWY & SE BAILEY RD.
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

REVISION

PROJECT NUMBER
13958.01
DATE
3/10/2022

DESIGNED

DRAWN

REVIEWED

SHEET TITLE

Sanitary Exhibit

SHEET NUMBER

1

CEDAR CREEK WATERSHED