VII.A.

690 Chesterfield Pkwy W ● Chesterfield MO 63017-0760
Phone: 636-537-4000 ● Fax 636-537-4798 ● www.chesterfield.mo.us

Planning Commission Staff Report

From: Isaak Simmers, Planner

Meeting Date: June 10, 2024

Location: 18460 Olive Street Road

Description: **Spirit of St. Louis Airpark (18460 Olive Street Road):** A Site Development Section Plan, Landscape Plan, and Lighting Plan for a leasehold area zoned "M3" Planned Industrial District located on a 47.97-acre tract of land south of Olive Street Road at the intersection of Outlet Boulevard and Spirit Airpark East Drive (Ward 4).

PROPOSAL SUMMARY

Crawford, Murphy & Tilly Engineers and Consultants, on behalf Spirit Sky Club, LLC, has submitted a Site Development Section Plan, Landscape Plan, and Lighting Plan for a leasehold area zoned "M3" Planned Industrial District located on a 47.97-acre tract of land south of Olive Street Road at the intersection of Outlet Boulevard and Spirit Airpark East Drive. The plan includes a new hangar complex at the Spirit of St. Louis Airport. The new hangar complex will be developed on an approximately 6-acre leasehold area and will include room for 28 hangar units, aircraft apron, taxi line pavement, and a paved parking area.

Figure 1: Subject Site

SITE HISTORY

The site was zoned "M-3" Planned Industrial District for Spirit of St. Louis Airport via St. Louis County Ordinance 2,212 in 1961 and remains undeveloped. The current ordinance governing the site is Ordinance 1430.

ZONING & LAND USE

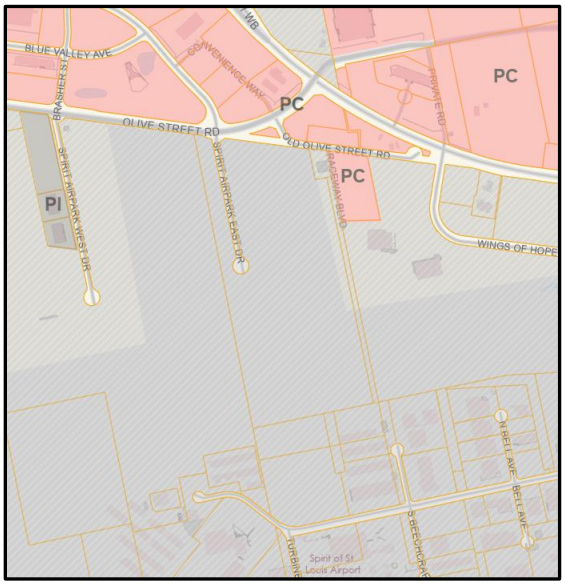


Figure 2: Zoning Map

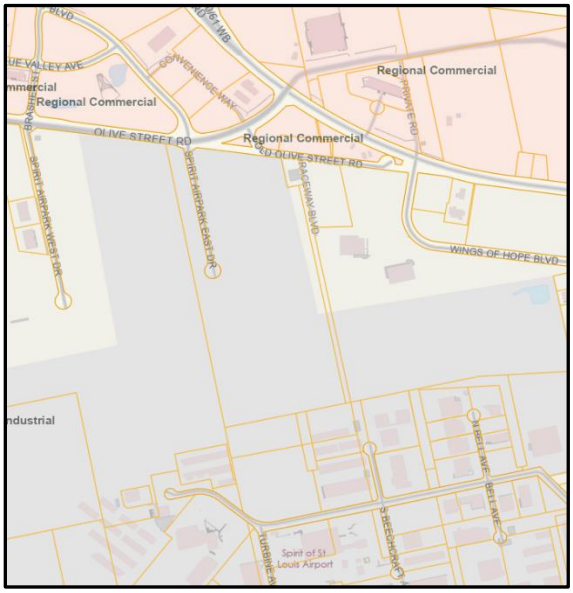


Figure 3: Land Use Map

Direction	Zoning	Land Use
North	"PC" Planned Commercial District	Regional Commercial
South	"M3" Planned Industrial District	Industrial
East	"PC" Planned Commercial / "M3" Planned Industrial District	Industrial
West	"M3" Planned Industrial District	Industrial

Figure 4: Zoning and Land Use Table

COMPREHENSIVE PLAN

The City of Chesterfield provides a character description of this area (Envision Chesterfield Comprehensive Plan 2020): "Conventional industrial park and associated activity involving an airport. These areas generally support manufacturing and production uses including; warehousing, distribution, light manufacturing, airport support business, and assembly operations. They are found in close proximity to major transportation corridors (i.e., highway and airport) and are generally buffered from surrounding development by transitional uses or landscaped areas that shield the view of structures, loading docks, or outdoor storage from adjacent properties. Industrial areas have the following Development Policies:

- Limit curb cuts on arterial streets, and where possible concentrate access at shared entrance points;
- Primary entrance points should be aligned with access points which immediately access the street;
- Connectivity may vary as industrial parks may have low connectivity due to dead ends and lack of connection to adjacent areas;
- Landscape buffering should be utilized between roadways to screen areas of surface parking;
- Residential project should be limited to areas outside of the Chesterfield Valley."

STAFF ANALYSIS

The subject site is undeveloped; however, there is existing flatwork on site that includes a runway and taxi way on which the proposed development will connect. The complex will be comprised of two (2) hangar structures, a northern most hangar and southernmost hangar. The northernmost building has a total area of 35,474SF and the southernmost building has a total area of 63,440SF.

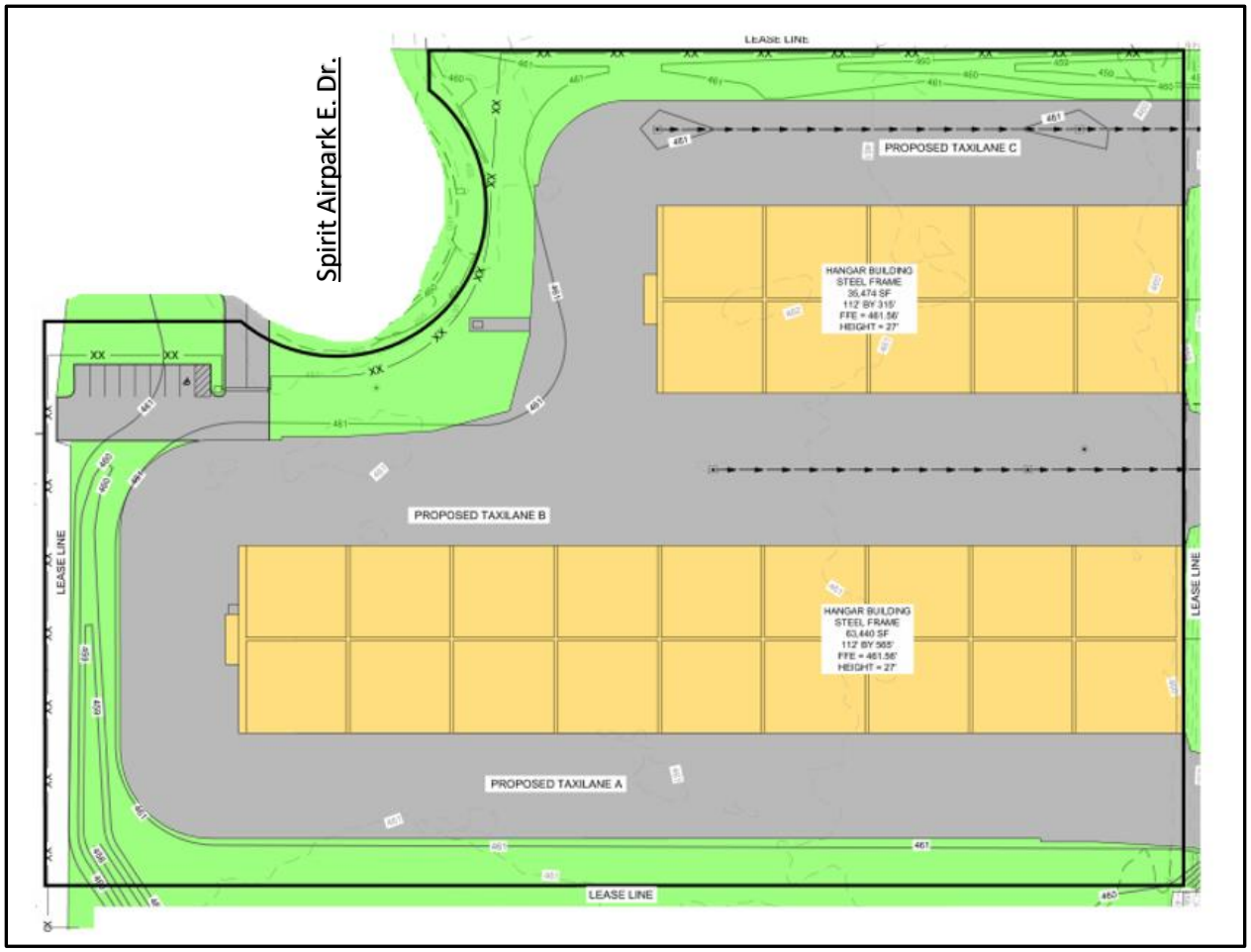


Figure 5: Color Site Plan (Leasehold Area)

A. Circulation System, Parking and Access

The site will be accessed from the cul-de-sac on Spirit Airpark East Drive and all associated parking and taxi lines will be gated from the public, see figure 6. The access to the site and turnaround at the end of the cul-de-sac exceeds the maximum allowed for maximum driveway width (allowed per code 40', proposed 46'); however, the entrance is located within the jurisdiction of St. Louis County Department of Transportation and the access and turnaround have been approved by the County. There is a fuel tank located on the west side of the northern most hangar building in the complex and the proposed flatwork will include three connecting drives to the taxi lane to the east and aircraft can enter the hangars on both the north and south side sides of each building.

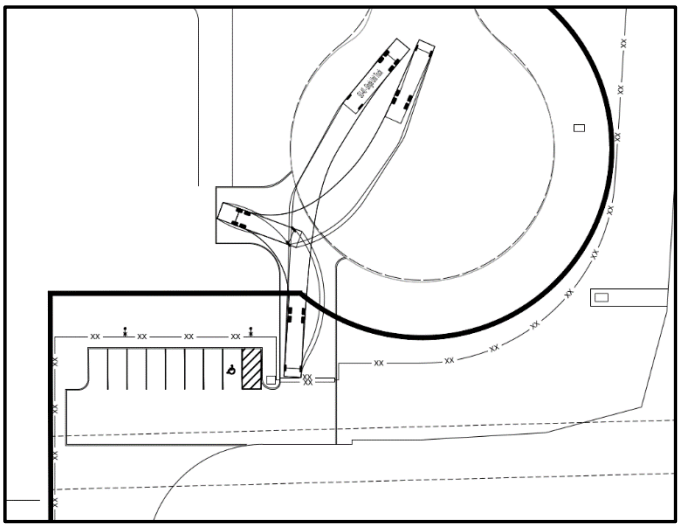


Figure 6: Parking Lot and Gate /Turning Radius Exhibit (Partial)

Per code, two (2) spaces are required for every three (3) employees for warehouse general use. There are no employees anticipated on site; therefore, the development is not required to provide any parking. The applicant has still proposed seven (7) regular spaces, and one (1) ADA compliant space. All eight (8) spaces will be located within the gated site enclosure. Per code, the development would require a minimum of three (3) 10'x40' loading spaces; however, the applicant has requested a modification as hangars do not use loading spaces. The applicant has also stated that there is plenty of room on site for any specific circumstances.

B. Landscape Design & Open Space

Spirit of St. Louis Airport requested that all landscaping at developments within the airport's vicinity be limited to features that would not serve as wildlife attractants. Per city requirements, the applicant must provide a letter from a certified tree specialist to request modifications to the City's landscape requirements. The applicant has provided a letter from the United States Department of Agriculture (USDA) Wildlife Services to substantiate their request which has been included in the packet. There is no open space requirement per their site-specific ordinance, but the plan has provided 65.1% open space for the parcel.

C. Screening

Rooftop HVAC screening is supplied in accordance with city code and is proposed to match the same color and material as the hangar complex walls and doors, Polar White, see figure 7. White vinyl will be used for both the proposed trash enclosure and fuel tank. The subject parcel has existing chain-link security fencing already in place, see figure 8. Addition fencing is proposed to secure the proposed hangars.

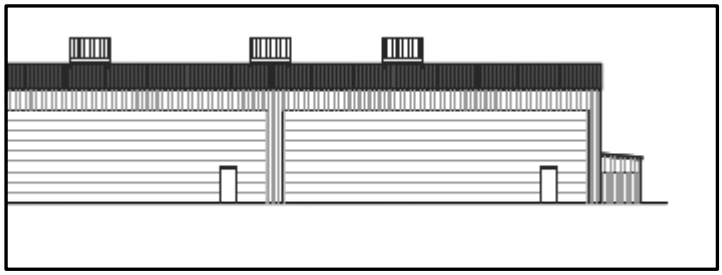


Figure 7: Partial North Elevation

Figure 8: Existing Fence

D. Materials & Design

The applicant has proposed two (2) colors to contrast the walls and the roofing. The walls will include ribbed metal siding, all doors, and HVAC screening will be Polar White by Economy Metals, INC. The metal roofing and trim will be colored Charcoal by the same company.

E. Lighting

The applicant has provided a site photometric plan and fixture cut sheets for all proposed fixtures. There are a total of 28 proposed fixtures and maintain an average of 1.6 footcandle (fc) throughout the hangar area and an average of 2.98 fc throughout the parking area. The maximum footcandle recorded on site is 7.8 fc and the maximum mounting height of the hangar fixtures will be eighteen and a half (18.5) feet. The site was found to be in compliance with the lighting standards of City Code. No street lighting is proposed as St. Louis County has indicated they do not want street lighting along this County owned roadway.

ARCHITECTURAL REVIEW BOARD (ARB)

This project was reviewed by the Architectural Review Board on May 9, 2024 and the Board made a recommendation to approve with one condition. The condition was to change the color of the HVAC screening from “Charcoal” to “Polar White”. The applicant has since updated their elevations. The motion passed by a vote of 6-0.

RENDERING(S)

DEPARTMENT INPUT

Staff has reviewed the Site Development Section Plan, Landscape Plan, and Lighting Plan and found that it meets the requirements to be presented to the Planning Commission for review. Staff recommends action.

MOTION

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

"I move to approve (or deny) the Site Development Section Plan, Landscape Plan, and Lighting Plan for Spirit of St. Louis Air Park (18460 Olive Street Road) as presented."

"I move to approve the Site Development Section Plan, Landscape Plan, and Lighting Plan for Spirit of St. Louis Air Park (18460 Olive Street Road) with the following conditions…"

Attachments:

1. PC Submittal Booklet

COMMENT RESPONSE LETTER

May 21, 2024

ATTN: Isaak Simmers, Site Development Plan Review
Department of Planning
690 Chesterfield Pkwy W
Chesterfield, MO 63017

RE: Project: Spirit Sky Club Hangars
CMT Project No. 23006099.00

The following responses are in reference to the review comments on the Site Development Plan for the proposed Spirit Sky Club Hangar Project

1. **Comment –** Provide the updated colored elevations per the recommendation for approval by ARB on May 09, 2024.
   Response: This has been included.

2. **Comment –** City Staff recently met with Spirit of St. Louis Airport Staff and discussed the City's requirement for Chesterfield Valley Storm Water Easements. It was indicated by Airport Staff that the Airport has FAA requirements for the maintenance of ditches, channels, and reservoirs on Airport property that cannot be deferred to lessees, the City, or Levee District. Based on that information, obtaining Chesterfield Valley Storm Water easements on Airport property is not necessary or feasible. The City is removing the requirement for the easements and it can be removed from the plans.
   Response: This has been removed.

3. **Comment –** The approved scope and fee for the functional equivalency analysis was received on May 3, 2024 and a notice to proceed was issued to the City's stormwater consultant on May 7, 2024. You will be provided the results of the analysis as soon as they are available.
   Response: Understood

4. **Comment –** Please be advised that the site development section plan can move forward through the process prior to a determination on the functional equivalency analysis. If site revisions are required based on the outcome of the analysis and those revision do not substantially conform to the site development section plan, amendments to the site development section plan may be required.
   Response: Understood

Thanks,
David Shelton, CMT

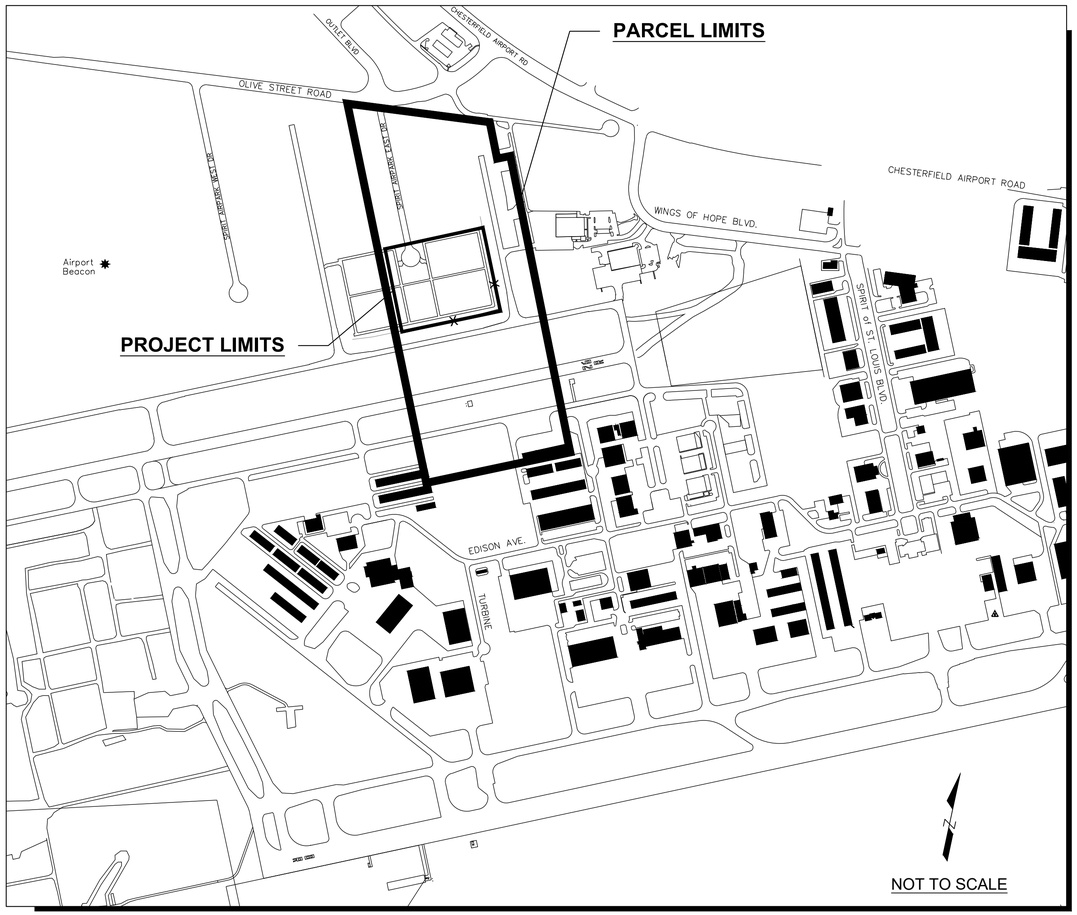
CC : Todd Ehlen, CMT
Brian Hutsell, CMT
Alex Martin, Spirit Sky Club
Mitch Hoffman, Hoffman General Contracting, INC
David Schubert, Saint Louis County/Spirit of St. Louis Airport
Justin Ryder, Saint Louis County/Spirit of St. Louis Airport

SITE DEVELOPMENT PLAN
SPIRIT SKY CLUB
HANGAR DEVELOPMENT
CHESTERFIELD, MO

A TRACT OF LAND LOCATED IN U.S. SURVEY 169, TOWNSHIP 45 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL OF MERIDIAN, CITY OF CHESTERFIELD, ST. LOUIS COUNTY, MISSOURI.

PARCEL ACREAGE = 51.7 AC
LEASE LOT ACREAGE = 6.83 AC

LOCATION MAP



SHEET INDEX

PROJECT INFORMATION

PROJECT SITE:
18460 OLIVE STREET ROAD
CHESTERFIELD, MISSOURI 63005

DEVELOPER/LESSEE:
SPIRIT SKY CLUB, LLC
303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

LANDOWNER/LESSOR:
SPIRIT OF ST. LOUIS AIRPORT
18270 EDISON AVENUE
CHESTERFIELD, MISSOURI 63005

CONTRACTOR:
HOFFMAN GENERAL CONTRACTING, INC.
2310 ASHLEY PLACE DR.
ST. CHARLES, MO 63303

APPLICANT INFORMATION

CIVIL ENGINEER/SURVEYOR:
CRAWFORD, MURPHY & TILLY (CMT)
GATEWAY TOWER
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102

ATTN: TODD EHLEN, PE
314-571-9105

GENERAL SITE NOTES:

1. TOPOGRAPHIC SURVEY BY CRAWFORD, MURPHY, & TILLY, INC.
2. PRESENT ZONING DISTRICT: M-3 PLANNED INDUSTRIAL
3. SUBJECT PROPERTY LIES WITHIN FLOOD ZONE SHADED X (AREAS WITH REDUCED FLOOD RISK DUE TO LEVEE ACCORDING TO THE NATIONAL FLOOD INSURANCE RATE MAP 29189C0145K WITH EFFECTIVE DATE, REVISED 2/3/2015)
4. TOTAL BUILDING FLOOR AREA = 99,032 SF
5. FLOOR AREA RATIO: LEASE LOT ACREAGE: 99,032 SF / 6.83 AC = 0.33.
   PARCEL ACREAGE: 99,032 SF / 51.7 AC PARCEL = 0.044.
6. OPEN SPACE PERCENTAGE: LEASE LOT ACREAGE: = 1.41 AC / 6.83 AC = 20.6%
   PARCEL ACREAGE: 38.23 AC OPEN / 51.7 AC PARCEL = 65.1%
   FLOOR AREA RATIO AND OPEN SPACE PERCENTAGE NOT TO BE APPLIED TO LEASE LOT ACREAGE PER DISCUSSION WITH CITY OF CHESTERFIELD.
7. SUBDIVISION NAME: ST. LOUIS AIR PARK
8. LOT NUMBER: NONE
9. PROPOSED USE: HANGARS FOR STORAGE OF AIRCRAFT EQUIPMENT, CONSIDERED GENERAL WAREHOUSE
10. CONSTRUCTION TYPE: STEEL FRAME STRUCTURE
11. BUILDINGS TO BE APPROXIMATELY 27'-6" FEET IN HEIGHT EXCLUSIVE OF MECHANICAL EQUIPMENT AND SCREENING. INCLUDING MECHANICAL EQUIPMENT, MAXIMUM HEIGHT IS APPROXIMATELY 32'-8"
12. THERE IS AN AREA DESIGNATED FOR TRASH WITHIN A 6'X6' FENCE ON THE WEST SIDE OF THE SOUTHERN MOST BUILDING.
13. ONE TRANSFORMER IS SHOWN ON THE PLAN. TO BE SCREENED. DETAILS INCLUDED IN ARB SUBMITTAL. FINAL LOCATION OF TRANSFORMER TO BE COORDINATED WITH AMEREN MO.
14. ROOF DRAINS ARE NOT ANTICIPATED.
15. ROOFTOP MECHANICAL EQUIPMENT WILL BE SCREENED FROM ALL DIRECTIONS.
16. THE BUILDINGS AND MAJORITY OF ASSOCIATED PAVING DRAIN TO THE SOUTH AND EAST INTO THE MASTER DRAINAGE CHANNEL. THE PARKING AREA AND A SMALL PORTION OF THE SITE DRAIN NORTH INTO THE DITCHES ALONG SPIRIT AIR PARK EAST DRIVE.
17. PROPOSED SANITARY TO FLOW TO THE NORTH INTO EXISTING MSD STRUCTURE 17W3-034S INTO AN 8" GRAVITY MAIN.
18. STORM DRAINAGE QUANTITY IS REGULATED BY CHESTERFIELD VALLEY STORMWATER MASTER PLAN. PER MONARCH-CHESTERFIELD LEVEE DISTRICT, DETENTION IS NOT REQUIRED AS WATER IS DIRECTED TO A CHANNEL THAT WILL EVENTUALLY CONNECT TO THE CHESTERFIELD VALLEY MASTER DRAINAGE SYSTEM.
19. STORM DRAINAGE SHALL COMPLY WITH THE CHESTERFIELD VALLEY STORMWATER MASTER PLAN.
20. LANDSCAPING PLANS ARE PROVIDED. PER LETTER FROM JOHN D. BALES, DIRECTION OF AVIATION AT SPIRIT OF ST. LOUIS AIRPORT, DATED DECEMBER 1, 2023, THE SPIRIT OF ST. LOUIS AIRPORT REQUESTS LANDSCAPING TO BE LIMITED TO ONLY FEATURES THAT WILL NOT ATTRACT WILDLIFE SUCH AS GRAVEL AND TURF GRASS.
21. THERE ARE NO PROPOSED SIGNS FOR THIS SITE.
22. LIGHTING IS BEING PROVIDED FROM THE BUILDING WITH 2 LIGHT POLES IN THE NORTHWEST PART OF THE LEASE AREA. SEE LIGHTING PLAN E-1.
23. SEE ARCHITECTURAL PLANS FOR ARCHITECTURAL ELEVATIONS AND BUILDING MATERIALS.
24. THE NEAREST INTERSECTION IS AT SPIRIT AIRPARK EAST DRIVE AND OLIVE STREET ROAD. THE INTERSECTION IS APPROXIMATELY 1,150 FEET FROM THE LEASE AREA.
25. THERE IS NO PROPOSED PLAT OR SUBDIVISION FOR THIS PROJECT. THE PREVIOUS PLAT WAS COMPLETED IN 2014.
26. AN EXPLORATION OF SUBSURFACE CONDITIONS WAS COMPLETED BY JACOBI GEOTECHNICAL ENGINEERING, INC. ON 1/24/24.

SITE INFORMATION

PARCEL ACREAGE	=	51.7 AC ±
LEASE LOT ACREAGE	=	6.83 AC ±
SITE ADDRESS	=	604 SPIRIT AIRPARK EAST DRIVE
OWNER	=	SPIRIT SKY CLUB, LLC
LOCATOR NUMBER	=	17M330055
CURRENT ZONING	=	M3 - PLANNED INDUSTRIAL DISTRICT
CITY	=	CHESTERFIELD, MO
ZIP CODE	=	63005
FEMA FLOOD MAP	=	29189C0145K (REVISED 2/3/2015) (ZONE X)
SCHOOL DISTRICT	=	ROCKWOOD 8 SCHOOL DISTRICT
FIRE DISTRICT	=	MONARCH FIRE DISTRICT
WATER SHED	=	MISSOURI RIVER WATERSHED
SEWER DISTRICT	=	METROPOLITAN ST. LOUIS SEWER DISTRICT
CABLE SERVICE	=	CHARTER COMMUNICATIONS
ELECTRIC SERVICE	=	AMEREN MISSOURI
GAS SERVICE	=	SPIRE ENERGY
PHONE SERVICE	=	AT&T
WATER SERVICE	=	MISSOURI AMERICAN WATER COMPANY
BUILDING TYPE	=	AIRCRAFT STORAGE
BLDG. CONST. TYPE	=	STEEL FRAME

GEOTECHNICAL CERTIFICATION

AT THE REQUEST OF SPIRIT SKY CLUB, LLC, JACOBI GEOTECHNICAL ENGINEERING, INC. (JGE) PERFORMED A GEOTECHNICAL STUDY: EXPLORATION OF SUBSURFACE CONDITIONS AND FOUNDATION RECOMMENDATION, SPIRIT OF SAINT LOUIS AIRPORT, SPIRIT AIRPARK EAST DRIVE – PHASE 1, CHESTERFIELD, MISSOURI, DATED JANUARY 24, 2024, JGE #23383.1. OUR FINDINGS INDICATE THE EARTH-RELATED ASPECTS ARE SUITABLE FOR THE PROPOSED CONSTRUCTION AS SUMMARIZED IN THE REFERENCED REPORT.

JACOBI GEOTECHNICAL ENGINEERING, INC. MUST BE INVOLVED DURING THE CONSTRUCTION PHASE OF THIS PROJECT IN ORDER TO DETERMINE IF SUBSURFACE CONDITIONS ARE CONSISTENT WITH THOSE ANTICIPATED RELATIVE TO SITE GRADING AND OTHER GEOTECHNICAL ASPECTS.

JACOBI GEOTECHNICAL ENGINEERING, INC. AND THE UNDERSIGNED ENGINEER ASSUME NO RESPONSIBILITY FOR SERVICES BY OTHERS (PURSUANT TO RSMO 327.411).

JACOBI GEOTECHNICAL ENGINEERING, INC.

ALLEN G. HINKS, P.E.
PROFESSIONAL ENGINEER
PE E-22438

DATE 4-15-24

STATE OF MISSOURI ALLEN G. HINKS NUMBER E-22438 PROFESSIONAL ENGINEER

ST. LOUIS COUNTY BENCHMARK

BENCHMARK # 11122
(NAVD88) (SLC2011a) ELEV = 665.32 ft (US)
ELEV = 665.47 ft (US)

FOUND CUT "L" ON THE NORTHERNMOST CORNER OF THE CONCRETE BASE FOR A METAL TRAFFIC SIGNAL CONTROL BOX SITUATED SOUTHEAST OF THE RIGHT TURN LANE FROM NORTHBOUND SPIRIT OF ST LOUIS BOULEVARD ONTO EASTBOUND CHESTERFIELD AIRPORT ROAD; ROUGHLY 76 FEET EAST OF THE CENTERLINE OF SPIRIT OF ST LOUIS BOULEVARD, 79 FEET SOUTH OF THE CENTERLINE OF CHESTERFIELD AIRPORT ROAD, AND 23 FEET WEST OF THE SOUTHWEST CORNER OF SPIRIT AIRPORT ENTRANCE SIGN. SP MO EAST N=314831± E=237299± METER -
ESTIMATED ROUGH NAD83 LAT=38.670196°±(N/+) LONG=90.645953°±(W/-)

DISCLAIMER :

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

UTILITY NOTE :

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

DEPARTMENT OF PLANNING

SCRIPT FOR A SITE DEVELOPMENT PLAN

(INCLUDE THE ABOVE SECTION)

(INSERT LEGAL DESCRIPTION WITH TOTAL ACREAGE)

A TRACT OF LAND LOCATED IN U.S. SURVEY 169, TOWNSHIP 45 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL OF MERIDIAN, CITY OF CHESTERFIELD, ST. LOUIS COUNTY, MISSOURI.
PARCEL ACREAGE = 51.7 AC LEASE LOT
ACREAGE = 6.65 AC

_____, the owner(s) of the property shown on this plan for and in
[Name of Owner(s)]
consideration of being granted approval of said plan to develop property under the provisions of
Section 03 -04-E-, M-3- of City of Chesterfield Unified Development
(applicable subsection)(present zoning)
Code, 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 City of Chesterfield, or voided or vacated by order of ordinance of the City of Chesterfield Council.

(Signature): _____

(Name Typed): _____

(AND EITHER INCLUDE THIS SECTION FOR A CORPORATION)

State of MISSOURI)
County of ST. LOUIS) SS.

On this ___day of _____, A.D., 20___, before me personally appeared
, to me known, who, being by me sworn in, did say
(Officer of Corporation)
that he/she is the _____ of _____ a
(Title) (Name of Corporation)
corporation in the State of__, and that the seal affixed to the foregoing instruments is the corporate seal of said corporation, and that said instrument was signed on behalf of said corporation by authority of its Board of Directors, and the said___ (Officer of Corporation)
acknowledged said instrument to be the free act and deed of said corporation.
In Testimony Whereof, I have hereunto set my hand and affixed my Notarial Seal at my Office in
_____, the day and year last above written.
(County and State)

My term expires_____. _____
(Notary Public)

(OR INCLUDE THIS SECTION FOR AN INDIVIDUAL)

State of_____)
) SS.
County of_____)

On this ___day of _____, A.D., 20__, before me personally appeared
, and_____, his wife, to me known
(Individual) (Wife)
to be the person(s) described in, and who executed the foregoing instrument, and acknowledged that he, she or they executed the same as his, her, or their free act and deed.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial Seal at my Office in
_____, the day and year last above written.
(County and State)

My term expires_____.

_____
(Notary Public)

(AND INCLUDE THIS SECTION)

This Site Development Plan was approved by the City of Chesterfield Planning Commission and duly verified on the _____ day of _____, 20_, by the Chairperson of said Commission, authorizing the recording of this Site Development Plan pursuant to Chesterfield Ordinance Number 200, as attested to by the Director of Planning and the City Clerk.

Justin Wyse, AICP
Director of Planning
City of Chesterfield, Missouri

Vickie McGownd, City Clerk
City of Chesterfield, Missouri

CMT

License No. 000631

CONSULTANTS

STATE OF MISSOURI
DAVID GORDON SHELTON NUMBER PE-2020012399
PROFESSIONAL ENGINEER

05/21/2024
CIVIL ENGINEER PE-2020012399

NOT FOR CONSTRUCTION

SITE DEVELOPMENT PLAN SUBMITTAL MAY 21, 2024

SPIRIT SKY CLUB HANGAR DEVELOPMENT

SPIRIT Of St. Louis Airport

OWNER

SPIRITSKY
SPIRIT SKY CLUB, LLC
ST. PETERS, MO
303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO:	23006099.00
CAD DWG FILE:	SITE DEVELOPMENT PLAN COVER.DWG
DESIGNED BY:	DGS
DRAWN BY:	DGS
CHECKED BY:	TME
APPROVED BY:	TME

SHEET TITLE:

COVER

SHEET 1 OF 7 — G-001

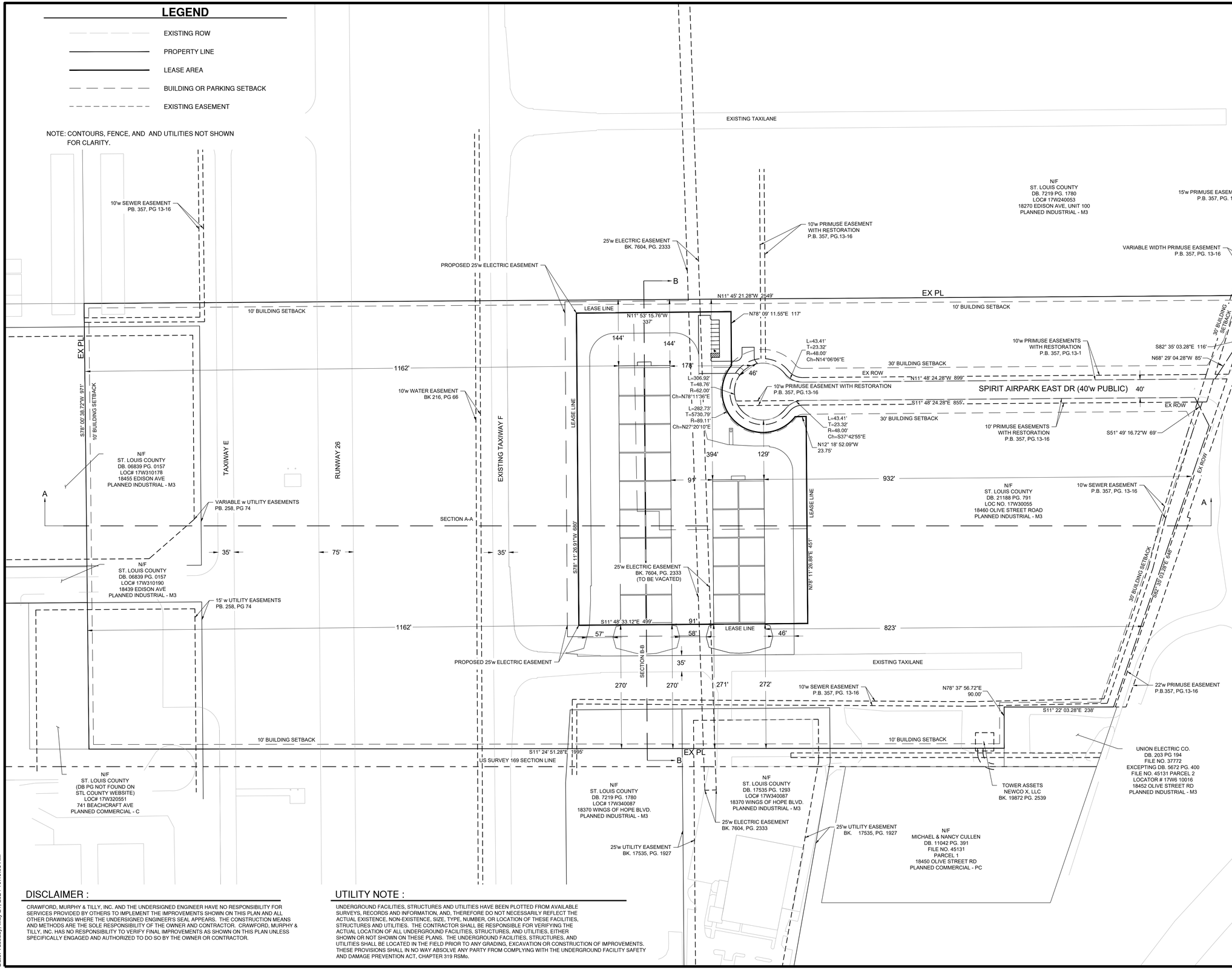
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Path: K:\SpiritSkyClub\23006099-00_SkyClubHangars\Draw\Sheets\SITE DEVELOPMENT PLAN\SITE DEVELOPMENT PLAN COVER.dwg
Date: Tuesday, May 21, 2024 10:19:21 AM

LEGEND

- EXISTING ROW
- PROPERTY LINE
- LEASE AREA
- BUILDING OR PARKING SETBACK
- EXISTING EASEMENT

NOTE: CONTOURS, FENCE, AND AND UTILITIES NOT SHOWN FOR CLARITY.



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Path: K:\SpiritSkyClub\23006099-00_SkyClubHangars\Draw\Sheets\SITE DEVELOPMENT PLAN\SITE DEVELOPMENT PLAN PARCEL.dwg
Date: Tuesday, May 21, 2024 10:19:55 AM

CMT

License No. 000631

CONSULTANTS

0 100 200 Feet

THIS BAR IS EQUAL TO 2" AT FULL SCALE (22X34)

STATE OF MISSOURI
DAVID GORDON SHELTON
NUMBER PE-2020012399
PROFESSIONAL ENGINEER

05/21/2024
CIVIL ENGINEER PE-2020012399

NOT FOR CONSTRUCTION

SITE DEVELOPMENT PLAN SUBMITTAL MAY 21, 2024

SPIRIT SKY CLUB HANGAR DEVELOPMENT

SPIRIT Of St. Louis Airport

OWNER

SPIRITSKY
SPIRIT SKY CLUB, LLC
ST. PETERS, MO
303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO: 23006099.00
CAD DWG FILE: SITE DEVELOPMENT PLAN PARCEL.DWG

DESIGNED BY: DGS
DRAWN BY: DGS
CHECKED BY: TME
APPROVED BY: TME

SHEET TITLE:

PARCEL PLAN

SHEET 2 OF 7

C-100

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

LEGEND

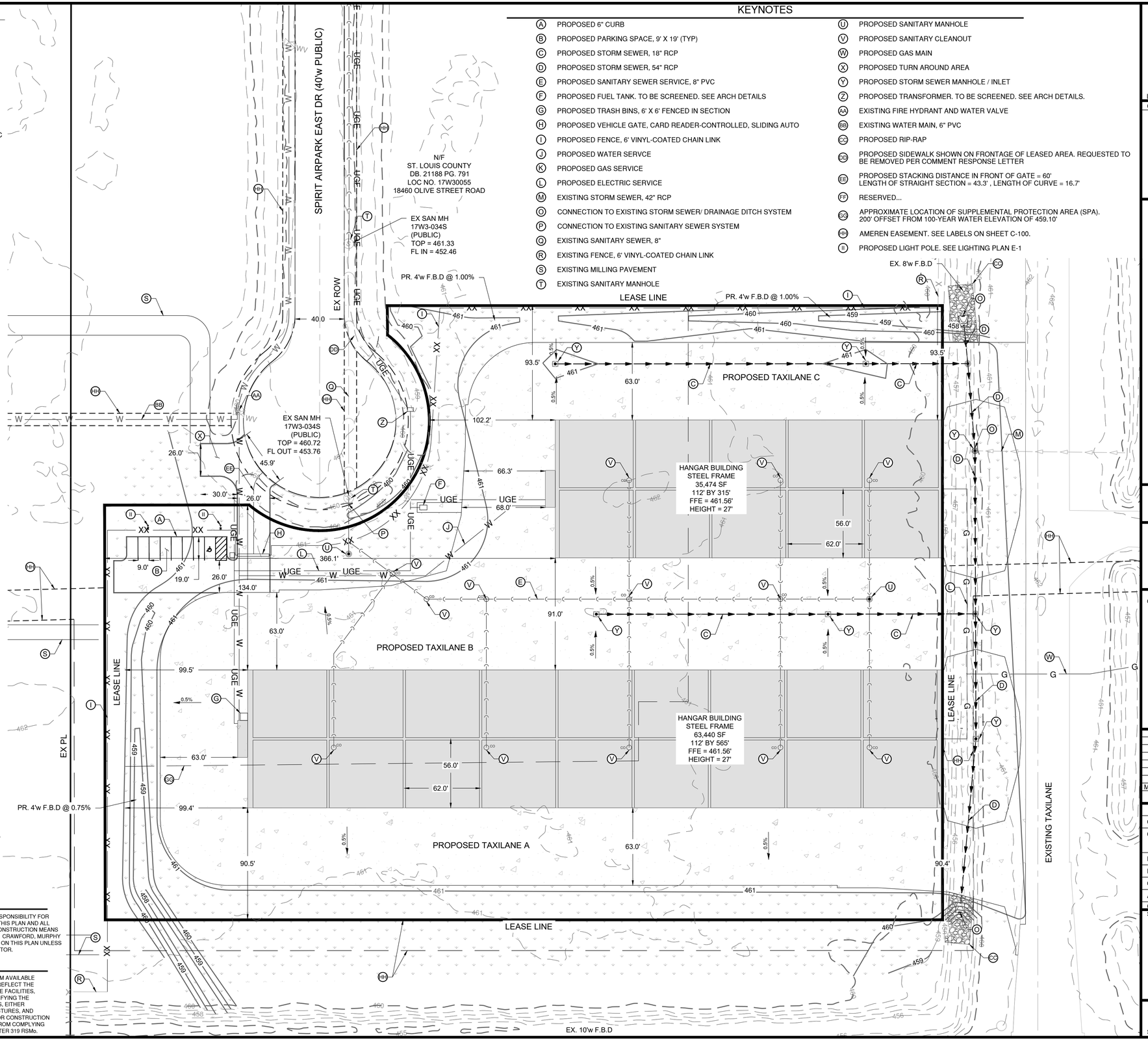
- EXISTING STORM SEWER TO REMAIN
- EXISTING UNDERGROUND ELECTRIC
- EXISTING WATER MAIN
- PROPOSED SANITARY PIPE
- PROPOSED STORM SEWER PIPE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND GAS
- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING ROW
- PROPERTY LINE
- LEASE AREA
- EXISTING ROADWAY
- EXISTING EASEMENT
- EXISTING SANITARY SEWER MH
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- PROPOSED STORM SEWER INLET
- PROPOSED MANHOLE
- PROPOSED CLEANOUT
- PROPOSED FLARE END SECTION
- PROPOSED CONCRETE PAVING
- PROPOSED SEEDING
- PROPOSED BUILDING
- PROPOSED RIP RAP

PARKING SUMMARY	
REGULAR SPACES	7
ADA SPACES	1
TOTAL PARKING SPACES	8

ACCORDING TO CITY OF CHESTERFIELD CODE, 2 SPACES ARE REQUIRED FOR EVERY 3 EMPLOYEES FOR WAREHOUSE, GENERAL USE. NO EMPLOYEES ARE ANTICIPATED ON SITE, THEREFORE REQUIRED SPACES = 0.

KEYNOTES

- (A) PROPOSED 6" CURB
- (B) PROPOSED PARKING SPACE, 9' X 19' (TYP)
- (C) PROPOSED STORM SEWER, 18" RCP
- (D) PROPOSED STORM SEWER, 54" RCP
- (E) PROPOSED SANITARY SEWER SERVICE, 8" PVC
- (F) PROPOSED FUEL TANK. TO BE SCREENED. SEE ARCH DETAILS
- (G) PROPOSED TRASH BINS, 6' X 6' FENCED IN SECTION
- (H) PROPOSED VEHICLE GATE, CARD READER-CONTROLLED, SLIDING AUTO
- (I) PROPOSED FENCE, 6' VINYL-COATED CHAIN LINK
- (J) PROPOSED WATER SERVCE
- (K) PROPOSED GAS SERVICE
- (L) PROPOSED ELECTRIC SERVICE
- (M) EXISTING STORM SEWER, 42" RCP
- (O) CONNECTION TO EXISTING STORM SEWER/ DRAINAGE DITCH SYSTEM
- (P) CONNECTION TO EXISTING SANITARY SEWER SYSTEM
- (Q) EXISTING SANITARY SEWER, 8"
- (R) EXISTING FENCE, 6' VINYL-COATED CHAIN LINK
- (S) EXISTING MILLING PAVEMENT
- (T) EXISTING SANITARY MANHOLE
- (U) PROPOSED SANITARY MANHOLE
- (V) PROPOSED SANITARY CLEANOUT
- (W) PROPOSED GAS MAIN
- (X) PROPOSED TURN AROUND AREA
- (Y) PROPOSED STORM SEWER MANHOLE / INLET
- (Z) PROPOSED TRANSFORMER. TO BE SCREENED. SEE ARCH DETAILS.
- (AA) EXISTING FIRE HYDRANT AND WATER VALVE
- (BB) EXISTING WATER MAIN, 6" PVC
- (CC) PROPOSED RIP-RAP
- (DD) PROPOSED SIDEWALK SHOWN ON FRONTAGE OF LEASED AREA. REQUESTED TO BE REMOVED PER COMMENT RESPONSE LETTER
- (EE) PROPOSED STACKING DISTANCE IN FRONT OF GATE = 60' LENGTH OF STRAIGHT SECTION = 43.3' , LENGTH OF CURVE = 16.7'
- (FF) RESERVED...
- (GG) APPROXIMATE LOCATION OF SUPPLEMENTAL PROTECTION AREA (SPA). 200' OFFSET FROM 100-YEAR WATER ELEVATION OF 459.10'
- (HH) AMEREN EASEMENT. SEE LABELS ON SHEET C-100.
- (II) PROPOSED LIGHT POLE. SEE LIGHTING PLAN E-1



DISCLAIMER :

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

UTILITY NOTE :

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

CMT

License No. 000631

CONSULTANTS

0 40 80 Feet

THIS BAR IS EQUAL TO 2" AT FULL SCALE (22X34)

STATE OF MISSOURI
DAVID GORDON SHELTON
NUMBER PE-2020012399
PROFESSIONAL ENGINEER

05/21/2024
CIVIL ENGINEER PE-2020012399

NOT FOR CONSTRUCTION

SITE DEVELOPMENT PLAN SUBMITTAL MAY 21, 2024

SPIRIT SKY CLUB HANGAR DEVELOPMENT

SPIRIT Of St. Louis Airport

OWNER

SPIRITSKY

SPIRIT SKY CLUB, LLC
ST. PETERS, MO
303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO: 23006099.00
CAD DWG FILE: SITE DEVELOPMENT PLAN BLOWUP.DWG
DESIGNED BY: DGS
DRAWN BY: DGS
CHECKED BY: TME
APPROVED BY: TME

SHEET TITLE:

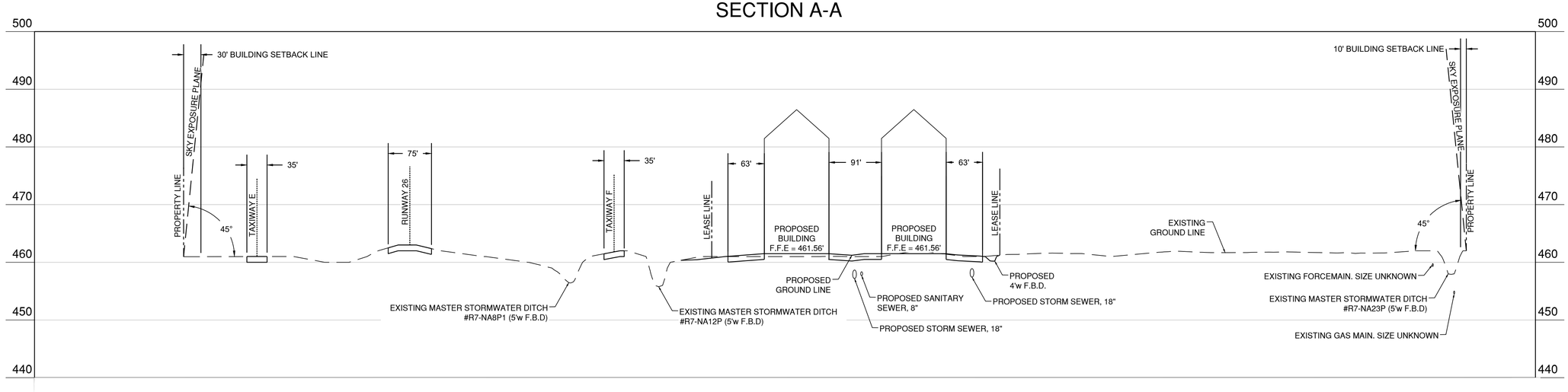
SITE PLAN

SHEET 3 OF 7 — C-101

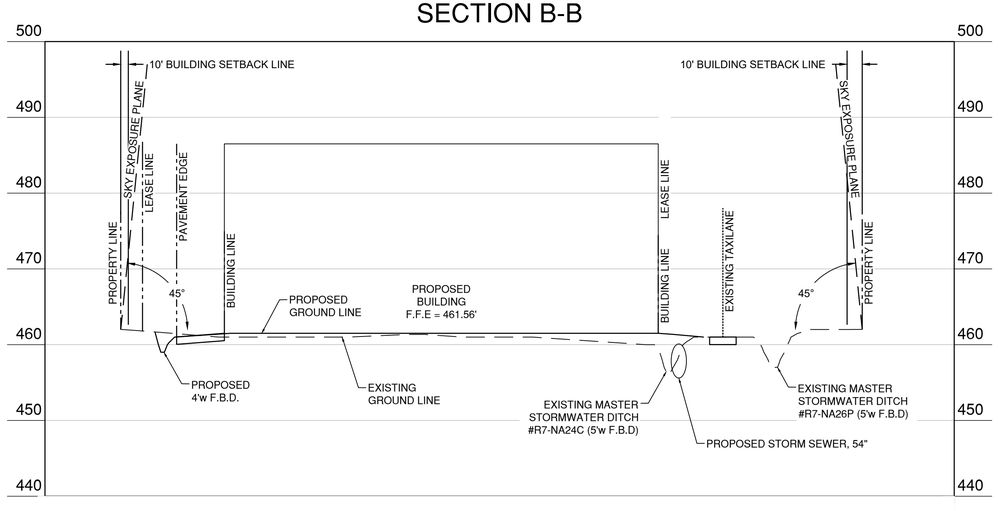
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Path: K:\SpiritSkyClub\23006099-00_SkyClubHangars\Draw\Sheets\SITE DEVELOPMENT PLAN\SITE DEVELOPMENT PLAN BLOWUP.dwg
Date: Tuesday, May 21, 2024 10:19:54 AM

SECTION A-A



SECTION B-B



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UTILITY NOTE :

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

CMT

License No. 000631

CONSULTANTS

0 100 200 Feet

THIS BAR IS EQUAL TO 2" AT FULL SCALE (22X34)

STATE OF MISSOURI
DAVID GORDON SHELTON
NUMBER PE-2020012399
PROFESSIONAL ENGINEER

05/21/2024
CIVIL ENGINEER PE-2020012399

NOT FOR CONSTRUCTION

SITE DEVELOPMENT PLAN
SUBMITTAL MAY 21, 2024

SPIRIT SKY CLUB
HANGAR DEVELOPMENT

SPIRIT Of St. Louis Airport

OWNER

SPIRITSKY
SPIRIT SKY CLUB, LLC
ST. PETERS, MO
303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO: 23006099.00
CAD DWG FILE: SITE DEVELOPMENT SECTION PLAN.DWG
DESIGNED BY: DGS
DRAWN BY: DGS
CHECKED BY: TME
APPROVED BY: TME

SHEET TITLE:

SECTION PLAN

C-102

SHEET 4 OF 7

Path: K:\SpiritSky\Club\23006099.00_SkyClubHangars\Draw\Sheets\SITE DEVELOPMENT PLAN\SITE DEVELOPMENT SECTION PLAN.dwg
Date: Tuesday, May 21, 2024 10:20:19 AM

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

LEGEND

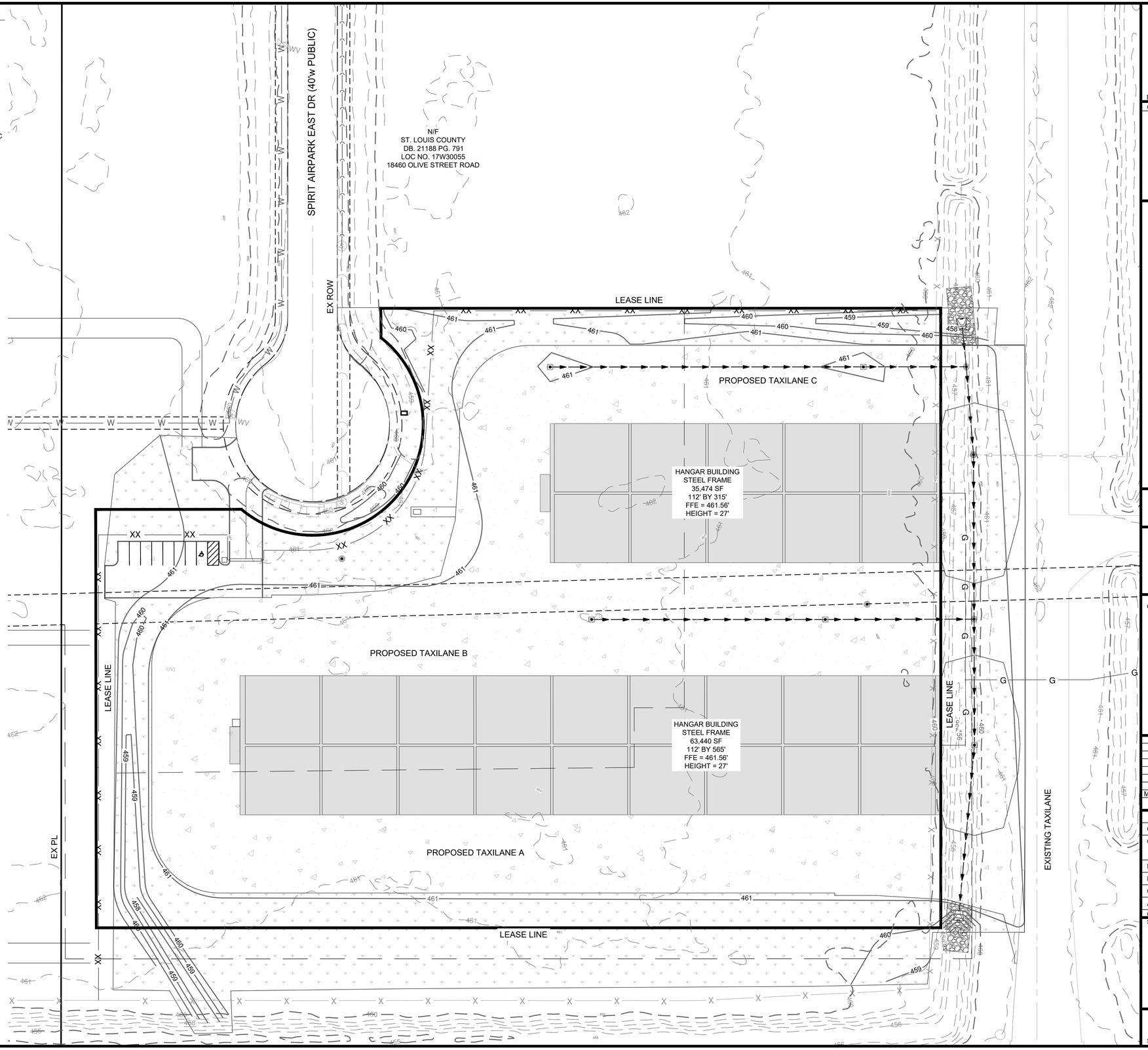
- EXISTING STORM SEWER TO REMAIN
- UGE — EXISTING UNDERGROUND ELECTRIC
- W — EXISTING WATER MAIN
- PROPOSED SANITARY PIPE
- PROPOSED STORM SEWER PIPE
- UGE — PROPOSED UNDERGROUND ELECTRIC
- G — PROPOSED UNDERGROUND GAS
- 540 — PROPOSED CONTOUR
- 538 — EXISTING CONTOUR
- X — EXISTING FENCE
- XX — PROPOSED FENCE
- EXISTING ROW
- PROPERTY LINE
- LEASE AREA
- EXISTING ROADWAY
- EXISTING EASEMENT
- EXISTING SANITARY SEWER MH
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- PROPOSED STORM SEWER INLET
- PROPOSED MANHOLE
- CO — PROPOSED CLEANOUT
- PROPOSED FLARE END SECTION
- PROPOSED SIGN

GENERAL NOTES

NOTES

1. PER LETTER FROM JOHN D. BALES, DIRECTION OF AVIATION AT SPIRIT OF ST. LOUIS AIRPORT, DATED DECEMBER 1, 2023, THE SPIRIT OF ST. LOUIS AIRPORT REQUESTS LANDSCAPING TO BE LIMITED TO ONLY FEATURES THAT WILL NOT ATTRACT WILDLIFE SUCH AS GRAVEL AND TURF GRASS.
2. ALL DISTURBED AREAS SHALL BE SEEDED AND RESTORED TO ORIGINAL CONDITION.

- PROPOSED CONCRETE PAVING
- GRASS PROPOSED SEEDING
- PROPOSED CONCRETE SIDEWALK PAVING
- PROPOSED BUILDING
- PROPOSED RIP RAP



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Date: Tuesday, May 21, 2024 10:20:40 AM

CMT

License No. 000631

CONSULTANTS

N

0 40 80 Feet

THIS BAR IS EQUAL TO 2" AT FULL SCALE (22X34)

STATE OF MISSOURI
DAVID GORDON SHELTON
NUMBER PE-2020012399
PROFESSIONAL ENGINEER

05/21/2024
CIVIL ENGINEER PE-2020012399

NOT FOR CONSTRUCTION

SITE DEVELOPMENT PLAN
SUBMITTAL MAY 21, 2024

SPIRIT SKY CLUB
HANGAR DEVELOPMENT

SPIRIT Of St. Louis Airport

OWNER

SPIRITSKY
SPIRIT SKY CLUB, LLC
ST. PETERS, MO
303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO: 23006099.00

CAD DWG FILE: SITE DEVELOPMENT PLAN LANDSCAPE PLAN.DWG

DESIGNED BY: DGS

DRAWN BY: TME

CHECKED BY: CMT

APPROVED BY: CMT

SHEET TITLE:

LANDSCAPE PLAN

SHEET 5 OF 7

C-103

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

LEGEND

- EXISTING STORM SEWER TO REMAIN
- UGE — EXISTING UNDERGROUND ELECTRIC
- W — EXISTING WATER MAIN
- PROPOSED SANITARY PIPE
- PROPOSED STORM SEWER PIPE
- UGE — PROPOSED UNDERGROUND ELECTRIC
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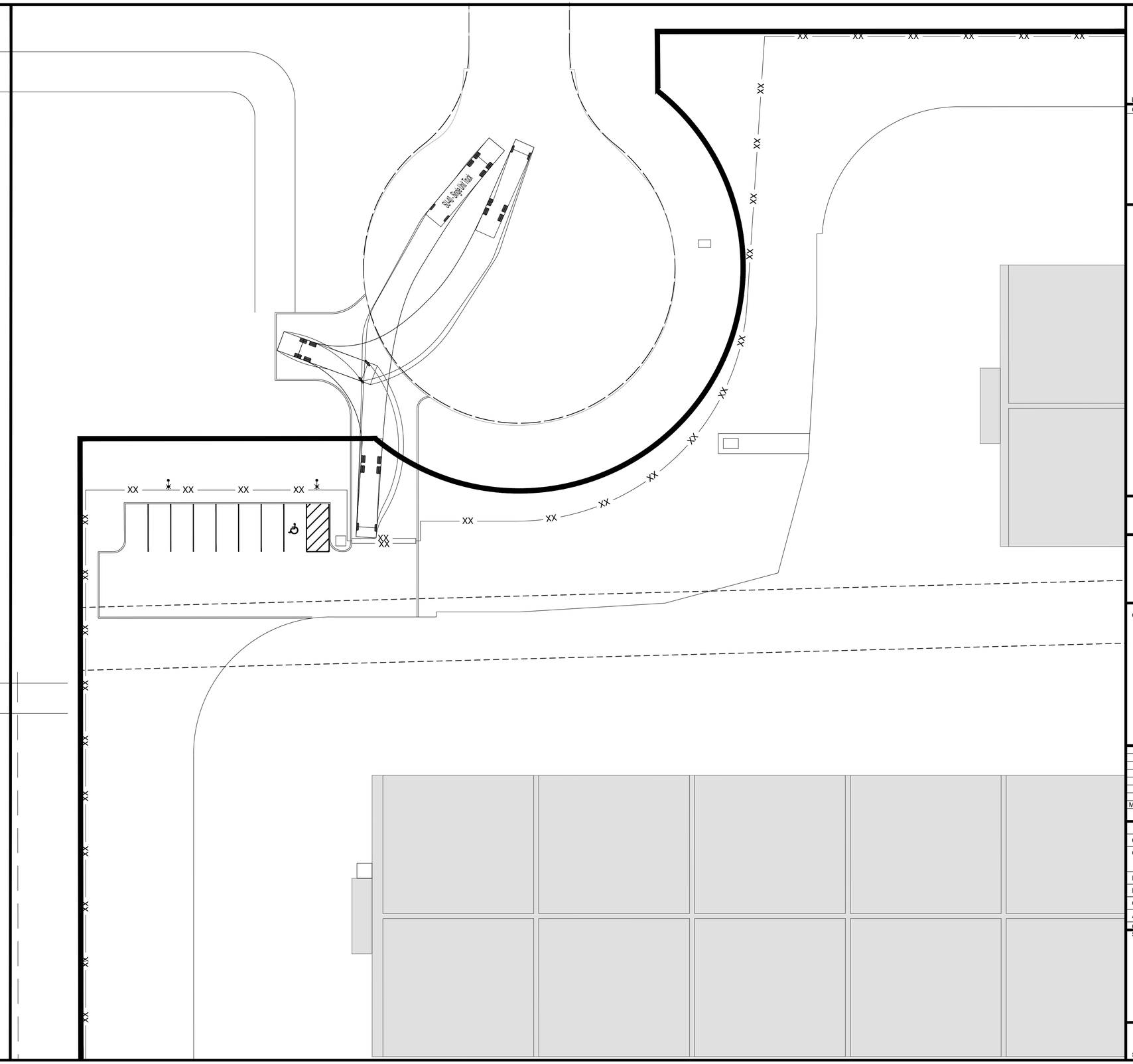
- EXISTING ROADWAY
- EXISTING EASEMENT
- EXISTING SANITARY SEWER MH
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- PROPOSED STORM SEWER INLET
- PROPOSED MANHOLE
- CO — PROPOSED CLEANOUT
- PROPOSED FLARE END SECTION
- PROPOSED SIGN



CMT

License No. 000631

CONSULTANTS

N

0 20 40 Feet

THIS BAR IS EQUAL TO 2" AT FULL SCALE (22X34)

STATE OF MISSOURI
DAVID GORDON SHELTON NUMBER PE-2020012399
PROFESSIONAL ENGINEER

05/21/2024
CIVIL ENGINEER PE-2020012399

NOT FOR CONSTRUCTION

The Professional Engineer's seal affixed to this sheet applies only to the material and items shown on this sheet. All drawings, instruments or other documents not exhibiting this seal shall not be considered prepared by this engineer, and this engineer expressly disclaims any and all responsibility for such plan, drawings or documents not exhibiting this seal.

SPIRIT Of St. Louis Airport

OWNER

SPIRITSKY

303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO: 23006099.00

CAD DWG FILE: SITE DEVELOPMENT TURNING EXHIBIT.DWG

DESIGNED BY: DGS

DRAWN BY: TME

CHECKED BY: CMT

APPROVED BY: CMT

SHEET TITLE:

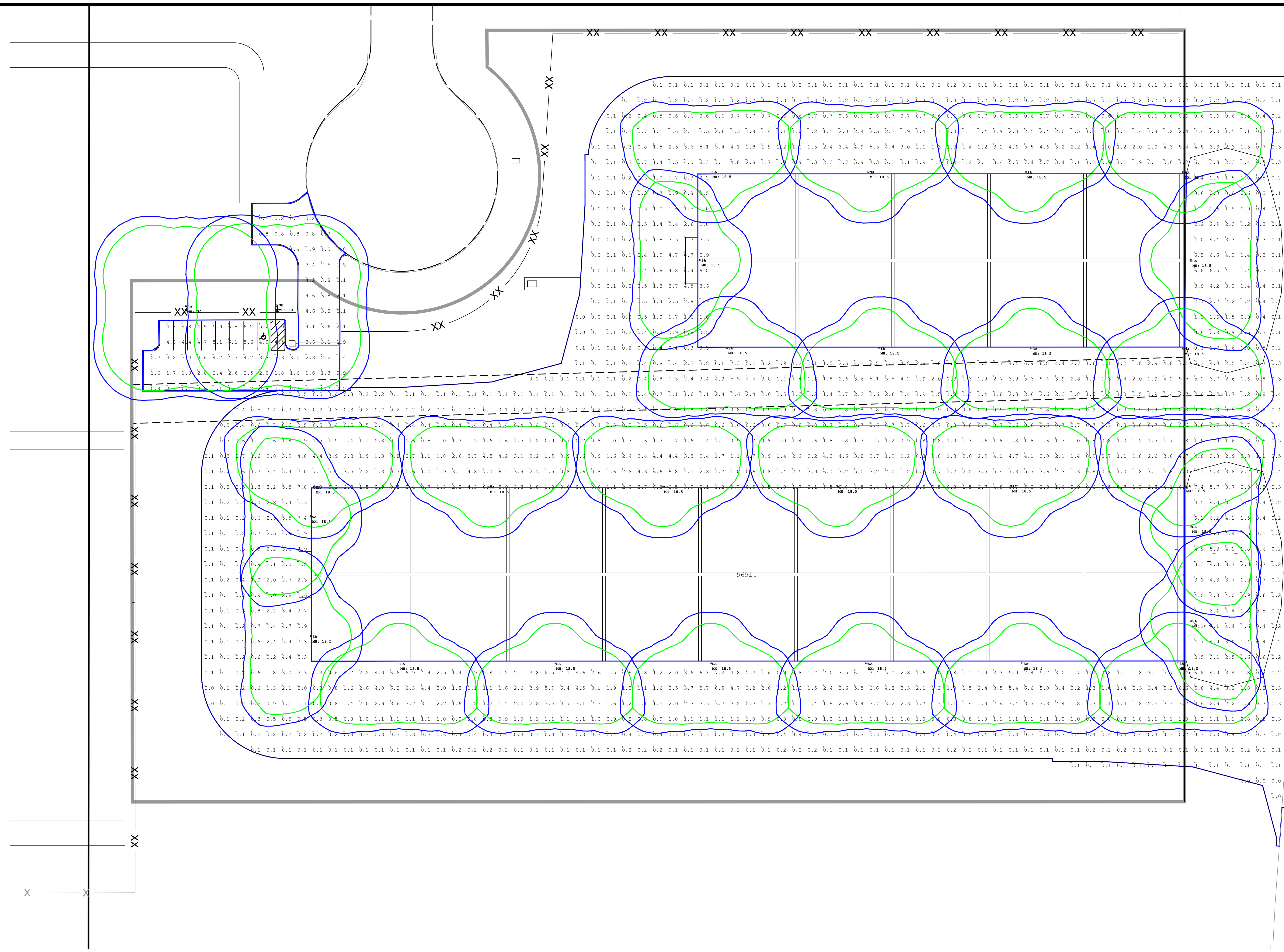
TURNING RADIUS EXHIBIT

C-104

SHEET 6 OF 7

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Path: K:\SpiritSkyClub\23006099-00_SkyClubHangars\Draw\Sheets\SITE DEVELOPMENT PLAN\SITE DEVELOPMENT TURNING EXHIBIT.dwg
Date: Tuesday, May 21, 2024 10:20:57 AM



Luminaire Schedule

Symbol	Label	Qty	Arrangement	LLF	Description	Lum. Watts
	SA	26	Single	0.900	SLG WFV-135-G1-4K	103
	SB	2	Single	0.900	ATLAS SLPM-30L-T5-4K // SSS-17.5-4-11-XX-1	210

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
Hangar area_Planar	1.60	7.8	0.0	N.A.	N.A.
Parking Lot_Planar	2.98	6.8	0.5	5.96	13.60

1. Parking Lot Calculation Points Set at 0'-0" AFF, 10'x10' spacing
2. Fixture Mounting Height: 20' AFF / 17.5' Pole Height / 2.5' Concrete Base
3. Wall Mount Height: 18.5' AFF

THE LIGHTING CALCULATIONS PROVIDED IN THIS REPORT APPROXIMATE THE LIGHT LEVELS EXPECTED WITHIN THE SPACE BASED ON AN OPEN ENVIRONMENT AND BASED ON INFORMATION PROVIDED TO MEGLIO AND ASSOCIATES. PLEASE VERIFY THE DATA LISTED TO ENSURE ACCURACY. ANY VARIANCE IN COLOR/COMPOSITION OF WALLS CCT, SPACING, AND ANY OTHER SUBSTANTIAL FACTORS OR CHANGES PROVIDED IN DRAWINGS WILL VOID THIS CALCULATION AND A NEW CALCULATION WILL NEED TO BE MADE. THIS LAYOUT IS MEANT TO SHOW FIXTURE QUANTITY AND PERFORMANCE.

PAGE 1 OF 1

PROJECT NAME:	240197 Spirt Hangars Overhaul v2.AGI
PROJECT LOCATION:	Chesterfield, MO
DATE:	4/18/2024
COMPANY:	MEGLIO & ASSOCIATES (J.F)

MEGLIO AND ASSOCIATES
MANUFACTURERS' REPRESENTATIVE

License No. 000631

CONSULTANTS

0 40 80 Feet

THIS BAR IS EQUAL TO 2" AT FULL SCALE (22X34)

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Spirit of St. Louis Airport

OWNER

SPIRITSKY

303 LAKESIDE VIEW LANE
ST. PETERS, MO 63376

MARK	DATE	DESCRIPTION

CMT PROJECT NO: 23006099.00

CAD DWG FILE: SITE DEVELOPMENT LIGHT PLAN.DWG

DESIGNED BY: DGS

DRAWN BY: TME

CHECKED BY: CMT

APPROVED BY: CMT

SHEET TITLE:

LIGHTING PLAN

E-1

SHEET 7 OF 7

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Path: K:\SpiritSkyClub\23006099-00_SkyClubHangars\Draw\Sheets\SITE DEVELOPMENT PLAN\SITE DEVELOPMENT LIGHT PLAN.dwg
Date: Tuesday, May 21, 2024 10:21:13 AM

LOADING SPACE
MODIFICATION REQUEST

April 19, 2024

ATTN: Isaak Simmers, Site Development Plan Review
Department of Planning
690 Chesterfield Pkwy W
Chesterfield, MO 63017

RE: Project: Spirit Sky Club Hangars
CMT Project No. 23006099.00

Per code requirements, developments with a Gross Floor Area of 50,001 to 100,000 require a minimum of three (3) 10-foot-by-40-foot loading spaces. We request that this site be modified as hangars do not use loading spaces and there is plenty of room on site for any specific circumstances.

Thanks,
David Shelton, CMT

CC : Todd Ehlen, CMT
Brian Hutsell, CMT
Alex Martin, Spirit Sky Club
Mitch Hoffman, Hoffman General Contracting, INC
David Schubert, Saint Louis County/Spirit of St. Louis Airport
Justin Ryder, Saint Louis County/Spirit of St. Louis Airport

STL COUNTY RESPONSE ON SIDEWALKS AND LIGHTING

David Shelton

From: Marshall, Gregory <GMarshall@stlouiscountymo.gov>
Sent: Wednesday, April 17, 2024 9:12 PM
To: isimmers@chesterfield.mo.us
Cc: Todd Ehlen; alex@spiritskyclub.com; Schubert, David; Ryder, Justin; Alyssa Ahner; JWyse@chesterfield.mo.us; David Shelton; Bales, John; jackdwhaley@gmail.com; mhhgci@gmail.com; Riley, Jennifer
Subject: RE: Hangar Development Project Spirit Airport Chesterfield MO
Attachments: 2024-4-10 Spirit of STL AP (18460 Olive Street Rd) SDSP cmt ltr (2).pdf

Dear Mr. Simmers,
In response to the Spirit of STL AP (18460 Olive Street Rd) SDSP comment #10 on the attached letter, St. Louis County Department of Transportation is not approving the installation of lighting and sidewalk with this development.
Here is information about the County's decision, if needed.
St. Louis County Department of Transportation does not prohibit sidewalk and streetlighting, but we are not approving it for installation with this development, and that is our discretion because we own the road.
All developments within St. Louis County's jurisdiction must conform to the requirements of the St. Louis County Department of Transportation. We have respectfully worked with our partner County Department at the Spirit of St. Louis Airport on this development. We confirmed there are issues with lighting and sidewalk at this location near the airport, and we are not approving the installation of these items.
As the County is the road owner, the decision is ours to make and not the City of Chesterfield.
Please contact me with any questions.
Sincerely,

Greg Marshall, P.E.
Supervisor, Project Managers - Civil Plan Review & Special Use Permits
St. Louis County Dept. of Transportation & Public Works
41 S. Central Ave., 5th Fl. | Clayton, MO 63105
gmarshall@stlouiscountymo.gov
314-615-8548

stlouiscountymo.gov

OPPORTUNITY CENTRAL

LEASE LOT PLAT

SPIRIT AIRPARK EAST DRIVE
LEASE AREA PHASE 1
APRIL 17, 2024

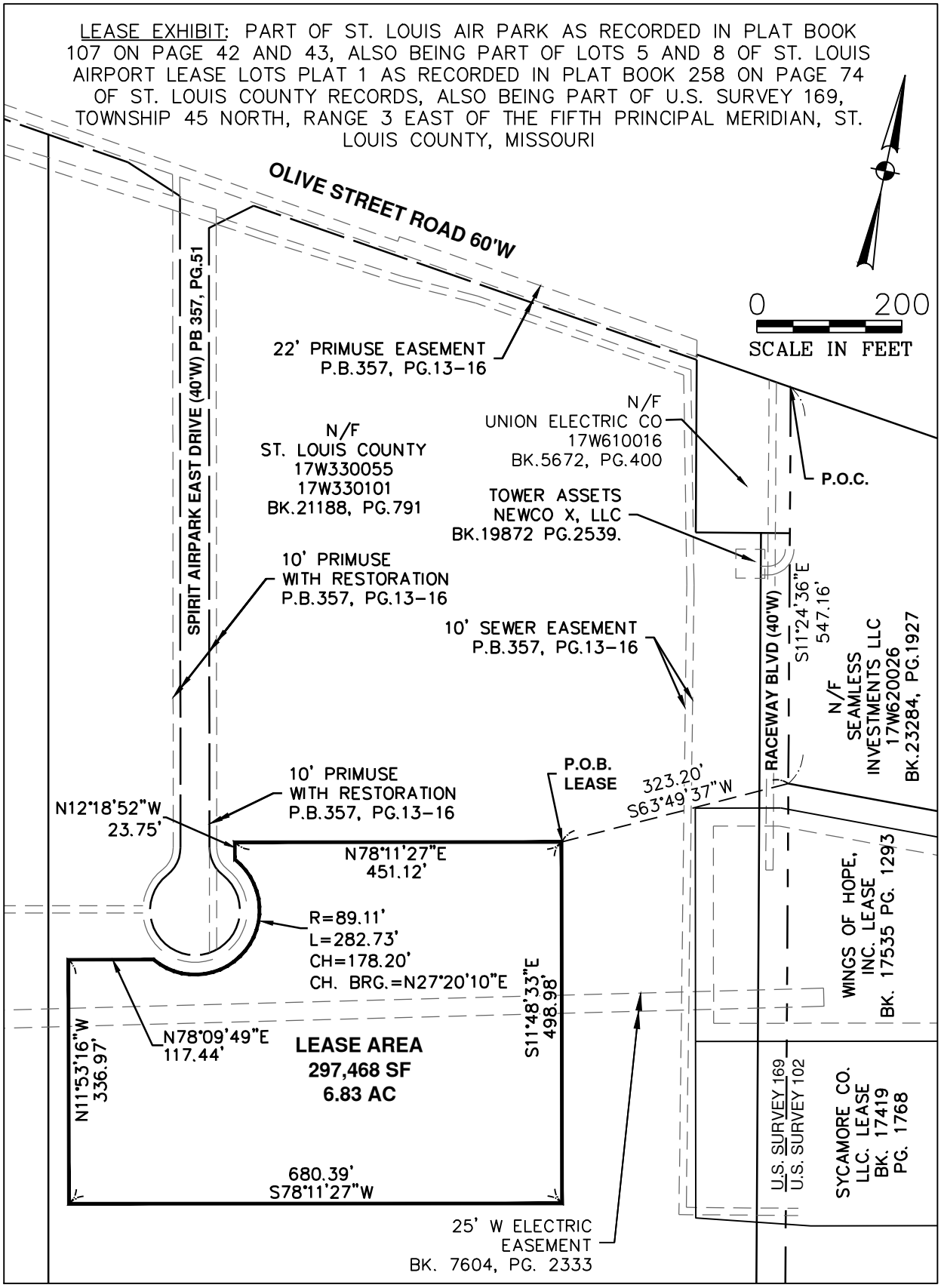
PART OF A TRACT OF LAND LOCATED IN U.S. SURVEY 169, TOWNSHIP 45 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL OF MERIDIAN, ST. LOUIS COUNTY, MISSOURI, WITH SAID PART BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE SOUTH LINE OF OLIVE STREET ROAD (60 FEET WIDE) AND THE EAST LINE OF U.S. SURVEY 169; THENCE SOUTH 11 DEGREES 24 MINUTES 36 SECONDS EAST, ALONG SAID EAST LINE OF SAID U.S. SURVEY 169, 547.16 FEET TO THE SOUTHWEST CORNER OF A TRACT OF LAND AS DESCRIBED IN BOOK 23284 ON PAGE 1927 OF ST. LOUIS COUNTY RECORDS; THENCE SOUTH 63 DEGREES 49 MINUTES 37 SECONDS WEST, 323.20 FEET, MORE OR LESS, TO THE POINT OF BEGINNING; THENCE SOUTH 11 DEGREES 48 MINUTES 33 SECONDS EAST, 498.98 FEET; THENCE SOUTH 78 DEGREES 11 MINUTES 27 SECONDS WEST, ALONG A LINE APPROXIMATELY 168.5 FEET± NORTH OF AND PARALLEL TO THE CENTERLINE OF EXISTING TAXIWAY F, 680.39 FEET; THENCE NORTH 11 DEGREES 53 MINUTES 16 SECONDS WEST, 336.97 FEET; THENCE NORTH 78 DEGREES 09 MINUTES 49 SECONDS EAST, 117.44 FEET; THENCE NORTHEASTERLY 282.73 FEET ON A CURVE TO THE LEFT HAVING A RADIUS OF 89.11 FEET, THE CHORD OF SAID CURVE BEING NORTH 27 DEGREES 20 MINUTES 10 SECONDS EAST, 178.20 FEET; THENCE NORTH 12 DEGREES 18 MINUTES 52 SECONDS WEST, 23.75 FEET; THENCE NORTH 78 DEGREES 11 MINUTES 27 SECONDS EAST, 451.12 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 6.83 ACRES, MORE OR LESS.

BASIS OF BEARINGS BEING THE MISSOURI STATE PLANE EAST ZONE.

314 Wolf Street P.O. Box 597 Edwardsville, Illinois 62025 PHONE 618.656.0470 FAX 618.656.0922 cmtengr.com Engineers and Consultants


LEASE EXHIBIT: PART OF ST. LOUIS AIR PARK AS RECORDED IN PLAT BOOK 107 ON PAGE 42 AND 43, ALSO BEING PART OF LOTS 5 AND 8 OF ST. LOUIS AIRPORT LEASE LOTS PLAT 1 AS RECORDED IN PLAT BOOK 258 ON PAGE 74 OF ST. LOUIS COUNTY RECORDS, ALSO BEING PART OF U.S. SURVEY 169, TOWNSHIP 45 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN, ST. LOUIS COUNTY, MISSOURI
OLIVE STREET ROAD 60'W
SPIRIT AIRPARK EAST DRIVE (40'W) PB 357, PG.51
0
200
SCALE IN FEET
22' PRIMUSE EASEMENT P.B.357, PG.13-16
N/F UNION ELECTRIC CO 17W610016 BK.5672, PG.400
N/F ST. LOUIS COUNTY 17W330055 17W330101 BK.21188, PG.791
TOWER ASSETS NEWCO X, LLC BK.19872 PG.2539.
P.O.C.
10' PRIMUSE WITH RESTORATION P.B.357, PG.13-16
10' SEWER EASEMENT P.B.357, PG.13-16
S11°24'36"E 547.16'
RACEWAY BLVD (40'W)
N/F SEAMLESS INVESTMENTS LLC 17W620026 BK.23284, PG.1927
P.O.B. LEASE
323.20' S63°49'37"W
10' PRIMUSE WITH RESTORATION P.B.357, PG.13-16
N12°18'52"W 23.75'
N78°11'27"E 451.12'
R=89.11'
L=282.73'
CH=178.20'
CH. BRG.=N27°20'10"E
WINGS OF HOPE, INC. LEASE BK. 17535 PG. 1293
N78°09'49"E 117.44'
LEASE AREA
297,468 SF
6.83 AC
S11°48'33"E 498.98'
N11°53'16"W 336.97'
680.39' S78°11'27"W
U.S. SURVEY 169
U.S. SURVEY 102
SYCAMORE CO. LLC. LEASE BK. 17419 PG. 1768
25' W ELECTRIC EASEMENT BK. 7604, PG. 2333

MONARCH FIRE

MONARCH FIRE PROTECTION DISTRICT
13725 Olive Blvd., Chesterfield, MO 63017-2640
Phone: 314.514.0900 Fax: 314.514.0696
www.monarchfpd.org

March 12, 2024

Mr. David Shelton
Senior Engineer
Crawford, Murphy & Tilly
One Memorial Dr., Suite 500
St. Louis, Missouri 63102

RE: Spirit Sky Club Hangars

Dear Mr. Shelton:

I have reviewed and approved the Site Development Plan submitted on January 31, 2024 for the project mentioned above. This project is being reviewed for compliance with the 2015 International Fire Code as adopted by Ordinance 31 *The Fire Prevention Code* of the Monarch Fire Protection District. Please make note of the following conditions of approval:

- Approved as submitted.

If you have any questions, please call me at 314-514-0900, ext. 2281 or email at brockmiller.n@monarchfpd.org.

Yours in Fire Safety,

Neal G. Brockmiller, MCP
Assistant Fire Marshal

MONARCH FIRE PROTECTION DISTRICT

13725 Olive Blvd., Chesterfield, MO 63017-2640
Phone: 314.514.0900 Fax: 314.514.0696
www.monarchfpd.org

Fire Prevention Bureau Policy

To:	Fire Prevention Bureau, Public	**From:**	Jim McKay
Subject:	Security Gates	**Date:**	May 2, 2022
CC: File			

Purpose: Establish criteria for security gates.

Objective: Provide requirements for security gates hereafter installed across fire apparatus roads.

Scope: This policy applies to all security gates submitted for review after the issuance of this policy.

Policy:

Security gates. Security gates installed or constructed on a fire apparatus access road shall comply with this policy in accordance with Section 503.5 of the 2015 International Fire Code. A permit shall be required before the construction or installation of a security gate across a fire apparatus access road.

Number of gates. Fire apparatus shall not be required to pass through more than one gate to access, or pass through, any part of a subdivision, development, facility or building.

Set back: The gate shall be at least 50 feet back from the edge of the cross street from which the "gated" street is accessed, and shall open the full width of the required pavement, roadway or driveway

> **Exception:** The setback may be reduced for a driveway serving one single-family dwelling where approved by the fire code official;

Electrically Operated Gates. All electrically operated gates shall be installed in accordance with the following requirements:

1. **Siren activation**: The gate shall be equipped with a "Siren Activated" system, that will automatically open the gate upon approach of emergency vehicles, which have their sirens sounding in the "yelp" mode;

   A durable, reflective, Siren Activated Yelp sign, approved by the Fire Code Official, shall be installed adjacent to the gate access control device card reader / keypad, facing the responding emergency vehicle.

2. **Key switch**: The gate shall also be equipped with a 'Rapid Entry' key operated switch to open the gate, in addition to the normal 'occupant operated mechanism.' The key switch, when activated, shall keep the gate open until fire district personnel reset it after the emergency;

   The 'Rapid Entry' key switch shall be installed adjacent to the gate access control device card reader / keypad, with the key slot facing the same direction as the card reader / keypad;

3. **Power failure:** The gate shall release in the event of a power failure, allowing it to be opened manually;

4. **Manual release:** Provide a means to manually release the gate, in addition to **item 2** above to allow the gate to be opened in the event the switch, motor, or some other component fails; and

5. **Approval prior to use:** The gate installation shall be inspected, tested and approved by the Fire Code Official prior to the use of the gate; and

6. **UL Listed:** Electric gate operators shall be listed in accordance with UL 325.

Manually Operated Gates. All manually operated gates shall be installed in accordance with the following requirements:

1. **Lock:** Gates intended to be locked shall be equipped with a dual locking mechanism, approved by the Fire Code Official, which accommodates the owner's padlock and a 'Rapid Entry' padlock. The gate locking mechanism shall be constructed in such a manner as to always allow the gate to open by unlocking either lock without unlocking the second lock.

2. **Approval prior to use:** The gate installation shall be inspected, tested and approved by the Fire Code Official prior to the use of the gate.

The 'Rapid Entry' Key Switch and Padlocks shall be purchased through the St. Louis Metro Mutual Aid Account on the Knox website. Contact the Fire Prevention Bureau for ordering instructions.

This policy shall be in effect until written notice otherwise is issued.

Jim McKay
Fire Marshal

MSD

David Shelton

To: Todd Ehlen
Cc: Brian Hutsell; Blake Craig
Subject: RE: Hangar Development Project Spirit Airport Chesterfield MO

From: Robert Miller <RAMILL@stlmsd.com <mailto:RAMILL@stlmsd.com> >
Sent: Friday, February 9, 2024 8:35 AM
To: Todd Ehlen <tehlen@cmtengr.com <mailto:tehlen@cmtengr.com> >
Cc: David Shelton <dshelton@cmtengr.com <mailto:dshelton@cmtengr.com> >; Lisa Riggleman <lriggleman@chesterfield.mo.us <mailto:lriggleman@chesterfield.mo.us> >
Subject: FW: Hangar Development Project Spirit Airport Chesterfield MO

External Message: This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.
Mr. Ehlen,

MSD has reviewed the attached site development plan provided for 18460 Olive Street Road and has the following comments:

1. Formal MSD review, approval, and permits are required.
2. If the site is subject to the regional MS4 permit, Post-construction BMP's will be required. Stormwater Management facilities and site design strategies shall be applied such that the extents of the project's disturbed areas are managed. The site is considered new development; volume reducing BMP's will be required. If the regional basin is used for water quality, the proposed CN will need to be in compliance with the approved plans for P002940100, additional BMP's may be required.
3. MSD will require approval from the Monarch Chesterfield Levee District and the City of Chesterfield indicating the projects conformance with the Chesterfield Valley Master Stormwater plan prior to issuing plan approval.
4. The project is in the Caulks Creek Service area and is subject to the Caulks Creek Surcharge.
5. Sanitary flow estimates must be provided. These shall include the estimated average daily and peak flow rates. These estimates are needed to determine the sanitary requirements for the site. Sanitary improvements, including pump station upgrades may be required based on the flow rates provided.
6. A grease trap or oil/ grit separator may be required.
7. A sample manhole will be required.
8. New encroachments will not be allowed.

If you have any further questions, feel free to contact me at 314-335-2053.

Robert A. Miller, P.E.
Principal Engineer
Metropolitan St. Louis Sewer District
314-335-2053

From: Todd Ehlen <tehlen@cmtengr.com <mailto:tehlen@cmtengr.com> >
Sent: Saturday, February 3, 2024 10:03 AM
To: Robert Miller <RAMILL@stlmsd.com <mailto:RAMILL@stlmsd.com> >
Cc: David Shelton <dshelton@cmtengr.com <mailto:dshelton@cmtengr.com> >
Subject: FW: Hangar Development Project Spirit Airport Chesterfield MO

Bob,

David is in my group and is working on a hanger project in Chesterfield on Spirit Airpark East, located on Airport property. As part of the City's review process, we need to obtain MSD's conceptual approval on the SDP. As you are aware this will be operating under the Airports stormwater DNR permit, I believe MSD's scope will be limited to sanitary service. The only sanitary services proposed is toilets, these hangers are not for airplane maintenance.

Can you please review this and provide comments or conceptual approval?

Thanks

Todd

TODD M. EHLEN PE | Crawford, Murphy & Tilly | w 314.571.9105 | m 314.456.4418 Civil Site Services Group Manager

From: David Shelton <dshelton@cmtengr.com <mailto:dshelton@cmtengr.com> >
Sent: Friday, February 2, 2024 4:08 PM
To: DLCentralStatesConstruction@charter.com <mailto:DLCentralStatesConstruction@charter.com>
Cc: Todd Ehlen <tehlen@cmtengr.com <mailto:tehlen@cmtengr.com> >
Subject: Hangar Development Project Spirit Airport Chesterfield MO

Attached is a Site Development Plan. The address is 18460 Olive Street Rd.

Thanks,

David

David Shelton, PE | Senior Engineer - Building & Site Services

<http://www.cmtengr.com/>
Crawford, Murphy & Tilly | Engineers & Consultants Gateway Tower | One Memorial Drive, Suite 500 | St. Louis, MO | 63102
Direct: 314.571.9071 | Mobile: 636.236.4491 | Fax: 314.436.0723 dshelton@cmtengr.com <mailto:dshelton@cmtengr.com>

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101 LAURA K DR., STE. 101 ● O'FALLON, MISSOURI 63366-3991

▪ MEMORANDUM ▪

TO: David Human, Monarch-Chesterfield Levee District
Diane Summers

FROM: Karen Frederich

SUBJECT: Spirit Sky Club – Hangar Development
18460 Olive Street Road
Site Development Plan

DATE: February 7, 2024

H&S JOB NO.: 1610000

CC: Todd Ehlen, Crawford, Murphy & Tilly
Jeff Wells & Jeremy Eck, Corps of Engineers

A Site Development Plan for Spirit Sky Club Hangar Development prepared by CMT (23006099.00) dated 01/30/2024 has been reviewed.

The plan shows the construction of two steel-frame hangar buildings and associated taxi lanes.

The Levee District will review improvement plans for the management of water quantity. All proposed features that serve only this development are to be labeled PRIVATE and maintained by the landowner.

The proposed development is more than 1,000 feet from any levee or flood control system component and no adverse effects from the development are expected to the Monarch-Chesterfield Levee System nor the flood protection of the Chesterfield Valley from the Missouri River or Bonhomme Creek.

All site improvement plans are subject to review and approval by the St. Louis District Corps of Engineers. That determination is made by them.

The plans shall be submitted to the levee district engineer in PDF.

The Levee District is not making a determination of the project's general conformance with the Chesterfield Valley Master Stormwater Plan; that is the responsibility of the City. Additionally, the Levee District has not reviewed nor analyzed any aspect of the water quality features; that is the responsibility of MSD. The Levee District has no other comments at this time.

SPIRIT AIRPORT

Sam Page
County Executive

John D. Bales, C.M.
Director of Aviation

SPIRIT Of St. Louis Airport
SINCE 1964
Business Aviation Center of the U.S.

February 9, 2024

Crawford, Murphy & Tilly
Attn.: David Shelton, P.E.
Gateway Tower
One Memorial Drive, Suite 500
St. Louis, MO 63102

RE: Spirit Sky Club

Dear Mr. Shelton,

The Airport has reviewed sheets G-001, C-100, C-101, and C-102 dated 1/30/24 of the Site Development Plan for the above referenced project. We have no objections to the improvements shown.

Please contact me with any questions.

Sincerely,

SPIRIT OF ST. LOUIS AIRPORT

Justin Ryder
Airport Engineer

CC John D. Bales, CM, Director of Aviation
David Schubert, Deputy Director of Aviation
File

Sam Page
County Executive

John D. Bales, C.M.
Director of Aviation

SPIRIT
Of St. Louis
Airport
SINCE 1964
Business Aviation
Center of the U.S.

December 1,2023

RE: Spirit of St. Louis Airport
Chesterfield, Missouri
Wildlife Management at Spirit of St. Louis Airport

To whom it may concern:

This letter is to address potential safety hazards created by certain types of landscaping features in and around Spirit of St. Louis Airport.

The Federal Aviation Administration (via FAA regulation subsection 139.337 and AC 150/5200-33C) makes it the responsibility of airport operators to minimize the chances of aircraft strikes with wildlife, both on the ground and in the air. One method is by controlling the amount and types of landscaping around the airport that could attract wildlife. Examples of landscape features that act as wildlife attractants include: water features, dense hedges, fruit and seed bearing trees, tall grasses, etc.

Therefore, the Spirit of St. Louis Airport requests that landscaping at developments within the airport's vicinity be limited only to the sorts of features that will not serve as an attractant to wildlife. Examples of this might include: decorative gravel, turf grasses, etc.

Thank you for your cooperation and please call, should you have any questions.

Sincerely,

SPIRIT OF ST. LOUIS AIRPORT

John D. Bales
Director of Aviation

CC David J. Schubert, Deputy Director of Aviation

United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife Services

18004 Edison Ave.
Chesterfield, MO 63005
816-602-0672 (office)

March 15th, 2024

To whom it may concern

USDA Wildlife Services staff have reviewed the comments submitted by the City of Chesterfield, specifically point 16 in the general comment section and general site note 21. USDA would advise against planting of trees in the North Development Lease Lot. Trees provide roosting habitat for hazardous wildlife and depending on the species selected additional attractants such as fruit and thermal cover may be present. Trees are known to attract bird species responsible for the majority of bird strikes indicated in the KSUS strike record. Additionally, wildlife attractants should be considered when creating a landscaping plan for the North Development Lease Lot. Per AC 150/5200-33C (Section 2.8.2.1), "Vegetation that produces seeds, fruits, or berries, or that provides dense roosting or nesting cover should not be used".

The ultimate purpose of an airport is to provide a safe environment for aviation, and all other considerations must be secondary to that. Additionally, the airport is compelled, through the advisory circulars that regulate its operation, not to create habitats that could attract hazardous wildlife within proximity to the airport. In striving for compliance with those requirements, USDA recommends utilizing only non-attractive, easily manageable grasses and/or rock in landscape situations. The use of trees, shrubs, or ornamental vegetation of any kind brings the risk of attracting hazardous wildlife.

Dan Durbin
USDA Wildlife Services

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

February 6, 2023

EMAIL ONLY

St. Louis County
ATTN: Justin Ryder
41 South Central Avenue
Clayton, MO 63105

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, the Missouri Department of Natural Resources (Department) has issued, and we are enclosing, **General State Operating Permit number MOR80F016 issued for Spirit of St. Louis Airport located at 18270 Edison Avenue, Chesterfield, MO, 63005.**

This General Permit is both your federal discharge permit and your new state operating permit and replaces all previous state operating permits and letters of approval for the discharges described within. In all future correspondence regarding this permit, please refer to your general permit number as shown on page one of your permit.

The permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to be kept on-site and available for viewing upon request by the Department. Refer to pages 8 through 11 of your permit for further explanation. Other conditions and requirements also exist within your permit.

Monitoring reports that may be required by this permit must be submitted on a periodic basis. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data about the NPDES program. All general permit covered facilities under this master general permit shall comply with the Department's requirements for reporting via the Electronic Discharge Monitoring Report (eDMR) system. Copies of any reporting forms, if necessary, have been enclosed for your convenience in utilizing the eDMR system.

This permit may include requirements with which you may not be familiar. If you would like the Department to conduct a Compliance Assistance Visit to discuss the permit, you can set up an appointment by contacting this office at 314-416-2960.

The requirements found in this permit do not supersede nor relieve liability for compliance with other federal, state, county, or local statutes, regulations, or ordinances. Also, any exemptions found in this permit do not imply an exemption from other permits from the Department. It is your responsibility to ensure that any and all necessary permits for this facility have been obtained.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Sections 644.051.6 and 621.250, RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is as follows: Administrative Hearing Commission, United States Post Office Bldg., Third Floor, 131 West High Street, Jefferson City, MO 65101, and PO Box 1557, Jefferson City, MO 65102. Phone: 573-751-2422, Fax: 573-751-5018, Website: www.oa.mo.gov/ahc.

If you have any questions concerning this permit, please contact **Brendin Wright** at 314-416-2479 or brendin.wright@dnr.mo.gov, at the St. Louis Regional Office at 7545 S. Lindbergh Blvd., Suite 210, St. Louis, MO 63125.

Sincerely,

ST. LOUIS REGIONAL OFFICE

Dorothy E. Franklin
Regional Director

DEF/BMW/bmb

Enclosure MSOP MOR80F016
Standard Conditions I
Request for Termination of Operating Permit Form

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

General Operating Permit

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No	MOR80F016
Owner:	St. Louis County
Address:	41 South Central Avenue St. Louis, MO 63105
Continuing Authority:	St Louis County 41 South Central Avenue Clayton, MO 63105
Facility Name:	Spirit of St. Louis Airport
Facility Address:	18270 Edison Avenue CHESTERFIELD, MO 63005
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream - ID#:	See Page 2
USGS# and Sub Watershed#:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations, benchmarks, and monitoring requirements as set forth herein.

FACILITY DESCRIPTION

All Outfalls SIC #4581

All Outfalls - Stormwater discharges from air transportation facilities involved in vehicle/aircraft maintenance and/or deicing.

This permit authorizes activities pusuant to the terms and conditions of this permit in the Missouri Clean Water Law and/or the National Pollutant Discharge Elimination System; it does not apply to other regulated activities.

February 01, 2023
Issue Date

Chris Wieberg, Director
Water Protection Program

November 27, 2027
Expiration Date

Dorothy Franklin, Regional Director
St. Louis Regional Office

Outfall Number:	001
Legal Description:	Land Grant 00150, St. Louis County
UTM Coordinates:	706125.449/4281732.272
Receiving Stream:	Tributary to Bonhomme Creek
First Classified Stream - ID#:	100K Extent-Remaining Streams (C) 303(d) 3960.00
USGS# and Sub Watershed#:	10300200 - 0702

Outfall Number:	002
Legal Description:	Land Grant 00150, St. Louis County
UTM Coordinates:	706125.275/4281732.510
Receiving Stream:	Tributary to Bonhomme Creek
First Classified Stream - ID#:	100K Extent-Remaining Streams (C) 303(d) 3960.00
USGS# and Sub Watershed#:	10300200 - 0702

PART I. APPLICABILITY

1. This Missouri State Operating Permit (permit) authorizes the discharge of stormwater to waters of the state of Missouri from airport facilities with the primary Standard Industrial Classification (SIC) Codes or facilities the Missouri Department of Natural Resources (Department) determines are fundamentally similar to facilities that are under the below SIC Codes:

SIC Code	Activity
4512	Air Transportation, Scheduled
4513	Air Courier Services
4522	Air Transportation, Nonscheduled
4581	Airports, Flying Fields, and Airport Terminal Services

2. This permit authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle/aircraft maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication, or equipment cleaning operations) or deicing operations. Deicing is defined as procedures and practices to remove or prevent any accumulation of snow or ice on an aircraft or on airfield pavement unless specific mention is made otherwise.

3. For the purpose of this permit, stormwater is defined as water from rain or melting snow/ice in sufficient quantities that it runs off over land and impervious surfaces and discharges to waters of the state instead of seeping into the ground.

4. For the purpose of this permit, aircraft deicing fluid means a fluid (other than hot water) applied to aircraft to remove or prevent any accumulation of snow or ice on the aircraft. This includes deicing and anti-icing fluids.

5. The first time an airport applies for coverage under this permit, the proposed permit must be placed on public notice for 30 days per 10 CSR 20-6.020(1)(C)2. For a renewal of the permit for an existing airport, the proposed permit must be placed on public notice for 30 days only if the facility has been in significant noncompliance during the time of the previous permit per 10 CSR 20-6.020(1)(C)2.

6. Airports that do not use chemical deicing on the runways or aircraft and do not conduct vehicle/aircraft maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication, or equipment cleaning operations) on premises are exempt from this permit. If the Department determines that the operating practices are not adequate, a permit may be necessary to protect the environment.

7. St. Louis Lambert International Airport, Kansas City International Airport, and any other airports that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons of urea or calcium chloride per year, combined, are precluded from coverage under this general permit and are required to apply for a site-specific permit.

8. This permit does not cover land disturbance activities or construction of earthen basins.
   (a) Land disturbance activities disturbing one or more acres of total area for the entire project or less than one acre for sites that are part of a common promotional plan of development may require a land disturbance permit. Instructions on how to apply for and receive the online land disturbance permit are located at www.dnr.mo.gov/env/wpp/epermit/help.htm. Questions regarding permit requirements may be directed to the Department's Land Disturbance phone line at 573-526-2082 or toll free at 855-789-3889.
   (b) Construction of an earthen basin or holding structure may require a construction permit. Instructions on how to apply for and receive a construction permit are located at https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater/construction-engineering. Questions regarding permit requirements may be directed to Department's Water Protection Program phone line at 573-751-1300, or toll free at 800-361-4827.

9. Discharge to the watersheds of a Metropolitan No-Discharge Stream (10 CSR 20-7.031 Table F) is prohibited except uncontaminated cooling water, non-contaminated stormwater flows, permitted stormwater discharges in compliance with permit conditions, and excess wet-weather bypass discharges not interfering with designated uses per 10 CSR 20-7.015(5) and 7.031(7).

10. This permit authorizes stormwater discharge in Outstanding State Resource Waters (OSRW) so long as no degradation of water quality occurs in the OSRW due to discharges from the permitted facility per 10 CSR 20-7.015(6)(B) and 10 CSR 20-7.031(3)(C).

11. For facilities operating within the watershed of Outstanding National Resource Waters (ONRW), which includes the Ozark National Riverways and the National Wild and Scenic Rivers System:
   (a) This permit authorizes only no-discharge facilities [as per 10 CSR 20-6.015(1)(B)7 and 10 CSR 20-7.015(6)(A)3] to operate.
   (b) This permit does not authorize discharges to groundwater.
   (c) Any discharge from a no-discharge facility, including stormwater, will be considered a violation of this permit unless a catastrophic storm or chronic storm event [as defined in 10 CSR 20-6.015(1)(B)2-3 and in the Definitions section above]

occurs. In the event of a catastrophic storm or chronic storm event:

(i) The no-discharge facility is authorized to release only the minimum amount of stormwater required to prevent damage to the facility.

(ii) The no-discharge facility should evaluate the impacts of the catastrophic storm or chronic storm event, and subsequent release of stormwater, on the ONRW. The facility should then review and update the Stormwater Prevention Plan (SWPPP) and Best Management Practices (BMPs) on site to determine what improvements or additional controls are needed to prevent future releases and preserve water quality. The facility should consider:

(1) Implementing structural improvements, enhanced pollution prevention measures, and other mitigation measures to help to minimize impacts from stormwater discharges from catastrophic storms or chronic storm events;
(2) Reinforcing materials storage structures to withstand flooding and additional exertion of force;
(3) When a delivery of exposed materials is expected, and a storm is anticipated within 48 hours, delay delivery until after the storm;
(4) Temporarily reduce or eliminate outdoor storage;
(5) Developing scenario-based emergency procedures for major storms that are complementary to regular stormwater pollution prevention planning and identify emergency contacts for staff and contractors; and
(6) Conducting staff training for implementing emergency procedures at regular intervals.

12. Facilities located within the watershed of an impaired water as designated in the 305(b) Report must be evaluated on a case-by-case basis for inclusion under this permit. Facilities found to be discharging the listed pollutant(s) of concern for any impaired water may be required to obtain a site-specific permit.

13. The Department may require any facility authorized by a general permit to apply for a site-specific permit [10 CSR 20-6.010(13)(C)]. Cases where a site-specific permit may be required include, but are not limited to, the following:
(a) The discharge(s) is a significant contributor of a pollutant(s) which impairs the designated uses of the receiving stream;
(b) The discharger is not in compliance with the conditions of the general permit;
(c) A Total Maximum Daily Load (TMDL) containing requirements applicable to the discharge(s) is approved.

14. If a facility covered under a current general permit desires to apply for a site-specific permit, the facility may do so by contacting the Department for application requirements and procedures.

15. Facilities covered under a current site-specific permit who desire to apply for inclusion under this general permit may contact the Department for application requirements and procedures.

16. This permit does not allow placement of fill material into any stream or wetland, alteration of a stream channel, or obstruction of stream flow unless the appropriate Clean Water Act (CWA) Section 404 permitting authority provides approval for such actions or determines such actions are exempt from Section 404 jurisdiction. Additionally, this permit does not authorize placement of fill in floodplains unless approved or determined exempt by appropriate federal and/or state floodplain development authorities.

17. This operating permit does not affect, remove, or replace any requirement of the National Environmental Policy Act; the Endangered Species Act; the National Historic Preservation Act; the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; or any other relevant acts. Determination of applicability to the above mentioned acts is the responsibility of the permittee. Additionally, this permit does not establish terms and conditions for runoff resulting from silvicultural activities listed in Section 402(l)(3)(a) of the Clean Water Act.

18. This permit does not authorize the discharge of process wastewaters, treated or otherwise, including contact and non-contact cooling waters; boiler blowdown; or water used to wash machinery, equipment, buildings, or pavement.

19. The following are allowable non-stormwater discharges authorized under this permit as long as no water quality impacts occur:
(a) Discharges from emergency/unplanned fire-fighting activities;
(b) De-chlorinated fire hydrant or water line flushing (testing) so long as the discharged water is managed to avoid instream water quality impacts;
(c) Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
(d) Landscape watering, provided all pesticides, herbicides, and fertilizers have been applied in accordance with manufacturer's instructions;
(e) Uncontaminated groundwater or spring water which has not contacted industrial materials or processes;
(f) Foundation or footing drains where flows are not contaminated with process materials; and
(g) Incidental windblown mist from cooling towers which collects on rooftops or adjacent portions of your facility but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

20. Any non-stormwater discharges other than those explicitly authorized in condition #19 above and #21 below are prohibited. For

clarity, a number of prohibited discharges will be listed here as a reminder. The list is not all inclusive, but it contains common prohibited discharges:
(a) Water from testing and maintenance of fire protection systems that have foam;
(b) Water from washout of concrete;
(c) Water from the washing of vehicles/aircraft and equipment, with or without detergents;
(d) Water from the washout of form release oils, curing compounds, or other construction materials;
(e) Water containing soaps, solvents, or detergents from any source; and
(f) Water containing substances from a spill on site, hazardous or otherwise.

21. This permit authorizes the operation of oil water separators for the treatment of process wastewater and stormwater. The oil water separators must be appropriately operated and sized per manufacturer's or engineering specifications. The facility must maintain oil water separator sludge removal records for a period of at least five years and provide them to the Department if requested. These records may be maintained in a searchable electronic format. Sludge from the oil water separator is considered used oil per 10 CSR 25-11.279 and must be disposed of accordingly.

22. Any discharges not expressly authorized in this permit and not clearly disclosed in the permit application cannot become authorized or shielded from liability under CWA section 402(k) or Section 644.051.16, RSMo, by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including any other permit applications, funding applications, the SWPPP, discharge monitoring reporting, or during an inspection. Discharges at the facility not expressly authorized by this permit must be covered by another permit, be exempt from permitting, or be authorized through some other method.

PART II. EXEMPTIONS

1. Facilities discharging all effluent stormwater directly to a combined sewer system (as defined in 40 CFR 122.26 and 40 CFR 35.2005) connecting to a publicly owned treatment works which has consented to receive such a discharge are exempt from stormwater permit requirements.

2. In accordance with 40 CFR 122.26(g) and 10 CSR 20-6.200(1)(C), if a facility has no materials exposed to stormwater (all materials and activities are protected by a storm resistant shelter that is enclosed on all sides to prevent exposure to rain, snow, snowmelt and/or runoff), the facility may apply for No Exposure Certification in lieu of stormwater permit coverage. If applicable, the facility must submit a No Exposure Certification form (https://dnr.mo.gov/document-search/no-exposure-certification-exclusion-npdes-stormwater-permitting-under-missouri-clean-water-law-mo-780-2828) with the application for permit coverage. No Exposure Certification Guidance may be found at https://dnr.mo.gov/document-search/guidance-no-exposure-certification-exclusion-stormwater-permit-requirements-pub2729/pub2729.

PART III. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

TABLE A	STORMWATER EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
THE FACILITY IS AUTHORIZED TO DISCHARGE FROM OUTFALL(S) WITH SERIAL NUMBER(S) AS SPECIFIED IN THE APPLICATION FOR THIS PERMIT. THESE FINAL EFFLUENT LIMITATIONS SHALL BE EFFECTIVE AT ISSUANCE OF THE MASTER GENERAL PERMIT AND REMAIN IN EFFECT FOR THE LIFE OF THE PERMIT. STORMWATER DISCHARGES SHALL BE CONTROLLED, LIMITED AND MONITORED BY THE FACILITY AS SPECIFIED BELOW: (NOTE 1)					
PARAMETERS, ALL OUTFALLS	UNITS	DAILY MAXIMUM	MONTHLY AVERAGE	SAMPLE FREQUENCY**	SAMPLE TYPE
ALL FACILITIES WITH < 1,000 JET DEPARTURES ANNUALLY LIMIT SET: PD					
FLOW	MGD	*	*	MONTHLY	24 HOUR ESTIMATE
CHEMICAL OXYGEN DEMAND (COD)	MG/L	120	90	MONTHLY	GRAB
PH***	SU	6.5 – 9.0	6.5 – 9.0	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS	MG/L	70	70	MONTHLY	GRAB
ETHYLBENZENE	MG/L	0.32	0.32	MONTHLY	GRAB
OIL AND GREASE	MG/L	15	10	MONTHLY	GRAB
CHLORIDE♦	MG/L	860	860	MONTHLY	GRAB
AMMONIA AS NITROGEN♦	MG/L	*	*	MONTHLY	GRAB
NITRATE♦	MG/L	*	*	MONTHLY	GRAB
ALL FACILITIES WITH ≥ 1,000 JET DEPARTURES ANNUALLY (NOTE 2) LIMIT SET: JD					
FLOW	MGD	*	*	MONTHLY	24 HOUR ESTIMATE
CHEMICAL OXYGEN DEMAND (COD)	MG/L	120	90	MONTHLY	GRAB
PH***	SU	6.5 – 9.0	6.5 – 9.0	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS	MG/L	70	70	MONTHLY	GRAB
ETHYLBENZENE	MG/L	0.32	0.32	MONTHLY	GRAB
OIL AND GREASE	MG/L	15	10	MONTHLY	GRAB
CHLORIDE♦	MG/L	860	860	MONTHLY	GRAB
AMMONIA AS NITROGEN♦	MG/L	14.7	14.7	MONTHLY	GRAB
NITRATE♦	MG/L	*	*	MONTHLY	GRAB
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY FOR THE MONTHS OF JANUARY, FEBRUARY AND MARCH VIA THE DEPARTMENT'S EDMR SYSTEM. SHOULD A WAIVER TO EDMR BE GRANTED BY THE DEPARTMENT, PAPER REPORTS SHALL BE SUBMITTED IN A TIMELY MANNER TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE FEBRUARY 28, 2023. IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.					

* Monitoring requirement only.

** One sample must be taken monthly if the facility has conducted deicing operations within the last 60 days in the designated months of January, February and March when there is a discharge (a discharge includes runoff from precipitation, sleet, or freezing rain as well as run off from melting frozen precipitation). See Table B below. If there is no discharge for a particular month, report no discharge.

*** pH is measured in pH standard units and is not to be averaged.

♦ If a facility uses a deicing product that contains no chloride and no urea, ammonia or nitrate-nitrogen, they may report a value of "AG" (Cond Monitoring – Not Req This Period) for this parameter. By reporting a value of "AG", the facility certifies that they are using deicing products that do not contain these parameters. It is the facility's responsibility to know what chemicals are in the products they use.

Note 1: When monitoring stormwater, a representative grab sample shall be taken during operational hours within the first 60 minutes of stormwater discharge, if possible. Samples shall be collected from an active discharge on the facility property before entering any water of the state. Stormwater samples shall not be collected from standing pools.

Note 2: Facilities in this category must use non-urea-containing deicers OR meet the effluent limit for Ammonia as Nitrogen in Table A.

1. Effluent limitations in Table A are considered necessary to protect existing water quality and should not be exceeded during discharges resulting from a precipitation event up to and including the 10-year 365-day rainfall event (chronic) or the 25 year 24-hour rainfall event (catastrophic) according to National Weather Service data. Design Storm Maps and Tables can be found at http://ag3.agebb.missouri.edu/design_storm/. Failure to address a limit exceedance with corrective action is a permit violation.

TABLE B	SAMPLE AND REPORTING SCHEDULE	
REPORT TYPE	REPORT PERIOD	REPORT DUE
ANNUAL REPORT	JANUARY – DECEMBER	JANUARY 28
TABLE A, SAMPLE DISCHARGE FOR THE MONTHS OF:	JANUARY FEBRUARY MARCH	FEBRUARY 28 MARCH 28 APRIL 28

PART V. STORMWATER REQUIREMENTS

1. This permit requires the development and implementation of a SWPPP. When applying for new or expanding coverage under this permit, a SWPPP including an alternative analysis of the BMPs must be developed, implemented, and maintained at the facility. Failure to implement and maintain the chosen alternative, which can be revised and updated, is a permit violation. The alternative analysis is a structured evaluation of BMPs to determine which are reasonable and cost effective. The analysis should include practices designed to be 1) non-degrading 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring the highest quality water attainable for the facility is discharged. The analysis must demonstrate why "no discharge" or "no exposure" are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures. This structured analysis of BMPs serves as the Antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3).

2. The EPA has published a Fact Sheet addressing BMPs specifically for airports: Sector S Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities, (EPA-833-F-06-034) published by the EPA in December 2006 which may be useful and can be found at: www.epa.gov/sites/production/files/2016-04/documents/sector_s_airtransmaint.pdf.

3. When applying for coverage under this permit, the development and implementation of a SWPPP is required. The SWPPP must be reviewed at least annually but more frequently if site conditions impacting stormwater or the nature and condition of stormwater discharges change. The SWPPP must be updated as necessary to reflect the most current and accurate conditions on site. The SWPPP must be kept on site (either electronically or paper copy) and be made readily available to the Department upon request and within 24 hours, unless explicitly granted more time in writing. The SWPPP should not be sent to the Department unless specifically requested.
   (a) **New Facilities:** The new SWPPP for the facility must be prepared and implemented upon permit effective date.
   (b) **Existing Facilities**: The existing SWPPP for the facility must be reviewed, revised as necessary, and implemented upon reissuance of permit coverage. This review can run concurrently with the required annual review.
   (c) **Expanding Facilities:** The existing SWPPP for the facility, including the alternative analysis, must be reviewed and revised as necessary. Once expansion occurs the revised SWPPP must be implemented upon effective date of facility expansion.

4. The purpose of the SWPPP and the BMPs listed therein is to prevent pollution per 10 CSR 20-2.010(56) to waters of the state. A deficiency of a BMP means it was not effective in preventing pollution of waters of the state or meeting the limits of this permit. Corrective action means the facility took steps to eliminate the deficiency. Throughout coverage under this permit, the facility must perform SWPPP review and revision to incorporate any significant site condition changes which impact the nature and condition of stormwater discharges. For all facilities the SWPPP must include the following:
   (a) An assessment of all stormwater discharges associated with the facility, facility activities, and facility materials. This assessment must include a list of potential contaminants and an annual estimate of amounts used and/or produced in the described activities.
   (b) A listing of BMPs and a narrative explaining how the BMPs will be implemented to control and minimize the amount of potential contaminants entering stormwater.
   (c) Wash water for vehicles/aircraft, equipment, building, or pavement must be handled in a no-discharge manner (infiltration, hauled off-site, etc.). Describe the disposal method and include all pertinent information (destination for effluent, BMPs, etc.) in the SWPPP. If wash water is not produced, note this instead.
   (d) A site map, or multiple maps, if necessary, showing the following:
      (1) Boundaries of the property and the size of the property in acres;
      (2) Location and extent of significant structures and impervious surfaces;
      (3) Direction of stormwater flow (use arrows), marking areas where high potential for soil erosion are found;
      (4) Location of all permitted features, outfalls, structural BMPs, and other stormwater control measures;
      (5) Location of all stormwater conveyances including ditches, pipes, and swales;
      (6) Location of potential stormwater pollutant sources;

(7) If applicable, municipal separate storm sewer systems (MS4s) and where stormwater from the facility discharges to them;
(8) Locations of the following activities which are exposed to precipitation:
i. Fueling stations;
ii. Vehicles and equipment maintenance and/or cleaning areas;
iii. Loading and unloading areas;
iv. Locations used for the treatment, storage, or disposal of wastes;
v. Salt storage areas (salt used for deicing or other commercial or industrial purposes);
vi. Liquid storage tanks, noting whether they have secondary containment; and
vii. Processing and storage areas.
(9) Locations and sources of run-on to your site from adjacent property that may contain significant quantities of pollutants.

This map shall be updated as needed to reflect current BMPs in use. Outfalls do not need to be marked in the field. The map does not need to be printed on paper. Electronic or other accessible maps will be considered adequate compliance with this condition.

(e) A schedule for monthly site inspections and a brief written report, which includes the name of the inspector, the signature of the inspector, and the date. The inspections must include observation and analysis of BMP effectiveness, deficiencies, and corrective action to be taken as well as the integrity of the containment structure(s) including but not limited to above ground tanks, secondary containment, external piping, etc.
(1) At a minimum, the following areas must be inspected:
i. Disturbed areas;
ii. Stormwater controls and pollution prevention measures;
iii. The drainage area around secondary containments and the interior of the secondary containment.
iv. Material, waste, borrow, or equipment storage and maintenance areas;
v. Areas where stormwater flows;
vi. Points of discharge; and
vii. The drainage area around secondary containments and the interior of the secondary.
(2) During inspections, at the minimum, the following must be checked:
i. Whether all BMPs are installed, operational, and working as intended;
ii. Whether any new or modified stormwater controls are needed;
iii. Facilities examined for conditions that could lead to a spill or leak; and
iv. Facility examined for visual signs of erosion, sedimentation, or pollutants at outfalls. Such items may be due to BMP failure or insufficiency. Response to finding excessive erosion, sedimentation, or pollutants should be addressed in the inspection report.
(3) Operational deficiencies must be corrected within seven (7) days and must be documented in the inspection report.
(4) Minor structural deficiencies must be corrected within fourteen (14) calendar days and must be documented in the SWPPP records.
(5) For major structural deficiencies which are projected to take longer than fourteen (14) calendar days to correct, The facility may submit a written request to the Department justifying additional time, if necessary, to complete corrective action. If required by the Department, the permittee shall work with the regional office to determine the best course of action. The permittee should consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
(6) BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I. https://dnr.mo.gov/document-search/standard-conditions-npdes-permits-aug-1-2014-part-i
(7) Inspection reports must be kept with the SWPPP and must be made available to the Department upon request.
(8) Inactive facilities: the requirement to conduct facility inspections on a monthly basis does not apply at a facility that is inactive and unstaffed as long as there are no industrial materials or activities exposed to stormwater. Such a facility shall only be required to conduct an inspection annually. To invoke this exception, the notification the facility is inactive must be made in the application materials submitted to the Department for renewal or issuance of a new permit. If a facility is already covered by a permit when they become inactive, they must submit notification to the appropriate Department Regional Office in writing of their intent to be considered “inactive”. The SWPPP shall also be updated to reflect this information. If circumstances change and industrial materials or activities become exposed to stormwater or the site becomes active, this exception will no longer apply, and the facility must immediately resume required monthly inspections.

(f) A provision for designating an individual to be responsible for environmental matters.
(g) A provision for providing training to all personnel involved in material handling, material storage, and housekeeping of areas having materials exposed to stormwater. Proof of training must be made available to the Department upon request.
(h) A provision for evaluating effluent limitations established in this permit.

5. The following minimum BMPs must be implemented at all facilities:

(a) Collection facilities shall be provided on site and arrangements made for proper disposal of waste products, including but not limited to petroleum waste products, solid waste, deicing products, and solvents, which may be exposed to stormwater. Keep storage bins for waste products covered to minimize contact with precipitation, where possible. Discharges or spills from collection facilities must be appropriately cleaned up before a precipitation event occurs.
(b) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle/aircraft maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances. This might include, for example, utilizing drip pans under vehicles/aircraft and equipment stored outdoors, covering fueling areas, using dry clean-up methods, use of absorbents, and cleaning pavement surfaces to remove oil and grease in a manner that ensures the removal of contaminates without discharging to waters of the state.
(c) Store all paints, solvents, petroleum products, petroleum waste products, and storage containers (such as drums, cans, or cartons) so they are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention, control, and countermeasures to prevent any spill of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall prevent the contamination of groundwater.
(d) Provide good housekeeping practices on site to keep solid waste from entering waters of the state. For example, direct stormwater away from areas where storage, loading and unloading, and material handling occur and perform good housekeeping to prevent the discharge of discolored or otherwise impacted stormwater.
(e) Facilities shall manage materials (products, stockpiles, waste piles, etc.) to:
    a. Minimize material migration and sediment loss from stormwater that runs off stockpiles by using sediment controls or covers where possible;
    b. Prevent stormwater flows from causing erosion of stockpiles, for example, by diverting flows around them;
    c. Ensure these materials or equipment are not discharged off-site or into a water of the state during a high water event.
(f) Storage piles of salt, sand, or piles containing salt or sand shall be stored in a manner that minimizes mobilization in stormwater (for example: under roof, in covered container, in secondary containment, under tarp, etc.). Piles do not need to be enclosed or covered if stormwater from the piles is not discharged or if discharges are authorized under another wastewater or stormwater permit.
(g) Minimize the accumulation of metals or aging equipment with visible rust in outdoor locations exposed to stormwater. Ensure metal equipment and scrap are stored indoors, under cover, or in a covered container when possible.
(h) Solids, sludge, and soluble debris shall not be allowed to accumulate in the secondary containment structures.

PART VIII. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Standard Conditions Part I dated August 01, 2014, and hereby incorporated as though fully set forth herein. https://dnr.mo.gov/document-search/standard-conditions-npdes-permits-aug-1-2014-part-i

PART IX. PERMIT REQUIREMENTS

1. Discharge of stormwater contaminated with deicing/anti-icing chemicals is only authorized as part of deicing/anti-icing activities. Dumping of unused, out-of-specification rinsate or product directly or indirectly into waters of the state is prohibited.

2. Existing and new primary airports (commercial service airports with more than 10,000 passenger boardings a year) with 1,000 or more annual jet departures ("non-propeller aircraft") that generate wastewater associated with airfield pavement deicing are to use non-urea-containing deicers, or alternatively, meet the numeric limit for ammonia as nitrogen daily maximum of 14.7 mg/L as expressed in 40 CFR 449.10.

3. Annual Report: The permittee shall submit an annual report by January 28th of each year detailing each deicer, anti-icer, or solvent used at the facility. The annual report will include:
    (a) Chemical types, such as “Urea” or “Sodium Chloride;”
    (b) Concentrations used, such as “10%”; and
    (c) Total volume or mass of the deicer used in the previous calendar year.

4. In addition to the requirements of this permit, the Department may require further sampling and reporting as a result of illegal discharges, compliance issues, complaint investigations, or evidence of off-site impacts from activities at the facility. If such an action is needed, the Department will specify in writing the sampling requirements, including such information as location and extent. It is a violation of this permit to fail to comply with said written notification to sample.

5. The Department may collect a sample of stormwater discharge during site inspection.

6. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized in the permit above are unauthorized discharges.
   (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's 24 hour spill line at 573-634-2436.

7. Electronic Discharge Monitoring Report (eDMR) Submission System
   Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data for the NPDES program. The eDMR system is currently the only Department-approved reporting method for this permit unless specified elsewhere in this permit, or a waiver is granted by the Department. The facility must register in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due.

8. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (Section 644.055, RSMo). The fee structure can be found at 10 CSR 20-6.011.

9. Compliance with all requirements in this permit does not supersede nor remove liability for compliance with county or other local ordinances.

10. This permit stipulates effluent limits applicable to the facility's discharge. Exceedances believed to be the result of legacy chemical use at the facility are not exempted from this requirement. Facilities are encouraged to contact the Department to formulate a plan for investigation and clean-up if legacy chemical use is suspected to be the cause of exceedances.

11. Outfalls must be:
   (a) Clearly marked in the field;
   (b) Made accessible for sampling and Monthly Site Inspection purposes;
   (c) Above the normal high water mark of the waterbody to which it discharges; and
   (d) Maintained so a sample of the discharge can be obtained at a point after the final treatment process and before the discharge mixes with receiving waters.

12. The permittee shall furnish to the Department, upon request and within 24 hours unless explicitly granted more time in writing, copies of records required to be kept according to the terms and conditions of this permit. All records required by this permit may be maintained electronically per 432.255 RSMo. These records should be maintained in a searchable format.

13. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
   (a) The alteration or addition could significantly change the nature or increase the quantity of pollutants in the discharge. This notification applies to pollutants subject to the effluent limitations of this permit as well as new pollutants different from pollutants listed in this permit; or
   (b) The alteration or addition results in a significant change in discharge practices and may justify the application of permit conditions different from or absent in the current permit.

14. Before releasing water accumulated in petroleum secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).
   (a) If odor or sheen is found, the water shall not be discharged without treatment ~~and~~ or shall be disposed of in accordance with legally approved methods.
   (b) The interior and exterior of the secondary containment area shall be inspected regularly for signs of leaks, spills, cracks, and unintentional releases.

15. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with RSMo 644.051.16 and the CWA section 402(k); however, this permit may be reopened and modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Clean Water Act Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit or controls any pollutant not limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

16. Changes in Discharges of Toxic Substances. In addition to the reporting requirements under 40 CFR 122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:
    (a) An activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit if the discharge will exceed the highest of the following notification levels:
        1) One hundred micrograms per liter (100 µg/L);
        2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
        3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
        4) One milligram per liter (1 mg/L) for antimony;
        5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
        6) The notification level established by the Department in accordance with 40 CFR 122.44(f).
    (b) An activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit if the discharge will exceed the highest of the following "notification levels":
        1) Five hundred micrograms per liter (500 µg/l);
        2) One milligram per liter (1 mg/l) for antimony;
        3) Ten (10) times the maximum concentration value reported for the pollutant in the permit application in accordance with §122.21(g)(7).
        4) The level established by the Director in accordance with §122.44(f).

17. Reporting of Non-Detects.
    (a) Compliance analysis conducted by the permittee or any contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated. See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, #4 regarding proper testing and detection limits used for sample analysis. For the purposes of this permit, the definitions in 40 CFR 136 apply; method detection limit (MDL) and laboratory established reporting limit (RL) are used interchangeably in this permit.
    (b) The permittee shall not report a sample result as "non-detect" without also reporting the MDL. Reporting "non-detect" without also including the MDL will be considered failure to report, which is a violation of this permit.
    (c) For the daily maximum, the permittee shall report the highest value; if the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method detection limit (MDL) or the highest reporting limit (RL), whichever is higher (e.g. <6).
    (d) When calculating monthly averages, zero shall be used in place of any value(s) not detected. Where all data used in the average are below the MDL or RL, the highest MDL or RL shall be reported as "<#" for the average as indicated in item (c).

PART X. PERMIT RENEWAL

1. Unless terminated, the permittee shall submit an application for the renewal of this permit by submitting *Form E-Application for General Permit* https://dnr.mo.gov/document-search/form-e-application-general-permit-under-missouri-clean-water-law-mo-780-0795 no later than thirty (30) days prior to the permit's expiration date.

2. When a facility submits a timely and complete application in accordance with 10 CSR 20-6.010(10)(C)1, and the Department is unable through no fault of the permittee to issue a renewed permit prior to expiration of the previous permit, the terms and conditions of the expired permit are administratively continued and will remain fully effective and enforceable until such time when a permit action is taken. Failure to submit a renewal application is a violation of the Missouri Clean Water Law. Failure to apply for renewal of a permit may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

3. As part of the complete application and as required by the federal NPDES eReporting rule, participation in the Department's Electronic Discharge Monitoring Report Submission System (eDMR) will be required. Facilities already participating in eDMR need not re-apply upon renewal. More information can be found at: http://dnr.mo.gov/env/wpp/edmr.htm.

PART XI. PERMIT TRANSFER

1. This permit may not be transferred to a new owner in any fashion except by submitting an *Application for Transfer of Operating Permit* https://dnr.mo.gov/sites/dnr/files/vfc/2018/10/main/780-1517-f.pdf signed by the seller and the buyer of the facility along with the appropriate modification fee. In some cases, revocation and reissuance may be necessary. Standard Condition Part 1, Subsection D.7 applies.

2. Facilities that undergo transfers of ownership without notice to the Department are considered to be operating without a permit.

PART XII. PERMIT TERMINATION

1. The permittee shall apply for permit termination when activities covered by this permit have ceased and no significant materials as defined by 10 CSR 20-6.200(1)(D)27 remain on the property or if on the property are stored in such a way as to have no potential for pollution. Whenever a release or a potential for release from a permitted facility is permanently eliminated, the existing permit may be terminated.

2. Proper closure of any effluent storage structure is required prior to permit termination. See https://dnr.mo.gov/document-search/wastewater-treatment-plant-closure-pub2568/pub2568 for more information on closure.

3. Permits do not terminate automatically upon expiration. In order to terminate this permit, the permittee shall notify the Department's appropriate regional office by completing and submitting *Request for Termination of Operating Permit* https://dnr.mo.gov/document-search/request-termination-operating-permit-mo-780-2814. The Department may require inspection of the premises prior to granting termination of a permit.

PART XIII. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET FOR MASTER GENERAL PERMIT
MO-R80F000

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 of Public Law 92-500 (as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (permit) are issued by the Missouri Department of Natural Resources (Department) under an approved program operated in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)2, a Fact Sheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the permit. A Fact Sheet is not an enforceable part of an MSOP.

Part I – Facility Information

Facility Type: Industrial
Facility SIC Code(s):
- 4512 Air Transportation, Scheduled
- 4513 Air Courier Services
- 4522 Air Transportation, Nonscheduled
- 4581 Airports, Flying Fields and Airport Terminal Services

Facility Description:
This permit authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle/aircraft maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations.

This permit establishes a Stormwater Prevention Plan (SWPPP) requirement for seasonal monthly monitoring for pollutants of concern from this type of facility covered under this permit. General permits shall contain Best Management Practice (BMP) requirements or monitoring and reporting requirements to keep the stormwater from becoming contaminated. The effluent limits are established in accordance with 10 CSR 20-7.031 in a manner deemed protective of all possible receiving stream conditions. Local conditions are not considered when developing conditions for a general permit. A facility may apply for a site-specific permit if they desire a review of site-specific conditions.

CHANGES TO THE RENEWAL OF THIS PERMIT INCLUDE:
- Updated language throughout the permit to current permit language used by the Department.
- Removed setbacks.
- Removed Biochemical Oxygen Demand (BOD) on Table A Stormwater Effluent Limitations and Monitoring Requirements.

Part II – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
Per Missouri Effluent Regulations (10 CSR 20-7.015), the waters of the state are divided into seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Effluent Limitations section. This permit applies to facilities discharging to the following water body categories:

- ☒ Missouri or Mississippi River [10 CSR 20-7.015(2)]
- ☒ Lakes or Reservoirs [10 CSR 20-7.015(3)]
- ☒ Losing Streams [10 CSR 20-7.015(4)]
- ☐ Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
- ☒ Special Streams [10 CSR 20-7.015(6)]
- ☒ Subsurface Waters [10 CSR 20-7.015(7)]
- ☒ All Other Waters [10 CSR 20-7.015(8)]

Missouri Water Quality Standards (10 CSR 20-7.031) defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's designated water uses shall be maintained in accordance with 10 CSR 20-7.031(4). A general permit does not take into consideration site-specific conditions.

MIXING CONSIDERATIONS:
This permit applies to receiving streams of varying low-flow conditions. Therefore, the effluent limitations must be based on the smallest low-flow streams considered, which includes waters without designated uses. As such, no mixing is allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)], and no Zone of Initial Dilution is allowed. [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:
There are no receiving water monitoring requirements recommended at this time.

Part III – Rationale and Derivation of Effluent Limitations & Permit Conditions

305(B) REPORT, 303(d) LIST, & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 305(b) of the Federal CWA requires each state identify waters not meeting Water Quality Standards and for which adequate water pollution controls have not been required. Water Quality Standards protect such beneficial uses of water as whole body contact, maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) list helps state and federal agencies keep track of waters which are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed which shall include the TMDL calculation. For facilities with an existing general permit before a TMDL is written on their receiving stream, the Department will evaluate the permit and may require any facility authorized by this general permit to apply for and obtain a site-specific operating permit. Requests for coverage of a new facility under this general permit will be evaluated on a case-by-case basis for facilities located within the watershed of an impaired water as designated on the 305(b) Report.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA Section 303(d)(4); CWA Section 402(c); 40 CFR Part 122.44(I)] requires a reissued permit to be as stringent as the previous permit with some exceptions.

- ✓ Applicable: Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
  - ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
    - Biochemical Oxygen Demand (BOD) in Table A; Stormwater Effluent Limitations and Monitoring Requirements has been removed. Five years of DMR data have shown that in every instance of a BOD exceedance there was a Chemical Oxygen Demand (COD) exceedance. However a COD exceedance does not always indicate a BOD exceedance. As there is an ELG for COD it has been determined that COD is a better indicator of water quality from the industry.
    - Setback language was removed from the permit. The setbacks in the old permit where applicable to land application of domestic waste and this permit does not authorize land application.

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation 40 CFR Part 122.44(d)(1)(i) requires effluent limitations for all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with 40 CFR Part 122.44(d)(iii) if the permit writer determines any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the water quality standard, the permit must contain effluent limits for the pollutant.

- ✓ Conservative assumption; a traditional statistical Reasonable Potential Analysis has not been conducted for this general permit; instead the Department has made a reasonable potential determination based on sources of pollutants related to water quality standards. Activities performed by facilities covered under this general permit were evaluated as to whether discharges have reasonable potential to cause or contribute to excursions of general criteria listed in 10 CSR 20-7.031(4). A reasonable potential to violate water quality standards is assumed for the pollutants of concern due to the nature of the activities carried out under this permit, resulting in the effluent limits contained in the permit.

- ✓ The permit writer reviewed industry materials, available DMR data, available past inspections, and other documents and research to evaluate general and narrative water quality reasonable potential for this permit. Permit writers also use the Department's permit writer's manual (https://dnr.mo.gov/water/business-industry-other-entities/technical-assistance-guidance/wastewater-permit-writers-manual), the EPA's permit writer's manual (https://www.epa.gov/npdes/npdes-permit-writers-manual), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding technology based effluent limitations, effluent limitation guidelines, and water quality standards. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the U.S. Environmental Protection Agency (EPA), research, and maintaining continuity of permits if necessary.
- ✓ Water Quality Standards: To the extent required by law, discharges to waters of the state shall not cause a violation of Missouri Water Quality Standards (10 CSR 20-7.031), including both specific and general criteria.
- ✓ General Criteria: The following water quality criteria shall be applicable to all waters of the state at all times, including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
  - (A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
    - ✓ For all outfalls, there is for reasonable potential (RP) for equipment cleaning activities covered under this general permit to cause the formation of putrescent, unsightly or harmful bottom deposits in waters of the state. This has been addressed by assigning an effluent limit for Total Suspended Solids and by requiring a SWPPP to address stormwater runoff. The Department has determined that the limit and BMP implementation for this pollutant are sufficient to protect water quality standard general criteria.
  - (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
    - ✓ For all outfalls, there is RP for equipment maintenance, lubrication and fueling activities exposed to stormwater and covered under this general permit to cause oil, scum or floating debris in waters of the state. This has been addressed by assigning limits for Oil and Grease and Ethylbenzene, narrative conditions prohibiting the discharge of waters with a visible sheen, and by requiring a SWPPP to address stormwater runoff. The Department has determined that the limits and BMP implementation for these pollutants are sufficient to protect water quality standard general criteria.
  - (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
    - ✓ For all outfalls there is RP for equipment washing, vehicle/aircraft rehabilitation and deicing activities covered under this general permit to cause unsightly color and/or turbidity in waters of the state. This has been addressed by assigning effluent limits for Total Suspended Solids, Nitrate, and Ammonia as Nitrogen and by requiring a SWPPP to address stormwater runoff. The Department has determined that the effluent limitations and BMP implementation for this pollutant are sufficient to protect water quality standards general criteria.
  - (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
    - ✓ The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.
  - (E) Waters shall maintain a level of water quality at their confluences to downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including waters of another state.
    - ✓ This criterion was not assessed for antibacksliding as this is a new requirement, approved by the EPA on July 30, 2019.
  - (F) There shall be no significant human health hazard from incidental contact with the water.
    - ✓ Much like the condition above, the permit writer considered specific toxic pollutants when writing this permit, including those pollutants could cause human health hazards. There is no reasonable potential for stormwater from this industry to cause a significant health hazard from incidental contact with the water.
  - (G) There shall be no acute toxicity to livestock or wildlife watering.
    - ✓ The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants could be discharged in toxic amounts. These effluent limitations are protective of livestock and wildlife watering.
  - (H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
    - ✓ It has been established any chemical changes are covered by the specific numeric effluent limitations established in the permit.
  - (I) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
    - ✓ There are no solid waste disposal activities or any operation found in this industry which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

ANTIDEGRADATION:

Antidegradation policies ensure protection of water quality for a particular water body on a pollutant-by-pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as an Outstanding National Resource Water or Outstanding State Resource Water [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

The Department has determined the best avenue forward for implementing the Antidegradation requirements into general stormwater permits is by requiring the appropriate development and maintenance of a SWPPP. The SWPPP must identify all reasonable and effective Best Management Practices (BMPs), taking into account environmental impacts and costs. This analysis must document why no discharge or no exposure options are not feasible at the facility. This selection and documentation of appropriate control measures will then serve as the analysis of alternatives and fulfill the requirements of the Antidegradation Rule and Implementation Procedure 10 CSR 20-7.031(3) and 10 CSR 20-7.015(9)(A)5.

Any facility seeking coverage under this permit which undergoes expansion or discharges a new pollutant of concern must update their SWPPP and select reasonable and cost effective new BMPs. New facilities seeking coverage under this permit are required to develop a SWPPP including this analysis and documentation of appropriate BMPs. Renewal of coverage for a facility requires a review of the SWPPP to ensure the selected BMPs continue to be appropriate.

✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

BENCHMARKS:

✓ Not Applicable; this facility has stormwater-only outfalls with effluent limitations and does not contain benchmarks.

BEST MANAGEMENT PRACTICES:

Minimum, site-wide BMPs are established in this permit to ensure all permittees are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these BMPs are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum BMPs are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state; therefore, pollutants cannot be released unless in accordance with RSMo 644.011 and 644.016 (17).

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

This special condition reiterates the federal rules found in 40 CFR 122.44(f) and 122.42(a)(1). In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as "…any pollutant listed as toxic under section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA." Section 307 of the CWA then refers to those parameters found in 40 CFR 401.15. The permittee should also consider any other toxic pollutant in the discharge as reportable under this condition.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:

Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.

✓ Not applicable; this permit does not authorize discharge of domestic waste, sludge, or biosolids. This includes discharges to onsite lagoons. If a facility has an onsite lagoon, they may need to obtain a separate general or site specific permit to cover discharges or land application from this structure.

✓ Not applicable; this permit does not authorize discharge or land application of biosolids or sludge. A separate permit, either general or site specific, must be obtained for these activities.

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The industries covered under this permit have an associated Effluent Limit Guideline (ELG) which is applicable to the stormwater discharges in this permit and is applied under 40 CFR 125.3(a). The limits in the ELG are found at 40 CFR 449 https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-449. Should Reasonable Potential be established for any particular parameter and water-quality derived effluent limits are more protective of the receiving water's quality, the WQS will be used as the limiting factor in accordance with 40 CFR 122.44(d) and 10 CSR 20-7.015(9)(A). See Part IV: EFFLUENT LIMITS DETERMINATION.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is not transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period, as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

To assist the facility in entering data into the eDMR system, the permit describes limit sets in each table in Part A of the permit. The data entry personnel should use these identifiers to ensure data entry is being completed appropriately.

GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, RSMo 644.076.1, as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

LAND DISTURBANCE:
- ✓ Not applicable; this permit does not provide coverage for land disturbance activities. The facility may obtain a separate land disturbance permit (MORA) online at https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance. MORA permits do not cover disturbance of contaminated soils; however, site specific permits can be modified to include appropriate controls for land disturbance of contaminated soils by adding site-specific BMP requirements and additional outfalls.

MAJOR WATER USER:
Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statutes Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/document-search/frequently-asked-major-water-user-questions-pub2236/pub2236
- ✓ Facilities meeting this definition must register with the Water Resources Center as soon as possible. https://apps5.mo.gov/MWU/

NUTRIENT MONITORING:
- ✓ This is a stormwater only permit therefore it is not subject to provisions found in 10 CSR 20-7.015 per 10 CSR 20-7.015(1)(C).

OIL/WATER SEPARATORS:
Oil water separator (OWS) tank systems are frequently found at industrial sites where process wastewater and stormwater may contain oils and greases, oily process wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.
- ✓ Applicable; Oil collected is an industrial sludge, is identified as used oil, and must be disposed of according to 10 CSR 25-11.279. 40 CFR 279.20(b)(2)(ii)(B) indicate that OWS operated for compliance with the CWA are not "processors" but are still "generators" of used oil and fall under the used oil requirements for disposal.

OPERATOR CERTIFICATION REQUIREMENTS:

✓ Not applicable; the facilities covered under this permit are not required to have a certified operator.

PERMIT SHIELD:

The permit shield provision of the Clean Water Act (Section 402(k)) and Missouri Clean Water Law (644.051.16 RSMo) provides that when a permit holder is in compliance with its NPDES permit or MSOP, they are effectively in compliance with certain sections of the Clean Water Act and equivalent sections of the Missouri Clean Water Law. In general, the permit shield is a legal defense against certain enforcement actions, but it is only available when the facility is in compliance with its permit and satisfies other specific conditions, including having completely disclosed all discharges and all facility processes and activities to the Department at time of application. It is the facility's responsibility to ensure that all potential pollutants, waste streams, discharges, and activities, as well as wastewater land application, storage, and treatment areas, are all fully disclosed to the Department at the time of application or during the draft permit review process. Subsequent requests for authorization to discharge additional pollutants or expanded or newly disclosed flows, or for authorization for previously unpermitted and undisclosed activities or discharges, will likely require permit modification or may require the facility be covered under a site specific permit.

PRETREATMENT PROGRAM:

✓ Not Applicable; the facilities covered under this permit, at this time, are not required to meet pretreatment requirements under an ELG.

PUBLIC NOTICE OF COVERAGE FOR AN INDIVIDUAL FACILITY:

Public Notice of reissuance of coverage is not required unless the facility is a specific type of facility as defined in 10 CSR 20-6.200(1). The need for an individual public notification process shall be determined and identified in the permit [10 CSR 20-6.020(1)(C)5.].

✓ Applicable; issuance of coverage to an individual airports under this permit for the first time shall be placed on Public Notice for thirty (30) days in accordance with 10 CSR 20-6.020(1)(B) & (C)2.

SCHEDULE OF COMPLIANCE (SOC):

✓ Not Applicable: This permit does not contain a SOC.

SETBACKS:

Setbacks are common elements of permits and are established to provide a margin of safety in order to protect the receiving water from accidents, spills, unusual events, etc.

✓ Discharge to the watersheds of a Metropolitan No-Discharge Stream (10 CSR 20-7.031 Table F) is authorized by this permit if the discharges are in compliance with 10 CSR 20-7.015(5) and 10 CSR 20-7.031(7). Discharges to these watersheds are authorized for uncontaminated cooling water, non-contaminated stormwater flows, permitted stormwater discharges only.

✓ It is the best professional judgment of the permit writer to allow discharges to losing streams as the effluent is stormwater only. This permit continues to prohibit the discharge of effluent to sinkholes or other ground openings which empty directly to groundwater. The issuing authority will assess whether a discharge from a facility is eligible for this permit based on the likelihood of effluent having reasonable potential to enter and affect groundwater.

✓ This permit authorizes stormwater discharge in Outstanding State Resource Waters (OSRW) so long as no degradation of water quality occurs in the OSRW due to discharges from the permitted facility per 10 CSR 20-7.015(6)(B) and 10 CSR 20-7.031(3)(C). The Antidegradation Analysis performed by the facility for the SWPPP should include the determination of no degradation. Additionally, if the facility is found to be causing degradation during an inspection or through complaint investigations, it will be required to become a no discharge facility or obtain a site specific permit with more stringent monitoring and SWPPP requirements.

✓ For facilities operating within the watershed of Outstanding National Resource Water, which includes the Ozark National Riverways and the National Wild and Scenic Rivers System, no discharge facilities are authorized. This includes no-discharge of stormwater.

✓ Facilities located within the watershed of an impaired water as designated in the 305(b) Report must be evaluated on a case-by-case basis for inclusion under this permit. Facilities found to be discharging the listed pollutant(s) of concern for any impaired water may be required to obtain a site-specific permit. Missouri's impaired waters can be found at https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters. The pollutants of concern at the facilities covered under this permit are found in Table A. The Department will assess the pollutants of concern for impaired waters on the 305(b) report and evaluate the reasonable potential for the facility to cause further impairment to the receiving stream.
If the facility is not expected to cause further impairment to the receiving stream, this general permit may be issued to the facility.

SLUDGE – DOMESTIC BIOSOLIDS:

✓ This permit does not authorize discharge or land application of biosolids. Sludge/biosolids must be removed by contract hauler, incinerated, stored in the lagoon, etc.

SLUDGE – INDUSTRIAL:
✓ Not applicable; sludge is not generated by this industry.

SPILL REPORTING:
Any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply when the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. https://revisor.mo.gov/main/OneSection.aspx?section=260.500&bid=13989&hl=

Underground and above ground storage devices for petroleum products, vegetable oils, and animal fats may be subject to control under Spill Prevention, Control, and Countermeasure (SPCC) and are expected to be managed under those provisions, if applicable. Substances regulated by federal law under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) which are transported, stored, or used for maintenance, cleaning or repair shall be managed according to the provisions of RCRA and CERCLA.

STANDARD CONDITIONS:
The standard conditions Part I attached to this permit incorporate all sections of 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the permittee to ascertain compliance with this permit, state regulations, state statutes, federal regulations, and the Clean Water Act.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater Management Plan, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of storm water discharges. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

A SWPPP must be prepared if the SIC code for the facility is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the effluent limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed, the facility will employ the control measures determined to be adequate to achieve the effluent limits discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the effluent limit, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP.
This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

The EPA has developed factsheets on the pollutants of concern for specific industries along with the BMPs to control and minimize stormwater (https://www.epa.gov/npdes/stormwater-discharges-industrial-activities). Along with EPA's factsheets, the International Stormwater BMP database (http://bmpdatabase.org) may provide guidance on BMPs appropriate for specific industries.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (https://dnr.mo.gov/document-search/antidegradation-implementation-procedure).

Alternative analysis evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The alternative analysis evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of the *Antidegradation Implementation Procedure* defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The alternative analysis evaluation must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure*, Section II.B.

If parameter-specific numeric effluent limit exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the effluent limit values established in the permit. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the effluent limit; 2) financial data of the company and documentation of cost associated with BMPs for review; and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of a site specific permit application, which includes an appropriate fee; Form A – Application for Non-Domestic Permit Under Missouri Clean Water Law (Form 780-1479) and Form C – Application for Discharge Permit – Manufacturing, Commercial, Mining, Silviculture Operations, and Stormwater (Form 780-1514) can be found at: https://dnr.mo.gov/forms-applications.

✓ Applicable: A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate control practices specific to site conditions, and provide for maintenance and adherence to the plan.

UNDERGROUND INJECTION CONTROL (UIC):

✓ Not applicable; this permit does not authorize subsurface wastewater systems or other underground injection. These activities must be assessed under an application for a site specific permit if not permitted otherwise.

VARIANCE:

✓ Not Applicable: This permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITATIONS:

✓ Not Applicable; mixing is not authorized by this general permit. Effluent limitations were determined using the most protective applicable standards and following TSD recommendations.

WATER QUALITY STANDARDS:

Per 10 CSR 20-7.031(4), General Criteria shall be applicable to all waters of the state at all times, including mixing zones. Additionally, 40 CFR 122.44(d)(1) directs the Department to include in each NPDES permit conditions to achieve water quality established under Section 303 of the CWA, including state narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

✓ Not Applicable: At this time, permittees are not required to conduct a WET test.

Part IV – Effluent Limitations Determination

EPA Multi-sector General Permit (MSGP)
The MSGP was used to research and support best professional judgment decisions made in establishing technology-based effluent benchmarks for this general permit which are consistent with national standards. EPA applies the requirements in Sectors S to stormwater discharges associated with industrial activity from Air Transportation Facilities. The permit writer determined the standards established by the MSGP are achievable and consistent with federal regulations.

Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to permit modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS FOR TABLE A:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	SAMPLE TYPE
FLOW	GPD	*	*	SAME	SEASONAL MONTHLY	24 HR. EST.
PH (S.U.)	SU	6.5 – 9	6.5 – 9	SAME	SEASONAL MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS	MG/L	70	70	SAME	SEASONAL MONTHLY	GRAB
ETHYLBENZENE	MG/L	0.32	0.32	SAME	SEASONAL MONTHLY	GRAB
OIL & GREASE (MG/L)	MG/L	15	10	SAME	SEASONAL MONTHLY	GRAB
CHEMICAL OXYGEN DEMAND	MG/L	120	90	SAME	SEASONAL MONTHLY	GRAB
BIOCHEMICAL OXYGEN DEMAND$_5$	MG/L	90	60	SAME	SEASONAL MONTHLY	GRAB
CHLORIDE	MG/L	860	860	SAME	SEASONAL MONTHLY	GRAB
AMMONIA AS N FOR > 1,000 JET DEPARTURES ANNUALLY	MG/L	14.7	14.7	SAME	SEASONAL MONTHLY	GRAB
AMMONIA AS N FOR < 1,000 JET DEPARTURES ANNUALLY	MG/L	*	*	SAME	SEASONAL MONTHLY	GRAB
NITRATE	MG/L	*	*	SAME	SEASONAL MONTHLY	GRAB

* Monitoring and reporting requirement only

PHYSICAL:

Flow
In accordance with [40 CFR Part 122.44(i)(1)(ii)], the estimated volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain estimated effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in gallons per day (GPD).

CONVENTIONAL:

Chemical Oxygen Demand (COD)
Monitoring with 120 mg/L daily maximum effluent limit is included using the permit writer's best professional judgment. EPA applies the requirements in Sectors S to stormwater discharges associated with industrial activity from Air Transportation Facilities primarily deicing operations. COD monitoring allows the permittee to identify increases in COD may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. The effluent limit value falls within the range of values implemented in other permits having similar industrial activities and is achievable through proper BMP controls.

Nitrate: Monitoring only requirement was carried over from previous permit. This parameter is monitored because of the deicing chemicals used at some airports with contain nitrate which can cause undesirable conditions in receiving streams. This parameter has been evaluated during the subsequent permit cycle. Based off of data collected there is concern that nitrate may cause undesirable conditions, nitrate will continue to be monitored.

Oil & Grease
15 mg/L daily maximum; 10 mg/L monthly average, continued from the previous permit to this permit. Per 10 CSR 20-7.031 Table A1: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR 20: 7.031 (4). The daily maximum was calculated using the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001). Section 5.4.2 indicates the waste load allocation can be set to the chronic standard. When the chronic standard is multiplied by 1.5, the daily maximum can be calculated. Hence, 10 * 1.5 = 15 mg/L for the daily maximum.

Ethylbenzene: The previous permit effluent limit of 0.32 mg/L, based on water quality standards for protection of aquatic life, was retained in this permit. Based on the water quality standards in 10 CSR 20-7.031 Table A, the Department has determined that this value is protective of state general criteria cited above and technologically achievable.

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall.

Total Suspended Solids (TSS)
Stormwater: Monitoring with a daily maximum effluent limit of 70 mg/L. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS indicating uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. The effluent limit is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

Chloride: Chlorides found in some deicing chemicals authorized in this permit and can be harmful to aquatic life. The previous permit required monitoring only. An effluent limitation of 860 mg/L has been added to protect water quality. The acute water quality standard for protection of aquatic life is applied directly because the discharge only occurs during ice or snowmelt.

NUTRIENTS:

Ammonia as N: An effluent limit is set because deicing chemicals containing urea have been demonstrated to have toxic impacts to receiving streams[1]. Per Effluent Limit Guidelines in 40 CFR 449.10, all airports with greater than or equal to 1,000 jet (non-propeller) aircraft departures must either use only non-urea-containing deicers OR they must meet the effluent limit of 14.7 mg/L. An analysis of available data demonstrates that in the past, airports under this general permit discharged well below the water quality based effluent limit of 12.1 mg/L (results range from 0.015 mg/L to 10 mg/L, average of 0.3 mg/L, n = 173 samples). In the previous permit cycle, annual reporting was due in October and consequently most monitoring was conducted in September. This makes extrapolation of the available data to evaluate effluent values during the winter season difficult at best. Because of limitations that exist with the available data, the Department intends to reevaluate this limitation in subsequent permit cycles to determine the appropriateness of water quality based limits for this parameter. For these reasons and in light of the fact that stormwater discharges are short term and intermittent, the Department has made the reasonable potential determination that the technology based limit representing the degree of effluent reduction available by the application of best available technology, along with the evaluation and implementation of BMPs as documented in the SWPPP, is appropriate at this time.

Part V– Sampling and Reporting Requirements

SAMPLING FREQUENCY:
Sampling frequency is established in accordance with Department policy. Effluent limitations are expressed in a daily maximum and a monthly average. Seasonal monthly is required depending on the parameter. Results from samples may be submitted as both the daily maximum and the monthly average. If the facility collects multiple samples during any month, the permit requires the facility to submit a monthly average. If no discharges occur during a sampling period, report as "no discharge."

[1] Corsi, S., Booth, N., Hall, D. USGS Aircraft and runway deicers at General Mitchell International Airport, Milwaukee, Wisconsin, USA. 1. Biochemical Oxygen Demand and Dissolved Oxygen in receiving streams. Environmental Toxicology and Chemistry, Vol. 20, No. 7, pp. 1474-1482, 2001.

SAMPLING TYPE JUSTIFICATION:
Sampling type was continued from the previous permit. The sampling types are representative of the discharges and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:
Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department and incorporated within this permit. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough the method detects and quantifies the level of pollutant in the discharge; or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive.

Part VI – Administrative Requirements

On the basis of preliminary staff review and applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the permit. The proposed determinations are tentative pending public comment.

PUBLIC MEETING:
A public meeting is not required for general permits with fewer than 50 General Permit Covered Facilities (GPCFs). MOR80F0000 covers eighteen GPCFs. A public meeting was held on May 18th, 2022.

PUBLIC NOTICE:
The Department shall give public notice when a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest or because of water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and facility must be notified of the denial in writing.

The Department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than thirty (30) days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Notice period for this permit starts August 12, 2022 and ends September 12, 2022. No comments were received during the Public Notice period.

DATE OF FACT SHEET: 08/11/2022

COMPLETED BY:

CODY GARNER
ENVIRONMENTAL SPECIALIST III
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - STORMWATER AND CERTIFICATION UNIT
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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions
Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. **Monitoring Requirements**.
   a. Records of monitoring information shall include:
      i. The date, exact place, and time of sampling or measurements;
      ii. The individual(s) who performed the sampling or measurements;
      iii. The date(s) analyses were performed;
      iv. The individual(s) who performed the analyses;
      v. The analytical techniques or methods used; and
      vi. The results of such analyses.
   b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. **Test Procedures**. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
   a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
   b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1);
      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

2. **Non-compliance Reporting.**
   a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.

c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

3. **Anticipated Noncompliance**. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

6. **Other Information**. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

7. **Discharge Monitoring Reports.**
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. **Definitions.**
   a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
   b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Bypass Requirements.**
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
   b. Notice.
      i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
      ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. Prohibition of bypass.
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement

imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. **Duty to Reapply.**
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. **Proper Operation and Maintenance**. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. **Permit Actions.**
   a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      iv. Any reason set forth in the Law or Regulations.
   b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. **Permit Transfer.**
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
    d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
    a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
    b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
    a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
    b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
    c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

REQUEST FOR TERMINATION OF OPERATING PERMIT

(REPLACES TERMINATION FORMS H AND J)

FOR OFFICE USE ONLY
DATE RECEIVED

IF A FACILITY OR SITE HAS BEEN SOLD, BUT PERMITTED ACTIVITIES HAVE NOT CEASED, A TRANSFER OF OWNERSHIP FORM (MO 780-1517) MUST BE COMPLETED RATHER THAN A TERMINATION FORM.

ALL APPLICABLE SECTIONS OF THIS FORM MUST BE COMPLETED.

1. FACILITY INFORMATION

PERMIT NUMBER	COUNTY		
NAME OF FACILITY			
PHYSICAL ADDRESS	CITY	STATE	ZIP CODE

FACILITY CONTACT NAME	FACILITY CONTACT TELEPHONE NUMBER	FACILITY CONTACT EMAIL

2. OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE		
ADDRESS	CITY	STATE	ZIP CODE
EMAIL			

3. CONTINUING AUTHORITY

NAME	TELEPHONE NUMBER WITH AREA CODE		
ADDRESS	CITY	STATE	ZIP CODE
EMAIL			

4. REASON FOR TERMINATION REQUEST (CHECK ONE)

☐ Permitted activities have ceased, or facility is closed (must select facility type in section five and attach photographs or any other supporting documents as required).

☐ General Permit MO-G _____or MO-R _____ has been issued and covers all regulated activities.

☐ Site specific permit MO- _____ has been issued and covers all regulated activities.

☐ Facility has obtained a “No Exposure” certification, MO-NX_____.

☐ Industrial activity (SIC Code # _____) is not regulated.

☐ For CAFOs, facility size is unregulated (Class II and smaller operations only).

☐ Other (Specify).

5. FACILITY TYPE (CHECK ONE FACILITY TYPE, COMPLETE ONLY IF PERMITTED ACTIVITY HAS CEASED OR FACILITY HAS CLOSED)

☐ For land disturbance sites, the area is stabilized; perennial vegetation, pavement, buildings or other permanent structures cover all areas that have been disturbed; no further land disturbance activities are planned; all building construction (commercial or residential) is completed; temporary best management practices are removed, and construction equipment is removed. With respect to areas that have been vegetated, vegetation cover shall be at least 70 percent over 100 percent of the site not covered in impervious material. Attach photographs showing stabilized areas.

☐ For wastewater treatment plants, the treatment plant is removed and sludge was removed and properly disposed of, and a closure plan in accordance with 10 CSR 20-6.010(12) or 10 CSR 20-6.015(5) was approved and implemented. Attach documentation required by the approved closure plan and photographs of the closed area. See the *Water Treatment Plant Closure* -PUB2568 fact sheet at dnr.mo.gov/pubs/pub2568.htm for more information on closure requirements for wastewater treatment plants.

☐ For industrial facilities, regulated activities have ceased, no "significant materials" remain on-site and disturbed areas are properly stabilized or vegetated. The area is stabilized when perennial vegetation, pavement, buildings or structures using permanent materials cover all areas that have been disturbed. Vegetation cover shall be at least 70 percent over 100 percent of the site not covered in impervious material. Attach applicable closure documents and photographs of the closed area that demonstrate no permitted activities or materials remain.

☐ For quarries or sand and gravel operations, submit documentation of release from the department's Land Reclamation Program.

☐ For landfills, official closure has been received from department's Solid Waste Management Program (SWMP); cap is vegetated as required by SWMP; and any additional industrial activities are permitted appropriately (i.e., transfer stations, mulching operations, land disturbance, etc.). Attach the official SWMP closure letter and permit numbers of any continuing active industrial or land disturbance activities.

☐ For CAFOs

- ☐ Class I CAFOs must properly close lagoons and waste storage structures per a closure plan in accordance with 10 CSR 20-6.300(6) and approved by the department. Attach photographs of closed lagoons. Also attach any additional information that supports closure of the facility.

- ☐ Class II CAFOs must close waste storage structures in accordance with 10 CSR 20-6.300(6)(B), or shall continue to maintain all storage structures so there is no discharge to waters of the state. Attach photographs of closed or re-purposed lagoons, or an explanation of "no discharge" methods. Also attach any additional information that supports closure of the facility.

6. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
SIGNATURE	DATE SIGNED

7. MAIL COMPLETED COPY TO:

For Site Specific (MO-), Abandoned Mine And Land Reclamation (MO-G05), Land Disturbance By County Or City (MO-R100), Pesticide Application (MO-G87), Sewer Extension Construction (MO-GC) and CAFO (MO-G01, MO-GS1) Permit Terminations:

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
Attn: Operating Permits Section
P.O. Box 176
Jefferson City, MO 65102-0176

For General Permit Terminations (MO-G or MO-R):

Send to the appropriate regional office.
Regional office is determined based on the county where the facility is physically located.

To determine the correct regional office for the permitted facility, see **dnr.mo.gov/regions.**

ST. LOUIS COUNTY

David Shelton

From: Marshall, Gregory <GMarshall@stlouiscountymo.gov>
Sent: Tuesday, March 26, 2024 12:04 PM
To: Todd Ehlen
Cc: David Shelton; Schubert, David; Ryder, Justin; George Stock
Subject: RE: Hangar Development Project Spirit Airport Chesterfield MO
Attachments: SpiritSkyClubHangars.pdf

Todd,

St. Louis County provides the following comments for the Spirit of STL AP (18460 Olive Street Rd) SDSP:

1. Conform to the requirements and/or recommendations of the St. Louis County Department of Transportation regarding Spirit Airpark East.
2. Access to this development from Spirit Airpark East shall be located in accordance with St. Louis County Access Management Guidelines and shall provide required sight distance and constructed to Saint Louis County standards as directed by St. Louis County Department of Transportation.
3. Installation of Landscaping and Ornamental Entrance Monument or Identification Signage construction shall be reviewed by the Saint Louis County Department of Transportation for sight distance consideration and approved prior to installation or construction.
4. The developer is advised that utility companies will require compensation for relocation of their facilities with public road 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.
5. The developer shall contribute a Traffic Generation Assessment (TGA) to the trust fund name Trust Fund established by ordinance Number 556. This contribution shall not exceed an amount established by multiplying the ordinance-required parking spaces for the difference between the existing and proposed uses by the following rate schedule:

Type of Development	Required Contribution
Commercial	$ 3.34/SF
Office	$ 2.34/SF
Industrial	$8,060.83/Acre
Stormwater	$3,357.52/Acre
Water Main	$1,058.23/Acre

If types of development proposed differ from those listed, rates shall be provided by the Saint Louis County Department of Transportation.

Allowable credits for required roadway improvements will be awarded as directed by the Saint Louis County Department of Transportation.

6. Conform to the requirements and/or recommendations of the St. Louis County Department of Transportation regarding Spirit Airpark East.
7. The amount of the required contribution/improvements, if not approved for construction by January 1, 2025, shall be adjusted on that date and on the first day of January in each succeeding year thereafter

in accord with the construction cost index as determined by the Saint Louis County Department of Transportation.

8. Traffic generation assessment contributions shall be deposited with Saint Louis County prior to the issuance of building permits. If development phasing is anticipated, the developer shall provide the traffic generation assessment contribution prior to issuance of building permits for each phase of development.
9. Prior to Special Use Permit issuance by the Saint Louis County Department of Transportation, 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 Transportation to guarantee completion of the required roadway improvements.
10. Provide adequate temporary off-street parking for construction employees. Parking on non-surfaced areas shall be prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions.
11. Include the zoning ordinance conditions in the plans
12. Add the following notes to the plans:
    a. All proposed improvements shall be constructed to St. Louis County Standards.
    b. All grading and drainage to be in conformance with St. Louis County and MSD Standards.
    c. All driveways intersecting St. Louis County Arterial and classified roadways shall be as directed by the St. Louis County Department of Transportation.
    d. Storm water shall be discharged at an adequate natural discharge point. Sinkholes are not adequate discharge points
    e. Access to this development shall be constructed to St. Louis County standards as directed by the St. Louis County Department of Transportation.
    f. All proposed access to St. Louis County roads for new development shall meet minimum St. Louis County sight distance requirements.
    g. Any entity that performs work on St. Louis County maintained property shall provide the County with a Certificate of Insurance evidencing general
    h. 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.
    i. All above-ground utilities or other potential obstructions within the St. Louis County road right-of-way, shall have a minimum setback, as directed by the St. Louis County Department of Transportation, as prescribed in Section 5.10 of the St. Louis County Design Criteria Manual 'Roadside Design Requirements'

Please contact us with any questions.
Sincerely,

Greg Marshall, P.E.
Supervisor, Project Managers - Civil Plan Review & Special Use Permits
St. Louis County Dept. of Transportation & Public Works
41 S. Central Ave., 5th Fl. | Clayton, MO 63105
gmarshall@stlouiscountymo.gov
314-615-8548

stlouiscountymo.gov

OPPORTUNITY CENTRAL

From: Todd Ehlen <tehlen@cmtengr.com>
Sent: Thursday, February 22, 2024 2:28 PM

To: Marshall, Gregory <GMarshall@stlouiscountymo.gov>
Cc: David Shelton <dshelton@cmtengr.com>
Subject: [External Email] RE: Hangar Development Project Spirit Airport Chesterfield MO

Greg, I don't think I have seen anything. Can you please provide the review/approval of the concept plan.

Thanks

Todd

TODD M. EHLEN PE | **Crawford, Murphy & Tilly** | w 314.571.9105 | m 314.456.4418
Civil Site Services Group Manager

From: Marshall, Gregory <GMarshall@stlouiscountymo.gov>
Sent: Monday, February 5, 2024 1:56 PM
To: Todd Ehlen <tehlen@cmtengr.com>
Cc: David Shelton <dshelton@cmtengr.com>
Subject: RE: Hangar Development Project Spirit Airport Chesterfield MO

Todd and David,
Thanks for the email and plans. We will review this and send a response this week.
Thanks,

Greg Marshall, P.E.
Supervisor, Project Managers - Civil Plan Review & Special Use Permits
St. Louis County Dept. of Transportation & Public Works
41 S. Central Ave., 5th Fl. | Clayton, MO 63105
gmarshall@stlouiscountymo.gov
314-615-8548

stlouiscountymo.gov

OPPORTUNITY CENTRAL

From: Todd Ehlen <tehlen@cmtengr.com>
Sent: Saturday, February 3, 2024 10:06 AM
To: Marshall, Gregory <GMarshall@stlouiscountymo.gov>
Cc: David Shelton <dshelton@cmtengr.com>
Subject: [External Email] FW: Hangar Development Project Spirit Airport Chesterfield MO

Greg,

David is in my group and is working on a hanger project in Chesterfield on Spirit Airpark East, located on Airport property. As part of the City's review process, we need to obtain STL County's conceptual approval on the SDP.

Can you please review this and provide comments or conceptual approval?

Thanks

Todd

TODD M. EHLEN PE | **Crawford, Murphy & Tilly** | w 314.571.9105 | m 314.456.4418
Civil Site Services Group Manager

From: David Shelton <dshelton@cmtengr.com>
Sent: Friday, February 2, 2024 4:08 PM
To: DLCentralStatesConstruction@charter.com
Cc: Todd Ehlen <tehlen@cmtengr.com>
Subject: Hangar Development Project Spirit Airport Chesterfield MO

Attached is a Site Development Plan. The address is 18460 Olive Street Rd.

Thanks,

David

David Shelton, PE | Senior Engineer - Building & Site Services

Crawford, Murphy & Tilly | **Engineers & Consultants**
Gateway Tower | One Memorial Drive, Suite 500 | St. Louis, MO | 63102
Direct: 314.571.9071 | Mobile: 636.236.4491 | Fax: 314.436.0723 dshelton@cmtengr.com


Centered in Value

USACE

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO

March 18, 2024

Regulatory Branch
File Number: MVS-2024-90

Crawford, Murphy & Tilly
Attn: Todd Ehlen
Gateway Tower
One Memorial Drive, Suite 500
St. Louis, MO 63102

Dear Mr. Ehlen:

We have reviewed the submittal regarding proposed site plans for a hanger development near the Spirit of St. Louis Airport in Chesterfield, St. Louis County, Missouri. The plan shows the construction of two steel-frame hangar buildings and associated taxi lanes at the airport. The project is located in Section 03, Township 045 North, Range 03 East, St. Louis County, Illinois. Specifically, the project can be found at Latitude 38.66834 and Longitude -90.6564.

Based upon a review of the submitted information and a review of the scope of work, we determined that the proposed activities do not require a Department of the Army authorization under the Clean Water Act or Section 404 of the Clean Water Act. Variations from these plans shall constitute a violation of Federal law and may result in the revocation of the permit.

This review is applicable only to the permit program administered by the Corps of Engineers. It does not eliminate the need to obtain other federal, state or local approvals before beginning work. This permit does not convey property rights, nor authorize any injury to property or invasion of other rights.

If you have any questions, please contact me at (314) 331-8811. Please refer to file number **MVS-2024-90**. The St. Louis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to go to our Customer Service Survey found on our web site at https://regulatory.ops.usace.army.mil/customer-service-survey/

Sincerely,

Alan Edmondson
Project Manager
Regulatory Branch

Copy:
USACE – Wells
Horner & Shifrin, Inc. - Karen Frederich

GEOTECHNICAL REPORT

Exploration of Subsurface Conditions and Foundation Recommendations

SPIRIT OF SAINT LOUIS AIRPORT
SPIRIT AIRPARK EAST DRIVE – PHASE 1
CHESTERFIELD, MISSOURI

January 24, 2024

Hoffman General Contracting, Inc.
General Contractor

JGE No. 23383.1

JACOBI GEOTECHNICAL ENGINEERING, INC.
798 Hoff Road, O'Fallon, Missouri 63366
636-978-7112

110 West Main Street, Suite B, Belleville, Illinois 62220
618-538-6666

JACOBI GEOTECHNICAL ENGINEERING, INC.

January 24, 2024

Mr. Mitch Hoffman
Hoffman General Contracting, Inc.
2310 Ashley Place Drive
Saint Charles, Missouri 63303

RE: Geotechnical Report
Spirit of Saint Louis Airport – Spirit Airpark East Drive – Phase 1
Chesterfield, Missouri
JGE No. 23383.1

Dear Mr. Hoffman:

Enclosed is our report, **Exploration of Subsurface Conditions and Foundation Recommendations – Spirit of Saint Louis Airport – Spirit Airpark East Drive – Phase 1 – Chesterfield, Missouri**, dated January 2024.

We appreciate the opportunity to be of service to you on this project. If you have any questions or comments concerning this report, please call.

Sincerely,

Jacobi Geotechnical Engineering, Inc.

Christine E. Dayton, P.E.
Project Engineer

Allen G. Minks, P.E.
Geotechnical Manager

CED/AGM/jvh

Distribution: Mitch Hoffman, Hoffman General Contracting, Inc.,
PDF via email: mhhgci@gmail.com

Table of Contents

List of Figures and Appendix

Exploration of Subsurface Conditions
and
Foundation Recommendations

SPIRIT OF SAINT LOUIS AIRPORT – SPIRIT AIRPARK EAST DRIVE – PHASE 1
CHESTERFIELD, MISSOURI

1.0 INTRODUCTION

At the request of Mr. Mitch Hoffman of Hoffman General Contracting, Inc. (Hoffman), Jacobi Geotechnical Engineering, Inc. (JGE) conducted a subsurface exploration for improvements to the existing Spirit of Saint Louis Airport in Chesterfield, Missouri. The purpose of our exploration was to characterize and observe the subsurface conditions, provide recommendations for foundations, and address geotechnical aspects of the project. Our services were provided in general accordance with our proposal dated and authorized by Mr. Hoffman on December 28, 2023.

2.0 PROJECT AND SITE DESCRIPTION

A hangar addition is proposed at the Spirit of Saint Louis Airport in Chesterfield, Missouri. The Location Plan, Figure 1, shows the site relative to the surrounding roads and topography.

The Phase 1 addition will generally be located south and southeast of the cul-de-sac of Spirit Airpark East Drive. Two hangar structures are planned; one about 112 feet by 310 feet, which will contain 10 individual hangar units (62 feet by 56 feet), and one about 112 feet by 558 feet, which will contain 18 individual hangar units. Specific building details are unknown but reported to be pre-engineered, metal-shell structures supported on shallow foundations with a slab-on-grade. Concrete taxi and apron pavements are proposed around the buildings. The proposed site improvements are shown on the Site Plan, Figure 2.

Topographic survey and grading plans were unavailable. Based on the St. Louis County parcel data and Google Earth data, the site surface is grass covered, relatively flat, and near elevation (El.) 460 to 461 feet across the proposed building area. Minimal grading, less than 2 feet of cut or fill, is anticipated.

The structural loads were unavailable. We anticipate the structures to be lightly-loaded, with wall loads less than 2,000 pounds per linear foot, column loads less than 75 kips, and interior floor loads less than 200 pounds per square foot.

3.0 FIELD EXPLORATION

The field exploration consisted of drilling 11 borings, designated as B-1 through B-11, at the approximate locations shown on the Site Plan. JGE personnel located the borings in the field, referencing site features. The boring elevations were estimated from Google Earth. The boring locations and elevations are approximate. The borings should be surveyed if more accurate data are necessary.

Hollow-stem augers powered by a CME-45C drill rig were used to advance the borings to predetermined depths of 15 and 20 feet. Standard penetration tests (SPTs) were performed at 2.5-foot intervals to a depth of 10 feet and 5-foot intervals thereafter. The SPT provides a correlation to soil strength and a disturbed sample for laboratory testing. Thin-walled Shelby tube samples were obtained in lieu of SPTs at select locations. The boreholes were backfilled with auger cuttings at the conclusion of drilling.

4.0 LABORATORY TESTING

In our laboratory, the samples were characterized using manual-visual methods. Moisture contents were obtained for each sample. Dry densities and unconfined compressive strength tests were performed on the Shelby tube samples conducive to testing. Atterberg limits tests were performed on select samples.

The nature and thickness of the soils encountered, and the results of the field sampling and laboratory testing are shown on the Boring Logs in the Appendix. The Log Notes sheet, included at the front of the Appendix, can be used to interpret the Boring Logs.

5.0 SUBSURFACE CONDITIONS

Presented herein is a general description of the soils encountered. Detailed information regarding the soil types and interpretive soil stratigraphy is presented on the Boring Logs.

Topsoil was observed in each of the borings to depths of 2 to 5 inches. Beneath the topsoil, existing fill, consisting of stiff, low plastic, silty clay (CL) with crushed limestone and trace amounts of sand, was observed to a depth of 3 feet in B-3. Beneath the existing fill and the topsoil in the remaining borings, the natural soils generally consist of low plastic, silty clay (CL) containing variable amounts of sand; low plastic silt (ML) containing variable amounts of clay and sand; and sand (SP, SW, and SM) containing variable amounts of silt and clay. Layers of high plastic, fat clay (CH) were observed from depths of 3 to 5.5 feet in B-1 and B-3, 5.5 to 7 feet in B-7, and 3 to 4.5 feet in B-11.

The natural soils were typically stiff to very stiff in the upper 3 feet of the borings with the exception of B-5, B-9, and B-11. Below the stiffer upper layer, the soils were generally soft to medium stiff. The sands were generally loose to medium dense, although layers of very loose sands were present in B-2 from 5 to 8 feet, B-3 from 8 to 12 feet, B-4 from 12 to 17 feet, B-5 from 5.5 to 8 feet, B-6 from 3 to 5.5 feet, and B-7 from 7 to 12 feet.

Moisture contents of the cohesive soils ranged from 7 to 40 percent, and moisture contents of the sands ranged from 3 to 31 percent.

The natural soils are alluvial, deposited during periods of flooding and meandering of the nearby Missouri River. Due to this process of deposition, soils can be highly variable in material composition and strength over very small distances, both horizontally and vertically.

Groundwater was not encountered at the time of drilling. Groundwater levels may not stabilize in a drilled boring even after several days. Groundwater is subject to seasonal and climatic variations and may be present at different depths in the future. At this site, groundwater will be influenced by the level of the nearby Missouri River.

6.0 GEOTECHNICAL CONCERNS AND RECOMMENDATIONS

Geotechnical concerns were encountered during our exploration, and include the following:

- Soft soils
- Expansive soil
- Silty soils and sands
- Existing fill

6.1 Soft Soils

Soft soils with SPT N-values of 4 blows per foot (bpf) or less were encountered in the borings except B-8 and B-11. Soft soils may be present in other areas of the site and at different depths. Due to these soft soils, a lower-than-typical foundation bearing capacity is recommended.

With proper proofrolling and treatment, these soils should be adequate for support of floor slabs and pavements. Proofrolling is accomplished by passing over the subgrade with heavily loaded construction equipment and observing the subgrade for zones of soft, disturbed, pumping, rutting, excessive deflecting, or otherwise unsuitable soils. Proofrolling is typically performed using a loaded tandem axle dump truck with a load of at least 25 tons or other heavily loaded construction equipment. Unacceptable materials thus found must be excavated and either recompacted or replaced with new structural fill.

6.2 Expansive Soil Remediation

Potentially expansive soils (medium plastic silty clay and high plastic clay) were encountered at elevations which could impact the proposed improvements. These soils have the potential for volume change with variations in the soil moisture content. The volume change can lead to slab-on-grade movement and cracking, and in severe cases, movement and cracking of foundations and walls.

To reduce heave or settlement related problems associated with expansive soils, we recommend these soils be removed and replaced where present within 3 feet of the floor slab subgrade and 2 feet of the foundation subgrades. The overexcavation should extend 2 feet beyond the edges of foundations and floor slabs if non-expansive soil is used as the replacement material. A representative of JGE should observe the foundation excavations to determine if remedial measures due to potentially expansive soil are necessary. The base of the excavations must not be allowed to dry during the remediation and construction process.

The overexcavation should be backfilled with properly compacted, non-expansive fill materials such as low plastic soil, lime stabilized clay, or 1-inch minus gradation crushed limestone. Lean concrete may also be used as the replacement material beneath foundations, and if used, the excavation for the concrete can be the same width as the planned footings. Extending the footings 2 feet below the normal bearing elevation and casting taller foundation walls is also an acceptable alternative.

The potential for volumetric changes of pavement subgrade soils exists at the site. As a minimum, we recommend removing the medium and high plastic clays within 1 foot below pavements and pavement base rock, and replacing the expansive soils with properly compacted, non-expansive materials.

The suggested method of treatment is based on generally accepted standards in the local engineering community. These soils may exhibit swell pressures and volumetric changes which exceed the suggested remediation methods. Consequently, the owner should recognize there is an inherent risk that floor slab, pavement, and foundation damage may occur, even after remedial treatment of the subgrade soil.

6.3 Silty Soils and Sands

Much of the subgrade at the site consists of very silty soils which are subject to loss of strength from disturbance, particularly when they are wet of the optimum moisture content. Care will be needed with these soils to protect them from excessive moisture and loss of strength. These soils are also highly susceptible to erosion.

Sands and soils with high sand content are also present across the site. Very silty soils, soils with high sand content, and sands may not stay open in excavations for even short periods of time.

6.4 Existing Fill Remediation

Existing fill was observed to a depth of about 3 feet in B-3. Existing fill may be present in other areas of the site, between or away from the boring locations and to variable depths.

The existing fill generally appeared to be consistent with the near surface natural soils. The on-site existing fill had an SPT N-value of 12 bpf and a moisture content of 18 percent. Fills of similar composition typically have SPT N-values between 8 and 12, and moisture contents ranging from about 15 to 20 percent. However, existing fill may be present in other areas of the site, between or away from the boring locations and to variable depths, which could be softer than that encountered in B-3. Therefore, we recommend the entire site be proofrolled, as discussed in *Section 6.1*, prior to placing any new fill or constructing structures and pavements.

7.0 DESIGN RECOMMENDATIONS

The following sections detail recommendations for the building and site design. These recommendations assume grading has been performed in general accordance with the recommendations provided in the *Construction Considerations* section that follows.

7.1 Shallow Foundations

Shallow foundations bearing in firm, low plastic, natural soil or compacted, non-expansive structural fill may be used to support the proposed structures. The soft and potentially expansive soils should be remediated as previously described. Shallow foundations can be designed for a net allowable bearing pressure of 1,500 pounds per square foot (psf).

Continuous footings should have a minimum width of 18 inches. Isolated column footings should have a minimum dimension of 30 inches. Exterior footings and foundations in unheated portions of the buildings should be provided with at least 30 inches of soil cover for frost protection. Interior footings in heated parts of the buildings can be located at nominal depths below the finish floor.

Following the recommendations given in this report, total settlement should be less than 1 inch, and differential settlement less than ¾ inch over a horizontal distance of 40 feet.

7.2 Seismic Design Considerations

In our professional opinion, based on the field data, laboratory data, and assumed depth to rock, the site fits the International Building Code for Site Class E. The proposed structures can be designed for this or more stringent soil types. We recommend the structural engineer determine the Seismic Design Category.

Liquefaction may be a factor if loose, saturated sands are present within the upper 50 feet. To check for potential liquefaction, a boring is generally advanced to a depth of 50 to 100 feet, but a deeper boring was excluded from the scope of services for this report.

Liquefaction is the loss of shear strength that occurs within a saturated soil mass when a cyclic load is applied, such as that induced by a seismic event. Liquefaction occurs when the porewater pressure in the soil mass increases to a value equaling the overburden pressure, resulting in zero effective stress. Under this condition, the ability of the soil to support an

imposed load is greatly reduced. Loss of foundation support caused by liquefaction can result in a potential for displacement or failure of footings, piles, piers, retaining structures, and slopes that are supported within or above the liquefied soils.

The potential for liquefaction exists when the following conditions are present: low density sand, saturated sand, sand with relatively uniform grain size distributions, high groundwater levels, and a high magnitude of ground shaking during the design earthquake event.

7.3 Floor Slabs

Floor slabs may be designed using a modulus of subgrade reaction of 100 pounds per square inch per inch of deflection (pci) for a properly compacted subgrade. The following recommendations are not intended to supersede the structural engineer's design of the floor slabs.

Floor slabs should be supported on a layer of crushed stone. This will help distribute concentrated loads and equalize moisture conditions beneath the slabs. If a polyethylene moisture barrier is placed atop the crushed stone and beneath the floor, careful attention to curing of the concrete slab should be followed or excessive shrinkage cracking and "curling" can occur. We suggest the applicable recommendations provided in the American Concrete Institute (ACI) Standards be followed for curing concrete floor slabs.

Floor slabs should not be structurally connected to the foundation walls and column pads. Isolation joints should be used where slabs meet a wall or column. We also suggest joints be placed in floor slabs on no more than 15-foot intervals for 4-inch thick floors. The joints should be located in such a manner that each floor slab section is rectangular. Such joints permit slight movements of the independent elements and help prevent random cracking that might otherwise be caused by restraint of shrinkage, slight rotations, heave, or settlement.

7.4 General Pavement Considerations

Concrete taxi and apron pavements are proposed around the buildings. Based on the general character of the subgrade materials, a California Bearing Ratio (CBR) value of 3 is considered appropriate for the upper stiff to very stiff soils, and a CBR value of 2 for the softer soils. However, CBR testing was not a part of our scope of services.

We recommend the paved areas be proofrolled as described in *Section 6.1* in the preparation of pavement subgrades. Any soft or unsuitable areas must be removed and replaced with new structural fill that will achieve a CBR of at least 3. If a higher CBR is required for the pavements, then the soil subgrade should be removed and replaced with crushed limestone to provide a stronger base.

The soil subgrade and crushed aggregate base should provide a drainable transition where the pavement sections vary in thickness, such that water is not trapped in the aggregate base and thus saturate and soften the subgrade.

7.5 Site Drainage and Final Grading

Adequate site drainage should be provided to reduce infiltration of surface water around the perimeter of the structures and beneath the slabs. All grades should be sloped away from the structures, and roof and surface drainage should be collected and discharged such that water is not permitted to infiltrate the foundation backfill.

8.0 CONSTRUCTION CONSIDERATIONS

The following sections present recommendations for the construction phase of the project.

8.1 Siltation Control

Appropriate erosion control measures, such as proper site contouring during general grading and the installation of siltation fences or the placement of staked straw bales, should be used during construction to keep eroded materials on site.

8.2 Site Preparation

Cut and fill areas must be stripped of surface vegetation and topsoil prior to fill placement. Topsoil and soft surface materials could be stockpiled for later use in green areas or common ground or be removed from the site. The subgrade in all areas to receive fill should then be scarified, proofrolled in accordance with *Section 6.1*, and compacted as specified later in this report, under the observation of JGE. Soft spots and areas where the recommended compaction cannot be achieved should be undercut and replaced with compacted, non-expansive cohesive soil fill or crushed stone.

8.3 Structural Fill Considerations

Low plastic, silty clay soil (CL) with a liquid limit less than 45 and a plasticity index less than 20 is suitable for structural fill. Crushed limestone or limestone screenings may also be used as structural fill at the site. The on-site soils consisting of medium to high plastic clays are not suitable for use as structural fill within 2 feet of foundations and 3 feet of floor slabs. The existing on-site soils consisting of silt and clayey silt may be difficult to compact and will be subject to loss of strength from disturbance, particularly when they are wet of their optimum moisture content.

Beneath paved areas, cohesive fill should be placed in maximum 8-inch loose lifts and compacted to at least 95 percent of the modified Proctor (ASTM 1557) maximum dry density.

Beneath pavements for aircraft weighing less than 60,000 pounds, all granular fill should be compacted to at least 100 percent standard Proctor (ASTM D 698) maximum dry density. Beneath pavements for aircraft weighing 60,000 pounds or more, the upper 6 inches should be compacted to at least 100 percent of the modified Proctor (ASTM D 1557) maximum dry density and the remainder of granular fill should be compacted to at least 95 percent modified Proctor maximum dry density.

Outside of paved areas, cohesive soil should be compacted to at least 90 percent of the modified Proctor maximum dry density, and granular fill should be compacted to at least 100 percent of the standard Proctor maximum dry density.

Field density tests should be performed on each lift of fill to check that proper compaction is being achieved.

8.4 Foundation Excavations

A JGE representative should observe the foundation excavations to check that the foundations bear on competent materials. The base of all excavations must be clean, relatively dry, and free of loose soil or uncompacted fill. The excavations should be protected from extreme temperatures, precipitation, and construction disturbances. To reduce the possibility of excessive wetting or drying of the foundation soils, we recommend the concrete be placed as soon as possible after the excavation is made.

Disturbance of the footing and slab subgrade soils should be avoided. The potential for such disturbance will increase during wetter times of the year. Footing subgrade materials that have been excessively disturbed should be overdeepened to firm, undisturbed soil and replaced with properly compacted, non-expansive fill. Excessively disturbed soils beneath the floor slabs should be removed and replaced with additional granular material.

8.5 Excavation Bracing Requirements

The United States Department of Labor, Occupational Safety and Health Administration (OSHA) issued "Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P" to provide for the safety of workers entering trenches or excavations. This document should be consulted for safe and legal excavations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean JGE is assuming any responsibility for construction site safety or the contractor's activities.

9.0 CONSTRUCTION MONITORING PROGRAM

The following are highlights of a construction monitoring program. These services are intended to assess our design assumptions and provide construction quality assurance by comparing and documenting procedures and test results with plans, specifications, and good engineering practice. In this endeavor, JGE should:

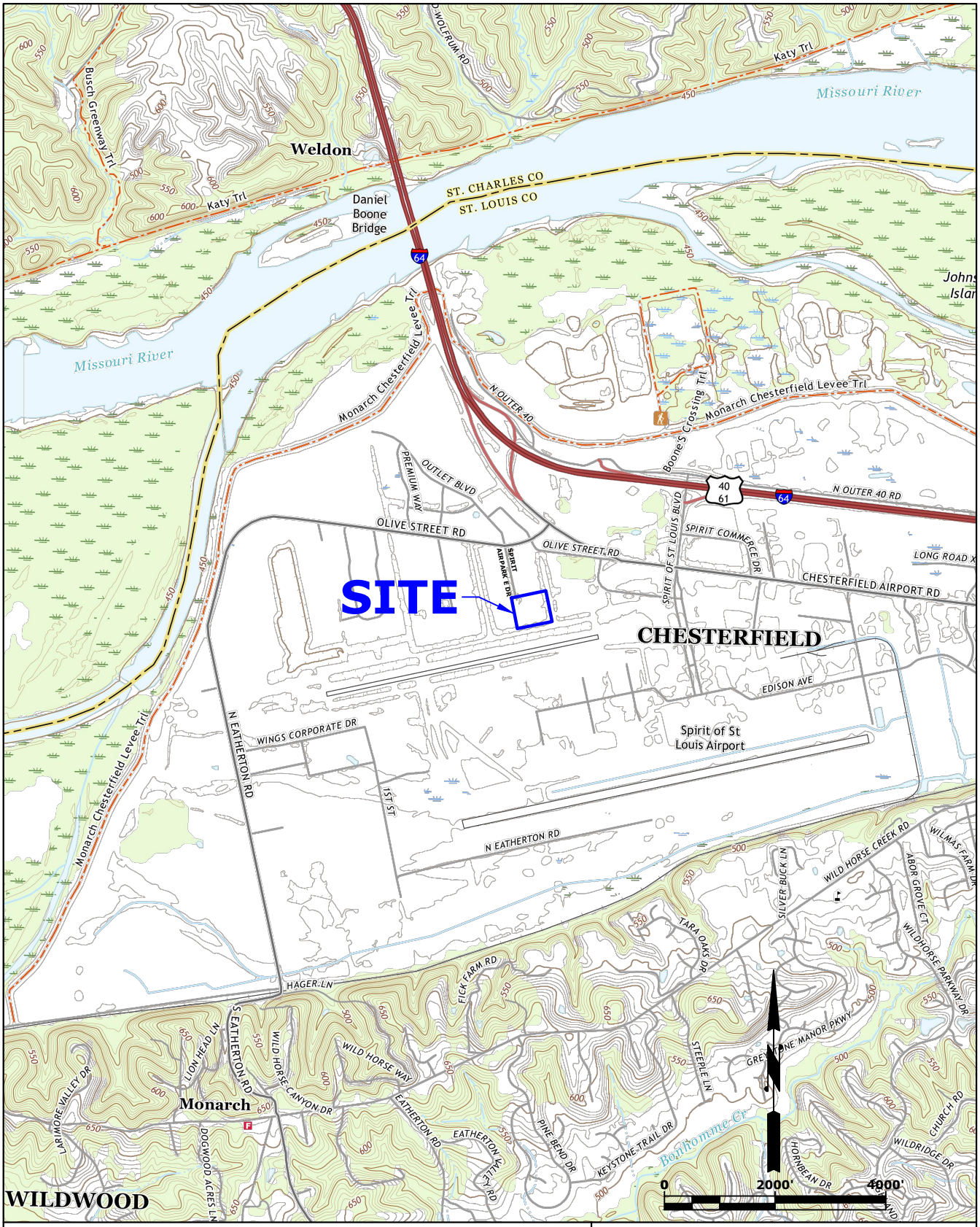
- Review project plans and construction specifications to assess the interpretation of this report
- Observe site preparation
- Observe remediation of geotechnical concerns
- Observe the suitability of potential fill materials
- Monitor placement and proper compaction of structural fill and backfill
- Observe footing and floor slab excavations for suitable bearing materials
- Test concrete during building construction

10.0 LIMITATIONS

The recommendations provided herein are based on the information obtained at 11 specific boring locations within the project area and regionally accepted practice. Sampling cannot be relied on to accurately reflect natural variations in stratigraphy that may exist between sample locations and depths. Unknowns within the stratigraphy will exist. This report does not reflect any variations beyond or below the borings. JGE should be contacted if conditions encountered are not consistent with those described.

This report has been prepared in accordance with generally accepted geotechnical engineering practices based on the data available to date. No other warranty, expressed or implied, is made to the professional advice and recommendations included herein. This report is for exclusive use by the parties named and for the specific project and purposes stated herein. This report may not contain sufficient information for the use of other parties or for other purposes.

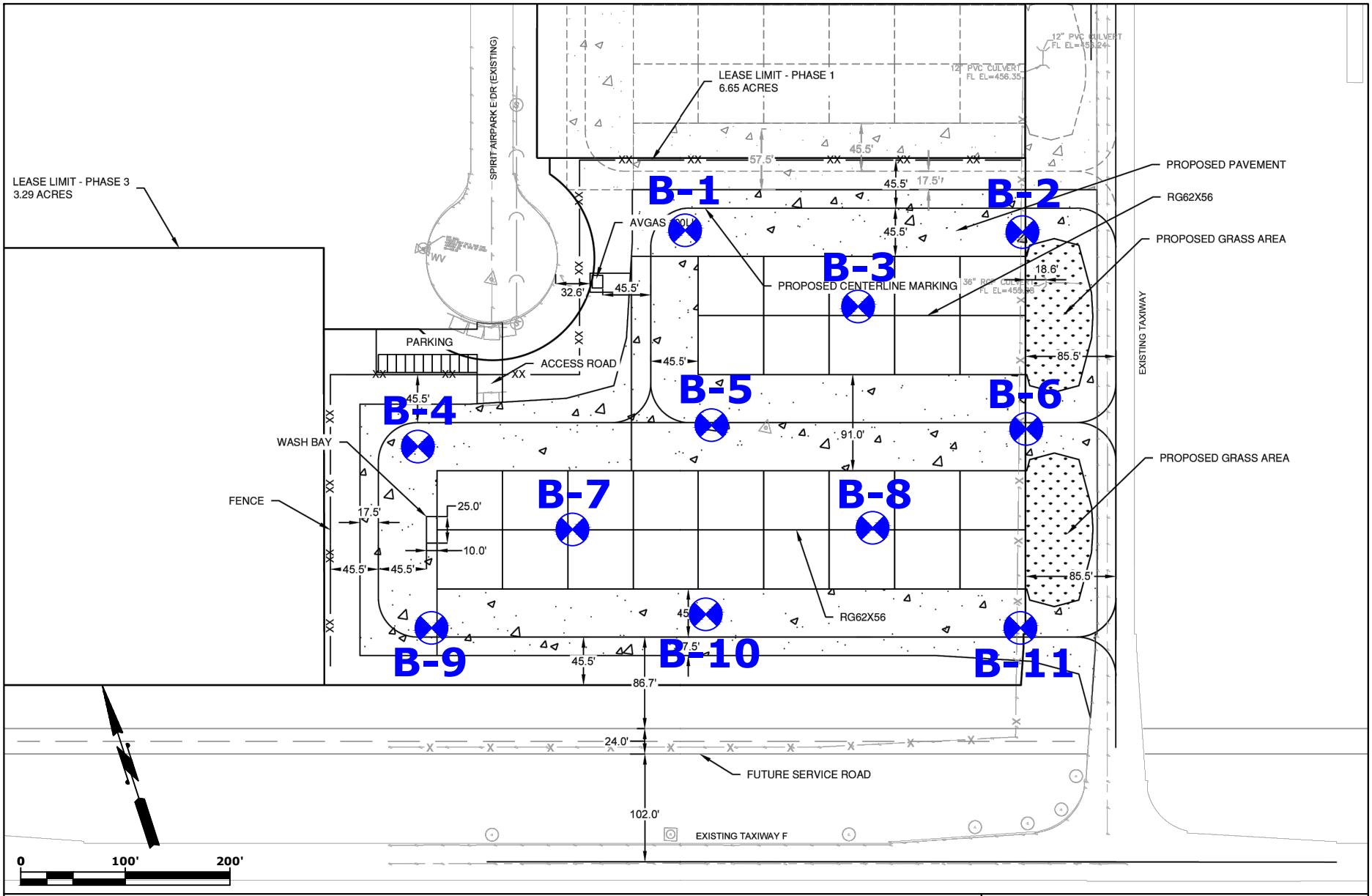
In addition, we should be provided with a set of final development plans, once they are available, to review how our recommendations have been applied to the design and check if changes to the proposed improvements require additional recommendations. Construction specifications also merit our review to assess the interpretation of this report. Failure to provide these documents for review may nullify some or all of the recommendations provided herein.



Location Plan based on USGS WELDON SPRING, MISSOURI QUADRANGLE
7.5-MINUTE SERIES, dated 2021
Contour Interval: 10 feet

JACOBI GEOTECHNICAL ENGINEERING, INC.
LOCATION PLAN
Spirit of Saint Louis Airport **Spirit Airpark East Drive - Phase 1**
Chesterfield, Missouri
23383.1 **January 2024**

Figure 1



Site Plan based on drawing by Crawford, Murphy, & Tilly, Inc., dated 11/22/2023

Approximate Boring Location

JACOBI GEOTECHNICAL ENGINEERING, INC.
SITE PLAN
Spirit of Saint Louis Airport **Spirit Airpark East Drive - Phase 1**
Chesterfield, Missouri
23383.1 **January 2024**

Figure 2

APPENDIX

JACOBI GEOTECHNICAL ENGINEERING, INC.

LOG NOTES

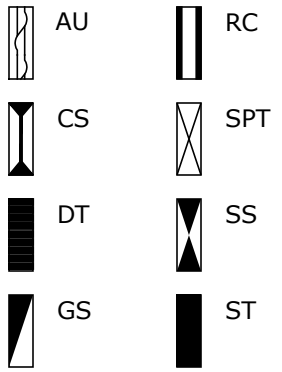
GENERAL NOTES

1. The Logs represent interpretation of field and laboratory data. The breaks between strata on the Logs are approximate and the actual material change may occur at a different depth, between samples, or gradually.
2. Groundwater shown on the Logs may not have stabilized and may not represent the present or future groundwater levels. Groundwater levels may vary significantly over time due to precipitation, construction, or other factors.
3. Soil classifications indicated on the Logs are based on visual observations and are considered approximate. Laboratory testing for classification is used only where noted.
4. Soil samples are recovered intermittently and data only represents samples tested. The results of such testing may not conclusively represent the characteristics of all materials collected or subsurface materials present.

ABBREVIATIONS / SYMBOLS

AU	Auger Cutting	RIMAC	Rimac Unconfined Compressive Test
CFA	Continous Flight Augers	RQD	Rock Quality Designation
CS	Continuous Sampler	SPT	Standard Penetration Test
DT	Drive Tube	SS	Split-spoon
GS	Grab Sample	ST	Shelby Tube
HSA	Hollow Stem Augers	SV	Shear Vane Test
ksf	Kips per Square Foot	TV	Torvane Shear Test
MR	Mud Rotary	USCS	Unified Soil Classification System
pcf	Pound per Cubic Foot	UU	Unconsolidated Undrained Triaxial Test
Unc	Unconfined Compressive Test	WR	Weight of Rods
RC	Rock Core	WH	Weight of Hammer

Recovery Sample Recovery (inch) / Sample Interval (inch)



PENETROMETER DATA

Penetrometer values on the Logs represents the direct reading of estimated unconfined compression strength.

STANDARD PENETRATION TEST (SPT)

The SPT blow count is the number of impacts a 140-pound hammer falling 30 inches takes to drive a split-spoon sampler 6 inches. The number of blow counts to penetrate the first 6 inches is the seating interval. The sum of the blow counts for the second and third 6-inch interval is the N-value. For example, if blows are 6-8-11, N-value = 8+11 = 19.

If the sampler penetrated a 6-inch interval under the static weight of the drill rods, WR is reported for "Weight of Rods". A 6-inch interval penetrated by the static weight of the drill rods and hammer is reported as WH for "Weight of Hammer". When 50 blow counts are required in a 6-inch interval or less, the SPT test is terminated and reported as 50 over the length of the sample interval. For example, 50 blow counts to drive a sampler 3 inches would be reported as 50/3.

CORRELATION OF SPT N-VALUE

COHESIVE SOIL

CONSISTENCY	N-VALUE
Very Soft	WR - 1
Soft	2 - 4
Medium Stiff	5 - 8
Stiff	9 - 15
Very Stiff	16 - 30
Hard	>30

GRANULAR SOIL

QUALITATIVE DENSITY	N-VALUE
Very Loose	WR - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>50

SOIL PROPORTIONS

Definition of descritive terms used in soil profile material description with percentage proportions.

DESCRIPTIVE TERM	PERCENT OF PROPORTIONS
Trace	0 to < 15 %
With	15 to < 30 %
Description Modifier	30 to < 50 %
Description Identifier	>50 to 100 %

SOIL STRUCTURE

Blocky	Cohesive soil that can be broken down in to small angular lumps which resist further breakdown.
Desiccated	Material in a very dry state. Soil structure often becomes fissured, blocky, and brittle.
Fissured	Breaks along definitive planes of fracture with little resistance to fracturing.
Intermixed	Material composed of different soil types which lacks layering, lamination, or stratification.
Laminated	Alternating layers of varying material or color with layers less than 6 mm thick (about a ¼ inch).
Lensed	Inclusions of small pockets of different soil.
Slickensided	Fractured planes appear polished, glossy, or slick.
Stratified	Alternating layers of varying material or color with layers at least 6 mm thick (about a ¼ inch).

SOIL GRAIN SIZE

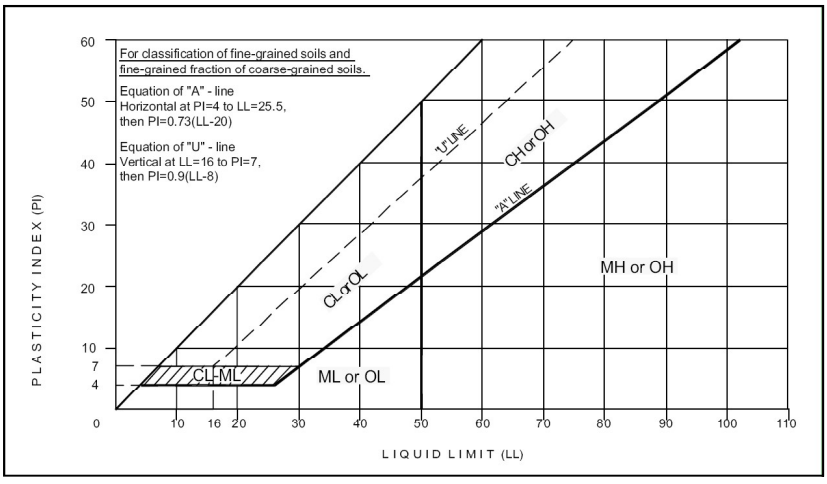
Boulders	Cobbles	Gravel		Sand			Silt	Clay
		Coarse	Fine	Coarse	Medium	Fine		

300 (12-in)	75 (3-in)	19 (3/4-in)	4.75 (#4)	2.0 (#10)	0.425 (#40)	0.075 (#200)	0.002	mm (Sieve)

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			GROUP SYMBOL	DESCRIPTION
COARSE-GRAINED SOIL (>50% retained on #200 sieve)	GRAVEL (>50% of coarse fraction retained on the #4 sieve)	CLEAN GRAVEL (<5% fines)	GW	Well-Graded Gravels, Gravel-Sand Mixtures, little or no fines
			GP	Poorly-Graded Gravels, Gravel-Sand Mixtures, little or no fines
		GRAVELS with fines (>12% fines)	GM	Silty Gravel, Gravel-Sand-Silt Mixture
			GC	Clayey Gravel, Gravel-Sand-Clay Mixture
	SAND (>50% of coarse fraction passes the #4 sieve)	CLEAN SAND (<5% fines)	SW	Well-Graded Sand, Gravelly Sands, little or no fines
			SP	Poorly-Graded Sand, Gravelly Sands, little or no fines
		SANDS with fines (>12% fines)	SM	Silty Sand, Sand-Silt Mixture
			SC	Clayey Sand, Sand-Clay Mixture
FINE-GRAINED SOIL (>50% passes the #200 sieve)	SILTS and CLAYS (Liquid Limit <50)	Inorganic	ML	Silt, Sandy Silt, Gravelly Silt, Silt with sand or gravel
			CL	Lean Clay, Sandy Lean Clay, Gravelly Lean Clay, Lean Clay with sand or gravel, low plasticity
		Organic	OL	Organic Clay, Organic Silt, low plasticity
	SILTS and CLAYS (Liquid Limit >50)	Inorganic	MH	Silt, Sandy Silt, Gravelly Silt, Silt with sand or gravel, elastic
			CH	Fat Clay, Sandy Fat Clay, Gravelly Fat Clay, Fat Clay with sand or gravel, high plasticity
		Organic	OH	Organic Clay, Organic Silt, elastic/high plasticity
HIGHLY ORGANIC SOIL			PT	Peat, Primarily Organic Soil

FINE-GRAINED SOIL PLASTICITY GRAPH



ROCK QUALITY DESIGNATION (RQD)

PERCENT RQD	ROCK QUALITY
0 - 25	Very Poor
25 -50	Poor
50 - 75	Fair
75 - 90	Good
90 - 100	Excellent

RQD is calculated by measuring and adding the length of intact core segments equal to or greater than 4 inches in length and dividing the sum by the core run length. RQD results are a percentage of total core run length.

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-1

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/3/2024 | **LOGGED BY** T. Soval | **ELEVATION (ft)** 461.0

COMPLETION DATE 1/3/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 20.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
					FIELD TESTING				LABORATORY TESTING							
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 460.8 TOPSOIL: 3 inches											
					Brown and gray, lean, SANDY CLAY											
	SPT 1	18/18	5-8-8 (16)	4.5				CL		14						
					3.0 / 458.0											
					Brown and gray, fat, CLAY, trace sand											
5	SPT 2	18/18	3-3-2 (5)	0.5				CH		25						5
					5.5 / 455.5											
					Brown, lean, SILTY CLAY with sand											
	ST 3	16/24		2						23	100	0.9 Unc				
					becomes grayish-brown, trace sand											
10	SPT 4	18/18	2-2-2 (4)	0.5				CL		29						10
					12.0 / 449.0											
					Brown and gray, fine to medium, SAND											
15	SPT 5	18/18	2-7-8 (15)							7						15
								SP								
20	SPT 6	18/18	3-4-6 (10)		20.0 / 441.0					4						20

Boring terminated at 20.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-2

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/3/2024 | **LOGGED BY** T. Soval | **ELEVATION (ft)** 460.0

COMPLETION DATE 1/3/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 20.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 459.8 TOPSOIL: 3 inches											
					Grayish-brown, lean, SILTY CLAY with sand											
	SPT 1	18/18	10-10-6 (16)	4.5				CL		11						
	ST 2	20/24		2.5	becomes brown, trace sand					16	99	1.4 Unc				
5					5.0 / 455.0											5
	SPT 3	18/18	3-2-2 (4)	0.5	Brown, fine, SILTY SAND			SM		11						
					8.0 / 452.0											
	SPT 4	18/18	2-2-3 (5)	0.5	Brown, lean, SILT with sand			ML		22						
10																10
					12.0 / 448.0											
					Brown, lean, SANDY CLAY											
	SPT 5	18/18	2-2-2 (4)	0.5				CL		31						
15																15
					17.0 / 443.0											
					Brown, fine, SAND, trace silt											
	SPT 6	18/18	3-4-4 (8)	<0.25				SP		31						
20					20.0 / 440.0											20

Boring terminated at 20.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-3

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/3/2024 | **LOGGED BY** T. Soval | **ELEVATION (ft)** 461.0

COMPLETION DATE 1/3/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 15.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 460.8 TOPSOIL: 2 inches											
	SPT 1	16/18	9-7-5 (12)	3	FILL: Brown, lean, SILTY CLAY with crushed limestone, trace sand			CL		18						
					3.0 / 458.0											
5	SPT 2	18/18	2-3-3 (6)	2	Grayish-brown, fat, CLAY, trace sand			CH		36			68	24	44	5
					5.5 / 455.5											
	SPT 3	18/18	2-2-3 (5)	1.5	Brown, lean, SILTY CLAY with sand			CL		20						
					8.0 / 453.0											
10	SPT 4	18/18	2-2-2 (4)	<0.25	Brown, fine, SAND, trace silt			SP		12						10
15	SPT 5	18/18	3-5-6 (11)	0.5	15.0 / 446.0					19						15

Boring terminated at 15.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-4

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/2/2024 | **LOGGED BY** C. Sharp | **ELEVATION (ft)** 461.0

COMPLETION DATE 1/2/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 20.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 460.8 TOPSOIL: 3 inches											
					Brown, lean, SANDY CLAY											
	SPT 1	14/18	7-5-7 (12)	1				CL		19						
					3.0 / 458.0											
					Brown, lean, SILT with sand											
	SPT 2	18/18	3-3-5 (8)	0.5						40						
5																5
								ML								
	SPT 3	14/18	2-2-2 (4)	<0.25						30						
					8.0 / 453.0											
					Brown, lean, SANDY SILT											
	SPT 4	16/18	1-2-3 (5)	0.25				CL		22						
10																10
					12.0 / 449.0											
					Brown and gray, fine to medium, SILTY SAND											
	SPT 5	16/18	WH-1-2 (3)	<0.25				SM		40						
15																15
					17.0 / 444.0											
					Brown and gray, fine to medium, SAND											
	SPT 6	15/18	6-6-7 (13)					SP		17						
20					20.0 / 441.0											20

Boring terminated at 20.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-5

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/2/2024 | **LOGGED BY** C. Sharp | **ELEVATION (ft)** 461.0

COMPLETION DATE 1/2/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 20.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / 3-inch ST / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 460.8 TOPSOIL: 2 inches Brown, lean, SILTY CLAY with sand											
	SPT 1	16/18	6-4-3 (7)	4.5				CL		9						
					3.0 / 458.0											
	ST 2	23/24		0.25	Brown, lean, SILT, trace sand 4.5 / 456.5			ML		31	83	0.4 Unc				
5					Brown, lean, SILTY CLAY to CLAYEY SILT, trace sand 5.5 / 455.5			CL-ML								5
	SPT 3	16/18	WH-2-1 (3)	<0.25	Brown, fine, SILTY SAND			SM		26						
					8.0 / 453.0											
	ST 4	24/24		1.5	Brown, lean, SILTY CLAY with sand 9.5 / 451.5			CL		27	85	0.6 Unc				
10					Brown and gray, fine to medium, SAND with silty clay											10
								SM								
	SPT 5	14/18	4-5-4 (9)	0.5						18						
15																15
					17.0 / 444.0											
					Brown and gray, fine to medium, SAND, trace silty clay			SP								
	SPT 6	12/18	4-5-4 (9)							13						
20					20.0 / 441.0											20

Boring terminated at 20.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-6

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/3/2024 | **LOGGED BY** T. Soval | **ELEVATION (ft)** 460.0

COMPLETION DATE 1/3/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 15.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 459.8 TOPSOIL: 3 inches											
					Brown, lean, SILT with sand											
	SPT 1	14/18	5-5-3 (8)	4.5				ML		8						
					3.0 / 457.0											
					Brown, fine to medium, SILTY SAND											
	SPT 2	18/18	2-2-1 (3)	<0.25						8						
5																5
								SM								
	SPT 3	18/18	2-3-3 (6)	<0.25						14						
					8.0 / 452.0											
					Brown, lean, SANDY SILT											
	SPT 4	18/18	3-3-3 (6)	0.5						26						
10																10
								ML								
					12.0 / 448.0											
					Brown and gray, fine to medium, SAND											
								SP								
	SPT 5	18/18	4-7-7 (14)							5						
15					15.0 / 445.0											15

Boring terminated at 15.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-7

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/2/2024 | **LOGGED BY** C. Sharp | **ELEVATION (ft)** 460.0

COMPLETION DATE 1/2/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 15.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					FIELD TESTING / LABORATORY TESTING											0
					0.2 TOPSOIL: 3 inches (459.8)											
	SPT 1	14/18	5-7-8 (15)	4.5	Brown, lean, SILTY CLAY with sand			CL		11						
					3.0 (457.0)											
	SPT 2	16/18	2-3-3 (6)	<0.25	Brown, lean, SILT with sand			ML		16						
5					5.5 (454.5)											5
	SPT 3	10/18	2-1-WH	0.5	Brown and gray, fat, CLAY, trace sand			CH		27			68	24	44	
					7.0 (453.0)											
	SPT 4	14/18	2-1-2 (3)	<0.25	Brown, fine to medium, SILTY SAND			SM		20						
10																10
					12.0 (448.0)											
					Brown and gray, fine to medium, SAND			SP								
	SPT 5	5/18	3-6-7 (13)							14						
15					15.0 (445.0)											15

Boring terminated at 15.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-8

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/2/2024 | **LOGGED BY** C. Sharp | **ELEVATION (ft)** 460.0

COMPLETION DATE 1/2/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 15.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
					DEPTH (ft) / ELEVATION (ft)											
0					0.3 TOPSOIL: 4 inches (459.7)											0
					Brown, lean, SILTY CLAY with sand											
	SPT 1	14/18	4-5-4 (9)	1.5						7						
					trace sand											
5	SPT 2	14/18	2-3-2 (5)	1						32						5
					with sand											
	SPT 3	12/18	1-2-3 (5)	<0.25				CL		24						
10	SPT 4	14/18	2-2-3 (5)	0.5						21						10
					12.0 (448.0)											
					Brown and gray, fine to medium, SAND, trace silty clay			SP								
15	SPT 5	16/18	6-14-14 (28)		15.0 (445.0)					13						15

Boring terminated at 15.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-9

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/2/2024 | **LOGGED BY** C. Sharp | **ELEVATION (ft)** 460.0

COMPLETION DATE 1/2/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 20.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / 3-inch ST / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.3 / 459.7 TOPSOIL: 4 inches Brown, lean, SILT with sand											
	SPT 1	16/18	6-4-3 (7)					ML		8						
5	ST 2	18/24		0.5	4.5 / 455.5 Brown and gray, medium plastic, SILTY CLAY, trace sand					37	81	0.6 Unc				5
					5.5 / 454.5 Brown, lean, SILTY CLAY with sand			CL								
	SPT 3	14/18	1-1-2 (3)	0.5				CL		24						
					8.0 / 452.0 Brown and gray, lean, SANDY CLAY											
10	SPT 4	16/18	1-2-3 (5)	<0.25				CL		24						10
					12.0 / 448.0 Brown and gray, fine to medium, SAND, trace silty clay											
15	SPT 5	12/18	4-5-2 (7)							20						15
					silty clay not observed			SP								
20	SPT 6	16/18	8-13-15 (28)		20.0 / 440.0					21						20

Boring terminated at 20.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-10

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/2/2024 | **LOGGED BY** C. Sharp | **ELEVATION (ft)** 460.0

COMPLETION DATE 1/2/2024 | **CHECKED BY** P. Dodd | **TOTAL DEPTH (ft)** 15.0

CONTRACTOR Jacobi Geotechnical Engineering | **GROUND WATER LEVELS:**

EQUIPMENT CME-45C / 3.25-inch HSA | **AT TIME OF DRILLING** --- Groundwater not observed

SAMPLING 2-inch SS / Automatic Hammer | **AT END OF DRILLING** ---

BACKFILL Auger Cuttings | **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					0.4 TOPSOIL: 5 inches (459.6)											0
					Brown, lean, SILTY CLAY with sand											
	SPT 1	18/18	5-6-5 (11)	4.5				CL		10						
					3.0 (457.0)											
					Brown, lean, SILT with sand											
	SPT 2	6/18	3-2-3 (5)	2						34						
5																5
								ML								
	SPT 3	14/18	2-2-2 (4)	0.25						21						
					8.0 (452.0)											
					Brown and gray, fat, CLAY, trace sand											
	SPT 4	12/18	3-3-3 (6)	2						25						
10								CH								10
					12.0 (448.0)											
					Brown and gray, fine to medium, SAND											
								SP								
	SPT 5	10/18	4-5-6 (11)							3						
15					15.0 (445.0)											15

Boring terminated at 15.0 feet.

NOTES:

JACOBI GEOTECHNICAL ENGINEERING, INC.

BORING NUMBER B-11

SPIRIT OF SAINT LOUIS AIRPORT - SPIRIT AIRPARK EAST DRIVE - PHASE 1
CHESTERFIELD, MISSOURI
JGE No. 23383.1

START DATE 1/3/2024
COMPLETION DATE 1/3/2024
CONTRACTOR Jacobi Geotechnical Engineering
EQUIPMENT CME-45C / 3.25-inch HSA
SAMPLING 2-inch SS / Automatic Hammer
BACKFILL Auger Cuttings

LOGGED BY C. Sharp
CHECKED BY P. Dodd
GROUND WATER LEVELS:
AT TIME OF DRILLING --- Groundwater not observed
AT END OF DRILLING ---
AFTER DRILLING ---

ELEVATION (ft) 460.0
TOTAL DEPTH (ft) 20.0

DEPTH (ft)	SAMPLE NUMBER	RECOVERY, in/in (RQD, %)	BLOW COUNTS (N VALUE)	PENETROMETER (tsf)	MATERIAL DESCRIPTION	WATER LEVEL	GRAPHIC LOG	USCS	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SHEAR STRENGTH (ksf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	DEPTH (ft)
0					DEPTH (ft) / ELEVATION (ft)											0
					0.2 / 459.8 TOPSOIL: 3 inches											
					Brown, fine, SAND with silt											
	SPT 1	16/18	3-2-3 (5)					SM		6						
					3.0 / 457.0 Grayish-brown, fat, CLAY, trace sand											
	SPT 2	13/18	2-3-3 (6)	2				CH		32						
5					4.5 / 455.5 Brown, lean, SANDY SILT											5
					5.5 / 454.5 Brown and gray, fine to medium, SAND, trace silt			ML								
	ST 3	/24								14						
	SPT 4	18/18	2-3-3 (6)	<0.25						13						
10																10
					becomes fine			SP								
	SPT 5	18/18	3-4-5 (9)	<0.25						16						
15																15
					17.0 / 443.0 Brown and gray, fine to coarse, SAND, trace silt											
	SPT 6	18/18	3-5-7 (12)					SW		21						
20					20.0 / 440.0 Boring terminated at 20.0 feet.											20

NOTES: