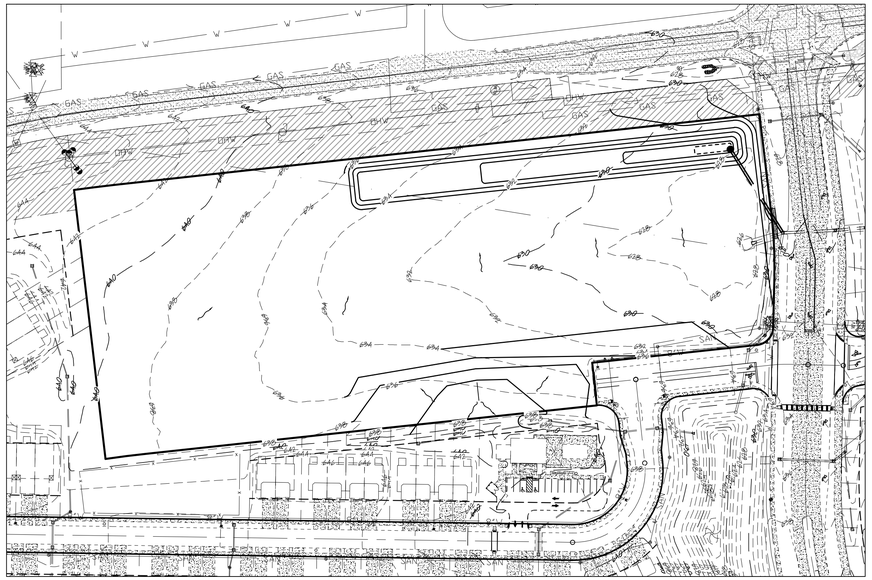
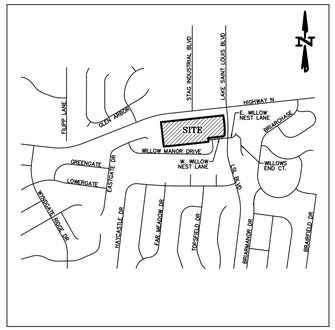
A SET OF GRADING PLANS FOR
SHADY CREEK COMMERCIAL
A TRACT OF LAND BEING PART OF U.S. SURVEY 931 AND PART OF THE EAST HALF OF SECTION 9 TOWNSHIP 46 NORTH, RANGE 2 EAST OF THE FIFTH PRINCIPAL MERIDIAN, CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI



Plan View



Locator Map

DEVELOPMENT NOTES:

1. Total Area of Tract: 7.98 Acres
2. Existing Zoning: C-2, General Business District (City of O'Fallon)
3. Property Owners: Joanne Griffith & Gary E. Kopadt Revocable Trust, 8780 Highway N, Lake Saint Louis, MO 63367
4. Per Flood Insurance Rate Map Panel Number 29183C0220G Dated January 20, 2016. This site is Zoned "X", described as areas outside the 500-year floodplain.
5. Boundary information is per survey as compiled by Bax Engineering during April, 2022.
6. Grading to begin as soon as possible.
7. The Contractor shall also notify the City of O'Fallon Division of Community Development 48 hours prior to the commencement of grading. A pre-construction meeting will be required to be held before any land disturbance activities may commence.
8. A sediment control plan that includes monitored and maintained sediment control basins and/or straw bales should be implemented as soon as possible. No graded area is to be allowed to remain bare over 14 days without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting up existing downstream storm drainage system.
9. Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any man-made structures. The unsuitable material shall be properly disposed of off-site.
10. All siltation control devices shall be inspected by the contractor after any rain of 1/4" or more with any appreciable accumulation of mud to be removed and siltation measures repaired where necessary.
11. No slope shall be steeper than 3(Horizontal):1(Vertical).
12. Any contaminated soil encountered during excavation shall be hauled and placed as directed by the owners environmental engineering representative.
13. Underground utilities have been plotted from available information and there-fore locations shall be considered approximate only. The verifications of the location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor and shall be located prior to any grading or construction improvements.
14. All operations shall conform to the current standards of the City of O'Fallon.
15. The contractor is responsible for following the City of O'Fallon Ordinance for the installation of sediment and erosion control devices.
16. Sediment and erosion control shall not be limited to the measures shown on the plans. The contractor, with the approval of the County Inspector, shall utilize best management practices to prevent sediment from entering adjacent properties, roadways, storm sewers, and drainageways.
17. All trash and debris on-site, either existing or from construction, must be removed and properly disposed of off-site.
18. Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
19. Where natural vegetation is removed during operations, vegetation shall be reestablished in such a density as to prevent erosion.
20. When mechanized land clearing activities are completed or suspended for more than 14 days; either temporary vegetation must be established or temporary siltation control measures must be put in place with the review and approval of the City of O'Fallon.
21. When operations are completed or suspended for more than 14 days, permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the recommendation of the City of O'Fallon. All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 lbs per 1,000 sq.ft. when seeded.

Utility Contacts

Sanitary Sewers
Public Water Supply District No. 2
P.O. Box 967
O'Fallon, MO. 63366
636-561-3737

Water
Public Water Supply District No. 2
P.O. Box 967
O'Fallon, MO. 63366
636-561-3737

Storm Sewer
City of O'Fallon
100 N. Main St.
O'Fallon, MO. 63366
636-240-2000

Electric
Cuivre River Electric Co.
P.O. Box 160
Troy, MO. 63379-0160
1-800-392-3709

Gas
Spire Gas
6400 Graham Road
St. Louis, MO. 63134
314-522-2297

Telephone
CenturyLink
1151 Century Tel Dr.
Wentzville, MO. 63385
636-332-7261

Fire District
Wentzville Fire District
502 Luetkenhaus Blvd.
Wentzville, MO. 63385
636-332-9869

Drawing Index

Benchmarks

Project

REFERENCE BENCHMARK: THE OBSERVED VERTICAL CHECK STATION UTILIZED IS LISTED ON WWW.NGS.NOAA.GOV AS DESIGNATION "C-149" WITH A PID OF JC0544 AND A PUBLISHED ELEVATION OF 545.45 (NAVD88). DESCRIBED AS FOLLOWS; 1.8 MILES EAST FROM GILMORE. 1.8 MILES EAST ALONG THE WABASH RAILROAD FROM THE STATION AT 'GILMORE, ST. CHARLES COUNTY, 80 FEET WEST OF A TOWNSHIP ROAD CROSSING, 48 FEET NORTH OF THE CENTERLINE OF THE TRACK, 12 FEET WEST OF THE RIGHT-OF-WAY FENCE CORNER, AND 2 FEET SOUTH OF THE RIGHT-OF-WAY FENCE. A STANDARD DISK, STAMPED C 149 1935 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 6 INCHES ABOVE GROUND.

Site

SITE BENCHMARK: ELEV. 637.38.
'X' IN CONCRETE SIDEWALK LOCATED ALONG THE WEST RIGHT-OF-WAY LINE OF LAKE SAINT LOUIS BOULEVARD. APPROXIMATELY 57.5 FEET SOUTHWEST OF AN AREA INLET.

Legend

600.00	EXISTING LABELS
600.00	PROPOSED LABELS
CI	SINGLE CURB INLET
DCI	DOUBLE CURB INLET
AI	AREA INLET
DAI	DOUBLE AREA INLET
GI	GRATE INLET
DGI	DOUBLE GRATE INLET
MH	MANHOLE
FE	FLARED END SECTION
EP	END PIPE
CP	CONCRETE PIPE
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
PVC	POLY VINYL CHLORIDE (PLASTIC)
CO	CLEAN OUT
	SLOPE LIMITS
	DRAINAGE SWALE
STM	EXISTING STORM SEWER
SAN	EXISTING SANITARY SEWER
W	EXISTING WATER LINE
FO	EXISTING FIBER OPTIC LINE
GAS	EXISTING GAS LINE
UGE	EXISTING UNDERGROUND ELECTRIC
OHW	EXISTING OVERHEAD ELECTRIC
CTV	EXISTING CABLE TV LINE
T	EXISTING TELEPHONE LINE
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
X	FENCE LINE
	SAWCUT LINE
	EXIST. SINGLE CURB INLET
	EXIST. AREA INLET
	PROPOSED SINGLE CURB INLET
	PROPOSED AREA INLET
	PROPOSED GRATE INLET
	EXIST. SANITARY MANHOLE
	EXIST. STORM MANHOLE
	PROPOSED MANHOLE
	POWER POLE
	GUY WIRE
	LIGHT STANDARD
	FIRE HYDRANT
WMTR	WATER METER
	WATER VALVE
	GAS VALVE
	TELEPHONE PEDESTAL
	SIGN
	TREE

VEGETATION ESTABLISHMENT
For Urban Development Sites
APPENDIX A

SEEDING RATES:

PERMANENT:
Tall Fescue – 150 lbs./ac.
Smooth Brome – 100 lbs./ac.
Combined – Fescue @ 75 lbs./ac. AND Brome @ 50 lbs./ac.

TEMPORARY:
Wheat or Rye – 150 lbs./ac. (3.5 lbs. per 1,000 s.f.)
Oats – 120 lbs./ac. (2.75 lbs. per 1,000 s.f.)

SEEDING PERIODS:
Fescue or Brome – March 1 to June 1, August 1 to October 1
Wheat or Rye – March 15 to November 1
Oats – March 15 to September 15

MULCH RATES:
100 lbs. per 1000 sq. ft. (4,356 lbs. per ac.)

FERTILIZER RATES:

Nitrogen	30 lbs./ac.
Phosphate	30 lbs./ac.
Potassium	30 lbs./ac.
Lime	600 lbs./ac. ENM*

* ENM = effective neutralizing material as per State evaluation of quarried rock.

* City of O'Fallon Construction work hours per City Ordinance 3429 as shown in Section 500.420 of the Municipal Code of the City of O'Fallon are as follows:

October 1 through May 31
7:00 A.M. To 7:00 P.M. Monday Through Sunday
June 1 Through September 30
6:00 A.M. To 8:00 P.M. Monday Through Friday
7:00 A.M. to 8:00 P.M. Saturday and Sunday

* The area of this phase of development is 7.98 Acres
The area of land disturbance is 4.85 Acres
Building setback information.
Front: Not less than twenty-five (25) feet, excluding all signs, pump islands, and canopies of gasoline service stations.
Side: No side yard is required except that where a side line of a lot in this district abuts the side line of a lot in any residential or office district, a side yard shall then be provided the same as required in the district it abuts. A side yard of not less than twenty-five (25) feet shall be provided on the street side of a corner lot.
Rear: No rear yard is required except that where a rear line of a lot in this district abuts lots zoned residential or office a rear yard of not less than ten (10) feet shall be provided.

* Tree Preservation requirements:
NO Existing Trees

City approval of any construction site plan does not mean that any building can be constructed on the lots without meeting the building setbacks as required by the zoning codes.

All installations and construction shall conform to the approved engineering drawings. However, if the developer chooses to make minor modifications in design and/or specifications during construction, they shall make such changes at their own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the developer to notify the City Engineer of any changes from the approved drawings. The developer may be required to correct the installed improvements so as to conform to the approved engineering drawings. The developer may request a letter from the Construction Inspection Division regarding any field changes approved by the City Inspector.

Lighting values will be reviewed on site prior to the final occupancy inspection.

CITY OF O'FALLON
ENGINEERING DEPARTMENT
ACCEPTED FOR CONSTRUCTION
BY: Jeannie Greenlee DATE 09/14/2022
PROFESSIONAL ENGINEER'S SEAL
INDICATES RESPONSIBILITY FOR DESIGN

PROJECT TITLE:
SHADY CREEK COMMERCIAL
Bax Project #20-16154A | Issue Date: 04/27/2022

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
FAX 928-1718

DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project of which

STATE OF MISSOURI
JEFFREY B SIMMONS
NUMBER PE-2007030831
PROFESSIONAL ENGINEER
6/30/22

JEFFREY B. SIMMONS
CIVIL ENGINEER
2007030831

REVISIONS

06/30/22	CITY COMMENTS
07/29/22	CITY COMMENTS
08/31/22	CITY COMMENTS

Developer / Owner:
JoAnn Griffith and Gary Kopadt
8780 Highway N
Lake Saint Louis, MO 63367
636-544-2128

COVER SHEET

P+Z No. ----------
Approval Date: ----------
City No. GR22-000008

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1 of 7

GENERAL NOTES

1. Driveway locations shall not interfere with the sidewalk handicap ramps, or curb inlet sumps
2. Sidewalks, curb ramps, ramps and accessible parking spaces shall be constructed in accordance with the current approved "American with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer.
   2.1. Truncated domes for curb ramps located in public right of way shall meet PROWAG requirements and shall be constructed using red pre-cast truncated domes per pavement details.
3. Any proposed pavilions or playground areas will need a separate permit from the Building Division.
4. The Contractor is responsible to call Missouri One Call and The City of O'Fallon for the location of utilities. Contact the City of O'Fallon (636) 379-3814 for the location of City maintained cable for street lights and traffic signals, all other utilities call Missouri One Call 1-800-DIG-RITE. 1-800-344-7483
5. All proposed utilities and/or utility relocations shall be located underground.
6. All proposed fencing requires a separate permit through the Building Safety Division.
7. All construction operations and work zone traffic control within the right of way will follow MoDOT or M.U.T.C.D. standards whichever is more stringent.
8. (INTENTIONALLY OMITTED)
9. All subdivision identification or directional sign(s) must have the locations and sizes approved and permitted separately through the Planning and Development Division.
10. Materials such as trees, organic debris, rubble, foundations, and other deleterious material shall be removed from the site and disposed of in compliance with all applicable laws and regulations. If the material listed previously are reused, a letter from a soil Engineer must clarify amount, location, depth. etc. and be approved with the construction plans. Landfill tickets for such disposal shall be maintained on file by the developer. Burning on site shall be allowed only by permit from the local fire district. If a burn pit is proposed the location and mitigation shall be shown on the grading plan and documented by the soils engineer.
11. Twenty-four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the developer shall make arrangements with the Construction Inspection Office to provide for inspection of the work, sufficient in the opinion of the City Engineer, to assure compliance with the plans and specifications as approved.
12. The City Engineer or their duly authorized representative shall make all necessary inspections of City infrastructure, escrow items or infrastructure located on the approved plans.
13. All installations and construction shall conform to the approved engineering drawings. However, if the developer chooses to make minor modifications in design and/or specifications during construction, he/she shall make such changes at his/her own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the developer to notify the City Engineer of any changes from the approved drawings. The developer may be required to correct the installed improvements so as to confirm to the approved engineering drawings. The developer may request a letter from the Construction Inspection Division regarding any field changes approved by the City inspectors.
14. City approval of the construction site plans does not mean that any building can be constructed on the lots without meeting the building setbacks as required by the zoning code.

Grading Notes

1. Developer must supply City Construction Inspectors with an Engineer's soil reports prior to and during site grading. The soil report will be required to contain the following information on soil test curves (Proctor reports) for projects within the City:
   1.1. Maximum dry density
   1.2. Optimum moisture content
   1.3. Maximum and minimum allowable moisture content
   1.4. Curve must be plotted to show density from a minimum of 90% Compaction and above as determined by the "Modified AASHTO T-180 Compaction Test" (A.S.T.M.-D-1157) or from a minimum of 95% as determined by the "Standard Proctor Test ASSHTO T-99, Method C" (A.S.T.M.-D-698). Proctor type must be designated on document.
   1.5. Curve must have at least 5 density points with moisture content and sample locations listed on document
   1.6. Specific gravity
   1.7. Natural moisture content
   1.8. Liquid limit
   1.9. Plastic limit

   Be advised that if this information is not provided to the City's Construction Inspector the City will not allow grading or construction activities to proceed on any project site.
2. All fill placed in areas other than proposed storm sewers, sanitary sewers, proposed roads, and paved areas shall be compacted from the bottom of the fill up in 8" lifts and compacted to 90% maximum density as determined by Modified AASHTO T-180 compaction test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99. Ensure the moisture content of the soil in fill areas corresponds to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill.
3. The surface of the fill shall be finished so it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
4. All sediment and detention basins are to be constructed during the initial phase of the grading operation or in accordance with the approved SWPPP.
5. When grading operations are complete or suspended for more than 14 days, permanent grass must be established at sufficient density to provide erosion control on site. Between permanent grass seeding periods, temporary cover shall be provided according to Missouri Department of Natural Resources Protecting Water Quality – a field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas.All finished grades (areas not to be disturbed by improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at a rate of 100 pounds per 1000 square feet when seeded.
6. No slopes shall exceed 3 (horizontal): 1 (vertical) unless otherwise approved by the soils report and specifically located on the plans and approved by the City Engineer.
7. All low places whether on site or off shall be graded to provide drainage with temporary ditches.
8. Any existing wells and/or springs which may exist on the property must be sealed in a manner acceptable to the City of O'Fallon Construction Inspection Department and following Missouri Department of Natural Resources standards and specifications.
9. (INTENTIONALLY OMITTED)
10. All trench back fills under paved areas shall be granular back fill, and compacted mechanically. All other trench back fills may be earth material (free of large clods, or stones) and compacted using either mechanical tamping or water jetting, Granular material and earth material associated with new construction outside of pavements may be jetted, taking care to avoid damage to newly laid sewers. The jetting shall be performed with a probe route on not greater than 7.5 foot centers with the jetting probe centered over and parallel with the direction of the pipe. Trench widths greater than 10 feet will require multiple probes every 7.5 foot centers.
    10.1. Depth, Trench back fills less than 8 feet deep shall be probed to a depth extending half the depth of the trench back fill, but not less than 3 feet. Trench back fill greater than 8 feet in depth shall be probed to half the depth of the trench back fill but not greater than 8 feet.
    10.2. Equipment, The jetting probe shall be a metal pipe with an interior diameter of 1.5 to 2 inches.
    10.3. Method, Jetting shall be performed from the lowest surface topographic point and proceed toward the highest point, and from the bottom of the trench back fill toward the surface. The flooding of each jetting probe shall be started slowly allowing slow saturation of the soil. Water is not allowed to flow away from the trench without first saturating the trench.
    10.4. Surface Bridging, The contractor shall identify the locations of the surface bridging (the tendency for the upper surface to crust and arch over the trench rather than collapse and consolidate during the jetting process). The contractor shall break down the bridged areas using an appropriate method such as wheels or bucket of a backhoe. When surface crust is collapsed, the void shall be back filled with the same material used as trench back fill and re-jetted. Compaction of the materials within the sunken/jetted area shall be compacted such that no further surface subsidence occurs.
11. Site grading.
    11.1. Within City right-of-way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed every two hundred fifty (250) feet along the centerline for each lift.
    11.2. Outside of City right-of-way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed at two (2) foot vertical intervals and approximately every one thousand (1,000) cubic yards.
12. Access to the site from any other location other than the proposed construction entrance is strictly prohibited!

Erosion Control Notes

1. The Permittee shall assume complete responsibility for controlling all siltation and erosion of the project area. The Permittee shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with the clearing operations and be maintained throughout the project until acceptance of the work by City of O'Fallon and as needed by MoDOT. The Permittee's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The City of O'Fallon and as required by MoDOT may at their option direct the Permittee in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement shall be removed immediately. Any depositing of silts or mud in new or existing storm sewers and/or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of O'Fallon and as required by MoDOT."
2. All erosion control systems are to be inspected and corrected weekly, especially within 48 hours of any rain storm resulting in one-quarter inch of rain or more. Any silt or debris leaving the site and affecting public right of way or storm water drainage facilities shall be cleaned up within 24 hours after the end of the storm.
3. Erosion control devices (silt fence, sediment basin, etc.) shall be in accordance with Missouri Department of Natural Resources Protecting Water Quality – a field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas.
4. This development is required to provide long term post construction BMP's such as; low impact design, source control and treatment controls that protects water quality and controls run off to maximum extent practical in compliance with Phase II Illicit Storm Water Discharge Guidelines. (Ord. 5082, section 405.245)
5. Graded areas shall be seeded and mulched (strawed) within 14 days of stopping land disturbance activities. Unless it can be shown to the City Engineer that weather conditions are not favorable, vegetative growth is to be established within 6 weeks of stopping grading work on the project. The vegetative growth established shall be sufficient to prevent erosion and the standard shall be as required by EPA and DNR. (70% coverage per square foot) Ord. 6496, Section 405.095
6. Storm structure OS4 shall have have adequate sediment control installed until such time as vegetation is established on the entire site.

SWPPP NOTES:

A. PURPOSE:

The purpose of the Storm Water Pollution Prevention Plan (SWPPP) shall meet the following objections:

- Prevent erosion where construction activities shall occur.
- Prevent pollutants from mixing with storm water.
- Prevent pollutants from being discharged by trapping them on-site, before they can affect the receiving waters.

B. PROJECT DESCRIPTION:

The project is located in the Dardenne Creek watershed in St. Charles County, Missouri. This project area is approximately 7.98 Acres, with 4.85 Acres being disturbed.

The project activities consist of grading for a residential subdivision along with the grading and installation of the proposed detention basins. The site will be protected with the various erosion protection measures listed below:

1. Perimeter Silt Control: The portion of the project perimeter that has the potential for storm water runoff will have silt control installed. These silt controls shall be composed of straw bales, silt fence, silt soxx or a wood chip barrier. These devices shall be built in accordance with the details as listed in the MDNR Stormwater Quality Guide.

2. Sediment Basins: At all locations where storm water is being directed to a collection point a sediment basin will be constructed. The sediment basins will be designed to filter the pollutants from the water prior to leaving the site. When the site work and grading commences the proposed detention basins will be overdug 2-4' as needed for sediment storage. Each basin will have a control post set with a mark at the cleanout elevation, at which time the basin will be cleaned out to the original grades by the contractor.

3. Revegetation: The site will consist of varying ground slopes upon completion of the grading activities and the slope areas prone to erosion will be seeded and strawed to stabilize the slope and prevent erosion. All finish grades (areas not to be disturbed by future improvements) in excess of twenty (20) percent slopes (5 horizontal to 1 vertical) shall be mulched and tacked as required in the Grading Ordinance.

4. Storm Inlet Protection: All storm water inlet structures shall be protected with silt control. These controls will be constructed in accordance with the latest details from the Wentzville Grading Ordinance.

C. MAINTENANCE AND INSPECTION:

Regular Maintenance: Weekly inspections of the project will be required and made available to the City of O'Fallon upon request.

Periodic Inspections: Following each rain of more than one quarter inch within 24 hours, the site will be inspected and any necessary repairs will be made. An inspection report is required to be completed also.

The field inspections will be conducted in a systematic manner to minimize the possibility of any significant feature being overlooked. Particular attention will be given to detecting evidence of erosion, slope instability, undue settlement, displacement, and rilling. The field inspection will include appropriate features and items, including potential hazards to human life or property.

The condition of the slopes and vegetative cover will be evaluated and examined for erosion. The sediment basins will be examined for excessive sedimentation and increase in sediment loads, which would reduce the sediment basins capacity.

Measures will be taken to promote the growth of vegetation and repair of damage caused by erosion and sedimentation. The inspection will also provide any recommendations for measures that need to be undertaken immediately, based on the experience and judgment of the inspector. Necessary follow up inspections will be made as necessary to verify that any maintenance, alteration, or repair measures are accomplished by methods acceptable by standard engineering practice.

STORM WATER POLLUTION PREVENTION PLAN SITE NOTES:

1. A Pre-Construction conference will be scheduled with the City prior to the start of construction activities, including installation of the temporary construction entrance. The permittee will be responsible for notifying all contractors and other entities including utility crews that will perform work at the site to be in attendance.
2. The contractor shall install perimeter siltation control (silt fencing) and install the construction entrance.
3. Site then shall be cleared and stripped.
4. Contractor shall install additional silt fencing and any other sediment control measures as needed in order to control siltation on site.
5. Contractor shall maintain all siltation control devices and provide inspection reports as outlined.
6. Contractor shall finish grade all areas as soon as practical and establish permanent vegetation and/or install erosion control matting as shown.
7. During construction of site, the contractor shall maintain all drainage and erosion control structures as needed.
8. Contractor shall finish grade and install any final erosion control measures as project is completed as well as all permanent landscaping.
9. Contractor to notify City 2 days prior to start of any site work.
10. Refer to SWPPP Report for sediment controls construction, maintenance and inspection requirements.

Table 60-5 Soil Stabilization Schedule

Soil Disturbance Activity or Condition	Required Stabilization Time
Soil disturbance has ceased in areas greater than 2,000 square feet.	14 days
After construction of dikes, swales, diversions, and other concentrated flow areas	5 days
When slopes are steeper than 3 horizontal to1 vertical	7 days
When slopes are greater than 3% and longer than 150 feet.	14 days
Perimeter controls around soil stockpiles.	End of workday
Stabilization or covering of inactive stockpiles.	30 days
When land disturbance is completed, permanent soil stabilization must be installed.	30 days

SPILL AND SITE POLLUTION:

Should an accidental spill occur refer to material safety data sheets. Any spills of hazardous materials in quantities in excess of reportable quantities as defined by EPA or the state agency regulations, shall be immediately reported to the EPA National Response Center (800-424-8802) and Missouri Department of Natural Resources (573-634-2436). Reportable spills for petroleum products is greater than 50 gallons. All other reportable hazardous materials and their quantities may be found on the web site at http://www.dnr.mo.gov on the local number is 573-840-9750. Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetlands, or area like a road ditch, that drains into the above.

An emergency spill kit is required to be onsite for all potential spills.

PROJECT TITLE:

SHADY CREEK COMMERCIAL

Bax Project # 20-1615A | Issue Date: 04/27/2022

ENGINEERING
PLANNING
SURVEYING

221 Point Test Blvd.
St. Charles, MO 63301
636-928-5552
FAX 928-1718

DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or property.

STATE OF MISSOURI
JEFFREY B SIMMONS
NUMBER PE-2007030831
PROFESSIONAL ENGINEER
6/30/22

JEFFREY B. SIMMONS
CIVIL ENGINEER
2007030831

REVISIONS

06/30/22	CITY COMMENTS
07/29/22	CITY COMMENTS
08/31/22	CITY COMMENTS

Developer / Owner:
JoAnn Griffith and Gary Kopadt
8780 Highway N
Lake Saint Louis, MO 63367
636-544-2128

NOTES

P+Z No. ----------
Approval Date: ----------
City No. GR22-000008

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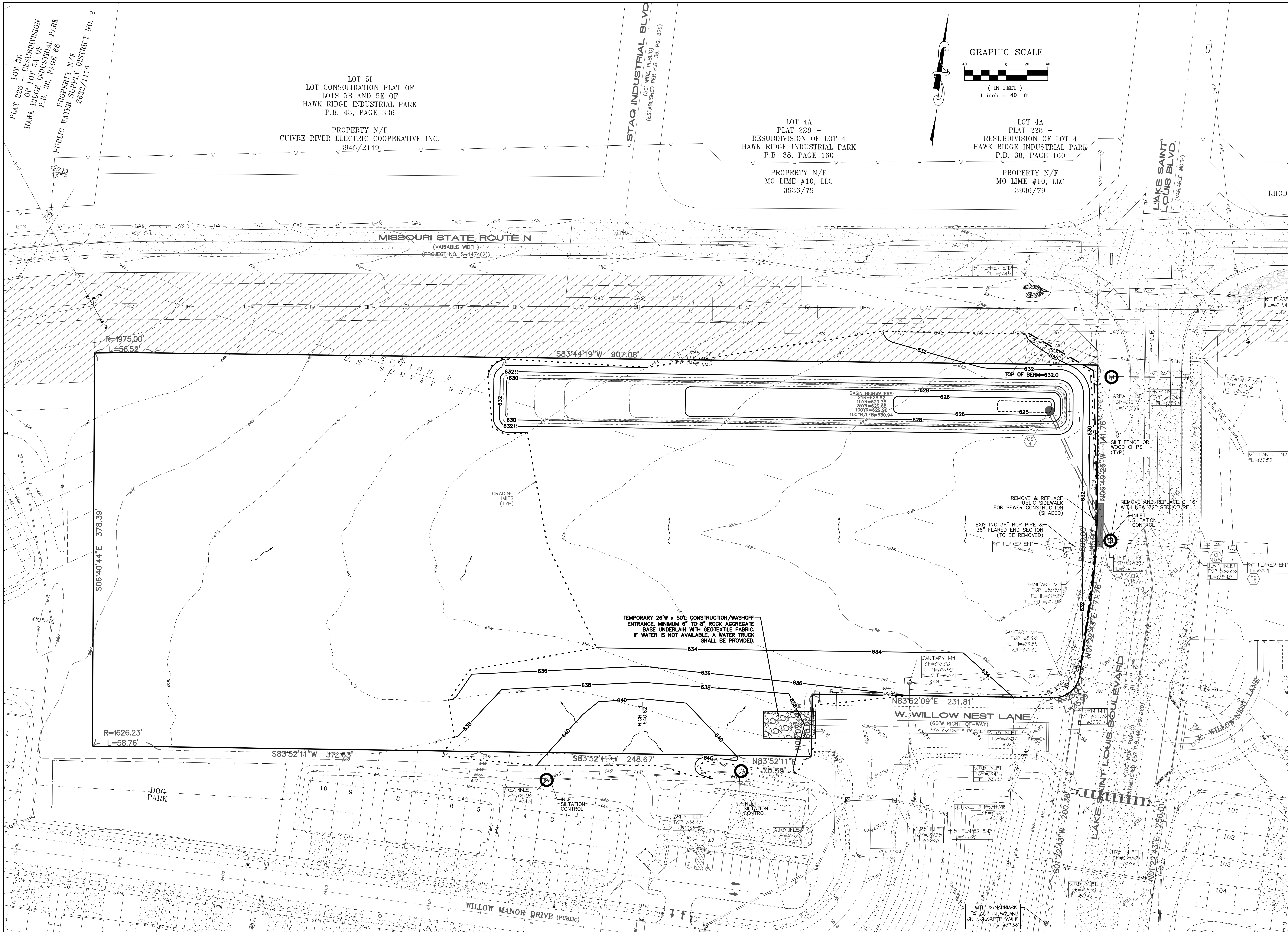
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.
LOT 5I
LOT CONSOLIDATION PLAT OF
LOTS 5B AND 5E OF
HAWK RIDGE INDUSTRIAL PARK
P.B. 43, PAGE 336
PROPERTY N/F
CUIVRE RIVER ELECTRIC COOPERATIVE INC.
3945/2149
LOT 4A
PLAT 228 -
RESUBDIVISION OF LOT 4
HAWK RIDGE INDUSTRIAL PARK
P.B. 38, PAGE 160
PROPERTY N/F
MO LIME #10, LLC
3936/79
STAG INDUSTRIAL BLVD
MISSOURI STATE ROUTE N
(VARIABLE WIDTH)
LAKE SAINT LOUIS BLVD.
LAKE SAINT LOUIS BOULEVARD
W. WILLOW NEST LANE
(60'W RIGHT-OF-WAY)
E. WILLOW NEST LANE
WILLOW MANOR DRIVE (PUBLIC)
DOG PARK
S83°44'19"W 907.08'
S06°40'44"E 378.39'
R=1975.00'
L=56.52'
R=1626.23'
L=58.76'
N83°52'09"E 231.81'
S83°52'11"W 248.67'
TOP OF BERM=632.0
BASIN HIGHWATERS:
GRADING LIMITS (TYP)
SILT FENCE OR WOOD CHIPS (TYP)
REMOVE & REPLACE PUBLIC SIDEWALK FOR SEWER CONSTRUCTION (SHADED)
REMOVE AND REPLACE CI 16 WITH NEW 72" STRUCTURE
INLET SILTATION CONTROL
EXISTING 36" RCP PIPE & 36" FLARED END SECTION (TO BE REMOVED)
TEMPORARY 26'W x 50'L CONSTRUCTION/WASHOFF ENTRANCE. MINIMUM 6" TO 8" ROCK AGGREGATE BASE UNDERLAIN WITH GEOTEXTILE FABRIC. IF WATER IS NOT AVAILABLE, A WATER TRUCK SHALL BE PROVIDED.
SITE BENCHMARK: "X" CUT IN SQUARE ON CONCRETE WALK

PROJECT TITLE:
SHADY CREEK COMMERCIAL

Bax Project # 20-18154A | Issue Date: 04/27/2022

ENGINEERING PLANNING SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
FAX 928-1718

DISCLAIMER OF RESPONSIBILITY
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STATE OF MISSOURI · JEFFREY B SIMMONS · NUMBER PE-2007030831 · PROFESSIONAL ENGINEER
8/31/22

JEFFREY B. SIMMONS
CIVIL ENGINEER
2007030831

REVISIONS

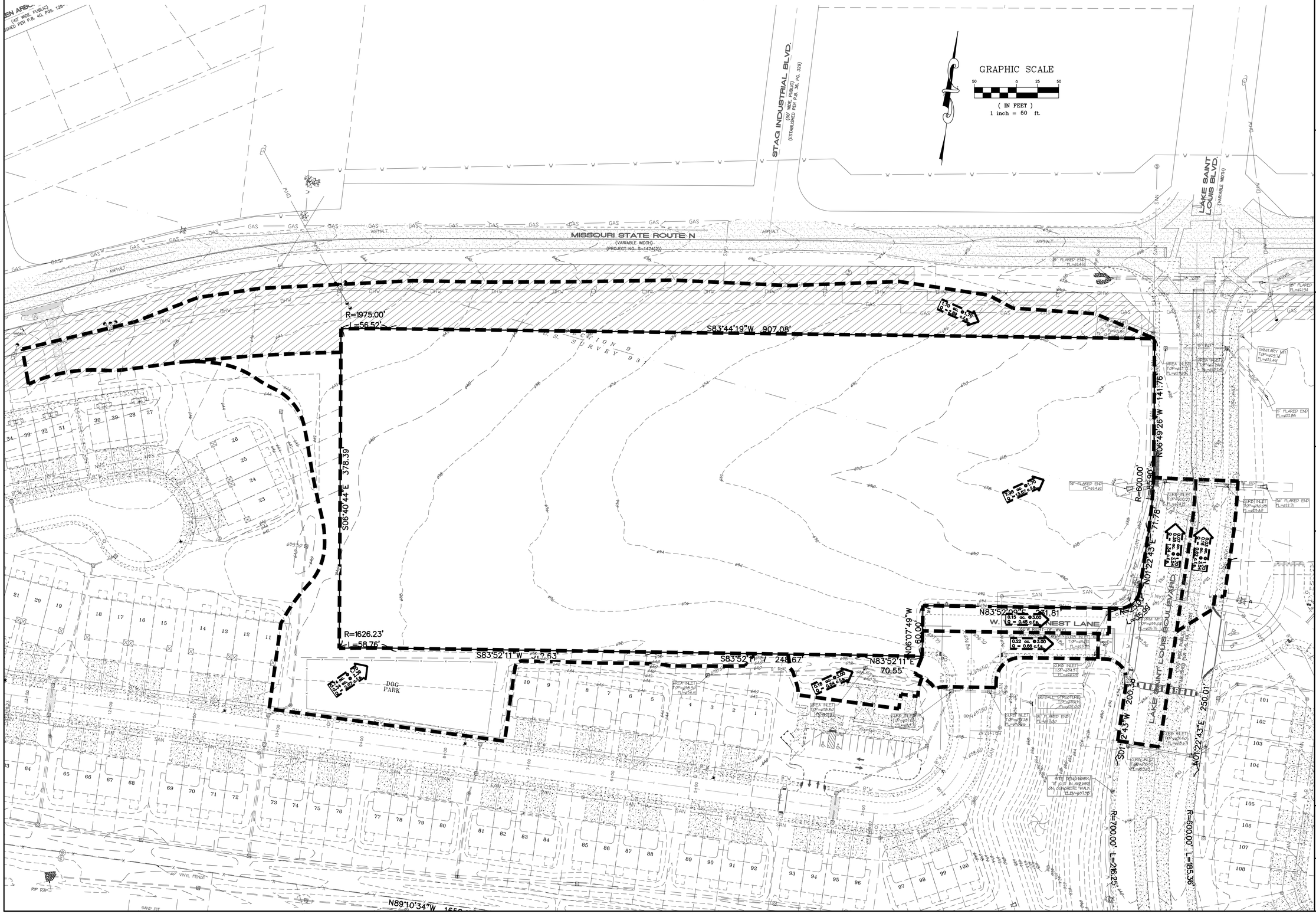
06/30/22	CITY COMMENTS
07/29/22	CITY COMMENTS
08/31/22	CITY COMMENTS

Developer / Owner:
JoAnn Griffith and Gary Kopadt
8780 Highway N
Lake Saint Louis, MO 63367
636-544-2128

GRADING / SWPP PLAN

P+Z No. ------------
Approval Date: ------------
City No. GR22-000008

THIS SHEET FOR DRAINAGE PURPOSES ONLY, NOT TO BE USED FOR CONSTRUCTION.



PROJECT TITLE:

SHADY CREEK COMMERCIAL

Bax Project # 20-16154A | Issue Date: 04/27/2022

ENGINEERING
PLANNING
SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
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STATE OF MISSOURI
JEFFREY B SIMMONS
NUMBER
2007030831
PROFESSIONAL ENGINEER
6/30/22

JEFFREY B. SIMMONS
CIVIL ENGINEER
2007030831

REVISIONS

06/30/22	CITY COMMENTS
07/29/22	CITY COMMENTS
08/31/22	CITY COMMENTS

PRE-DEVELOPED DRAINAGE AREA MAP

Developer / Owner:
JoAnn Griffith and Gary Kopadt
8780 Highway N
Lake Saint Louis, MO 63367
636-544-2128

P+Z No. ----------
Approval Date: ----------
City No. GR22-000008

Page No.
4 of 7

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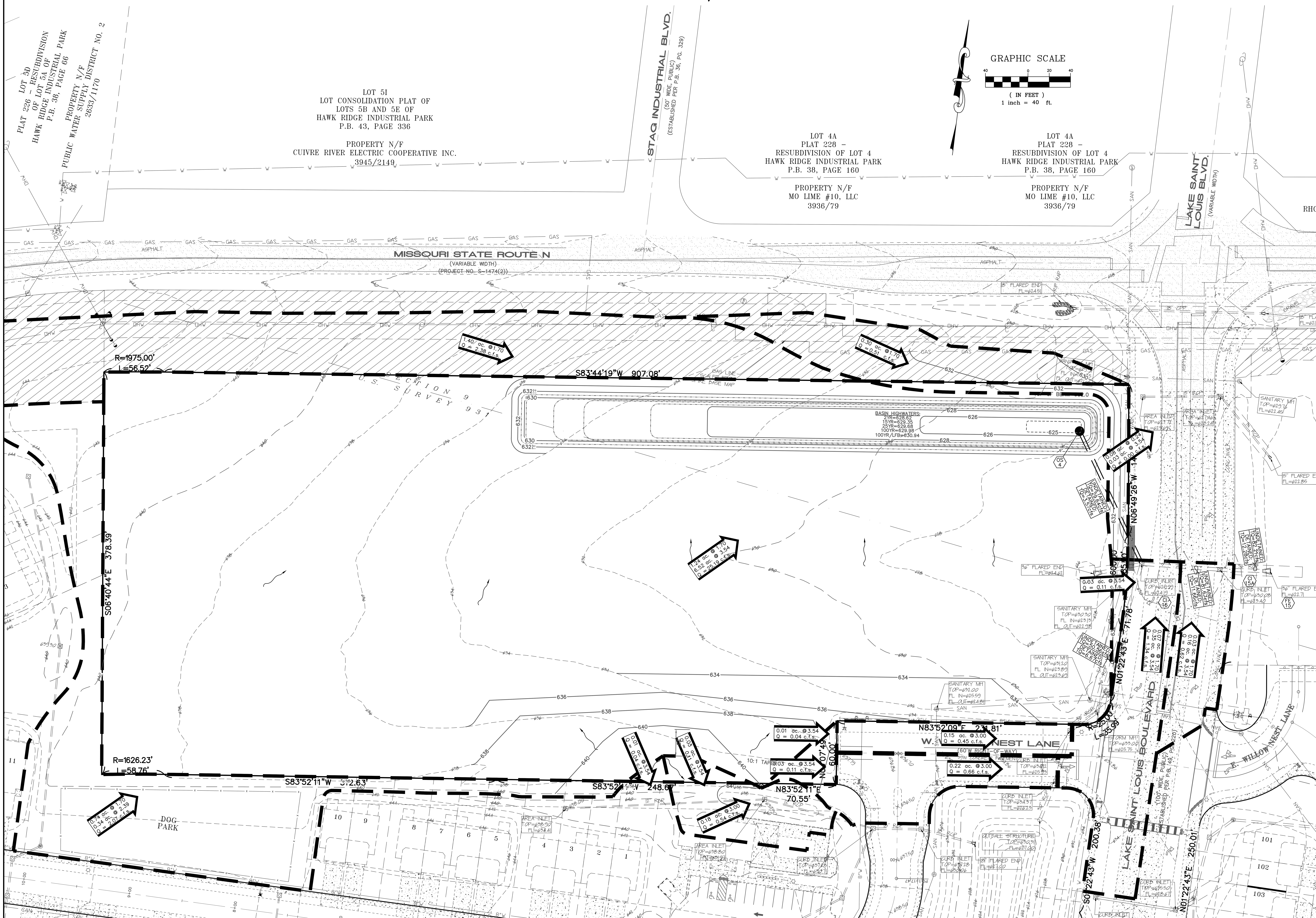

PROJECT TITLE:

SHADY CREEK COMMERCIAL

Bax Project # 20-18154A | Issue Date: 04/27/2022

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8/31/22

JEFFREY B. SIMMONS
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2007030831

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Developer / Owner:
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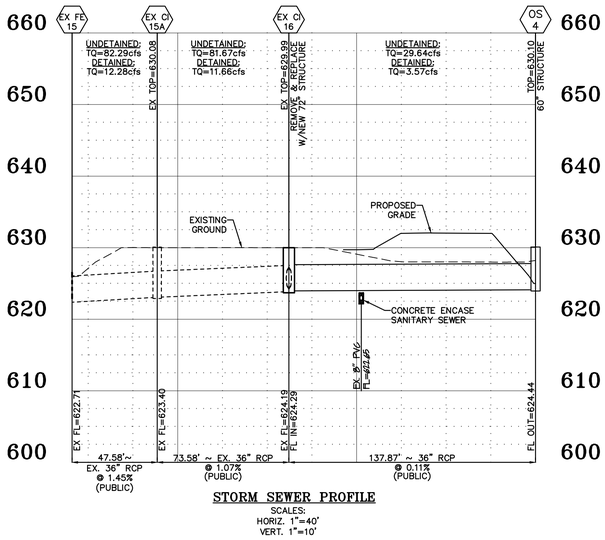
8780 Highway N
Lake Saint Louis, MO 63367
636-544-2128

POST-DEVELOPED DRAINAGE AREA MAP

P+Z No. ------------
Approval Date: ------------
City No. GR22-000008



STORM SEWER PROFILE

SCALES:
HORIZ. 1"=40'
VERT. 1"=10'

15 YEAR HYDRAULICS

St Charles County Government
Hydraulic Review Output Data

\\VAULTSERVER\FileFolders\180000\18154A - Shady Creek Commercial\Engineering\Hydraulics\18154A
8/31/2022
Calculations Under Full Flow

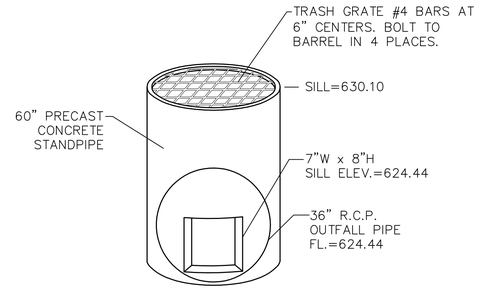
	Upp Str	Low Str	PL	S	Upp FL LN	Low FL LN	PS	Upp ST EL	Depth HY GR	Upp HY EL	Low HY EL	Hydr Grade	FR Head	VEL	VEL Head	Junc Loss	Turn Loss	Curve Loss	STR Grade	Inl Cap	DR Area	P.I.	Q	TQ	Pipe Cap	Remarks
1	OS4	EXCI16	138	36	624.44	624.29	0.11	630.10	1.82	628.28	627.73	0.00200	0.28	4.19	0.27	0.27	0.00	0.00	OS	0.00	10.24	2.90	29.64	29.64	22.12	
2	EXCI16	EXCI15A	74	36	624.19	623.40	1.07	629.99	2.26	627.73	626.48	0.01500	1.10	11.55	2.07	0.00	0.15	0.00	1.3%	2.18	0.45	3.22	1.45	81.67	68.99	
3	EXCI15A	EXFE15	48	36	623.40	622.71	1.45	630.08	3.60	626.48	625.71	0.01520	0.72	11.64	2.10	0.00	0.05	0.00	1.3%	2.18	0.19	3.26	0.62	82.29	80.32	ITP=625.71

100 YEAR/LFB HYDRAULICS (DETAINED)

St Charles County Government
Hydraulic Review Output Data

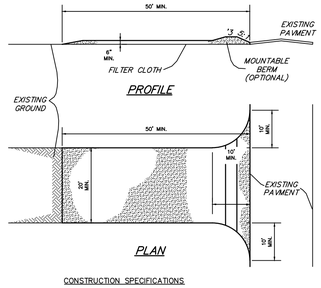
\\VAULTSERVER\FileFolders\180000\18154A - Shady Creek Commercial\Engineering\Hydraulics\100 yr 20 min\18154A 100 yr 20 min 100yr LFB.txt
8/31/2022
Calculations Under Full Flow

	Upp Str	Low Str	PL	S	Upp FL LN	Low FL LN	PS	Upp ST EL	Depth HY GR	Upp HY EL	Low HY EL	Hydr Grade	FR Head	VEL	VEL Head	Junc Loss	Turn Loss	Curve Loss	STR Grade	Inl Cap	DR Area	P.I.	Q	TQ	Pipe Cap	Remarks
1	OS14	CI62	39	30	627.00	626.23	1.97	630.31	-1.03	631.34	630.13	0.00820	0.32	7.56	0.89	0.89	0.00	0.00	OS	0.00	2.02	4.04	8.16	37.13	57.57	
2	CI62	CI61	50	36	626.23	625.93	0.60	634.37	4.24	630.13	629.90	0.00330	0.16	5.40	0.45	0.00	0.07	0.00	2.0%	1.64	0.25	4.15	1.04	38.17	51.66	
3	CI61	MH60	31	36	625.93	625.75	0.58	634.12	4.22	629.90	629.81	0.00340	0.10	5.49	0.47	0.00	0.19	0.00	2.0%	1.64	0.16	4.12	0.66	38.83	50.80	
4	MH60	EXCI16	146	36	625.75	624.29	1.00	633.00	3.39	629.61	628.91	0.00340	0.50	5.49	0.47	0.00	0.20	0.00	0.0%	0.00	0.00	0.00	0.00	38.83	66.70	
5	OS4	EXCI16	138	36	624.44	624.29	0.11	630.10	0.47	629.63	628.91	0.00260	0.36	4.82	0.36	0.36	0.00	0.00	OS	0.00	10.24	3.90	34.05	34.05	22.12	
6	EXCI16	EXCI15A	74	36	624.19	623.40	1.07	629.99	1.08	628.91	626.40	0.01260	0.93	10.59	1.74	1.58	0.00	0.00	1.3%	2.18	0.45	4.33	1.95	74.83	68.99	
7	EXCI15A	EXFE15	48	36	623.40	622.71	1.45	630.08	3.72	626.36	625.71	0.01290	0.61	10.70	1.78	0.00	0.04	0.00	1.3%	2.18	0.19	4.38	0.83	75.66	80.32	ITP=625.71



DRY BASIN OVERFLOW STRUCTURE 4 DETAIL
NOT TO SCALE

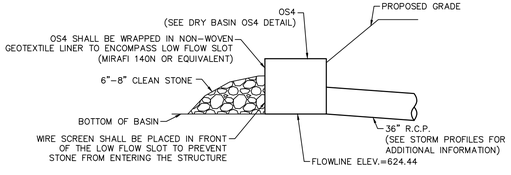
2 YEAR 20 MINUTE HIGHWATER = 628.62
15 YEAR 20 MINUTE HIGHWATER = 629.35
25 YEAR 20 MINUTE HIGHWATER = 629.68
100 YEAR 20 MINUTE HIGHWATER = 629.98
100 YEAR 20 MINUTE LFB HIGHWATER = 630.94



CONSTRUCTION SPECIFICATIONS

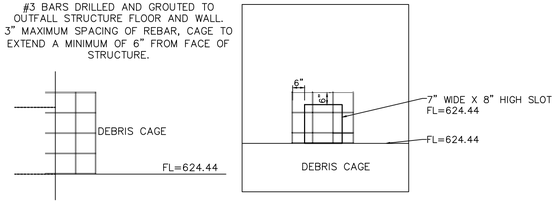
1. Stone Size – Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length – As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness – Not less than six (6) inches.
4. Width – Twenty (20) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth – Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing – Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE/WASHDOWN AREA
NOT TO SCALE



OS4 SEDIMENT CONTROL
NOT TO SCALE

NOTE:
1. OS4 SEDIMENT CONTROL SHALL BE PUT INTO PLACE IMMEDIATELY AFTER THE CONSTRUCTION OF OS4.
2. OS4 SEDIMENT CONTROL SHALL BE IN PLACE UNTIL THE ENTIRE COMPLETION OF ALL PROPOSED DEVELOPMENTS AT SHADY CREEK.
3. AFTER COMPLETION OF ALL PROPOSED DEVELOPMENTS AT SHADY CREEK, OS4 SEDIMENT CONTROL MEASURES SHALL BE DEMOLISHED.
4. DEBRIS CAGE AS DISPLAYED IN DEBRIS CAGE OS4 LOWER SLOT DETAIL SHALL BE CONSTRUCTED AFTER THE DEMOLITION OF OS4 SEDIMENT CONTROL MEASURES.



DEBRIS CAGE OS 4 LOWER SLOT
NOT TO SCALE

PROJECT TITLE:
SHADY CREEK COMMERCIAL

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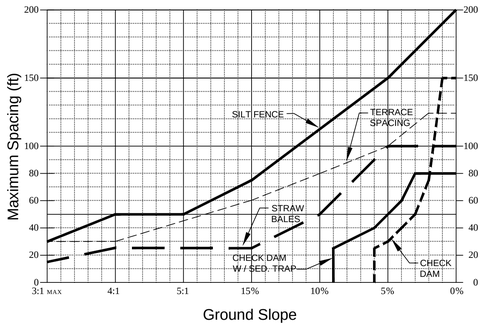
STORM SEWER PROFILE AND DETAILS

P+Z No. ----------
Approval Date: ----------
City No. GR22-000008

Page No.
6 of 7

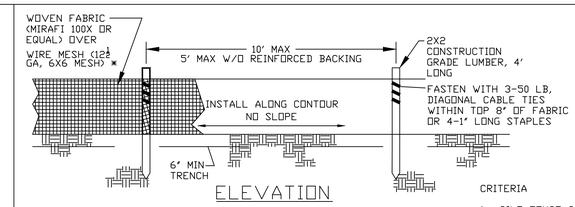


DESIGN CRITERIA

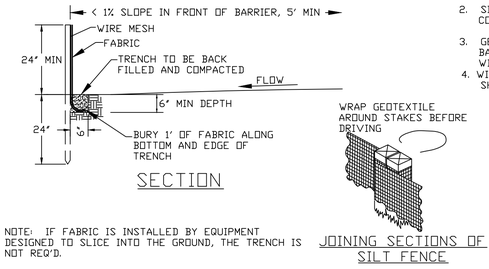
1. SILT FENCE FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
2. STRAW BALE BARRIERS FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
3. REFER TO INDIVIDUAL ESC FIGURE FOR INSTALLATION.
4. TERRACING INCLUDES LOGS, WATTLES & FILTER SOCKS.

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

SPACING CHART FOR ESC DEVICES



ELEVATION



SECTION

JOINING SECTIONS OF SILT FENCE

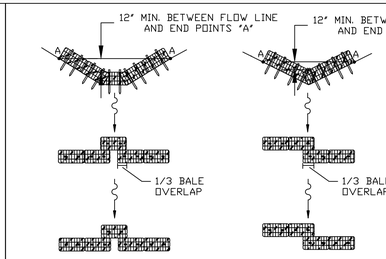
CRITERIA

1. SILT FENCE SHALL BE 24 INCHES HIGH.
2. SILT FENCE SHALL NOT BE USED FOR CONCENTRATED FLOWS.
3. GEOSYNTHETIC REINFORCED SILT FENCE BACKING MAY BE USED IN LIEU OF WIRE MESH.
4. WIRE MESH WILL BE USED AT LOCATIONS SHOWN ON THE APPROVED SWPPP.

NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT REQ'D.

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

SILT FENCE INSTALLATION SHEET FLOW (ONLY)



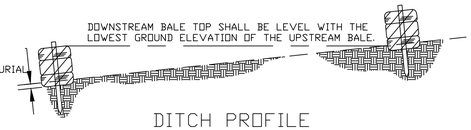
TRAPEZOIDAL DITCH V-DITCH

CRITERIA FOR LOW CONCENTRATED FLOWS

1. DRAINAGE AREAS SHALL BE LESS THAN 1 ACRE.
2. INSTALL TWO STAKES PER BALE.
3. BALES WILL BE TRENCHED 4" DEEP INTO EARTH.
4. MAXIMUM CHANNEL SLOPE OF 3%.
5. SEDIMENTATION TRAPS TO BE USED IN HIGHLY EROSIVE AREAS.

CHECK DAM SPACING

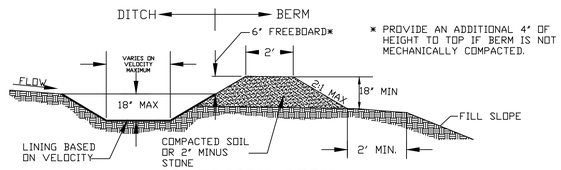
Ditch Slope	Maximum Spacing
3%	50%
2%	75%



DITCH PROFILE

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

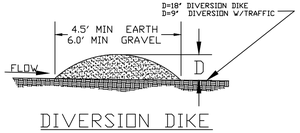
STRAW BALE CHECK DAM



DIVERSION BERM

DESIGN CRITERIA

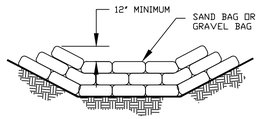
1. DIVERSIONS SHALL BE USED FOR DRAINAGE AREAS ≤ 3 ACRES.
2. DIVERSION CHANNELS SHALL BE DESIGNED TO CONVEY THE 6-MO STORM AT NON-ERODSIVE VELOCITIES.
3. CRITICAL LOCATIONS SHALL BE DESIGNED FOR THE 15YR / 20Min. STORM.
4. MAXIMUM CHANNEL SLOPE OF 3% WITHOUT CHECK DAMS.
5. SWALE SEDIMENT TRAPS ARE TO BE USED IN HIGHLY EROSIVE AREAS.
6. CHANNELS SHALL BE PROTECTED USING APPROPRIATE CHANNEL LINERS.
7. CHANNEL OUTLETS MUST BE STABILIZED.
8. STORM SEWERS MAY BE USED IN LIEU OF OPEN CHANNELS.



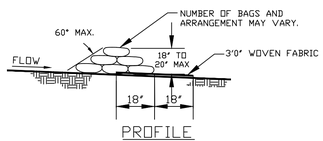
DIVERSION DIKE

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

DIVERSION BERMS + DIKES

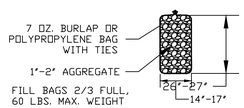


CROSS SECTION



PROFILE

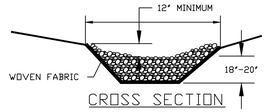
SAND BAG OR GRAVEL BAG CHECK DAM



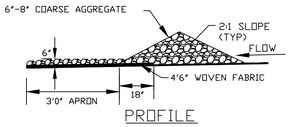
GRAVEL BAG

NOTE:
1. CHECK DAMS MAY BE CONSTRUCTED OF SEVERAL ESC CHECK DAM PRODUCTS.
2. *SEE TABLE 60-12 AND ESC 1 FOR CHECK DAM SPACING.*

LEVEL CENTER SECTION, WITH 12" RISE ON BOTH SIDES TO CAUSE FLOW OVER, NOT AROUND, CHECK DAM



CROSS SECTION

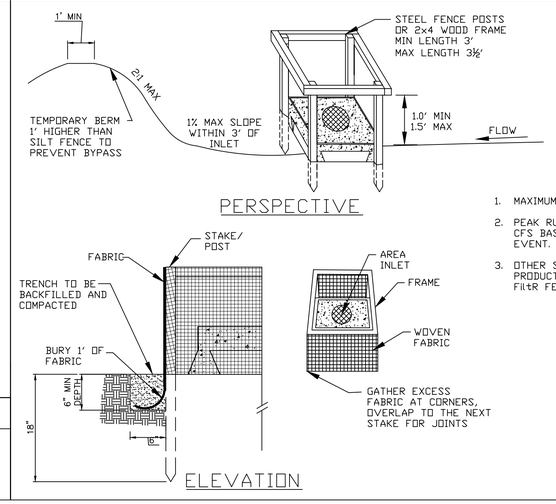


PROFILE

ROCK CHECK DAM

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

CHECK DAMS



PERSPECTIVE

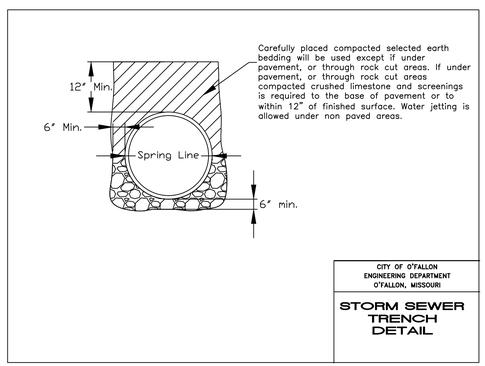
DESIGN CRITERIA

1. MAXIMUM DRAINAGE AREA = 1 ACRE.
2. PEAK RUNOFF SHALL NOT EXCEED 2 CFS BASED ON A 6-MONTH STORM EVENT.
3. OTHER SEDIMENT PROTECTION PRODUCTS MAY BE USED, SUCH AS FILTR FENCE™

ELEVATION

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

AREA INLET PROTECTION FABRIC DROP



CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

STORM SEWER TRENCH DETAIL

ENGINEERS SEAL DOES NOT APPLY TO DETAILS ON THIS SHEET.

* All other Storm or Sanitary Sewer Details will be by M.S.D. Standards and Specifications.

PROJECT TITLE:

SHADY CREEK COMMERCIAL

Bax Project # 20-16154A | Issue Date: 04/27/2022

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
FAX 928-1718

REVISIONS

06/30/22	CITY COMMENTS
07/29/22	CITY COMMENTS
08/31/22	CITY COMMENTS

Developer / Owner:
JoAnn Griffith and Gary Kopadt
8780 Highway N
Lake Saint Louis, MO 63367
636-544-2128

EROSION CONTROL DETAILS AND CONSTRUCTION DETAILS

P+Z No. ----------
Approval Date: ----------
City No. GR22-000008

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