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City of Lee's Summit Scherer Road, Scherer Parkway, and Longview Boulevard Alignment Analysis

Final Report

Prepared for:

City of Lee's Summit

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1. Executive Summary

The purpose of this report is to design and analyze alternative roadway alignments for future corridors of Scherer Road, Scherer Parkway, and Longview Boulevard, located in the southwest quadrant of the City of Lee's Summit, Missouri (City). The City will then be able to determine where right-of-way acquisitions are needed as well as plan for future development.

The following were achieved as part of the study:

- Establish design criteria and typical sections.
- Develop and analyze three alignments for Scherer Parkway.
- Develop and analyze one alignment each for Scherer Road and Longview Parkway.
- Determine the impacts on adjacent properties.
- Provide an opinion of probable costs for each alignment.
- Update the City's TransCAD Model and create a Year 2055 model.

2. Introduction

Lochmueller Group (Lochmueller) prepared the following report to evaluate future alignment alternatives for Scherer Road, Scherer Parkway, and Longview Boulevard.

2.1. Background

The City of Lee's Summit has recognized a need for improvements to the existing Scherer Parkway, Scherer Road, and Longview Boulevard to accommodate for future development projects including the planned development of four future schools and a future park adjacent to the Scherer Road corridor.

The proposed alignments for the future development of these roads are discussed in this report to account for the need for major arterial roadways because of increases in traffic due to these planned developments.

2.2. Study Area Description

The study area for the alternative analyses is shown in **Figure 1**. The area includes Scherer Road between Sampson Road and Route 291 Highway, a new Scherer Parkway between Sampson Road and the future Hook interchange at Route 291 Highway, and Longview Boulevard between Longview Road and Hook Road. The study focuses on evaluating existing conditions and updating the City's TransCAD model to include future growth within the Property Reserve property and developing recommended alignments for the future corridors of Scherer Parkway, Scherer Road, Longview Boulevard, and Hook Road Connector.

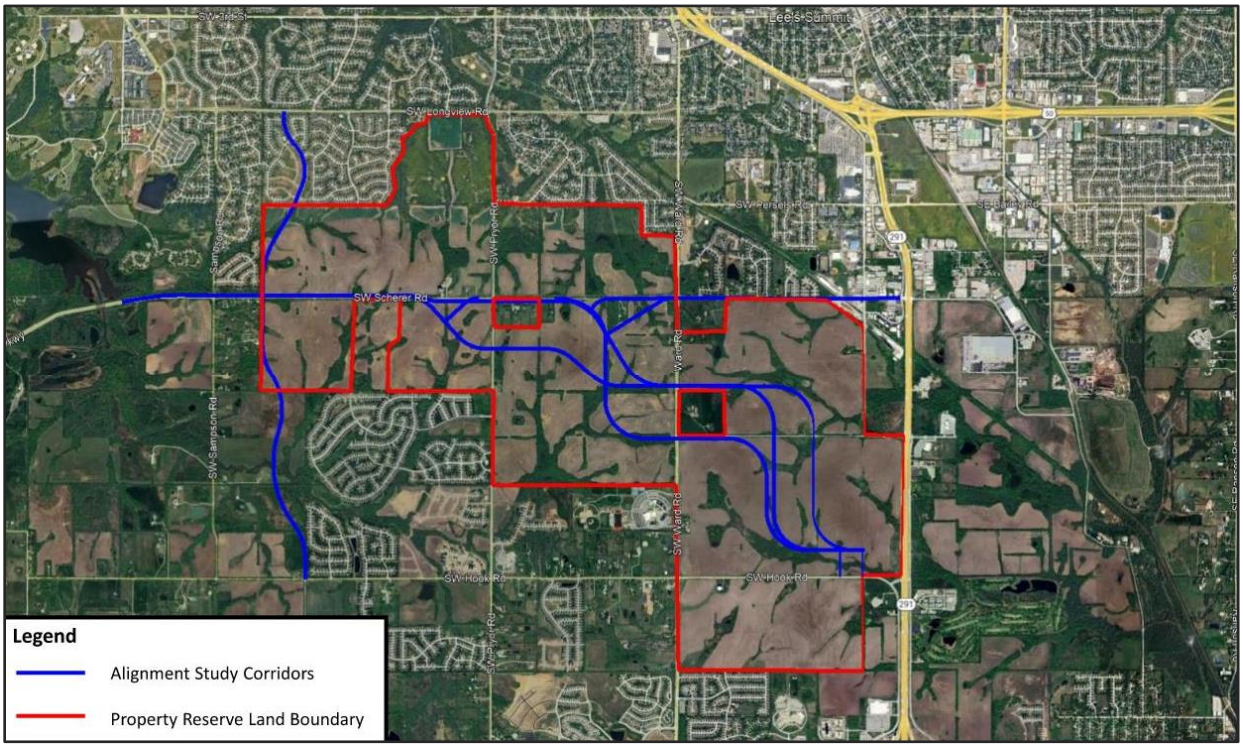


Figure 1 – Study Area

3. Existing Conditions

3.1. Existing Roadways

3.1.1. Scherer Parkway

Scherer Parkway is a cross jurisdictional artery that extends from Interstate 49 in Grandview through Kansas City, Missouri to Route 291 in Lee's Summit. West of Interstate 49, the roadway is Grandview's main street. An alignment study for Scherer Parkway was previously completed in 1997. In addition, Scherer Road between Sampson Road and Route 291 is a project identified in Connected KC 2050, a long-range metro transportation plan for the Kansas City region.

At Lee's Summit western city limits, Scherer Parkway is a four-lane divided minor arterial road running east to west between Raytown Road and Sampson Road. Scherer Parkway crosses over a tributary of Longview Lake. The posted speed limit is 45 mph. The roadway has two 12-foot lanes in each direction, with a raised median, 6-foot wide outside shoulders, and open ditches. As it approaches Sampson Road it transitions into a two-lane roadway with 12-foot lanes. There are no pedestrian facilities or street lighting along this section of roadway.

3.1.2. Scherer Road

Scherer Road is a minor arterial roadway that provides east/west traffic movement from Sampson Road to Route 291. The roadway is a two-lane unimproved rural road with 11-foot lanes, no shoulders, and open ditches. The posted speed limit is 35 mph. There are no pedestrian facilities or street lighting along this section of roadway.

3.1.3. Longview Boulevard

Longview Boulevard is a long-planned major arterial in coordination with the cities of Lee's Summit and Kansas City, Missouri connecting Route 150 to Interstate 470 and extending beyond to the north and south as a significant regional connection within an area otherwise absent a north south arterial between Pryor Road and Raytown Road.

Beginning at Longview Road, Longview Boulevard is a 2-lane local road with 12-foot lanes, curb and gutter, and six-foot sidewalks on both sides of the roadway. An enclosed storm sewer system provides for surface drainage. The right-of-way and side road connections are prepared for future widening to a four-lane divided section. The existing lanes will become the future southbound lanes for the ultimate roadway section. Longview Boulevard runs through the Highland Meadows subdivision.

3.2. Existing Right-of-Way

3.2.1. Scherer Parkway

The existing right-of-way for Scherer Parkway varies between 100' and 320' from Raytown Road to Sampson Road, the widest corridor existing adjacent to Longview Lake. As Scherer Parkway approaches the Sampson Road intersection, it narrows to approximately 160'.

3.2.2. Scherer Road

The existing right-of-way for Scherer Road from Sampson Road to Route 291 is generally 50' wide and varies from 40' to 130'. At Heartwood Drive the right-of-way is 60' wide. Between Jeffrey Drive and the Rock Island Trail the right-of-way is 40' wide.

3.2.3. Longview Boulevard

A 110' platted right-of-way corridor through the Highlands Meadow Subdivision exists for Longview Boulevard between Longview Road and 12th Street.

3.3. Existing Land Use

Figure 2 shows the current land use zoning for the project area. The primary land use within the alignment study area is single-family residential and agricultural. There are also small pockets of industrial and 4-family/fourplex land uses on the eastern end of the Scherer Road corridor near Jefferson Street.

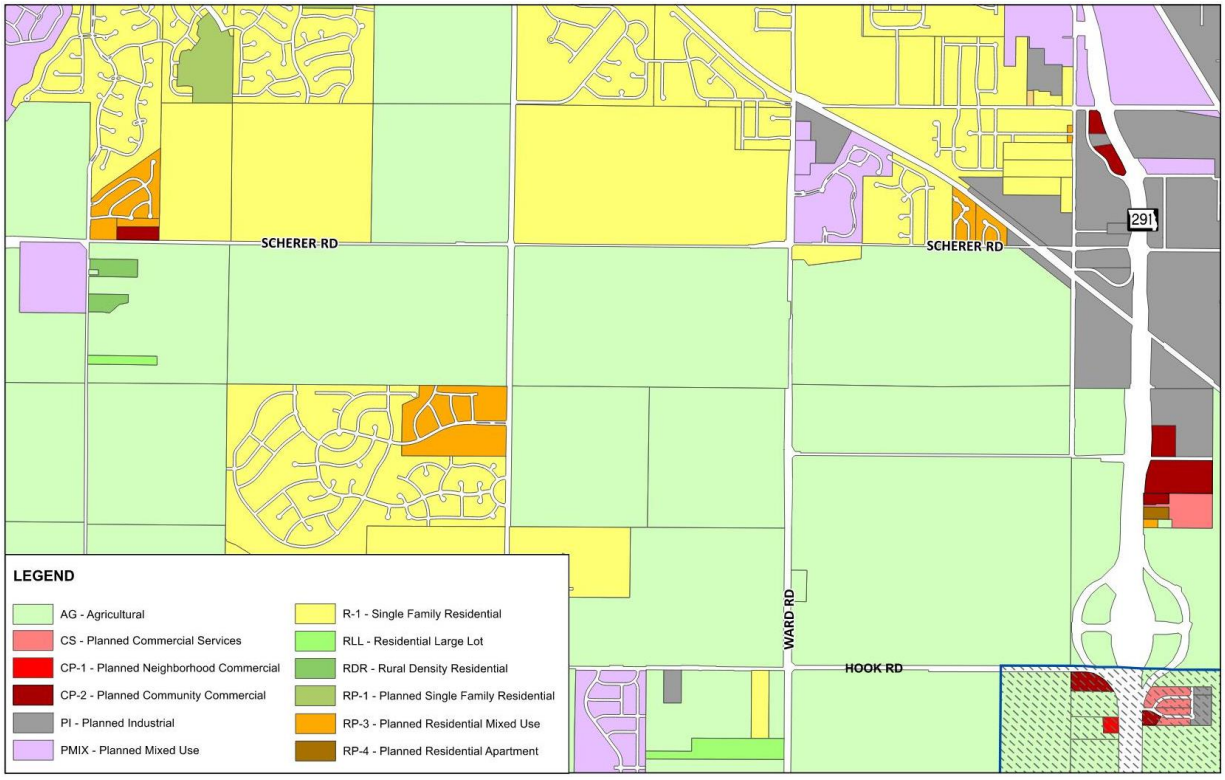


Figure 2 – Lee's Summit Zoning Map

3.4. Existing Vertical Alignments

Existing speed limits along the project corridor are 45 mph for Scherer Parkway west of Sampson Road and 35 mph along Scherer Road east of Sampson Road. The existing speed limit for Longview Boulevard is 35 mph. Further discussion of the existing vertical alignment is covered in the Alignment Alternatives Development section.

3.4.1. Scherer Road

Scherer Road from Sampson Road to Jefferson Street is a 2-lane undeveloped rural segment. This segment contains substandard vertical curves that create sight distance issues when compared to AASHTO standards. Although minor vertical grade adjustments will be required, there are a couple significant adjustments west of Ward Road that will be necessary to meet criteria.

3.4.2. Longview Boulevard

The area planned for the proposed extension of Longview Boulevard is currently undeveloped south of its current termination within the Highlands Meadow Subdivision. It is expected that substantial cuts to the existing rolling terrain will be necessary in a few areas to establish a proposed vertical alignment meeting current AASHTO standards. The proposed alternative discussed in the Alignment Alternatives Development segment further elaborates on the proposed alignment's changes to the existing terrain.

3.5. Existing Drainage

The proposed project area is divided between two HUC-8 watershed boundaries, South Grand (10290108) and Lower Missouri-Crooked (10300101). The South Grand portion is within the HUC 12 Headwaters Big Creek (102901080302) watershed. The Lower Missouri-Crooked portion is divided between the Mouse Creek-Little Blue River (103001010202) and the Cedar Creek-Little Blue River (103001010203) watersheds. These watersheds are shown in **Figure 3** below.

There is limited drainage infrastructure within the proposed study area. Scherer Road has several short sections with curb and gutter and underground storm sewer piping at the intersection of Scherer Road and Sampson Road, Scherer Road and Ward Road, and Scherer Road and Jeffrey Street. The remaining portions of the roadway are drained via ditch and culvert into existing drainage channels and streams.

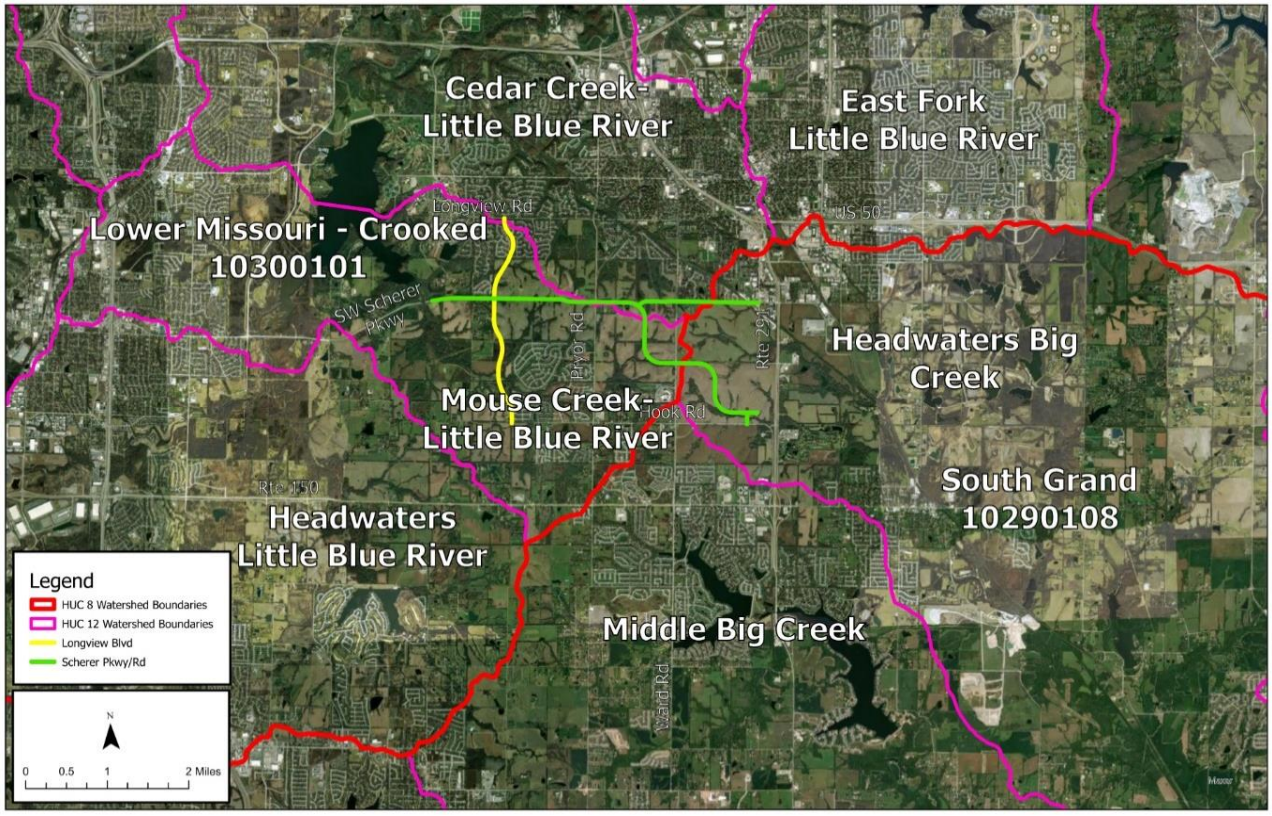


Figure 3 – Watershed Boundaries

3.6. Existing Utilities

Utilities within the project area are primarily located along the existing roadway corridors except for the overhead transmission power lines that traverse the undeveloped Property Reserve property. Most impacts to the utilities will be the result of upgrades to the existing unimproved Scherer Road from west of Sampson Road to Jefferson Street. Utilities within the existing Scherer Road corridor that may be impacted include the following:

- Tri County Water Authority
- Lee's Summit Water
- KC Water
- Lee's Summit Sewer
- Evergy (Electric)
- Spire (Gas)
- AT&T Distribution (Cable)
- Google (Fiber)
- Consolidated (Fiber, Cable)
- Spectrum (Cable)
- Unite Private Networks (Fiber)

In addition, many of the same utilities exist along the Pryor Road, Ward Road, and Hook Road corridors and may be impacted by the future Scherer Parkway improvements as they intersect with these roadways. And although the future parkway will primarily traverse undeveloped land, consideration will need to be given to new water and sewer mains to service this area as it develops. The City's Water Master Plan and Wastewater Master Plan should be referenced as this future corridor is constructed.

Many franchise utilities will also be planning to install facilities along the Scherer Parkway corridor as it is built, and the area develops. Given the proposed generous 200' right-of-way corridor, there should be ample space to provide a dedicated corridor for utilities to install their infrastructure to serve the new development.

3.7. Existing Operational Analysis

3.7.1. Existing Road Information

Within the project limits, Scherer Road transitions into a two-lane roadway with designated left-turn lanes at Ward Road, Jefferson Street, and Route 291. Scherer Road intersects Sampson Road, Pryor Road, Ward Road, Jefferson Street, Market Street, and Route 291, with turn lanes provided at key intersections.

Pryor Road is classified as a major arterial running in the north-south direction with a speed limit of 45 mph. The roadway is a two-lane road with dedicated left turn lanes at the Scherer Road intersection.
Ward Road is classified as a major arterial oriented in the north-south direction with a posted speed limit of 35 mph north of Scherer Road and 45 mph south of Scherer Road. The roadway is a four-lane divided highway with a 15-foot grass median and has dedicated left turns on all approaches of the intersection.

Jefferson Street is classified as a commercial/industrial collector beyond its intersection with Scherer Road, running north-south with a posted speed limit of 35 mph. It is a two-lane roadway featuring a two-way left-turn lane (TWLTL) just north and south of the Scherer Road intersection. Both Jefferson Street and Scherer Road have dedicated left-turn lanes at their intersection.

Route 291 is classified as a principal arterial running north-south with a speed limit of 45 mph. The roadway is a four-lane divided highway with a 40-foot grass median and has dedicated right- and left-turn lanes at the intersection with Scherer Road. **Figure 4** illustrates the existing intersection lane configurations and traffic control at the study intersections.

The intersection of Scherer Road and Heartwood Drive currently operates under all-way stop control (AWSC). This intersection control is due to the poor sight distance found at the intersection. Improvements to Scherer Road would look to improve the alignment at this intersection, thus improving the sight distance to remove the AWSC.

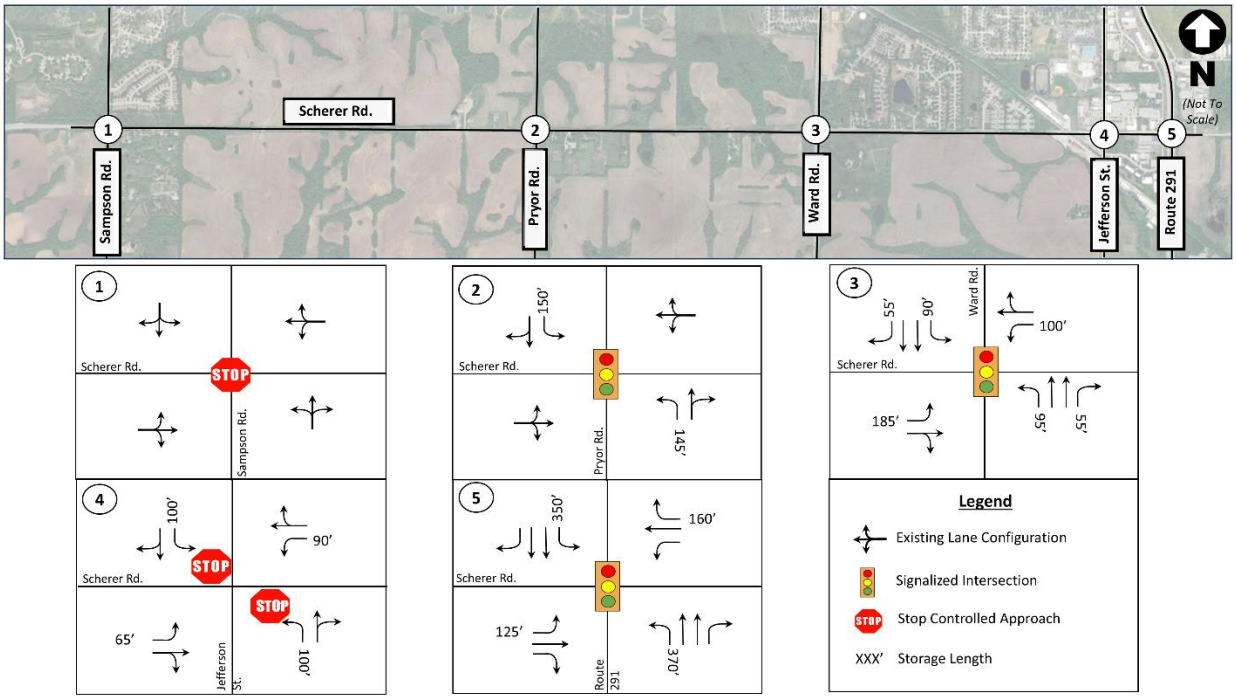


Figure 4 – Existing Intersection Lane Configuration

3.7.2. Existing Traffic Volumes

The City of Lee's Summit collected traffic volumes (ADT) for the roadways over multiple years between 2017 and 2022. The existing ADT for the study area corridor is illustrated in **Figure 5**.

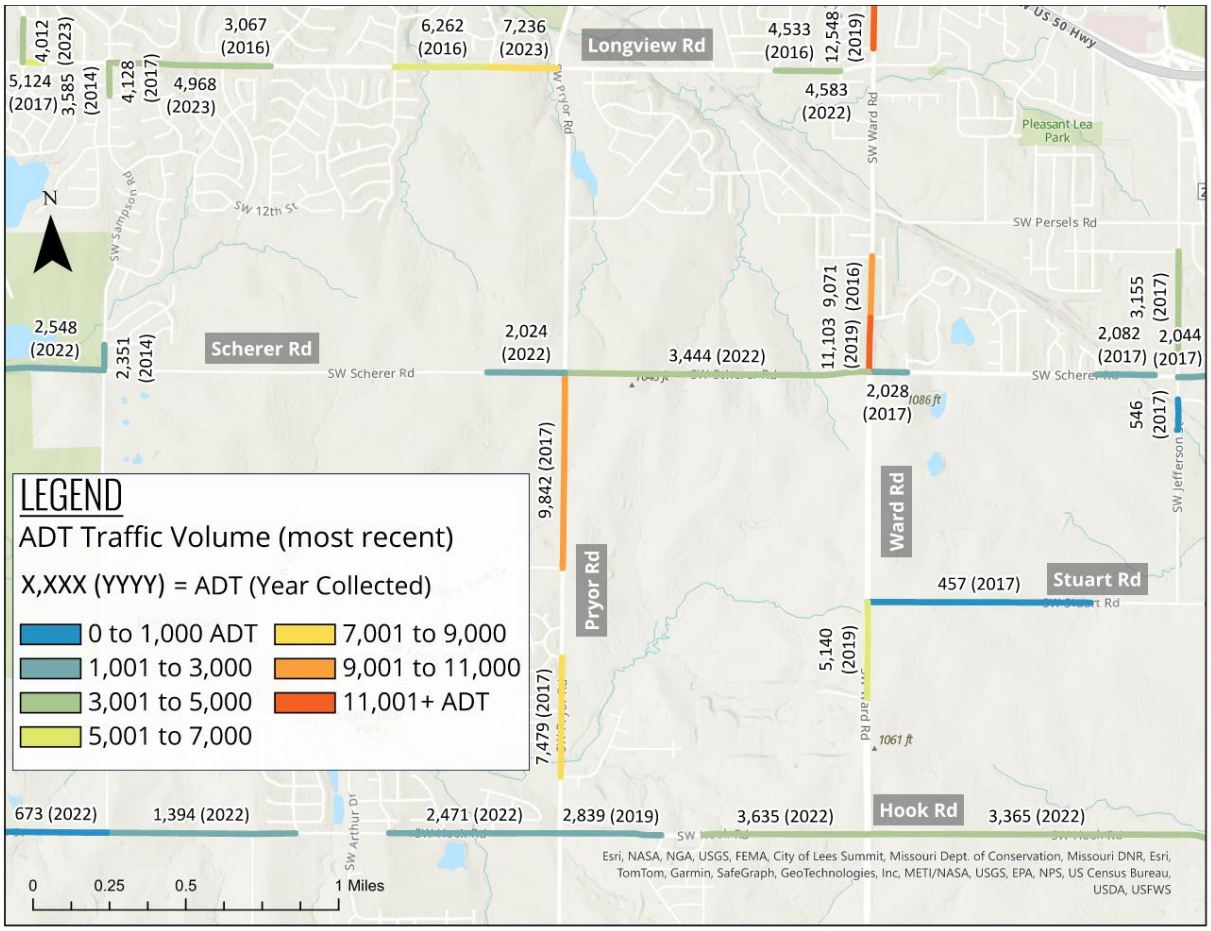


Figure 5 – Existing ADT

3.7.3. Safety Analysis (Crash Analysis)

Crash data for the study area was obtained from the City of Lee's Summit and the MoDOT crash database, covering a five-year period from 2019 to 2023. The study area spans Scherer Road from Sampson Road to Route 291 and includes five intersections. Most crashes occurred at two key locations: the intersections of Scherer Road with Route 291 and Pryor Road.

To analyze crash patterns, a crash dashboard (**Figure 7**) was created to illustrate trends in crash type, contributing factors, time-of-day occurrences, and lighting conditions that may indicate correctable safety issues. In total, 106 crashes were reported within the study area. A collision diagram is provided in **Figure 6**.

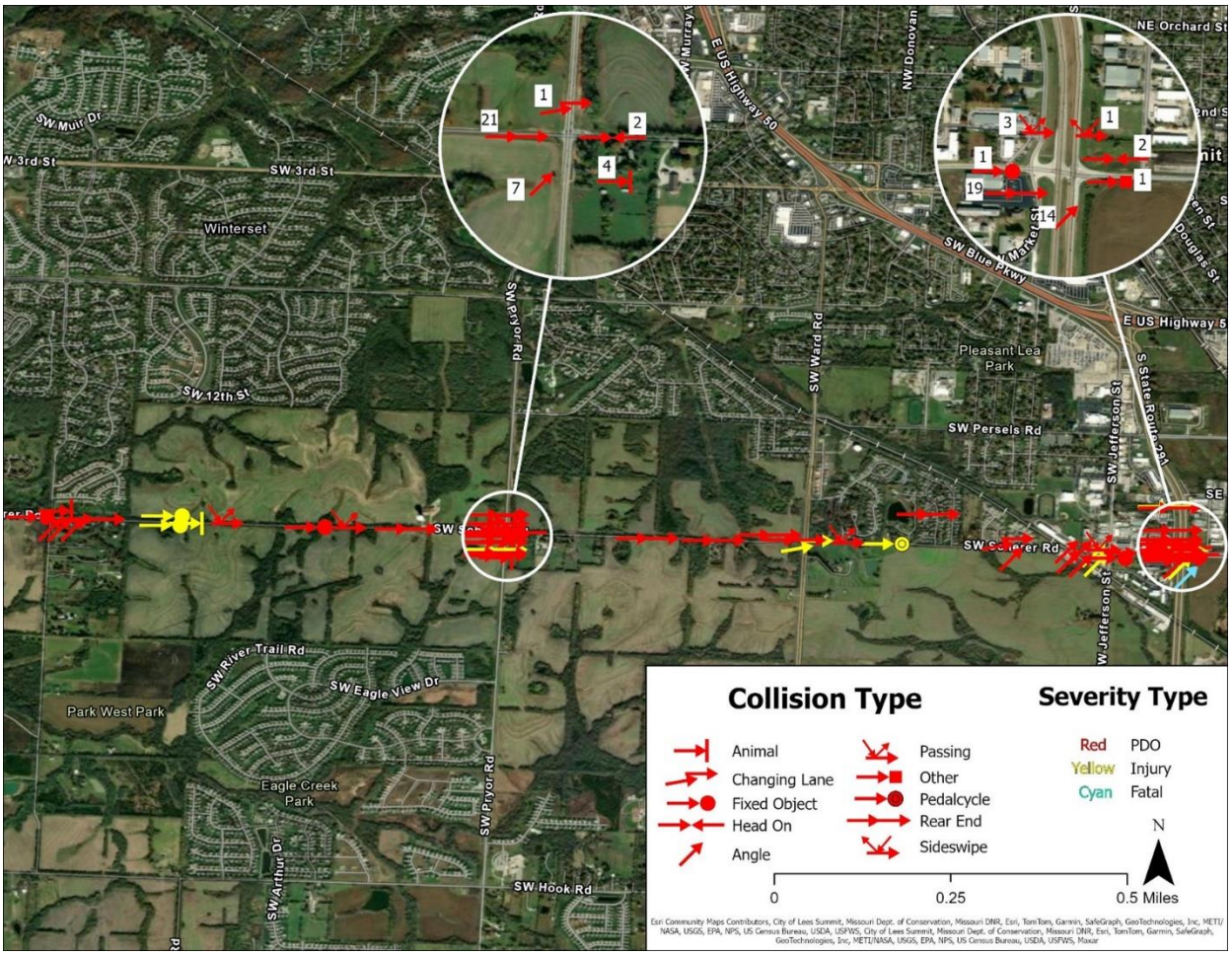


Figure 6 – Existing Corridor Collision Diagram

Between 2019 and 2023, the intersection of Scherer Road and Route 291 experienced 41 crashes. Rear-end collisions were the most common, accounting for 20 incidents, followed by eight right-angle crashes and six left-turn crashes. The remaining seven crashes included passing, out-of-control, sideswipe, head-on, and other types of collisions. Weather and lighting conditions did not have a strong impact on the reported crashes but did play a role in some of the incidents—six rear-end crashes occurred during rain or cloudy conditions, with three of those on wet roads. Four rear-end crashes happened in dark conditions.

One crash occurred on the existing Longview Boulevard within the five-year period. This crash occurred at the intersection of Longview Boulevard and SW Heather Drive. It was an out-of-control crash in clear weather and dry roads that resulted in crashing into street light support.

At the intersection of Scherer Road and Pryor Road, 35 crashes were reported. Rear-end collisions were again the most common, with 21 incidents, followed by five right-angle crashes. The remaining crashes included right-turn, head-on, left-turn, lane-changing, and farm animal-related crashes. Weather and lighting do not appear to be a strong factor in crashes at this location. It should be noted that a significant vertical curve on the south leg of Pryor Road may contribute to sight distance issues.

Across the entire corridor, rear-end collisions were the most prevalent, representing 45% of all crashes (48 out of 106 incidents). Angle crashes accounted for 28% (30 incidents), while animal-related and fixed-object collisions each made up 6% (totaling 12% combined). The remaining 15% included head-on (4%), sideswipe (4%), passing (3%), lane-changing (2%), other (1%), and bicycle-related (1%) crashes.

A total of 21 crashes resulted in injuries, including 18 minor injuries and two serious injuries. The corridor experienced one fatal crash at the intersection of Route 291. The fatal crash reported was a right-angle crash in clear weather and dry roads in 2019, before the existing signal was installed at the intersection. One of the serious injury crashes was reported at the intersection of Route 291. This crash was an angle crashes that occurred in 2023 during daylight hours in clear weather with dry road conditions. Improvements to the intersection were made before this crash happened. The other serious injury crash was reported near the intersection of Heartwood Drive. This crash was a pedal cycle crash that occurred during daylight hours in clear weather with dry road conditions in 2022. No improvements were made to the area where the crash took place.

As discussed, there was one fatal crash in the study area during the study period. Through discussions with city staff, it was learned that the corridor has experienced fatalities in the past. In addition, there was a recent fatality at the Scherer Road and Jefferson Street intersection involving a bicycle.

Analysis of crash data highlighted key trends in timing and conditions. The afternoon peak between 4:00 PM and 6:00 PM was the most hazardous, with 31 crashes occurring during this period. Most crashes (71%) happened in clear weather, and 80% occurred on dry road surfaces. Regarding lighting conditions, 77% of crashes took place during daylight, while 5% occurred at night on lit roads and 13% at night on unlit roads. These findings indicate that adverse weather and poor road conditions were not primary factors in crashes along Scherer Road.

The high incidence of rear-end collisions suggests potential issues such as driver inattention at intersections, misjudgment of speed and distance, congestion leading to stop-and-go traffic, or roadway designs that may not adequately support current traffic volumes. Angle crashes may be attributed to factors such as limited sight distance, high speeds, misjudging gaps, or insufficient driver awareness at intersections. Addressing these concerns through improved roadway design, traffic management strategies, and driver education could help reduce both the frequency and severity of crashes along this corridor.

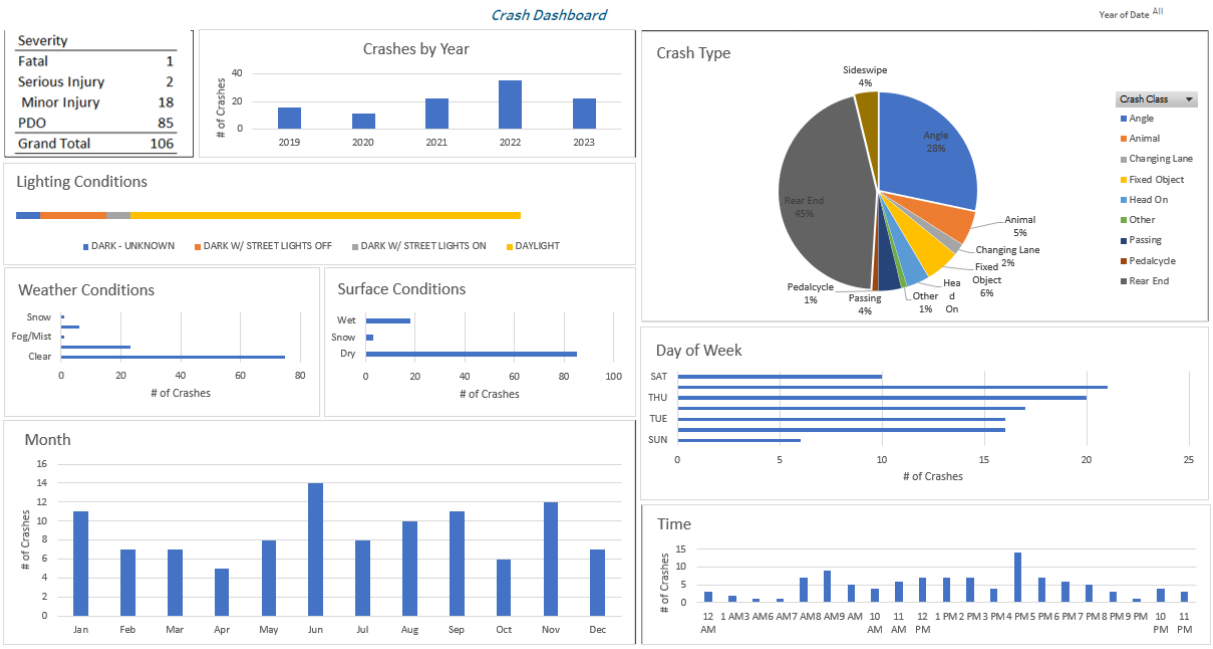


Figure 7 – Existing Crash Dashboard

Another measure for safety is crash rates. Crash rates can be calculated for each project and compared to Statewide and/or District wide rates. For this project, a segment crash rate was determined for Scherer Road from approximately 1,700 feet west of Sampson Road to Route 291 using the following formula:

$$R = \frac{100{,}000{,}000\ x\ C}{365\ x\ V\ x\ N\ x\ L}$$

Where:

R = Crash rate for the segment expressed as crashes per 100 million vehicle miles of travel.
C = Total number of roadway crashes in the study period.
V = Traffic volumes using Average Daily Traffic (ADT).
N = Number of years of data.
L = Length of the roadway segment in miles.

For all crashes in the study segment this gives:

$$R = \frac{1{,}000{,}000\ x\ 106}{365\ x\ 2361.7\ x\ 5\ x\ 4.1} = 599.84$$

Comparisons are made based on the functional classification of the roadway segment. Scherer Road is classified as a major arterial. The City of Lee's Summit does not have crash rate information available, so MoDOT rates for a principal arterial were used. **Table 1** contains the crash rates for Scherer Road as well as the statewide and Kansas City district wide rates.

Table 1 – Scherer Road 5-Year Crash Rate Comparison

	All Crashes	Fatality	Serious Injury	Minor Injury	Property Damage Only
Scherer Road	599.84	5.66	11.32	101.86	481.00
Statewide Average	208.11	1.22	5.37	46.6	154.92
District wide Average	241.11	1.54	7.18	56.73	175.64

The crash rate comparison indicates that this segment of Scherer Road experiences significantly more crashes of all severities compared to a similar road type in the Kansas City MoDOT District or statewide in Missouri.

4. Conceptual Design

Existing Horizontal and Vertical Alignments were analyzed to find areas that could be improved from a safety and drivability standpoint. The proposed horizontal and vertical alignments for Scherer Parkway, Scherer Road, and Longview Boulevard are described below.

4.1. Design Criteria

Table 2 – Design Criteria

Roadway	Scherer Road	Longview Boulevard	Scherer Parkway	Hook Road	Design Standard Source
Typical Sections					
Classification	Minor Arterial	Major Arterial	Major Arterial	Minor Arterial	City of Lee's Summit Road Classification Map
Min. R/W Width (Ft)	80	100	100	80	LS Section 5200
*Design Speed (mph)	35-45	35-45	40-45	35-45	LS Section 5200
Min. Lane Widths (Ft)	11	11	11	11	LS Section 5200
Typical Side Slopes	2% - 4%	2% - 4%	2% - 4%	2% - 4%	LS Sidewalk/Shared-Use Path Detail
Min. Sidewalk Width (Ft)	5	5	5	5	LS Section 5300
Min. SUP Width - Without Buffer (Ft)	10	10	10	10	LS Sidewalk/Shared-Use Path Detail
Min. SUP Width - With Buffer (Ft)	10	10	10	10	LS Sidewalk/Shared-Use Path Detail
Bike Lane Width (Ft)	5	5	5	5	AASHTO BICYCLE
Geometrics					
Min. Horizontal Radius	N/A	N/A	N/A	N/A	LS Section 5200
Max. Gradient	6%	7%	6%	7%	LS Section 5200
Min. Gradient	1.00%	1.00%	1.00%	1.00%	LS Section 5200
Vertical Curve					
Min. K Value (Crest)	44-84	44-84	44-84	44-84	LS Section 5200

Min. K Value (Sag)	64-96	64-96	64-96	64-96	LS Section 5200
Min. Stopping Sight Distance (Ft)	305-360	305-360	305-360	305-360	LS Section 5200
Min. Cross Slope	2.00%	2.00%	2.00%	2.00%	LS Section 5200
Drainage					
Crossroad culvert design storm	1%				APWA Section 5600

*Posted speed and design speed are equal.

LS = Lee's Summit Design Criteria

AASHTO = A Policy on Geometric Design of Highways and Streets (Greenbook) 2018 - 7th Edition

AASHTO BICYCLE = Guide for the Development of Bicycle Facilities 2012 - 4th Edition

MoDOT = MoDOT Design Manual

4.2. Typical Sections

Typical sections were developed for Scherer Parkway, Longview Boulevard, and Scherer Road. Each proposed typical section is described below and illustrated in the Typical Section drawing located in **Appendix A**.

4.2.1. Scherer Parkway

The typical section for the proposed Scherer Parkway is nine-inch Portland Cement Concrete Pavement (PCCP) over six-inch aggregate base course on geogrid with a 12-inch compacted subgrade. The section includes four 11-foot lanes, two in each direction separated by a 26-foot raised median. The median width will allow for dual left-turn lanes in the future. There will be a five-foot sidewalk and a 10-foot bike trail on both sides of the road. A 16-foot green space will be located at the back of the curb on both sides to accommodate right-turn lanes as needed. A 10-foot landscape buffer between the sidewalk and bike lane is provided. Finally, a two-foot curb and gutter for both the median and outside edge of traveled way will be constructed. 4:1 cut and fill slopes were used in all areas.

4.2.2. Scherer Road

The Scherer Road pavement section is nine-inch PCCP over a six-inch aggregate base course on geogrid with a 12-inch compacted subgrade. This section includes three 11-foot lanes, one lane in each direction and a two-way left-turn lane (TWLTL). Five-foot bike lanes with two-foot curb and gutter will be provided on both sides of the roadway. There will be a five-foot sidewalk on the left side of the road, and a 10-foot shared-used path on the right side. A five-foot green space will be located at the back of the curb on both sides. 4:1 cut-and-fill slopes are used in all areas.

4.2.3. Longview Boulevard

Like the typical section for Scherer Parkway, Longview Boulevard includes nine-inches of PCCP over six-inches of aggregate base course on geogrid with a 12-inch compacted subgrade. The section will include four 11-foot lanes, two in each direction separated by a 20-foot raised median. There will be a five-foot sidewalk on the right side of the road, and a 10-foot shared-used path on the left side. A five-foot green space will be located at the back of the curb on both sides. A two-foot curb and gutter for both the median and outside edge of traveled way will be constructed. 4:1 cut and fill slopes were used in all areas.

4.2.4 Hook Road Connector

The Hook Road Connector pavement section is nine-inch PCCP over a six-inch aggregate base course on geogrid with a 12-inch compacted subgrade. This section includes three 11-foot lanes, one lane in each direction and a two-way left-turn lane (TWLTL). Five-foot bike lanes with two-foot curb and gutter will be provided on both sides of the roadway. There will be a five-foot sidewalk on the left side of the road, and a 10-foot shared-used path on the right side. A five-foot green space will be located at the back of the curb on both sides. 4:1 cut-and-fill slopes are used in all areas.

4.3. Right-of-Way

Right-of-way requirements for these future improvements are indicated in the typical sections and on the plans located in **Appendices A and B**. Scherer Parkway will require a 200-foot right-of-way corridor. Scherer Road will require a minimum 80-foot right-of-way corridor from Scherer Parkway to Jefferson Street. Longview Road will require a 110- to 120-foot right-of-way corridor.

Permanent drainage easements will be necessary for stormwater drainage facilities and at the end of the crossroad drainage structures. Temporary construction easements may be necessary to accommodate grading. Permanent utility easements may be necessary to accommodate utility relocations. However, the final locations of the proposed utility easements should be determined during the project design phase when more accurate utility information is available.

4.4. Horizontal Alignment

4.4.1. Scherer Parkway

Three alignments were considered for Scherer Parkway using the typical section previously described. These alignment alternatives are illustrated at the conclusion of this section in **Figure 8.** Each alternative begins approximately 2000’ west of Sampson Road where the existing parkway transitions to a two-lane roadway. They follow the existing Scherer Parkway / Scherer Roadway alignment to the east until they depart at various locations and traverse south-easterly through the Property Reserve property and terminate at the future Route 291 and Hook Road interchange. Alternative 1 and Alternative 3 depart the existing alignment in the same vicinity between Pryor Road and Ward Road, while Alternative 2 begins its departure between Longview Boulevard and Pryor Road.

4.4.2. Scherer Road

The proposed Scherer Road alignment follows that of the existing apart from the proposed tie-ins to the three Scherer Parkway alternatives. Alternative 1 and Alternative 2 are designed with longer tie-ins while Alternative 3 has a more concise tie-in. The length of the Scherer Road corridor also varies based on the Scherer Parkway location of departure from the existing alignment. The Scherer Road alignment terminates at Jefferson Street.

4.4.3. Longview Boulevard

The proposed alignment for Longview Boulevard begins at the current intersection of Longview Road and follows the existing two-lane roadway within the platted right-of-way of the Highland Meadows Subdivision to 12th Street, its current termination point. It then heads south abutting the Siena at Longview Subdivision platted right-of-way where it intersects Scherer Parkway. There is also a platted easement along the east side of Sienna at Longview Subdivision for Longview Boulevard.

The location of existing and platted right-of-way, the impacts to Park West Park and the large tract of land south of Mouse Creek, and the Mouse Creek crossing were taken into consideration with the future corridor extension south of Scherer Parkway to Hook Road. There is a platted easement along the west side of the Monarch View Subdivision near Hook Road for the future extension of Longview Boulevard.

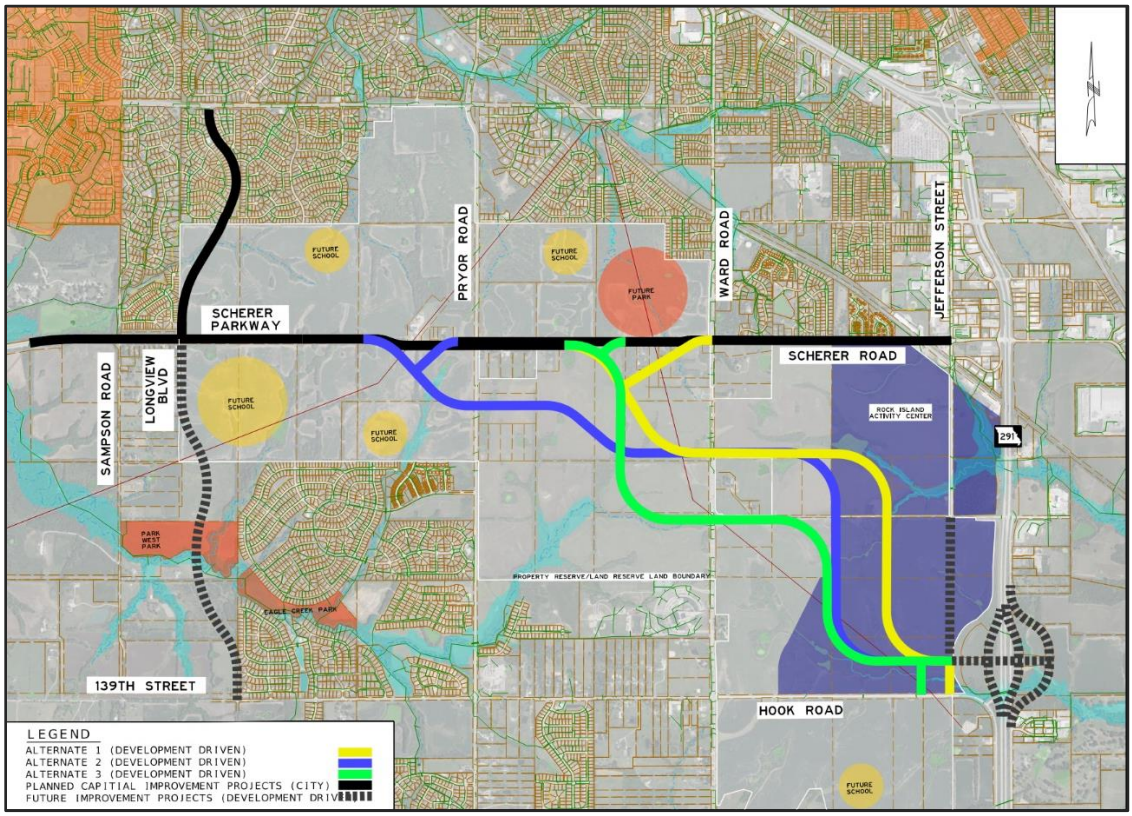


Figure 8 – Alignment Alternatives

4.5. Vertical Alignment

The design criteria summarized in **Table 2** located in Section 4.1 was derived using data from the Lee's Summit Design Criteria and A Policy on Geometric Design of Highways and Streets (Green Book) from the American Association of State Highway and Transportation Officials (AASHTO). Since the existing geometry Scherer Road/Parkway does not meet AASHTO and Lee's Summit Design Standards, the three alternatives propose improvements to vertical geometry throughout the existing roadway corridor that improve sight distance and safety for drivers.

4.6. Drainage

4.6.1. Floodplains

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) indicate that several areas within the proposed project boundaries are within Special Flood Hazard Areas (SFHAs). This indicates that the area is subject to inundation by the 1% Annual Chance Flood (Zone AE and A). The proposed crossing of Longview Rd over Mouse Creek is a designated Floodway and must be kept free of

encroachment and will require a '"No Rise" Certificate' to obtain a Floodplain Development Permit (https://cityofls.net/development-services/construction/permits/floodplain-development-permit).

Additionally, the proposed connecting road between Scherer Parkway and Hook Road is located immediately upstream of a Floodway on Tributary B2 to Big Creek and may require special consideration as well. Permits must be obtained from the City of Lee's Summit as the floodplain administrator designated by the Missouri State Emergency Management Association. Flood maps for the study area can be found in **Appendix D.**

4.6.2. Drainage Structure Alternatives

New drainage structures beneath Scherer Road Alignment 1 will be a combination of circular culverts, box culverts, and a bridge crossing drainage structure. The crossings were designed for a 100-year storm to adhere to Lee's Summit regulations. The proposed drainage design was developed using both the Rational Method and the Regression Method based on drainage areas. For drainage areas greater than 70 acres, the USGS regression method was used. For drainage areas less than 70 acres the rational equation was performed.

4.6.3. Scherer Road Alternative 1

Nine circular culverts, six box culverts, and one bridge will be required along Scherer Parkway and Scherer Road in Alternative 1. Locations of these structures can be found in the Plan and Profile sheets in **Appendix B**. A summary of these structures, and their locations are shown in **Table 3** below.

Table 3 – Drainage Structures – Alternative 1

No.	Alignment	Station	Drainage Area (Acres)	Peak Flow (ft^3/s)	Calculation Type	Type of Crossing	Size
1.0	Scherer Pkwy	76+50	31.89	152.47	Rational	RCP	36"
1.1	Scherer Pkwy	84+00	24.81	118.62	Rational	RCP	36"
1.2	Scherer Pkwy	102+45	8.85	42.31	Rational	RCP	30"
1.3	Scherer Pkwy	131+20	6.34	30.31	Rational	RCP	36"
1.4	Scherer Pkwy	137+15	18.07	86.40	Rational	RCP	36"
1.5	Scherer Pkwy	147+50	7.73	36.96	Rational	RCP	30"
1.6	Scherer Rd	12+50	2.63	12.57	Rational	RCP	18"
1.7	Scherer Pkwy	165+00	27.10	129.57	Rational	RCB	2 - 4'x3'
1.8	Scherer Rd	24+00	45.52	217.64	Rational	RCB	10'x4'
1.9	Scherer Pkwy	174+50	36.00	172.13	Rational	RCB	2 - 5'x3'
1.10	Scherer Pkwy	197+00	42.31	202.29	Rational	RCB	2- 5'x3'
1.11	Scherer Pkwy	227+00	133.71	713.40	Regression	RCB	2 - 10'x4'
1.12	Hook Connector	N/A	347.14	1039.05	Regression	Bridge	100' x 80'

1.13	Scherer Pkwy	263+00	30.96	148.03	Rational	RCB	6'x3'
1.14	Scherer Rd	37+50	5.95	28.45	Rational	RCP	24"
1.15	Scherer Rd	43+75	21.55	103.04	Rational	RCP	42"
1.16	Scherer Rd	79+75	92.32	269.72	Rational	RCP	72"

4.6.4. Scherer Road Alternative 2

Sixteen circular culverts, seven box culverts, and one bridge will be required along Scherer Parkway and Scherer Road in Alternative 2. Locations of these structures are shown in the Plan and Profile sheets in **Appendix B**. A summary of these structures, and their locations are shown in **Table 4** below.

Table 4 – Drainage Structures – Alternative 2

No.	Alignment	Station	Drainage Area (Acres)	Peak Flow (ft^3/s)	Calculation Type	Type of Crossing	Size
2.0	Scherer Pkwy	76+50	31.89	152.47	Rational	RCP	36"
2.1	Scherer Pkwy	84+00	24.81	118.62	Rational	RCP	36"
2.2	Scherer Rd	1001+50	16.49	78.84	Rational	RCP	36"
2.3	Scherer Pkwy	111+00	37.99	181.64	Rational	RCB	6'x3'
2.4	Scherer Pkwy	117+75	8.89	42.51	Rational	RCP	30"
2.5	Scherer Pkwy	123+00	34.40	164.48	Rational	RCP	60"
2.6	Pryor Rd	N/A	45.81	219.03	Rational	RCB	2 - 5'x3'
2.7	Scherer Rd	1032+00	6.34	30.31	Rational	RCP	36"
2.8	Scherer Rd	1037+00	18.07	86.40	Rational	RCP	36"
2.9	Scherer Pkwy	135+50	10.50	50.20	Rational	RCP	36"
2.10	Scherer Pkwy	140+75	11.41	54.55	Rational	RCP	2 - 30"
2.11	Scherer Rd	1047+00	27.78	132.82	Rational	RCP	36"
2.12	Scherer Rd	1058+50	54.79	261.96	Rational	RCB	7'x3'
2.13	Scherer Pkwy	147+00	10.38	49.63	Rational	RCP	30"
2.14	Scherer Pkwy	157+00	52.05	248.86	Rational	RCB	7'x3'
2.15	Scherer Pkwy	160+75	36.00	172.13	Rational	RCB	2 - 5'x3'
2.16	Scherer Pkwy	172+50	42.31	202.29	Rational	RCB	2 - 5'x3'
2.17	Scherer Pkwy	213+50	20.26	96.87	Rational	RCP	2 - 36"
2.18	Scherer Pkwy	222+50	33.16	158.55	Rational	RCP	30"
2.19	Scherer Pkwy	252+25	32.69	156.3	Rational	RCB	2 - 5'x3'

2.20	Scherer Pkwy	254+00	16.82	80.42	Rational	RCP	42"
2.21	Scherer Rd	1073+50	5.95	28.45	Rational	RCP	24"
2.22	Scherer Rd	1080+00	21.55	103.04	Rational	RCP	42"
2.23	Hook Connector	N/A	285.35	940.43	Regression	Bridge	100' x 80'
2.24	Scherer Rd	1115+50	92.32	269.72	Rational	RCP	72"

4.6.5. Scherer Road Alternative 3

Twelve circular culverts, four box culverts, and one bridge will be required along Scherer Parkway and Scherer Road in Alternative 3. Locations of these structures are shown in the Plan and Profile sheets in **Appendix B**. A summary of these structures, and their locations are shown in **Table 5** below.

Table 5 – Drainage Structures – Alternative 3

No.	Alignment	Station	Drainage Area (Acres)	Peak Flow (ft^3/s)	Calculation Type	Type of Crossing	Size
3.0	Scherer Pkwy	76+50	31.89	152.47	Rational	RCP	36"
3.1	Scherer Pkwy	84+00	24.81	118.62	Rational	RCP	36"
3.2	Scherer Pkwy	102+50	8.85	42.31	Rational	RCP	30"
3.3	Scherer Pkwy	131+50	6.34	30.31	Rational	RCP	36"
3.4	Scherer Pkwy	137+00	18.07	86.40	Rational	RCP	36"
3.5	Scherer Pkwy	147+00	7.73	36.96	Rational	RCP	30"
3.6	Scherer Pkwy	168+00	117.21	598.10	Rational	RCB	2 - 9'x5'
3.7	Scherer Pkwy	178+50	35.06	167.63	Rational	RCB	5'x3'
3.8	Ward Rd	N/A	23.94	129.72	Rational	RCP	42"
3.9	Scherer Pkwy	227+00	22.88	138.57	Rational	RCP	36"
3.10	Scherer Pkwy	258+00	39.64	189.53	Rational	RCB	2 - 5'x3'
3.11	Scherer Pkwy	259+50	16.82	80.42	Rational	RCP	42"
3.12	Hook Connector	N/A	285.35	940.43	Regression	Bridge	100' x 80'
3.13	Scherer Rd	14+50	27.78	132.82	Rational	RCP	36"
3.14	Scherer Rd	25+50	54.79	261.96	Rational	RCB	7'x3'
3.15	Scherer Rd	40+50	5.95	28.45	Rational	RCP	24"
3.16	Scherer Rd	46+50	21.55	103.04	Rational	RCP	42"
3.17	Scherer Rd	82+50	92.32	269.72	Rational	RCP	72"

4.6.6. Longview Boulevard

Four circular culverts, one box culvert, and one bridge will be required for the proposed Longview Road extension. Locations of these structures are shown in the Plan and Profile sheets in **Appendix B**. A summary of these structures, and their locations are shown in **Table 6** below.

Table 6 – Drainage Structures – Longview Boulevard

No.	Alignment	Station	Drainage Area (Acres)	Peak Flow (ft^3/s)	Calculation Type	Type of Crossing	Size
4.0	Longview	43+75	150.54	802.35	Regression	RCB	2 - 8'x5'
4.1	Longview	50+00	19.26	92.09	Rational	RCP	42"
4.2	Longview	68+00	27.34	130.72	Rational	RCP	48"
4.3	Longview	75+00	11.55	55.22	Rational	RCP	30"
4.4	Longview	84+50	8.64	41.31	Rational	RCP	30"
4.5	Longview	116+50	2895.60	3501.53	Regression	Bridge	200’ x 80’

5. Evaluation of Alternatives

5.1. Alternative Analysis

5.1.1. Scherer Parkway

While there are many factors that are considered in developing alignment alternatives, the following were the most important – how to provide for safe and efficient infrastructure for all modes of travel in the area, community stakeholder input, Ignite! Comprehensive Plan and other adopted Master Plans, environmental impact, financial considerations, as well as existing and future infrastructure, utilities, and community needs.

Three alignment options were evaluated for Scherer Parkway within the project limits as part of this study: Alternative 1, Alternative 2, and Alternative 3. The three alignments extend the existing Scherer Parkway south eastly towards Route 291 aligning with the future Hook Road and Route 291 Interchange. These alternatives are discussed further in Section 6 Comparison of Alternatives in this report. In addition, the three alignments are illustrated in **Figure 8** located in Section 4.4.

5.1.2. Scherer Road

One alignment was evaluated for Scherer Road as part of this study. The proposed alignment was developed to minimize impacts to existing developed properties. Since much of the north side of the roadway is platted and developed, it is proposed that the roadway be widened to the south and land be acquired from the undeveloped parcels on the south side of the corridor.

5.1.3. Longview Boulevard

Longview Boulevard was analyzed to plan for a new north-south connector between Longview Road and Hook Road, with an intermediate termination at the proposed Scherer Parkway. The two-lane extension

from 12th Street in Highland Meadows Subdivision to Scherer Parkway will be built with Phase 2 of the Scherer Road Improvements using NTIB Funds as approved by the voters. Expansion from an interim 2-lane to 4-lane will be determined as development creates the demand for more capacity. Additionally, future development will drive the extension of Longview Boulevard south of Scherer Parkway to Hook Road where it will align with Horridge Road, which then intersects Route 150.

5.2. Travel Demand Model

The City of Lee's Summit travel demand model (TDM) is a planning tool for estimating travel patterns and travel demand in the region. As received, the TDM has three model years: **2015**, **2025**, and **2040**. Several TDM inputs were updated to create the future model year **2055**, representing land use and roadway conditions in 2055 based on socioeconomic projections and committed roadway projects provided by the City. The methods used for performing these input updates are discussed in more detail in the following sections.

5.2.1. Calculating Land Use

The TDM encompasses all area within the City of Lee's Summit boundary, and some select areas beyond that boundary. The model area is composed of 329 internal traffic analysis zones (TAZs) representing tracts of land within the model boundary and 29 external TAZs representing "gateways" into and out of the model boundary. **Figure 9** shows the TAZ system encompassing the City of Lee's Summit in the TDM. **Figure 10** shows the roadway network included in the TDM.

Each internal TAZ has several attributes representing its specific land use, including (but not limited to):

- Number of single-family housing units,
- Number of multi-family housing units,
- Square feet of commercial use,
- Square feet of office use,
- Square feet of industrial use, and
- Square feet of primary or secondary school use.

These attributes were scaled from their 2040 values to represent the future model year 2055 conditions. The following sections discuss how these attributes were calculated and allocated to TAZs within the model area.

5.2.2. Housing Units

As a first step for calculating the total number of new single-family housing units (SFUs) and multi-family housing units (MFUs) added in the future model year 2055, U.S. Census data from the year 2020 was used to calculate the average household size and occupancy rates for SFUs and MFUs in the model area. The 2020 5-year estimates from the American Community Survey (ACS) provide several tables which can be used to derive average household size and occupancy rates. **Tables 7**, **8**, and **9** show these ACS 5-year estimates for Jackson County, Missouri.

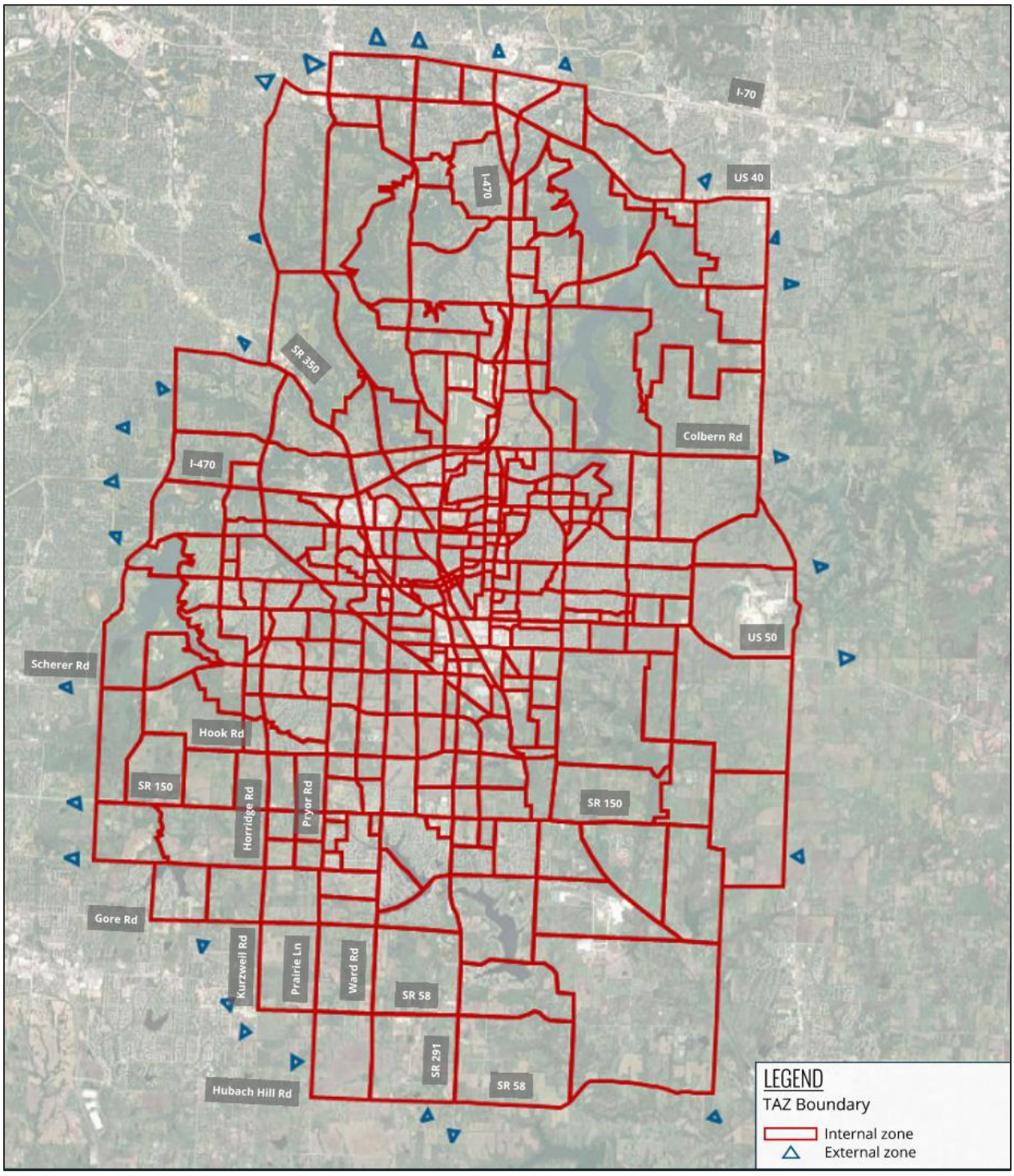


Figure 9 – Model TAZs

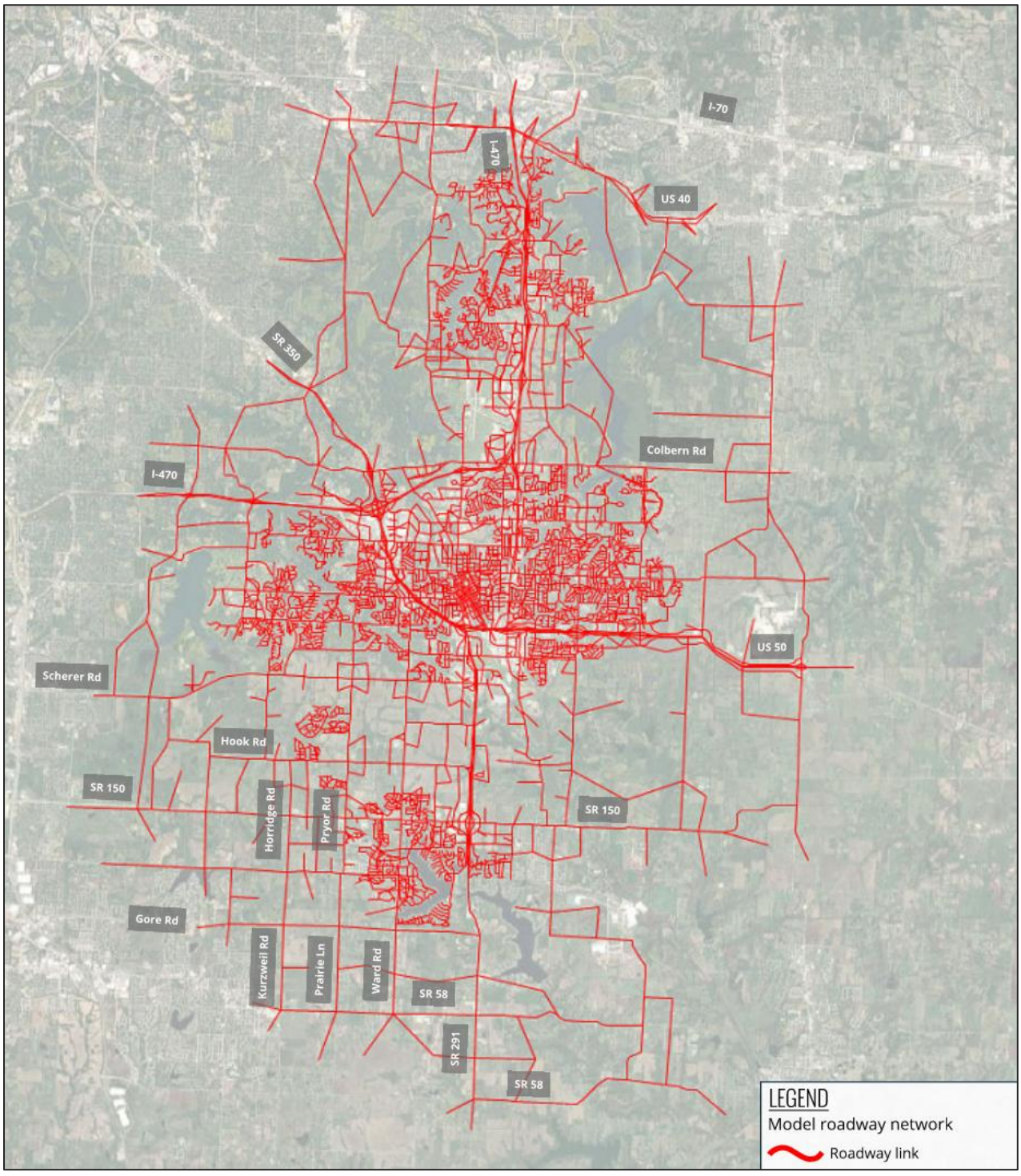


Figure 10 – Model Roadway Network

Table 7 – ACS Table B25032 (Tenure by Units in Structure), Jackson County, Missouri

Unit type	Total tenure[1]
Single-family units[2]	217,274
Multi-family units[3]	74,258

Source: U.S. Census, American Community Survey, 2020 5-Year Estimates (data accessed January 2025).
[1]Total tenure is a sum of owner-occupied unit tenure and renter-occupied unit tenure.
[2]Single-family units include structures with single unit detached structures, single unit attached structures, mobile homes, and boats/RVs/etc.
[3]Multi-family units include structures with two or more housing units.

Table 8 – ACS Table B25024 (Units in Structure), Jackson County, Missouri

Unit type	Total units
Single-family units[1]	239,194
Multi-family units[2]	86,565

Source: U.S. Census, American Community Survey, 2020 5-Year Estimates (data accessed January 2025).
[1]Single-family units include structures with single unit detached structures, single unit attached structures, mobile homes, and boats/RVs/etc.
[2]Multi-family units include structures with two or more housing units.

Table 9 – ACS Table B25033 (Total Population in Occupied House Units by Tenure by Units in Structure), Jackson County, Missouri

Unit type	Total population
Single-family units[1]	564,468
Multi-family units[2]	124,795

Source: U.S. Census, American Community Survey, 2020 5-Year Estimates (data accessed January 2025).
[1]Single-family units include structures with single unit detached structures, single unit attached structures, mobile homes, and boats/RVs/etc.
[2]Multi-family units include structures with two or more housing units.

With these values calculated, the average household sizes and unit occupancy rates for SFUs and MFUs in Jackson County, Missouri in the year 2020 can be derived. **Table 10** below shows how these values are found.

Table 10 – Average 2020 Household Size and Occupancy, Jackson County, Missouri

Unit type	Average household size[1]	Occupancy rate[2]
Single-family units	2.60	90.8%
Multi-family units	1.68	85.8%

Source: U.S. Census, American Community Survey, 2020 5-Year Estimates (data accessed January 2025).
[1]Average household sizes were calculated using the following formula for each unit type: ΣTotal population in occupied units / ΣTotal tenure
[2]Occupancy rates were calculated using the following formula for each unit type: ΣTotal tenure / ΣTotal units

The City of Lee's Summit provided a set of City population projections between 2024 and 2055 based on historical population counts. These projections estimate that the City's population will be 136,982 in the year 2040 and 171,756 in the year 2055, assuming a geometric growth rate of 1.5% per year. Using this estimated increase in population of 34,774 between 2040 and 2055 as a baseline, the occupancy rates and average household sizes from **Table 10** were applied to calculate the number of new SFUs and MFUs which should be added to the 2040 TAZ system to reach 2055 conditions, with the assumption that household size remains the same over time. **Table 11** shows these calculated values in detail.

Table 11 – Calculating 2055 Housing Units

Category	Single-family[1]	Multi-family[1]	SFU to MFU ratio	Total
2040 Units[2]	49,464	14,261	3.47	63,725
2040 Population[3]	116,775	20,556		137,331
2040 to 2055 Unit Difference	+12,525	+3,611	3.47	+16,136
2040 to 2055 Population Difference	+29,569	+5,205		+34,774
2055 Units[4]	**61,989**	**17,872**	**3.47**	**79,861**

Source: U.S. Census, American Community Survey, 2020 5-Year Estimates (data accessed January 2025). City of Lee's Summit population projections (received 2024).
[1]The TDM categorizes housing units as either single-family or multi-family. Single-family units are defined as a detached housing unit designed for a single family; multi-family units are defined as any standard housing unit not considered a single-family unit.
[2]Total units throughout 2040 TAZ system, as received.
[3]Model population was calculated using the following formula for each unit type: number of units * average household size * occupancy rate.
[4]These calculations were performed assuming the ratio of SFUs to MFUs will stay constant between 2040 and 2055.

Based on these calculations, the 2055 TAZ system requires an additional 12,525 SFUs and 3,611 MFUs over the 2040 TAZ system to reach the projected population difference provided by the City. These units were allocated throughout the model area using a methodology discussed in Section 5.2.5. **Figure 11** shows the total housing units added in each TAZ from the 2040 TAZ system to the 2055 TAZ system.

5.2.3. Employment

As mentioned previously, the TDM has several TAZ attributes related to employment, including square feet of commercial, office, and industrial use. The total square footage for each employment type was found for the model year 2015 and model year 2040 TAZ systems, then projected forward to model year 2055 assuming an exponential growth rate. **Table 12** outlines these calculations below.

Table 12 – Calculated 2055 Employment Land Use

Model Year	Commercial Area (ksqft.)[1]	Office Area (ksqft.)	Industrial Area (ksqft.)
2015 Model TAZ Totals	14,877	4,816	8,866
2040 Model TAZ Totals	22,776	9,612	12,490
Calculated 2055 Model TAZ Totals	33,884	13,664	15,809
2040 to 2055 Difference	**11,108**	**4,052**	**3,319**

Source: City of Lee's Summit Travel Demand Model (received 2024).
[1]Ksqft. is a unit representing 1,000 square feet.

Based on these calculations, there are approximately 11,108 ksqft of new commercial area, 4,052 ksqft of new office area, and 3,319 ksqft of new industrial area that should be allocated on top of the model year 2040 TAZ system to represent model year 2055. This land use was allocated using a methodology discussed in a later section. **Figure 12** shows the total square footage of employment added in each TAZ from the 2040 TAZ system to the 2055 TAZ system.

5.2.4. Schools

Lochmueller Group received square footage and location information about four elementary schools and two high schools planned in the project area. These sites were added to the appropriate TAZs for the future model year 2055.

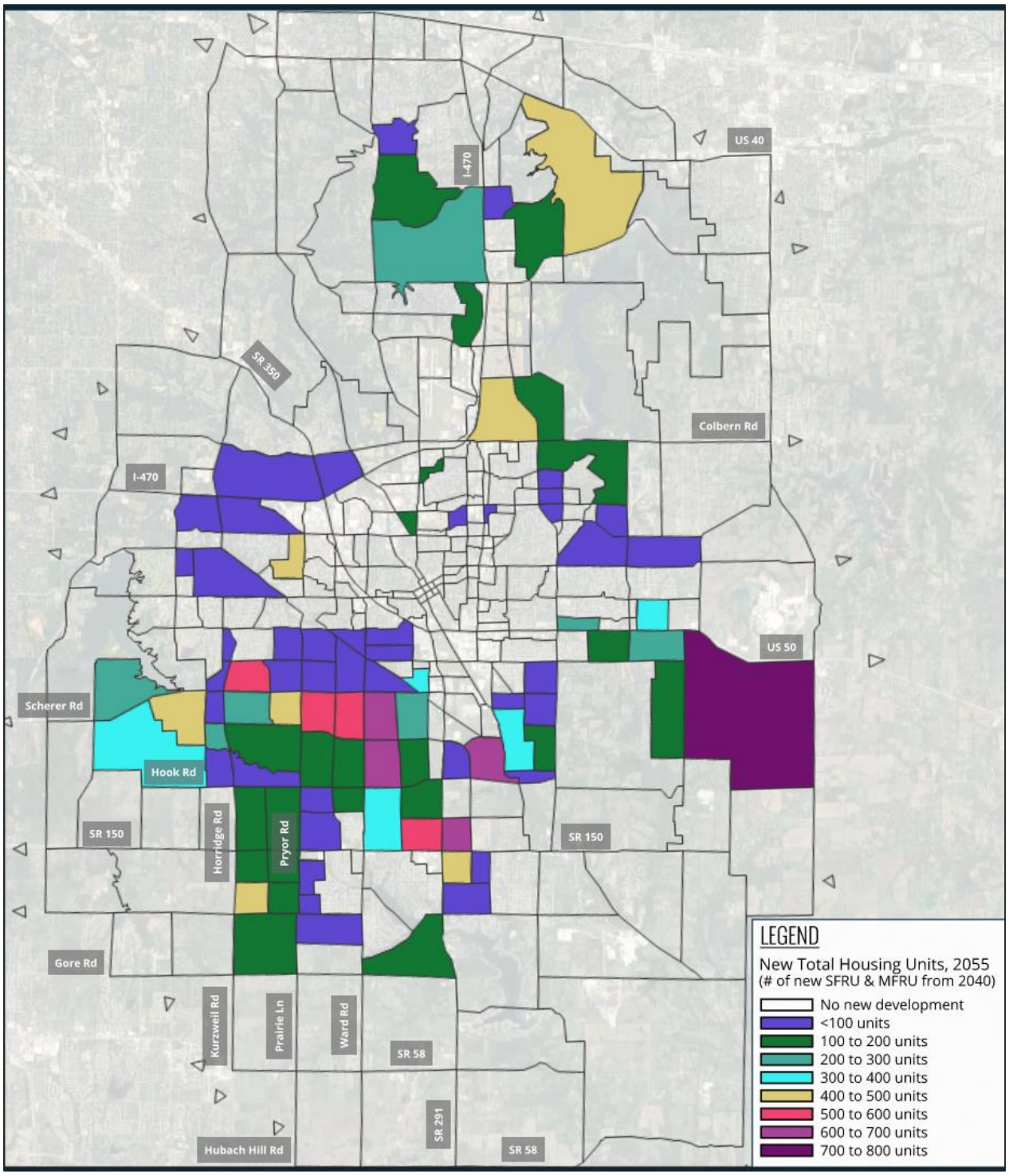


Figure 11 – Model New Housing Growth

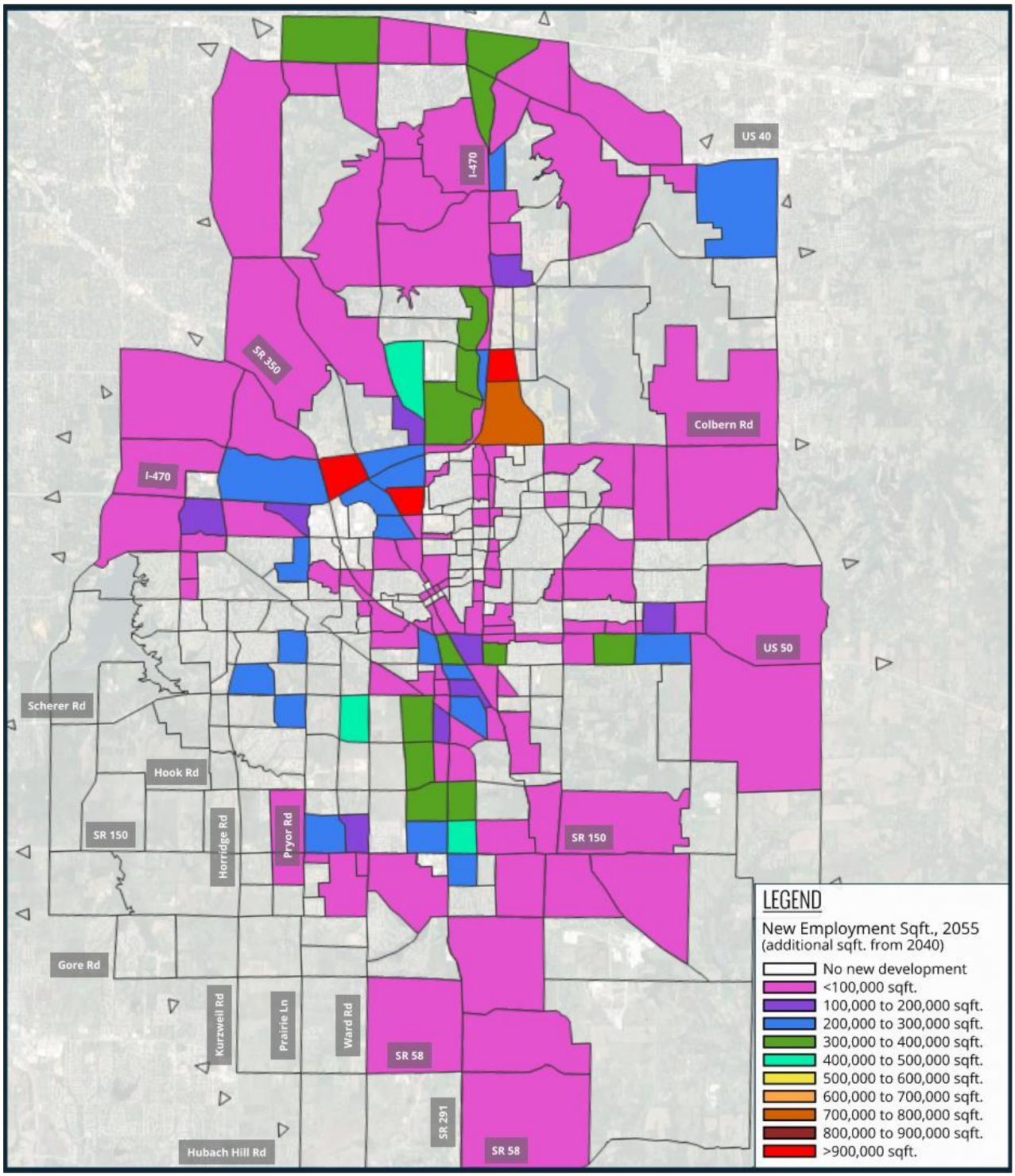


Figure 12 – Model Employment Growth

5.2.5. Allocating Land Use

The City of Lee's Summit Ignite! Comprehensive Plan (*City of Lee's Summit, April 2021*) contains several figures and tables representing the current and future land use for all areas within the City boundary. The figures found on pages 79, 80, and 81 of the Comprehensive Plan ("Current Land Use", "Land Use Changes", and "Future Land Use", respectively) guided the manual allocation of new employment land use and housing units. Average development sizes from the model year 2040 TAZ system were used as a baseline for the sizes of new developments in TAZs with new land uses. Allocations were made until the required new employment and housing units referenced in **Tables 11** and **12** were reached.

Adjustments were made based on input from City staff to reflect current development patterns and trends.

5.3. Consideration of Environmental Constraints

5.3.1. Environmental Setting

The study area is situated in a rural undeveloped setting with urban/suburbanization encroachment from all directions. Lee's Summit West High School is located immediately south of the study area and was constructed in the early 2000's (opening in 2004). The district boundaries extend north to the neighborhood of Little Blue Valley, south to Stoney Creek, and east to Tarsney Lakes. The opening of the school has spurred considerable residential development in the surrounding area over the last two decades.

Most of the property in the study area is owned by a single landowner, Property Reserve. The landowner has held the properties in agricultural production and not subdivided or allowed development. Coordination between the City and the landowner regarding the extension of Scherer Parkway would produce the catalyst that would lead to the transformation of the area from predominantly agricultural to commercial/residential/recreational/educational.

The existing agricultural production is a mixture of row crops and hay and forage. Land cover not associated with agriculture or lawn space (associated with road right of way or residential properties) is primarily woodland. These woodlands are generally narrow, linear, and align with property boundaries, drainage features, seeps, ponds, or with slopes too steep to crop.

The tributaries in the study area are mostly first or second order. These types of waterways are predominantly ephemeral or intermittent; however, this area has numerous seeps and springs meaning many of these may maintain a small base flow year-round. All tributaries in the area drain to the Missouri River, but more locally split between drainage to Big Creek in the south and the Little Blue River to the north.

No designated public or private recreational facilities are present in the study area, but there are numerous in the surrounding Lees Summit area.

5.3.2. Regulatory Factors

For each alternative or section of roadway to be constructed or improved, environmental documentation and necessary agency coordination and/or clearances will be determined by funding sources and/or permitting requirements. If federal funds are pursued and obtained through the U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA) would be the lead federal agent

responsible to ensure the project remains in compliance with the National Environmental Policy Act (NEPA). If the project is federally funded, then all actions taken to construct the project are considered in coordination with other federal agencies which may have a type of regulatory jurisdiction.

If the project is locally or privately funded, then interaction with the regulatory agencies is dispersed and restricted to the specific permitting action. Regardless of whether federal funds are involved, the scope of the project dictates numerous state and federal permits will be required. These will include:

- Section 404 permit from the U.S. Army Corps of Engineers (USACE)
- Section 401 water quality certification (WQC) from the Missouri Department of Natural Resources (MDNR)
- Floodplain Development permit from the City of Lee's Summit as the City is the floodplain administrator as designated by Missouri State Emergency Management Association
- Construction Land Disturbance permit from the MDNR

5.3.3. NEPA Readiness

5.3.3.1. No Federal Funds

If the proposed improvements to Scherer Road and the extension of Scherer Parkway are solely funded with private dollars, resource agency involvement would be restricted to the locations of permit actions. For example, an impact to a stream crossing could require a Section 404 permit from the USACE and companion Section 401 WQC from the MDNR. Under this circumstance, the USACE and MDNR would only review the portion of the road crossing the stream, not the potential impacts to areas outside of their jurisdiction. However, areas within the jurisdictional confines of the permitting agency remain subject to further analysis for regulatory compliance. The USACE must comply with NEPA for its action, meaning it must consult with other agencies for compliance with Section 106 of the National Historic Preservation Act or Section 7 of the Threatened and Endangered Species Act.

The project is occurring within an undeveloped area near the Missouri River. The study area does not contain any known archaeological resources, but there have been very limited studies near this area. Whether the project is reviewed under NEPA by a funding agency or a permitting agency, it should be anticipated field surveys will be required to determine if unknown historical resources are present. It is unlikely the field studies will identify any resources warranting preservation in place. If preliminary field studies did find historical features, secondary studies could be required to determine if the information they contain are eligible for inclusion in the National Register of Historic Places (NRHP).

Although additional environmental studies and/or reviews will be required to obtain the various permits, no fatal flaws are anticipated for any of the alternatives.

5.3.3.2. Pursuit of Federal Funds

The study considered three primary alternatives to extend Scherer Parkway to Route 291, improve Scherer Road, and extend Longview Boulevard. These alternatives also considered anticipated intersections with future developments and roadways. While this study summarized these improvements within three alternatives, progressing the project forward would likely be divided into two or more distinct projects.

A critical factor in the pursuit of federal aid is producing an application for a project with a clear need, defined and measurable goals, and containing logical termini. Logical termini are defined for transportation studies as the rational beginning and ending points for a project. For this study, the eastern terminus for the Scherer Parkway extension is Route 291. This is a rational end point; however, the alternatives are partially dependent upon an independent project being undertaken by MoDOT. The intent of the Scherer Parkway extension would be to tie it to the future interchange access point. MoDOT has developed an Access Justification Report (AJR) for the interchange, but it has neither completed the NEPA process nor obtained funding for construction.

The Scherer Parkway extension study would likely be unable to obtain NEPA approvals until the construction funds were dedicated to the MoDOT Route 291 interchange project. If both projects were in the NEPA process at the same time, there is a potential that the FHWA could consider them entangled requiring a single NEPA approval for both to ensure the approved alternative for each interconnect properly and their project goals align. Alternatively, FHWA could allow the NEPA approvals to be processed separately but concurrently. If federal aid is determined necessary to pursue, additional coordination with FHWA and MoDOT is recommended to identify an appropriate means to establish the eastern terminus for the approved alternative or identify an appropriate timeline to pursue the funding to lower the NEPA risk.

With regard to the NEPA class of action documentation, the extent of the new alignment and amount of new land acquisition necessary would eliminate the potential to process as a Categorical Exclusion (CE). Based on the desktop review of the environmental setting, it is anticipated to result in a finding of no significant impact allowing it to be processed as an Environmental Assessment (EA).

5.4. Operational Analysis

5.4.1. Future Operations Analysis

The 2055 traffic operating conditions were evaluated as street segments between the study intersections. The ADT used for the analysis was generated from the travel demand model (TDM). The volumes were calculated using the generated ADT, a K-factor, and a D-factor. The K-factor is the proportion of annual average daily traffic occurring during the peak hour while the D-factor (directional factor) is the traffic volume proportion moving in the higher volume direction during the peak hour. The design traffic volumes were calculated using current ADT traffic counts from MoDOT and the TDM while the k-factor was assumed to be 0.1. The D-factor was calculated using current directional ADT counts from MoDOT and was found to be 50%/50% for the corridor. All segments were analyzed with the projected 2055 traffic volumes and the appropriate lane modifications.

The segment analysis was completed using Highway Capacity Software 2023 (HCS), which is based upon the methodologies outlined in the "Highway Capacity Manual, 7th Edition" (HCM) published by the Transportation Research Board. Traffic operations are quantified by six Levels of Service (LOS), which range from LOS A ("Free Flow") to LOS F ("Fully Saturated"). LOS C is normally used as a minimum threshold for design purposes and represents a roadway with volumes ranging from 70% to 80% of its capacity. The LOS criteria for multilane and two-lane highways are shown in **Table 13**.

Table 13 – LOS Criteria for Multilane Highway and Two-Lane Highway Segments

Level of Service	Density (D) pc/mi/ln	Follower Density (vehicles/mi/ln)
	Multilane Highway	Two-Lane Highway Posted Speed Limit < 50 mph
A	≤11	≤2.5
B	>11-18	>2.5-5.0
C	> 18-26	>5.0-10.0
D	> 26-35	>10.0-15.0
E	> 35-45	> 15.0
F	Demand exceeds capacity or density > 45	Demand exceeds capacity

The future operations of the corridor street segments included the current eastbound and westbound segments between

- Sampson Road and Pryor Road
- Pryor Road and Ward Road
- Ward Road and Jefferson Street

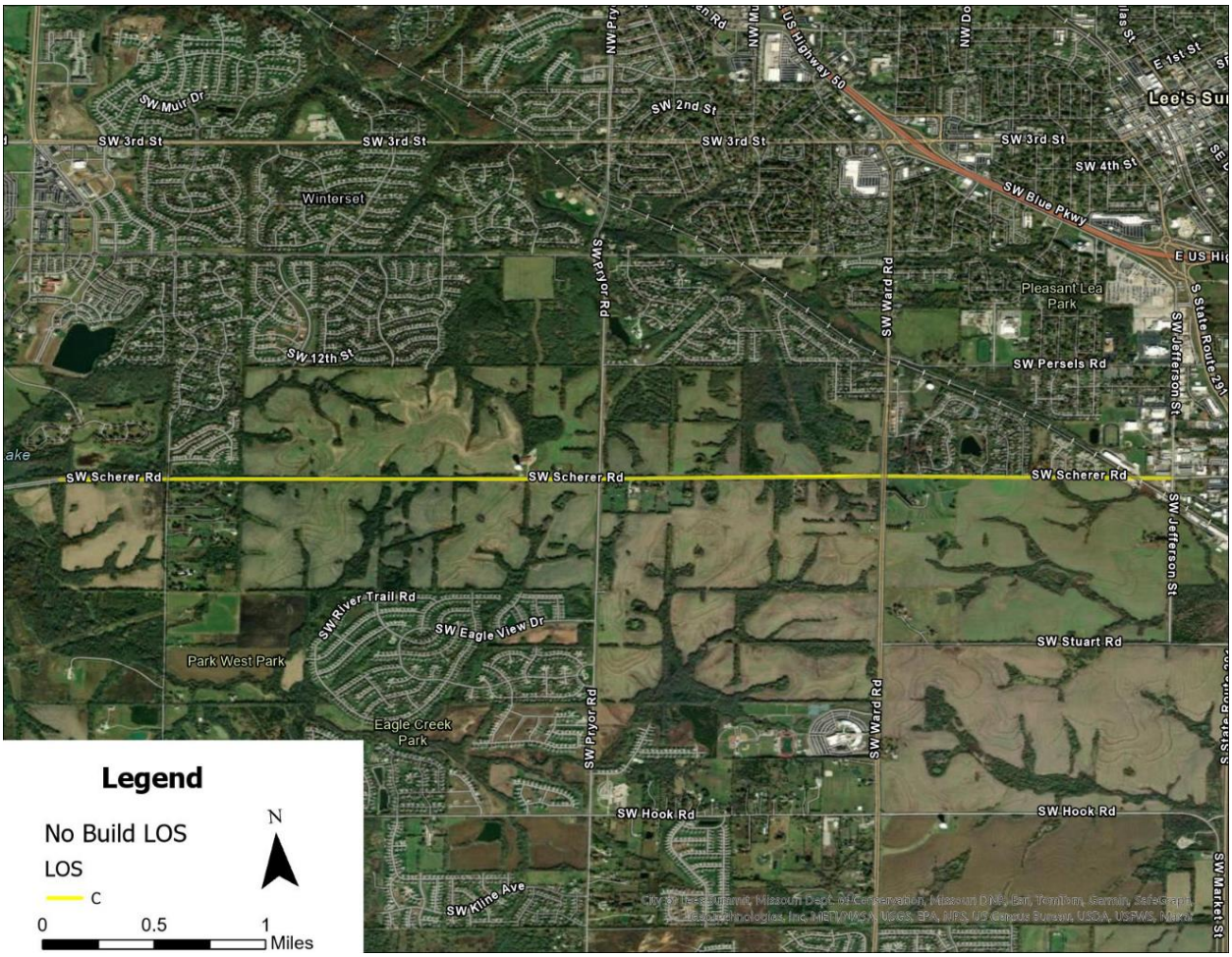


Figure 13 – Projected 2055 No Build LOS

The no build scenario would show no changes to the current roadway in 2055 and is a base line for the alternatives.

The no build scenario is based on projected traffic volumes for the year 2055 under current roadway conditions. This scenario is used as a base line for the proposed alternatives. The results of the segment analysis show that the current corridor segments will operate at a LOS C throughout (see **Figure 13**). The segment with the most optimal traffic flow occurs between Sampson Road and Longview Boulevard with a follower density of 5.2 vehicles/mi. The most congested segment of the corridor occurs at the segment between Ward Road and Jefferson Street with a follower density of 7.4 vehicles/mi.

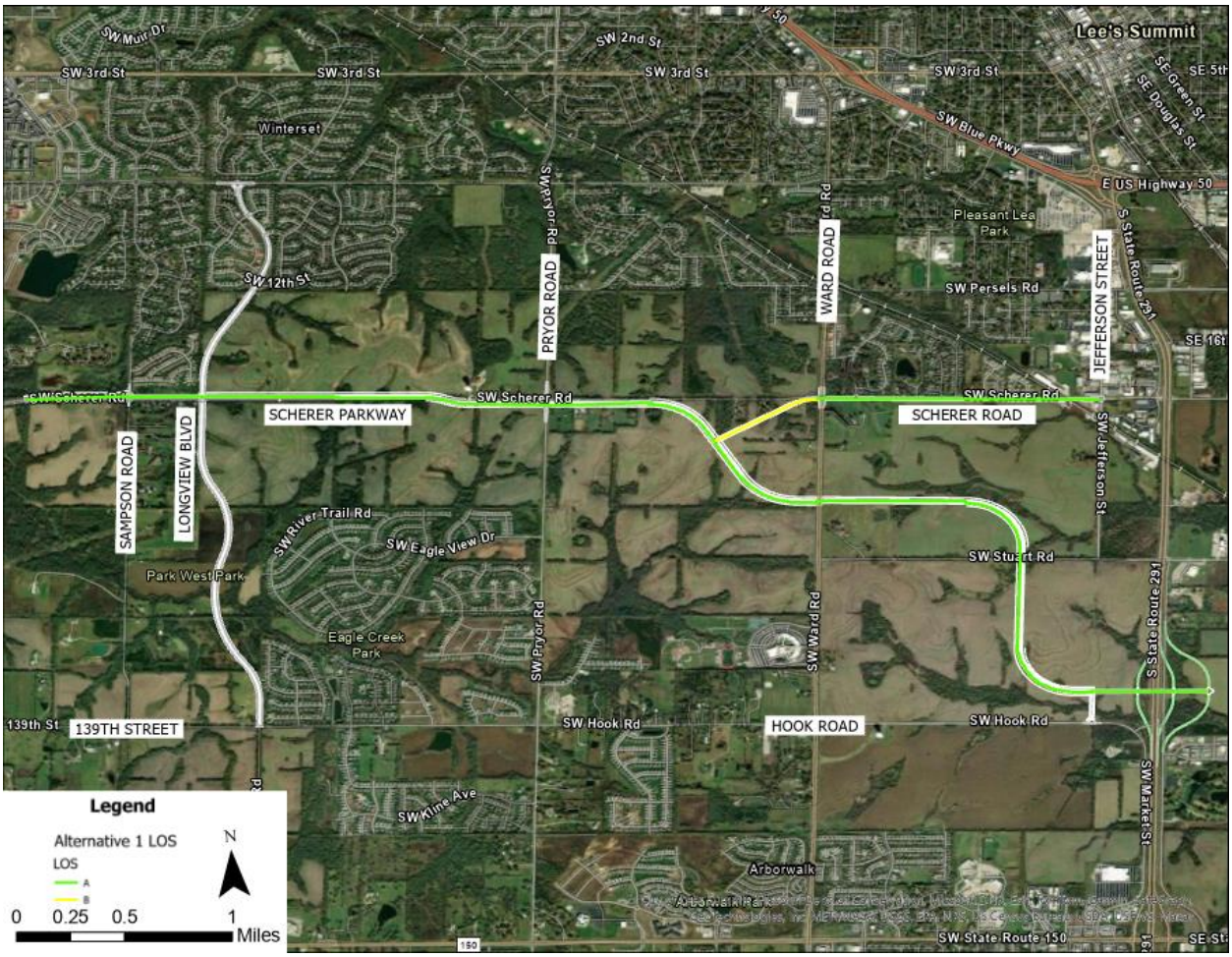


Figure 14 – Projected 2055 Alternative 1 LOS

5.4.1.1. Alternative 1

The proposed Alternative 1 segments were analyzed using HCS for the future operations of the twelve segments of the corridor including –

- West of Sampson Road (4-lane Divided)
- Sampson Road to Longview Boulevard (4-lane Divided)
- Longview Boulevard to Golden Rod Drive (4-lane Divided)
- Golden Rod Drive to Scherer Road (4-lane Divided)
- Scherer Road to Pryor Road (4-lane Divided)
- Pryor Road to Ward Road (4-lane Divided)
- Ward Road to Stuart Road (4-lane Divided)
- Stuart Road to Hook Road (4-lane Divided)
- Hook Road to Route 291 (4-lane Divided)
- East of the 291 Interchange (4-lane Divided)
- West of Ward Road (3-Lane)
- Ward Road to Jefferson Street (3-Lane)

The main line of Scherer Parkway is prioritized and can expect to operate at a LOS A throughout the corridor. All sections of Scherer Parkway will operate with a density of 6.3 pc/mi/ln or less. The segment of Scherer Road between Scherer Parkway and Ward Road is expected to operate at a LOS B with a density of 5 vehicles/mi/ln while the rest of the corridor is expected to operate as a LOS A with a density of 3.9 vehicles/mi/ln (see **Figure 14**).

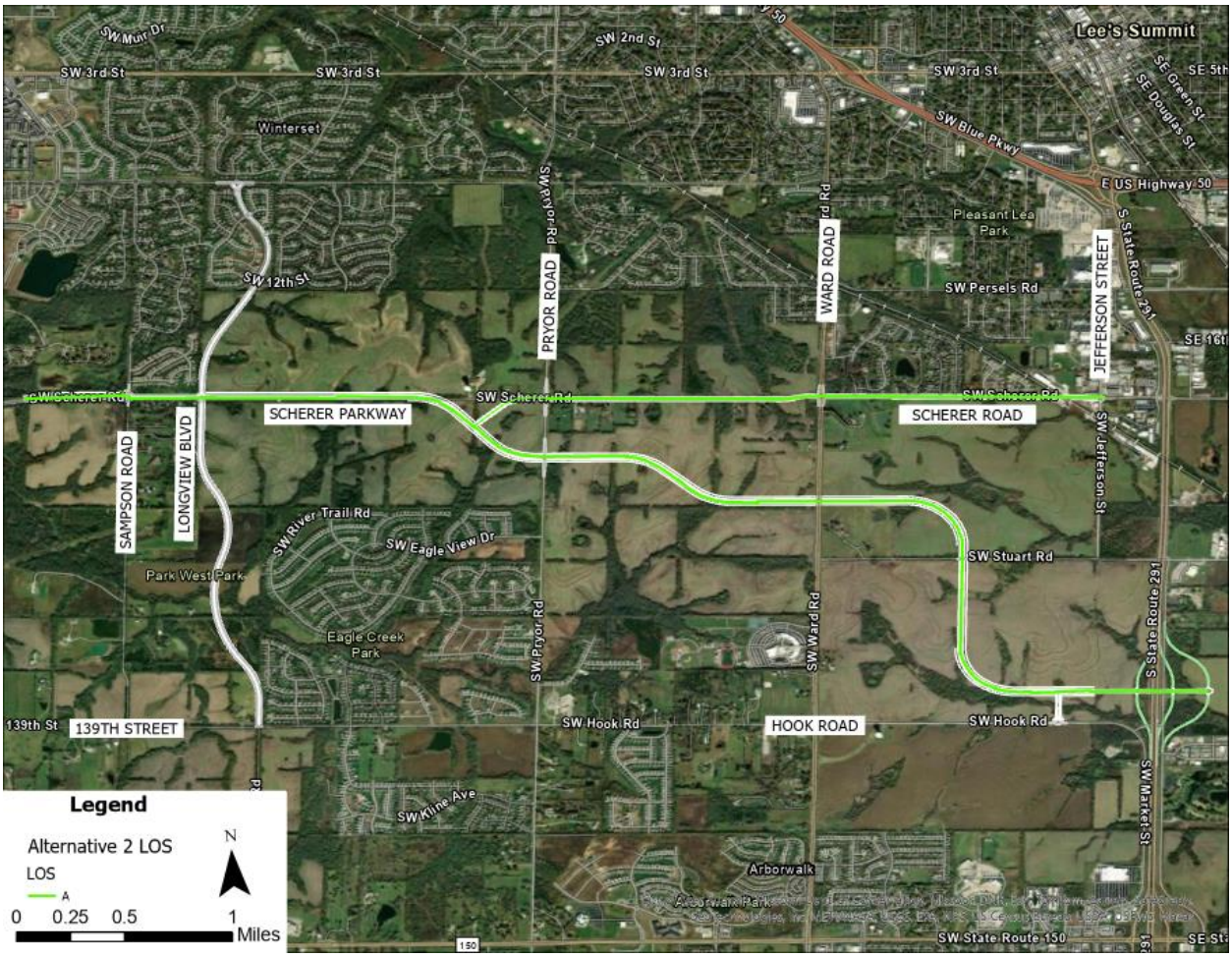


Figure 15 – Projected 2055 Alternative 2 LOS

5.4.1.2. Alternative 2

The proposed Alternative 2 segments were analyzed using HCS for the future operations of the thirteen segments of the corridor including –

- West of Sampson Road (4-lane Divided)
- Sampson Road to Longview Boulevard (4-lane Divided)
- Longview Boulevard to Golden Rod Drive (4-lane Divided)
- Golden Rod Drive to Scherer Road (4-lane Divided)
- Scherer Road to Pryor Road (4-lane Divided)
- Pryor Road to Ward Road (4-lane Divided)

- Ward Road to Stuart Road (4-lane Divided)
- Stuart Road to Hook Road (4-lane Divided)
- Hook Road to Route 291 (4-lane Divided)
- East of the 291 Interchange (4-lane Divided)
- West of Pryor Rd (3-Lane)
- Pryor Road to Ward Road (3-Lane)
- Ward Road to Jefferson Street (3-Lane)

The main line of Scherer Parkway is prioritized and can expect to operate at a LOS A throughout the corridor. All sections of Scherer Parkway will operate with a density of 7.0 pc/mi/ln or less. The segments of Scherer Road are expected to operate as a LOS A with a density of 3.6 vehicles/mi/ln or less (see **Figure 15**).

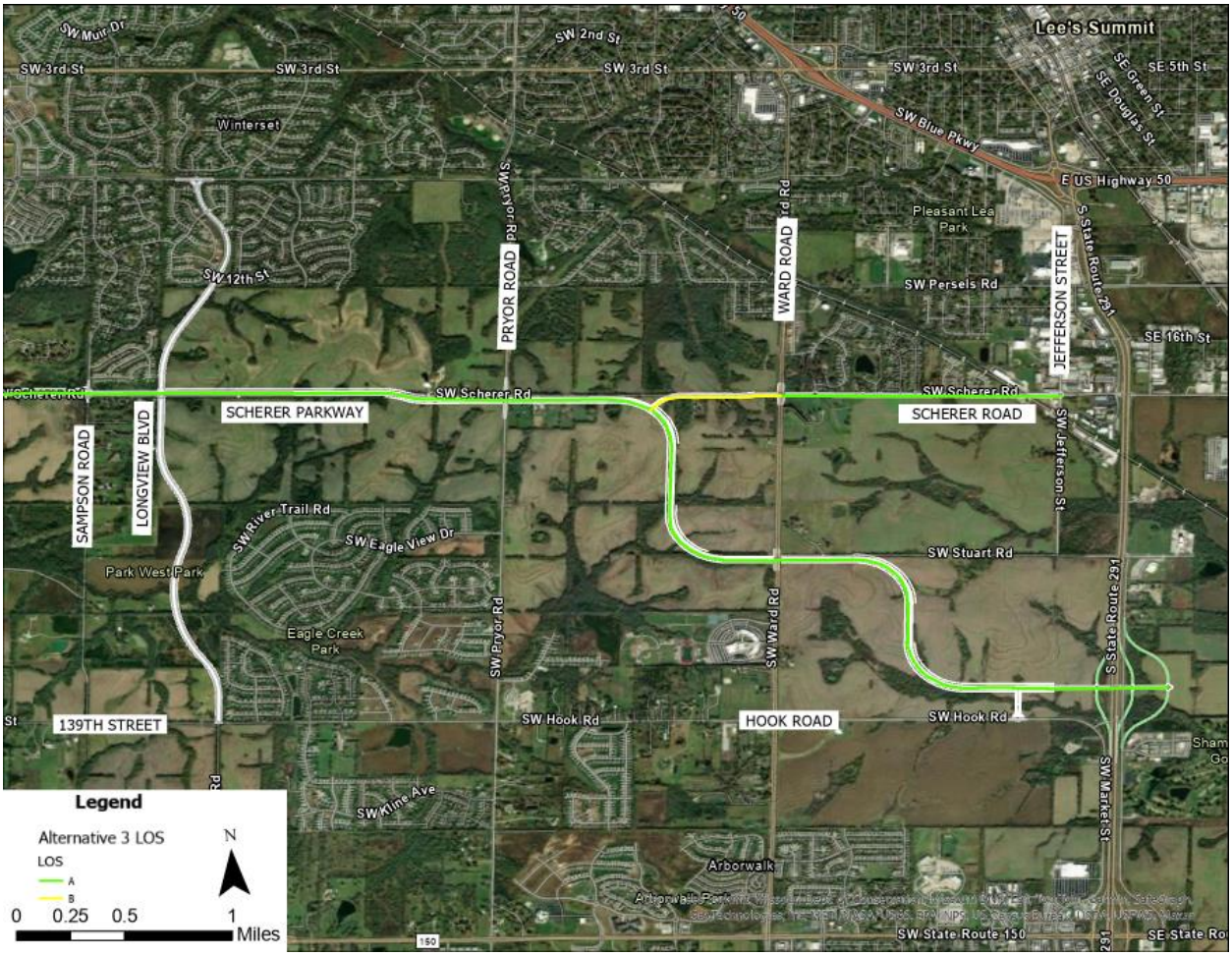


Figure 16 – Projected 2055 Alternative 3 LOS

5.4.1.3. Alternative 3

The proposed Alternative 3 segments were analyzed using HCS for the future operations of the eleven segments of the corridor including –

- West of Sampson Road (4-lane Divided)
- Sampson Road to Longview Boulevard (4-lane Divided)
- Longview Boulevard to Golden Rod Drive (4-lane Divided)
- Golden Rod Drive to Scherer Road (4-lane Divided)
- Scherer Road to Pryor Road (4-lane Divided)
- Pryor Road to Ward Road (4-lane Divided)
- Ward Road to Hook Road (4-lane Divided)
- Hook Road to Route 291 (4-lane Divided)
- East of the 291 Interchange (4-lane Divided)
- West of Ward Road (3-Lane)
- Ward Road to Jefferson Street (3-Lane)

The main line of Scherer Parkway is prioritized and can expect to operate at a LOS A throughout the corridor. All sections of Scherer Parkway will operate with a density of 8.3 pc/mi/ln or less. The segment of Scherer Road between Scherer Parkway and Ward Road is expected to operate at a LOS B with a density of 3.1 vehicles/mi/ln while the rest of the corridor is expected to operate as a LOS A with a density of 4.5 vehicles/mi/ln (see **Figure 16**).

The HCS output for each future analysis can be found in **Appendix E**.

5.4.2. Future Intersection Operation

In addition to the roadway segments, it is beneficial to review future intersections to get a sense of what might be needed at the major intersections. This review primarily focused on roundabouts and signalized intersections.

While roundabouts and signalized intersections (traffic signals) both are effective means to control an intersection, they have characteristics that should be considered. **Table 14** lists some general pros and cons of each intersection control type.

It is worth mentioning that the City of Lee's Summit currently uses roundabouts for intersection control. To the north of the study area, on Longview Boulevard and Longview Road, four existing roundabouts can be found. This indicates uncertainty and apprehension regarding how roundabouts operate may not be as prevalent compared to locations which do not have such a history with roundabouts.

Table 14 – Roundabout vs Traffic Signals – Pros and Cons

Roundabout	Traffic Signals
Pros More efficient traffic flow, less emissions Reduced number & severity of crashes Reduced speeds Can accommodate pedestrians Works well for multiple approaches	Pros Easier to understand More control for specific movements Suitable for all speeds Can accommodate large vehicles Can accommodate bicycles & pedestrians
Cons Cause confusion for some drivers Can be issues for large vehicles Not suitable for high speeds Can be a challenge for bicycles Typically requires more right-of-way	Cons Longer delays, more vehicle emissions Challenge for more than 4 approaches Increased number & severity of crashes Greater risk of fatality Increased speed at intersection

Without turning movement counts a detailed analysis of each intersection is difficult. A general review of the future 2055 intersections was completed using the ADT from the TDM. The ADT for each Alternative can be found in **Figures 17-19**.

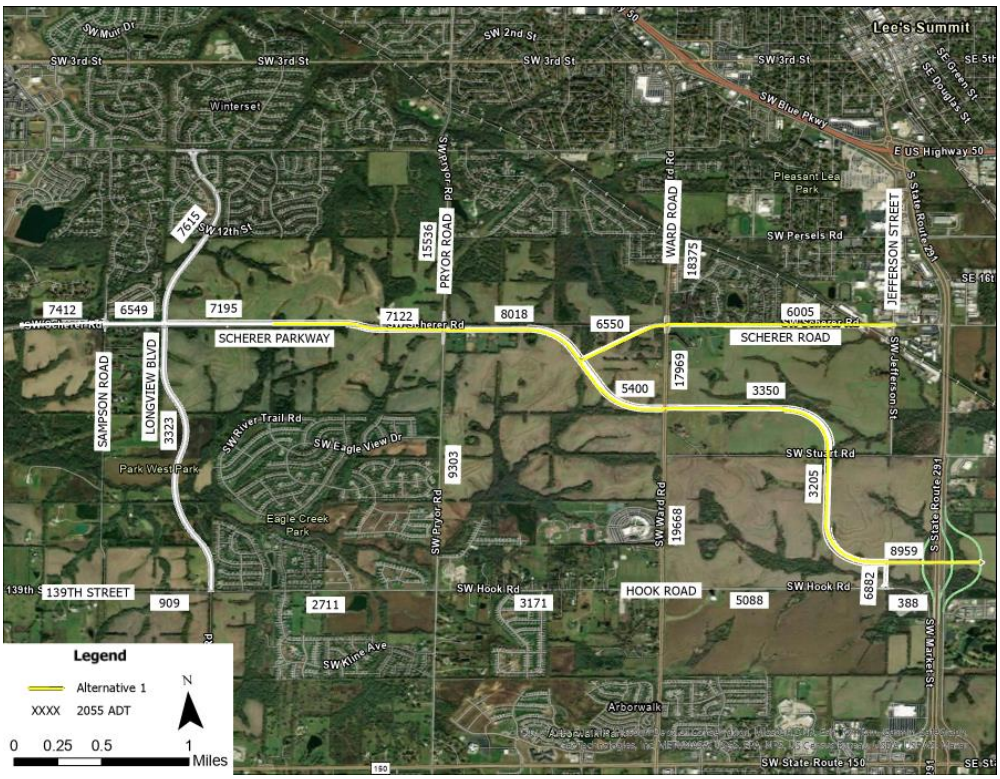


Figure 17 – Projected 2055 Alternative 1 ADT

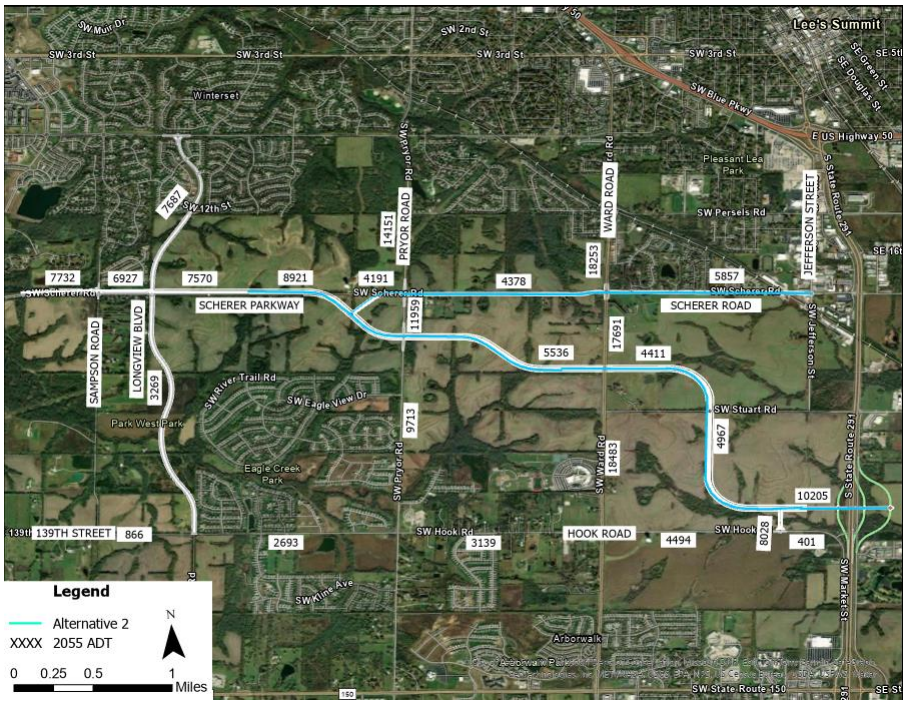


Figure 18 – Projected 2055 Alternative 2 ADT

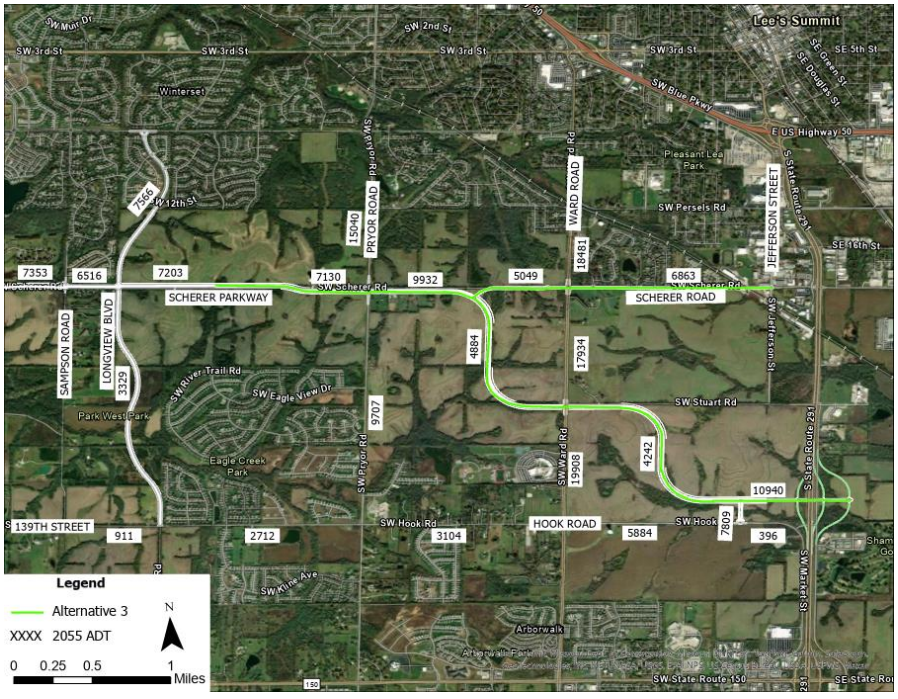


Figure 19 – Projected 2055 Alternative 3 ADT

To review a roundabout Exhibit 3-12 from *NCHRP Report 672 Roundabouts: An Informational Guide* Second Edition, was used. This exhibit provides a planning level daily intersection volume around 42,000 for a double-lane roundabout and around 25,000 vehicles for a single-lane roundabout (volume threshold varies based on the left turn percentage). With this information, **Table 15** contains the recommended intersection control types for Scherer Parkway.

Table 15 – Recommended Intersection Control Type

Intersection	Proposed 2055 Control Type
Sampson Rd & Scherer Pkwy	Roundabout
Longview Blvd & Scherer Pkwy	Roundabout
Pryor Rd & Scherer Pkwy	Traffic Signal
Ward Rd & Scherer Rd	Traffic Signal
Ward Rd & Scherer Pkwy	Traffic Signal
Longview Blvd & Hook Rd	Roundabout
Scherer Pkwy Connector & Hook Rd	Roundabout

The future intersection of Scherer Parkway and Scherer Road was also analyzed for control type. The volumes listed previously indicate a roundabout at this location would be possible. Next the length of tangent section of roadway on each leg of the intersection was reviewed. This will help give a sense of the sight distance available at the intersection. The following **Table 16** shows the approximate centerline tangent distances at this intersection:

Table 16 – Centerline Tangent Approach Distance (ft)

Road	Alternative 1	Alternative 2	Alternative 3
Scherer Pkwy N	370	515	0
Scherer Pkwy S	995	555	0
Scherer Rd	1,815	705	60

Alternatives 1 and 2 show larger tangent approaches to the intersection. Therefore, for these alternatives a roundabout is recommended. The shorter tangent lengths with Alternative 3 could indicate a sight distance issue. Therefore, a signalized intersection is recommended with this option, with the addition of flashing yellow lights on each approach that warns approaching vehicles of the red light for the approach. **Table 17** contains a summary of the control type recommendations.

Table 17 – Recommended Scherer Parkway/Road Intersection Control Type

Alternative	Proposed 2055 Control Type
Alternative 1	Roundabout
Alternative 2	Roundabout
Alternative 3	Traffic Signal

As more data becomes available and development takes place, it is recommended to review the intersections for the appropriate control type.

5.5. Opinion of Probable Costs

5.5.1. Construction Costs

To assist in the determination of the preferred Scherer Parkway alternative alignment, construction costs were estimated. They are summarized in **Table 18** below.

Table 18 – Summary of Estimated Construction Costs

	Alternative 1	Alternative 2	Alternative 3
Scherer Parkway (Sampson Rd to Scherer Rd)	$25,895,328	$16,335,576	$24,326,418
Scherer Parkway (Scherer Rd to Hook Rd)	$33,878,758	$40,904,677	$38,324,357
Scherer Road (Scherer Pkwy to Jefferson St)	$13,131,899	$21,094,528	$13,427,602
Total	**$72,905,985**	**$78,334,781**	**$76,078,377**

*All Construction Costs include 20% Contingency

Alternative 1 and Alternative 3 have similar construction costs. Although these alignments differ as they traverse south-easterly through the Property Reserve property, they are similar in length, as are their respective Scherer Parkway and Scherer Road components that follow the existing alignment.

Alternative 2 costs more due to its location of departure from the existing alignment being approximately 4500’ west of that of Alternative 1 and Alternative 3. This requires additional parkway length to traverse to the future Route 291 and Hook Road interchange. A comparison of alignment lengths is shown in **Table 19**.

Table 19 – Summary of Alignment Lengths (ft)

	Alternative 1	Alternative 2	Alternative 3
Scherer Parkway (Sampson Rd to Scherer Rd)	11,944	7,438	12,092
Scherer Parkway (Scherer Rd to Hook Rd)	13,404	17,700	13,656
Scherer Road (Scherer Pkwy to Jefferson St)	7,614	12,187	7,893
Total	**32,962**	**37,325**	**33,641**

In addition, construction costs were estimated for the programmed widening and extension of Longview Boulevard between Longview Road and Scherer Parkway, along with the future extension south to Hook Road. Those estimated construction costs are –

- Longview Boulevard (Longview Road to Scherer Parkway) - **$9,687,530**
- Longview Boulevard (Scherer Parkway to Hook Road) - **$20,664,767**

Detailed estimates of probable construction cost for each alternative can be found in **Appendix C**. The prices listed reflect the engineer's best knowledge of 2025 construction costs and are based on conceptual design for each option.

6. Comparison of Alternatives

6.1. Discussion

The alternatives were designed while considering many factors and utilizing the design criteria shown above. The alternates were laid out to minimize the impacts to wetlands and existing parcels. Each alternate follows existing parcel lines where applicable to reduce property splits. The new Scherer Road and other existing road crossings were considered during the design of the alternates. All the alternatives follow the same alignment from the existing Scherer Parkway to Longview Boulevard. The proposed Scherer Parkway alignments were kept within the Property Reserve properties.

6.2. Advantages vs Disadvantages

Based on an analysis of the three alignments that were developed, **Table 20** below summarizes the advantages and disadvantages of each alternative.

Table 20 – Advantages vs Disadvantages

	Advantages	Disadvantages
Alternate 1 (Yellow)	• Avoids the Fire Station and Water Tower • Minimizes the impact on the 6 parcels in the Southeast corner of Scherer Road & Pryor Road • Will not require the relocation of homes • Contains two gentle curves (>90°) • Minimizes the impacts to the streams and wetlands • Hook Road connection can be placed at a 90-degree between both Hook Road and Scherer Parkway • Straightens Scherer Road alignment removing curve just west of Jefferson Street	• Scherer Road tie-in to Scherer Parkway would create smaller parcels to the north of the tie-in • Cuts through parcel east of Ward Road creating two smaller parcels • Contains two 90° turns
Alternate 2 (Blue)	• Avoids the Fire Station and Water Tower • Contains four gentle curves (>90°) • Crosses Pryor Road a minimum of a quarter mile south of the Scherer Road and Pryor Road Intersection • Alignment shows good spacing from other north-south roads at Ward Road • Hook Road connection can be placed at a 90-degree between both Hook and Scherer Parkway	• Scherer Road tie-in to Scherer Parkway would create small parcel to the north of the tie-in • Closer distance to Scherer Road at Pryor Road means smaller parcels to develop, particularly east of Pryor Road • East of Ward Road the alignment borders a parcel line that is not owned by Property Reserve • Contains two 90° turns • Would require more land acquisition and relocation of homes
Alternate 3 Green)	• Avoids the Fire Station and Water Tower • Less impactful tie-in from Scherer Road to Scherer Parkway • Minimizes the impact on 4 parcels • Will not require the relocation of homes • Straightens Scherer Road alignment removing curve just west of Jefferson Street	• Contains four 90° turns • East of Ward Road the alignment borders a parcel line that is not owned by Property Reserve • Scherer Road tie-in to Scherer Parkway would create small parcel to the north of the tie-in

7. Public Involvement

7.1. Summary

To provide the public with an opportunity to learn more about the Alignment Study of Scherer Road/Parkway and Longview Boulevard, an information meeting was held on Wednesday, March 19th at Hawthorn Hill Elementary School at 2801 SW Pryor Road in Lee's Summit.

The meeting was an open-house format and was attended by City staff and the Alignment Study's design engineer, Lochmueller Inc. At least 68 individuals of the public filled out the sign-in sheet. Conceptual exhibits were available for public inspection at the meeting. This meeting provided stakeholders with an opportunity to ask questions, provide feedback, and gain insights into the timeline, scope, and impact on the community. A copy of the public meeting materials can be found in **Appendix F**.

In addition, the City provided a project landing page on their website at - https://cityofls.net/public-works/infrastructure-capital-projects/scherer-road. The web page shared a project overview, a copy of the public meeting exhibits and materials, and a place to submit feedback and comments.

8. Findings and Conclusions

8.1. Summary of Findings and Recommendations

Several factors were considered when evaluating the individual alignments and recommending a preferred alternative. The primary factors included future development, construction costs, impacts on individual properties, and drainage. Based on the evaluation of these factors, Lochmueller Group recommends the City proceed with the Alternative 3 alignment option.

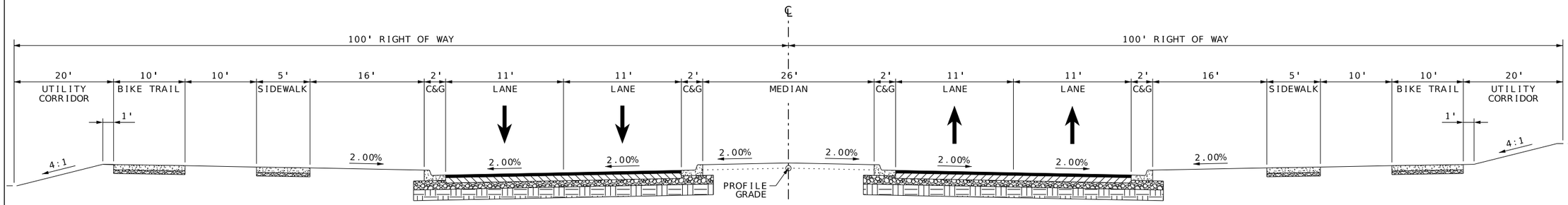
Since Alternative 2 departs from the existing roadway alignment approximately 4500' west of Alternative 1 and Alternative 3, increased construction costs and impacts to developable tracts associated with the additional parkway length makes this option less desirable than the other two.

And although Alternative 1 is comparable in cost to that of the recommended alternative, it is less favorable to development as the alignment splits up the land into less-than-desirable parcels. Alternative 3 is entirely comprised of 90 degree turns which reduces the breaking of developable tracts of land and provides a more concise intersection with Scherer Road.

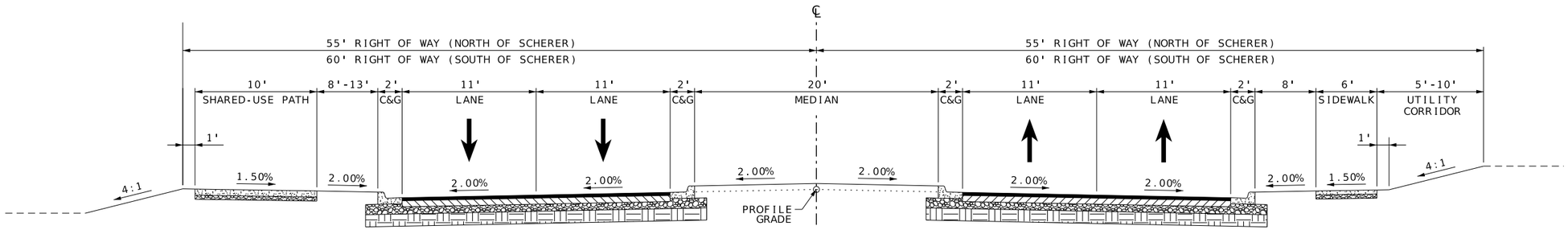
In addition, Alternative 3 best supplements the existing street network by equally separating the north-south routes of Ward Road and the future extension of Jefferson Street. It is also equally spaced between the east-west routes of Hook Road and Scherer Road. This alternative also requires fewer and smaller drainage channel crossings, which reduces construction costs.

To graphically illustrate the conceptual design of the Scherer Parkway alternatives, Longview Boulevard extension, and Scherer Road widening, plan and profile sheets have been developed and are included in **Appendix B**. These conceptual designs were also used as a basis to develop the cost estimates that are included in **Appendix C**.

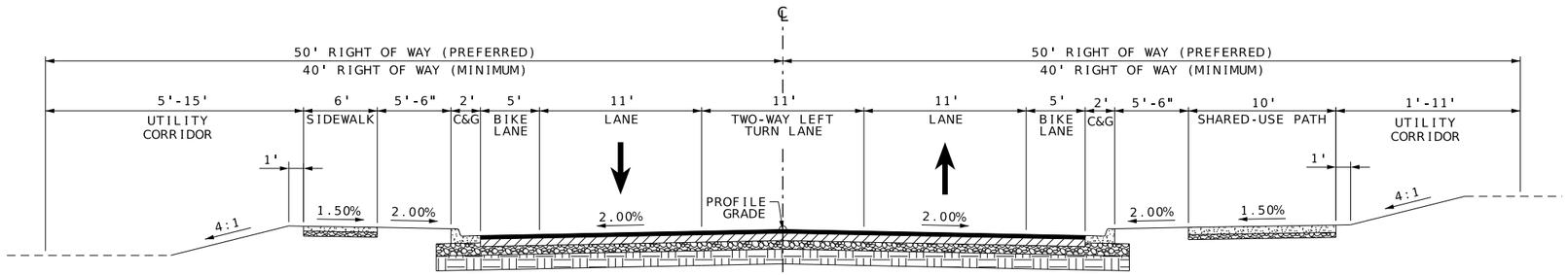
Appendix A
Typical Sections



SCHERER PARKWAY



LONGVIEW BOULEVARD



SCHERER ROAD/HOOK ROAD CONNECTOR

DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO.

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

SCHERER ROAD/PARKWAY
ALIGNMENT STUDY
TYPICAL SECTIONS

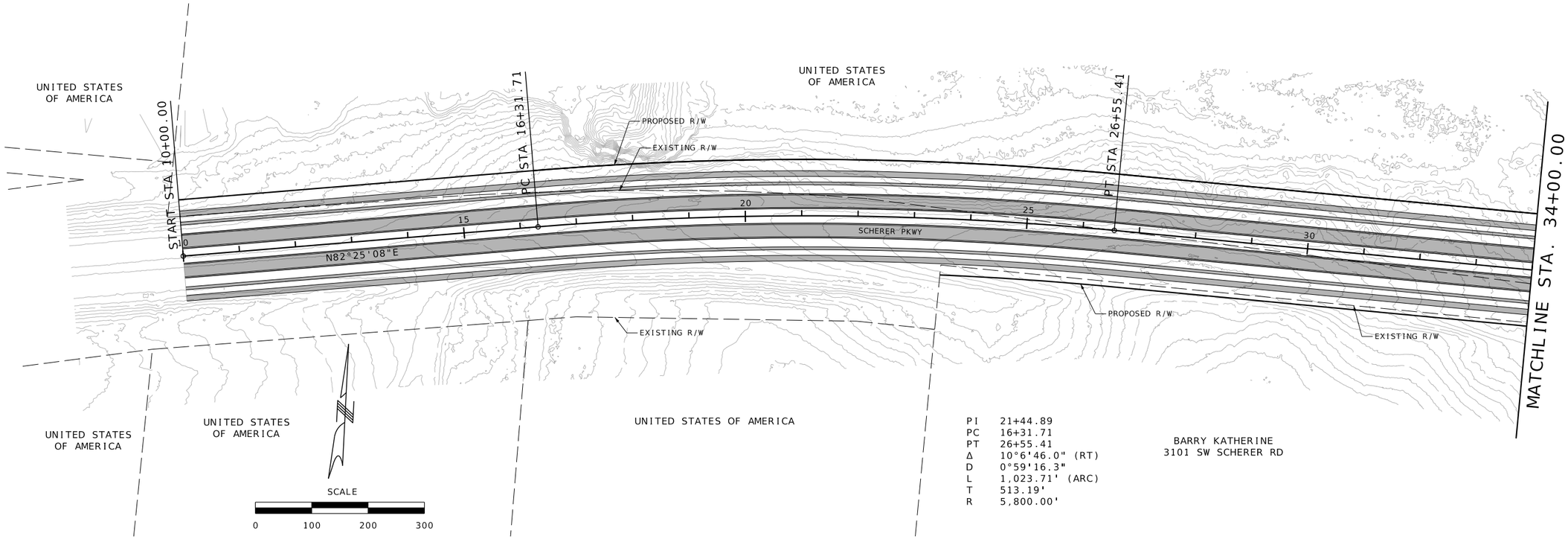
LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

FINAL PLANS

REV.

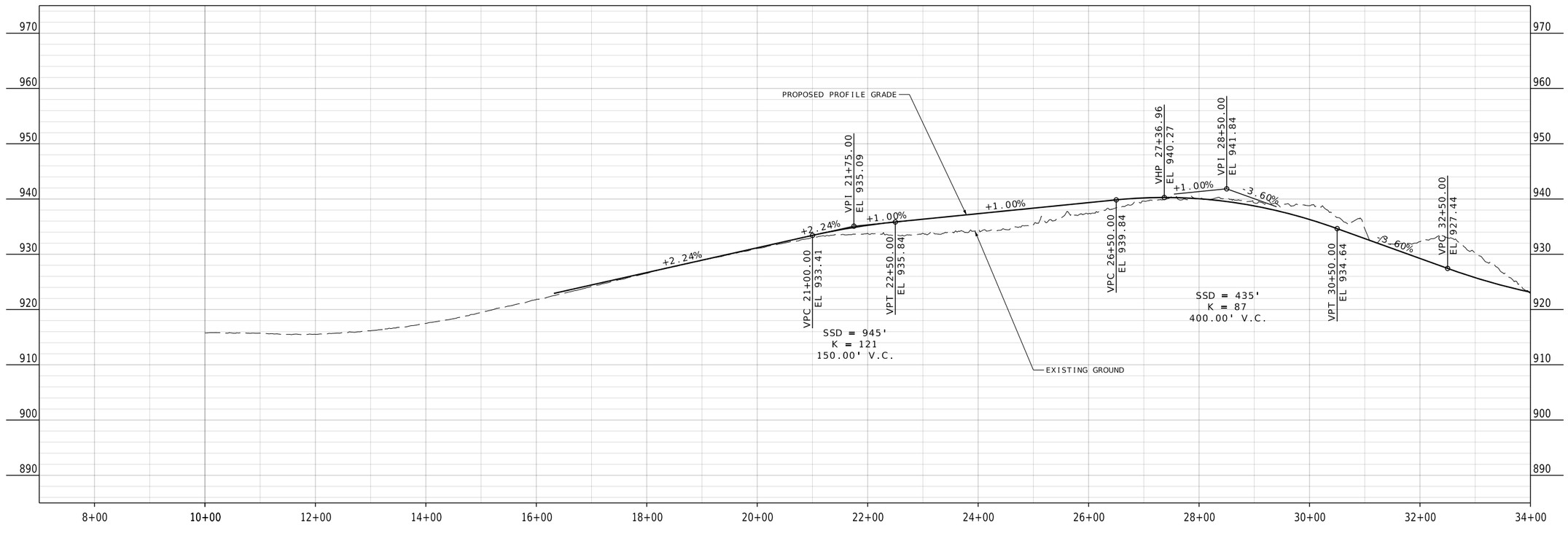
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Appendix B
Conceptual Plans



PI 21+44.89
PC 16+31.71
PT 26+55.41
Δ 10°6'46.0" (RT)
D 0°59'16.3"
L 1,023.71' (ARC)
T 513.19'
R 5,800.00'

BARRY KATHERINE
3101 SW SCHERER RD



DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 1

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

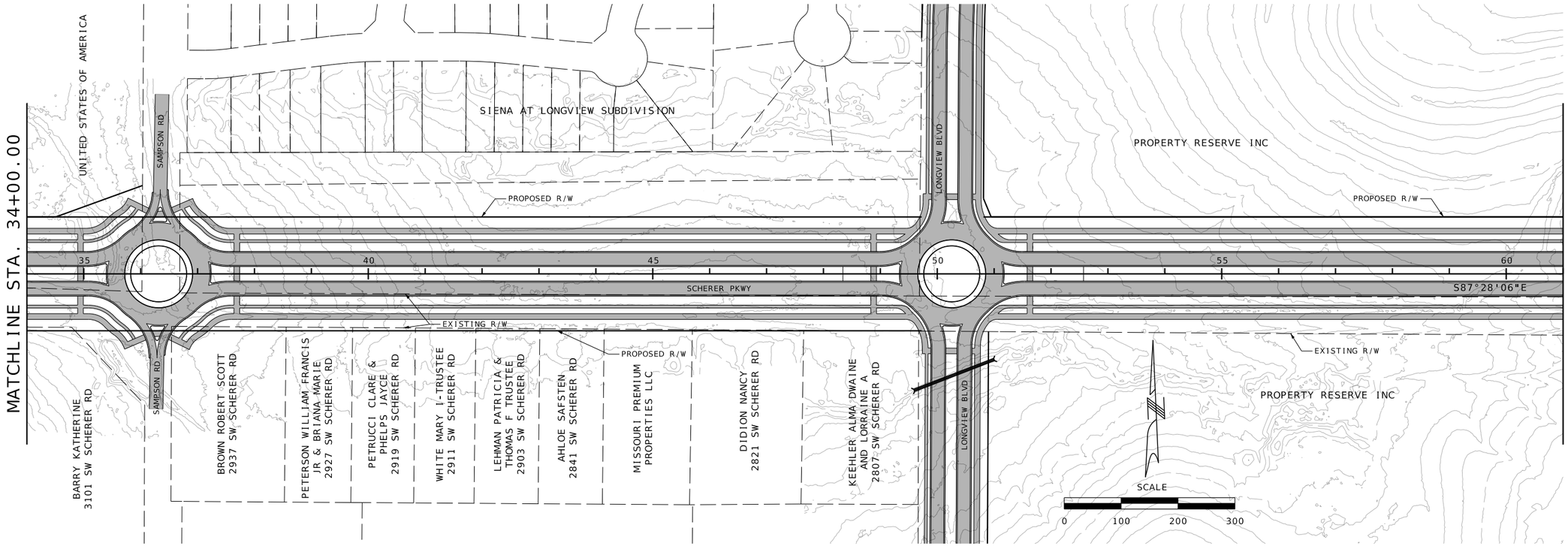
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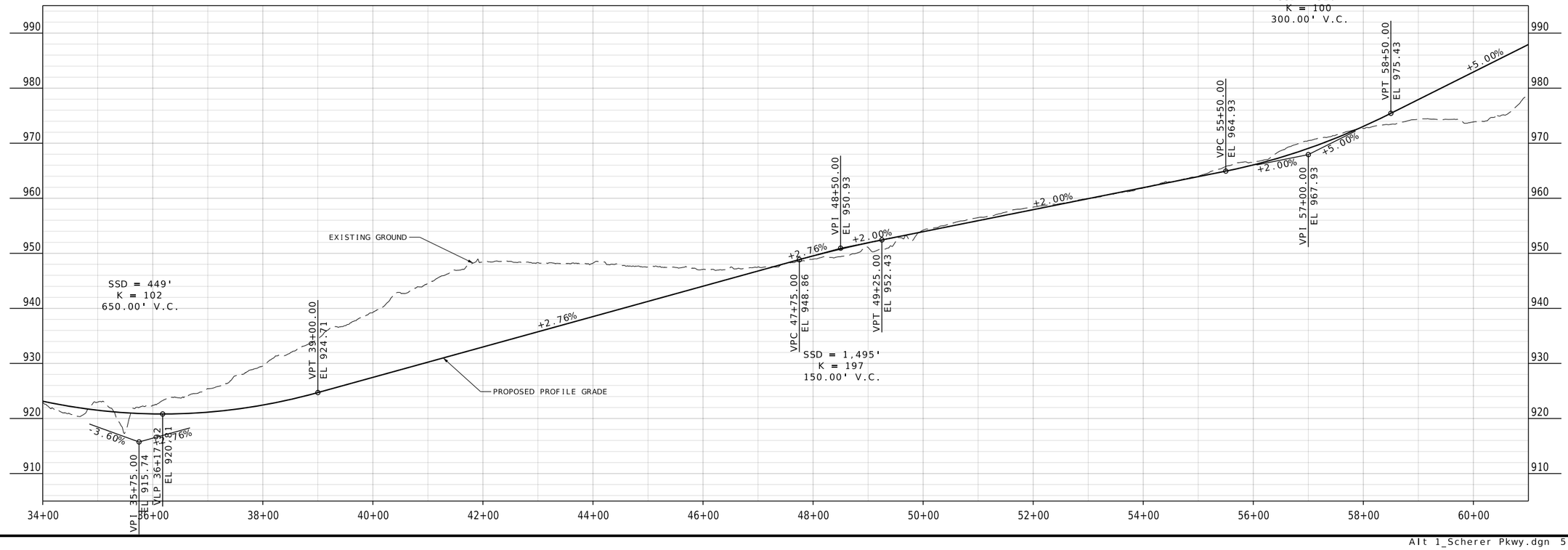
SCHERER PKWY
STA 10+00 TO STA 34+00
ALTERNATIVE 1
SHEET 1 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 1_Scherer Pkwy.dgn 5:26:53 PM 6/18/2025





DATE PREPARED

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	MO
DISTRICT	SHEET NO.
	2

COUNTY

JOB NO.

CONTRACT ID.

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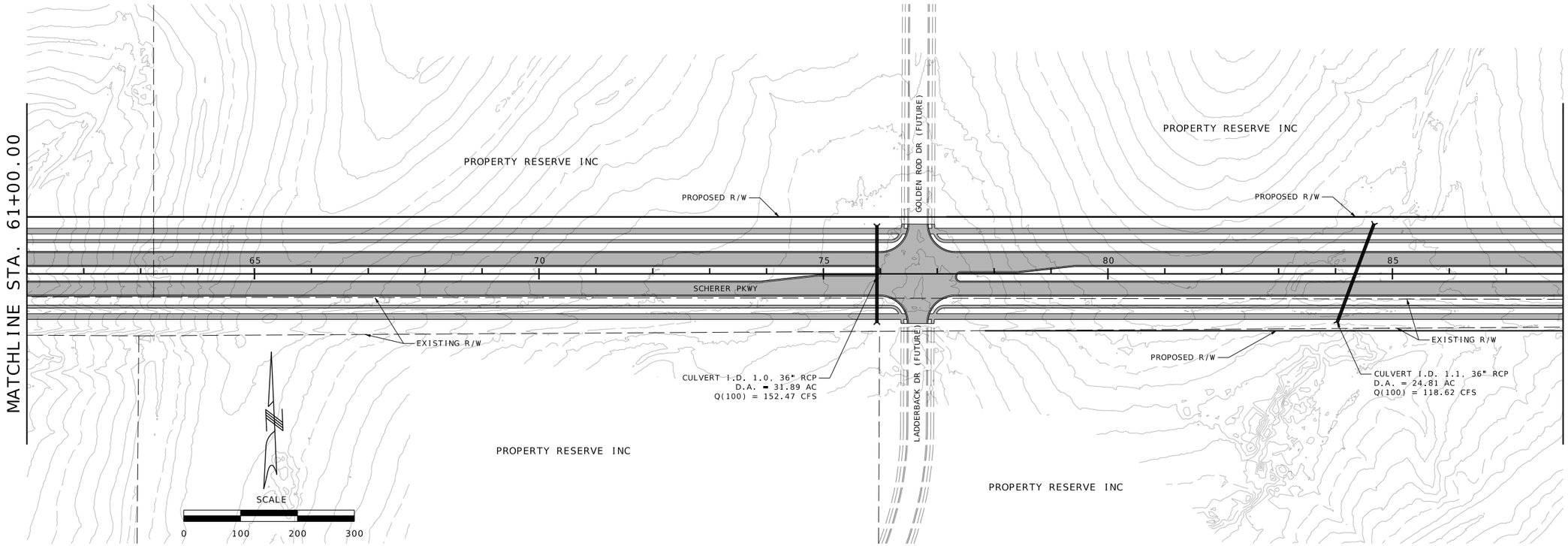
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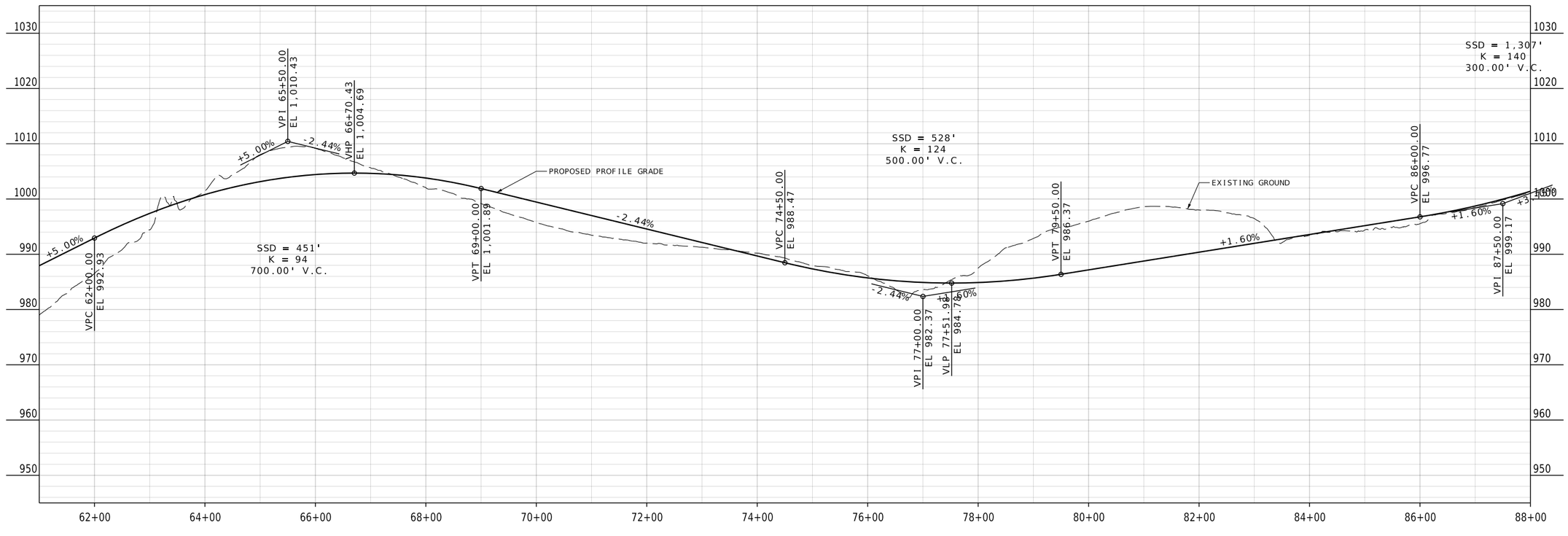
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SCHERER PKWY
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ALTERNATIVE 1
SHEET 2 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	3

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

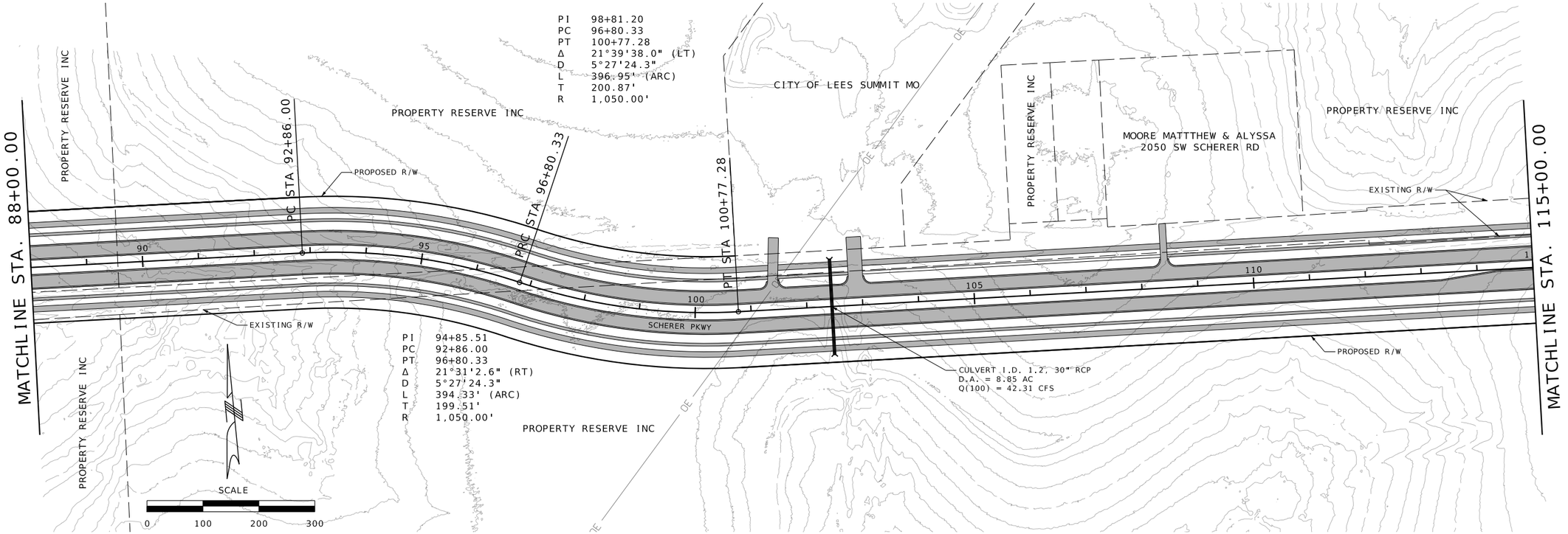
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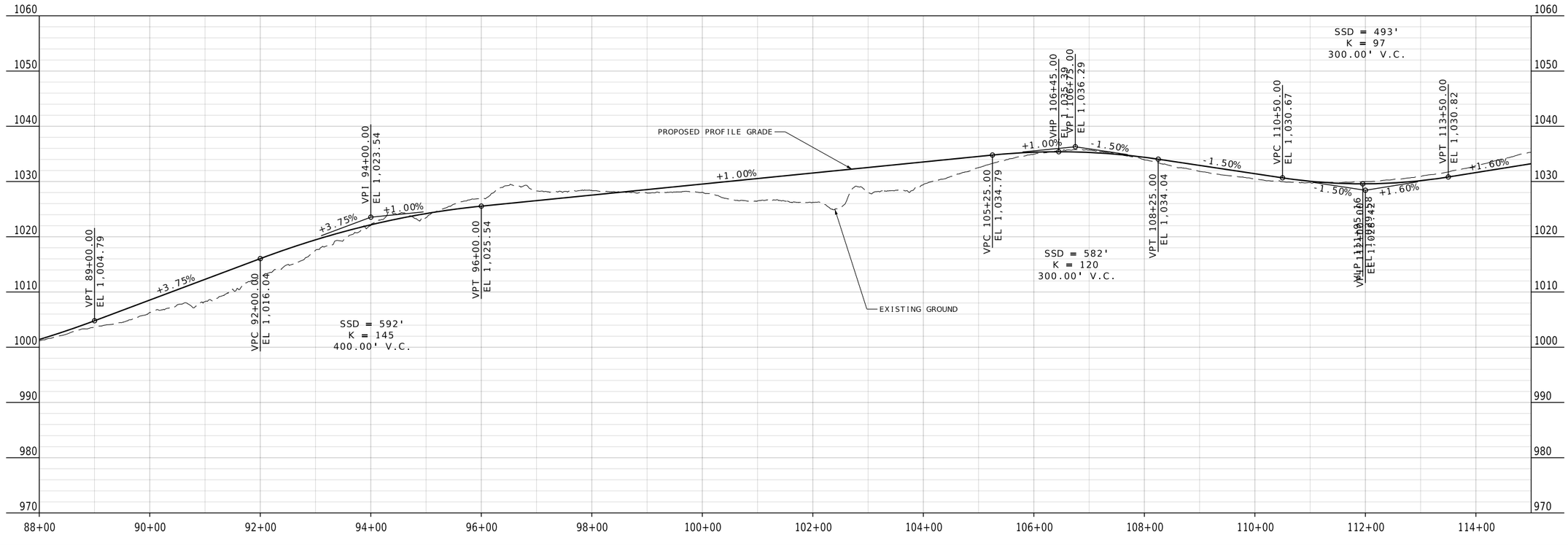
DATE	DESCRIPTION

SCHERER PKWY
STA 61+00 TO STA 88+00
ALTERNATIVE 1
SHEET 3 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	4

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

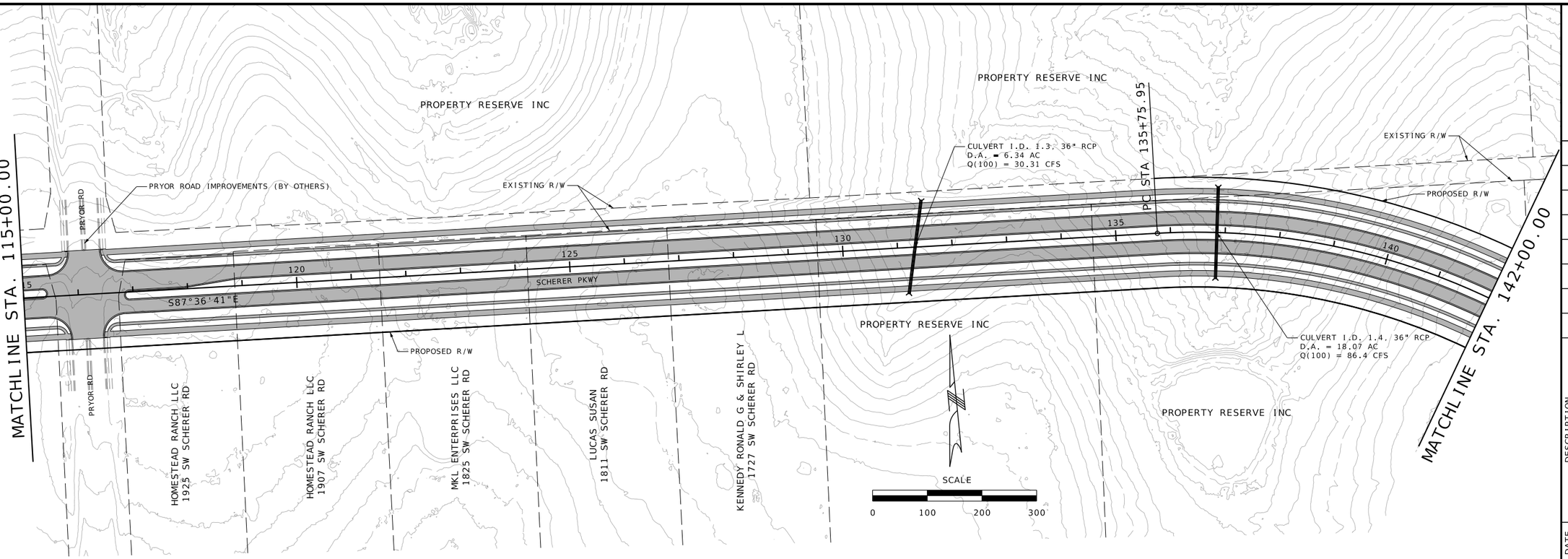
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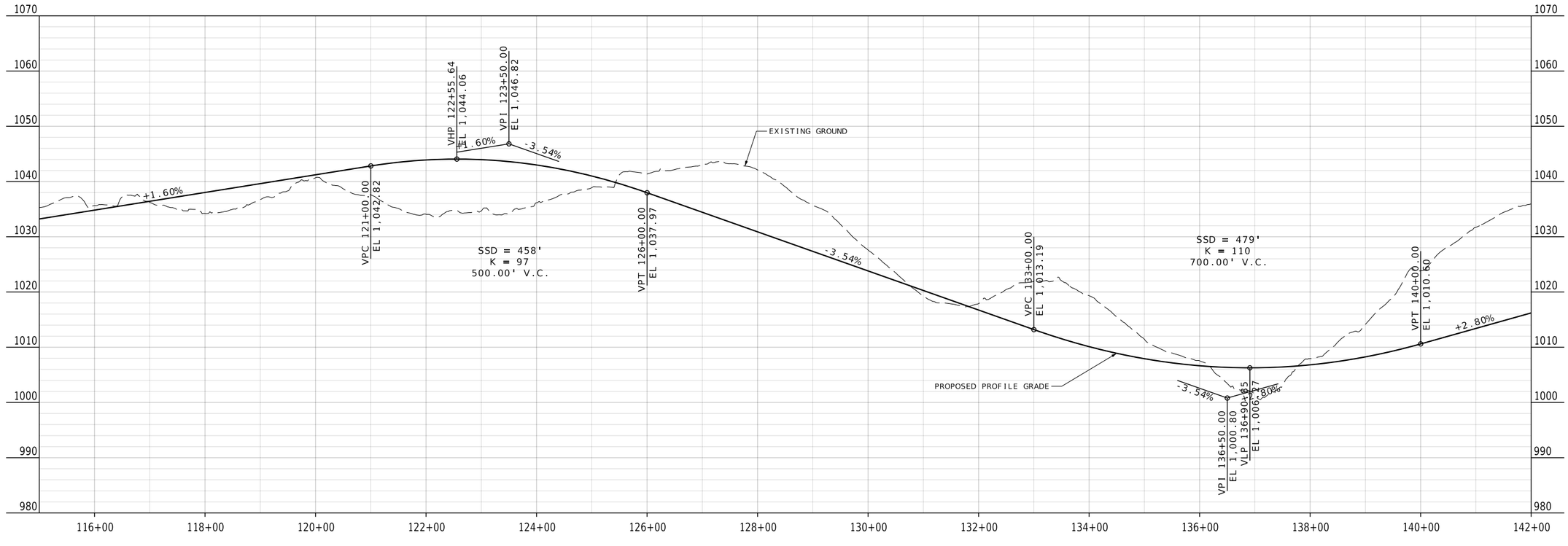
DESCRIPTION	DATE

SCHERER PKWY
STA 88+00 TO STA 115+00
ALTERNATIVE 1
SHEET 4 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	5

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

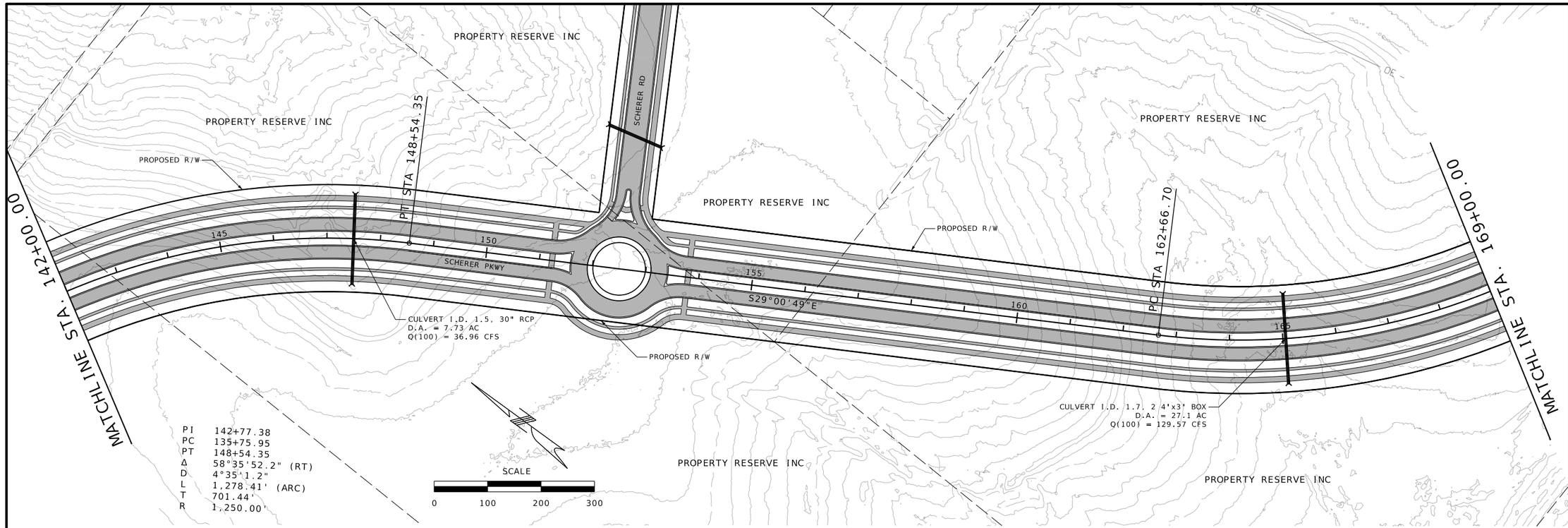
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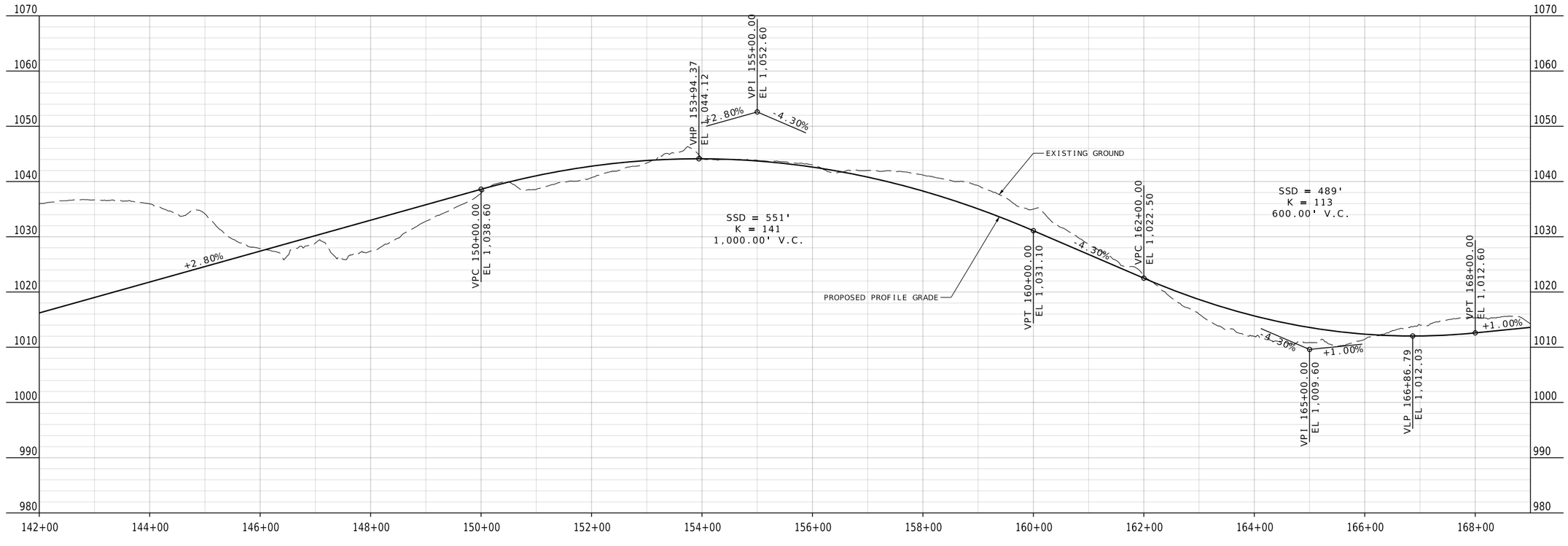
DATE	DESCRIPTION

SCHERER PKWY
STA 115+00 TO STA 142+00
ALTERNATIVE 1
SHEET 5 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	6

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

SCHERER PKWY
STA 142+00 TO STA 169+00
ALTERNATIVE 1
SHEET 6 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 1_Scherer Pkwy.dgn 5:29:02 PM 6/18/2025

PI 169+60.04
PC 162+66.70
PT 175+32.76
Δ 58°1'54.0" (LT)
D 4°35'1.2"
L 1,266.05' (ARC)
T 693.34'
R 1,250.00'

MATCHLINE STA. 169+00.00

MATCHLINE STA. 196+00.00

PROPERTY RESERVE INC

PROPERTY RESERVE INC

PROPERTY RESERVE INC

PROPERTY RESERVE INC

OVERHEAD TRANSMISSION POWER LINES

PT STA 175+32.76

WARD RD

WARD RD

PROPOSED R/W

PROPOSED R/W

SCHERER PKWY

S87°02'43"E

CULVERT I.D. 1.9. 2 5'x3' BOX
D.A. = 36.00 AC
Q(100) = 172.13 CFS

TOURTELLOT NICOLAS G-TRUSTEE
818 SW STUART RD

SCALE
0 100 200 300

1080 1070 1060 1050 1040 1030 1020 1010 1000 990

170+00 172+00 174+00 176+00 178+00 180+00 182+00 184+00 186+00 188+00 190+00 192+00 194+00 196+00

SSD = 502'
K = 117
500.00' V.C.

SSD = 433'
K = 87
850.00' V.C.

SSD = 516'
K = 115
400.00' V.C.

PROPOSED PROFILE GRADE

EXISTING GROUND

VPC 173+75.00
EL 1,018.35

VPI 176+25.00
EL 1,020.85

VPT 178+75.00
EL 1,034.05

VPC 181+00.00
EL 1,045.93

VPI 185+25.00
EL 1,068.37

VHP 185+58.90
EL 1,068.04

VPT 189+50.00
EL 1,049.24

VPC 193+00.00
EL 1,033.49

VPI 195+00.00
EL 1,024.49

+1.00%
+5.28%
+1.00%
+5.28%
+4.50%
-4.50%
-4.50%
-1.01%

DATE PREPARED	
ROUTE	STATE MO
DISTRICT	SHEET NO. 7
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

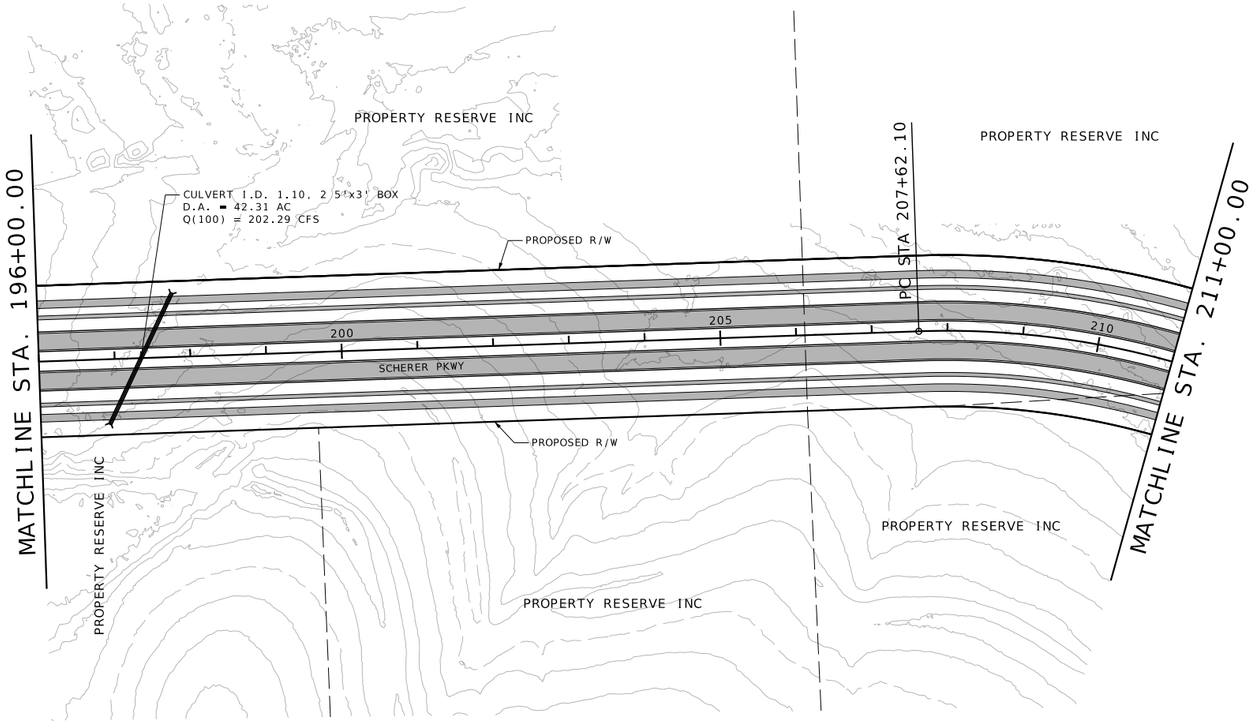
DATE

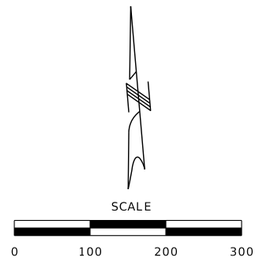
SCHERER PKWY
STA 169+00 TO STA 196+00
ALTERNATIVE 1
SHEET 7 OF 12

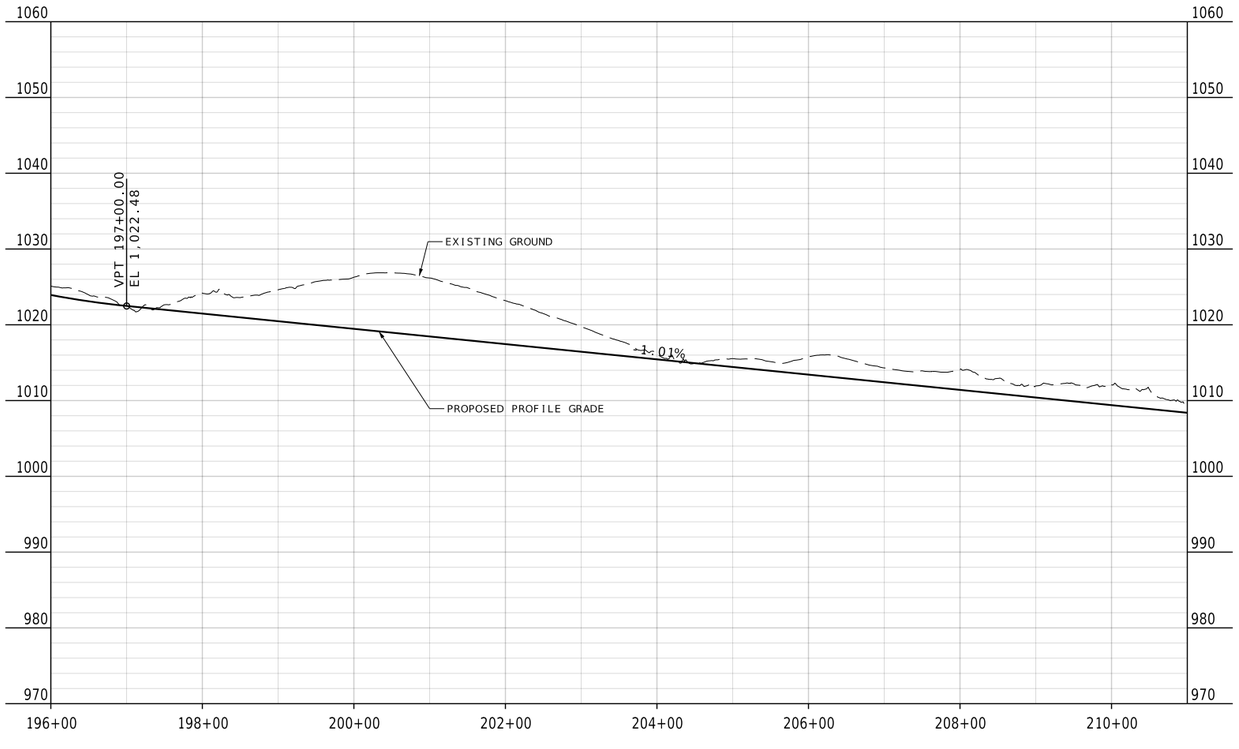
LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 1_Scherer Pkwy.dgn 5:29:23 PM 6/18/2025







DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 8

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

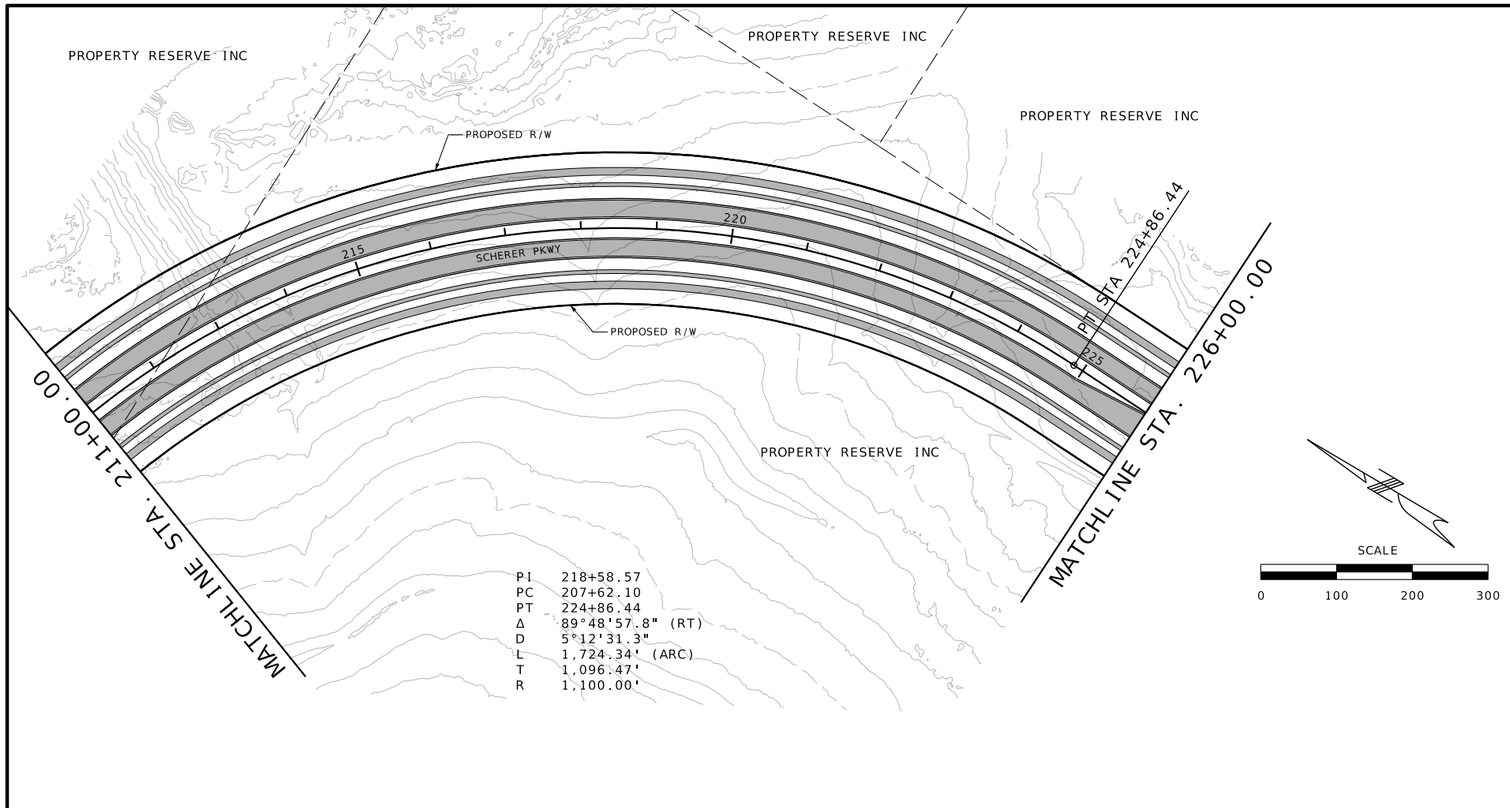
BRIDGE NO.

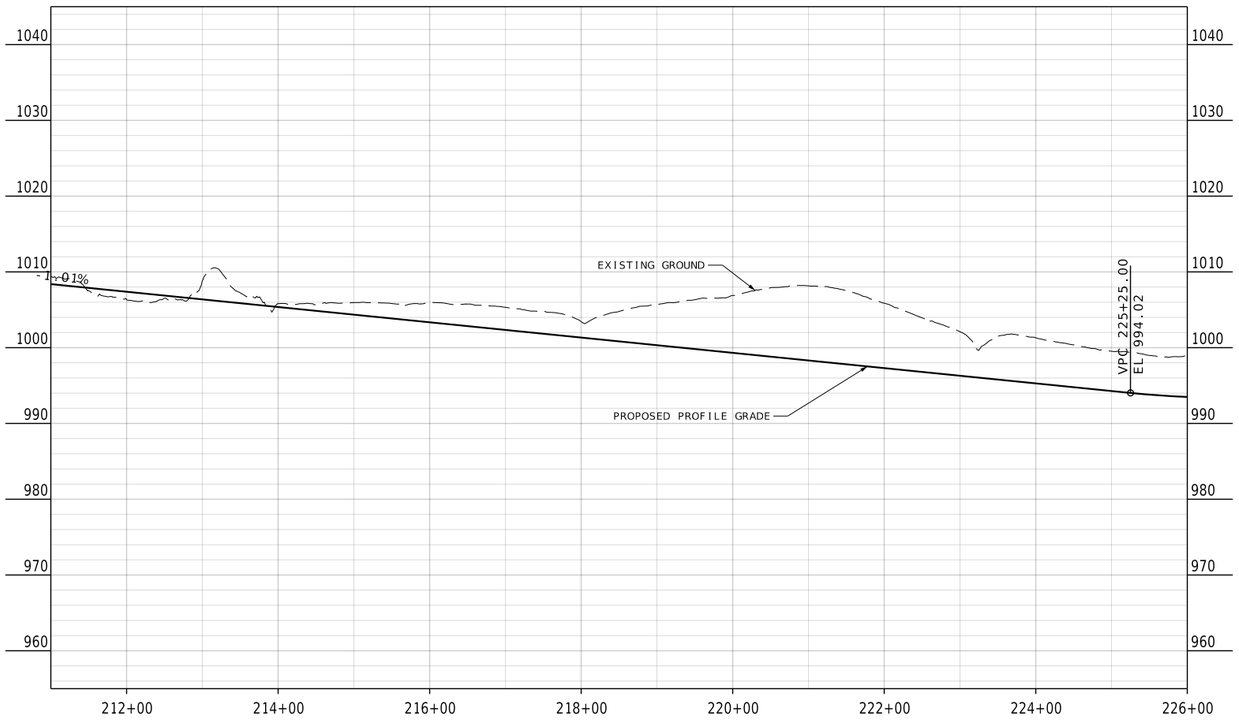
DESCRIPTION	DATE

SCHERER PKWY
STA 196+00 TO STA 211+00
ALTERNATIVE 1
SHEET 8 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
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PLAN-PROFILE





DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 9

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

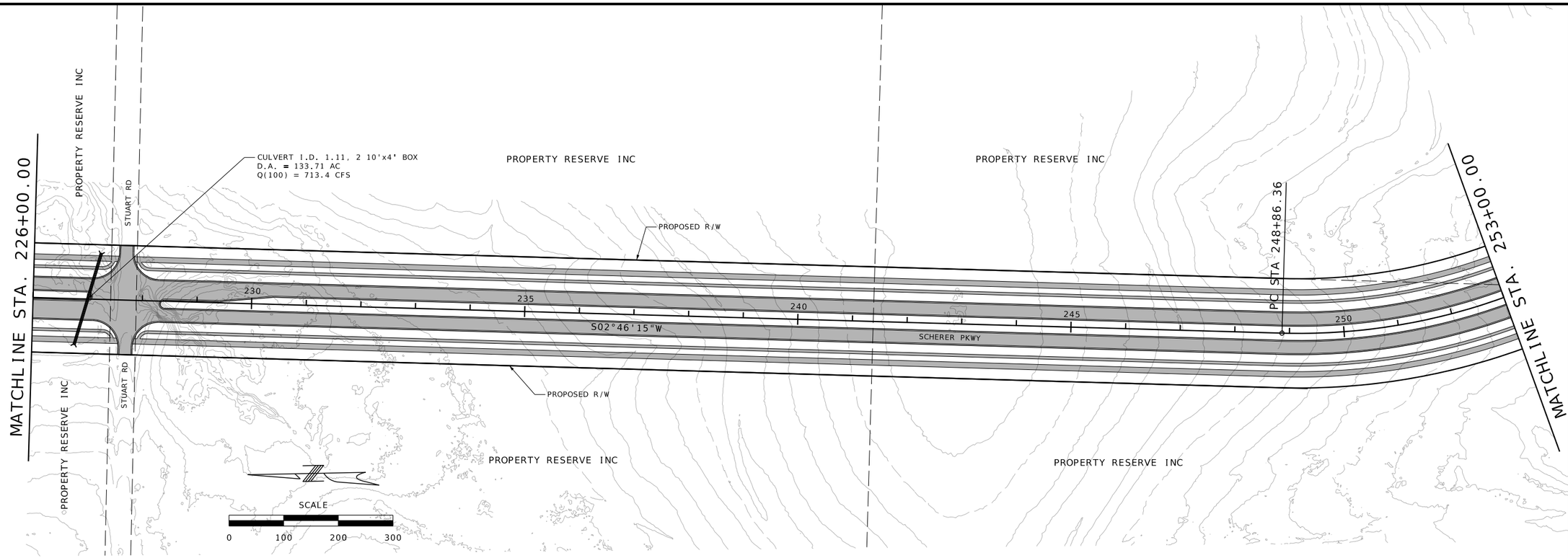
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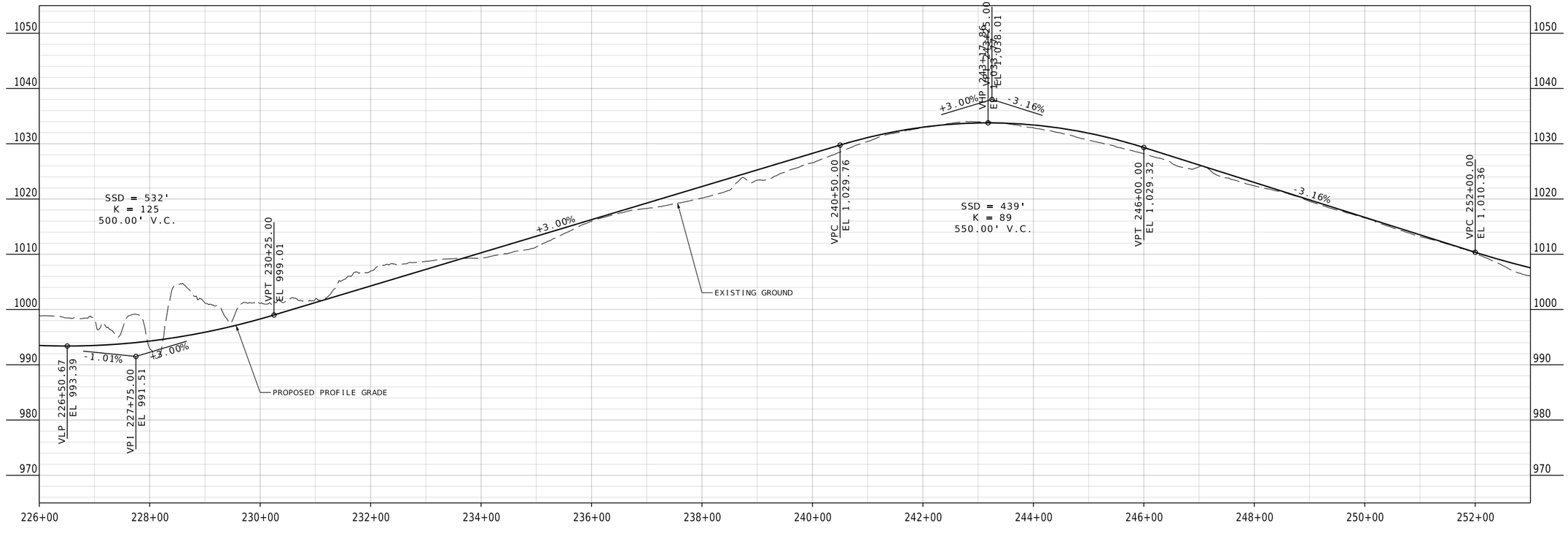
DATE	DESCRIPTION

SCHERER PKWY
STA 211+00 TO STA 226+00
ALTERNATIVE 1
SHEET 9 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	10

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

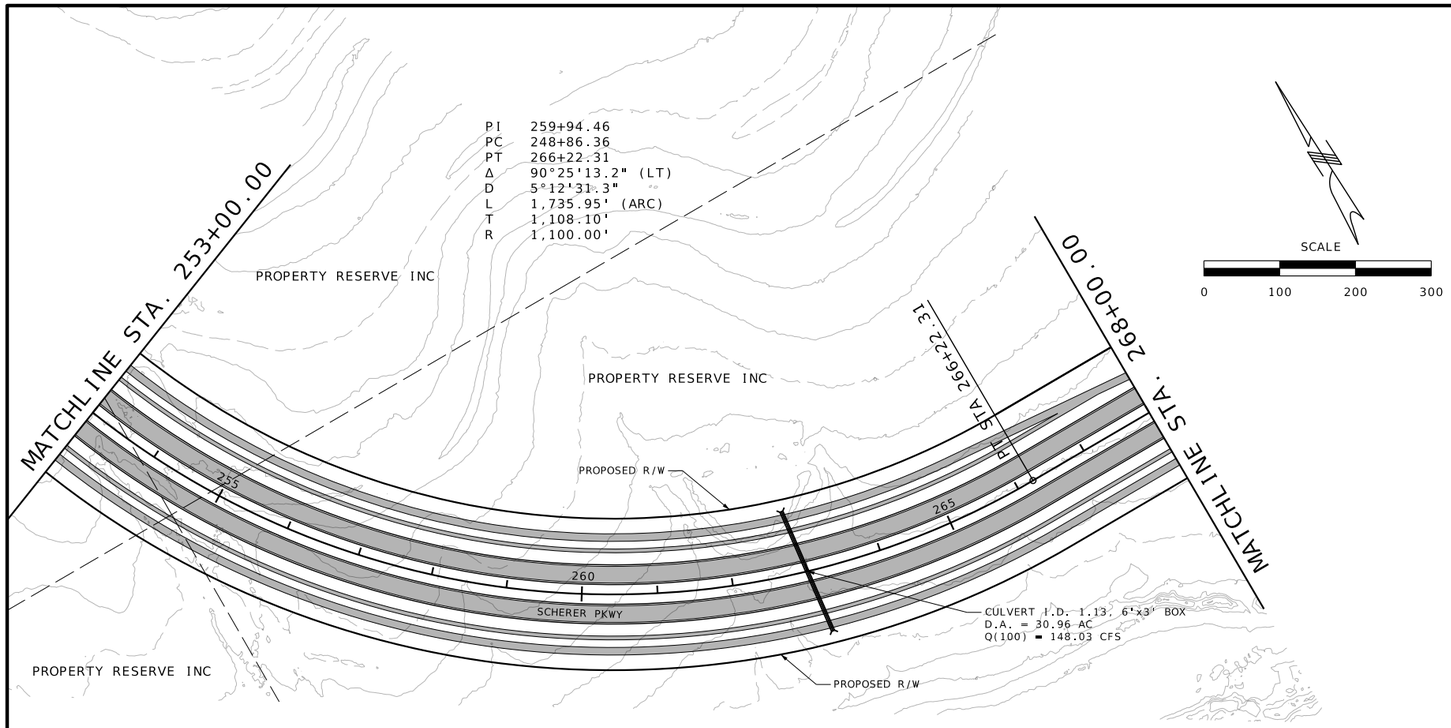
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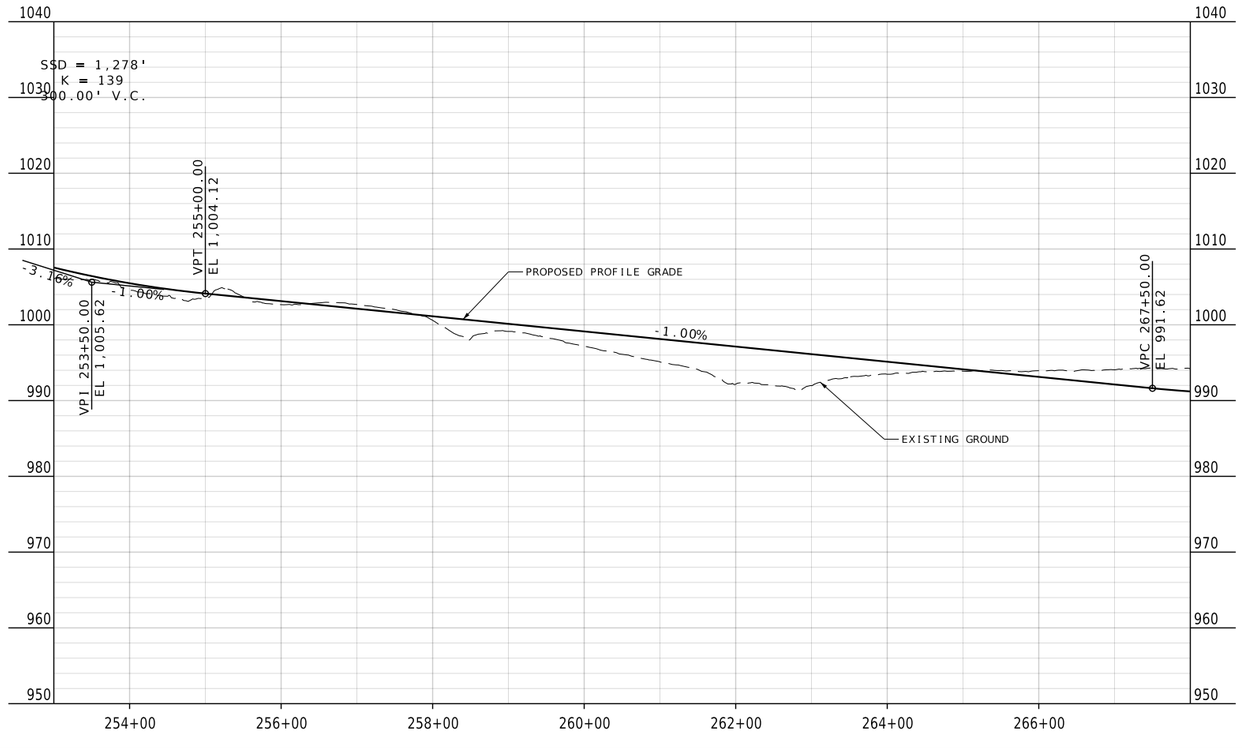
DATE	DESCRIPTION

SCHERER PKWY
STA 226+00 TO STA 253+00
ALTERNATIVE 1
SHEET 10 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 11

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

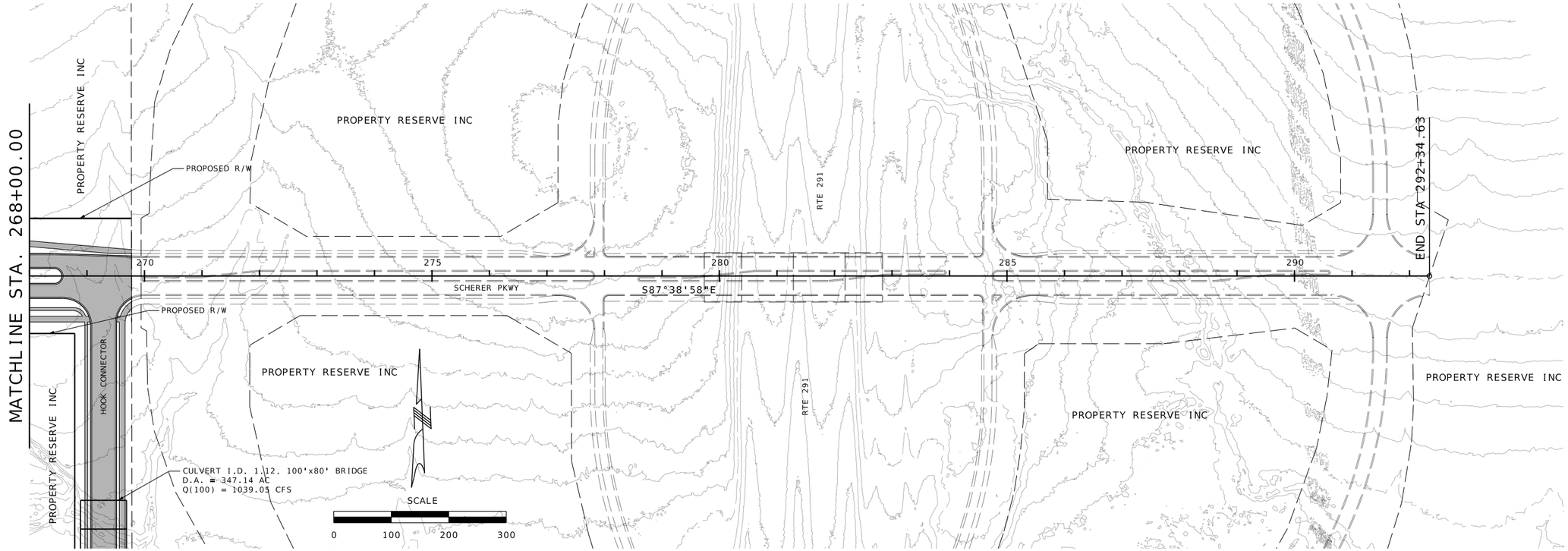
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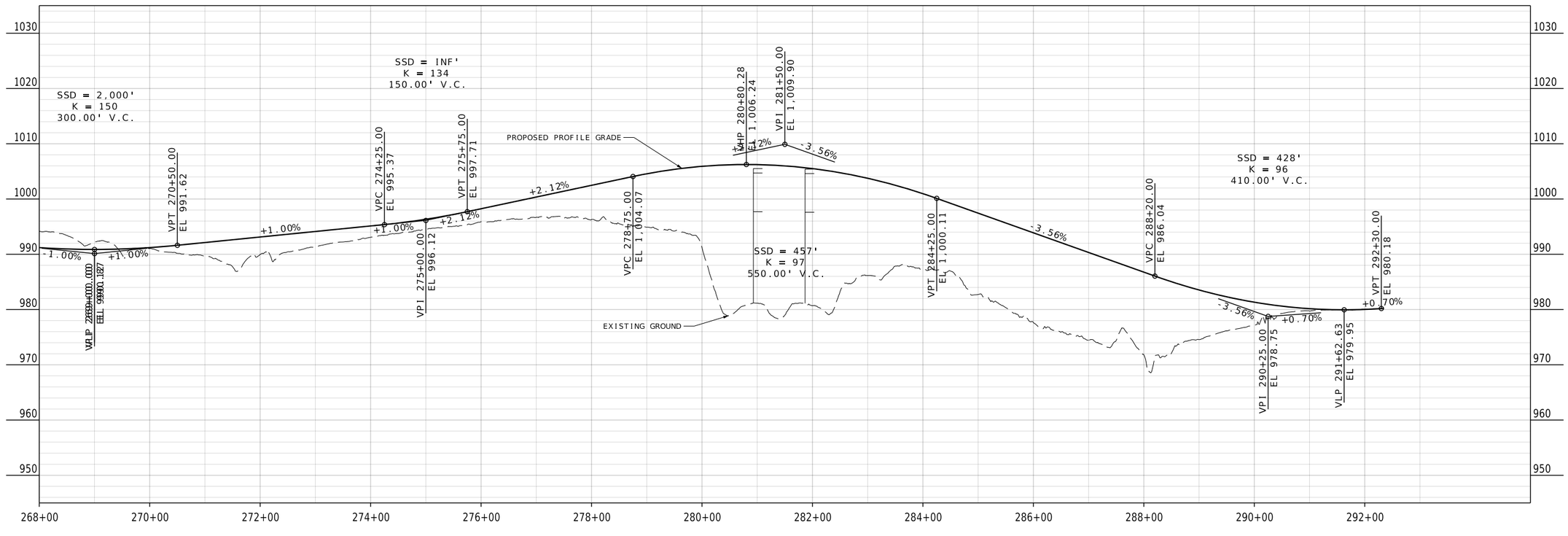
SCHERER PKWY
STA 253+00 TO STA 268+00
ALTERNATIVE 1
SHEET 11 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 1_Scherer Pkwy.dgn 5:30:36 PM 6/18/2025





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	12

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

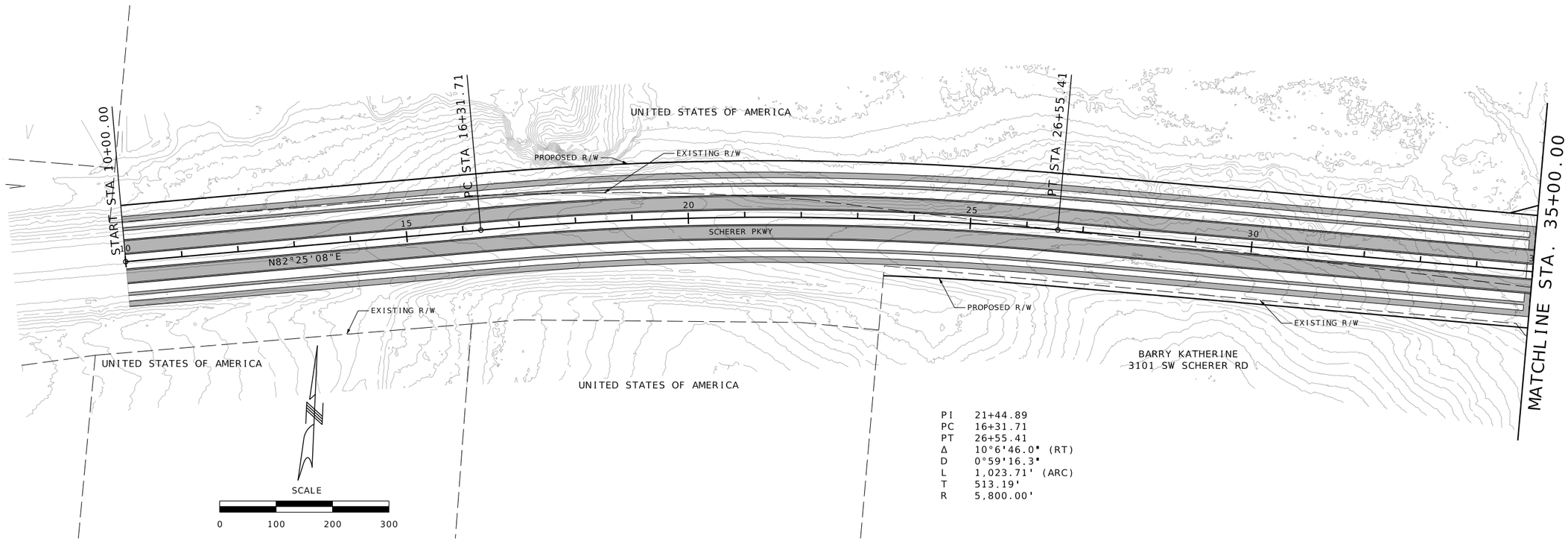
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DATE

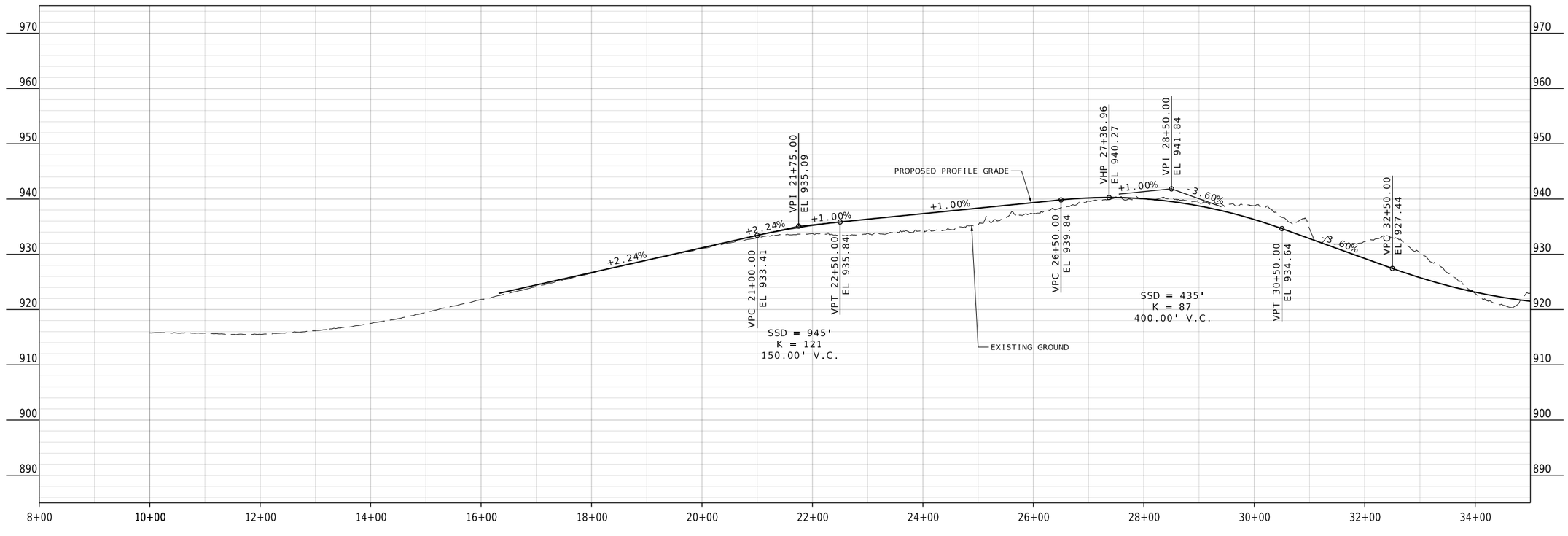
SCHERER PKWY
STA 268+00 TO STA 292+35
ALTERNATIVE 1
SHEET 12 OF 12

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE



PI 21+44.89
PC 16+31.71
PT 26+55.41
Δ 10°6'46.0" (RT)
D 0°59'16.3"
L 1,023.71' (ARC)
T 513.19'
R 5,800.00'



DATE PREPARED

ROUTE
STATE MO
DISTRICT
SHEET NO. 1
COUNTY
JOB NO.
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION

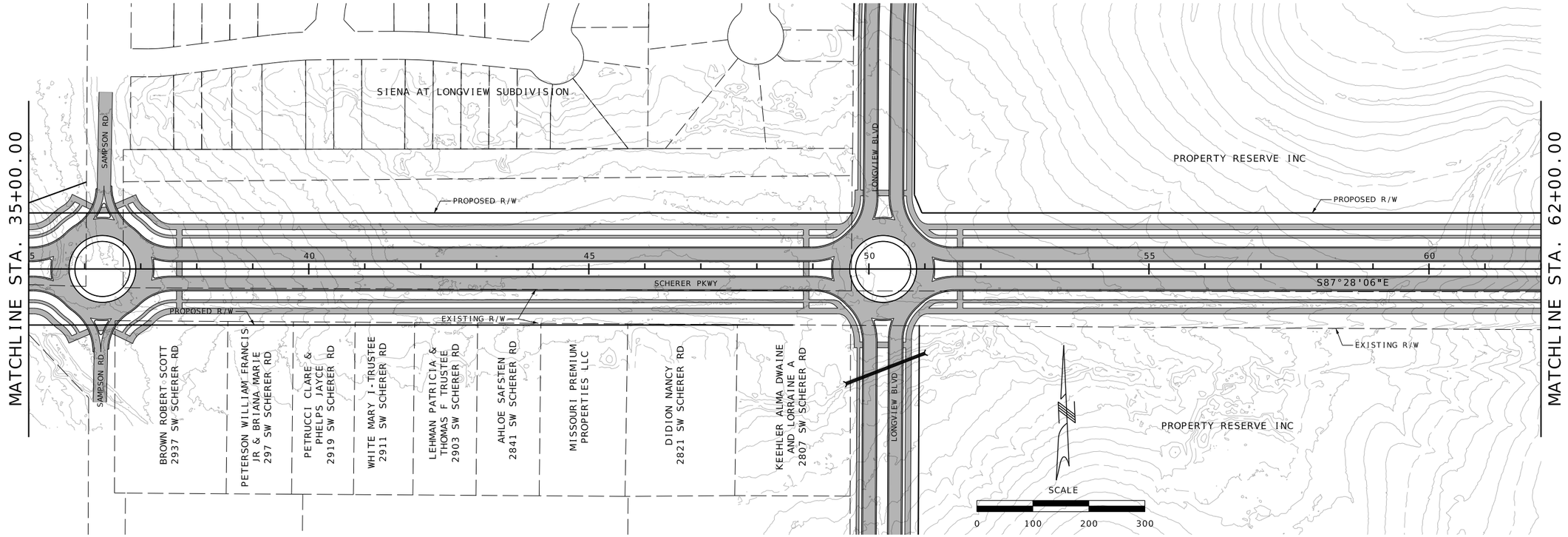
DATE

SCHERER PKWY
STA 10+00 TO STA 35+00
ALTERNATIVE 2
SHEET 1 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 2_Scherer Pkwy.dgn 5:45:43 PM 6/18/2025



DATE PREPARED

ROUTE | STATE: MO

DISTRICT | SHEET NO.: 2

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

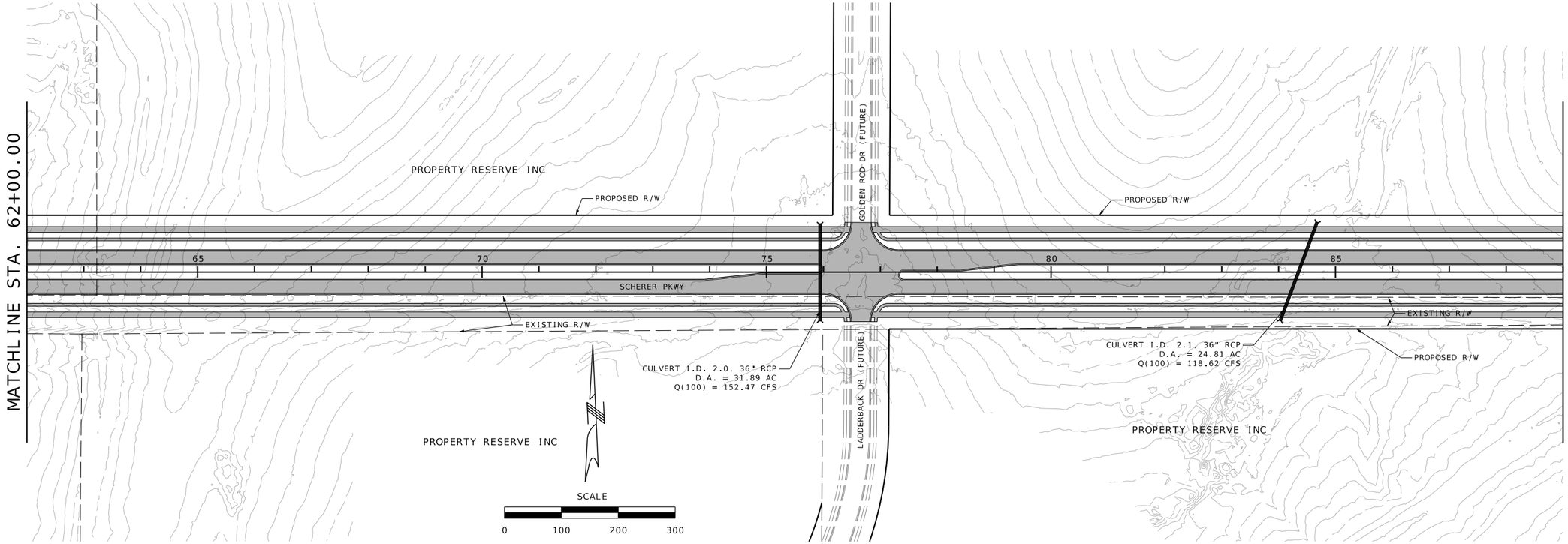
DATE | DESCRIPTION

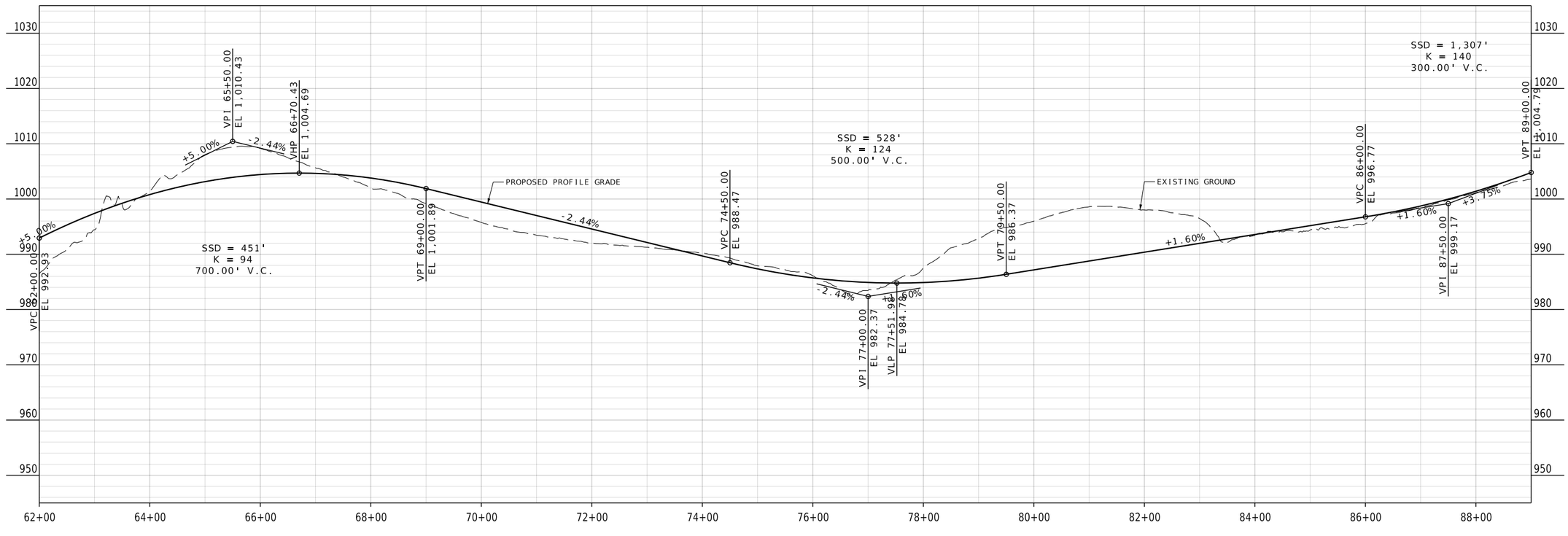
SCHERER PKWY
STA 35+00 TO STA 62+00
ALTERNATIVE 2
SHEET 2 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 2_Scherer Pkwy.dgn 5:46:09 PM 6/18/2025





DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 3

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

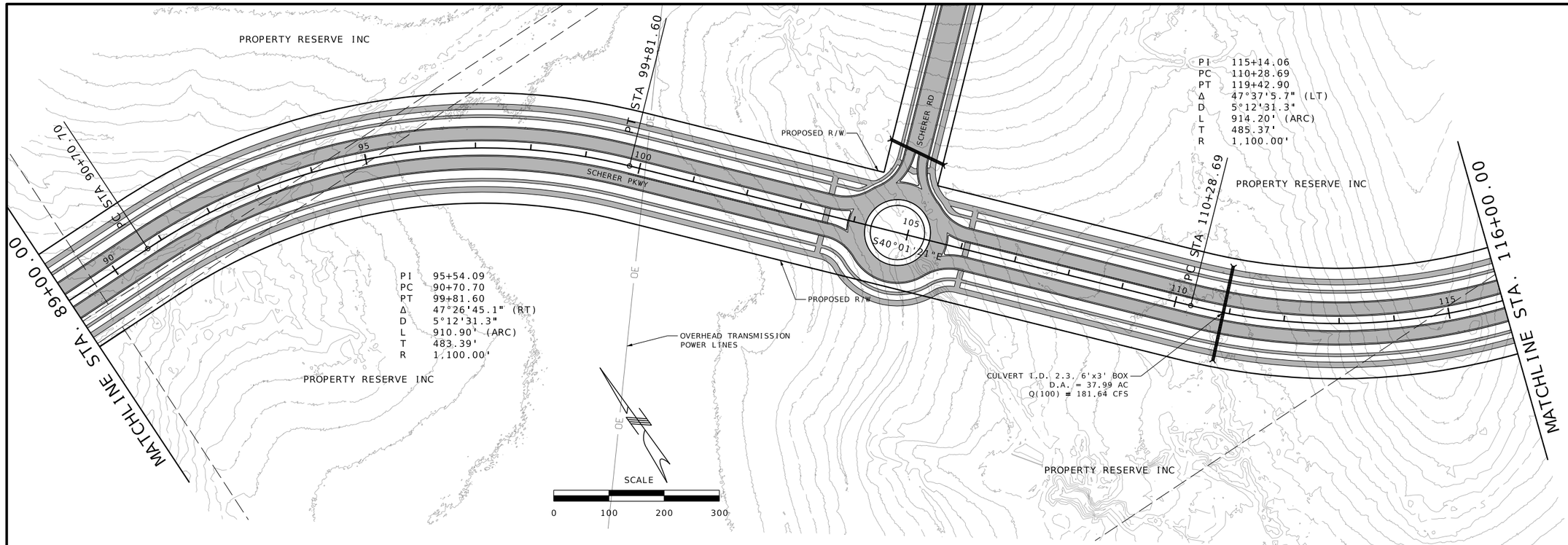
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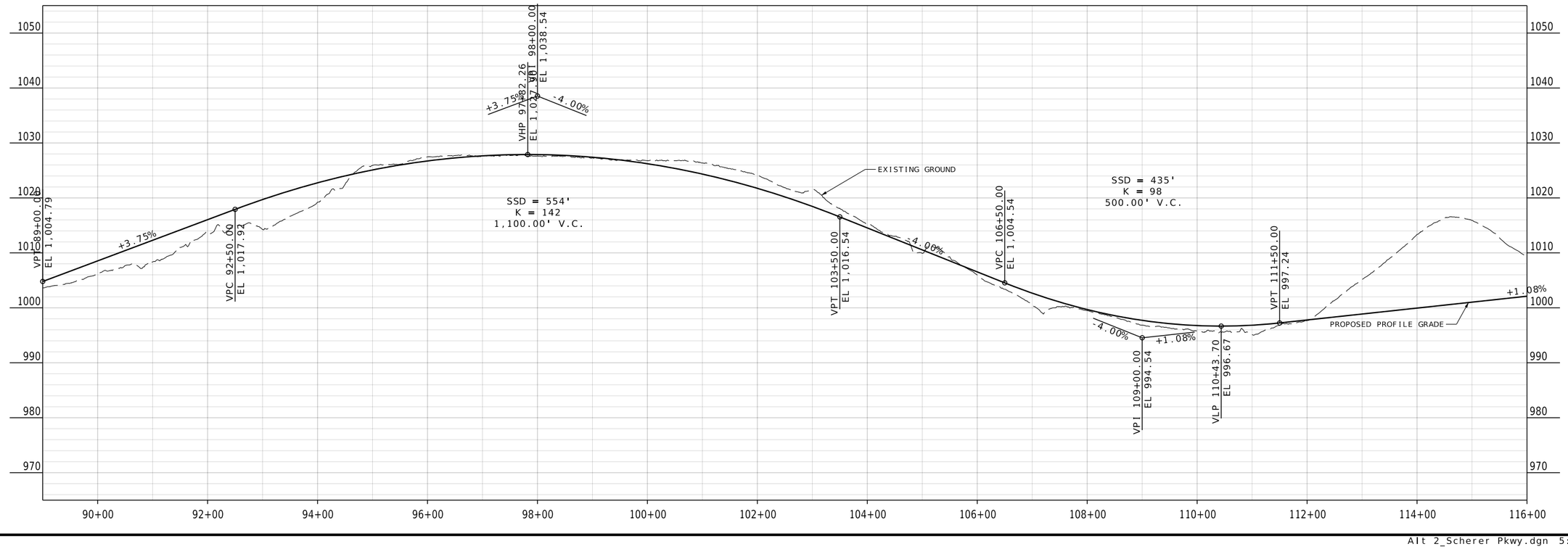
SCHERER PKWY
STA 62+00 TO STA 89+00
ALTERNATIVE 2
SHEET 3 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 2_Scherer Pkwy.dgn 3:27:36 PM 6/19/2025





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	4

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

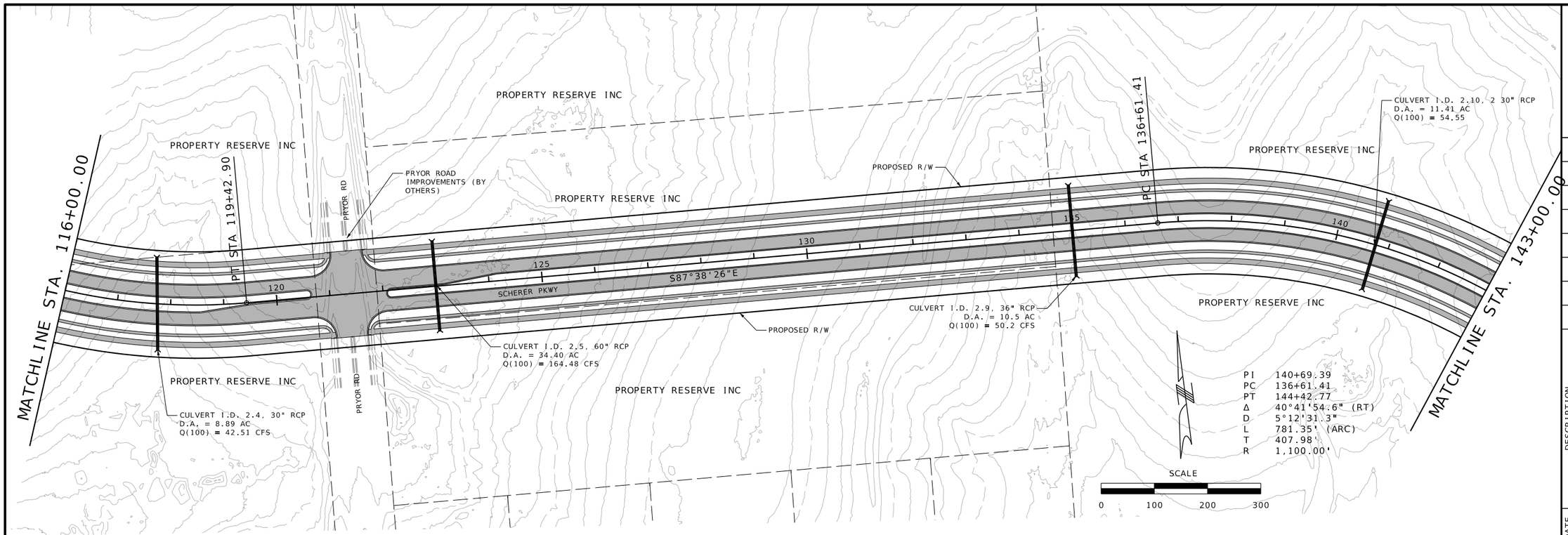
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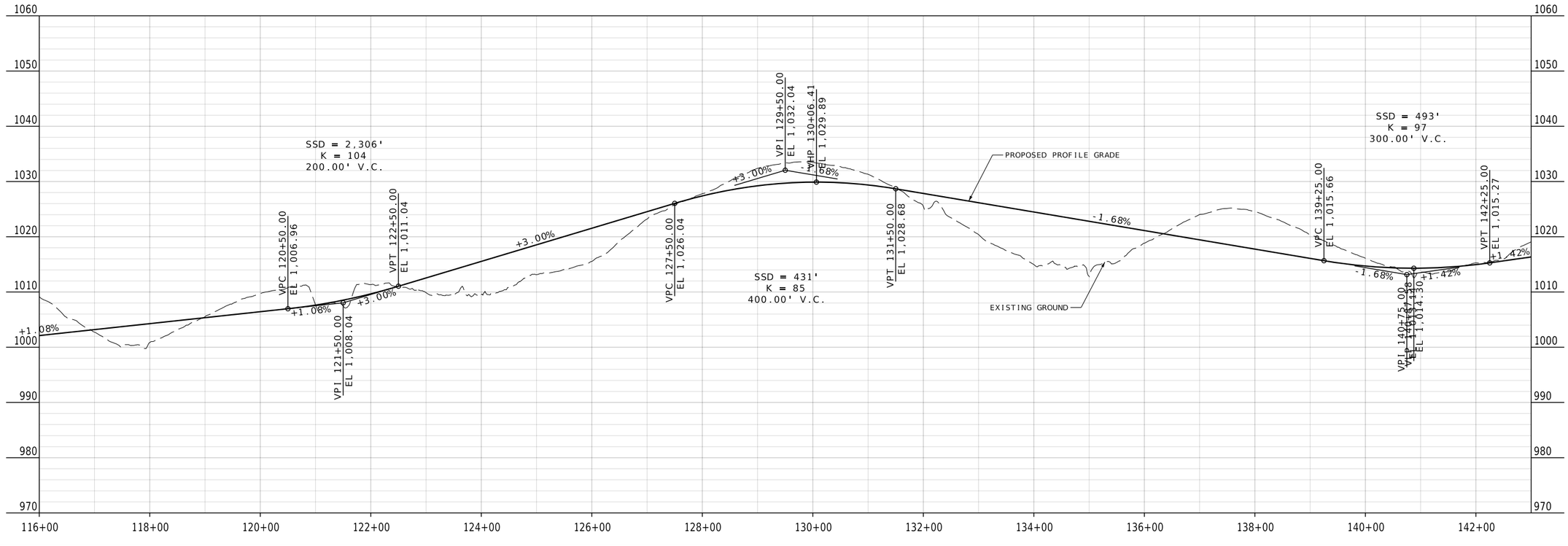
SCHERER PKWY
STA 89+00 TO STA 116+00
ALTERNATIVE 2
SHEET 4 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 2_Scherer Pkwy.dgn 5:46:56 PM 6/18/2025





DATE PREPARED

ROUTE | STATE: MO

DISTRICT | SHEET NO.: 5

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

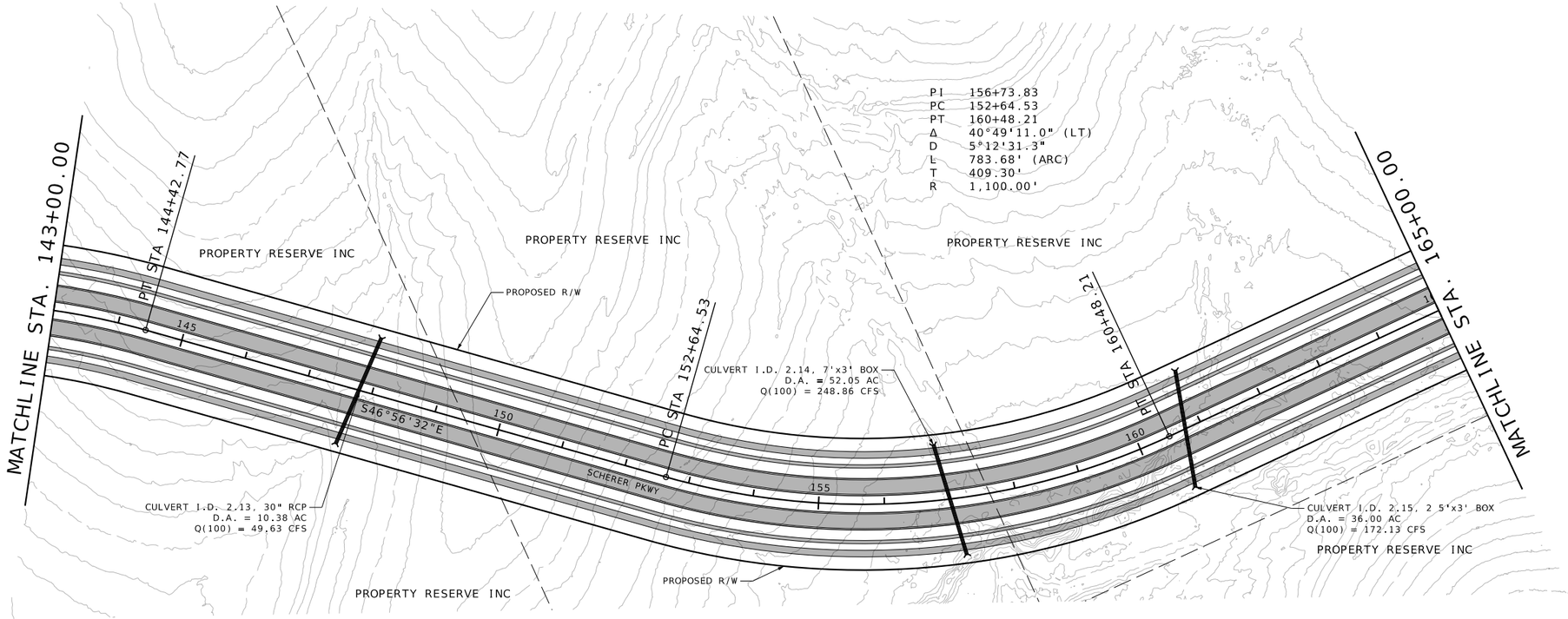
DATE	DESCRIPTION

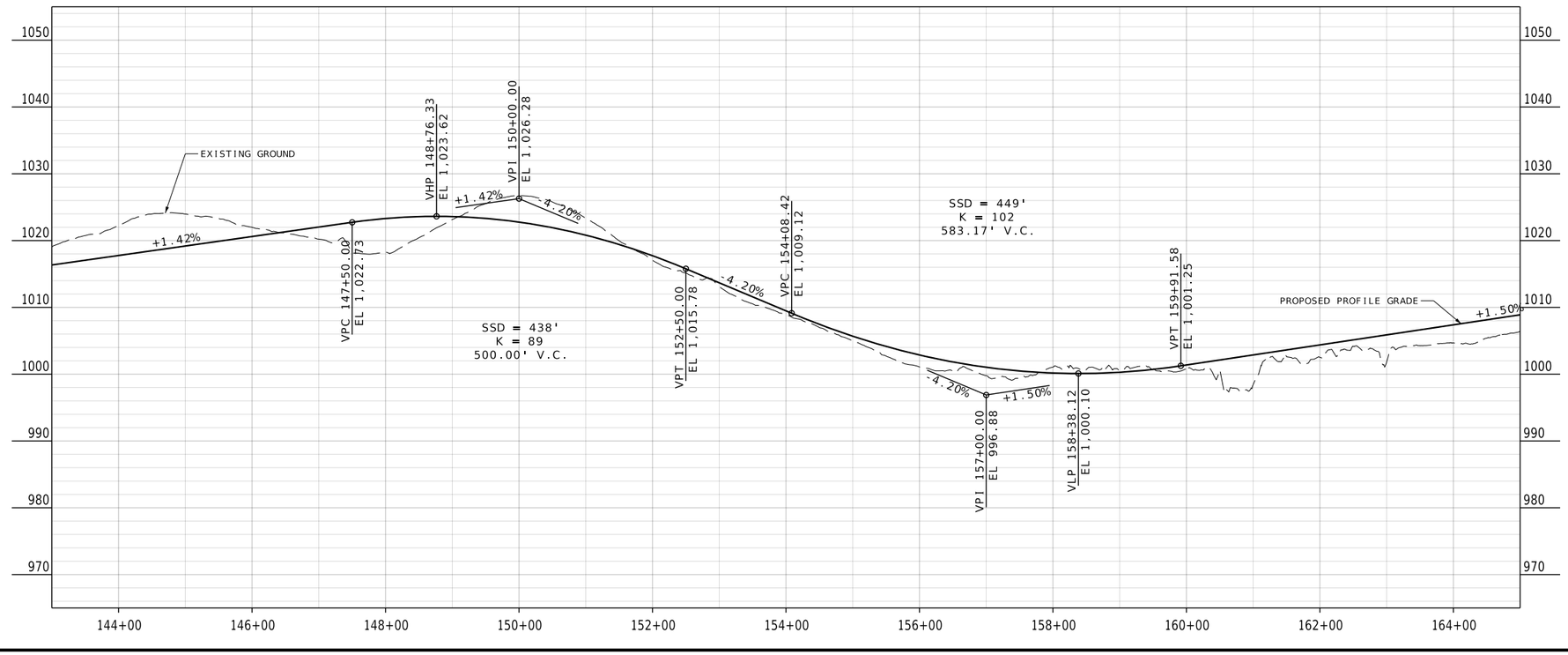
SCHERER PKWY
STA 116+00 TO STA 143+00
ALTERNATIVE 2
SHEET 5 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 2_Scherer Pkwy.dgn 5:47:29 PM 6/18/2025





DATE PREPARED

ROUTE | STATE: MO

DISTRICT | SHEET NO.: 6

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

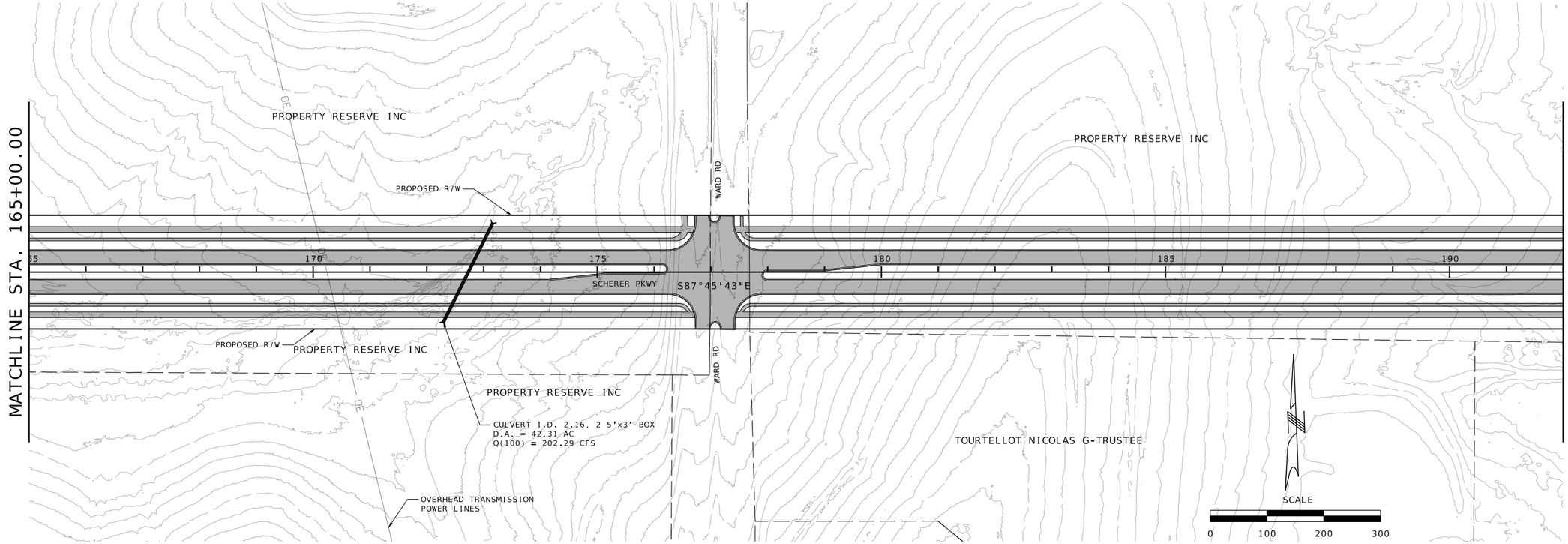
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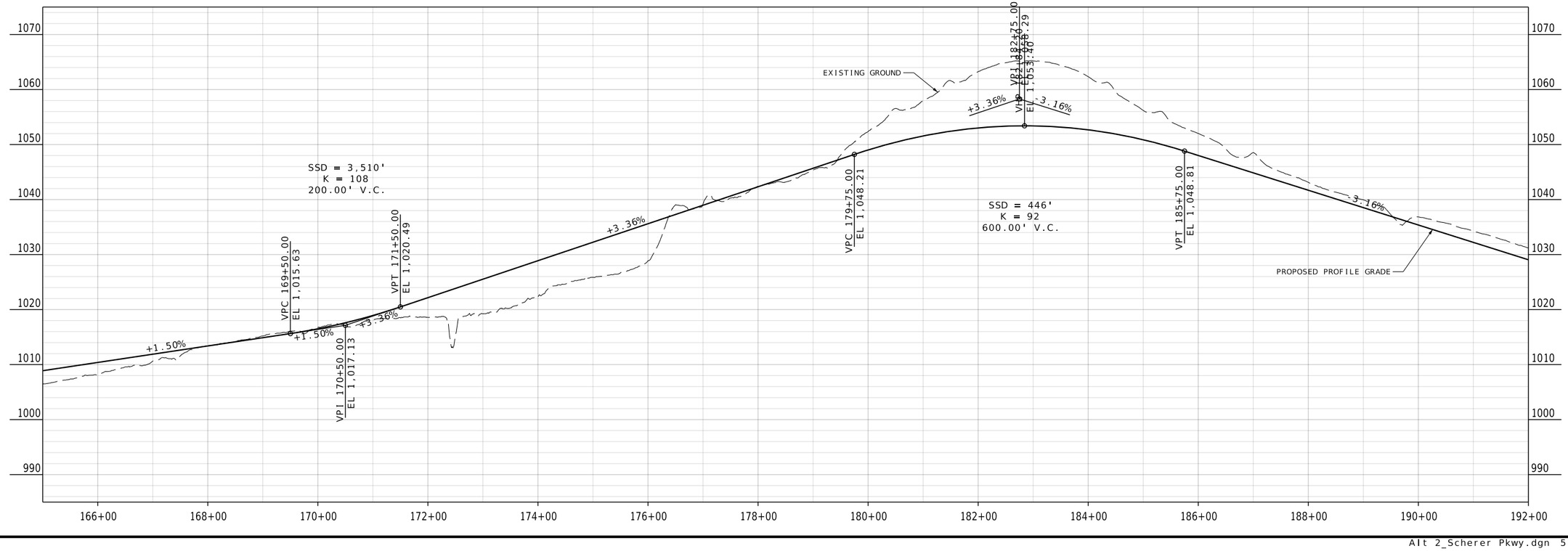
DATE

SCHERER PKWY
STA 143+00 TO STA 165+00
ALTERNATIVE 2
SHEET 6 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	7

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

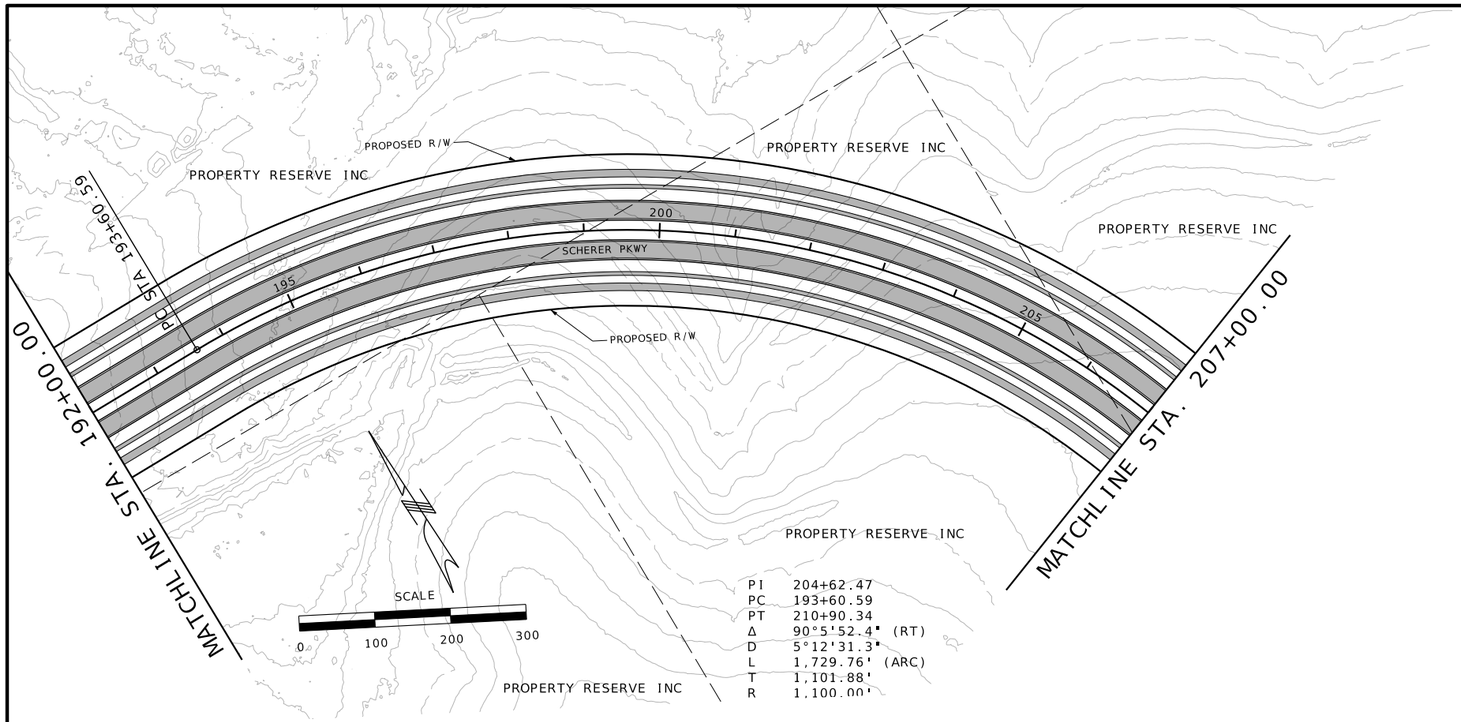
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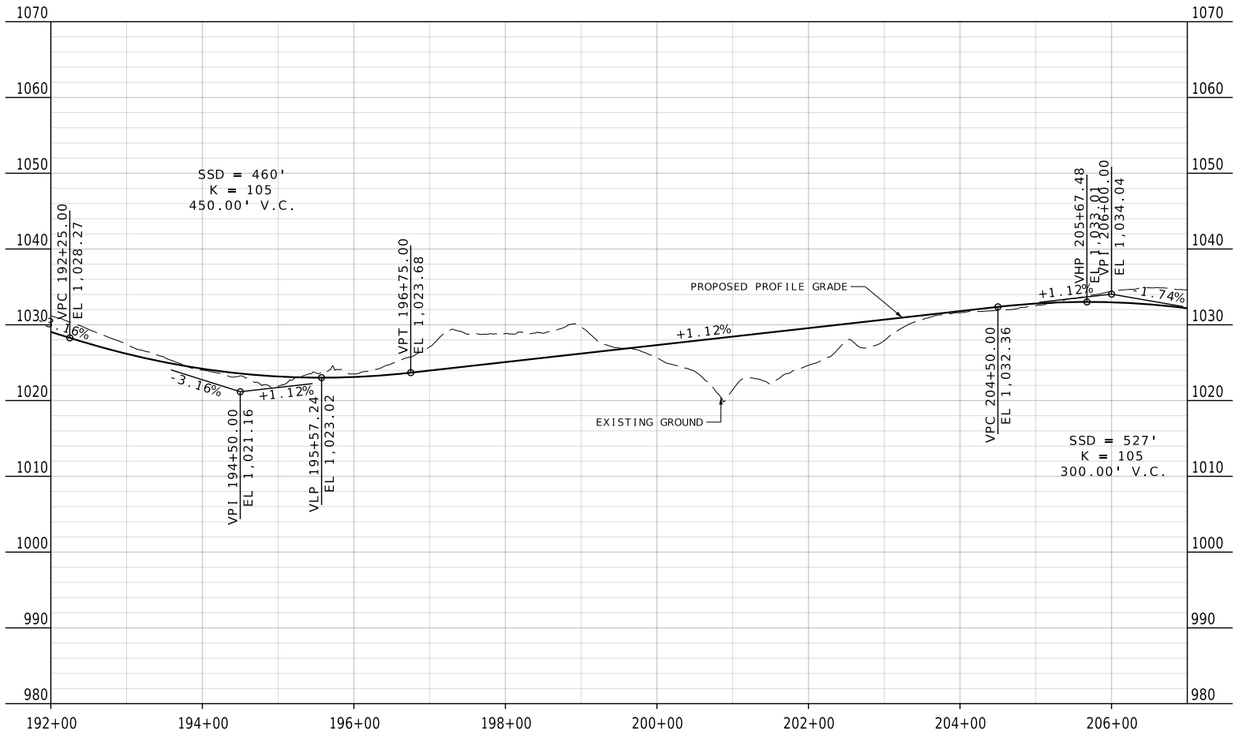
DESCRIPTION	DATE

SCHERER PKWY
STA 165+00 TO STA 192+00
ALTERNATIVE 2
SHEET 7 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 8

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

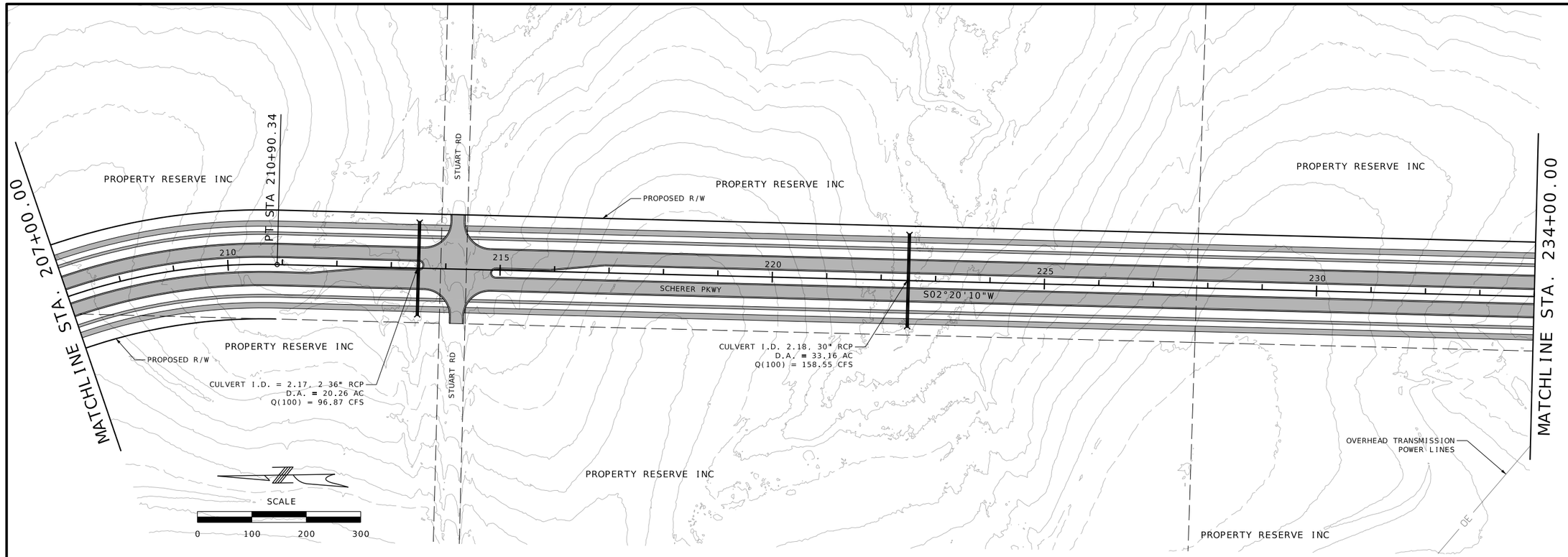
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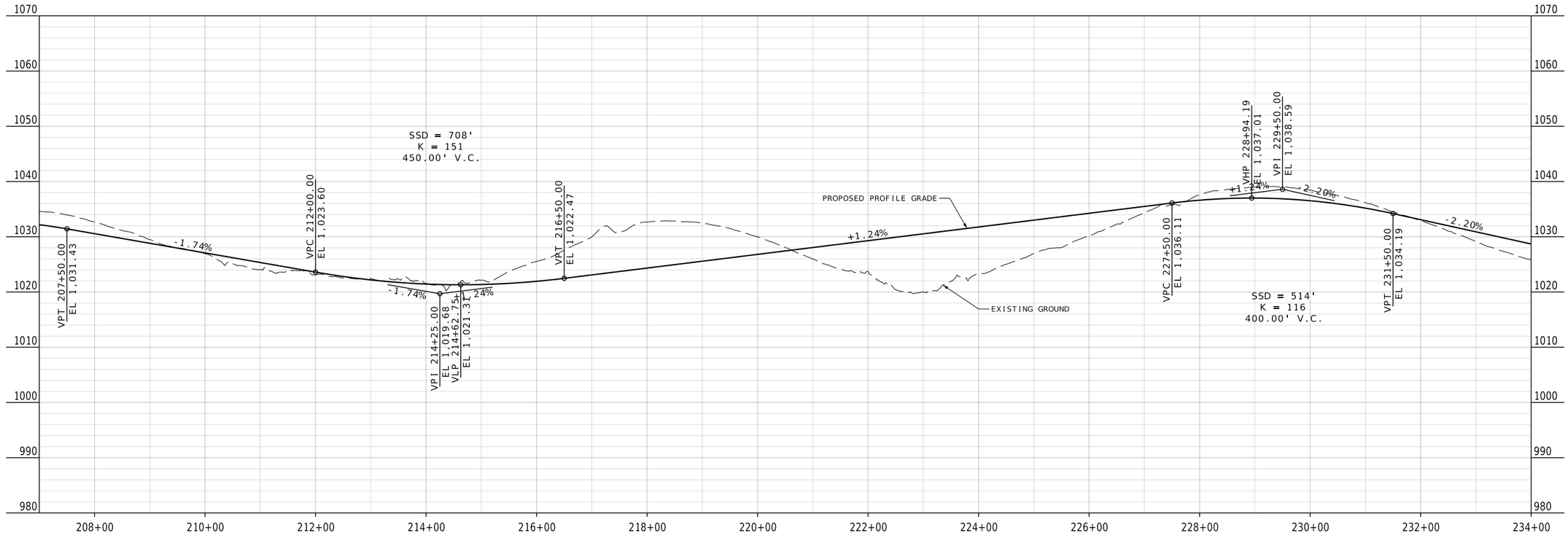
DATE	DESCRIPTION

SCHERER PKWY
STA 192+00 TO STA 207+00
ALTERNATIVE 2
SHEET 8 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	9

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

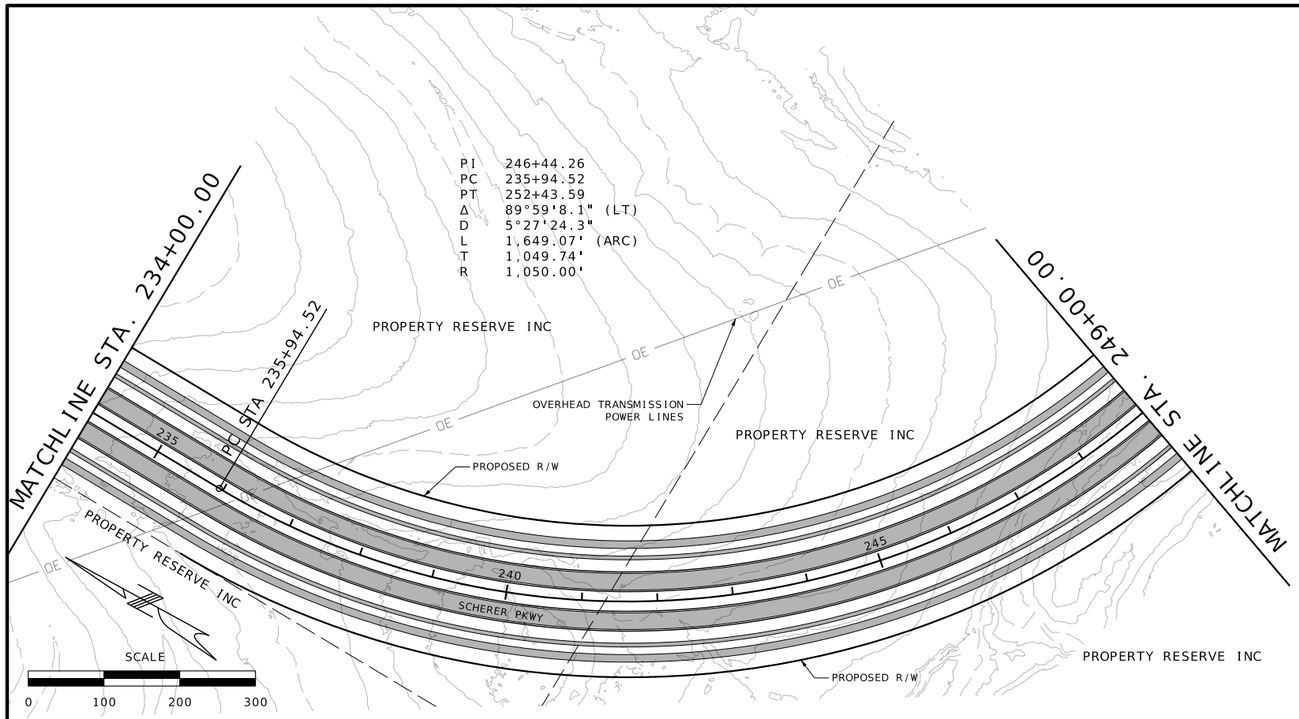
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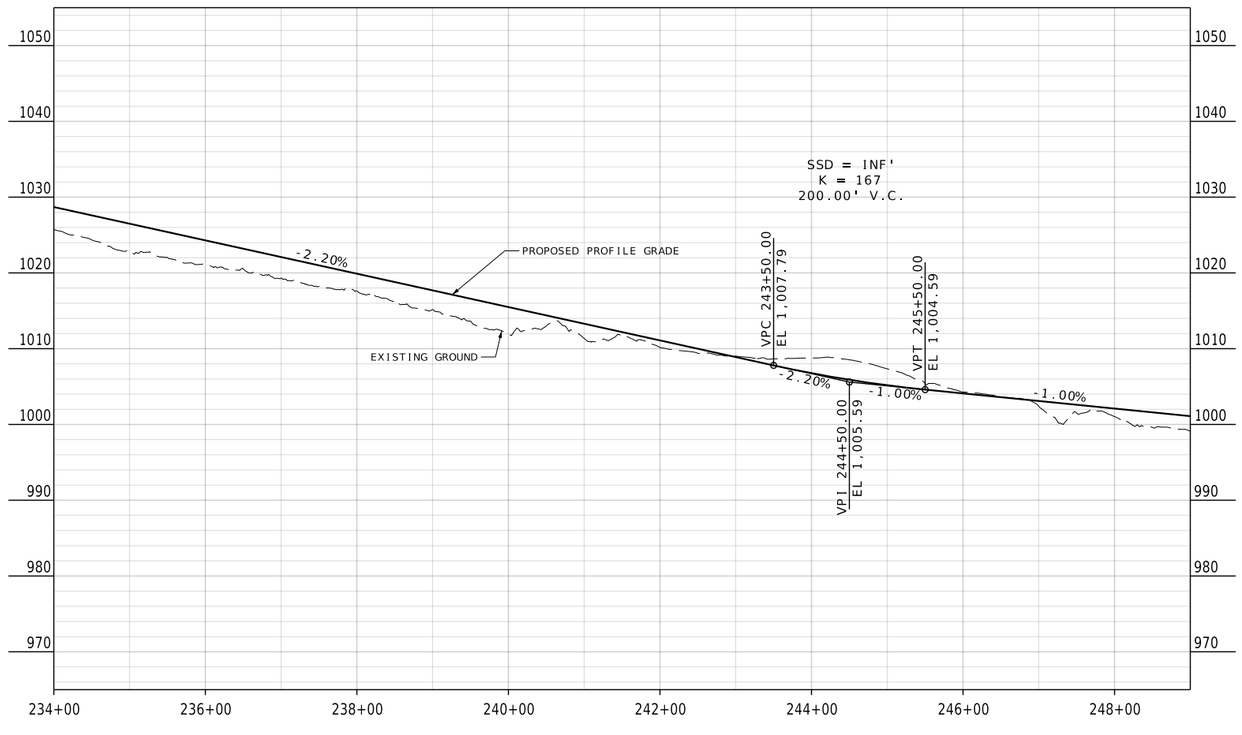
SCHERER PKWY
STA 207+00 TO STA 234+00
ALTERNATIVE 2
SHEET 9 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 2_Scherer Pkwy.dgn 5:49:16 PM 6/18/2025





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	10

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

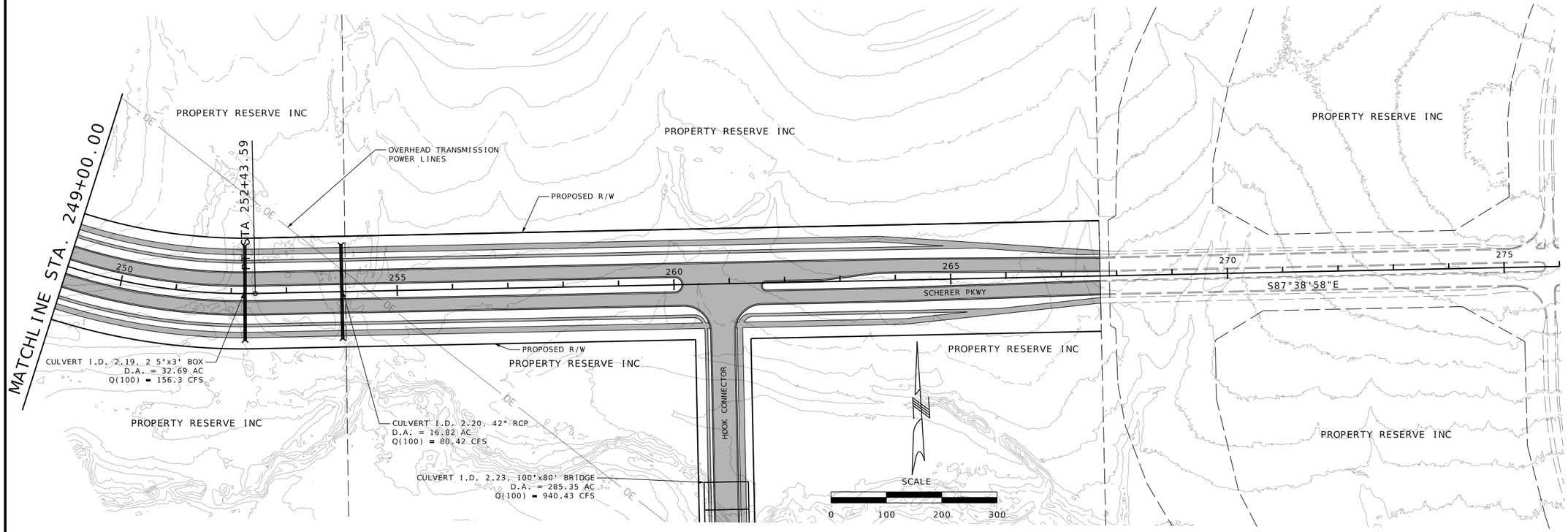
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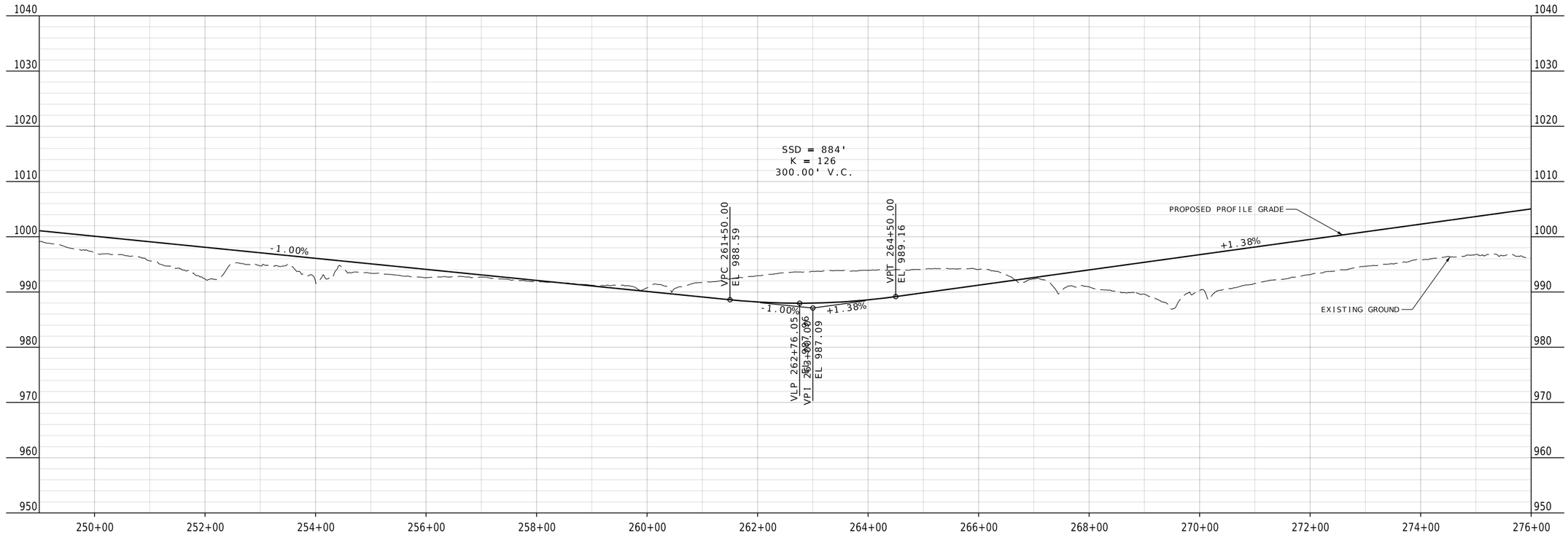
DESCRIPTION	DATE

SCHERER PKWY
STA 234+00 TO STA 249+00
ALTERNATIVE 2
SHEET 10 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE | STATE: MO

DISTRICT | SHEET NO.: 11

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

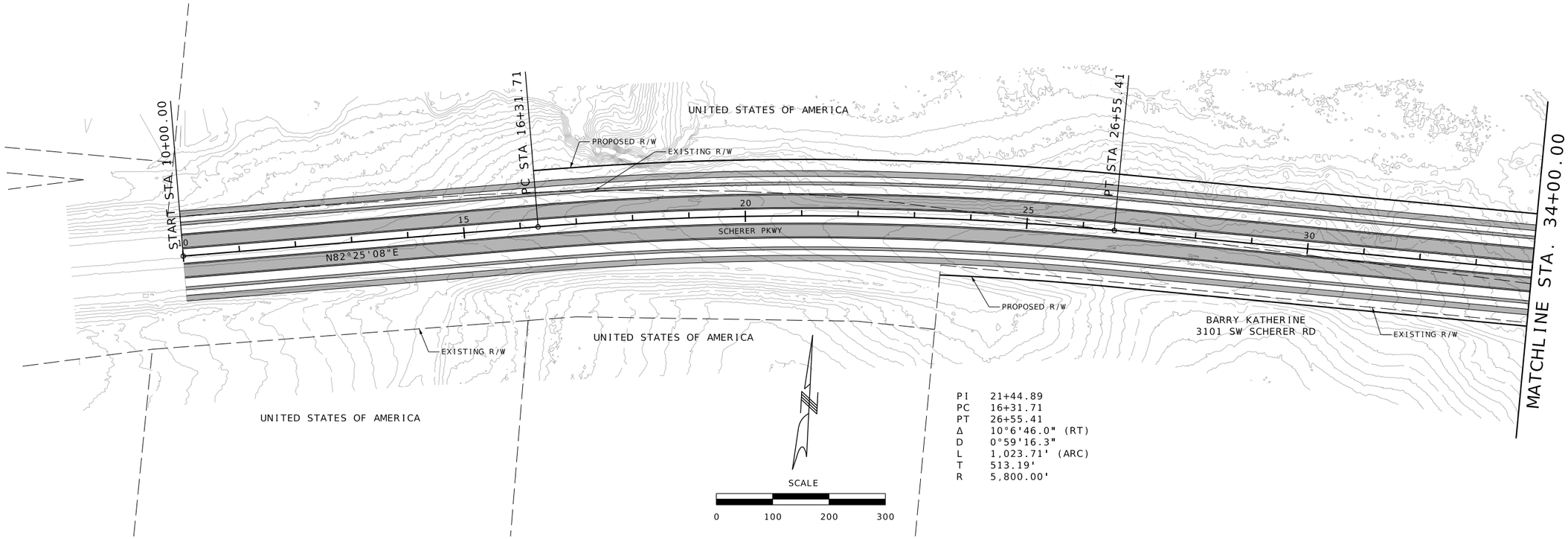
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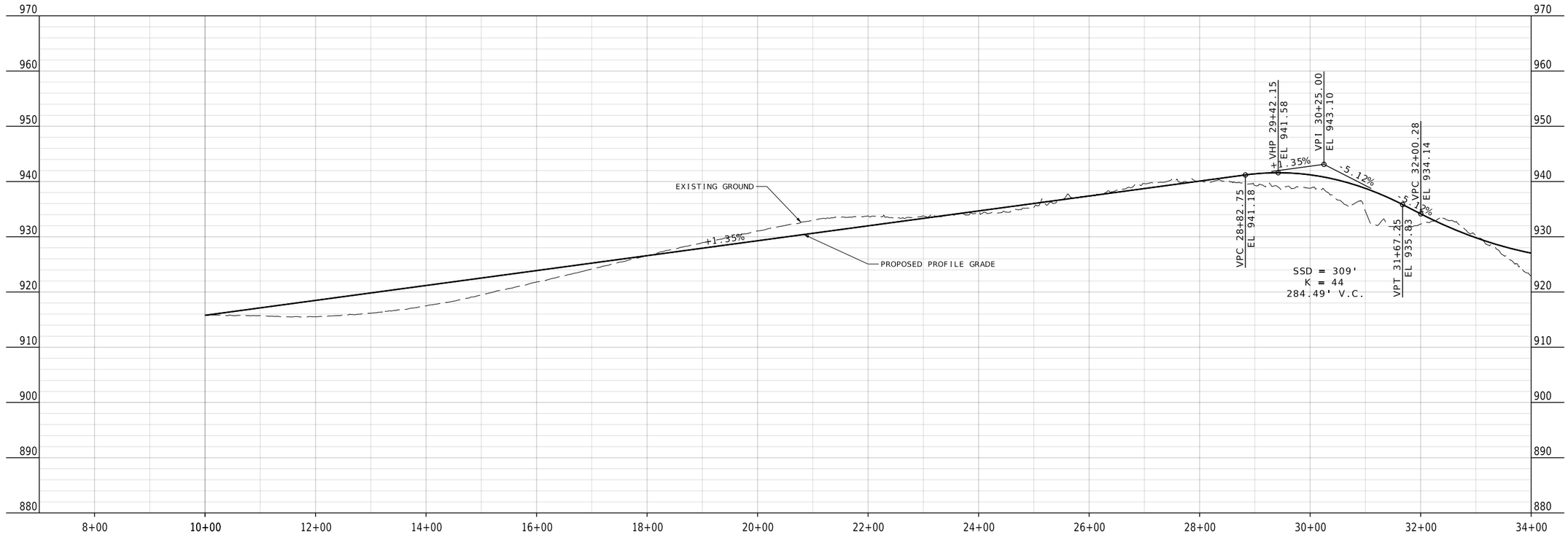
DATE

SCHERER PKWY
STA 249+00 TO STA 276+00
ALTERNATIVE 2
SHEET 11 OF 11

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	1

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

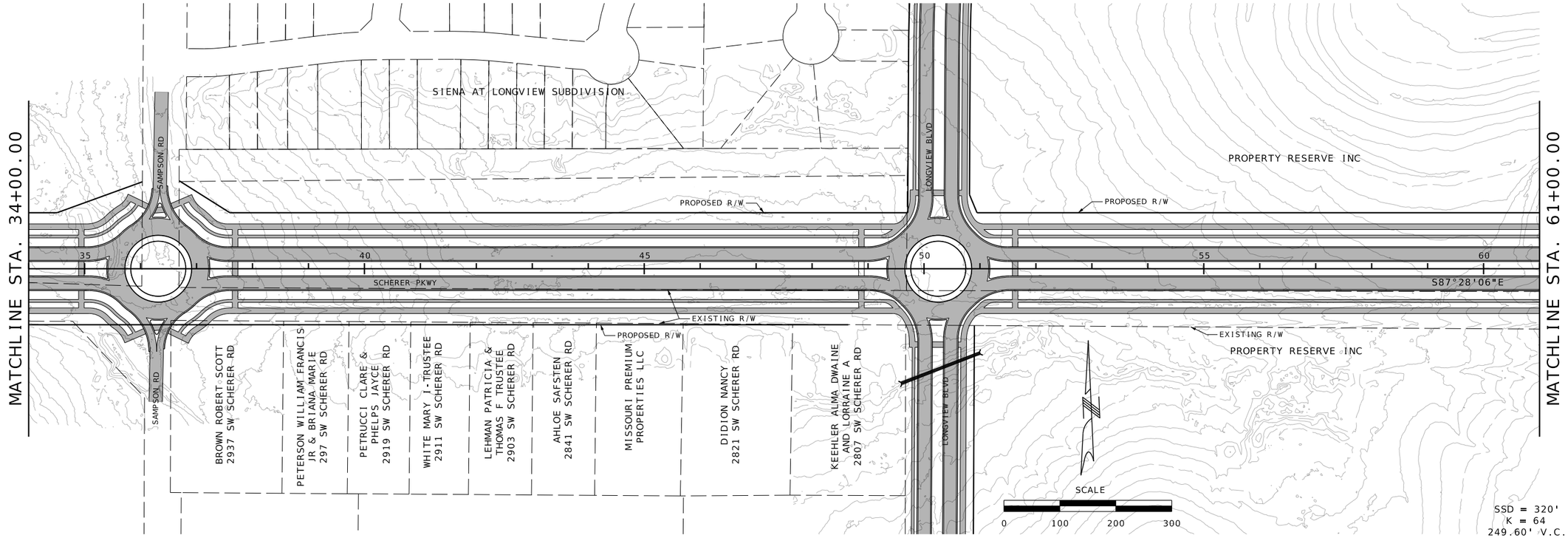
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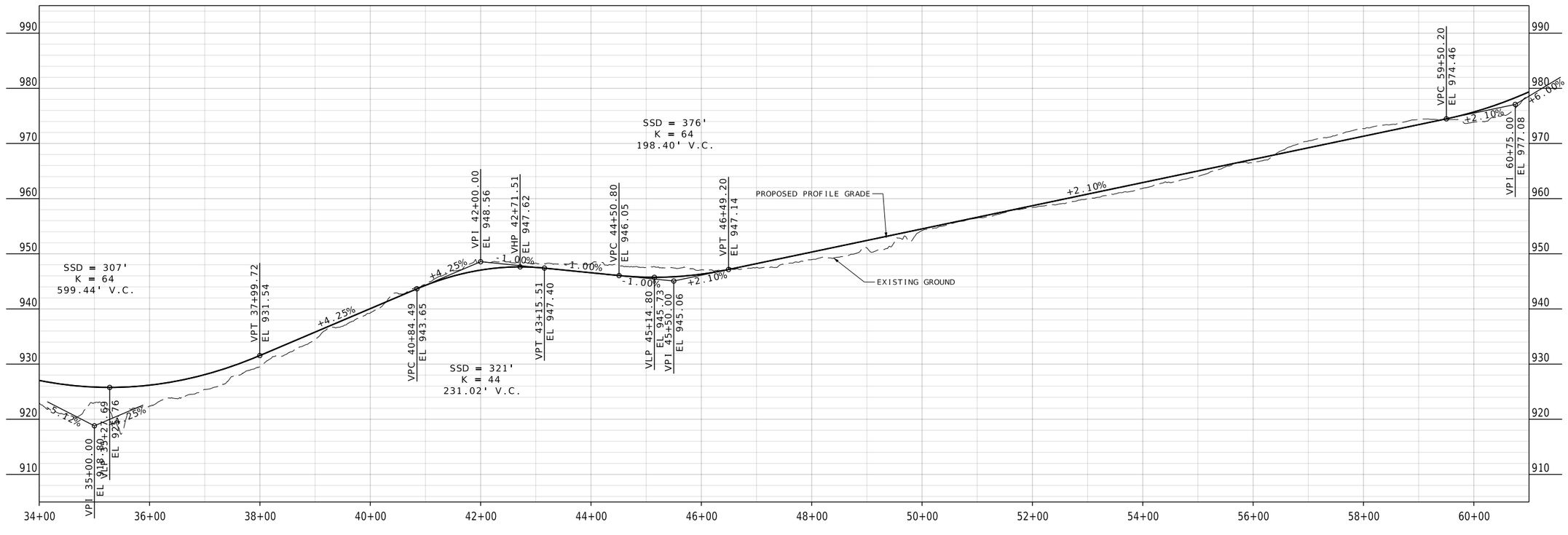
SCHERER PKWY
STA 10+00 TO STA 34+00
ALTERNATIVE 3
SHEET 1 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

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DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	2

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

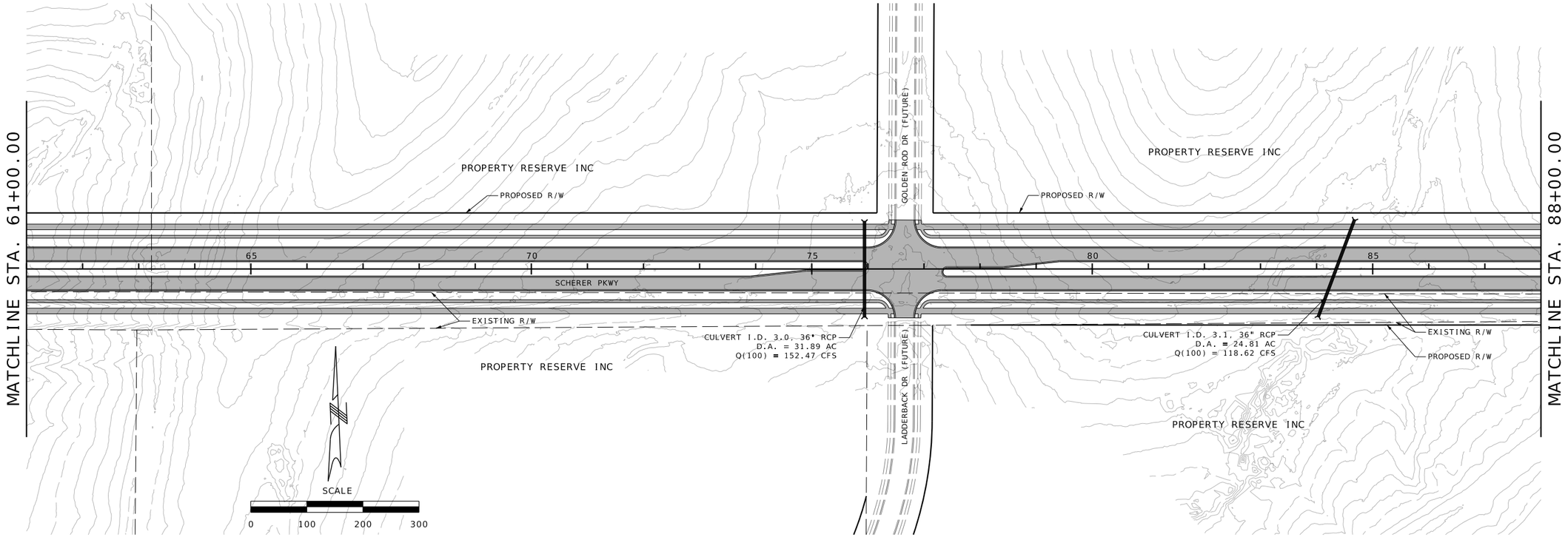
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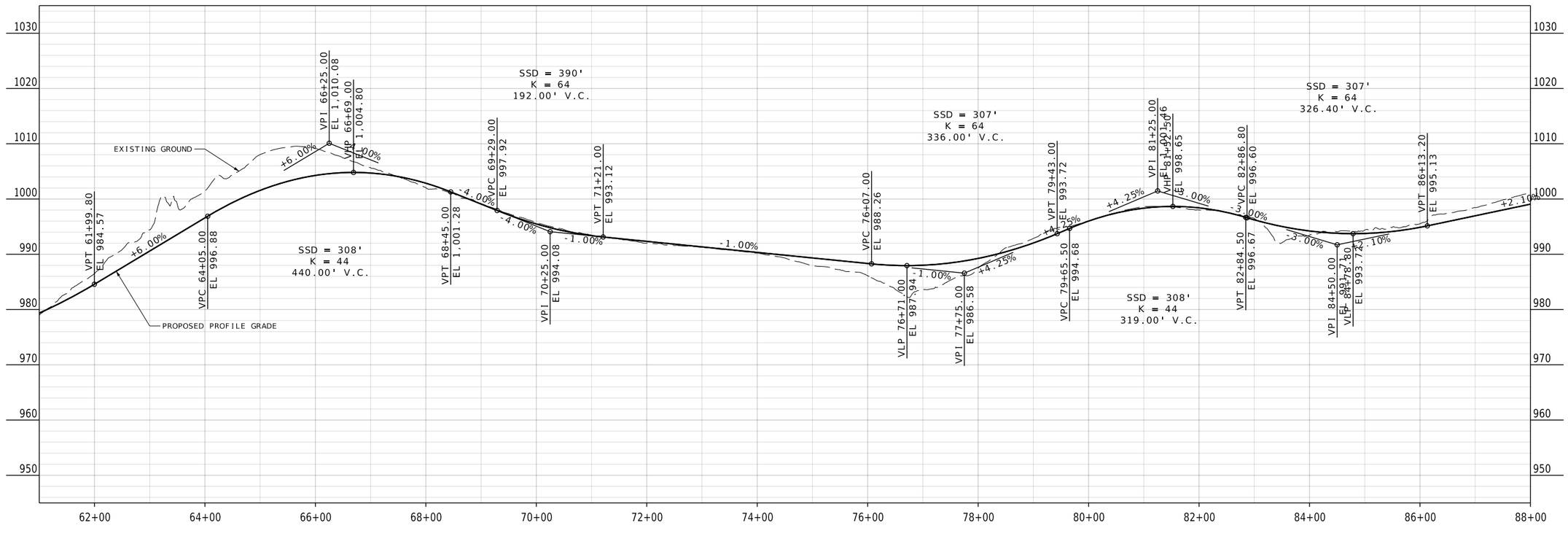
DATE	DESCRIPTION

SCHERER PKWY
STA 34+00 TO STA 61+00
ALTERNATIVE 3
SHEET 2 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE | STATE: MO

DISTRICT | SHEET NO.: 3

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

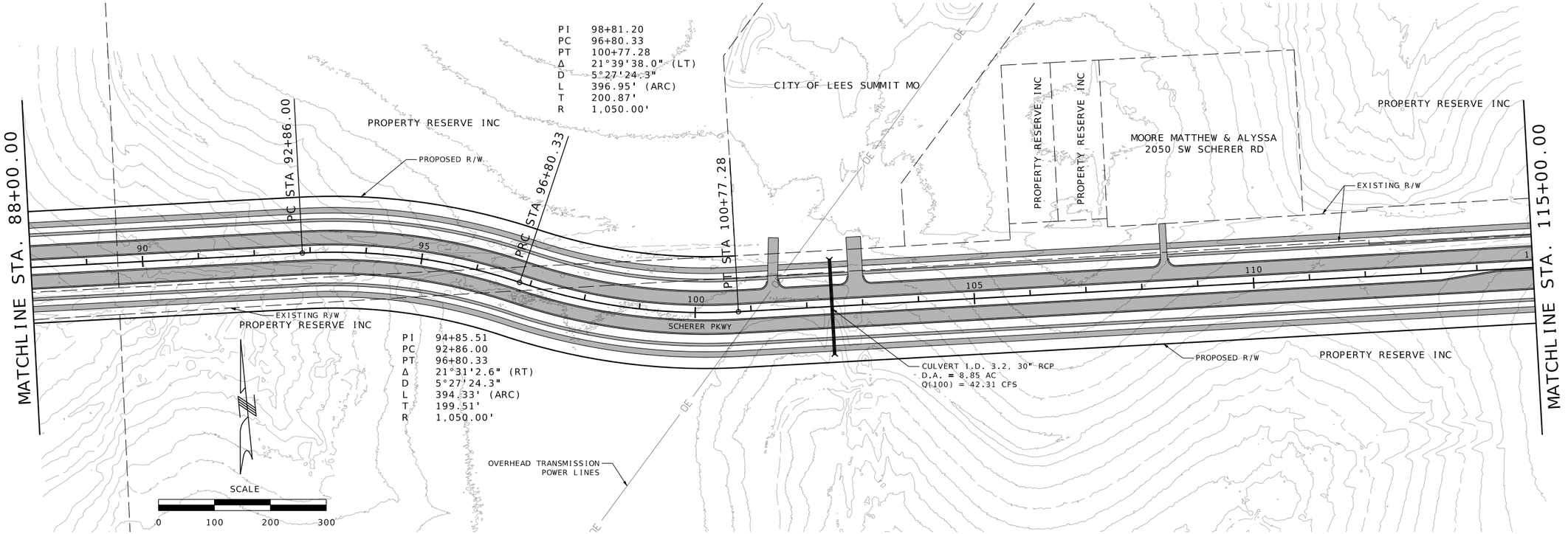
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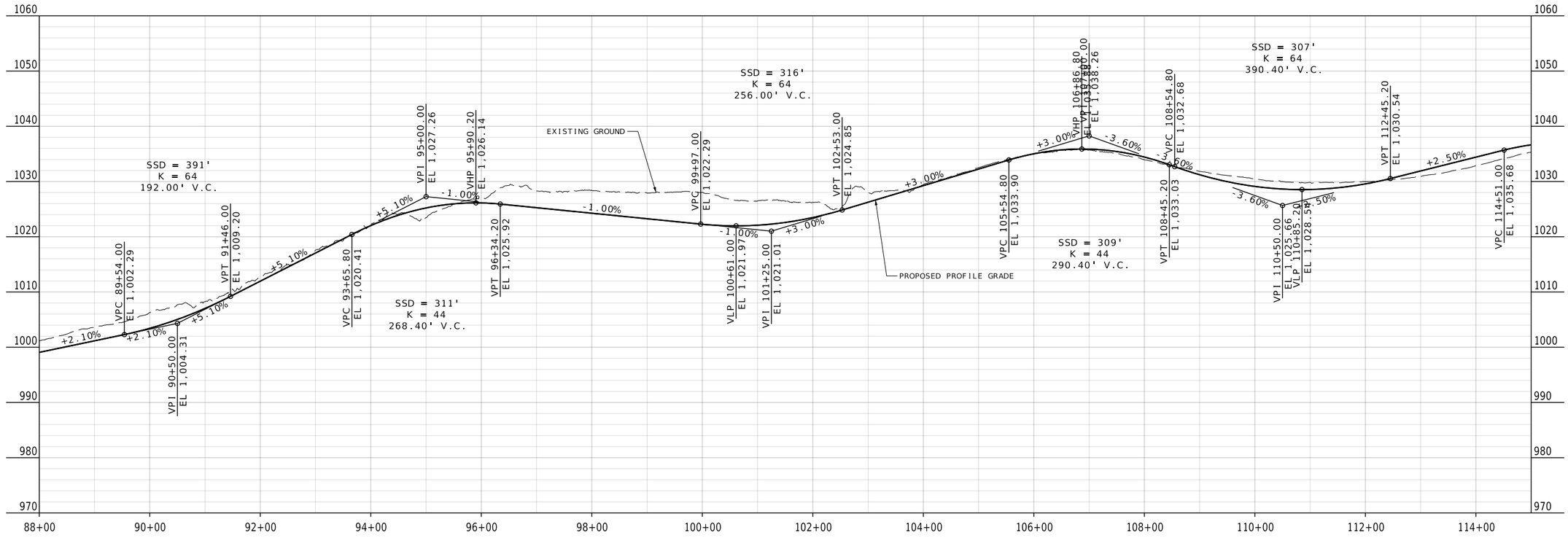
SCHERER PKWY
STA 61+00 TO STA 88+00
ALTERNATIVE 3
SHEET 3 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 3_Scherer Pkwy.dgn 6:05:57 PM 6/18/2025





DATE PREPARED	
ROUTE	STATE MO
DISTRICT	SHEET NO. 4
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

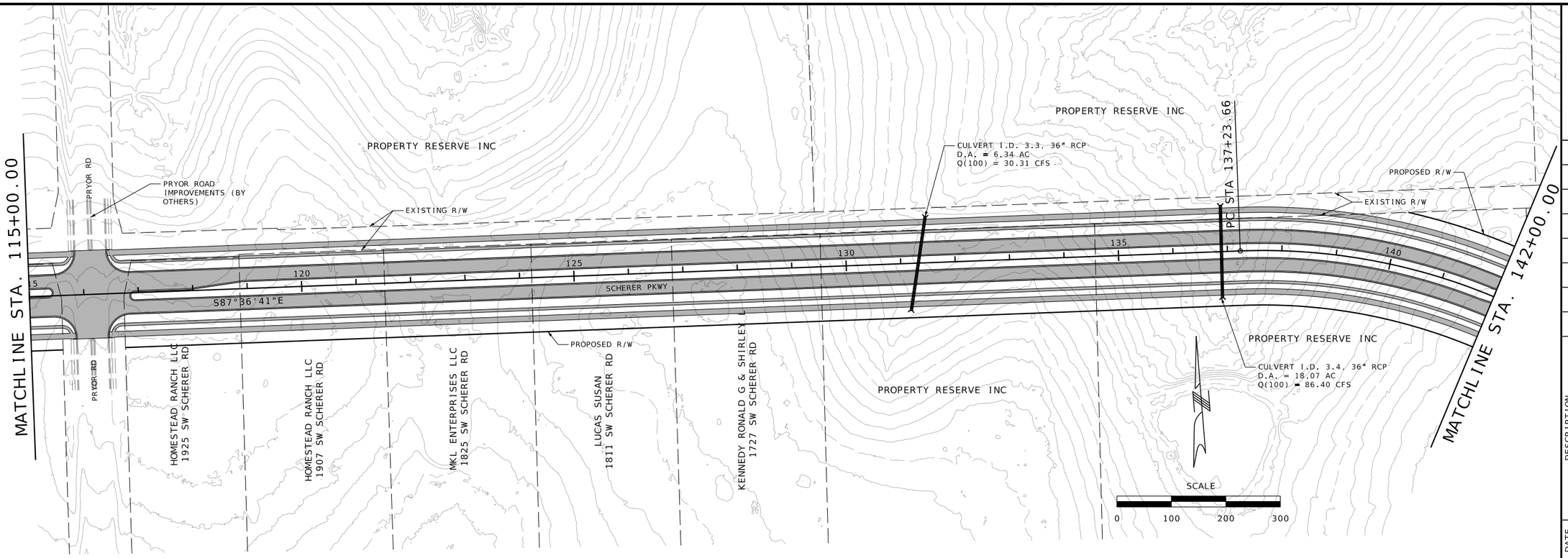
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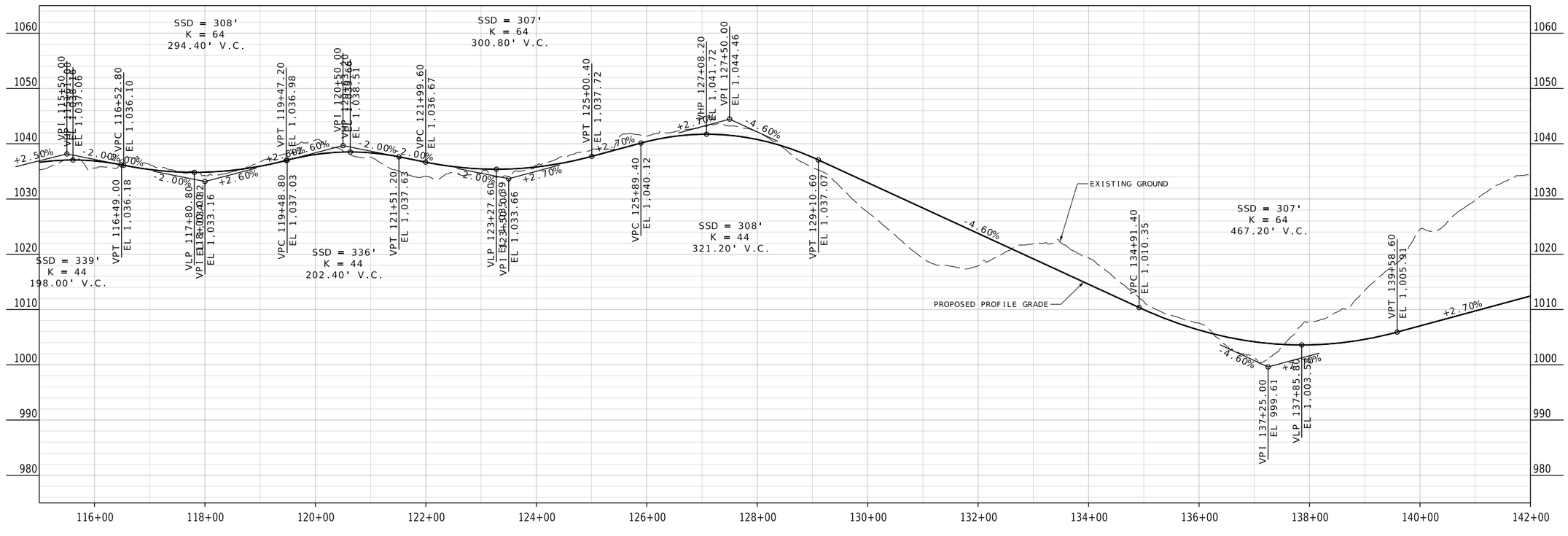
DATE

SCHERER PKWY
STA 88+00 TO STA 115+00
ALTERNATIVE 3
SHEET 4 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE MO | STATE

DISTRICT | SHEET NO. 5

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

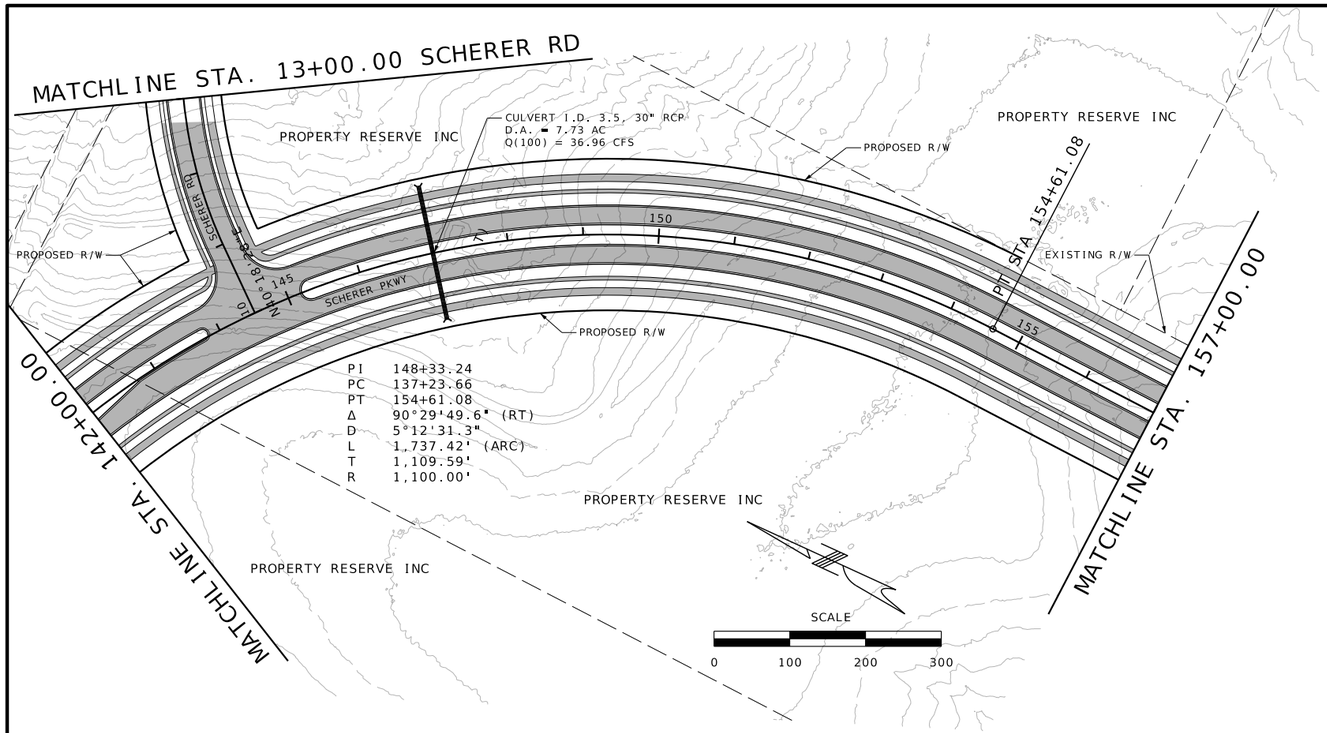
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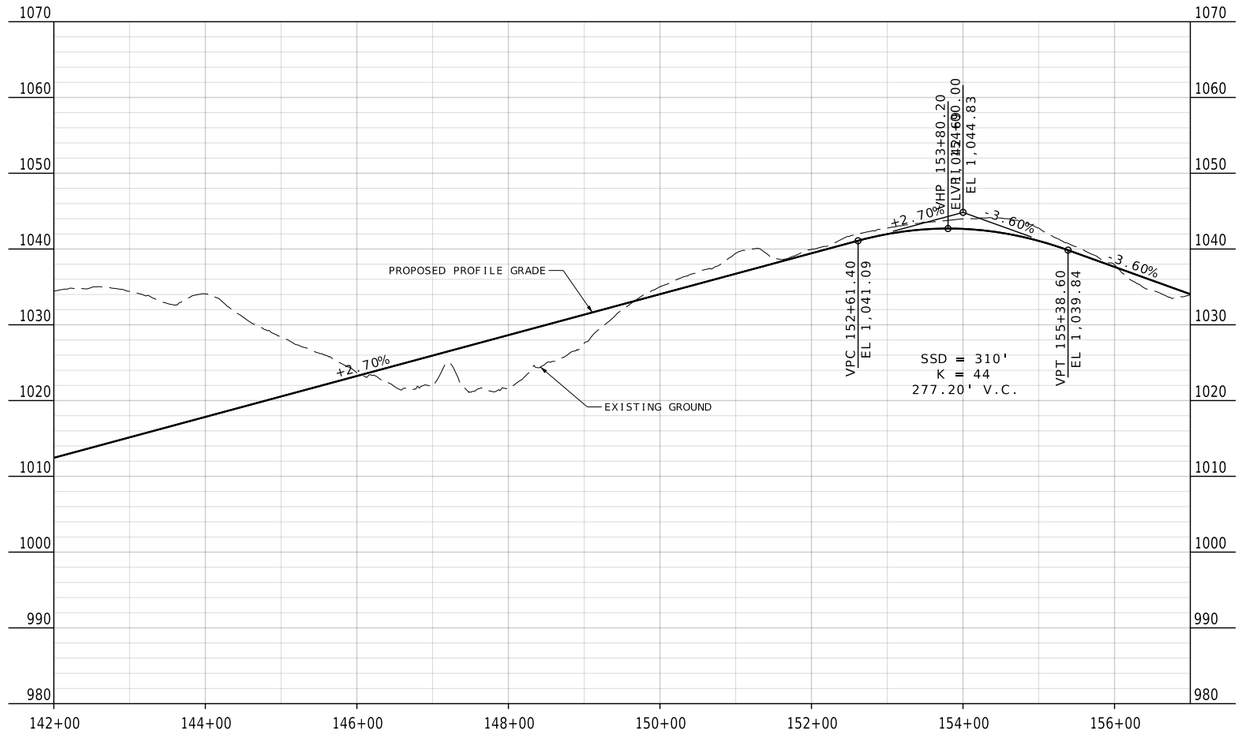
DATE	DESCRIPTION

SCHERER PKWY
STA 115+00 TO STA 142+00
ALTERNATIVE 3
SHEET 5 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE | STATE: MO

DISTRICT | SHEET NO.: 6

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

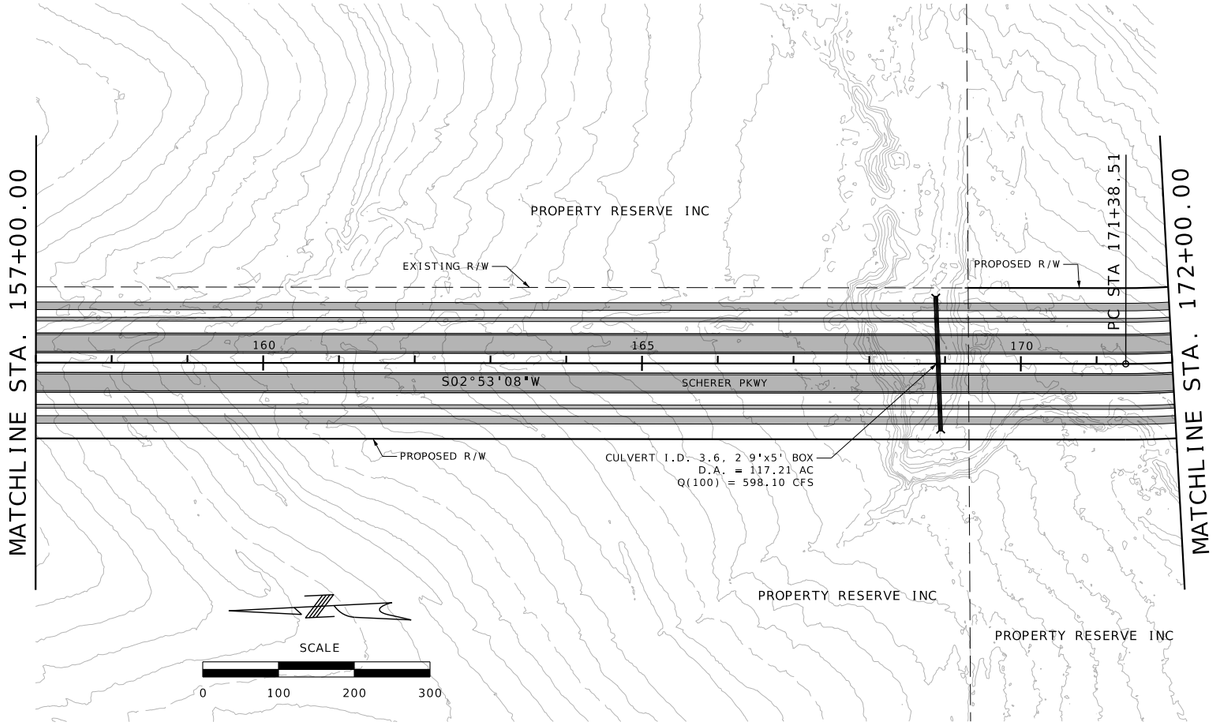
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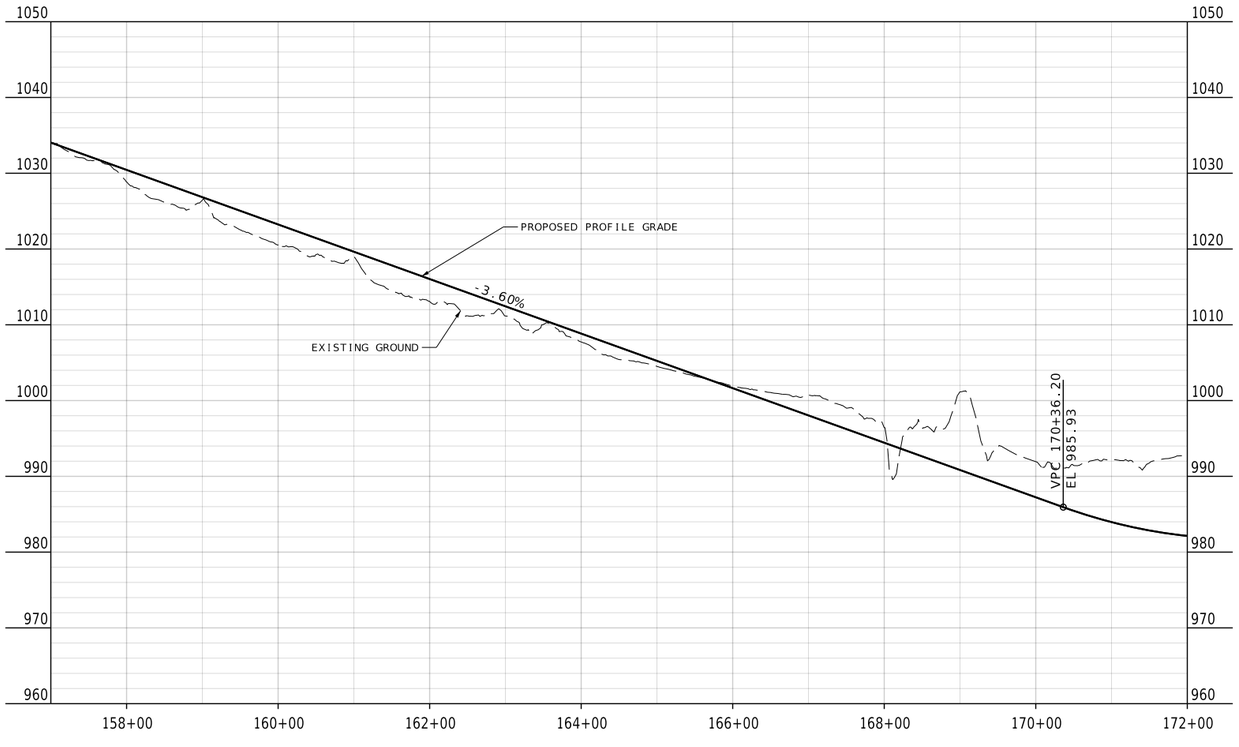
DATE	DESCRIPTION

SCHERER PKWY
STA 142+00 TO STA 157+00
ALTERNATIVE 3
SHEET 6 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	7

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

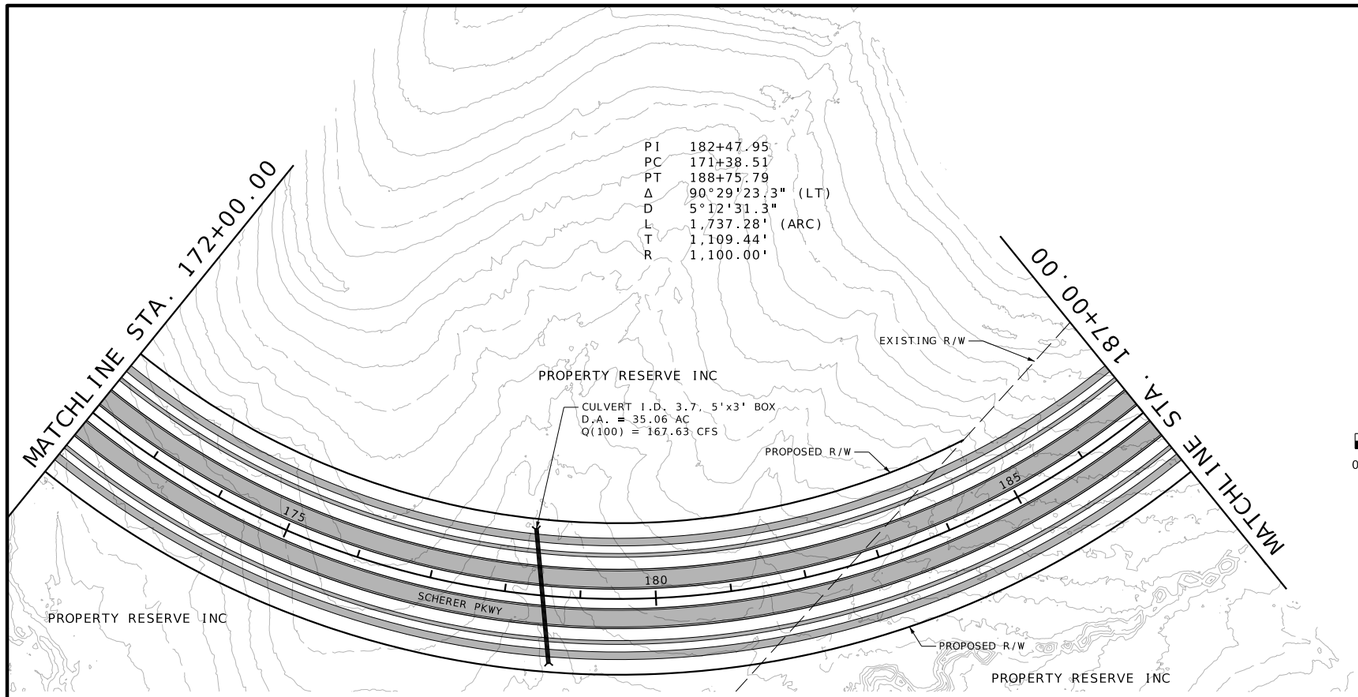
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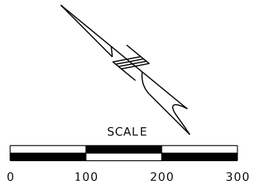
DESCRIPTION	DATE

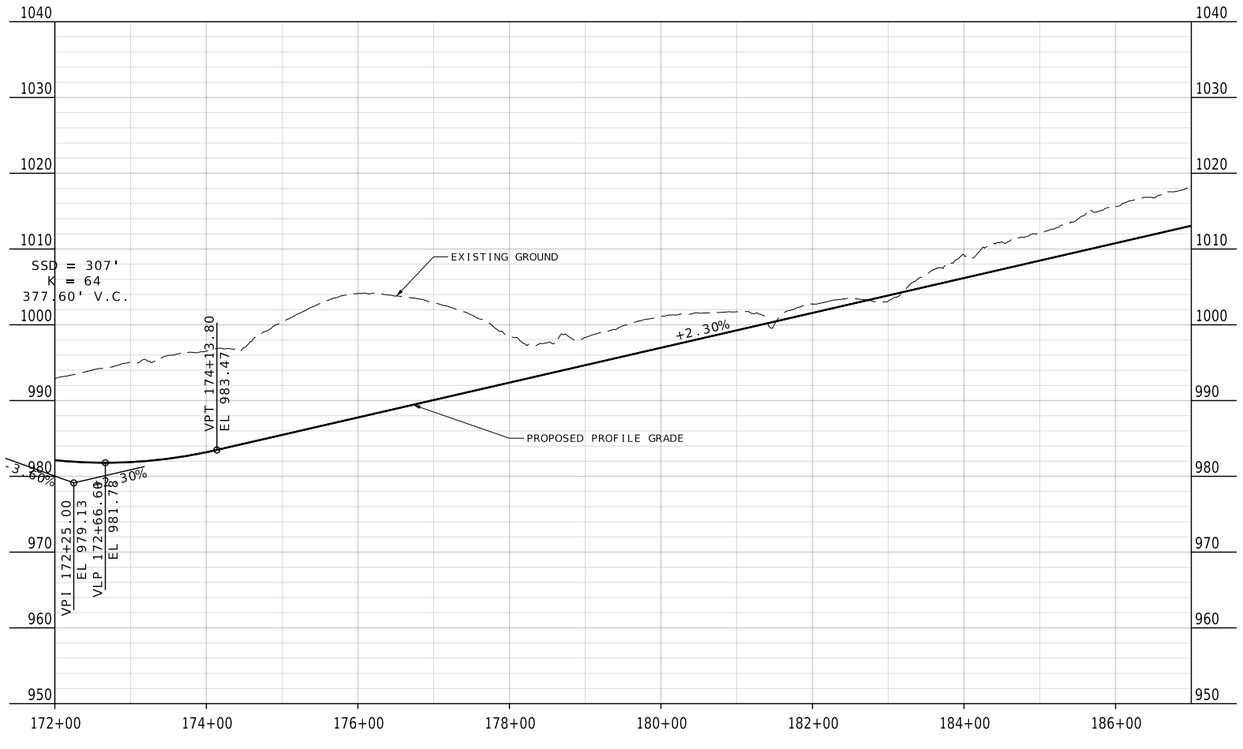
SCHERER PKWY
STA 157+00 TO STA 172+00
ALTERNATIVE 3
SHEET 7 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE







DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	8

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

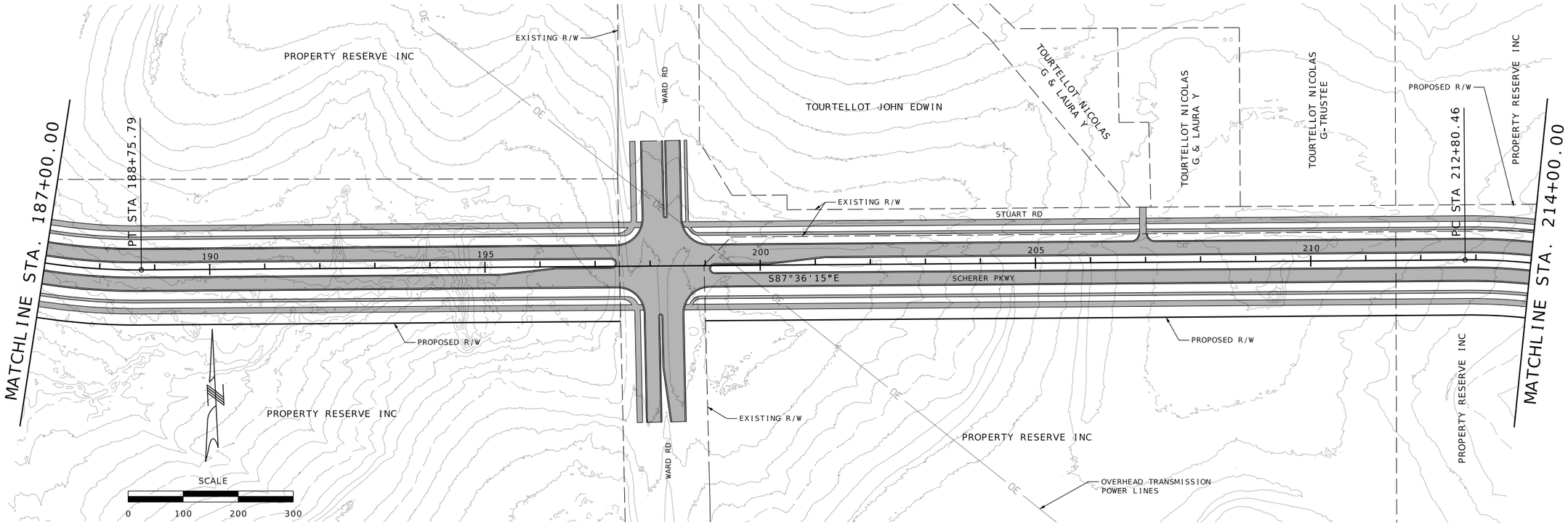
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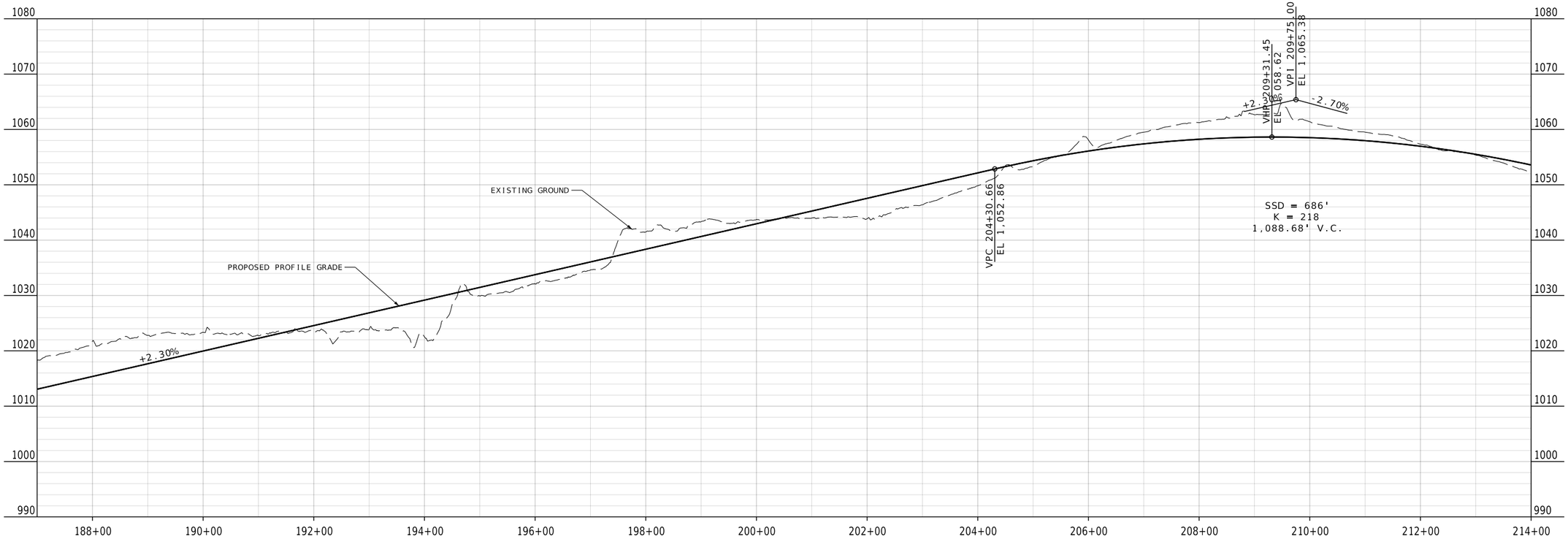
DESCRIPTION	DATE

SCHERER PKWY
STA 172+00 TO STA 187+00
ALTERNATIVE 3
SHEET 8 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED	
ROUTE	STATE MO
DISTRICT	SHEET NO. 9
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

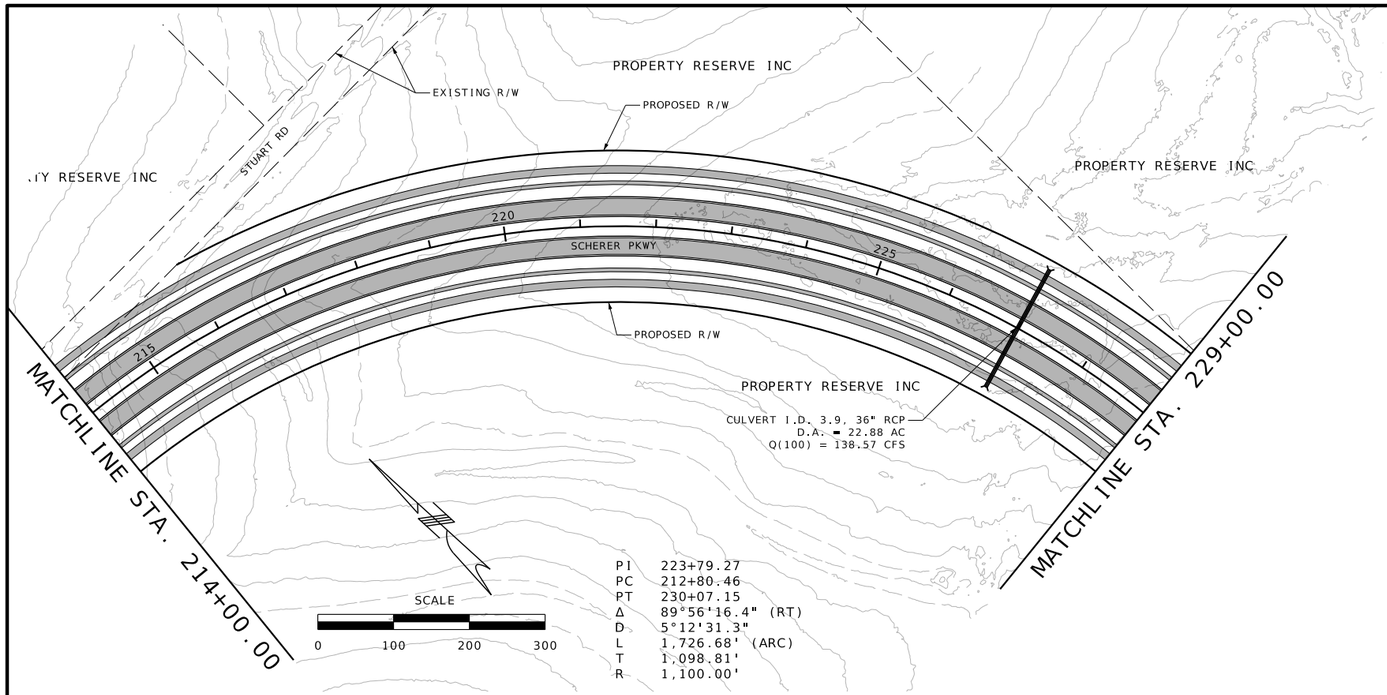
DATE

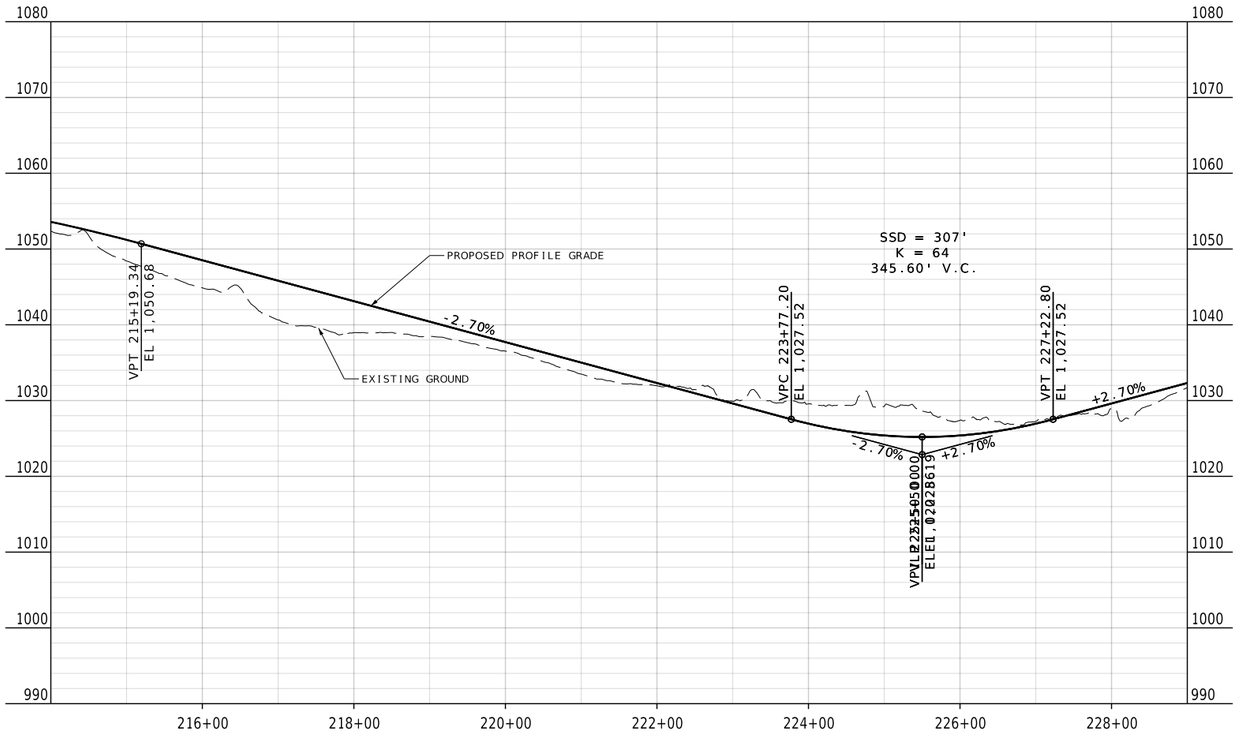
SCHERER PKWY
STA 187+00 TO STA 214+00
ALTERNATIVE 3
SHEET 9 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 3_Scherer Pkwy.dgn 6:09:13 PM 6/18/2025





DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 10

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

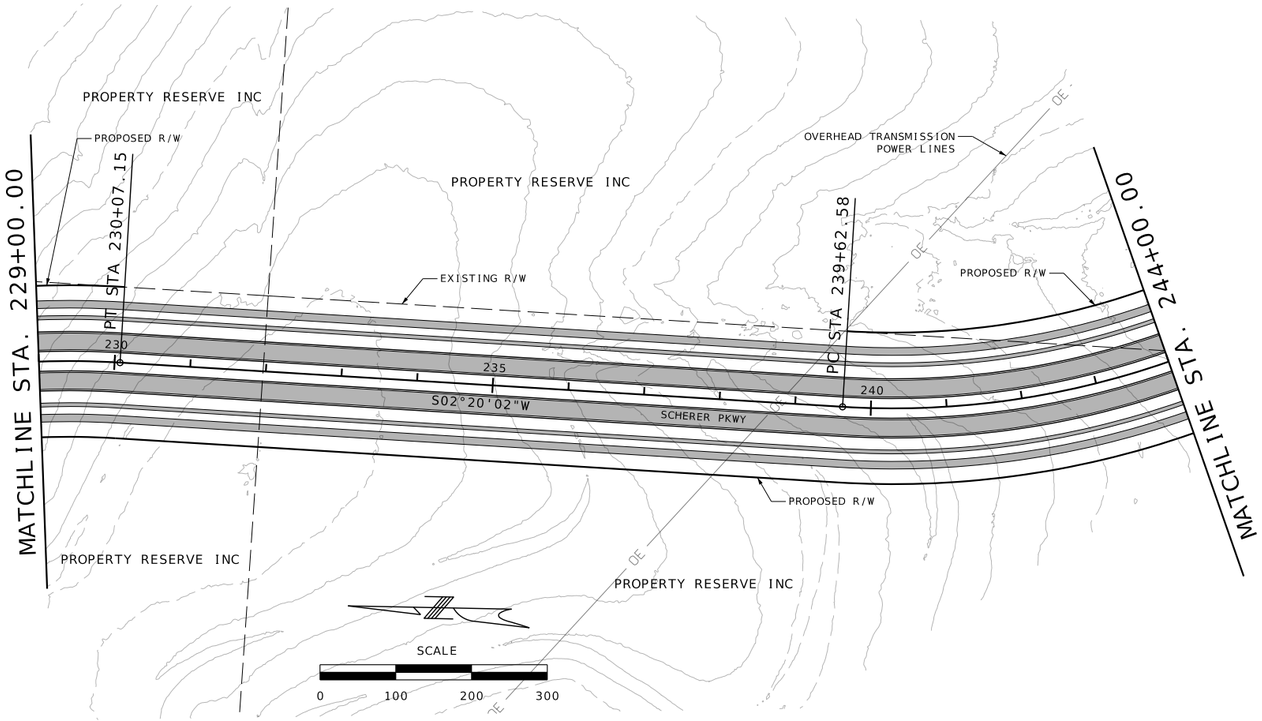
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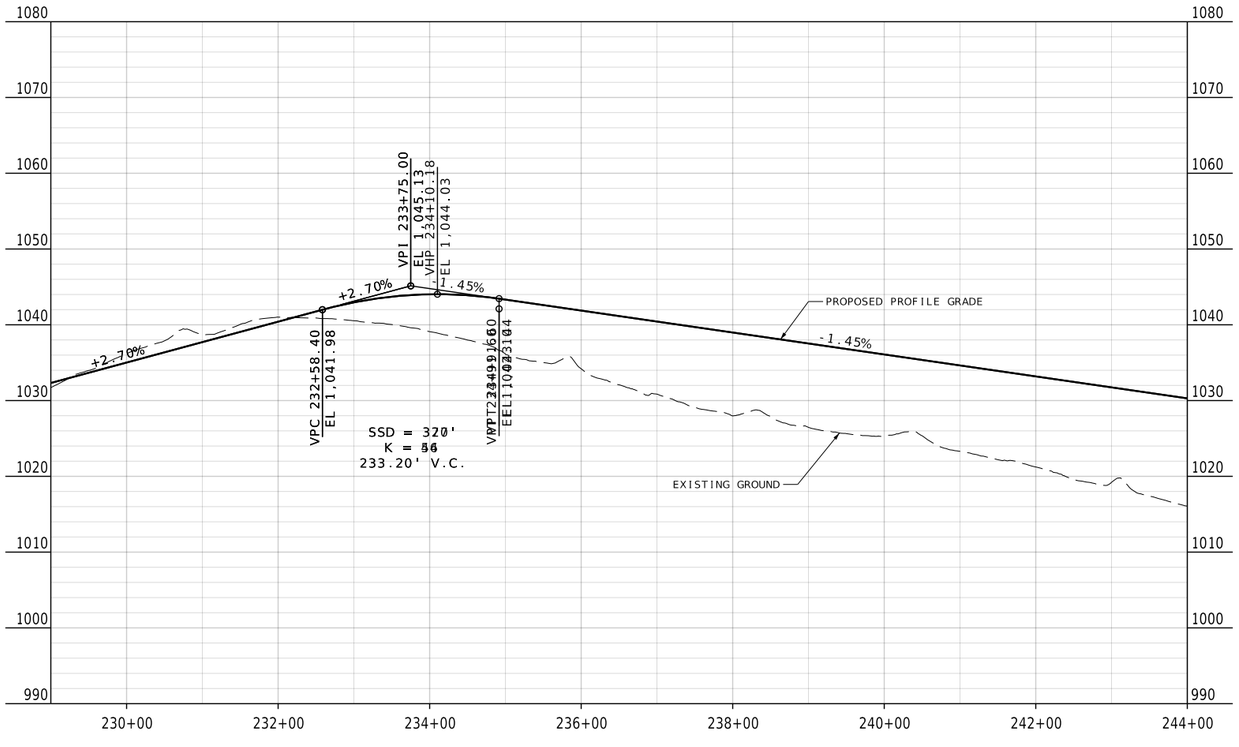
DESCRIPTION	DATE

SCHERER PKWY
STA 214+00 TO STA 229+00
ALTERNATIVE 3
SHEET 10 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	11

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

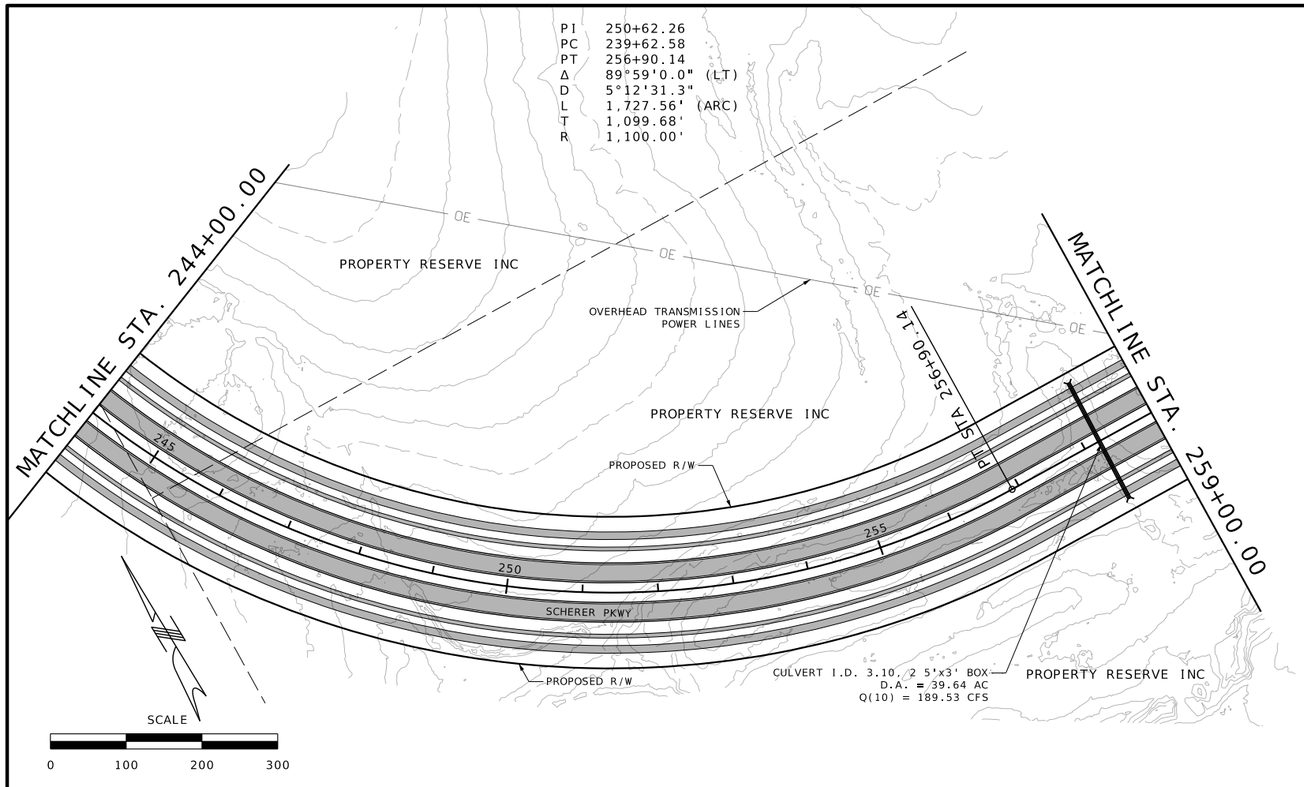
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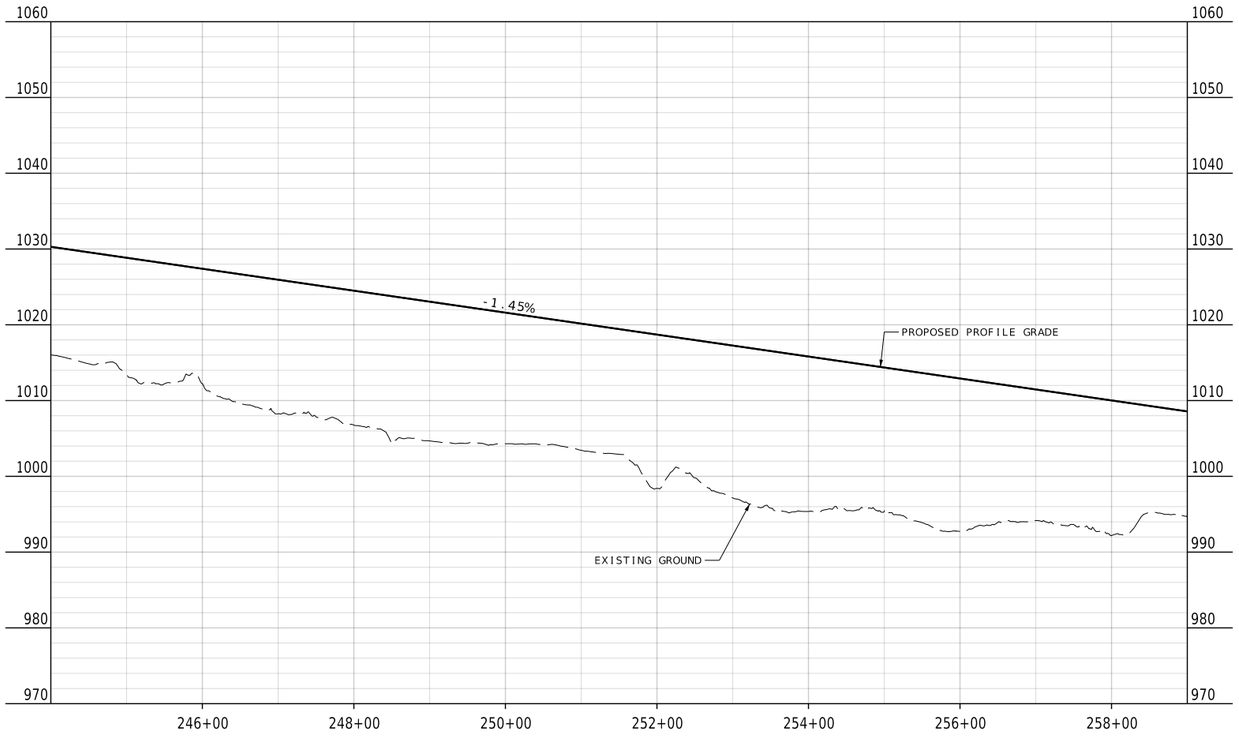
DESCRIPTION	DATE

SCHERER PKWY
STA 229+00 TO STA 244+00
ALTERNATIVE 3
SHEET 11 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE | STATE MO

DISTRICT | SHEET NO. 12

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

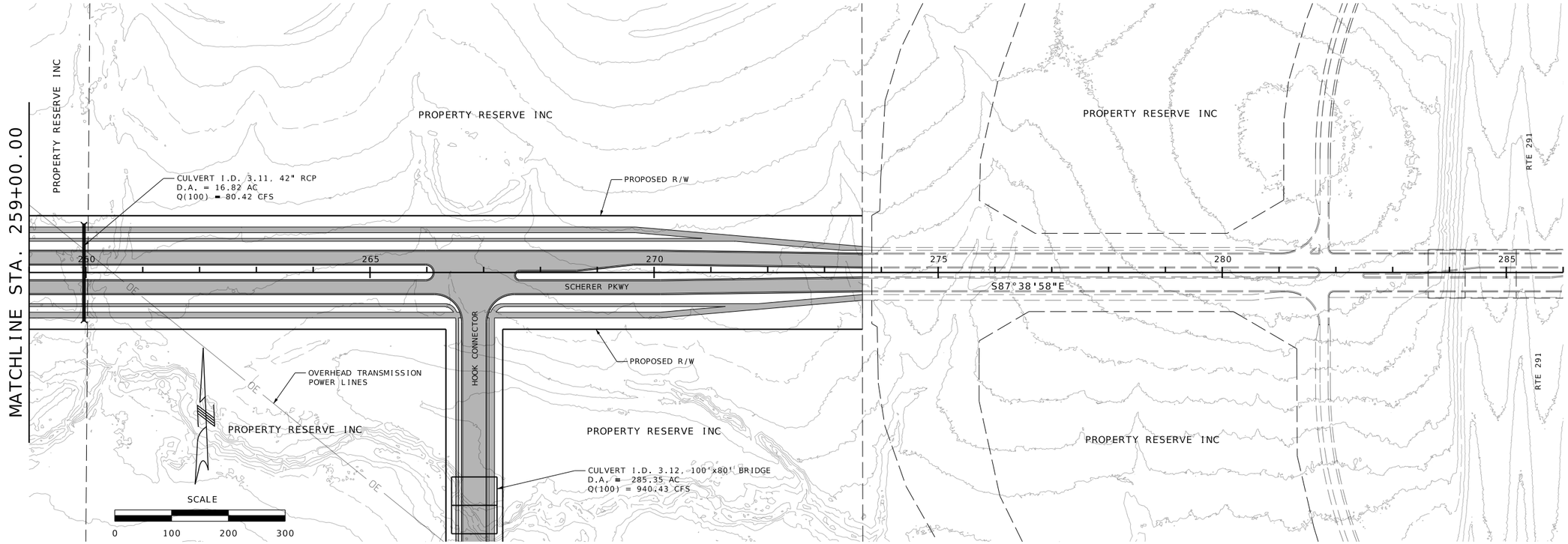
DATE

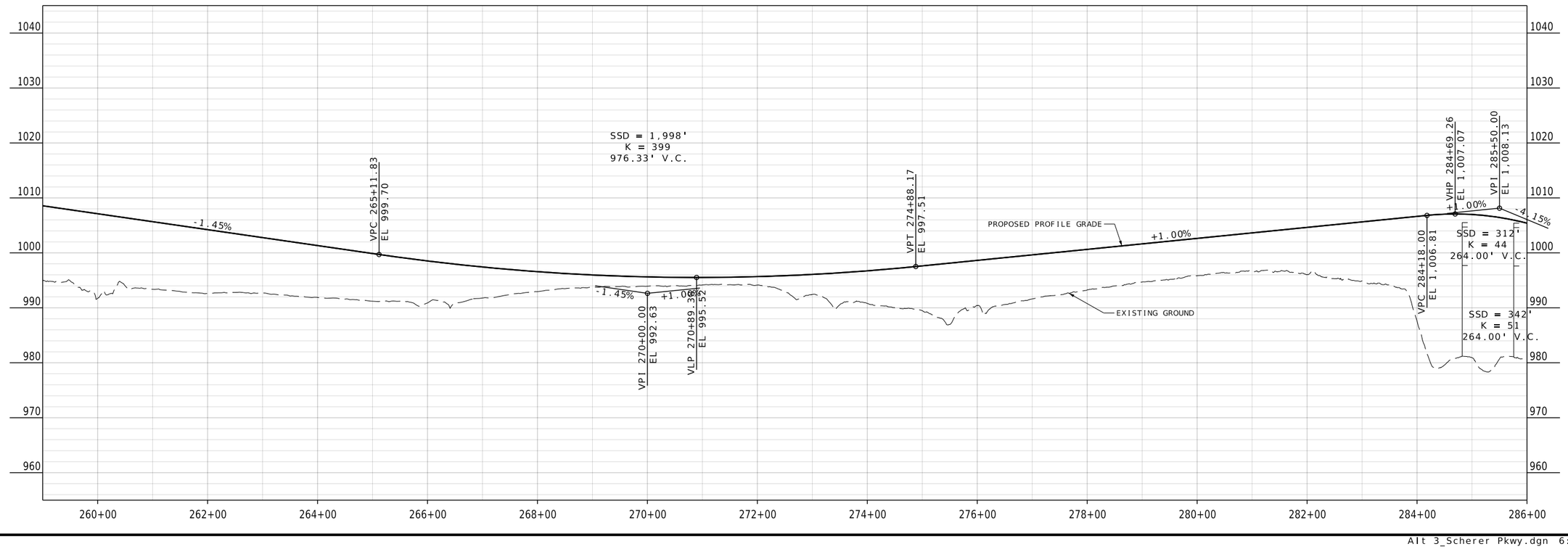
SCHERER PKWY
STA 244+00 TO STA 259+00
ALTERNATIVE 3
SHEET 12 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Alt 3_Scherer Pkwy.dgn 6:10:49 PM 6/18/2025





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	13

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

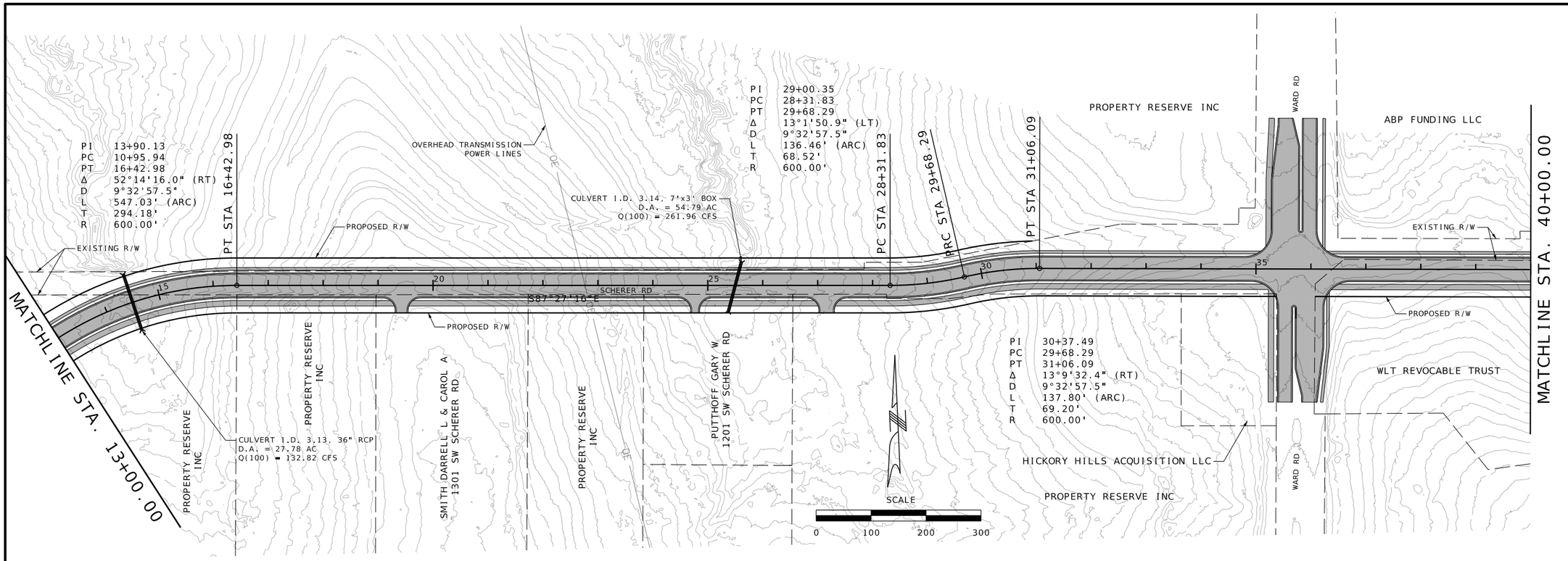
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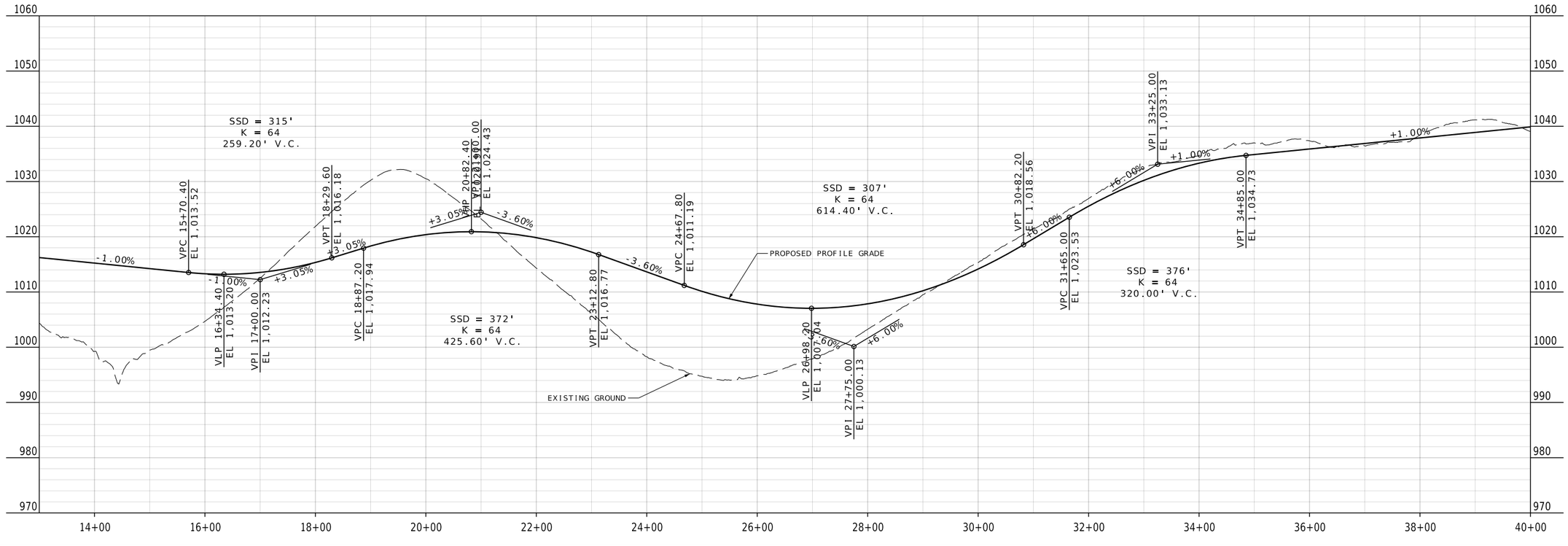
DESCRIPTION	DATE

SCHERER PKWY
STA 259+00 TO STA 286+00
ALTERNATIVE 3
SHEET 13 OF 13

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED	4/18/2025
ROUTE	STATE MO
DISTRICT	SHEET NO. 1
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

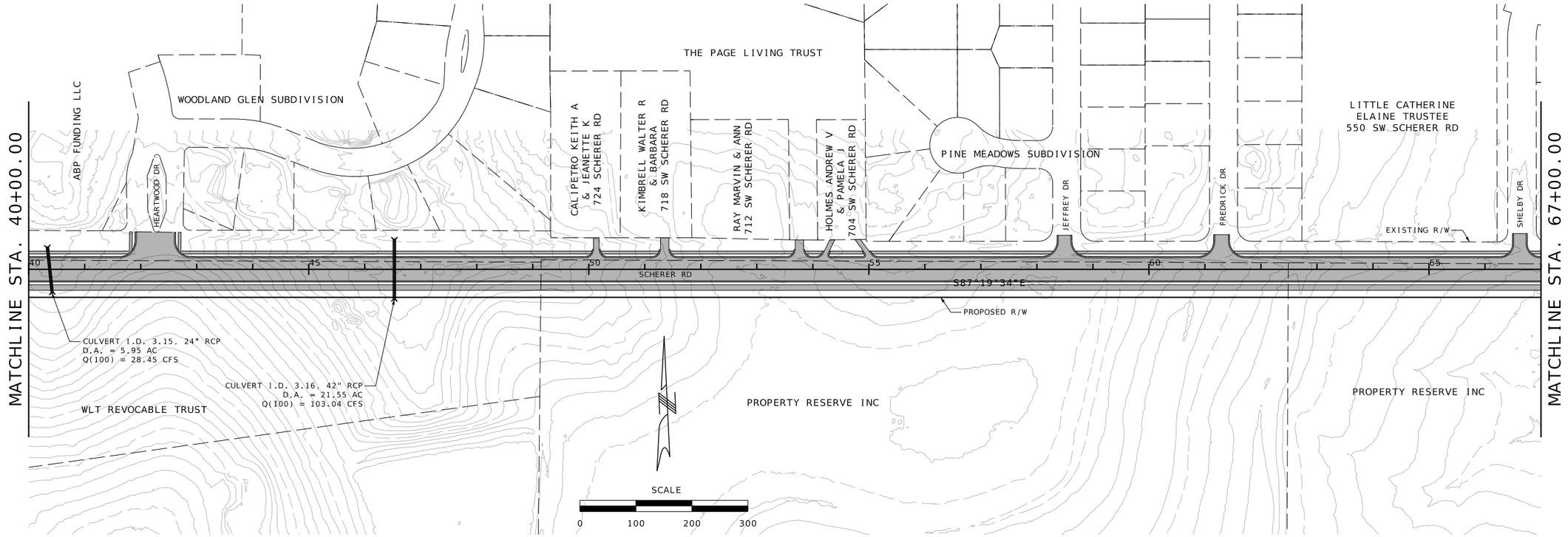
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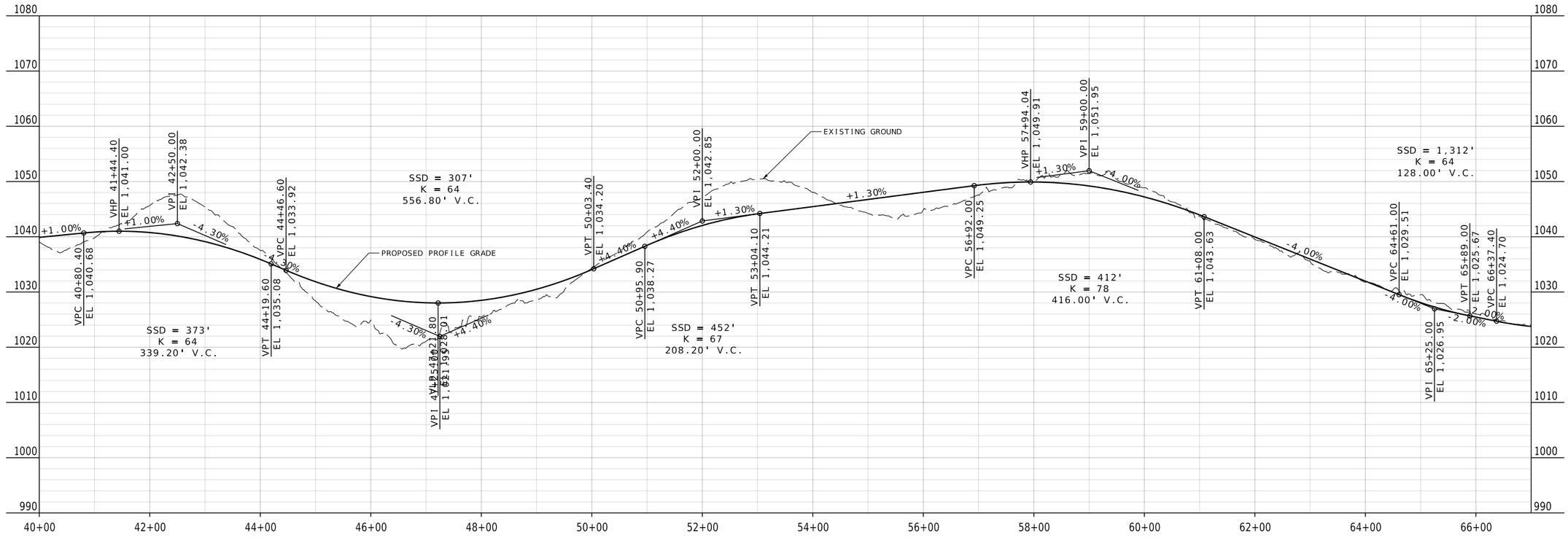
DATE

SCHERER RD
STA 13+00 TO STA 40+00
ALTERNATIVE 3
SHEET 1 OF 3

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED 4/17/2025
ROUTE
STATE MO
DISTRICT
SHEET NO. 2
COUNTY
JOB NO.
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

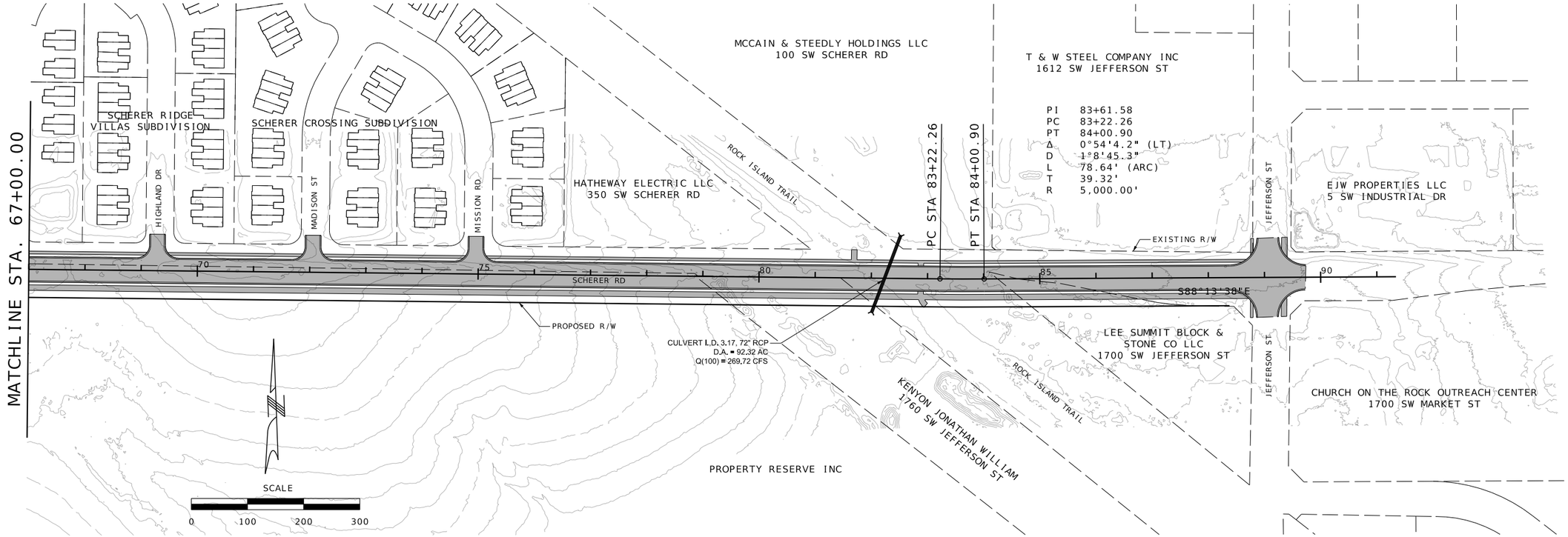
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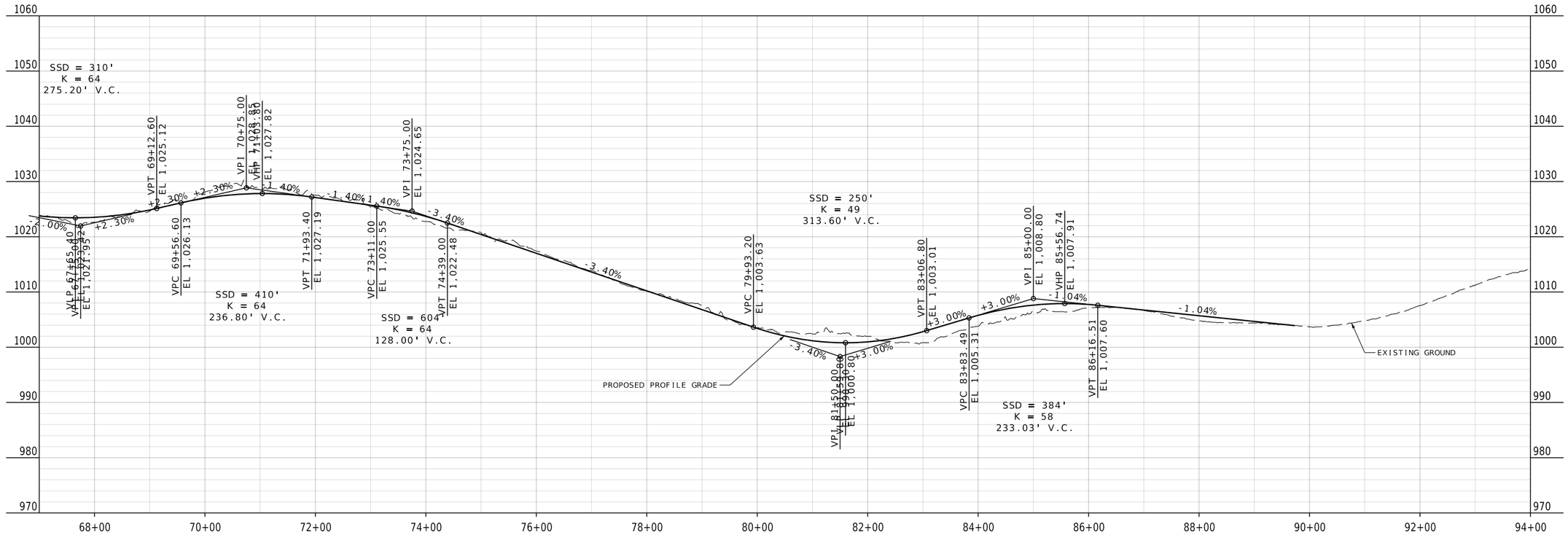
DATE

SCHERER RD
STA 40+00 TO STA 67+00
ALTERNATIVE 3
SHEET 2 OF 3

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE: STATE: MO

DISTRICT: SHEET NO.: 3

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

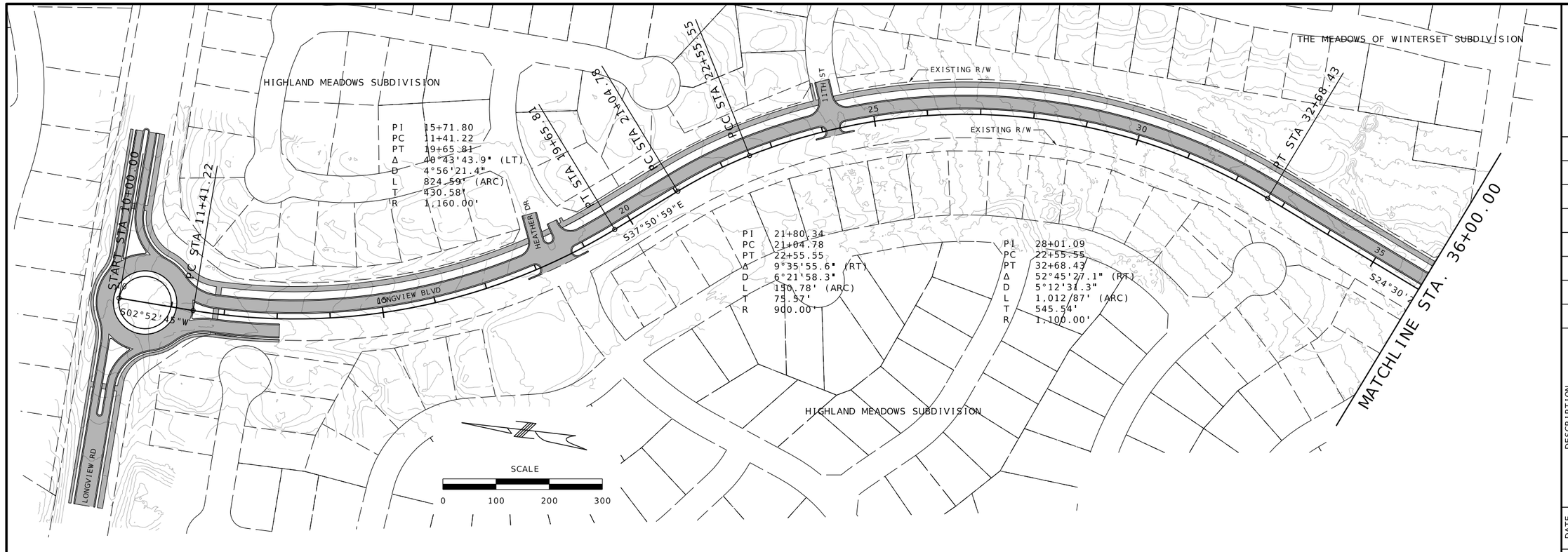
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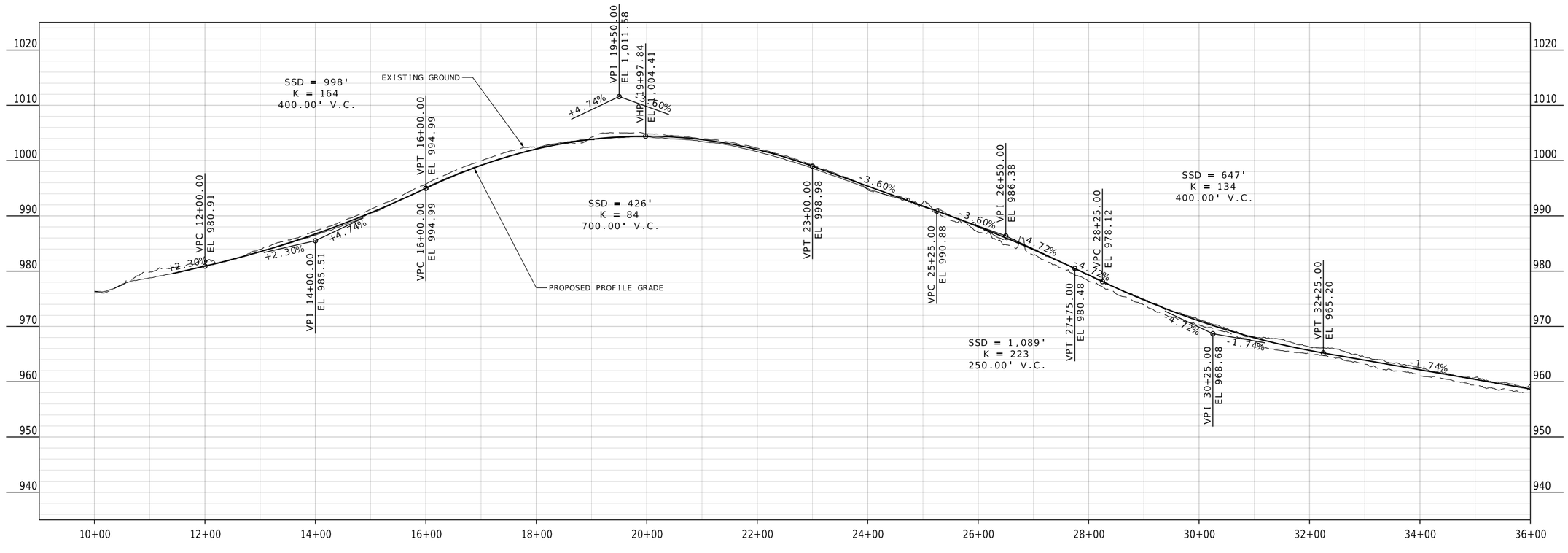
SCHERER RD
STA 67+00 TO STA 90+00
ALTERNATIVE 3
SHEET 3 OF 3

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

$FILE$ $TIME$ $DATE$





DATE PREPARED 4/17/2025

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	1

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

LONGVIEW BOULEVARD
STA 10+00 TO STA 36+00
SHEET 1 OF 6

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Longview Boulevard.dgn 10:47:36 AM 4/17/2025

PROPERTY RESERVE INC

HIGHLAND MEADOWS SUBDIVISION

MATCHLINE STA. 36+00.00

12 ST

4"W

12 ST

PC STA 38+78.55

PT STA 40+96.20

PROPOSED R/W

CULVERT I.D. 4.0. 2 8'x5' BOX
D.A. = 150.54 AC
Q(100) = 802.35 CFS

40

45

S33°24'51"W

LONGVIEW BLVD

PC STA 49+75.42

50

55

60

PT STA 62+30.50

MATCHLINE STA. 63+00.00

PI	39+87.60
PC	38+78.55
PT	40+96.20
Δ	8°54'27.2" (RT)
D	4°5'33.2"
L	217.65' (ARC)
T	109.05'
R	1,400.00'

PI	56+18.32
PC	49+75.42
PT	62+30.50
Δ	30°36'1.8" (LT)
D	2°26'17.2"
L	1,255.09' (ARC)
T	642.90'
R	2,350.00'

CULVERT I.D. 4.1. 42" RCP
D.A. = 19.26 AC
Q(100) = 92.09 CFS

PROPOSED R/W

SCALE

0 100 200 300

HIGHLAND MEADOWS SUBDIVISION

PROPERTY RESERVE INC

SIENA AT LONGVIEW SUBDIVISION

1000 990 980 970 960 950 940 930 920 910

36+00 38+00 40+00 42+00 44+00 46+00 48+00 50+00 52+00 54+00 56+00 58+00 60+00 62+00

PROPOSED PROFILE GRADE

EXISTING GROUND

SSD = 617'
K = 109
300.00' V.C.

VPC 44+25.00
EL 944.32

VPI 45+75.00
EL 941.71

VLP 46+15.51
EL 942.66

VPT 47+25.00
EL 943.21

-1.74%

+1.00%

VPC 53+50.00
EL 949.46

VHP 54+50.00
EL 949.96

VPI 55+00.00
EL 950.96

+1.00%

-2.00%

SSD = 510'
K = 100
300.00' V.C.

VPT 56+50.00
EL 947.96

-2.00%

VPC 57+75.00
EL 945.46

SSD = 444'
K = 100
400.00' V.C.

VPI 59+57.10
EL 943.64

-2.00%

+2.00%

VPT 61+75.00
EL 945.46

+2.00%

DATE PREPARED	4/17/2025
ROUTE	STATE MO
DISTRICT	SHEET NO. 2
COUNTY	
JOB NO.	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

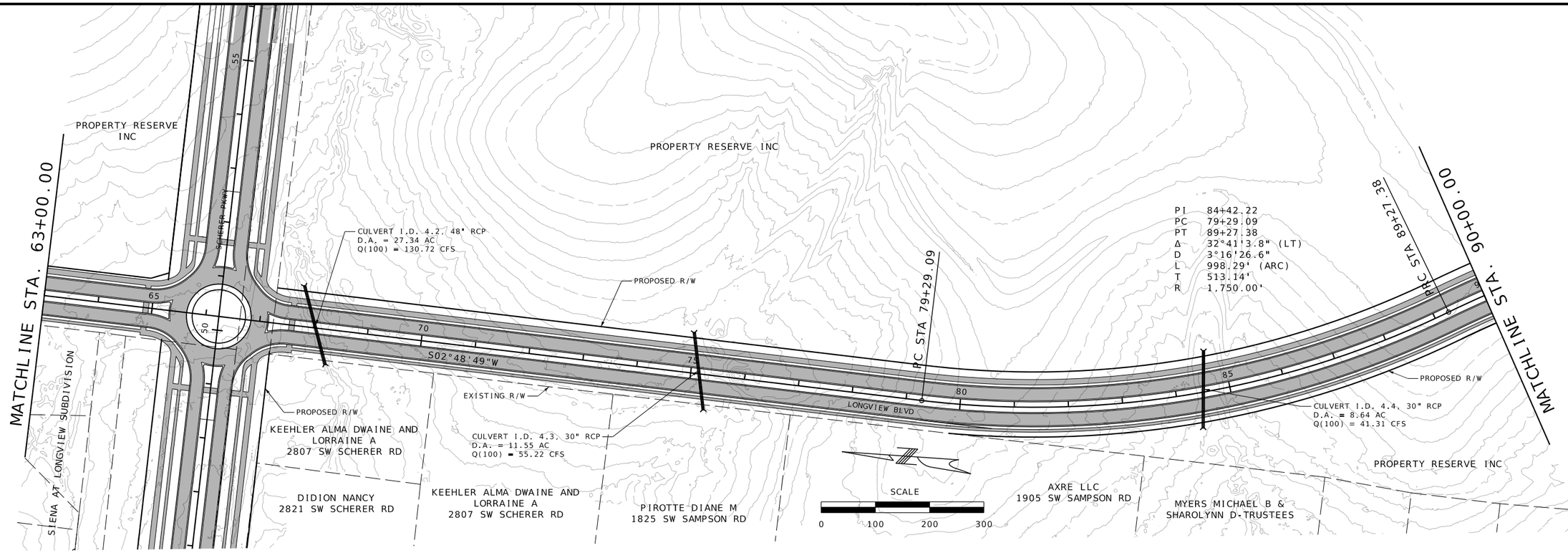
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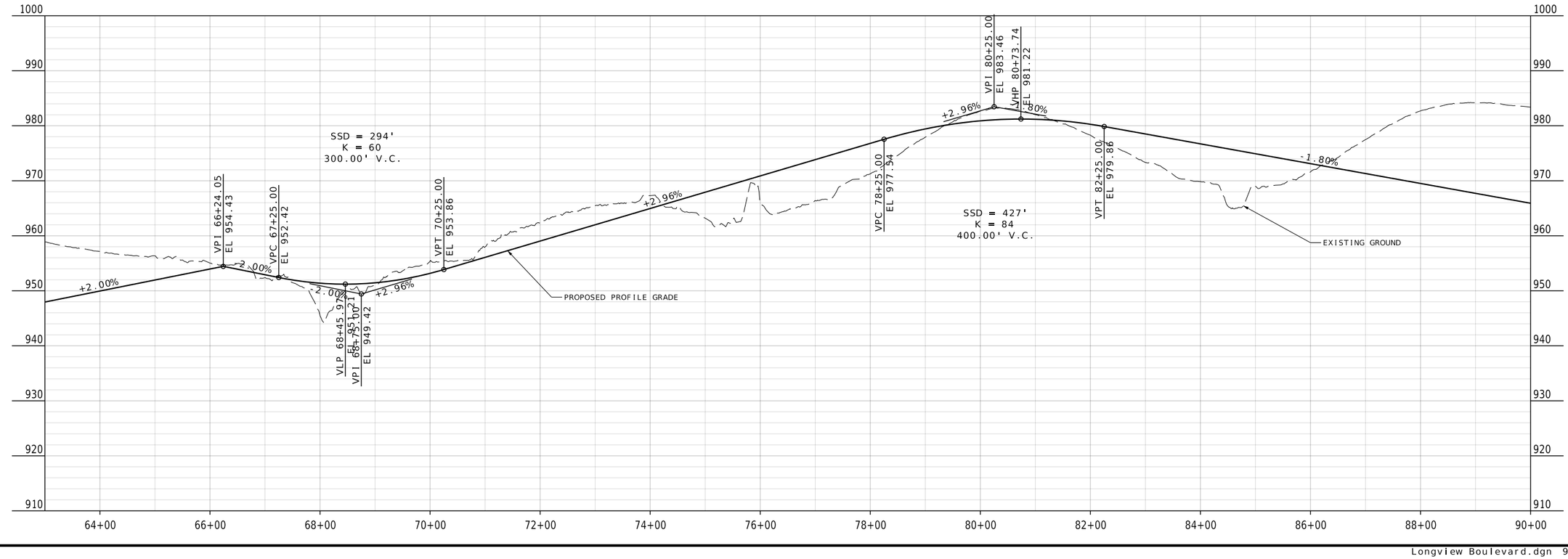
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LONGVIEW BOULEVARD
STA 36+00 TO STA 63+00
SHEET 2 OF 6

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	3

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

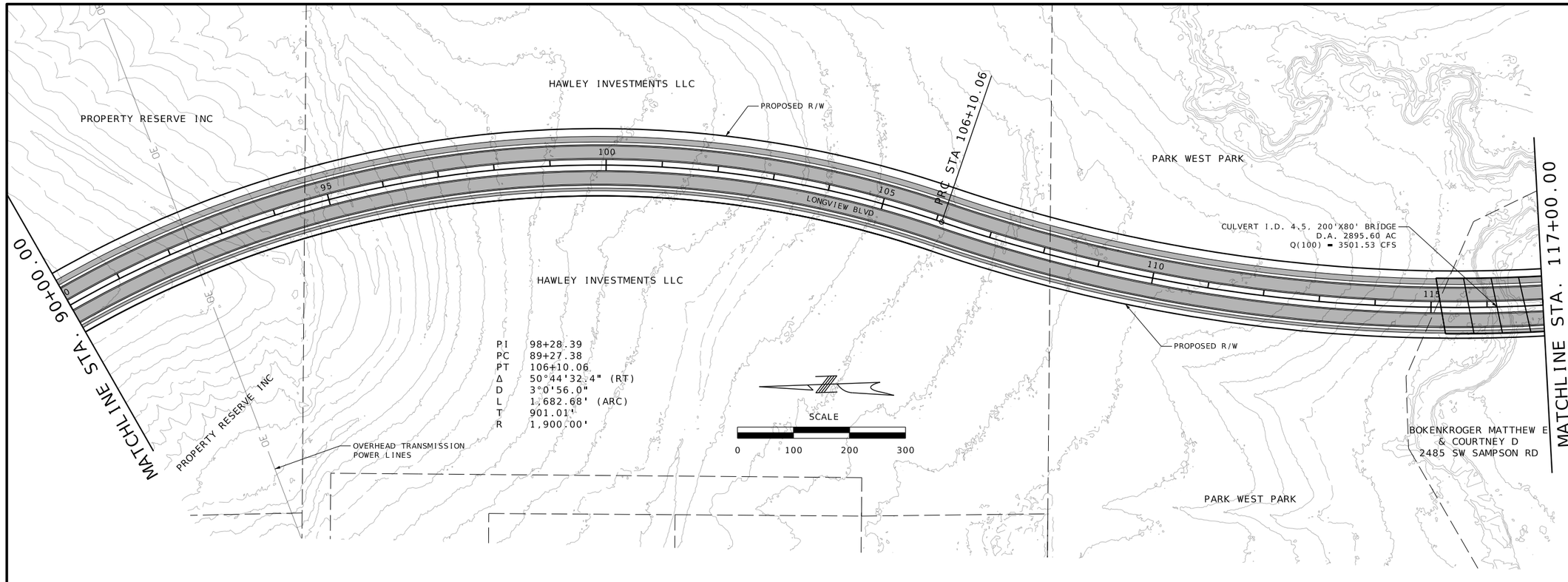
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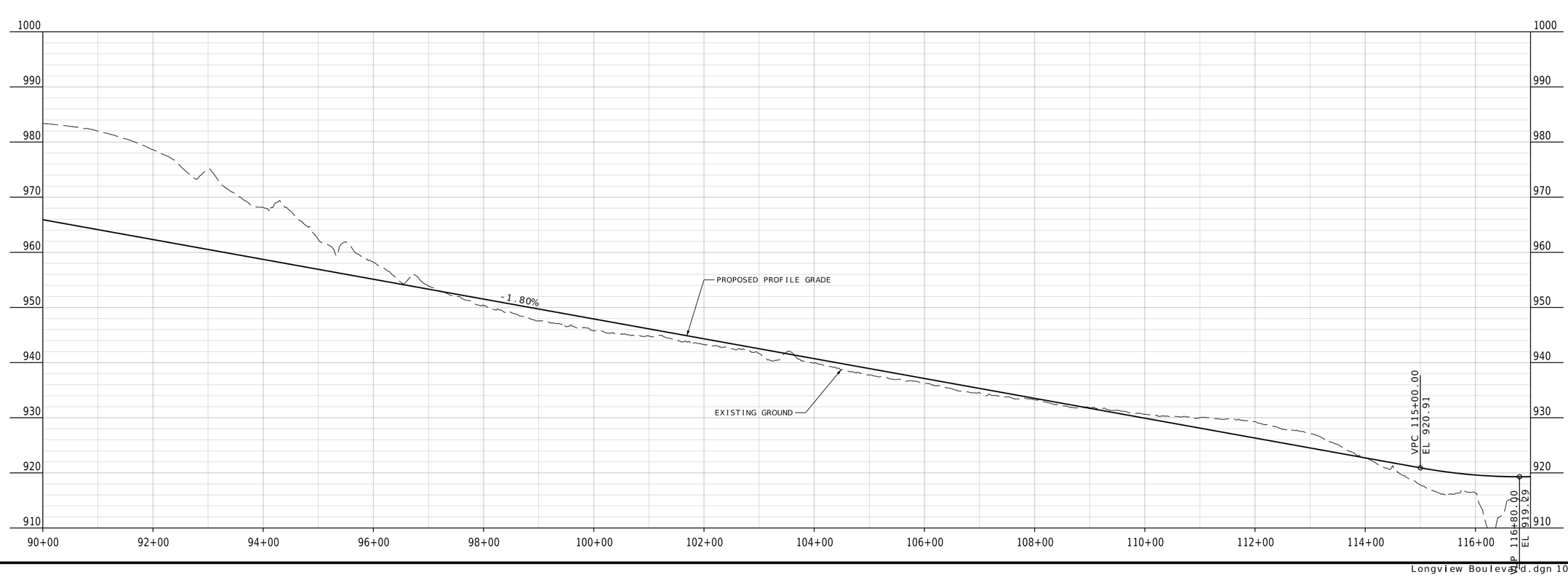
LONGVIEW BOULEVARD
STA 63+00 TO STA 90+00
SHEET 3 OF 6

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
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PLAN-PROFILE

Longview Boulevard.dgn 9:46:14 AM 6/20/2025





DATE PREPARED
4/17/2025

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	4

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

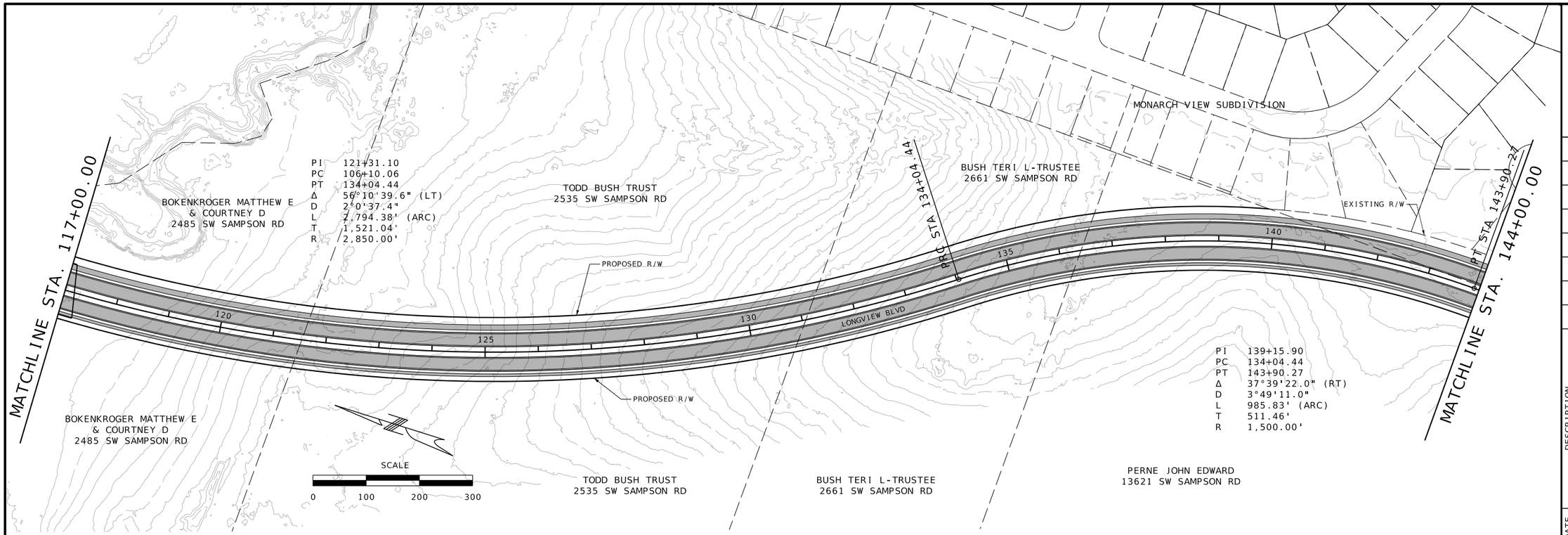
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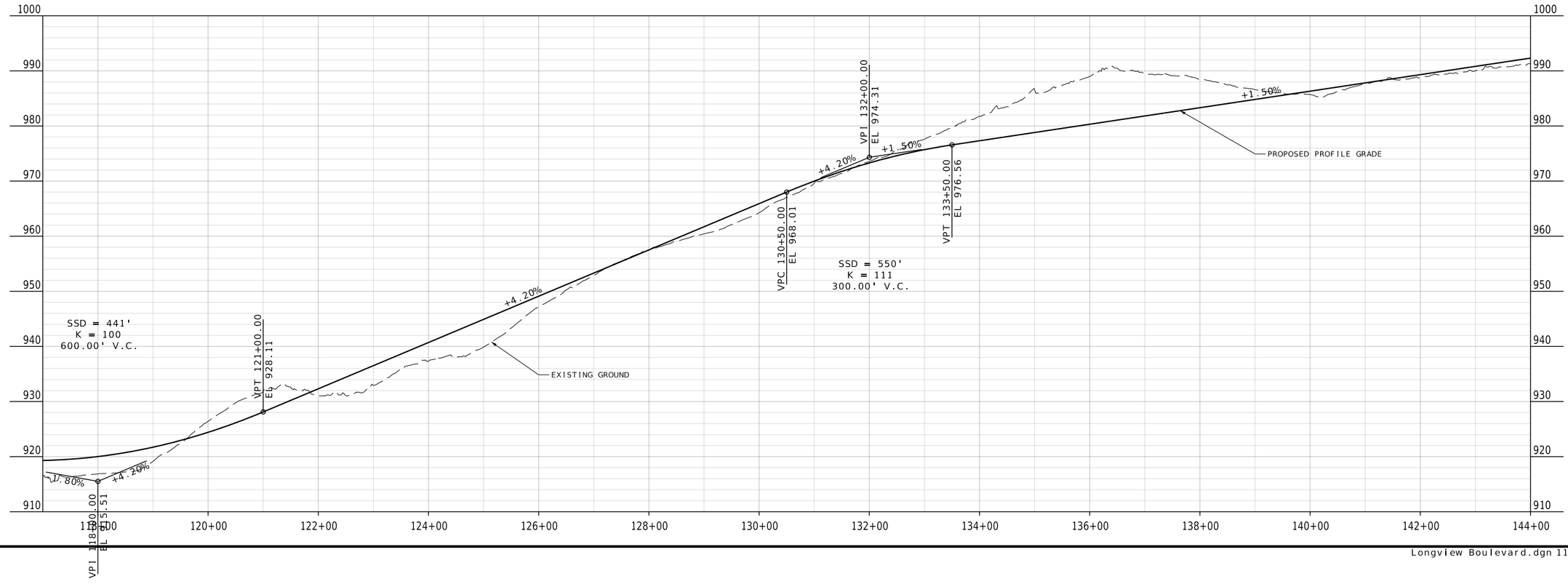
DATE

LONGVIEW BOULEVARD
STA 90+00 TO STA 117+00
SHEET 4 OF 6

LOCHMUELLER GROUP
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St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED
4/17/2025

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	5

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

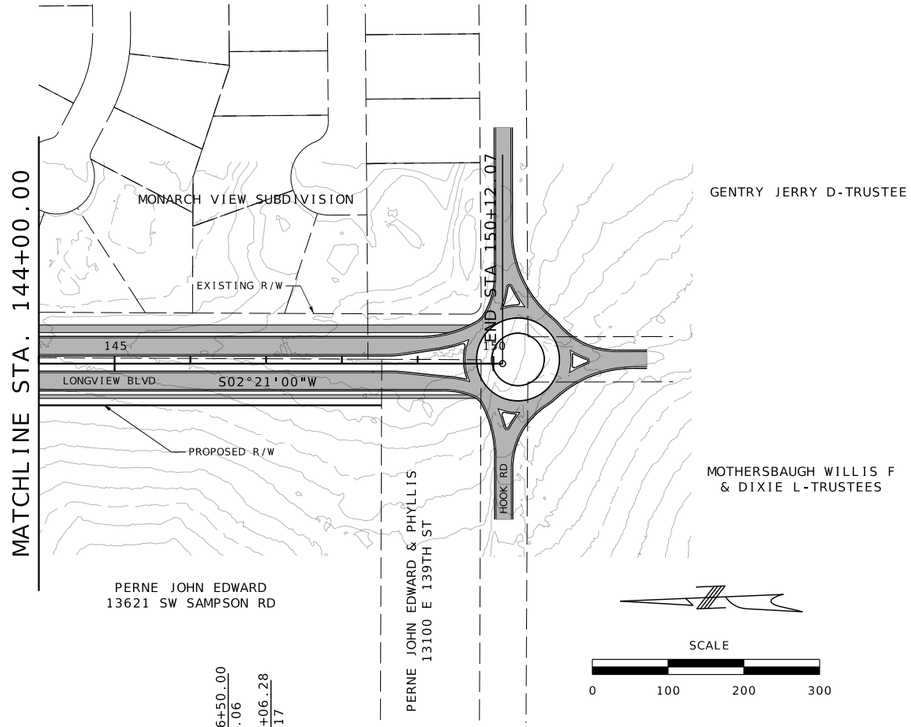
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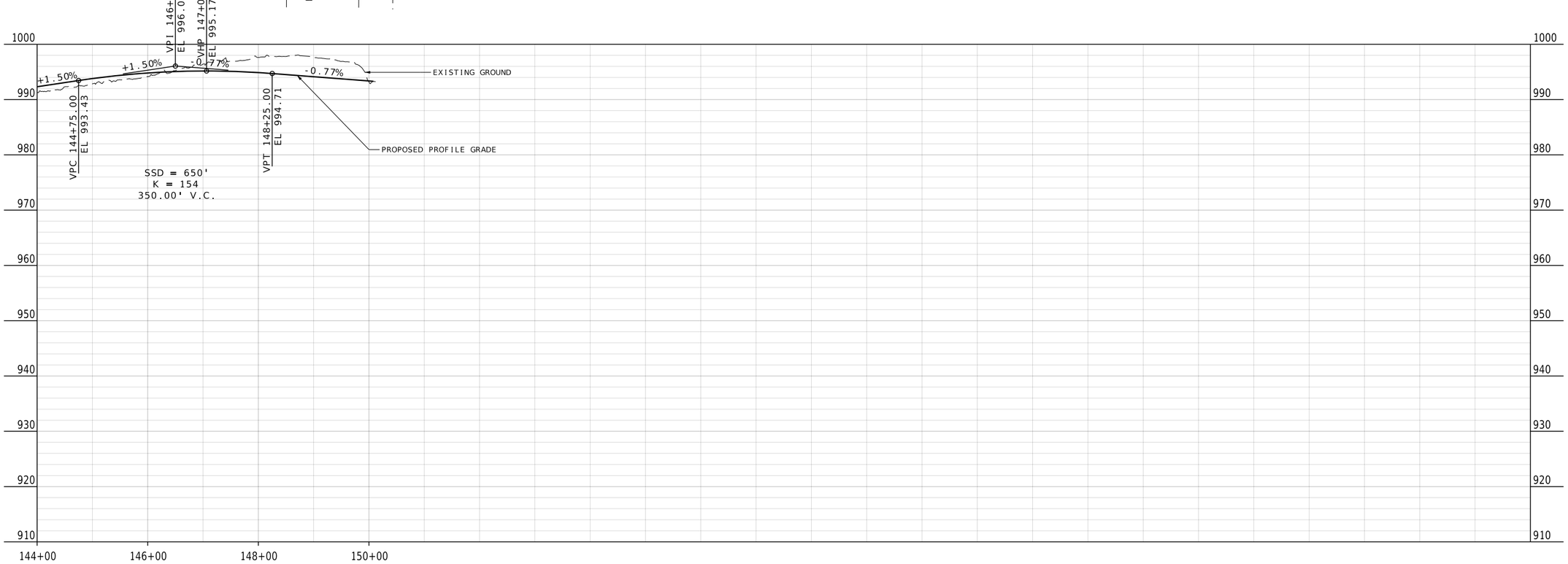
LONGVIEW BOULEVARD
STA 117+00 TO STA 144+00
SHEET 5 OF 6

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Longview Boulevard.dgn 11:14:07 AM 4/17/2025





DATE PREPARED
4/17/2025

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	6

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

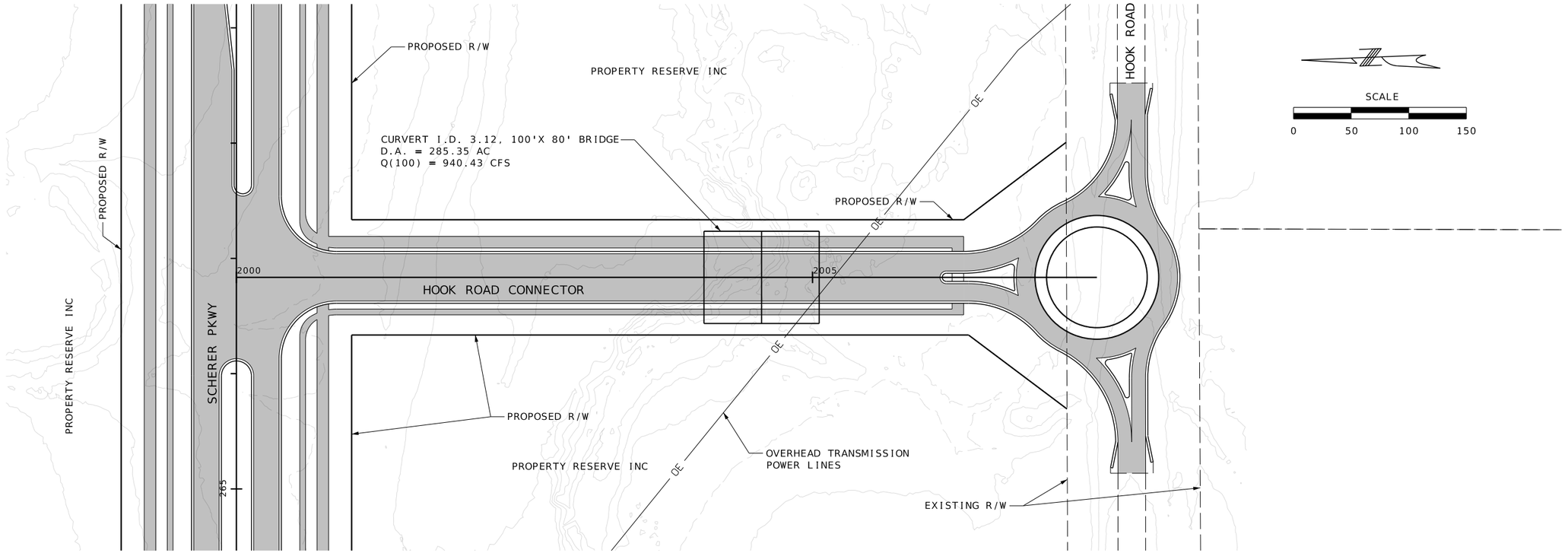
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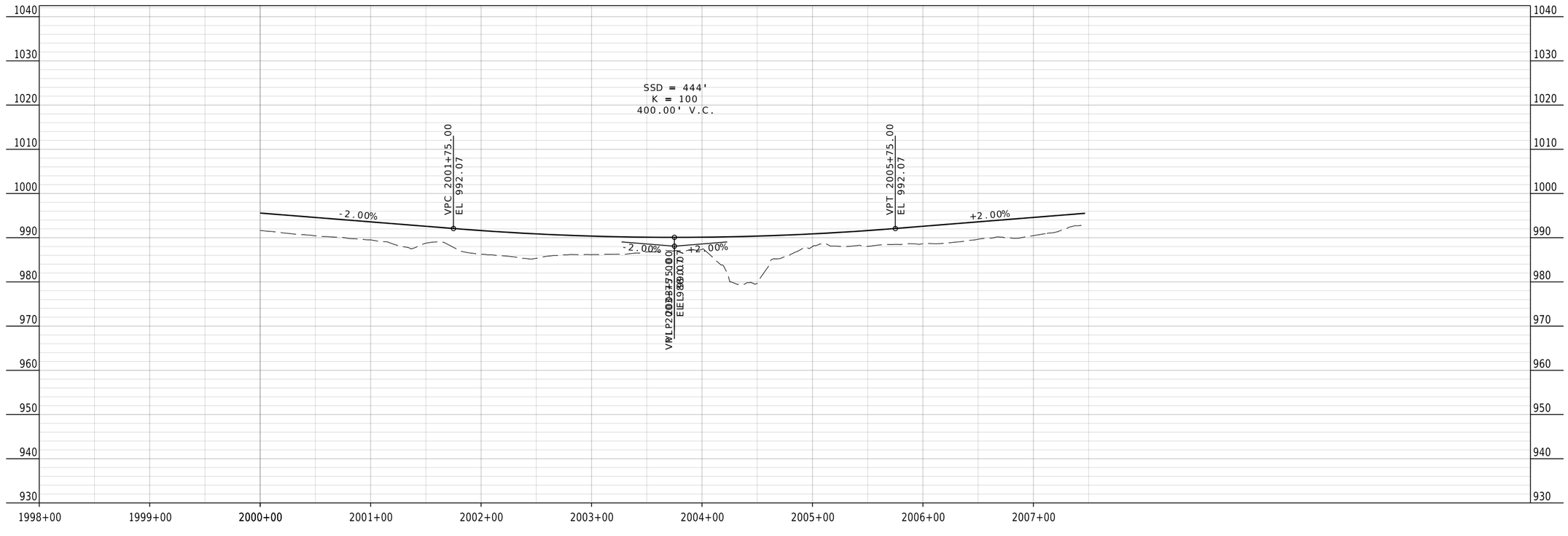
DESCRIPTION	DATE

LONGVIEW BOULEVARD
STA 144+00 TO STA 150+12
SHEET 6 OF 6

LOCHMUELLER GROUP
399 South Spring Avenue, Suite 208 B
St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE





DATE PREPARED
4/24/2025

ROUTE	STATE
	MO
DISTRICT	SHEET NO.
	14

COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

HOOK ROAD CONNECTOR
ALTERNATIVE 3
SHEET 1 OF 1

LOCHMUELLER GROUP
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St. Louis, MO 63110
Phone: 314.621.3395

PLAN-PROFILE

Hook Road Connection.dgn 4:03:59 PM 6/19/2025

Appendix C

Estimates of Probable Construction Costs

Summary of Estimated Construction Costs - Scherer Road / Parkway (Alternate 1)									
Item No.	Item Description	Unit	Unit Price	Scherer Pkwy (Sampson Rd to Scherer Rd)		Scherer Pkwy (Scherer Rd to Hook Rd)		Scherer Rd (Scherer Pkwy to Jefferson St)	
				Estimated Quantity	Total	Estimated Quantity	Total	Estimated Quantity	Total
1	Mobilization	LS	--	1	$ 1,000,000	1	$ 1,500,000	1	$ 500,000
3	Demolition and Removals	LS	--	1	$ 500,000	1	$ 300,000	1	$ 500,000
2	Clearing and Grubbing	AC	$ 5,000.00	55	$ 275,000	60	$ 300,000	20	$ 100,000
4	Unclassified Excavation	CY	$ 15.00	216,507	$ 3,247,605	251,466	$ 3,771,990	72,405	$ 1,086,075
5	Embankment	CY	$ 5.00	148,647	$ 743,235	56,607	$ 283,035	56,961	$ 284,805
6	Contractor Furnished Borrow	CY	$ 20.00	0	$ -	0	$ -	0	$ -
7	Subgrade Geogrid	SY	$ 2.00	84,268	$ 168,535	92,139	$ 184,278	48,399	$ 96,799
8	Subgrade Compaction (12")(95% MRO+3)	SY	$ 3.00	84,268	$ 252,803	92,139	$ 276,417	48,399	$ 145,198
9	Aggregate Base (4") (MoDOT Type 5)	SY	$ 10.00	38,820	$ 388,200	46,204	$ 462,040	13,786	$ 137,860
10	Aggregate Base (6") (MoDOT Type 5)	SY	$ 12.00	84,268	$ 1,011,212	92,139	$ 1,105,668	48,399	$ 580,792
11	Portland Cement Conc. Pvmt. (9") (KCMMB 4K)	SY	$ 70.00	68,638	$ 4,804,660	73,573	$ 5,150,110	42,686	$ 2,988,020
12	Portland Cement Conc. Pvmt. (4") (KCMMB 4K) (Sidewalk)	SY	$ 55.00	12,978	$ 713,790	15,394	$ 846,670	5,009	$ 275,495
13	Portland Cement Conc. Pvmt. (6") (KCMMB 4K) (Bike Trail / SUP)	SY	$ 65.00	25,842	$ 1,679,730	30,810	$ 2,002,650	8,777	$ 570,505
14	ADA Ramps (All Types)	EA	$ 3,000.00	48	$ 144,000	32	$ 96,000	32	$ 96,000
15	Concrete Curb and Gutter (TYPE CG-1)	LF	$ 30.00	46,889	$ 1,406,670	55,698	$ 1,670,940	17,140	$ 514,200
16	Reinforced Concrete Pipe w/ End Sections (18")	EA	$ 23,500.00	0	$ -	0	$ -	1	$ 23,500
17	Reinforced Concrete Pipe w/ End Sections (24")	EA	$ 27,500.00	0	$ -	0	$ -	1	$ 27,500
18	Reinforced Concrete Pipe w/ End Sections (30")	EA	$ 31,000.00	1	$ 31,000	1	$ 31,000	0	$ -
19	Reinforced Concrete Pipe w/ End Sections (36")	EA	$ 33,500.00	3	$ 100,500	1	$ 33,500	0	$ -
20	Reinforced Concrete Pipe w/ End Sections (42")	EA	$ 41,500.00	0	$ -	0	$ -	1	$ 41,500
21	Reinforced Concrete Pipe w/ End Sections (48")	EA	$ 47,000.00	0	$ -	0	$ -	0	$ -
22	Reinforced Concrete Pipe w/ End Sections (60")	EA	$ 68,000.00	0	$ -	0	$ -	0	$ -
23	Reinforced Concrete Box (5' X 3')	EA	$ 180,000.00	0	$ -	0	$ -	0	$ -
24	Reinforced Concrete Box (6' X 3')	EA	$ 192,000.00	0	$ -	1	$ 192,000	0	$ -
25	Reinforced Concrete Box (7' X 3')	EA	$ 204,000.00	0	$ -	0	$ -	0	$ -
26	Reinforced Concrete Box (10' X 4')	EA	$ 360,000.00	0	$ -	0	$ -	1	$ 360,000
27	Reinforced Concrete Box (2 - 4' X 3')	EA	$ 336,000.00	0	$ -	1	$ 336,000	0	$ -
28	Reinforced Concrete Box (2 - 5' X 3')	EA	$ 360,000.00	0	$ -	2	$ 720,000	0	$ -
29	Reinforced Concrete Box (2 - 8' X 5')	EA	$ 600,000.00	0	$ -	0	$ -	0	$ -
30	Reinforced Concrete Box (2 - 9' X 5')	EA	$ 648,000.00	0	$ -	0	$ -	0	$ -
31	Reinforced Concrete Box (2 - 10' X 4')	EA	$ 720,000.00	0	$ -	1	$ 720,000	0	$ -
32	Storm Sewer System	LS	--	1	$ 1,750,000	1	$ 2,250,000	1	$ 900,000
33	Bridge (100' X 80')	LS	--	0	$ -	1	$ 2,200,000	0	$ -
34	Bridge (200' X 80')	LS	--	0	$ -	0	$ -	0	$ -
35	Street Lighting System	LS	--	1	$ 1,100,000	1	$ 1,250,000	1	$ 500,000
36	Permanent Pavement Marking and Signing	LS	--	1	$ 125,000	1	$ 150,000	1	$ 75,000
37	Traffic Control	LS	--	1	$ 100,000	1	$ 100,000	1	$ 75,000
38	Roundabout	EA	$ 150,000.00	2	$ 300,000	2	$ 300,000	0	$ -
39	Traffic Signal Installation	EA	$ 500,000.00	1	$ 500,000	1	$ 500,000	1	$ 500,000
40	Traffic Signal Modification	EA	$ 150,000.00	0	$ -	0	$ -	1	$ 150,000
41	Sodding	SY	$ 8.00	105,000	$ 840,000	120,000	$ 960,000	25,000	$ 200,000
42	Seeding	AC	$ 3,500.00	45	$ 157,500	50	$ 175,000	10	$ 35,000
43	Stone Riprap	SY	$ 150.00	100	$ 15,000	600	$ 90,000	200	$ 30,000
44	Erosion and Sediment Control	LS	--	1	$ 150,000	1	$ 200,000	1	$ 100,000
45	Contractor Furnished Staking	LS	--	1	$ 75,000	1	$ 75,000	1	$ 50,000
	Subtotal				$ 21,579,440		$ 28,232,298		$ 10,943,249
	Contingency (20%)				$ 4,315,888		$ 5,646,460		$ 2,188,650
	Total Construction Cost				**$ 25,895,328**		**$ 33,878,758**		**$ 13,131,899**

Summary of Estimated Construction Costs - Scherer Road / Parkway (Alternate 2)									
Item No.	Item Description	Unit	Unit Price	Scherer Pkwy (Sampson Rd to Scherer Rd)		Scherer Pkwy (Scherer Rd to Hook Rd)		Scherer Rd (Scherer Pkwy to Jefferson St)	
				Estimated Quantity	Total	Estimated Quantity	Total	Estimated Quantity	Total
1	Mobilization	LS	--	1	$ 750,000	1	$ 1,750,000	1	$ 1,000,000
3	Demolition and Removals	LS	--	1	$ 300,000	1	$ 500,000	1	$ 750,000
2	Clearing and Grubbing	AC	$ 5,000.00	35	$ 175,000	80	$ 400,000	30	$ 150,000
4	Unclassified Excavation	CY	$ 15.00	155,627	$ 2,334,405	223,276	$ 3,349,140	172,483	$ 2,587,245
5	Embankment	CY	$ 5.00	94,324	$ 471,620	146,716	$ 733,580	63,114	$ 315,570
6	Contractor Furnished Borrow	CY	$ 20.00	0	$ -	0	$ -	0	$ -
7	Subgrade Geogrid	SY	$ 2.00	51,883	$ 103,765	123,415	$ 246,831	76,566	$ 153,133
8	Subgrade Compaction (12")(95% MRO+3)	SY	$ 3.00	51,883	$ 155,648	123,415	$ 370,246	76,566	$ 229,699
9	Aggregate Base (4") (MoDOT Type 5)	SY	$ 10.00	24,154	$ 241,540	60,282	$ 602,820	21,768	$ 217,680
10	Aggregate Base (6") (MoDOT Type 5)	SY	$ 12.00	51,883	$ 622,592	123,415	$ 1,480,984	76,566	$ 918,796
11	Portland Cement Conc. Pvmt. (9") (KCMMB 4K)	SY	$ 70.00	42,202	$ 2,954,140	99,300	$ 6,951,000	67,852	$ 4,749,640
12	Portland Cement Conc. Pvmt. (4") (KCMMB 4K) (Sidewalk)	SY	$ 55.00	8,150	$ 448,250	20,058	$ 1,103,190	8,020	$ 441,100
13	Portland Cement Conc. Pvmt. (6") (KCMMB 4K) (Bike Trail / SUP)	SY	$ 65.00	16,004	$ 1,040,260	40,224	$ 2,614,560	13,748	$ 893,620
14	ADA Ramps (All Types)	EA	$ 3,000.00	40	$ 120,000	32	$ 96,000	40	$ 120,000
15	Concrete Curb and Gutter (TYPE CG-1)	LF	$ 30.00	29,042	$ 871,260	72,346	$ 2,170,380	26,143	$ 784,290
16	Reinforced Concrete Pipe w/ End Sections (18")	EA	$ 23,500.00	0	$ -	0	$ -	0	$ -
17	Reinforced Concrete Pipe w/ End Sections (24")	EA	$ 27,500.00	0	$ -	0	$ -	1	$ 27,500
18	Reinforced Concrete Pipe w/ End Sections (30")	EA	$ 31,000.00	0	$ -	5	$ 155,000	0	$ -
19	Reinforced Concrete Pipe w/ End Sections (36")	EA	$ 33,500.00	2	$ 67,000	3	$ 100,500	4	$ 134,000
20	Reinforced Concrete Pipe w/ End Sections (42")	EA	$ 41,500.00	0	$ -	1	$ 41,500	0	$ -
21	Reinforced Concrete Pipe w/ End Sections (48")	EA	$ 47,000.00	0	$ -	0	$ -	0	$ -
22	Reinforced Concrete Pipe w/ End Sections (60")	EA	$ 68,000.00	0	$ -	1	$ 68,000	0	$ -
23	Reinforced Concrete Box (5' X 3')	EA	$ 180,000.00	0	$ -	0	$ -	0	$ -
24	Reinforced Concrete Box (6' X 3')	EA	$ 192,000.00	0	$ -	1	$ 192,000	0	$ -
25	Reinforced Concrete Box (7' X 3')	EA	$ 204,000.00	0	$ -	1	$ 204,000	1	$ 204,000
26	Reinforced Concrete Box (10' X 4')	EA	$ 360,000.00	0	$ -	0	$ -	0	$ -
27	Reinforced Concrete Box (2 - 4' X 3')	EA	$ 336,000.00	0	$ -	0	$ -	0	$ -
28	Reinforced Concrete Box (2 - 5' X 3')	EA	$ 360,000.00	0	$ -	3	$ 1,080,000	0	$ -
29	Reinforced Concrete Box (2 - 8' X 5')	EA	$ 600,000.00	0	$ -	0	$ -	0	$ -
30	Reinforced Concrete Box (2 - 9' X 5')	EA	$ 648,000.00	0	$ -	0	$ -	0	$ -
31	Reinforced Concrete Box (2 - 10' X 4')	EA	$ 720,000.00	0	$ -	0	$ -	0	$ -
32	Storm Sewer System	LS	--	1	$ 1,000,000	1	$ 2,500,000	1	$ 1,500,000
33	Bridge (100' X 80')	LS	--	0	$ -	1	$ 2,200,000	0	$ -
34	Bridge (200' X 80')	LS	--	0	$ -	0	$ -	0	$ -
35	Street Lighting System	LS	--	1	$ 700,000	1	$ 1,600,000	1	$ 750,000
36	Permanent Pavement Marking and Signing	LS	--	1	$ 75,000	1	$ 175,000	1	$ 125,000
37	Traffic Control	LS	--	1	$ 100,000	1	$ 100,000	1	$ 100,000
38	Roundabout	EA	$ 150,000.00	2	$ 300,000	2	$ 300,000	0	$ -
39	Traffic Signal Installation	EA	$ 500,000.00	0	$ -	2	$ 1,000,000	1	$ 500,000
40	Traffic Signal Modification	EA	$ 150,000.00	0	$ -	0	$ -	2	$ 300,000
41	Sodding	SY	$ 8.00	65,000	$ 520,000	160,000	$ 1,280,000	40,000	$ 320,000
42	Seeding	AC	$ 3,500.00	30	$ 105,000	65	$ 227,500	15	$ 52,500
43	Stone Riprap	SY	$ 150.00	50	$ 7,500	800	$ 120,000	200	$ 30,000
44	Erosion and Sediment Control	LS	--	1	$ 100,000	1	$ 250,000	1	$ 150,000
45	Contractor Furnished Staking	LS	--	1	$ 50,000	1	$ 125,000	1	$ 75,000
	Subtotal				$ 13,612,980		$ 34,087,231		$ 17,578,773
	Contingency (20%)				$ 2,722,596		$ 6,817,446		$ 3,515,755
	Total Construction Cost				**$ 16,335,576**		**$ 40,904,677**		**$ 21,094,528**

Summary of Estimated Construction Costs - Scherer Road / Parkway (Alternate 3)									
Item No.	Item Description	Unit	Unit Price	Scherer Pkwy (Sampson Rd to Scherer Rd)		Scherer Pkwy (Scherer Rd to Hook Rd)		Scherer Rd (Scherer Pkwy to Jefferson St)	
				Estimated Quantity	Total	Estimated Quantity	Total	Estimated Quantity	Total
1	Mobilization	LS	--	1	$ 1,000,000	1	$ 1,500,000	1	$ 500,000
3	Demolition and Removals	LS	--	1	$ 500,000	1	$ 300,000	1	$ 500,000
2	Clearing and Grubbing	AC	$ 5,000.00	55	$ 275,000	60	$ 300,000	20	$ 100,000
4	Unclassified Excavation	CY	$ 15.00	127,260	$ 1,908,900	263,240	$ 3,948,600	64,170	$ 962,550
5	Embankment	CY	$ 5.00	112,287	$ 561,435	365,502	$ 1,827,510	76,016	$ 380,080
6	Contractor Furnished Borrow	CY	$ 20.00	0	$ -	102,262	$ 2,045,240	11,846	$ 236,920
7	Subgrade Geogrid	SY	$ 2.00	85,308	$ 170,615	95,604	$ 191,209	50,242	$ 100,483
8	Subgrade Compaction (12")(95% MRO+3)	SY	$ 3.00	85,308	$ 255,923	95,604	$ 286,813	50,242	$ 150,725
9	Aggregate Base (4") (MoDOT Type 5)	SY	$ 10.00	39,312	$ 393,120	46,462	$ 464,620	14,178	$ 141,780
10	Aggregate Base (6") (MoDOT Type 5)	SY	$ 12.00	85,308	$ 1,023,692	95,604	$ 1,147,252	50,242	$ 602,900
11	Portland Cement Conc. Pvmt. (9") (KCMMB 4K)	SY	$ 70.00	69,361	$ 4,855,270	76,285	$ 5,339,950	44,327	$ 3,102,890
12	Portland Cement Conc. Pvmt. (4") (KCMMB 4K) (Sidewalk)	SY	$ 55.00	13,142	$ 722,810	15,800	$ 869,000	5,255	$ 289,025
13	Portland Cement Conc. Pvmt. (6") (KCMMB 4K) (Bike Trail / SUP)	SY	$ 65.00	26,170	$ 1,701,050	30,662	$ 1,993,030	8,923	$ 579,995
14	ADA Ramps (All Types)	EA	$ 3,000.00	48	$ 144,000	32	$ 96,000	32	$ 96,000
15	Concrete Curb and Gutter (TYPE CG-1)	LF	$ 30.00	47,840	$ 1,435,200	57,958	$ 1,738,740	17,744	$ 532,320
16	Reinforced Concrete Pipe w/ End Sections (18")	EA	$ 23,500.00	0	$ -	0	$ -	0	$ -
17	Reinforced Concrete Pipe w/ End Sections (24")	EA	$ 27,500.00	0	$ -	0	$ -	1	$ 27,500
18	Reinforced Concrete Pipe w/ End Sections (30")	EA	$ 31,000.00	1	$ 31,000	1	$ 31,000	0	$ -
19	Reinforced Concrete Pipe w/ End Sections (36")	EA	$ 33,500.00	4	$ 134,000	1	$ 33,500	1	$ 33,500
20	Reinforced Concrete Pipe w/ End Sections (42")	EA	$ 41,500.00	0	$ -	1	$ 41,500	1	$ 41,500
21	Reinforced Concrete Pipe w/ End Sections (48")	EA	$ 47,000.00	0	$ -	0	$ -	0	$ -
22	Reinforced Concrete Pipe w/ End Sections (60")	EA	$ 68,000.00	0	$ -	0	$ -	0	$ -
23	Reinforced Concrete Box (5' X 3')	EA	$ 180,000.00	0	$ -	1	$ 180,000	0	$ -
24	Reinforced Concrete Box (6' X 3')	EA	$ 192,000.00	0	$ -	0	$ -	0	$ -
25	Reinforced Concrete Box (7' X 3')	EA	$ 204,000.00	0	$ -	0	$ -	1	$ 204,000
26	Reinforced Concrete Box (10' X 4')	EA	$ 360,000.00	0	$ -	0	$ -	0	$ -
27	Reinforced Concrete Box (2 - 4' X 3')	EA	$ 336,000.00	0	$ -	0	$ -	0	$ -
28	Reinforced Concrete Box (2 - 5' X 3')	EA	$ 360,000.00	0	$ -	1	$ 360,000	0	$ -
29	Reinforced Concrete Box (2 - 8' X 5')	EA	$ 600,000.00	0	$ -	0	$ -	0	$ -
30	Reinforced Concrete Box (2 - 9' X 5')	EA	$ 648,000.00	0	$ -	1	$ 648,000	0	$ -
31	Reinforced Concrete Box (2 - 10' X 4')	EA	$ 720,000.00	0	$ -	0	$ -	0	$ -
32	Storm Sewer System	LS	--	1	$ 1,750,000	1	$ 2,250,000	1	$ 900,000
33	Bridge (100' X 80')	LS	--	0	$ -	1	$ 2,200,000	0	$ -
34	Bridge (200' X 80')	LS	--	0	$ -	0	$ -	0	$ -
35	Street Lighting System	LS	--	1	$ 1,100,000	1	$ 1,250,000	1	$ 500,000
36	Permanent Pavement Marking and Signing	LS	--	1	$ 125,000	1	$ 175,000	1	$ 75,000
37	Traffic Control	LS	--	1	$ 100,000	1	$ 100,000	1	$ 75,000
38	Roundabout	EA	$ 150,000.00	2	$ 300,000	1	$ 150,000	0	$ -
39	Traffic Signal Installation	EA	$ 500,000.00	1	$ 500,000	2	$ 1,000,000	1	$ 500,000
40	Traffic Signal Modification	EA	$ 150,000.00	0	$ -	0	$ -	1	$ 150,000
41	Sodding	SY	$ 8.00	110,000	$ 880,000	120,000	$ 960,000	25,000	$ 200,000
42	Seeding	AC	$ 3,500.00	45	$ 157,500	50	$ 175,000	10	$ 35,000
43	Stone Riprap	SY	$ 150.00	150	$ 22,500	400	$ 60,000	150	$ 22,500
44	Erosion and Sediment Control	LS	--	1	$ 150,000	1	$ 200,000	1	$ 100,000
45	Contractor Furnished Staking	LS	--	1	$ 75,000	1	$ 75,000	1	$ 50,000
	Subtotal				$ 20,272,015		$ 31,936,964		$ 11,189,668
	Contingency (20%)				$ 4,054,403		$ 6,387,393		$ 2,237,934
	Total Construction Cost				**$ 24,326,418**		**$ 38,324,357**		**$ 13,427,602**

Summary of Estimated Construction Costs - Longview Boulevard (Longview Road to Scherer Parkway)					
Item No.	**Item Description**	**Unit**	**Unit Price**	**Estimated Quantity**	**Total**
1	Mobilization	LS	$ 500,000.00	1	$ 500,000
2	Demolition and Removals	LS	$ 200,000.00	1	$ 200,000
3	Clearing and Grubbing	AC	$ 5,000.00	15	$ 75,000
4	Unclassified Excavation	CY	$ 15.00	64,845	$ 972,675
5	Embankment	CY	$ 5.00	13,338	$ 66,690
6	Contractor Furnished Borrow	CY	$ 20.00	0	$ -
7	Subgrade Geogrid	SY	$ 2.00	32,401	$ 64,802
8	Subgrade Compaction (12")(95% MRO+3)	SY	$ 3.00	32,401	$ 97,203
9	Aggregate Base (4") (MoDOT Type 5)	SY	$ 10.00	9,170	$ 91,700
10	Aggregate Base (6") (MoDOT Type 5)	SY	$ 12.00	32,401	$ 388,812
11	Portland Cement Conc. Pvmt. (9") (KCMMB 4K)	SY	$ 70.00	26,433	$ 1,850,310
12	Portland Cement Conc. Pvmt. (4") (KCMMB 4K) (Sidewalk)	SY	$ 55.00	2,776	$ 152,680
13	Portland Cement Conc. Pvmt. (6") (KCMMB 4K) (Shared Use Path)	SY	$ 65.00	6,394	$ 415,610
14	ADA Ramps (All Types)	EA	$ 3,000.00	27	$ 81,000
15	Concrete Curb and Gutter (TYPE CG-1)	LF	$ 30.00	21,207	$ 636,210
16	Reinforced Concrete Pipe w/ End Sections (18")	EA	$ 18,500.00	0	$ -
17	Reinforced Concrete Pipe w/ End Sections (24")	EA	$ 21,750.00	0	$ -
18	Reinforced Concrete Pipe w/ End Sections (30")	EA	$ 24,500.00	0	$ -
19	Reinforced Concrete Pipe w/ End Sections (36")	EA	$ 26,500.00	0	$ -
20	Reinforced Concrete Pipe w/ End Sections (42")	EA	$ 32,750.00	1	$ 32,750
21	Reinforced Concrete Pipe w/ End Sections (48")	EA	$ 37,000.00	0	$ -
22	Reinforced Concrete Pipe w/ End Sections (60")	EA	$ 53,000.00	0	$ -
23	Reinforced Concrete Box (5' X 3')	EA	$ 135,000.00	0	$ -
24	Reinforced Concrete Box (6' X 3')	EA	$ 144,000.00	0	$ -
25	Reinforced Concrete Box (7' X 3')	EA	$ 153,000.00	0	$ -
26	Reinforced Concrete Box (10' X 4')	EA	$ 270,000.00	0	$ -
27	Reinforced Concrete Box (2 - 4' X 3')	EA	$ 252,000.00	0	$ -
28	Reinforced Concrete Box (2 - 5' X 3')	EA	$ 270,000.00	0	$ -
29	Reinforced Concrete Box (2 - 8' X 5')	EA	$ 450,000.00	1	$ 450,000
30	Reinforced Concrete Box (2 - 9' X 5')	EA	$ 486,000.00	0	$ -
31	Reinforced Concrete Box (2 - 10' X 4')	EA	$ 540,000.00	0	$ -
32	Storm Sewer System	LS	$ 750,000.00	1	$ 750,000
33	Bridge (100' X 80')	LS	$ 2,200,000.00	0	$ -
34	Bridge (200' X 80')	LS	$ 4,400,000.00	0	$ -
35	Street Lighting System	LS	$ 500,000.00	1	$ 500,000
36	Permanent Pavement Marking and Signing	LS	$ 100,000.00	1	$ 75,000
37	Traffic Control	LS	$ 75,000.00	1	$ 75,000
38	Roundabout	EA	$ 150,000.00	1	$ 150,000
39	Traffic Signal Installation	EA	$ 500,000.00	0	$ -
40	Traffic Signal Modification	EA	$ 150,000.00	0	$ -
41	Sodding	SY	$ 8.00	30,000	$ 240,000
42	Seeding	AC	$ 3,500.00	15	$ 52,500
43	Stone Riprap	SY	$ 150.00	200	$ 30,000
44	Erosion and Sediment Control	LS	$ 75,000.00	1	$ 75,000
45	Contractor Furnished Staking	LS	$ 50,000.00	1	$ 50,000
	Subtotal				$ 8,072,942
	Contingency (20%)				$ 1,614,588
	Total Construction Cost				**$ 9,687,530**

Summary of Estimated Construction Costs - Longview Boulevard (Scherer Parkway to Hook Road)					
Item No.	**Item Description**	**Units**	**Unit Price**	**Estimated Quantity**	**Total**
1	Mobilization	LS	$ 1,000,000.00	1	$ 1,000,000
2	Demolition and Removals	LS	$ 400,000.00	1	$ 400,000
3	Clearing and Grubbing	AC	$ 5,000.00	20	$ 100,000
4	Unclassified Excavation	CY	$ 15.00	111,563	$ 1,673,445
5	Embankment	CY	$ 5.00	35,884	$ 179,420
6	Contractor Furnished Borrow	CY	$ 20.00	0	$ -
7	Subgrade Geogrid	SY	$ 2.00	53,557	$ 107,114
8	Subgrade Compaction (12")(95% MRO+3)	SY	$ 3.00	53,557	$ 160,671
9	Aggregate Base (4") (MoDOT Type 5)	SY	$ 10.00	13,202	$ 132,020
10	Aggregate Base (6") (MoDOT Type 5)	SY	$ 12.00	53,557	$ 642,684
11	Portland Cement Conc. Pvmt. (9") (KCMMB 4K)	SY	$ 70.00	42,039	$ 2,942,730
12	Portland Cement Conc. Pvmt. (4") (KCMMB 4K) (Sidewalk)	SY	$ 55.00	6,825	$ 375,375
13	Portland Cement Conc. Pvmt. (6") (KCMMB 4K) (Shared Use Path)	SY	$ 65.00	9,100	$ 591,500
14	ADA Ramps (All Types)	EA	$ 3,000.00	16	$ 48,000
15	Concrete Curb and Gutter (TYPE CG-1)	LF	$ 30.00	34,556	$ 1,036,680
16	Reinforced Concrete Pipe w/ End Sections (18")	EA	$ 18,500.00	0	$ -
17	Reinforced Concrete Pipe w/ End Sections (24")	EA	$ 21,750.00	0	$ -
18	Reinforced Concrete Pipe w/ End Sections (30")	EA	$ 24,500.00	2	$ 49,000
19	Reinforced Concrete Pipe w/ End Sections (36")	EA	$ 26,500.00	0	$ -
20	Reinforced Concrete Pipe w/ End Sections (42")	EA	$ 32,750.00	0	$ -
21	Reinforced Concrete Pipe w/ End Sections (48")	EA	$ 37,000.00	1	$ 37,000
22	Reinforced Concrete Pipe w/ End Sections (60")	EA	$ 53,000.00	0	$ -
23	Reinforced Concrete Box (5' X 3')	EA	$ 135,000.00	0	$ -
24	Reinforced Concrete Box (6' X 3')	EA	$ 144,000.00	0	$ -
25	Reinforced Concrete Box (7' X 3')	EA	$ 153,000.00	0	$ -
26	Reinforced Concrete Box (10' X 4')	EA	$ 270,000.00	0	$ -
27	Reinforced Concrete Box (2 - 4' X 3')	EA	$ 252,000.00	0	$ -
28	Reinforced Concrete Box (2 - 5' X 3')	EA	$ 270,000.00	0	$ -
29	Reinforced Concrete Box (2 - 8' X 5')	EA	$ 450,000.00	0	$ -
30	Reinforced Concrete Box (2 - 9' X 5')	EA	$ 486,000.00	0	$ -
31	Reinforced Concrete Box (2 - 10' X 4')	EA	$ 540,000.00	0	$ -
32	Storm Sewer System	LS	$ 1,600,000.00	1	$ 1,600,000
33	Bridge (100' X 80')	LS	$ 2,200,000.00	0	$ -
34	Bridge (200' X 80')	LS	$ 4,400,000.00	1	$ 4,400,000
35	Street Lighting System	LS	$ 750,000.00	1	$ 750,000
36	Permanent Pavement Marking and Signing	LS	$ 200,000.00	1	$ 100,000
37	Traffic Control	LS	$ 100,000.00	1	$ 100,000
38	Roundabout	EA	$ 150,000.00	1	$ 150,000
39	Traffic Signal Installation	EA	$ 500,000.00	0	$ -
40	Traffic Signal Modification	EA	$ 150,000.00	0	$ -
41	Sodding	SY	$ 8.00	45,000	$ 360,000
42	Seeding	AC	$ 3,500.00	20	$ 70,000
43	Stone Riprap	SY	$ 150.00	100	$ 15,000
44	Erosion and Sediment Control	LS	$ 150,000.00	1	$ 125,000
45	Contractor Furnished Staking	LS	$ 75,000.00	1	$ 75,000
	Subtotal				$ 17,220,639
	Contingency (20%)				$ 3,444,128
	Total Construction Cost				**$ 20,664,767**

Appendix D
Flood Insurance Rate Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Missouri State Plane West Zone (FIPS zone 2403). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from the U.S.D.A Farm Service National Agriculture ImageryProgram (NAIP) dated 2014. Produced at scale of 1:24,000.

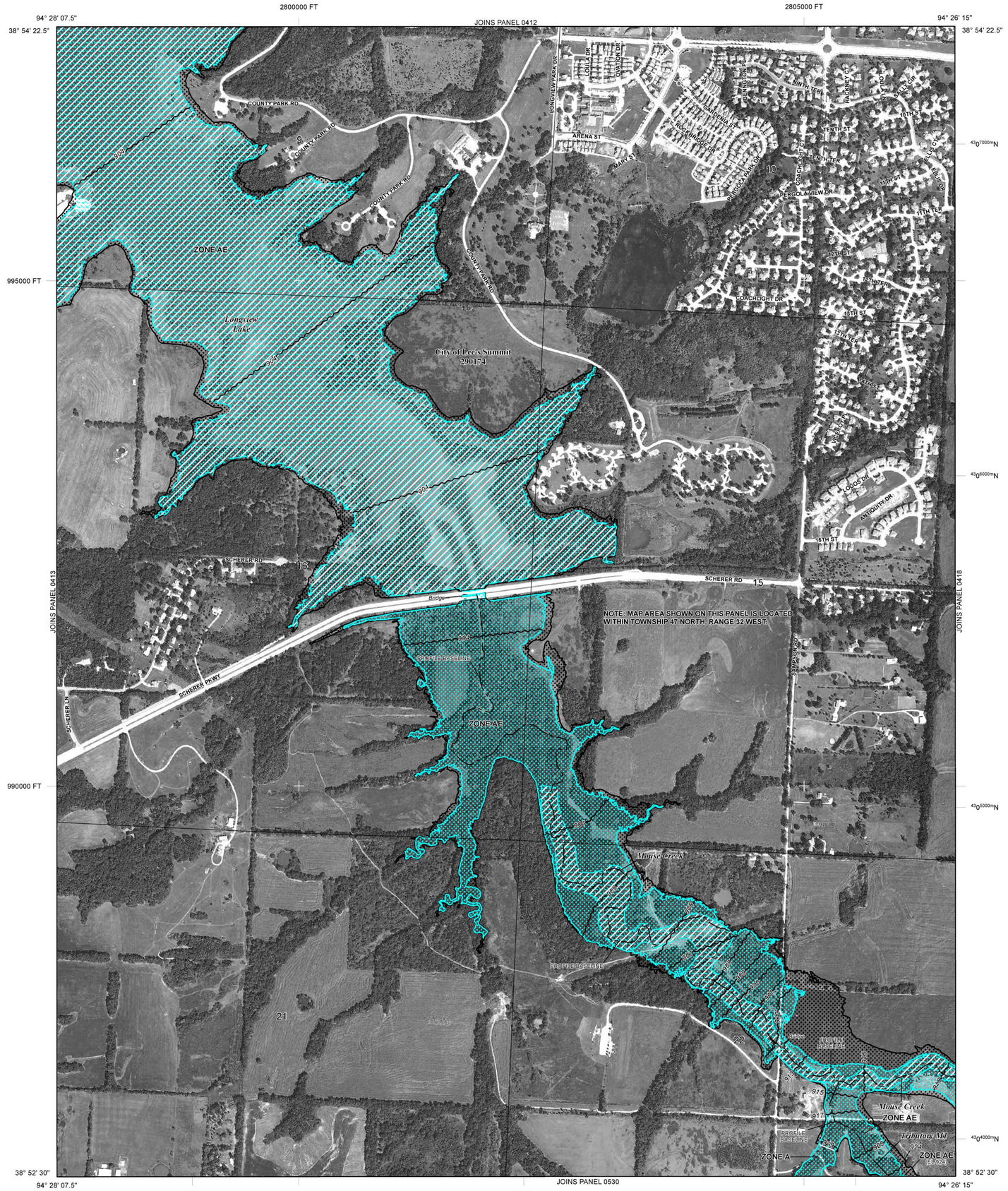
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.



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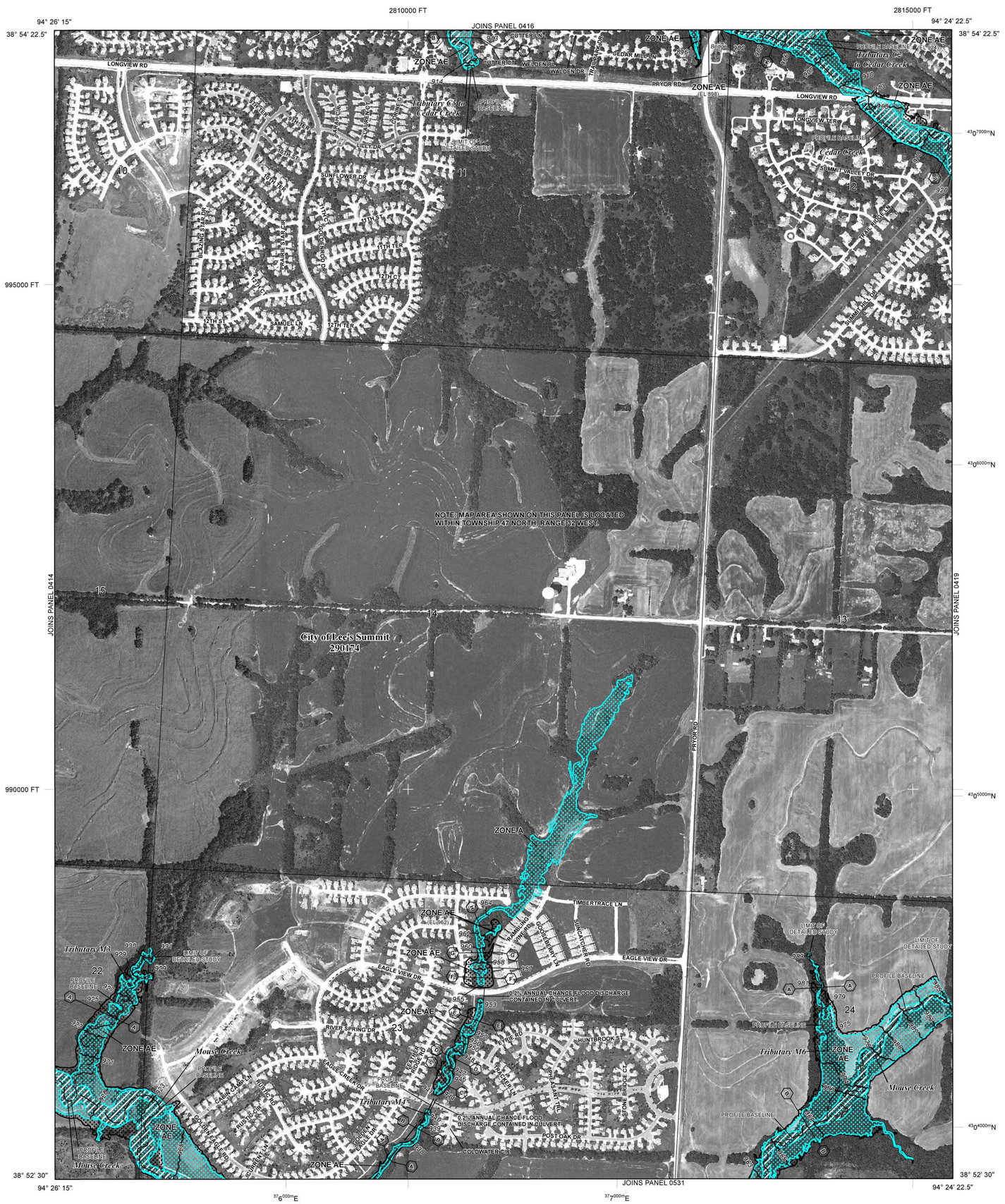
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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A A	Cross section line
23 23	Transect line
	Culvert
	Bridge
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Missouri State Plane West Zone (FIPS Zone 2403), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 29, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 20, 2017 - to change Special Flood Hazard Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0418G

FIRM

FLOOD INSURANCE RATE MAP

JACKSON COUNTY, MISSOURI
AND INCORPORATED AREAS

PANEL 418 OF 625
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEE'S SUMMIT, CITY OF	290174	0418	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
29095C0418G
MAP REVISED
JANUARY 20, 2017

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Missouri State Plane West Zone (FIPS zone 2403). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from the U.S.D.A Farm Service National Agriculture ImageryProgram (NAIP) dated 2014. Produced at scale of 1:24,000.

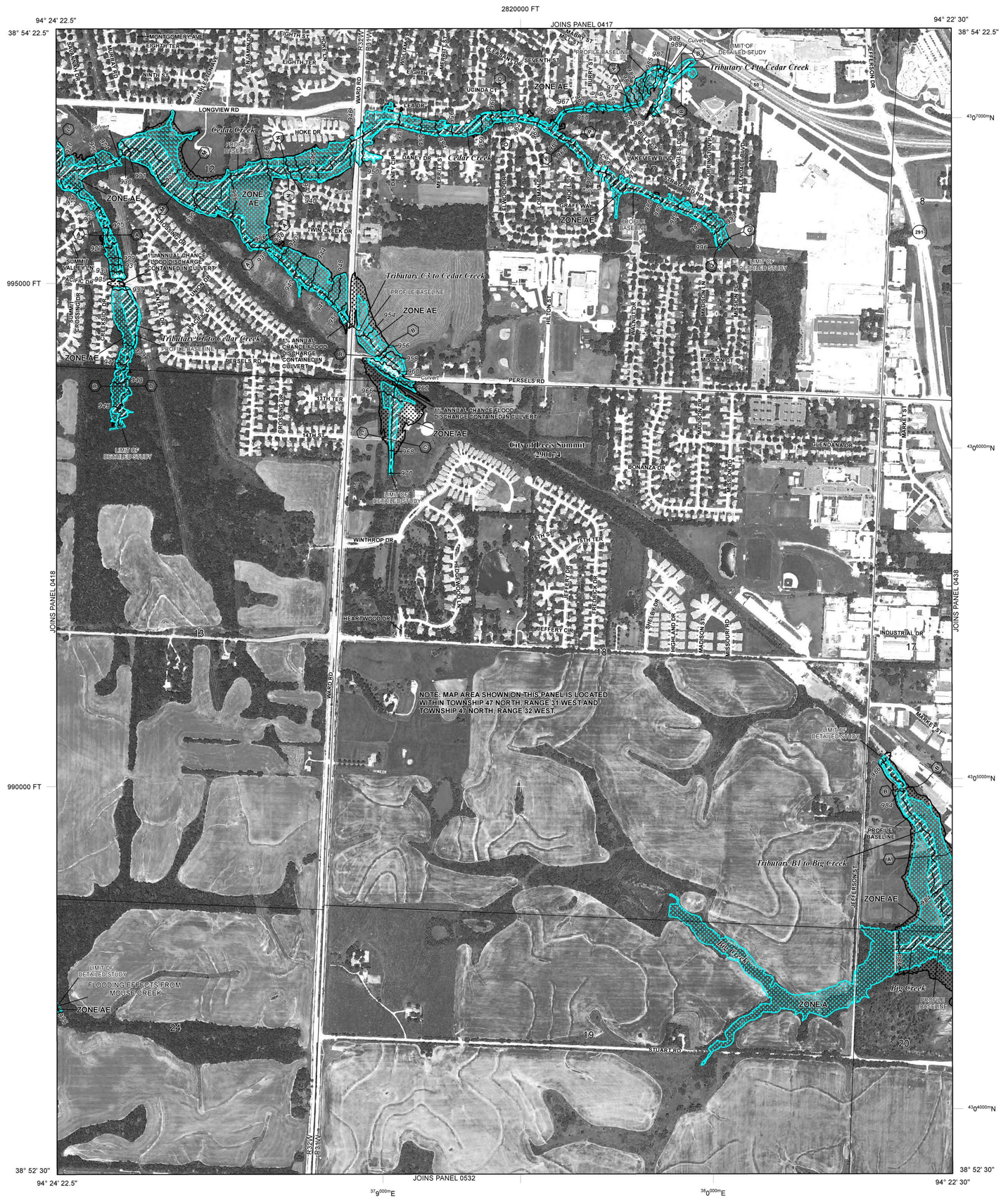
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A A	Cross section line
23 23	Transect line
	Culvert
	Bridge
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Missouri State Plane West Zone (FIPS Zone 2403), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 29, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 20, 2017 - to change Special Flood Hazard Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0419G

FIRM

FLOOD INSURANCE RATE MAP

JACKSON COUNTY, MISSOURI AND INCORPORATED AREAS

PANEL 419 OF 625
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEE'S SUMMIT, CITY OF	290174	0419	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
29095C0419G
MAP REVISED
JANUARY 20, 2017

Federal Emergency Management Agency

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Missouri State Plane West Zone (FIPS zone 2403). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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1315 East-West Highway
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(301) 713-3242

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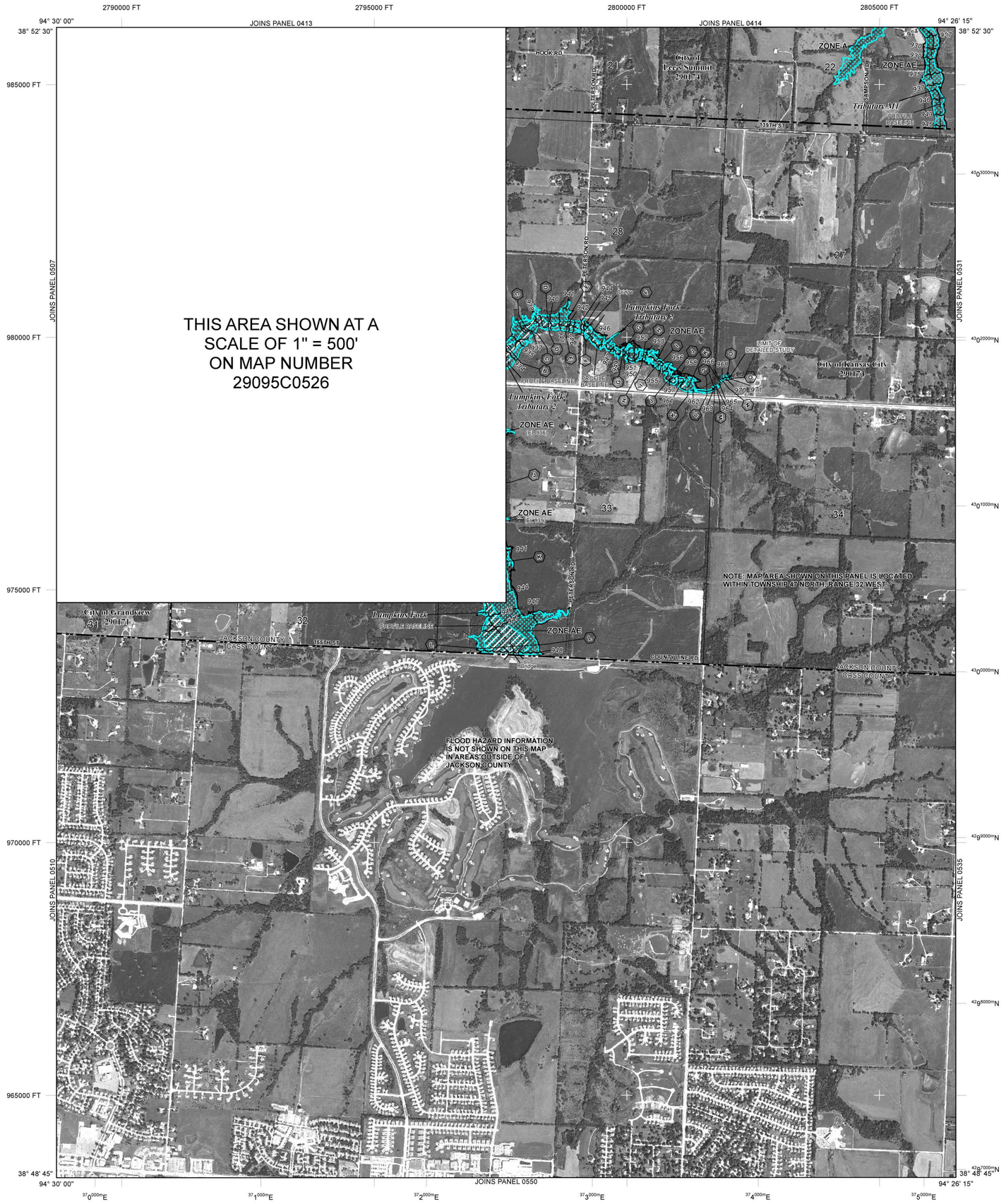
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
	Culvert
	Bridge
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Missouri State Plane West Zone (FIPS Zone 2403), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 29, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 20, 2017 - to change Special Flood Hazard Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0530G

FIRM

FLOOD INSURANCE RATE MAP

JACKSON COUNTY, MISSOURI AND INCORPORATED AREAS

PANEL 530 OF 625
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GRANDVIEW, CITY OF	290171	0530	G
KANSAS CITY, CITY OF	290173	0530	G
LEE'S SUMMIT, CITY OF	290174	0530	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
29095C0530G
MAP REVISED
JANUARY 20, 2017

Federal Emergency Management Agency

NOTES TO USERS

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

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1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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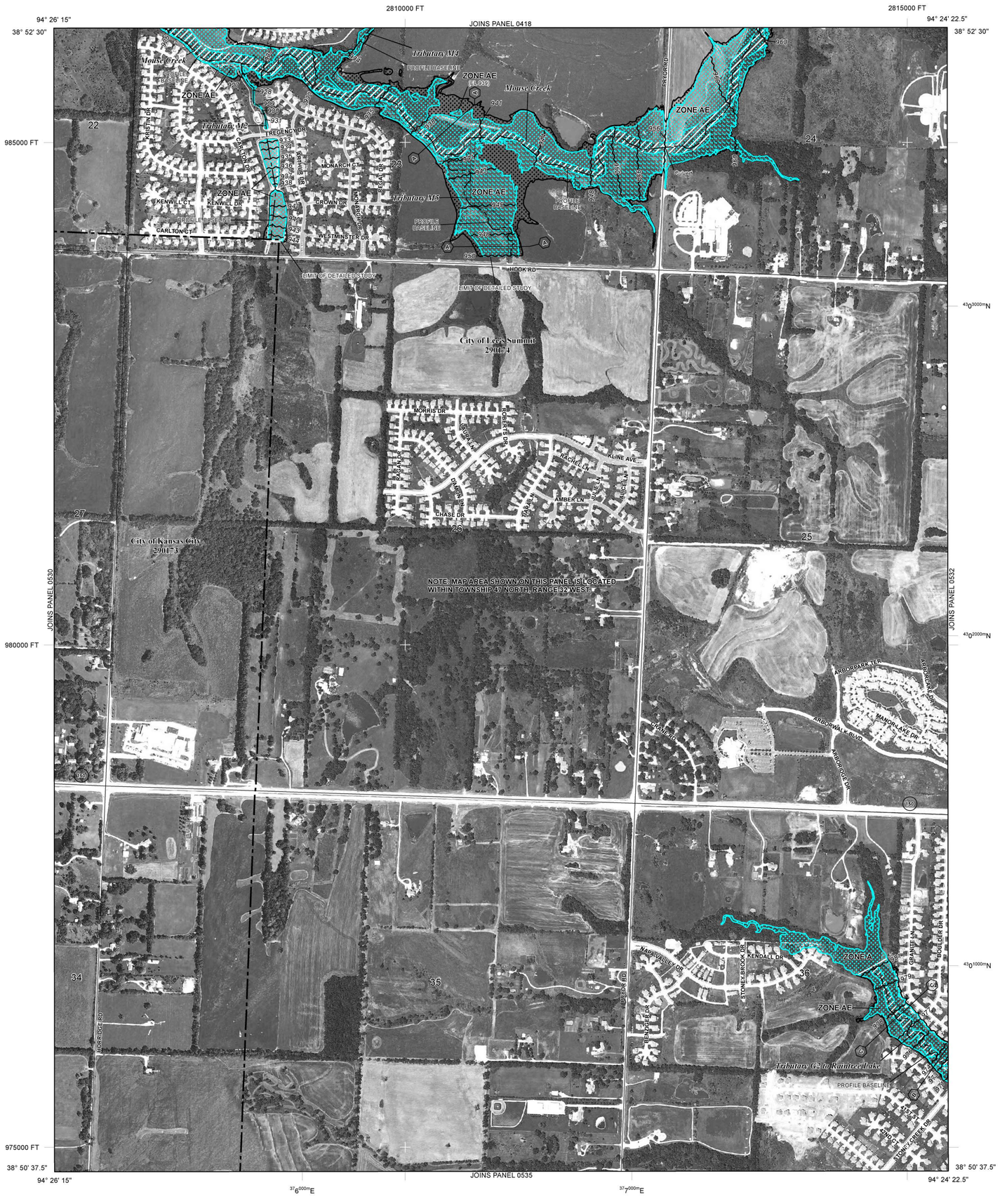
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LEGEND

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ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
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ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
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COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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	1% Annual Chance Floodplain Boundary
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*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
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	Culvert
	Bridge
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DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 29, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 20, 2017 - to change Special Flood Hazard Areas.

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MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0531G

FIRM

FLOOD INSURANCE RATE MAP

JACKSON COUNTY, MISSOURI AND INCORPORATED AREAS

PANEL 531 OF 625
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
KANSAS CITY, CITY OF	290173	0531	G
LEE'S SUMMIT, CITY OF	290174	0531	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
29095C0531G
MAP REVISED
JANUARY 20, 2017

Federal Emergency Management Agency

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To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from the U.S.D.A Farm Service National Agriculture ImageryProgram (NAIP) dated 2014. Produced at scale of 1:24,000.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
	Culvert
	Bridge
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Missouri State Plane West Zone (FIPS Zone 2403), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 29, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 20, 2017 - to change Special Flood Hazard Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Proogram at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0532G

FIRM

FLOOD INSURANCE RATE MAP

JACKSON COUNTY, MISSOURI
AND INCORPORATED AREAS

PANEL 532 OF 625
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEE'S SUMMIT, CITY OF	290174	0532	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
29095C0532G
MAP REVISED
JANUARY 20, 2017

Federal Emergency Management Agency

Appendix E
HCS Analysis

Existing Conditions

HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2025
Jurisdiction	Lee'e Summit	Time Analyzed	Existing
Project Description	West of Sampson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1929
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.41828	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.46259	PF Power Coefficient (p)	0.66375
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1929	-	-	34.4

Vehicle Results

Average Speed, mi/h	34.4	Percent Followers, %	33.4
Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	12	0.01	1.4	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2025
Jurisdiction	Lee'e Summit	Time Analyzed	Existing
Project Description	Sampson to Longview	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1417
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	113	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.40939	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.49052	PF Power Coefficient (p)	0.65654
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1417	-	-	34.6

Vehicle Results

Average Speed, mi/h	34.6	Percent Followers, %	30.0
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	7	0.00	1.0	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2025
Jurisdiction	Lee'e Summit	Time Analyzed	Existing
Project Description	Longview to Pryor	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	6635
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	113	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.47143	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38336	PF Power Coefficient (p)	0.67240
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6635	-	-	34.6

Vehicle Results

Average Speed, mi/h	34.6	Percent Followers, %	27.3
Segment Travel Time, minutes	2.18	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	33	0.01	0.9	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2025
Jurisdiction	Lee'e Summit	Time Analyzed	Existing
Project Description	Pryor to Ward	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5270
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	113	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.45888	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38953	PF Power Coefficient (p)	0.67607
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5270	-	-	34.6

Vehicle Results

Average Speed, mi/h	34.6	Percent Followers, %	27.3
Segment Travel Time, minutes	1.73	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	26	0.01	0.9	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2025
Jurisdiction	Lee'e Summit	Time Analyzed	Existing
Project Description	Ward to Jefferson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5343
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	8.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.35119	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38156	PF Power Coefficient (p)	0.66644
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5343	-	-	32.7

Vehicle Results

Average Speed, mi/h	32.7	Percent Followers, %	27.2
Segment Travel Time, minutes	1.86	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	26	0.01	0.9	A

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Future No Build

HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee'e Summit	Time Analyzed	2055 No Build
Project Description	West of Sampson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1929
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	377	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.41828	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.46259	PF Power Coefficient (p)	0.66375
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1929	-	-	33.6

Vehicle Results

Average Speed, mi/h	33.6	Percent Followers, %	53.5
Segment Travel Time, minutes	0.65	Follower Density (FD), followers/mi/ln	6.0
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	32	0.04	6.0	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee'e Summit	Time Analyzed	2055 No Build
Project Description	Sampson to Longview	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1417
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	339	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.40939	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.49052	PF Power Coefficient (p)	0.65654
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1417	-	-	33.7

Vehicle Results

Average Speed, mi/h	33.7	Percent Followers, %	51.9
Segment Travel Time, minutes	0.48	Follower Density (FD), followers/mi/ln	5.2
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	21	0.02	5.2	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee'e Summit	Time Analyzed	2055 No Build
Project Description	Longview to Pryor	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	6635
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	382	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.47143	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38336	PF Power Coefficient (p)	0.67240
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6635	-	-	33.6

Vehicle Results

Average Speed, mi/h	33.6	Percent Followers, %	51.5
Segment Travel Time, minutes	2.25	Follower Density (FD), followers/mi/ln	5.9
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	110	0.14	5.9	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee'e Summit	Time Analyzed	2055 No Build
Project Description	Pryor to Ward	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5270
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	437	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.0
Speed Slope Coefficient (m)	2.45888	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38953	PF Power Coefficient (p)	0.67607
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5270	-	-	33.5

Vehicle Results

Average Speed, mi/h	33.5	Percent Followers, %	54.8
Segment Travel Time, minutes	1.79	Follower Density (FD), followers/mi/ln	7.2
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	100	0.13	7.2	C

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee'e Summit	Time Analyzed	2055 No Build
Project Description	Ward to Jefferson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5343
Lane Width, ft	11	Shoulder Width, ft	0
Speed Limit, mi/h	35	Access Point Density, pts/mi	8.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	428	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.35119	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38156	PF Power Coefficient (p)	0.66644
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5343	-	-	31.6

Vehicle Results

Average Speed, mi/h	31.6	Percent Followers, %	54.4
Segment Travel Time, minutes	1.92	Follower Density (FD), followers/mi/ln	7.4
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	100	0.14	7.4	C

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Future Alternative 1

HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	West of Sampson	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	363	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	205
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	363	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	205
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Sampson to Longview	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	322	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	182
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	322	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	182
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Longview to Golden Rod	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	360	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	204
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	360	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	204
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Golden Rod to Pryor	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	356	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	201
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	356	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	201
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Pryor to Scherer	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	409	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	231
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	222	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.41
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	409	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	231
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	222	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.41
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Scherer Rd to Ward	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	271	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	153
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	271	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	153
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Ward to Stuart	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	216	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	122
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	216	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	122
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Stuart to Hook	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	169	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	96
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.05

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	169	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	96
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.05

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Hook to 291	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	454	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	256
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	454	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	256
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	East of 291	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	332	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	188
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data			
Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity			
Volume (V) veh/h	332	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	188
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmuller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	West of Ward	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	2425
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	365	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.2
Speed Slope Coefficient (m)	2.65648	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.44266	PF Power Coefficient (p)	0.68904
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2425	-	-	37.7

Vehicle Results

Average Speed, mi/h	37.7	Percent Followers, %	51.4
Segment Travel Time, minutes	0.73	Follower Density (FD), followers/mi/ln	5.0
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	B

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	39	0.04	5.0	B

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmuller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 1
Project Description	Ward to Jefferson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	5358
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	8.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	343	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.23

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	37.2
Speed Slope Coefficient (m)	2.88680	Speed Power Coefficient (p)	1.08832
PF Slope Coefficient (m)	-1.26142	PF Power Coefficient (p)	0.79013
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5358	-	-	36.6

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	215	128
Percentage of Heavy Vehicles (HV%), %	0.80	4.01
Initial Average Speed (Sint), mi/h	37.0	37.1
Average Speed at Midpoint (SPLmid), mi/h	38.5	35.6
Percent Followers at Midpoint (PFPLmid), %	31.4	21.6

Vehicle Results

Average Speed, mi/h	36.6	Percent Followers, %	41.9
Segment Travel Time, minutes	1.66	Follower Density (FD), followers/mi/ln	3.9
Follower Density Mid-Point, followers/mi/ln	1.3	Vehicle LOS	A

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	80	0.04	1.3	A

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Future Alternative 2

HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	West of Sampson	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	387	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	218
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	210	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.38
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	387	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	218
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	210	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.38
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Sampson to Longview	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	348	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	196
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	189	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.33
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

Direction 2 Geometric Data			
Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity			
Volume (V) veh/h	348	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	196
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}), veh/h	189	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.33
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Longview to Golden Rod	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	380	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	214
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	207	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.37
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

Direction 2 Geometric Data			
Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity			
Volume (V) veh/h	380	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	214
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}), veh/h	207	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.37
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Golden Rod to Scherer	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	447	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	252
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	243	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.45
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	447	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	252
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	243	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.45
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Scherer to Pryor	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	203	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	114
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.06

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	203	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	114
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.06

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Pryor to Ward	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	282	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	160
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	282	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	160
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Ward to Stuart	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	233	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	132
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	233	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	132
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Stuart to Hook	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	216	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	122
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	216	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	122
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Hook to 291	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	504	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	284
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	504	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	284
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	East of 291	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	333	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	188
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	333	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	188
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	West of Pryor	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1530
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	228	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.2
Speed Slope Coefficient (m)	2.65648	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.44266	PF Power Coefficient (p)	0.68904
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1530	-	-	38.1

Vehicle Results

Average Speed, mi/h	38.1	Percent Followers, %	40.6
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	2.4
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	A

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	114	Bicycle Effective Width, ft	23
Bicycle LOS Score	2.08	Bicycle Effective Speed Factor	3.84
Bicycle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS

1	15	0.01	2.4	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Pryor to Ward	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	5218
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	238	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.2
Speed Slope Coefficient (m)	3.06793	Speed Power Coefficient (p)	1.06763
PF Slope Coefficient (m)	-1.27183	PF Power Coefficient (p)	0.79454
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5218	-	-	38.9

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	154	84
Percentage of Heavy Vehicles (HV%), %	0.80	4.19
Initial Average Speed (Sint), mi/h	39.1	39.2
Average Speed at Midpoint (SPLmid), mi/h	40.6	37.7
Percent Followers at Midpoint (PFPLmid), %	25.1	16.0

Vehicle Results

Average Speed, mi/h	38.9	Percent Followers, %	33.4
Segment Travel Time, minutes	1.53	Follower Density (FD), followers/mi/ln	2.0
Follower Density Mid-Point, followers/mi/ln	0.7	Vehicle LOS	A

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	119	Bicycle Effective Width, ft	23
Bicycle LOS Score	2.10	Bicycle Effective Speed Factor	3.84
Bicycle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	54	0.01	0.7	A

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 2
Project Description	Ward to Jefferson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	5317
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	8.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	324	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	37.2
Speed Slope Coefficient (m)	2.88473	Speed Power Coefficient (p)	1.08552
PF Slope Coefficient (m)	-1.26327	PF Power Coefficient (p)	0.78959
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5317	-	-	36.7

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	204	120
Percentage of Heavy Vehicles (HV%), %	0.80	4.04
Initial Average Speed (Sint), mi/h	37.0	37.1
Average Speed at Midpoint (SPLmid), mi/h	38.5	35.6
Percent Followers at Midpoint (PFPLmid), %	30.4	20.7

Vehicle Results

Average Speed, mi/h	36.7	Percent Followers, %	40.5
Segment Travel Time, minutes	1.65	Follower Density (FD), followers/mi/ln	3.6
Follower Density Mid-Point, followers/mi/ln	1.2	Vehicle LOS	A

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	162	Bicycle Effective Width, ft	23
Bicycle LOS Score	2.26	Bicycle Effective Speed Factor	3.84
Bicycle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	75	0.03	1.2	A

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Future Alternative 3

HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	West of Sampson	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	365	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	206
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	365	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	206
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Sampson to Longview	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	322	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	182
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	322	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	182
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Longview to Golden Rod	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	361	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	204
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	361	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	204
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Golden Rod to Pryor	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	357	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	202
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data			
Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity			
Volume (V) veh/h	357	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	202
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Pryor to Scherer	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	493	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	278
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	493	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	278
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Scherer to Ward	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	248	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	140
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	248	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	140
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Ward to Hook	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	309	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	174
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	43.1	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	309	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	174
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Hook to 291	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	596	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	336
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	8.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	596	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	336
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	8.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

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HCS Multilane Highway Report

Project Information

Analyst		Date	3/31/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	East of 291	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	East		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	329	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	186
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	West		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Grade Length, mi	-
Lane Width, ft	11	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	42.9	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	329	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	186
Total Trucks, %	2.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1784
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	1.9	Average Speed (S), mi/h	40.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	West of Ward	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	2563
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	266	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.2
Speed Slope Coefficient (m)	2.65648	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.44266	PF Power Coefficient (p)	0.68904
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2563	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	44.0
Segment Travel Time, minutes	0.77	Follower Density (FD), followers/mi/ln	3.1
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	B

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	30	0.03	3.1	B

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HCS Two-Lane Highway Report

Project Information

Analyst		Date	4/1/2025
Agency	Lochmueller Group	Analysis Year	2055
Jurisdiction	Lee's Summit	Time Analyzed	Alt 3
Project Description	Ward to Jefferson	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	5336
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	8.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	373	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	37.2
Speed Slope Coefficient (m)	2.88569	Speed Power Coefficient (p)	1.08682
PF Slope Coefficient (m)	-1.26241	PF Power Coefficient (p)	0.78984
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5336	-	-	36.5

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	232	141
Percentage of Heavy Vehicles (HV%), %	0.80	3.98
Initial Average Speed (Sint), mi/h	37.0	37.1
Average Speed at Midpoint (SPLmid), mi/h	38.5	35.6
Percent Followers at Midpoint (PFPLmid), %	33.0	23.1

Vehicle Results

Average Speed, mi/h	36.5	Percent Followers, %	44.0
Segment Travel Time, minutes	1.66	Follower Density (FD), followers/mi/ln	4.5
Follower Density Mid-Point, followers/mi/ln	1.5	Vehicle LOS	A

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	87	0.04	1.5	A

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Appendix F
Public Meeting Materials

LEE'S SUMMIT
MISSOURI

March 3, 2025

Addressee
Street Address
City, State, ZIP

Dear Addressee,

The Lee's Summit Public Works Department is excited to announce an upcoming opportunity to learn more about the Alignment Study of Scherer Road/Parkway and Longview Boulevard at a public meeting from 5-7 p.m. on Wednesday, March 19, at Hawthorn Hill Elementary, 2801 SW Pryor Rd, Lee's Summit, Mo. 64082 in Room A138 (Media Center).

The Alignment Study will establish a preferred alignment for: Scherer Road/Parkway between Sampson Road and M291 Hwy; Scherer Parkway between Scherer Road/Parkway and the Future Hook Interchange at M291 Hwy; and Longview Boulevard between Longview Road and Hook Road. The alignment study is the first step in the Scherer Road – 291 Highway to Sampson Road project, which will be accomplished in two phases, and the Longview Boulevard from Longview Road to Scherer Road project. Please refer to the exhibit attached to this letter for a visual representation of the alignments being considered.

The meeting will be an open-house format and will be attended by City staff and the Alignment Study's design engineer, Lochmueller Inc. Conceptual exhibits will be available for public inspection at the meeting. This meeting is an opportunity to ask questions, provide feedback, and gain insights into the timeline, scope, and impact on the community. We look forward to meeting with you and addressing any questions or concerns you may have.

There will be no formal presentation during the meeting, allowing you the flexibility to drop by at any time that suits your schedule. In conjunction with the in-person public meeting, updated information about the project will be available on the City's website here: cityofls.net/Scherer. Anyone who cannot attend the meeting can review the same exhibits available at the in-person public meeting on the website.

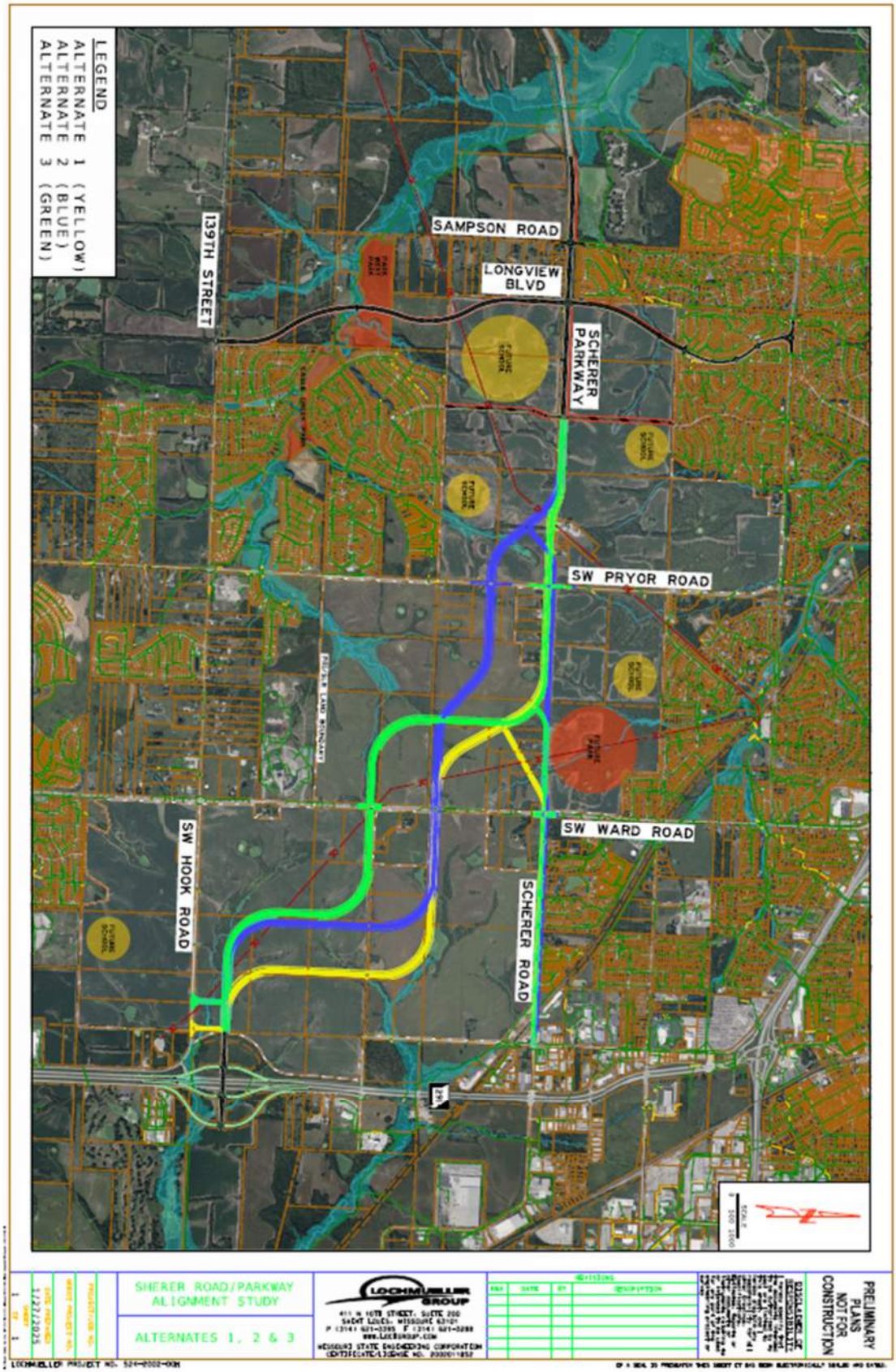
If you have any questions before the meeting, please contact John Persing, Staff Engineer at 816.969.1800 or john.persing@cityofls.net.

Thank you for your continued interest and support. We hope to see you there!

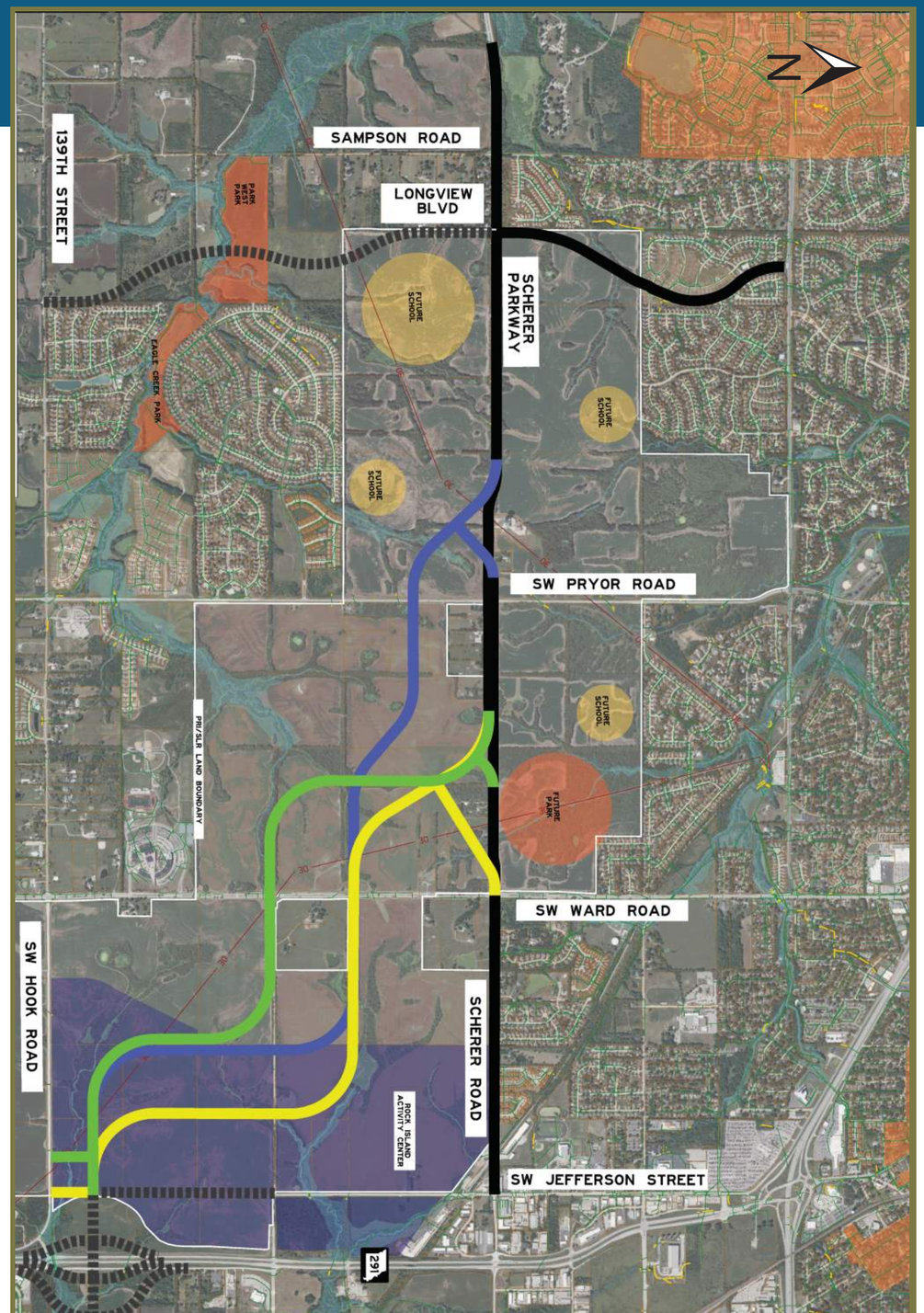
Sincerely,

John Persing

John Persing
Staff Engineer, Lee's Summit Public Works Department


LEGEND
ALTERNATE 1 (YELLOW)
ALTERNATE 2 (BLUE)
ALTERNATE 3 (GREEN)
139TH STREET
SAMPSON ROAD
LONGVIEW BLVD
SCHERER PARKWAY
SW PRYOR ROAD
SW WARD ROAD
SW HOOK ROAD
SCHERER ROAD
FUTURE SCHOOL
FUTURE PARK
PUBLIC LAND BOUNDARY
SCALE: 1" = 500'
SHERER ROAD/PARKWAY ALIGNMENT STUDY
ALTERNATES 1, 2 & 3
LOCHMUELLER GROUP
PRELIMINARY PLANS NOT FOR CONSTRUCTION

SCHERER ROAD ALIGNMENT STUDY



PROJECT OVERVIEW

The Scherer Road Alignment Study is a precursor to the Scherer Road Reconstruction projects outlined in the current Capital Improvement Plan, funded by the voter-approved 2023 No Tax Increase Bond Issue and CIP Sales Tax. This alignment study will provide a comprehensive vision of the future arterial roadway system in the area to guide both private development and City Capital Improvement Projects.

The Scherer Road Reconstruction projects will be two separate projects upgrading the existing unimproved Scherer Road from Jefferson Street to Ward Road in the first phase, then from Ward Road to Sampson Road in the second phase. As land in this area is developed, a new arterial road will continue Scherer Parkway and connect the existing Scherer Parkway to a new interchange at M291 Highway and Hook Road. The alignment of this new arterial will be designated in the alignment study. Most of this new arterial will likely be constructed by developers as new development occurs between Scherer Road and the planned Hook Interchange at M291 Highway. Additionally, an alignment will be developed for Longview Boulevard from its existing southern terminus to Hook Road in this alignment study. The voter-approved No-Tax Increase Bond Issue also funds the Longview Boulevard extension and will likely be built with Scherer Road Reconstruction Phase 2 or around a similar schedule. All of these arterial roads are in the City's adopted Comprehensive Plan and related modal master plans.

PROJECT NEED

This project supports improved safety, operations, southwest Lee's Summit community growth, and livability. The project is identified in the Thoroughfare Master Plan, the Greenway Master Plan, and the Bicycle Transportation Plan, which are also in the adopted Comprehensive Plan for the City of Lee's Summit. Phase 1 of the Scherer Road Reconstruction project intersects the Rock Island Trail and supports a future trailhead. There are also future park plans along the corridor.

The Scherer Road Reconstruction project's later phase(s) will connect with Longview Lake. Increased land development, traffic demand and use by cyclists and pedestrians along this corridor is cause for its forthcoming capacity issues and impediment to further community growth. The existing unimproved road conditions, with narrow lanes, an absence of shoulders, no sidewalks or trails, limited intersection sight distance, and other safety concerns with a history of severe and fatal crashes, present a current need for improvement. The project will meet the commitment to voters who approved a No Tax Increase Bond Issue and CIP Sales Tax. It also supports the Ignite Strategic Plan and Comprehensive Plan adopted by the City Council.

PROJECT SCHEDULE

Alignment Study	Phase 1 (Jefferson Street to Ward Road)	Phase 2 (Ward Road to Sampson Road)
SPRING 2025	FALL 2027	FALL 2028

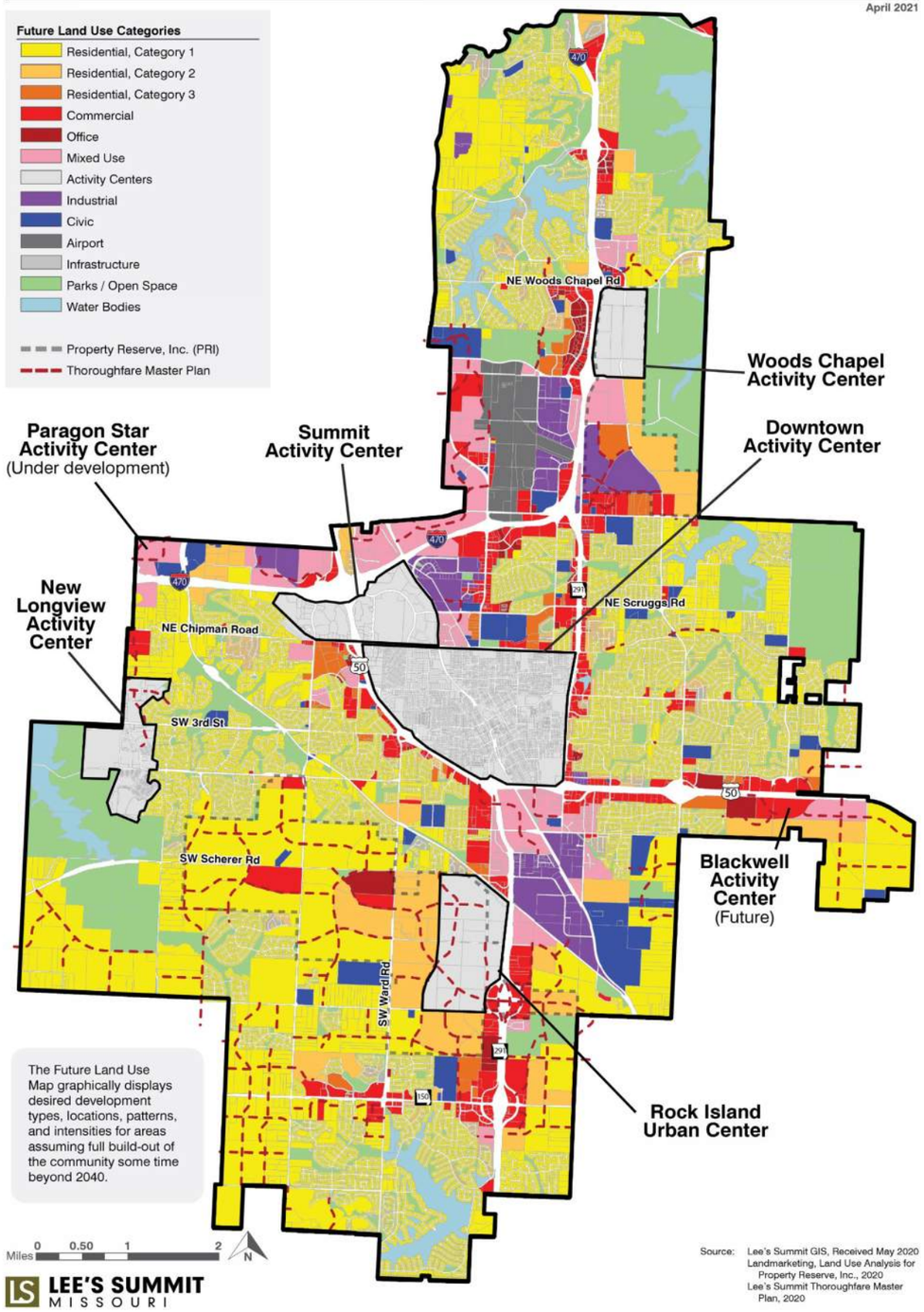
LOCHMUELLER GROUP

LS

Fuel Our Future
IGNITE
comprehensive plan

Future Land Use

April 2021



Scherer Road Alignment Study

Frequently Asked Questions

What is the purpose of this alignment study?

The purpose of this alignment study is to provide an efficient roadway system serving as an east/west connection that will accommodate existing and future growth in the area. It will also guide private development and City capital improvement projects.

What are the project limits?

Scherer Parkway will begin approximately 2100 feet west of Sampson Road and follow the existing roadway alignment east to a point between Pryor Road and Ward Road. It will then depart the existing Scherer Road alignment and traverse south-easterly through the PRI property and end at the future Route 291 and Hook Road Interchange.

How are the projects funded?

Scherer Road Reconstruction (Ward Road to Jefferson Street) is funded with a combination of CIP Sales Tax Renewal (2017), April 2023 NTIB (Transportation), and Water Construction (316) funds.

Scherer Road Reconstruction (Sampson Road to Ward Road) is funded with a combination of CIP Sales Tax Renewal (2017) and April 2023 NTIB (Transportation) funds.

Both Scherer Road Reconstruction projects are subject to change to include STP Federal Funds to supplement the City's funding.

The future Scherer Parkway extension, where it diverges from Scherer Road and traverses south easterly to the Hook Road Interchange, will be paid for and constructed by the developers as new subdivisions are planned and constructed.

Longview Parkway Widening and Construction (from Longview Road to Scherer Parkway) is funded by April 2023 NTIB (Transportation) funds.

What factors are considered in determining the preferred alignment?

While there are many factors that are considered in determining the preferred alignment the following are the most important – how to provide for safe and efficient infrastructure for all modes of travel in the area, community stakeholder input, Ignite! Comprehensive Plan and other adopted Master Plans, environmental impact, financial considerations, as well as existing and future infrastructure, utilities, and community needs.

What is the status of Route 291 and Hook Road Interchange?

The Route 291 and Hook Road Interchange is a future, unfunded need of the City and could be handled as a cost share project with MoDOT. As development occurs within this area, the need for this improvement increases. As there are no pending development projects at this time, the priority level of this improvement has not yet been identified.

Will property be purchased for this project?

It is anticipated that property will need to be purchased along Scherer Road for purposes of obtaining the necessary right-of-way. It is not yet known the extent of any necessary land acquisition, but the City will work with any and all affected property owners.

When will construction start?

Scherer Road Reconstruction (Ward Road to Jefferson Street) is anticipated to be constructed in 2027/2028.

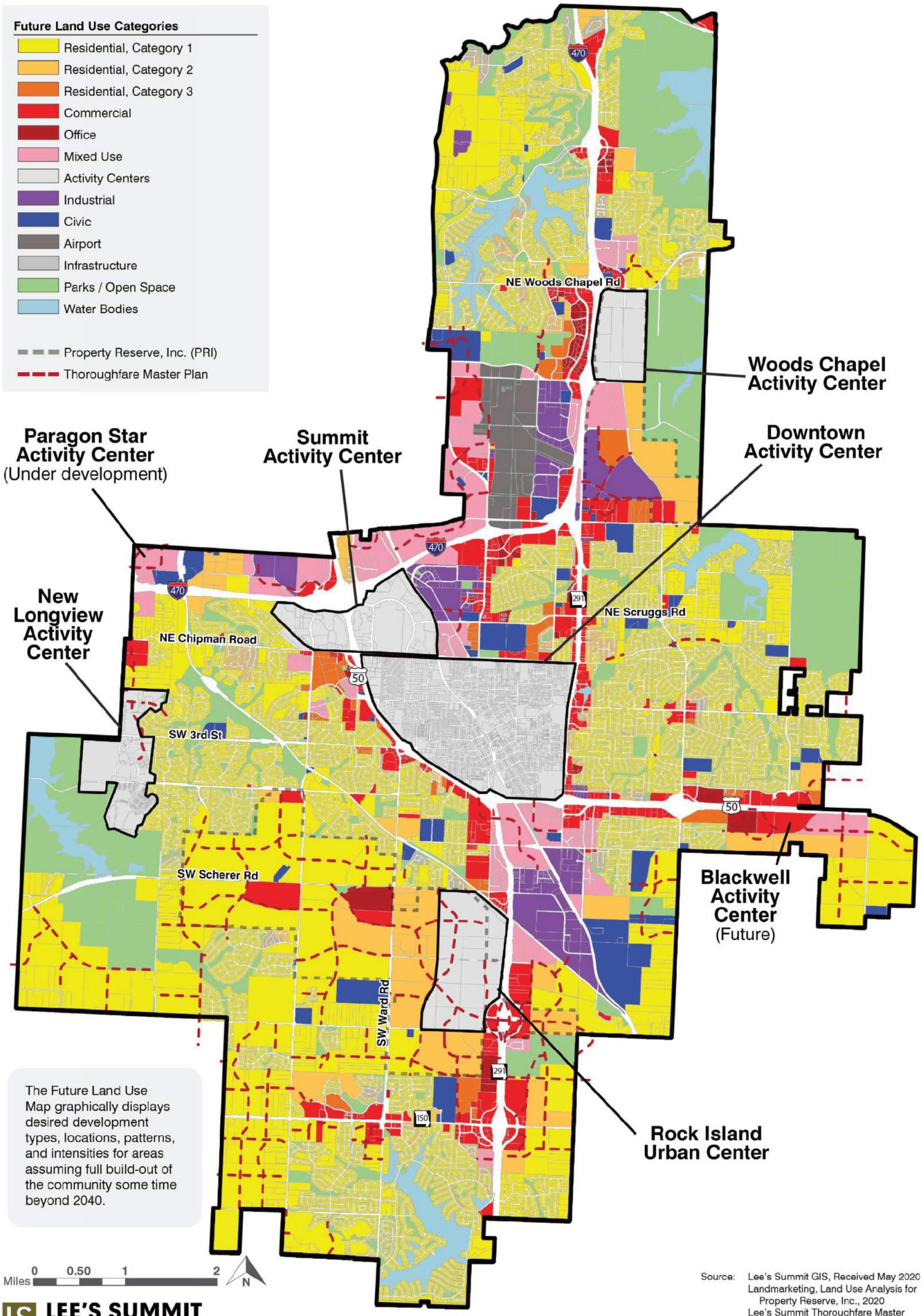
Scherer Road Reconstruction (Sampson Road to Ward Road) is anticipated to be constructed in 2028/2029.

Longview Parkway Widening and Construction (from Longview Road to Scherer Parkway) is also anticipated in 2028/2029.

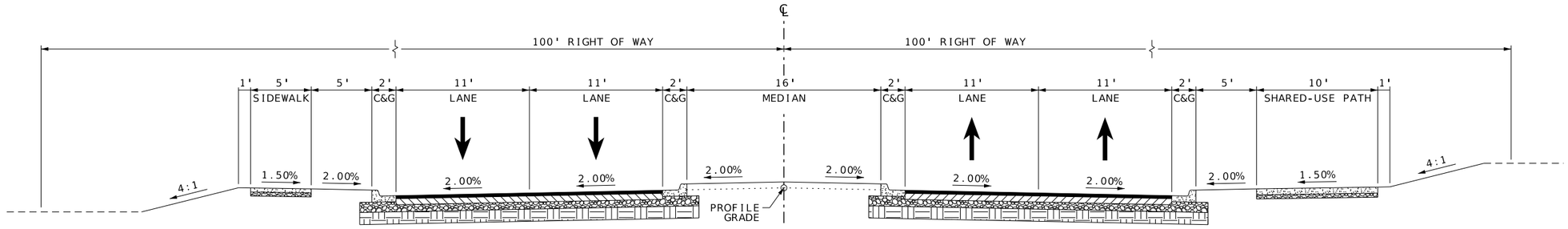
The future Scherer Parkway extension, where it diverges from Scherer Road and traverses south easterly to the Hook Road Interchange, will be constructed, most likely, two-lanes at a time, as new subdivisions are constructed. At this time there is no timeline established for the completion of Scherer Parkway and construction could take many years to complete.

Comments are encouraged and can be sumitted on the city's website at - https://cityofls.net/public-works/infrastructure-capital-projects/scherer-road

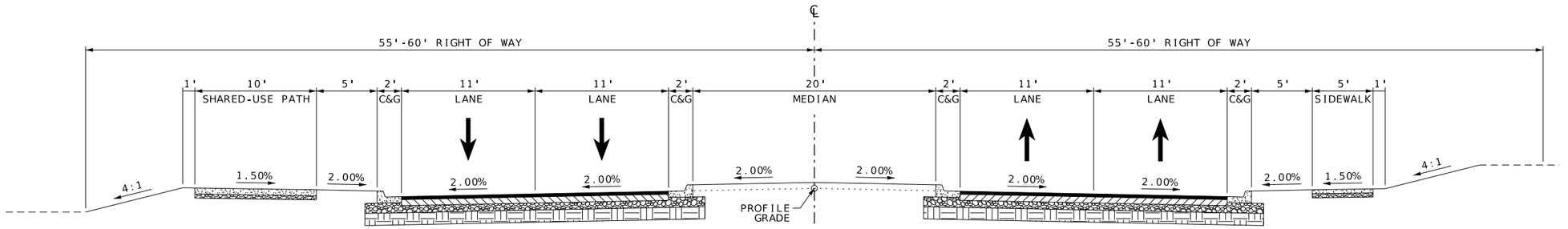
If you have other questions please contact **John Persing** at 816.969.1800 or John.Persing@cityofls.net



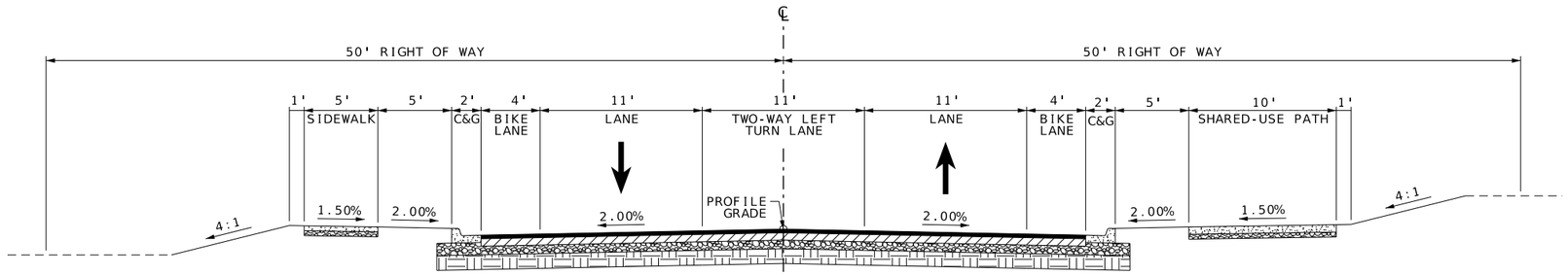
FUTURE LAND USE / THOROUGHFARE MASTER PLAN



SCHERER PARKWAY



LONGVIEW BOULEVARD



SCHERER ROAD/HOOK ROAD

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DISCLAIMER OF RESPONSIBILITY

I hereby specify that the documents intended to be authorized 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 of the engineering project or survey

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

REVISIONS

REV	DATE	BY	DESCRIPTION

LOCHMUELLER GROUP
411 N 10TH STREET, SUITE 200
SAINT LOUIS, MISSOURI 63101
P (314) 621-3395 F (314) 621-3288
WWW.LOCHGROUP.COM
MISSOURI STATE ENGINEERING CORPORATION
CERTIFICATE/LICENSE NO. 2002011852

SCHERER ROAD/PARKWAY ALIGNMENT STUDY

TYPICAL SECTIONS

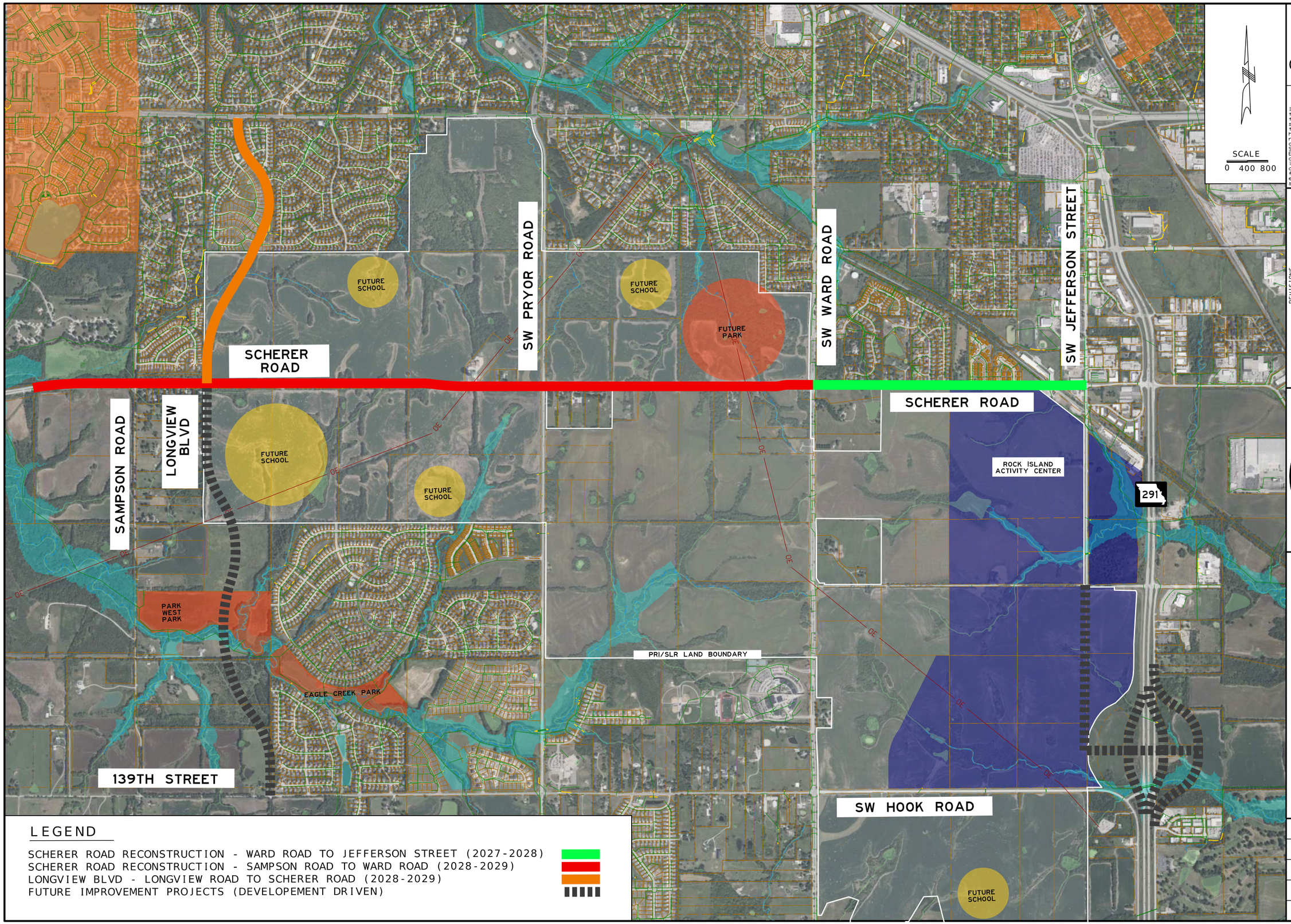
LOCHMUELLER PROJECT NO. 524-2002-00H

PROJECT/JOB NO.

MODOT PROJECT NO.

DATE PREPARED
03/03/2025

SHEET
1 OF 1



SCALE
0 400 800

LEGEND

SCHERER ROAD RECONSTRUCTION - WARD ROAD TO JEFFERSON STREET (2027-2028)
SCHERER ROAD RECONSTRUCTION - SAMPSON ROAD TO WARD ROAD (2028-2029)
LONGVIEW BLVD - LONGVIEW ROAD TO SCHERER ROAD (2028-2029)
FUTURE IMPROVEMENT PROJECTS (DEVELOPEMENT DRIVEN)

PRELIMINARY PLANS NOT FOR CONSTRUCTION

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LOCHMUELLER GROUP
399 SOUTH SPRING AVE, SUITE 208 B
ST. LOUIS, MO 63110
P (314) 621-3395 F (314) 621-3288
WWW.LOCHGROUP.COM
MISSOURI STATE ENGINEERING CORPORATION
CERTIFICATE/LICENSE NO. 2002011852

SCHERER ROAD/PARKWAY ALIGNMENT STUDY

SCHERER ROAD/LONGVIEW BLVD. CIP SCHEDULE

LOCHMUELLER PROJECT NO. 524-2002-00H

PROJECT/JOB NO.

MODOT PROJECT NO.

DATE PREPARED
03/18/2025

SHEET
1 OF 1

SCHERER PARKWAY

SW PRYOR ROAD

SW WARD ROAD

SW JEFFERSON STREET

SCHERER ROAD

SAMPSON ROAD

LONGVIEW BLVD

FUTURE SCHOOL

FUTURE SCHOOL

FUTURE SCHOOL

FUTURE SCHOOL

FUTURE PARK

ROCK ISLAND ACTIVITY CENTER

291

PARK WEST PARK

EAGLE CREEK PARK

PRI/SLR LAND BOUNDARY

139TH STREET

SW HOOK ROAD

OE

LEGEND

- ALTERNATE 1 (DEVELOPMENT DRIVEN)
- ALTERNATE 2 (DEVELOPMENT DRIVEN)
- ALTERNATE 3 (DEVELOPMENT DRIVEN)
- PLANNED CAPITIAL IMPROVEMENT PROJECTS (CITY)
- FUTURE IMPROVEMENT PROJECTS (DEVELOPMENT DRIVEN)

SCALE
0 400 800

PRELIMINARY PLANS NOT FOR CONSTRUCTION

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WWW.LOCHGROUP.COM
MISSOURI STATE ENGINEERING CORPORATION
CERTIFICATE/LICENSE NO. 2002021852

SCHERER ROAD/PARKWAY ALIGNMENT STUDY

ALTERNATES 1, 2 & 3

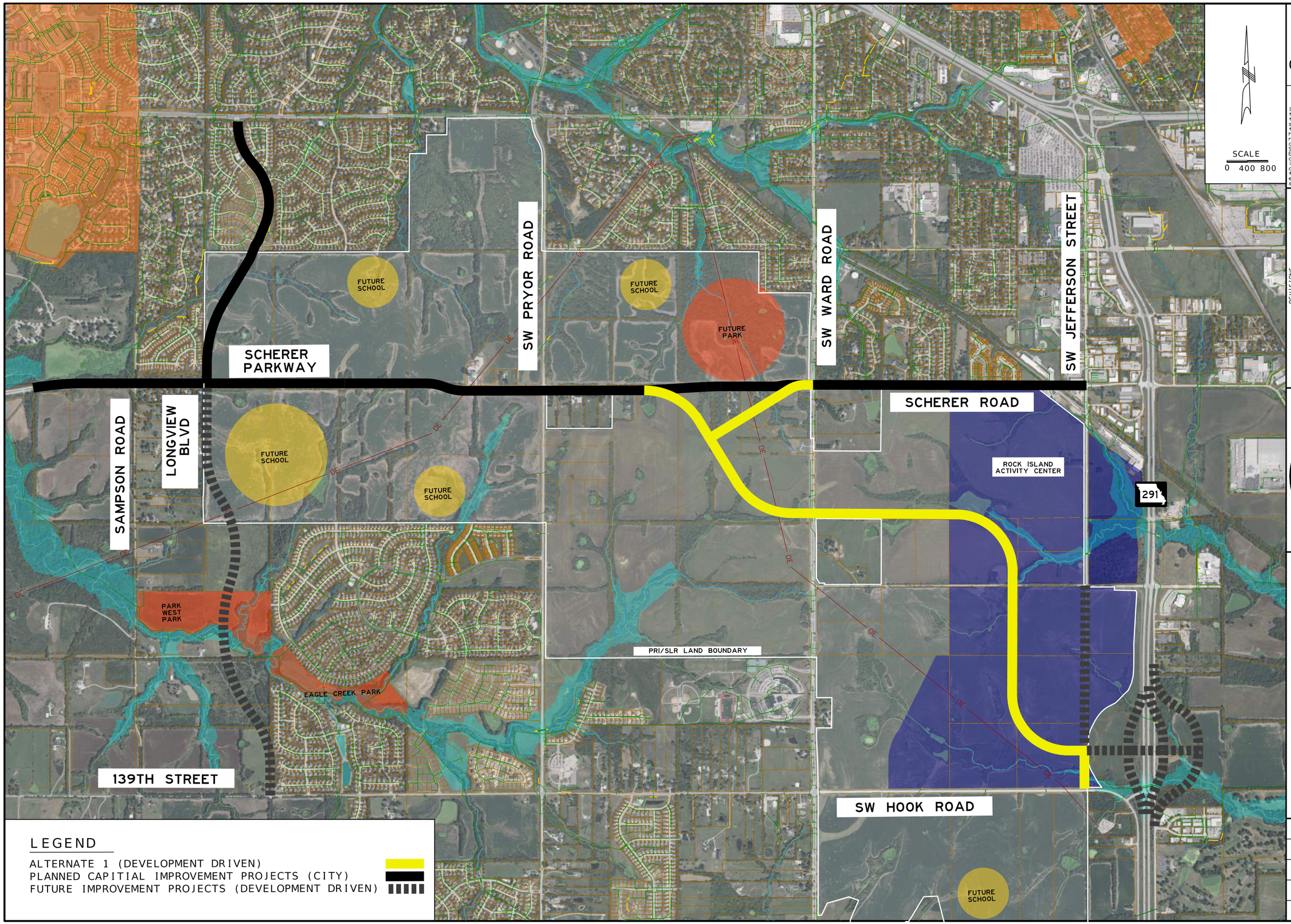
PROJECT/JOB NO.

MODOT PROJECT NO.

DATE PREPARED
03/18/2025

SHEET
1 OF 1

LOCHMUELLER PROJECT NO. 524-2002-00H



LEGEND

ALTERNATE 1 (DEVELOPMENT DRIVEN)
PLANNED CAPITIAL IMPROVEMENT PROJECTS (CITY)
FUTURE IMPROVEMENT PROJECTS (DEVELOPMENT DRIVEN)

SCALE
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PRELIMINARY PLANS NOT FOR CONSTRUCTION

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WWW.LOCHGROUP.COM
MISSOURI STATE ENGINEERING CORPORATION
CERTIFICATE/LICENSE NO. 2002011852

SCHERER ROAD/PARKWAY ALIGNMENT STUDY

ALTERNATE 1

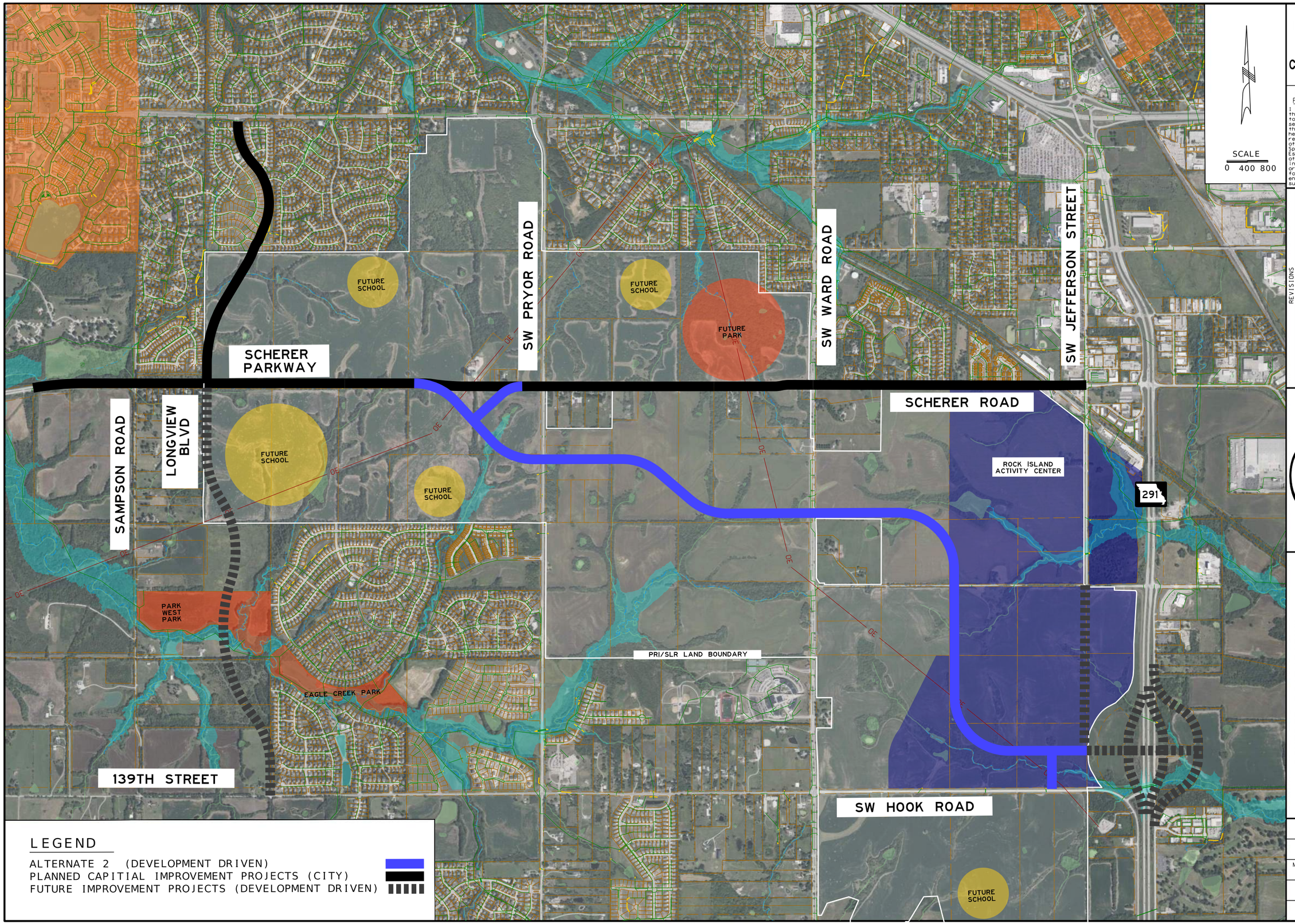
PROJECT/JOB NO.

MODOT PROJECT NO.

DATE PREPARED
03/18/2025

SHEET
1 OF 3

LOCHMUELLER PROJECT NO. 524-2002-00H



SCALE
0 400 800

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DISCLAIMER OF RESPONSIBILITY

I hereby specify that the documents intended to be authorized 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 of the engineering project or survey

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REVISIONS

REV	DATE	BY	DESCRIPTION

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SCHERER ROAD/PARKWAY ALIGNMENT STUDY

ALTERNATE 2

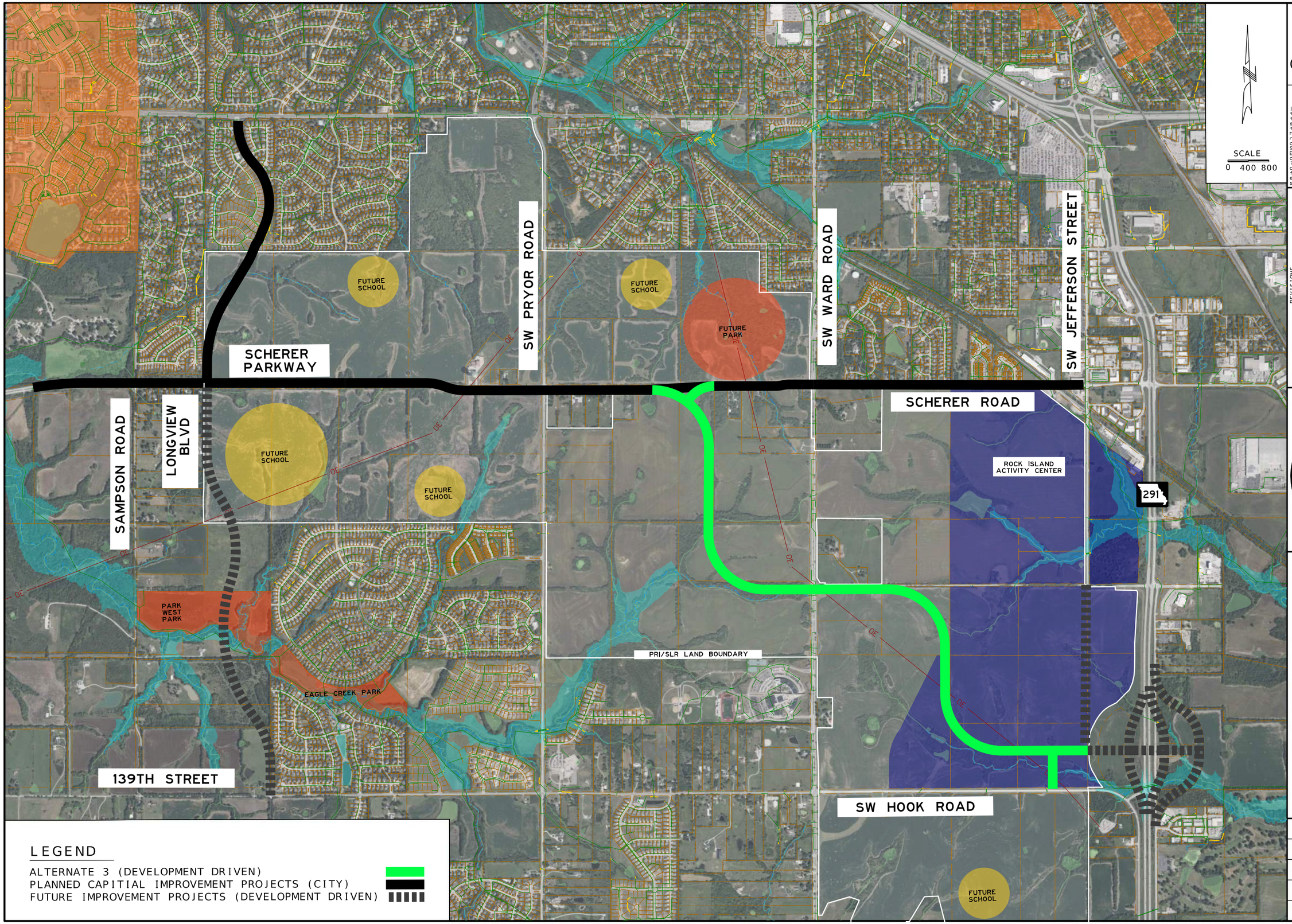
LOCHMUELLER PROJECT NO. 524-2002-00H

PROJECT/JOB NO.

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2 OF 3



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SCHERER ROAD/PARKWAY ALIGNMENT STUDY

ALTERNATE 3

LOCHMUELLER PROJECT NO. 524-2002-00H

PROJECT/JOB NO.

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03/18/2025

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3 OF 3