

# Memorandum

## Department of Public Works



**TO:** Michael O. Geisel, P.E.  
City Administrator

**FROM:** James A. Eckrich, P.E. *JAE*  
Public Works Dir. / City Engineer

**DATE:** January 22, 2024

**RE:** Ladue Farm Road Bridge

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The Ladue Farm Road Bridge is a double box culvert which connects the Ladue Farm Estates subdivision to Missouri Highway 141. The Ladue Farm Road Bridge was originally constructed in 1978 and is currently included in the City's Capital Replacement Plan for design in 2025 and reconstruction in 2027. As this is one of 14 City maintained structures on the National Bridge Inventory, the Ladue Farm Road Bridge is inspected biennially by MODOT and qualifies for grant funding through the Surface Transportation Program (STP-S) administered by East West Gateway.

The City of Chesterfield has been planning to submit for a grant to reconstruct the Ladue Farm Road Bridge once the bridge's condition rating (as determined by MODOT) fell to a 4 or below. That occurred during the most recent MODOT inspection on December 18, 2023, after which the Ladue Farm Bridge was downgraded from a condition rating of 5 to 4, as detailed in the attached memorandum from Senior Civil Engineer Jeff Paskiewicz. A condition rating of four or below helps ensure that a grant application to reconstruct the bridge will be successful.

After reviewing the grant requirements, the City Engineering Staff has determined that it would be beneficial to have a preliminary bridge design prior to submitting a grant application. Accordingly, we do not believe it would be in the City's best interest to submit a grant application in the current 2024 grant cycle. Instead, we propose to proceed by designing a new bridge in 2024 in preparation for submitting a grant application in early 2025. This will ensure a comprehensive grant application with accurate design costs.


As we were originally planning to design the Ladue Farm Bridge in 2025, there is no money in the 2024 Capital Projects Fund allocated for design of the Ladue Farm Bridge. Accordingly, I am hereby requesting a Budget Amendment in the 2024 Capital Projects Fund Budget of \$180,000 to fund design of a new Ladue Farm Road

Bridge. If approved, a Request for Qualifications will be issued as soon as practical. Once the most qualified firm is chosen a project scope and fee will be negotiated and incorporated into a contract which will be submitted to the City Council for approval.

**Action Recommended**

This matter should be forwarded to the Planning and Public Works Committee for consideration. Should the PPW Committee concur with the recommendation of the Public Works Director, it should recommend approval of a Budget Amendment in the Capital Projects Fund of \$180,000 for design services for the Ladue Farm Bridge. That design will then be used to apply for a 2025 grant to reconstruct the Ladue Farm Road Bridge. Please be advised that the Capital Projects Fund currently contains a fund balance in excess of \$2,000,000 and can easily absorb the requested \$180,000.

Concurrence:

  
\_\_\_\_\_  
Jeannette Kelly, Finance Director

Please forward to PPW for approval to proceed in soliciting proposals. However, if the PPW concurs, I recommend that we delay the budget transfer until we have negotiated a contract and have a solid budgetary figure. We can process the budget amendment request concurrent with the contract approval, if the PPW concurs that we should proceed with the project in this manner.

 2024-1-23

# Memorandum

## Department of Public Works



**TO: James A. Eckrich, PE – Director of Public Works /City Engineer**

**FROM: Jeff Paskiewicz, PE – Senior Civil Engineer**

**DATE: January 22, 2024**

**RE: Ladue Farm Road Bridge**

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As you are aware, the Ladue Farm Road bridge, originally constructed in 1978, is one of 14 structures that are on the National Bridge Inventory and are maintained by the City. MoDOT conducts an inspection of these structures on a biennial basis with the last inspection occurring on December 18, 2023. These inspections are utilized to update the 10-year maintenance plan contained in the City's Bridge Inspection and Maintenance Manual.

As part of MoDOT's inspections, the structures are rated on a scale of 0 to 9. A rating from 7 to 9 is considered "good". A rating of 5 or 6 is considered "fair". A rating of 4 is considered "poor" and anything below a 4 requires immediate attention in some way. The results of the recent inspection of the Ladue Farm Road Bridge resulted in a 4. The MoDOT report and photos are attached to this memo. Based on the rating of 4, the City should begin the planning process to replace the bridge.

The previous inspection that was completed on December 8, 2021 resulted in a rating of 5 for the Ladue Farm Road Bridge. Based on the 2021 rating and the age of the bridge, Staff anticipated replacement of the bridge would be necessary in the near future. The 10-year maintenance plan contained in the City's Bridge Inspection and Maintenance Manual includes design of a replacement bridge in 2025 and construction of the new bridge in 2027.

The Surface Transportation Program (STP-S), administered through East-West Gateway Council of Governments (EWG), allows for complete grant applications to be submitted for replacement of bridges on local roadways that have a rating of 4 or below. The Ladue Farm Road bridge is now eligible for grant consideration under the STP-S program. Applications for the 2024 round of STP-S applications are due February 8, 2024. As it will be necessary to enlist the services of an

engineering consultant in order to complete the application, there is not sufficient time to complete the application by the February 8, 2024 deadline.

The next round of STP-S grant applications are anticipated to be due in early 2025. In order to prepare for the 2025 application round, it will be necessary to contract with an engineering consulting firm as soon as possible in 2024 such that that they can perform the necessary work needed to complete the STP-S application by early 2025. The 2024 budget does not include design services as it was originally anticipated that design would occur in 2025. Therefore, in order to commence design of a new bridge, an amendment to the City's 2024 budget will be required.

I recommend requesting an amendment to the 2024 budget, from City Council, to provide for design services associated with replacement of the Ladue Farm Road bridge in an amount not to exceed \$180,000. This design will be used to apply for a STP-S bridge replacement project in 2025. If approved, the bridge will likely be reconstructed in 2028.

Please let me know if you need additional information.

Attachments:      Location Map  
                         December 18, 2023 Photos  
                         December 18, 2023 MoDOT inspection form

Cc:    Zach Wolff, Assistant City Engineer



Ladue Farm Road Bridge Location Map



Photo 1 - West abutment.

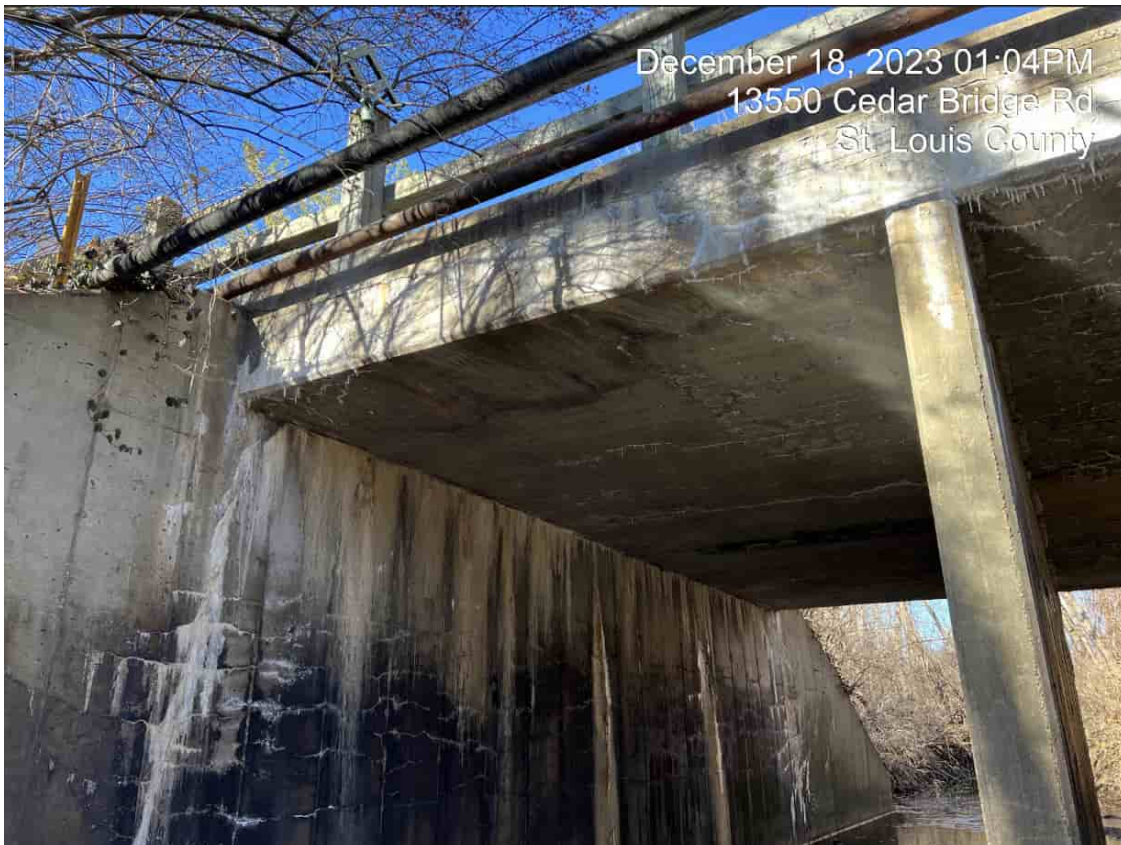


Photo 2 - West abutment and underside of bridge deck.

Photo 3 - East abutment and underside of bridge deck.

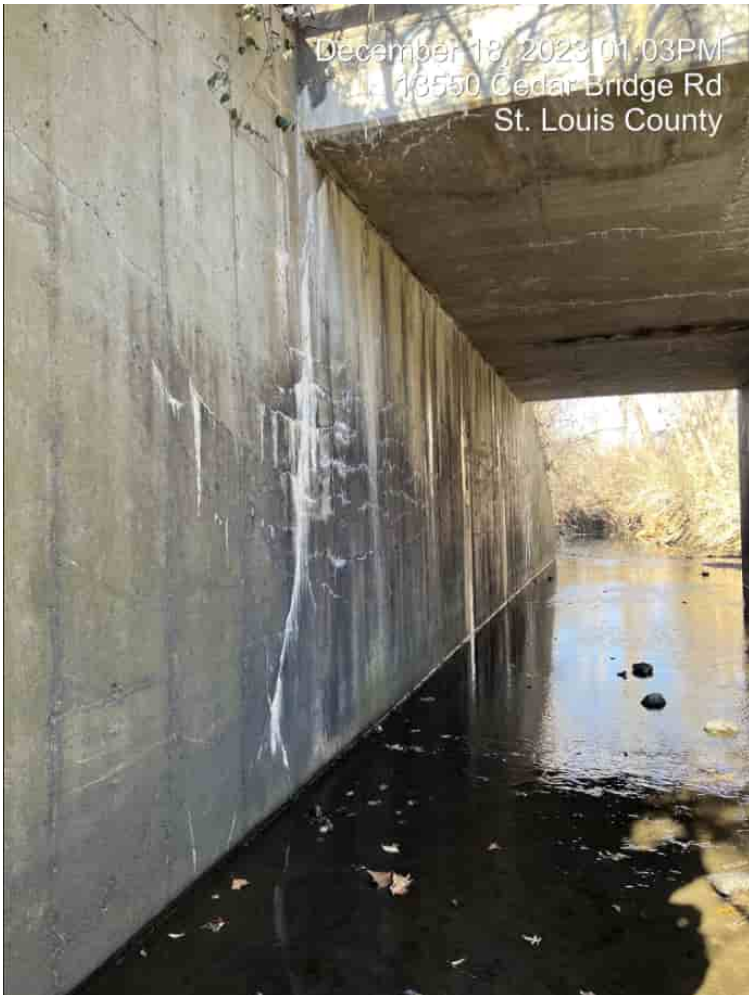
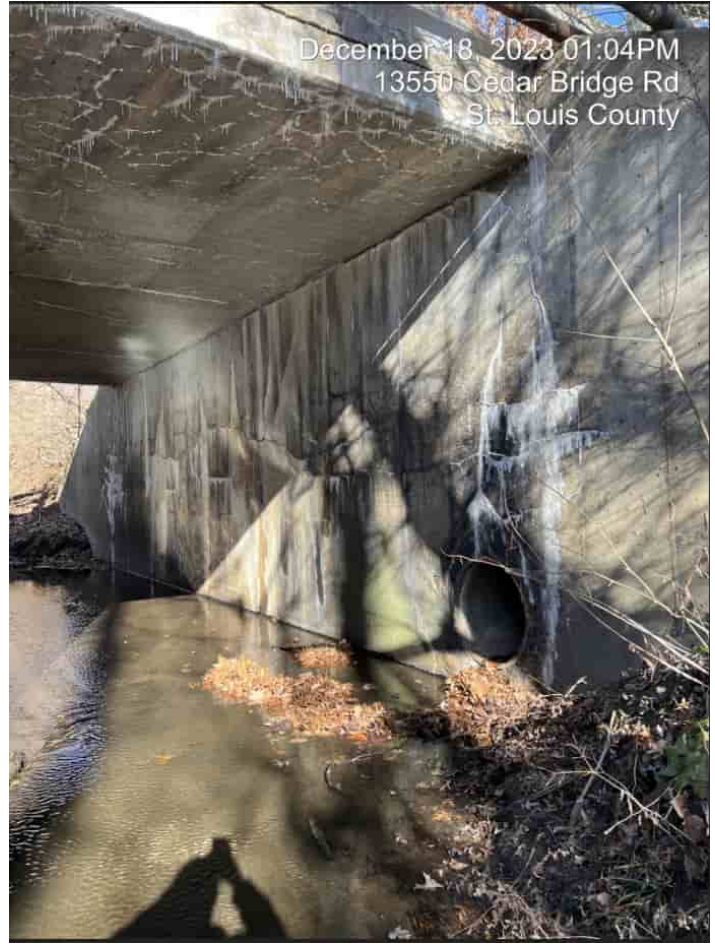


Photo 4 - West abutment.



Photo 5 - West abutment.



Photo 6- Northwest abutment wall.





**Missouri Department of Transportation  
Bridge Inventory and Inspection System  
Non-State Structure Inspection Report**

January 9, 2024  
9:59:52am

County : ST. LOUIS      District : SL      Class : NONSTATCUL      Bridge : 0793003      Federal ID : 14933

**GENERAL STRUCTURE INFORMATION**

[5D] Route : 00000	[41] Structure Status : P-LOAD POSTED W/RESTRICT
[4] Place Code : 13600 CHESTERFIELD CITY	[9] Location : S 8 T 44 R 5 E
[6] Features Intersected : CREVE COEUR CR	[22] Owner : CITY
[7] Facility Carried : LADUE FARM RD	[26] Functional Classification : ULOCAL
[16] Latitude : 38 39 19.8 (DMS)	[21] Maintenance Responsibility : CITY
[17] Longitude : 90 30 20.68 (DMS)	[11] Milepoint : 2.49 MILES

**AGE AND SERVICE - GEOMETRIC DATA - MATERIAL**

[27] Year Built : 1978	[106] Year Reconstructed :
[49] Structure Length : 31 FT.	[51] Bridge Width : 26 FT. 0 IN.
[32] Approach Roadway Width : 40 FT. 0 IN.	[52] Deck Width : 38 FT. 0 IN.
[42B] Type of Service Under : WATERWAY	[28A] Lanes On : 2
[19] Detour Length : 0.62 MILES	[28B] Lanes Under : 0

COMPONENTS	# SPANS	PRED	MATERIAL	CONSTRUCTION
MAIN SERIES	2	X	REINFORCED CONCRETE	BOX CULV-DOUB CELL
[107] Deck Type :			EARTH FILL	NOTAPPLIC
[108A] Wearing Surface :			EARTH FILL	NOTAPPLIC
[108B] Membrane :			EARTH FILL	NOTAPPLIC
[108C] Deck Protection :			EARTH FILL	NOTAPPLIC

**AADT INFORMATION**

[29] AADT on Structure : 550	[30] Year : 2020	[109] AADT Truck : 1 %
[114] Future AADT : 743	[115] Year : 2040	[102] Direction of Traffic : 2-WAY TRAFFIC

**STRUCTURE POSTING**

<b>FIELD POSTING</b>	Problem Code :	Problem Direction Code :
Category : S-15 TRUCK WEIGHT LIMIT 42 TONS EXCEPT SINGLE UNIT TANDEM REAR AXLE TRUCKS 25 TONS WEIGHT LIMIT		
Ton 1 : 42	Ton 2 : 25	Ton 3 :

<b>APPROVED POSTING</b>	Problem Code :	Problem Direction Code :
Category : S-15 TRUCK WEIGHT LIMIT 42 TONS EXCEPT SINGLE UNIT TANDEM REAR AXLE TRUCKS 25 TONS WEIGHT LIMIT		
Ton 1 : 42	Ton 2 : 25	Ton 3 :

**COMPUTER GENERATED DEFICIENCY AND EVALUATION ITEMS**

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

<u>Rated Item</u>	<u>Rating</u>	<u>Rating Date</u>
[Item 67] Structure Evaluation Rating:	5-BETTER THAN MINIMUM	5/31/2002
[Item 68] Deck Geometry Rating:	5-BETTER THAN MINIMUM	5/31/2002
[Item 69] Underclearance:	N-NOT APPLICABLE	3/1/2002
<b>Sufficiency Rating:</b>	72.3 %	2/22/2022
<b>Deficiency:</b>	NOT DEFICIENT	2/22/2022

**Funding Eligibility:**  
**Estimated New Structure Length:**  
**Estimated Structure Cost:**  
**Estimated Total Project Cost:**  
**Year of Cost Estimate:**

NOTE: The above structure length and cost estimates are computer generated using algorithms in the TMS system. These algorithms are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.



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\*\*\*\*STRUCTURE GENERAL INSPECTION\*\*\*\*

[90] Inspection Type: GENERAL      [91] Designated Frequency: 24      Inspection Responsibility: DISTRICT  
 Inspection Date: 12/18/2023      \*\* Calculated Frequency: 24      Element Inspection Required: NO

\*\* If designated interval is exceeded, then a comment providing justification must be added. Exceeding the interval by more than one month requires Bridge Division approval.

General Inspection Comments

<u>Inspector</u> JACOB SCHMIDT	<u>Team Leader</u> X	<u>Organization</u> MODOT
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\*\*\*\*UNDERWATER INSPECTION\*\*\*\*

Inspection Category: SHALLOW-WADE      [92B] Designated Frequency: 60      Inspection Responsibility: DISTRICT  
 Inspection Date: 12/18/2023      \*\* Calculated Frequency: 24      NBI: NO

\*\* If designated interval is exceeded, then a comment providing justification must be added. Exceeding the interval by more than one month requires Bridge Division approval.

Underwater Inspection Comments

<u>Inspector</u> JACOB SCHMIDT	<u>Team Leader</u> X	<u>Organization</u> MODOT
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\*\*\*\*SPECIAL INSPECTION\*\*\*\*

Inspection Category: QUALITY ASSURANCE      [92C] Designated Frequency: 999      Inspection Responsibility: BRIDGEDIV  
 Inspection Date: 2/18/2020      \*\* Calculated Frequency:      NBI: NO

\*\* If designated interval is exceeded, then a comment providing justification must be added. Exceeding the interval by more than one month requires Bridge Division approval.

Special Inspection Comments

<u>Inspector</u> TERRY L SHUNAMON JESSE ELSEMAN	<u>Team Leader</u> X	<u>Organization</u> MODOT MODOT
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\*\*\*\*OTHER SPECIAL INSPECTIONS\*\*\*\*

Category	Frequency	Calculated Frequency**	Date	Inspection Responsibility	NBI
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\*\* If designated interval is exceeded, then a comment providing justification must be added. Exceeding the interval by more than one month requires Bridge Division approval.



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\*\*\*\*GENERAL COMMENTS AND CONDITION RATINGS\*\*\*\*

**General Comments :**

(CAMPBL1, 12/02/2015)--CHESTERFIELD - (2) 13'X12' CIP CONC BOX CULVERT

**[Item 58]--Deck Condition Rating:**

N-NOT APPLICABLE

**Rating Date:** 03/01/2002

Deck Rating Comments

**[Item 59]--Superstructure Condition Rating:**

N-NOT APPLICABLE

**Rating Date:** 03/01/2002

Superstructure Rating Comments

**[Item 60]--Substructure Condition Rating:**

N-NOT APPLICABLE

**Rating Date:** 03/01/2002

**Compass Direction:**

Substructure Rating Comments

**[Item 61]--Channel Condition Rating:**

5-MAJOR DAMAGE

**Rating Date:** 12/18/2007

Rating Comments

(EVANSZ1, 12/18/2019)--3' OF SEDIMENT US AND DS ENDS OF EAST BARREL

(EVANSZ1, 12/18/2019)--HABITUAL DRIFT RESTRICTS FLOW, DIRECTING TO EAST BARREL

**[Item 62]--Culvert Condition Rating:**

4-POOR CONDITION

**Rating Date:** 12/29/2023

Rating Comments



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(GEIGEM1, 12/23/2013)--HEAVY EFFL IN HEADWALL.

(EVANSZ1, 12/18/2019)--DS W WING, LARGE CRACKS AND WALL PUSHING INWARD. CRACKS MEASURED AND MARKED, FOLLOW UP AND MONITOR DURING BIENNIAL INSPECTIONS.

(SEMARR1, 12/22/2021)--NO FURTHER MOVEMENT NOTICED DURING INSPECTION 12-08-2021 RTS

(SEMARR1, 12/22/2021)--LOTS OF CRACKING AND HEAVY EFFLORESCENCE ON OUTER WALLS. FEW LONG. CRACKS W/ MOD LEACHING, HEAVY EFFL (W STALAGMITES) & MOD RUST STAINS IN TOP SLAB. SATURATION OF TOP, EAST SPAN 40%, WEST SPAN 20%. LARGE OPEN CRACKS IN WINGS.

(SCHMIJ8, 12/29/2023)--LARGE OPEN (1 CM) DIAGONAL CRACK IN NORTHWEST WING WALL. WING WALL IS LEANING. 2 OTHER LARGE CRACKS IN SAME LOCATION.

(SCHMIJ8, 12/29/2023)--SOUTHWEST WING WALL OPEN DIAGONAL CRACK (5 MM).



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\*\*\*\*APPRAISAL RATINGS\*\*\*\*

**[Item 36A]--Bridge Railing Appraisal:** DOESNT MEET CURRNT STND-0      **Rating Date:** 12/23/2003  
Rating Comments  
 (ALLBRD1, 12/18/2007)--TIMBER RAIL

**[Item 36B]--Transition Railing Appraisal:** NOT REQUIRED-N      **Rating Date:** 12/28/2011  
Rating Comments

**[Item 36C]--Approach Railing Appraisal:** NOT REQUIRED-N      **Rating Date:** 12/28/2011  
Rating Comments

**[Item 36D]--Rail End Treatment Appraisal:** NOT REQUIRED-N      **Rating Date:** 12/28/2011  
Rating Comments

**[Item 71]--Waterway Adequacy:** DECK ABOVE FLOOD ELEV      **Rating Date:** 03/01/2002  
Rating Comments

**[Item 72]--Approach Roadway Alignment:** 5 - FAIR      **Rating Date:** 05/31/2002  
Rating Comments  
 (HOLZBJ, 05/31/2002)--SHARP TURN.  
 (SEMARR1, 12/22/2021)--MODERATE SPEED REDUCTION

**[Item 113]--Scour Assessment:** 8-STABLE FOR CALCULATED      **Rating Date:** 5/31/2002  
**Type of Scour Evaluation:**  
Rating Comments  
 (HOLZBJ, 05/31/2002)--NO SCOUR.

**Work Comments :**  
 (ALLBRD1, 12/18/2007)--CUT UP LARGE TREES UPSSTREAM IN CHANNEL.  
 (CAMPBL1, 12/02/2015)--REMOVE DRIFT @ US WALLS.  
 (SEMARR1, 12/22/2021)--CONSIDER REPLACEMENT



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DistrictAbbr = SL and Design\_No = 0793003 and County = ST. LOUIS

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