

**CITY OF BROKEN ARROW  
RESOLUTION NO. 1637**

**ATTACHMENT A**

**Resolution to Request Programming of  
Tulsa Urbanized Area Surface Transportation Funds**

WHEREAS, Surface Transportation Program Urbanized Area funds have been made available for transportation improvements within the Tulsa Transportation Management Area, and

WHEREAS, The City of Broken Arrow has selected a project described as follows: Widening of 23rd Street (193<sup>rd</sup> E. Ave.) to 5 lanes (4 lanes with a dedicated two-way left turn lane) from Albany Street (61st St. S.) to Omaha Street (51st St. S.), to include the replacement of the existing functionally obsolete 2-lane 23rd Street Bridge, NBI# 19345, with a 4-lane bridge structure, and the addition of a 5' sidewalk on the west side, and a 10' sidepath on the east side of 23<sup>rd</sup> Street; and

WHEREAS, the selected project is consistent with the local comprehensive plan, including applicable Major Street and Highway Plan Element, and the Regional Transportation Plan; and

WHEREAS, the engineer's preliminary estimate of cost is \$12,750,000.00, and Federal participation under the terms of the Surface Transportation Block Grant Program Urbanized Area funds are hereby requested for funding of 31.4 percent of the project cost; and

WHEREAS, the City of Broken Arrow proposes to use 2018 Streets General Obligation Bond funds for the balance of the project costs; and

WHEREAS, the City of Broken Arrow agrees to provide for satisfactory maintenance after completion, and to furnish the necessary right-of-way clear and unobstructed; and

WHEREAS, the City of Broken Arrow has required matching funds available and further agrees to deposit with the Oklahoma Department of Transportation said matching funds within the time frame as required by the ODOT.

NOW THEREFORE, BE IT RESOLVED: That the Indian Nations Council of Governments is hereby requested to program this project into the Transportation Improvement Program for the Tulsa Transportation Management Area; and should the project be selected for funding; and

BE IT FURTHER RESOLVED: That upon inclusion in the Transportation Improvement Program, the Oklahoma Transportation Commission is hereby requested to concur in the programming and selection of this project and to submit the same to the Federal Highway Administration for its approval.

ATTEST:

\_\_\_\_\_  
Mayor

(SEAL)

\_\_\_\_\_  
Clerk

APPROVED AS TO FORM:

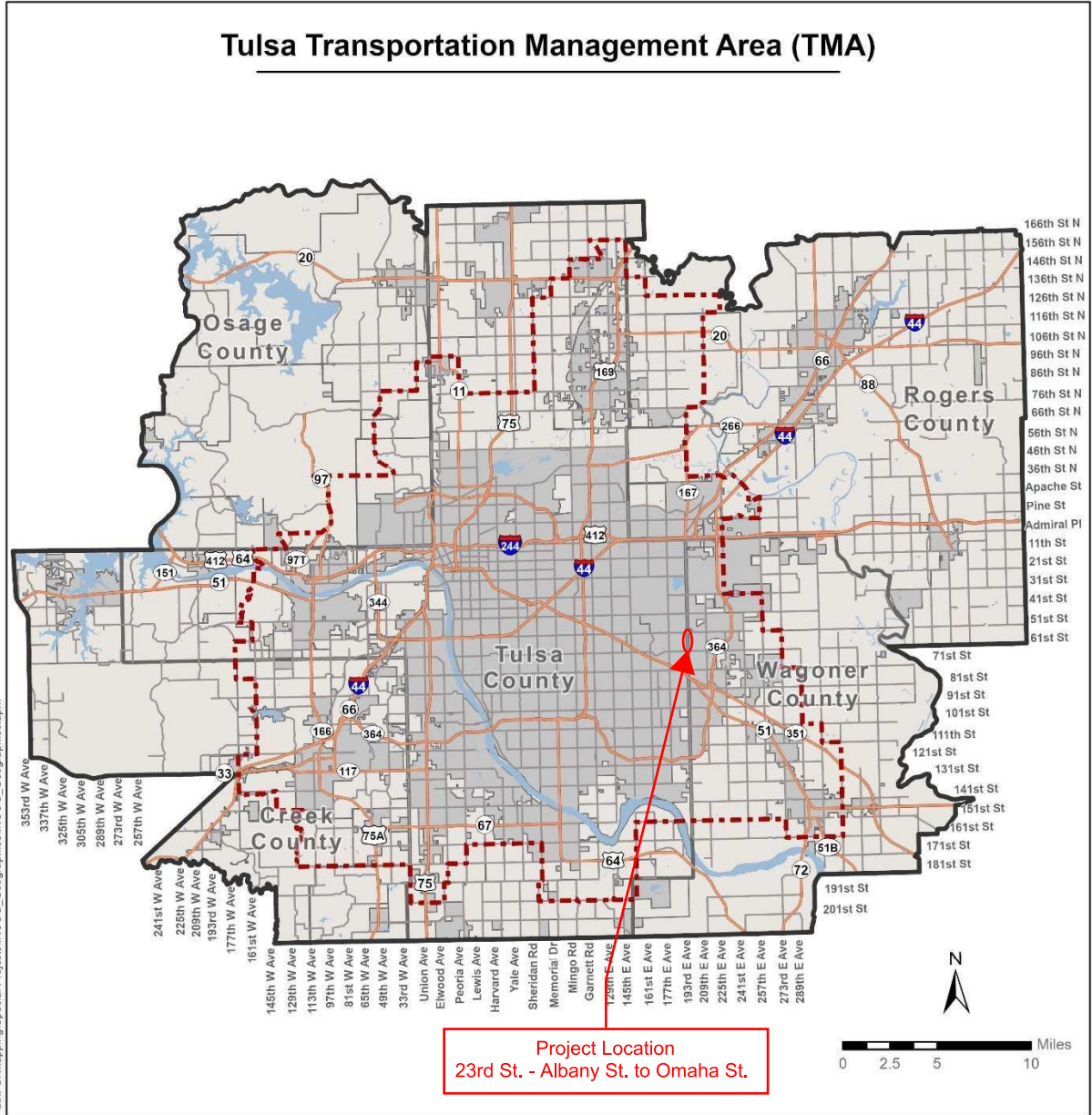
*D. Graham Parker*

3/11/2025

\_\_\_\_\_  
Assistant City Attorney

# CITY OF BROKEN ARROW - PRIORITY NO. 1 PROJECT

## Attachment B – Tulsa Transportation Management Area



#### Legend

- Highways
- Major Streets
- Bodies of Water
- Corporate Limits (Cities and Towns)
- County Boundaries
- Transportation Management Area
- Adjusted Urbanized Area

#### Location Map

INCOG

## Attachment C - Tulsa Urban Area Surface Transportation Program Project Rating Form

### A. Application Information

Project Title	ST1931 & ST1932 - 23rd St. Widening from Albany to Omaha
Project Location	193rd E Ave. (County Line Rd.) from 61st St. S. to 51st St. S.
Sponsor	City of Broken Arrow
Sponsor Contact Name	Brent Stout
Sponsor Contact Title	Transportation Project Manager
Address	485 North Poplar Ave, Broken Arrow, OK 74012
Phone	(918) 259-7000 Ext. 7395
Email	bstout@brokenarrowok.gov

### B. Project Financial Information – Include a detailed, complete, realistic cost estimate, and summarize below:

PROJECT BUDGET					
		Percent	Federal Funds	Sponsor Funds (20% Minimum)	TOTAL
<b>Pre-Construction Costs:</b>					
Planning/Design					
ROW					
Utility Relocation					
<b>Sub-total</b>					
Construction Cost			\$3,120,000	\$6,800,000	\$9,920,000
Contingency Cost (%)		10 %	\$310,000	\$680,000	\$990,000
<b>Sub-total</b>			\$3,430,000	\$7,480,000	\$10,910,000
Escalation	# of yrs <u>2</u>	5 % per yr 10.3 %	\$350,000	\$770,000	\$1,120,000
<b>Sub-total</b>			\$3,780,000	\$8,250,000	\$12,030,000
Construction Management & Inspection (%)		6%	\$220,000	\$500,000	\$720,000
<b>TOTAL</b>			\$4,000,000	\$8,750,000*	\$12,750,000*

- Only City of Broken Arrow funds used for planning/engineering design, right-of-way acquisition and utility relocation.

\* \$3 mil of this total amount has already been allocated funding to City of Broken Arrow from a previous STP application.

**Note: In the application, please provide (a) The source of cost estimates and attach the most detailed and complete cost estimate available. Annual cost escalation to year of expenditure percentage and Construction Management & Inspection fee is provided as guidance but you may use the best applicable percentages to your project provided you have a basis. Total Federal Funds are capped for the project once awarded.**

\$3.0 million in Surface Transportation Program (STP) funds has previously been awarded and allocated to this project for the City of Broken Arrow. With this application, the City of Broken Arrow hopes to accomplish fully funding this project to construct a 5-lane arterial roadway in accordance with the INCOG Major Street and Highway Plan. The cost estimate of this project is \$12.75 million and with the full award of funding for this application, there should be sufficient funding to construct the project as designed.

1) Applicants are required to include a minimum of 6% Construction Management & Inspection costs per ODOT's recommendation.

2) Projects selected often take two years or more for preconstruction activity before they are ready for letting. The local project sponsor must provide an annual cost escalation to the year of expenditure.

3) All federal funds will be capped for awarded projects inclusive of CM&I fees.

**Certification:**

I certify that City of Broken Arrow (name of sponsor) supports the proposed project, has the legal authority to pledge matching funds, and has the legal authority to apply for state or federal funds. I further certify that matching funds are available or will be available for the proposed project.

Signature: Charlie Bright

Date: 3/12/25

Printed Name: Charlie Bright

Title: Engineering Director

**A. Travel Time Improvement – Maximum 30 Points**

Projects that seek to improve travel time can receive up to 30 points in this category. Improvements are usually in the form of capacity addition or intersection improvements.

1. What is the most recent average daily traffic count for the proposed project location? (For new alignments the projected volume and number of lanes from the most current computer model of the long-range transportation plan will be used. For intersection improvements, traffic volume of all approaches averaged will be used to determine the V/C ratio.)

Count: 13,963 Date: 3/12/25

Future Forecasted Traffic Volumes (2050): 34,042

Current number of lanes: 2 Count per lane: 6,982

For corridor improvements, INCOG will determine if the proposed project provides relief for an existing/future congested corridor location, using volume to capacity (V/C) ratio where Level of Service C capacity is greater than 0.80.

- V/C Ratio 1.50 or greater (18 points)
- V/C Ratio 1.20 or greater (12 points)
- V/C Ratio 1.00 to 1.19 (8 points)
- V/C Ratio 0.80 to 0.99 (4 points)
- V/C Ratio less than 0.80 (0 points)

2. Cost Points: Max 6 Points INCOG will calculate the STBG dollar cost per daily traffic volume. The projects will be divided into quartiles and the first quartile will receive 6 points, the second quartile 4 points, the third quartile 2 points and the fourth quartile 1 point.
3. If the project is exclusively related to intersection improvements: Additional 6 Points (Example: for Traffic Flow Improvements such as Arterial intersection projects, System Management/Integration, Turning Movement improvements, adding turn lanes to existing roadway or other related corridor traffic improvement projects that include intersection improvements to reduce congestion) –

Please provide any additional comments on congestion improvements:

Widening from 2 lanes to 5 lanes (with continuous 2-way left turn lane) for improving left turn movements which will provide relief from future congestion due to residential/commuter traffic as well as heavy vehicles (existing commercial vehicles and public school buses). This corridor is moderately utilized by heavy vehicles to transport goods to the Port of Catoosa and will continue to experience both residential and commercial development in the near term. There has been recent high density residential development on the corridor. The center turn lane will lessen the impacts of increased future traffic volumes on congestion greatly. The intersection of 23rd Street and Albany Street will also be improved/widened. Tulsa County is improving the intersection of 23rd and Omaha Street with the construction of a roundabout, abutting the northern project limits of this potential project.

**B. Safety Improvements – Maximum 30 Points**

If the project is designed to mitigate identified safety issues, it can receive up to 30 points in this category. Please provide a description in the space provided next to each applicable criterion.

What is the Average Annual Crash Severity Index for the Project? \_\_\_\_\_  
 (INCOG will calculate based on data from DPS/ODOT related to Fatality, Injury & PDO crashes)

- First Quartile of Projects: 18 Points
- Second Quartile of Projects: 12 Points
- Third Quartile of Projects submitted: 8 Points
- Fourth Quartile of Projects submitted: 4 Points

If the project is not an EXCLUSIVE safety project, it may not receive above points, but eligible to receive following points:

<b>Evaluation Criteria</b>	<b>Points</b>	<b>Provide Description</b>
Project includes transit, pedestrian, bicycle & wheelchair traffic safety. Ex: signalized crossings, high visibility markings, signage, crosswalk upgrades, sidewalk extensions, pedestrian ramps, lighting, barriers separating vehicle/person conflicts. (List each item that is a part of the design separately to receive 1 point each, up to 4 points total.)	<b>4</b>	Upgrades/Improvements include: Pedestrian crosswalks, pavement markings, new signage, addition of 5' sidewalk and 10' sidepath for the entire length of the project, addition of curb & gutter to provide a barrier between traffic and pedestrians on sidewalk/trail, widening from 2-lanes to 5 lanes (with continuous 2-way left turn lane) from Albany to Omaha for improving left turn movements for BAPS bus routes in the vicinity, and other heavy vehicles utilizing this street.
Projects to improve roadway safety and/or address Traffic Incident Management. Ex: pavement markings, lighting, signage, barriers or increase skid resistance, responder safety, equipment, communication systems, design features such as incident detection/synchronized signals, turning lane improvements, super-two-lane configuration with added shoulders (List each item that is a part of the design separately to receive 1 point each, up to 4 points total.)	<b>4</b>	Upgrades/improvements include: Pedestrian crosswalks, pavement markings, new signage, addition of a continuous left turn lane on 23rd from Albany to Omaha, provides better access for emergency responders and gives additional roadway for clearing traffic incidents. New pavement/overlay will provide better skid resistance.
Project increases safety through rail crossing improvements.	<b>4</b>	
<b>TOTAL</b>		

Comments:

This project will reduce the number and severity of collisions being reported on this segment of 23rd Street. The addition of capacity by the addition of a center turn lane will provide for safer turning movements on the corridor. Safety will be improved and the number of accidents will be reduced by the addition of sidewalks, curb ramps, visible signals, crosswalks, lighting, signing, striping and pedestrian signals. Curve realignment (horizontal and vertical) of the roadway geometrics in the area of the reconstructed bridge for improved sight distance and reduced risk of head-on collisions will be accomplished with this project.

Arterial intersection related safety criteria:

Additional points will be awarded for projects that are proposed to improve unsafe intersections, railroad crossings and/or bridges Using the ODOT Public Safety data from the past three years, INCOG will calculate the most recent average annual crash count at the proposed project location:

Number of Crashes: 14\* Date: 2022-2024  
Crash Severity Index: \_\_\_\_\_  
Points Awarded: \_\_\_\_\_

The projects will be divided into quartiles based on the Crash Severity Index and the first quartile will receive 2 points, the second quartile 4 points, the third quartile 6 points and the fourth quartile 8 points. Projects that involve rehabilitation of existing facilities only, with no targeted additional safety features/improvements, are not eligible for “Crash Severity” points.

* 14 total crashes - 1 with serious injury, and 4 with minor injuries.
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**C. System Maintenance and Management – Maximum 30 Points**

If the main purpose of the proposed project is to maintain, rehabilitate or rebuild existing facilities, it may receive up to 30 points in this category. Please provide a description in the space provided next to each applicable criterion.

Evaluation Criteria	Points	Provide Description
Project includes either resurfacing or rehabilitation of a majority of the extent, substantial drainage improvements.	<b>15</b>	1) Utilization of existing pavement by rehab, via patching/mill/overlay. 2) Replaces existing inadequate ditches with ditch improvements, enclosed storm sewers, improved cross drains and bridge replacement.
Project improves signalization and/or aids in the detection and clearance of non-recurring traffic incidents, the rapid clearing of road obstructions, or otherwise contributes to or utilizes ITS technology or incident management elements.	<b>15</b>	This project connects to Tulsa County improvements at the intersection of 23rd and Omaha, which converts a signalized intersection to a roundabout. Additional width and a two-way left turn lane will be included in the project, which will assist in clearing of traffic incidents and/or obstructions in the roadway.
Project is derived from or related to the INCOG Congestion Management Process and reduces congestion on streets or intersections functionally classified by the FHWA as arterials in incorporated areas or as a major rural collectors in unincorporated areas.	<b>5</b>	Project widens 23rd Street (an arterial street) by adding two lanes and a two-way continuous left turn lane allowing better turning movements thereby decreasing congestion.
<b>TOTAL</b>		

Comments:

This project will rehabilitate the existing pavement, and widen the roadway with the addition of new pavement for the outside lanes. There will be a center turn lane added to this arterial mile project as well. This project ties into the recently completed reconstruction of the 23rd Street and Albany Street intersection.



**D. Livability Criteria – Maximum 30 Points**

If the main purpose of the proposed project is transit components, pedestrian components, or bicycle components, it may receive up to 30 points in this category. If the project is NOT an alternative-mode enhancement, but it includes design considerations for the operation thereof, it may obtain up to 15 points. Please provide a description in the space provided next to each applicable criterion.

<b>Evaluation Criteria</b>	<b>Points</b>	<b>Provide Description</b>
The project is a transit facility improvement, pedestrian or bicycle facility per the GO plan	<b>30</b>	This project includes the addition of a 5' sidewalk on the west side, and a 10' sidepath on the east side of 23rd Street.
<i>If main purpose of project is not alternative mode, but it does include complementary features, please fill in below.</i>		
Project provides for existing or planned bus/transit/school bus operations (i.e., turning radii, bus stop pad, etc....)	<b>5</b>	23rd Street is heavily used by BAPS school buses. Widening will provide safer facility for these vehicles (width, radii, shoulders, etc). 23rd Street is also a significant route for heavy vehicles (with houses due to the Port of Catoosa).
Project provides for pedestrian or bicycle components (bump outs, sidewalks, shelters, wide shoulders, dedicated lanes, paths/trails etc....)	<b>5</b>	This project will add a 5' sidewalk and a 10' trail (no continuous sidewalks currently exist for the full length of the the project). ADA curb ramps and crosswalks with pedestrian safety measures will be added.
Project ( <i>not</i> a limited access facility) is primarily located in a district zoned as Commercial, Office, High-Density Single-Family Residential, or Medium-Density Multi-Family.	<b>5</b>	This project is located through an area with significant numbers of high density housing units (apartments) and single family residential housing. The arterial is also a route heavily utilized by commercial traffic due to connections to highways and Port of Catoosa as well as other businesses in the area.
Project displaces one or more homes, businesses, schools, churches or recreational areas.	<b>-10</b>	No Displacements are required for this project.
<b>TOTAL</b>		

**Comments:**

This project includes a 5' sidewalk on the west side of 23rd, and a 10' multi-use trail on the east side for the full length of the project that will be used primarily by pedestrians and bicyclists. It is anticipated that these facilities will be utilized frequently, as there are apartment complexes and numerous single family residences along the corridor, which lead to the largest high school in the state of Oklahoma. These facilities will be designed to be fully ADA-compliant.

**E. Freight Movement and Intermodal Linkages – Maximum 20 Points**

If the project induces the interaction between two or more modes of transportation, it may receive up to 20 points in this category. Please provide a description in the space provided next to each applicable criterion.

<b>Evaluation Criteria</b>	<b>Points</b>	<b>Provide Description</b>
Project facilitates the exchange of passengers and/or goods from private to public modes or between transportation modes.	<b>10</b>	23rd Street is heavily used by BAPS school buses and is a significant route for heavy vehicles of various uses due to route for Port of Catoosa and due to the connection to highways in the area.
Project improves access to existing or proposed transportation freight or passenger terminal facility	<b>10</b>	23rd Street is a heavily traveled route transporting goods due to the connection to highways between Broken Arrow, Catoosa, and Coweta as well as the Port of Catoosa. 23rd Street is heavily used by public school buses.
Project improves road component(s) with 5% or more heavy duty trucks by traffic volume substantiated with observed vehicle classification data as an attachment	<b>10</b>	+5% Heavy vehicles utilize the 23rd Street corridor due to businesses in the area. Heavy vehicles transport goods along the corridor because of connections to highway systems in the area as well as the Port of Catoosa.
<b>TOTAL</b>		

Comments:

Because this corridor is heavily used by Broken Arrow Public Schools school buses, this is a point of interaction between pedestrians and transit users. The addition of 3-lanes including a center turn lane will make travel safer and more convenient for large trucks using the corridor to get to and from the Port of Catoosa.

**F. Project Preparation – Maximum 20 Points**

Projects that are prepared for construction may receive up to 20 points in this category. Please provide a description in the space provided next to each applicable criterion. Additionally, INCOG may reduce the project score if previously awarded projects are not advancing to construction in a timely manner unless circumstances are out of the applicant’s control.

<b>Evaluation Criteria</b>	<b>Pt</b>	<b>Provide Description</b>
<i>What is the status of the environmental review process?</i>		
Environmental clearance completed and federal approval obtained.	<b>5</b>	
Safety and/or Active Transportation Projects that are deemed to be a CE projects	<b>3</b>	
Environmental clearance is in process in compliance with federal requirements	<b>1</b>	Initial Environmental work has begun for consultation with the USACOE.
Environmental clearance has not been initiated	<b>0</b>	
EIS likely to be required	<b>-4</b>	
<i>What is the status of proposed project design/ engineering/ planning?</i>		
Final Design/ Engineering/ planning completed and approved by ODOT.	<b>10</b>	Final design plans have been submitted to ODOT and are under review.
Preliminary Design/ Engineering 60% plans completed.	<b>6</b>	
Preliminary Design/ Engineering/ Planning design consultant selected.	<b>2</b>	
<i>What is the status of right-of-way acquisition?</i>		
Right-of-way acquisition completed or not required per ODOT approved plans.	<b>5</b>	Right-of-way acquisition to be complete by March 2025.
Right-of-way acquisition based on area is 50% complete in compliance with federal requirements	<b>2</b>	
Right-of-way acquisition has not been initiated	<b>0</b>	
<i>What is the status of utility relocation?</i>		
Utility relocation plans are completed or not required per ODOT approved plans.	<b>5</b>	Utility plans are complete and relocation is in progress.
Utility relocation is 50% complete in compliance with federal requirements	<b>3</b>	
Utility relocation has not been initiated	<b>0</b>	
<i>What is the amount of matching funds for STBG Funds?</i>		
More than 50% (6pts), 25 – 50% (4pts)	<b>4 or 6</b>	COBA funds will cover approximately 45.1% of project cost.
<b>TOTAL</b>		

**G. Multijurisdictional Projects – Maximum 20 Points**

Multijurisdictional transportation projects are transportation projects that can involve multiple jurisdictions, such as cities, counties, states, and/or the federal government. These projects can improve safety, efficiency, and reliability for people and goods. Please provide a description in the space provided next to each applicable criterion.

Evaluation Criteria	Points	Provide Description
Project is multi-jurisdictional and is a part of a regional funding program or economic development or Travel/Tourism strategy that benefits more than one community and/or county involving multiple local public agencies.	<b>10</b>	23rd Street is heavily traveled by commuters of Broken Arrow, Coweta, Tulsa and Catoosa (as well as Tulsa, Rogers & Wagoner County Residents). The route is also significant due to the economic benefit of the businesses (goods & transportation) along the corridor and connections to highways in the area and the Port of Catoosa. This segment of 23rd Street bridges both Tulsa and Wagoner Counties and is a route into Rogers County.
Project involves multiple partners that participate with substantial local match in funding, greater than 25% of total match required, substantiated with a letter of commitment from the partner(s).	<b>10</b>	
<b>TOTAL</b>		

Comments:

This project benefits users in multiple communities and counties in northeast Oklahoma. It connects to area highways and provides access to the Port of Catoosa, the furthest inland port facility in the United States.

**H. Regional Priorities – Maximum 20 Points**

Please describe the extent to which the proposed project offers significant additional benefits to the region in terms of functionally obsolete or structurally deficient bridges and/or projects on boundary roads that are shared between two or more jurisdictions. Please provide a description in the space provided next to each applicable criterion.

Evaluation Criteria	Points	Provide Description
Project includes replacement or rehabilitation of a functionally obsolete or structurally deficient bridge, such that it no longer is a functionally obsolete or structurally deficient.	<b>10</b>	Project includes the replacement of a functionally obsolete bridge with a sufficiency rating of 47.5 with a new bridge, sufficiently wide enough to accommodate 4-lanes of traffic.
Projects involving boundary roads between two or more jurisdictions.	<b>10</b>	23rd Street is also County Line Road which is the boundary between Tulsa County and Wagoner County.
<b>TOTAL</b>		

Comments:

23rd Street, also known as 193rd E. Ave. or County Line Road, is the boundary between Tulsa County and Wagoner County. This project ties in to the Tulsa County roundabout project at 23rd and Albany. It is utilized by citizens of both counties to access highways and businesses along the corridor.

**Letting:**  
**Call Order:**  
**Contract ID:**



**Oklahoma Department of Transportation  
Detail Cost Estimate**

**Project ID:** 36448(04)

**Project Description:** 23rd STREET (193rd E. AVE.)

**Spec Book:** 19

**Date Printed:** 12/12/2024

**Federal Project Number:** 36448(04)



Detail Estimate Cost Summary

Project ID:3644804

Project Description: 23rd STREET (193rd E. AVE.)

Fund Package	Total Fund Package Cost	E&C Amount	Total	Funding Limit	Funding
Project Project '3644804': Project does not contain Fund Packages.					



**Project ID:** 3644804 **Federal Project Number:** 36448(04)

**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
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**Category** 0100 ROADWAY **Alternate Set**

**Alternate Member**

**Funding Source(s) and Participation:** Multiple Fund Packages exist for the Category. See other Funding reports for details.

**Fed Work Class:**

**Fed Construction Class:**

**Category Work Class:**

**Category Length:** 0

**Category Width:** 0

0010	201(A)1200	CLEARING AND GRUBBING			LSUM	1.000	175,000.00000	175,000.00		L B
0020	202(A)2200	UNCLASSIFIED EXCAVATION			CY	25,289.000	11,000.000	278,179.00		L
0030	202(D)2500	UNCLASSIFIED BORROW			CY	2,053.000	16,000.000	32,848.00		L
0040	205(A)6200	TYPE A-SALVAGED TOPSOIL			LSUM	1.000	75,000.00000	75,000.00		L B
0050	221(B)2300	TEMPORARY SILT FENCE			LF	3,522.000	3,500.000	12,327.00		L
0060	221(C)2400	TEMPORARY SEDIMENT FILTER			EA	34.000	300,000.000	10,200.00		L
0070	221(E)2600	TEMPORARY SILT DIKE			LF	217.000	18,000.000	3,906.00		L
0080	221(F)2720	TEMPORARY ROCK FILTER DAM TYPE 3			CY	37.000	200,000.000	7,400.00		L
0090	230(A)7200	SOLID SLAB SODDING			SY	15,515.000	4,000.000	62,060.00		L
0100	303(A)1200	AGGREGATE BASE TYPE A			CY	8,396.000	76,000.000	638,096.00		L
0110	310(B)5300	SUBGRADE, METHOD B			SY	39,775.000	3,000.000	119,325.00		L
0120	325 0100	SEPARATOR FABRIC			SY	32,986.000	2,000.000	65,972.00		L
0130	411(B)1330	SUPERPAVE, TYPE S3(PG 64-22 OK)			TON	13,538.000	110,000.000	1,489,180.00		L





Detail Cost Estimate

**Project ID:** 3644804      **Federal Project Number:** 36448(04)  
**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
0140	411(C)1420	SUPERPAVE, TYPE S4(PG 70-28 OK)			TON	3,300.000	143.00000	471,900.00		L
0150	412 3100	COLD MILLING PAVEMENT			SY	6,141.000	7.00000	42,987.00		L
0160	414(A)5200	P.C.CONCRETE PAVEMENT(PLACEMENT)			SY	637.000	46.00000	29,302.00		L
0170	414(G)5800	P.C. CONCRETE FOR PAVEMENT			CY	107.000	250.00000	26,750.00		L
0180	501(A)1200	STRUCTURAL EXCAVATION UNCLASSIFIED			CY	41.000	42.00000	1,722.00		L
0190	509(A)0200	CLASS AA CONCRETE			CY	38.000	1,100.00000	41,800.00		L
0200	509(C)0400	CLASS A CONCRETE, SMALL STRUCTURES			CY	9.000	1,200.00000	10,800.00		L
0210	511(A)2200	REINFORCING STEEL			LB	6,310.000	2.00000	12,620.00		L
0220	514(J)6100	TEMPORARY SHEET PILING			LSUM	1.000	40,000.00000	40,000.00		L B
0230	601(A)1100	TYPE I PLAIN RIPRAP			TON	1,857.000	68.00000	126,276.00		L
0240	601(C)1300	TYPE I-A FILTER BLANKET			TON	496.000	44.00000	21,824.00		L
0250	609(B)4310	COMBINED CURB & GUTTER(6" BARRIER)			LF	8,953.000	32.00000	286,496.00		L
0260	610(A)5200	4" CONCRETE SIDEWALK			SY	1,727.000	80.00000	138,160.00		L
0270	610(A)5240	4" DECORATIVE CONCRETE SIDEWALK			SY	179.000	129.00000	23,091.00		L
0280	610(B)5300	6" CONCRETE DRIVEWAY (H.E.S.)			SY	925.000	100.00000	92,500.00		L
0290	610(I)6000	TACTILE WARNING DEVICE-NEW			SF	120.000	46.00000	5,520.00		L
0300	611(A)7216	(PL) MANHOLE (5' DIA.)			EA	5.000	6,500.00000	32,500.00		L
0310	611(A)7231	(PL) MANHOLE (8' DIA.)			EA	5.000	10,000.00000	50,000.00		L
0320	611(B)7306	(PL) ADD'L DEPTH IN MANHOLE (5'			VF	1.000	500.00000	500.00		L



Detail Cost Estimate

Project ID: 3644804 Federal Project Number: 36448(04)  
 Project Description: 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
0330	611(B)7321	(PL) ADD'L DEPTH IN MANHOLE (8' DIA.)			VF	10.000	750.00000	7,500.00		L
0340	611(G)0104	INLET W/LRG. JCT. BOX, CI, DES.1(A)			EA	6.000	7,500.00000	45,000.00		L
0350	611(G)0144	INLET W/LRG. JCT. BOX, CI, DES.2			EA	2.000	9,000.00000	18,000.00		L
0360	611(G)0148	INLET W/LRG. JCT. BOX, CI, DES.2(B)			EA	1.000	11,500.00000	11,500.00		L
0370	611(G)0172	INLET W/LRG. JCT. BOX, CI, DES.3			EA	8.000	11,500.00000	92,000.00		L
0380	611(G)0224	INLET W/SMALL JCT. BOX, CI, DES.1(A)			EA	5.000	7,000.00000	35,000.00		L
0390	611(G)0304	INLET W/SMALL JCT. BOX, CI, DES.3			EA	3.000	11,800.00000	35,400.00		L
0400	611(G)7754	INLET CI DES. 2 (STD)			EA	1.000	5,800.00000	5,800.00		L
0410	611(G)7766	INLET CI DES. 2 (D)			EA	1.000	7,900.00000	7,900.00		L
0420	611(G)9000	INLET CDI RCP DES. 1			EA	5.000	4,725.00000	23,625.00		L
0430	611(H)0784	ADD'L DEPTH IN INLET W/LJB, CI, DES. 1(A)			VF	17.000	300.00000	5,100.00		L
0440	611(H)0820	ADD'L DEPTH IN INLET W/LJB, CI, DES. 2			VF	3.000	500.00000	1,500.00		L
0450	611(H)0824	ADD'L DEPTH IN INLET W/LJB, CI, DES. 2(B)			VF	3.000	500.00000	1,500.00		L
0460	611(H)0844	ADD'L DEPTH IN INLET W/LJB, CI, DES. 3			VF	29.000	700.00000	20,300.00		L
0470	611(H)0884	ADD'L DEPTH IN INLET W/SJB, CI, DES. 1(A)			VF	10.000	300.00000	3,000.00		L
0480	611(H)0944	ADD'L DEPTH IN INLET W/SJB, CI, DES. 3			VF	7.000	1,100.00000	7,700.00		L
0490	611(L)1600	JUNCTION BOXES			CF	230.000	135.00000	31,050.00		L



Detail Cost Estimate

**Project ID:** 3644804      **Federal Project Number:** 36448(04)  
**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
0500	612(A)3201	(PL) MANHOLES ADJUST TO GRADE			EA	4.000	1,000.00000	4,000.00		L
0510	612(E)3800	VALVE BOXES ADJUST TO GRADE			EA	5.000	565.00000	2,825.00		L
0520	612(F)3700	METER BOXES ADJUST TO GRADE			EA	3.000	640.00000	1,920.00		L
0530	612(G)3800	FIRE HYDRANT RESET			EA	2.000	6,870.00000	13,740.00		L
0540	613(A)5236	54" R.C.PIPE CLASS III			LF	1,729.000	424.00000	733,096.00		L
0550	613(A)5358	28" X 18" R.C.PIPE ARCH CLASS A-III			LF	10.000	150.00000	1,500.00		L
0560	613(EE)5965	15" CORRUGATED POLYPROPYLENE PIPE			LF	29.000	57.00000	1,653.00		L
0570	613(EE)5969	18" CORRUGATED POLYPROPYLENE PIPE			LF	1,959.000	59.00000	115,581.00		L
0580	613(EE)5973	24" CORRUGATED POLYPROPYLENE PIPE			LF	1,153.000	75.00000	86,475.00		L
0590	613(EE)5977	30" CORRUGATED POLYPROPYLENE PIPE			LF	1,235.000	134.00000	165,490.00		L
0600	613(EE)5981	36" CORRUGATED POLYPROPYLENE PIPE			LF	55.000	124.00000	6,820.00		L
0610	613(EE)5985	42" CORRUGATED POLYPROPYLENE PIPE			LF	496.000	170.00000	84,320.00		L
0620	613(L)6708	18" PREFAB. CULVERT END SEC., ROUND			EA	2.000	940.00000	1,880.00		L
0630	613(L)6724	30" PREFAB. CULVERT END SEC., ROUND			EA	1.000	1,720.00000	1,720.00		L
0640	619(A)6200	REMOVAL OF STRUCTURES & OBSTRUCTIONS			LSUM	1.000	50,000.00000	50,000.00		L B
0650	619(B)6300	REMOVAL OF HEADWALL			EA	15.000	1,522.00000	22,830.00		L
0660	619(B)6352	REMOVAL OF FENCE			LF	2,437.000	3.00000	7,311.00		L
0670	619(B)6356	REMOVAL OF CURB AND GUTTER			LF	483.000	12.00000	5,796.00		L



Detail Cost Estimate

**Project ID:** 3644804      **Federal Project Number:** 36448(04)  
**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
0680	619(B)6360	REMOVAL OF CONCRETE PAVEMENT			SY	32.000	19.00000	608.00		L
0690	619(B)6364	REMOVAL OF ASPHALT PAVEMENT			SY	8,663.000	9.00000	77,967.00		L
0700	619(B)6368	REMOVAL OF DRAINAGE INLETS			EA	2.000	1,350.00000	2,700.00		L
0710	619(B)6372	REMOVAL OF MANHOLES			EA	2.000	900.00000	1,800.00		L
0720	619(B)6380	REMOVAL OF CONCRETE DRIVEWAY			SY	982.000	16.00000	15,712.00		L
0730	619(B)6384	REMOVAL OF ASPHALT DRIVEWAY			SY	1,173.000	10.00000	11,730.00		L
0740	619(B)6396	REMOVAL OF GUARDRAIL			LF	1,471.000	6.00000	8,826.00		L
0750	619(B)6404	REMOVAL OF SIDEWALK			SY	149.000	20.00000	2,980.00		L
0760	619(B)6420	REMOVAL OF RIPRAP			SY	1,082.000	4.00000	4,328.00		L
0770	619(B)6440	REMOVAL OF EXISTING PIPE			LF	680.000	13.00000	8,840.00		L
0780	619(C)6600	SAWING PAVEMENT			LF	1,582.000	4.00000	6,328.00		L
0790	624 3100	(PL) ORNAMENTAL FENCE			LF	114.000	230.00000	26,220.00		L
0800	624(C)3400	FENCE-STYLE SWF (4 BARBED WIRE)			LF	120.000	12.00000	1,440.00		L
0810	624(C)3405	FENCE-STYLE SWF (5 BARBED WIRE)			LF	485.000	14.00000	6,790.00		L
0820	624(E)3600	FENCE-STYLE CLF (4'HIGH, CLASS A)			LF	219.000	65.00000	14,235.00		L
0830	624(E)3625	FENCE-STYLE CLF (6'HIGH, CLASS B)			LF	357.000	44.00000	15,708.00		L
0840	624(H)3900	(PL) GATE			EA	1.000	1,620.00000	1,620.00		L
0850	629(A)7200	MAILBOX INSTALLATION-SINGLE			EA	5.000	270.00000	1,350.00		L



**Project ID:** 3644804 **Federal Project Number:** 36448(04)

**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
0860	629(C)7400	REMOVAL OF MAILBOX INSTALLATION			EA	5.000	150.00000	750.00		L
0870	629(E)7600	MAILBOX			EA	5.000	155.00000	775.00		L
<b>Category Total:</b>								<b>\$6,293,780.00</b>		

**Category** 0110

WATERLINE

**Alternate Set**

**Alternate Member**

**Funding Source(s) and Participation:** Multiple Fund Packages exist for the Category. See other Funding reports for details.

**Fed Work Class:**

**Fed Construction Class:**

**Category Work Class:**

**Category Length:** 0

**Category Width:** 0

0880	616(B)2332	4" POLYVINYL CHLORIDE (PVC) PIPE			LF	268.000	36.00000	9,648.00		L
0890	616(B)2352	12" POLYVINYL CHLORIDE (PVC) PIPE			LF	124.000	245.00000	30,380.00		L
0900	616(C)2400	3/4" COPPER WATER SERVICE PIPE			LF	3.000	73.00000	219.00		L
0910	616(D)2538	2" COMB-AIR RELEASE ASSEMBLY AND VAULT			EA	1.000	4,210.00000	4,210.00		L
0920	616(E)2900	3/4" CORPORATION STOPS			EA	3.000	200.00000	600.00		L
0930	616(K)3508	4" SOLID SLEEVE			EA	3.000	1,100.00000	3,300.00		L
0940	616(K)3524	12" SOLID SLEEVE			EA	4.000	1,775.00000	7,100.00		L
0950	616(O)4045	12" 45 DEGREE FITTING			EA	8.000	1,200.00000	9,600.00		L
0960	616(Q)4205	4" 45 DEGREE BEND			EA	9.000	900.00000	8,100.00		L
<b>Category Total:</b>								<b>\$73,157.00</b>		



**Project ID:** 3644804 **Federal Project Number:** 36448(04)  
**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
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**Category** 0120 **WASTEWATER** **Alternate Set** **Alternate Member**  
**Funding Source(s) and Participation:** Multiple Fund Packages exist for the Category. See other Funding reports for details.

**Fed Work Class:**  
**Fed Construction Class:** Category Length: 0  
**Category Work Class:** Category Width: 0

0970	611(A)7211	(PL) MANHOLE (4' DIA.)			EA	3.000	6,500.00000	19,500.00		L
0980	611(B)7301	(PL) ADD'L DEPTH IN MANHOLE (4' DIA.)			VF	7.000	500.00000	3,500.00		L
0990	615(A)1224	10" POLYVINYL CHLORIDE (PVC) PIPE			LF	495.000	200.00000	99,000.00		L
1000	616(I)3330	20" STEEL CASING			LF	20.000	320.00000	6,400.00		L
							<b>Category Total:</b>	\$128,400.00		

**Category** 0200 **BRIDGE A** **Alternate Set** **Alternate Member**  
**Funding Source(s) and Participation:** Multiple Fund Packages exist for the Category. See other Funding reports for details.

**Fed Work Class:**  
**Fed Construction Class:** Category Length: 0  
**Category Work Class:** Category Width: 0

1010	501(B)1300	SUBSTRUCTURE EXCAVATION			CY	120.000	31.00000	3,720.00		L
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**Project ID:** 3644804 **Federal Project Number:** 36448(04)

**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
COMMON										
1020	501(G)1800	CLSM BACKFILL			CY	321.100	240.00000	77,064.00		L
1030	502 3100	TEMPORARY EARTH RETAINAGE			LSUM	1.000	75,000.00000	75,000.00		L B
1040	503(A)4240	PRESTRESSED CONCRETE BEAMS (TYPE IV)			LF	1,284.500	345.00000	443,152.50		L
1050	504(A)5200	APPROACH SLAB			SY	347.600	265.00000	92,114.00		L
1060	504(D)5420	CONCRETE RAIL (TR4)			LF	466.000	130.00000	60,580.00		L
1070	504(F)5600	HANDRAILING			LF	466.000	180.00000	83,880.00		L
1080	506(A)7200	STRUCTURAL STEEL			LB	1,840.000	5.25000	9,660.00		L
1090	507(A)8210	WEATHERING STEEL FIXED BEARING ASSEMBLY			EA	14.000	1,800.00000	25,200.00		L
1100	507(B)8300	STAINLESS STEEL EXP. BEARING ASSEMBLY			EA	28.000	2,900.00000	81,200.00		L
1110	507(C)8400	ELASTOMERIC BEARING PADS			EA	28.000	350.00000	9,800.00		L
1120	509(A)0210	CLASS AA CONCRETE			CY	512.000	905.00000	463,360.00		L
1130	509(B)0320	CLASS A CONCRETE			CY	256.600	880.00000	225,808.00		L
1140	511 2100	MECHANICAL SPLICES			EA	1,394.000	45.00000	62,730.00		L
1150	511(A)2210	REINFORCING STEEL			LB	1,590.000	1.90000	3,021.00		L
1160	511(B)2310	EPOXY COATED REINFORCING STEEL			LB	200,210.000	1.70000	340,357.00		L
1170	513(B)4300	CLASS B BRIDGE DECK REPAIR			SY	67.000	380.00000	25,460.00		L
1180	513(C)4400	CLASS C BRIDGE DECK REPAIR			SY	67.000	600.00000	40,200.00		L
1190	514(A)5210	PILES, FURNISHED (HP 10X42)			LF	310.000	55.00000	17,050.00		L



Detail Cost Estimate

Project ID: 3644804 Federal Project Number: 36448(04)

Project Description: 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
1200	514(B)5310	PILES, DRIVEN (HP 10X42)			LF	310.000	21.00000	6,510.00		L
1210	514(L)6300	PILE SPLICE, H-PILE (NON-BIDDABLE)			EA	1.000	500.00000	500.00		F L
1220	515(A)7200	WATER REPELLENT (VISUALLY INSPECTED)			SY	1,199.000	5.50000	6,594.50		L
1230	516(A)8240	DRILLED SHAFTS 60" DIAMETER			LF	72.000	1,400.00000	100,800.00		L
1240	516(A)8250	DRILLED SHAFTS 72" DIAMETER			LF	36.000	1,400.00000	50,400.00		L
1250	516(C)8400	CROSSHOLE SONIC LOGGING			EA	4.000	2,500.00000	10,000.00		L
1260	517 9110	ELASTOMERIC COATING			SF	846.000	25.00000	21,150.00		L
1270	523(A)3200	SEALER CRACK PREPARATION			LF	551.700	3.90000	2,151.63		L
1280	523(B)3300	SEALER RESIN			GAL	7.200	70.00000	504.00		L
1290	601(B)1230	TYPE I-A PLAIN RIPRAP			TON	2,640.000	55.00000	145,200.00		L
1300	601(C)1310	TYPE I-A FILTER BLANKET			TON	605.000	45.00000	27,225.00		L
1310	613(H)6205	6" PERFORATED PIPE UNDERDRAIN ROUND			LF	132.000	38.00000	5,016.00		L
1320	613(I)6310	6" NON-PERF. PIPE UNDERDRAIN RND.			LF	40.000	42.00000	1,680.00		L
1330	619(D)6700	REMOVAL OF EXISTING BRIDGE STRUCTURE			LSUM	1.000	75,000.00000	75,000.00		L B
<b>Category Total:</b>								<b>\$2,592,087.63</b>		

Category 0310 TRAFFIC SIGNING AND STRIPING Alternate Set Alternate Member  
 Funding Source(s) and Participation: Multiple Fund Packages exist for the Category. See other Funding reports for details.





Detail Cost Estimate

Project ID: 3644804      Federal Project Number: 36448(04)  
 Project Description: 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
<b>Fed Work Class:</b>										
<b>Fed Construction Class:</b>										
<b>Category Work Class:</b>										
1340	805(A)3252	(PL)REMOVAL OF EXISTING SIGNS			EA	14.000	155.00000	2,170.00		L
1350	850(A)1200	SHEET ALUMINIUM SIGNS			SF	91.000	42.00000	3,822.00		L
1360	851(C)2415	2" SQUARE TUBE POST			LF	136.000	11.00000	1,496.00		L
1370	855(A)7200	TRAFFIC STRIPE(PLASTIC)(4" WIDE)			LF	14,032.000	1.25000	17,540.00		L
1380	855(B)7304	TRAFFIC STRIPE(PLASTIC)(ARROWS)			EA	28.000	260.00000	7,280.00		L
<b>Category Total:</b>								\$32,308.00		

Category	0340	TRAFFIC CONTROL	Alternate Set	Alternate Member				
<b>Funding Source(s) and Participation:</b> Multiple Fund Packages exist for the Category. See other Funding reports for details.								
<b>Fed Work Class:</b>								
<b>Fed Construction Class:</b>								
<b>Category Work Class:</b>								
1390	857(C)9400	REMOVABLE PAVEMENT MARKING TAPE(4" WIDE)	LF	25,867.000	1.50000	38,800.50		L
1400	857(F)9700	PAVEMENT MRKNG. REMOVAL(TRAF. STRP)	LF	25,867.000	0.50000	12,933.50		L
1410	880(J)7110	CONSTRUCTION TRAFFIC CONTROL	LSUM	1.000	220,000.00000	220,000.00		L B



Detail Cost Estimate

**Project ID:** 3644804      **Federal Project Number:** 36448(04)  
**Project Description:** 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
							<b>Category Total:</b>	\$271,734.00		

**Category** 0600      STAKING      **Alternate Set**      **Alternate Member**  
**Funding Source(s) and Participation:** Multiple Fund Packages exist for the Category. See other Funding reports for details.

**Fed Work Class:**  
**Fed Construction Class:**      **Category Length:** 0  
**Category Work Class:**      **Category Width:** 0

1420	642(B)3300	CONSTRUCTION STAKING LEVEL II			LSUM	1.000	70,000.00000	70,000.00		L B
							<b>Category Total:</b>	\$70,000.00		

**Category** 0640      CONSTRUCTION      **Alternate Set**      **Alternate Member**  
**Funding Source(s) and Participation:** Multiple Fund Packages exist for the Category. See other Funding reports for details.

**Fed Work Class:**  
**Fed Construction Class:**      **Category Length:** 0  
**Category Work Class:**      **Category Width:** 0

1430	220 1100	SWPPP DOCUMENTATION AND MANAGEMENT			LSUM	1.000	15,000.00000	15,000.00		L B
1440	641 2110	MOBILIZATION			LSUM	1.000	444,058.67000	444,058.67		L B
							<b>Category Total:</b>	\$459,058.67		



Detail Cost Estimate

Project ID: 3644804 Federal Project Number: 36448(04)

Project Description: 23rd STREET (193rd E. AVE.)

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
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Estimate Total 3644804 \$9,920,525.30

\* Flags: (F)ixed Price, (N)on Bid, (L)ow Cost Contributor, (B)id as Lump Sum



**Detail Estimate Funding Summary**

**Project ID:** 3644804      **Project Description:** 23rd STREET (193rd E. AVE.)

Category	Cost	E&C Percent	E&C Amount	Total	Funding Package	Fund	Funding Amount
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Project '3644804': Project does not contain Fund Packages.



**Detail Estimate Funding Summary By Fund**

**Project ID:** 3644804

**Project Description:** 23rd STREET (193rd E. AVE.)

Fund ID	Category ID	Cost	E&C Amount	Total	Funding Amount
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Project '3644804': Project does not contain Fund Packages.



**Detail Estimate Funding Summary By Unit**

**Project ID:** 3644804

**Project Description:** 23rd STREET (193rd E. AVE.)

Unit	Cost	E&C Amount	Total	Funding Amount
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Project Project '3644804': Project does not contain Fund Packages.

## SURVEY CONTROL DATA

### Horizontal Control:

1. Horizontal Control for this survey are based on the Oklahoma State Plane Coordinate System, North Zone - NAD 83 Datum.

2. Accuracy - 3rd Order

### Vertical Controls:

3. Level Datum is Mean Sea Level (USC&GS) NAVD 88

4. The Linear Unit is U.S. Survey Foot.

5. Permanent Benchmark - ADS 10

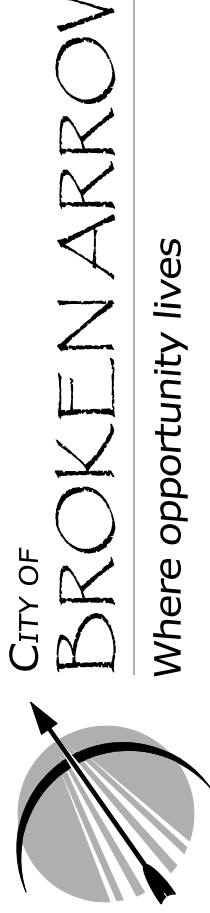
UTILITY CONTACTS	
CITY OF BROKEN ARROW, OKLAHOMA ROCKY HENKEL STREET/STORMWATER 485 N. POPLAR AVE BROKEN ARROW, OKLAHOMA 74012 (918) 259-7000 X2380 (918) 251-3383 (FAX)	CITY OF BROKEN ARROW, OKLAHOMA ROCKY HENKEL STREET/STORMWATER 485 N. POPLAR AVE BROKEN ARROW, OKLAHOMA 74012 (918) 259-7000 X2380 (918) 251-3383 (FAX)
CITY OF BROKEN ARROW, OKLAHOMA CHARLES VOKES, WATER & SEWER 485 N. POPLAR AVE BROKEN ARROW, OKLAHOMA 74012 (918) 259-7000 X7375	AT&T (COMMUNICATIONS) WAYNE GROOM, TECHNOLOGY OPERATIONS 509 S DETROIT AVE, 9TH FLOOR TULSA, OK 74120 (918) 527-7309
OKLAHOMA NATURAL GAS (GASLINE) STEVE EDLIN, GOVERNMENT RELOCATIONS 5848 E. 15TH ST. TULSA, OK 74146 (918) 851-8589	COX (COMMUNICATIONS) CHRIS LONG, RIGHT-OF-WAY AGENT I 11811 E 51ST ST TULSA, OK 74146 (918) 286-4665
PHILLIPS 66 (GASLINE) MATTHEW B. DOWDELL, REAL ESTATE SERVICES AGENT 1388 04 PHILLIPS BUILDING 420 SOUTH KEELER BARTLESVILLE, OK 74003-6670 (918) 977-6600 (918) 977-2202 (FAX)	WATER - RURAL WATER DISTRICT #4 RYAN SMITH, P. E., PROJECT MANAGER POE & ASSOCIATES, INC 4606 S. GARNETT ROAD, SUITE 600 TULSA, OK 74146 (918) 665-8800 (918) 665-6076 (FAX)
VERZONI (COMMUNICATIONS) LESTER RUTHERFORD (918) 809-2359	MBO (COMMUNICATIONS) JOHNNY ALEXANDER (918) 550-3433
PSO (ELECTRIC) LONNY HICKS, TECHNICIAN PRIN 5223 S GARNETT TULSA, OK 74146-5902 (918) 250-6211	CENTURYLINK (COMMUNICATIONS) MARK LANE (918) 240-7376

## SYMBOL LEGEND

== SS ==	EXISTING SANITARY SEWER LINE
== RCP ==	EXISTING STORM DRAIN LINE
— FO —	EXISTING FIBER OPTIC LINE
T	EXISTING TELEPHONE RISER
⊕	EXISTING COMMUNICATIONS BOX
E	EXISTING ELECTRICAL RISER
⚡	EXISTING ELECTRICAL TRANSFORMER
— G —	EXISTING OVERHEAD ELECTRICAL LINE
— W —	EXISTING NATURAL GAS LINE
— — —	EXISTING WATER LINE
— — —	EXISTING PAVEMENT EDGE
— — —	EXISTING CONCRETE JOINT
— — —	EXISTING PROPERTY LINE
— — —	EXISTING RW
— — —	EXISTING PARCEL
— — —	EXISTING EASEMENT
— X —	EXISTING FENCE
— — —	EXISTING FLOWLINE
— O —	EXISTING SIGN
⊕	EXISTING WATER VALVE
⊕	EXISTING WATER METER

## DESIGN DATA

AADT (2018)	=	18,280
Design Speed	=	50 MPH
Min. Hor. R	=	1.125'
Max. Vertical Grade	=	4.0%
Min. Vertical Grade	=	0.4%
Min. Vert. K (Sag)	=	96
Min. Vert. K (Crest)	=	84

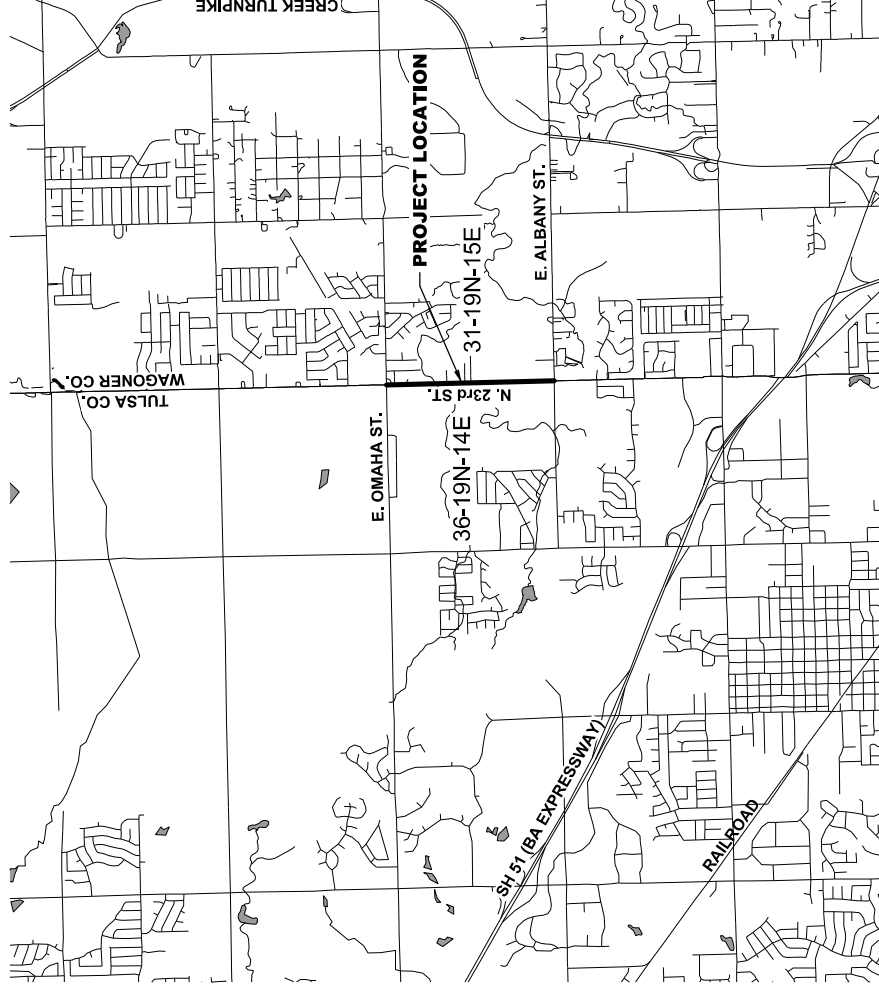


# N. 23rd STREET

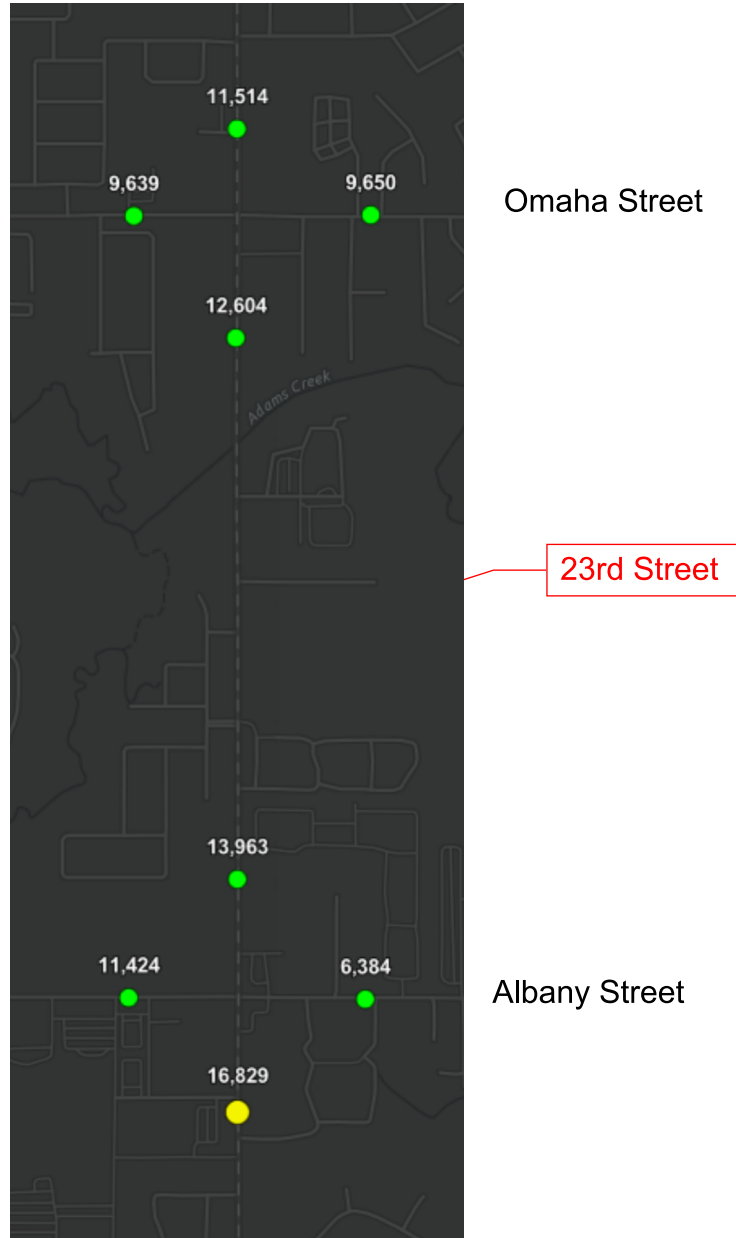
## WIDENING FROM ALBANY ST. TO OMAHA ST. AND BRIDGE REPLACEMENT

PROJECT NUMBER ST1931 & ST1932  
EXISTING NBI # 19345 ; NEW NBI # 32731

### LOCATION MAP



PROJECT LOCATION  
SECTION 30 T19N R14E



INCOG - AADT ESTIMATES (STREETLIGHT DATA), USED IN SECTION A.1



# Oklahoma Dept. of Transportation - Bridge Inspection Report

<b>NBI No.:</b> 19345	<b>Structure No.:</b> 72N4070E0640003	<b>Local ID:</b> 3	<b>Suff. Rating:</b> 47.50	<b>FO</b>																																																		
<b>Bridge Description:</b> 39-52-39ft. CONTINUOUS PLATE GIRDER SPANS		<b>INSPECTION</b>																																																				
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<b>STRUCTURE TYPE AND MATERIALS</b>		<b>CLASSIFICATION</b>																																																				
43a/b. Main Span: Steel Cont. / Stringer/Girder 44a/b. Appr. Span: N/A / Not Applicable (P) 45. # of Main Spans: 3 46. # of Appr. Spans: 0 107. Deck Type: Concrete-Cast-in-Place 108a. Wearing Surface: Bituminous 108b. Membrane: None 108c. Deck protection: None		12. Base Hwy Net.: Not on Base Network 20. Toll Facility: On free road 21. Custodian: City 22. Owner: City 26. Function Class: 07 Rural Mjr Collecto 37. Historical Sig.: Not eligible for NRHP 100. Def. Hwy: Not a STRAHNET hwy 101. Parallel Str.: No    bridge exists 102. Traffic Dir.: 2-way traffic 103. Temp. Str.: Not Applicable (P) 104. Hwy System: Not on NHS 105. Fed Land Hwy: N/A (NBI) 110. Defense Hwy: Not a STRAHNET hwy 112. NBIS Length: Long Enough																																																				
<b>AGE AND SERVICE</b>		<b>CONDITION</b>																																																				
19. Detour Length: 4.0 mi 27. Year Built: 1977 28a/b. Lanes on/und: 2 / 0 29. ADT: 12,532 30. Year of ADT: 2020 42a/b. Type of Svc on/und: Highway / Waterway		58. Deck: 6 Satisfactory 62. Culvert: N/A (NBI) 59. Sup.: 5 Fair 61. Chan./Chan. Prot.: 6 Bank Slumping 60. Sub: 5 Fair Flowline Notes Flowline, taken from Top of Rail, West side, South to North																																																				
<b>GEOMETRIC DATA</b>		<b>LOAD RATING AND POSTING</b>																																																				
10. Vert. Clearance: 99.99 ft 32. Appr Rwy Width: 26.00 ft 33. Median: No median 34. Skew: 45.00° 35. Struct. Flared: No flare 47. Horizontal Clr: 31.00 ft 48. Length Max Span: 52.00 ft 49. Struct. Length: 132.50 ft 50a. Curb/Sdwk Width L: 1.33 ft 50b. Curb/Sdwk Width R: 1.33 ft 51. Width Curb to Curb: 31.00 ft 52. Width Out to Out: 32.83 ft Deck Area: 5,117.00 sq. ft 53. Min. Vert. Cl. Ovr Brg: 99.99 ft 54a. Min. Vt. Undclr. Ref.: N Feature not hwy c 54b. Min. Vert. Undclr.: 0.00 ft 55a. Min. Lat. Undclr. Ref.: N Feature not hwy 55. Min. Lat. Underclr. R: 0.00 ft 56. Min. Lat. Underclr. L: 0.00 ft		31. Design Load: MS 18 (HS 20) 41. Post. Status: P Posted for load 70. Posting: 2 20.0-29.9% below 63. Op / 65. Inv. Rating Meth.: 1 LF Load Factor / 1 LF Load Factor 64. Operating Rating (tons): <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td>H</td><td>HS</td><td>3-3</td><td>EV3</td><td>SHV</td></tr> <tr><td>25.00</td><td>33.00</td><td>55.00</td><td>30.00</td><td>38.00</td></tr> </table> 66. Inventory Rating (tons): <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td>15.00</td><td>20.00</td><td>33.00</td><td>18.00</td></tr> </table> Date Rated: 03/31/2021			H	HS	3-3	EV3	SHV	25.00	33.00	55.00	30.00	38.00	15.00	20.00	33.00	18.00																																				
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<b>OKLAHOMA ITEMS</b>		<b>APPRAISAL</b>																																																				
200c. Temperature: 41 200d. Weather: Clear 201. Struc. Stl. ASTM Desig.: -1 / -1 202. Waterprf. Membrane: -1 Date Installed: 01/01/1901 203. Type Exp. Device: - 204. Type of Railing: SFP-1 205. Material Quantity: -1.00 208a. Type of Abutment: Skeleton b. Type of Found.: Steel Piling 209. Type of Pier/Found.: 2 / No No Piling/Drilled Shaft 210. Foundation Elev.: <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td>-1.00</td><td>-1.00</td></tr> <tr><td>-1.00</td><td>-1.00</td></tr> </table> 211. Wear. Surf. Prot. Sys: None Date Installed: 01/01/1901 211c. Silane Reapplied 211d. Date: 213. Utilities Attached: Natural Gas		-1.00	-1.00	-1.00	-1.00	36a. Brdg Rail: 1 Meets Standards 36b. Transition: 0 Substandard 36c. Appr. Rail: 0 Substandard 36d. Appr. Rail Ends: 0 Substandard 67. Str Evaluation: 4 Minimum Tolerab 68. Deck Geom.: 3 Intolerable - Correct 69. Vert./Horiz. Undclr: Not applicable (NB) 71. Waterway Adeq: 6 Equal Minimum 72. Appr. Alignment: 5 Above Tolerable 113. Scour Critical: 8 Stable Above Footr																																																
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<b>PROPOSED IMPROVEMENTS</b>		<b>NAVIGATION DATA</b>																																																				
94. Bridge Cost: \$368,000 95. Roadway Cost: \$203,000 96. Total Cost: \$589,000 97. Yr. of Cost Est.: 2015		75. Type of Work: 31 Repl-Load Capacity 76. Lngth of Improvement: 236.7 ft 114. Future ADT: 8,214 115. Yr. of Future ADT: 2040 38. Nav. Control: Permit Not Required 39. Vert. Clearance: 0.0 ft 40. Horiz. Clearance: 0.0 ft 111. Pier Protect.: 1 Not Required 116. Lift Bridge Vert. Clr.: 0.0 ft																																																				
214a. Posted Weight Limit: 252525 b. Posted Speed Limit: NR c. Narrow/1way Brdg Sign: No d. Vertical Clr. Sign: No Adv. Warning Sign: No e. Navigation Lights?: No Working/Not Working: No 215. Overpass: INCOG 218. Functionally Obsolete: FO 220. Bridge Redecked: - 221. Substr. Cond. (U/W): 222. Fill Over RCB: 223. Appr. Slab/Rwy Cond.: 2 225. Paint Type/Ovrct: Red Lead 3 Coat System N/A 226. Date Painted: 1977 227. Paint Color: Silver 233. Deck Forming: 238. School Bus Rte.: - Current bus route 240. Appr. Rwy Type.: Asphalt/Bituminous 243. Grdr Spacing/No.: 9.00 / 4		244. Span Lengths: <table border="1" style="display: inline-table; margin-right: 10px;"><tr><td>39</td></tr></table> <table border="1" style="display: inline-table; margin-right: 10px;"><tr><td>52</td></tr></table> <table border="1" style="display: inline-table;"><tr><td>39</td></tr></table> 245. Girder Depth: 3.08 246a. Type of Overlay: AC Overlay b. Overlay Thickness: 6.00 c. Overlay Date: 09/01/2006 d. Ovlv Depth Changed >1": - 247. Protective Systems: <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td> </td></tr> <tr><td> </td></tr> </table> <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td> </td></tr> <tr><td> </td></tr> </table> 248. # Field Splices w/ Corrosion: 249. Scour Crit. POA Exists?: - 250. Headwall: 258. Plans w/Found.in ODOT File: - 259. Scour Eval. in ODOT File: - 263. Interchange at Intersection: - 264. Interstate Milepoint: -1.00			39	52	39																																															
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# Oklahoma Dept. of Transportation - Bridge Inspection Report

<b>NBI No.:</b> 19345	<b>Structure No.:</b> 72N4070E0640003	<b>Local ID:</b> 3	<b>Suff. Rating:</b> 47.50	<b>FO</b>
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Inspection Date: 2/3/23	Rick Kingery	
Invoice No.: 21T03080-11	Inspected With: Jacob Hoak	

Richard Kingery

Digitally signed by Richard Kingery  
Location: Garver, LLC  
Contact Info: RSKingery@GarverUSA.com  
Date: 2023.04.24 14:03:37-05'00'

**BRIDGE NOTES:**

Spans numbered South to North. Beams numbered West to East. Bearing numbered West to East. Stringers numbered South to North.

**INSPECTION NOTES: 2/3/23**

PX - CLEAN AND PAINT ALL BEAMS.  
 PX - GUARDRAIL DAMAGE AND ROTTEN TIMBER POSTS AT ALL CORNERS.  
 PX - REPAIR/SPLICE WEST PILE AT SOUTH ABUTMENT AND ENCASE ALL ABUTMENT PILES.

**ELEMENT CONDITION STATE DATA**

Elem. / Env	Description	Unit	Total Qty	% 1	Qty. 1	% 2	Qty. 2	% 3	Qty. 3	% 4	Qty. 4
12 / 4	Re Concrete Deck	sq.ft	4,590.00	0%	0.00	100%	4,590.00	0%	0.00	0%	0.00
Covered by asphalt overlay. Gutter line has approximately 6 in. of dirt and gravel.											
510 / 4	Wearing Surfaces	sq.ft	4,590.00	0%	0.00	85%	3,905.00	15%	685.00	0%	0.00
Transverse and longitudinal cracking along deck. South and North joints have cracking and spalling. South joint is worse with bigger spall/opening in Northbound lane. Wearing with exposed aggregate.											
107 / 4	Steel Opn Girder/Beam	ft	480.00	0%	0.00	100%	480.00	0%	0.00	0%	0.00
FX - DIAPHRAGM AT BOTH PIERS HAVE MODERATE TO SIGNIFICANT SECTION LOSS. PX - BEAMS 1 & 4 HAVE PACK RUST AND SECTION LOSS OVER PIER 2. PX - ALL STRINGERS OVER PIER 1 AND 2 HAVE PACK RUST AND SECTION LOSS WITH HEAVY RUST THROUGHOUT. Pitting (1/16 in.) at bottom of web and bottom flange of Beam 1 and 4 at Pier 2. Initial section loss and corrosion at Beam 3, Pier 2 Top and bottom flanges of Beam 1 at Pier 2 have pack rust and section loss. Diaphragm between Beams 3 & 4 over Pier 2 has 100% section loss.											
515 / 4	Steel Protective Coating	sq.ft	6,240.00	0%	0.00	100%	6,240.00	0%	0.00	0%	0.00
80% effective.											
210 / 4	Re Conc Pier Wall	ft	40.00	83%	33.00	15%	6.00	3%	1.00	0%	0.00
Minor spalls with exposed rebar in both Pier walls. Pier 2 has a minor 18 in. long vertical crack at East end.											
215 / 4	Re Conc Abutment	ft	72.00	90%	65.00	10%	7.00	0%	0.00	0%	0.00
Minor staining on both abutments. Minor horizontal crack in West end of North Abutment. Minor scaling in North Abutment.											
225 / 4	Steel Pile	(EA)	7.00	0%	0.00	86%	6.00	14%	1.00	0%	0.00
PX - PILE NO. 1 OF SOUTH ABUTMENT HAS SIGNIFICANT SECTION LOSS (35%) AND CORROSION. South abutment has 5 exposed piles. North abutment has 2 exposed piles. Surface rust throughout.											
234 / 4	Re Conc Pier Cap	ft	66.00	44%	29.00	26%	17.00	30%	20.00	0%	0.00
South face of Pier 1 cap has 2 small spalls with exposed rebar. South face of Pier 1 has a horizontal crack. South face of Pier 2 at East end has a 3 ft. by 8 in. spall with exposed rebar. North face of the Pier 2 cap has 2 small spalls with exposed rebar. Pier 2 at West end has map cracking with efflorescence. Rust staining at the ends of both caps.											
304 / 4	Open Expansion Joint	ft	132.00	0%	0.00	100%	132.00	0%	0.00	0%	0.00
Covered with asphalt.											
311 / 4	Moveable Bearing	each	12.00	0%	0.00	50%	6.00	50%	6.00	0%	0.00
PX - 6 ROLLER BEARINGS (1 ON WEST END OF THE NORTH ABUTMENT, 4 ON THE NORTH PIER CAP, AND 1 ON SOUTH ABUTMENT) WITH SECTION LOSS. Bearings are approximately 1 in. or less out of alignment towards the South on the South abutment. Southwest abutment bearing plate rusted with minor section loss. 2 bearings at North abutment are rotated to the North.											
313 / 4	Fixed Bearing	each	4.00	0%	0.00	0%	0.00	100%	4.00	0%	0.00
Bearings 1, 2 & 4 on Pier 1 are rusted with section loss.											
331 / 4	Re Conc Bridge Railing	ft	265.00	88%	232.00	12%	32.00	0%	1.00	0%	0.00
West rail has minor spalls with exposed rebar. West rail at South end has a 6 in. by 24 in. spall. Minor vertical cracks in both rails.											

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<b>859 / 4</b>	Soffit	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00	
4 in. gas line attached to the East side of the soffit with spalling at all the anchor locations. Bay 1.2 over Pier 1 has delamination. Spall in Span 1. Saturation and scaling around joints.												
<b>865 / 4</b>	St.Open Gird End(5Ft	(LF)	40.00	0%	0.00	40%	16.00	60%	24.00	0%	0.00	
Initial surface corrosion at all beam ends. Beam 1 & 4 over both piers have heavy corrosion with minor section loss.												
<b>870 / 4</b>	Concrete Wingwall	(EA)	4.00	100%	4.00	0%	0.00	0%	0.00	0%	0.00	
Southwest wing has a vertical crack.												
<b>963 / 4</b>	Steel Section Loss SF	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00	
PX - BEARINGS WITH MINOR SECTION LOSS AT PIERS 1 AND 2 AND BOTH ABUTMENTS. 2 DIAPHRAGMS ABOVE BOTH PIERS RUSTING WITH SECTION LOSS. PX - SIGNIFICANT SECTION LOSS AND CORROSION AT PILE NO. 1 OF SOUTH ABUTMENT. LOCAL SECTION LOSS (35%) OF FLANGE. Exposed piles with minor section loss at both abutments.												
<b>966 / 4</b>	Exposed Abut.Piling SF	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00	
PX - SOUTH ABUTMENT HAS 5 EXPOSED PILES (APPROX. 15 IN.) NORTH ABUTMENT HAS 2 EXPOSED PILES (APPROX. 6 IN.)												
<b>968 / 4</b>	Erosion SF	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00	
PX - EROSION IS EXPOSING 5 PILES AT SOUTH ABUTMENT AND 2 PILES AT NORTH ABUTMENT.												

# Oklahoma Dept. of Transportation - Bridge Channel Report

<b>NBI No.:</b> 19345000000000	<b>Structure No.:</b> 72N4070E0640003	<b>Local ID:</b> 3	<b>Insp. Date:</b> 2/3/2023
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**Bridge Description:**

39-52-39ft. CONTINUOUS PLATE GIRDER SPANS

- |                         |                                    |
|-------------------------|------------------------------------|
| 1. State: Oklahoma      | 7. Facility Carried : 23RD ST      |
| 2. Division: Division 8 | 6. Feat.Intersected: CREEK         |
| 3. County: TULSA        | 9. Location: 193RD E .3S OF 51ST S |
| 4. City: BROKEN ARROW   | 16. Latitude: 36° 05' 09.29"       |
|                         | 17. Longitude: 095° 45' 42.51"     |

- |                                |                        |
|--------------------------------|------------------------|
| 38. Nav. Control:              | Permit Not Required    |
| 39. Nav. Vert. Clearance:      | 0.0 ft                 |
| 40. Nav. Horiz. Clearance:     | 0.0 ft                 |
| 42. Service Type Under:        | Waterway               |
| 61. Channel/Chan. Prot.:       | 6 Bank Slumping        |
| 71. Waterway Adeq.:            | 6 Equal Minimum        |
| 111. Pier Protect.:            | 1 Not Required         |
| 113. Scour Critical:           | 8 Stable Above Footing |
| 249. Scour Crit. POA Exists?:  | —                      |
| 259. Scour Eval.in ODOT File?: | —                      |

**Flowline Note**

Flowline, taken from Top of Rail, West side, South to North

**i212 Hydraulic Data:**

- |   |       |
|---|-------|
| Navigable Waterway?   | Unkno |
| Type Bedding Material at the Bottom of Piers, Piles, Spread Footing or Drilled Shaft: | -1    |
| Contributing Drain Area:  | -1    |
| Drainage Area:  | -1    |
| High Water Elevation:   | -1.00 |
| Low Point Elevation:  | -1.00 |
| Top of Opening Elevation:   | -1.00 |
| Computed High Water:  | -1    |
| Stream Velocity Plans):   | -1    |
| Total Scour for Q100:   |       |
| Total Scour for Overtopping:  |       |
| V - Velocity Downstream:  | -1    |
| Q - Flow Thru Bridge:   | -1    |
| Waterway Below Low Steel:   | -1    |

**Channel Profile Measurements**

256. Measurements were taken from which side of bridge?  Distance from beginning of bridge to baseline (up to 999.9 ft.):

	1	2	3	4	5	6	7	8	9	10
<b>Distance from baseline:</b>	<input type="text" value="3.00"/>	<input type="text" value="39.00"/>	<input type="text" value="65.00"/>	<input type="text" value="91.00"/>	<input type="text" value="127.00"/>					
<b>Profile:</b>	<input type="text" value="10.50"/>	<input type="text" value="19.00"/>	<input type="text" value="22.00"/>	<input type="text" value="20.50"/>	<input type="text" value="9.60"/>					
<b>Event:</b>	<input type="text" value="Abutment"/>	<input type="text" value="Pier"/>	<input type="text" value="Flowline"/>	<input type="text" value="Pier"/>	<input type="text" value="Abutment"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>

	11	12	13	14	15	16	17	18	19	20
<b>Distance from baseline:</b>										
<b>Profile:</b>										
<b>Event:</b>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text" value="—"/>

**CITY OF BROKEN ARROW BRIDGE: 3**  
**NBI NO.:** 19345  
**STRUCTURE NO.:** 72N4070E0640003

**COUNTY:** TULSA  
**FACILITY CARRIED:** 23RD ST.  
**FACILITY INTERSECTED:** CREEK



**PHOTO 1:** SOUTH APPROACH WITH 25 TON POSTING SIGNS (LOOKING NORTH)



**PHOTO 2:** NORTH APPROACH WITH 25 TON POSTING SIGNS (LOOKING SOUTH)

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**PHOTO 3:** WEST PROFILE  
(LOOKING NORTHEAST)



**PHOTO 4:** CHANNEL,  
UPSTREAM  
(LOOKING WEST)

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**PHOTO 5: CHANNEL,  
DOWNSTREAM  
(LOOKING EAST)**



**PHOTO 6: RAIL DAMAGE  
(TYPICAL)**

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**COUNTY:** TULSA  
**FACILITY CARRIED:** 23RD ST.  
**FACILITY INTERSECTED:** CREEK



**PHOTO 7:** DECK AT NORTH ABOUTMENT (TYP AT SOUTH) – CRACKS, SPALLS, AND PATCHES



**PHOTO 8:** DECK WITH POTHOLES AND CRACKING IN OVERLAY



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**FACILITY CARRIED:** 23RD ST.  
**FACILITY INTERSECTED:** CREEK



**PHOTO 9:** BEAM 1 -  
MINOR SECTION LOSS OF  
BOTTOM FLANGE AT  
NORTH ABUTMENT



**PHOTO 10:** NORTH  
ABUTMENT - EROSION  
WITH EXPOSED PILES

**CITY OF BROKEN ARROW BRIDGE: 3**  
**NBI NO.: 19345**  
**STRUCTURE NO.: 72N4070E0640003**

**COUNTY: TULSA**  
**FACILITY CARRIED: 23RD ST.**  
**FACILITY INTERSECTED: CREEK**



**PHOTO 11: DIAPHRAGMS AT PIER 2 HAVE 100% SECTION LOSS (TYPICAL)**



**PHOTO 12: BEAM 4 AT PIER 2 – 15% SECTION LOSS**

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**FACILITY CARRIED: 23RD ST.**  
**FACILITY INTERSECTED: CREEK**



**PHOTO 13: BEAM 1 AT PIER 2 – 15% SECTION LOSS**



**PHOTO 14: MINOR SPALLS IN SOFFIT AT DRAINS (TYPICAL)**

**CITY OF BROKEN ARROW BRIDGE: 3**  
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**COUNTY: TULSA**  
**FACILITY CARRIED: 23RD ST.**  
**FACILITY INTERSECTED: CREEK**



**PHOTO 15:** DIAPHRAGMS AT PIER 1 HAVE MODERATE TO HEAVY SECTION LOSS (TYPICAL)



**PHOTO 16:** BEAM 4 AT PIER 1 – MINOR SECTION LOSS

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**COUNTY: TULSA**  
**FACILITY CARRIED: 23RD ST.**  
**FACILITY INTERSECTED: CREEK**



**PHOTO 17:** BEAM 1 AT  
PIER 1 – MODERATE  
SECTION LOSS



**PHOTO 18:** BEARINGS AT  
ABUTMENTS HAVE  
HEAVY CORROSION  
(TYPICAL)

CITY OF BROKEN ARROW BRIDGE: 3  
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COUNTY: TULSA  
FACILITY CARRIED: 23RD ST.  
FACILITY INTERSECTED: CREEK



**PHOTO 19:** PILE 1 SOUTH ABUTMENT FLANGE RUSTED THROUGH WITH 35% SECTION LOSS



**PHOTO 20:** PIER 1 MINOR SPALL AND DELAMINATION SOUTH FACE (TYP)

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**PHOTO 21:** SOUTH  
ABUTMENT  
UNDERMINED 24"



**PHOTO 22:** BEARING 4  
AT PIER 1

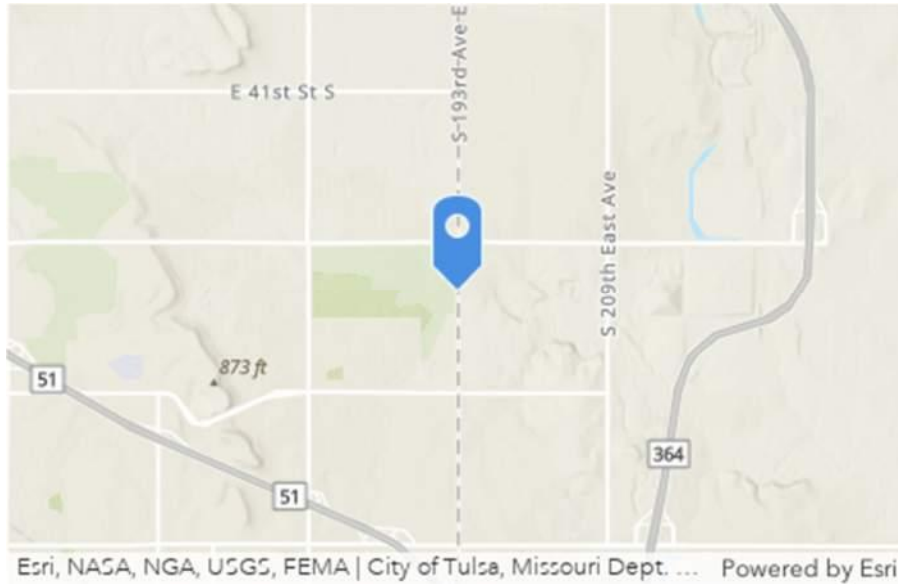
**CITY OF BROKEN ARROW BRIDGE: 3**  
**NBI NO.:** 19345  
**STRUCTURE NO.:** 72N4070E0640003

**COUNTY:** TULSA  
**FACILITY CARRIED:** 23RD ST.  
**FACILITY INTERSECTED:** CREEK

**INSPECTED BY:** Bridge2\_Garver

**INSPECTION DATE:** 02/03/2023

**LOCATION:** -95.7618393691152, 36.08502099396132



**LOCATION NOTES**



Summary of Maintenance Bridge Inspection for City of Broken Arrow February 2023									
Local ID	NBI No.	Description	Facility Carried	Feature Intersected	Scour POA?	Existing Load Posting	New Load Posting	Comments	
001	21521	(12ft.-14ft.-12ft.)X 6ft.X 43ft. R.C.BOX	E ROCKFORD ST.	CREEK				FX: ADD RIPRAP TO MITIGATE 12 IN. SCOUR AT SOUTH END; NO UNDERMINING. * PX: REMOVE SILT AND VEGETATION AT SOUTH SIDE OF CELL 2.	
002	29698	3-12ft. X 9ft. X 80ft. LONG SKEWED RCB	LYNN LANE (9TH ST.)	CREEK				FX: NONE PX: REMOVE SILT AND DEBRIS FROM ALL CELLS. *	
003	19345	39-52-39ft. CONTINUOUS PLATE GIRDER SPANS	23RD ST.	CREEK		25 TONS		FX: NONE PX: CLEAN AND PAINT ALL BEAMS, DIAPHRAGMS AND BEARINGS. REPAIR/SPLICE WEST PILE AT SOUTH ABUTMENT AND ENCASE ALL ABUTMENT PILES. REPLACE ALL GUARDRAIL. * FX: REMOVE TREES AND VEGETATION FROM WEST SIDE & SILT IN ALL CELLS. * PX: NONE	
004	19675	3-10ft.X 6ft.X 114ft. R.C.BOX	ASPEN ST.	CREEK				FX: REMOVE TREES AND VEGETATION FROM WEST SIDE & SILT IN ALL CELLS. * PX: NONE	
005	29699	3-9ft. X 5ft. X 82ft. LONG RCB	N4060 (9TH/LYNN)	CREEK		26 TONS		FX: REPAIR FENCE ON EAST SIDE. PX: NONE	
006	20055	3-10ft.X 8ft.X 37ft. R.C.BOX	INDIANWOOD	HAIKEY CREEK				FX: REPAIR SETTLING AND CRACKED APPROACH ROADWAY PAVEMENT. * PX: REMOVE SILT & TREES BLOCKING CELL 3. *	

\* RECOMMENDATION NOTED IN PREVIOUS INSPECTION REPORT.

