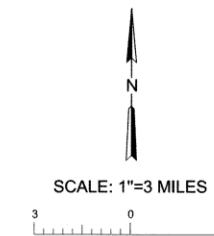
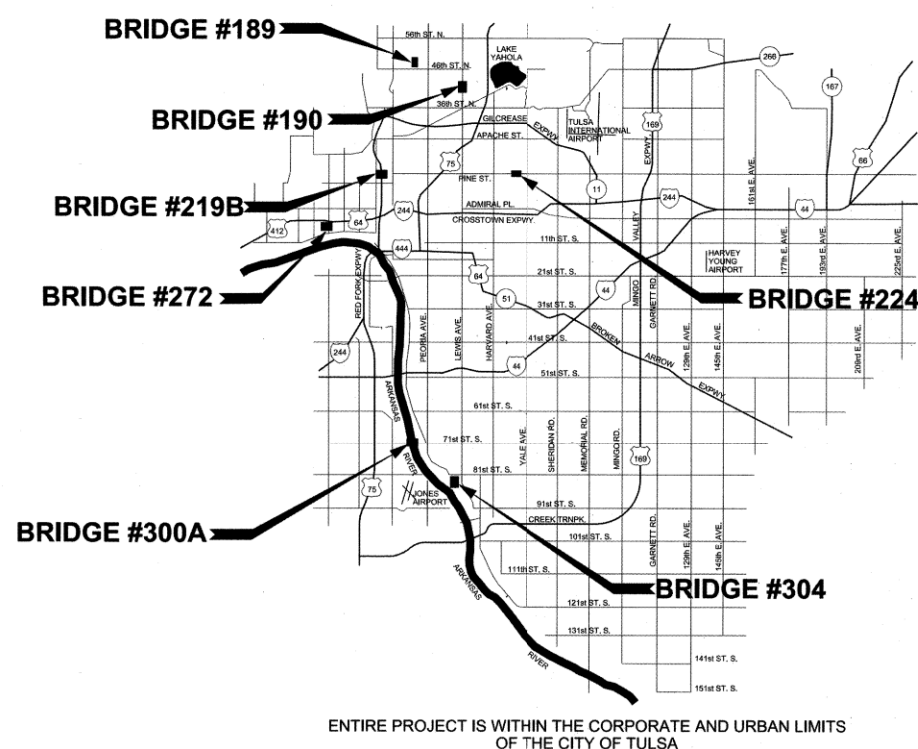


CONSTRUCTION PLANS FOR BRIDGE REHABILITATIONS

BRIDGE #189 NBI NO. 19439
BRIDGE #190 NBI NO. 10331
BRIDGE #219B NBI NO. 21669
BRIDGE #224 NBI NO. 12112
BRIDGE #272 NBI NO. 19428
BRIDGE #300A NBI NO. 20579
BRIDGE #304 NBI NO. 27189

PROJECT NO. 2436B0005Z - 189, 190, 219B, 224, 272, 300A, 304
ACCOUNT NO. 2436B0005Z.Bridges.BridgMR.4292.42923200-541104

PUBLIC WORKS DEPARTMENT



SYMBOL LEGEND

SS	EXISTING SANITARY SEWER LINE
RCP	EXISTING STORM DRAIN LINE
FO	EXISTING FIBER OPTIC LINE
T	EXISTING TELEPHONE RISER
W	EXISTING OVERHEAD ELECTRICAL LINE
PUG	EXISTING UNDERGROUND ELECTRICAL LINE
E	EXISTING ELECTRICAL RISER
G	EXISTING NATURAL GAS LINE
W	EXISTING WATER LINE
Δ	EXISTING ELECTRICAL TRANSFORMER
---	EXISTING PAVEMENT EDGE
---	EXISTING CONCRETE JOINT
---	EXISTING PROPERTY LINE
---	EXISTING R/W
---	EXISTING EASEMENT
---	EXISTING BUILDING LINE
---	EXISTING FENCE
○	EXISTING SIGN
WV	EXISTING WATER VALVE
WM	EXISTING WATER METER
FH	EXISTING FIRE HYDRANT
○	EXISTING SANITARY SEWER MANHOLE
□	EXISTING STORM MANHOLE
○	EXISTING GAS METER
□	EXISTING HVAC UNIT
LP	EXISTING LIGHT POLE
PP	EXISTING POWER POLE
↑	EXISTING GUY WIRE
⊠	EXISTING TRAFFIC SIGNAL PULL BOX
○	EXISTING TREE
MB	EXISTING MAILBOX
○	EXISTING COMMUNICATION MANHOLE
●	BORE HOLE
◆	BENCHMARK
△	VERTICAL CONTROL POINT
21	PARCEL NUMBER
---	PROPOSED CONSTRUCTION

UTILITY COORDINATION

UTILITY	CONTACT	PHONE NO.
CITY OF TULSA	TONY GLYNN	918-596-9245
AEP/PSO	EMERGENCY	888-216-3523
ONG	EMERGENCY	800-664-5463
AT&T	EMERGENCY	800-288-2020
COX COMMUNICATIONS	CUSTOMER SERVICE	918-806-6000
VERIZON	CUSTOMER SERVICE	888-294-6804
WINDSTREAM	CUSTOMER SERVICE	800-347-1991

In accordance with ODOT Section 105.14, the City of Tulsa is anticipating that the successful contractor will utilize the appropriate means and methods to accomplish the work described in the plans without causing collateral damage to the existing infrastructure. The anticipated construction phasing will minimize the time between milled streets and new asphalt placement. Current City of Tulsa construction budgets do not allow for the growth of the project beyond the extents detailed in the plans.

THIS PROJECT COMPLIES WITH ALL OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) REQUIREMENTS



APPROVED BY:

T. O. Bell
CITY ENGINEER

DATE: 12/9/2025

ADVERTISEMENT DATE: _____



PREPARED BY:

Karen S. Jones

BENHAM DESIGN, LLC.
15 West 6th Street, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600

KAREN S. JONES, P.E.
OK P.E. NO. 28517
PROJECT ENGINEER



DATE: 9-30-25

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BRIDGE REHABILITATIONS
BRIDGE #189, 190, 219B, 224, 272, 300A, 304
PROJECT NO. 2436B0005Z - 189, 190, 219B, 224, 272, 300A, 304

Benham Design, LLC
15 West 6th Street, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600



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INDEX OF SHEETS

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2	INDEX OF SHEETS
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4-5	PAY ITEMS AND NOTES
6-8	GENERAL CONSTRUCTION NOTES
9	SUMMARIES
10	MISCELLANEOUS DETAILS
11-17	STORMWATER MANAGEMENT PLAN
18-19	BRIDGE 189 DETAIL
20-24	BRIDGE 190 DETAIL
25-26	BRIDGE 219B DETAIL
27-33	BRIDGE 224 DETAIL
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36-39	BRIDGE 300A DETAIL
40-41	BRIDGE 304 DETAIL
42-45	SIGNING AND STRIPING
46-48	UTILITIES AND ROW
49-52	REQUIRED SEQUENCE OF CONSTRUCTION & TRAFFIC CONTROL
53	DETOUR MAP

THE FOLLOWING CITY STANDARDS WILL BE REQUIRED

STD. NO.	STANDARD NAME
102	PROJECT SIGN
126	STANDARD SILT FENCE AND CONSTRUCTION ENTRANCE
608B	TRAFFIC SIGNS

THE FOLLOWING ODOT STANDARDS WILL BE REQUIRED

ROADWAY DESIGN		TRAFFIC CONTROL		2009 BRIDGE DESIGN	
BMPR-0	BEST MANAGEMENT PRACTICE REFERENCE MATRIX	TCS1-1-01	TRAFFIC CONTROL CONSTRUCTION NOTES	TR4-2-00E	CONCRETE TRAFFIC RAIL (TR4)
TESCA-0	TYPICAL TEMPORARY EROSION SEDIMENT CONTROL APPLICATIONS	TCS2-1-00	TRAFFIC CONTROL TABLES AND CHARTS	B40-STL-BM-BRACING-00E	STEEL BEAM BRACING DETAILS
RSF-0	REINFORCED SILT FENCE INSTALLATION AND APPLICATIONS	TCS4-1-01	TRAFFIC CONTROL DEVICES		
SCE-0	STABILIZED CONSTRUCTION EXIT	TCS5-1-00	TYPICAL SIGN INSTALLATION		
SSS-2-1	SOLID SLAB SODDING	TCS6-1-02	CHANNELIZING DEVICES		
ASCD-6-1	ASPHALT SURFACING CONSTRUCTION DETAILS	TCS7-1-02	PLACEMENT OF ADVANCE WARNING SIGNS		
LECS-5-3	JOINTS AND SEALERS - LONGITUDINAL, EXPANSION / ISOLATION AND CONTRACTION	TCS8-1-00	CONSTRUCTION SIGNS		
		TCS9-1-01	CONSTRUCTION SIGNS		
		TCS14-1-00	CONSTRUCTION SIGNS		
		TCS19-1-01	CONSTRUCTION SIGNS		

TRAFFIC SIGNING

PM3-1-02	PAVEMENT MARKING (FIFTH LANE AND TWO LANE RURAL)
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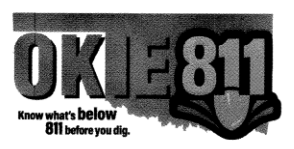
TRAFFIC SAFETY

THRI-1-02	GUARDRAIL BRIDGE CONNECTION - THRIE BEAM
SKT-1-00	GUARDRAIL END TREATMENT
GA31-1-00	GUARDRAIL ANCHOR UNITS
GHW1-1-00	GUARDRAIL AND HARDWARE (1 OF 2)
GHW2-1-00	GUARDRAIL AND HARDWARE (2 OF 2)



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BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT

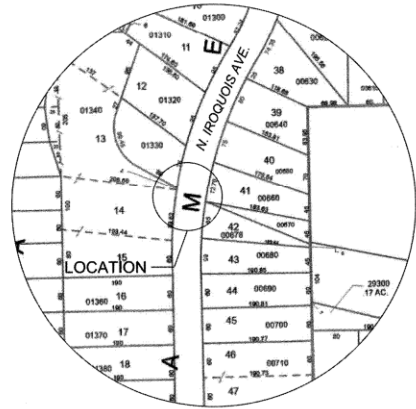
BENHAM Benham Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600
a Haskell Company



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 KAREN SWATEK JONES CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
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			ATLAS PAGE NO.:				SHEET 2 OF 53 SHEETS

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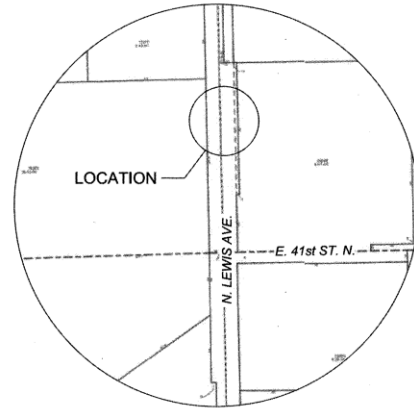
BRIDGE 189



Vicinity Map

Scale: NTS
Section 12, T-20-N, R-12-E
ATLAS PAGE: 431

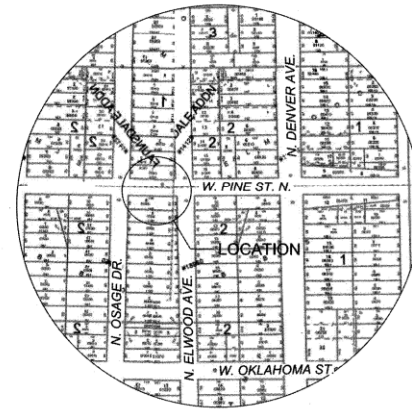
BRIDGE 190



Vicinity Map

Scale: NTS
Section 26, T-20-N, R-12-E & Section 35, T-20-N R-12-E
ATLAS PAGE: 353, 354

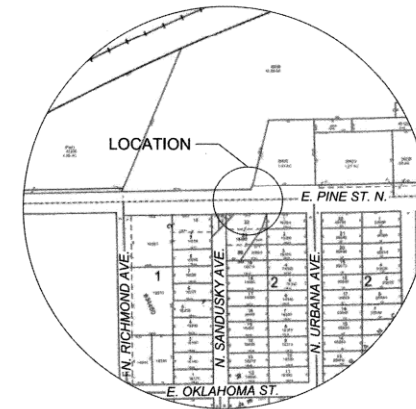
BRIDGE 219B



Vicinity Map

Scale: NTS
Section 26, T-20-N, R-12-E & Section 35, T-20-N, R-12-E
ATLAS PAGE: 45, 76

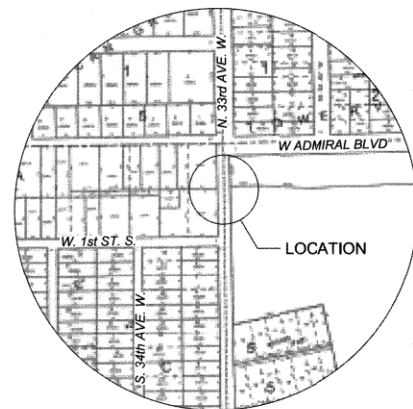
BRIDGE 224



Vicinity Map

Scale: NTS
Section 28, T-20-N, R-13-E & Section 33, T-20-N, R-13-E
ATLAS PAGE: 49, 80

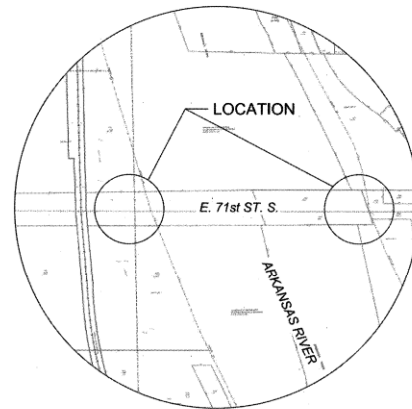
BRIDGE 272



Vicinity Map

Scale: NTS
Section 04, T-19-N, R-12-E & Section 03, T-19-N, R-12-E
ATLAS PAGE: 19, 40

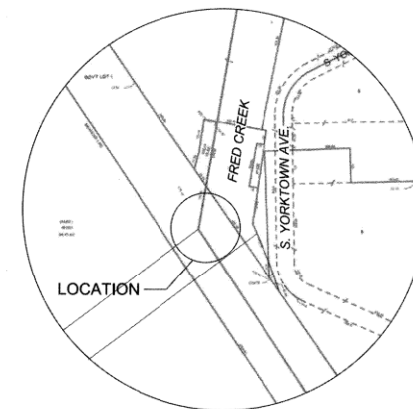
BRIDGE 300A



Vicinity Map

Scale: NTS
Section 01, T-18-N, R-13-E & Section 12, T-18-N, R-13-E
ATLAS PAGE: 565, 664

BRIDGE 304



Vicinity Map

Scale: NTS
Section 18, T-18-N, R-13-E
ATLAS PAGE: 885



LOCATION MAPS
BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600
a Haskell Company

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 KAREN SWATEK JONES LICENSED PROFESSIONAL ENGINEER OKLAHOMA 28517
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
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			VERTICAL:	RECOMMENDED			
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			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 3 OF 53 SHEETS



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BRIDGE PAY ITEMS					BRIDGE #189	BRIDGE #190	BRIDGE #219B	BRIDGE #224	BRIDGE #272	BRIDGE #300A	BRIDGE #304	TOTAL
ITEM	SPEC. NO.	DESCRIPTION	PAY ITEM NOTE	UNIT	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
1	504(B)	SAW-CUT GROOVING	(301)	SY			645	208	159			1012
1	504(D)	CONCRETE RAIL (TR4)	(101,301)	LF				85				85
2	504(F)	HANDRAILING		LF				85				85
3	505(A)	BRIDGE DECK CONCRETE OVERLAY	(101,301,305)	CY			36		9			45
4	505(E)	HYDRODEMOLITION	(310)	SY			645		159			804
5	506(A)	STRUCTURAL STEEL M270 GRADE 50W	(317)	LB				57790				57790
6	507(A)	STAINLESS STEEL FIXED BEARING ASSEMBLY	(315,316)	EA				18				18
7	509(A)	CLASS AA CONCRETE	(101,314)	CY	1			77		62		140
8	509(B)	CLASS A CONCRETE	(101,301,311)	CY	1	2	2	1		3		9
9	510(C)	SLOPE WALL (5")		SY			105					105
10	510(D)	GRAFFITI TREATMENT		SF				1446				1446
11	511	MECHANICAL SPLICES		EA				290				290
12	511(B)	EPOXY COATED REINFORCING STEEL		LB				18090		7800		25890
13	512	CLEANING BRIDGE SURFACES		SY	22	55		23		147		247
14	512(A)	PAINTING EXISTING STRUCTURES		LSUM		1						1
15	512(B)	COLLECTION AND HANDLING OF WASTE		SF		7626						7626
16	513(B)	CLASS C BRIDGE DECK REPAIR	(306)	SY			32		8			40
17	515(A)	WATER REPELLENT (VISUALLY INSPECTED)		SY				90		140		230
18	517	ELASTOMERIC COATING		SF				512		522		1034
19	518(C)	RAPID CURE JOINT SEALANT		LF			39		33			72
20	518(D)	ELASTOMERIC MORTAR		CF			4					4
21	520(A)	PREPARATION OF CRACKS, ABOVE WATER	(302,303)	LF	99	95		97		39	108	438
22	520(C)	EPOXY RESIN, ABOVE WATER	(302)	GAL	1	1		1		1	1	5
23	521(A)	PNEUMATICALLY PLACED MORTAR	(307,313)	SY	3	3		22		12		42
24	523(A)	SEALER CRACK PREPARATION	(301)	LF			78	155	66			299
25	523(B)	SEALER RESIN	(301)	GAL			1	1	1			3
26	524(A)	(SP) CARBON FIBER-REINFORCED POLYMER	(312)	SF						125		125
27	535	CORROSION INHIBITOR(SURFACE APPLIED)	(307)	SY	15	15	22	13		21	12	98
28	601(A)	TYPE I PLAIN RIPRAP (24")	(308)	TON	66			6				72
29	601(C)	TYPE I-A FILTER BLANKET	(309)	TON	16			2				18
30	619(B)	REMOVAL OF BRIDGE ITEMS	(102,304)	LSUM				1				1
31	623(F)	GUARDRAIL ANCHOR UNIT (TYPE D-BF)		EA			1					1
32	623(G)	GUARDRAIL END TREATMENT (GET)		EA		1						1

CONSTRUCTION PAY ITEMS					
ITEM	SPEC. NO.	DESCRIPTION	PAY ITEM NOTE	UNIT	QUANTITY
33	220	SWPPP DOCUMENTATION AND MANAGEMENT	(111,112,113)	LSUM	1
34	619(A)	REMOVAL OF STRUCTURES & OBSTRUCTIONS	(103, 115)	LSUM	1
35	641	MOBILIZATION	(105,108,109)	LS	1
36	642(B)	CONSTRUCTION STAKING LEVEL II	(106,107)	EA	1
37	805(A)	REMOVAL OF TRAFFIC ITEMS	(T-1)(103)	EA	25
38	805(D)	REMOVAL AND RESET SIGN		EA	78
39	855(A)	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	(T-3)	LF	2,510
40	871(B)	CONST. ZONE IMPACT ATTN.	(205)	SD	180
41	877(D)	(PL) PORTABLE LONGITUDINAL BARRIER DELINEATOR	(205)	SD	180
42	880(A)	ARROW DISPLAY (TYPE A)	(T-4)(201)	SD	460
43	880(B)	CONSTRUCTION SIGNS 0.00 TO 6.25 SF	(T-2, 4, 5) (201, 202)	SD	3,450
44	880(B)	CONSTRUCTION SIGNS 6.26 TO 15.99 SF	(T-2, 4, 5) (201, 202)	SD	3,450
45	880(C)	BARRICADES (TYPE III)	(T-2, 4, 5) (201)	SD	1,380
46	880(E)	WARNING LIGHTS (TYPE A)	(T-4, 5) (201)	SD	2,760
47	880(E)	WARNING LIGHTS (TYPE C)	(T-4, 5) (201)	SD	6,900
48	880(F)	DRUMS	(T-2, 4, 5) (201)	SD	13,800
49	880(I)	FLAGGER	(T-6)	SD	50
50	882(B)	REMOTE CONTROLLED CHANGEABLE MESSAGE SIGN	(T-4) (201)	SD	180
51	COT 202	QUICK SET FLOWABLE FILL	(104)	CY	50
52	COT 327	SAFETY FENCE	(203)	LF	500
53	COT 334	CONSTRUCTION AS-BUILT		LSUM	1
54	COT 335	CONTRACTOR'S QUALITY CONTROL		LSUM	1
55	COT 608	GROUND SIGN	(114)	SF	26
56	COT 608	1-3/4" SIGN POST	(114)	LF	260
57	COT 608	2" SIGN POST	(114)	LF	78
58	SPECIAL	OWNER'S ALLOWANCE	(116)	ALLOW	15,000
59	SPECIAL	URBAN RIGHT OF WAY RESTORATION	(110)	EA	1
60	SPECIAL	SPECIAL SIGNAGE FOR LOCAL BUSINESS ACCESS (BAS-1)	(T-4) (204)	SD	5,060

ITEMS LISTED OR SHOWN IN DRAWINGS AND/OR DESCRIBED IN THE SPECIFICATIONS THAT ARE NOT INCLUDED AS A SEPARATE PAY ITEM QUANTITY SHALL BE CONSIDERED INCIDENTAL AND THE COST SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS. THE PRICE BID FOR ALL WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND ALL OTHER REQUIRED ITEMS TO COMPLETE THE WORK AS SHOWN ON PLANS AND SPECIFICATIONS.



PAY ITEMS AND NOTES
(1 OF 2)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 J. Jones CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR	EAS	11-13-25	
			VERTICAL:	RECOMMENDED			
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			ATLAS PAGE NO.:				SHEET 4 OF 53 SHEETS



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ROADWAY PAY ITEM NOTES (11/1/2024)

- 103 PAY ITEM INCLUDES REMOVAL OF ALL STRUCTURES AND OBSTRUCTIONS WITHIN PROJECT LIMITS NOT SPECIFIED BY OTHER ITEMS OF WORK WHICH ARE VISIBLE OR WHOSE LOCATION COULD REASONABLY HAVE BEEN DETERMINED WITH AVAILABLE INFORMATION.
104 LOCATIONS TO BE DETERMINED IN THE FIELD AND WORK TO BE PERFORMED AT THE DIRECTION OF THE FIELD ENGINEER. QUANTITY IS ESTIMATED AND MAY BE OMITTED IN ITS ENTIRETY.
105 MAXIMUM OVERALL DOLLAR AMOUNT AND SCHEDULE OF PAYMENTS SHALL BE IN ACCORDANCE SECTION 641 OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT EDITION.
106 CONSTRUCTION STAKING SHALL INCLUDE SURVEYING AND THE FURNISHING, PLACING, AND MAINTAINING OF THE CONSTRUCTION LAYOUT STAKES NECESSARY FOR THE PROPER COMPLETION AND INSPECTION OF THE ENTIRE PROJECT.
107 THE COST TO REPLACE REMOVED OR DAMAGED SECTION CORNERS AND ALL OTHER PERMANENT RIGHT OF WAY MARKERS SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. NO ADDITIONAL PAYMENT WILL BE MADE.
108 CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY STAGING AREAS AND REMOVING ALL STAGING AREAS, AS WELL AS RESTORATION TO PRE-PROJECT OR BETTER. NO ADDITIONAL COST TO CITY.
109 SHALL INCLUDE ALL LABOR, EQUIPMENT, AND ASSOCIATED COSTS TO COMPLETE THE REQUIRED BID ITEM TO THE FULL EXTENT REQUIRED TO COMPLETE THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS.
110 ALL EXISTING DRAINAGE STRUCTURES SHALL BE CLEANED AND CLEARED OF ALL SEDIMENTATION AND DEBRIS TO THE RIGHT OF WAY. COST OF CLEARING SHALL BE INCLUDED IN THE PRICE BID.
111 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL AND MAINTENANCE OF THE STORM WATER DRAINAGE FROM THE CONSTRUCTION SITE. STORM WATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED. ALL COST ASSOCIATED WITH STORM WATER MANAGEMENT, AS WELL AS REMOVAL OF ALL SILT AND DEBRIS FROM ALL DRAINAGE STRUCTURES, STORM SEWER PIPES AND APPURTENANCES WITHIN THE PROJECT LIMITS AT END OF PROJECT, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.
112 EROSION PROTECTION SHALL BE PLACED AS FOLLOWS:
A. AROUND INLETS TO PREVENT INFLOW OF ERODED MATERIAL INTO STORM SEWER SYSTEM;
B. IN LOCATIONS THROUGHOUT PROJECT SITE, AS DETERMINED BY THE ENGINEER, TO PREVENT WASH OF ERODED MATERIAL ONTO ADJACENT PROPERTY;
C. FOR ENTIRE DURATION OF PROJECT, WITH MAINTENANCE AND REPLACEMENTS, AS DIRECTED BY THE ENGINEER;
D. WITH PERIODIC REMOVAL OF SEDIMENT IN ACCORDANCE WITH STORMWATER MANAGEMENT PLAN.
ALL COST FOR ITEMS A-D ABOVE SHALL BE INCLUDED IN UNIT PRICE BID FOR THIS ITEM.
113 PRICE BID SHALL INCLUDE MAINTENANCE, SEDIMENT REMOVAL, DISPOSAL, AND REMOVAL OF FILTERS AT PROJECT COMPLETION. APPLIED AS NECESSARY UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE WORK IS ACCEPTED AS COMPLETE.
114 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS PART OF THIS PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNDAMAGED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS.
115 INCLUDES REMOVAL OF ALL EXISTING ROADWAY DRAINAGE STRUCTURES, HEADWALLS (UNLESS OTHERWISE SPECIFIED), INLETS, FENCES, AND OTHER STRUCTURES WITHIN THE RIGHT OF WAY.
116 CONTRACTOR NOT TO EXCEED ALLOWED MAXIMUM

TRAFFIC PAY ITEM NOTES (6/27/2025)

- T-1 ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.
T-2 REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE IX RETROREFLECTIVE SHEETING. REFLECTORIZED SHEETING ON DRUMS AND TUBE CHANNELIZERS SHALL BE OF A HIGH-INTENSITY TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE III RETROREFLECTIVE SHEETING.
T-3 ALL PLASTIC PAVEMENT MARKINGS SHALL BE:
EXTRUDED-APPLIED THERMOPLASTIC (USE ON ASPHALT AND CONCRETE PAVEMENT). THERMOPLASTIC PAVEMENT MARKINGS SHALL ONLY BE APPLIED WHEN THE SURFACE TEMPERATURE EXCEEDS 55°F FOR ALL OF THE SIX HOURS PRIOR TO INSTALLATION AND MAXIMUM WIND GUSTS ARE BELOW 15 MPH AT THE TIME OF APPLICATION. PRICE BID TO INCLUDE FLEX TABS OR LIKE KIND FOR POST CONSTRUCTION LANE MARKING/SEPARATION. MECHANICALLY APPLIED PREFORMED PLASTIC TAPE ("COLD TAPE") WILL NOT BE ACCEPTED.
T-4 PAYMENT SHALL BE MADE ON A SIGN-DAY BASIS ONLY FOR TRAFFIC CONTROL DEVICES THAT ARE PROPERLY INSTALLED AND IN GOOD WORKING ORDER. COSTS FOR DELIVERY, INSTALLATION, RELOCATION, MAINTENANCE REMOVAL AND REPLACEMENT, AS NEEDED AT THE DISCRETION OF THE ENGINEER, INCLUDED IN UNIT PRICE BID.
T-5 IF WARNING LIGHTS ARE TO BE USED ON TRAFFIC CONTROL DEVICES, TYPE "A" LIGHTS SHALL ONLY BE USED ON DEVICES WARNING OF UNEXPECTED HAZARDS, AND SHALL NOT BE USED FOR DELINEATION OF THE TRAVELED WAY. ONLY TYPE "C" WARNING LIGHTS SHALL BE USED FOR DELINEATION OF THE TRAVELED WAY, AND TYPE "C" LIGHTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.
T-6 THE PAY ITEM FOR FLAGGER SHALL BE PAID FOR ON A FLAG DAY (F.D.) BASIS. ONE F.D. IS ONE COMPLETE WORKDAY PERFORMED BY THE CONTRACTOR AS SET FORTH IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS.
201 230 CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY AND FLAG DAY PAY ITEMS. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY AND FLAG DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT COT STANDARDS, MUTCD STANDARDS, AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY AND FLAG DAY QUANTITIES MAY CHANGE AS THE PROJECT'S CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION.
202 QUANTITIES SHOWN FOR CONSTRUCTION SIGNING HAVE BEEN INCREASED TO ALLOW FOR TRAFFIC CONTROL ON CROSS STREETS NOT SHOWN ON THE PLANS.
203 CONTRACTOR SHALL INSTALL AND MAINTAIN SAFETY FENCE ALONG THE EDGE OF OPEN CUTS WITHIN THE CONSTRUCTION ZONE. SAFETY FENCE SHALL BE AN OPEN MESH TYPE, HIGH-DENSITY PLASTIC MATERIAL, 48-INCHES IN HEIGHT, AND COLORED INTERNATIONAL SAFETY ORANGE. FENCE SHALL BE SUPPORTED BY FENCE POSTS SPACED AT NO MORE THAN 10 FEET. PAYMENT FOR SAFETY FENCE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT BASED ON THE TOTAL FOOTAGE USED FOR THE DURATION OF THE PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE FOR MOVING THE FENCE AS THE JOB SITE CHANGES.
204 CONTRACTOR SHALL INSTALL AND MAINTAIN INFORMATION SIGNS TO ADVISE THE PUBLIC THAT BUSINESSES ARE OPEN AND WHERE ACCESS POINTS TO THE BUSINESSES ARE LOCATED.
205 CONTRACTOR SHALL UTILIZE LIGHT WEIGHT ITEMS WHILE STILL MAINTAINING FUNCTIONALITY. COST OF DELIVERY, RELOCATION, AND REMOVAL INCLUDED IN BID.

BRIDGE PAY ITEM NOTES

- 101 THE USE OF FLY-ASH IN CONCRETE IS PROHIBITED.
102 WASTE MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IN A MANNER APPROVED BY THE ENGINEER AT NO ADDITIONAL COST TO THE CITY.
301 PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITIES ONLY. SEE SECTION 109.01B OF THE ODOT 2019 STANDARD SPECIFICATIONS.
302 ALL COST INCLUDING LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "PREPARATION OF CRACKS, ABOVE WATER" AND THE PRICE BID PER GALLON OF "EPOXY RESIN, ABOVE WATER".
303 AN ADDITIONAL 25 LF OF QUANTITY FOR EACH BRIDGE WITH THE PAY ITEM "PREPARATION OF CRACKS, ABOVE WATER" HAS BEEN INCLUDED IN THE QUANTITIES, TO BE USED AT THE DISCRETION OF THE ENGINEER.
304 PAY ITEM FOR REMOVAL OF EXISTING SUPERSTRUCTURE INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS.
305 QUANTITY ASSUMES 2" THICK LAYER OF OVERLAY. INCLUDES ALL LABOR, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE CONSTRUCTION OF OVERLAY. ADDITIONAL PAYMENT NOT ALLOWED.
306 ESTIMATED QUANTITY IS 5% OF BRIDGE DECK SURFACE AREA IN SQUARE YARDS. PAYMENT ONLY FOR ACTUAL REPAIRS PERFORMED WILL BE ALLOWED. PAYMENT WILL NOT BE MADE FOR REPAIRS NOT PERFORMED.
307 QUANTITY INCLUDES REPAIRS OF WEST SIDE OF COLUMN AT BRIDGE 219C NB, ESTIMATED TO BE 3.0 SY. BRIDGE 219C NB IS DIRECTLY ADJACENT TO BRIDGE 219B SB. ADDITIONAL PAYMENT FOR FOR REPAIRS TO BRIDGE 219C NB WILL NOT BE CONSIDERED.
308 RIPRAP SIZE SHALL BE 24", PER ODOT 2019 STANDARD SPECIFICATIONS SECTION 713.
309 FILTER BLANKET SHALL BE 6", PER ODOT 2019 STANDARD SPECIFICATIONS SECTION 713.
310 ALL COST INCLUDING LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS TO COMPLETE THE WORK AS SHOWN IN THE PLANS AND SPECIFIED IN SECTION 505 OF THE 2019 ODOT STANDARD SPECIFICATIONS AND THE SPECIAL PROVISION SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "HYDRODEMOLITION".
311 ALL LABOR, EQUIPMENT, AND MATERIAL REQUIRED TO FABRICATE, TRANSPORT, AND INSTALL ANTI-LOITERING DEVICES SHALL BE INCLUDED IN THE PRICE BID PER CY OF "CLASS A CONCRETE".
312 AN ADDITIONAL 10% OF QUANTITY FOR BRIDGE 300A WITH THE PAY ITEM "(SP) CARBON FIBER-REINFORCED POLYMER" HAS BEEN INCLUDED IN THE QUANTITIES, TO BE USED AT THE DISCRETION OF THE ENGINEER.
313 AN ADDITIONAL 2 SY OF QUANTITY FOR BRIDGE 300A WITH THE PAY ITEM "PNEUMATICALLY PLACED MORTAR" HAS BEEN INCLUDED IN THE QUANTITIES, TO BE USED AT THE DISCRETION OF THE ENGINEER.
314 AN ADDITIONAL 1 CY OF QUANTITY FOR BRIDGE 300A WITH THE PAY ITEM "CLASS AA CONCRETE" HAS BEEN INCLUDED IN THE QUANTITIES, TO BE USED AT THE DISCRETION OF THE ENGINEER.
315 INCLUDES 2,000 POUNDS OF STAINLESS STEEL FOR ANCHOR PLATES AND SHIM PLATES FOR BRIDGE 224 BEARING PLATES.
316 ANCHOR BOLTS AND ALL DRILLING AND GROUTING OF ANCHOR BOLTS AND REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE PER CUBIC YARD OF CLASS AA CONCRETE.
317 INCLUDES QUANTITIES FOR BEARING ASSEMBLY SHIM PLATES WEIGHT.



9-30-25

PAY ITEMS AND NOTES (2 OF 2)

BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



Table with columns: REVISION, BY, DATE, PLAN SCALE, DRAWN, DESIGNED, SURVEY, FIELD MGR, PROJECT MGR, LEAD ENGR, RECOMMENDED, DESIGN MANAGER, APPROVED, DATE. Includes handwritten signatures and dates.



GENERAL CONSTRUCTION NOTES - CITY OF TULSA (11/12/2016)

- 1 ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2019 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AS AMENDED AND ADOPTED BY CITY OF TULSA ORDINANCE 24616, JUNE 2021 AND THE CURRENT CITY OF TULSA STANDARD SPECIFICATIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF TULSA SPECIAL PROVISIONS.
- 2 THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING SAFETY, HEALTH, AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT, AND TAKE ANY OTHER NEEDED ACTION ON AS HIS OWN RESPONSIBILITY OR AS THE ENGINEER MAY DETERMINE REASONABLY NECESSARY TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT.
- 3 PAY ITEMS SHALL BE AS SPECIFIED ON THE CITY OF TULSA OR ON THE ODOT STANDARD DRAWINGS EXCEPT AS MODIFIED BY THE CONTRACT.
- 4 THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.
- 5 THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO ALL AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK, TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS:
SEE TITLE SHEET FOR CONTACT INFORMATION.
- 6 THE CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN TEN DAYS NOR LATER THAN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO THE COMMENCEMENT OF WORK. PHONE 1-800-522-6543.
- 8 THE CONTRACTOR SHALL PRESERVE THE INTEGRITY OF THE SANITARY SEWER STRUCTURES AND ALL OTHER UTILITY STRUCTURES WITHIN THE PROJECT EXTENTS.
- 9 THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY OF TULSA TO ESTABLISH, INSTALL, MAINTAIN AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROLS DURING THE ENTIRE CONSTRUCTION PERIOD. ALL FLAGMEN, BARRICADES AND TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE FIELD ENGINEERING REPRESENTATIVE.
- 10 CONSTRUCTION SIGNAGE WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK.
- 11 THE CONTRACTOR SHALL NOTIFY THE CITY OF TULSA FIELD ENGINEERING, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK OR PRIOR TO REMOVING TRAFFIC SIGNS.
- 12 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS LISTED IN THE SIGNAGE SCHEDULE FOR THE PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNDAMAGED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS. ALL TRAFFIC MATERIAL REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.
- 14 LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH THE PROJECT AT ALL TIMES.
- 15 ALL PUBLIC AND PRIVATE STREETS AND DRIVES SHALL BE ACCESSIBLE AT ALL TIMES.
- 16 ALL BROKEN CONCRETE, WASTE MATERIAL, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE DISPOSAL OF THIS MATERIAL.
- 17 ALL EXCAVATED MATERIAL NOT REQUIRED IN THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE CITY. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF ANY MATERIAL IS STORED ON THE PROJECT SITE AND/OR DISPOSED OF WITHIN THE CITY LIMITS.
- 18 ALL TREES, BRUSH AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER IS TO BE CLEANED OUT TO THE RIGHT-OF-WAY LINE IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK. TREES OUTSIDE THE FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- 19 WHERE MATERIALS ARE TRANSPORTED IN THE PROSECUTION OF WORK, VEHICLES SHALL NOT BE LOADED BEYOND THE CAPACITY RECOMMENDED BY THE VEHICLE MANUFACTURER OR AS PRESCRIBED BY ANY FEDERAL, STATE OR LOCAL LAW OR REGULATION.
- 20 ANY DAMAGE TO THE ROADWAY PAVEMENT, CURB, DRIVEWAYS OR SIDEWALK CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION AND SHALL BE ACCOMPLISHED AT THE CONTRACTOR'S SOLE EXPENSE. ALL DISTURBED ITEMS SHALL BE REPAIRED TO MATCH EXISTING MATERIALS AND PATTERNING.
- 21 NO FLY ASH IS ALLOWED TO BE USED ON THIS PROJECT.
- 22 PHYSICAL TESTING FOR QUALITY ASSURANCE SHALL BE FURNISHED BY THE CITY.
- 23 CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY QUALITY CONTROL TESTING TO ENSURE THAT PROJECT REQUIREMENTS ARE MET.
- 24 MASONRY STRUCTURES SHALL NOT BE CONSTRUCTED WITHIN THE STREET RIGHT-OF-WAY.

- 25 REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE IX RETROREFLECTIVE SHEETING. REFLECTORIZED SHEETING ON DRUMS AND TUBE CHANNELIZERS SHALL BE OF A HIGH-INTENSITY TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR THE ASTM D 4956-01 TYPE III RETROREFLECTIVE SHEETING.
- 26 ALL SANITARY AND STORM SEWER MANHOLE CASTINGS AND LIDS THAT ARE LOCATED IN THE STREET AND ARE DISTURBED BY THE CONTRACTOR SHALL BE REPLACED WITH NEW LIDS AND CASTINGS AND THE OLD ONES SHALL BE SALVAGED AND DELIVERED TO THE METAL RECYCLE BINS IN THE STOCKROOM AREA AT SEWER OPERATIONS AND MAINTENANCE, 9319 E. 42ND STREET NORTH, BETWEEN THE HOURS OF 7:30 AM AND 3:00 PM MONDAY THROUGH FRIDAY.
- 27 THE SIGN PLACEMENT STATIONING AND LOCATIONS SHOWN ON THE PLAN SHEETS AND SUMMARY SHEETS ARE APPROXIMATE. EXACT STATIONING AND LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR SO THAT THE SIGN IS INSTALLED IN ACCORDANCE WITH CITY OF TULSA STANDARDS, CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES IN ORDER TO PROVIDE OPTIMUM VISIBILITY TO THE ONCOMING/APPROACHING MOTORIST. IF A PROPOSED LOCATION CONFLICTS WITH OTHER SIGNS, UTILITIES, OR OTHER ROADWAY FEATURES, THE ENGINEER SHALL BE NOTIFIED.
- 28 THE CONTRACTOR SHALL REPLACE ANY SECTION CORNERS OR OTHER PERMANENT RIGHT OF WAY MARKERS REMOVED OR DISTURBED AS A RESULT OF THE CONSTRUCTION OF THIS PROJECT. REPLACEMENT OF SECTION CORNERS OR ANY OTHER MONUMENTS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR AUTHORIZED TO PERFORM WORK IN THE STATE OF OKLAHOMA.
- 29 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL AND MAINTENANCE OF THE STORMWATER DRAINAGE. STORMWATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED.
- 30 STRAW OR HAY BALES AS STORMWATER BEST MANAGEMENT PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.
- 31 THE CONTRACTOR MUST CALL 1-800-458-4251 IMMEDIATELY IF A NATURAL GAS PIPELINE IS CUT, DAMAGED, OR OTHERWISE DISTURBED.
- 32 PRIOR TO FINAL ACCEPTANCE, ALL EXPOSED CURB SURFACES SHALL BE CLEANED OF ALL DISCOLORATION SUCH AS ASPHALT STAIN, TIRE MARKS, OR OTHER DISFIGUREMENT.
- 33 ALL FEATURES OF THIS PROJECT INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, CURB RAMPS, AND CROSSWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, ACCESSIBILITY GUIDELINES, AND THE PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY, PUBLISHED ON AUGUST 8, 2023 BY THE U.S. ACCESS BOARD. WHERE SPATIAL LIMITATIONS OR EXISTING FEATURES WITHIN THE LIMITS OF THE PROJECT PREVENT FULL COMPLIANCE WITH THIS ACT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF SUCH FEATURES. THE CONTRACTOR SHALL NOT PROCEED WITH ANY ASPECT OF THE WORK, WHICH IS NOT IN FULL COMPLIANCE WITH THE ADA WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. ANY WORK WHICH IS NOT PERFORMED WITHIN THE GUIDELINES OF THE ADA, FOR WHICH THE CONTRACTOR DOES NOT HAVE WRITTEN APPROVAL, SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- 34 THE CONTRACTOR SHALL NOTIFY THE METROPOLITAN TULSA TRANSIT AUTHORITY (MTTA), VALERIE COURCHESNE 918-699-0291, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK, LANE CLOSURES OR PRIOR TO DETOURING TRAFFIC.
- 35 CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT IN THE FLOODPLAIN.
- 36 THE CONTRACTOR SHALL PROTECT MAILBOXES AS NECESSARY. MAILBOXES ARE TO BE MAINTAINED IN AN UPRIGHT POSITION AND ACCESSIBLE TO MAIL CARRIER'S CAR DURING CONSTRUCTION.
- 37 STRAW OR HAY BALES AS STORMWATER BEST MANAGEMENT PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.
- 38 PRIOR TO FINAL ACCEPTANCE, ALL EXPOSED CURB SURFACES SHALL BE CLEANED OF ALL DISCOLORATION SUCH AS ASPHALT STAIN, TIRE MARKS, OR OTHER DISFIGUREMENT.
- 39 PRIOR TO FINAL ACCEPTANCE, ALL EXPOSED CURB SURFACES SHALL BE CLEANED OF ALL DISCOLORATION SUCH AS ASPHALT STAIN, TIRE MARKS, OR OTHER DISFIGUREMENT.
- 40 ALL FEATURES OF THIS PROJECT INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, CURB RAMPS, AND CROSSWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, ACCESSIBILITY GUIDELINES, AND THE PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY, PUBLISHED ON JULY 3, 2024 BY THE U.S. ACCESS BOARD. WHERE SPATIAL LIMITATIONS OR EXISTING FEATURES WITHIN THE LIMITS OF THE PROJECT PREVENT FULL COMPLIANCE WITH THIS ACT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF SUCH FEATURES. THE CONTRACTOR SHALL NOT PROCEED WITH ANY ASPECT OF THE WORK, WHICH IS NOT IN FULL COMPLIANCE WITH THE ADA WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. ANY WORK WHICH IS NOT PERFORMED WITHIN THE GUIDELINES OF THE ADA, FOR WHICH THE CONTRACTOR DOES NOT HAVE WRITTEN APPROVAL, SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- 41 ALL TRENCH WIDTHS & BEDDING MATERIAL SHALL BE AS SHOWN ON COT STANDARD PIPE BEDDING DETAIL, STANDARD NO. 751. SPECIFIED TRENCH WIDTHS SHALL BE MAINTAINED FULL DEPTH FROM THE FLOWLINE TO THE GRADING TEMPLATE. THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED.
- 42 THE CONTRACTOR SHALL NOTIFY THE METROPOLITAN TULSA TRANSIT AUTHORITY (MTTA), VALERIE COURCHESNE 918-699-0291, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK, LANE CLOSURES OR PRIOR TO DETOURING TRAFFIC.
- 43 CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT IN THE FLOODPLAIN.

GENERAL CONSTRUCTION NOTES - TRAFFIC SIGNING

- 44 NO SPLICES SHALL BE PERMITTED IN ANY PIPE OR WIDE FLANGE SIGN POSTS.
 - 45 CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A RECORD OF ALL SIGNS AND MARKINGS TO INSURE PROPER REINSTALLATION BY THE CONTRACTOR AS APPROVED BY THE CITY OF TULSA.
 - 46 FOR EXISTING GROUND MOUNTED SIGNS, MAXIMUM STUB POST PROJECTION ABOVE FOOTING/GROUND LINE SHALL BE 1-3/4" + 1/4". MAXIMUM FOOTING PROJECTION ABOVE GROUND LINE SHALL BE NO MORE THAN 2". SHOULD ADDITIONAL SOIL BE REQUIRED, THE ENGINEER SHALL DESIGNATE AN AREA TO OBTAIN ADDITIONAL SOIL.
- GENERAL CONSTRUCTION NOTES - BENHAM
- 47 ALL WORK AND/OR MATERIALS NOT CLASSIFIED AS A "CONTRACT PAY ITEM" SHALL BE CONSIDERED INCIDENTAL AND THE COST THEREOF SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS WHICH ARE CLASSIFIED FOR PAYMENT.
 - 48 WHERE IT IS NECESSARY TO CROSS CURBING, PROTECTION AGAINST DAMAGE SHALL BE PROVIDED BY THE CONTRACTOR AND ANY DAMAGE TO THE ROADWAY PAVEMENT, CURBS, OR DRIVEWAYS CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
 - 49 BLASTING SHALL NOT BE ALLOWED.
 - 50 CONTRACTOR SHALL TAKE PRECAUTION NOT TO DAMAGE EXISTING INLETS THAT ARE WITHIN THE PROJECT LIMITS THAT ARE NOT SHOWN AS PART OF THE CONSTRUCTION IN THIS PROJECT. ALL DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.
 - 51 PROJECT SIGNS SHALL BE PROVIDED AT ENTRANCES TO THE PROJECT AREA. THE PROJECT SIGNS SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
 - 52 CONTRACTOR SHALL DOCUMENT PRE-CONSTRUCTION SITE CONDITIONS BY MEANS OF PHOTOGRAPHS AND VIDEO WITH CITY REPRESENTATIVE BEFORE THE START OF CONSTRUCTION. COST SHALL BE CONSIDERED AS INCIDENTAL AND NO SEPARATE PAYMENT SHALL BE MADE.
 - 53 THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING:
 - 1) ANY PERMITS OR LICENSES REQUIRED FOR CONSTRUCTION WITH THE EXCEPTION OF THE WATERSHED DEVELOPMENT PERMIT, WHICH SHALL BE OBTAINED BY THE CITY.
 - 2) PROPER NOTIFICATION OF ALL NECESSARY AGENCIES PRIOR TO CONSTRUCTION AND FOR REQUIRED INSPECTIONS.
 - 3) DETERMINING THE EXACT LOCATION OF ANY UTILITIES. EXISTING UTILITIES TO REMAIN IN SERVICE AT ALL TIMES. SERVICE DISRUPTION TO BE AT CONTRACTOR'S RISK AND EXPENSE.
 - 54 CONTRACTOR SHALL BRACE UTILITY POLES AND/OR LINES AS NECESSARY.
 - 55 ALL COSTS OF MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS TO VERIFY THE WORK DESCRIBED SHALL BE INCLUDED IN THE UNIT PRICE BID OF "CONSTRUCTION STAKING LEVEL II". CONTRACTOR SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE OR ROADWAY. DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.




GENERAL CONSTRUCTION NOTES
(1 OF 3)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	
				SURVEY			
			PROFILE SCALE	FIELD MGR			 CITY ENGINEER
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR			
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 6 OF 53 SHEETS



GENERAL CONSTRUCTION NOTES - BRIDGE:

SPECIFICATIONS:

COMPLY WITH THE REQUIREMENTS OF THE 2019 OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AS ADOPTED BY CITY OF TULSA, EXCEPT AS MODIFIED BY THE PLANS AND CITY OF TULSA STANDARDS.

MATERIALS:

CLASS AA CONCRETE $f_c = 4,000$ PSI
 CLASS A CONCRETE $f_c = 3,000$ PSI
 REINFORCING STEEL (GRADE 60) $F_y = 60,000$ PSI
 EPOXY COATED REINFORCING STEEL $F_y = 60,000$ PSI
 STRUCTURAL STEEL M270 (GRADE 50W) $F_y = 50,000$ PSI
 STAINLESS STEEL A240 (TYPE 316) $F_y = 30,000$ PSI
 STAINLESS STEEL A320; CLASS 2 (GRADE B8M) $F_y = 58,000$ PSI

LOADING (BRIDGE #224):

HL-93 OR OKLAHOMA OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE

LFD OPERATING RATING (EV3 TRUCK) = HS-78.8

DESIGN (BRIDGE #224):

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANSI/AASHTO/AWS D1.6 STRUCTURAL WELDING CODE-STAINLESS STEEL

DESCRIPTION OF WORK:

PROJECT INVOLVES REHABILITATION OF SEVEN BRIDGES WITH VARYING LEVELS OF REPAIR.

BRIDGE #189:
 SUBSTRUCTURE CRACK REPAIR, PNEUMATIC MORTAR REPAIR, ANTI-LOITERING DEVICES, AND RIPRAP PLACEMENT. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO FALL INTO WATER BELOW.
 ONE LANE OF TRAFFIC ON THE BRIDGE AND ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION.

BRIDGE #190:
 CLEAN AND PAINT STEEL BEAMS AND DIAPHRAGMS. PNEUMATIC MORTAR REPAIR, SUBSTRUCTURE CRACK REPAIR, ANTI-LOITERING DEVICES, REPLACE GUARDRAIL END TREATMENT. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO FALL INTO WATER BELOW.
 ONE LANE OF TRAFFIC ON THE BRIDGE AND ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION.

BRIDGE #219B:
 SUBSTRUCTURE CRACK REPAIR, PNEUMATIC MORTAR REPAIR, ANTI-LOITERING DEVICES, HYDRODEMOLITION AND CONCRETE OVERLAY. CLEAN AND SEAL FIXED JOINTS. REPLACE EXPANSION JOINT. FINAL ELEVATION OF BRIDGE DECK SHALL MATCH ELEVATIONS EXISTING APPROACH SLABS.
 ONE LANE OF TRAFFIC ON THE BRIDGE AND ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION AT PINE STREET AND TISDALE PARKWAY SOUTHBOUND.

BRIDGE #224:
 SUPERSTRUCTURE REPLACEMENT. PNEUMATIC MORTAR REPAIR, SUBSTRUCTURE CRACK REPAIR, CONCRETE REPAIR, RIPRAP PLACEMENT, AND ANTI-LOITERING DEVICES. PHASED CONSTRUCTION. BRACING OF ABUTMENTS REQUIRED DURING PHASED CONSTRUCTION. ONE LANE OF TRAFFIC ON THE BRIDGE AND ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION.

BRIDGE #272:
 HYDRODEMOLITION AND CONCRETE OVERLAY. CLEAN AND SEAL JOINTS. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO FALL INTO WATER BELOW. FINAL ELEVATION OF BRIDGE DECK SHALL MATCH ELEVATIONS EXISTING APPROACH SLABS.
 BRIDGE SHALL BE CLOSED DURING CONSTRUCTION.

BRIDGE #300A:
 CLASS AA REPAIR AND CARBON FIBER WRAP OF PRESTRESSED BEAMS. CLASS AA ENCASEMENT OF PIER NO. 21 CAPS AND COLUMN. PNEUMATIC MORTAR REPAIR OF DIAPHRAGMS, PEDESTALS, AND SUBSTRUCTURE. SUBSTRUCTURE CRACK REPAIR. ANTI-LOITERING DEVICES. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO FALL INTO WATER BELOW.
 CONTRACTOR SHALL NOT IMPEDE TRAFFIC ON BRIDGE 300A DURING CONSTRUCTION.

BRIDGE #304:
 CRACK REPAIR OF CELL WALLS. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO FALL INTO WATER BELOW.
 CONTRACTOR SHALL NOT IMPEDE TRAFFIC ON BRIDGE 304 DURING CONSTRUCTION.

VERIFICATION OF EXISTING CONDITIONS:

ALL DIMENSIONS OF THE EXISTING BRIDGE COMPONENTS SHOWN ON THE PLANS ARE APPROXIMATE AND BASED ON AS-BUILT PLANS, WHERE AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND MATERIALS NECESSARY TO PERFORM THE WORK DESCRIBED ABOVE AND SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.

BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURES OR ROADWAY. DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.

FOR BRIDGE #224, PEDESTAL LOCATIONS, BEAM SPACINGS, BEAM AND DIAPHRAGMS LENGTHS, OVERALL HEIGHTS OF BEAMS, PEDESTALS, THICKNESS OF ANCHOR PLATES AND SHIM PLATES, AND LENGTHS OF REINFORCING STEEL IN SCHEDULES SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO FABRICATION OF MATERIALS OR CONSTRUCTION. SURVEY OF BRIDGE PRIOR TO CONSTRUCTION REQUIRED. ALL MATERIAL THAT IS FABRICATED TO DIMENSIONS NOT FITTING EXISTING CONDITIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.

FINAL ELEVATIONS AND CROSS SLOPE OF BRIDGE DECK SHALL MATCH EXISTING ELEVATIONS AND TIE INTO EXISTING APPROACH SLABS WITHOUT DISRUPTION.

ALL COSTS OF SURVEYING NECESSARY TO DETERMINE THE WORK AS DESCRIBED ABOVE INCLUDING THE COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS WILL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN "CONSTRUCTION LEVEL STAKING II".

ORIGINAL AND REHABILITATION CONSTRUCTION PLANS FOR THE EXISTING BRIDGE STRUCTURES, IF AVAILABLE, MAY BE OBTAINED FROM THE CITY OF TULSA.

REMOVAL OF BRIDGE ITEMS

FOR BRIDGE #224, THE REMOVAL AND DISPOSAL OF EXISTING MATERIALS, (CONCRETE, REINFORCING STEEL, STRUCTURAL STEEL, RIPRAP, ETC.) FROM DECK AND SIDEWALK REMOVAL, AND ANY OTHER ITEMS NECESSARY TO COMPLETE THE WORK SHOWN IN THE PLANS SHALL BE IN ACCORDANCE WITH SUBSECTION 619.04(B)2 OF THE ODOT 2019 STANDARD SPECIFICATIONS AND BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

AT BRIDGES #190 AND #224, THE EXISTING STRUCTURAL STEEL IS PAINTED WITH LEAD-BASED PAINT. THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS AND FOLLOW ALL NECESSARY REGULATIONS IN HANDLING AND TRANSPORTING ANY STRUCTURAL STEEL CONTAINING LEAD-BASED PAINT.

AT BRIDGE #224, TEMPORARY BRACING OF ABUTMENTS SHALL BE IN PLACE PRIOR TO REMOVAL OF EXISTING RAILING, DECK AND BEAMS. SEE BRIDGE GENERAL NOTE "TEMPORARY BRACING (BRIDGE #224)".

THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO FALL INTO WATER BELOW. FOR BRIDGES #224, #272, AND #304.

STAY-IN-PLACE FORMS (BRIDGE #224):

STAY -IN-PLACE DECK FORMS SHALL NOT BE USED FOR BRIDGE #224 DECK CONSTRUCTION.

EPOXY INJECTION (BRIDGES #189, 190, 224, 300A, AND 304):

THE EXISTING BRIDGES HAVE APPROXIMATELY 395 LINEAR FEET OF CRACKS THAT SHALL BE CLEANED AND INJECTED WITH EPOXY. THE ACTUAL LOCATION AND EXTENT OF THE CRACKS TO BE SEALED SHALL BE AS SHOWN IN THE PLANS AND AS DETERMINED BY THE ENGINEER. THIS WORK SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE ODOT 2019 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL COST INCLUDING LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "PREPARATION OF CRACKS, ABOVE WATER" AND THE PRICE BID PER GALLON OF "EPOXY RESIN, ABOVE WATER".

PNEUMATICALLY PLACED MORTAR (BRIDGES #189, 190, 219B, 224, AND 300A):

THE EXISTING CONCRETE SUBSTRUCTURE ELEMENTS OF THE BRIDGE WHICH ARE SPALLED, ERODED, OR BROKEN SHALL BE REPAIRED WITH PNEUMATICALLY PLACED MORTAR IN THE VARIOUS AREAS AS SHOWN ON THE PLANS OR DETERMINED BY THE ENGINEER, AND IN ACCORDANCE WITH SECTION 521 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

THE REMOVAL OF LOOSE CONCRETE SHALL BE DONE USING HAND TOOLS. POWER TOOLS WILL NOT BE ALLOWED UNLESS HAND TOOLS PROVE INCAPABLE OF EXCAVATING ALL DETERIORATED CONCRETE TO SOUND CONCRETE AND APPROVED BY THE ENGINEER. SHOULD POWER TOOLS BE NECESSARY, POWER TOOLS SHALL BE OF SUCH SIZE APPROVED BY THE ENGINEER SUCH THAT THEIR USE DOES NOT CAUSE DAMAGE TO THE SOUND CONCRETE.

ANY DAMAGE DONE TO THE EXISTING REINFORCING STEEL DURING THE REMOVAL PROCESS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER. ANY DETERIORATED REINFORCING STEEL WITH A SECTION LOSS GREATER THAN 50%, AS DETERMINED BY THE ENGINEER, SHALL BE REPORTED TO THE BRIDGE ENGINEER FOR REMEDIAL ACTION. PRIOR TO MORTAR APPLICATION, BLAST CLEAN THE CONCRETE SURFACE AND REINFORCING STEEL FREE OF DEBRIS AND CORROSION. APPLY THE PNEUMATICALLY PLACED MORTAR TO REPLACE THE DETERIORATED CONCRETE. BUILD UP MORTAR TO PROVIDE A 2" COVER OVER THE EXISTING REINFORCING STEEL.

IN THE EVENT OF A REPAIR IN WHICH THE MAIN MOMENT REINFORCING IS EXPOSED, CLASS AA CONCRETE SHALL BE USED IN PLACE OF "PNEUMATICALLY PLACED MORTAR". IN THIS CASE, THE VOLUME REQUIRING CLASS AA CONCRETE SHALL BE PAID FOR AS "CLASS AA CONCRETE" IN LIEU OF "PNEUMATICALLY PLACED MORTAR".

THE CONTRACTOR MAY PROPOSE AND USE AS AN ALTERNATE ONE OF THE FOLLOWING REPAIR METHODS:

- (1) CAST-IN-PLACE CONCRETE
- (2) FORMED AND PUMPED CONCRETE AND MORTAR

THE CONTRACTOR SHALL SUBMIT A PROPOSED WORK PLAN OF THE REPAIR METHOD TO BE USED TO THE ENGINEER FOR HIS APPROVAL. THE WORK PLAN SHOULD INCLUDE SURFACE PREPARATION METHODS, PATCHING MATERIAL, BONDING AGENTS, MATERIAL PLACING METHODS, AND FINISHING METHODS. THE CONTRACTOR SHALL TEST REPAIR AN AREA TO VERIFY THE EFFECTIVENESS OF THE PROPOSED REPAIR METHOD PRIOR TO COMMENCEMENT OF THE WORK. FAULTY REPAIRS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ALL COSTS FOR REMOVAL AND DISPOSAL OF EXISTING DETERIORATED CONCRETE, LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "PNEUMATICALLY PLACED MORTAR".

CORROSION INHIBITOR (BRIDGES #189, 190, 219B, 224, 300A, AND 304):

THIS WORK CONSISTS OF TREATING CONCRETE SURFACES WITH A PENETRATING CORROSION INHIBITOR AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH SECTION 535.04D(a) OF THE ODOT 2019 STANDARD SPECIFICATIONS AND THE MANUFACTURER SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE SURFACE APPLIED CORROSION INHIBITORS THAT ARE ORGANOFUNCTIONAL SILANE BASED, USE CORROSION INHIBITORS THAT ARE DESIGNED TO WORK ON BOTH ANODIC AND CATHODIC AREAS.

BEFORE APPLYING THE CORROSION INHIBITOR TREATMENT SYSTEMS, CLEAN ALL CONCRETE SURFACES AND EXPOSED REINFORCEMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

APPLY THE CORROSION INHIBITOR AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. APPLY CORROSION INHIBITOR AFTER PATCHING WITH PNEUMATICALLY PLACED MORTAR. APPLY CORROSION INHIBITOR TO ENTIRE SURFACE AREA OF DAMAGED CONCRETE PRIOR TO CLASS AA REPAIR OR ENCASEMENT. REMOVE ALL TRACES OF THE INHIBITOR PRODUCT REMAINING ON THE CONCRETE SURFACE PRIOR TO ENCASEMENT.

ALL COSTS FOR FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, TESTING, AND INCIDENTALS NECESSARY FOR THE SURFACE PREPARATION AND APPLICATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR "CORROSION INHIBITOR (SURFACE APPLIED)".

(SP) CARBON FIBER-REINFORCED POLYMER (BRIDGE #300A):

THE CONTRACTOR SHALL PERFORM ALL OF THE FOLLOWING REPAIRS AS DIRECTED BY THE ENGINEER:

THE REMOVAL OF UNSOUND CONCRETE SHALL BE DONE USING HAND TOOLS. POWER TOOLS WILL NOT BE ALLOWED UNLESS HAND TOOLS PROVE INCAPABLE OF EXCAVATING ALL DETERIORATED CONCRETE TO SOUND CONCRETE AND APPROVED BY THE ENGINEER. SHOULD POWER TOOLS BE NECESSARY, POWER TOOLS SHALL BE OF SUCH SIZE APPROVED BY THE ENGINEER SUCH THAT THEIR USE DOES NOT CAUSE DAMAGE TO THE SOUND CONCRETE OR THE PRESTRESSING STRANDS AND BEAM REINFORCING STEEL. CLASS AA CONCRETE SHALL BE USED TO REPAIR THE SPALLED AREAS OF THE BEAM ENDS.

AFTER PLACEMENT AND CURING OF CLASS AA CONCRETE, CORROSION INHIBITOR SHALL BE APPLIED TO THE BEAM ENDS.

CARBON FIBER-REINFORCED POLYMER WRAP SHALL BE APPLIED TO THE BEAM IN THREE (3) LAYERS. THE FIRST AND THIRD LAYERS SHALL BE APPLIED IN A HORIZONTAL PATTERN. THE SECOND LAYER SHALL BE APPLIED IN A VERTICAL PATTERN.

INSTALLATION OF THE CARBON FIBER-REINFORCED POLYMER SHALL BE APPLIED PER THE MANUFACTURER'S SPECIFICATIONS AND IN ACCORDANCE WITH ODOT 2009 SPECIAL PROVISION 524-3(a-e) 09

THE ACTUAL LOCATIONS AND EXTENT OF REPAIRS SHALL BE DETERMINED BY THE ENGINEER PRIOR TO BEGINNING THE WORK. PAYMENT SHALL BE MADE FOR THE ACTUAL COUNT OF BEAM ENDS REPAIRS MADE. NO PAYMENT SHALL BE MADE FOR BEAM ENDS NOT REQUIRING REPAIR.

ALL COSTS INCLUDING REMOVAL OF UNSOUND CONCRETE, CLASS AA CONCRETE FOR SPALLS, CORROSION INHIBITOR, ALL THREE LAYERS OF CARBON FIBER - REINFORCED POLYMER, AND ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO MEET THE CRITERIA ABOVE SHALL BE INCLUDED IN THE PRICE BID PER SQUARE FOOT OF "(SP) CARBON FIBER-REINFORCED POLYMER".

ANCHORAGE INTO EXISTING CONCRETE (BRIDGES #189, 190, 219B, 224, 300A):

REINFORCING STEEL AND DOWELS SHALL BE ANCHORED INTO EXISTING CONCRETE AS SHOWN IN THE PLANS. INSTALLATION OF NEW REINFORCING STEEL DOWELS INTO EXISTING CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 509.04.D(3) OF THE ODOT 2019 STANDARD SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER.

DRILLING INTO EXISTING CONCRETE SHALL BE ACCOMPLISHED WITHOUT CUTTING OR DAMAGING EXISTING REINFORCING STEEL. PRIOR TO DRILLING, THE CONTRACTOR SHALL LOCATE AND MARK THE EXISTING REINFORCING STEEL WITH NONDESTRUCTIVE TOOLS, EQUIPMENT AND METHODS APPROVED BY THE ENGINEER. IF EXISTING REINFORCING STEEL IS ENCOUNTERED, THE DRILLING SHALL CEASE AND THE HOLE GROUTED. THE HOLE SHALL THEN BE RELOCATED TO CLEAR THE EXISTING REINFORCING STEEL. ADJUSTMENTS TO THE LOCATION OF THE NEW REINFORCING STEEL FROM THE PLANS SHALL BE THE MINIMUM TO AVOID CUTTING THE EXISTING REINFORCING STEEL AND SHALL BE APPROVED BY THE ENGINEER.

NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR THE ADJUSTMENT IN NEW REINFORCING BAR LENGTHS FOR THE RELOCATION OF ANCHORAGE HOLES DUE TO THE ENCOUNTERING OF EXISTING REINFORCING STEEL.

ALL COSTS INCLUDING LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO DRILL AND EPOXY GROUT THE REINFORCING STEEL, ANCHOR BOLTS, AND DOWELS AS SHOWN IN THE PLANS SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF CLASS A CONCRETE OR CLASS AA CONCRETE (DEPENDING ON BRIDGE NUMBER AND WHETHER ANCHORAGE IS ASSOCIATED WITH CLASS A OR CLASS AA CONCRETE).



GENERAL CONSTRUCTION NOTES
(2 OF 3)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Design, LLC
15 W 6th St, Suite 900
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REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
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				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>[Signature]</i>	11/13/25	
			HORIZONTAL:	PROJECT MGR	<i>[Signature]</i>	11-2025	
			VERTICAL:	LEAD ENGR	EAS	11-2025	
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			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281			SHEET 7 OF 53 SHEETS



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GENERAL CONSTRUCTION NOTES - BRIDGE: (CONT'D)

ELASTOMERIC COATING (BRIDGES #224 AND 300A):

THE ELASTOMERIC COATING IS MEASURED IN SQUARE FEET AND SHALL BE A LIQUID APPLIED URETHANE COATING SUCH AS CIM 1000 AS MANUFACTURED BY CIM INDUSTRIES, INC., POLYCOAT PC-IM-129 AS MANUFACTURED BY POLYCOAT PRODUCTS, OR AN APPROVED EQUAL.

THE ELASTOMERIC COATING SHALL BE APPLIED TO THE AREAS SHOWN IN THE PLANS. THE FINISH SHALL BE NEAT STRAIGHT LINES FOR APPROVAL.

THE EQUIPMENT AND METHODS OF APPLYING THE URETHANE COATING SHALL BE IN ACCORDANCE WITH THE PRODUCT COATING PROFILE AND INSTRUCTION GUIDES FOR APPLICATION TO CONCRETE. PRECAUTIONARY MEASURES SHALL BE IN ACCORDANCE WITH THE MATERIAL SAFETY DATA SHEETS AS PROVIDED BY THE MANUFACTURER.

THE COATING SHALL BE 60 MILS DRY THICKNESS AND 68 MILS WET THICKNESS. SURFACE PREPARATION AND PRODUCT MIXING SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS. PRIMER SHALL BE APPLIED TO THE CONCRETE SURFACES PRIOR TO APPLYING THE URETHANE COATING. ALL CONCRETE WORK SHALL BE COMPLETED PRIOR TO THE APPLICATION OF THE ELASTOMERIC COATING.

WATER REPELLENT SHALL NOT BE REQUIRED ON SURFACES THAT ARE COATED WITH ELASTOMERIC COATING.

ALL COSTS INCURRED DURING APPLICATION OF ELASTOMERIC COATING SHALL BE INCLUDED IN THE PRICE BID PER SQUARE FOOT OF "ELASTOMERIC COATING".

WATER REPELLENT (VISUALLY INSPECTED) (BRIDGES #224 AND #300A):

A PENETRATING WATER REPELLENT SURFACE TREATMENT SHALL BE APPLIED TO LOCATIONS AT BRIDGES #224 AND #300A AS SHOWN ON THE PLANS.

ALL COSTS INCLUDING COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD OF "WATER REPELLENT (VISUALLY INSPECTED)".

AFTER REPAIRS ARE COMPLETE AND CONCRETE, PNEUMATIC MORTAR, OR EPOXY RESIN HAS CURED A MINIMUM OF SEVEN DAYS, A PENETRATING WATER REPELLENT SURFACE TREATMENT SHALL BE APPLIED TO THE PIER CAP (BRIDGE #300A), COLUMNS (BRIDGE #300A), ABUTMENT SEAT, BACKWALL AND 1 FOOT OF ABUTMENT FACE (BRIDGE #224), AS SHOWN IN THE PLANS. ALL COSTS INCLUDING COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD OF "WATER REPELLENT (VISUALLY INSPECTED)".

COLLECTION AND HANDLING OF WASTE (BRIDGE #190):

THE "COLLECTION AND HANDLING OF WASTE" SHALL INCLUDE LABOR, MATERIALS AND INCIDENTALS NECESSARY FOR THE CLEANING, CONTAINMENTS, STABILIZATION, INCINERATION, TRANSPORTATION AND DISPOSAL OF WASTE, SAMPLING, TESTING OF SOIL, AIR AND WASTE MATERIALS, PERMITS AND RELATED ITEMS, OTHER THAN PAINTING, AS SPECIFIED IN SECTION 512 OF THE ODOT 2019 STANDARD SPECIFICATIONS.

PAINTING EXISTING STRUCTURES (BRIDGE #190):

THE EXISTING BRIDGE MAY CONTAIN A LEAD BASED PAINT SYSTEM. THIS WORK SHALL BE IN ACCORDANCE WITH SECTION 512 AND 730 OF THE ODOT 2019 STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT A SSPC-QP 2 CERTIFICATION IN ACCORDANCE WITH 512.04A(1).

THE EXPOSED SURFACES OF THE STEEL BEAMS AND DIAPHRAGMS SHALL BE CLEANED AND PAINTED. IN ADDITION, THE EXPOSED SURFACES OF THE FIXED AND EXPANSION BEARINGS SHALL BE CLEANED AND PAINTED.

THE PAINT SYSTEM CATEGORY SHALL BE IN ACCORDANCE WITH SECTION 512.04B(2).

ALL COSTS OF CLEANING AND PAINTING INCLUDING LABOR, EQUIPMENT, MATERIAL AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LUMP SUM "PAINTING EXISTING STRUCTURES".

MECHANICAL SPLICES (BRIDGE #224):

MECHANICAL SPLICES SHALL BE PROVIDED AS SHOWN ON THE PLANS IN ACCORDANCE WITH SECTION 511 OF THE ODOT 2019 STANDARD SPECIFICATIONS. RANDOM COUPLERS SHALL BE TESTED. USE EPOXY COATED OR GALVANIZED COUPLERS WHERE BARS BEING SPLICED OR CONNECTED ARE EPOXY COATED. FLAKING OF EPOXY COATING OR GALVANIZING IN EXPOSED AREAS SHALL BE TOUCHED UP WITH THE APPROPRIATE PATCH KIT.

MECHANICAL SPLICES SHALL BE USED TO CONNECT THE TRANSVERSE REINFORCING STEEL IN THE DECK AND APPROACH SLABS AND CONNECTION REINFORCING STEEL FROM THE DECK TO THE SIDEWALK IN PHASE 1, AS SPECIFIED OR SHOWN IN THE PLANS. THE MECHANICAL SPLICES SHALL SATISFY THE REQUIREMENTS OF SECTION 511.04C(3) OF THE ODOT 2019 STANDARD SPECIFICATIONS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ALL COST OF INSTALLING THE MECHANICAL SPLICES INCLUDING THE COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "MECHANICAL SPLICES".

THE LENGTHS OF PHASE 1 REINFORCING STEEL BARS WITH FLUSH MECHANICAL SPLICES SHOWN IN THE PLANS END 1" SHORT OF THE PHASE 1 LINE TO ACCOMMODATE THE CONNECTION.

THE LENGTHS OF PHASE 2 REINFORCING STEEL BARS WITH FLUSH MECHANICAL SPLICES SHOWN IN THE PLANS ACCOUNT FOR AN ADDITIONAL 1" OF LENGTH NEEDED FOR THE CONNECTION.

THE ACTUAL MECHANICAL SPLICE ENGAGEMENT LENGTHS FOR EITHER FLUSH OR MECHANICAL COUPLERS SHALL BE DETERMINED BY THE MECHANICAL SPLICE MANUFACTURER, AND THE LENGTHS OF THE REINFORCING STEEL BARS TO BE ENGAGED INTO MECHANICAL SPLICES SHALL BE ADJUSTED ACCORDINGLY. THE COST TO ADJUST THE LENGTH OF ANY REINFORCING STEEL SHOWN IN THE PLANS TO ACCOMMODATE THE MECHANICAL SPLICES WILL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "MECHANICAL SPLICES".

HYDRODEMOLITION (BRIDGES #219B & #272):

HYDRODEMOLITION WILL BE REQUIRED TO PREPARE THE EXISTING BRIDGE DECK FOR THE NEW CONCRETE OVERLAY. PRIOR TO HYDRODEMOLITION, ANY EXISTING ASPHALT OVERLAY, IF PRESENT, WILL BE REMOVED BY COLD MILLING. AFTER THE REMOVAL OF THE EXISTING ASPHALT OVERLAY, SCARIFY A MINIMUM OF THE EXISTING CONCRETE DECK SURFACE, THEN REMOVE THE REMAINING CONCRETE TO MAINTAIN 1" MINIMUM ABOVE THE TOP STEEL MAT BY HYDRODEMOLITION.

ONLY COLD MILLING MACHINERY WITH A GROSS WEIGHT LESS THAN THE POSTED LOAD WILL BE ALLOWED ON THE BRIDGE DECK. THE PROPOSED METHOD OF MILLING THE BRIDGE DECK AND THE EQUIPMENT USED WILL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

HYDRODEMOLITION WILL BE PERFORMED IN ACCORDANCE WITH SECTION 505 OF THE 2019 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. THE DEFECTIVE AREAS AND TYPES OF BRIDGE DECK REPAIR WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. REMOVE ALL PREVIOUS DECK PATCH REPAIR AREAS PRIOR TO THE HYDRODEMOLITION.

ALL COSTS OF THE HYDRODEMOLITION INCLUDING EQUIPMENT, LABOR, MILLING, SCARIFYING, DISPOSAL OF REMOVED MATERIALS, VACUUMING, SHIELDING, WATER CONTROL, JACK HAMMERING IN AREAS INACCESSIBLE TO THE HYDRODEMOLITION EQUIPMENT AND ALL OTHER ASPECTS OF WORK AND INCIDENTALS NECESSARY TO PREPARE THE DECK FOR THE PLACEMENT OF A NEW OVERLAY SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "HYDRODEMOLITION".

CLASS C BRIDGE DECK REPAIR (BRIDGES #219B & 272):

THE QUANTITY FOR "CLASS C BRIDGE DECK REPAIR" IS FOR REPAIRING DETERIORATED DECK SLAB LOCATIONS, AS DETERMINED BY THE ENGINEER, WHERE HYDRODEMOLITION RESULTS IN DECK REPAIRS MORE EXTENSIVE THAN CLASS A OR B DECK REPAIR.

ALL DECK REPAIR LOCATIONS MUST BE COMPLETE AFTER PERFORMING DECK HYDRODEMOLITION BUT PRIOR TO PERFORMING THE OVERLAY. PAYMENT ONLY FOR ACTUAL REPAIRS PERFORMED WILL BE ALLOWED. PAYMENT WILL NOT BE MADE FOR REPAIRS NOT PERFORMED. THE REPAIRS WILL BE IN ACCORDANCE WITH SECTION 513 OF THE 2019 ODOT STANDARD SPECIFICATIONS.

CONCRETE OVERLAY (BRIDGES #219B & #272):

THE MINIMUM 2" DECK SLAB OVERLAY SHALL BE HIGH DENSITY CONCRETE (LATEX MODIFIED CONCRETE) OR APPROVED EQUAL. THE MATERIAL SHALL CONFORM TO SECTION 505 OF THE ODOT 2019 STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE THAT THE FINAL ROADWAY SURFACE ELEVATION MATCHES EXISTING AND THAT BRIDGE DECK, APPROACHES AND ROADWAY MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FOR FINAL CONSTRUCTION. ALL COSTS OF CLASS A OR B DECK REPAIR, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS TO COMPLETE THE WORK SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF "BRIDGE DECK CONCRETE OVERLAY".

STEEL HANDRAILING (BRIDGE #224):

RAILING SHALL BE MEASURED AND PAID FOR AS LINEAR FEET OF HANDRAILING, WHICH INCLUDES THE UPPER HANDRAIL PIPES, POSTS, BASEPLATES, BOLTS, 1/4" ELASTOMERIC PAD BENEATH BASEPLATE AND ACCESSORIES AS WELL AS THE 2" PIPE BETWEEN THE CONCRETE POSTS OF TR-4 RAIL. THE PIPE BETWEEN CONCRETE POSTS OF TR-4 RAIL WILL NOT BE MEASURED SEPARATELY.

ALL COSTS OF MATERIALS, INSTALLATION, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FEET OF "HANDRAILING".

NON-SACRIFICIAL GRAFFITI TREATMENT (BRIDGE #224):

ANTI-GRAFFITI COATING SYSTEM SHALL BE APPLIED TO THE ENTIRE FACE OF EACH ABUTMENT AT BRIDGE #224. APPLY GRAFFITI TREATMENT AFTER REPAIRS AND ALL OTHER SURFACE TREATMENTS HAVE BEEN APPLIED.

APPLICATION OF THE GRAFFITI TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 737.04 OF THE 2019 STANDARD SPECIFICATIONS.

ALL COSTS ASSOCIATED WITH THE APPLICATION OF THE ANTI-GRAFFITI SYSTEM INCLUDING LABOR, MATERIALS, EQUIPMENT AND OTHER INCIDENTALS SHALL BE INCLUDED IN THE COST PER SQUARE FOOT OF "GRAFFITI TREATMENT".

TEMPORARY BRACING (BRIDGE #224):

BRIDGE #224 SHALL REQUIRE TEMPORARY BRACING OF THE ABUTMENTS DURING CONSTRUCTION OF PHASE 1 AND 2. BRACING SHALL BE INSTALLED PRIOR TO REMOVAL OF THE RAILING, DECK AND BEAMS AND SHALL REMAIN IN PLACE UNTIL DECK HAS CURED TO A MINIMUM OF 3,000 PSI.

THE ESTIMATED OVERTURNING FORCE AT EACH ABUTMENT IS 25 KIP-FT/LF. THE ESTIMATED SLIDING FORCE AT EACH ABUTMENT IS 5,000 LBS/LF. THE CONTRACTOR SHALL HAVE A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF OKLAHOMA INDEPENDENTLY CALCULATE THE OVERTURNING AND SLIDING FORCES AT EACH ABUTMENT FOR THE TEMPORARY BRACING DESIGN.

COSTS OF TEMPORARY BRACING SHALL BE INCLUDED IN THE PRICE BID PER POUND OF "STRUCTURAL STEEL M270 GRADE 50W".

CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND DETAILS OF THE TEMPORARY BRACING AND SHALL SUBMIT SIGNED AND SEALED DRAWINGS AND CALCULATIONS BY A REGISTERED LICENSED PROFESSIONAL ENGINEER IN THE STATE OF OKLAHOMA.

LONGITUDINAL CONSTRUCTION JOINT (BRIDGE #224):

THE LONGITUDINAL CONSTRUCTION JOINT AT THE DECK PHASE LINE SHALL BE SEALED USING HIGH MOLECULAR WEIGHT METHACRYLATE SEALER RESIN IN ACCORDANCE WITH SECTION 523 OF THE ODOT 2019 STANDARD SPECIFICATIONS.

THE DECK THICKNESS SHALL BE INCREASED BY 1/2" AT BRIDGE #224 CRL TO ALLOW FOR ADDITIONAL GRINDING IN THE LANE AND ADJACENT LANES WHERE THE LONGITUDINAL CONSTRUCTION JOINT IS LOCATED. THE TRANSITION FOR THIS ADDITIONAL THICKNESS SHALL BE FROM CENTERLINE JOINT TO 2 FEET ON EACH SIDE. GRINDING SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER AFTER ANY REQUIRED SMOOTHNESS CORRECTIONS ARE DONE TO MEET REQUIREMENTS OF ODOT SPECIAL PROVISION 430 PAVEMENT SMOOTHNESS. THE INTENT IS TO CORRECT ROUGHNESS AT THE LONGITUDINAL JOINT DUE TO PAVEMENT FINISHING OPERATIONS. GRINDING ADJACENT LANES MAY ALSO BE REQUIRED TO FEATHER OUT AND REMOVE GRINDING DEPTHS GREATER THAN 1/8". ALL COSTS OF GRINDING SHALL BE INCLUDED IN THE PRICE BID PER CY OF "CLASS AA CONCRETE" USED IN THE BRIDGE DECK.

STRUCTURAL STEEL M270 GRADE 50W (BRIDGE #224):

ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270 (ASTM A709) GRADE 50W, UNLESS SHOWN OR NOTED OTHERWISE. HIGH STRENGTH FASTENERS SHALL CONFORM TO ASTM M164 (ASTM A325), TYPE 3. NUTS, WASHERS, AND WELDING SHALL HAVE WEATHERING CHARACTERISTICS.

ERECTED GIRDERS SHALL HAVE ALL DIAPHRAGMS INSTALLED AND CONNECTIONS COMPLETED PRIOR TO LEAVING THE JOBSITE AT THE END OF EACH DAY.

MECHANICAL SPLICES (BRIDGE #224):

MECHANICAL SPLICES SHALL BE PROVIDED AS SHOWN ON THE PLANS IN ACCORDANCE WITH SECTION 511 OF THE ODOT 2019 STANDARD SPECIFICATIONS. RANDOM COUPLERS SHALL BE TESTED. USE EPOXY COATED OR GALVANIZED COUPLERS WHERE BARS BEING SPLICED OR CONNECTED ARE EPOXY COATED. FLAKING OF EPOXY COATING OR GALVANIZING IN EXPOSED AREAS SHALL BE TOUCHED UP WITH THE APPROPRIATE PATCH KIT.

MECHANICAL SPLICES SHALL BE USED TO CONNECT THE TRANSVERSE REINFORCING STEEL IN THE DECK AND APPROACH SLABS AND CONNECTION REINFORCING STEEL FROM THE DECK TO THE SIDEWALK IN PHASE 1, AS SPECIFIED OR SHOWN IN THE PLANS. THE MECHANICAL SPLICES SHALL SATISFY THE REQUIREMENTS OF SECTION 511.04C(3) OF THE ODOT 2019 STANDARD SPECIFICATIONS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ALL COST OF INSTALLING THE MECHANICAL SPLICES INCLUDING THE COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "MECHANICAL SPLICES".

THE LENGTHS OF PHASE 1 REINFORCING STEEL BARS WITH FLUSH MECHANICAL SPLICES SHOWN IN THE PLANS END 1" SHORT OF THE PHASE 1 LINE TO ACCOMMODATE THE CONNECTION.

THE LENGTHS OF PHASE 2 REINFORCING STEEL BARS WITH FLUSH MECHANICAL SPLICES SHOWN IN THE PLANS ACCOUNT FOR AN ADDITIONAL 1" OF LENGTH NEEDED FOR THE CONNECTION. THE ACTUAL MECHANICAL SPLICE ENGAGEMENT LENGTHS FOR EITHER FLUSH OR MECHANICAL COUPLERS SHALL BE DETERMINED BY THE MECHANICAL SPLICE MANUFACTURER, AND THE LENGTHS OF THE REINFORCING STEEL BARS TO BE ENGAGED INTO MECHANICAL SPLICES SHALL BE ADJUSTED ACCORDINGLY. THE COST TO ADJUST THE LENGTH OF ANY REINFORCING STEEL SHOWN IN THE PLANS TO ACCOMMODATE THE MECHANICAL SPLICES WILL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "MECHANICAL SPLICES".

CLEANING BRIDGE SURFACES (BRIDGES #189, 190, 224, 300A):

ALL PIER CAPS, ABUTMENT SEATS, AND PEDESTALS AND SHALL BE SWEEP CLEAN OF RUBBLE AND DEBRIS PRIOR TO APPLICATION OF SURFACE TREATMENTS AND ALSO PRIOR TO COMPLETION OF WORK.

ALL COSTS FOR LABOR, EQUIPMENT, MATERIALS, AND OTHER INCIDENTALS SHALL BE INCLUDED IN THE COST PER SQUARE YARD OF "CLEANING BRIDGE SURFACES".

STAINLESS STEEL FIXED BEARING ASSEMBLY (BRIDGE #224):

PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES OF THE SIZE AND SHAPE DETAILED IN THE PLANS AT THE ABUTMENTS. THERE IS AN ESTIMATED TOTAL WEIGHT OF 2,000 LBS. OF STRUCTURAL STEEL FOR THE 18 FIXED BEARINGS.

INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ANCHOR PLATES AND ANCHOR BOLTS, NUTS, WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS IN THE PRICE BID PER EACH OF "STAINLESS STEEL FIXED BEARING ASSEMBLY".



GENERAL CONSTRUCTION NOTES (3 OF 3)	
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304	
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT	



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"=NA	DESIGNED	KS	09/25	 KAREN SWATEK JONES PROJECT MGR 11/13/25 EAS 11-2025 HAS 11-25 DESIGN MANAGER CITY ENGINEER DATE: SEPTEMBER 2025
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			1"=NA	PROJECT MGR			
				LEAD ENGR			
			VERTICAL:	RECOMMENDED			
			1"=NA	DESIGN MANAGER			
			FILE:				
			ATLAS PAGE NO.:				



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SIGN SCHEDULE													
SIGN LOCATION		SIGN TYPES	SIGN DIMENSION	NUMBER OF INDIVIDUAL SIGNS *	GROUND SIGN	1-3/4" SIGN POST	2" SIGN POST	REMOVE AND RESET SIGN	COMMENTS				
SIGN NO.	STREET									COT 608	COT 608	COT 608	805(D)
1	N. Iroquois Ave.	R12-1(25)	24 X 30	1	5.00	10.00	3.00		Weight Limit 25 TONS				
2	N. Iroquois Ave.	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
3	N. Iroquois Ave.	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
4	N. Iroquois Ave.							1.00	City of Tulsa Waterway				
5	N. Iroquois Ave.	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
6	N. Iroquois Ave.	R12-1(25)	24 X 30	1	5.00	10.00	3.00		Weight Limit 25 TONS				
7	N. Iroquois Ave.	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
8	N. Lewis Ave.	I-3	V X 36	1	5.00	10.00	3.00		FLAT ROCK CREEK				
9	N. Lewis Ave.	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
10	N. Lewis Ave.	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
11	N. Lewis Ave.	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
12	N. Lewis Ave.	I-3	V X 36	1	5.00	10.00	3.00		FLAT ROCK CREEK				
13	N. Lewis Ave.	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
14	E. Pine St	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
15	E. Pine St	R12-1(20)	24 X 30	1	5.00	10.00	3.00		Weight Limit 20 TONS				
16	E. Pine St	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
17	E. Pine St	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
18	E. Pine St	R12-1(20)	24 X 30	1	5.00	10.00	3.00		Weight Limit 20 TONS				
19	E. Pine St	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
20	S. 33rd W Ave	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
21	S. 33rd W Ave	R12-1(23)	24 X 30	1	5.00	10.00	3.00		Weight Limit 23 TONS				
22	S. 33rd W Ave	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
23	S. 33rd W Ave	OM3-R	12 X 36	1	3.00	10.00	3.00		Object Marker				
24	S. 33rd W Ave	R12-1(23)	24 X 30	1	5.00	10.00	3.00		Weight Limit 23 TONS				
25	S. 33rd W Ave	OM3-L	12 X 36	1	3.00	10.00	3.00		Object Marker				
26	W. 71st St S.	R2-1 (45)	24 X 30	1	5.00	10.00	3.00		Speed Limit (45 mph)				
27	W. 71st St S.	R2-1 (45)	24 X 30	1	5.00	10.00	3.00		Speed Limit (45 mph)				
TOTALS:				26	98	260	78	1					

* FOR INFORMATION ONLY
NOTE: ALL NEW SIGNS SHALL BE USED AS REPLACEMENTS FOR EXISTING SIGNS

STRIPING SUMMARY			
SHEET NO.	ALIGNMENT	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	
		855(A)	
		LF	
		WHITE	YELLOW
43	L.L. TISDALE PKWY	640	510
43	E. PINE ST.	260	1,010
TOTAL		950	1,560



SUMMARIES

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

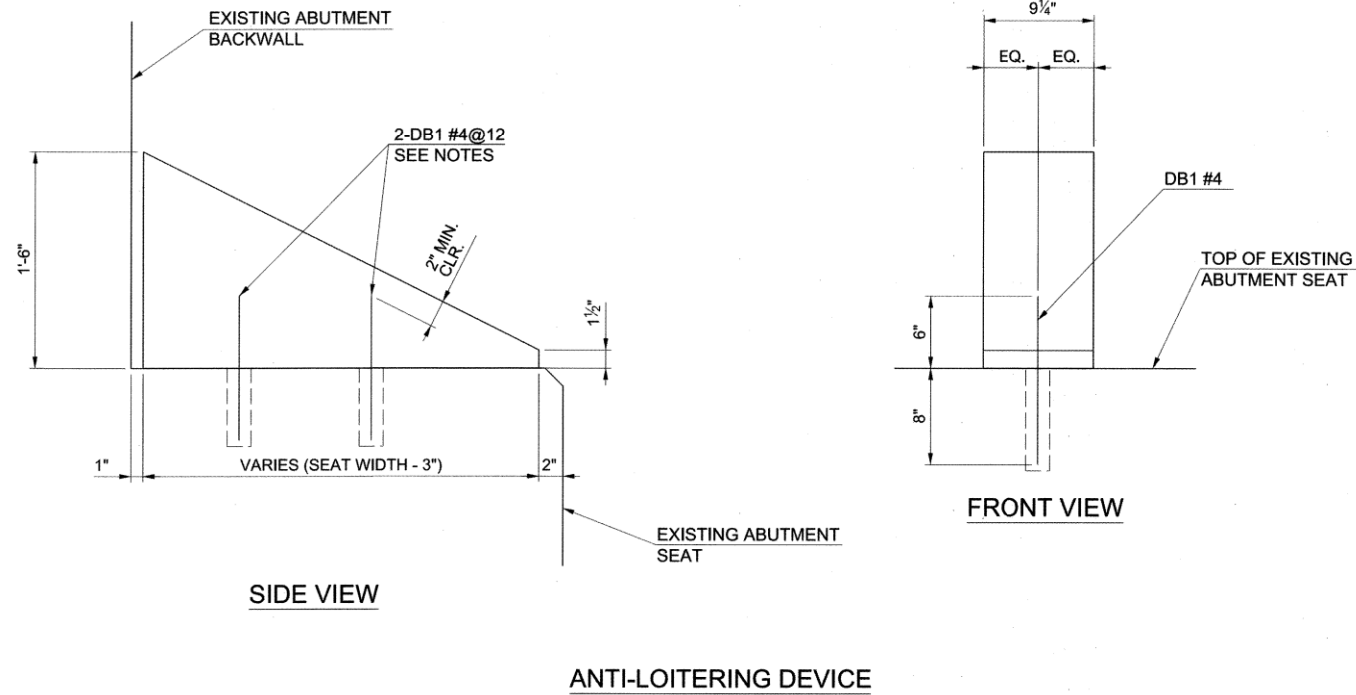
CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
15 W 6th St, Suite 200
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>KS</i>	<i>12/15</i>	
			HORIZONTAL:	PROJECT MGR	<i>MEP</i>	<i>10/24/25</i>	
			1"= N/A	LEAD ENGR	<i>EAS</i>	<i>11-2019</i>	
			VERTICAL:	RECOMMENDED	<i>HAS</i>	<i>11-25</i>	
			1"= N/A	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO: 76, 77, 115, 116, 162, 163, 217, 218, 280, 281				SHEET 9 OF 53 SHEETS



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ANTI-LOITERING DEVICE

NOTES:

- MATERIALS:
 CONCRETE (CLASS A) F'C = 3 KSI
 REINFORCING STEEL FY = 60 KSI
- CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS OF ABUTMENT SEAT AND ESTIMATED QUANTITY OF ANTI-LOITERING DEVICES REQUIRED AT EACH BRIDGE PRIOR TO CASTING THE DEVICES. DEVICES SHALL BE SPACED IN A MANNER TO LEAVE 9" TO 12" EDGE-TO-EDGE DISTANCE BETWEEN DEVICES.
- CONTRACTOR SHALL DRILL AND EPOXY GROUT A MINIMUM OF (15XDB) OR AS PER MANUFACTURER'S SPECIFICATIONS, BUT SHALL NOT BE LESS THAN 6" EMBEDMENT INTO ABUTMENT SEAT. ALL COST FOR DRILL AND EPOXY GROUT (INCLUDING DB1 DOWEL BARS) SHALL BE INCLUDED IN THE BID PRICE PER CY OF "CLASS A CONCRETE".
- CONTRACTOR SHALL AVOID EXISTING ABUTMENT SEAT REINFORCING STEEL DURING DRILLING OPERATIONS. COST FOR LOCATING EXISTING REINFORCING STEEL SHALL BE INCLUDED IN THE BID PRICE PER CY OF "CLASS A CONCRETE".
- PRE-CAST ANTI-LOITERING DEVICES SHALL BE CONNECTED TO DB1 BARS EXTENDED ABOVE THE EXISTING ABUTMENT SEAT A MINIMUM OF 6" AND SECURED WITH ODOT-APPROVED EPOXY ADHESIVE, IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- COST OF PREPARING AND CLEANING THE ABUTMENT SEATS PRIOR TO THE INSTALLATION OF THE ANTI-LOITERING DEVICES SHALL BE INCLUDED IN THE BID PRICE PER SY OF "CLEANING BRIDGE SURFACES".

ANTI-LOITERING DEVICES					
ESTIMATED NUMBER REQUIRED					
BRIDGE #189	BRIDGE #190	BRIDGE #219B	BRIDGE #224	BRIDGE #300A	TOTAL
9	17	13	12	26	77
ESTIMATED QUANTITY CLASS A CONCRETE (CY)					
1	2	2	1	3	9



MISCELLANEOUS DETAILS

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
 15 W 6th St, Suite 500
 Tulsa, Oklahoma 74119
 (918) 492-1600
a Haskell Company

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 KAREN SWATEK JONES CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	Ben	12/15	
			HORIZONTAL:	PROJECT MGR	MED	11/24/25	
			VERTICAL:	LEAD ENGR	EAS	11-2025	
			1"= N/A	RECOMMENDED	HAS	11-25	
				DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 10 OF 53 SHEETS



STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 189 ALONG N. IROQUOIS AVE. BETWEEN E. 46TH ST. N. AND
E. 48TH ST N. NBI: 19439

PROJECT DESCRIPTION: BRIDGE 189 REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- 1) INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- 2) RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: SILT LOAM

TOTAL AREA OF THE CONSTRUCTION SITE: 0.12 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=0.10 AC EX. GRASS=0.02 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.10 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.10 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.90

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°13'18"N 95°58'58"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: VALLEY VIEW CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE:
THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION
- HYDROMULCH / HYDROSEED

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIAL IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2019 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION, AND STORM WATER POLLUTION PREVENTION
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 189
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>J. Jones</i>	09/25	
			HORIZONTAL:	PROJECT MGR	<i>J. Jones</i>	09/25	
			1"= N/A	LEAD ENGR	<i>EAS</i>	11-2025	
			VERTICAL:	RECOMMENDED	<i>HAS</i>	11-25	
			1"= N/A	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 11 OF 53 SHEETS



STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 190 ALONG N. LEWIS AVE. BETWEEN E. 46TH ST. N. AND
W. 36TH ST N. NBI: 10331

PROJECT DESCRIPTION: BRIDGE 190 REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- 1) INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- 2) RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: SILT LOAM

TOTAL AREA OF THE CONSTRUCTION SITE: 0.22 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=0.15 AC EX. GRASS=0.07 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.15 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.15 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.68

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°12'54"N 95°57'30"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: FLAT ROCK CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE:
THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION
- HYDROMULCH / HYDROSEED

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2019 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION, AND STORM WATER POLLUTION PREVENTION
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 190
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	
				SURVEY			
			PROFILE SCALE	FIELD MGR	JAN	11/5	
			HORIZONTAL:	PROJECT MGR	JAFD	10/24/25	
			VERTICAL:	LEAD ENGR	EAS	11-10/25	
			1"= N/A	RECOMMENDED			
				DESIGN MANAGER	HAS	11-25	
			FILE:				
			ATLAS PAGE NO.:				



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STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 219B ALONG S. TISDALE EXPY. OVER PINE ST. NBI: 21669

PROJECT DESCRIPTION: BRIDGE 219B REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- 1) INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- 2) RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: SILT LOAM, SILTY CLAY

TOTAL AREA OF THE CONSTRUCTION SITE: 0.26 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=0.14 AC EX. GRASS=0.12 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.14 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.14 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.58

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°10'38"N 96°00'04"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: DIRTY BUTTER CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE:
THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION
- HYDROMULCH / HYDROSEED

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIAL IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2019 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION, AND STORM WATER POLLUTION PREVENTION
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

*ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA. ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

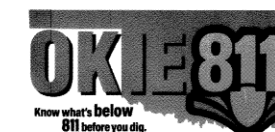
ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 219B
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>Ben</i>	12/20	
			HORIZONTAL:	PROJECT MGR	<i>WED</i>	10/21/25	
			1"= N/A	LEAD ENGR	<i>EAS</i>	11-2025	
			VERTICAL:	RECOMMENDED	<i>HAS</i>	11-25	
			1"= N/A	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 13 OF 53 SHEETS



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9/30/2025

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 224 ALONG E. PINE ST. BETWEEN W. YALE AVE. N. AND
E. HARVARD AVE. N. NBI: 12112

PROJECT DESCRIPTION: BRIDGE 224 REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: SILT LOAM, SILTY CLAY

TOTAL AREA OF THE CONSTRUCTION SITE: 0.08 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=0.06 AC EX. GRASS=0.02 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.06 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.06 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.73

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°10'37"N 95°55'40"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: COAL CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT: _____

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE: THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION
- HYDROMULCH / HYDROSEED

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

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WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2019 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION, AND STORM WATER POLLUTION PREVENTION
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 224
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	
				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>Jan</i>	<i>10/15</i>	
			HORIZONTAL:	PROJECT MGR	<i>MJD</i>	<i>10/24/25</i>	
			1"= N/A	LEAD ENGR	<i>EAS</i>	<i>11-2023</i>	
			VERTICAL:	RECOMMENDED	<i>Has</i>	<i>11-25</i>	
			1"= N/A	DESIGN MANAGER			<i>Jones</i>
			FILE:				CITY ENGINEER
			ATLAS PAGE NO.:				DATE: SEPTEMBER 2025
			76, 77, 115, 116, 162, 163, 217, 218, 280, 281				SHEET 14 OF 53 SHEETS



STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 272 ALONG S. 33 RD. AVE. W. BETWEEN S. 25TH W. AVE. AND S. 41ST W. AVE. NBI: 19428

PROJECT DESCRIPTION: BRIDGE 272 REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- 1) INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- 2) RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: SILT LOAM, SILTY CLAY

TOTAL AREA OF THE CONSTRUCTION SITE: 0.09 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=0.06 AC EX. GRASS=0.03 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.06 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.06 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.67

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°09'17"N 96°01'46"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: PARKVIEW DRAINAGE DITCH

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE:
THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION
- HYDROMULCH / HYDROSEED

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2019 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION, AND STORM WATER POLLUTION PREVENTION
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

*ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA. ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 272
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 DESIGN MANAGER
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR	EAS	11-10-23	
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER	KS	11-25	
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 15 OF 53 SHEETS



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STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 300A ALONG W. 71ST. S. BETWEEN W. RIVERSIDE DR. AND
E. ELWOOD AVE. S. NBI: 20579

PROJECT DESCRIPTION: BRIDGE 300A REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- 1) INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- 2) RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: LOAMY FINE SAND

TOTAL AREA OF THE CONSTRUCTION SITE: 6.46 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=4.30 AC EX. GRASS=2.16 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 4.30 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 4.30 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.67

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°03'39"N 95°59'05"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: ARKANSAS RIVER

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE:
THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION
- HYDROMULCH / HYDROSEED

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2019 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION, AND STORM WATER POLLUTION PREVENTION
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

*ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA. ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 300A
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
1	N/A		DESIGNED	KS	09/25		
			SURVEY				
			PROFILE SCALE	FIELD MGR	12/6		
			HORIZONTAL:	PROJECT MGR	10/24/25		
			1"=N/A	LEAD ENGR	EAS	11-1-2025	
			VERTICAL:	RECOMMENDED			
			1"=N/A	DESIGN MANAGER	HAS	11-25	
			FILE:				
			ATLAS PAGE NO.:				



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STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: BRIDGE 304 ALONG S. RIVERSIDE DR. BETWEEN N. 81ST. E. AND S. 91ST. E. NBI: 27189

PROJECT DESCRIPTION: BRIDGE 304 REHABILITATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

- 1) INSTALL TEMPORARY CONTROL DEVICES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE CITY OF TULSA STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS PER PHASE.
- 2) RESTORE GROUND CONDITIONS TO PRE CONSTRUCTION CONDITIONS

SOIL TYPE: LOAMY FINE SAND

TOTAL AREA OF THE CONSTRUCTION SITE: 0.08 AC

ESTIMATED AREA TO BE DISTURBED: EX. PAVEMENT=0.04 AC EX. GRASS=0.04 AC

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.04 AC

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.04 AC

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.55

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°02'35"N 95°57'47"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: FRED CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: CITY OF TULSA

NOTE:
THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
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STRUCTURAL PRACTICES:

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- TEMPORARY SLOPE DRAIN
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- TEMPORARY SEDIMENT TRAPS
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- RIP RAP
- INLET PROTECTION
- TEMPORARY BRUSH SEDIMENT BARRIERS
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- TEMPORARY STREAM CROSSINGS
- FLEXAMAT / ARTICULATED CONCRETE BLOCK
- COMPOST FILTER SOCKS
- EROSION CONTROL MATS AND BLANKETS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPAILIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

- * USE CITY OF TULSA STANDARD 126, CONSTRUCTION ENTRANCE

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

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- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

*ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA. ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.

ADDITIONAL PERMITS REQUIRED FROM OKLAHOMA WATER RESOURCES BOARD AND/OR MUNICIPALITY FOR USE OF SURFACE, GROUND OR CITY WATER SOURCES FOR ACTIVITIES SUCH AS WATERING.



STORMWATER MANAGEMENT PLAN BRIDGE 304
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT
Benham Design, LLC 15 W 6th St, Suite 900 Tulsa, Oklahoma 74119 (918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR			
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 17 OF 53 SHEETS

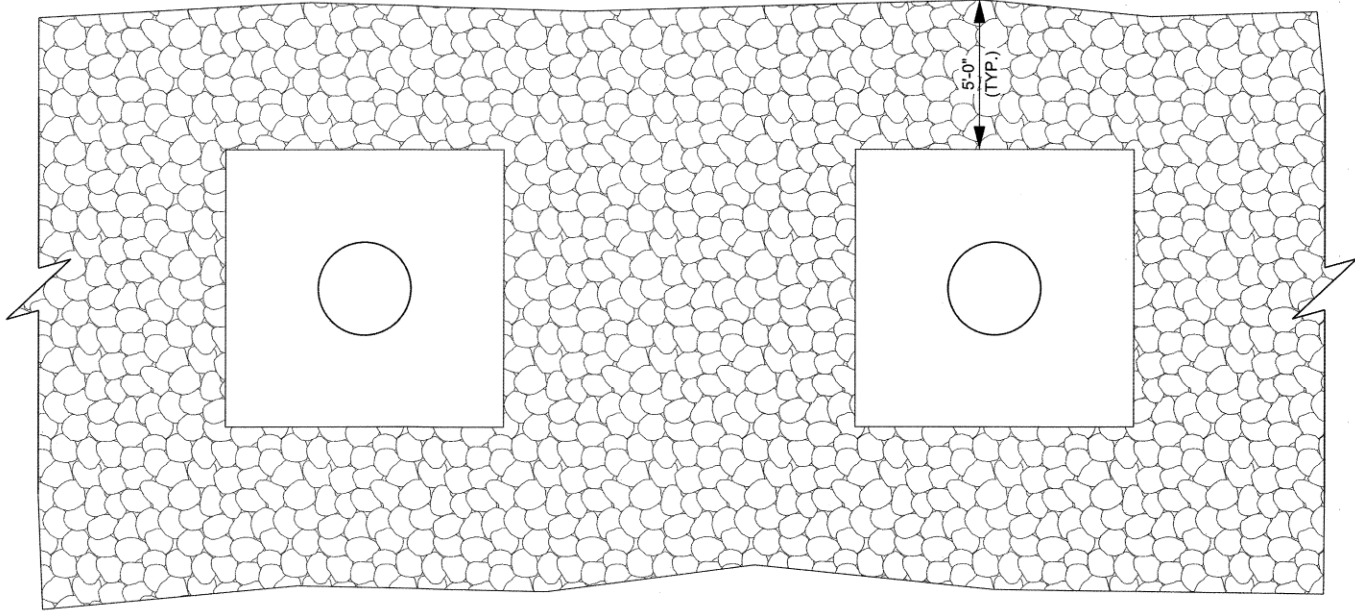
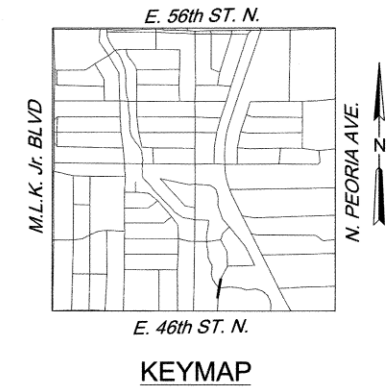


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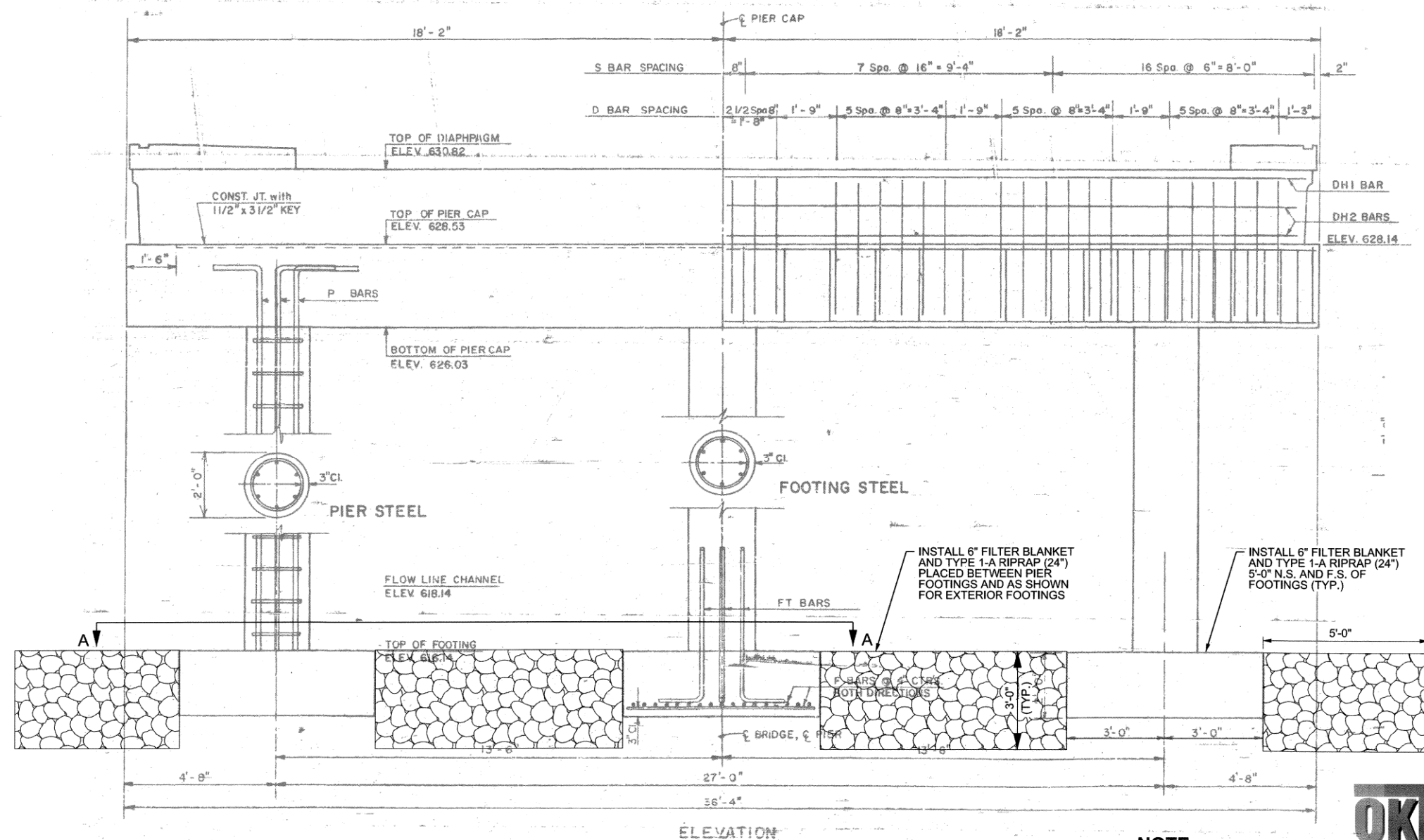
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SECTION A-A



ELEVATION

**NOTE:
ALL DETAILS ARE
NOT TO SCALE**



NOTES:

1. ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS AND ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
2. BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.



BRIDGE 189 DETAIL
N IROQUOIS AVE
(2 OF 2)

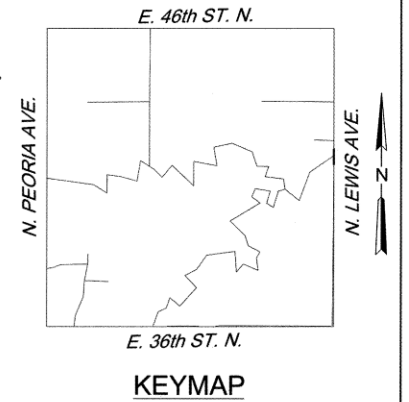
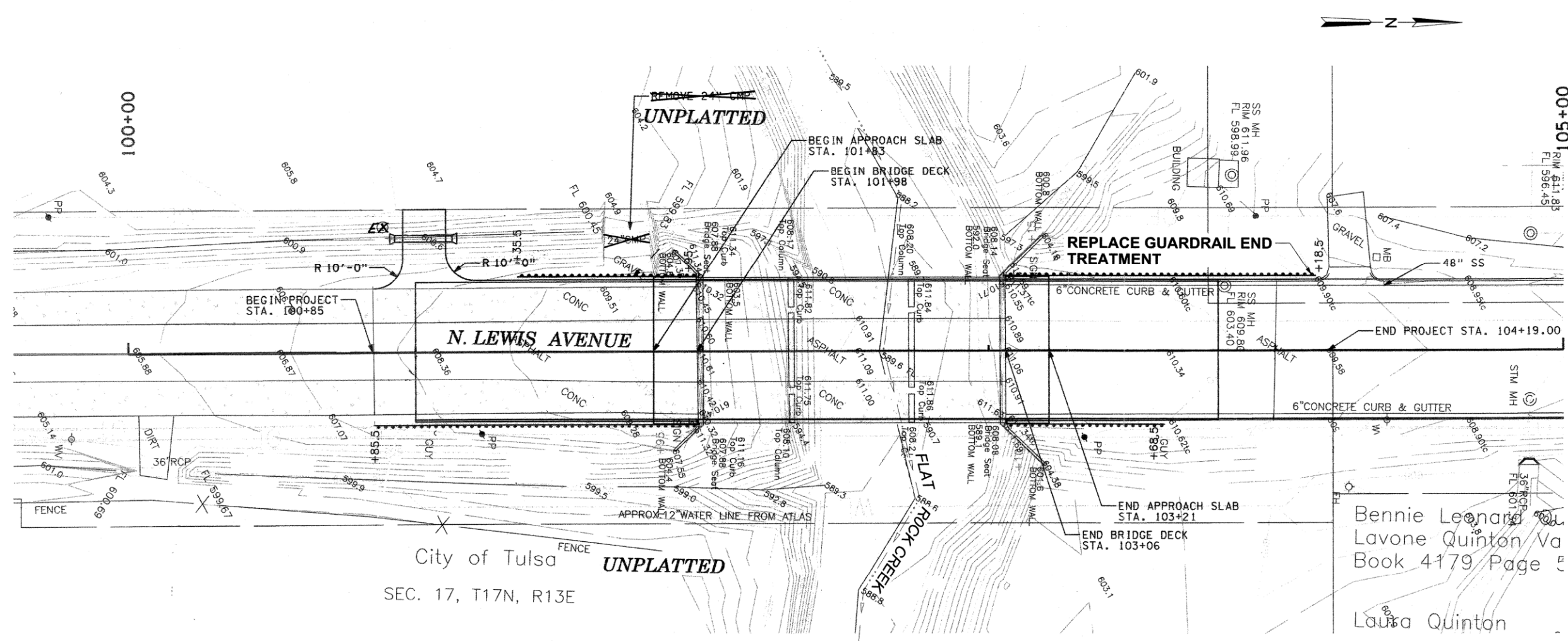
BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Design, LLC
15 W 6th St, Suite 910
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"=N/A	DESIGNED	KS	09/25	 DATE: SEPTEMBER 2025 SHEET 19 OF 53 SHEETS
			1"=N/A	SURVEY			
			1"=N/A	FIELD MGR	<i>Rau</i>	12/6	
			1"=N/A	PROJECT MGR	<i>MED</i>	10/24/25	
			1"=N/A	LEAD ENGR	<i>EAS</i>	11/1/2022	
			1"=N/A	RECOMMENDED	<i>HAS</i>	11-25	
				DESIGN MANAGER			
				FILE:			
				ATLAS PAGE NO.:	76, 77, 115, 116, 162, 183, 217, 218, 280, 281		

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City of Tulsa
SEC. 17, T17N, R13E

Bennie Leonard
Lavone Quinton Va
Book 4179 Page 5
Laura Quinton

NOTES:

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BRIDGE 190 DETAIL
N LEWIS AVE
(1 OF 5)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
15 W 6th St, Suite 200
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 DATE: SEPTEMBER 2025 SHEET 20 OF 53 SHEETS
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			VERTICAL:	RECOMMENDED			
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			ATLAS PAGE NO:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281			

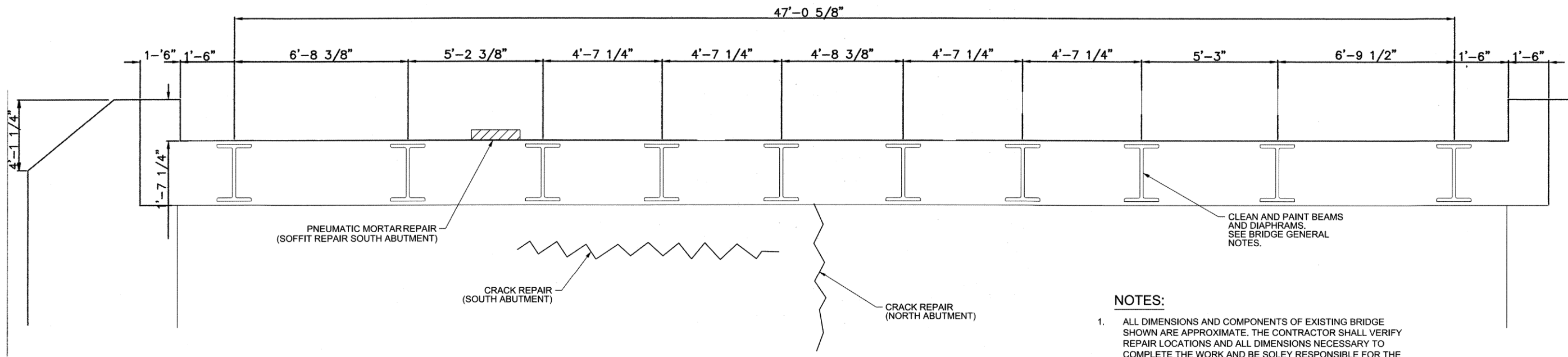
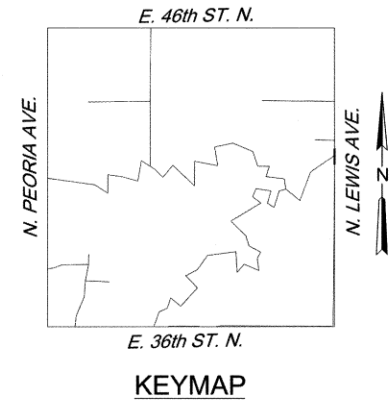
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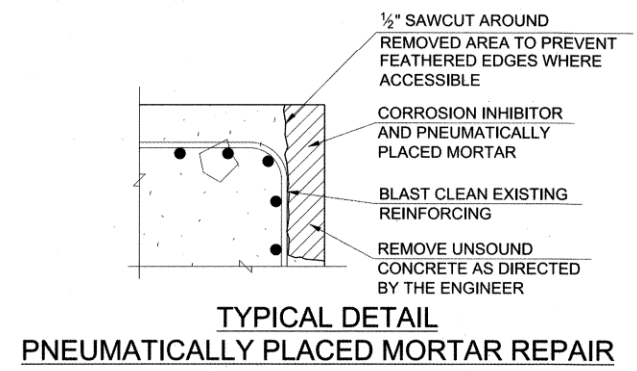
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9/30/2025



ABUTMENT ELEVATION
(NTS)

- NOTES:**
1. ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS AND ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
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TYPICAL DETAIL
PNEUMATICALLY PLACED MORTAR REPAIR

NOTE:
ALL DETAILS ARE NOT TO SCALE



BRIDGE 190 DETAIL
N LEWIS AVE
(2 OF 5)

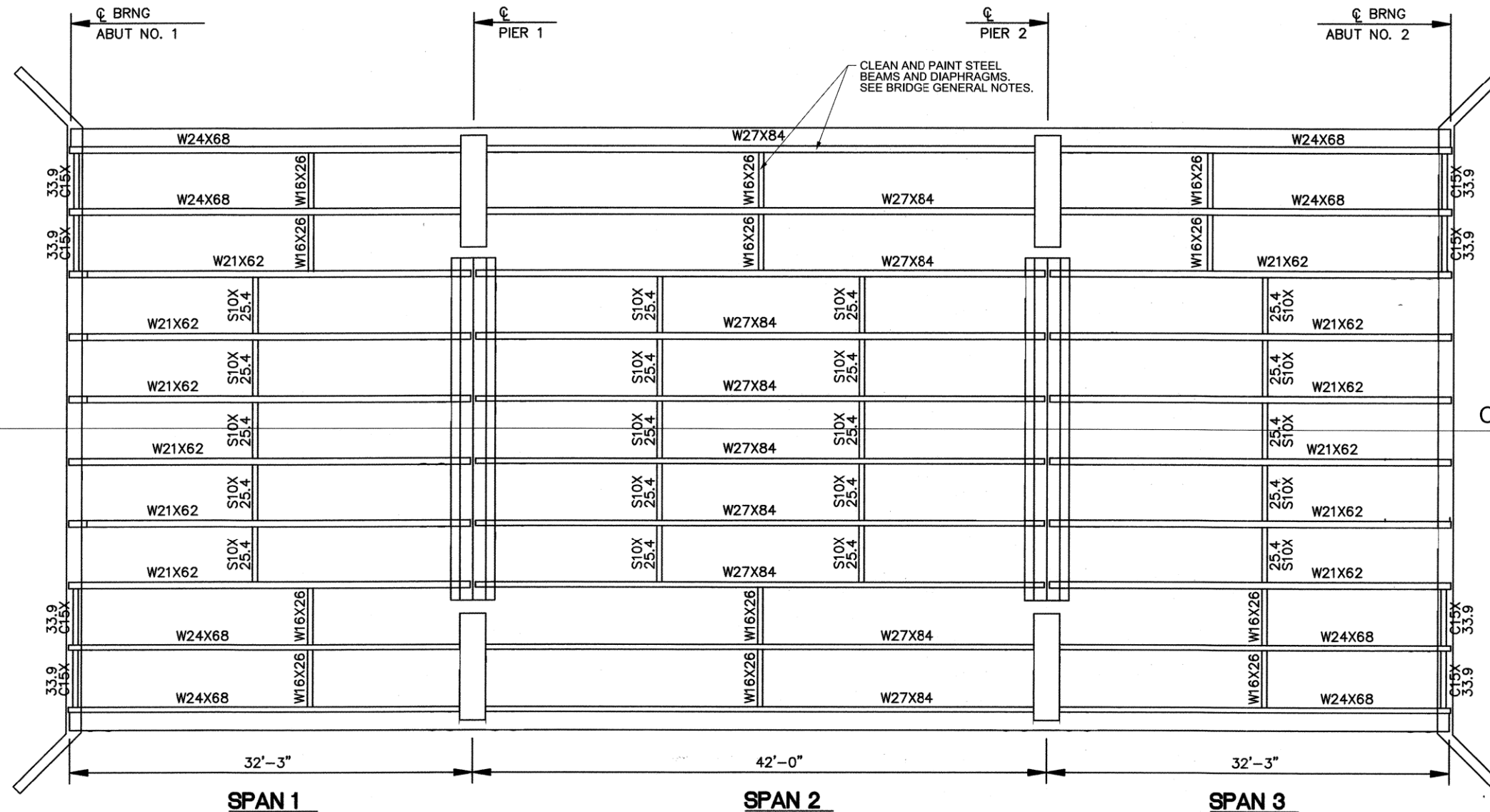
BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

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Tulsa, Oklahoma 74119
(918) 492-1600
a Haskell Company

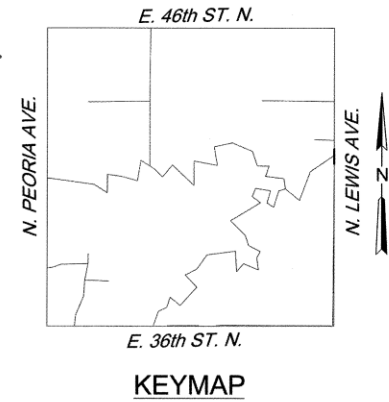
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FRAMING PLAN
 (EXISTING STRUCTURE)
 (N.T.S.)

NOTE:
 ALL DETAILS ARE
 NOT TO SCALE



CL N. LEWIS AVE.

NOTES:

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BRIDGE 190 DETAIL
 N LEWIS AVE
 (3 OF 5)

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT

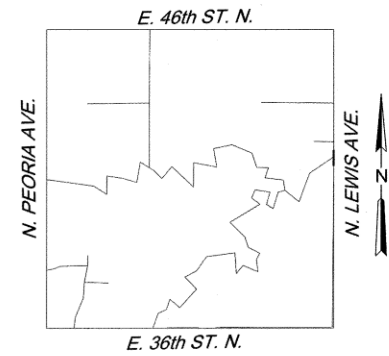

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 (918) 492-1600

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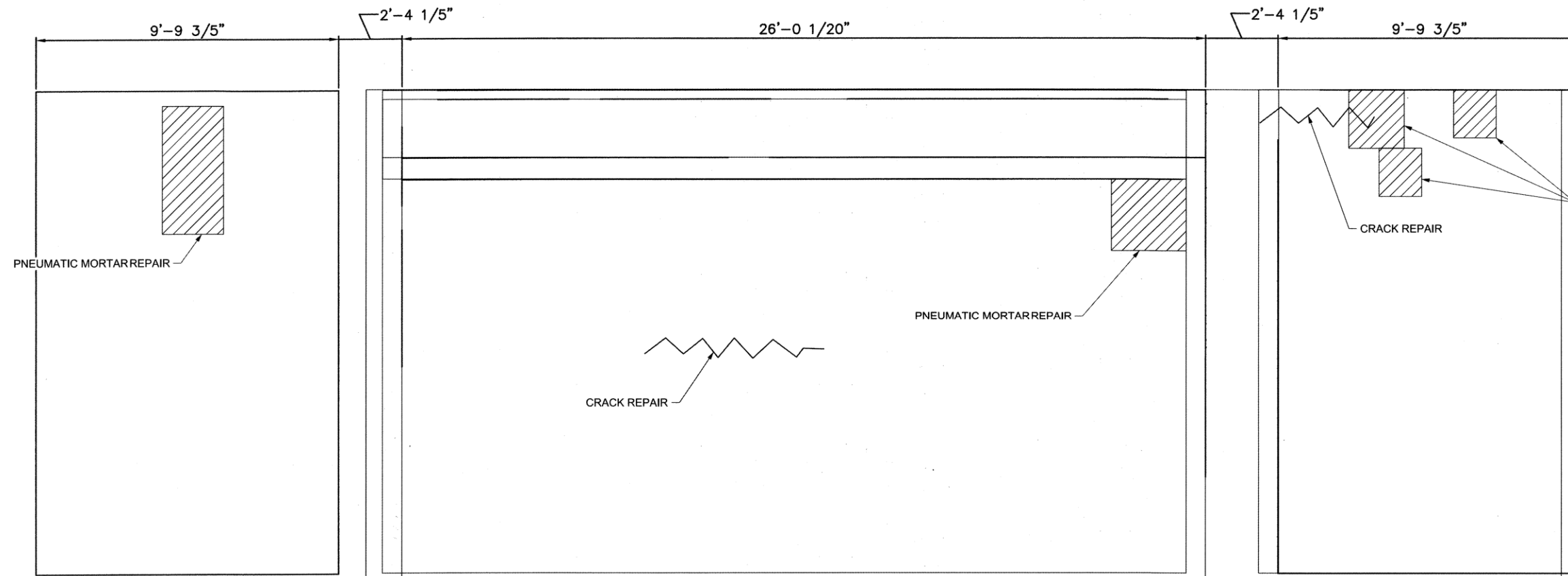
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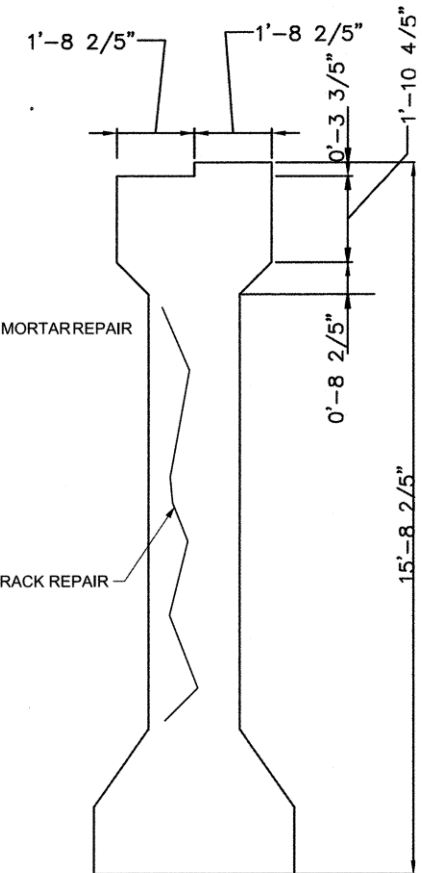
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KEYMAP



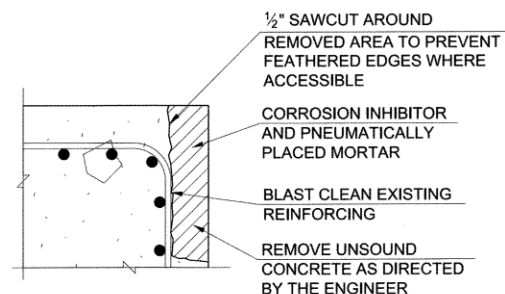
SOUTH PIER
SOUTH ELEVATION



EAST END ELEVATION
NOT TO SCALE

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TYPICAL DETAIL
PNEUMATICALLY PLACED MORTAR REPAIR



BRIDGE 190 DETAIL N LEWIS AVE (4 OF 5)
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT

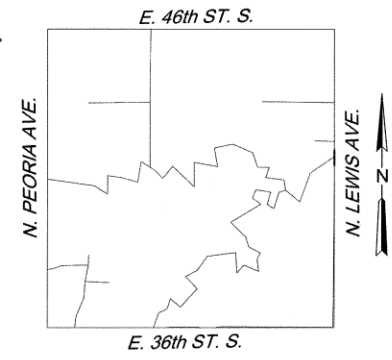


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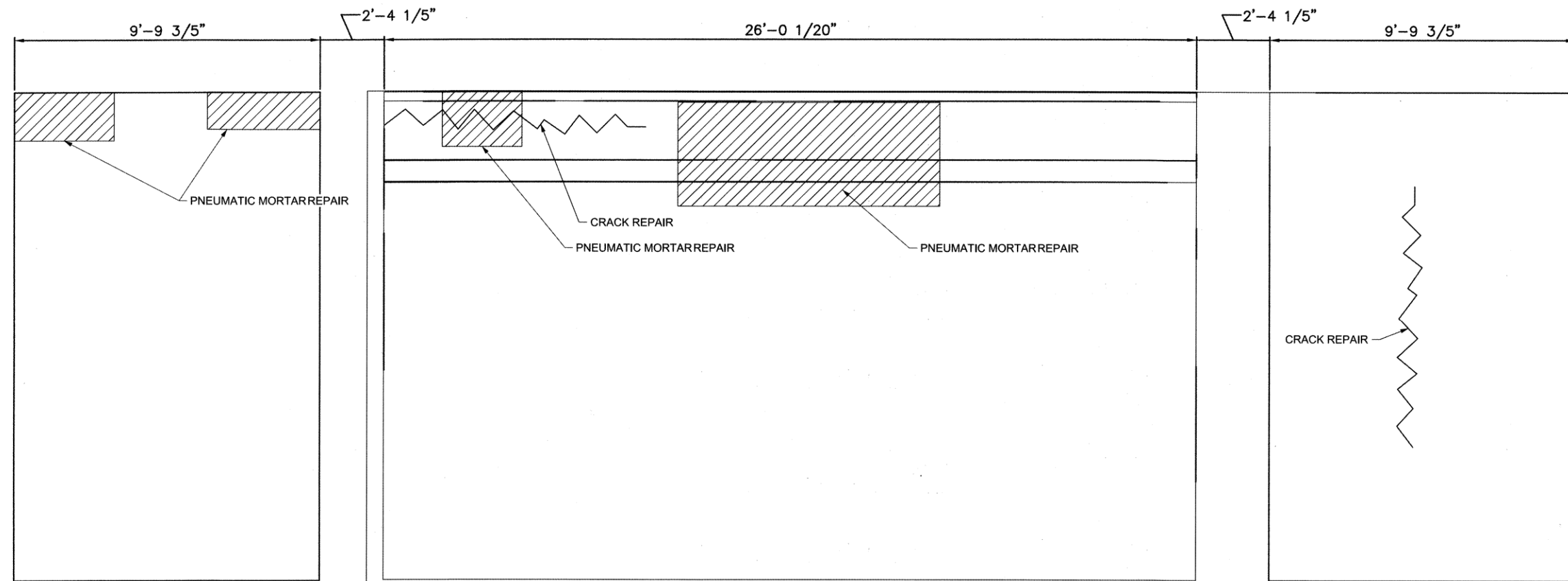
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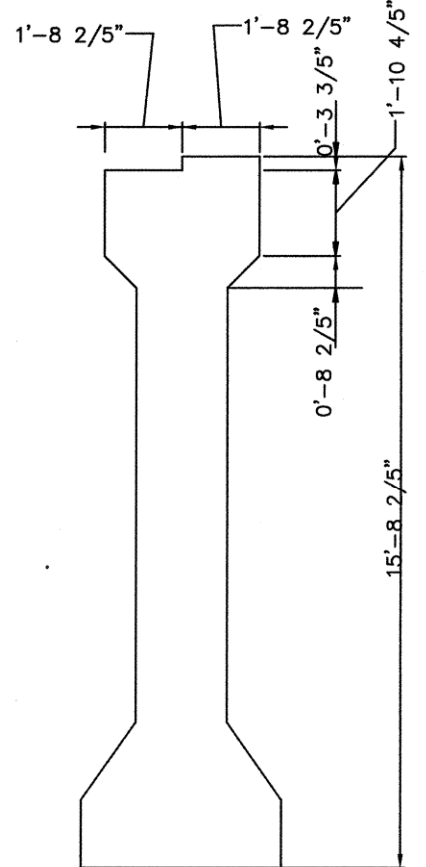
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KEYMAP



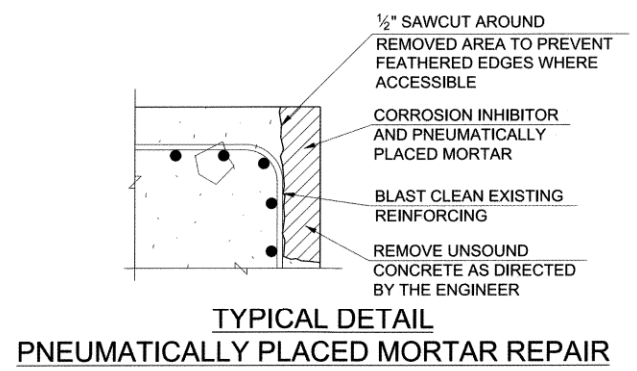
SOUTH PIER
NORTH ELEVATION



WEST END ELEVATION
NOT TO SCALE

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BRIDGE 190 DETAIL
N LEWIS AVE
(5 OF 5)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

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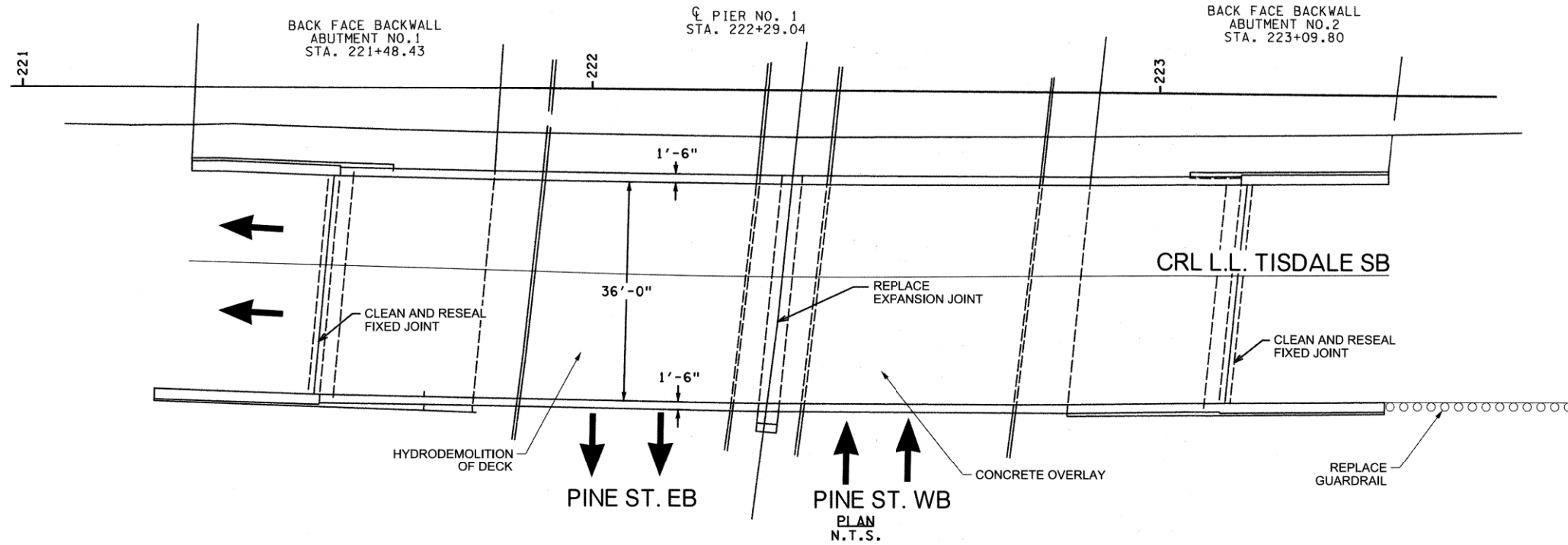
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			ATLAS PAGE NO.: 76, 77, 115, 116, 162, 163, 217, 218, 280, 281				SHEET 24 OF 53 SHEETS

NOTE:
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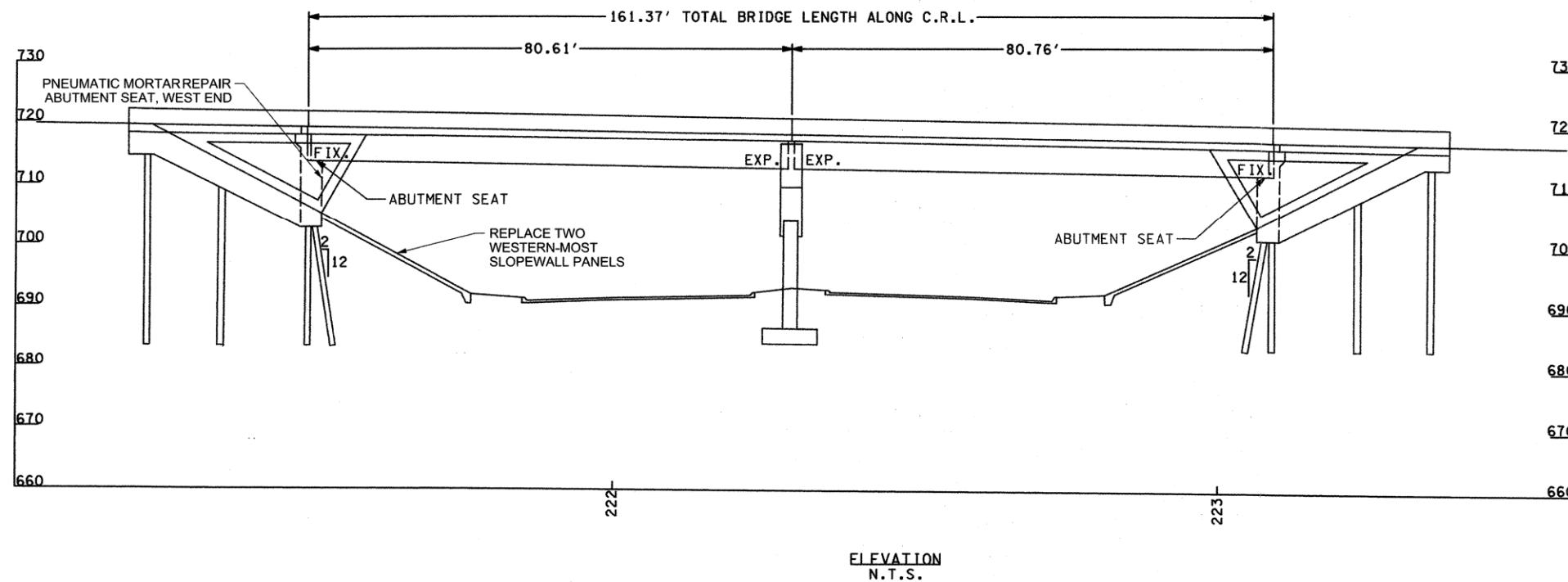
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 P.O.C. STA. 78+23.82 @ PINE



KEYMAP

NOTES:

1. ALL DIMENSIONS STATIONS, ELEVATIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS AND ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
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3. FINAL ELEVATIONS OF BRIDGE DECK SHALL MATCH ELEVATIONS OF EXISTING APPROACH SLABS.



BRIDGE 219B DETAIL
 SB N TISDALE PKWY
 (1 OF 2)

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

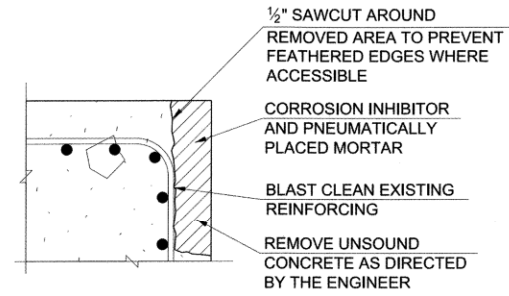
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 (918) 492-1600

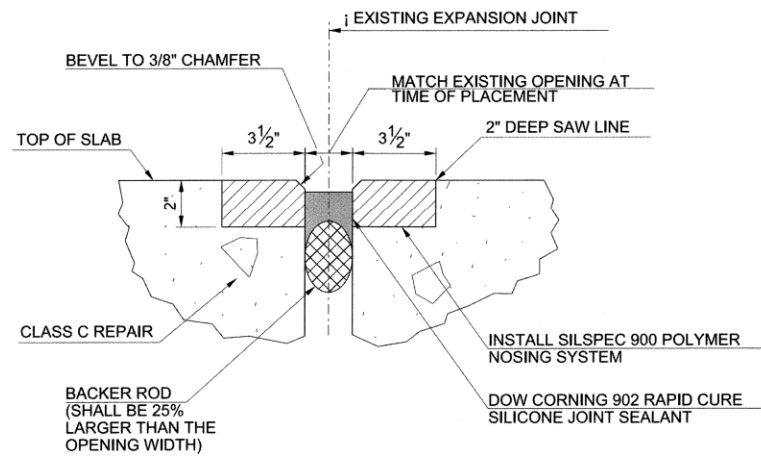
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NOTE:
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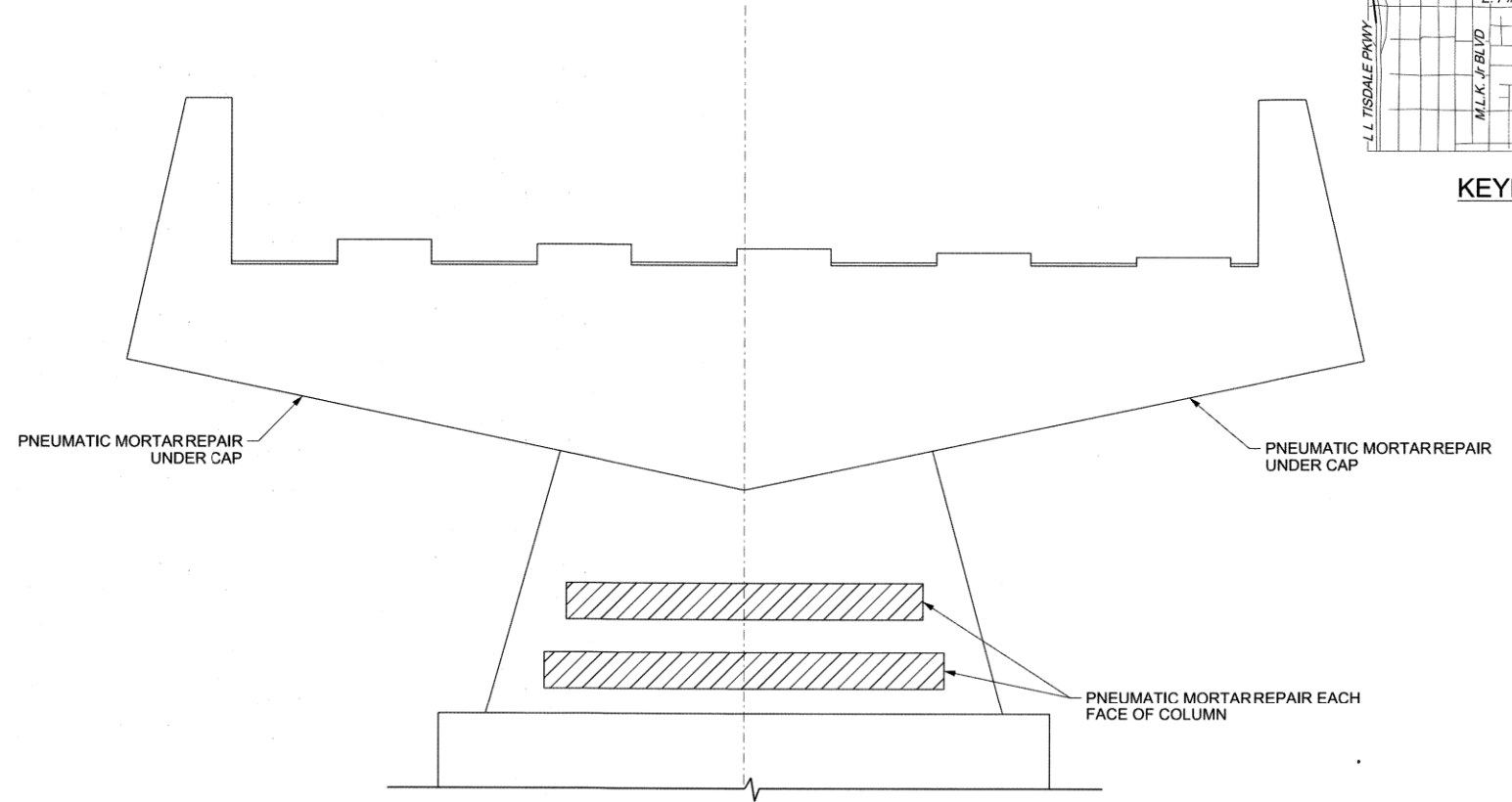
**TYPICAL DETAIL
PNEUMATICALLY PLACED MORTAR REPAIR**



**ELASTOMERIC MORTAR INSERT DETAIL
EXPANSION JOINT NTS**

NOTES:

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- REPAIR WORK AT BRIDGE 219B SHALL ALSO INCLUDE PNEUMATIC MORTAR REPAIR AT BRIDGE 219C COLUMN. SEE PAY ITEM NOTES FOR CLARIFICATION.



NOTES:

- PERFORM HYDRODEMOLITION OVER ENTIRE BRIDGE DECK BEFORE COMPLETING CLASS C BRIDGE DECK REPAIR (IF REQUIRED).
- AFTER HYDRODEMOLITION OPERATIONS ARE COMPLETE, REPORT ANY DETERIORATED REINFORCING STEEL BARS WITH A SECTION LOSS GREATER THAN 25%, TO THE ENGINEER FOR REMEDIAL ACTION. THE DETERIORATED PORTION OF THE BAR SHALL BE CUT OUT AND REPLACED WITH NEW REINFORCING STEEL BARS OF THE SAME SIZE AND TYPE AS THE EXISTING BAR. NEW REINFORCING BARS SHALL BE LAPPED WITH REMAINING SOUND BARS. IN THE EVENT THE EXISTING BARS ARE NOT EXPOSED ENOUGH AFTER HYDRODEMOLITION OPERATIONS TO ACCOMMODATE THE REQUIRED LAP LENGTHS SHOWN IN THE PLANS OR AT THE DISCRETION OF THE ENGINEER, NEW REINFORCING STEEL BARS WILL BE MECHANICALLY SPLICED WITH THE EXISTING BARS. THE REMOVAL OF SOUND CONCRETE TO FACILITATE LAP SPLICES WILL NOT BE ALLOWED. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL SATISFY SECTION 723.01 OF THE 2019 ODOT STANDARD SPECIFICATIONS. INCLUDE ALL COSTS OF REPLACING THE CORRODED STEEL IN THE UNIT PRICE PER POUND OF "EPOXY COATED REINFORCING STEEL". IN THE EVENT MECHANICAL EQUIPMENT SNAGS THE TOP MAT OF DECK REINFORCING STEEL, REPAIR OR REPLACE DAMAGED OR DISLODGED REINFORCING, IN A MANNER APPROVED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE CITY.
- ADDITIONAL CLASS C BRIDGE DECK REPAIR MAY BE REQUIRED IN THE EVENT THAT HYDRODEMOLITION REMOVES CONCRETE BELOW THE TOP MAT OF STEEL. NOTIFY THE ENGINEER TO DETERMINE THE EXTENT OF CLASS C BRIDGE DECK REPAIR RESULTING FROM HYDRODEMOLITION REMOVALS. ROUGHEN REPAIRED SURFACES TO PROVIDE A BONDING SURFACE FOR THE BRIDGE DECK CONCRETE OVERLAY.
- BRIDGE DECK CONCRETE OVERLAY SHALL BE PLACED IN ACCORDANCE WITH SECTION 505 OF THE 2019 ODOT STANDARD SPECIFICATIONS ACROSS THE ENTIRE CLEAR ROADWAY WIDTH AND ALONG THE ENTIRE LENGTH OF BRIDGE DECK, INCLUDING AREAS OF CLASS C BRIDGE DECK REPAIR. BRIDGE DECK SHALL HAVE A UNIFORM SURFACE WHEN OVERLAY IS COMPLETE, MATCH EXISTING SLOPE, AND TIE IN TO EXISTING BRIDGE APPROACHES.
- ALL COSTS OF CLASS A OR B DECK REPAIR, IF REQUIRED, SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF "BRIDGE DECK CONCRETE OVERLAY" PER SECTION 505 OF THE 2019 ODOT STANDARD SPECIFICATIONS.



BRIDGE 219B DETAIL SB N TISDALE PKWY (2 OF 2)
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT

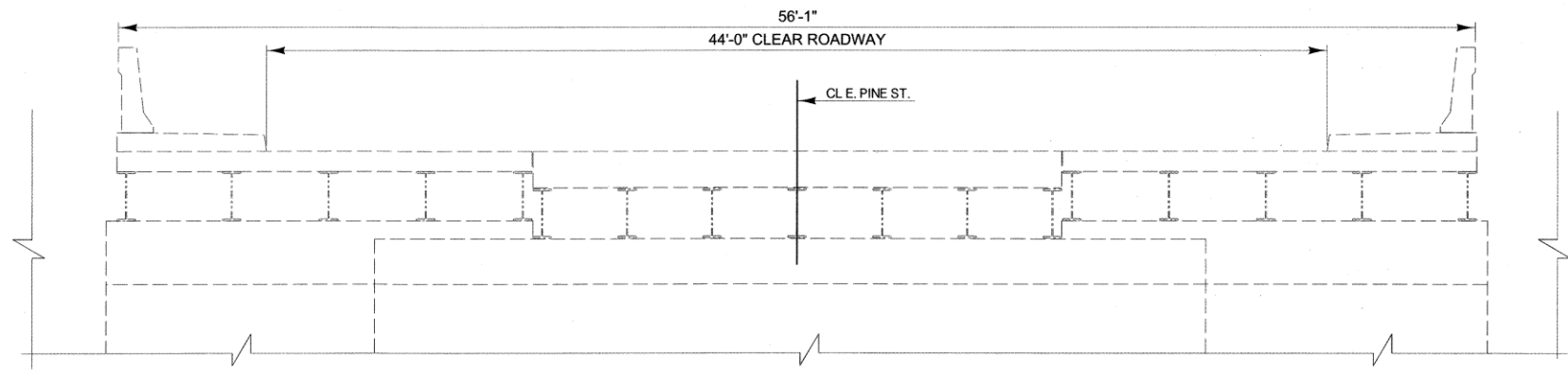
BENHAM Benham Design, LLC
15 W 6th St, Suite 500
Tulsa, Oklahoma 74119
(918) 492-1600

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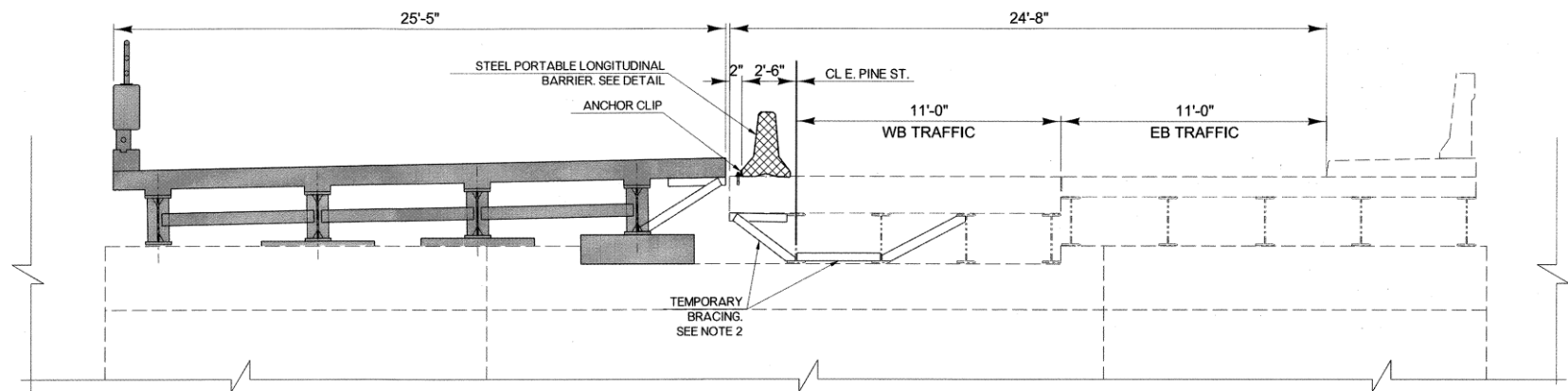
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ALL DETAILS ARE
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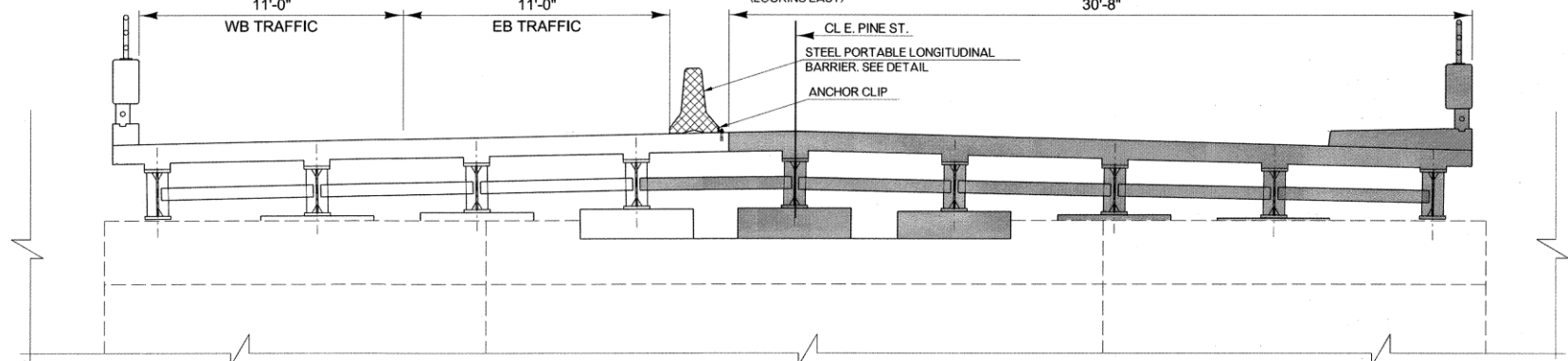
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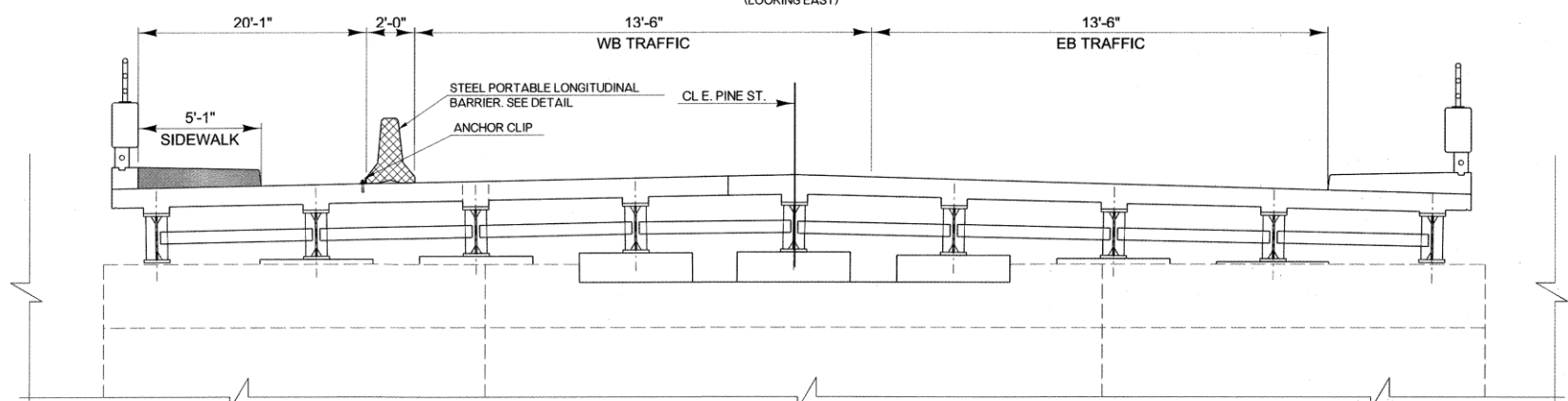
**EXISTING BRIDGE AT EAST ABUTMENT
(LOOKING EAST)**



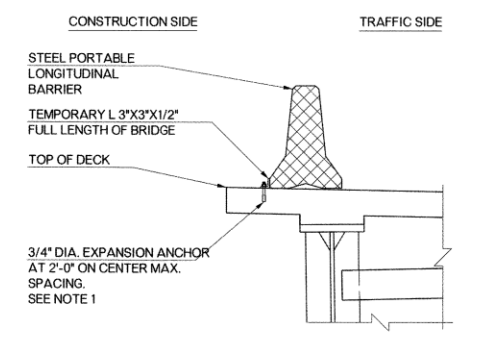
**PHASE 1
(LOOKING EAST)**



**PHASE 2
(LOOKING EAST)**

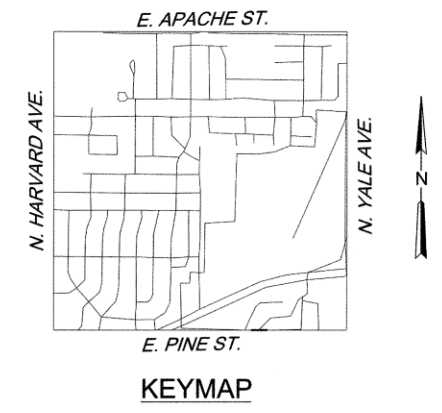


**PHASE 3
(LOOKING EAST)**



STEEL PORTABLE LONGITUDINAL BARRIER

- NOTE:**
1. THE CONTRACTOR SHALL SUBMIT THE TYPE OF EXPANSION ANCHOR TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION OF ANCHORS. ANCHORS SHALL HAVE A MINIMUM ULTIMATE PULLOUT CAPACITY OF 10 KIPS AND A MINIMUM SHEAR CAPACITY OF 13 KIPS. WHEN ANGLE IS REMOVED, THE REMAINING HOLES WILL BE FILLED WITH GROUT IN A MANNER APPROVED BY THE ENGINEER. ALL COSTS OF ANGLES, 3/4" DIAMETER CONCRETE ANCHORS WITH WASHERS, AND GROUTING SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
 2. CONTRACTOR TO SUBMIT TEMPORARY BRACING DESIGN FOR ACCEPTANCE. INCLUDE ALL COSTS IN OTHER ITEMS OF WORK.
 3. CONCRETE BARRIERS NOT ALLOWED ON BRIDGE FOR PHASED CONSTRUCTION.



KEYMAP

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LEGEND
 NEW CONSTRUCTION

**BRIDGE 224 DETAIL
 E PINE ST
 (1 OF 7)**

**BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304**

**CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT**

BENHAM Benham Design, LLC
 15 W 6th St, Suite 500
 Tulsa, Oklahoma 74119
 (918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	BY	DATE	APPROVED:
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				SURVEY		09/25	
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			HORIZONTAL:	PROJECT MGR	MJD	10/24/25	
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			ATLAS PAGE NO.:				

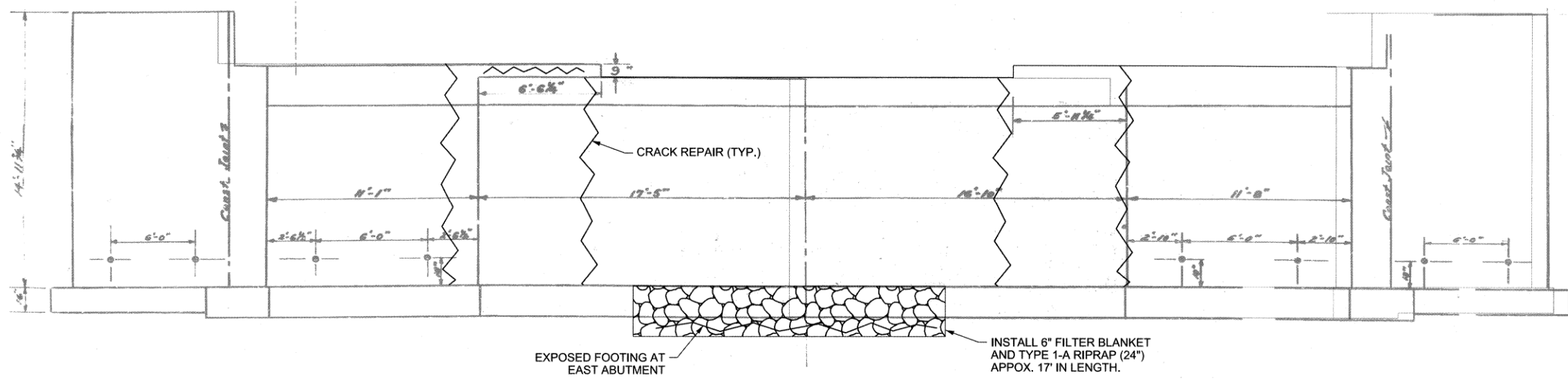
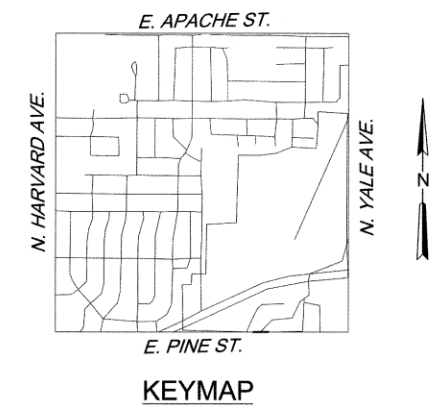
**NOTE:
 ALL DETAILS ARE
 NOT TO SCALE**



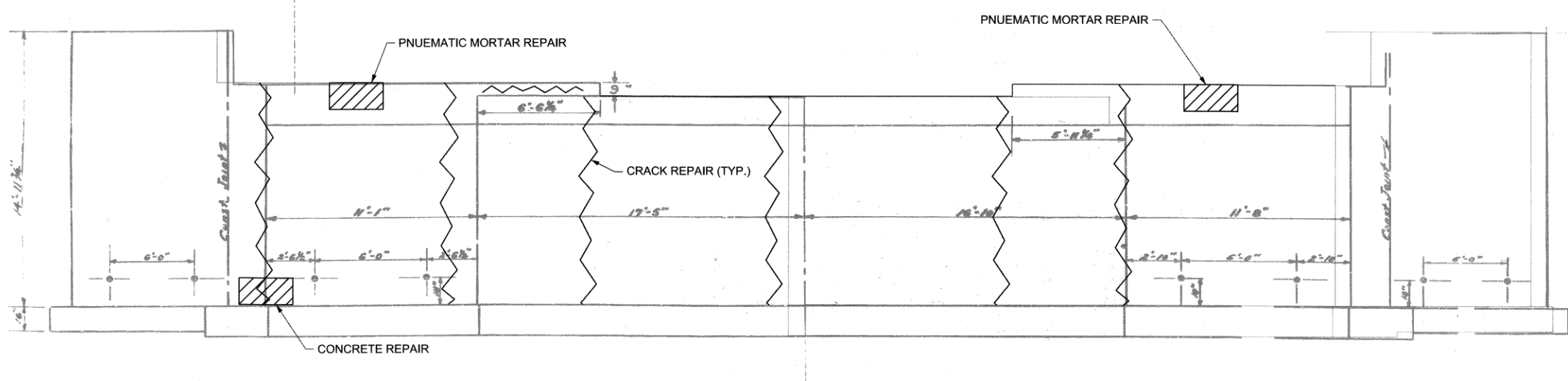
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9/30/2025



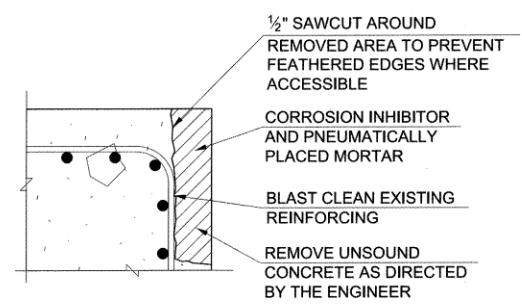
**ELEVATION VIEW
EAST ABUTMENT**



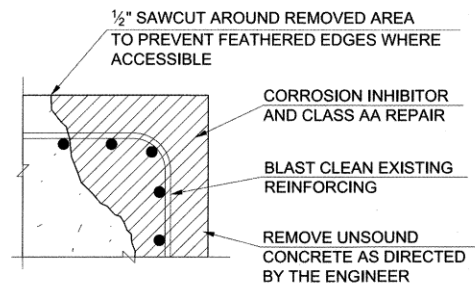
**ELEVATION VIEW
WEST ABUTMENT**

NOTES:

1. ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS AND ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
2. BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.



**TYPICAL DETAIL
PNEUMATICALLY PLACED MORTAR REPAIR**



**TYPICAL DETAIL
CLASS AA CONCRETE REPAIR**

**NOTE:
ALL DETAILS ARE
NOT TO SCALE**



BRIDGE 224 DETAIL
E PINE ST
(2 OF 7)

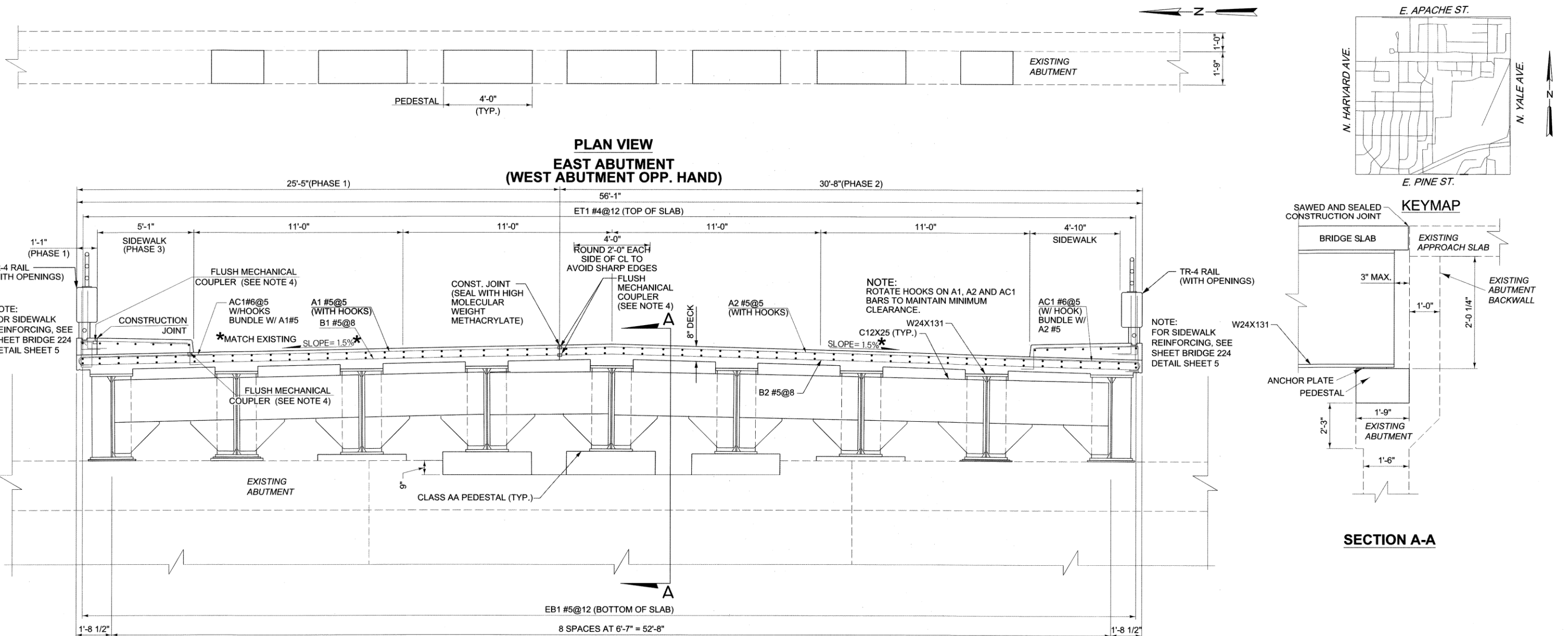
BRIDGE REHABILITATION
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PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"=N/A	DESIGNED	KS	09/25	 DATE: SEPTEMBER 2025 SHEET 28 OF 53 SHEETS
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			HORIZONTAL:	PROJECT MGR	<i>MJD</i>	11/24/25	
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			FILE:				
			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 183, 217, 218, 280, 281			

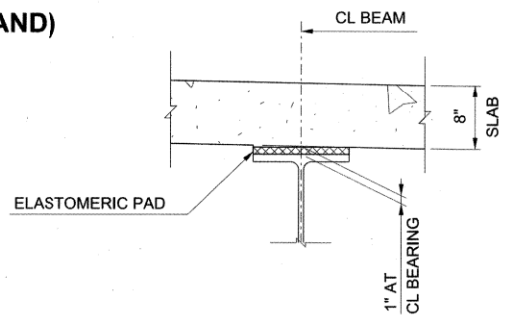
P:\1140_Civil\11400405 COT Pine St. Bridge Rehab\21Design\Working\CIVIL\BRIDGE\Microstation\1400405_S-224-Detail02.dgn



**ELEVATION VIEW
EAST ABUTMENT
(LOOKING EAST)
(WEST ABUTMENT OPP. HAND)**

NOTES:

- ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE AND PROPOSED STRUCTURE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL REPAIR LOCATIONS AND DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
- BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
- PHASE 1 TRANSVERSE BAR LENGTHS EXTEND TO PHASE LINE. PHASE 2 TRANSVERSE BAR EXTEND AN ADDITIONAL 1' BEYOND PHASE LINE TO ACCOUNT FOR FLUSH COUPLER. CONTRACTOR SHALL ADJUST LENGTHS FOR SPECIFIC FLUSH COUPLER USED AT NO ADDITIONAL COST TO THE CITY.
- CONTRACTOR MAY SUBSTITUTE FLUSH COUPLERS WITH MECHANICAL COUPLERS (EXTENDING REINFORCING 1'-0" BEYOND THE PHASE 1 JOINT LINE) AT NO ADDITIONAL COST TO THE CITY.
- SUPERSTRUCTURE QUANTITIES ARE BASED ON BRIDGE SPAN OF 42'-6".
- ALL PEDESTAL CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.



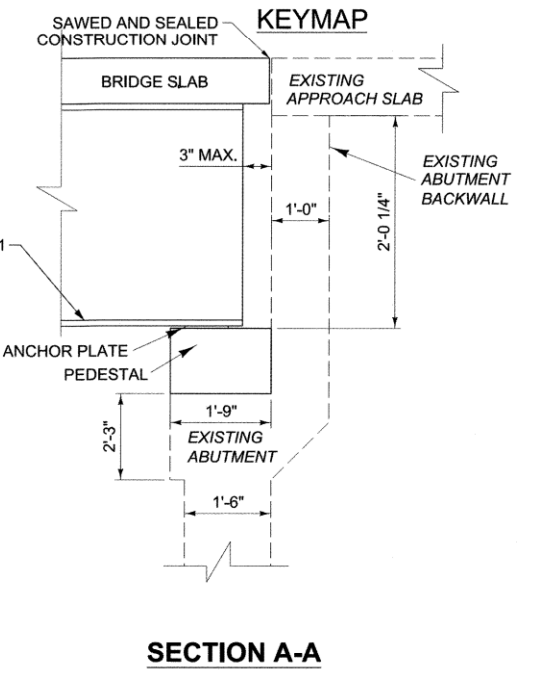
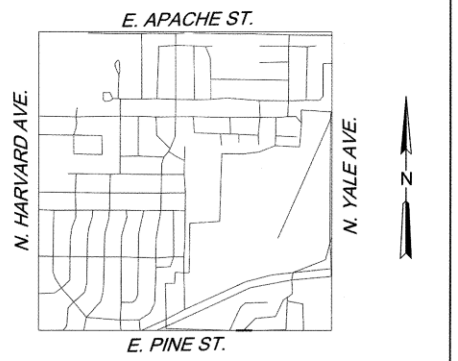
NOTE:

PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE BEAM HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO THE TOP OF BEAM, AND VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHT FOR PAYMENT.

BEAM HAUNCH DETAIL

CONTRACTOR SHALL INSTALL TEMPORARY BRACING AT EACH PHASE PRIOR TO REMOVING SUPERSTRUCTURE. SEE BRIDGE GENERAL NOTES "TEMPORARY BRACING".

**NOTE:
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NOT TO SCALE**

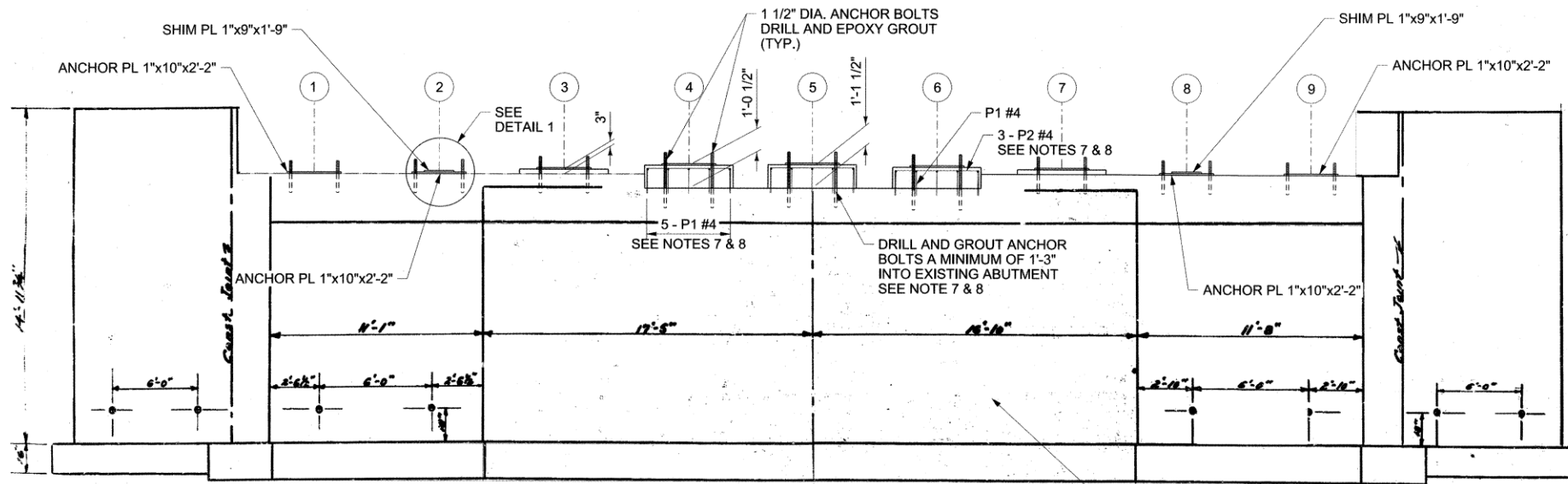


BRIDGE 224 DETAIL E PINE ST (3 OF 7)	
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304	
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT	

BENHAM a Haskell Company		Benham Design, LLC 15 W 6th St, Suite 300 Tulsa, Oklahoma 74119 (918) 492-1600	
DESIGNED	KS	DATE	09/25
DRAWN	KS	DATE	09/25
FIELD MGR	ZJM	DATE	12/25
PROJECT MGR	MAD	DATE	10/24/25
LEAD ENGR	EAS	DATE	11/20/25
RECOMMENDED		DATE	
DESIGN MANAGER	HAG	DATE	11/25
FILE:		DATE:	SEPTEMBER 2025
ATLAS PAGE NO.:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281	SHEET	29 OF 53 SHEETS

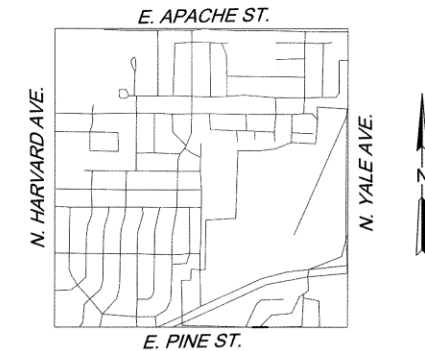


CONTRACTOR SHALL INSTALL TEMPORARY BRACING AT EACH PHASE PRIOR TO REMOVING SUPERSTRUCTURE. SEE BRIDGE GENERAL NOTES "TEMPORARY BRACING".



**ELEVATION VIEW
EAST ABUTMENT
(LOOKING EAST)
(WEST ABUTMENT OPP. HAND)**

GRAFFITI TREATMENT
(APPLY AFTER REPAIRS AND ALL OTHER
SURFACE TREATMENTS HAVE BEEN APPLIED)



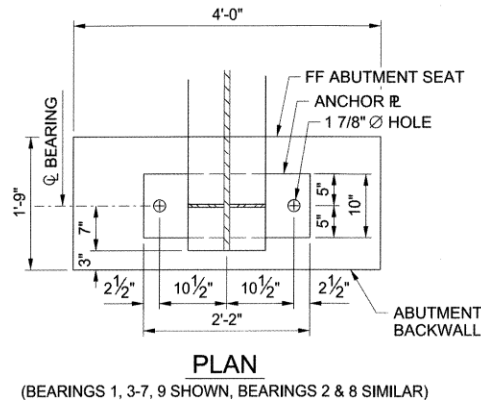
KEYMAP

NOTES:

- ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL REPAIR LOCATIONS AND DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
- BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
- ALL DECK QUANTITIES ARE BASED ON A LONGITUDINAL DECK LENGTH OF 42'-6" AND AN OUT-TO-OUT WIDTH OF 56'-1".
- SEE BRIDGE GENERAL NOTES "VERIFICATION OF EXISTING CONDITIONS".
- STRUCTURAL STEEL FOR ANCHOR PLATES SHALL BE IN ACCORDANCE WITH ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316 CHARPY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M AND ASTM A320, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL. MINIMUM THICKNESS OF ANCHOR PLATES SHALL BE 1".
- SHIM PLATES SHALL BE IN ACCORDANCE WITH M270 (ASTM A709) GRADE 50W, AND SHALL BE INCLUDED IN THE PRICE BID PER LB "STRUCTURAL STEEL M270 GRADE 50W". MINIMUM THICKNESS OF SHIM PLATES SHALL BE 3/8".
- CONTRACTOR SHALL DRILL AND EPOXY GROUT A MINIMUM OF (15XDB) OR AS PER MANUFACTURER'S SPECIFICATIONS, BUT SHALL NOT BE LESS THAN 6" EMBEDMENT INTO ABUTMENT SEAT. ALL COST FOR DRILL AND EPOXY GROUT (INCLUDING DB1 DOWEL BARS) SHALL BE INCLUDED IN THE BID PRICE PER CY OF "CLASS A CONCRETE".
- CONTRACTOR SHALL AVOID EXISTING ABUTMENT SEAT REINFORCING STEEL DURING DRILLING OPERATIONS. COST FOR LOCATING EXISTING REINFORCING STEEL SHALL BE INCLUDED IN THE BID PRICE PER CY OF "CLASS A CONCRETE".



9-30-25



PLAN
(BEARINGS 1, 3-7, 9 SHOWN, BEARINGS 2 & 8 SIMILAR)

BAR LIST - SUPERSTRUCTURE PHASE 1					
MARK	SIZE	QTY.	FORM	LENGTH	VARIANCE
EPOXY COATED					
A1	#5	102	BNT.	25'-10"	----
AC1	#6	102	BNT.	5'-11"	----
B1	#5	64	STR.	22'-11"	----
ET1	#4	26	STR.	42'-4"	----
EB1	#5	26	STR.	42'-4"	----
P1	#4	10	BNT.	4'-9"	----
P2	#4	6	BNT.	7'-0"	----
SW1	#4	43	BNT.	4'-4"	----
SW2	#4	43	BNT.	1'-7"	----

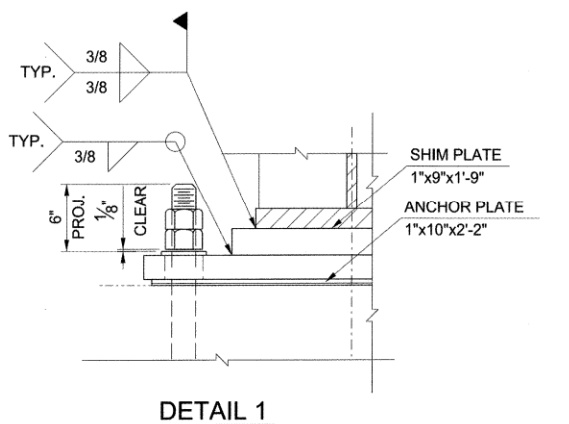
BAR LIST - SUPERSTRUCTURE PHASE 2					
MARK	SIZE	QTY.	FORM	LENGTH	VARIANCE
EPOXY COATED					
A2	#5	102	BNT.	31'-2"	----
B2	#5	64	STR.	32'-11"	----
ET1	#4	31	STR.	42'-4"	----
EB1	#5	31	STR.	42'-4"	----
P1	#4	20	BNT.	4'-9"	----
P2	#4	12	BNT.	7'-0"	----
SR1	#5	92	BNT.	4'-1"	----
SW3	#4	43	BNT.	3'-10"	----
SW4	#4	43	STR.	5'-7"	----
SW5	#4	43	STR.	3'-11"	----
SW6	#5	7	STR.	42'-4"	----

① FOR SR1 #5 BEND DETAIL SEE CONCRETE TRAFFIC RAIL (TR4) DETAILS (ODOT STD. TR4-2).

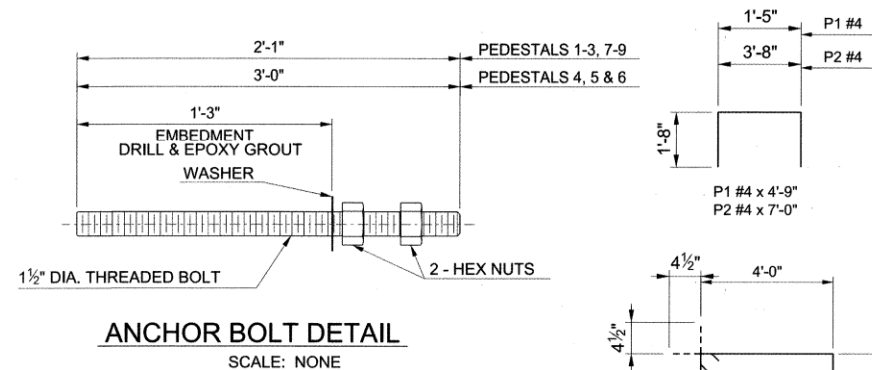
BAR LIST - SUPERSTRUCTURE PHASE 3					
MARK	SIZE	QTY.	FORM	LENGTH	VARIANCE
EPOXY COATED					
SR1	#5	92	BNT.	4'-1"	----
SW6	#5	7	STR.	42'-4"	----
SW7	#4	43	STR.	4'-11"	----
SW8	#4	43	STR.	2'-8"	----

① FOR SR1 #5 BEND DETAIL SEE CONCRETE TRAFFIC RAIL (TR4) DETAILS (ODOT STD. TR4-2).

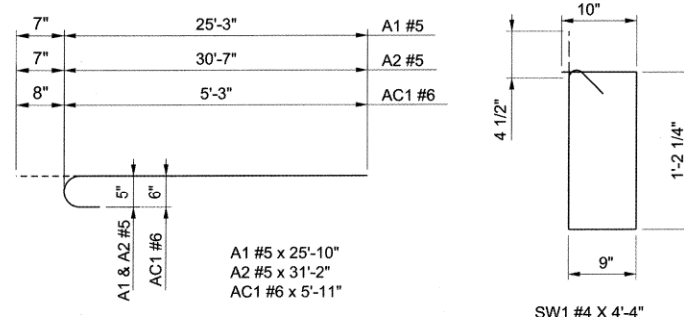
**NOTE:
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NOT TO SCALE**



DETAIL 1

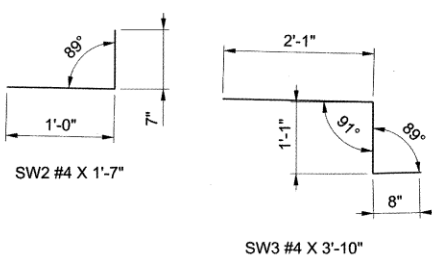


ANCHOR BOLT DETAIL
SCALE: NONE



A1 #5 x 25'-10"
A2 #5 x 31'-2"
AC1 #6 x 5'-11"

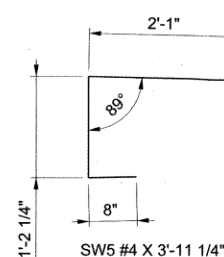
SW1 #4 x 4'-4"



SW2 #4 x 1'-7"

SW3 #4 x 3'-10"

SW8 #4 x 2'-8"



SW5 #4 x 3'-11 1/4"



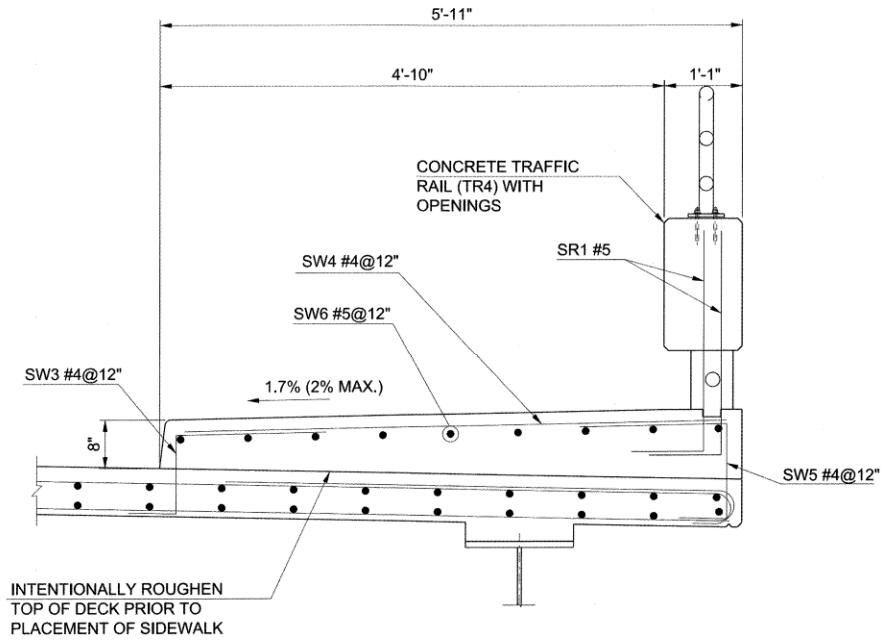
BRIDGE 224 DETAIL
E PINE ST
(4 OF 7)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

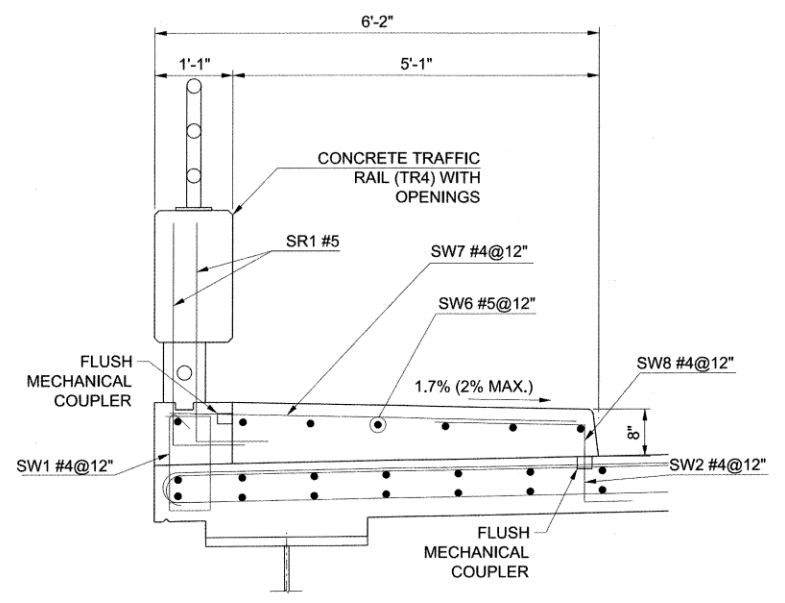
CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
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			PROFILE SCALE	SURVEY			
			HORIZONTAL:	FIELD MGR	TRM	11/20	
			1"=N/A	PROJECT MGR	MED	11/21/25	
			VERTICAL:	LEAD ENGR	EAS	11/21/25	
			1"=N/A	RECOMMENDED			
				DESIGN MANAGER	HAS	11/25	
			FILE:				CITY ENGINEER
			ATLAS PAGE NO.:				DATE: SEPTEMBER 2025
			76, 77, 115, 116, 162, 163, 217, 218, 280, 281				SHEET 30 OF 53 SHEETS

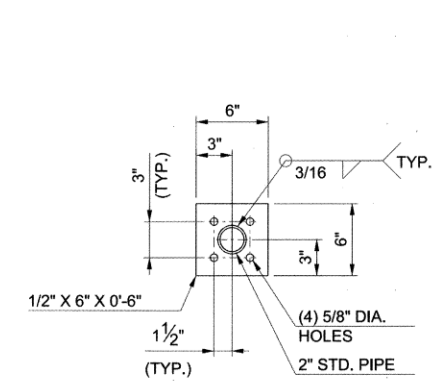
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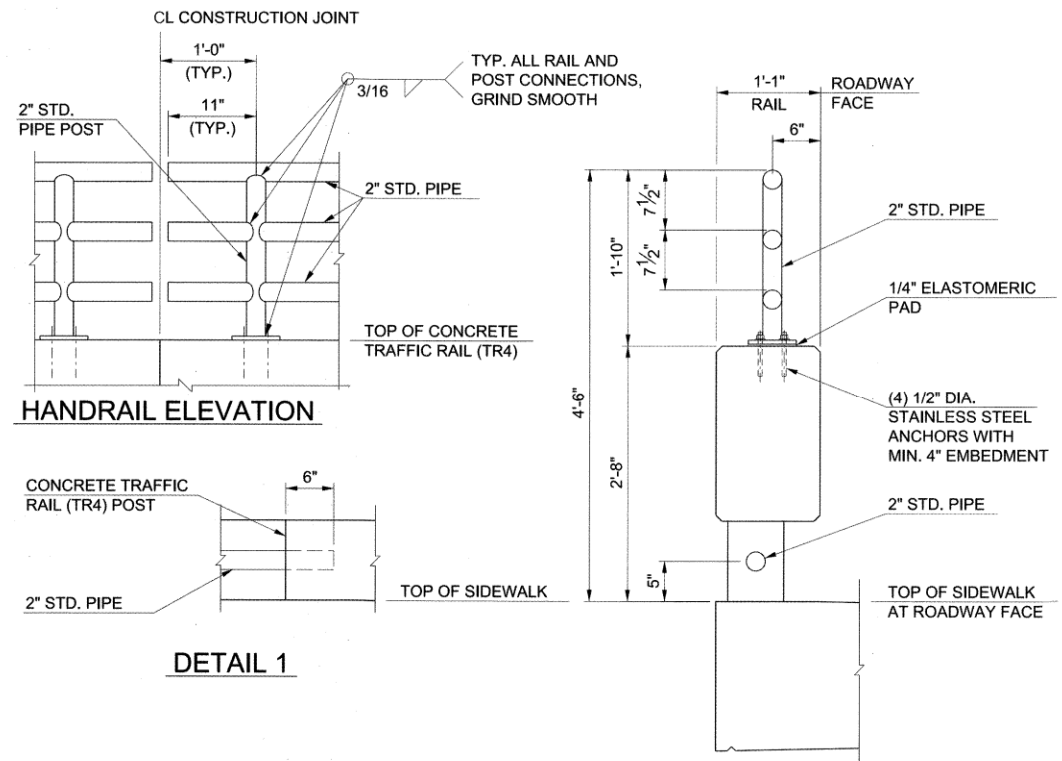
**SECTION AT SIDEWALK
PHASE 2**



**SECTION AT SIDEWALK
PHASE 1 AND 3**

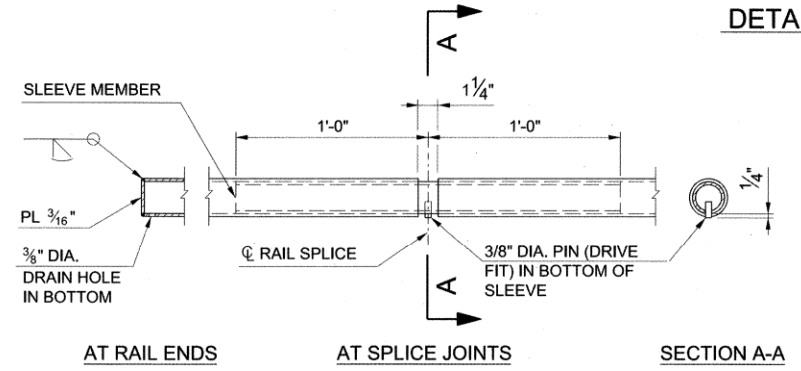


BASEPLATE DETAIL



HANDRAIL ELEVATION

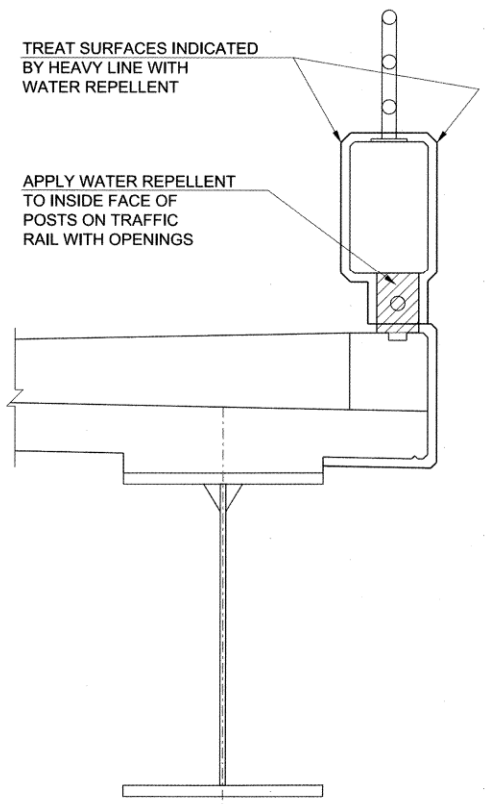
TYPICAL SECTION THRU RAIL



HANDRAIL FABRICATION DETAILS

PIPE RAILING NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY AND PROVIDE SUBMITTALS TO THE ENGINEER FOR APPROVAL PRIOR TO THE CONSTRUCTION OF THE STEEL PIPE RAILING.
2. STEEL PIPE RAILING AND POSTS SHALL BE 2" DIA. STD. STEEL PIPE CONFORMING TO ASTM A36 SPECIFICATIONS. ALL MATERIAL SHALL BE STRUCTURAL STEEL WITH A MINIMUM YIELD STRENGTH OF 36,000 P.S.I.. ALL POSTS SHALL BE VERTICAL. ALL WELDS SHALL BE 3/16" FILLET WELDS (UNLESS NOTED OTHERWISE). GRIND ALL WELDS AND EDGES SMOOTH.
3. STEEL RAILING, POSTS AND BASE PLATES SHALL BE BLACK POWDER COATED. BOLTS SHALL BE STAINLESS STEEL AND NOT REQUIRE BLACK POWDER COAT.
4. CARE SHALL BE TAKEN TO AVOID SCRATCHING, MARRING, DENTING, DISCOLORING OR OTHERWISE DAMAGING THE RAILING OR POSTS. ANY MEMBER DAMAGED AS TO DETRACT FROM THE APPEARANCE OF THE COMPLETED RAILING WILL BE REJECTED AND SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.

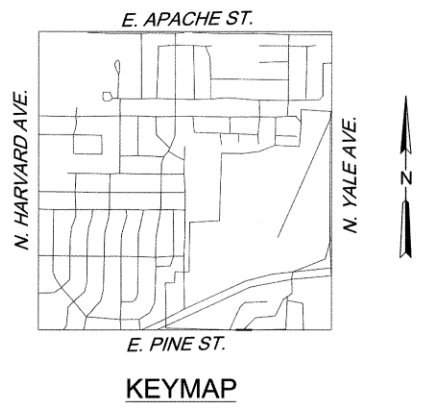


WATER REPELLENT TREATMENT DETAILS

**DETAIL OF ELASTOMERIC COATING
EAST AND WEST ABUTMENTS**

NOTE:
APPLY ELASTOMERIC COATING BEFORE ANY OTHER SURFACE TREATMENTS.

- 1 COAT ALL EXPOSED CONCRETE ON TOP OF ABUTMENT SEAT AND 1'-0" MIN. DOWN ON VERTICAL FACE OF ABUTMENT SEAT WITH URETHANE COATING. SURFACE TO BE SAND BLASTED AND PRIMED AS RECOMMENDED BY THE MANUFACTURER. MASKING SHALL BE USED TO PROVIDE A CLEAN RESULT. URETHANE COATING SHALL BE PAID FOR AT THE UNIT PRICE BID PER SQ. FT. FOR "ELASTOMERIC COATING".
- 2 COATING SHALL NOT BE APPLIED UNDERNEATH OR ON TOP OF ANCHOR PLATES OR ON TOP OF PEDESTALS.
- 3 CLEAN ABUTMENT SEATS OF DEBRIS PRIOR TO SURFACE TREATMENT APPLICATIONS.



KEYMAP



**BRIDGE 224 DETAIL
E PINE ST
(5 OF 7)**

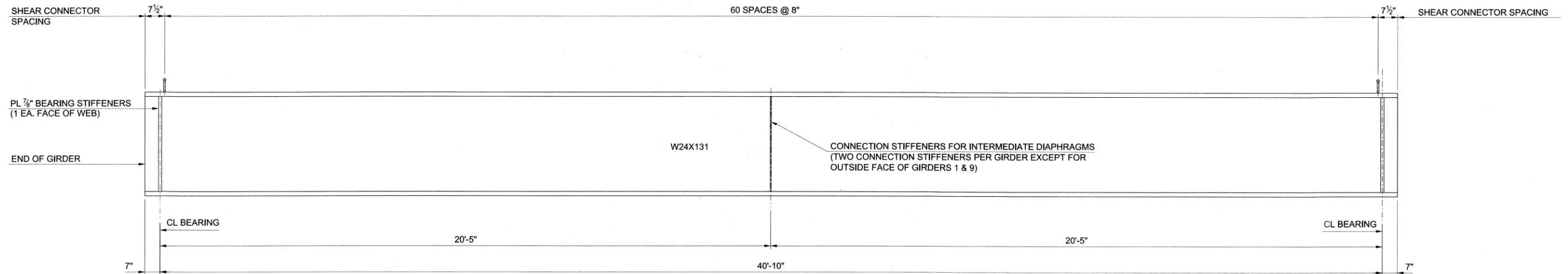
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			PROFILE SCALE	FIELD MGR			
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			1"= N/A	LEAD ENGR	EAS	11-2029	 CITY ENGINEER
			RECOMMENDED	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281			SHEET 31 OF 53 SHEETS





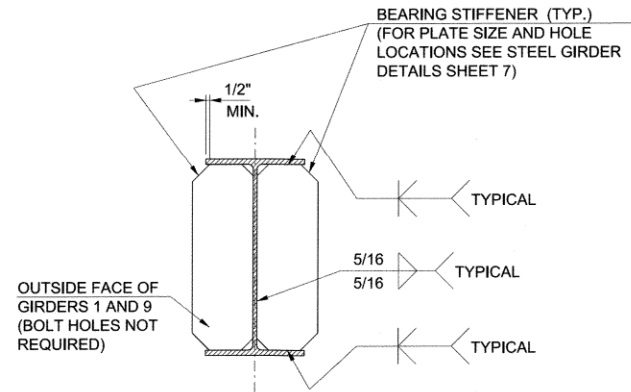
BEAM ELEVATION

SCALE: NONE

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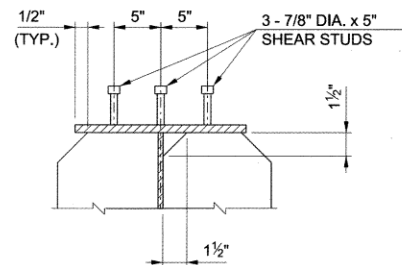
- FOR BRIDGE GEOMETRIC DATA SEE GENERAL PLAN AND ELEVATION.
- W24X131 AND STIFFENER PLATES SHALL CONFORM TO THE CHARPY V-NOTCH REQUIREMENTS.
- GIRDERS, DIAPHRAGMS AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.
- ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.
- CL BEARING TO CL BEARING LENGTH IS TAKEN ALONG THE GIRDER WEB AND TOP FLANGE WITH DIAPHRAGMS PLACED AS SHOWN IN THE GIRDER ELEVATION.
- GIRDERS ARE DRAWN AND DIMENSIONS SHOWN AS IF THE TOP FLANGE OF GIRDERS WERE IN A TRULY HORIZONTAL POSITION. SHOP DRAWINGS SHALL INCLUDE ADJUSTMENTS AS NECESSARY TO ACCOUNT FOR VERTICAL CURVE AND DEAD LOAD DEFLECTIONS.
- ALL FILLET WELDS SHALL BE TERMINATED $\frac{3}{8}$ " \pm $\frac{1}{8}$ " FROM EDGES OF STIFFENERS AS PER AWS D1.5 SECT 9.15.
- DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE EXTERIOR GIRDERS ON THE UP GRADE SIDE OF ABUTMENT AND EACH PIER.
- ALL COST OF DRIP PLATE, WELD, CAULK AND LABOR NEEDED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LB. FOR "STRUCTURAL STEEL".
- BEAM AND DIAPHRAGMS LENGTHS AND OVERALL HEIGHTS OF BEAMS SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO FABRICATION OF MATERIALS OR CONSTRUCTION. SURVEY OF BRIDGE PRIOR TO CONSTRUCTION REQUIRED. ALL MATERIAL THAT IS FABRICATED TO DIMENSIONS NOT FITTING EXISTING CONDITIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.

SEE BRIDGE GENERAL NOTES "VERIFICATION OF EXISTING CONDITIONS".



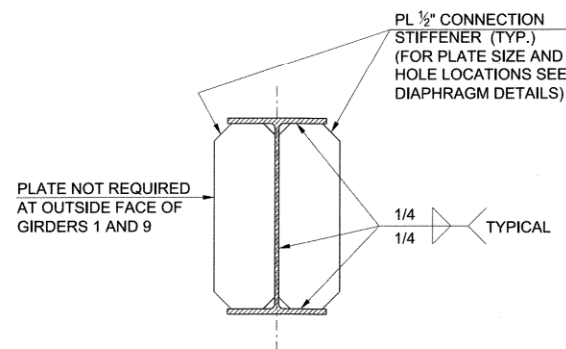
BEARING STIFFENERS

SCALE: NONE



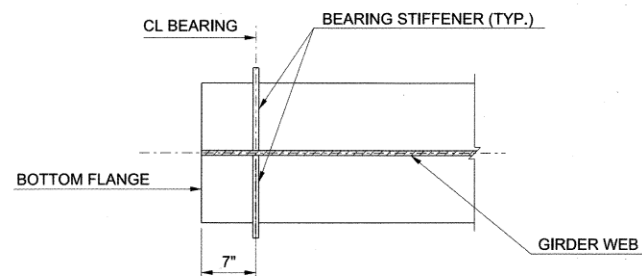
STIFFENER CLIP AND SHEAR CONNECTORS

SCALE: NONE



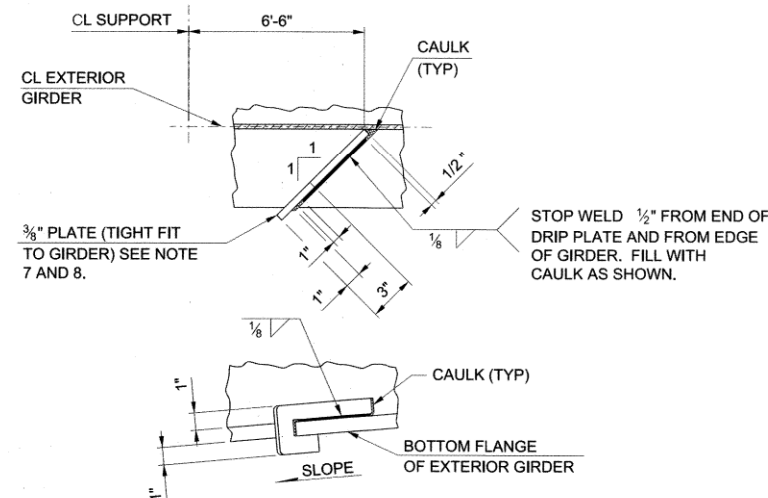
CONNECTION STIFFENERS

SCALE: NONE



TYPICAL BEARING STIFFENER

SCALE: NONE



TYPICAL DRIP PLATE DETAIL FOR EXTERIOR GIRDERS

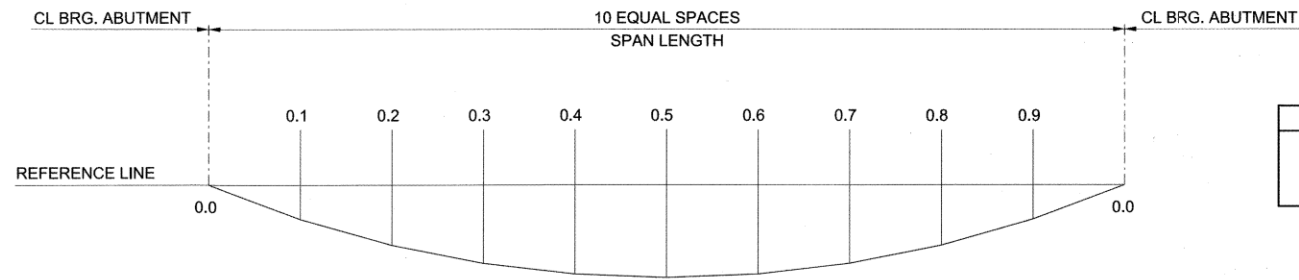
SCALE: NONE



BRIDGE 224 DETAIL E PINE ST (6 OF 7)	
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304	
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT	

BENHAM Design, LLC
15 W 6th St, Suite 300
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	BEW	09/25	APPROVED:
			1"= N/A	DESIGNED	KSJ	09/25	
				SURVEY			
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			HORIZONTAL:	PROJECT MGR	MWD	10/24/25	
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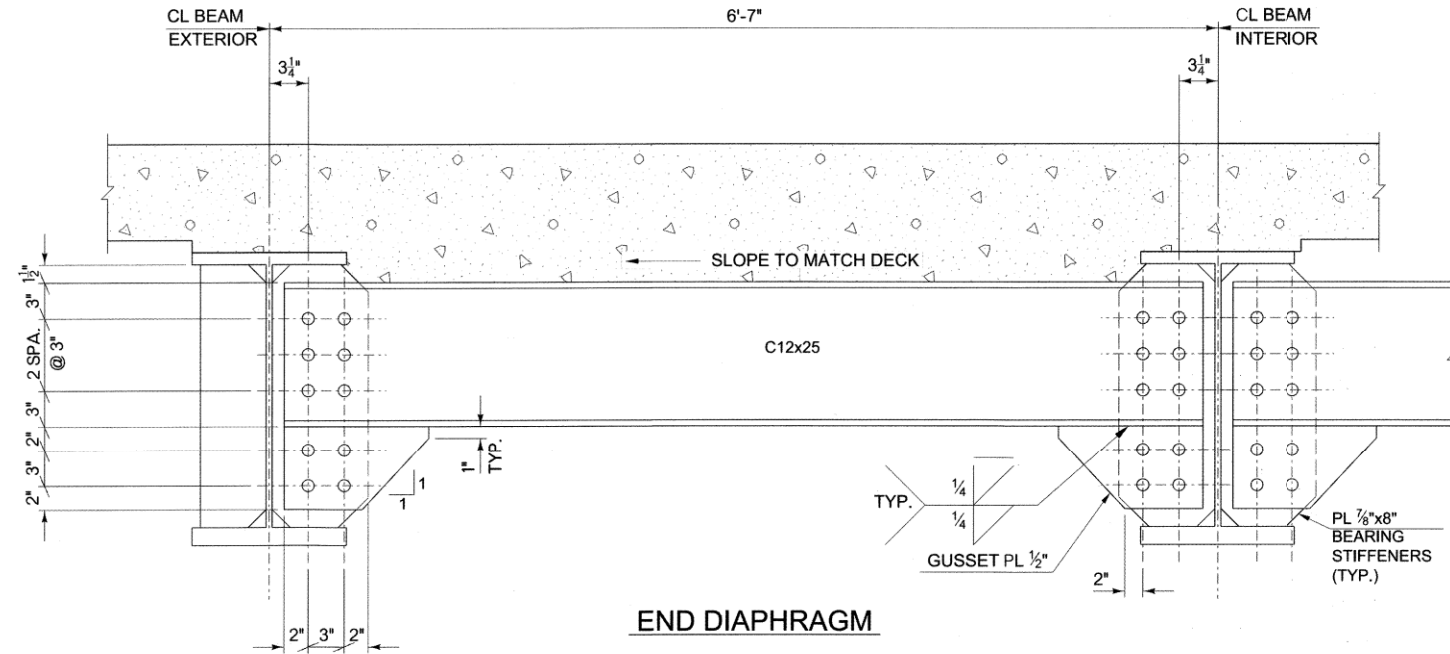
DEAD LOAD DEFLECTION DIAGRAM

SCALE: NONE

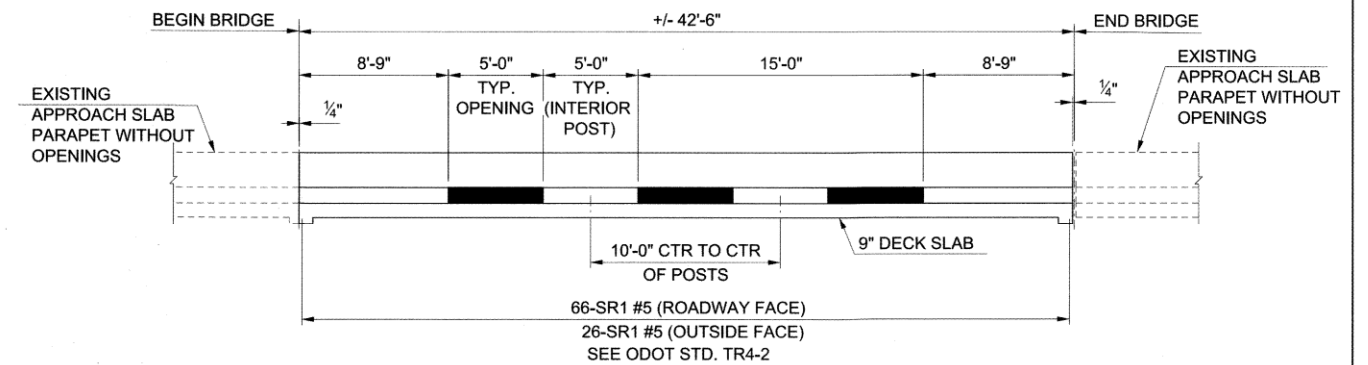
ORDINATES	TENTH PT.	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
SPAN 1 GIRDERS 1-9	AVERAGE STEEL	0.00	0.03	0.06	0.09	0.10	0.11	0.10	0.09	0.06	0.03	0.00
	AVERAGE CONCRETE	0.00	0.14	0.28	0.38	0.45	0.47	0.45	0.38	0.28	0.14	0.00
	AVERAGE TOTAL	0.00	0.17	0.34	0.47	0.55	0.58	0.55	0.47	0.34	0.17	0.00

NOTES:

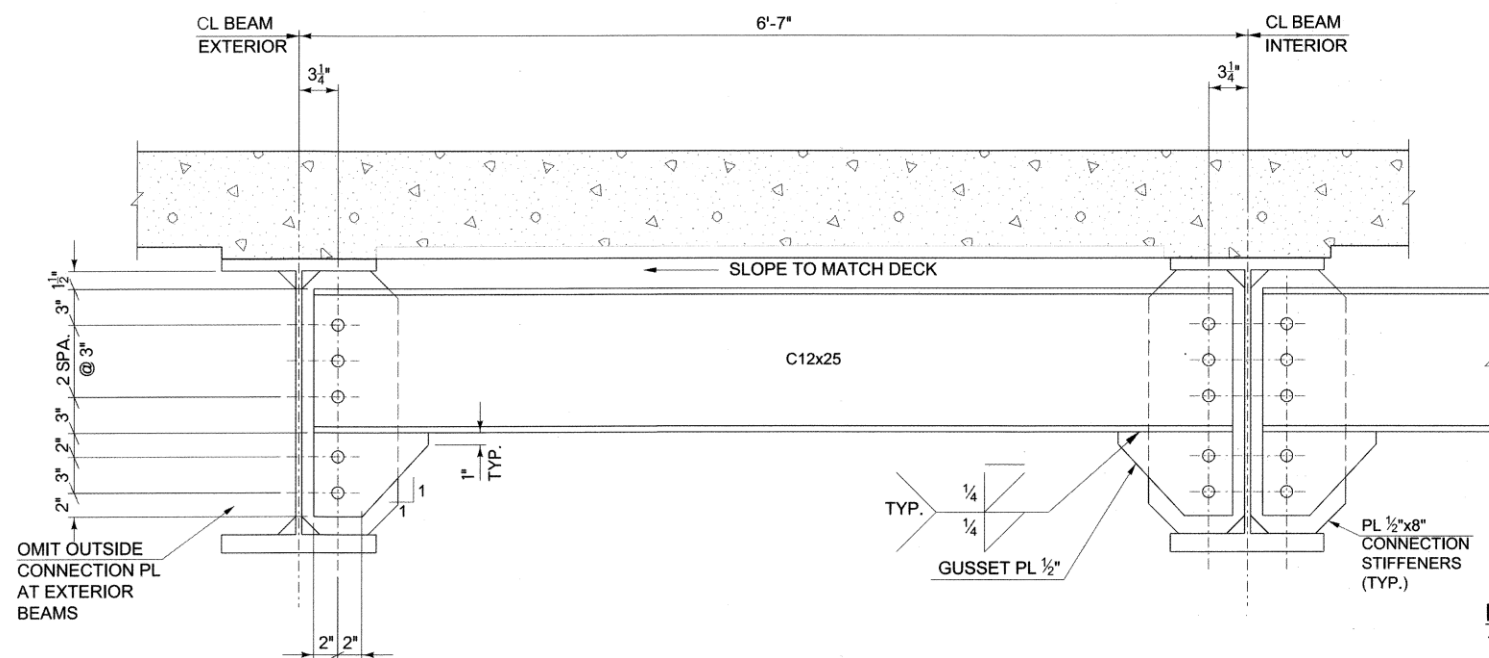
- DEFLECTION IS IN INCHES.
- POSITIVE VALUE INDICATES DEFLECTION IS DOWNWARD.
- CONCRETE LOAD INCLUDES SLAB, HAUNCHES AND PARAPETS AND STAY-IN-PLACE FORMS.



END DIAPHRAGM



TR4 CONCRETE TRAFFIC RAIL ELEVATION



INTERMEDIATE DIAPHRAGM

INSTALL ALL DIAPHRAGMS AND TIGHTEN ALL BOLTS BEFORE PLACING CONCRETE FOR THE DECK SLAB OR APPLYING OTHER MASSIVE LOADS TO THE BEAMS.

NOTE:

- BEAM AND DIAPHRAGMS LENGTHS AND OVERALL HEIGHTS OF BEAMS SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO FABRICATION OF MATERIALS OR CONSTRUCTION. SURVEY OF BRIDGE PRIOR TO CONSTRUCTION REQUIRED. ALL MATERIAL THAT IS FABRICATED TO DIMENSIONS NOT FITTING EXISTING CONDITIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.
- ERECTED GIRDERS SHALL HAVE ALL DIAPHRAGMS INSTALLED AND CONNECTIONS COMPLETED PRIOR TO LEAVING THE JOBSITE AT THE END OF EACH DAY.

NOTES:

- ALL BOLTED CONNECTIONS SHALL BE 7/8" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS. THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED. ALL BOLT HOLES SHALL BE 15/16" DIA.



BRIDGE 224 DETAIL
E PINE ST
(7 OF 7)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

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				SURVEY			
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			HORIZONTAL:	PROJECT MGR	<i>MCS</i>	10/24/25	
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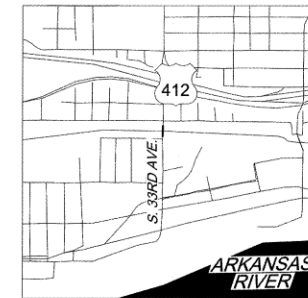
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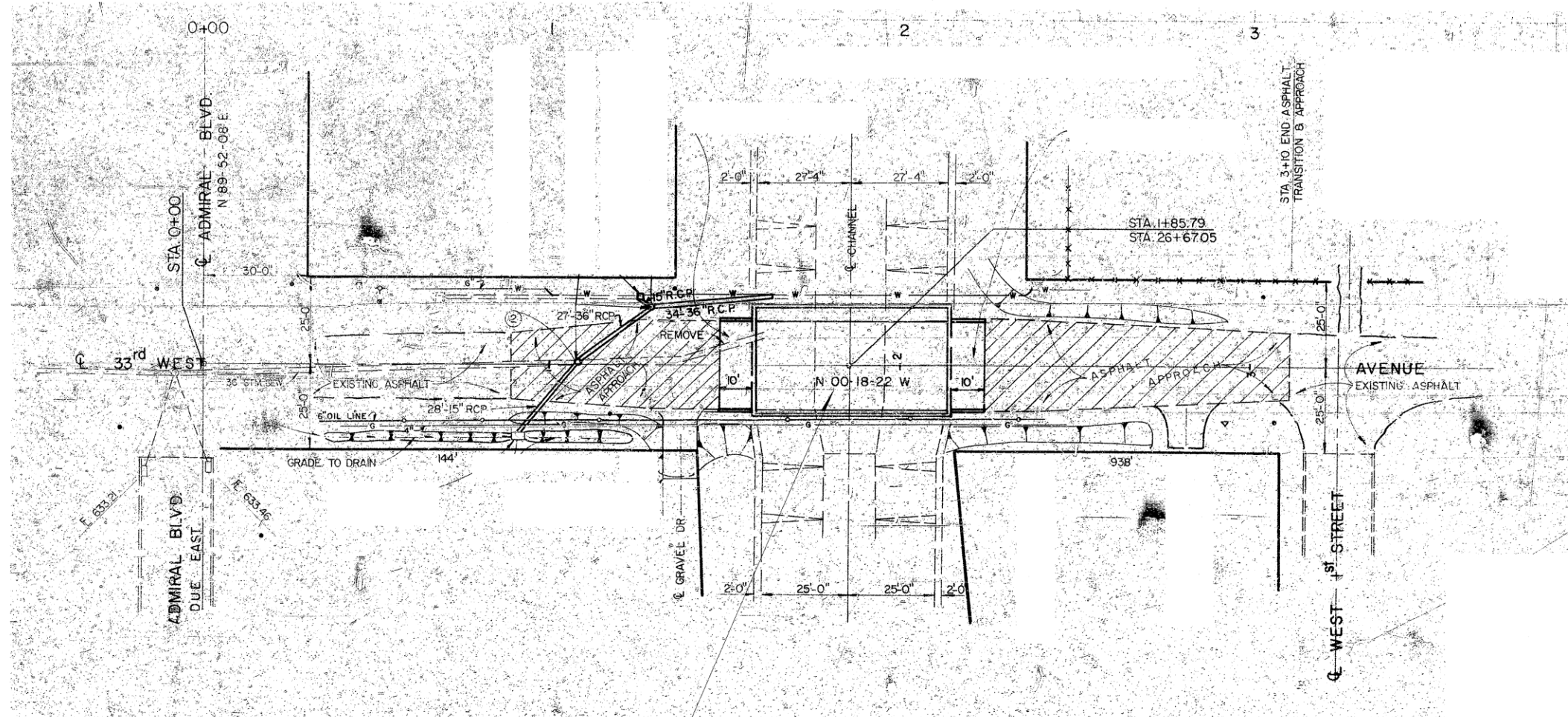
9/30/2025

DATE: SEPTEMBER 2025

SHEET 33 OF 53 SHEETS



KEYMAP



NOTES:

1. ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL REPAIR LOCATIONS AND DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
2. BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.



HYDRODEMOLITION AND CONCRETE OVERLAY

BRIDGE 272 DETAIL
S 33rd W AVE
(1 OF 2)

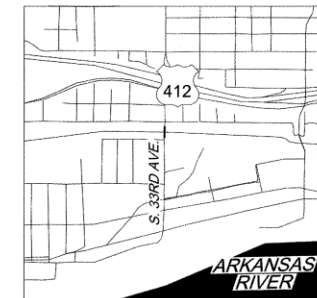
BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

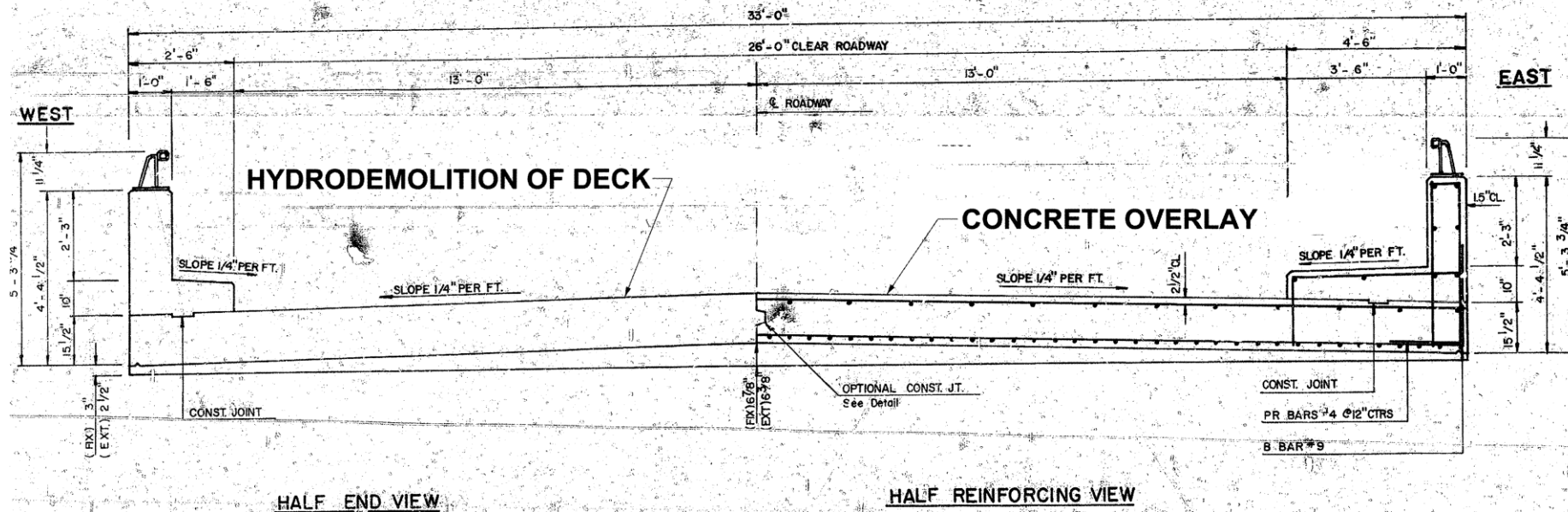
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Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"=N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	Tom	11/10	
			HORIZONTAL:	PROJECT MGR	MED	11/24/25	
			1"=N/A	LEAD ENGR	EAS	11-2021	
			VERTICAL:	RECOMMENDED			
			1"=N/A	DESIGN MANAGER	HAK	11-25	
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281			SHEET 34 OF 53 SHEETS





KEYMAP



HALF END VIEW

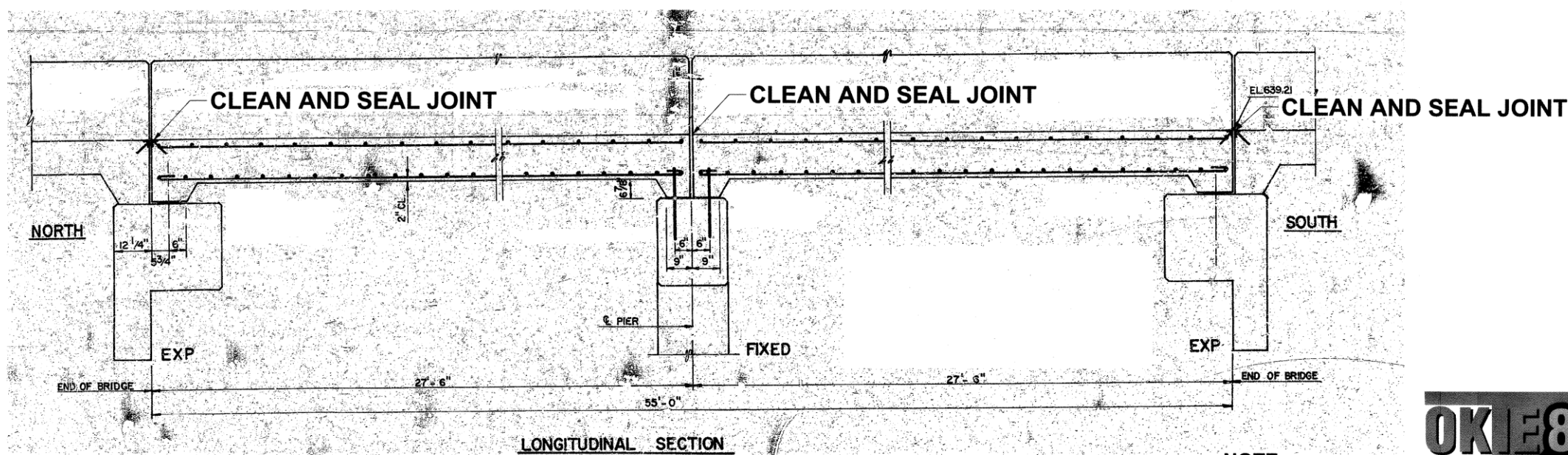
HALF REINFORCING VIEW

NOTES:

- PERFORM HYDRODEMOLITION OVER ENTIRE BRIDGE DECK BEFORE COMPLETING CLASS C BRIDGE DECK REPAIR (IF REQUIRED).
- AFTER HYDRODEMOLITION OPERATIONS ARE COMPLETE, REPORT ANY DETERIORATED REINFORCING STEEL BARS WITH A SECTION LOSS GREATER THAN 25%, TO THE ENGINEER FOR REMEDIAL ACTION. THE DETERIORATED PORTION OF THE BAR SHALL BE CUT OUT AND REPLACED WITH NEW REINFORCING STEEL BARS OF THE SAME SIZE AND TYPE AS THE EXISTING BAR. NEW REINFORCING BARS SHALL BE LAPPED WITH REMAINING SOUND BARS. IN THE EVENT THE EXISTING BARS ARE NOT EXPOSED ENOUGH AFTER HYDRODEMOLITION OPERATIONS TO ACCOMMODATE THE REQUIRED LAP LENGTHS SHOWN IN THE PLANS OR AT THE DISCRETION OF THE ENGINEER, NEW REINFORCING STEEL BARS WILL BE MECHANICALLY SPLICED WITH THE EXISTING BARS. THE REMOVAL OF SOUND CONCRETE TO FACILITATE LAP SPLICES WILL NOT BE ALLOWED. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL SATISFY SECTION 723.01 OF THE 2019 ODOT STANDARD SPECIFICATIONS. INCLUDE ALL COSTS OF REPLACING THE CORRODED STEEL IN THE UNIT PRICE PER POUND OF "EPOXY COATED REINFORCING STEEL". IN THE EVENT MECHANICAL EQUIPMENT SNAGS THE TOP MAT OF DECK REINFORCING STEEL, REPAIR OR REPLACE DAMAGED OR DISLODGED REINFORCING, IN A MANNER APPROVED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE CITY.
- ADDITIONAL CLASS C BRIDGE DECK REPAIR MAY BE REQUIRED IN THE EVENT THAT HYDRODEMOLITION REMOVES CONCRETE BELOW THE TOP MAT OF STEEL. NOTIFY THE ENGINEER TO DETERMINE THE EXTENT OF CLASS C BRIDGE DECK REPAIR RESULTING FROM HYDRODEMOLITION REMOVALS. ROUGHEN REPAIRED SURFACES TO PROVIDE A BONDING SURFACE FOR THE BRIDGE DECK CONCRETE OVERLAY.
- BRIDGE DECK CONCRETE OVERLAY SHALL BE PLACED IN ACCORDANCE WITH SECTION 505 OF THE 2019 ODOT STANDARD SPECIFICATIONS ACROSS THE ENTIRE CLEAR ROADWAY WIDTH AND ALONG THE ENTIRE LENGTH OF BRIDGE DECK, INCLUDING AREAS OF CLASS C BRIDGE DECK REPAIR. BRIDGE DECK SHALL HAVE A UNIFORM SURFACE WHEN OVERLAY IS COMPLETE, MATCH EXISTING SLOPE, AND TIE IN TO EXISTING BRIDGE APPROACHES.
- ALL COSTS OF CLASS A OR B DECK REPAIR, IF REQUIRED, SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF "BRIDGE DECK CONCRETE OVERLAY" PER SECTION 505 OF THE 2019 ODOT STANDARD SPECIFICATIONS.

NOTES:

- ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS AND ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
- BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
- FINAL ELEVATION OF BRIDGE DECK SHALL MATCH ELEVATIONS EXISTING APPROACH SLABS.



LONGITUDINAL SECTION

NOTE:
ALL DETAILS ARE NOT TO SCALE



BRIDGE 272 DETAIL
S 33rd W AVE
(2 OF 2)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

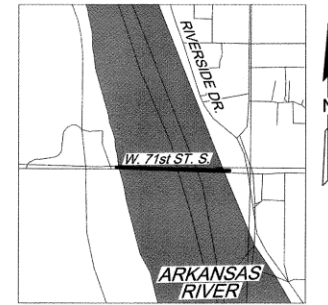
CITY OF TULSA, OKLAHOMA
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(918) 492-1600

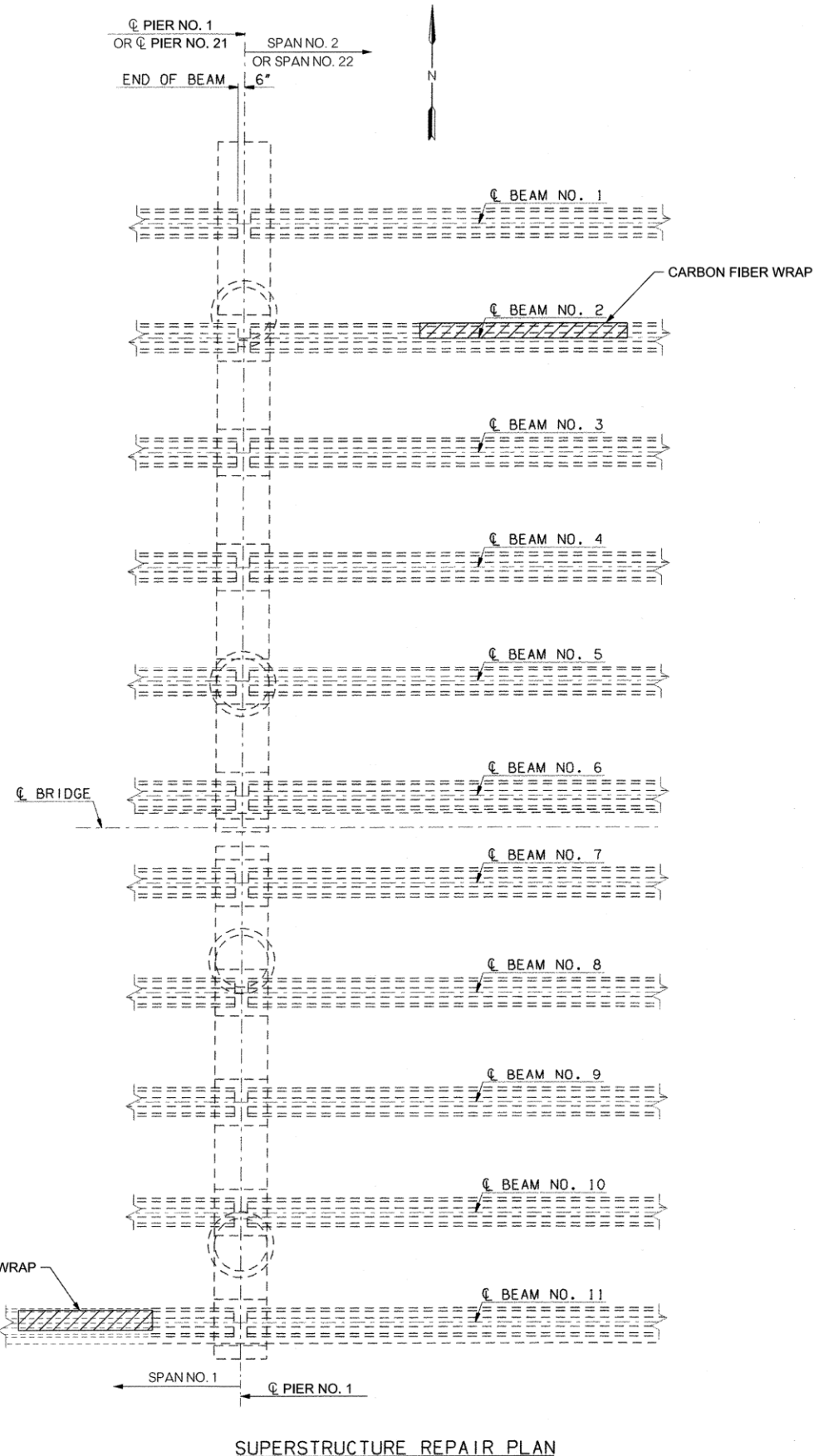
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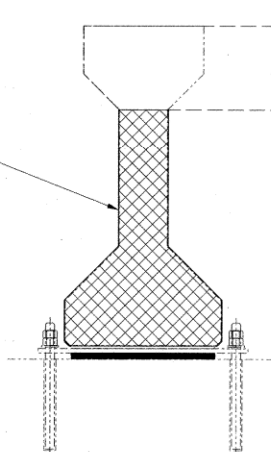


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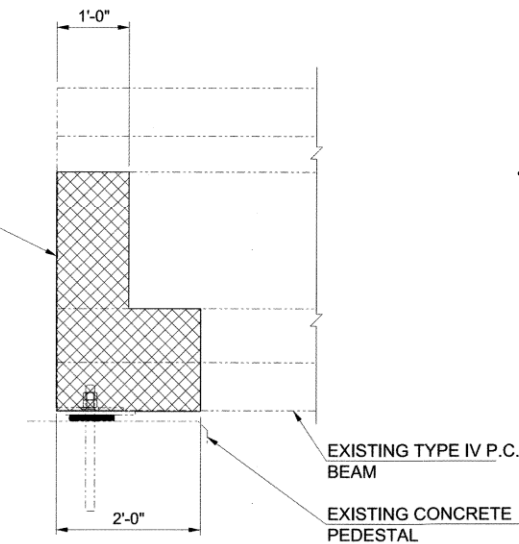
SUPERSTRUCTURE REPAIR PLAN

BEAM END REPAIR
SEE NOTES 1-4



END VIEW

BEAM END REPAIR
SEE NOTES 1-4



SIDE VIEW

BEAM ENDS REPAIR DETAIL

NOTES:

1. REMOVE UNSOUND CONCRETE FROM BEAM ENDS AS DIRECTED BY THE ENGINEER AND REPAIR SPALLS WITH CLASS AA CONCRETE.
2. REMOVAL OF UNSOUND CONCRETE SHALL BE PERFORMED IN A MANNER THAT DOES NOT CAUSE DAMAGE TO THE SOUND CONCRETE OR THE PRESTRESSING STRANDS AND BEAM REINFORCING STEEL.
3. APPLY CORROSION INHIBITOR TO THE BEAMS ENDS AS DIRECTED BY THE ENGINEER.
4. PROVIDE THREE LAYERS OF CARBON FIBER-REINFORCED POLYMER WRAP AT BEAM ENDS AS DETERMINED BY THE ENGINEER IN THE FIELD. THE ENGINEER MAY DESIGNATE SOME BEAM ENDS AS NOT REQUIRING FIBER WRAP. AVOID PLACING CARBON FIBER-REINFORCING OVER BEARING PADS AND ANCHOR PLATES.
5. CARBON FIBER-REINFORCED POLYMER WRAP SHALL BE APPLIED TO THE BEAM IN THREE (3) LAYERS. THE FIRST AND THIRD LAYERS SHALL BE APPLIED IN A HORIZONTAL PATTERN. THE SECOND LAYER SHALL BE APPLIED IN A VERTICAL PATTERN.
6. SEE BRIDGE GENERAL NOTES FOR "(SP) CARBON FIBER-REINFORCED POLYMER".

NOTE:
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NOT TO SCALE

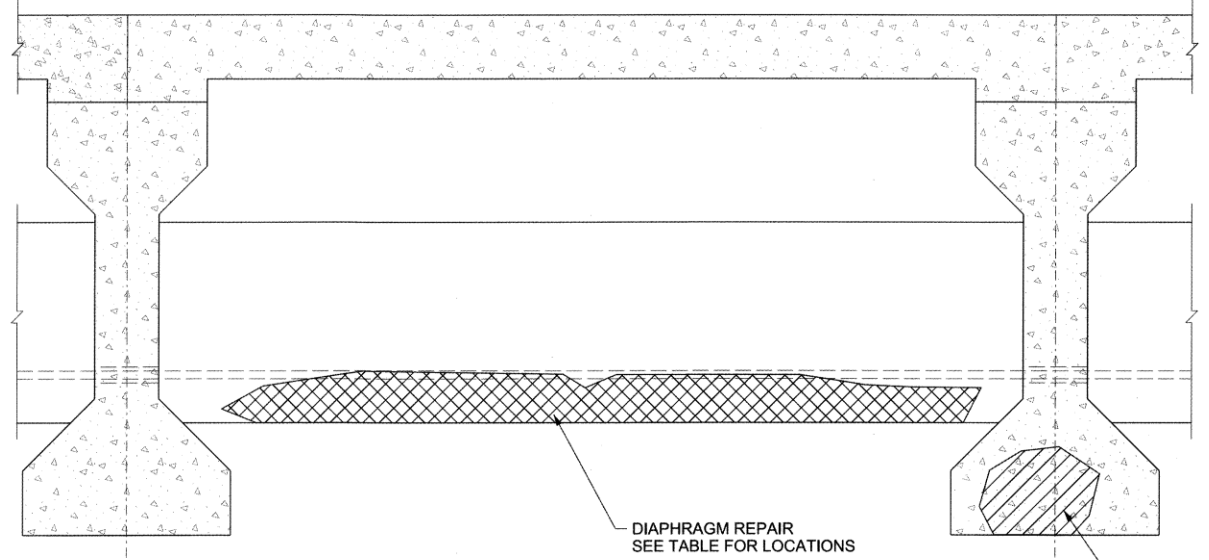


BRIDGE 300A DETAIL W 71st ST S (1 OF 4)
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT



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DIAPHRAGM REPAIR
SEE TABLE FOR LOCATIONS

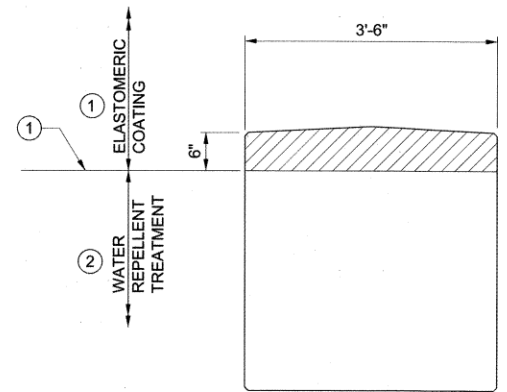
CLASS AA CONCRETE AND
CARBON FIBER WRAP REPAIR
SEE TABLE FOR LOCATIONS

PRECAST BEAM & DIAPHRAGM REPAIR

PNEUMATIC MORTAR AND CRACK REPAIR					
DIAPHRAGMS					
Span	Beam	Location	Area (SF)	Area (SY)	Type
23	1	W	6.8	0.8	SPALL
23	1	W, N	5 FT	-	CRACK
23	2	W, S	6.0	0.7	SPALL
22	Betw 1-2	West End, Underside of Deck	16.0	1.8	SPALL
22	Pier 22	South Deck O'hang	4.5	0.5	SPALL
22, 23	2, 3	-	4.5	0.5	SPALL
22, 23	3, 4	-	4.5	0.5	SPALL
22, 23	4, 5	-	4.5	0.5	SPALL
22, 23	5, 6	-	4.5	0.5	SPALL
22, 23	7, 8	-	4.5	0.5	SPALL
22, 23	8, 9	-	4.5	0.5	SPALL
22, 23	9, 10	-	4.5	0.5	SPALL
22, 23	10, 11	-	4.5	0.5	SPALL
1, 2	10, 11	-	4.5	0.5	SPALL
1, 2	7, 8	-	4.5	0.5	SPALL
1, 2	5, 6	-	4.5	0.5	SPALL
1, 2	4, 5	-	4.5	0.5	SPALL
1	Pier 1	Deck at Column 2	4.0	0.4	SPALL

BETWEEN

CLASS AA (CY) AND CARBON FIBER WRAP (SF)					
PRESTRESSED BEAMS					
Span	Beam	Location	Orientation	Volume (CY)	Area (SF)
22	2	Bottom of Flange	Mid-Length	0.19	20.0
22	7	Bottom Flange	W	0.01	1.5
22	7	Bottom Flange	E	0.02	2.0
22	8	Beam End	E	0.06	6.25
22	9	Beam End	E	0.06	6.25
22	10	Beam End	E	0.02	2.5
22	11	Beam End	E	0.01	5.0
23	1	Bottom of Flange	W	0.00	4.0
23	2	Bottom of Flange	W	0.04	4.0
23	3	Bottom of Flange	W	0.05	5.4
23	8	Bottom of Flange	W	0.02	2.5
23	9	Bottom of Flange	W	0.02	2.5
23	10	Bottom of Flange	W	0.05	5.0
23	11	Bottom of Flange	W	0.05	5.0
1	11	Bottom of Flange	7' Length of Repair	0.13	14.0
1	1	Bottom of Flange	E	0.02	2.0
1	1	Bottom of Flange	West Abutment	0.02	2.0
1	6	Beam End	West Abutment	0.02	2.0
1	11	Beam End	West Abutment	0.02	2.0
2	2	Bottom of Flange	10' From Pier 1	0.19	20.0



- 1 COAT ALL EXPOSED CONCRETE ON TOP OF PIER CAP AND 6" MIN. DOWN ON VERTICAL FACE OF PIER CAP WITH ELASTOMERIC COATING. SURFACE TO BE SANDBLASTED AND PRIMED AS RECOMMENDED BY THE MANUFACTURER. MASKING SHALL BE USED TO PROVIDE A CLEAN RESULT.
- 2 TREAT ALL EXTERIOR VERTICAL SURFACES OF THE PIER CAPS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (ELASTOMERIC COATING WILL OVERLAP WATER REPELLENT NEAR TOP OF CAP.)

NOTE:
DO NOT APPLY ELASTOMERIC COATING TO LOCATIONS UNDER BEARINGS.

**PIER 21 CAP SURFACE TREATMENT DETAILS
(TO BE APPLIED AFTER CLASS AA REPAIR WORK)**

NOTE:
APPLY ELASTOMERIC COATING AFTER REPAIR WORK HAS CURED A MINIMUM OF 7 DAYS AND BEFORE WATER REPELLENT TREATMENT.



KEYMAP

NOTES:

1. ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL REPAIR LOCATIONS AND DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
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3. REMOVE UNSOUND CONCRETE FROM DIAPHRAGMS AS DIRECTED BY THE ENGINEER.
4. REMOVAL OF UNSOUND CONCRETE SHALL BE PERFORMED IN A MANNER THAT DOES NOT CAUSE DAMAGE TO THE SOUND CONCRETE OR REINFORCING STEEL.
5. APPLY CORROSION INHIBITOR TO THE DIAPHRAGMS AS DIRECTED BY THE ENGINEER.



BRIDGE 300A DETAIL
W 71st ST S
(2 OF 4)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

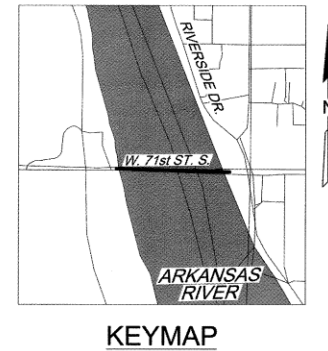
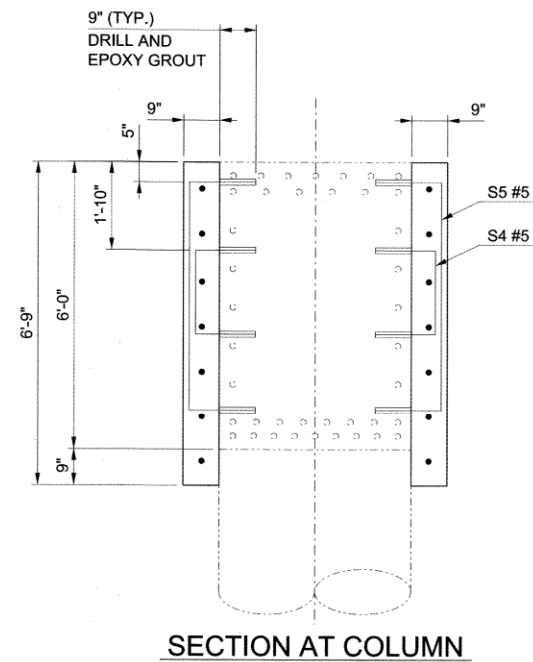
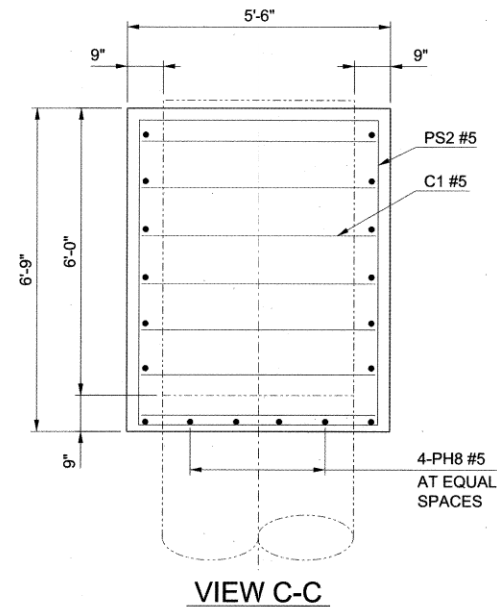
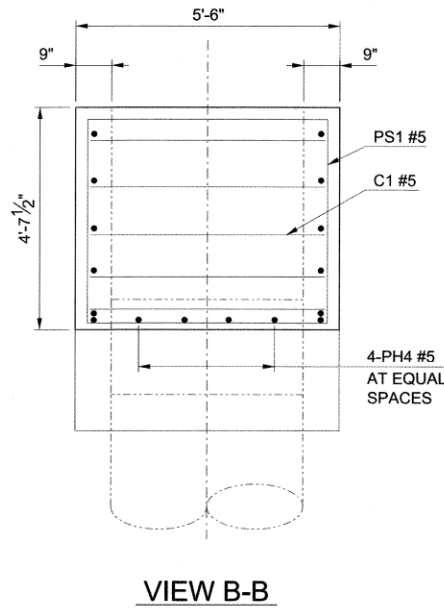
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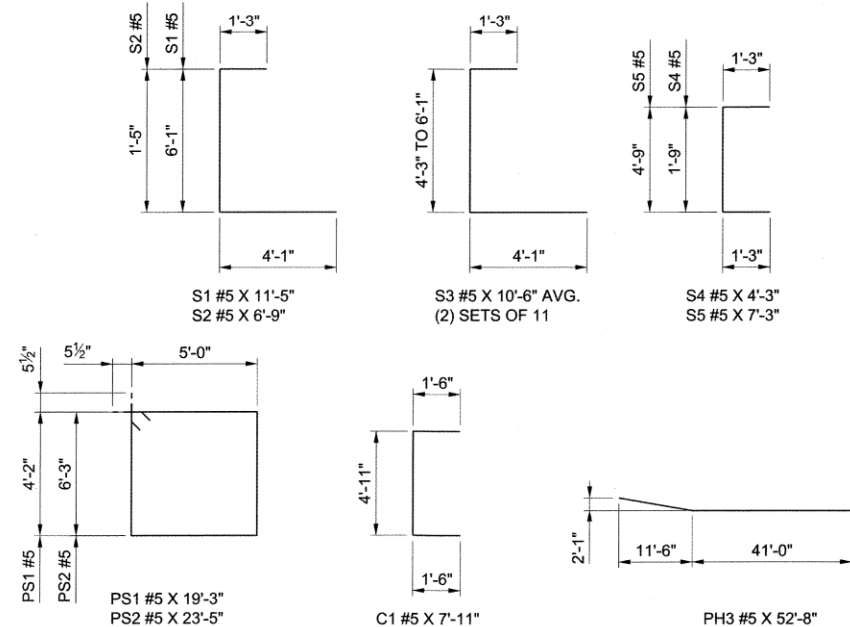
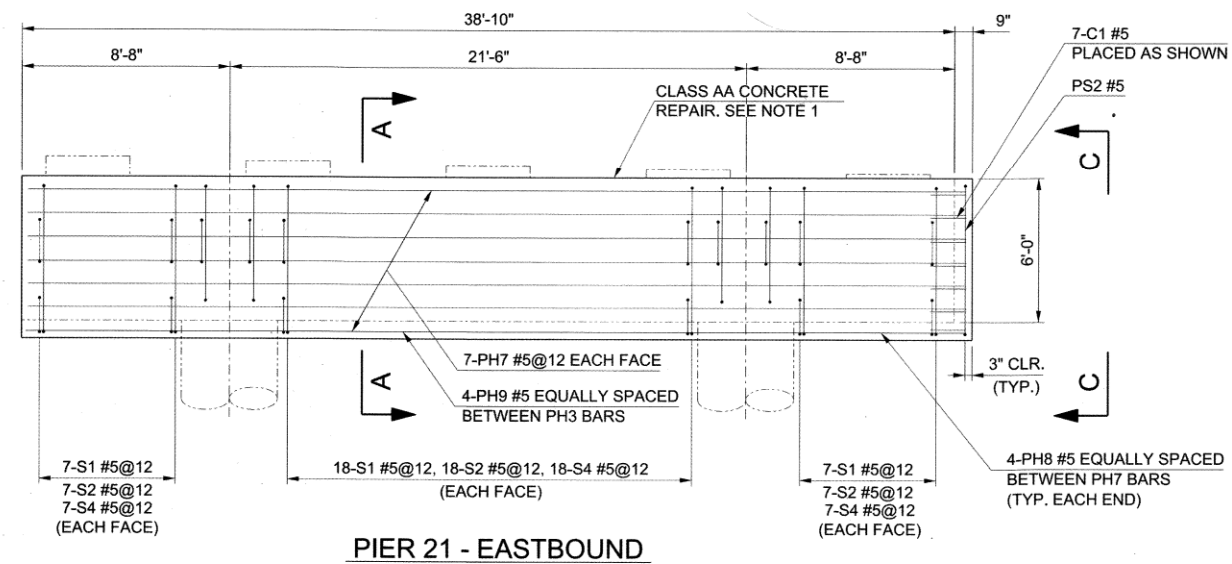
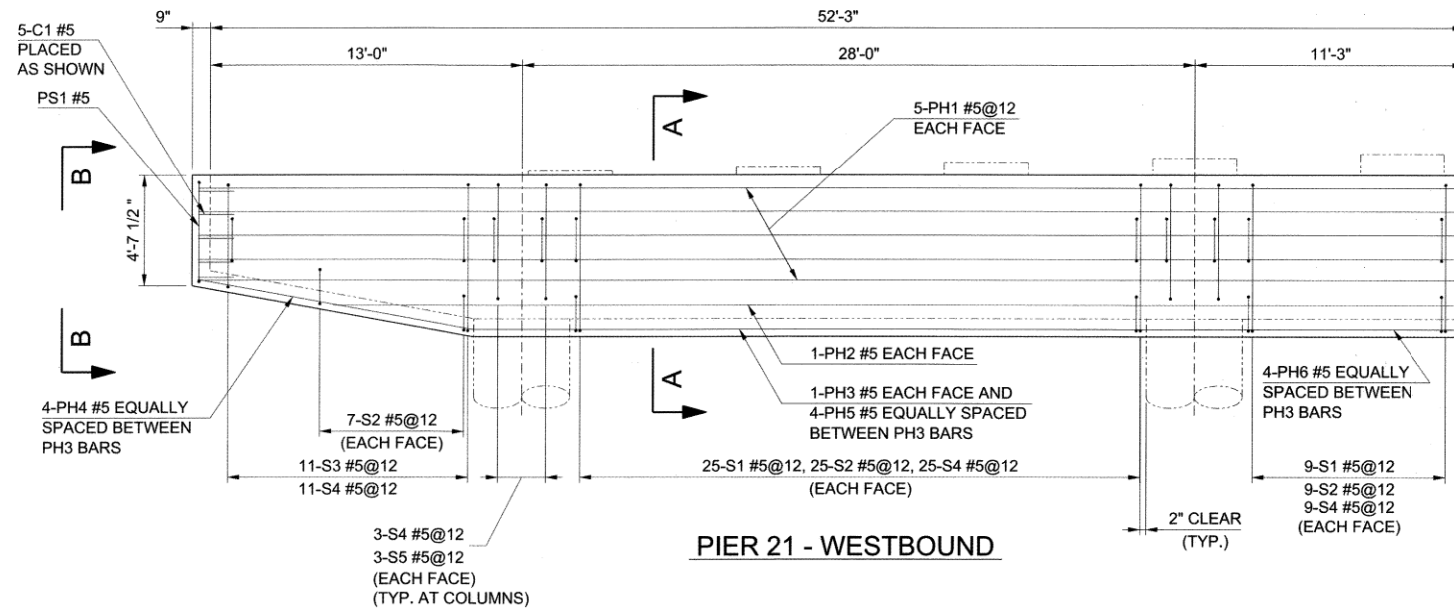
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NOT TO SCALE



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PIER QUANTITIES		
ITEM	UNIT	TOTAL
CLASS AA CONCRETE	CY	44.2
EPOXY COATED REINFORCING STEEL	LB	5580
WATER REPELLANT (VISUALLY INSPECTED)	SY	85.2
ELASTOMERIC COATING	SF	662.2
CORROSION INHIBITOR	SY	213



PIER CAP BAR LIST (ONE SHOWN, ONE REQUIRED)					
EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
PH1	#5	10	STR.	52'-6"	
PH2	#5	2	STR.	46'-11"	
PH3	#5	2	BNT.	52'-8"	
PH4	#5	4	STR.	11'-5"	
PH5	#5	4	STR.	23'-8"	
PH6	#5	4	STR.	8'-10"	
PH7	#5	14	STR.	39'-1"	
PH8	#5	8	STR.	6'-4"	
PH9	#5	4	STR.	17'-2"	
S1	#5	132	BNT.	11'-5"	
S2	#5	146	BNT.	6'-9"	
S3	#5	22	BNT.	10'-6" (AVG.)	9'-7" TO 11'-5"
S4	#5	178	BNT.	4'-3"	
S5	#5	24	BNT.	7'-3"	
PS1	#5	1	BNT.	19'-3"	
PS2	#5	1	BNT.	23'-5"	
C1	#5	12	BNT.	7'-11"	

NOTES:

- REMOVE UNSOUND CONCRETE, CLEAN EXPOSED REINFORCEMENT, APPLY CORROSION INHIBITOR AND REPAIR WITH CLASS AA CONCRETE.
- ALL NEW REINFORCING TO HAVE 2" CLEAR UNLESS NOTED OTHERWISE.
- ALL EDGES OF PIER CAP SHALL HAVE A 1 1/2" CHAMFER.
- CONTRACTOR SHALL DRILL AND EPOXY GROUT A MINIMUM OF (15xdb) OR AS PER MANUFACTURER'S SPECIFICATIONS. ALL COSTS FOR DRILL AND EPOXY GROUT SHALL BE INCLUDED IN THE BID PRICE PER LB OF "EPOXY COATED REINFORCING STEEL".



BRIDGE 300A DETAIL
W 71st ST S
(3 OF 4)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

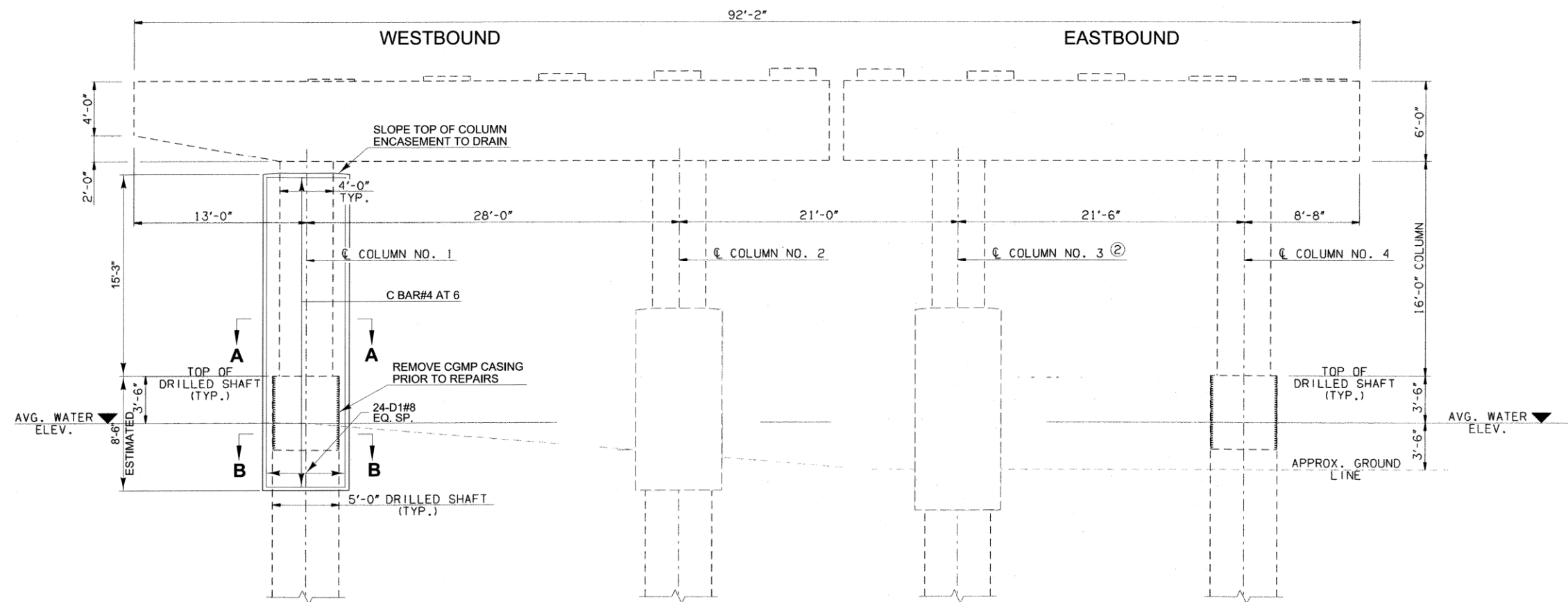
BENHAM Benham Design, LLC
15 W 6th St, Suite 200
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
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			PROFILE SCALE	SURVEY			
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			1"=N/A	PROJECT MGR			
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			ATLAS PAGE NO.:				



NOTE:
ALL DETAILS ARE
NOT TO SCALE

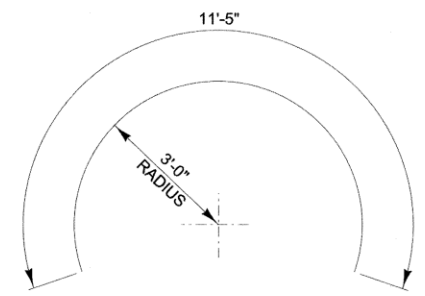
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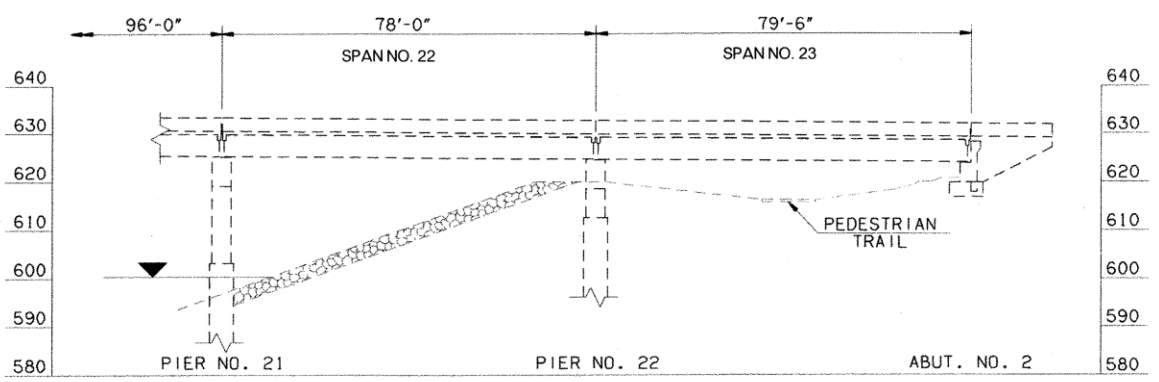
PIER NO. 21 ELEVATION-COLUMN REPAIR
(LOOKING EAST)

PIER 21 COLUMN BAR LIST
(ONE SHOWN, ONE REQUIRED)

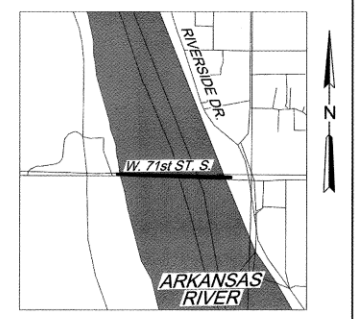
EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
D1	#8	24	STR.	23'-3"	
C	#4	94	BNT.	11'-5"	



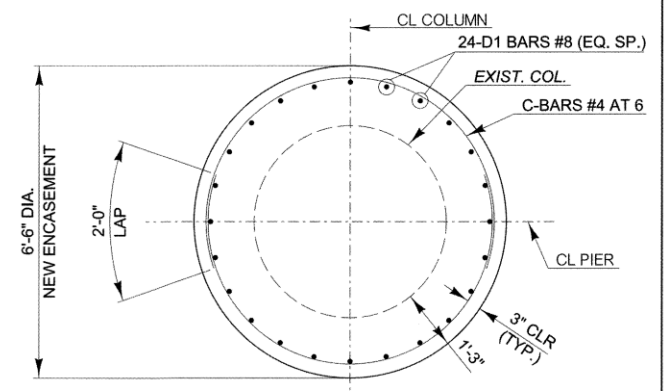
C BAR #4 x 11'-5"



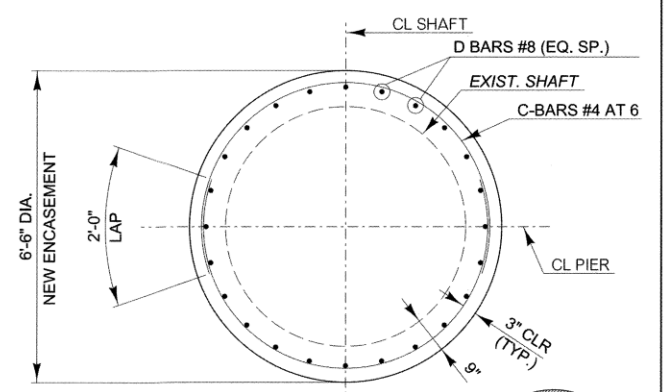
ELEVATION - EXISTING
(LOOKING NORTH)



KEYMAP



SECTION A-A



SECTION B-B



NOTES:

- ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL REPAIR LOCATIONS AND DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
- BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
- REMOVE UNSOUND CONCRETE, CLEAN EXPOSED REINFORCEMENT, APPLY CORROSION INHIBITOR AND REPAIR WITH CLASS AA CONCRETE.

NOTE:
ALL DETAILS ARE
NOT TO SCALE



BRIDGE 300A DETAIL
W 71st ST S
(4 OF 4)

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

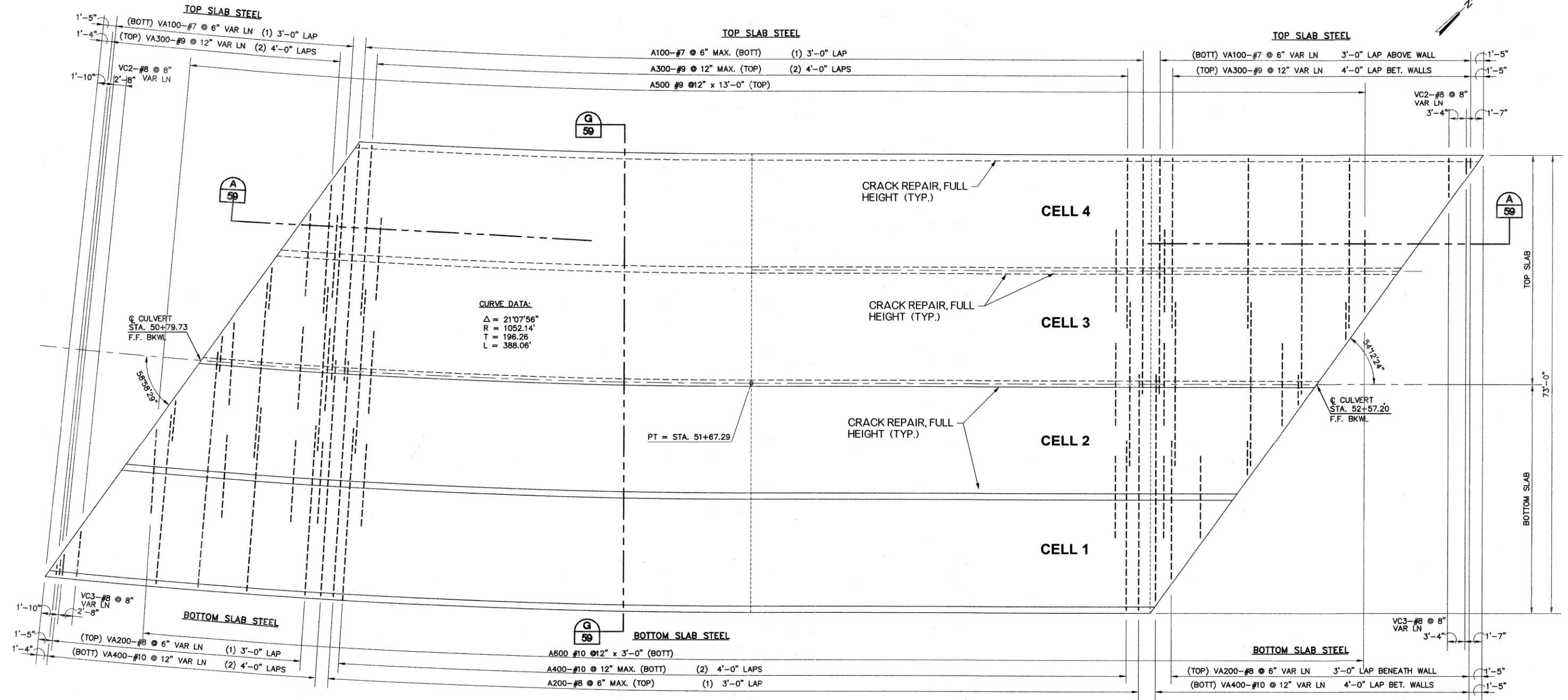
CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	BEW	09/25	APPROVED:
			1"= N/A	DESIGNED	KSJ	09/25	
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR			
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER			
			FILE:				
			ATLAS PAGE NO.:				

DATE: SEPTEMBER 2025
SHEET 39 OF 53 SHEETS

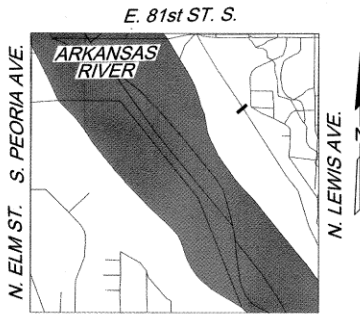
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A 56 PLAN RCB 'A-1'
 SCALE: 1/8" = 1'-0"

- NOTES:**
- ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
 - BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONSTRUCTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
 - REPAIRS AT BRIDGE #304 ARE FOR CRACK REPAIR ONLY.

NOTE:
 ALL DETAILS ARE NOT TO SCALE



BRIDGE 304 DETAIL
 RIVERSIDE PKWY
 (1 OF 2)

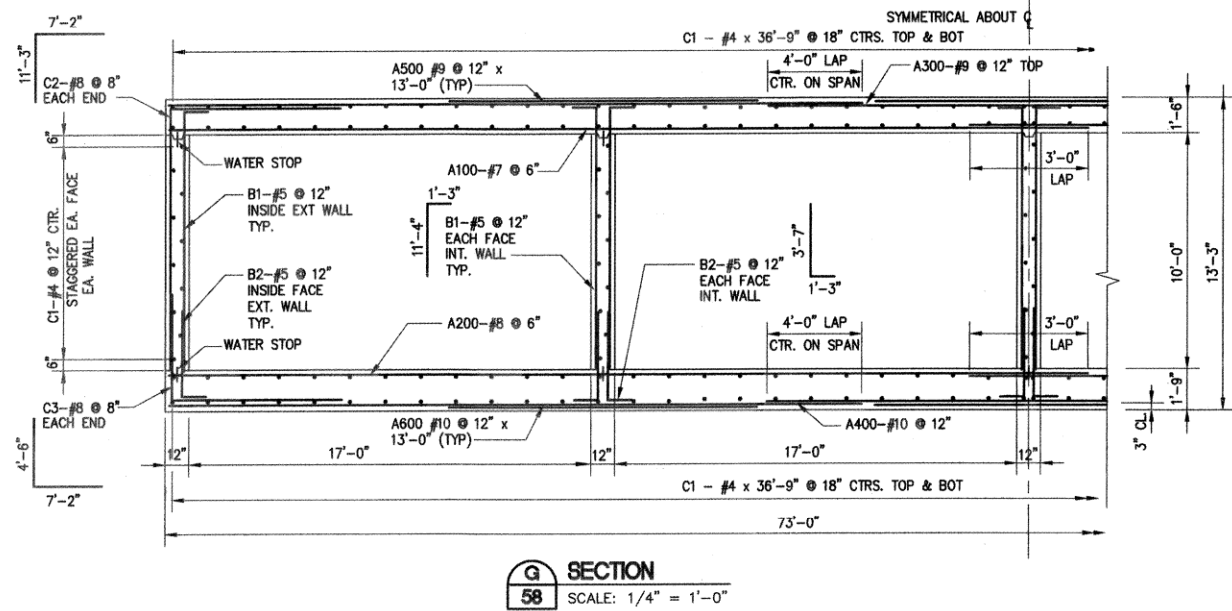
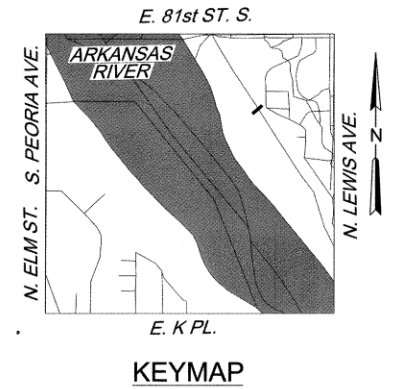
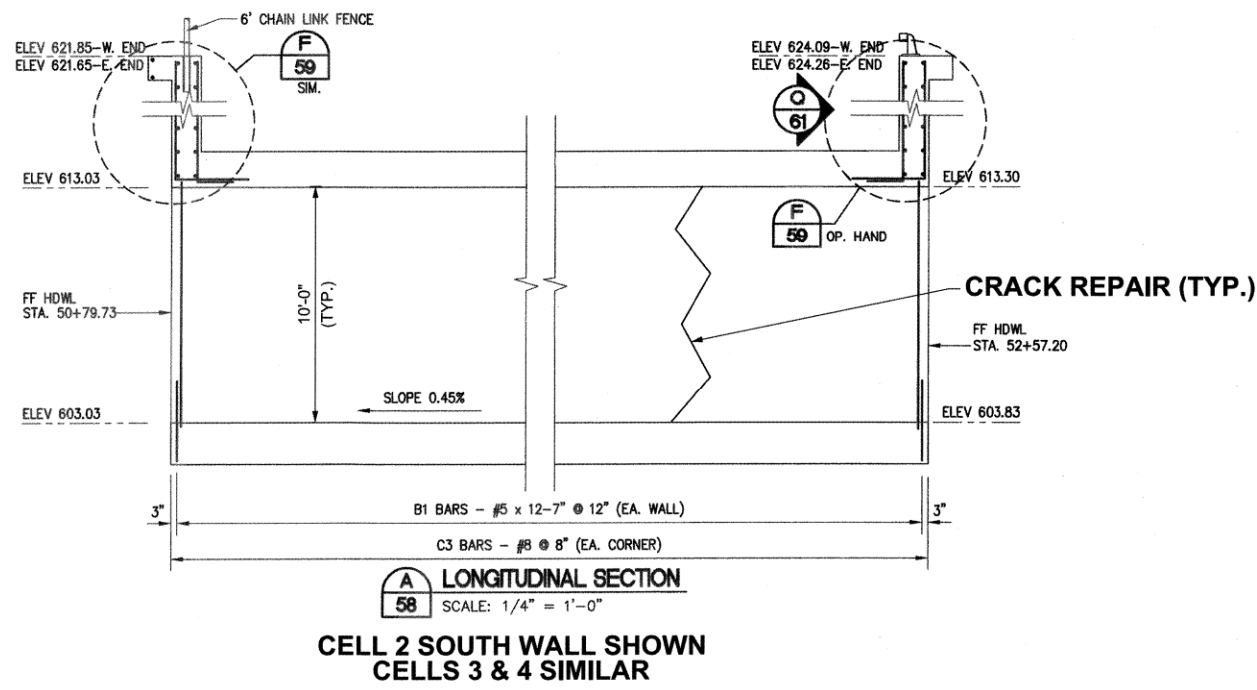
BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
 15 W 6th St, Suite 900
 Tulsa, Oklahoma 74119
 (918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	DATE	APPROVED:
1	NA		1" = NA	DESIGNED	KS	09/25	 J. Jones CITY ENGINEER
				SURVEY		09/25	
				FIELD MGR	AS	11/25/25	
				PROJECT MGR	MSD	11/25/25	
				LEAD ENGR	EAS	11-25	
				RECOMMENDED			
				DESIGN MANAGER	WAS	11-25	
				FILE			
				ATLAS PAGE NO.	76, 77, 115, 116, 162, 163, 217, 218, 280, 281		

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NOTES:

- ALL DIMENSIONS AND COMPONENTS OF EXISTING BRIDGE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY REPAIR LOCATIONS AND ALL DIMENSIONS NECESSARY TO COMPLETE THE WORK AND BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.
- BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE STRUCTURE AND ROADWAY. DAMAGE DUE TO THE CONSTRUCTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
- REPAIRS AT BRIDGE #304 ARE FOR CRACK REPAIR ONLY.



BRIDGE 304 DETAIL
 RIVERSIDE PKWY
 (2 OF 2)

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR			
				RECOMMENDED			
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			ATLAS PAGE NO.:				

NOTE:
 ALL DETAILS ARE
 NOT TO SCALE



Jones
 CIVIL ENGINEER

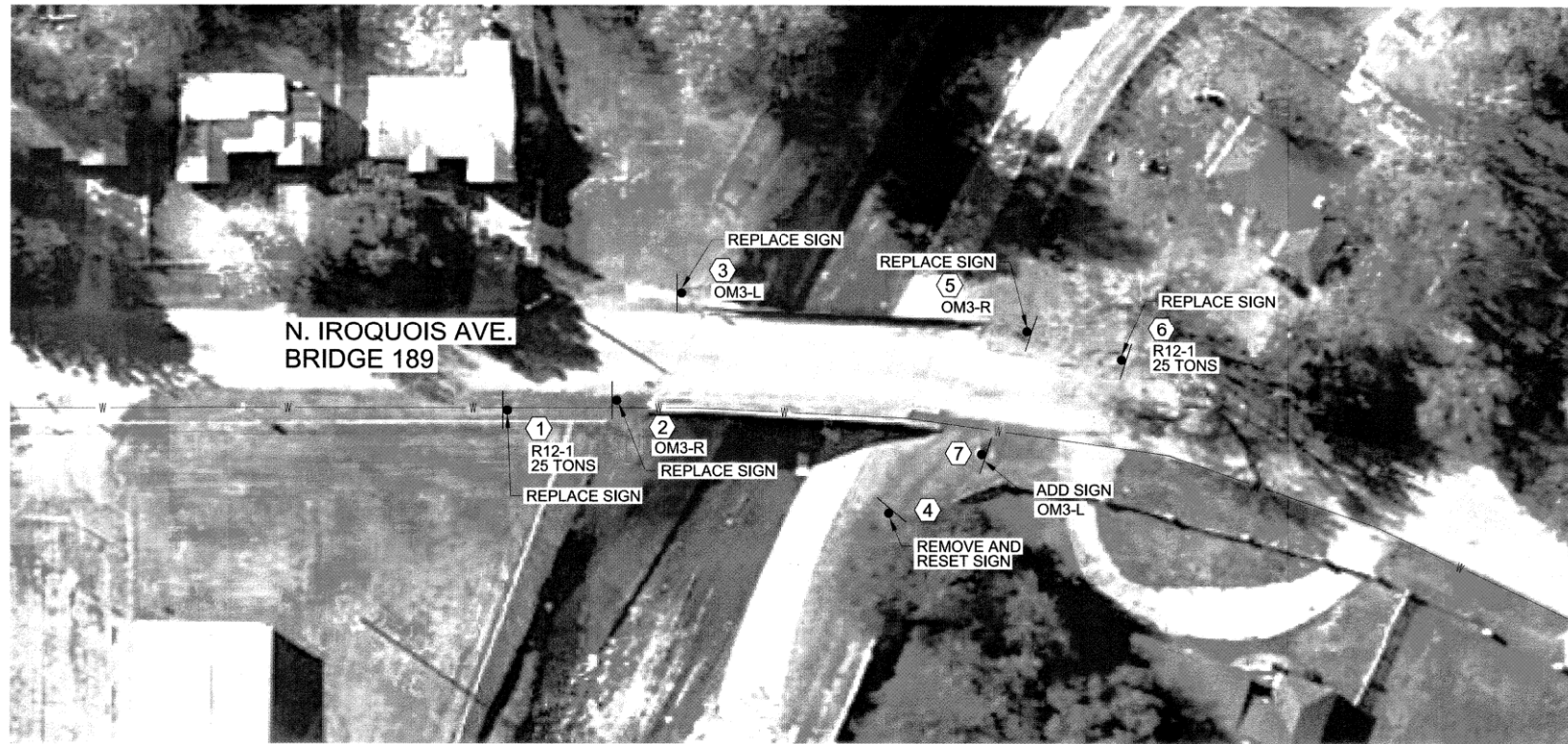
DATE: SEPTEMBER 2025

SHEET 41 OF 53 SHEETS

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9/30/2025



LEGEND
 ● SIGN
 # SIGN NUMBER



Karen Swatek Jones
 LICENSED PROFESSIONAL ENGINEER
 KAREN SWATEK JONES
 28517
 OKLAHOMA
 9-30-25

BRIDGE 189, and 190
 SIGNING AND STRIPING


BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT

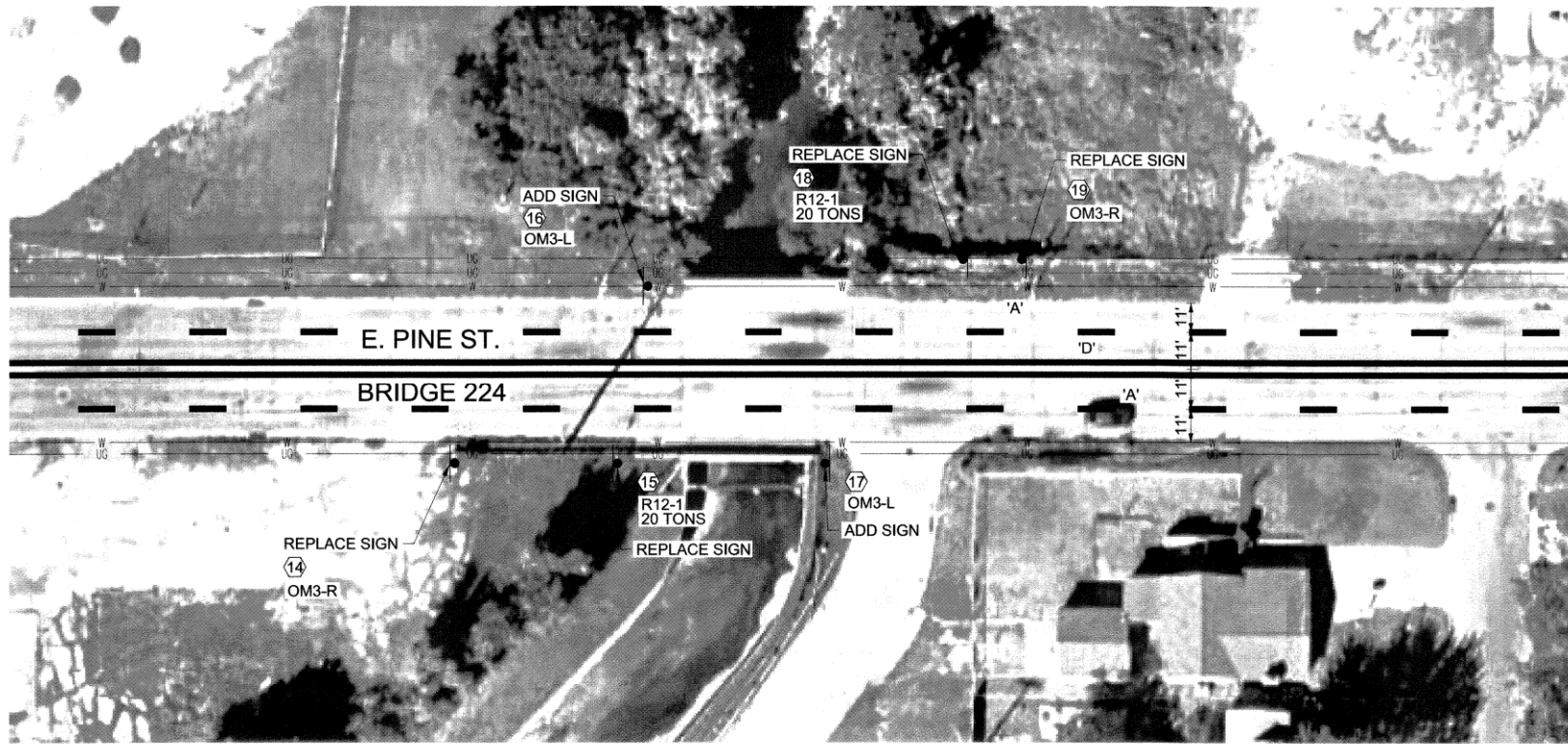
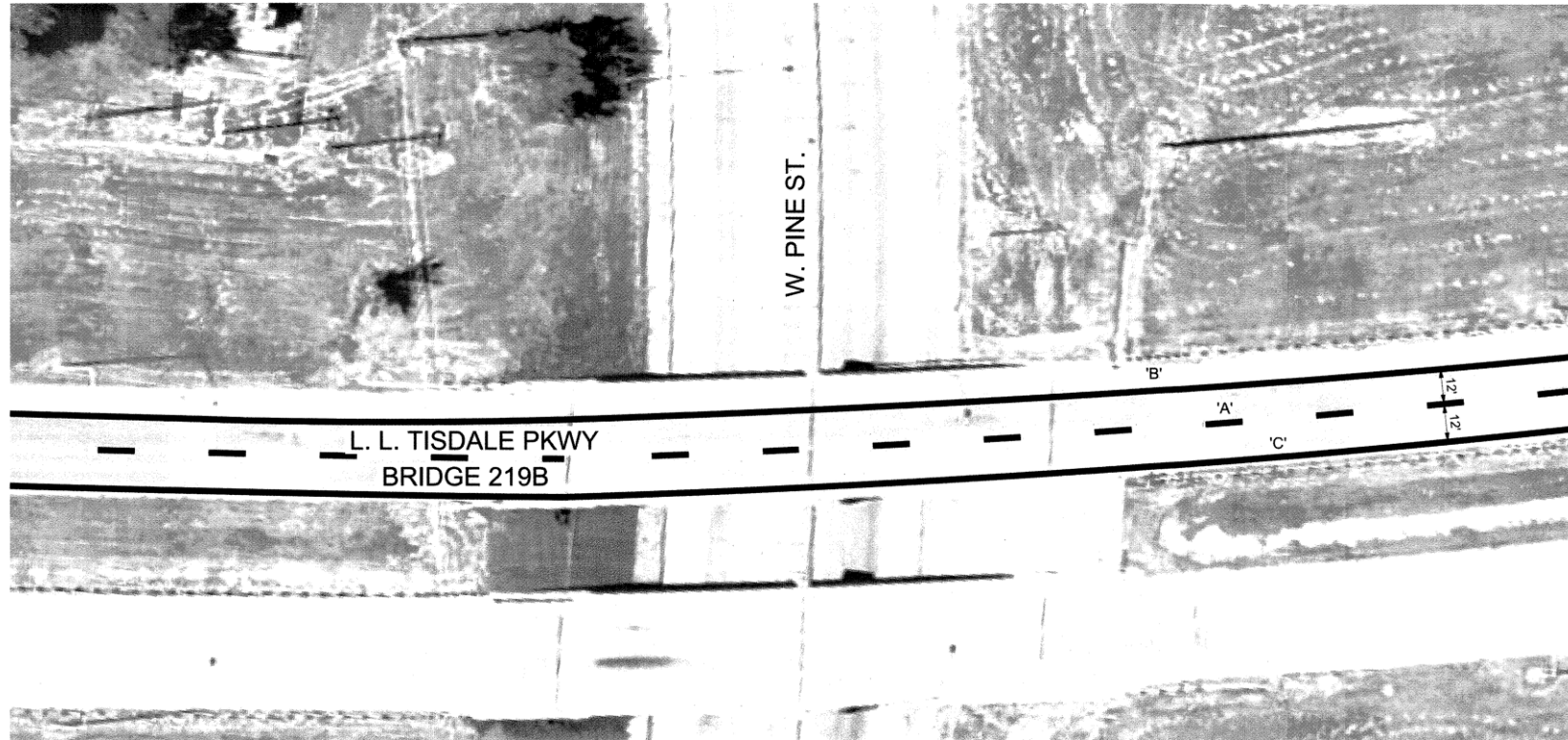
BENHAM Benham Design, LLC
 15 W 6th St, Suite 200
 Tulsa, Oklahoma 74119
 (918) 492-1600

REFER TO BRIDGE 190 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
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				SURVEY			
			PROFILE SCALE	FIELD MGR			 CITY ENGINEER
			HORIZONTAL: 1"= N/A	PROJECT MGR	<i>MED</i>	<i>12/05</i>	
			VERTICAL: 1"= N/A	LEAD ENGR	<i>EAS</i>	<i>11/2025</i>	
				RECOMMENDED	<i>WAG</i>	<i>11/25</i>	
			FILE:	DESIGN MANAGER			DATE: SEPTEMBER 2025
			ATLAS PAGE NO.: 76, 77, 115, 116, 162, 163, 217, 218, 280, 281				SHEET 42 OF 53 SHEETS

REFER TO BRIDGE 219B REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



LEGEND

- 'A' TYPE 'A' LINE
12' 28' 12' 40' CYCLE
- 'B' TYPE 'B' LINE
4" SOLID WHITE LINE
- 'C' TYPE 'C' LINE
4" SOLID YELLOW LINE
- 'D' TYPE 'D' LINE
4" DOUBLE YELLOW CENTERLINE
- SIGN
- # SIGN NUMBER



BRIDGE 219B, and 224
SIGNING AND STRIPING

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

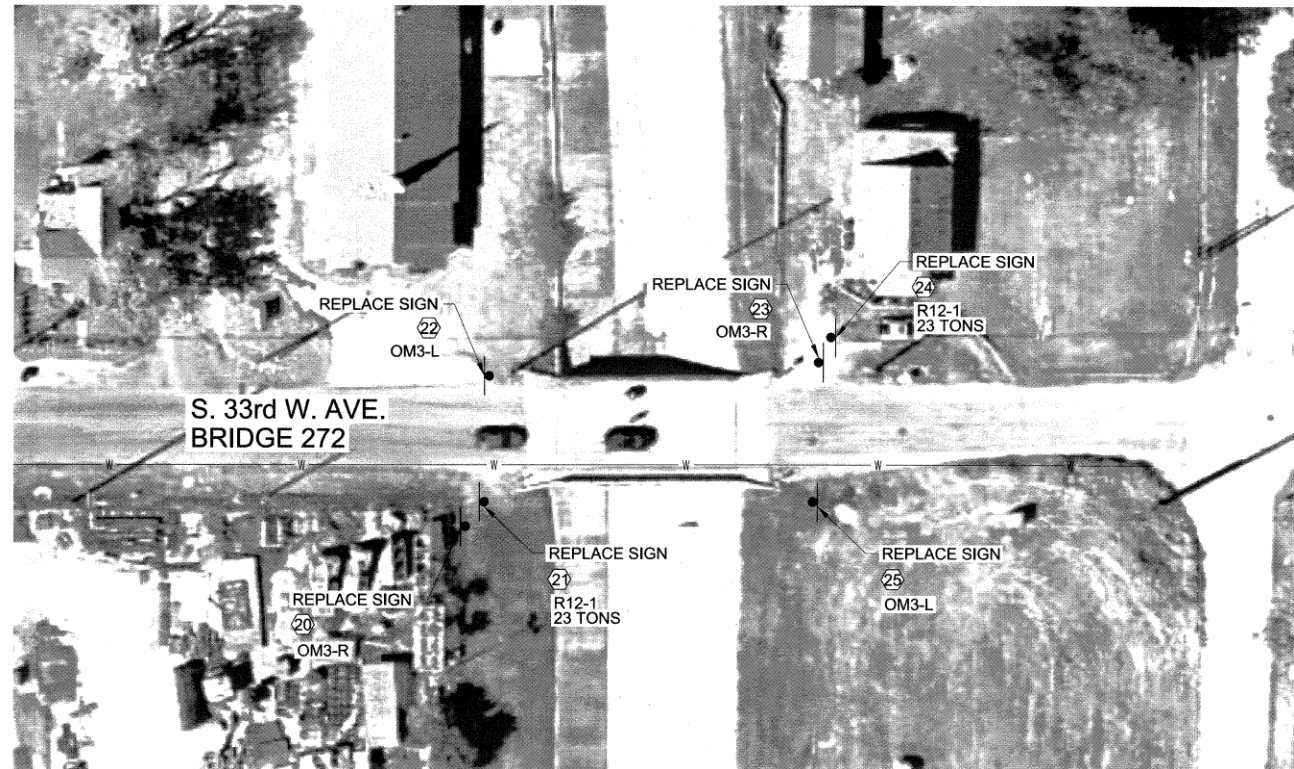
BENHAM Benham Design, LLC
15 W 6th St, Suite 500
Tulsa, Oklahoma 74119
(918) 492-1600

REFER TO BRIDGE 224 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



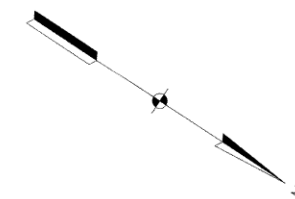
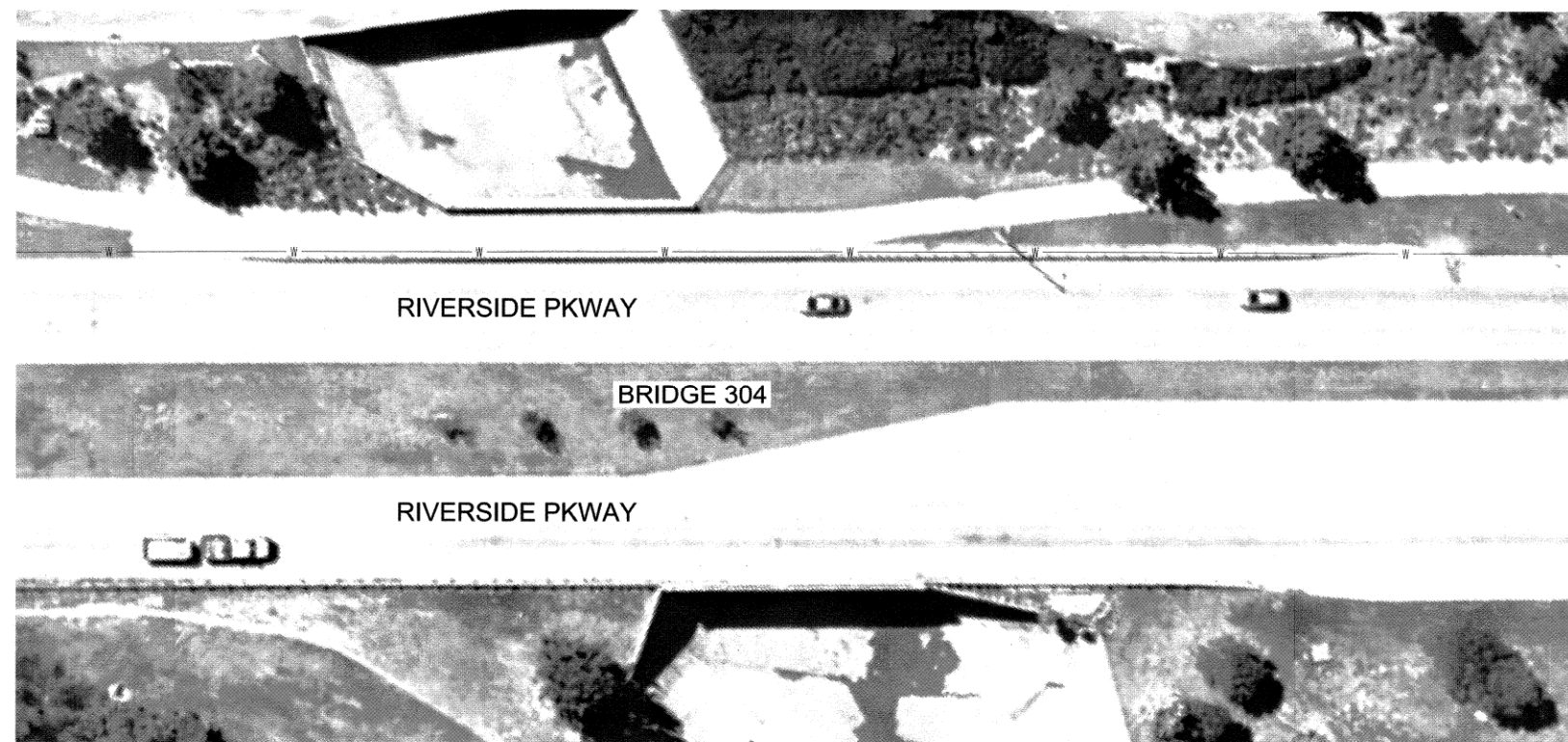
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			PROFILE SCALE	FIELD MGR	<i>JKM</i>	12/05	
			HORIZONTAL:	PROJECT MGR	<i>MEB</i>	10/01/25	
			VERTICAL:	LEAD ENGR	<i>EAS</i>	11-2025	
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				DESIGN MANAGER			DATE: SEPTEMBER 2025
			FILE:				SHEET 43 OF 53 SHEETS

REFER TO BRIDGE 272 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



LEGEND

- SIGN
- # SIGN NUMBER



BRIDGE 272, & 304
SIGNING AND STRIPING

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	Tom Jones	10/24/25	
			HORIZONTAL:	PROJECT MGR	Matt	10/24/25	
			1"= N/A	LEAD ENGR	EAS	11-10-25	 DATE: SEPTEMBER 2025
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER	WAG	11-25	
			FILE:				
			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281			SHEET 44 OF 53 SHEETS



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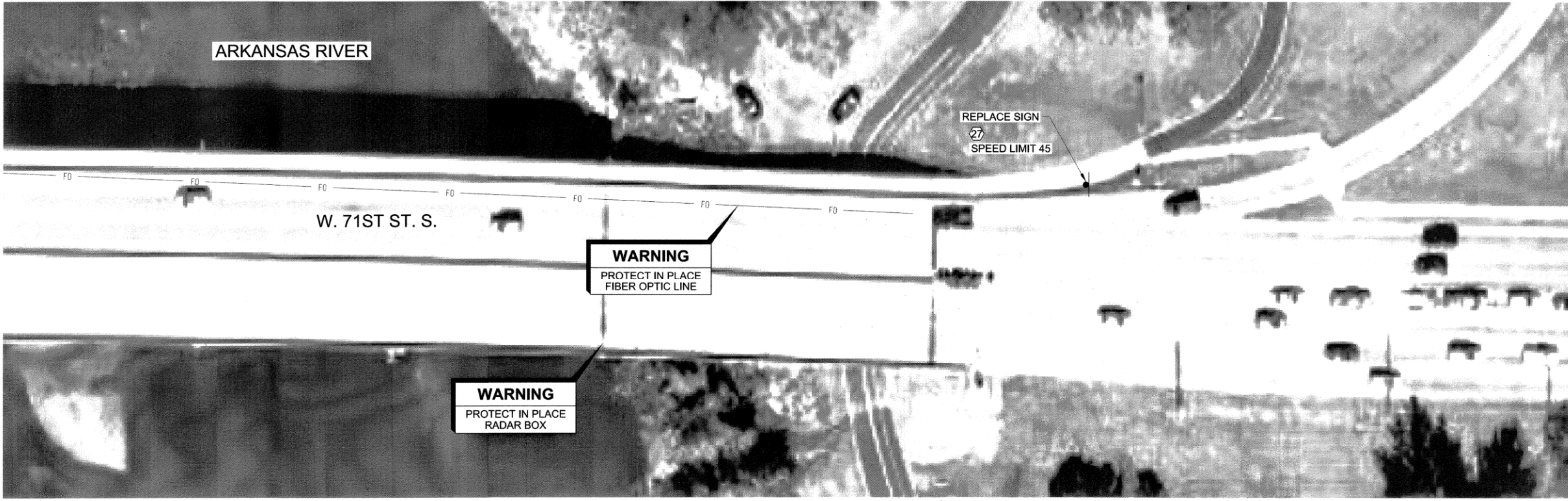
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9/30/2025

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9/30/2025



LEGEND

- SIGN
- # SIGN NUMBER

NOTE:

BUSINESS AND RESIDENTIAL ACCESS SHALL REMAIN OPEN DURING THE DURATION OF THE PROJECT.

BUSINESS ACCESS SIGNS SHALL BE USED DURING CONSTRUCTION.

CONTRACTOR SHALL NOT IMPEDE TRAFFIC DURING CONSTRUCTION.

TRAFFIC CONTROL SHALL USE MUTCD STANDARDS WITH A 25 MPH CONSTRUCTION SPEED ZONE.



BRIDGE 300A
SIGNING AND STRIPING

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

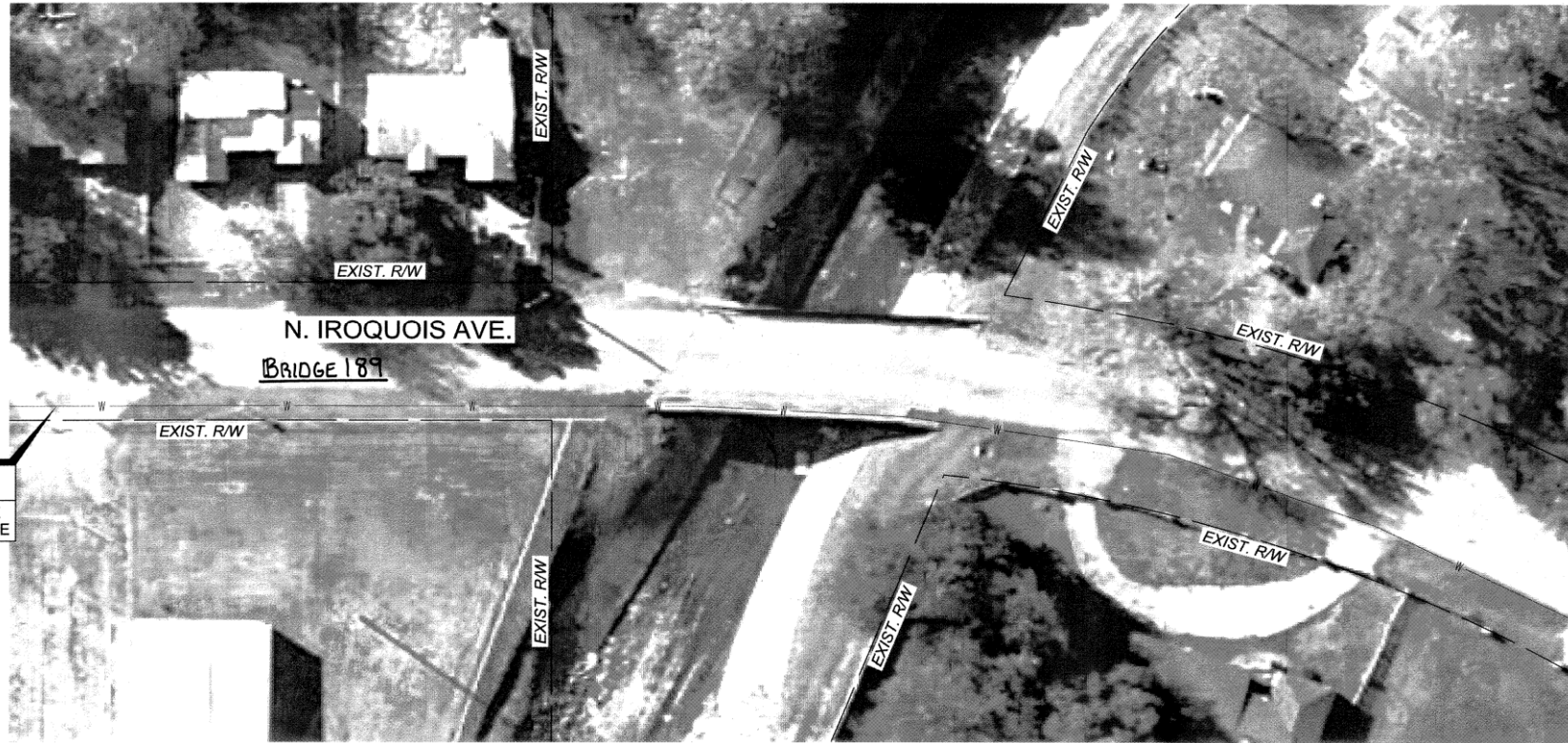
BENHAM Benham Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600
a Haskell Company

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>Tom Jones</i>		
			HORIZONTAL:	PROJECT MGR	<i>MSP</i>	11/13/25	
			1"= N/A	LEAD ENGR	<i>EAS</i>	11-2025	
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			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 163, 217, 218, 280, 281			SHEET 45 OF 53 SHEETS

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8:31:53 AM

9/30/2025



WARNING
PROTECT IN PLACE
EXISTING WATERLINE



LEGEND

— EXIST. RW

NOTE:

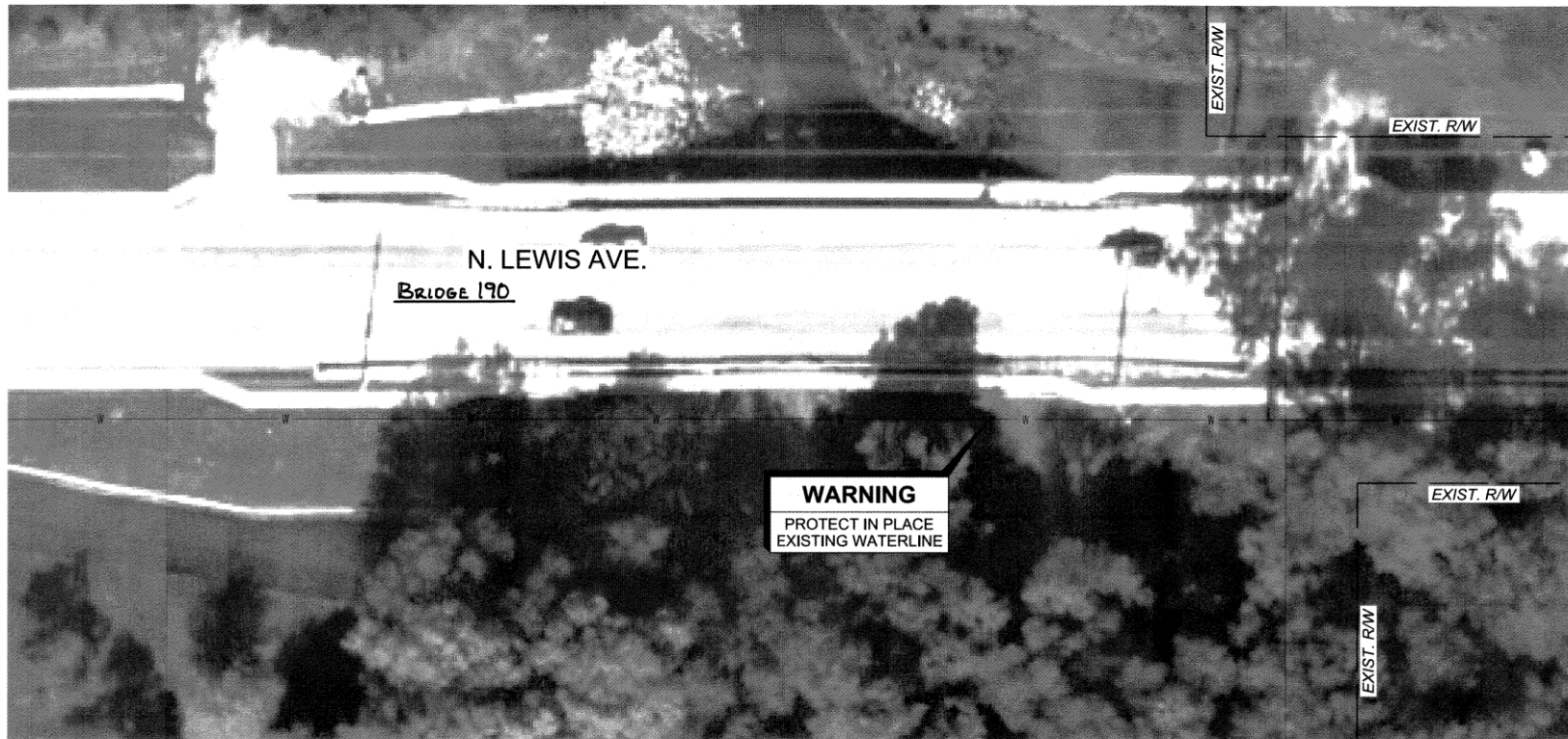
DO NOT DISTURB EXISTING UTILITY LINES.

THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO AVAILABLE ATLAS INFORMATION.

THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK. TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS, THE FOLLOWING IS A LIST OF UTILITY OWNERS:

- AT&T
 - COX COMMUNICATIONS
 - OKLAHOMA NATURAL GAS (ONG)
 - PUBLIC SERVICE COMPANY OF OKLAHOMA (AEP)
 - CITY OF TULSA UTILITY COORDINATOR
- SEE COVER SHEET FOR CONTACT INFORMATION.

CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.



WARNING
PROTECT IN PLACE
EXISTING WATERLINE



REFER TO BRIDGE 190 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS

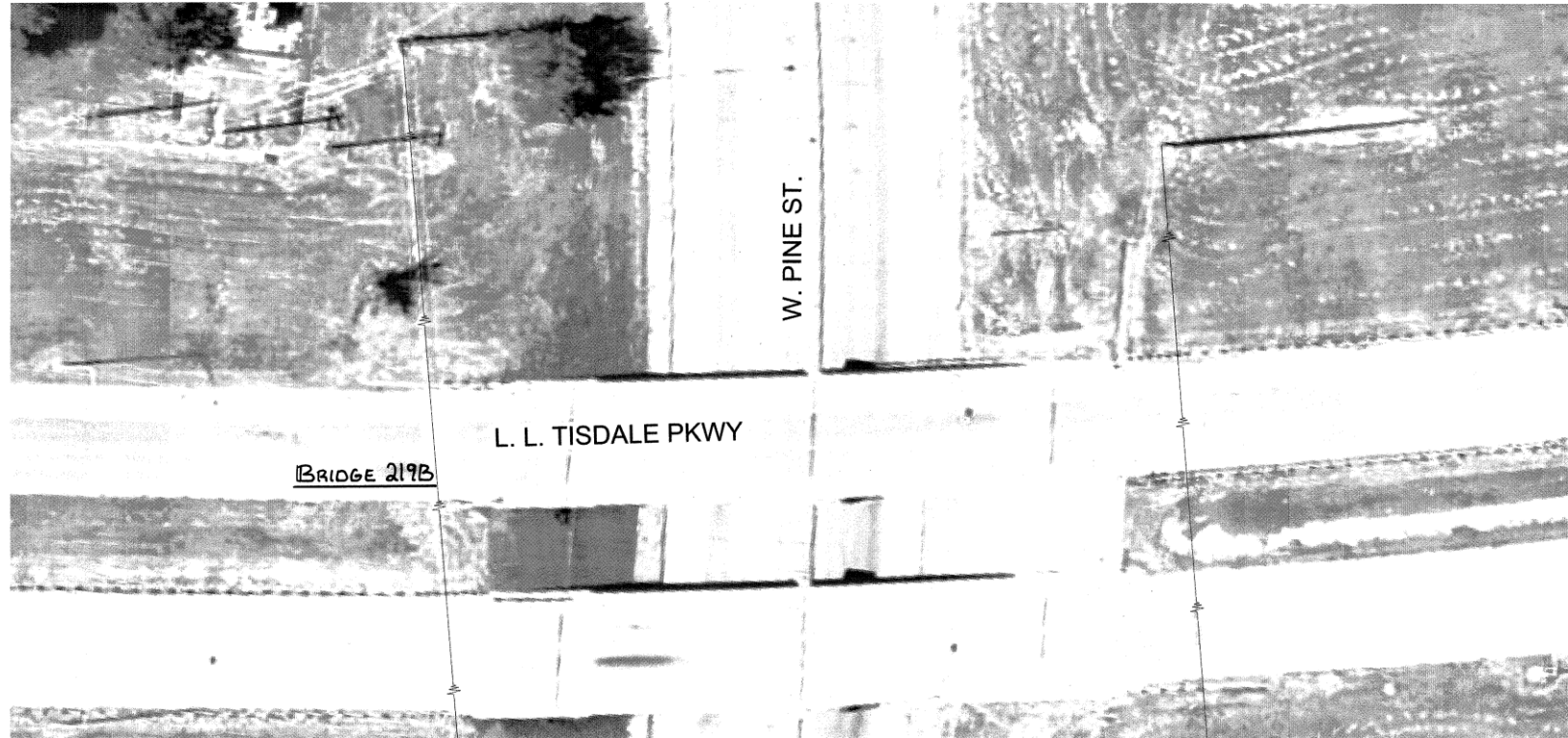
BRIDGE 189, and 190 UTILITIES AND ROW
BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600
a Haskell Company

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR			
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER			
			FILE:				CITY ENGINEER
			ATLAS PAGE NO.:				DATE: SEPTEMBER 2025
			76, 77, 115, 116, 162, 163, 217, 218, 280, 281				SHEET 46 OF 53 SHEETS



REFER TO BRIDGE 219B REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



LEGEND

— EXIST. RW

NOTE:

DO NOT DISTURB EXISTING UTILITY LINES.
 THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO AVAILABLE ATLAS INFORMATION.
 THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK. TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS:
 AT&T
 COX COMMUNICATIONS
 OKLAHOMA NATURAL GAS (ONG)
 PUBLIC SERVICE COMPANY OF OKLAHOMA (AEP)
 CITY OF TULSA UTILITY COORDINATOR
 SEE COVER SHEET FOR CONTACT INFORMATION.
 CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.



BRIDGE 219B, and 224 UTILITIES AND ROW
 BRIDGE REHABILITATION CITYWIDE PROJECT NO. 2436B0005Z 189, 190, 219B, 224, 272, 300A, and 304
 CITY OF TULSA, OKLAHOMA PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
 15 W 6th St, Suite 310
 Tulsa, Oklahoma 74119
 (918) 492-1600

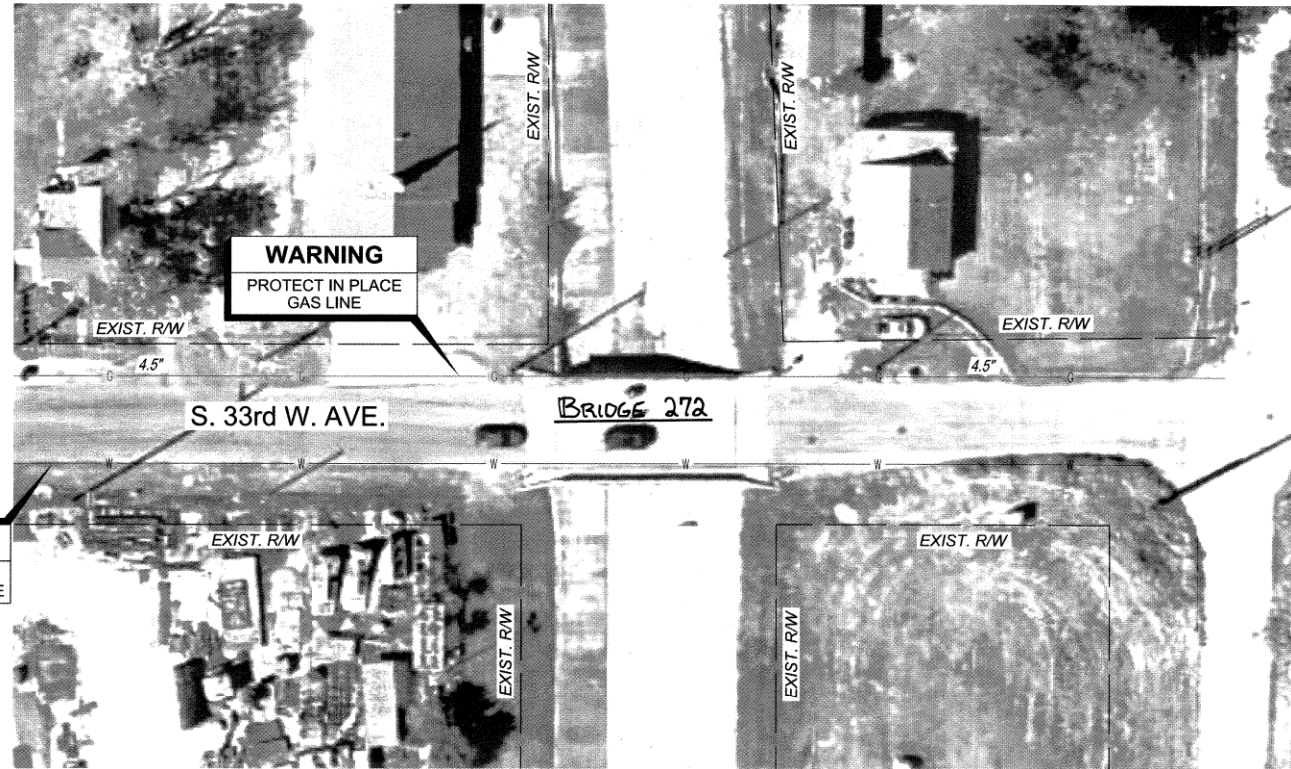
REFER TO BRIDGE 224 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 KAREN SWATEK JONES LICENSED PROFESSIONAL ENGINEER OKLAHOMA 28517 DATE: SEPTEMBER 2025
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR			
				RECOMMENDED			
			1"= N/A	DESIGN MANAGER			
			FILE:				
			ATLAS PAGE NO.:				

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 9/30/2025

REFER TO BRIDGE 272 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL FOR BUSINESS ACCESS SIGN DETAILS



WARNING
PROTECT IN PLACE EXISTING WATERLINE

WARNING
PROTECT IN PLACE GAS LINE



LEGEND

— EXIST. R/W

NOTE:

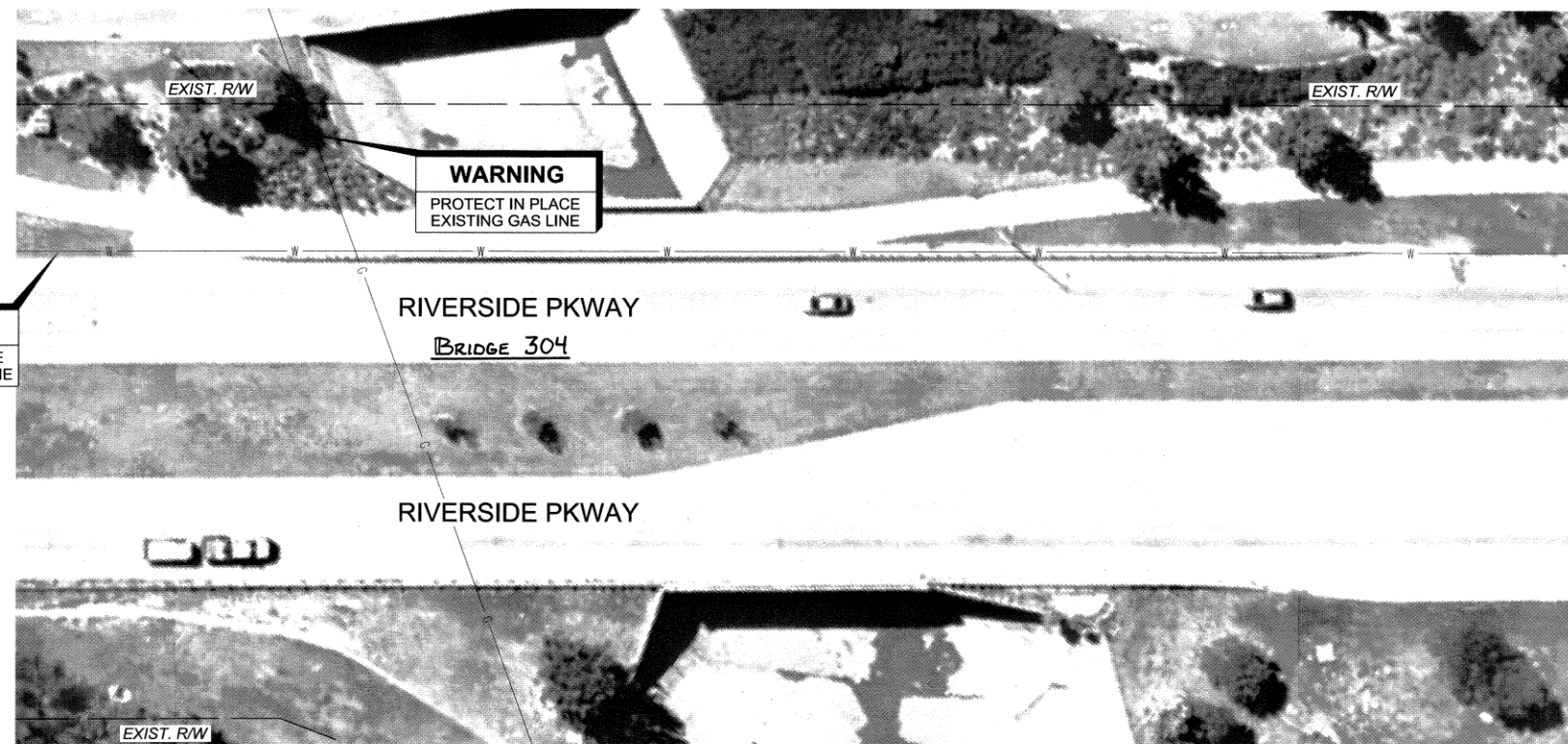
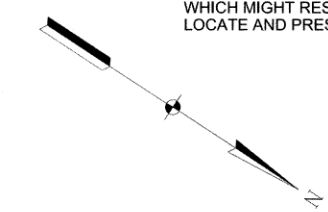
DO NOT DISTURB EXISTING UTILITY LINES.

THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO AVAILABLE ATLAS INFORMATION.

THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK. TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS:

- AT&T
 - COX COMMUNICATIONS
 - OKLAHOMA NATURAL GAS (ONG)
 - PUBLIC SERVICE COMPANY OF OKLAHOMA (AEP)
 - CITY OF TULSA UTILITY COORDINATOR
- SEE COVER SHEET FOR CONTACT INFORMATION.

CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.



WARNING
PROTECT IN PLACE EXISTING GAS LINE

WARNING
PROTECT IN PLACE EXISTING WATERLINE



BRIDGE 272, & 304
UTILITIES AND ROW

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

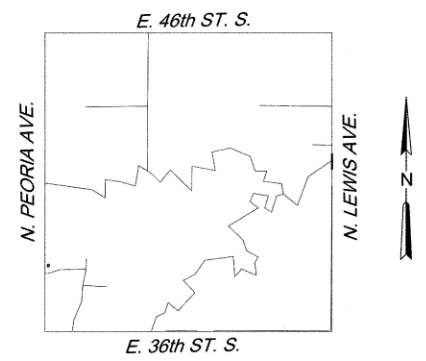
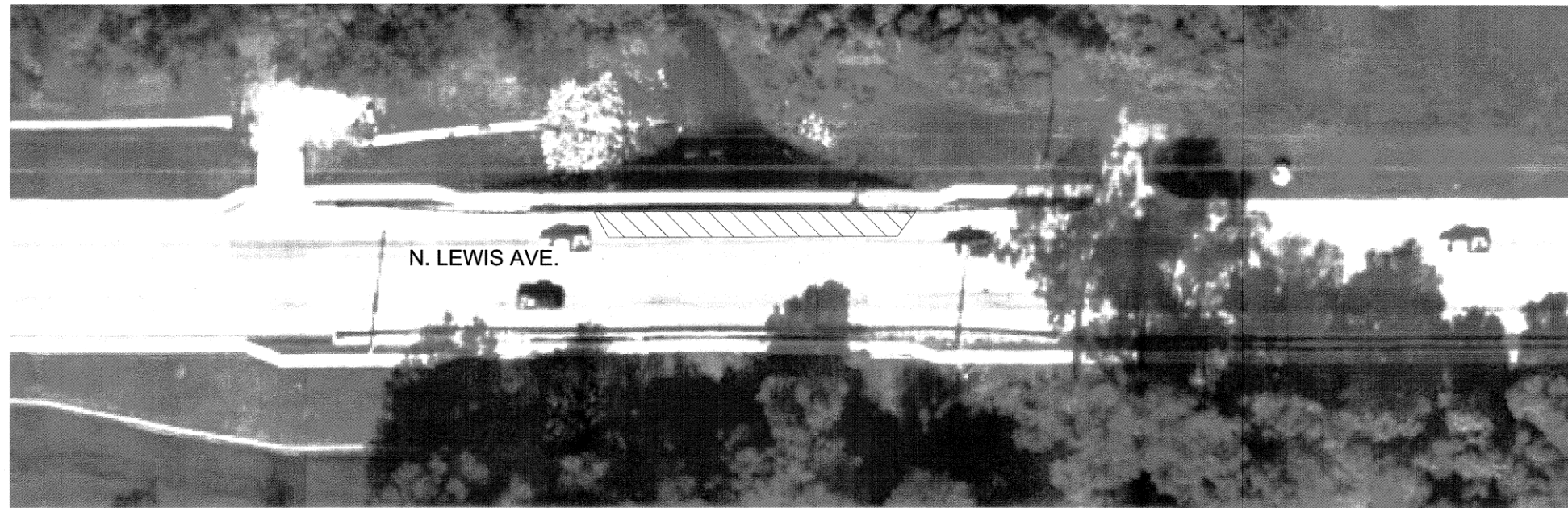
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BENHAM Benham Design, LLC
15 W 6th St, Suite 900
Tulsa, Oklahoma 74119
(918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE	FIELD MGR			
			HORIZONTAL:	PROJECT MGR			
			1"= N/A	LEAD ENGR	EAS	11/13/25	
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER	HAS	11-25	
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:	76, 77, 115, 116, 162, 217, 218, 280, 281			SHEET 48 OF 53 SHEETS



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KEYMAP

NOTE:
 ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
 ONLY ONE PHASE SHALL BE DISTURBED AT ANY TIME.
 TRAFFIC CONTROL SHALL USE MUTCD STANDARDS WITH A 25 MPH CONSTRUCTION SPEED ZONE.
 OPEN MILLED OR EXPOSED SURFACES WILL BE AT THE CONTRACTOR'S RISK IN THE EVENT LOCAL OR CONSTRUCTION TRAFFIC CAUSES DAMAGE TO ANY SURFACES.

LEGEND:



BRIDGE 190 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

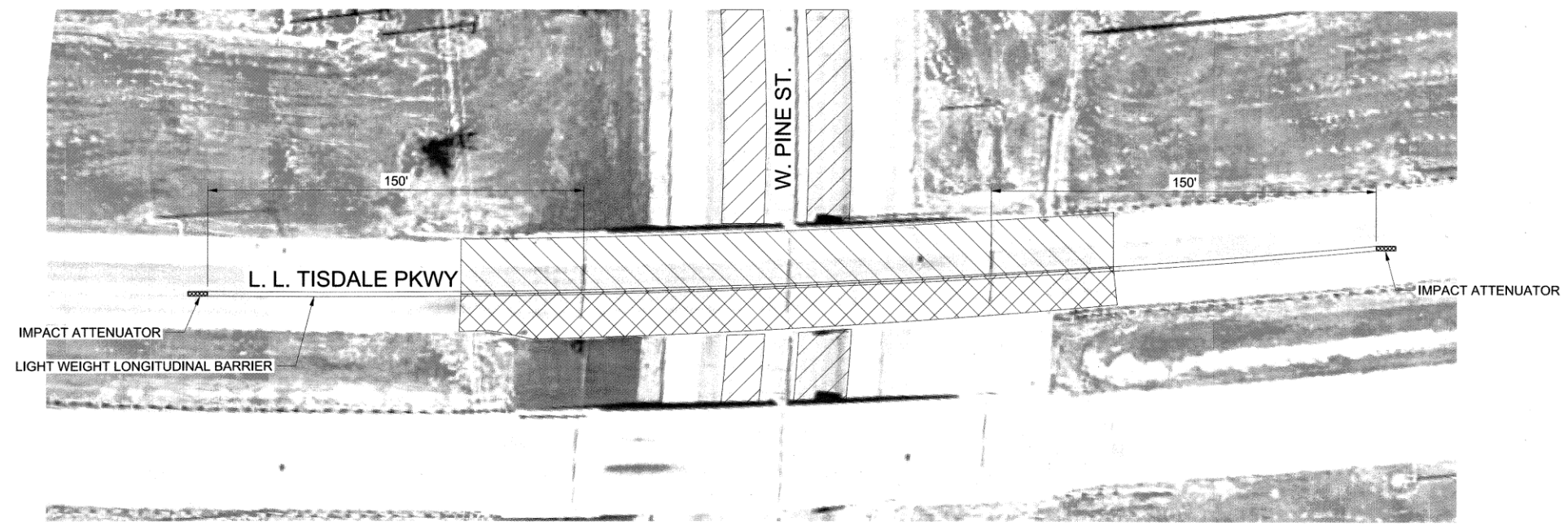
CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT



REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
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				SURVEY			
			PROFILE SCALE	FIELD MGR	<i>Jones</i>	10/01/25	
			HORIZONTAL:	PROJECT MGR	<i>MAS</i>	10/01/25	
			1"= N/A	LEAD ENGR	<i>EAS</i>	11-2025	
			VERTICAL:	RECOMMENDED	<i>MAS</i>	11-25	
			1"= N/A	DESIGN MANAGER			
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:	76, 77, 116, 118, 162, 183, 217, 218, 280, 281			SHEET 49 OF 53 SHEETS



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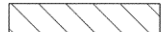




KEYMAP

NOTE:

- ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
- ONLY ONE PHASE SHALL BE DISTURBED AT ANY TIME.
- TRAFFIC CONTROL SHALL USE MUTCD STANDARDS WITH A 25 MPH CONSTRUCTION SPEED ZONE.
- LANE CLOSURES AND DRUMS SHALL NOT ENCR OACH PINE RAMPS.
- OPEN MILLED OR EXPOSED SURFACES WILL BE AT THE CONTRACTOR'S RISK IN THE EVENT LOCAL OR CONSTRUCTION TRAFFIC CAUSES DAMAGE TO ANY SURFACES.

LEGEND:

-  PHASE 1
-  PHASE 2
-  PHASE 3


BRIDGE 219B REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
15 W 6th St, Suite 200
Tulsa, Oklahoma 74119
(918) 492-1600

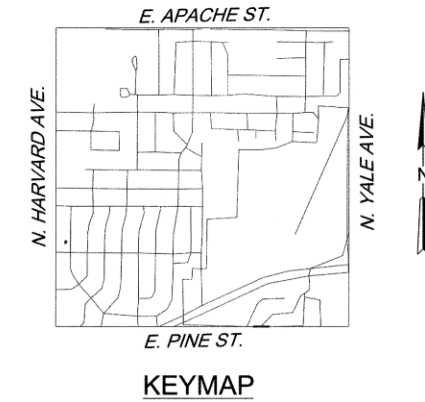
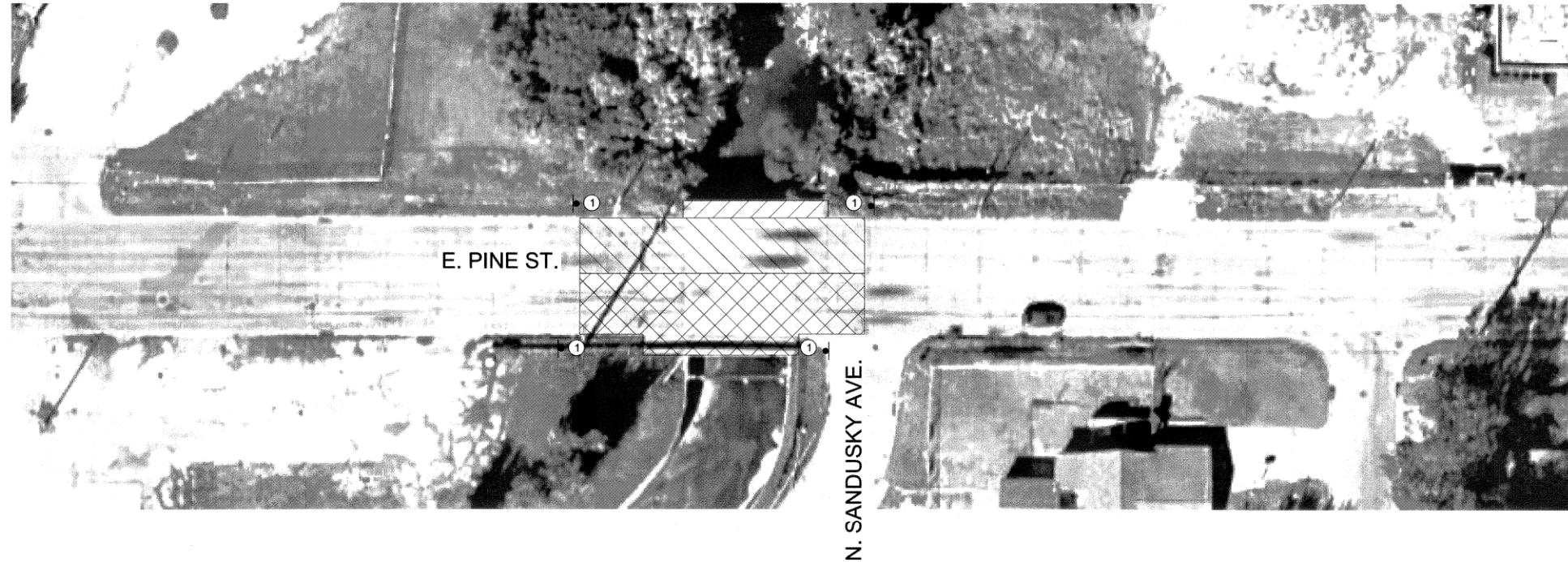


REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	 CITY ENGINEER
				SURVEY			
			PROFILE SCALE HORIZONTAL:	FIELD MGR	<i>KS</i>	<i>12/15</i>	
			1"= N/A	PROJECT MGR	<i>MJB</i>	<i>10/24/25</i>	
			VERTICAL:	LEAD ENGR	<i>EAS</i>	<i>11-2025</i>	
			1"= N/A	RECOMMENDED			
				DESIGN MANAGER	<i>WAS</i>	<i>11-25</i>	
			FILE:				DATE: SEPTEMBER 2025
			ATLAS PAGE NO.:				SHEET 50 OF 53 SHEETS

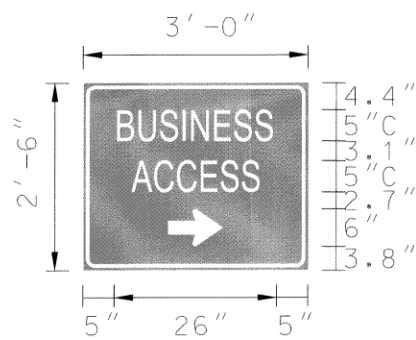
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9/30/2025



NOTE:
 BUSINESS AND RESIDENTIAL ACCESS SHALL REMAIN OPEN DURING ALL PHASES OF THE PROJECT.
 BUSINESS ACCESS SIGNS SHALL BE USED DURING CONSTRUCTION.
 ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
 ONLY ONE PHASE SHALL BE DISTURBED AT ANY TIME.
 TRAFFIC CONTROL SHALL USE MUTCD STANDARDS WITH A 25 MPH CONSTRUCTION SPEED ZONE.
 LANE CLOSURES AND DRUMS SHALL NOT ENCR OACH INTO INTERSECTION OF N. YALE AVE & E. PINE ST.
 OPEN MILLED OR EXPOSED SURFACES WILL BE AT THE CONTRACTOR'S RISK IN THE EVENT LOCAL OR CONSTRUCTION TRAFFIC CAUSES DAMAGE TO ANY SURFACES.
 SANDUSKY AVE ACCESS MUST MAINTAIN AT LEAST ONE LANE OF TRAFFIC AT ALL TIMES
 SIDEWALK ACCESS WILL BE CLOSED DURING PHASE 2 OF CONSTRUCTION. "SIDEWALK CLOSED" SIGNS SHALL BE UTILIZED AS NEEDED.



BORDER
 R=1.5"
 TH=0.63"
 IN=0.38"

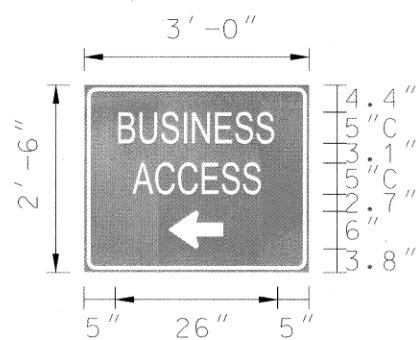
SIGN NUMBER	SP. SIGN BAS(R)
WIDTH x HIGHT.	3'-0" x 2'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective COLOR: Blue
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	270	13.5	3.8	6	9

Dimensions are in inches tenths Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIES/SIZE
B	U	S	I	N	E	S	S				C 2000
5	8.7	12.3	16	17.8	21.7	24.8	28.2			26	5
A	C	C	E	S	S						C 2000
7.7	11.5	15.2	19	22.1	25.5					20.7	5

SIGN BAS(R)
7.5 SF



BORDER
 R=1.5"
 TH=0.63"
 IN=0.38"

SIGN NUMBER	SP. SIGN BAS(L)
WIDTH x HIGHT.	3'-0" x 2'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective COLOR: Blue
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	13.5	3.8	6	9

Dimensions are in inches tenths Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIES/SIZE
B	U	S	I	N	E	S	S				C 2000
5	8.7	12.3	16	17.8	21.7	24.8	28.2			26	5
A	C	C	E	S	S						C 2000
7.7	11.5	15.2	19	22.1	25.5					20.7	5

SIGN BAS(L)
7.5 SF

LEGEND:

- PHASE 1 (diagonal hatching)
- PHASE 2 (cross-hatching)
- PHASE 3 (horizontal hatching)
- ① SIDEWALK CLOSED (R9-9)

9-30-25

BRIDGE 224 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT

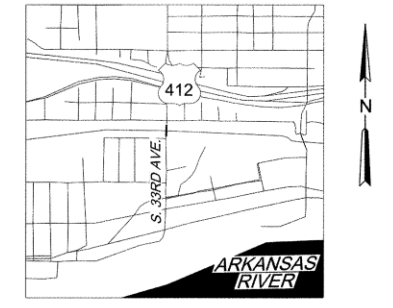
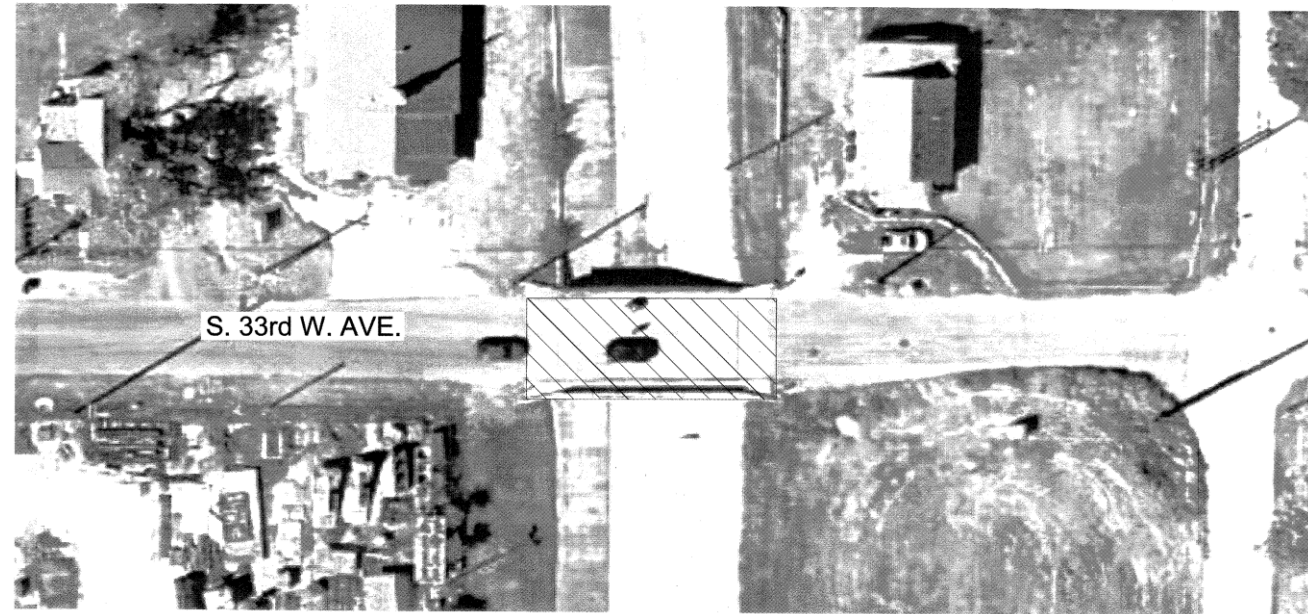
BENHAM Benham Design, LLC
 15 W 6th St, Suite 900
 Tulsa, Oklahoma 74119
 (918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			1"= N/A	DESIGNED	KS	09/25	
				SURVEY			
			PROFILE SCALE	FIELD MGR	JMS	12/20	
			HORIZONTAL:	PROJECT MGR	MED	10/24/25	
			1"= N/A	LEAD ENGR	EAS	11-2025	
			VERTICAL:	RECOMMENDED			
			1"= N/A	DESIGN MANAGER	AMS	11-25	
			FILE:				CITY ENGINEER
			ATLAS PAGE NO.:	76, 77, 115, 116, 182, 183, 217, 218, 280, 281			DATE: SEPTEMBER 2025



T. Bell
 DATE: SEPTEMBER 2025

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KEYMAP

NOTE:

- RESIDENTIAL ACCESS SHALL REMAIN OPEN DURING ALL PHASES OF THE PROJECT.
- TRAFFIC CONTROL SHALL USE MUTCD STANDARDS WITH A 25 MPH CONSTRUCTION SPEED ZONE.
- OPEN MILLED OR EXPOSED SURFACES WILL BE AT THE CONTRACTOR'S RISK IN THE EVENT LOCAL OR CONSTRUCTION TRAFFIC CAUSES DAMAGE TO ANY SURFACES.
- CLOSE BRIDGE FOR CONSTRUCTION ACTIVITIES. USE TYPE 3 BARRICADES ACROSS THE ROADWAY WITH ROAD CLOSED SIGNS AND DETOUR SIGNS SHALL ALIGN WITH CURRENT MUTCD STANDARD. DETOUR FOR A CLOSED STREET (TA-20) SEE DETOUR SCHEMATIC SHEET 52.

LEGEND:



BRIDGE 272 REQUIRED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL

BRIDGE REHABILITATION
CITYWIDE
PROJECT NO. 2436B0005Z
189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS DEPARTMENT



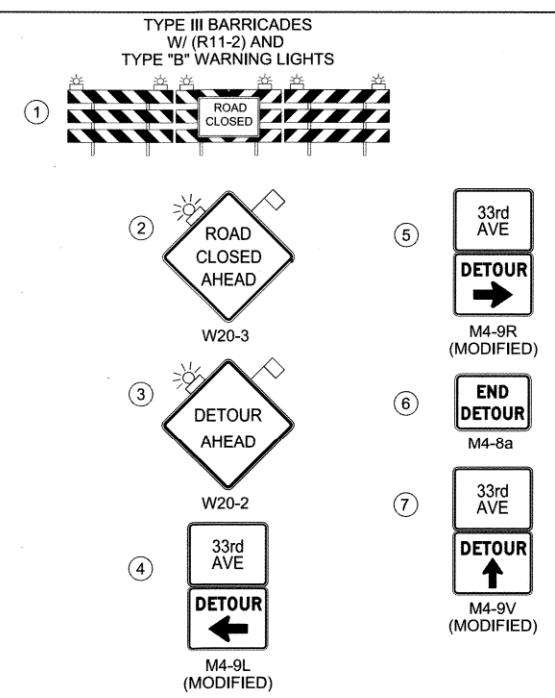
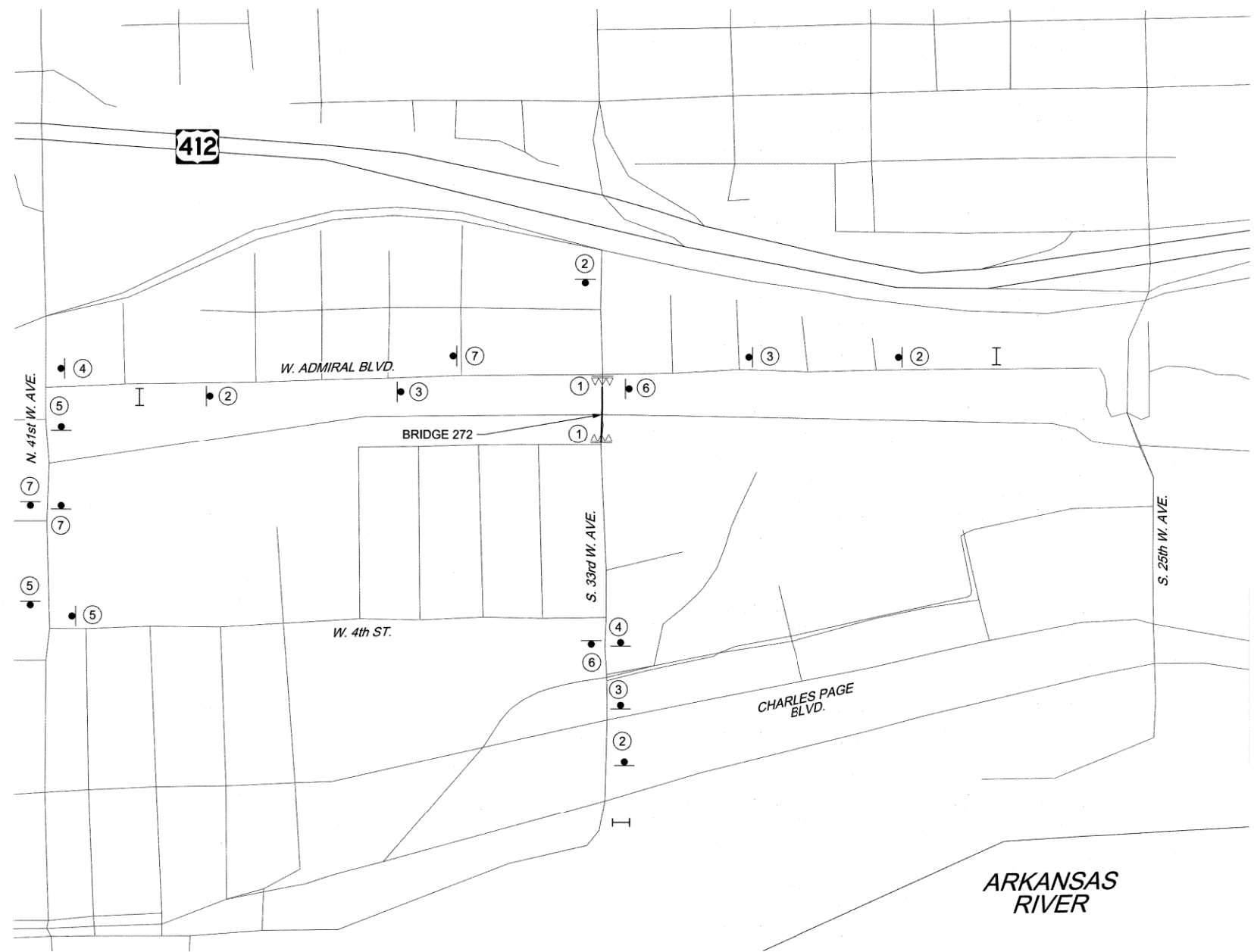
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				SURVEY			
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			HORIZONTAL: 1"=N/A	PROJECT MGR	<i>mjd 10/24/25</i>		
			VERTICAL: 1"=N/A	LEAD ENGR	<i>EAS 11/20/25</i>		
				RECOMMENDED	<i>HAS 11/25</i>		
				DESIGN MANAGER			DATE: SEPTEMBER 2025
FILE:							SHEET 52 OF 53 SHEETS
ATLAS PAGE NO.: 76, 77, 115, 116, 162, 163, 217, 218, 280, 281							



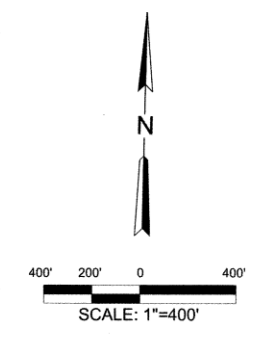
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9/30/2025



LEGEND
 I PORTABLE CHANGABLE MESSAGE SIGN
 • SIGN
 A TYPE III BARRICADE



DETOUR MAP
BRIDGE 272

BRIDGE REHABILITATION
 CITYWIDE
 PROJECT NO. 2436B0005Z
 189, 190, 219B, 224, 272, 300A, and 304

CITY OF TULSA, OKLAHOMA
 PUBLIC WORKS DEPARTMENT

BENHAM Benham Design, LLC
 15 W 6th St, Suite 900
 Tulsa, Oklahoma 74119
 (918) 492-1600

REVISION	BY	DATE	PLAN SCALE	DRAWN	ES	09/25	APPROVED:
			DESIGNED	KS		09/25	 CITY ENGINEER
			1"= N/A	SURVEY			
			PROFILE SCALE	FIELD MGR	Jen	09/25	
			HORIZONTAL	PROJECT MGR	MED	11/13/25	
			VERTICAL	LEAD ENGR	EAS	11/20/25	 CITY ENGINEER
			1"= N/A	RECOMMENDED	HWS	11-25	
			FILE	DESIGN MANAGER			DATE: SEPTEMBER 2025
ATLAS PAGE NO.: 76, 77, 115, 116, 162, 163, 217, 218, 280, 281							SHEET 53 OF 53 SHEETS

