



Department of Public Works & Utilities

October 17, 2017

Wilks Underground & Utilities, LLC
3601 West Harry, Suite 1
Wichita, Kansas 67213

Gentlemen:

Subject: WDS for Cox Machine in NW Water Treatment Plant Addition, 5339 West 21st Street North

(Privately Owned and Maintained) (2060PPW) (OCA 183021)

The City of Wichita is acknowledging that the subject described improvement, to be complete and constructed in substantial conformance with contract documents, has been inspected and certified by Kirk Miller, P.E., and a licensed professional engineer in the State of Kansas.

The maintenance of this improvement shall be the responsibility of the owner.

Sincerely,

Julianne Kallman, P.E.
Senior Engineer

JK/tm

cc: Kirk Miller, P.E., K.E. Miller Engineering, P.A.

Engineering Division

City Hall • Seventh Floor • 455 North Main • Wichita, Kansas 67202-1606

T 316.268.4501 **F** 316.268.4114

www.wichitagov.org

**ENGINEER'S
CERTIFICATE OF COMPLETION**

City of Wichita Project No: 2060 PPW (183021)

Project: Northwest Water Treatment Plant Addition - Cox Machine

Contractor: Wilks Underground

Engineer: KE Miller Engineering, P.A.

To the City Engineer, City of Wichita, Kansas:

I, Kirk Miller, PE of **KE Miller Engineering, P.A.**

being a licensed engineer in the state of Kansas, do hereby certify that the above-described improvements have been completed in substantial conformance with the approved plans and specifications, with exceptions noted on the as-built drawings, and, if concurred by the City of Wichita, do hereby recommend acceptance of same by the City of Wichita for the use by the public for the purpose for which they were intended.



PROFESSIONAL ENGINEER SEAL

KE Miller Engineering, P.A.
CONSULTANT ENGINEERING FIRM

ENGINEER'S
CERTIFICATE OF COMPLETION

City of Wichita Project No: 2060 PPW (183021)

Project: Northwest Water Treatment Plant Addition - Cox Machine

Contractor: Wilks Underground

Engineer: KE Miller Engineering, P.A.



Department of Public Works & Utilities

October 17, 2017

Wilks Underground & Utilities, LLC
3601 West Harry, Suite 1
Wichita, Kansas 67213

Gentlemen:

Subject: WDS for Cox Machine in NW Water Treatment Plant Addition, 5339 West 21st Street North

(Privately Owned and Maintained) (2060PPW) (OCA 183021)

The City of Wichita is acknowledging that the subject described improvement, to be complete and constructed in substantial conformance with contract documents, has been inspected and certified by Kirk Miller, P.E., and a licensed professional engineer in the State of Kansas.

The maintenance of this improvement shall be the responsibility of the owner.

Sincerely,

Julianne Kallman, P.E.
Senior Engineer

JK/tm

cc: Kirk Miller, P.E., K.E. Miller Engineering, P.A.

Engineering Division

City Hall • Seventh Floor • 455 North Main • Wichita, Kansas 67202-1606

T 316.268.4501 **F** 316.268.4114

www.wichitagov.org

Start Date: 9/8/17

Project Description: 2060 PPW Cox NW Water Treatment Plant Add	Date of Final Check: 10/16/17
Project No.:	Inspector/Firm: Tom Jones KEMiller Eng
Field Book No.:	Contractor: WILKS UNDERGROUND
Project Completion Date:	Superintendent:
Final Acceptance Date:	Design Consultant:

CONCRETE PAVEMENT		SWS PIPE, MH'S, STRUCTURES & INLETS	
JOINT SEAL		MANHOLE ELEVATIONS	
EXPANSION JOINT		TRIM PIPE IN STRUCTURE	
RANDOM CRACKING		MATERIAL CERTIFICATIONS	
SURFACE MARRING		VISUAL WALK-THRU	
POSITIVE DRAINAGE		DEBRIS IN PIPE / STRUCTURE	
JOINT SAWING		TRENCH SETTLEMENT	
BACKER ROD INST.		INVERTS	
CONCRETE SLOBBERS		TESTING	
OTHER:		FIELD CAP	
		AS-BUILTS	
ASPHALT PAVEMENT		RING AND LID TO GRADE	
SURFACE CRACKS		UNDER DRAIN PLUG	
SEGRAGATION/MARRING		REMOVAL OF FORMS	
TIE-IN TO EXISTING AREAS		DEBRIS AND DIRT IN STRUCTURE	
LOOSE ASPH. AT HI-EDGE		GROUTING-LIDS, WALLS, ETC.	
OTHER:		RANDOM CRACKING	
		RIP-RAP PLACED AND GROUTED	
CURB AND GUTTER		OTHER:	
BROKEN / CRACKED AREAS			
WATERHOLES/GRIND AREAS		SANITARY SEWER AND MH'S	
TRIM EXPANSION MTL.		AS-BUILTS	
GENERAL APPEARANCE		PROPER RING AND LID	
REMOVAL OF FORMS		MANHOLE ELEVATIONS	
SAW AND SEAL JOINTS		INVERTS	
BACKFILL		TRIM PIPE IN STRUCTURE	
OTHER:		TRENCH SETTLEMENT	
		AIR AND TV TESTING	
VALLEY GUTTERS		VACUUM TESTING	
SURFACE MARRING		REMOVAL OF FORMS	
POSITIVE DRAINAGE		FIELD CAP	
ACCEPTABLE % OF GRADE		PAINT OR COATING OF MANHOLE	
RANDOM CRACKING		OTHER:	
TRIM EXPANSION MTL.			
SAW & SEAL JOINTS		WATER LINE	
HOOK-UPS TO EXISTING AREAS		AS-BUILTS	10/16
REMOVAL OF FORMS		HYDRANT LOCATION AND ELEV.	10/17
OTHER:		TRENCH SETTLEMENT	10/13
		SAMPLES / WATER QUALITY	10/13
SIGNALS / SIGNS / PAVEMENT MARKING		PROPER KEY ACCESS	10/13
TEARS IN PAVEMENT MARKING		PRESSURE TEST	10/14
PROPER HARDWARE: SIGNS		RESTORATION AND SETTLEMENT	10/13
DETECTOR LOOPS SEALED		ROTATE HYDRANT CORRECTLY	10/13
J-BOX SECURED AT GRADE		VAULT(S)	10/13
ADJUST SERVICE BOXES		CHAIN & LOCK	10/13
TIE WIRES AND SECURE IN MH'S		CONFINED ENTRY SIGN	10/13
CUT BACK CONDUIT		PROPER VAULT RING & LID	10/16
PRE-OPERATION BY TRAF. ENG.		DDC METER #12146816	10/13
TRENCH SETTLEMENT		OTHER:	
OTHER:			
SITE RESTORATION		MISCELLANEOUS ITEMS/NOTES	
LANDSCAPE ITEMS			
GRADE R/W AND EASEMENT			
IRONS AND MONUMENTS			
REMOVE TEMPORARY SIGNING			
EROSION CONTROL (BMP's)			
CHANNEL SLOPE AND GRADE			
CLAY LINING			
VISUAL WALK-THRU			
OTHER:			

DAILY CONSTRUCTION INSPECTION REPORT

Date: 10/13/17

City Project Number: 2060 PPW COX

NW Water Treatment
plant addition

KEM Proj. Number: 17-172

Contractor: WILKS

Inspector: Tom Jones

Weather: Clear

Construction Activities:

Identified cracks in vault. Removed and
Replaced cracked center section of vault.
Reset top. Supplier clutter.
meter reading is 00000000 - gage
meter number is 17146816
graded area around tap and valve.
need test station at valve.

DAILY CONSTRUCTION INSPECTION REPORT



Date: 10/4/2017

City Project Number: 2060 PPW (183021) COX Machine

KEM Project Number: 17-172

Contractor: WILKS UNDERGROUND UTILITIES

Weather: 60's RAIN

Construction Activities: Pressure test 2 hrs. @ 200 psi. - Ker^{LT}Shen &

I am on job site. Need bollards } chain } padlock. Pressure Test PASSED

DAILY CONSTRUCTION INSPECTION REPORT

Date: 10/3/17

City Project Number: 2060 PPW COX NW water treatment

KEM Proj. Number: 17-172

Contractor: WILKS

Inspector: Tom Jones

Weather: Clear

Construction Activities:

^{WL}
laid 48 LF of 8" PVC to vault.
tied in plastic to Dip with long sleeves.
grouted vault-clamped pipe Set
Back flow. Back filled FD inspected.
No gage on Back flow - Being Replaced.

DAILY CONSTRUCTION INSPECTION REPORT

Date: 10/2/17

City Project Number: 2060PPW COX MACH NW water Treat

KEM Proj. Number: 17-172

Contractor: Wilks

Inspector: Tom Jones

Weather: Clear

Construction Activities:

WL

Completed tie in from tap valve to Bore pipe.

Valve - 5' DIP-45° UP - 9.5' DIP 45° South (Horz). Restrained pipe under street, tracer wire to valve Box. Thrust Blocks restrained at 45° Bends with mega lugs and re-bar. covered.

DAILY CONSTRUCTION INSPECTION REPORT



Date: 9/27/2017

City Project Number: 2060 PPW (183021) Cox Machine

KEM Project Number: 17-172

Contractor: Wilks Underground Utilities

Weather: 60's Showers

Construction Activities: cleaning out, Tapping pit. so city can do another

Tap - bored under 21ST STREET NORTH - Digging for VAULT - Schowalter saw thru
blocks on fire hydrant & Tee

DAILY CONSTRUCTION INSPECTION REPORT

Date: 9/14/17

City Project Number: 2060 PPW NW Water Treatment
COP MACH

KEM Proj. Number: 17-172

Contractor: Wilks

Inspector: Tom Jones

Weather: Clear

Construction Activities:

WC
Set FH Assembly at Sta 4+58.48 line #1,
laid about 320 LF of 8" PVC from 4+58
to about 1+58.

Am Sta FH - Survey

Delivery

Stas fitting

Wilks Double Check Detector - gage gallons -

350 A&TDA dated 1/3/17.

8" DR18 CIPC1120 Restrained joint pipe

8" DR18 C900

American Darling RH Assembly - Survey

DAILY CONSTRUCTION INSPECTION REPORT

Date: 9/8/17

City Project Number: 2060PPW NW water Treatment Plant
COT MACH

KEM Proj. Number: 17-172

Contractor: Wilks

Inspector: Tom Jones

Weather: Clear

Construction Activities:

WC Sta 0+00 line #1
City tap crew started tap on 36"
water line. Gasket failed. Stop
tap. Reschedule when parts
available.

Contractor's Material and Test Certificate for Underground Piping

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

Property Name: Cox Machine Date: 10-4-17
Property Address: 5339 W 21st N

Plans	Accepted by approving authorities (names) <u>KE Miller</u>	
	Address <u>117 E Lewis</u>	
	Installation conforms to accepted plans	☒ Yes ☐ No
	Equipment used is approved	☒ Yes ☐ No
If no, state deviations _____		
Instructions	Has person in charge of fire equipment been instructed as to location of control valves and care and maintenance of this new equipment? ☐ Yes ☐ No	
	If no, explain _____	
	Have copies of appropriate instructions and care and maintenance charts been left on the premises? ☐ Yes ☐ No	
	If no, explain _____	
Location	Supplies buildings <u>Only Hydrant</u>	
Underground pipes and joints	Pipe types and class <u>C-900</u>	Type joint <u>Gasket</u>
	Pipe conforms to <u>NFPA 24</u>	standard ☒ Yes ☐ No
	Fittings conform to _____	standard ☐ Yes ☐ No
	If no, explain _____	
	Joints needed anchorage clamped, strapped, or blocked in in accordance with _____ standard ☐ Yes ☐ No	
	If no, explain _____	

Test description	Flushing: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags at outlets such as hydrants and blow-offs. Flush at flows not less than 390 gpm (1476 L/min) for 4 in. pipe, 880 gpm (3331 L/min) for 6 in. pipe, 1560 gpm (5905 L/min) for 8 in. pipe, 2440 gpm (9235 L/min) for 10 in. pipe, and 3520 gpm (13,323 L/min) for 12 in. pipe. When supply cannot produce stipulated flow rates, obtain maximum available. Hydrostatic: All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at 200 psi (13.8 bar) or 50 psi (3.4 bar) in excess of the system working pressure, whichever is greater and shall maintain that pressure ± 5 psi for 2 hours. Hydrostatic Testing Allowance: Where additional water is added to the system to maintain the test pressures required by 10.10.2.2.1, the amount of water shall be measured and shall not exceed the limits of the following equation (for metric equation, see 10.10.2.2.4): $L = \frac{SD\sqrt{P}}{148,000}$ L = testing allowance (makeup water), in gallons per hour S = length of pipe tested, feet D = nominal diameter of the pipe, in inches P = Average test pressure during the hydrostatic test, in pounds per square inch									
Flushing tests	New underground piping flushed according to _____ ☒ Yes ☐ No standard by (company) _____ If no, explain _____ <table border="1" data-bbox="414 913 1323 1060"> <thead> <tr> <th data-bbox="414 913 982 976">How flushing was obtained</th> <th data-bbox="982 913 1323 976">Through what type opening</th> </tr> </thead> <tbody> <tr> <td data-bbox="414 976 982 1060"> ☒ Public water ☐ Tank or reservoir ☐ Fire pump </td> <td data-bbox="982 976 1323 1060"> ☐ Hydrant butt ☐ Open pipe </td> </tr> </tbody> </table> Lead-ins flushed according to _____ standard by _____ ☐ Yes ☐ No If no, explain _____ <table border="1" data-bbox="414 1186 1323 1344"> <thead> <tr> <th data-bbox="414 1186 982 1249">How flushing was obtained</th> <th data-bbox="982 1186 1323 1249">Through what type opening</th> </tr> </thead> <tbody> <tr> <td data-bbox="414 1249 982 1344"> ☐ Public water ☐ Tank or reservoir ☐ Fire pump </td> <td data-bbox="982 1249 1323 1344"> ☐ Y connection to flange and spigot ☐ Open pipe </td> </tr> </tbody> </table>		How flushing was obtained	Through what type opening	☒ Public water ☐ Tank or reservoir ☐ Fire pump	☐ Hydrant butt ☐ Open pipe	How flushing was obtained	Through what type opening	☐ Public water ☐ Tank or reservoir ☐ Fire pump	☐ Y connection to flange and spigot ☐ Open pipe
How flushing was obtained	Through what type opening									
☒ Public water ☐ Tank or reservoir ☐ Fire pump	☐ Hydrant butt ☐ Open pipe									
How flushing was obtained	Through what type opening									
☐ Public water ☐ Tank or reservoir ☐ Fire pump	☐ Y connection to flange and spigot ☐ Open pipe									
Hydrostatic test	<table border="1" data-bbox="414 1354 1323 1480"> <thead> <tr> <th data-bbox="414 1354 982 1417">All underground piping hydrostatically tested at</th> <th data-bbox="982 1354 1323 1417">Joints covered</th> </tr> </thead> <tbody> <tr> <td data-bbox="414 1417 982 1480"> 200 psi For 2 hours </td> <td data-bbox="982 1417 1323 1480"> ☒ Yes ☐ No </td> </tr> </tbody> </table>		All underground piping hydrostatically tested at	Joints covered	200 psi For 2 hours	☒ Yes ☐ No				
All underground piping hydrostatically tested at	Joints covered									
200 psi For 2 hours	☒ Yes ☐ No									

Leakage test	Total amount of leakage measured			
	_____	_____ hours		
	Allowable leakage			
	_____	_____ hours		
Hydrants	Number installed	Type and make	All operate satisfactorily	
	<u>1</u>	<u>American Darling</u>	☐ Yes ☐ No	
Control valves	Water control valves left wide open		☐ Yes ☒ No	
	If no, state reason			
	<u>Waiting on Water Quality test</u>			
Remarks	Hose threads of fire department connections and hydrants interchangeable with those of fire department answering alarm		☐ Yes ☐ No	
	Date left in service			
Signatures	Name of installing contractor			
	<u>Wilks Underground</u>			
	Tests witnessed by			
	For property owner (signed)	Title	Date	
	For installing contractor (signed)	Title	Date	
	<u>[Signature]</u>		<u>10-4-17</u>	

Additional explanation and notes:

200th Test
Wichita Fire 10/4/17

[Signature]



Pipelife Jet Stream, Inc.
P.O. Box 190
1700 S. Lincoln Street
Siloam Springs, AR 72761
Tel: 479-524-5151
Fax: 479-524-5464

To Whom It May Concern:

This letter is to certify that all PipeLife Jet Stream, Inc. blue C900 gasket pipe is produced and tested in accordance with and meets or exceeds the requirement of AWWA C900. Our C900 pressure pipe of potable water carries the NSF Standard 61, the Underwriters Laboratories, Inc. Standard 1285 and the Factory Mutual Research Water Distribution Pipe for Underground Fire Protection Service marks of acceptance.

The UL pressure rating for DR14 is 305 PSI at 73° Fahrenheit, the FM pressure rating for DR 14 is 200 PSI at 73° Fahrenheit.

The UL pressure rating for DR 18 is 235 PSI at 73° Fahrenheit, the FM pressure rating for DR 18 is 150 PSI at 73° Fahrenheit.

The material used is ASTM D1784 PVC 1120 with a cell class 12454. The gasket bell on this pipe meets or exceeds the requirements of ASTM D3139; the gasket itself meets or exceeds the requirements of ASTM F477.

Sincerely,

Travis Snow
Technical Service Manager
PipeLife Jet Stream, Inc.



APPROVED

Certificate of Compliance

POLYVINYL CHLORIDE (PVC) PIPE

Product Designation	Nominal Pipe Size, in.	Pressure Rating, psi (kPa)	Remarks
AWWA C900 Pipe DR18 PC 150	4, 6, 8, 10, 12	150 (1035)	a
AWWA C900 Pipe DR14 PC 200	4, 6, 8, 10, 12	200 (1380)	a

Remarks:

a. Pipe lengths are joined by single-gasketed bell and spigot joints and are joined to valves or fittings having bell or standardized mechanical joint connections.

Manufactured by:

Pipelife Jet Stream Inc.
1700 S. Lincoln Street
Silvaco Springs, AR 72761

FM Approvals confirms that the pipe shown above has been found to comply with the following standard:

FM Approval Standard 1612, dated November 1999

Project Identifier: 3035480
Project Identifier: 3027281

Date of Approval: June 10, 2009
Date of Approval: October 5, 2006



Member of the FM Global Group

Richard B. Dunne

Richard B. Dunne, Manager, Hydraulics Group

Date *June 12, 2009*



C900

PipeLife Jetstream manufactures AWWA C900 product family which includes 4" to 12" C.I OD pipes. AWWA C900 standards include all specifications relating to the production and testing of C900 pipes. In three pressure ratings of DR25, DR 18 and DR25.

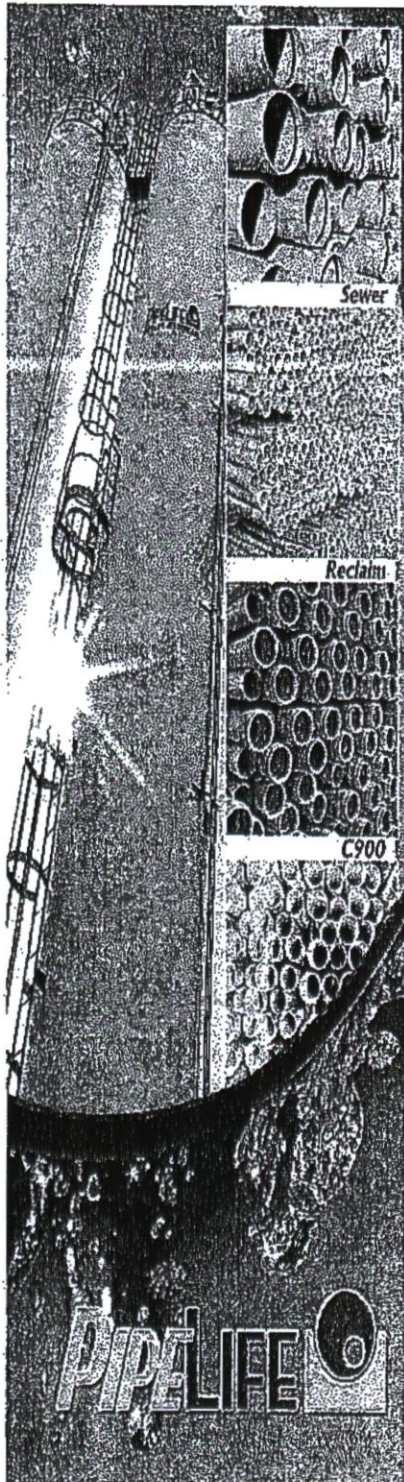
Our C900 is suitable for the transmission and distribution of water. PipeLife Jetstream carries various certifications from NSF International (NSF), Underwriters Laboratories (UL) and Factory Mutual (FM).

PipeLife Jetstream uses compound according to ASTM D1784—12454 as well as integral gasket joints according to ASTM F477 and ASTM D3139. To aid in the installation of PipeLife Jetstream's C900, each spigot end is beveled and includes a depth mark for insertion guidance.

12454 (Type 1, Grade 1, PVC 1120) Material

DR 18 Pressure Ratings are: **UL 235 PSI** and **FM 150 PSI** both at 73.4 degrees

Size	Outside Diameter	Minimum Wall Thickness	Weight LBS/Foot	Pieces per Pallet	Order Units	*Optional Colors
4	4.800	0.267	2.55	36	2.4	Yes
6	6.900	0.383	5.29	18	3	Yes
8	9.050	0.503	9.15	10	2.4	Yes
10	11.100	0.617	13.82	4	2	Yes
12	13.200	0.733	19.56	4/3	4	Yes



Limited One ¹ Year Warranty

All PipeLife Jet Stream Inc. products are warranted to be free from defects in material and workmanship.

The extent of PipeLife Jet Stream Inc.'s obligation under the warranty is the replacement of such product deemed to be defective if it or a representative portion thereof is returned to PipeLife Jet Stream Inc. (Siloam Springs, Arkansas), transportation prepaid, and proves to be defective within the terms of the warranty. PipeLife Jet Stream Inc. will provide such replacement product at the original point of delivery.

The duration of the warranty and of any implied warranty is one year from the date of shipment by PipeLife Jet Stream Inc. Under no circumstances will PipeLife Jet Stream Inc. be liable for any incidental or consequential damages resulting from the use of this product.



P.O. BOX 190
SILOAM SPRINGS, ARKANSAS 72761

17SB0277

Bond No. S425699

PRIVATE CONTRACT STATUTORY BOND

K.S.A. 60-1111

COPY

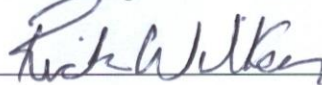
Project Title Northwest Water Treatment Plant Addition - 5339 W. 21st NorthProject Number PPW 2060

KNOW ALL MEN BY THESE PRESENTS: That we Wilks Underground Utilities LLC
of Wichita, Kansas,
as Principal and Employers Mutual Casualty Company,
as Surety, are well and firmly bound unto the State of Kansas, in the penal sum of
Seven Thousand, three hundred Dollars (\$ 7,300.00), lawful
money of the United States of America for the payment of which we and each of us jointly
and severally bind ourselves, our heirs, executors, administrators, successors and
assigns firmly by these presents. The conditions of this obligation are such, that,

WHEREAS, the said above bonded Wilks Underground Utilities LLC,
as Principal herein, did on the 1st day of August, 2017,
enter into a Contract with Evans Construction
to furnish all labor, material and equipment necessary and to construct public works
improvements in public right-of-way as provided by plans on file with the City Engineer
of Wichita, Kansas and in accordance with applicable City of Wichita Standard
Specifications; which said Contract, Plans, and Specifications are hereby referred to and
made a part of this obligation.

NOW, THEREFORE, if the said Wilks Underground Utilities LLC
shall pay all indebtedness incurred for supplies, materials of labor furnished or
consumed in connection with the construction of said improvements, then the above
obligation shall be null and void, otherwise to remain in full force and effect.

IN TESTIMONY WHEREOF, THE SAID principal and the said Surety have hereunto set
their hands and seals this 6th day of September,
2017.

Wilks Underground Utilities LLC

Principal

(SEAL)

FILED
APP DOCKET NO.
2017 SEP 7 AM 10 32
CLERK OF DIST COURT
18TH JUDICIAL DISTRICT
SEDGWICK COUNTY, KS

BY

By

Brad Cartwright

Attorney in Fact

Employers Mutual Casualty Company

Surety

NOTE: Attach Power of Attorney.

/tm(01/05)

Bond No. S425699

PRIVATE CONTRACT PERFORMANCE AND MAINTENANCE BOND

Project Title Northwest Water Treatment Plant Addition - 5339 W. 21st North

Project Number PPW 2060

KNOW ALL MEN BY THESE PRESENTS: That we Wilks Underground Utilities LLC of

Wichita, Kansas, as Principal and Employers Mutual Casualty Company, as Surety, are well and firmly bound unto the City of Wichita, Kansas, in the penal sum of Seven Thousand, Three hundred Dollars (\$ 7,300.00), lawful money of the United States of America for the payment of which we and each of us jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns firmly by these presents. The conditions of this obligation are such, that,

WHEREAS, the said Wilks Underground Utilities LLC, as Principal herein, did on the 1st day of August, 2017, enter into a Contract with Evans Construction, to furnish all labor, and material for, and to construct, public works improvements in public right-of-way as provided by plans on file with the City Engineer of Wichita, Kansas and in accordance with applicable City of Wichita Standard Specifications; which said Contract, Plans, and Specifications are hereby referred to and made a part of this obligation.

NOW, THEREFORE, if the said Wilks Underground Utilities LLC, Principal herein, shall well and truly perform said Contract in the time and manner designated therein and faithfully comply with the warranties and guaranties therein and shall hold said City harmless from all damages and costs said City may be liable for by reason of negligence of said Principal in the construction of said work and shall do all things required to be done and performed under said Contract, including the maintenance of subject property for a period of two (2) years from the date of acceptance by said City, then this obligation shall be null and void; otherwise to be in full force and effect.

IN TESTIMONY WHEREOF, THE SAID principal and the said Surety have hereunto set their hands and seals this 6th day of September, 2017.

Wilks Underground Utilities LLC

By _____ Principal

Name of Surety Company Employers Mutual Casualty Company Surety

By Brad Cartwright Attorney in Fact

NOTE: Attach Power of Attorney

BL/(12-10)

**CERTIFICATE OF AUTHORITY INDIVIDUAL ATTORNEY-IN-FACT****KNOW ALL MEN BY THESE PRESENTS, that:**

1. Employers Mutual Casualty Company, an Iowa Corporation
2. EMCASCO Insurance Company, an Iowa Corporation
3. Union Insurance Company of Providence, an Iowa Corporation
4. Illinois EMCASCO Insurance Company, an Iowa Corporation

5. Dakota Fire Insurance Company, a North Dakota Corporation
6. EMC Property & Casualty Company, an Iowa Corporation
7. Hamilton Mutual Insurance Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint:
 CHARLES J. CHAPPLE, BRAD CARTWRIGHT, SHARYL BECKWITH, CINDY VAN BUREN, NATALIE POOL, MONICA OKON

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute its lawful bonds, undertakings, and other obligatory instruments of a similar nature as follows:

In an amount not exceeding Ten Million Dollars.....\$10,000,000.00

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

AUTHORITY FOR POWER OF ATTORNEY

This Power-of-Attorney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at a regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof; and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be fully and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS THEREOF, the Companies have caused these presents to be signed for each by their officers as shown, and the Corporate seals to be hereto affixed this

14th day of FEBRUARY, 2017.

Seals



Bruce G. Kelley
 Bruce G. Kelley, Chairman
 of Companies 2, 3, 4, 5 & 6; President
 of Company 1; Vice Chairman and
 CEO of Company 7

Todd Strother
 Todd Strother
 Vice President

On this 14th day of FEBRUARY AD 2017 before me
 a Notary Public in and for the State of Iowa, personally appeared Bruce G. Kelley and
 Todd Strother, who, being by me duly sworn, did say that they are, and are known to me to be the
 Chairman, President, Vice Chairman and CEO, and/or Vice President, respectively, of each of
 The Companies above; that the seals affixed to this instrument are the seals of said corporations;
 that said instrument was signed and sealed on behalf of each of the Companies by authority
 of their respective Boards of Directors; and that the said Bruce G. Kelley and Todd Strother, as
 such officers, acknowledged the execution of said instrument to be the voluntary act and deed
 of each of the Companies.

My Commission Expires October 10, 2019.

Kathy Loveridge
 Notary Public in and for the State of Iowa

CERTIFICATE

I, James D. Clough, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies,
 and this Power of Attorney issued pursuant thereto on FEBRUARY 14, 2017 on behalf of:
 CHARLES J. CHAPPLE, BRAD CARTWRIGHT, SHARYL BECKWITH, CINDY VAN BUREN, NATALIE POOL, MONICA OKON

are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of
 each Company this 4th day of September, 2017.

[Signature] Vice President