



Brett Biesemeyer, P.E.  
Guernsey  
5555 N. Grand Blvd, #100  
Oklahoma City, OK 73112

**SUBJ:** Salt Creek Tunnel Pricing

Mr. Bessimeyer:

Attached to this correspondence you will find the requested pricing for the installation of 84" steel casing by hand mined methods under Salt Creek in order to lower the existing 60" PCCP Atoka Waterline in order to eliminate the exposure that currently exists. This is attached as "Exhibit A". Additionally, while exploring options to minimize the cost of this action we examined potential opportunities for Oklahoma City Water Utilities Trust ("OCWUT") to minimize the cost.

As we've discussed on several occasions, the utilization of the grouted rip rap on this project is excessive and exceptionally expensive. McKee Utility Contractors, LLC ("McKee") in conjunction with our suppliers and subcontractors have identified a potentially significant cost savings through the utilization of alternative materials that we believe could be utilized in order achieve the same outcome at a lower cost that would result in a credit to the city.

McKee would like to propose Flexamat as an alternative solution for the areas that specify the utilization of grouted rip rap. McKee believes that substituting Flexamat for the specified rip rap would provide significant benefits in terms of constructability, which would result in an ability to extend a credit offering to OCWUT while maintaining equivalent performance.

Flexamat is a high-performance, flexible concrete mat system that offers a durable and environmentally friendly erosion control solution. Unlike traditional grouted rip rap, Flexamat is pre-manufactured, reducing installation time and labor costs. Additionally, it provides superior stability while allowing for vegetation growth, which enhances the aesthetics and environmental sustainability of the project. The interlocking concrete block design minimizes the potential for washout and displacement, ensuring long-term protection with reduced maintenance requirements.

When factoring in the material and labor savings presented by transitioning from the grouted in rip rap to the Flexamat, McKee is able to extend a cost savings credit of **\$200,000** to the project if Flexamat is selected in lieu of the currently specified rip rap. This credit presents a substantial value proposition, helping to optimize project budgets while delivering an equally—if not more—effective erosion control solution. Product information on the proposed Flexamat is attached to this correspondence as "Exhibit B".

We would welcome the opportunity to further discuss this proposal, provide supporting technical data, and coordinate any necessary evaluations to demonstrate Flexamat's suitability for this application. Thank you for your time and consideration.

Best regards,

*Taylor Medlin*  
**Taylor Medlin**

Senior Project Manager  
McKee Utility Contractors, LLC

2319 W. Main Street  
Prague, OK 74864

# Exhibit A

Date: 4-Mar-25 Work Authorization Number: \_\_\_\_\_  
Project Name: WC-0877 Atoka Pipeline Raw Water Transmission Line Konawa Pump Station to 1.44 Miles West of SH-3W  
Location: Konawa, OK

Owner: OCWUT  
Engineer: Guernsey  
Contractor: MCKEE UTILITY CONTRACTORS, INC.  
Description of Work: Cost analysis to install 160 LF of 86" Steel Casing under Salk Creek and lower the existing 60" Atoka PCCP line.

Owner's Tracking Number: \_\_\_\_\_  
Engineer's Tracking Number: \_\_\_\_\_  
Contractor's Tracking Number: CMR - 001

#### Labor Costs

Description	Weeks	Week Rate	Subtotal	N/A	N/A	Subtotal	Subsistence	Burden	Subtotal
Operations Manager	1.0	\$3,500.00	\$3,500.00				\$1,025.00	\$1,575.00	\$6,100.00
Superintendent	2.0	\$5,000.00	\$10,000.00				\$2,050.00	\$4,500.00	\$16,550.00
Project Manager	0.5	\$2,500.00	\$1,250.00				\$0.00	\$562.50	\$1,812.50
Project Engineer	0.0	\$5,000.00	\$0.00				\$0.00	\$0.00	\$0.00
Description	RG Hours	RG Rate/Hr	Subtotal	OT Hours	OT Rate/Hour	Subtotal	Subsistence	Burden	Subtotal
Payroll Administrator	5.0	\$20.00	\$100.00	0.0	\$30.00	\$0.00	\$0.00	\$45.00	\$145.00
Foreman	80.0	\$45.00	\$3,600.00	40.0	\$67.50	\$2,700.00	\$2,000.00	\$2,835.00	\$11,135.00
Main Line Excavator Operator	80.0	\$40.00	\$3,200.00	40.0	\$60.00	\$2,400.00	\$2,000.00	\$2,520.00	\$10,120.00
Support Excavator Operator	40.0	\$35.00	\$1,400.00	0.0	\$52.50	\$0.00	\$875.00	\$630.00	\$2,905.00
Loader Operator	80.0	\$30.00	\$2,400.00	40.0	\$45.00	\$1,800.00	\$1,750.00	\$1,890.00	\$7,840.00
Pipe Layer	80.0	\$26.00	\$2,080.00	40.0	\$39.00	\$1,560.00	\$1,750.00	\$1,638.00	\$7,028.00
Top Man	80.0	\$30.00	\$2,400.00	40.0	\$45.00	\$1,800.00	\$1,500.00	\$1,890.00	\$7,590.00
Laborer	240.0	\$25.00	\$6,000.00	160.0	\$37.50	\$6,000.00	\$3,750.00	\$5,400.00	\$21,150.00
Pipe layer helper	80.0	\$22.00	\$1,760.00	40.0	\$33.00	\$1,320.00	\$1,500.00	\$1,386.00	\$5,966.00
Mechanic & Truck	0.0	\$125.00	\$0.00	0.0	\$187.50	\$0.00	\$0.00	\$0.00	\$0.00
Fuel/Lub Man	0.0	\$25.00	\$0.00	0.0	\$37.50	\$0.00	\$0.00	\$0.00	\$0.00
CDL Truck Driver	35.0	\$35.00	\$1,225.00	0.0	\$52.50	\$0.00	\$0.00	\$551.25	\$1,776.25
Labor Costs Subtotal									\$100,117.75

#### Equipment Costs

Description	Hours	Rate/Hour	Total
KOM-PC490LC	0.0	\$222.43	\$0.00
CAT-345D L	0.0	\$177.26	\$0.00
CAT-730 Articulated Truck	0.0	\$110.31	\$0.00
CAT-950m Loader	50.0	\$85.21	\$4,260.50
CAT-390 EX	40.0	\$310.43	\$12,417.20
Shoring (2) (Month)	0.0	\$3,300.00	\$0.00
Super - Truck (1)	120.0	\$16.84	\$2,020.80
Shoring (5)	360.0	\$20.00	\$7,200.00
Light Plant (4)	0.0	\$15.00	\$0.00
Sweeper	0.0	\$15.00	\$0.00
Dodge Ram 3500	120.0	\$26.52	\$3,182.40
Gooseneck Trailer	0.0	\$13.60	\$0.00
Fuel Truck	0.0	\$27.24	\$0.00
Steel Trench Plates (8) 52,004#	960.0	\$8.00	\$7,680.00
Compressor 195 CFM	0.0	\$8.35	\$0.00
Water Truck	30.0	\$34.95	\$1,048.50
CAT-390 EX (Stand-by)	80.0	\$79.99	\$6,399.20
KOM - PC490LC (Stand-by)	0.0	\$61.77	\$0.00
CAT-950K Loader (Stand-by)	70.0	\$27.55	\$1,928.50
Water Truck (Stand-by)	0.0	\$7.04	\$0.00
CAT-D6 Dozer	25.0	\$134.99	\$3,374.75
CP-44 Compactor	0.0	\$55.17	\$0.00
Bedding Box	60.0	\$10.00	\$600.00
KOM - PC138	0.0	\$72.27	\$0.00
CAT- 289 Skid Steer	25.0	\$42.23	\$1,055.75
Equipment Cost Subtotal			\$51,167.60

#### Material Cost

Quantity	Description	Unit cost	Amount
160	LF of 84" Steel Casing Pipe (0.875)	\$ 920.00	\$147,200.00
1	LS 60" CL 225 Pipe (180 LF Poly Co	\$233,616.00	\$233,616.00
2	Internal Joint Seals	\$ 18,000.00	\$36,000.00
2	Tunnel Shafts	\$ 85,000.00	\$170,000.00
10	Joint Heat Shrink Sleeves	\$ 650.00	\$6,500.00
1	LS Tunnel Drain/Slick Line	\$ 550.00	\$550.00
2	EA 60" Dia Butt Straps	\$ 3,500.00	\$7,000.00
		\$ -	\$0.00
		\$ -	\$0.00
Material Cost Subtotal			\$600,866.00

#### Subcontractor Cost

Quantity	Description	Unit cost	Amount
1	Subcontractor Mobilization	\$ 25,000.00	\$25,000.00
160	LF of 84" Steel Casing Installed	\$ 3,350.00	\$536,000.00
10	EA - Pipe Welds	\$ 850.00	\$8,500.00
10	EA - Pipe Weld Tests	\$ 120.00	\$1,200.00
160	LF of Tunnel Grouting	\$ 220.00	\$35,200.00
1	LS Dewatering Subcontractor	\$ 35,000.00	\$35,000.00
		\$ -	\$0.00
		\$ -	\$0.00
		\$ -	\$0.00
		\$ -	\$0.00
		\$ -	\$0.00
		\$ -	\$0.00
		\$ -	\$0.00
		\$ -	\$0.00
Subtotal			\$640,900.00

#### Miscellaneous Costs

Description	% of Labor Subtotal	Subtotal
Small Tools and Supplies	2%	\$2,002.36
Safety Supplies	2%	\$2,002.36
Traffic Signs & Barricades	0%	\$0.00
Miscellaneous Costs Subtotal		\$4,004.71

#### Extra Work Cost Summary

Labor Costs Subtotal	\$100,117.75
Equipment Costs Subtotal	\$51,167.60
Material Subtotal	\$600,866.00
15% - O&P	\$112,822.70
Subtotal PC	\$864,974.05
Subcontractor Cost	\$640,900.00
5% Commission	\$32,045.00
Subtotal PC	\$672,945.00
Miscellaneous Costs Subtotal	\$4,004.71
Credit for Flexamat Install in Lieu of Grouted Rip Rap Ammdment	(\$200,000.00)
Subtotal	\$1,341,923.76
1% - Bond & Ins.	\$13,419.24
Total	\$1,355,343.00

#### Contract Duration Extension

Contract Extension (days) resulting from extra work performed 60

# Exhibit B

# Flexamat Plus Specification

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## 1. DESCRIPTION

A Tied Concrete Block Mat with Triple Layered Underlayment. This work shall consist of furnishing and placing the system in accordance with this specification and conforming with the lines, grades, design, and dimensions shown on the plans.

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## 2. MATERIALS

Flexamat Plus is manufactured from individual concrete blocks tied together with high strength knitted polypropylene bi-axial geogrid. Each block is tapered, beveled and interlocked and includes connections that prevent lateral displacement of the blocks within the mats when they are lifted for placement.

Tied Concrete Block Mats with Triple Underlayment shall be Flexamat Plus, manufactured by Motz Enterprises, Inc.

- 2.1. **Blocks.** Furnish blocks manufactured with concrete conforming to the cement requirements of ASTM C150 and to the aggregate requirements of ASTM C33. Blocks shall have a minimum weight of 3 lb. per block and placed no further than 2 in. apart. Material weight per square foot shall not exceed 10 lbs. Blocks shall have a 2.25" profile, a flat-top pyramid shape, and a coarse finish without protrusions. Concrete shall have a minimum compressive strength requirement of Table1 and certified by a third party.

Table 1  
Concrete Compressive Strength Requirements

Age	Required Compressive Strength psi
7 - Day	5000 psi
14 - Day	6000 psi
28 - Day	6900 psi

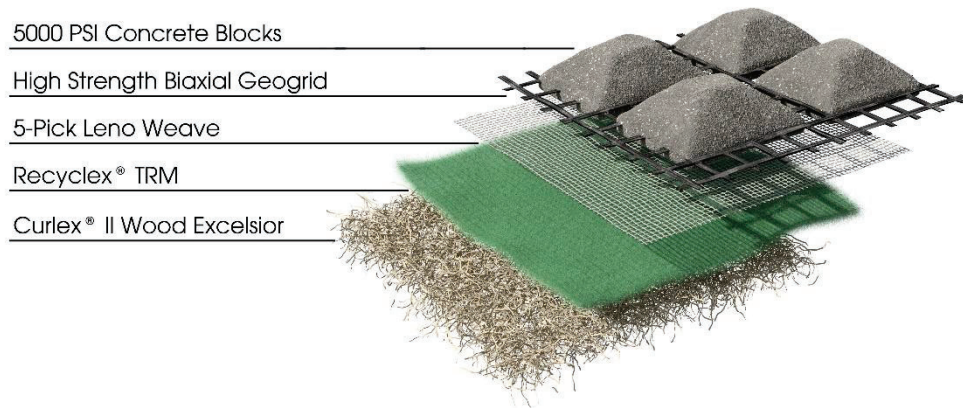
- 2.2. **Polypropylene Bi-Axial Geogrid.** The interlocking geogrid shall be an open knitted fabric composed of high tenacity, multifilament polypropylene yarns knitted and coated in tension with an acrylic based coating which is designed to resist degradation in environments with exposure to water and low pH (<4 pH) and high pH (>9 pH). When combined with the revetment mat, this will yield a high tenacity, low elongating, and continuous filament polypropylene geogrid that is embedded within the base of the concrete blocks. Ensure the geogrid meets the requirements of Table 2.

**Table 2**  
**Polypropylene Bi-Axial Geogrid**

Property	Unit	Test	Requirement
Mass/Unit Area	oz/yd <sup>2</sup>	ASTM D5261	6.5 oz/yd <sup>2</sup>
Aperture Size	English units	Measured	1.4x 1.4 inch
Ultimate Wide Width Tensile Strength (MD x CMD)	lb/ft	ASTM D6637	2,055 lb/ft
Elongation at Ultimate Tensile Strength (MD x CMD)	%	ASTM D6637	6%
Wide Width Tensile Strength @ 2% (MD x CMD)	lb/ft	ASTM D6637	822 lb/ft
Wide Width Tensile Strength @ 5% (MD x CMD)	lb/ft	ASTM D6637	1,640 lb/ft
Tensile Modulus @ 2% (MD x CMD)	lb/ft	ASTM D6637	41,100 lb/ft
Tensile Modulus @ 5% (MD x CMD)	lb/ft	ASTM D6637	32,800 lb/ft

2.3.

**Underlayment Materials.** A four-layered system includes, in order from top to bottom, 1) Concrete block mat 2) 5-Pick Leno Weave 3) Recyclex TRM-V and 4) Curlex® II. The underlayment materials shall be packaged within the roll of the Flexamat Plus.



**Five-Pick Leno Weave:**

This Five-Pick Weave provides added strength and support to the underlayments.

<b><u>Index Property</u></b>	<b><u>Units</u></b>	<b><u>Value</u></b>
GSM	g/m <sup>2</sup>	118 (-3 ~ +3)
Density	Picks/10cm	62 x 24 (+/- 2)
Warp Strength	N/5cm	≥ 350
Warp Elongation	%	20 - 50
Weft Strength	N/5cm	≥ 280
Weft Elongation	%	20 - 50
Warp Shrinkage	%	≤ 7
Weft Shrinkage	%	≤ 9

**Recyclex® TRM:**

Recyclex TRM – V is a permanent non-degradable Turf Reinforcement Mat (TRM), consists of 100% post-consumer recycled polyester (green or brown bottles) with 80% five-inch fibers or greater fiber length. It is of consistent thickness with fibers evenly distributed throughout the entire area of the TRM. The top and bottom of each TRM is covered with heavy duty polypropylene net. Fibers are tightly crimped and curled to allow fiber interlock, and to

retain 95% memory of the original shape after loading by hydraulic events. Fibers have a specific gravity greater than 1.0; therefore, the blanket will not float during hydraulic events. Recyclex TRM – V meets Federal Government Executive Order initiatives for use of products made from, or incorporating, recycled materials. Recyclex TRM – V shall be manufactured in the U.S.A. and the fibers shall be made from 100% recycled post-consumer goods.

<b><u>Index Property</u></b>	<b><u>Test Method</u></b>	<b><u>Value</u></b>
Thickness	ASTM D 6525	0.294 in (7.47 mm)
Light Penetration	ASTM D 6567	57%
Resiliency	ASTM D 6524	86%
Mass per Unit Area	ASTM D 6566	0.50 lb/yd <sup>2</sup> (271 g/m <sup>2</sup> )
MD-Tensile Strength Max.	ASTM D 6818	295.2 lb/ft (4.32 kN/m)
TD-Tensile Strength Max.	ASTM D 6818	194.4 lb/ft (2.85 kN/m)
MD-Elongation	ASTM D 6818	32.2%
TD-Elongation	ASTM D 6818	40.8%
Swell	ECTC Procedure	8%
Water Absorption	ASTM D 1117/ECTC	33.8%
Specific Gravity	ASTM D 792	1.21
UV Stability	ASTM D 4355 (1,000 hr)	80% minimum
Porosity	Calculated	97.5%
Bench-Scale Rain Splash	ECTC Method 2	SLR = 5.86 @ 2 in/hr <sup>1,2</sup>
Bench-Scale Rain Splash	ECTC Method 2	SLR = 5.00 @ 4 in/hr <sup>1,2</sup>
Bench-Scale Rain Splash	ECTC Method 2	SLR = 6.33 @ 6 in/hr <sup>1,2</sup>
Bench-Scale Shear	ECTC Method 3	2.41 lb/ft <sup>2</sup> @ 0.5 in soil loss <sup>2</sup>
Germination Improvement	ECTC Method 4	432%

<sup>1</sup> SLR is the Soil Loss Ratio, as reported by NTPEP/AASHTO. <sup>2</sup> Bench-scale index values should not be used for design purposes

#### **Curlex® II:**

Curlex II erosion control blanket (ECB) consists of a specific cut of naturally seed free Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It is of consistent thickness with fibers evenly distributed throughout the entire area of the blanket. The top and bottom of each blanket is covered with degradable polypropylene netting.

<b><u>Index Property</u></b>	<b><u>Test Method</u></b>	<b><u>Value</u></b>
Thickness	ASTM D 6525	0.418 in (10.62 mm)
Light Penetration	ASTM D 6567	34.6%
Resiliency	ASTM D 6524	64%
Mass per Unit Area	ASTM D 6475	0.57 lb/yd <sup>2</sup> (309 g/m <sup>2</sup> )
MD-Tensile Strength Max.	ASTM D 6818	127.0 lb/ft (1.9 kN/m)
TD-Tensile Strength Max.	ASTM D 6818	50.9 lb/ft (0.7 kN/m)
MD-Elongation	ASTM D 6818	28.64%
TD-Elongation	ASTM D 6818	29.84%
Swell	ECTC Procedure	89%
Water Absorption	ASTM D 1117/ECTC	199%
Bench-Scale Rain Splash	ECTC Method 2	SLR = 6.84 @ 2 in/hr <sup>2,3</sup>
Bench-Scale Rain Splash	ECTC Method 2	SLR = 7.19 @ 4 in/hr <sup>2,3</sup>
Bench-Scale Rain Splash	ECTC Method 2	SLR = 7.56 @ 6 in/hr <sup>2,3</sup>
Bench-Scale Shear	ECTC Method 3	2.6 lb/ft <sup>2</sup> @ 0.5 in soil loss <sup>3</sup>
Germination Improvement	ECTC Method 4	645%

<sup>1</sup> Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen excelsior is 22%.

<sup>2</sup> SLR is the Soil Loss Ratio, as reported by NTPEP/AASHTO. <sup>3</sup> Bench-scale index values should not be used for design purposes.

- 2.4. Mats will be rolled for shipment. Upon delivery, rolls may be left exposed for up to 30 days. If exposure will exceed 30 days, cover or tarp the rolls to minimize UV exposure.

Chipping or missing concrete resulting in a weight loss exceeding 15% of the average weight of a concrete unit is grounds for rejection by the engineer. Replace, repair or patch the damaged areas per the manufacturer's recommendations.

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### 3. PERFORMANCE

Full-Scale laboratory testing performed by an independent 3<sup>rd</sup> party testing facility with associated engineered calculations certifying the hydraulic capacity of the proposed Tied-Concrete Block Erosion Control Mat meets the following requirements:

Test	Tested Value	Bed Slope	Soil Classification	Limiting Value
ASTM 6460	Shear Stress	30%	Sandy Loam (USDA)	24lb./ft <sup>2</sup>
ASTM 6460	Velocity	20%	Loam (USDA)	30 ft./sec

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### 4. ALTERNATIVE PRODUCTS

Such products must be pre-approved in writing by the Engineer prior to bid date. Alternative product packages must be submitted to the Engineer a minimum of fifteen (45) days prior to bid date. Submittal packages for alternate products must include, as a minimum, the following:

- 4.1. Alternative Product Properties – Product must be comprised of materials as detailed in Section 2, including both in composition, underlayment layers and performance requirements.
- 4.2. Full-Scale laboratory testing performed by an independent 3<sup>rd</sup> party testing facility with associated engineered calculations certifying the hydraulic capacity of the proposed Tied-Concrete Block Erosion Control Mat meets the performance requirements listed in Section 3 of this specification.
- 4.3. A list of 15 comparable projects in terms of project size, application and material dimensions in the United States, where the results of the specific alternative material's use can be verified and reviewed for system integrity and sustained after a minimum of 10 years of service life.

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### 5. EQUIPMENT

Provide the proper equipment to place the mat that will not damage the mat material or disturb the topsoil subgrade and seed bed.

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### 6. CONSTRUCTION

Prior to installing Flexamat Plus, prepare the subgrade as detailed in the plans. All subgrade surfaces to be smooth and free of all rocks, stones, sticks, roots, and other protrusions or debris of any kind that would result in an individual block being raised more than 3/4 in. above the adjoining blocks. When seeding is shown on the plans, provide subgrade material that can sustain growth.

Ensure the prepared subgrade provides a smooth, firm, and unyielding foundation for the mats. The subgrade shall be graded into a parabolic or trapezoidal shape to concentrate flow to middle of mat or mats.

When vegetation is required, distribute seed on the prepared topsoil subgrade before installation of the concrete mats in accordance with the specifications.



Install mats to the line and grade shown on the plans and per the manufacturer's guidelines. The manufacturer or authorized representative will provide technical assistance during preparation and installation of the concrete block mats as needed.

Provide a minimum 18 in. deep concrete mat embedment toe trench at all edges exposed to concentrated flows. Recess exterior edges subject to sheet flow a minimum of 6 in.

Provide fastening or anchoring as recommended by the manufacturer or engineer for the site conditions.

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**7. MEASUREMENT**

This Item will be measured by the square foot as shown on the plans, complete in place.

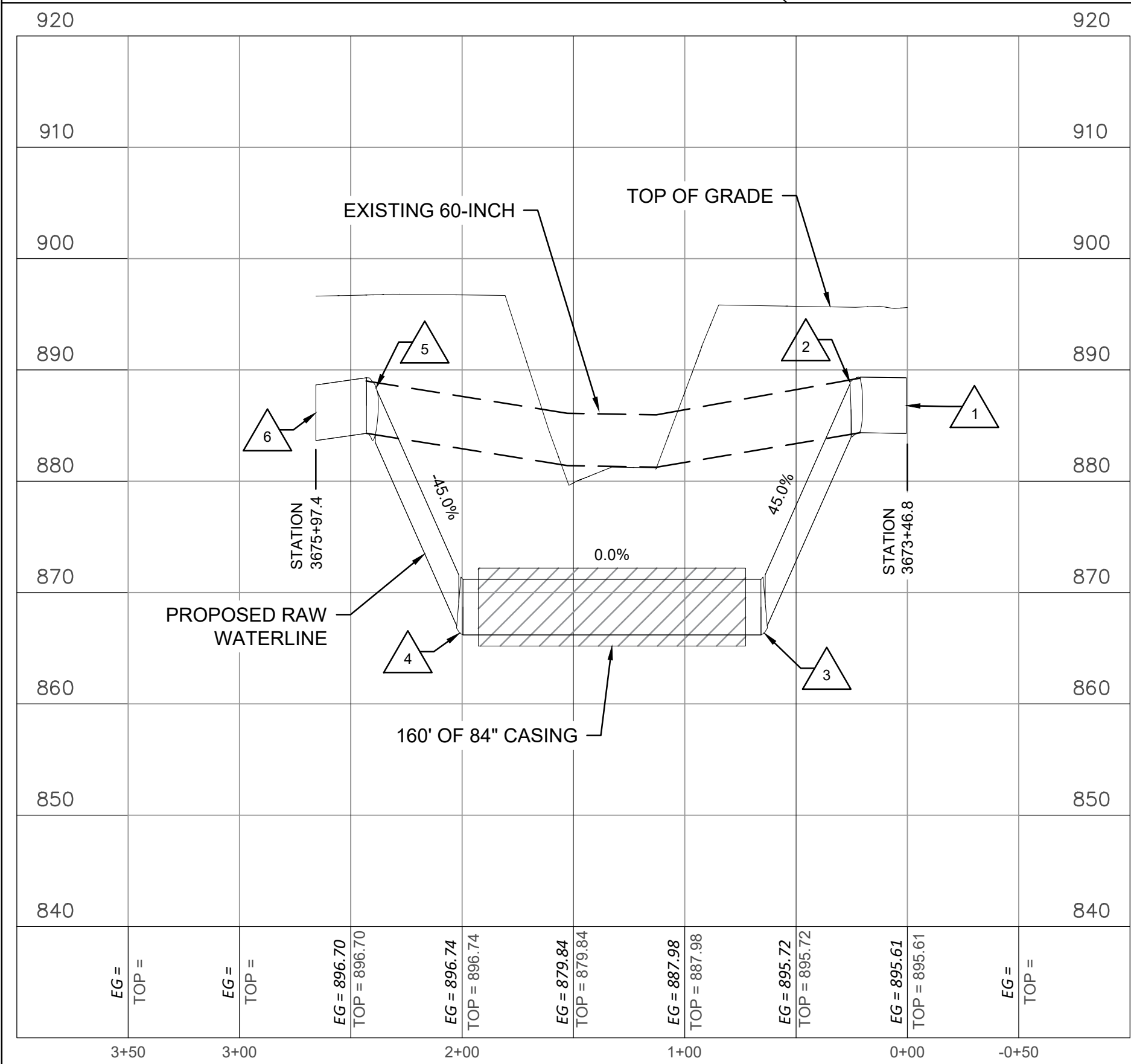
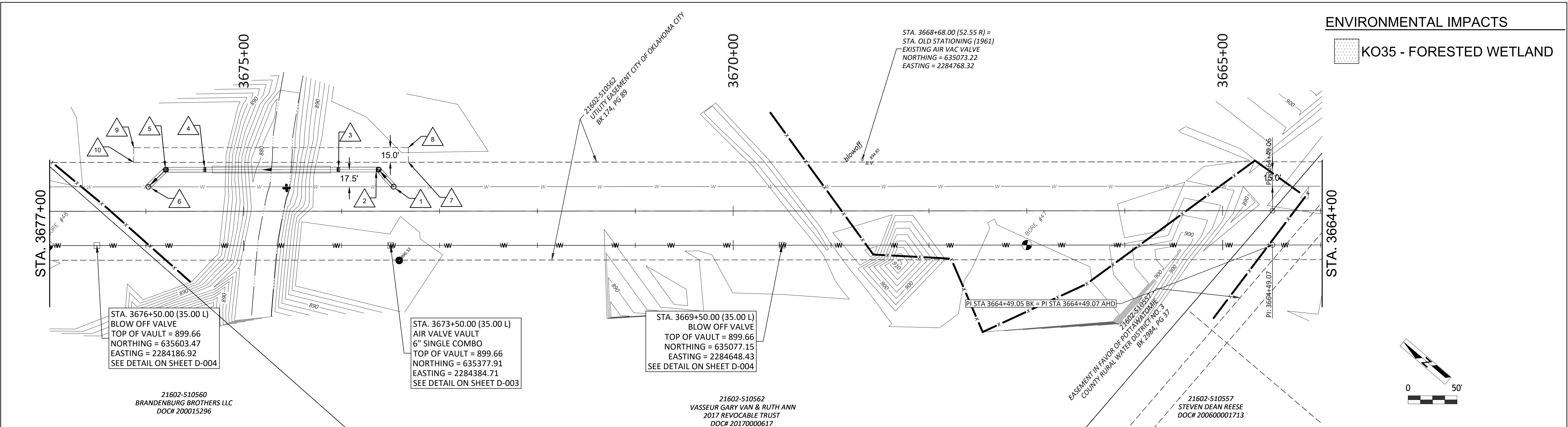
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**8. PAYMENT**

The work performed, and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Flexamat Plus". This price is full compensation for loading and transporting, placing concrete block mats; excavation and disposal; furnishing topsoil and bedding; and equipment, labor, materials, tools, and incidentals.

ENVIRONMENTAL IMPACTS

KO35 - FORESTED WETLAND



COORDINATE TABLE				
No.	DESCRIPTION	NORTHING	EASTING	STATION
1	45 DEG. BEND TIE-IN LOCATION	635415.0592	2284431.9350	STA. 3673+46.8
2	45 DEG. BEND	635438.1444	2284434.9676	-
3	45 DEG. BEND	635468.9927	2284407.9181	-
4	45 DEG. BEND	635571.8084	2284317.7637	-
5	45 DEG. BEND	635601.7221	2284291.5338	-
6	45 DEG. BEND TIE-IN LOCATION	635603.4559	2284266.7387	3675+97.4
7	EASEMENT BORDER	635420.2633	2284460.6216	3673+31.8
8	EASEMENT BORDER	635430.1527	2284471.8998	-
9	EASEMENT BORDER	635641.1059	2284286.9247	-
10	EASEMENT BORDER	635631.2165	2284275.6464	3676+12.4

- NOTES:
- REFER TO SHEET G-018 FOR GENERAL PROJECT NOTES.
  - REFER TO SHEET G-019 FOR PAY ITEM SUMMARY NOTES.

SUMMARY OF PROJECT QUANTITIES					
ITEM NUMBER	TITLE	SPECIFICATION NO.	QUANTITY	UNIT	AS-BUILT QUANTITY
01-01	MOBILIZATION		1	LS	
01-02	COLOR AUDIO/VIDEO RECORDING PRE & POST CONSTRUCTION (DVD)		1	LS	
01-03	SEDIMENT & EROSION CONTROL		1	LS	
01-08-A	60" PIPELINE TRENCH OPTION B (CLASS 225)		137.9	LF	
01-09	TUNNEL SHAFTS		136.5	LF	
01-10	PIPELINE MARKER		?	EA	
01-24	HYDROSTATIC PRESSURE TESTING		1	LS	
01-25	CONSTRUCTION STAKING		1	LS	
01-27	CLEARING & GRUBBING		1	LS	
01-42	SEEDING		0.22	AC	
01-43	G.P.S. TOTAL STATION (FOR AS-BUILTS)		1	LS	

WC-0877 ESTIMATED STEEL PIPE PROCUREMENT QUANTITIES					
BID ITEM	SIZE (IN.)	PRESSURE CLASS/ MINIMUM THICKNESS	TITLE	QUANTITY	UNIT
1	84	-	CASING PIPE $\frac{11}{16}$ INCH THICK	160	LF
2	60	225 / 0.406	PIPE	274.4	LF
3	60	225 / 0.406	BEND, 22.6 TO 45 DEGREE	6	EA



ISSUED FOR CONSTRUCTION

1	6/02/2023	DJA	BAB	ADDENDUM #3
REV. NO.	DATE	DRWN	CHKD	REMARKS

SCALE: AS SHOWN  
DATE: 4/20/2023  
DESIGNED BY: B. BIESEMEYER  
DRAWN BY: J. TILLMAN  
CHECKED BY: D. ANDERSON  
APPROVED BY: B. BIESEMEYER



ATOKA PIPELINE RAW WATER TRANSMISSION LINE PROJECT WC-0877

CIVIL  
RAW WATER PIPELINE  
PLAN AND PROFILE



ENGINEERS  
ARCHITECTS  
CONSULTANTS



VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE.  
SHEET  
C-037A  
SHEET 58A OF 85