

## Elkhorn Tide Gate Repair Project – PHASE III

### COST PROPOSAL

#### Scope of Work:

Remove and replace tide gates on culverts 2, 4, 5, 6 & 7. New gates will utilize fiberglass fasteners<sup>1</sup> and new anodes<sup>2</sup>.

Item/Task	Quantity	Price	Amount
Removal and replacement of remaining five (5) tide gates, utilize fiberglass fasteners and installation of anodes	5	\$27,420	\$137,100
Installation of ¼" EPDM UV shields with SS316 screws on seven (7) western exposed ends of pipe	7	\$2,750	\$19,250
Granite's Factor (1.17)			\$26,580
Traffic Control	10 days	\$2,500	\$25,000
Gordian 5%			\$10,397
P.W. 15%			\$31,190
Contingency			\$40,000
<b>Total</b>			<b>\$289,517</b>

<sup>1</sup> **Anodes:** The flap gates are aluminum, while the existing pipe support saddles are SS316. The dissimilar metals will create a galvanic cell causing accelerated deterioration of the aluminum flap gate. Zine anodes will be placed on the aluminum flap and spigot. The flap and spigot are separated by a SS316 hinge so it is important to install an anode on each piece. The installation is in kind to the existing flap gates.

<sup>2</sup> **Fiberglass Fasteners:** The aluminum flap gate spigot will be fastened through the HDPE pipe to the SS316 pipe support saddle with twelve (12) twelve fiberglass rods. By using fiberglass fasteners, we avoid linking dissimilar metals offering more corrosion protection to the system.