



Flow Control Gate Replacement Project

***Presented by
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Manager***



Overview: Gates/Actuators

- Morris Sheppard Dam has 9 flood control gates
- Each flood gate has one 30"x 60" roller gate and actuator that allows water into the chamber to "float the gate".
- Each flood gate has one slide (sluice) gate and actuator that allows water out of the chamber.
- There are three low flow outlets that are opened and closed with a 24" x 30" slide gate and actuator.
- The Roller Gates, Sluice Gates and Low Flow Gates are controlled at Piers 8, 14 and 20
- Total Actuators = 21
9 Roller Gate + 9 Slide Gate (Sluice) + 3 Low Flow Slide Gates



Overview: Operating Piers

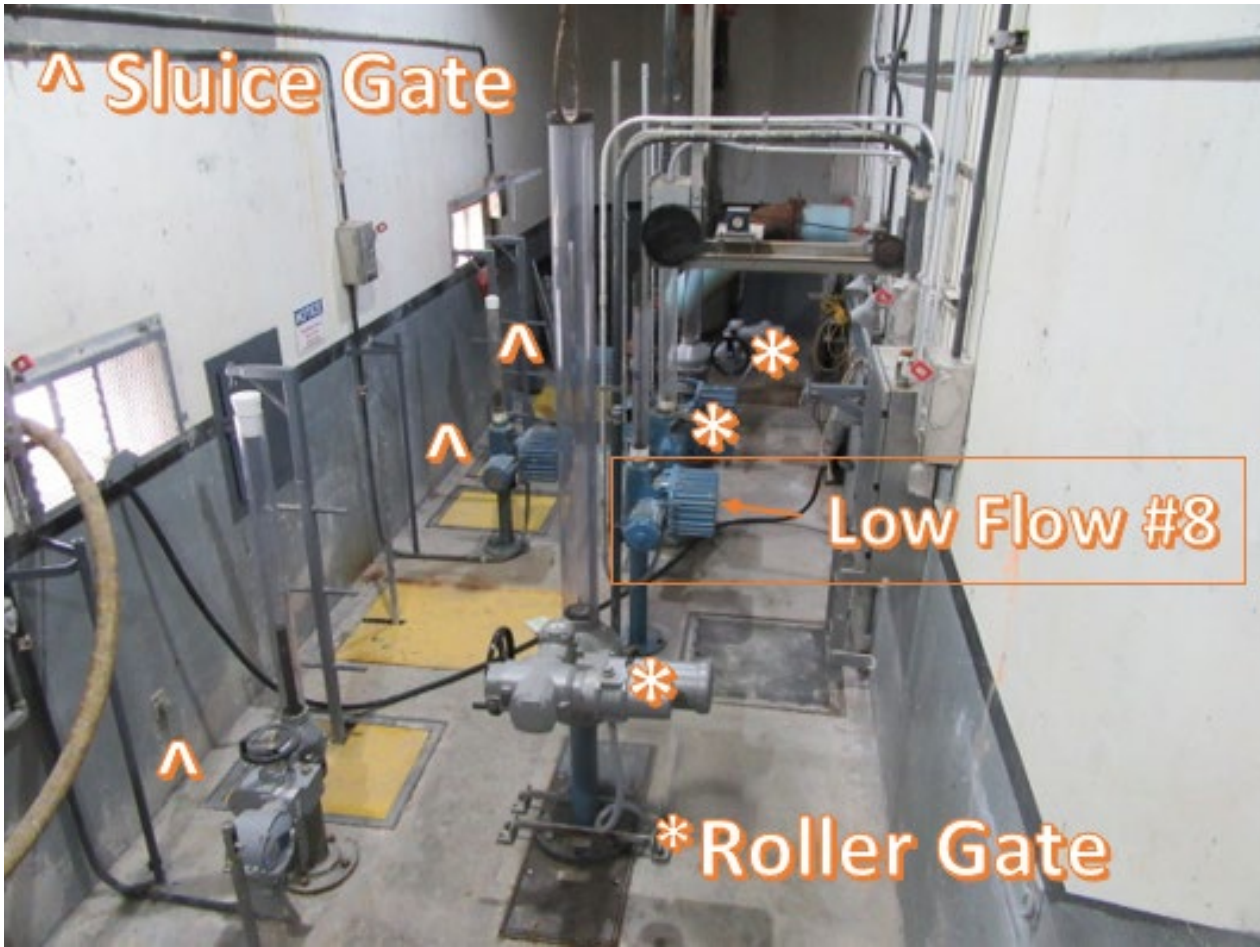


Pier 8
Flood Gates 1-3
Low Flow 8

Pier 14
Flood Gates 4-6
Low Flow 14

Pier 20
Flood Gates 7-9
Low Flow 20

Pier 8 showing 7 actuators
(Auma / Limitorque)



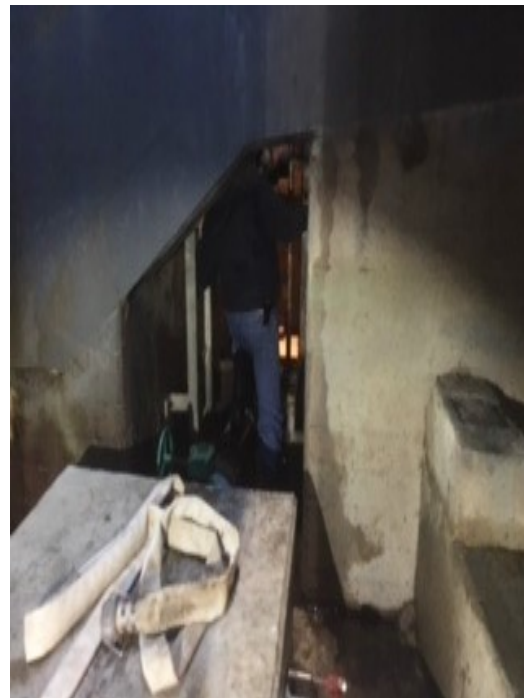
Pier 20 (14 similar) showing 6 actuators
* Low Flow 20/14 actuator is inside pier





Operation

- In order to operate a flood gate, water is admitted into the gate chamber utilizing a roller gate to float the gate.
- Once gate is unlocked, water is drained from the gate chamber utilizing a sluice gate which allows the gate leaves to collapse in on themselves resulting in flood release.





Project Overview

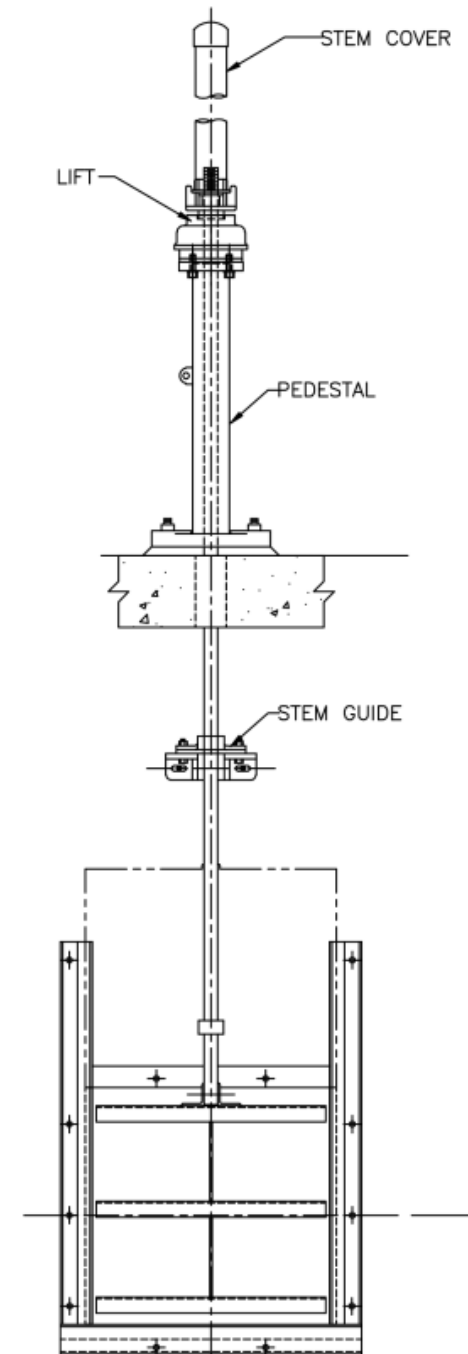
- Replace 9 Roller Gates with slide gates and replace associated actuators/gate stems/pedestals with stainless steel.
- Replace 9 Sluice (Slide) Gate actuators/gate stems/pedestals with stainless steel. The 9 Sluice (Slide) Gates will not be replaced.
- Replace 3 Low Flow Slide Gates and associated actuators/gate stems/pedestals with stainless steel.



Stem Guide



Roller Gate



Project Overview

- Replace 240 volt electrical system with a 480 volt system that is currently available on the dam.
- Evaluate and assess the safe working load of the Pedestrian Bridge



Walkway Bridge



480v Power Feed

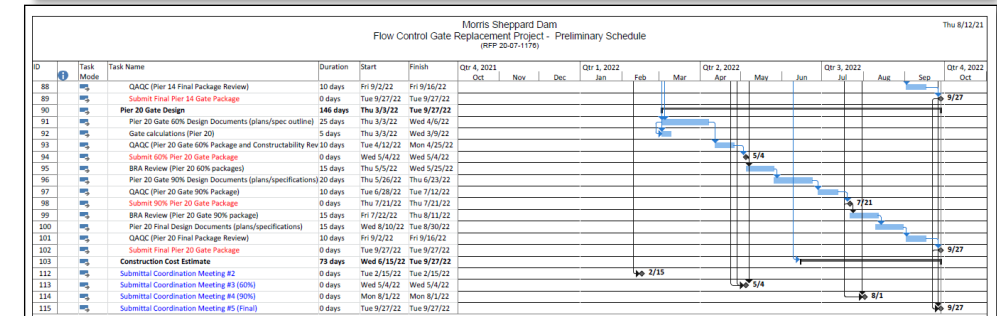
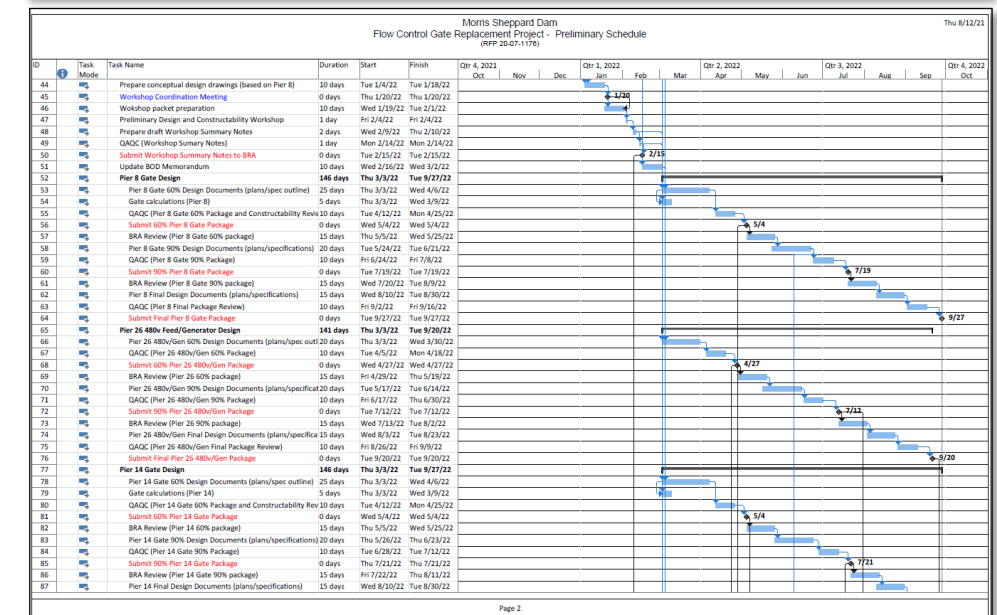
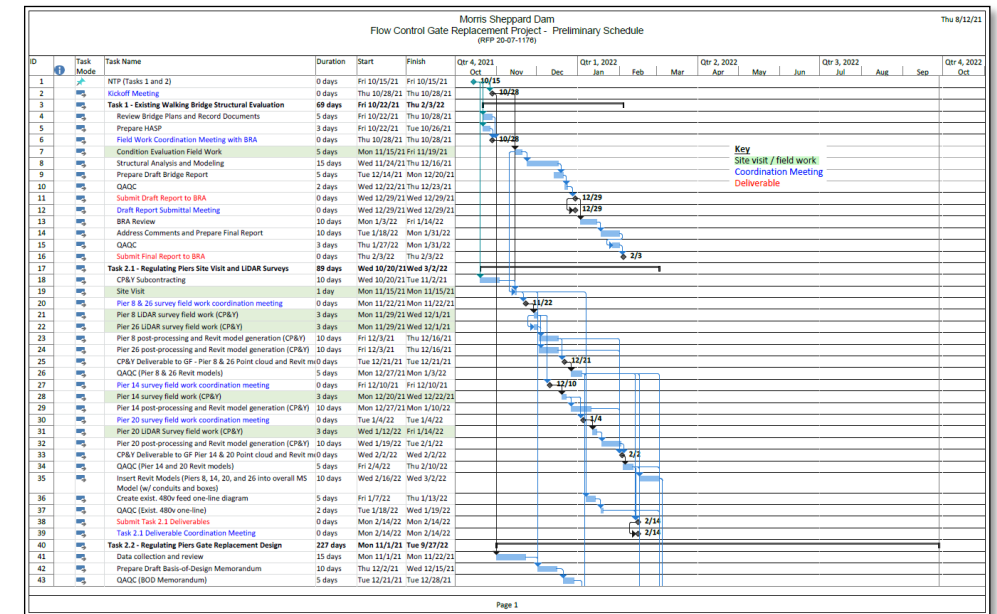


Roller Gate



PROJECT SCHEDULE

- NTP October 2021
- Task 1: Walking Bridge Structural Eval.
- Task 2.1: Regulating Pier Site Visit/Lidar Survey
- Task 2.2: Regulating Piers Gate Replacement Design
 - Pier 8 Gate Design
 - Pier 26 480v Feed/Generator Design
 - Pier 14 Gate Design
 - Pier 20 Gate Design
- Sept. 2022: Construction Cost Estimate
- Sept. 2022: Final Design





Scope of Services

Goal – Provide Engineering Services, Sealed Drawings, and Engineering Support to allow for replacement of current roller gates and upgrades to actuators to allow for a longer service life.

Result – BRA will self perform construction portion of this project in house utilizing the RSMU Crew.

Construction Schedule – Roughly 10 months per pier if ideal conditions exist.

Pier 14 will be first, followed by Pier 20, then lastly Pier 8. By completing Pier 8 last, RSMU crew will have the benefit of doing other piers first which should allow for increased efficiency of work performance and the desire to minimize its downtime.

Engineering Fee Summary

- Task 1: Walking Bridge Structural Eval.....\$60,570
 - Task 2.1: Regulating Piers Site Visit/Lidar Survey.....\$175,700
 - Task 2.2: Regulating Piers Gate Replacement Design.....\$614,055
 - Pier 8 Gate Design
 - Pier 26 480v Feed/Generator Design
 - Pier 14 Gate Design
 - Pier 20 Gate Design
 - Task 3 Flow Control Construction Phase Eng.....\$499,650
 - Sept. 2022: Construction Cost Estimate
 - Sept. 2022: Final Record Drawings
- Total: 1,349,975



“BE IT RESOLVED that the Board of Directors of the Brazos River Authority hereby authorizes the General Manager/CEO to enter into a contract with Gannett Fleming Inc. to provide engineering services for the Flow Control Gate Replacement Project at Morris Sheppard Dam in an amount not exceed \$1,400,000.”



Brazos

RIVER AUTHORITY