

CASE STUDY REF: 018

SIENNA PLANTATION LID, NORTH PUMPING STATION – FLAP GATES



Location

Sienna Plantation Levee is located in Missouri City, within Fort Bend County, Texas, United States.

Role of Levee system

Sienna Plantation is having levee system to protect residential area in heavy rain condition and during flood in Brazos river. Pump station located at Sienna Plantation is pumping water accumulated in levee out in river during heavy rain. Outfall structure of pump station is equipped with gated structure like flap gates and sluice gates which are working as barriers to stop water flow in undesired condition.

Purpose of gate replacement

After due course of time flap gates installed at Outfall structure were not in functional condition and need to be replaced with new ones to avoid risk of water surge in pump station during heavy rain and to avoid potential water passing through flap gates from river during flood condition. Sienna Plantation Levee Improvement Department has then decided to upgrade outfall structure by installing new flap gates which will basically going to operate as non-return valve at outfall structure and allow flow in one direction only.



Project Information

Project	Replacement of flap gates at North pumping station
Owner	Sienna Plantation Levee Improvement District
Contractor	Jerdon Enterprise, L.P.
Consultant	LJA Engineering Inc.

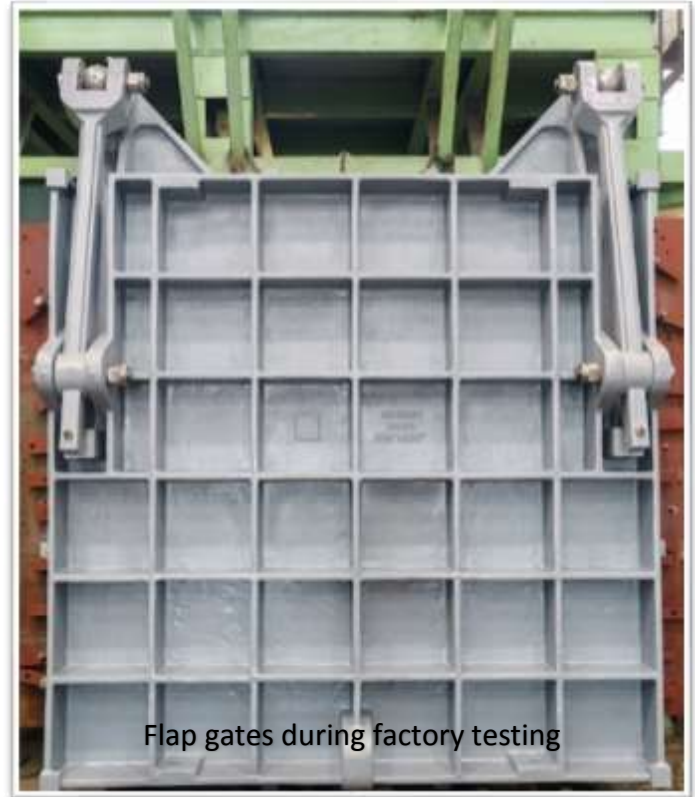
Product details

Type of gate	Automatic drainage flap gates
Size	10' X 10' (3048 mm X 3048 mm)
Quantity	5 Nos.
MOC	Cast Iron

Function of Rodney Hunt supplied Flap gates

Rodney Hunt has supplied Automatic drainage flap gates of huge size 10' X 10' (3048 mm X 3048 mm) and installed at North outfall structure located in the southwestern corner of the northern levee system. These gates are functioning to drain water accumulated in levee during heavy rainfall in city to the river. These flap gates are designed to operate automatically under very minimal water level to achieve free outflow from levee.

These flap gates are providing the first line of defense during a Brazos River high water event and prevent backflow entering in levee to protect levee as well as city. These gates are backed up by Rodney Hunt supplied 5 Nos. 10' x 10' sluice gate as the emergency back-up system on this structure.



Please refer website below to understand operation philosophy of Sienna Plantation Levee and related details.

web link : <http://www.siennalid.org/external-flap-gates-at-north-pump-station>

<https://youtu.be/Ji9XmcFVjkw>

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