Golden Harvest, Inc.
Golden Gates™

SECTION XXXXX
LEVEL CONTROL GATES

PART 1- GENERAL

1.1 SUMMARY

A. Section Includes:
1. Constant Upstream Level Control Gates.

B. Related Sections include but are not necessarily limited to:
1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.

1.2 SUBMITTALS

A. Shop Drawings:
1. See Sections 01300.
2. Product technical data including:
a. Acknowledgment that the products submitted meets the requirements of standards referenced.

B. Operation and Maintenance Manuals:
1. See Section 01300.

PART 2-- PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
1. Constant upstream level control gates:
a. Golden Harvest, Inc., Model GH-9000 or engineer pre-approved equal.

2.2 EXPERIENCE AND QUALIFICATIONS:

A. A minimum of ten (10) successful installations located within the United States within the last 10 years.
B. A minimum of 5-years experience in the production of substantially similar equipment.

2.3 CONSTANT UPSTREAM LEVEL CONTROL GATES

A. General: Provide upstream level control gates, prefabricated control structure, and other appurtenances of size, type, material and construction shown on the drawings and specified. The automatic control gate shall be completely self operating with an integrated float ballast design.

B. Operational Requirements

1. Gates shall automatically control the level upstream of the gates irrespective of the flow through the gates and independent of the downstream water surface elevation, provided the difference between the controlled water surface elevation and the downstream water surface elevation equals or exceeds the minimum amount stated below.

a. Maximum upstream water elevation: **(Project Specified) - inches [above channel invert]**

b. Maximum flow: **(Project Specified) - MGD**

c. Minimum flow: **(Project Specified) - MGD [tbc]**

d. Minimum head differential: **(Project Specified) - inches or greater**

2. The gates shall use force balance principal to control flow. The hydraulic force of the water flow against the gates shall be counter-balanced by a buoyant chamber and ballast chambers. No motor or electrical devices, cable and pulley arrangements, or float wells shall be employed in the operation of the gates. Weighted flap gate designs will not be considered.

3. Refer to Drawings for mounting location opening size.

C. Construction and Coating

1. Gates shall be constructed of stainless-steel plate and shapes and designed to withstand the pressure forces produced by the upstream water level at its maximum elevation, with no tail water.
2. All anchor bolts, nuts and fasteners shall be (304 or 316) stainless steel.
3. Gates shall mainly consist of a radial shaped faceplate, suitably reinforced and matching trapezoidal shape sluiceway, and a framework that includes a float and ballasting compartments.
4. Gates shall include an adjustable counterweight, suitable for accurate, sensitive and stable gate operation.
5. Each gate shall be provided with fully adjustable corrosion resistant stainless steel shock dampeners. Each gate shall be provided with one [1] spare shock dampener.
6. Gate shall come equipped with embedded side and sill plates constructed of stainless steel or epoxy coated carbon steel.

PART 3- EXECUTION

3.1 FIELD QUALITY CONTROL

A. The contractor shall provide the services of a qualified manufacturer's factory employed field service engineer to: check the installation before the gate is placed into operation; perform field tests; assist in the start-up of the equipment; and train the plant operations and maintenance staff in the care, operation, and maintenance of the equipment.

B. The manufacturer's field service engineer shall be a direct employee of the equipment manufacturer, with at least with at least five (5) years experience in the installation, testing and startup of equipment of the type provided under this specification. The manufacturer's agent or other sales and marketing personnel will not be accepted as the manufacturer's field service engineer. Manufacturer shall submit a resume for approval prior to performing field service work.

C. The contractor shall provide the services of a manufacturer's field service engineer at such times and for such durations of time as are needed to perform the tasks required. At a minimum, the services of the manufacturer's field service engineer shall be provided as indicated herein below. The number of visits and person-days per visit indicated below shall be understood as referring to the total required services for the lot of equipment provided under this specification.

D. Field Test:

1. A functional test shall be completed by means of varying flow to each gate from minimum to full plant flow. Upstream water levels shall be recorded and if necessary, each gate shall be adjusted to satisfactory performance.

Installation Check: **(Project Specified) - Trip** of (**Project Specified) - person-days** per visit per gate

Start-up: **(Project Specified) - Trip** of **(Project Specified) - person-days** per visit per gate

END OF SECTION