

Ina Road WRF has six anaerobic digesters with a total liquid capacity of approximately 8.8 million gallons. Four of the six anaerobic digesters are outfitted with floating covers for gas storage. The total volume of stored gas under the floating covers range from zero cubic feet to approximately 140,000 cubic feet at the operating pressure.

The Digester gas pressure and digester cover level are monitored by the SCADA system. Digester gas compressors are controlled by their local control panels. Starting and stopping are initiated automatically by the SCADA system. The compressors are sequenced on and off based on digester cover level – one compressor runs when the cover level is within a lower level band; two compressors run when the cover level increases to a higher-level band.

The compressor local control system includes local recirculation control of the digester gas around the compressor if the gas pressure exceeds a preset value. If the gas pressure continues to increase, a back-pressure-regulating valve in the existing digester gas header diverts digester gas to a waste gas burner system.⁽¹⁾

The digester covers are designed for the following service conditions:

- **Atmosphere: Digester gas composed of approximately 55 to 65 percent methane, 35 to 45 percent carbon dioxide, and trace amounts of nitrogen, hydrogen, and other gases; 100 percent humidity.**
- **Temperature:**
 - **Digester gas: 95 to 100 degrees F.**
 - **Outside Ambient: 30 to 130 degrees F.**
- **Pressure:**
 - **Relief: at 12 inches of water column.**
 - **Operating: 10 inches of water column.**
 - **Relief: below 2 inches of water column.**

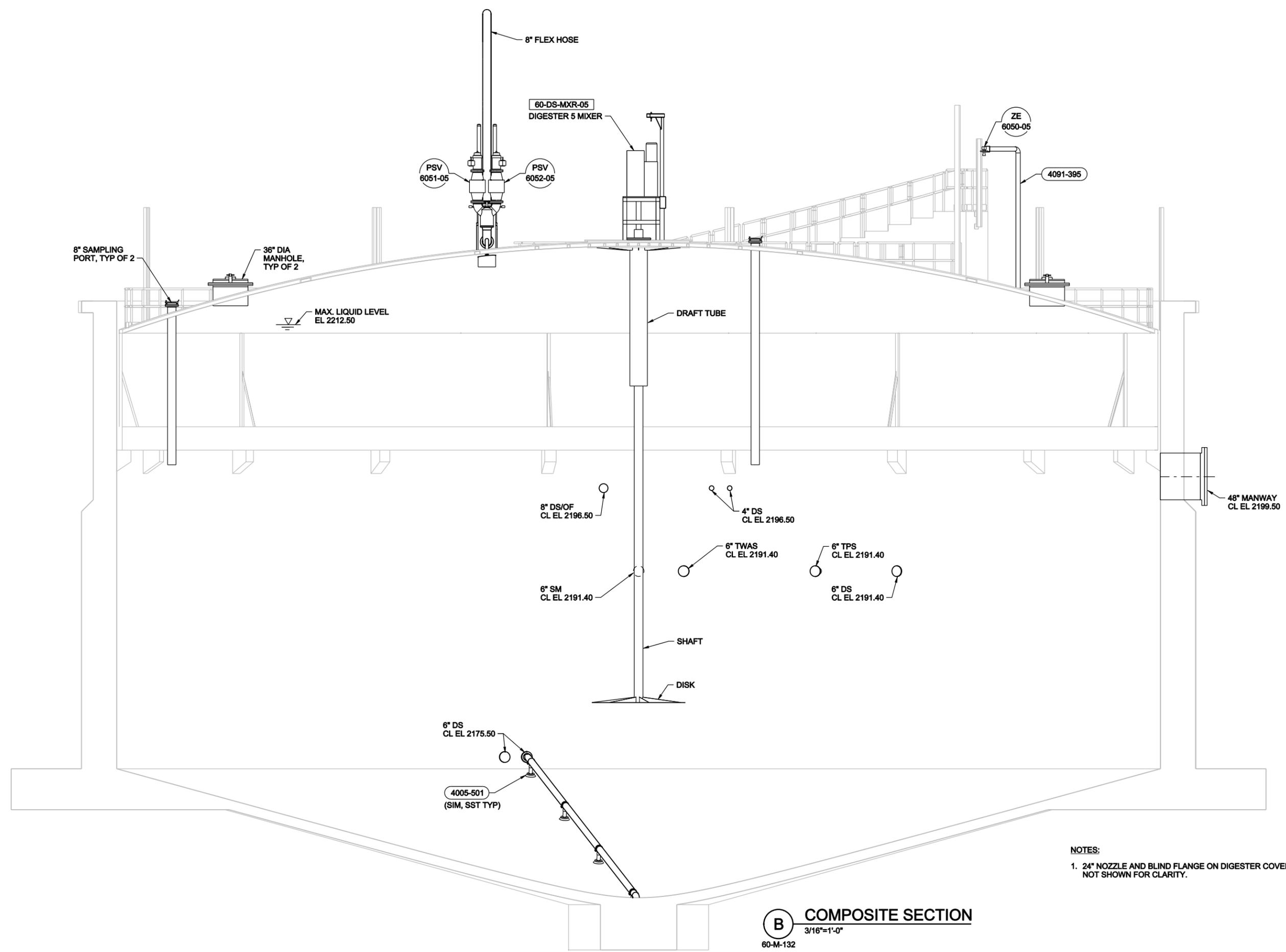
A drawing of a typical digester with floating cover is attached.

Source of Data:

- (1) Ina Road WRF Capacity and Effluent Quality Upgrade, Schematic Design Report Interim Biosolids Facilities Design Memorandum, CH2M Hill, November 2008, DM 5 – Digestion, Digester Gas and Compressors.

1 2 3 4 5 6

A
B
C
D



NOTES:
1. 24" NOZZLE AND BLIND FLANGE ON DIGESTER COVER NOT SHOWN FOR CLARITY.

B COMPOSITE SECTION
3/16"=1'-0"
60-M-132

PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	REVISION	CHK	DR	APVD
1	95% CONSTRUCTION DOCUMENT SUBMITTAL	CJ BROWN	CL KIRKPATRICK	R WILLIAMS
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PIMA COUNTY
REGIONAL WASTEWATER
RECLAMATION DEPARTMENT
INA ROAD WRF
CAPACITY AND EFFLUENT QUALITY UPGRADE
INTERIM BIOSOLIDS - DIGESTER COMPLEX
C-363

CH2MHILL
DIGESTER COMPLEX
MECHANICAL
COMPOSITE SECTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE DEC 2009
PROJ C-363
DWG 60-M-311
SHEET