Final Report for Period: 07/2011 - 12/2011
Submitted on: 03/10/2012
Principal Investigator: Weissburg, Marc J.
Award ID: 0829448
Organization: Georgia Tech Research Corp
Submitted By:
Weissburg, Marc - Principal Investigator
Title:
Acquisition of a Research and Teaching Salt Water Flume at Priest Landing, GA

Project Participants

Senior Personnel

Name: Weissburg, Marc
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Webster, Donald
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Fritz, Hermann
Worked for more than 160 Hours: Yes
Contribution to Project:

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Research Experience for Undergraduates

Organizational Partners

Skidaway Institute of Oceanography

Other Collaborators or Contacts

Activities and Findings

Research and Education Activities:
This grant funds infrastructure acquisition. The device (10 m long flume; please see attached drawings) was installed and tested at the end of

October 2011. The installation required an unanticipated need to upgrade the electrical service in the building, which required the power company to install a new meter and a contractor to provide 240v service to the building.

Extra expenses for the electrical service have been covered by institutional funds.

Findings:

The flume was installed and tested at the end of October 2011. It is now fully functional, and, with Skidaway Institute of Oceanography (SkIO), we are discussing ways to further instrument the facility to increase its capabilities.

We are setting up a website to manage the projects and modifying the SkIO and GA Tech Biology websites to describe this facility to the community.

Training and Development:

This grant funds infrastructure acquisition. The research flume was built by a contractor (Engineering Laboratory Designs; file attached), hence there was no direct training involved in the project.

Moving forward, graduate students and local researchers will be trained, as needed, on the use and operation of the flume. The facility is now available for general use, and we are setting up institutional procedures to train users and manage the projects.

Outreach Activities:

We had a recent (February 2012) meeting with the faculty of SkIO, GA Tech and Ga Tech Savannah to inform the community about the availability of the new device. It has been announced on the GA Tech Biology web page, and will soon be announced on the SkIO web page once we have the procedures in place to manage potential projects. We expect this to occur by the end of March 2012, and will announce the availability of this facility to local institutions (e.g. Savannah State University, Armstrong-Atlantic State University, Georgia Southern University), as well as to the larger community (e.g. by announcements at the meetings of Benthic Society, ASLO, etc).

Journal Publications

Books or Other One-time Publications

Web/Internet Site

Other Specific Products

Contributions

Contributions within Discipline:

The facility is operational as of January 2012, and we are informing the community about its availability for research projects.

Contributions to Other Disciplines:

Contributions to Human Resource Development:

The fabrication of this device has been beneficial to the engineering company (Engineering Laboratory Designs) in charge of its construction.

Contributions to Resources for Research and Education:

The flume device will contribute substantially to the research and training of graduate students, and in particular, be used to stress the interdisciplinary nature of biological science. Projects involving flumes typically are used to examine how biological processes are coupled to the physical-chemical environment, thus contributing to the training of more quantitative and interdisciplinary biologist who can use tools from physics, engineering and chemistry. Both graduate and undergraduate (REU) training programs make use of the Marine Facility so that the

educational benefits are broadly distributed. Georgia Tech's partner institutions (AASU, SSU, GSOU) are minority-serving universities, and the proposed facility would contribute to research and training programs designed to increase diversity in academia and engineering. GTREP's program at the Georgia Tech Savannah campus, in particular, is focused on building engineering skills in a region where the local community may not have access to this knowledge, thus improving the local intellectual infrastructure and fostering economic development. Similar benefits apply to our REU program, since most of our students come from smaller colleges with limited research opportunities and 25% are from groups underrepresented in science. The flume will also be used for K-12 education through the Savannah Science Seminar, which promotes an understanding and appreciation for science through informative, participatory presentations and hands on workshops (HOW sessions) to highly qualified secondary school students in Savannah and Chatham County. Faculty at the Georgia Tech Savannah campus participates regularly in the Savannah Science Seminar series. Other societal benefits arise as a consequence of specific research areas. For instance, the proposed facility will contribute directly to ameliorating or understanding human impacts on coastal processes, or on predicting at-risk coastal areas.

Contributions Beyond Science and Engineering:

Conference Proceedings

Categories for which nothing is reported:

Any Journal

Any Book

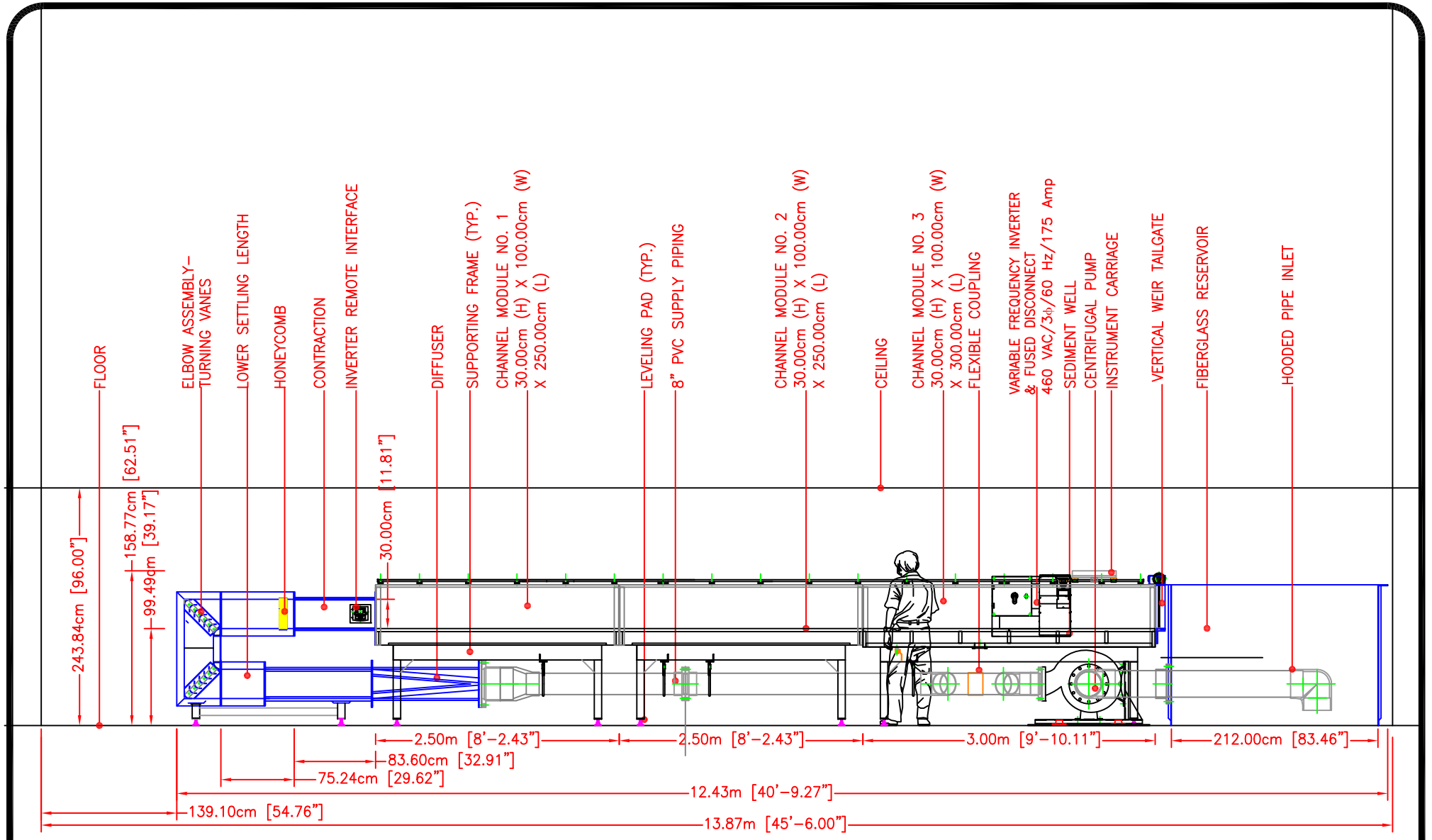
Any Web/Internet Site

Any Product

Contributions: To Any Other Disciplines

Contributions: To Any Beyond Science and Engineering

Any Conference



ENGINEERING LABORATORY DESIGN, INC.
P.O. Box 278
Lake City, Minnesota 55041 USA
800–795–8536 FAX 651–345–5095

PROJECT: 8m MARINE BIOLOGY FLUME
OVERALL – ELEVATION ALTERNATIVE RESERVOIR NO. 1

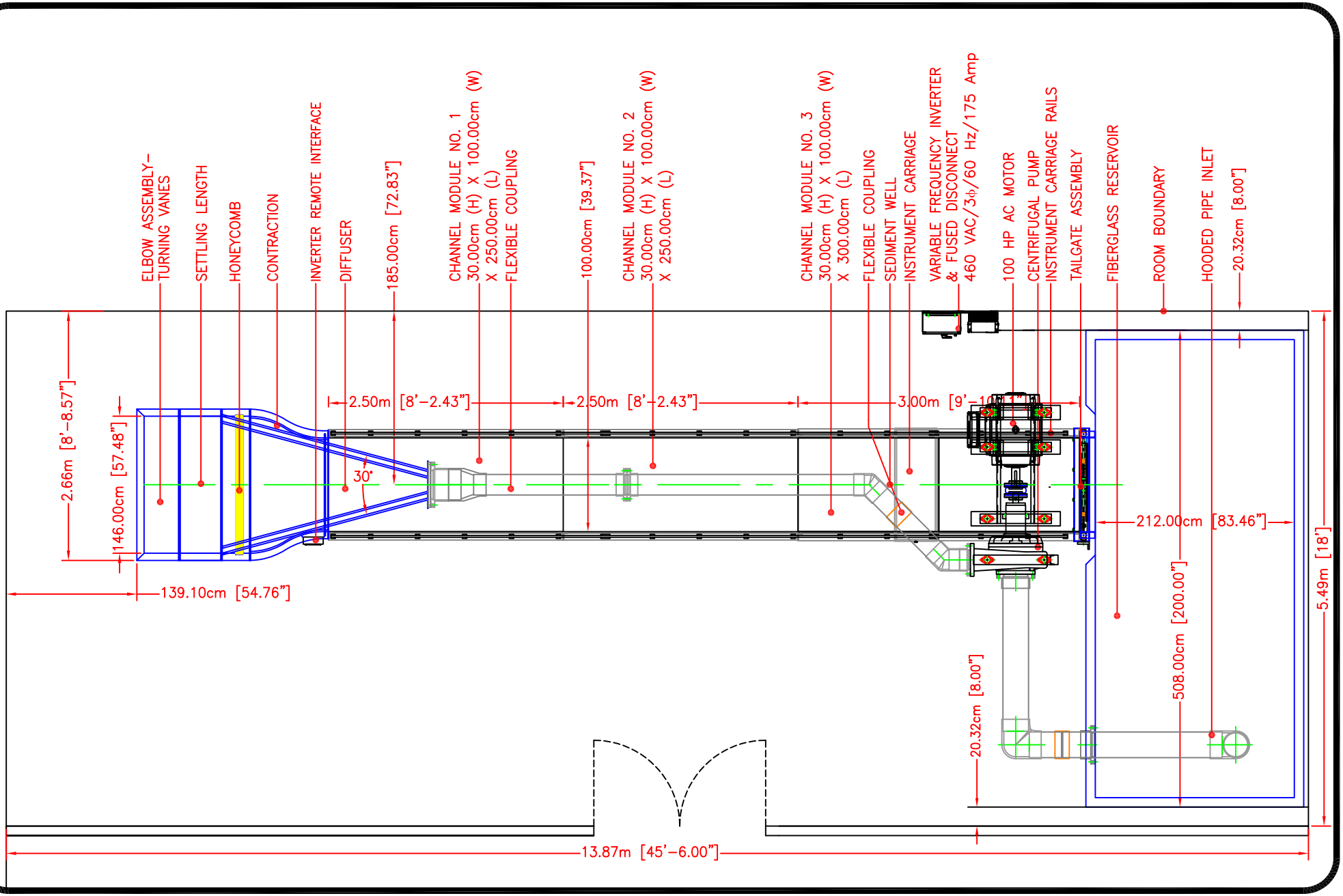
ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY

DRAWING No. 1

REFERENCE: P.O. No. 3200014827

DATE: 01/24/11

SCALE: 1cm = 55cm



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PROJECT: 8m MARINE BIOLOGY FLUME
OVERALL – PLAN VIEW ALTERNATIVE RESERVOIR NO. 1

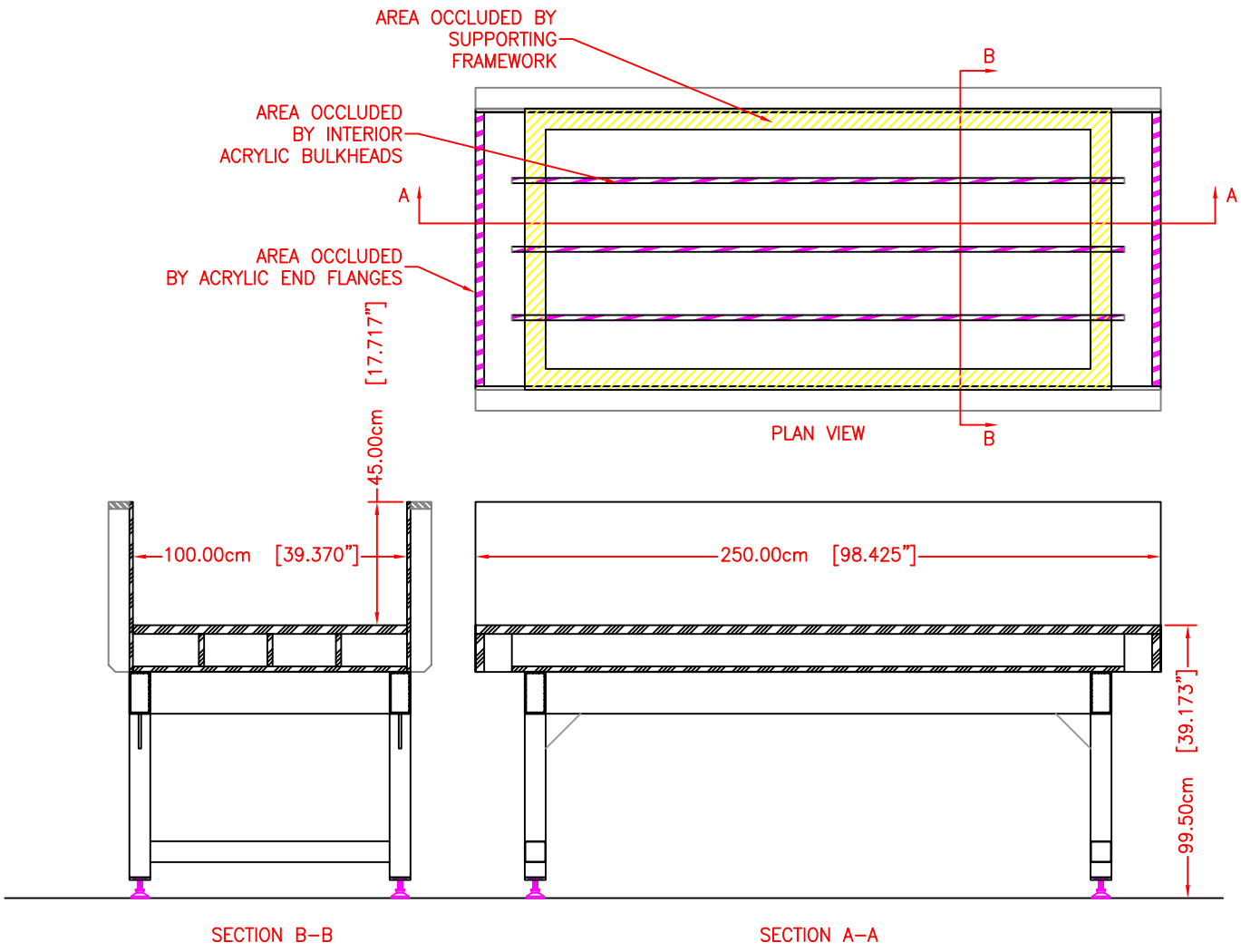
ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY

DRAWING No. 2

REFERENCE: P.O. No. 3200014827

DATE: 01/24/11

SCALE: 1cm = 55cm



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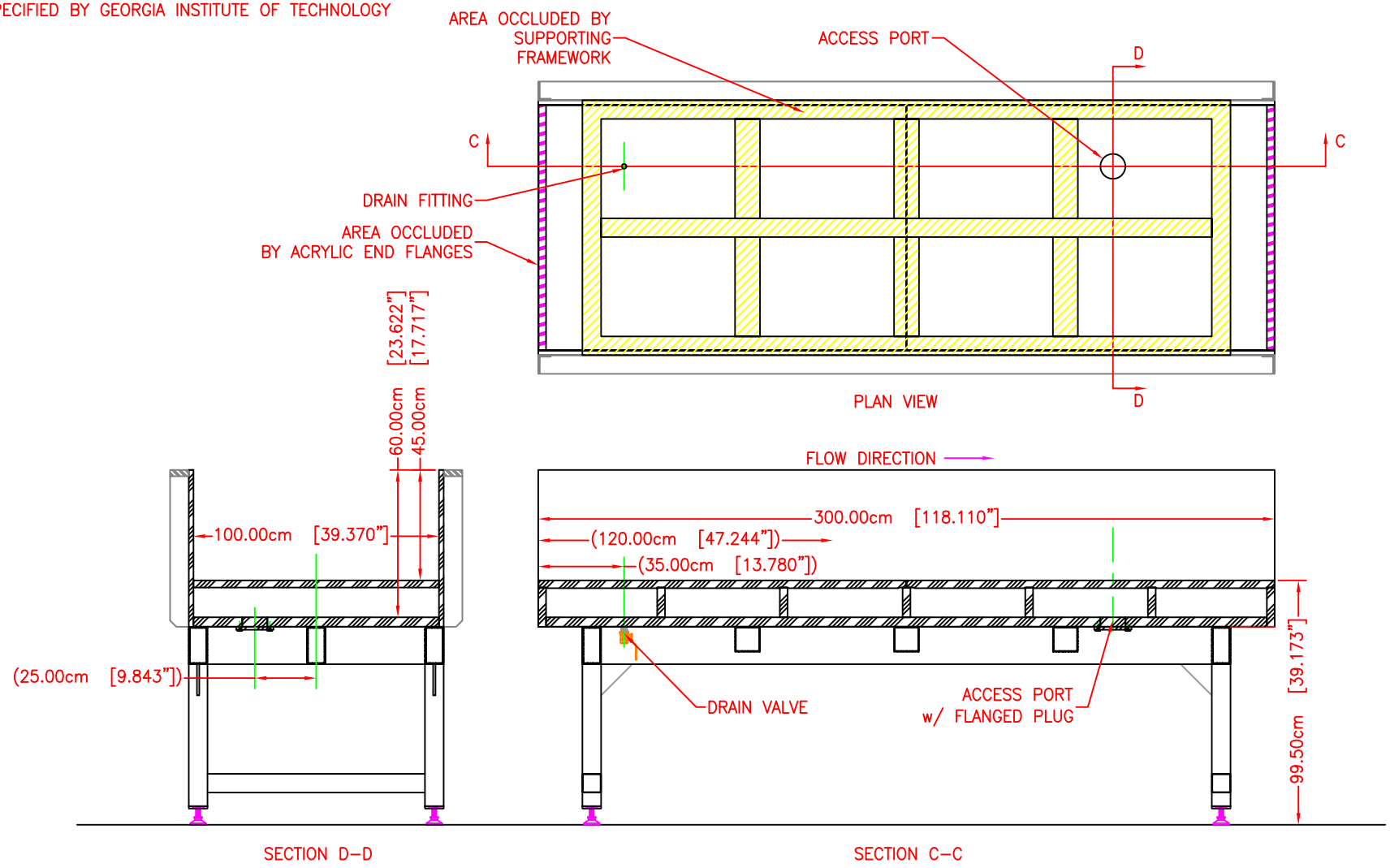
PROJECT: 8m MARINE BIOLOGY FLUME CHANNEL MODULES No. 1 & 2		
ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY		DRAWING No. 4
REFERENCE: P.O. No. 3200014827	DATE: 01/24/11	SCALE: 1cm = 20cm

NOTE:
SIZE AND LOCATION OF ACCESS PORT TO BE SPECIFIED BY GEORGIA INSTITUTE OF TECHNOLOGY



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PROJECT: 8m MARINE BIOLOGY FLUME CHANNEL MODULE No. 3		
ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY		DRAWING No. 6
REFERENCE: P.O. No. 3200014827	DATE: 01/24/11	SCALE: 1cm = 25cm