# Innovative Thinking Sessions
# Group 6

3/2/06

# General Thoughts

- Soil Improvements
  - Spread out over a large area to minimize depth
    - Could be cheaper than going deeper
    - Decreases settlement
  - Could utilize fly-ash material
- Buoyant structures would reduce bearing loads and settlement
- Use of light weight material
  - Shell Material would be good material
  - “Red Mud” or other industry by-products that are readily available for use
- Incorporate controlled failure mechanism into the system

# Recommendations

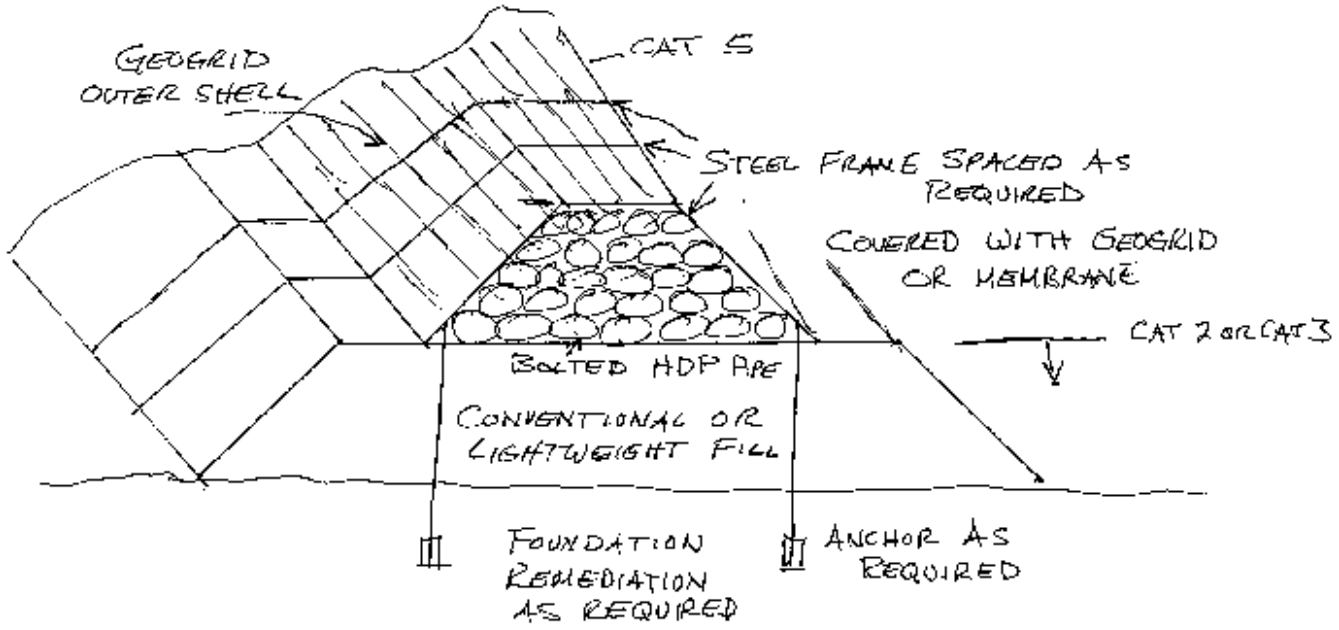
- Adaptive Management for Engineering Manuals, Reports and etc.
  - Develop mechanisms for being able to use innovative technologies to adjust current standards
  - Develop criteria that is easily adapted to new ideas as opposed to standard designs
  - Re-evaluate criteria for its application to the conditions in southern Louisiana

# Design #1

- Lightweight structure on top of a levee section
  - Frame that contains lightweight materials – plastic pipe encased in geo-grid supported by steel frames spaced as required
  - Similar to Portadam

# Design #1

#1




HARDENED PROTECTION TO CAT 2 OR CAT 3

LIGHTWEIGHT PROTECTION TO CAT 5

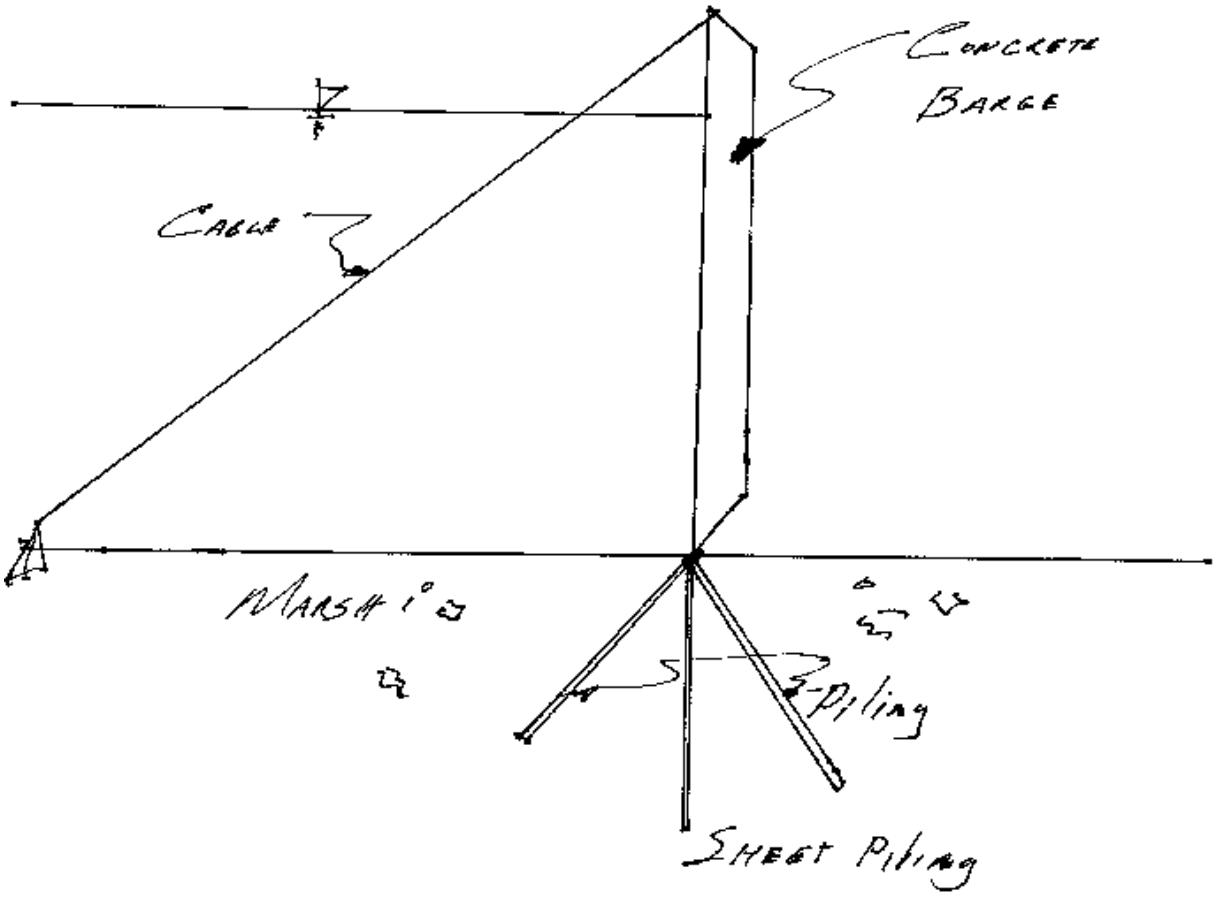
# Design #2

- PVC Piping or Metal Corrugated Piping
  - Attached to smaller piles or anchors that are placed on top of levees.
  - Could be 10’ – 12’ tall

# Design #3

- A self-raising sheet or concrete panel that is hinged into the ground and is anchored from the gulf side of structure

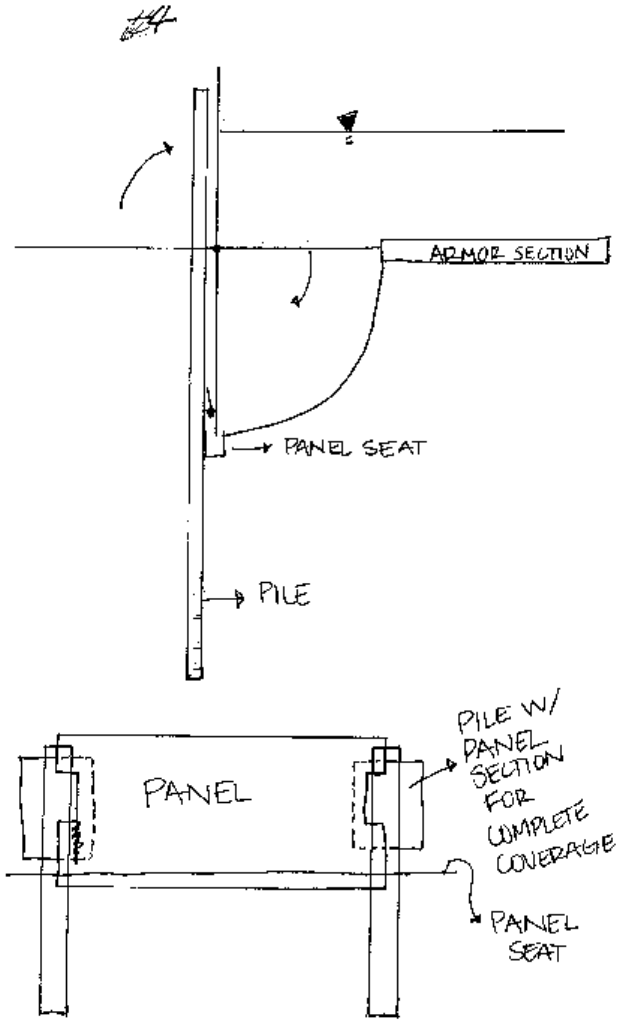
# Design #3



# Design #4

- Concrete Panel walls that hinge upright based on the surge of water.  The panels would then set down into place in front of the support piles.
  - Utilizing the support piles for back support

# Design #4

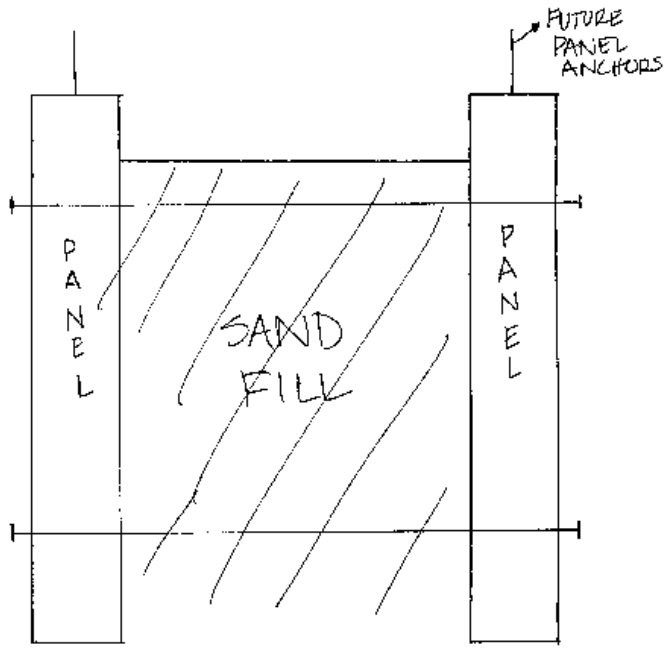

ARMOR SECTION
PANEL SEAT
PILE
PANEL
PILE W/ PANEL SECTION FOR COMPLETE COVERAGE
PANEL SEAT

# Design #5

- Two concrete panels braced together with a sand material in between the panels.
  - Would provide and easy point to add panels to adjust for settlement of structure

# Design #5

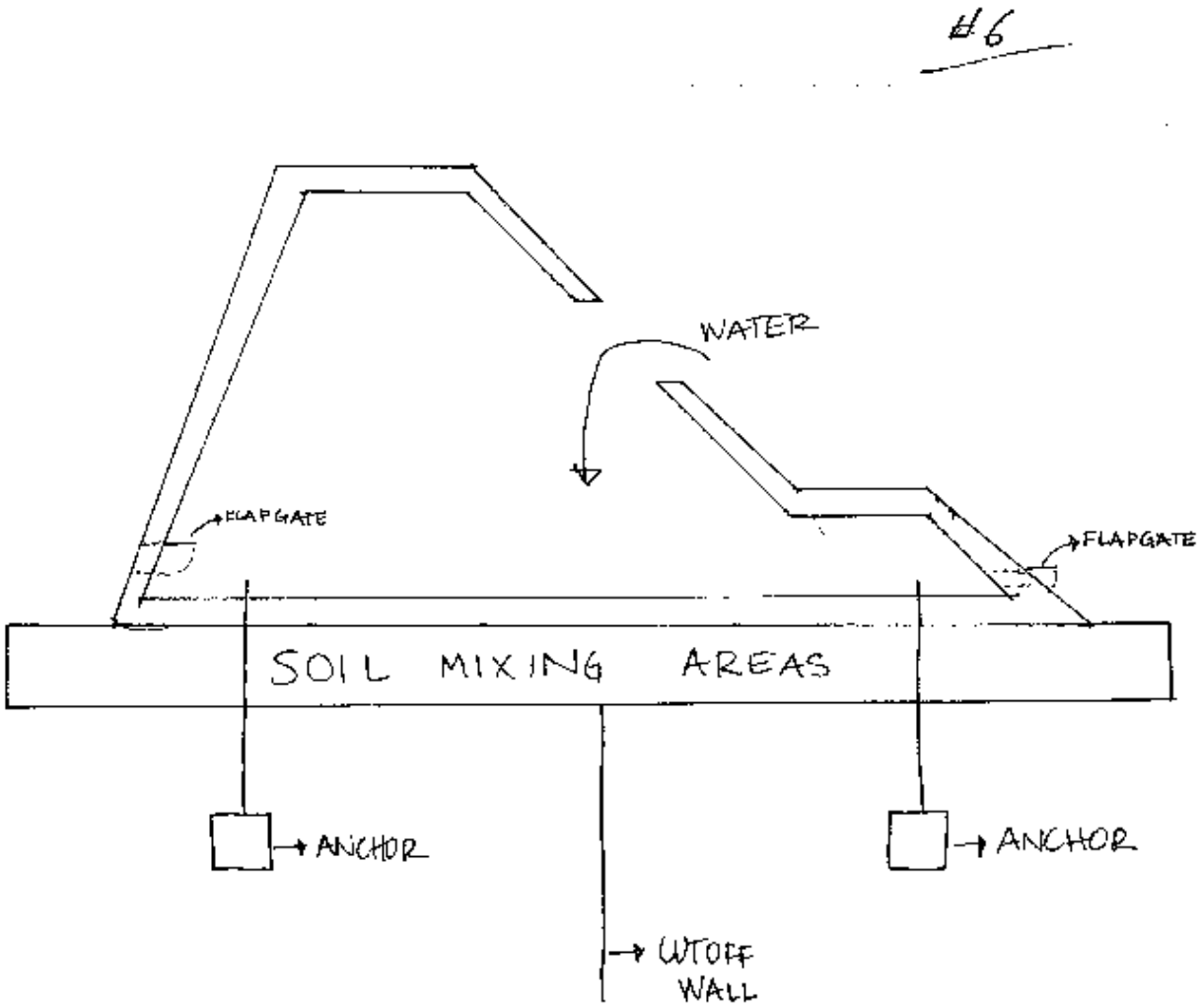
#5



# Design #6

- A hollow concrete structure that allows for the surge to enter the structure and provide for additional weight as needed.
  - Would have an area of soil mixing underneath
  - Would use a cutoff wall that could be part of anchoring system
  - Would have flap gate structures to allow water to drain out to the front of the structure or flow through for hydrologic needs

# Design #6


#6
WATER
FLAPGATE
FLAPGATE
SOIL MIXING AREAS
ANCHOR
ANCHOR
CUTOFF WALL