GENERAL DOE

- **Map out the ponds** with a detailed labelled diagram
  - Draw a diagram with labelled row lengths/widths and describe how they are fixed down
- Get **average size** of Salicornia
  - Measure 10-20 Salicornia and put data in a table
  - Pictures of samples of plants from xyz plane so we can characterize approximate shapes of them from all sides
- **Average shape** of Salicornia
  - Take photos of 10-20 varying shapes
  - Also most extreme versions of each shape/size
- **Cargo and storage** set up
  - Take photos and observations
- **Water quality**
  - Take photos and observations of any weeds, ropes, any underwater obstacle and their depth

ME DOE

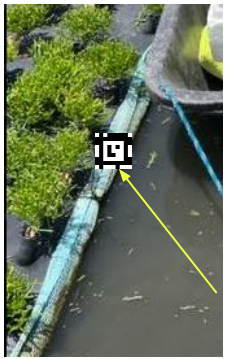
- Roller **compression**
  - apply varying amounts of force against the rollers while picking
  - how does increasing compression (pinching the plant) affects harvesting
- Roller **materials**
  - vary the materials that are contacting the plants, how rubbery should the roller be
- Roller **texture** geometry shells:
  - Use various geometries to harvest by hand
- **Force** required to **pick**, and then **pull the roots out**
  - Use spring scale for measurement
- **Where does the yield go** when picked through the roller
  - Document observations
- **Claw** mechanism
  - Use two objects that can mimic both ends of a claw and pull up from the bottom of the plant, also document how the yield is dispersed (try different types of objects: flat, rounded, curved, surfaces)
  - Observe how the picking behavior changes.
- **Placement**
  - Where along the z axis of the plant approximately across sample of plants is like the “start” of where to pick

FW DOE

- BEFORE testing on farm:
  - Verify there **is a good way to measure speed using camera video** (make sure camera is at the right shutter speed that can capture the spinning flag etc.)
- Find **optimal speed** for harvesting
  - vary the drill speed
- **Pinching force** for picking
  - How much force is enough to grip plant from the side, get the min force (at slippage point), and max force (at breaking point of the plant) to know thresholds. May need to tune this along with torque limit.
- **Force** measurement for **pulling cargo** along
  - Force required for pulling empty cart (minimum) along the water and a full cart (maximum)

SW DOE

- Get a picture from birds eye view (or a slow-moving video to mimic the robot moving)
- Get **photos of apriltags** placed in reasonable locations around the plants/trays (without being obstructed by plants)
    - Choose a few sizes that can easily be placed near a row of plants as a marker
    - Take from top down, far away enough to still capture the width of the row, and also pics of it more zoomed in with just the edge of the row in frame
    - For each angle, capture a worst-case visibility image (bad glare/maybe water droplets) and a decent-case image



Can be in the middle or on the side, as long as it will not be blocked, or we can have some way to clear the path for viewing the row