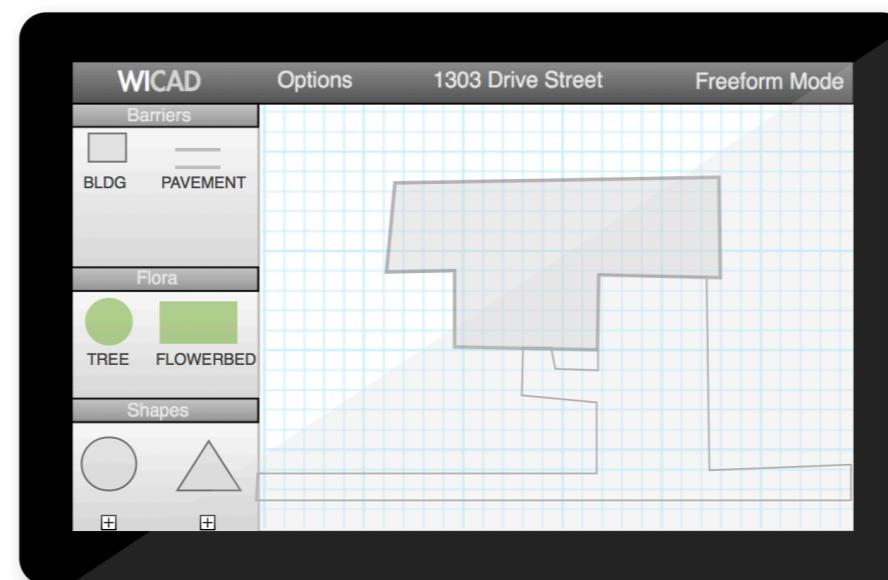


MERJ

# WICAD PRESENTATION

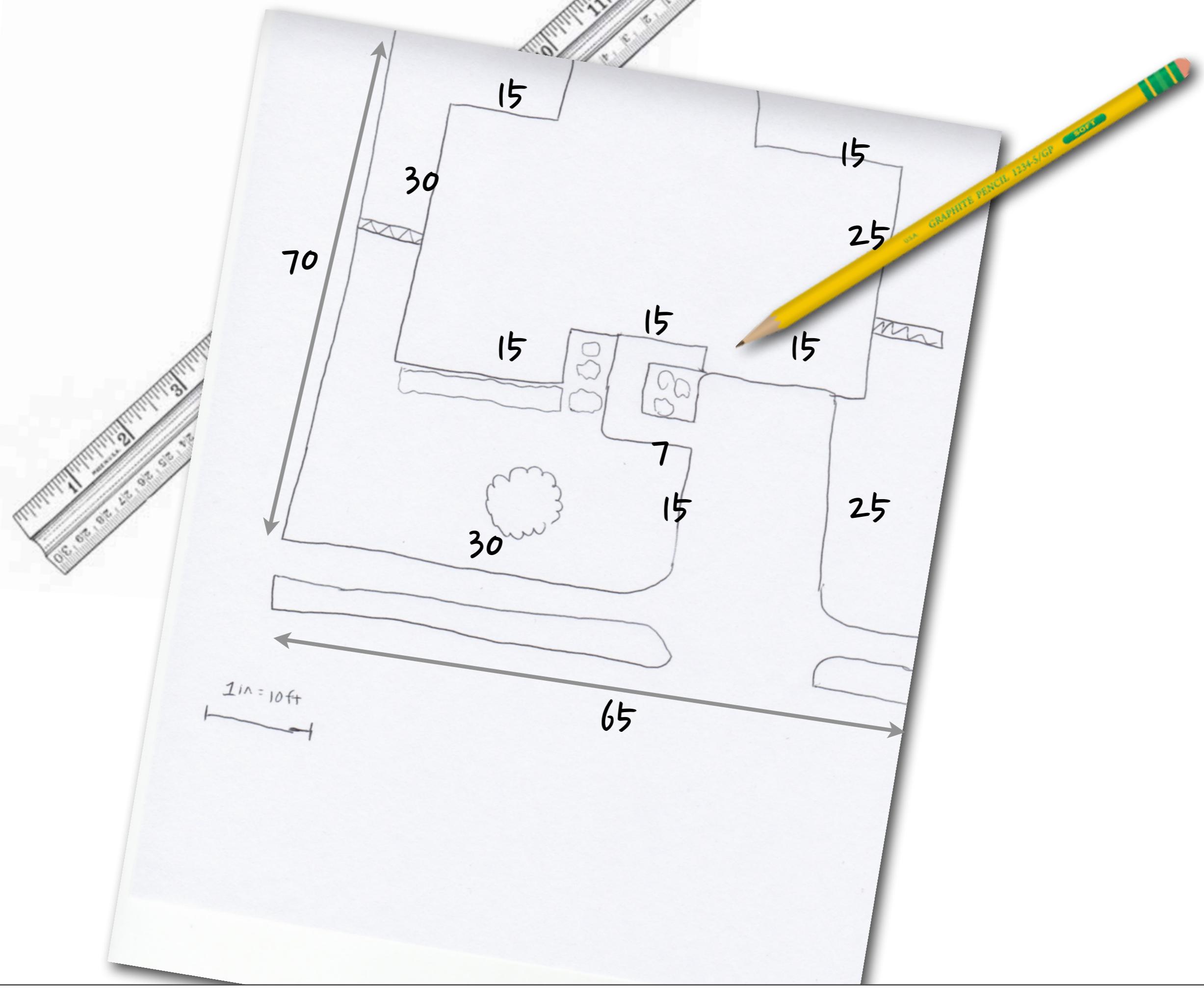
Water Irrigation Computer Aided Design

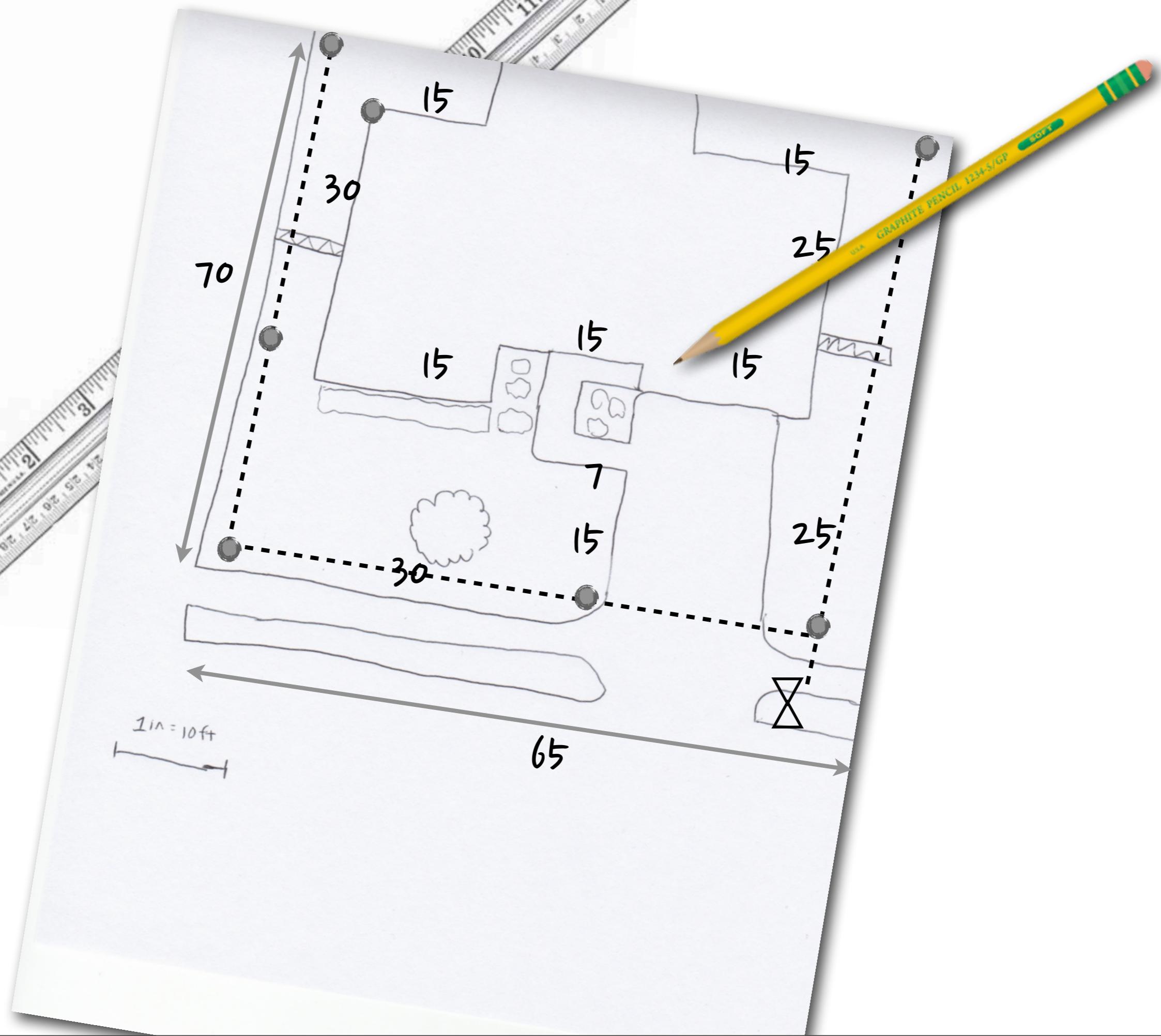


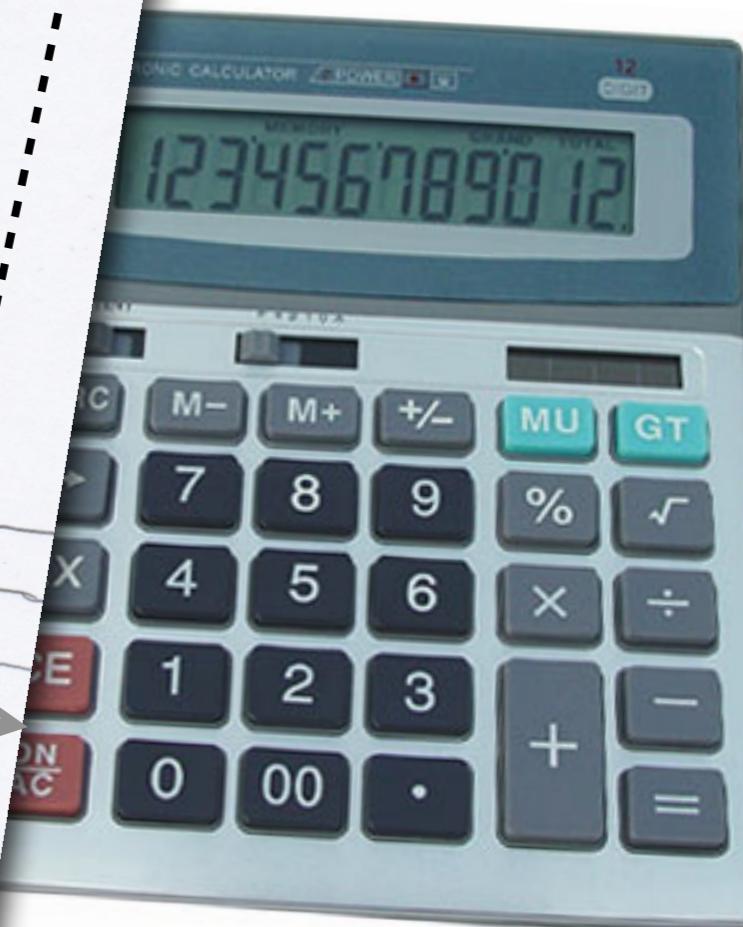
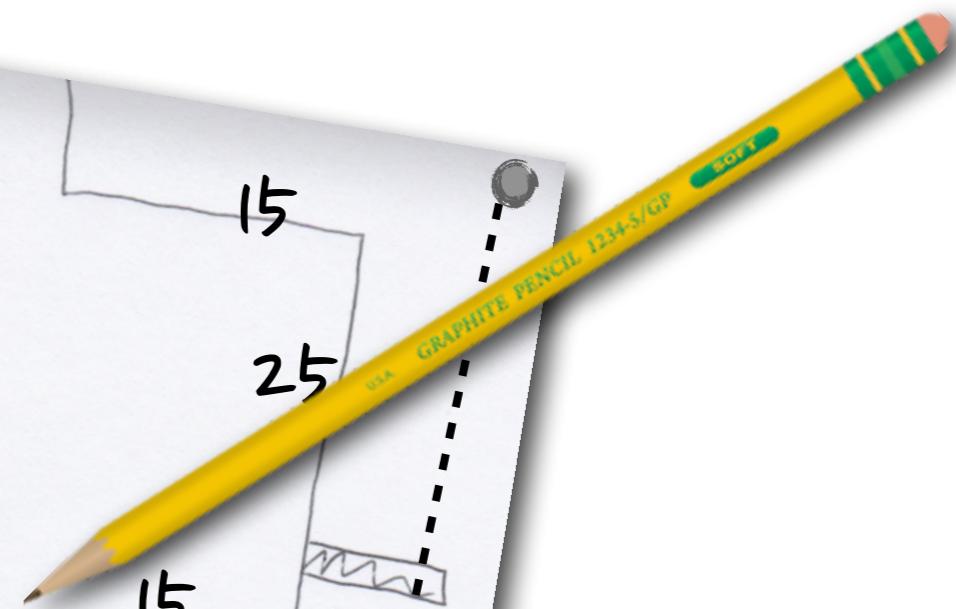
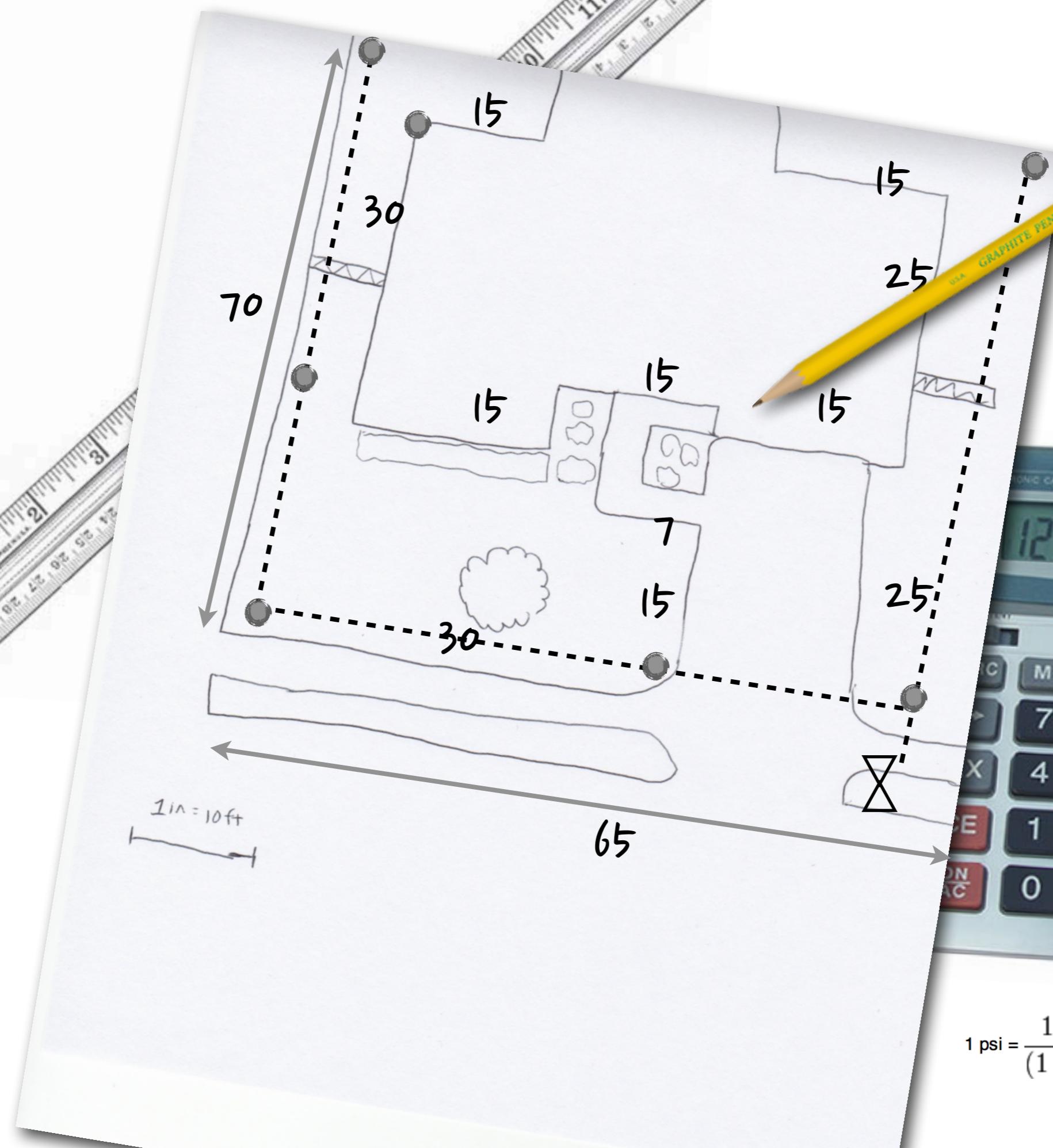
## PROJECT MEMBERS

MATTHEW FARMER | ELIZABETH CROW | TIMI DOSUMU | KALPANA JAMBULA









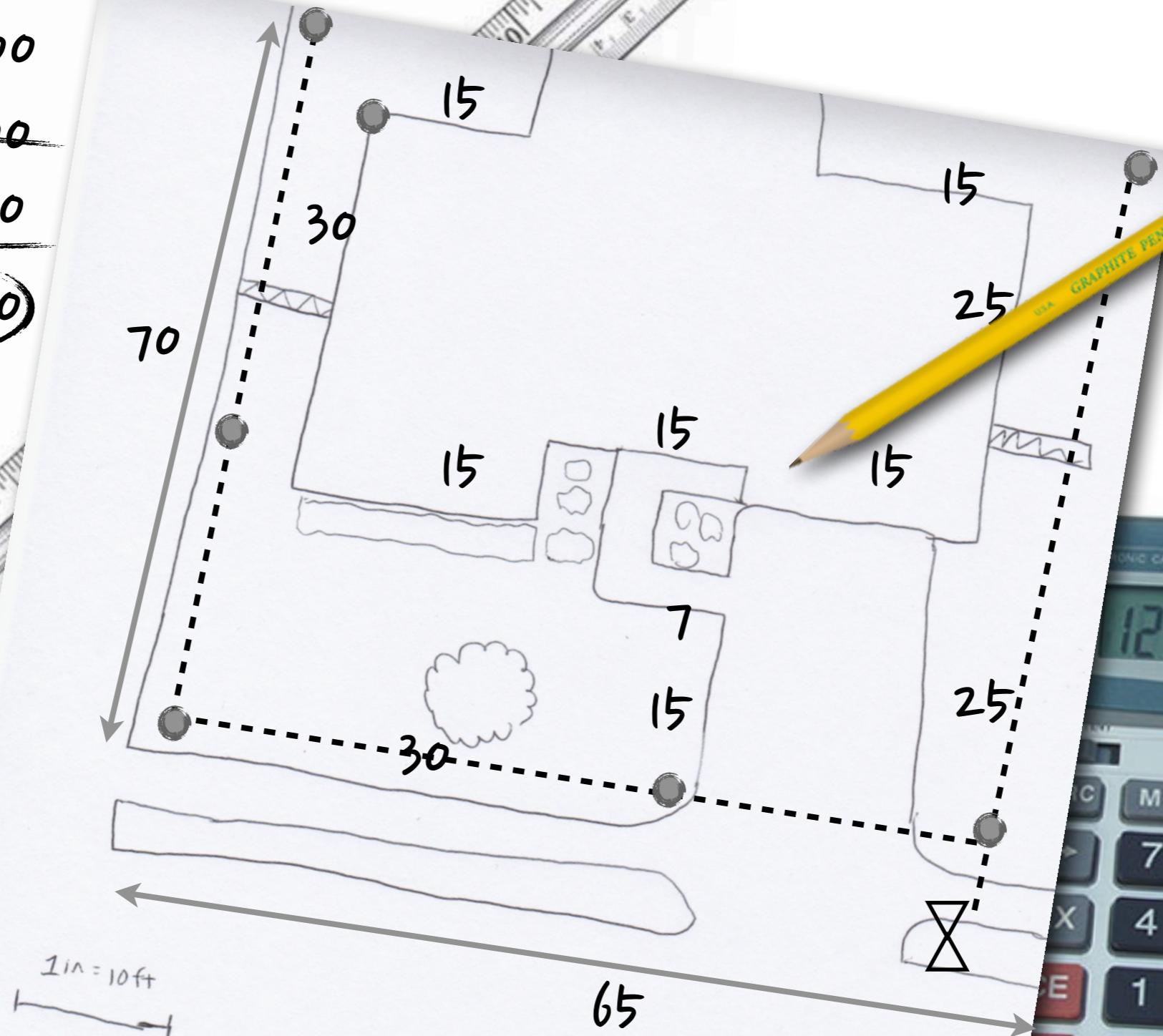
$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

PARTS: \$2000

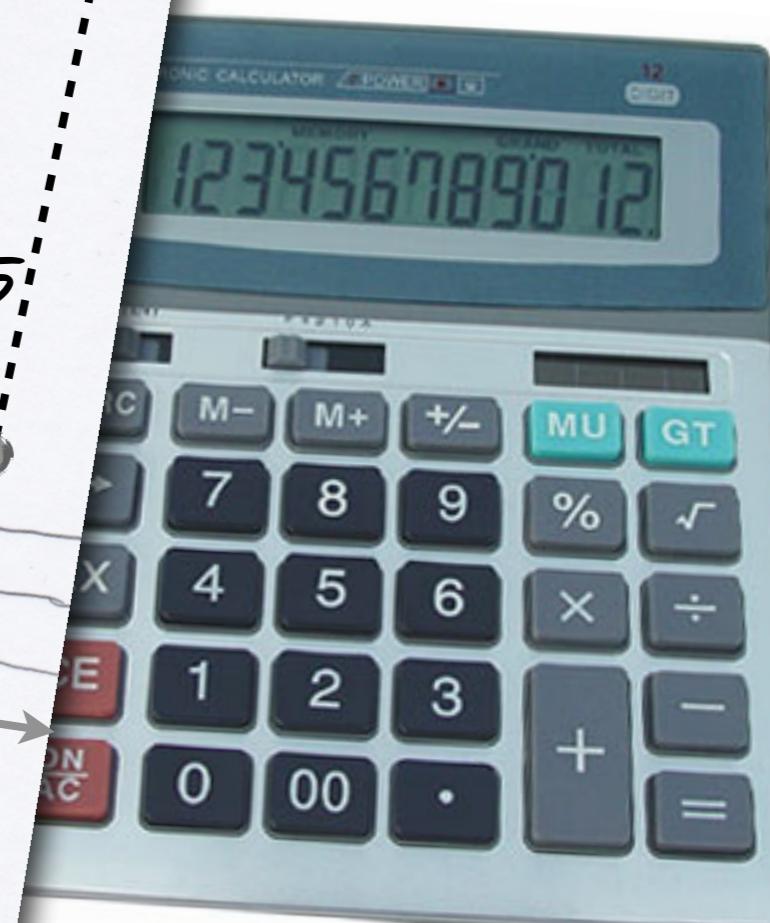
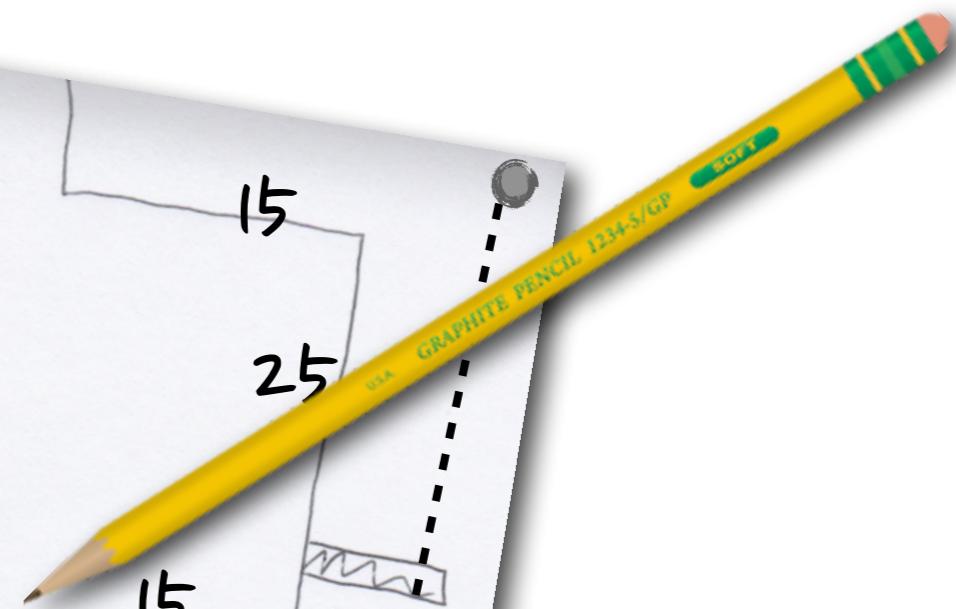
~~LABOR: \$1300~~

~~LABOR: \$1200~~

**\$ 3200**



ESTIMATE: \$3200



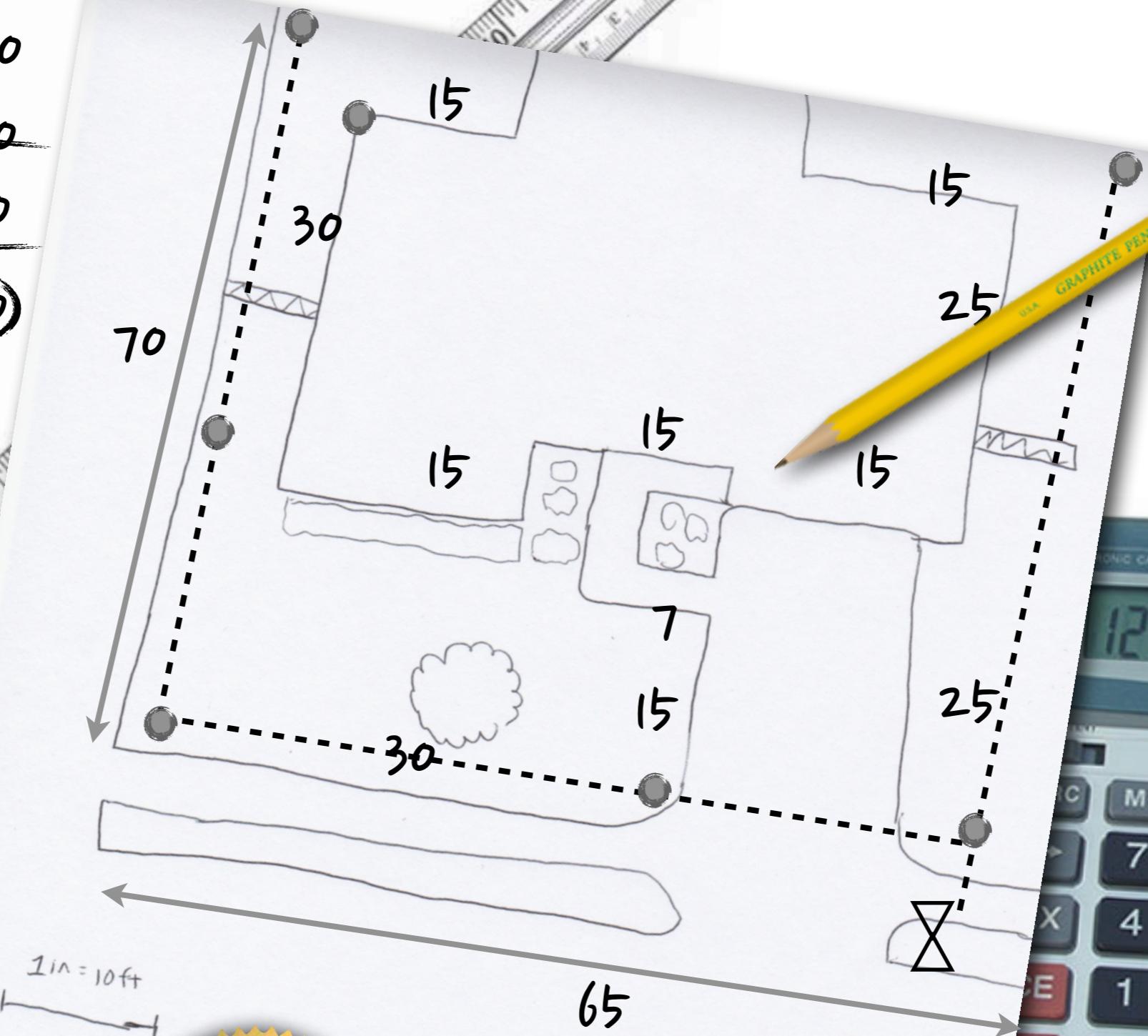
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PARTS: \$2000

~~LABOR: \$1300~~

LABOR: \$1200

**\$ 3200**

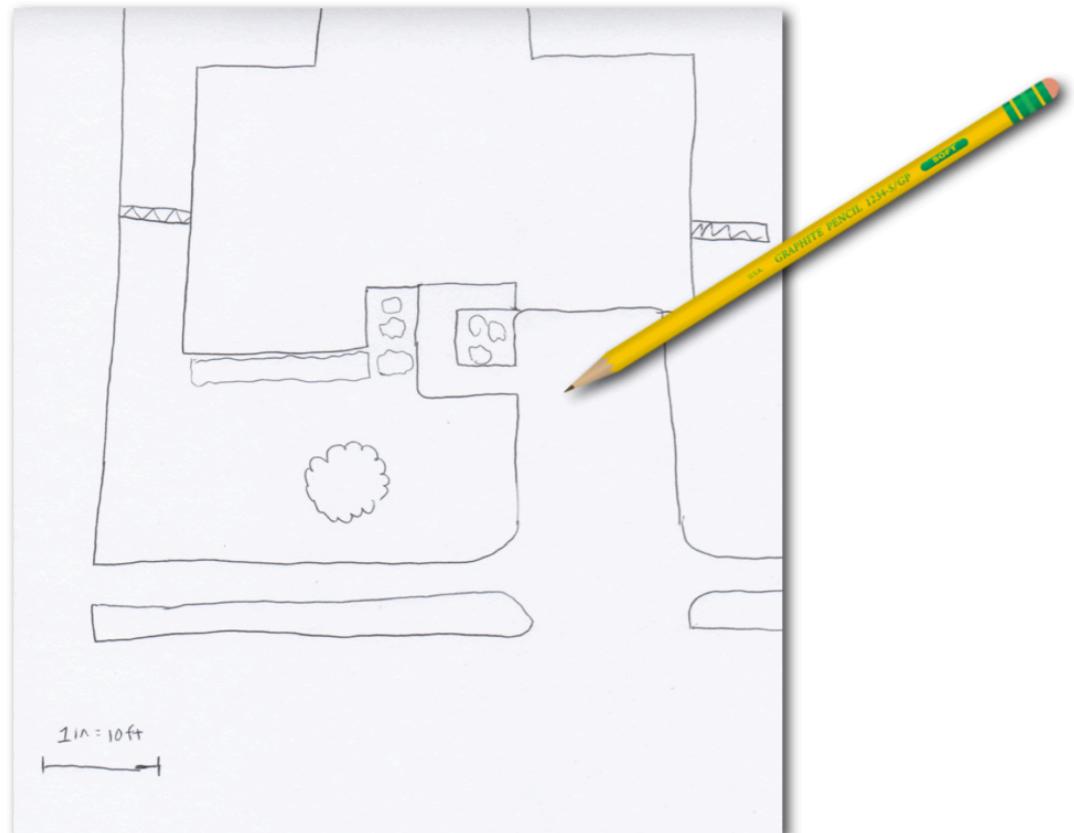


ESTIMATE: \$3200

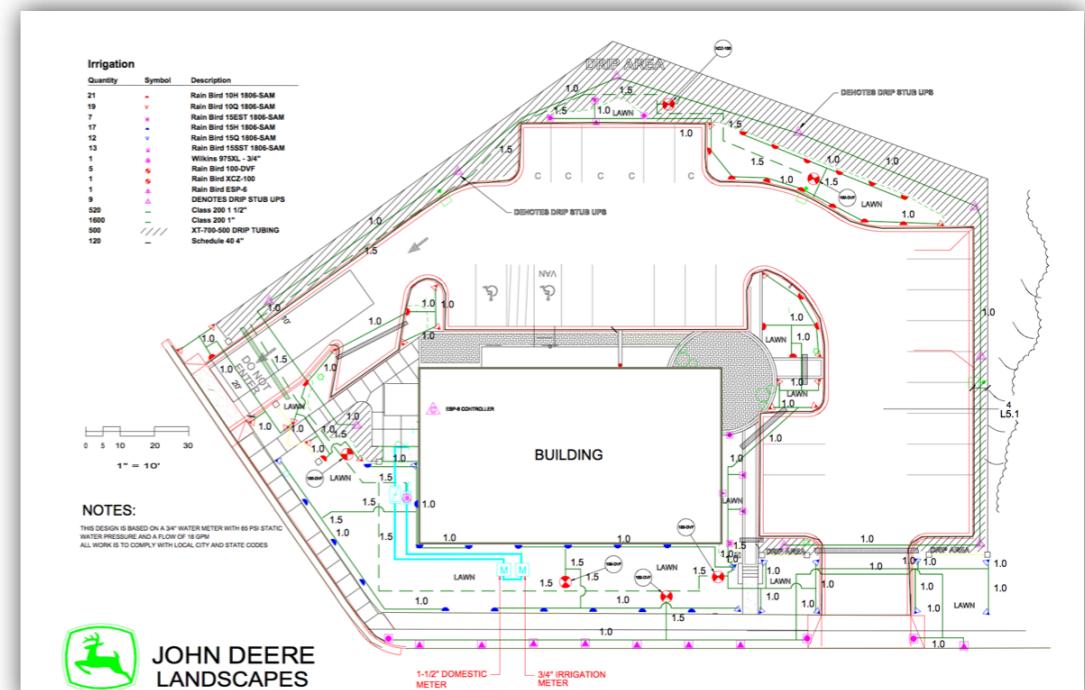


$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

# IN THE FIELD



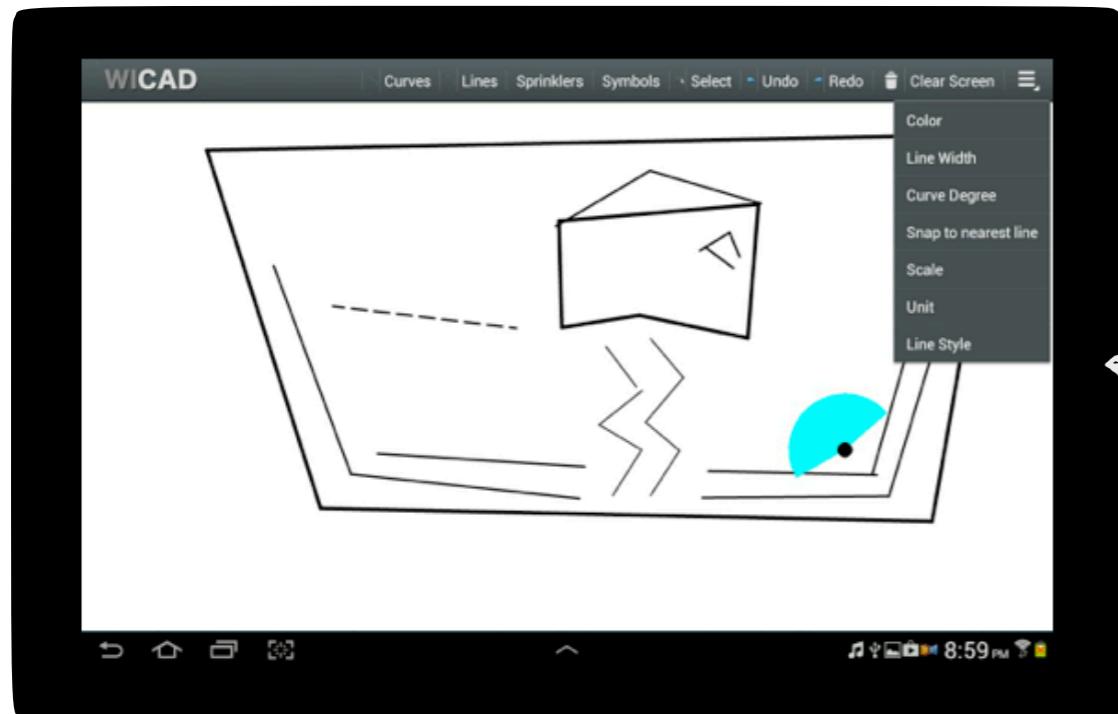
# OFFICE



# IN THE FIELD



# WICAD

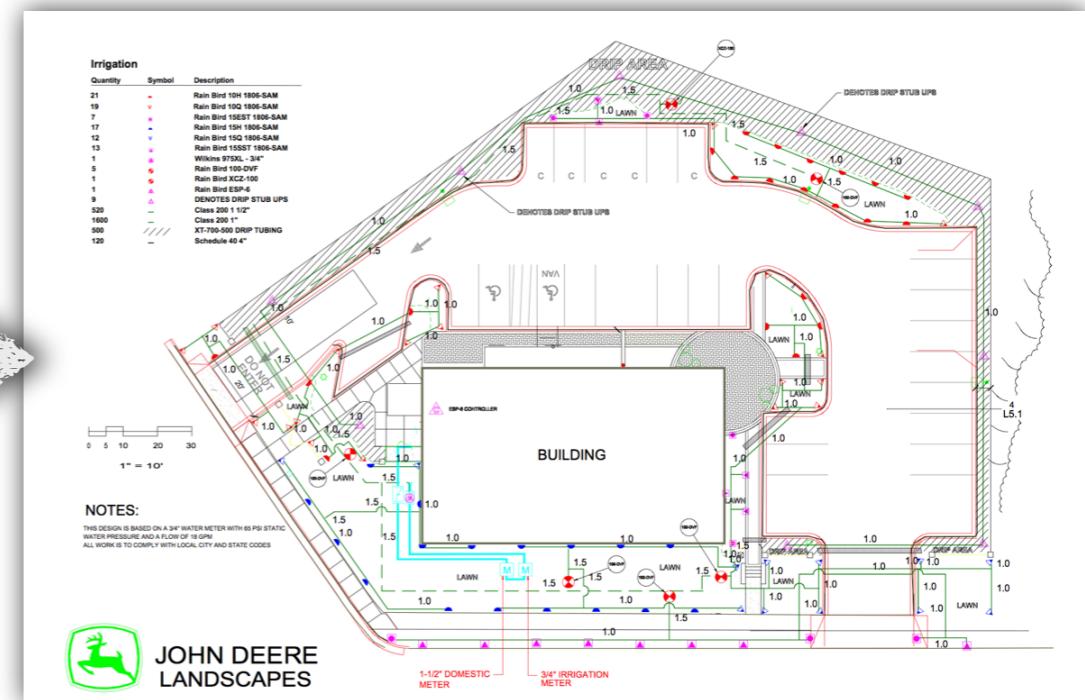


# OFFICE



Microsoft  
Windows®

# RainCAD™



# A New Approach

- Make the design process more efficient
- Minimize the need for manual estimation and calculation
- Make the design process more intuitive

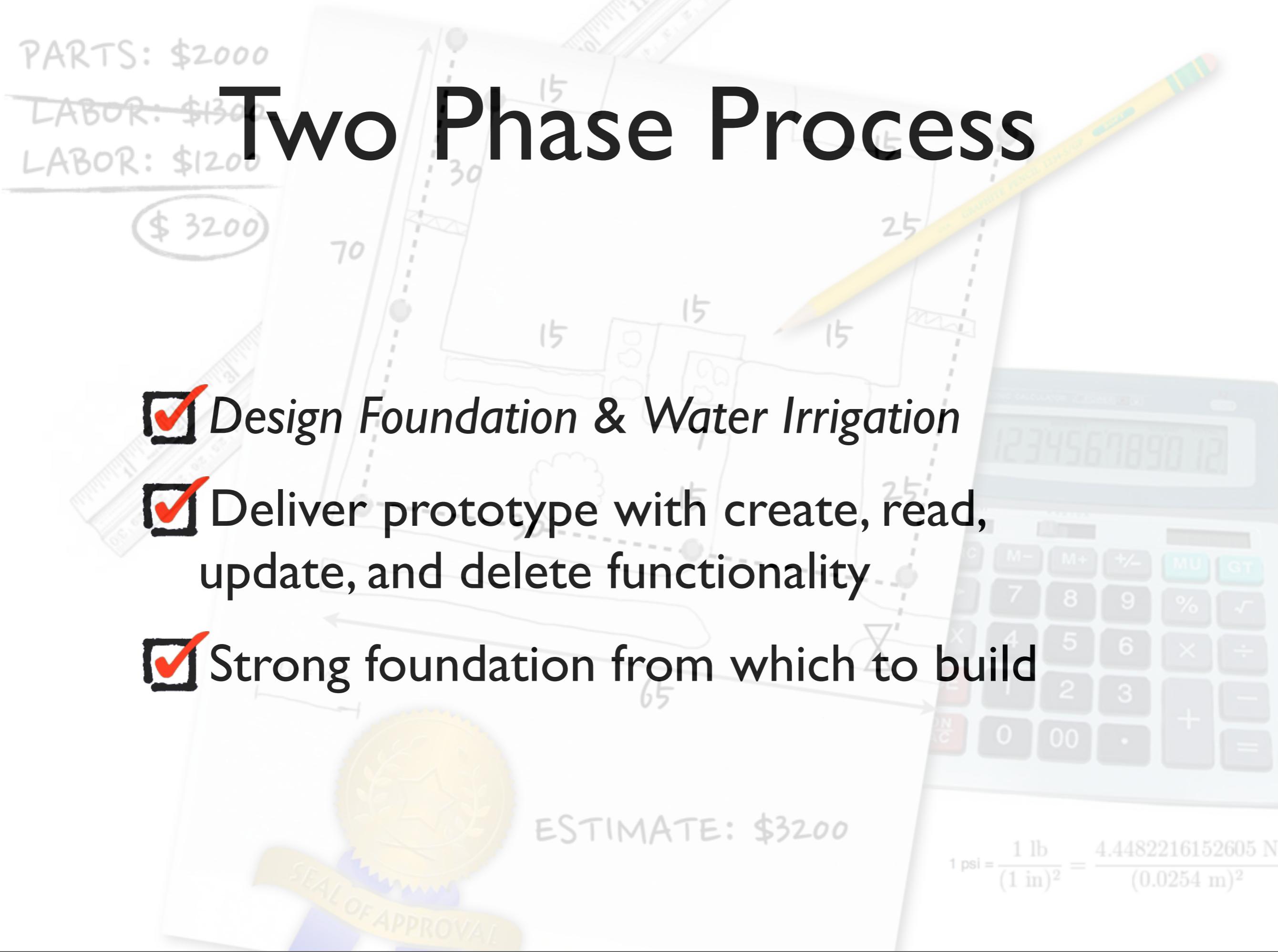
$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

PARTS: \$2000

~~LABOR: \$1300~~

~~LABOR: \$1200~~

\$ 3200



- Design Foundation & Water Irrigation
- Deliver prototype with create, read, update, and delete functionality
- Strong foundation from which to build

ESTIMATE: \$3200

$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

# MERJ Development

- Iterative development process
- Decentralized group leadership
- Projected vs. Actual Schedule



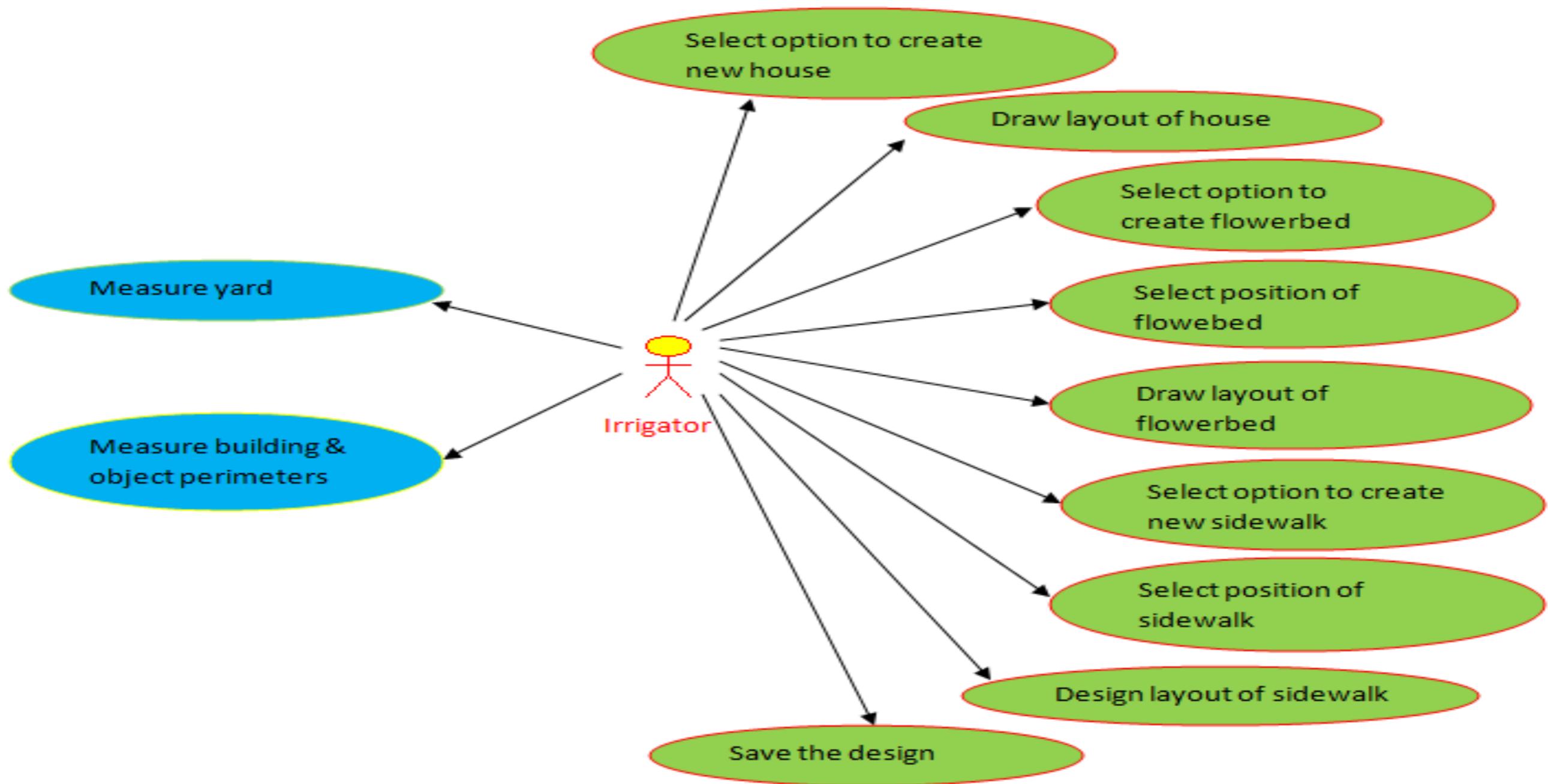
# Schedule: Planned vs Actual

Task	Projected	Actual
Preliminary Setup	Finish 9/10/12	<b>Finished 9/10/12</b>
Final Requirements Document	Finish 10/1/12	<b>Finished 10/1/12</b>
Project Plan	Finish 10/8/12	<b>Finished 10/16/12</b>
Coding Phase	10/22/12 - 11/17/12	<b>11/4/12 - 12/2/12</b>
Project Testing	11/4/12 - 11/24/12	<b>11/26/12 - 12/2/12</b>
Finalize Deliverables	11/26/12 - 12/3/12	<b>11/26/12 - 12/6/12</b>

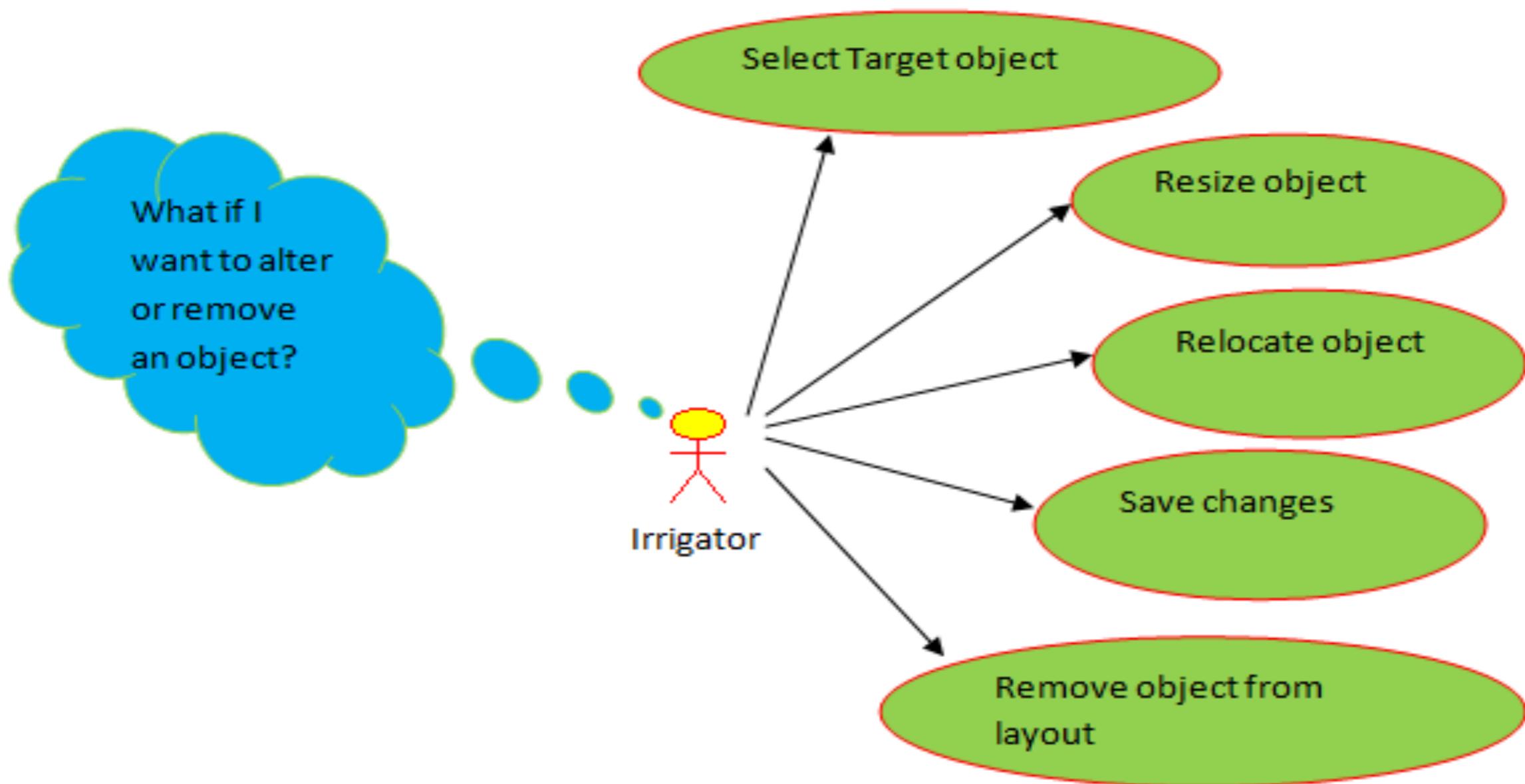


# System Design

# Creating House design



# To alter or remove object



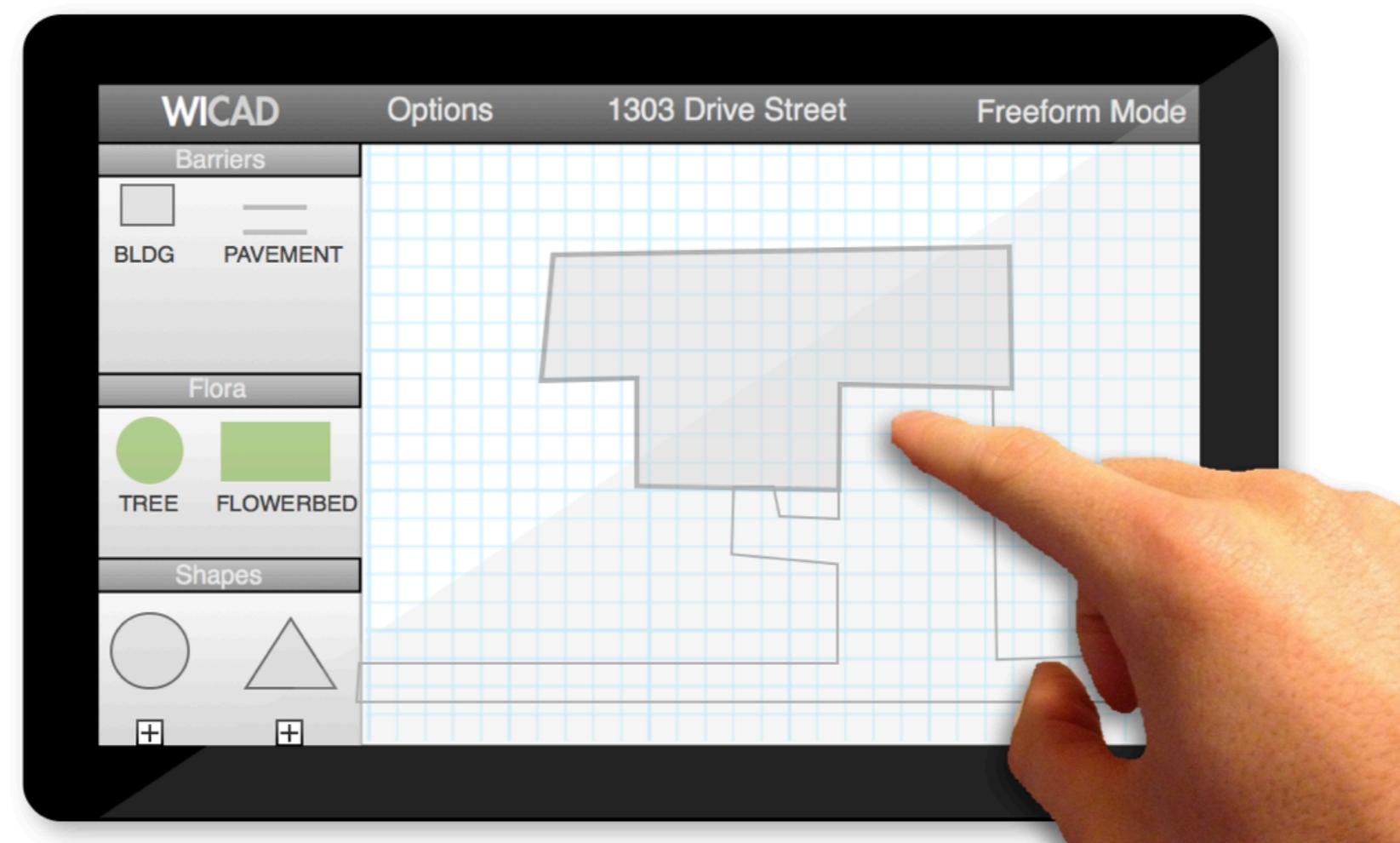
# Creating New irrigation





# Initial Mockups

introducing  
**the WICAD Design**



MERJ

Irrigation Design at your fingertips

The WICAD (Water Irrigation Computer Aided Design) app features a split view interface, providing both important functionality and graphical tools within quick access. The power to design, edit, print, and save pixel perfect designs for water irrigation systems is at your fingertips.

COMING SOON

**App Logo**

**Options Menu**

**Design Identifier**

**Draw Mode**

**WICAD**

Options

1303 City Drive

Structure Mode

**Editor Pane**

**Design Palette**

**WICAD**

Options

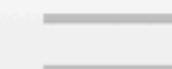
1303 Drive Street

Freeform Mode

Barriers



BLDG



PAVEMENT

Flora

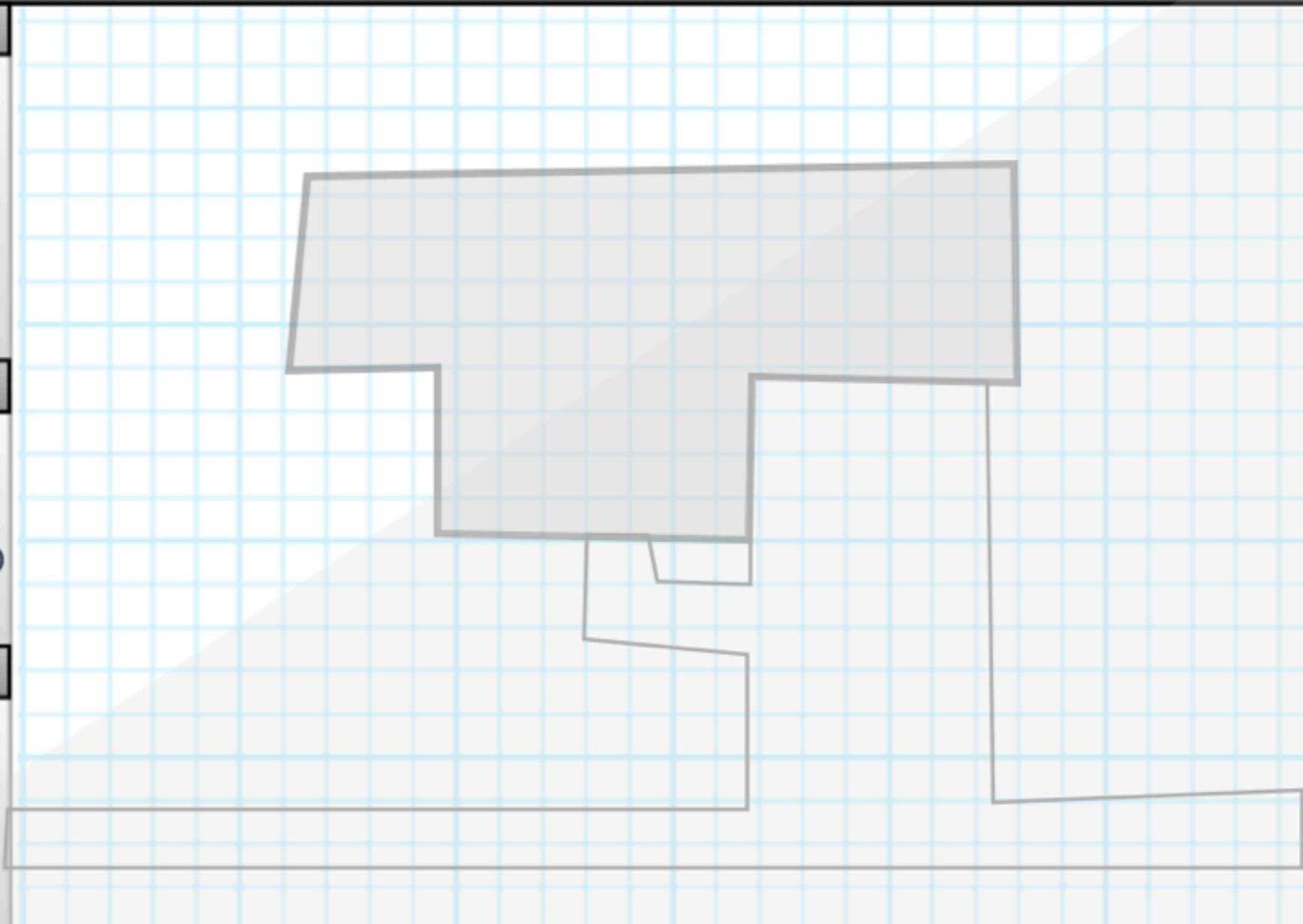
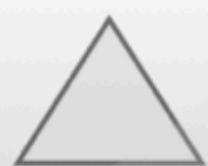
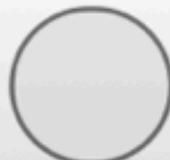


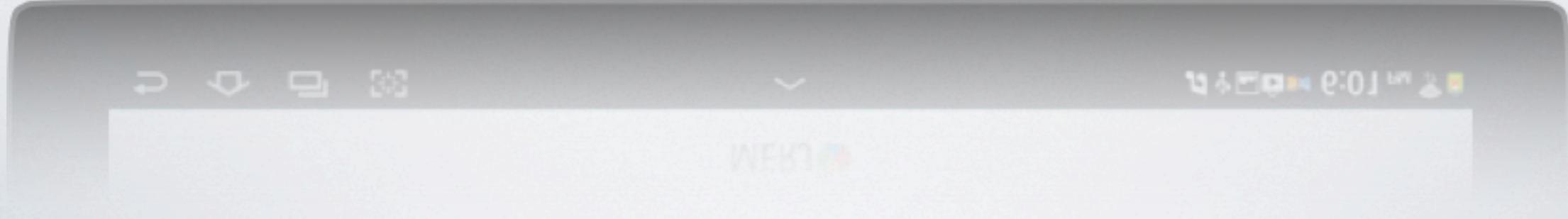
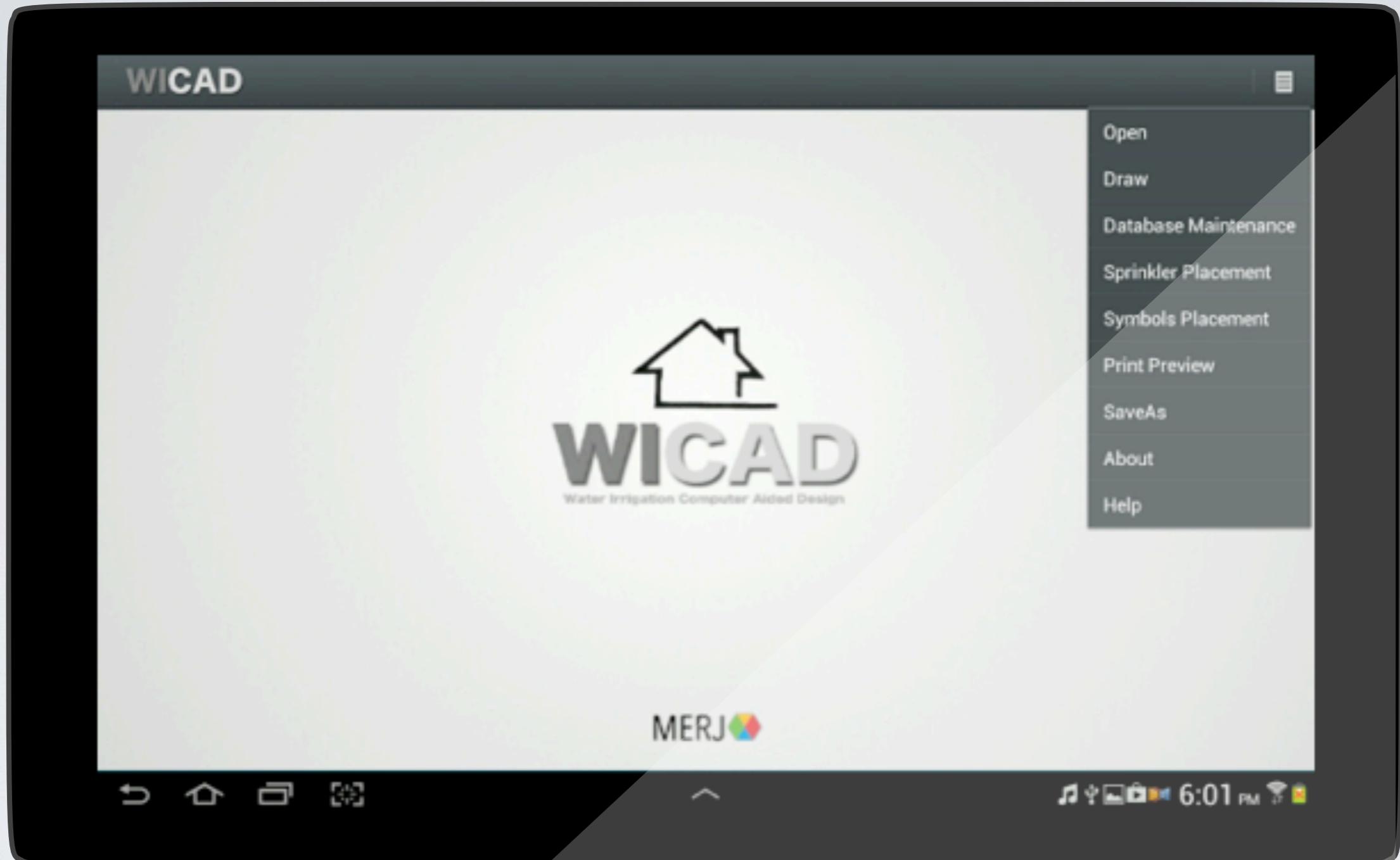
TREE



FLOWERBED

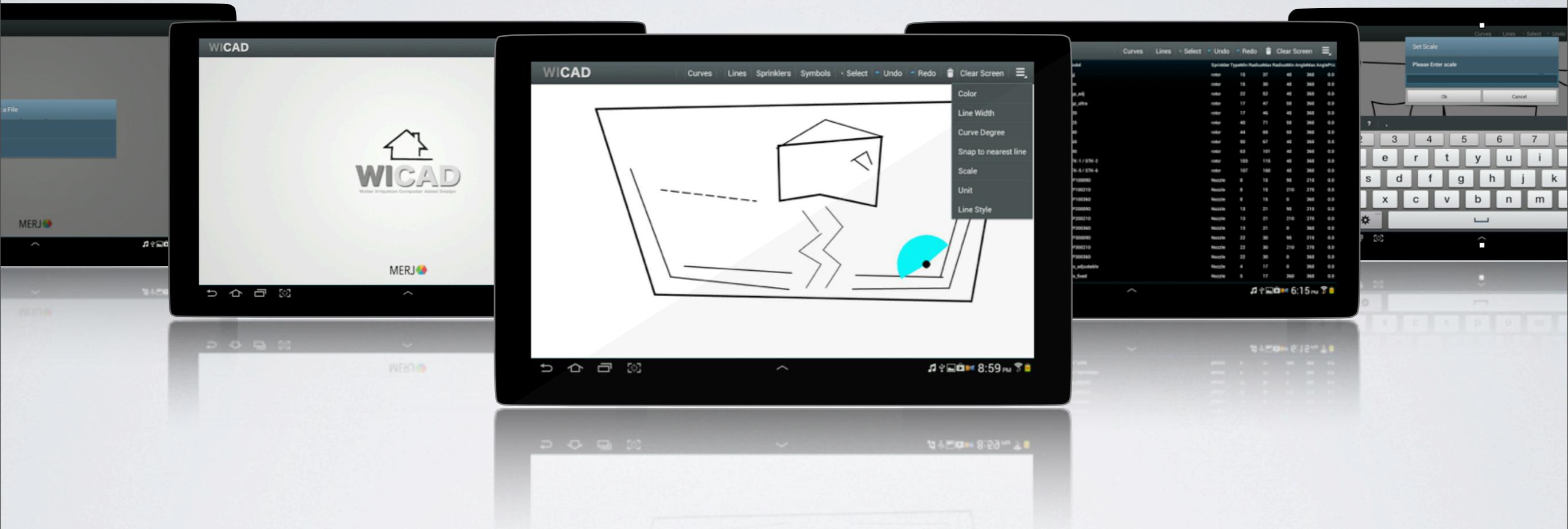
Shapes





# WICAD

## Water Irrigation Computer Aided Design



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# Test Reports

# Test Reports

- Focused on functional testing
- Tested multiple prototype iterations
- Tracked improvements from one version to another over a three weeks

$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

# Test Reports

PARTS: \$2000  
LABOR: \$1300

Test Description	Phase	
	1	2
Undo a drawn line	FAIL	PASS
Redo a line	PASS	PASS
Creating a new drawing	PASS	PASS
View sprinkler database	N/A	PASS
Print preview	N/A	FAIL
Saving a file	N/A	PASS
Saving a new file or changing the name of the existing file	N/A	PASS
Saving a drawing as an image file	N/A	PASS
Changing color of lines, curves	FAIL	PASS
Changing line width	FAIL	PASS
Changing curve degree	N/A	PASS
Changing line style	N/A	PASS
Opening the database	N/A	PASS
Help option in main menu	N/A	FAIL
Drawing a line after 'undo'ing some lines	N/A	FAIL
Redo a line after deleting it once	PASS	FAIL
Rotating line or cuves	FAIL	FAIL
Clear screen	PASS	PASS
Deleting a line or curve	N/A	PASS
Showing length or curve	N/A	PASS

- 40 functional test cases by two independent testers
- 16 were improved
- 4 remained in the failed state
- 10 remained in the passed state

$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

PARTS: \$2000

~~LABOR: \$1300~~

~~LABOR: \$1200~~

**\$ 3200**

# Test Reports

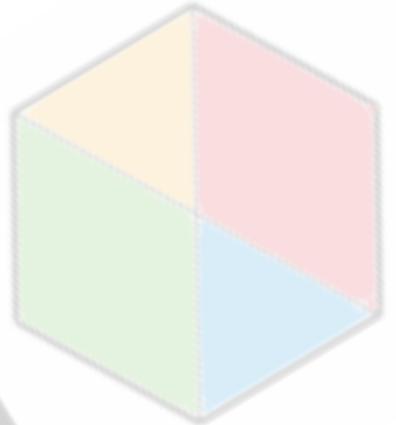
- Known problems
- Deviation from requirements
- Deployment issues

ESTIMATE: \$3200

$$1 \text{ psi} = \frac{1 \text{ lb}}{(1 \text{ in})^2} = \frac{4.4482216152605 \text{ N}}{(0.0254 \text{ m})^2}$$

# Post Mortem

- MERJ thoughts on:
  - If we had more time
  - If we had to do it over
  - What we learned



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# Live Demonstration