

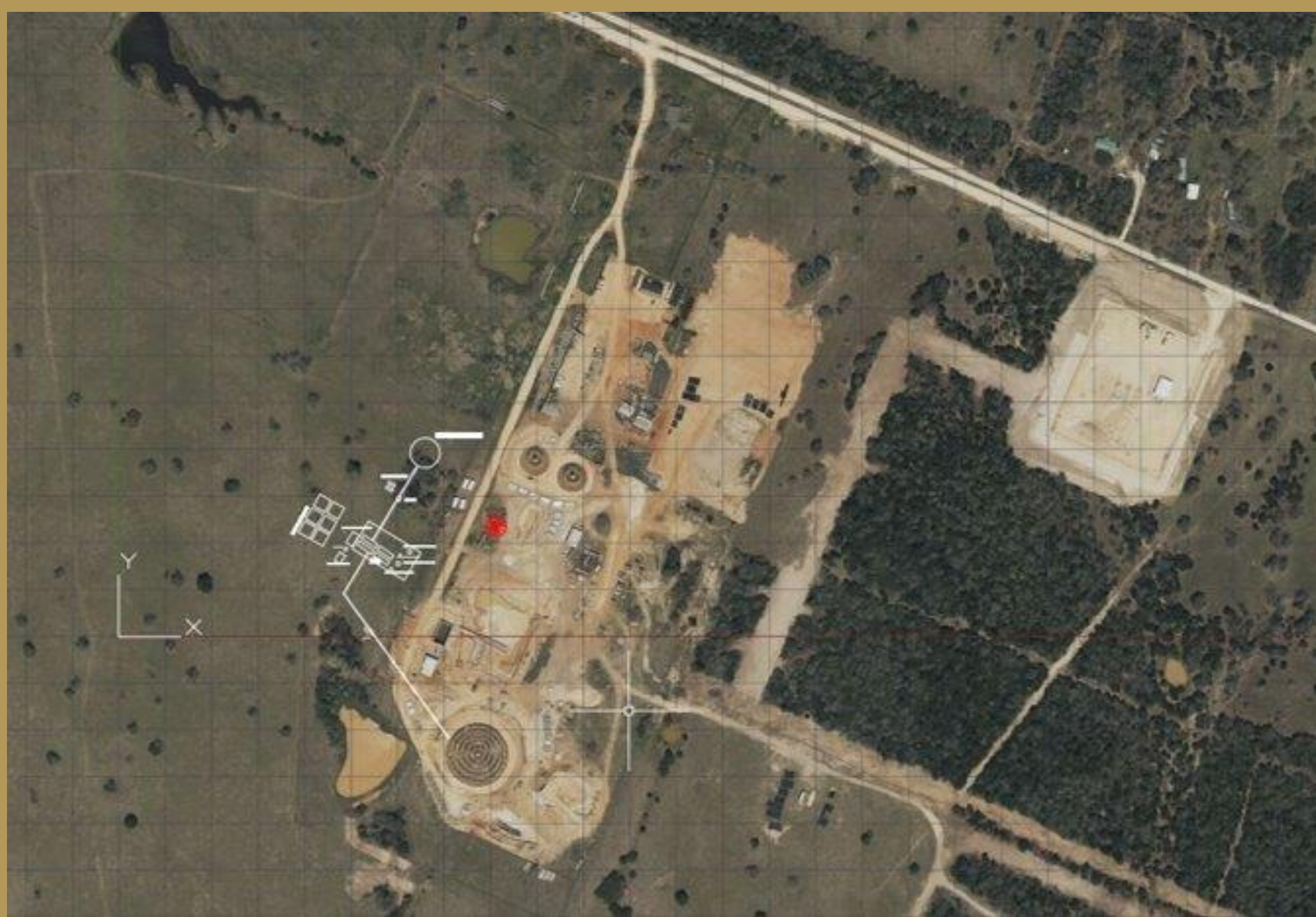
# Group C2-04 Groundwater Treatment Plant

**John Carroll, Wyatt Strength, & Cameron LaVigne**  
 Sponsored By: Josh Milks & Emily Sanford with STV



## Summary of the Problem

Design of the ARWA groundwater treatment plant expansion. The expansion will add 10 MGD to the current 20MGD. The plant pulls water out of the Carrizo aquifer and provides drinking water to residents along I-35 from Buda to New Braunfels.



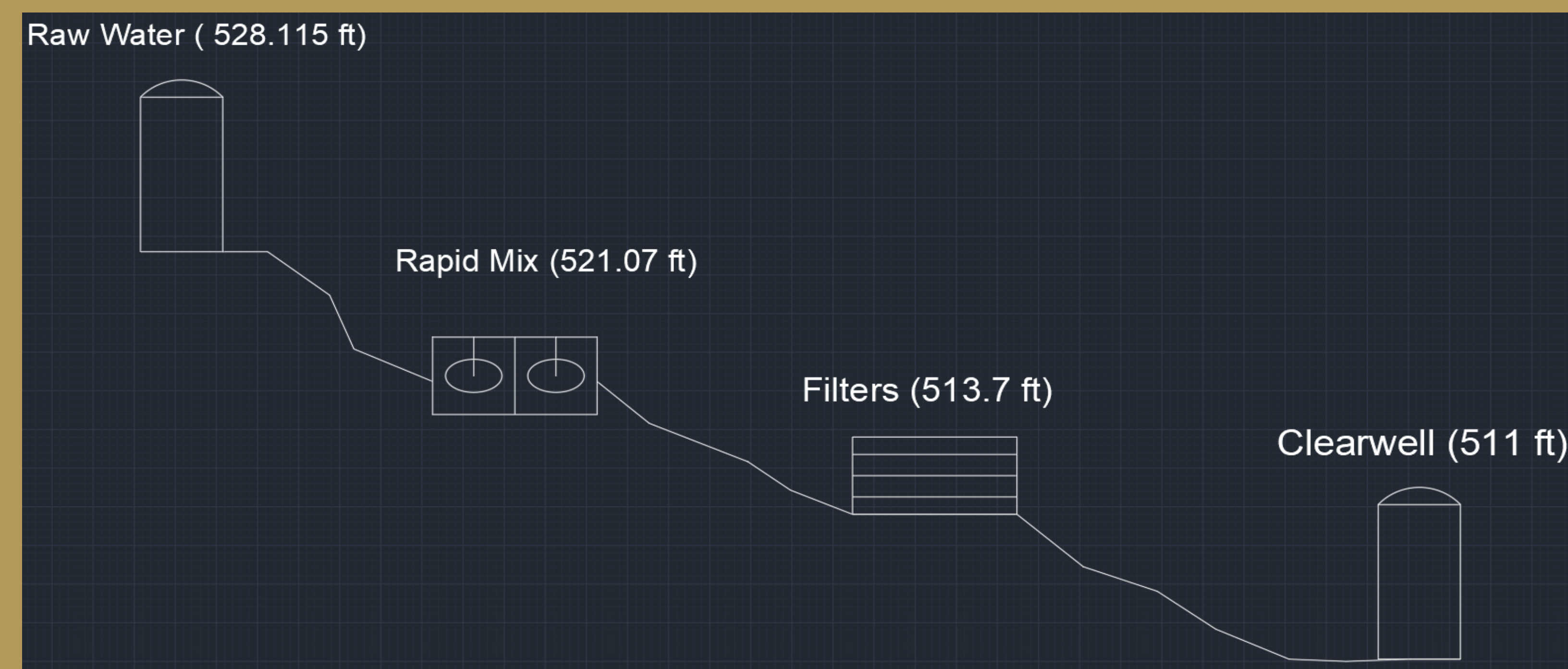
## Constraints and Standards

- TxDOT - TEX -113-E
- TCEQ - §§290.38 - 290.47
- AWWA - D110 or D115
- AWWA - 30001 - 30073
- OSHA - 1926.650
- ACSE - 7-10 sec 2.4.1

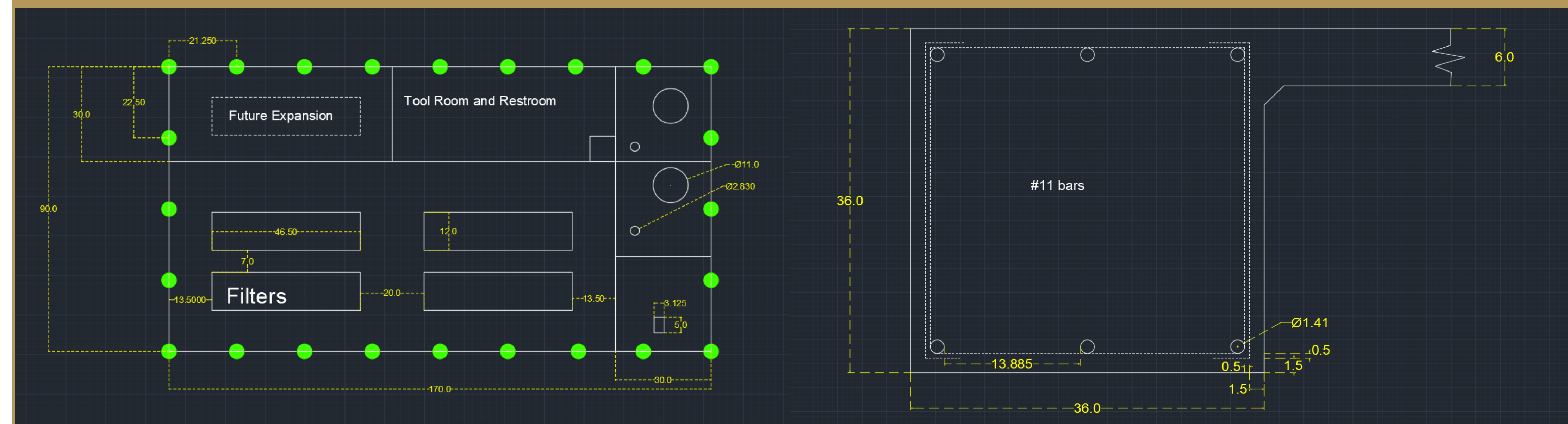
## Engineering Solution



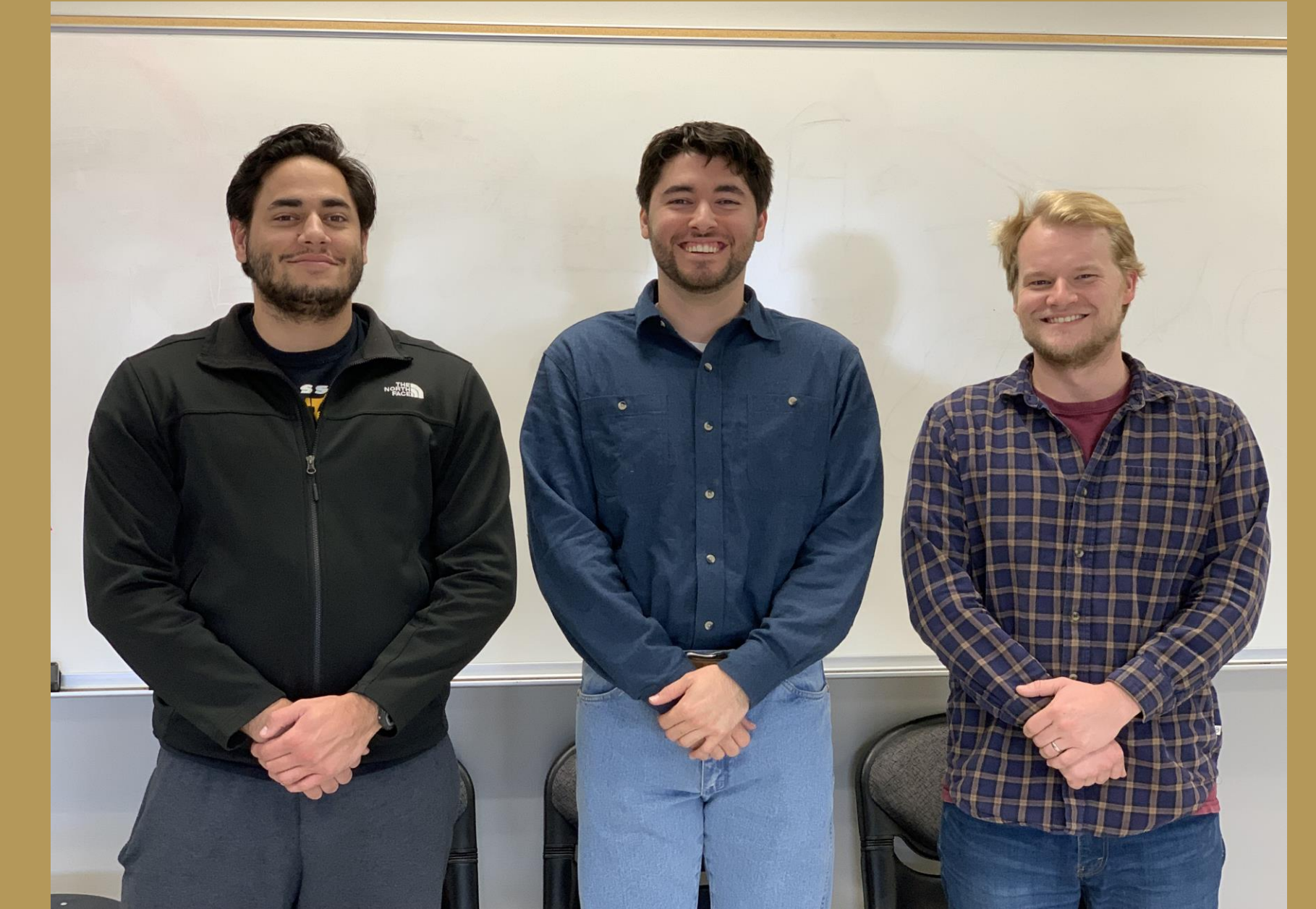
## Hydraulic Grade Line



## Foundations

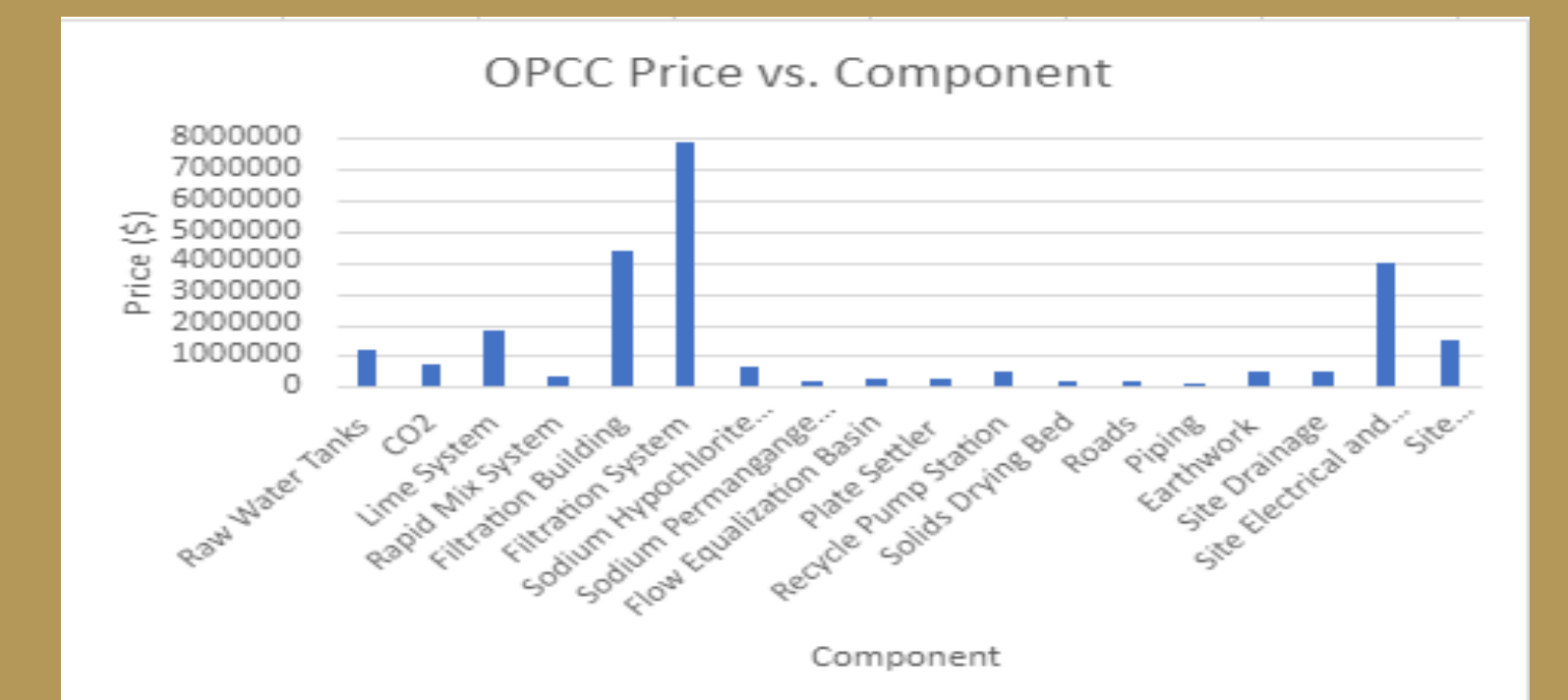


## Team Members



John Carroll, Wyatt Strength, & Cameron LaVigne

## Summary Cost



Item	Daily Use	Price	Yearly Price	100 Year Price	ROUNDED
Electricity	6158.9kwh	0.10125/kwh	227497.4482	22749744.82	
<b>Chemicals</b>					
Sodium Permanganate	50 gal	105/gal	182500	18250000	
Sodium Hypochlorite	500 gal	105/gal	1825000	182500000	
Lime	2000 gal	15/gal	730000	73000000	
CO2	4 tons	5005/ton	7300000	730000000	
<b>Labor</b>					
Cleaning Sludge Drying Beds			10000	1000000	
Operational Cost of Replacing Filter Media, per 5 Years			180000	18000000	
<b>Total 100 Year LCCA Price (\$)</b>				388499744.8	400000000

## Summary Sustainability

Credit Category	Applicable	Submitted	Percentage
Quality of Life	186	146	78%
Leadership	182	178	98%
Resource Allocation	184	80	43%
Natural World	194	74	38%
Climate and Resilience	190	90	47%
<b>Total Points / %</b>	<b>936</b>	<b>568</b>	<b>61%</b>

**SUBMITTED SCORE**  
**568** out of 936 points  
**61%**  
**Platinum**