

## PROJECT SCOPE

- A yearly average growth of 4.5% in Hays Country has prompted the need for infrastructure to meet the demand of increasing population.
- The objective is to recommend a design for an industrial warehousing complex with a minimum gross floor area of 300,000 SF, on a designated 25-acre property to fulfill the needs of businesses seeking space in the area.

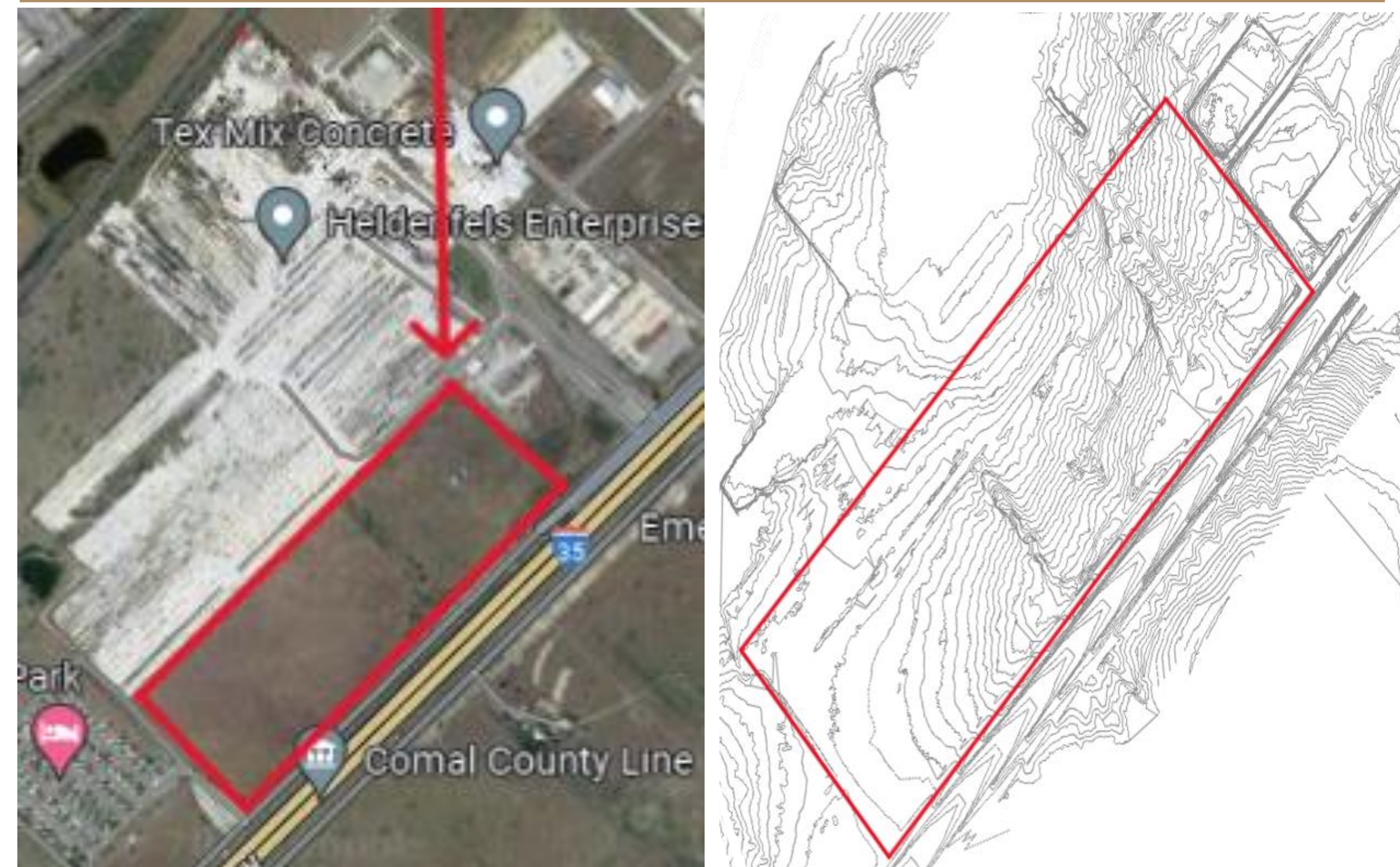
## PROJECT DESCRIPTION

- The objective was to recommend design alternatives that would meet the criteria set forth by the sponsors, with respect to city code.
- Four alternatives were considered, evaluated primarily in their potential for generating income. Only two were selected for recommendation.
- The selected designs were further evaluated in Capital Cost, Sustainability and Life Cycle Analysis

## ALTERNATIVES

- No Constraints** allows a combination of warehousing strategies that may appeal to a variety of businesses.
- Cross Docks** consist of a single building, with docks on each side allowing a direct unloading and loading operation that omits storage and maximizes developable square footage.
- Shared Docks** consist of buildings that share a dock area
- Rear Loads** consist of buildings limited to 50,000 SF in size and limits the interaction between heavy trucks and pedestrians

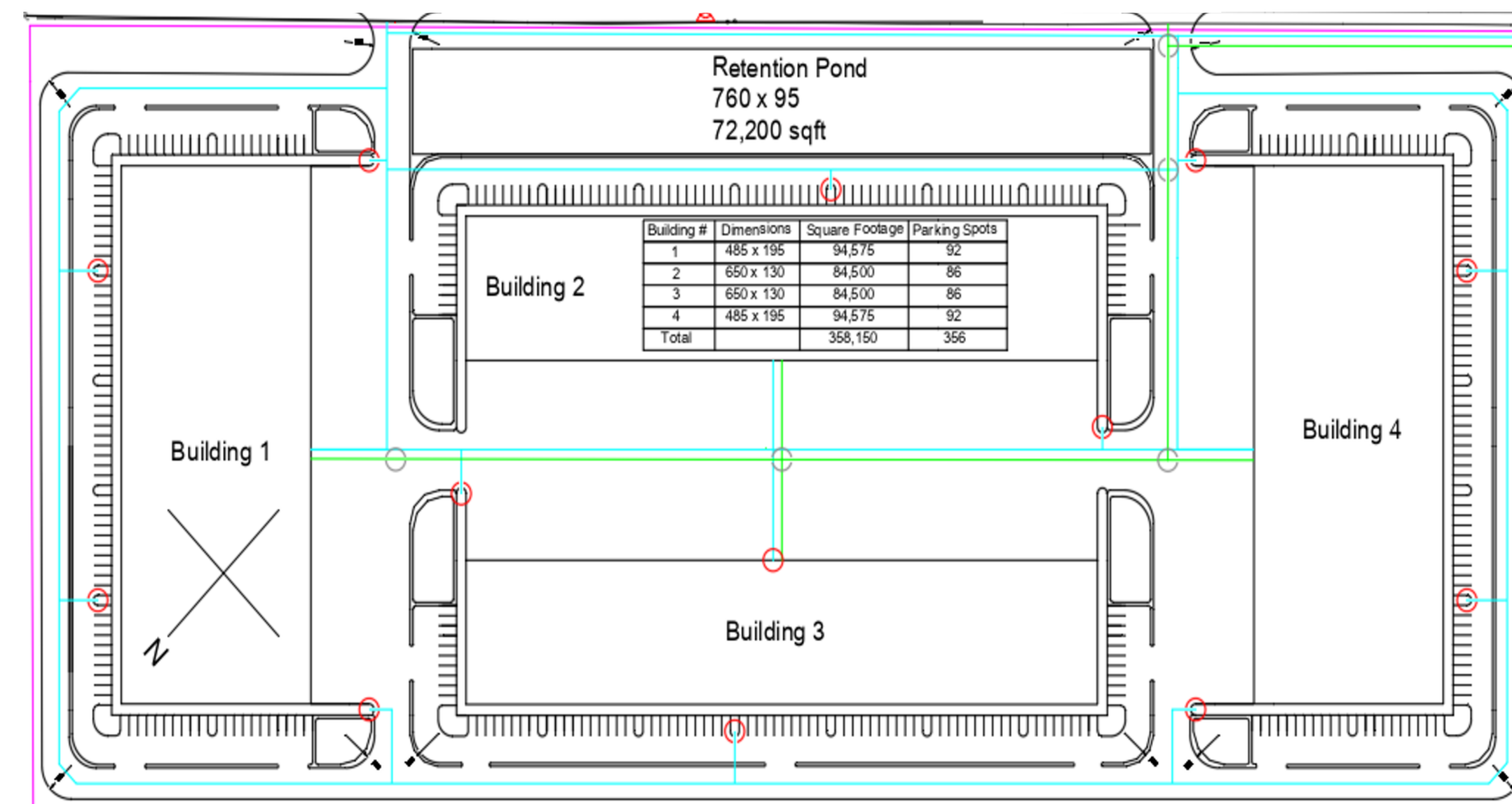
## SITE LOCATION & TOPOGRAPHY



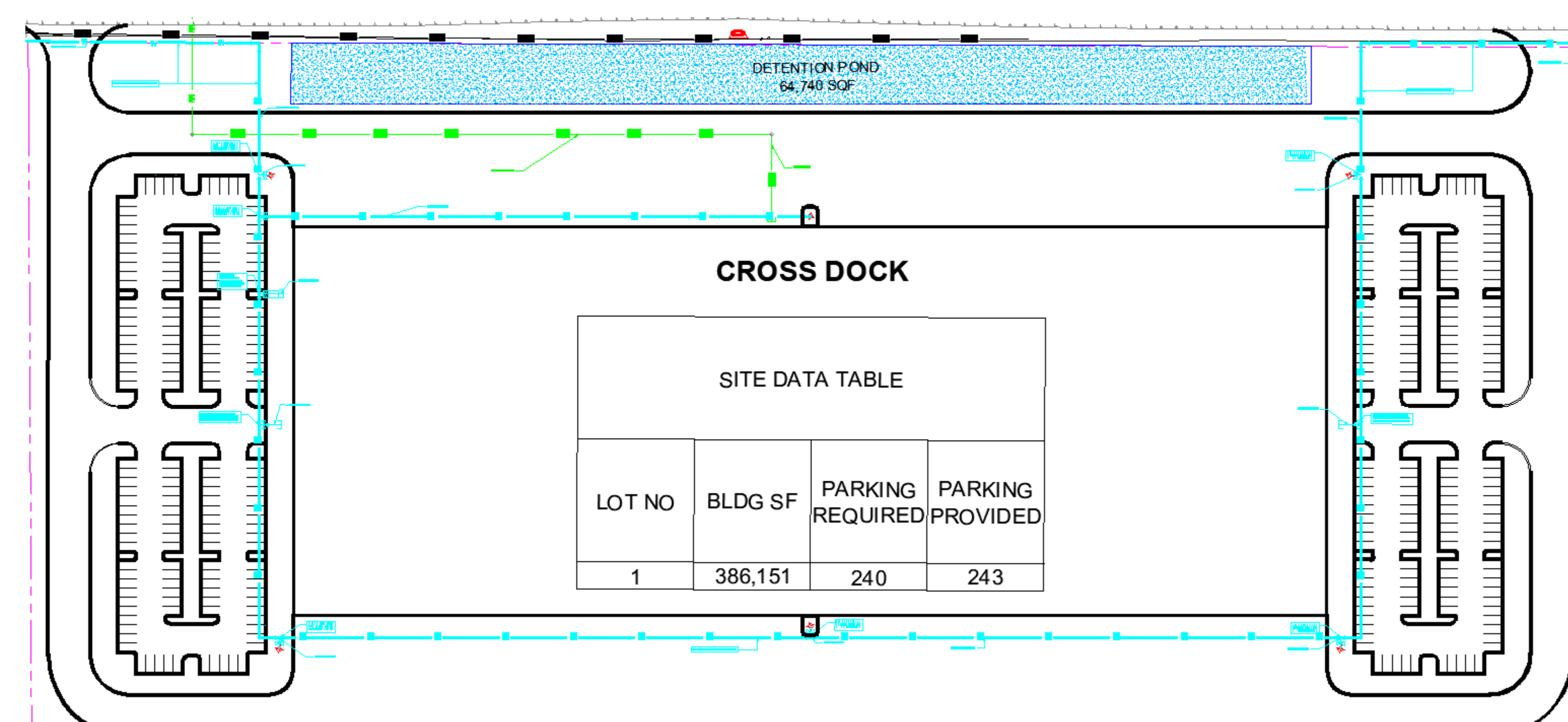
## ALTERNATIVE CRITERIA

Criteria	Weighted	Alternatives							
		No Constraints		Shared Dock		Cross Dock		Rear Dock	
		Score	Total	Score	Total	Score	Total	Score	Total
GFA	10	7	70	5	50	9	90	4	40
GFA-Impervious Cover Ratio	6	7	42	7	42	7	42	6	36
Safety	4	6	24	10	40	7	28	6	24
Revenue	10	8	80	6	60	10	100	4	40
<b>Total</b>			<b>216</b>		<b>192</b>		<b>260</b>		<b>140</b>

### NO CONSTRAINTS



### CROSS DOCK



## TEAM



## SUSTAINABILITY

- LEED was the sustainability framework chosen to evaluate the potential of each alternative in providing environmental consciousness during implementation and over the life span of the development.
- The Leadership in Energy and Environmental Design (LEED) rating tool has provided a **Gold** certification for the designs, with 79 points. Although a significant cost is associated with this, it offers a best-case scenario for clients who prioritize a sustainable infrastructure.
- The most significant substitutions considered to reach this certification are the following:
  - Solar Panels and battery
  - Access to quality transit by bus
  - Wastewater quality management system
  - EV charging stations

## COST

- Cost evaluation was divided into two categories
  - Capital Cost
  - Life Cycle Analysis
- Capital Costs involve all expenditures related to the establishment of infrastructure and was estimated by unit cost method.
- Life Cycle Analysis predicts all future expenditures, including maintenance, rehabilitation, and salvage value into a cumulative cost.

	No Constraints	Cross Dock
Capital Cost	\$34,826,264	\$43,107,199
Sustainability	\$2,500,000	\$2,500,000
20% Contingency	\$7,465,252	\$8,621,439
<b>Total</b>	<b>\$44,791,516</b>	<b>\$51,728,638</b>
NPV (30years)	\$80,088,389	\$89,860,436