

# Restructuring of the Enrique Martí Coll Linear Park

## Department of Sports and Recreation (DRD) Polytechnic University of Puerto Rico (PUPR) Civil Engineering Senior Design CE4920-29



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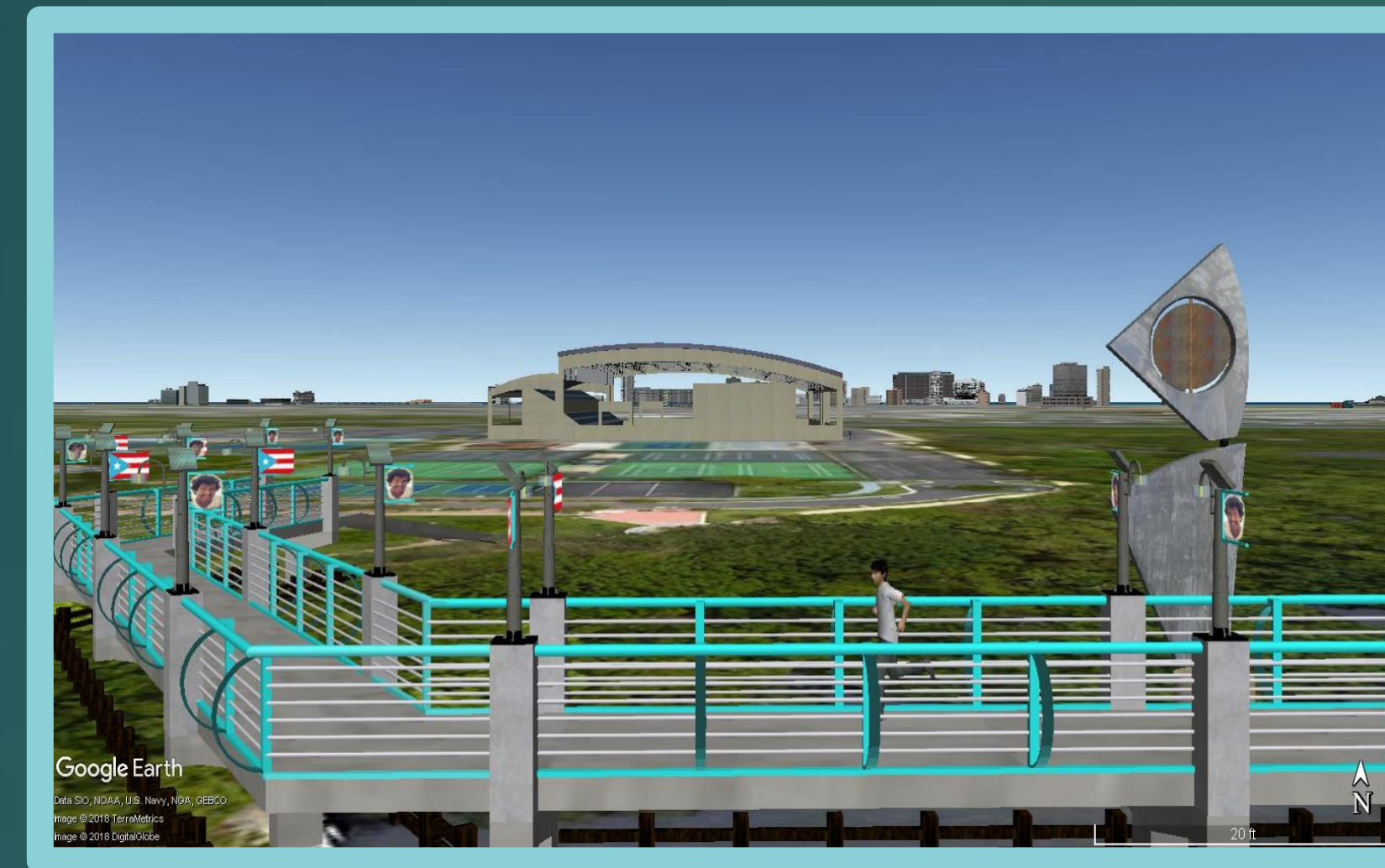
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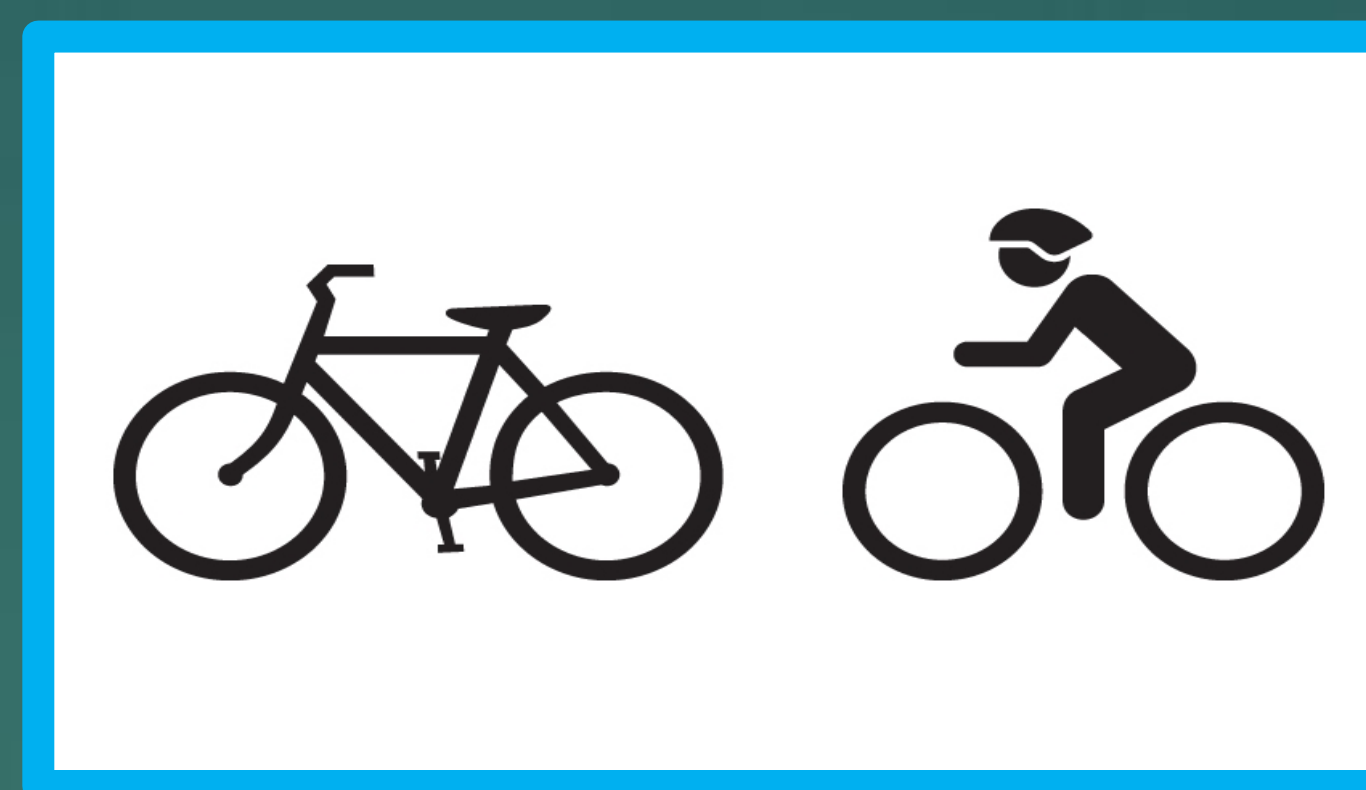
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### Abstract

The Enrique Martí Coll Linear Park was built as an elevated concrete walkway that runs along the bank of the Martín Peña canal, designed as an attraction to give a space for people to get away from the concrete jungle of San Juan without having to travel too far.



View to Central Park



### Project Description

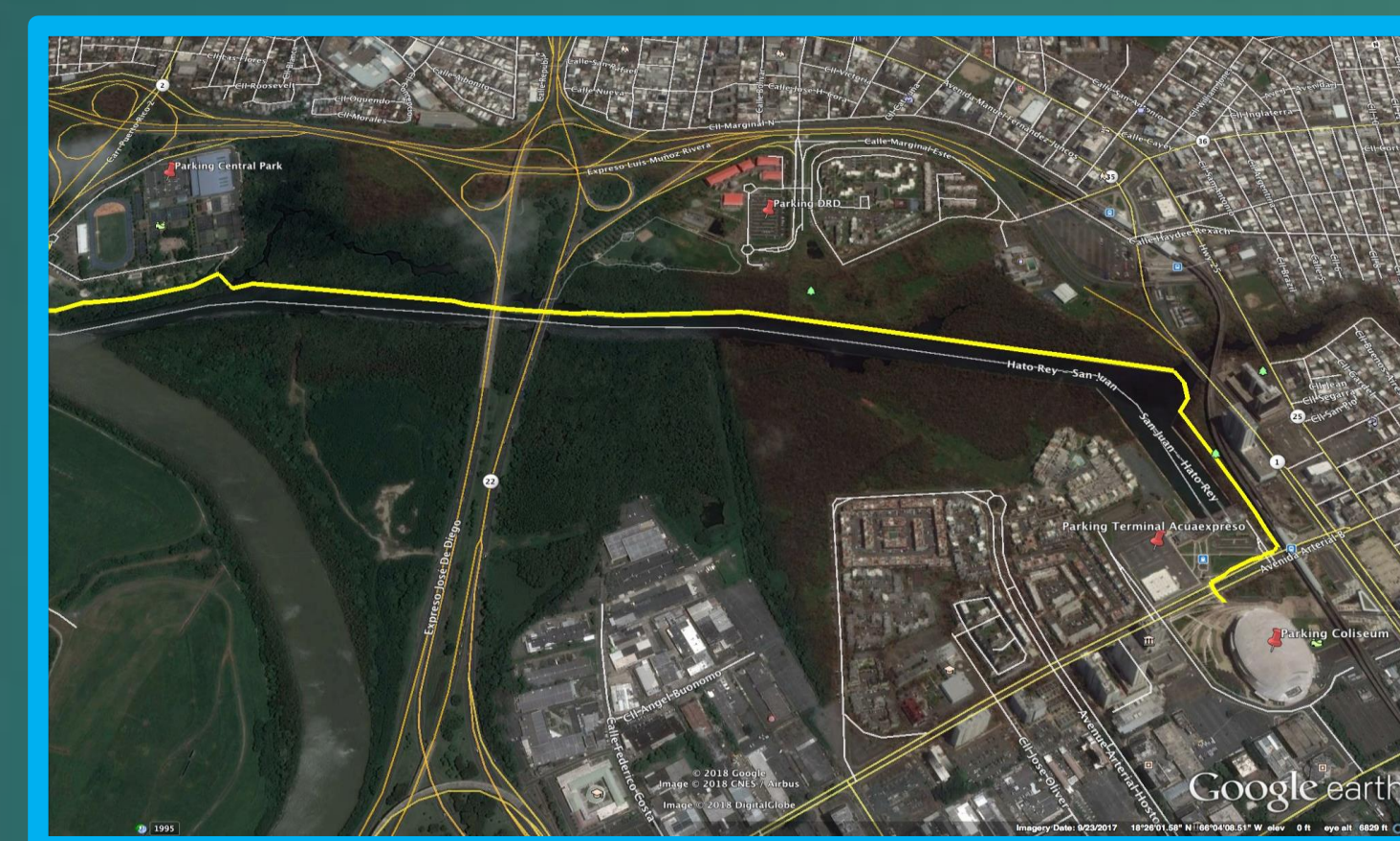
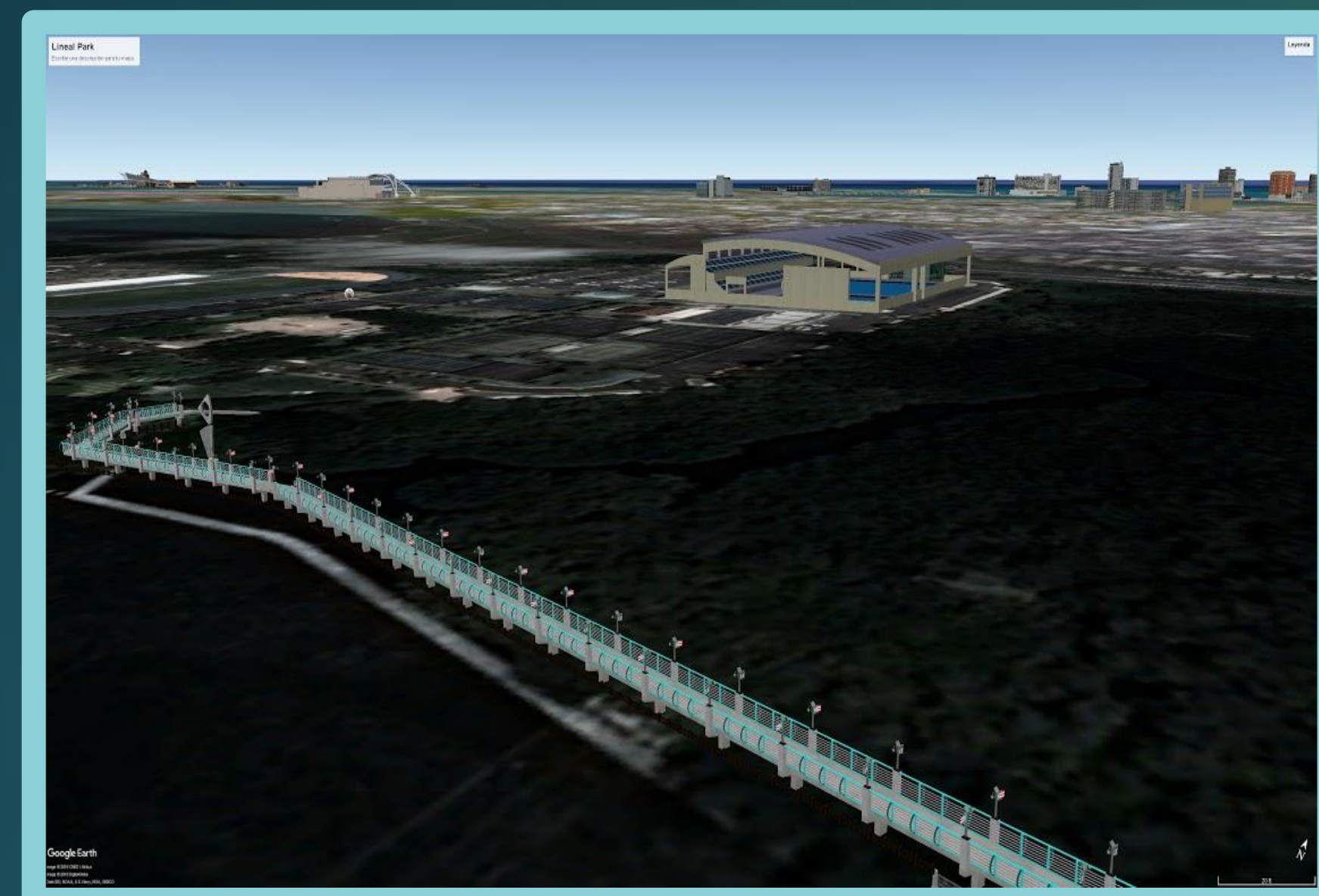
The main objective of this project is to restructure and restore the Enrique Martí Coll Linear Park so that it can open its gates to the public, guaranteeing its safety and functioning. In addition to the restructuring, we want to connect the Enrique Martí Coll Linear Park with the Puerta de Tierra Linear Park with an expansion from "Parque Central" to "Bahía Urbana".



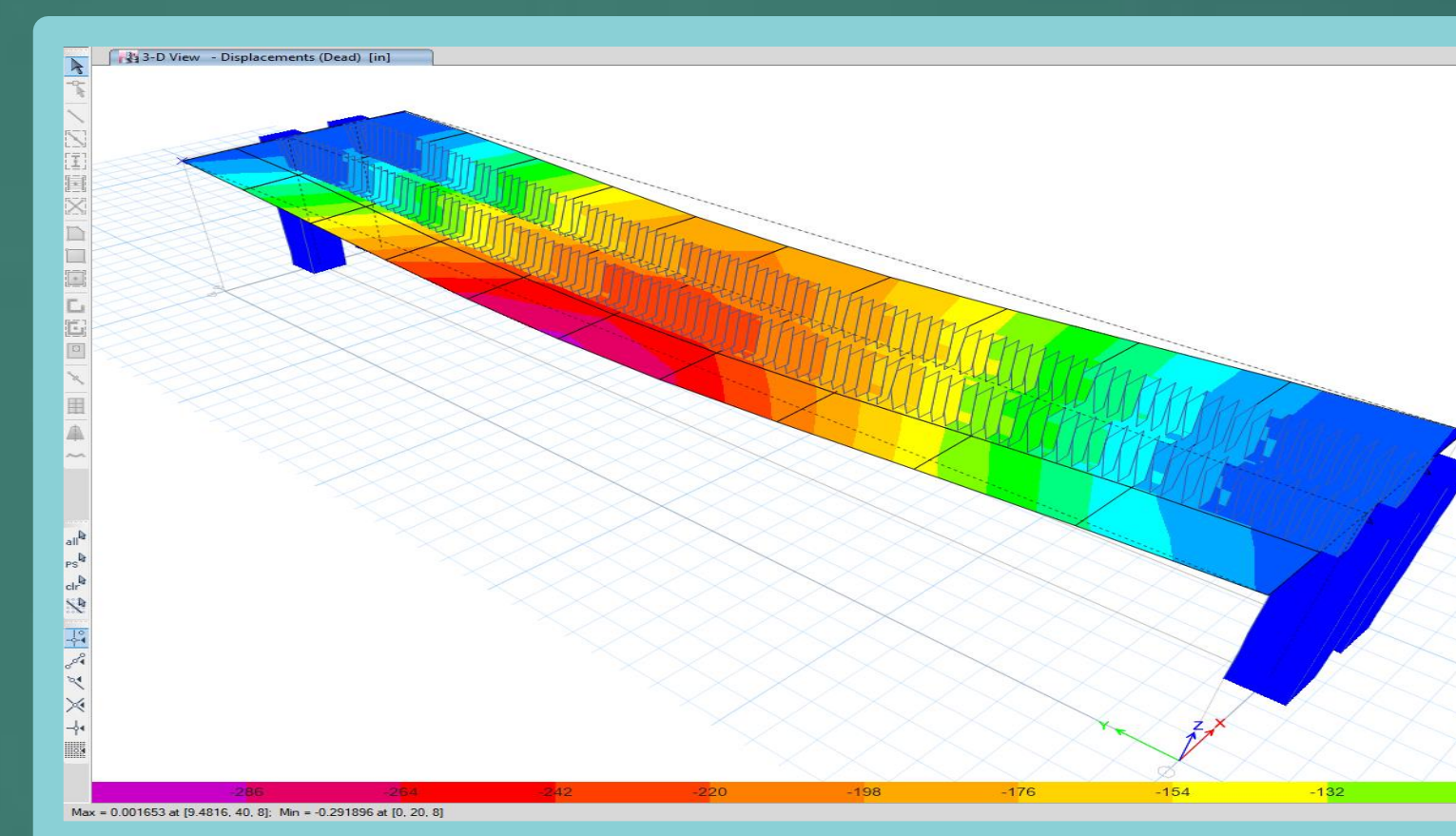
Top View Route Martí Coll

### Transvision Park

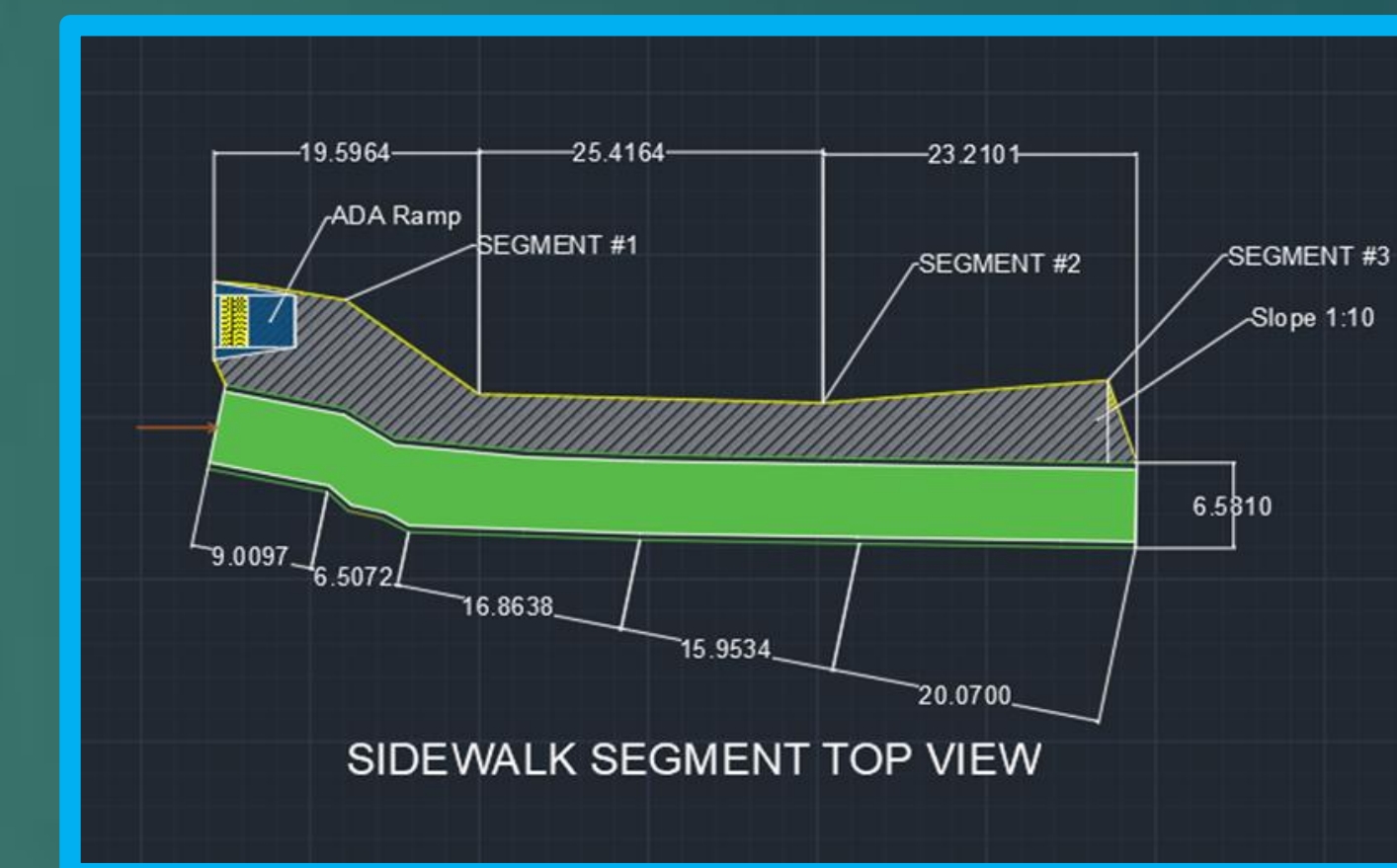
- It's the future vision of collective transportation.
- The Park will have cultural, musical, and gastronomic experiences.
- Areas of interest:
  - Food Area
  - Gym Area
  - Amphitheater
  - Pet Area
  - Splash Water Park
  - Playground Area



Route Martí Coll Lineal Park



Load Displacement



Sidewalk Segment Side View

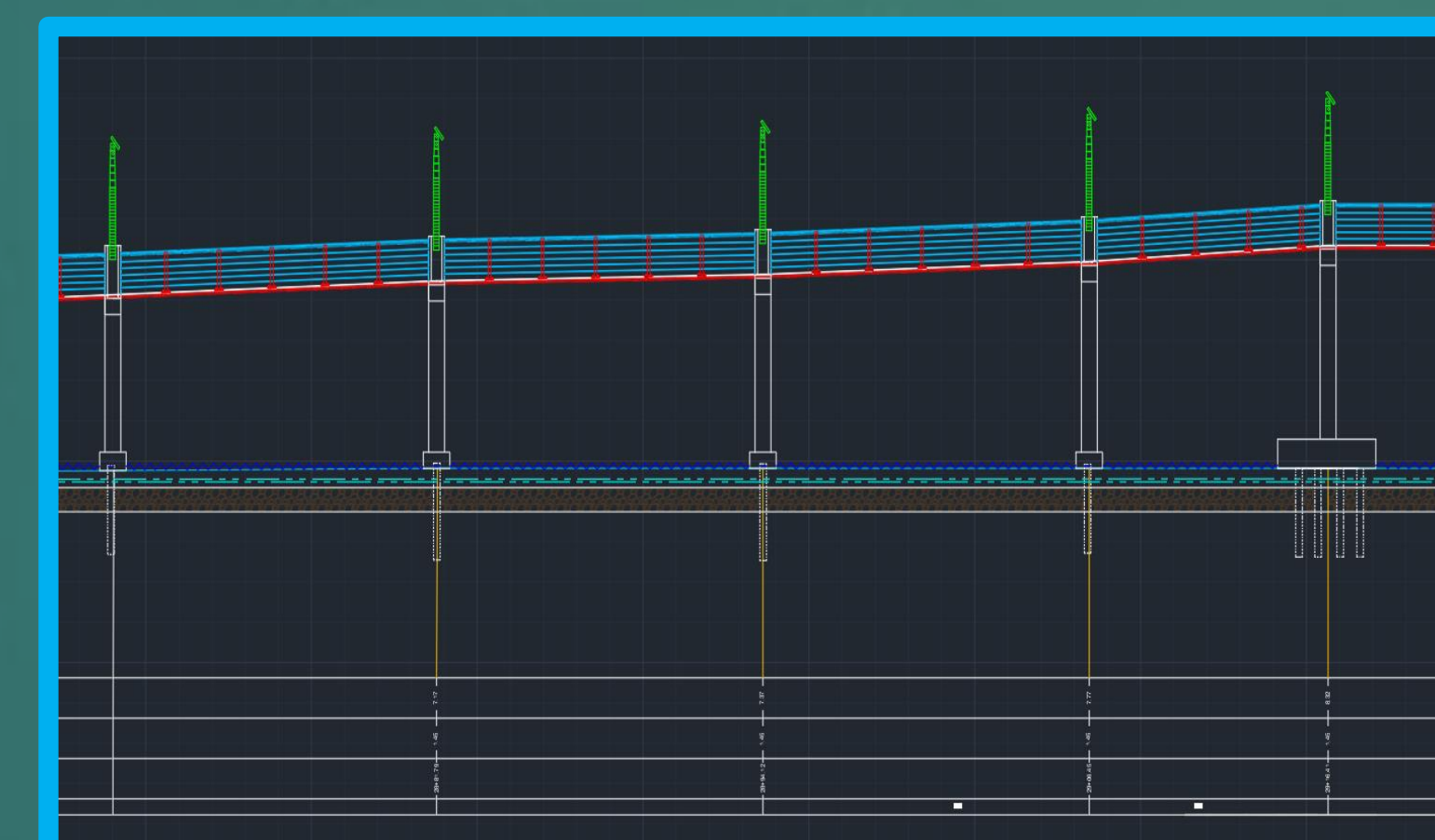


### Conclusion

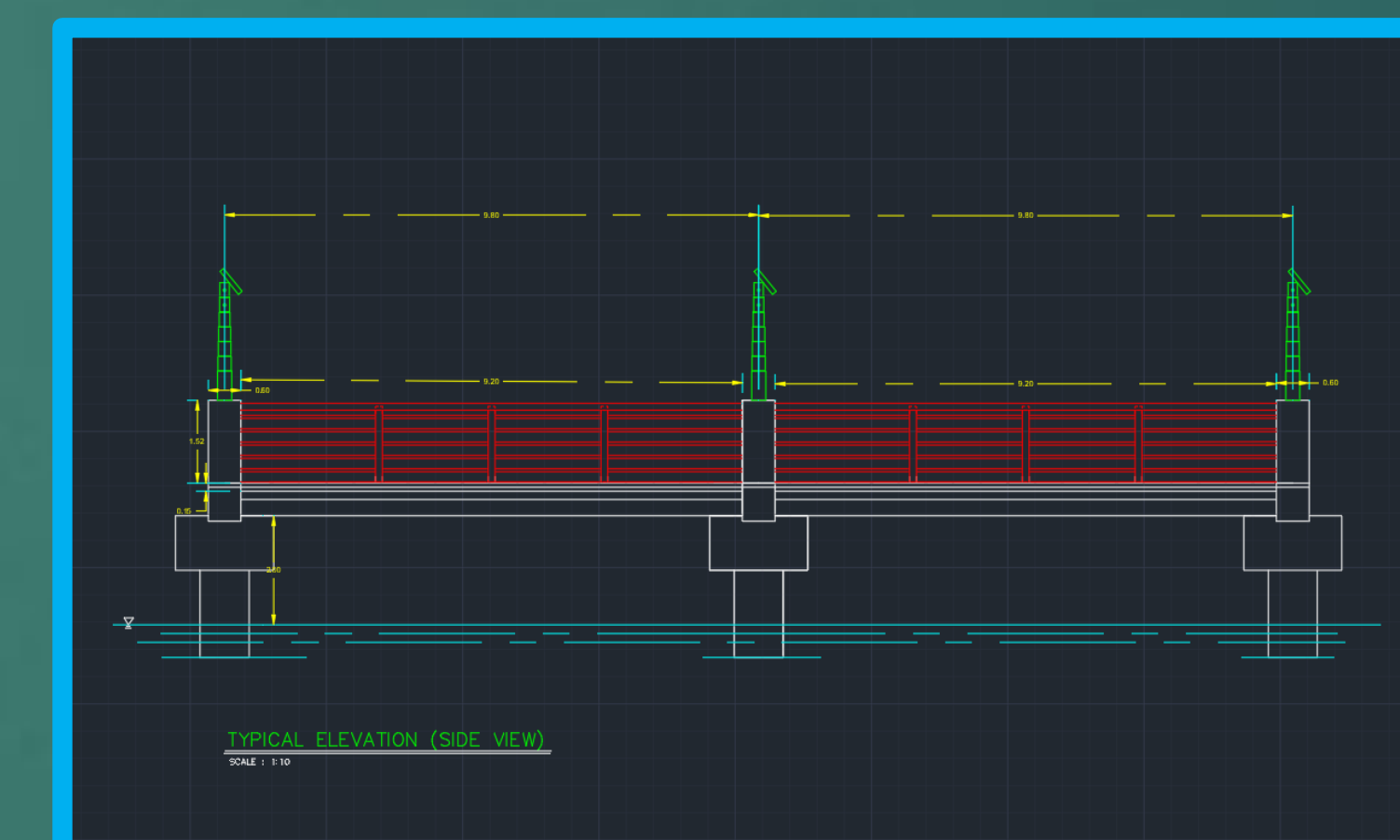
After having assessed the needs of our client and met all the necessary parameter for the reconstruction of structure, it is determined that the Linear Park Martí Coll will be available for a prompt opening as long as the proposed improvements are made. It is guaranteed that in this project you will find everything you need to know the current condition of the Park and the steps to follow for its rehabilitation.

### Restructuring the Martí Coll Park

This park is currently closed due to its deteriorated condition. Based on the evaluation guides for the restructuring of concrete structures, it is proposed to carry out a series of improvements in concrete slabs, beams, lighting, security and fences, among other aspects in order to reopen the facilities.



Proposed Detailing Side View



Typical Elevation Side View



Actual Damage Slab



Preventive Maintenance Plan			
Frequency	Type of Inspections	Commentary	Cost Level
Annually	Inspection of piles, beams, and columns. Preventive maintenance and general condition.	Every year it is advisable to inspect the condition of the major elements, as well as to make a general cleaning of them to reduce the risk of failure due to adhering materials such as excess salt, algae, fungi, etc.	High
Biannual	Cracks, fissures, chipping, corrosion spots and major flaws.	It is established as a period of 6 months an evaluation of cracks, fissures, flaking, or other major flaws that occurs and categorize them to have an inventory of their critical level.	Moderate
Quarterly	Condition of bollards, propaganda, security system.	Everything related to security must be investigated with a term of no more than 3 months, this includes guardrails, electrical system and pest control.	Moderate
Quadrimestral	Physical state of the security guardrails, electrical system, pest control.	The bollards where the system of lighting, propaganda and security system will be, should be inspected, with a period of 4 months to guarantee the welfare of the users.	Low
Monthly	Green areas and surroundings, visual evaluation, lighting system, bathrooms and acces.	Green areas, trees obstructing the passage, condition of the sanitary services and lighting and a routine visual evaluation to identify possible critical and unforeseen events, should be done every 30 days at the most.	Very Low

Activities	Estimated Cost
Demolition / Removed Works	\$ 112,560.00
Slab	\$ 431,115.20
Railings	\$ 699,000.00
Bollard	\$ 11,137.04
Treatment Concrete and Steel Reinforcement	\$ 3,056.10
Bathroom	\$ 3,185.80
Sewer Water Line	\$ 24,790.00
Fire Protection System	\$ 80.00
Finishing Work	\$ 123,690.00
General Condition	\$ 874,541.03
Project Total Cost	\$ 2,283,155.17