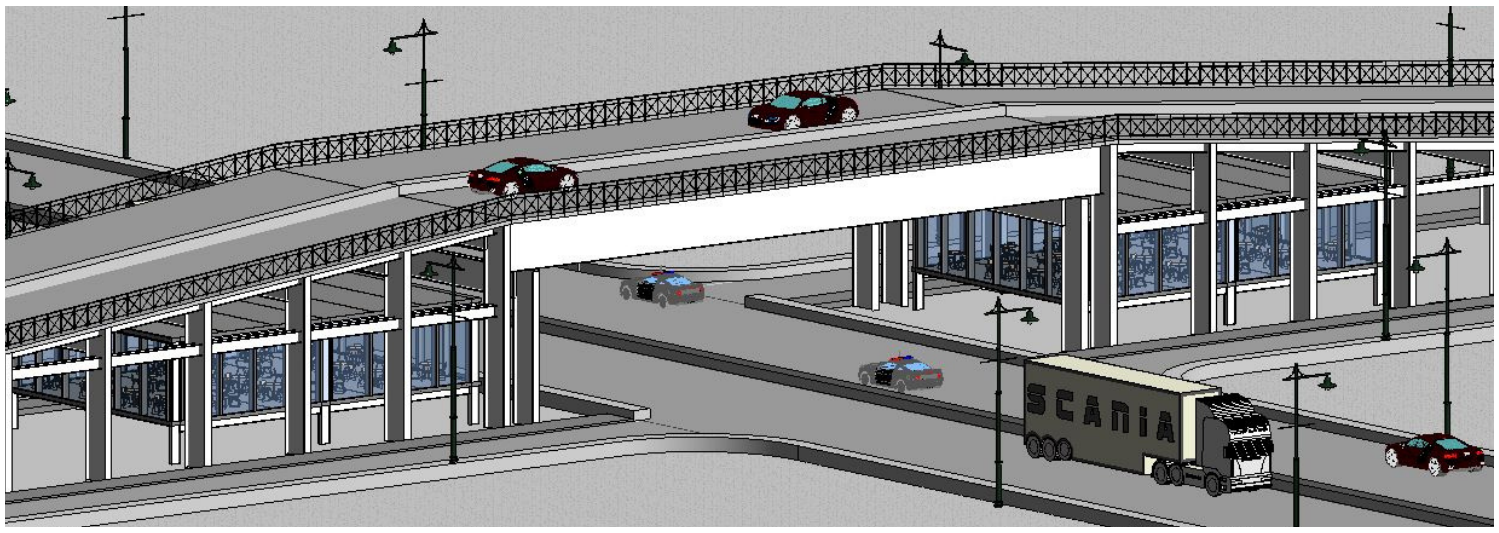
Pharos University In Alexandria
Faculty Of Engineering
Construction Engineering And
Management Department

Graduation Project 2022 – 2023
Steel Structure Design
Roadway Steel Bridge

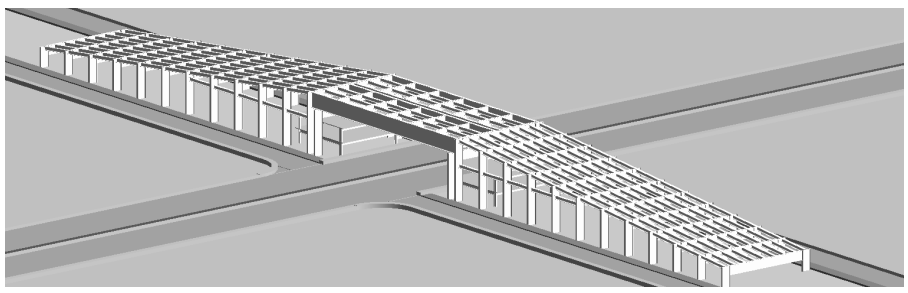
Site 3D



General Information

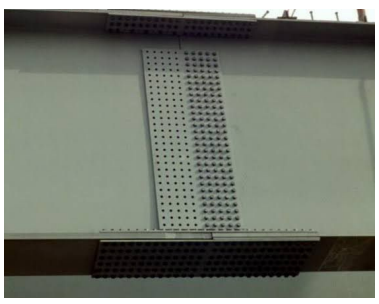
- 4 Lanes (Span = 16m)
- Top Level = 10 m
- Clear Height = 7.5 m
- Inclined Slope = 1:10

Structural 3D



Field Pictures

Main Girder Curtailment



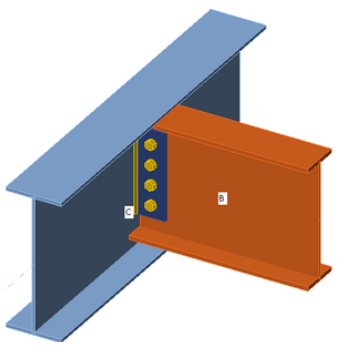
Field Splice

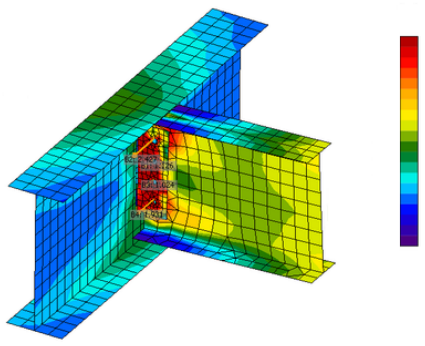
Objectives

- Decrease traffic jam in the intersection of two main roadways
- Investigate the major factors affecting the design of road way steel bridge.
- Study the effect of using empty space under the bridge as a commercial partition
- Investigate the cost and time of construction.

Estimated Duration=158 Days

Estimated Weight=659 Tons



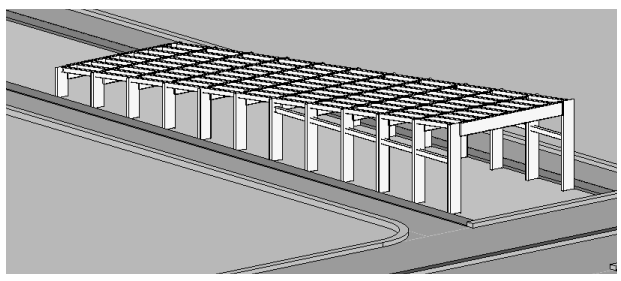


Secondary Beam Connecting to Main Beam

Structure System

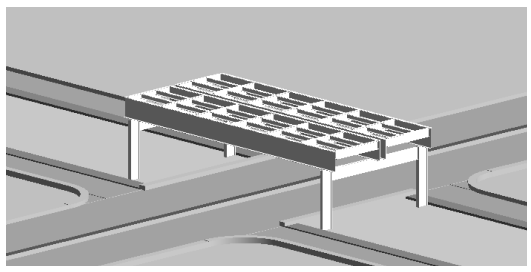
Inclined Part

- 12 Portal Frames
- Incline Slope 1:10
- Spacing = 6 m
- Stringer Spacing = 2 m
- Span between frame = 16 m



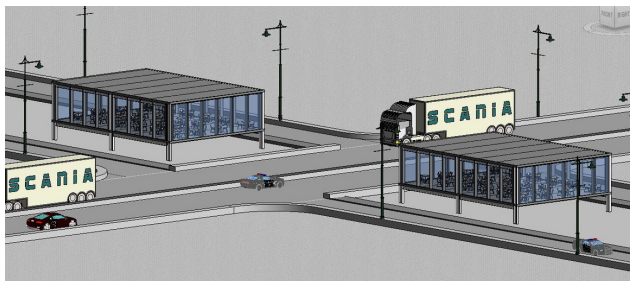
Deck Bridge Part

- Multi main Girder System
- Resting On Portal Frame
- Main Girder Span = 36 m
- Stringer Spacing = 2.5 m
- Cross Girder Spacing = 6 m



Mezzanine Floor

- Area=(18 x 12.4) = 223.2 m2
- Main Beam Span = 9 m
- Secondary Beam Span = 6.2 m
- First Column Height = 2m
- Coffee Shop Clear Height = 4 m



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