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- Steel & concrete structures design with reports (International & Local Codes)
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- Structural /Workshop drawings.
- Visual inspection reports
- Complex Structural Problem Solving
- Surveying Work, digital twin

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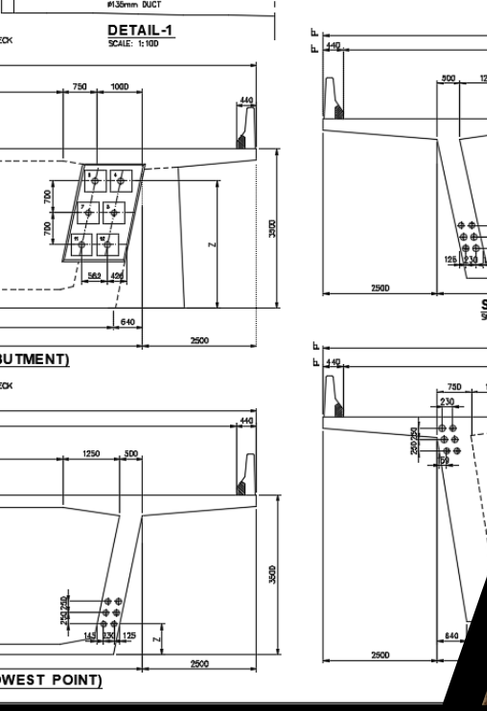
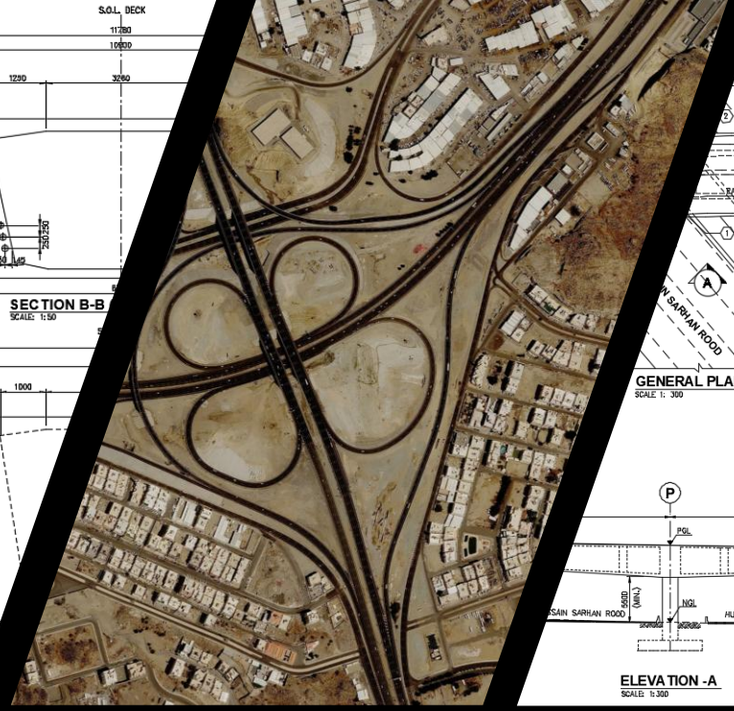
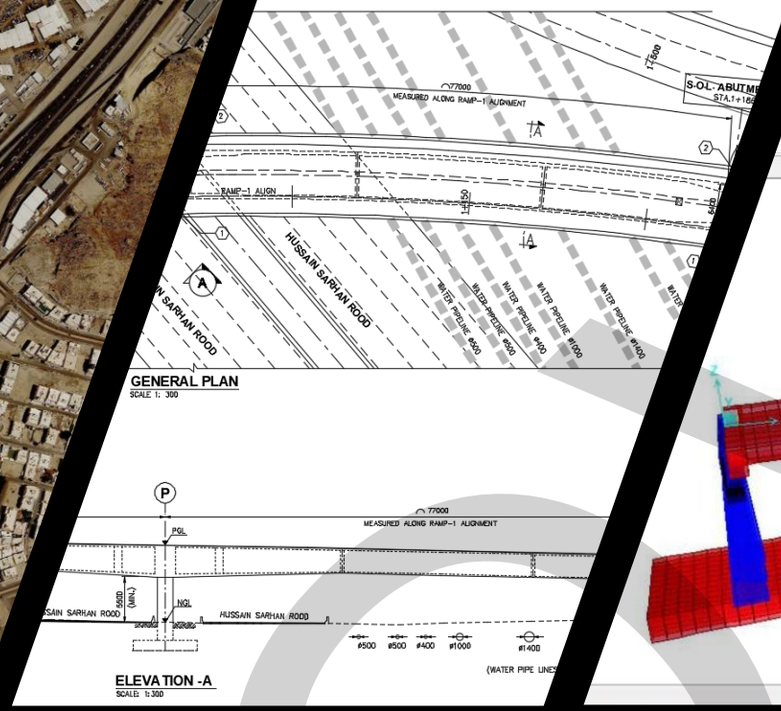
Infrastructure & Bridges

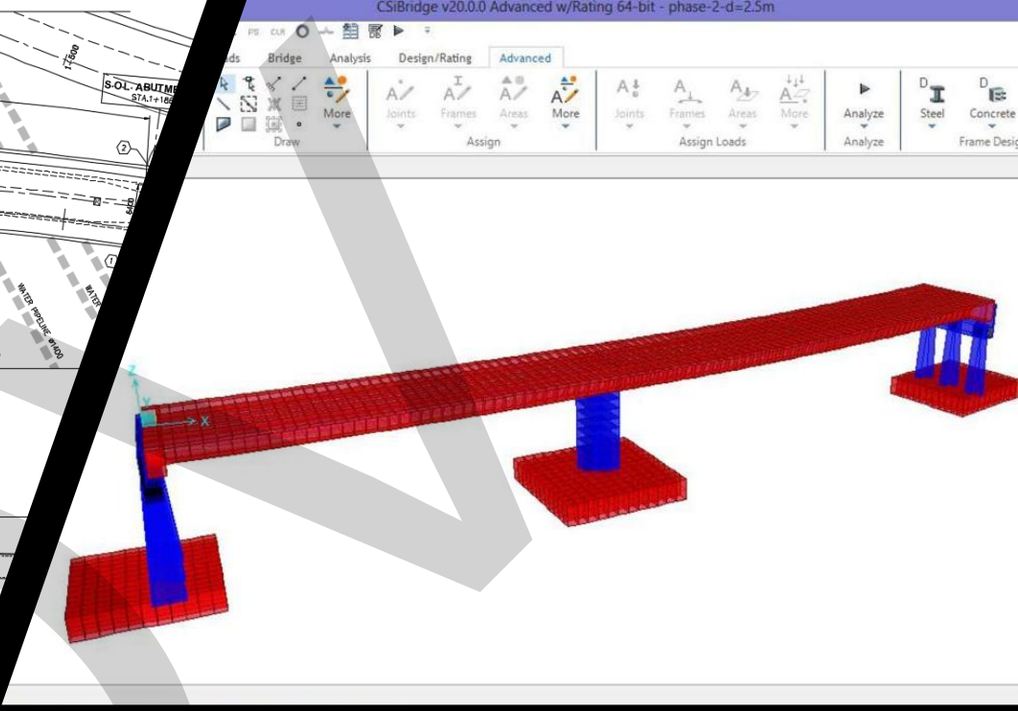
Al-Sail Al-Kabeer interchange

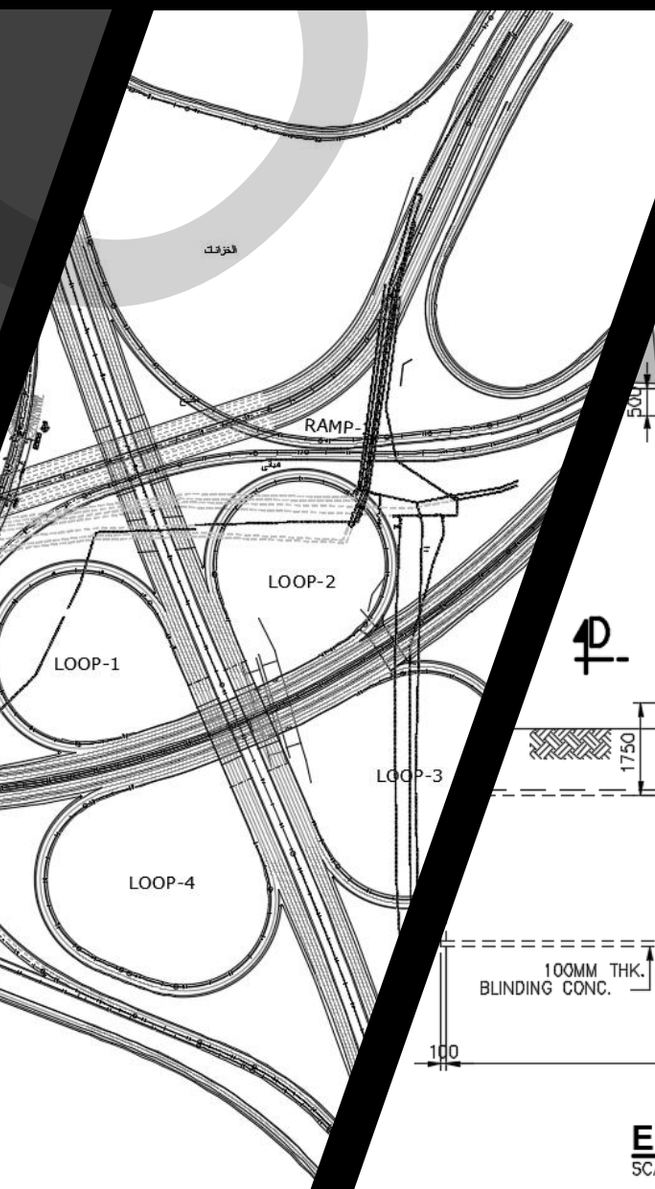
- Grade-separated interchange integrating Makka 4th Ring Road with King Faisal Road
- Complex 4-loop cloverleaf configuration featuring four directional ramps
- Comprehensive structural scope encompassing long-span ramps and a major crossing bridge
- Prestressed concrete box-girder design for directional ramps with spans ranging from 60 to 77 meters
- Two-span prestressed girder bridge system (41m span) engineered for optimal clearance over the active 4th Ring Road
- Advanced skew-angle structural modeling and precise utility coordination to resolve spatial conflicts and ensure structural efficiency

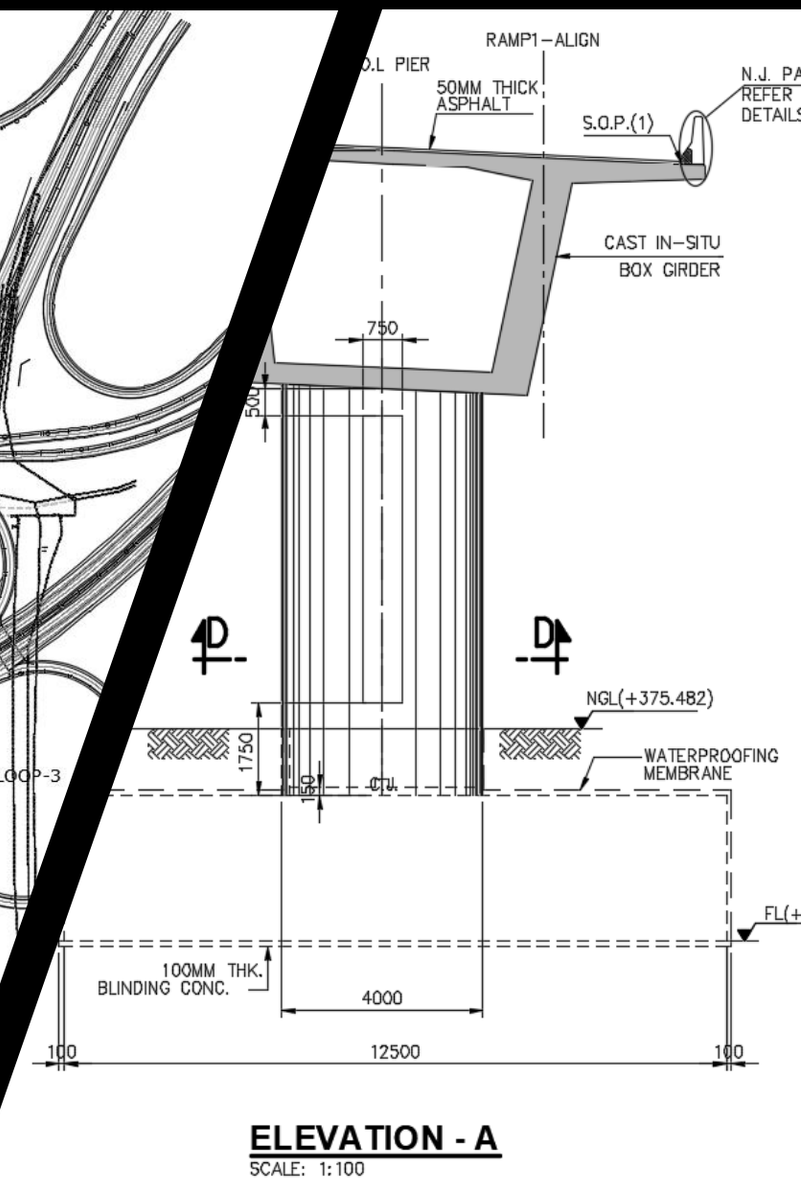


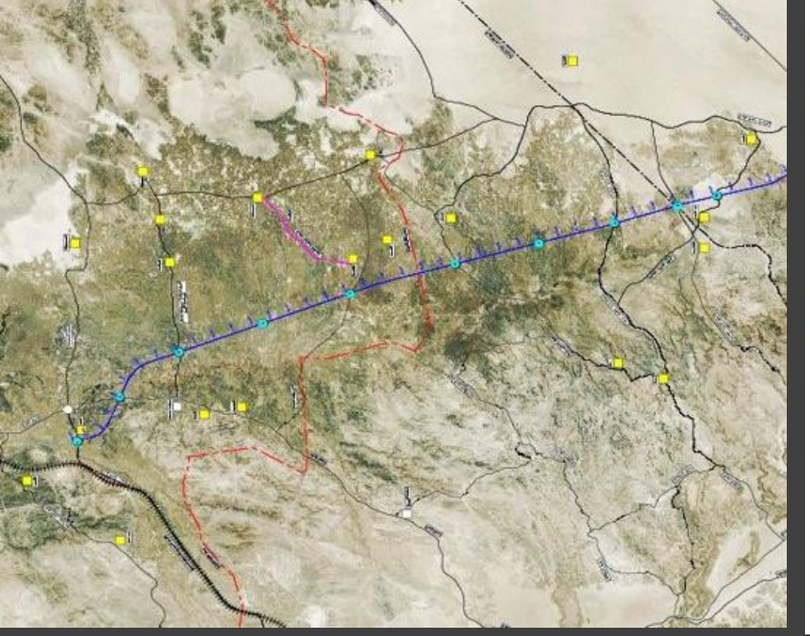


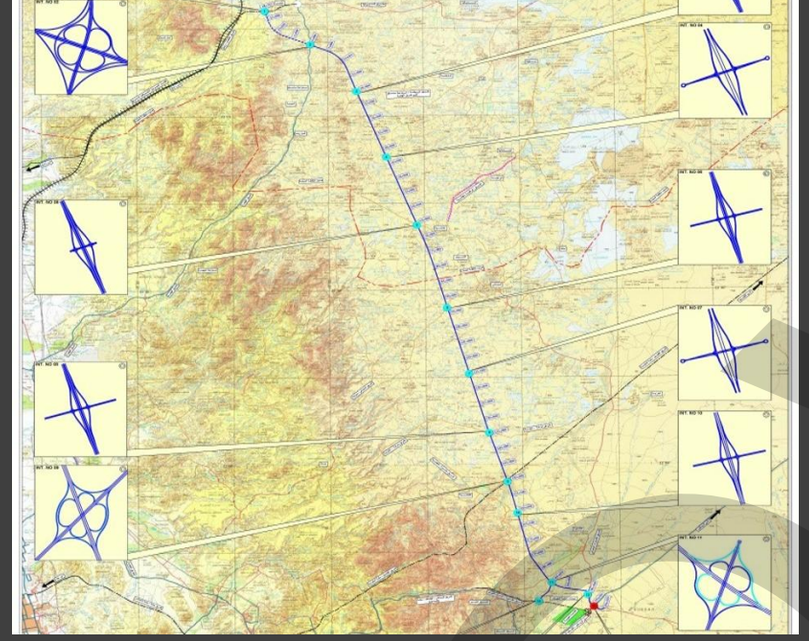


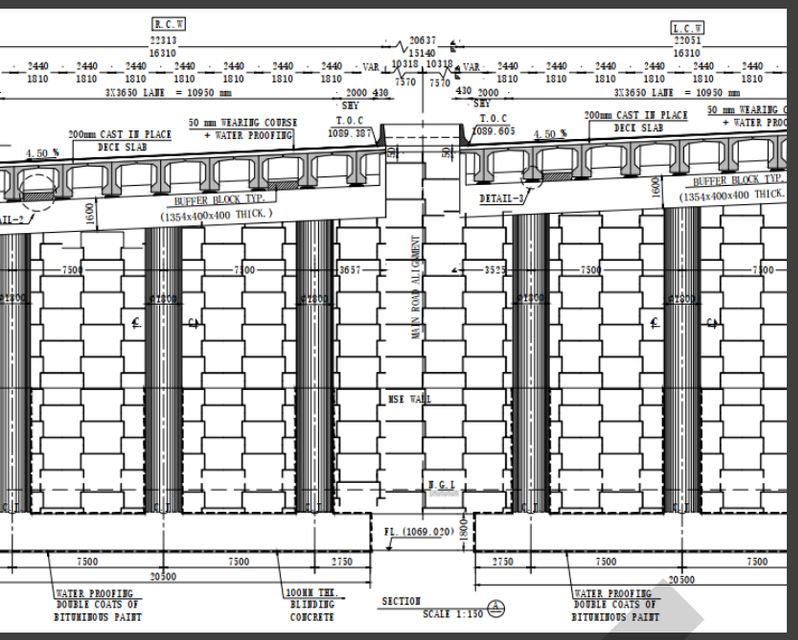


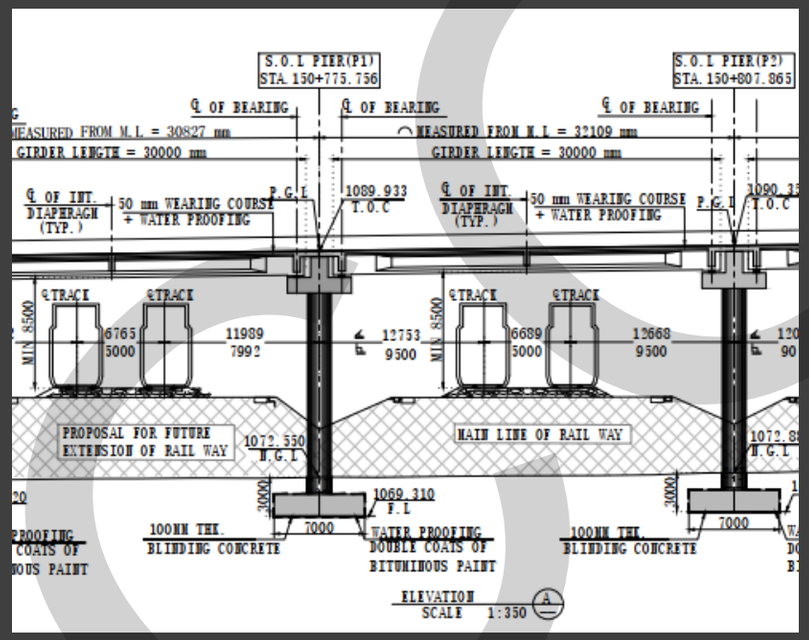


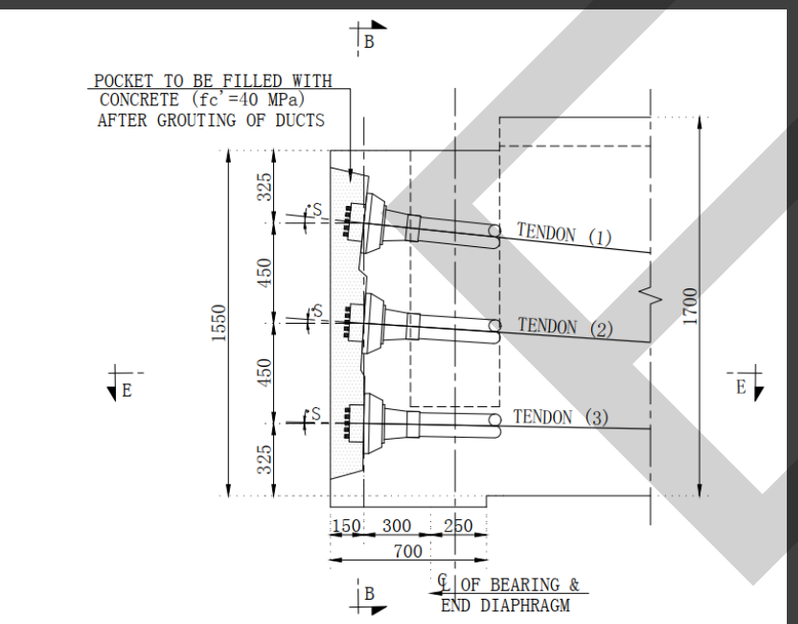


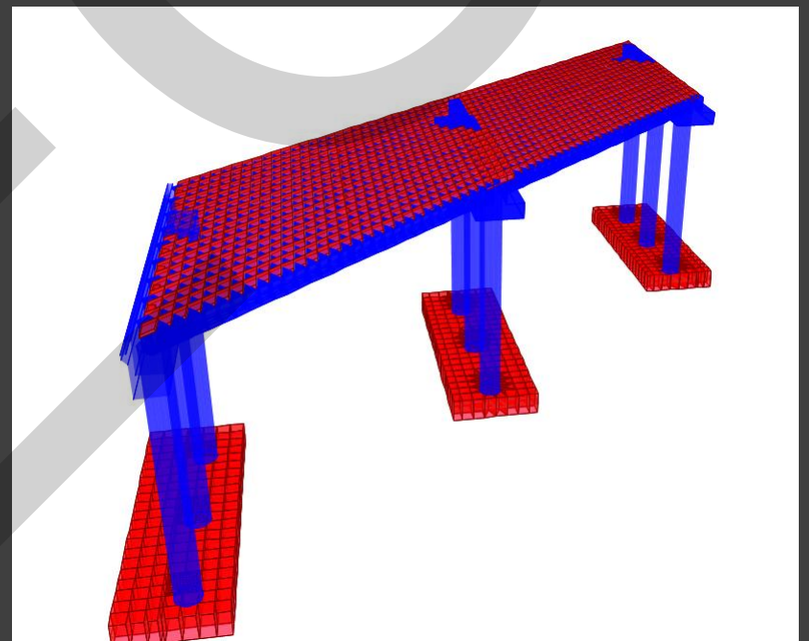










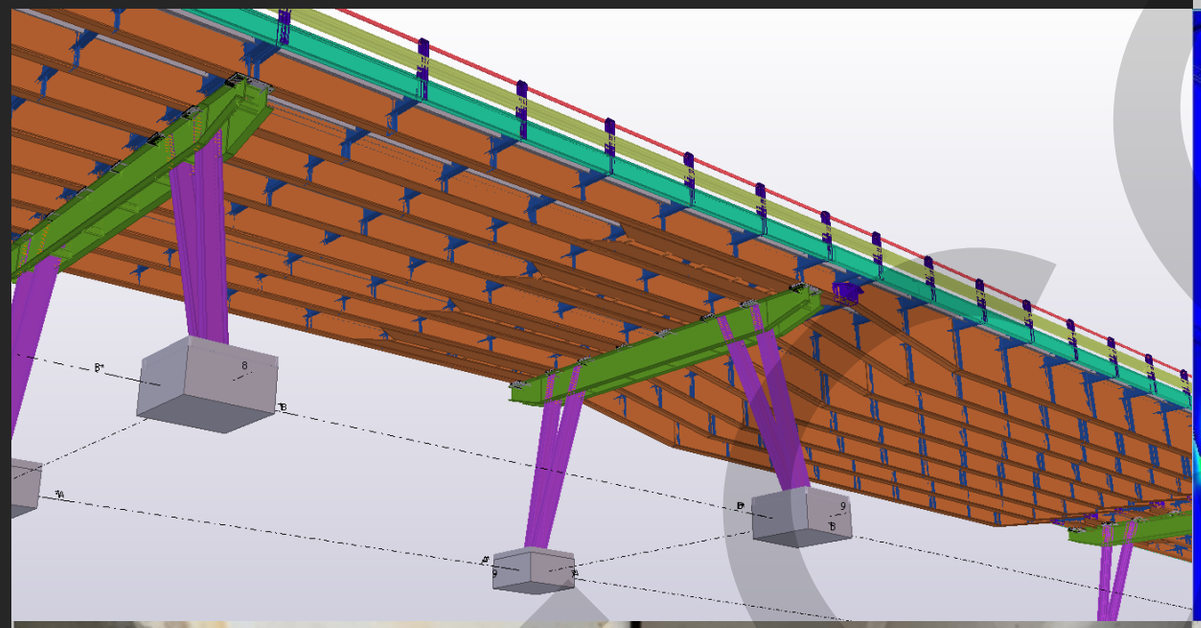


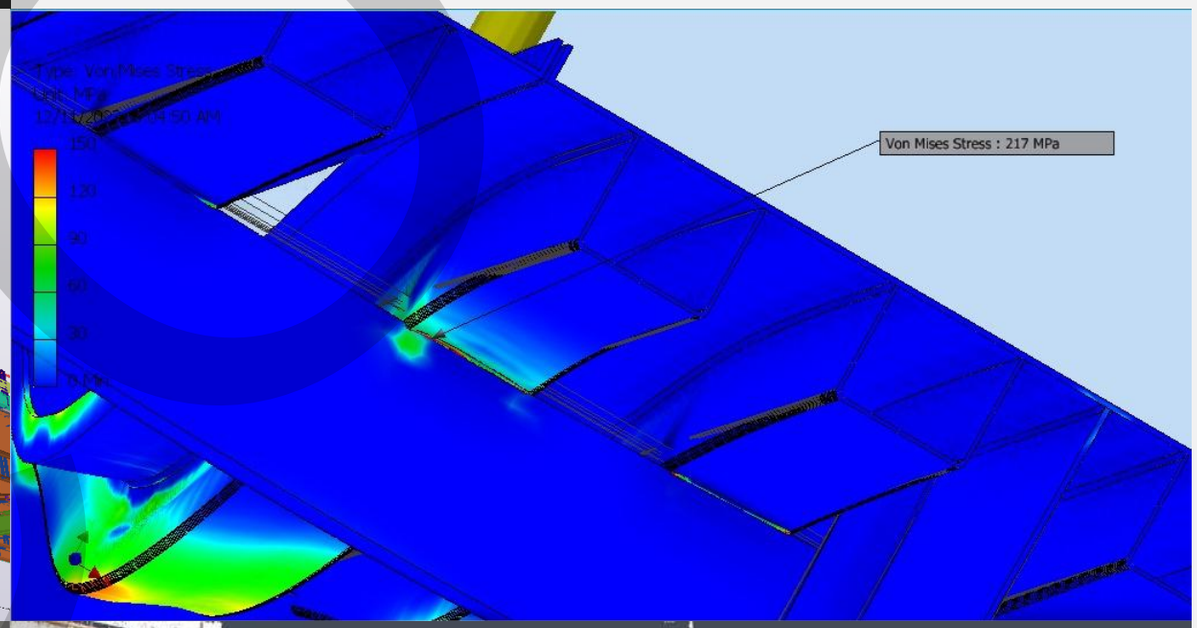
AL-Akhal &Taife project

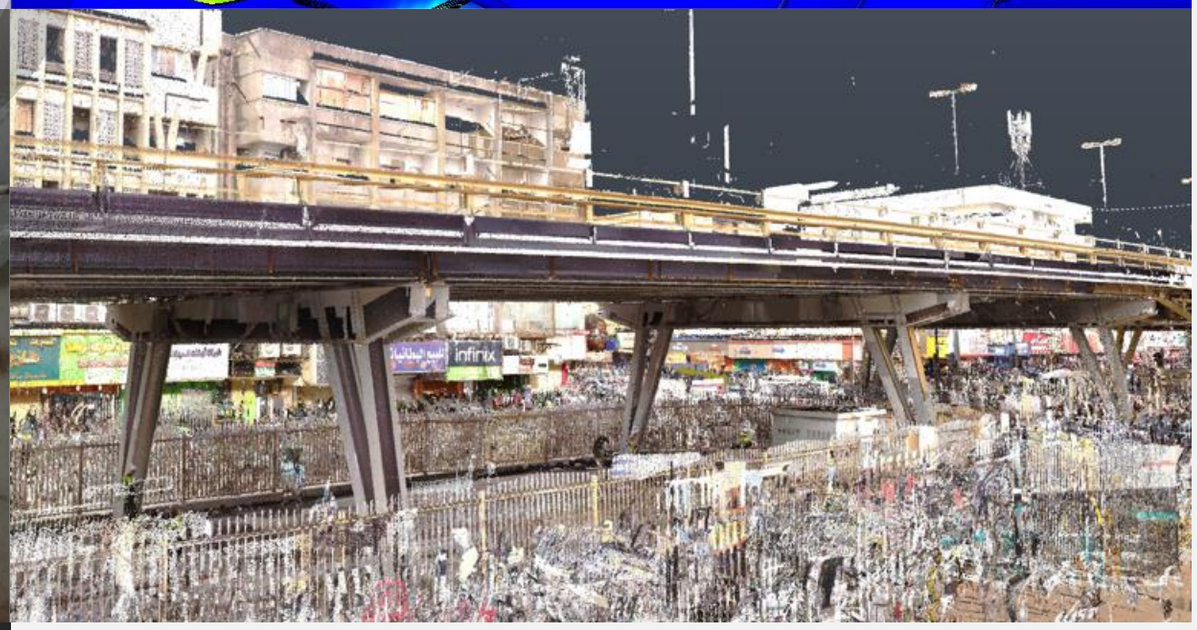
- Extensive 243 km freeway corridor featuring 12 interchanges and 5 specialized camel crossings
- High-speed design parameters optimized for 140 km/hr operational velocity
- Strategic infrastructure reducing travel time between Makkah and Madinah by over 90 minutes while enhancing fuel efficiency
- Standardized prestressed concrete girder system utilizing span lengths between 31 m and 41 m for structural efficiency
- Comprehensive corridor planning to accommodate current and future traffic demand between Akhal, Taif, and adjacent regions
- Optimized geometric alignment ensuring safety and connectivity for long-distance generated trips

10 Steel bridges in Riyadh city.

- Evaluation and study of old traffic steel bridges (without any documentations /data) , in several location of Riyadh city .
- Making visual inspection , and laser scan surveying to create the as-built drawings (From point cloud) and analysis model for technical evaluation.
- For the bridge damaged parts , the finite elements analysis has been made (Including fatigue) .

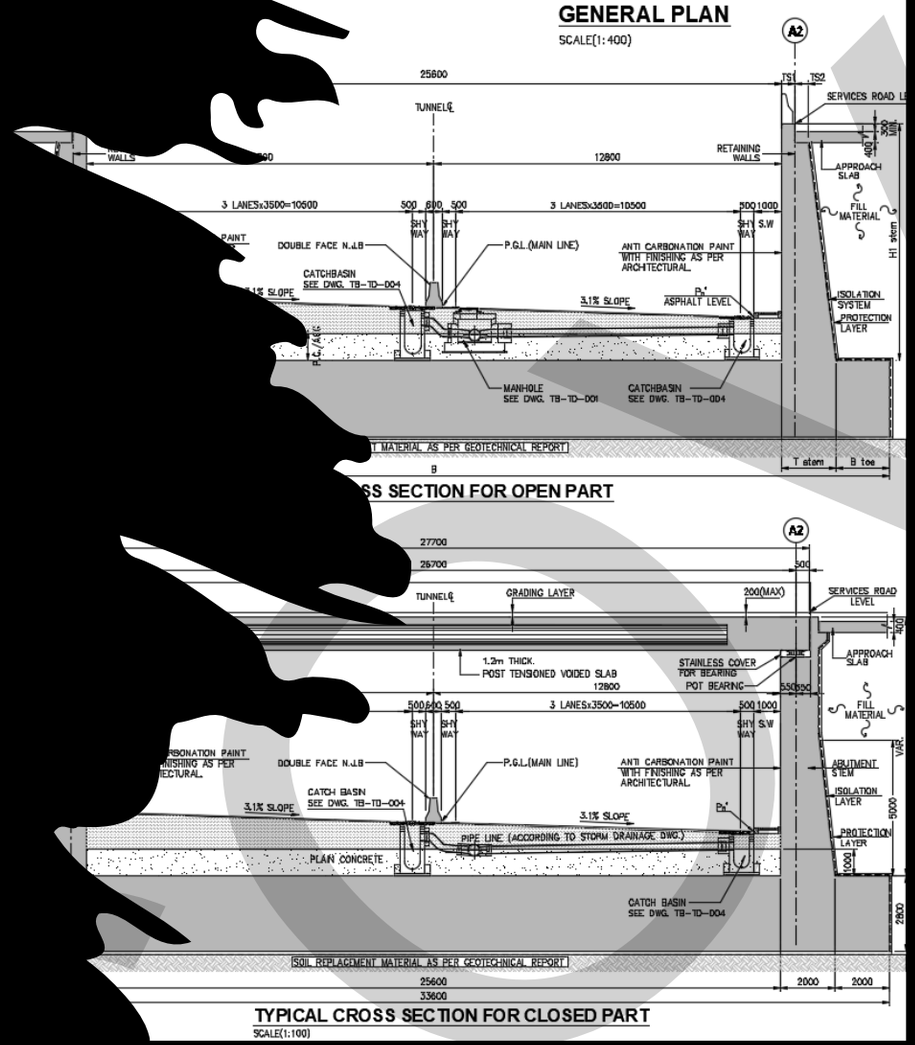


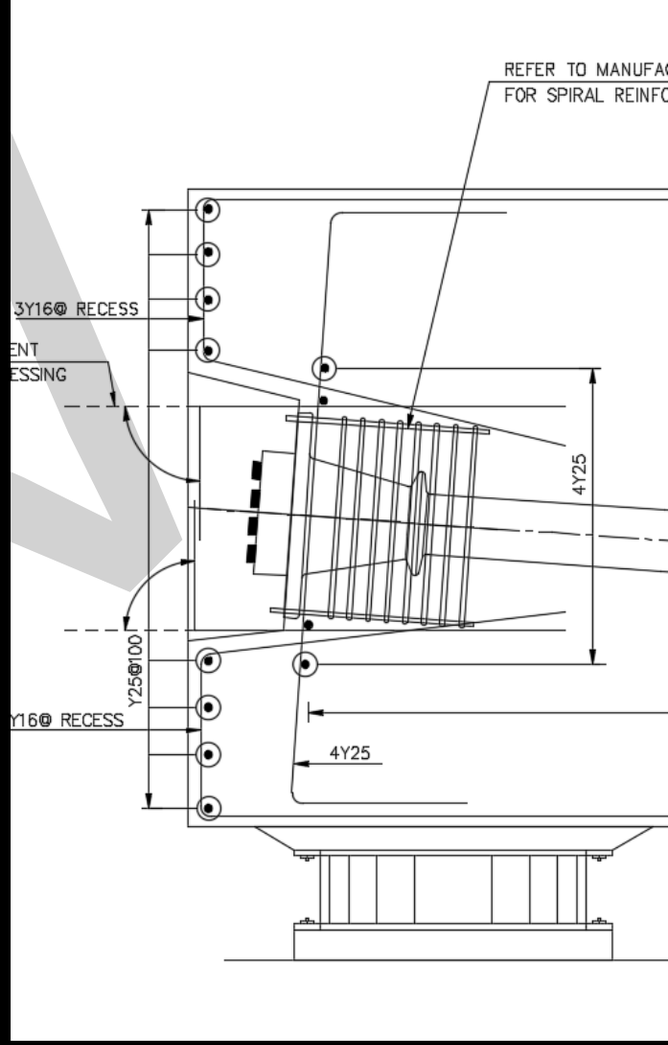


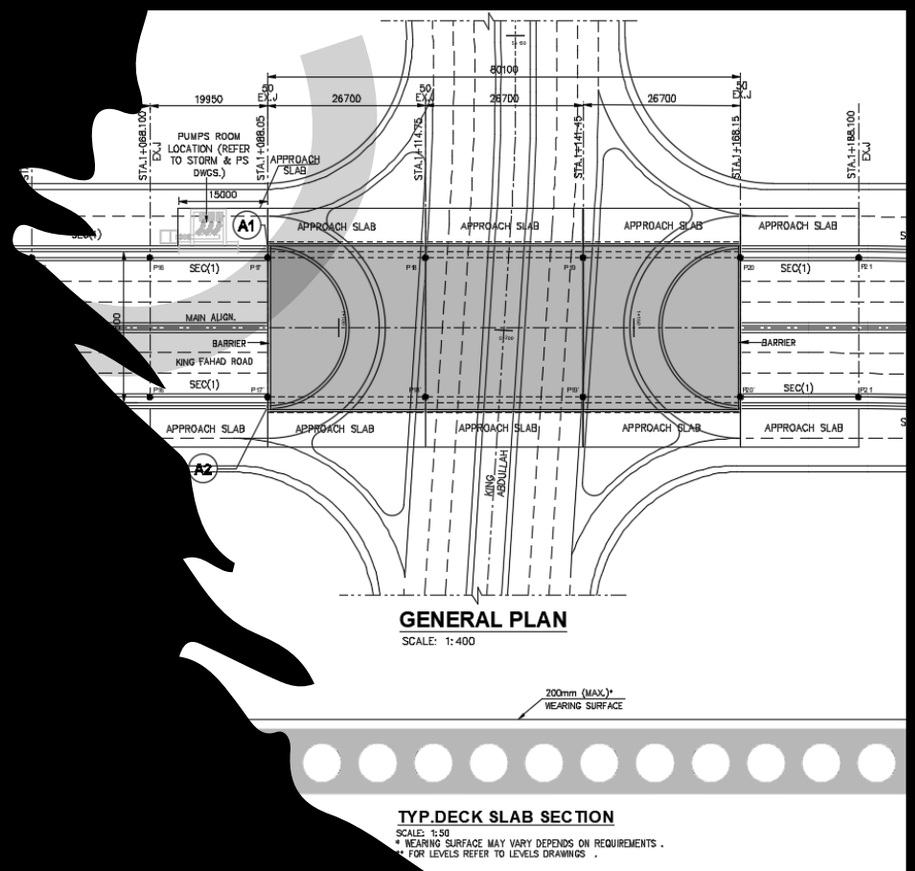


AL-EMARA underpass project (TABUK)

- 780-meter grade-separated underpass located at the critical intersection of King Fahd Road and King Abdullah Road
- Strategic infrastructure designed to optimize traffic flow and connectivity within Tabuk city
- Complex execution environment requiring careful management of existing groundwater conditions
- Hybrid structural system utilizing prestressed voided slabs for the covered section and U-shaped cast-in-place reinforced concrete for the open section
- Specialized design approach to mitigate high groundwater table effects, ensuring structural stability and watertightness during construction and operation
- Integrated architectural forming within underpass walls to accommodate lighting systems, alongside dedicated pump rooms for efficient drainage management

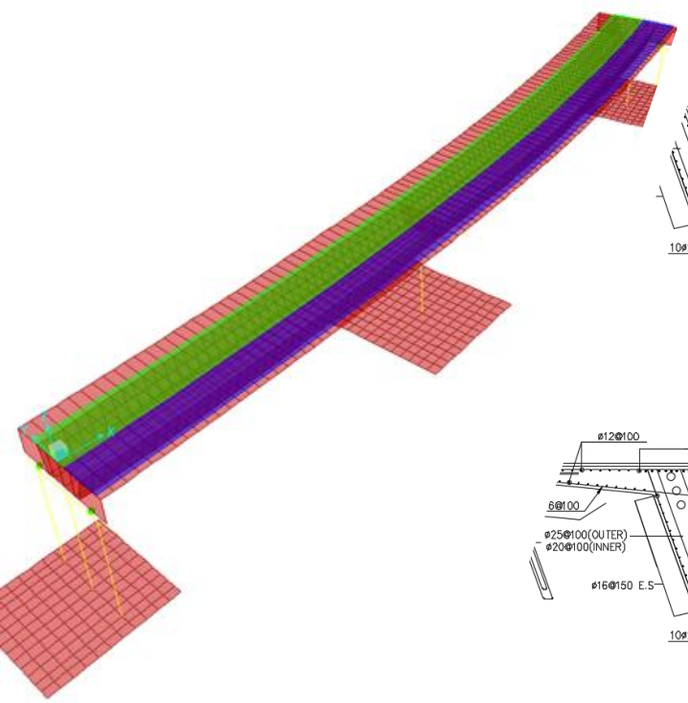


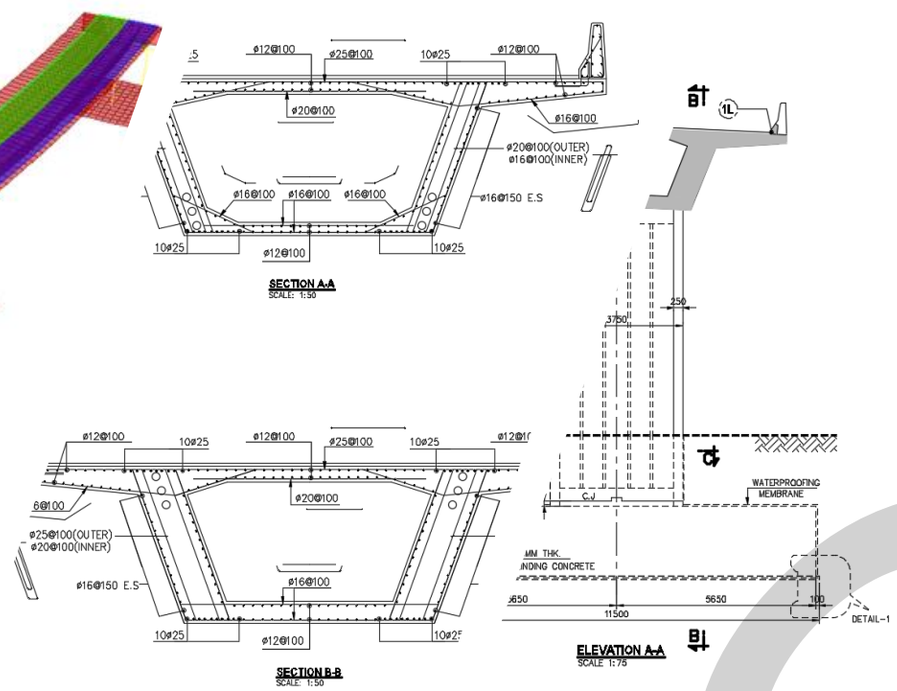


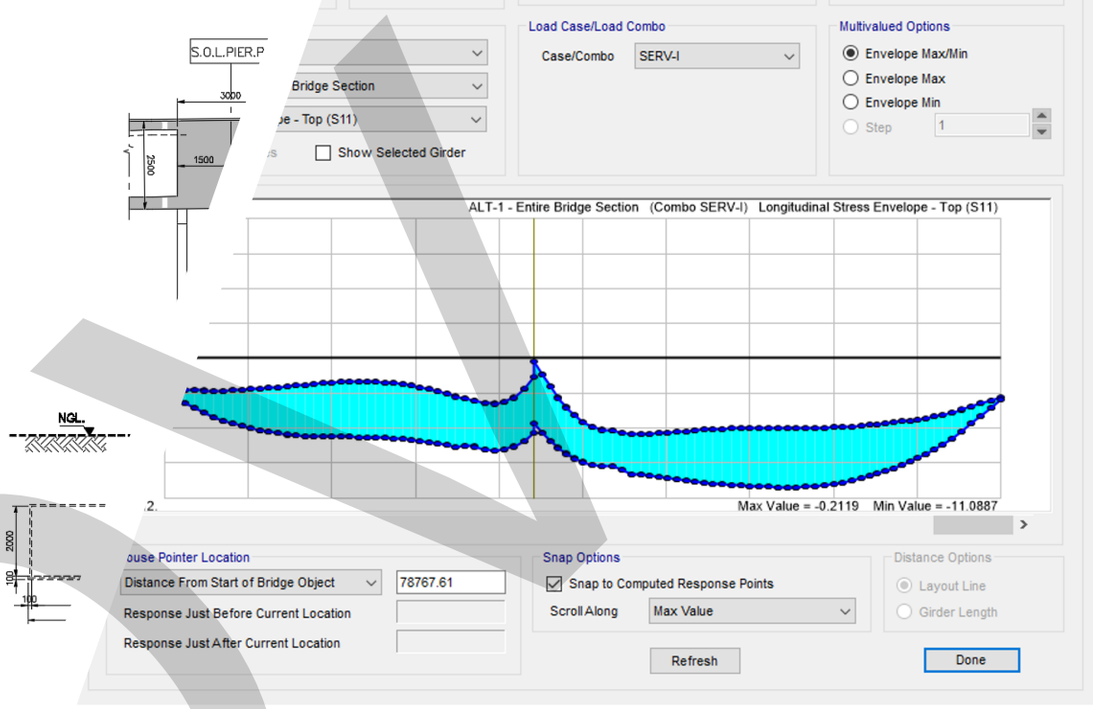


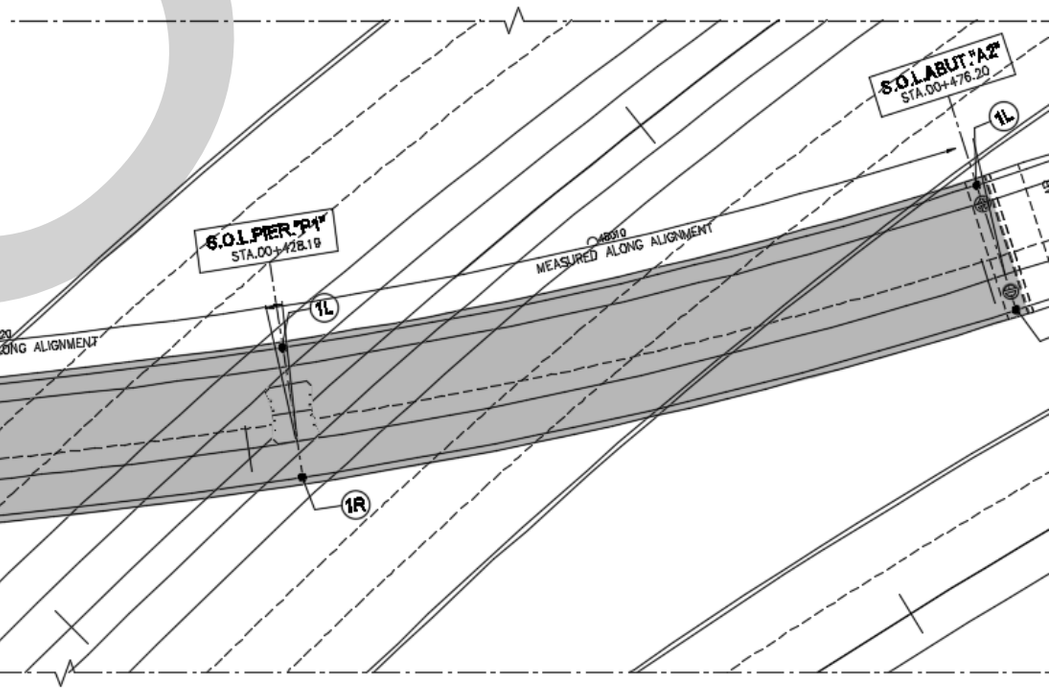
Al-Eskan with MANSOURIA road project (MAKKA)

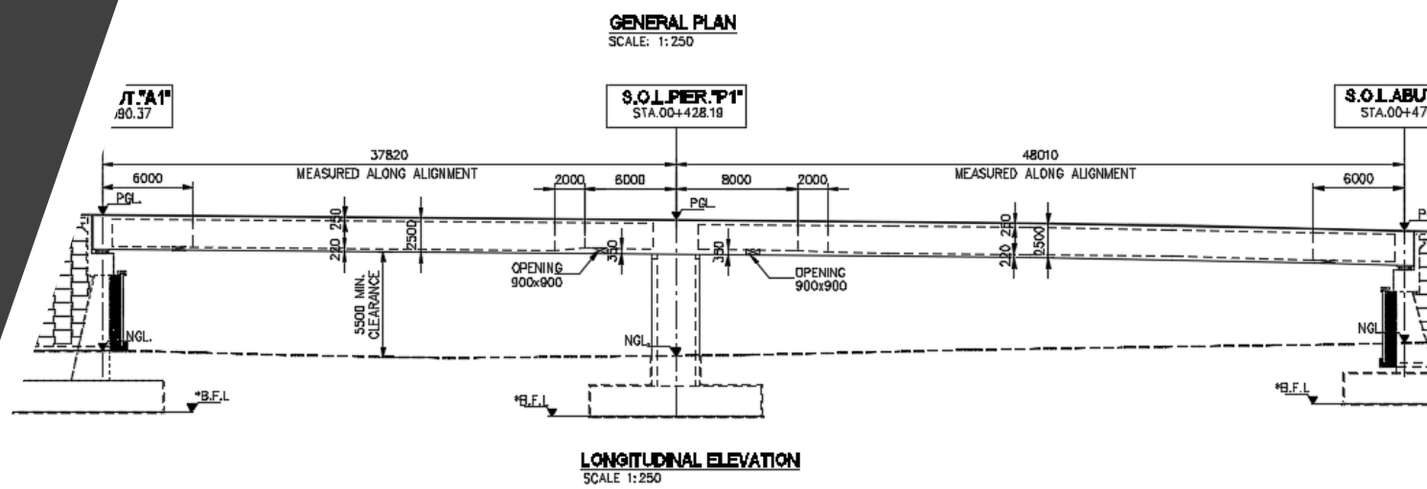
- Strategic interchange infrastructure connecting the AL-ESKAN Road extension with MANSOURIA Road in Makkah
- Grade-separated structure designed to optimize traffic flow and enhance connectivity within a dense urban environment
- Complex project scope requiring precise coordination with existing city infrastructure
- Two-span continuous bridge utilizing prestressed concrete box-girder sections with span lengths of 38 meters and 48 meters
- Advanced structural modeling to account for significant skew angle effects, ensuring optimal load distribution and structural integrity
- Comprehensive utility mapping and avoidance strategies are integrated into the design phase to mitigate conflicts with existing underground services





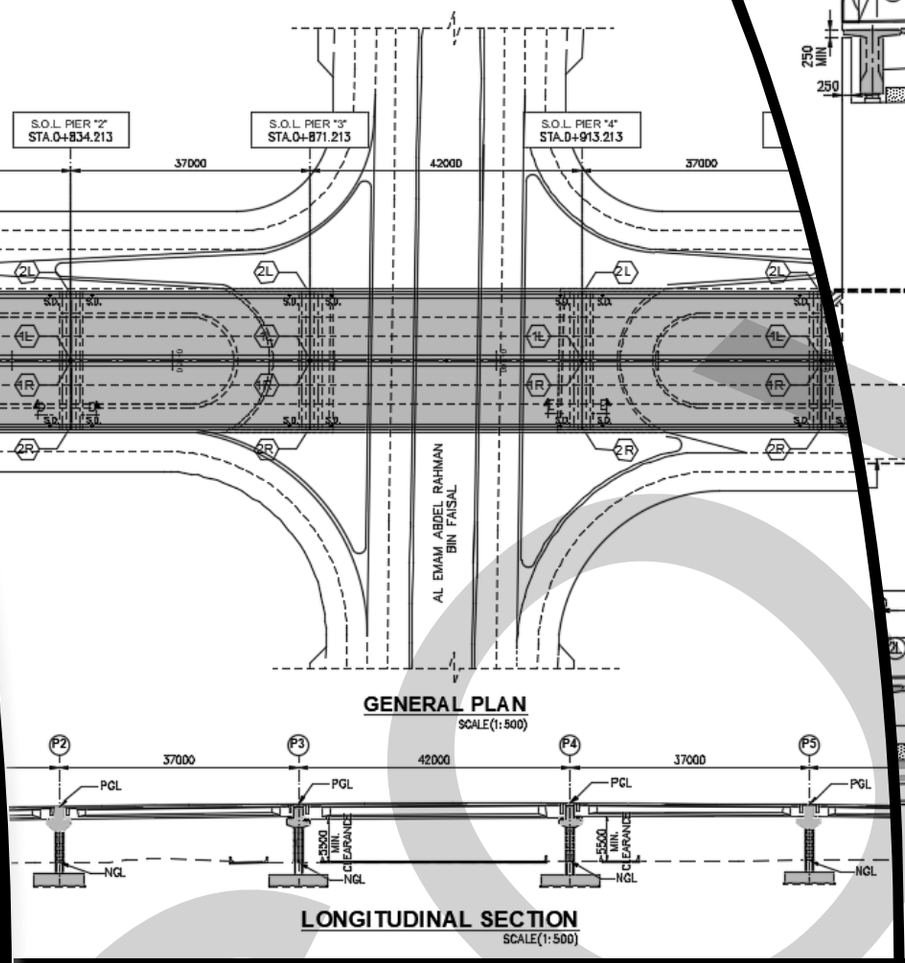


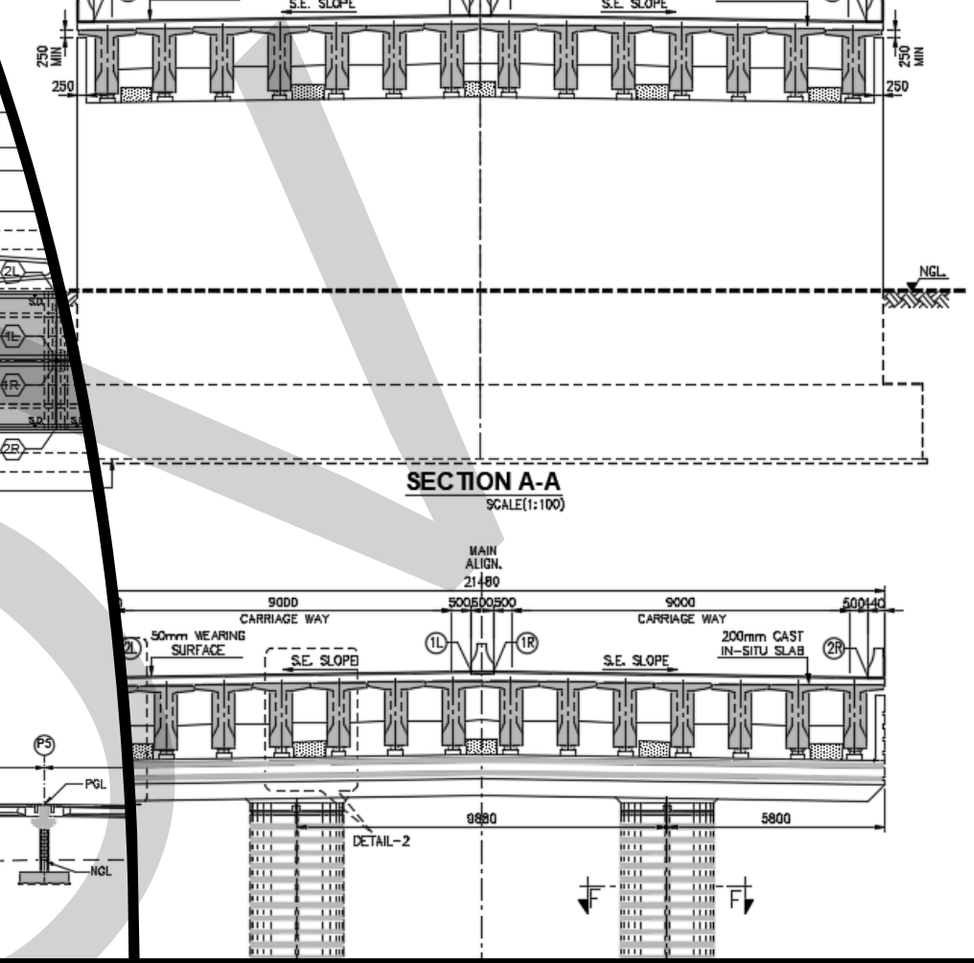


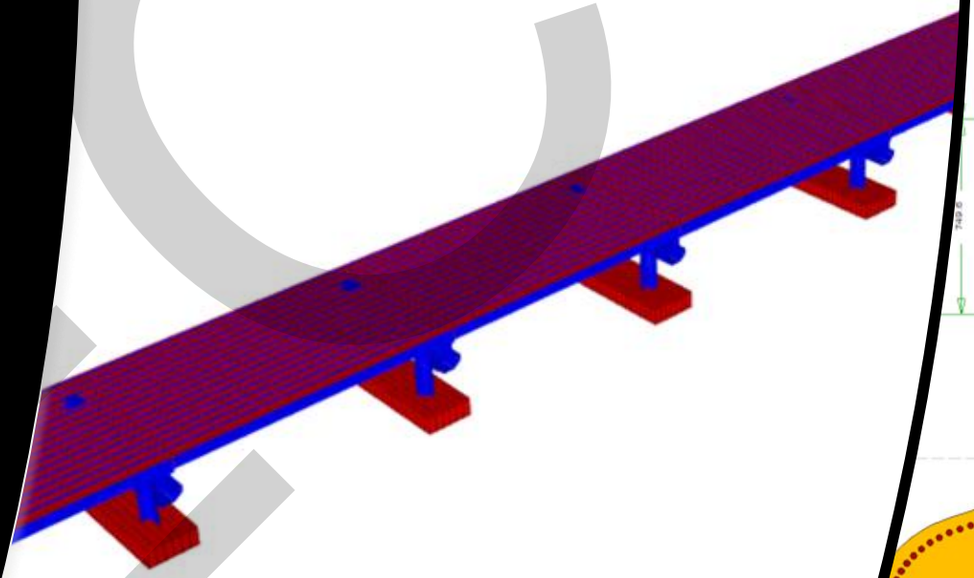


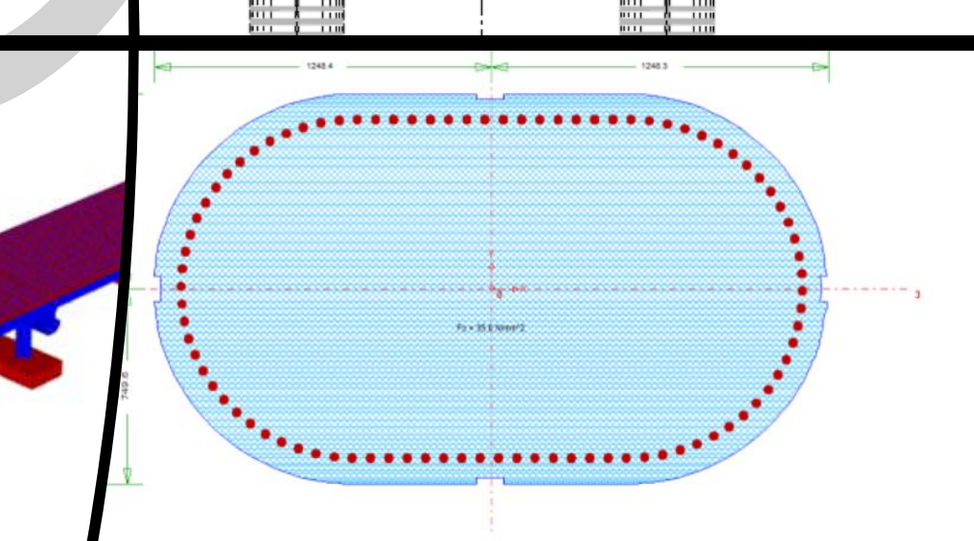
INTERCHNGE.9 project (TABUK)

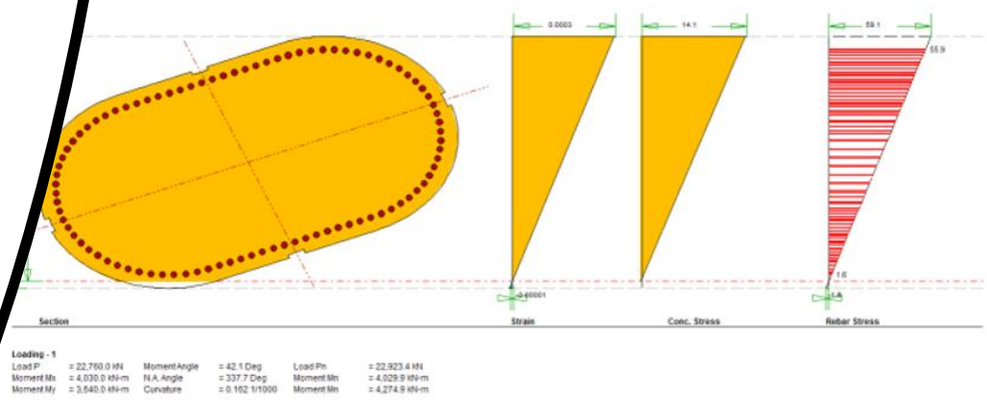
- Strategic grade-separated interchange located at the intersection of King Fahd Road and Imam Abd Elrahman bin Faisal Road in Tabuk.
- Extensive 262-meter bridge structure designed to optimize traffic flow and enhance regional connectivity.
- Seven-span superstructure utilizing precast prestressed reinforced concrete girders with span lengths of 40.6 m and 35.6 m.
- Composite deck system featuring a 200 mm cast-in-situ concrete topping slab to ensure structural integrity and effective load distribution.

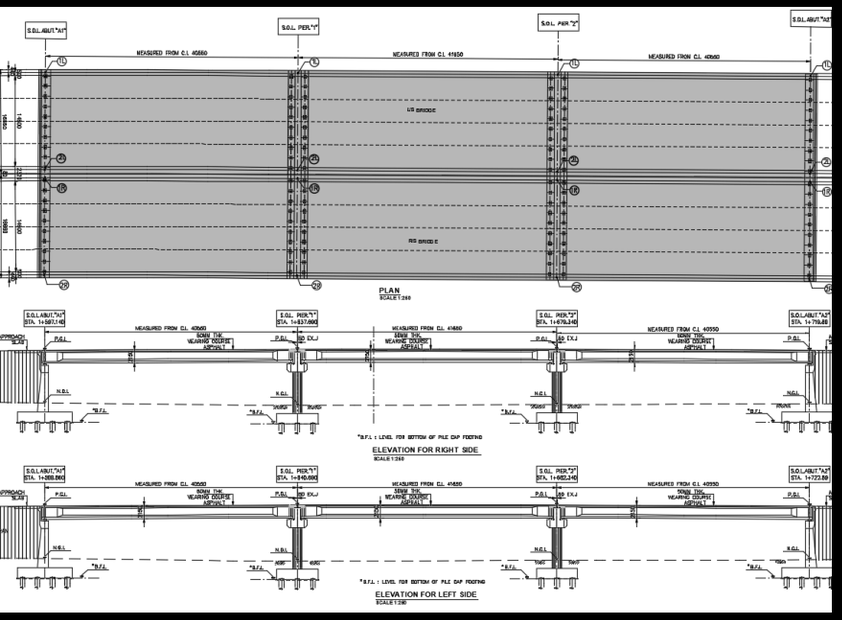






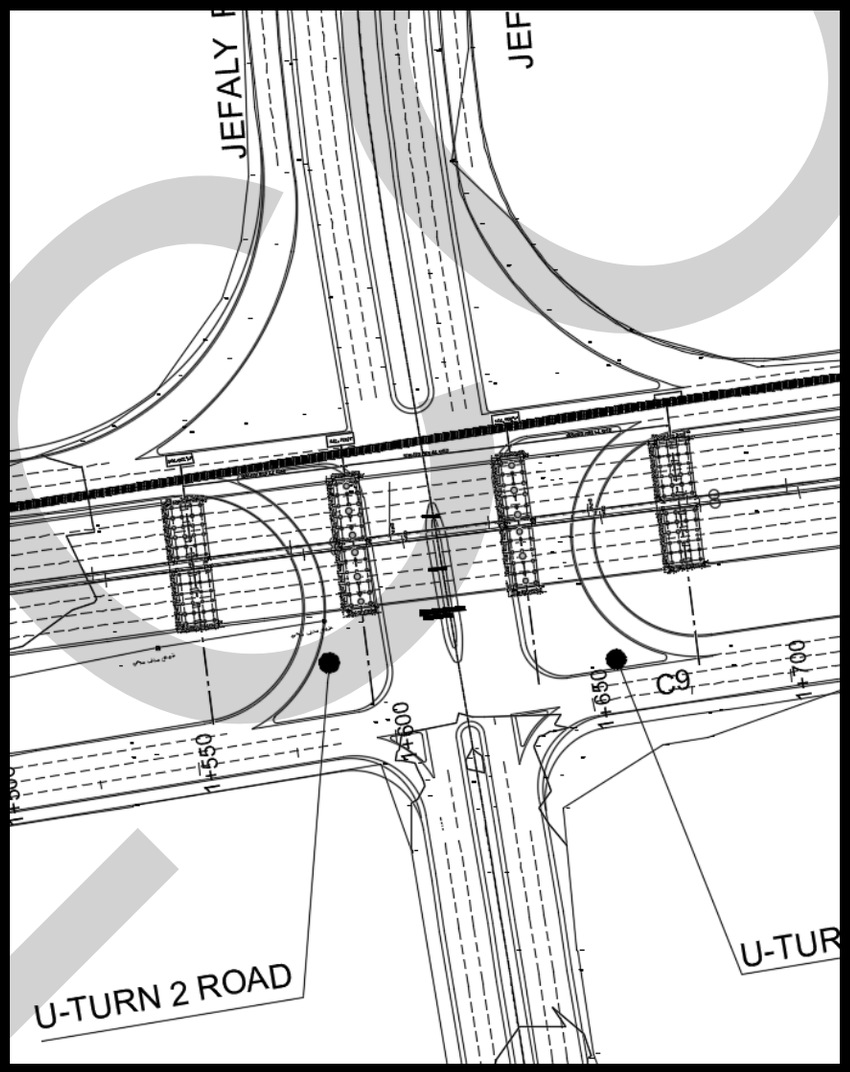


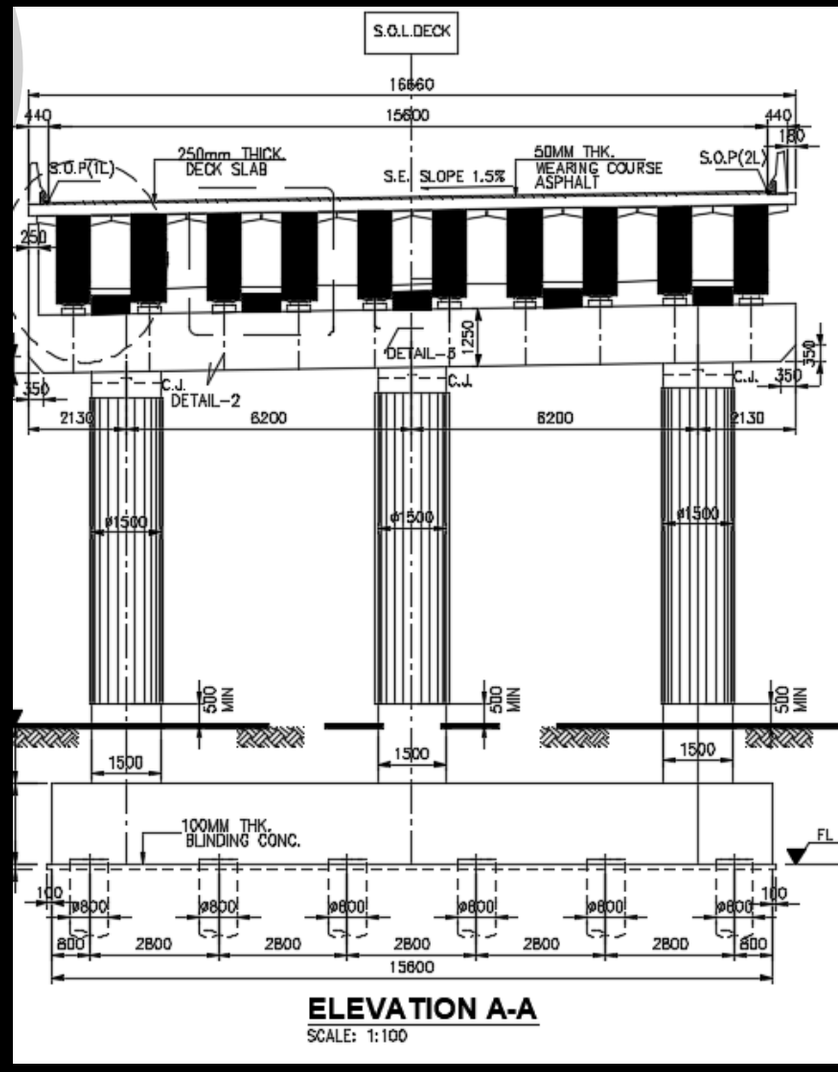




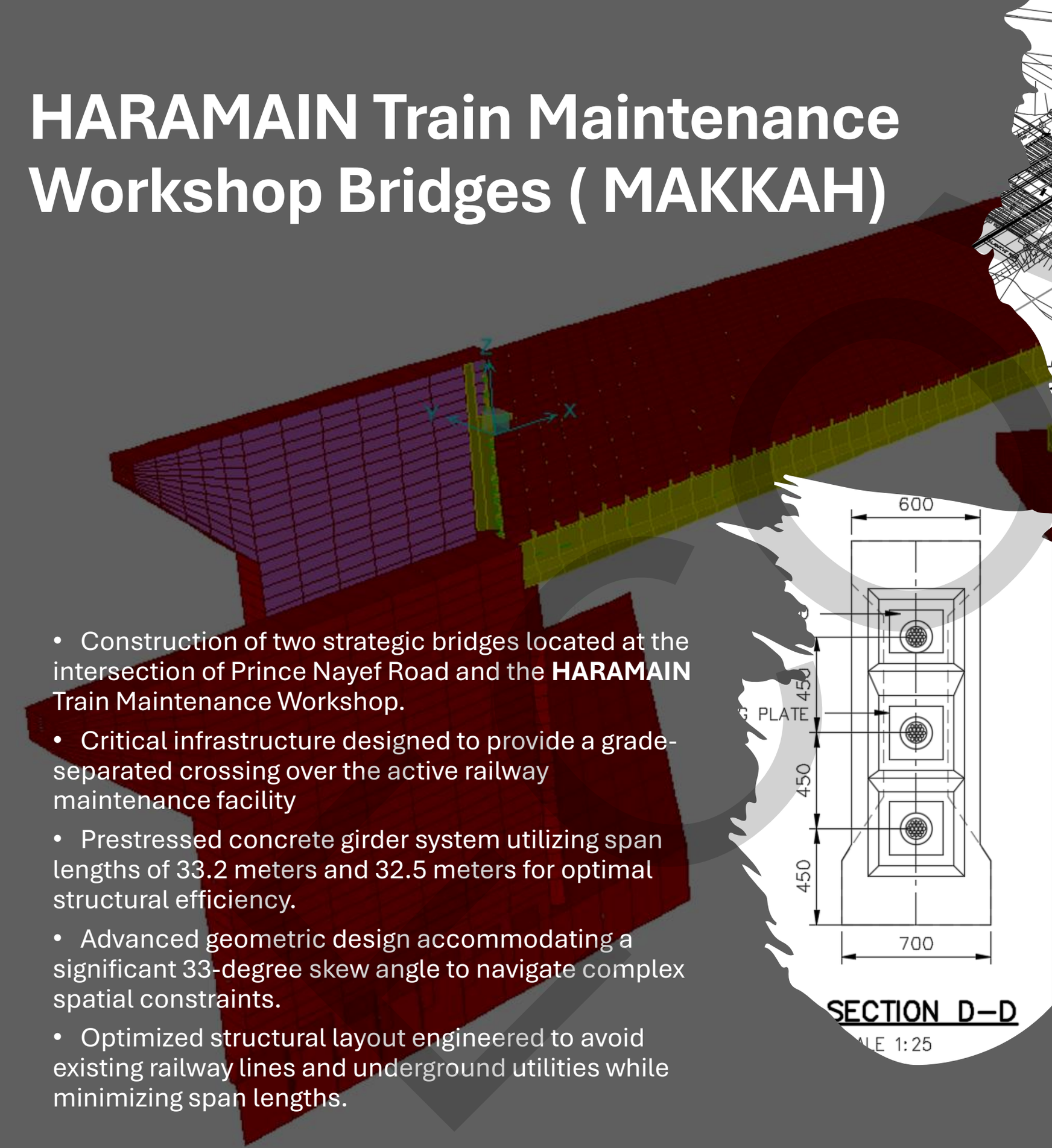
Ibraheem Al-Jefaly Bridge (MAKKAH)

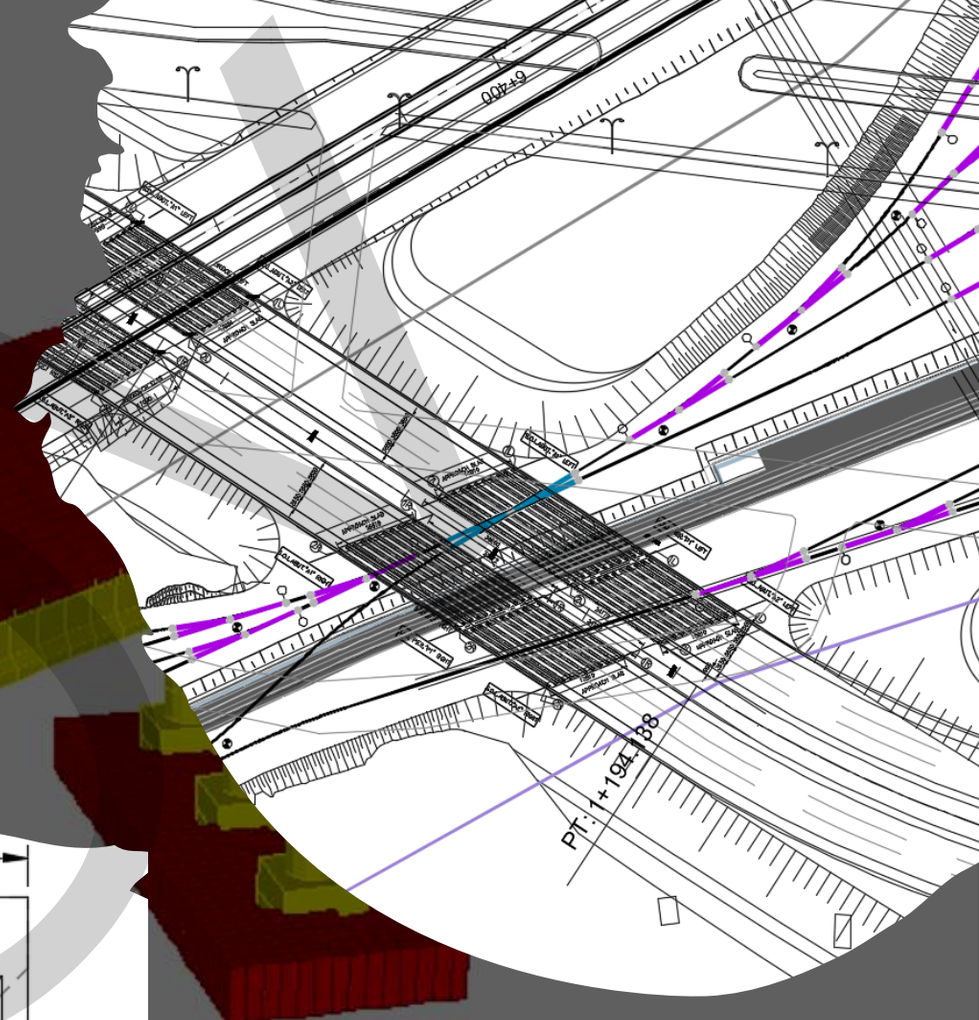
- Strategic grade-separated bridge located at the intersection of the 4th Ring Road and Ibrahim Al Jafaly Road.
- Total structural length of 123 meters designed to enhance traffic capacity and connectivity within Makkah.
- Four-span superstructure system utilizing prestressed concrete girders for optimal structural efficiency.
- Engineered with variable span lengths of 40.6 meters and 35.6 meters to accommodate specific geometric constraints and site requirements.



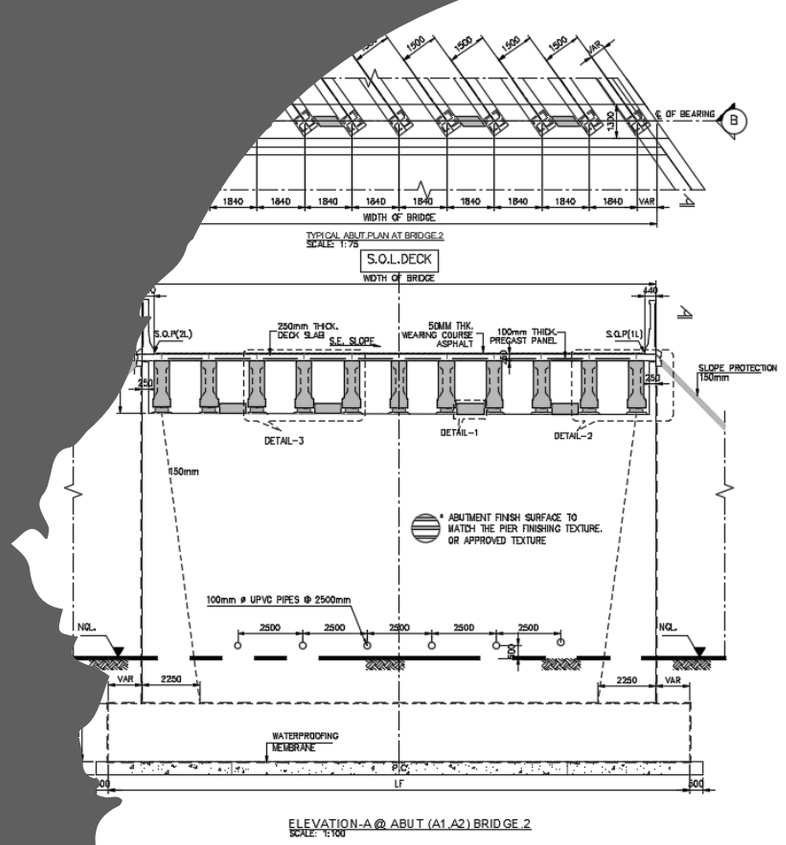


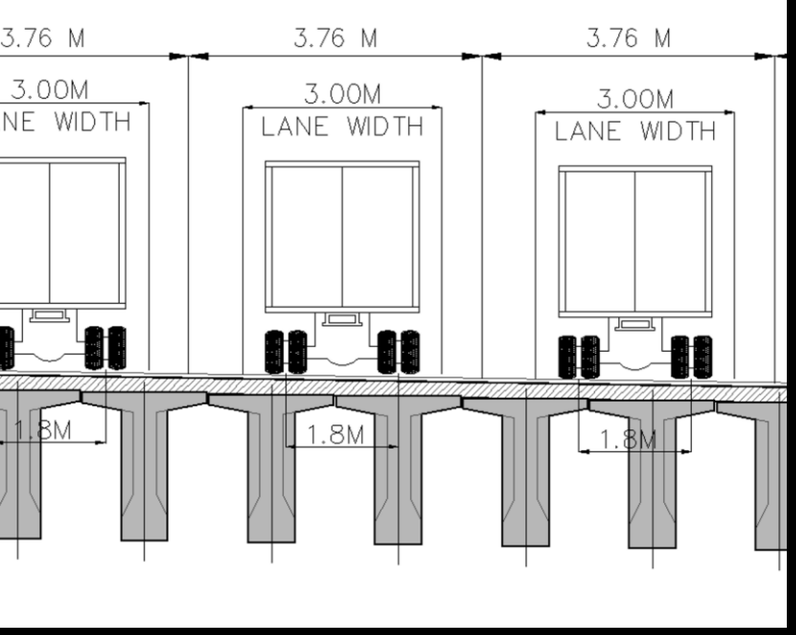
HARAMAIN Train Maintenance Workshop Bridges (MAKKAH)

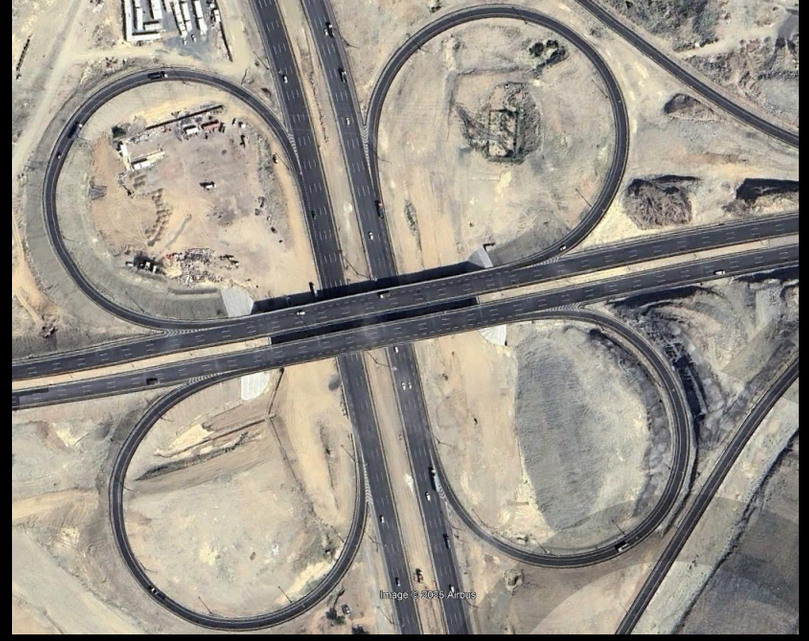




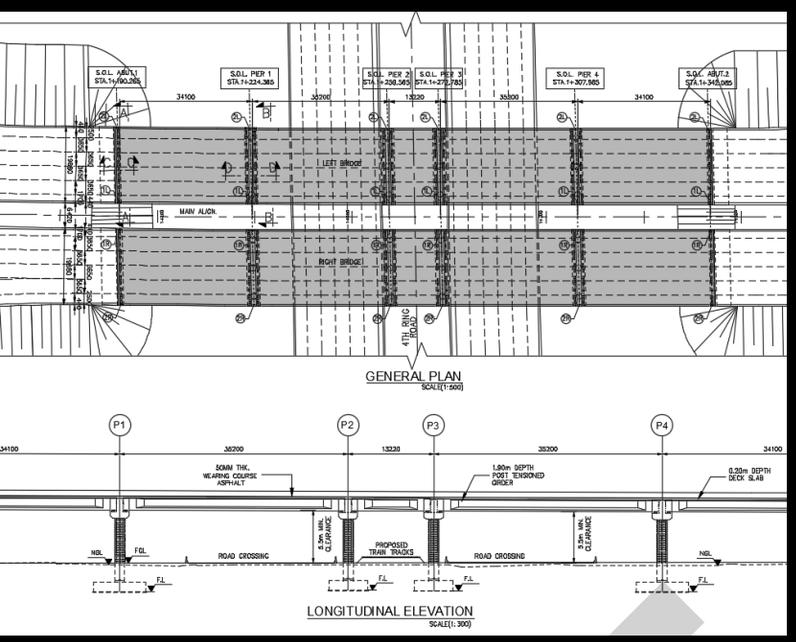
- Construction of two strategic bridges located at the intersection of Prince Nayef Road and the **HARAMAIN** Train Maintenance Workshop.
- Critical infrastructure designed to provide a grade-separated crossing over the active railway maintenance facility
- Prestressed concrete girder system utilizing span lengths of 33.2 meters and 32.5 meters for optimal structural efficiency.
- Advanced geometric design accommodating a significant 33-degree skew angle to navigate complex spatial constraints.
- Optimized structural layout engineered to avoid existing railway lines and underground utilities while minimizing span lengths.



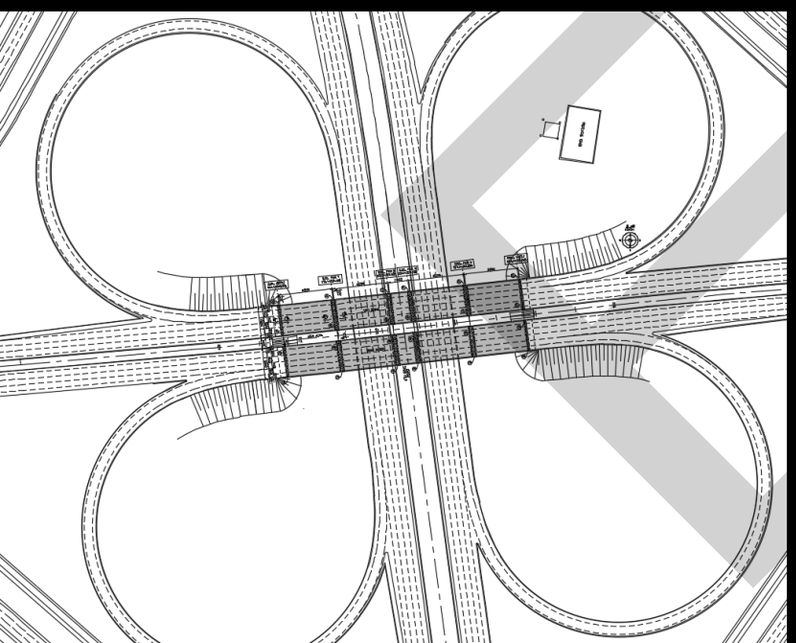


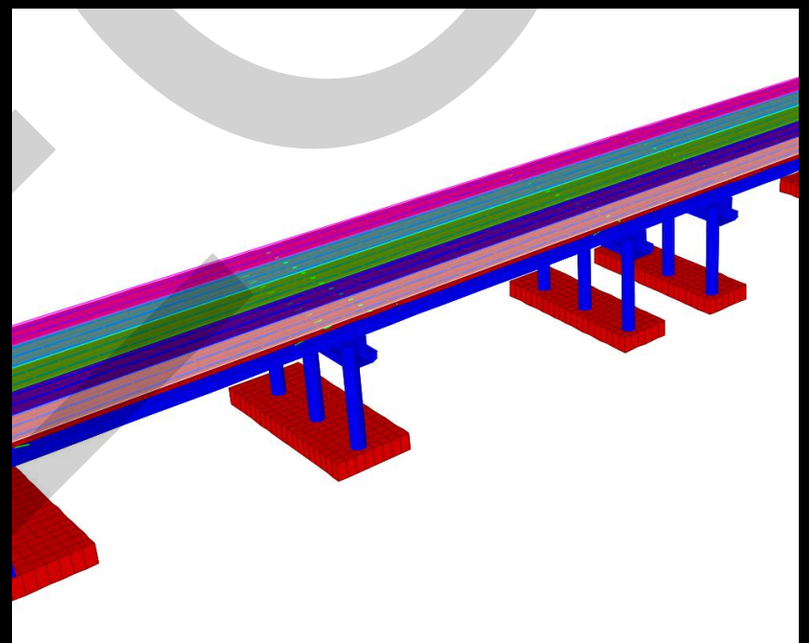


(Interchange -5)



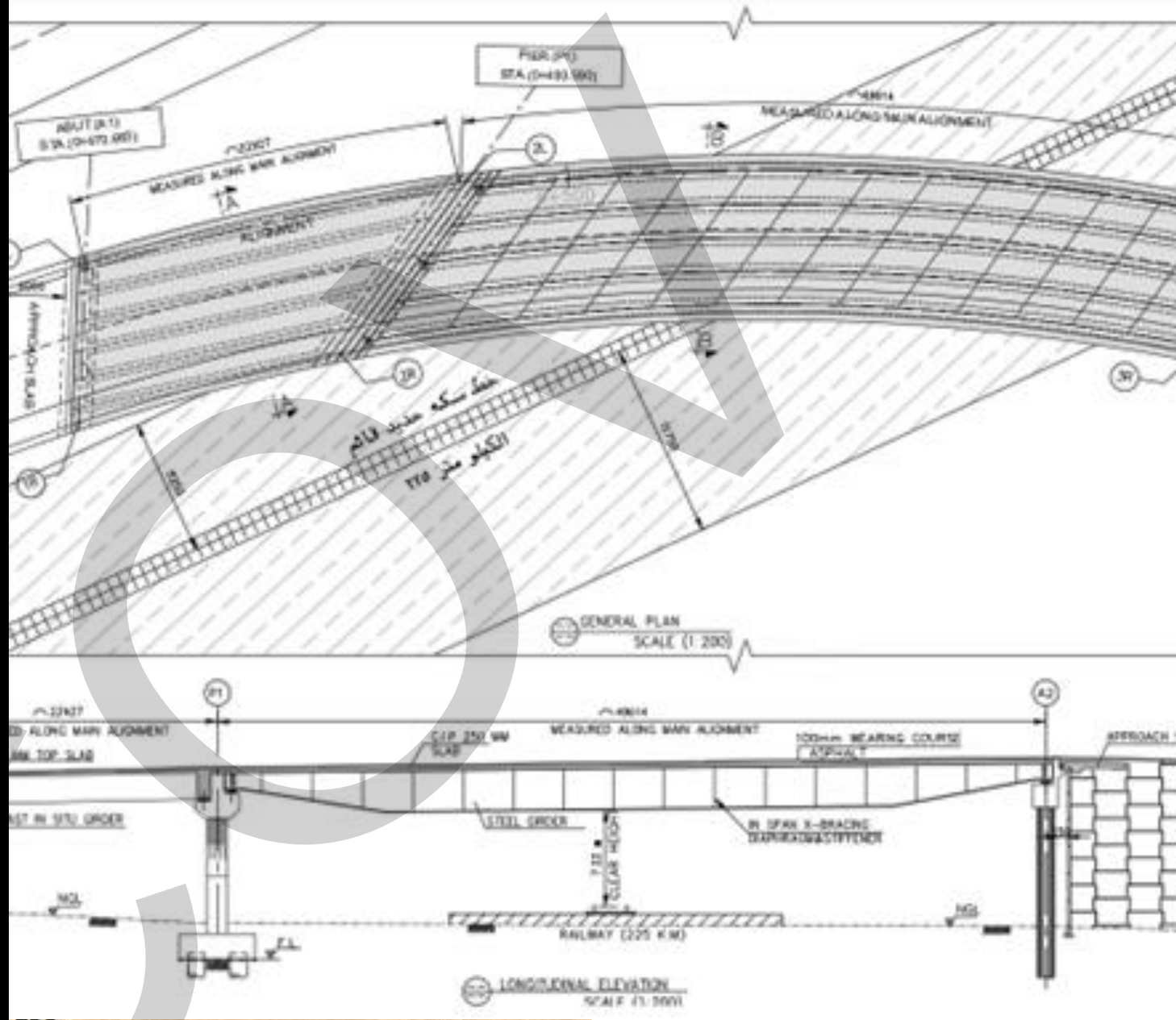
- Strategic grade-separated structure located at the intersection of the 4th Ring Road and Al-Eskan Road in Makkah.
- The total structural length of approximately 151.82 meters is designed to facilitate traffic flow at Interchange 5.
- Composite superstructure system featuring four primary spans of prestressed concrete girders with a uniform length of 40.6 meters.
- Incorporates a supplementary 11.9-meter span utilizing non-prestressed precast girders to address specific approach geometry constraints

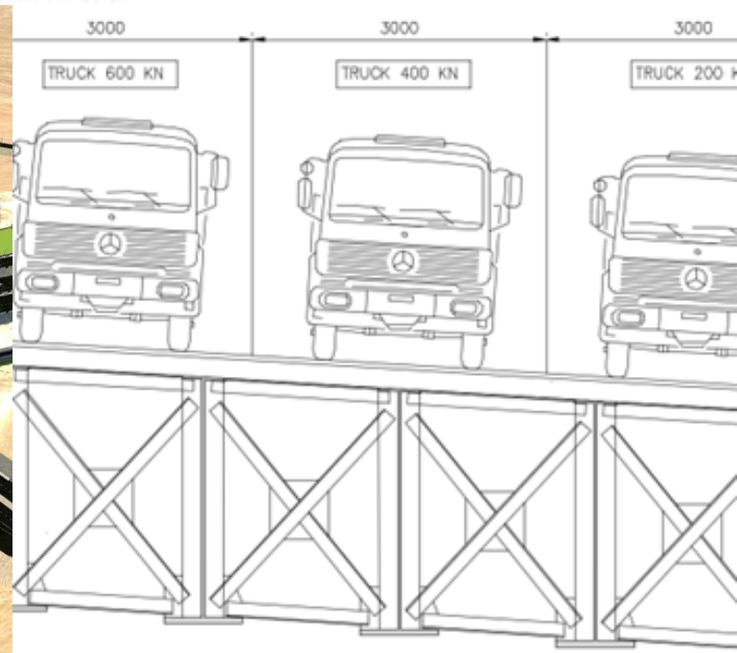




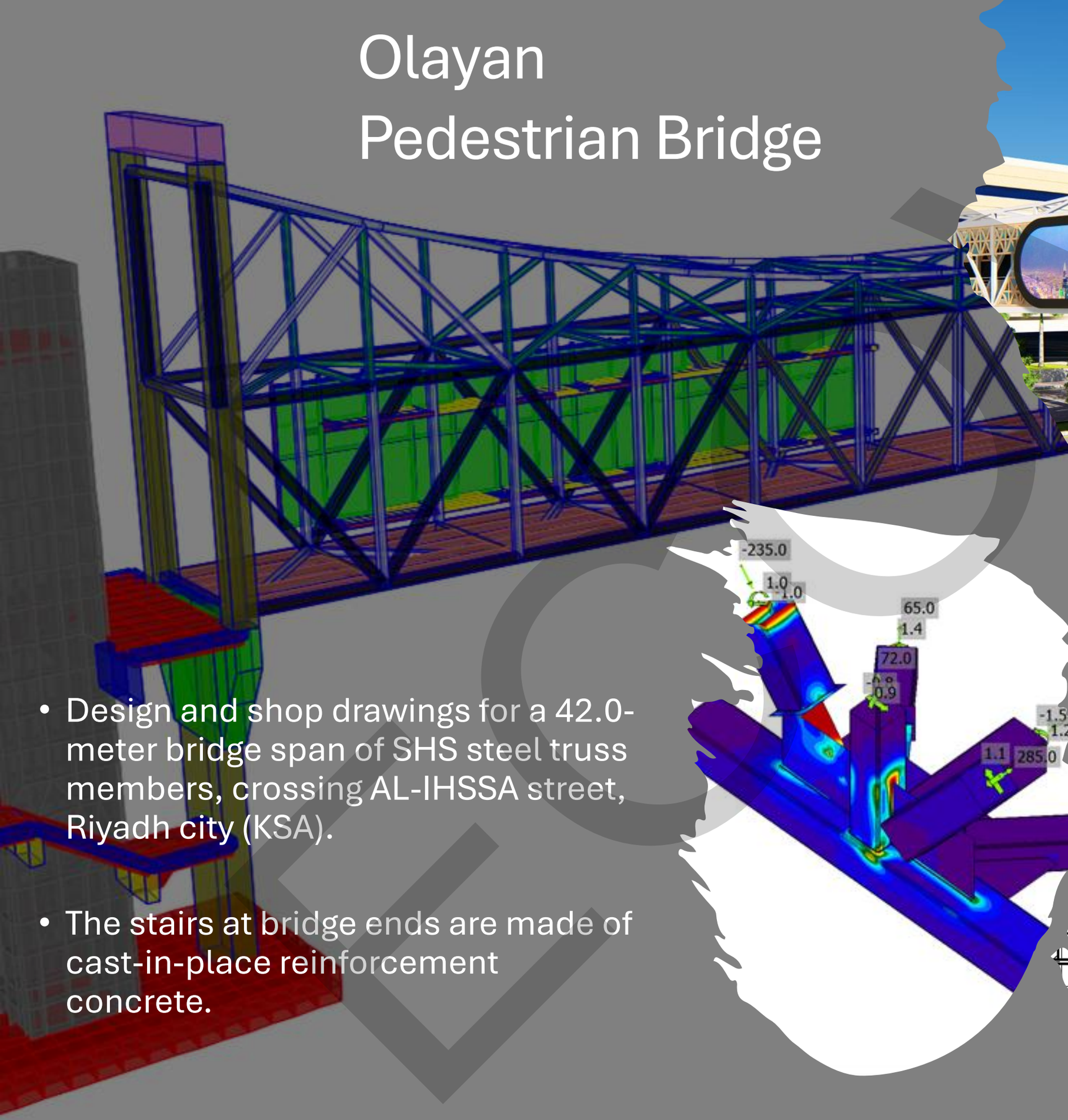
El Wahat & El Fayum Interchange (EGYPT)

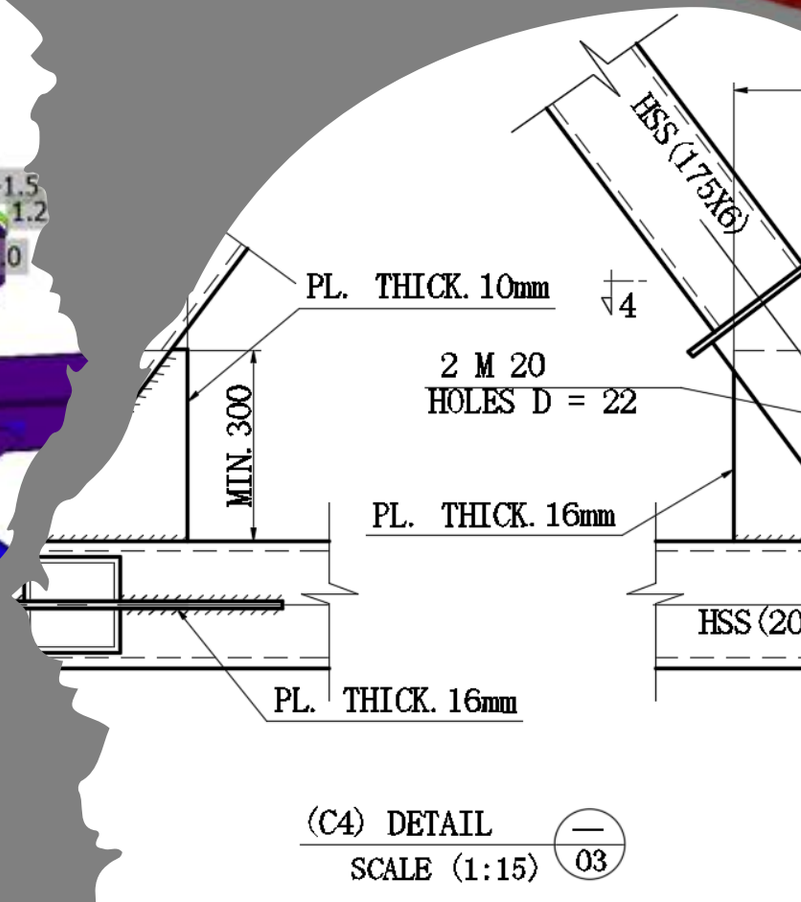
- Partial cloverleaf interchange connecting El Wahat-Cairo Road with El Fayum South Road
- Multi-structure system with two hybrid ramps and a primary bridge
- Crosses active High-Speed Rail (HSR) network and conventional roads
- Hybrid ramps: Steel girders over HSR + cast-in-place concrete girders over roads
- Ramp-1 (72.5m): 49.6m steel span + 22.5m concrete span
- Ramp-2 (74m): 50.15m steel span + 21.5m concrete span
- Bridge 1 (~100m): 2 prestressed + 2 reinforced precast girders with 200mm cast-in-situ slab
- Optimized spans ensuring HSR clearance and cost efficiency





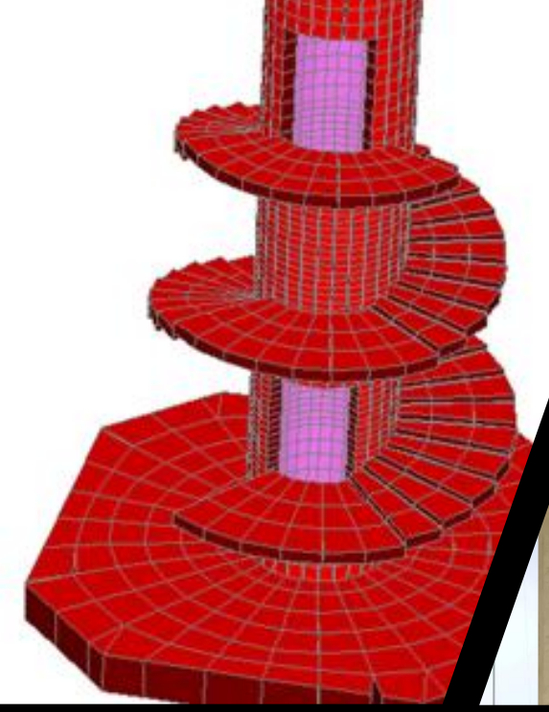
Olayan
Pedestrian Bridge

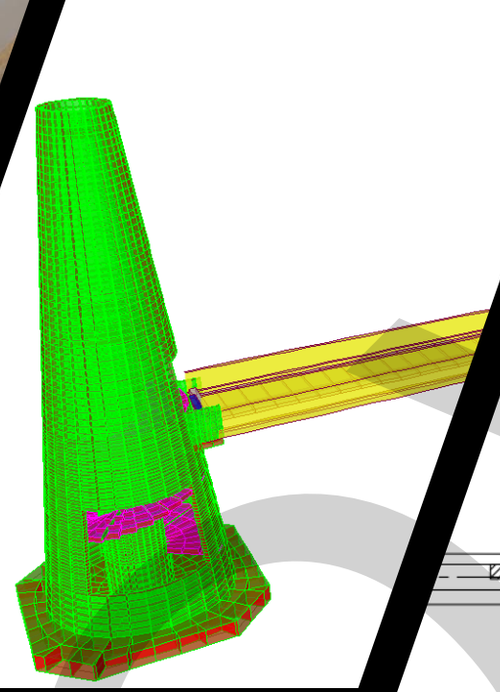


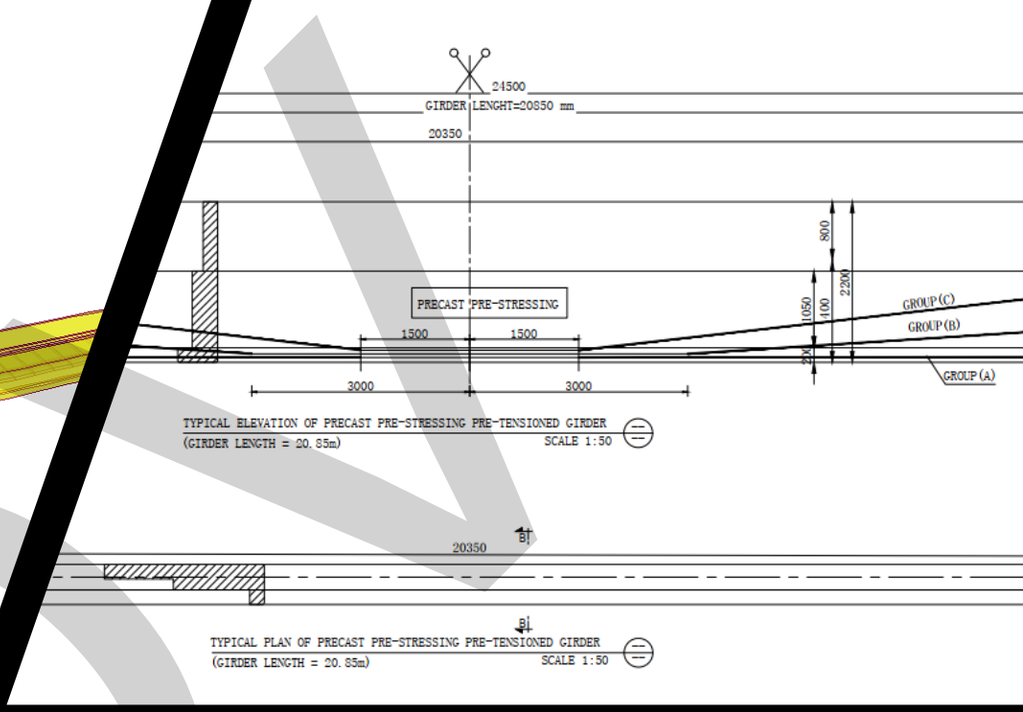


- Design and shop drawings for a 42.0-meter bridge span of SHS steel truss members, crossing AL-IHSSA street, Riyadh city (KSA).

- The stairs at bridge ends are made of cast-in-place reinforcement concrete.



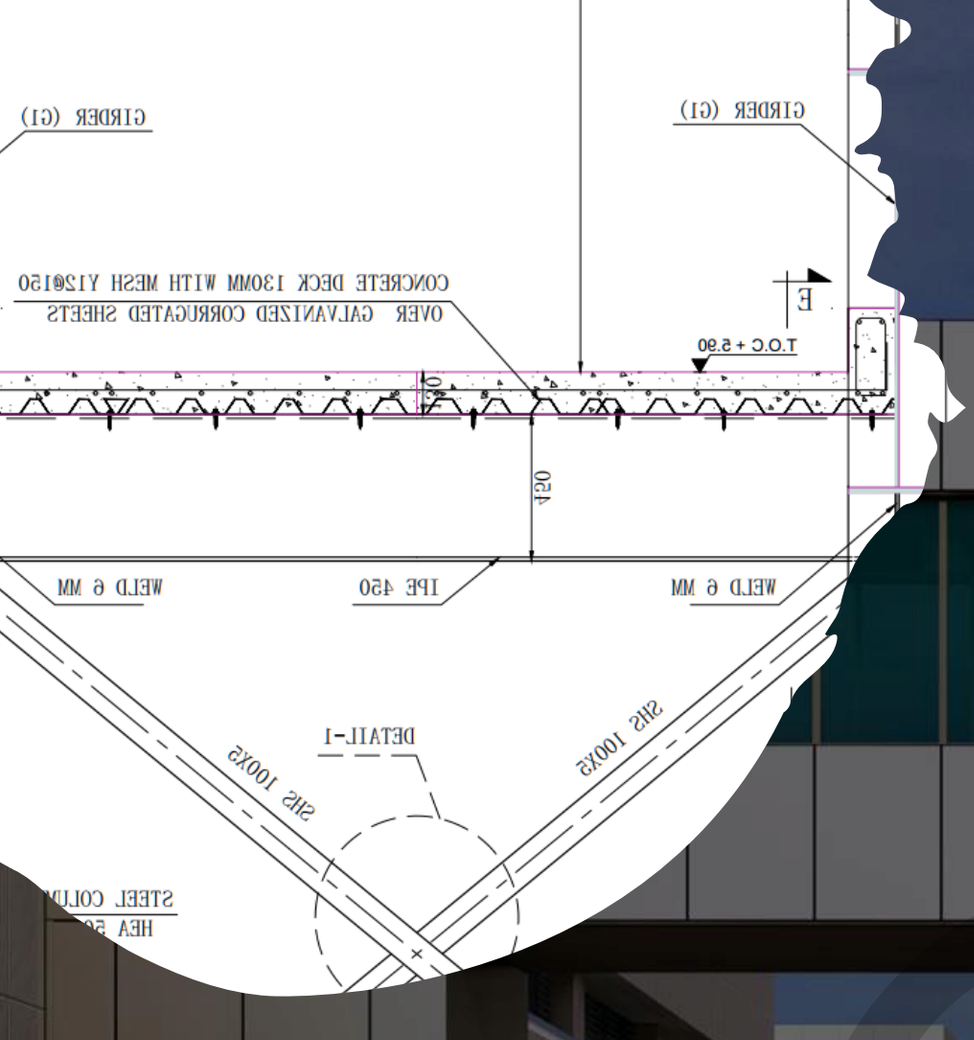


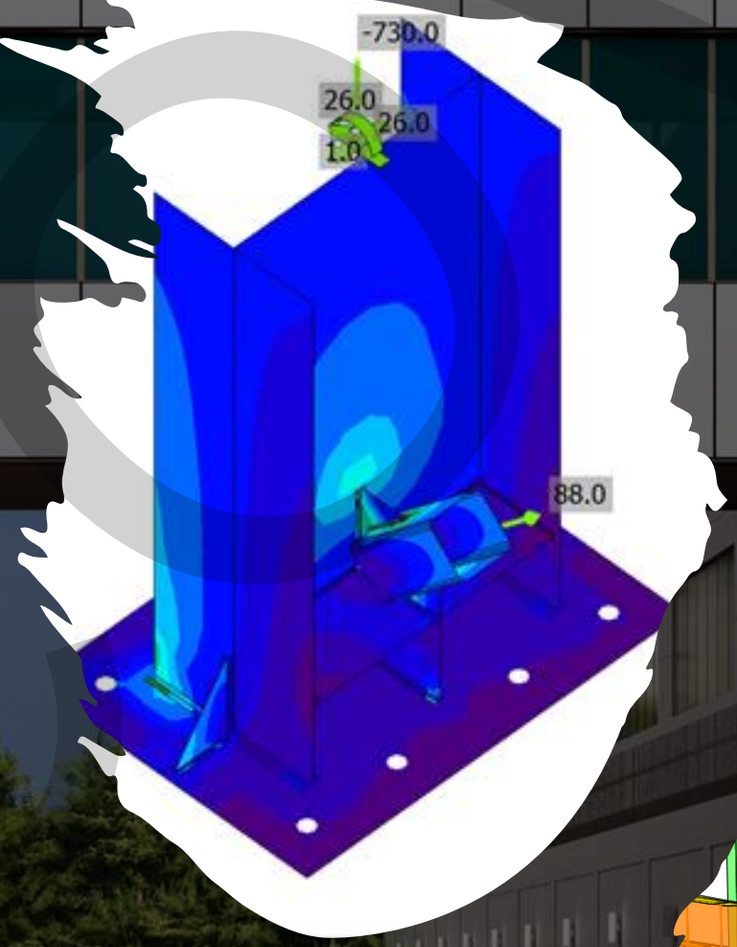


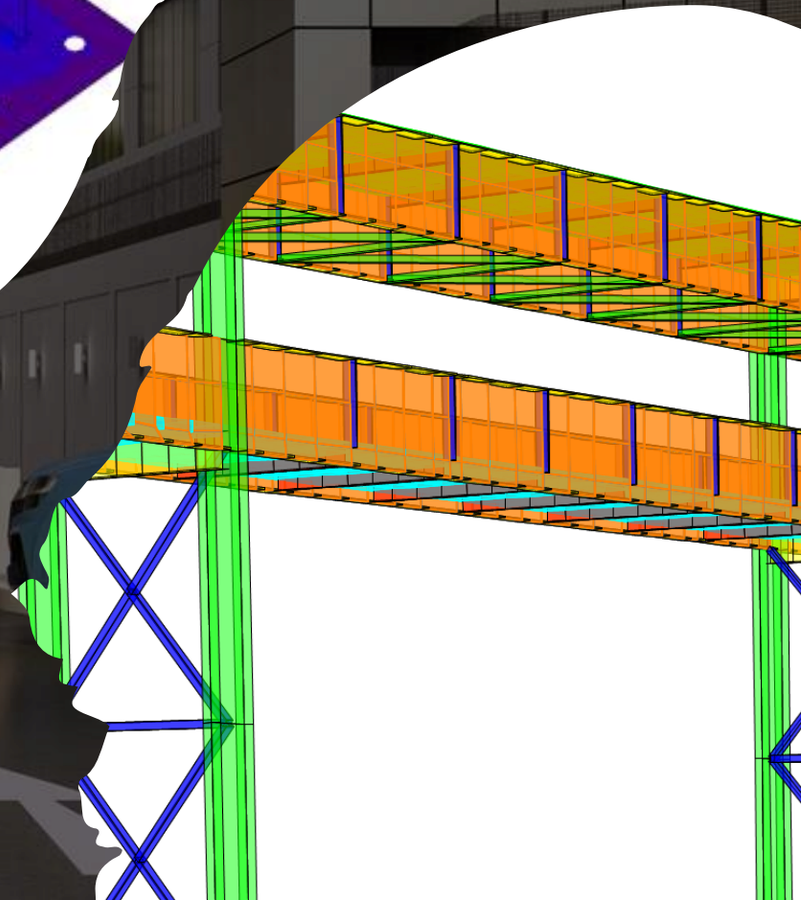
GARSH Pedestrian Bridge (RIYADH)

- Culturally responsive design inspired by traditional Pigeon Towers to honor local heritage and historical context
- Reinforced concrete pedestrian bridge structure designed for efficient urban connectivity
- Two-span configuration (2 x 24.5m) utilizing post-tensioned precast girders with inverted T-shape sections
- Precast concrete panel decking system selected to optimize construction speed and simplify on-site implementation

AL-Marai steel Link bridge





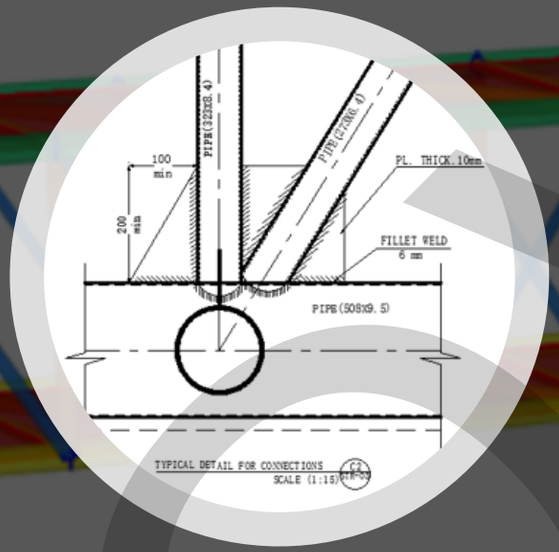


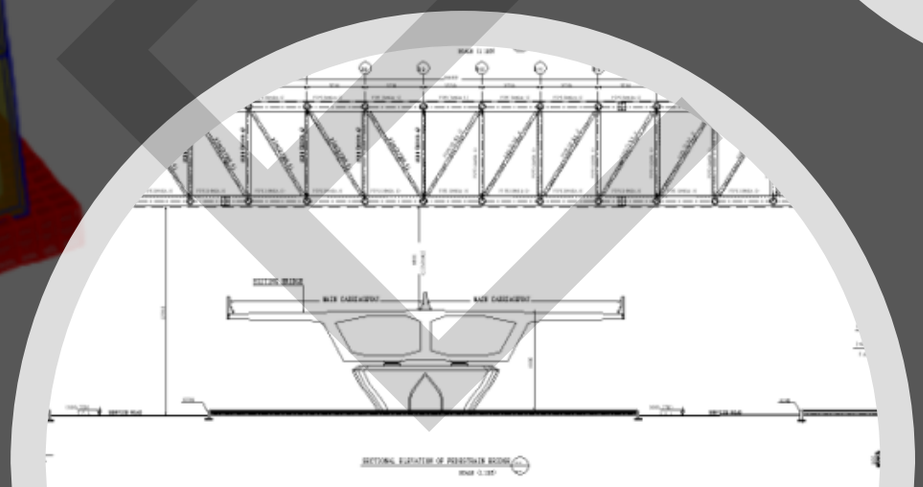
- A 20.0-meter steel link bridge was designed to connect two existing buildings for Al-Marai Company.
- The bridge floor comprises inverted steel girders (Built-up sections) combined with IPE floor beams that support a composite concrete slab.

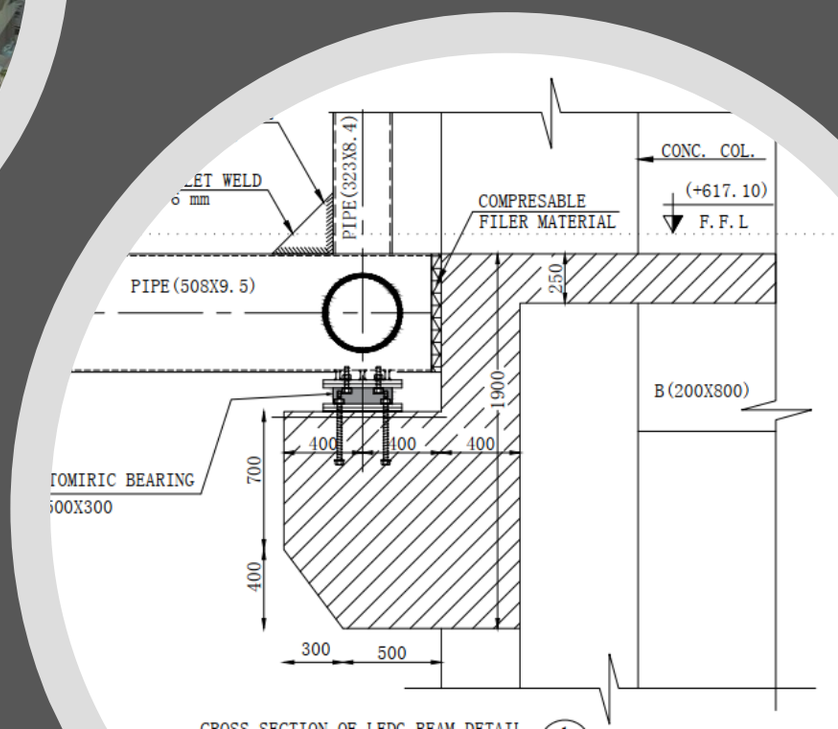
King Faisal Hospital Bridge.

- The bridge features a 56.6-meter span consisting of steel pipe truss members, crossing a major roadway. Its double-height design ensures the required clearance above the perpendicular highway bridge below.

- The stairs at both ends of the bridge are constructed of cast-in-place reinforced concrete.



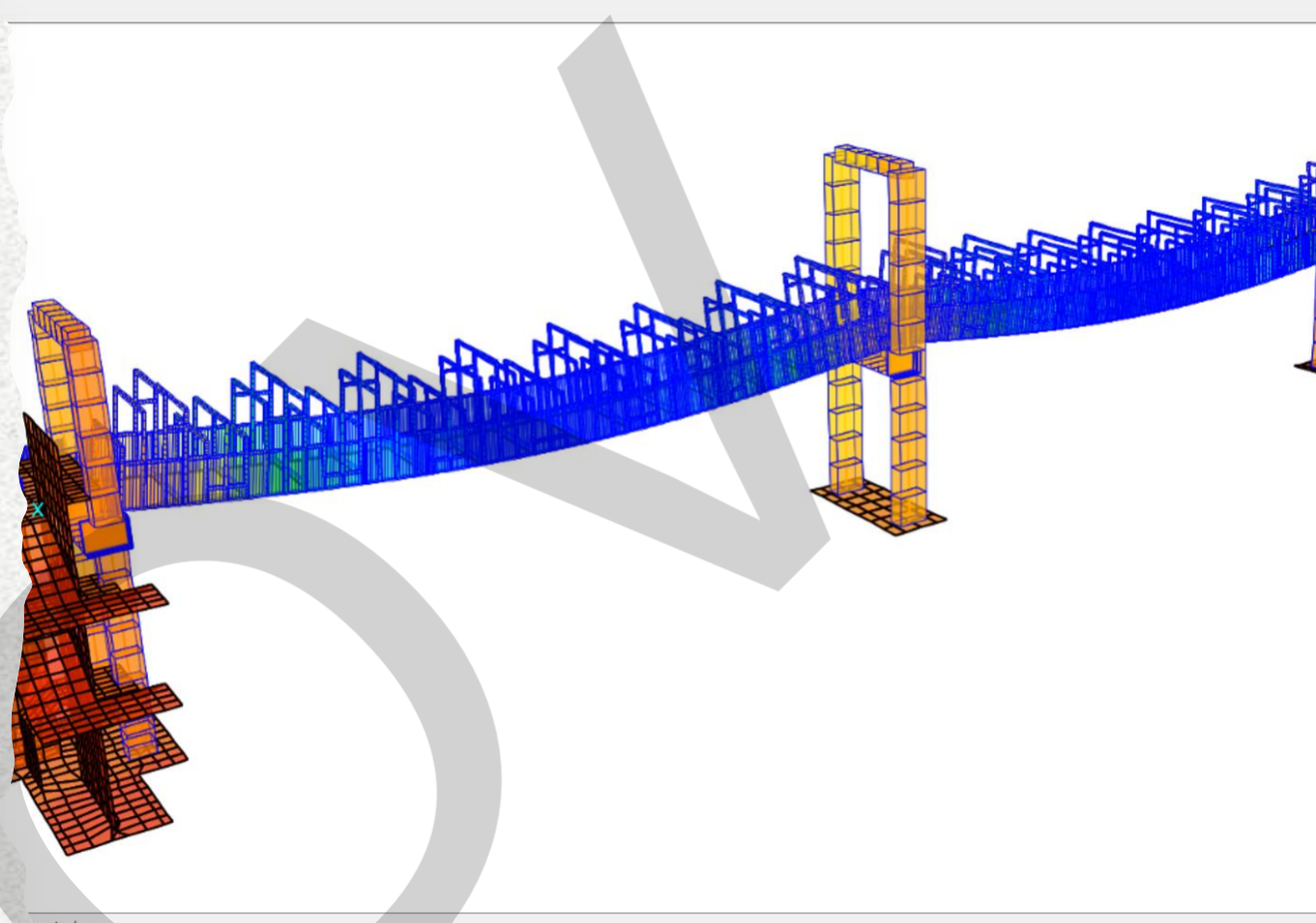


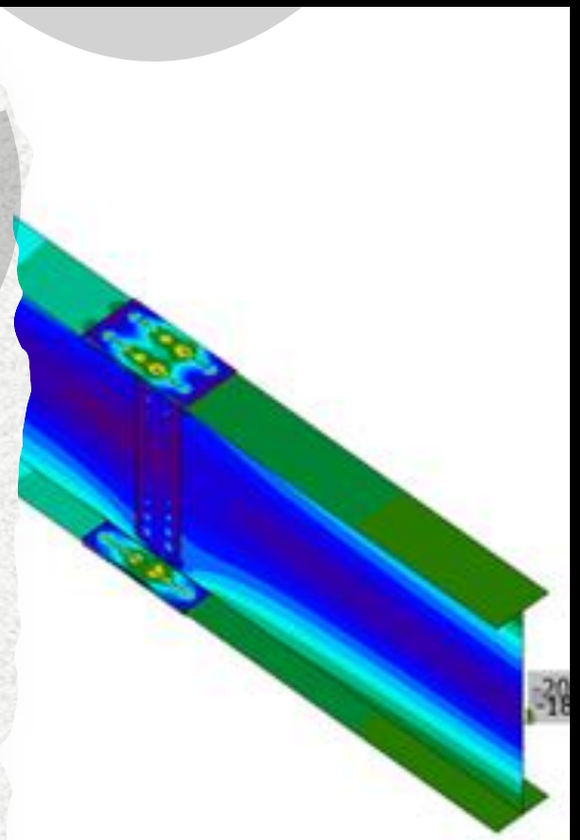


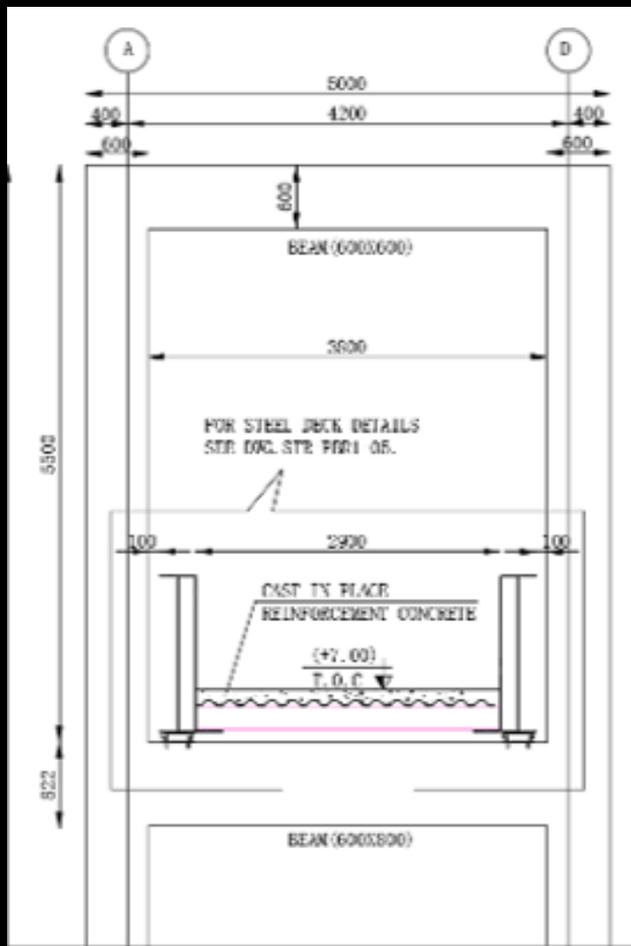
BORJ Al-Arab Bridge

- The bridge consists of two spans, each 28.8 meters long, crossing a major roadway. The superstructure features inverted steel girders (built-up sections) with IPE floor beams that support a composite concrete slab.

- The stairs and the pier are constructed of cast-in-place reinforced concrete.



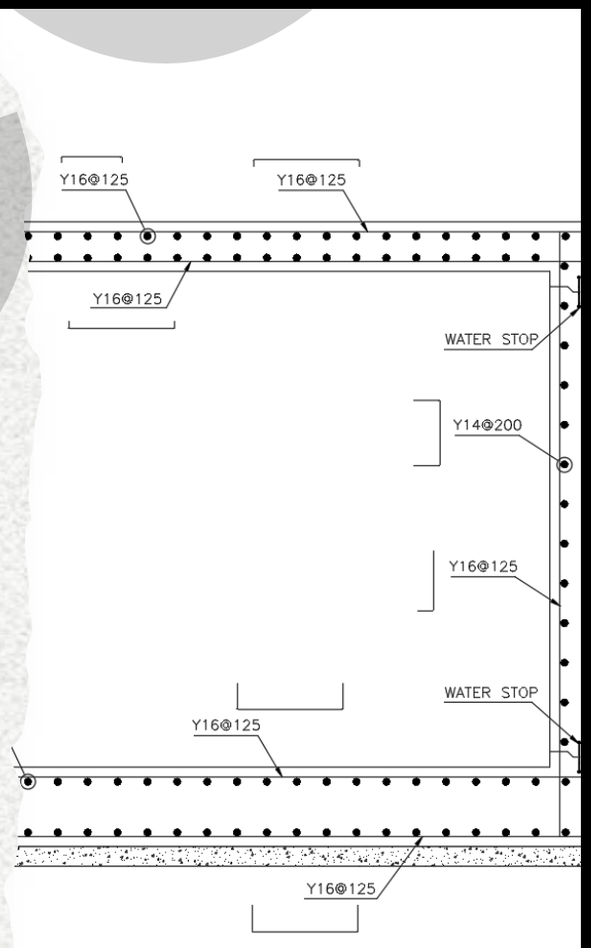


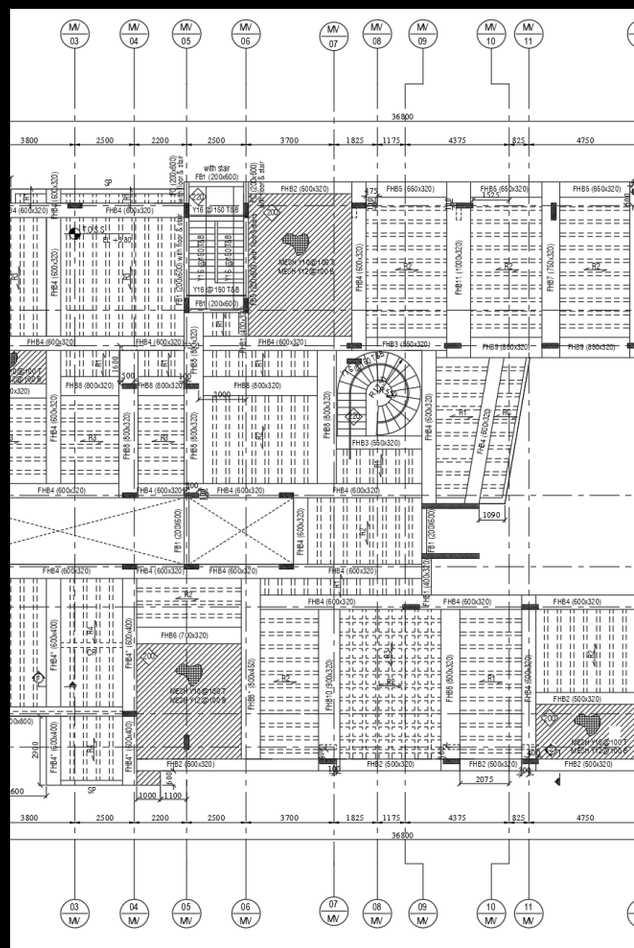


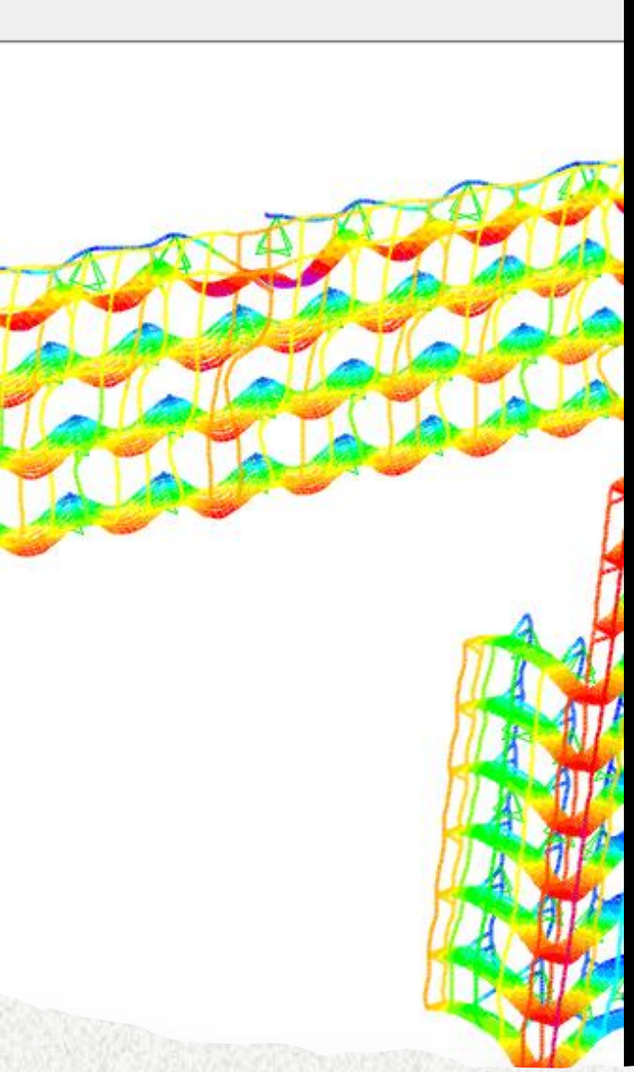
Buildings & Specialized Structures

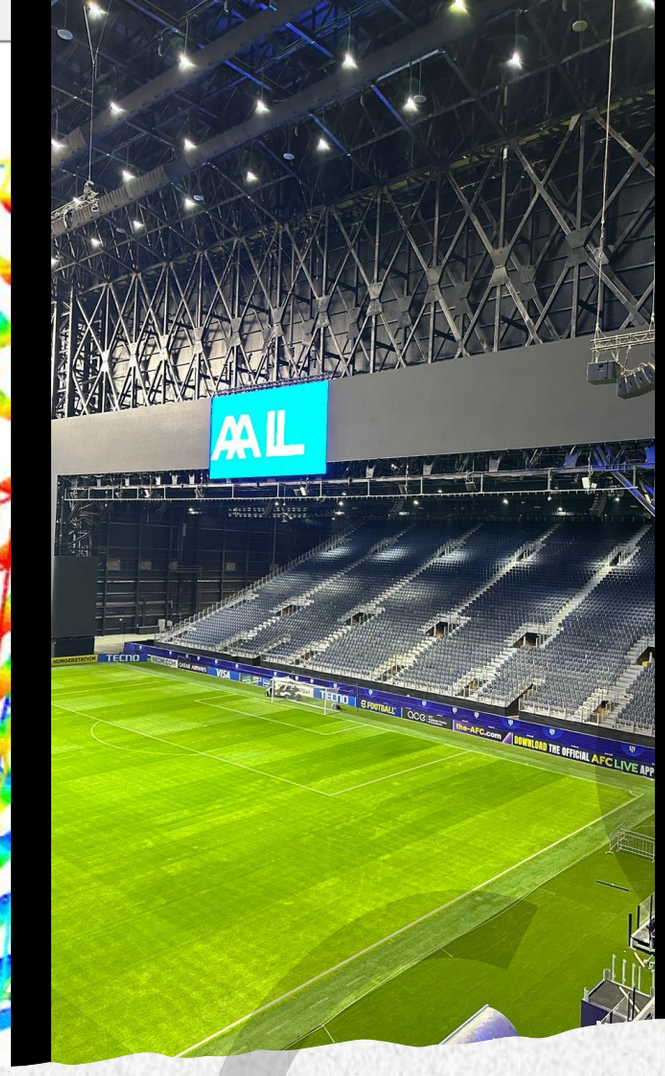
Luxury Private Villa

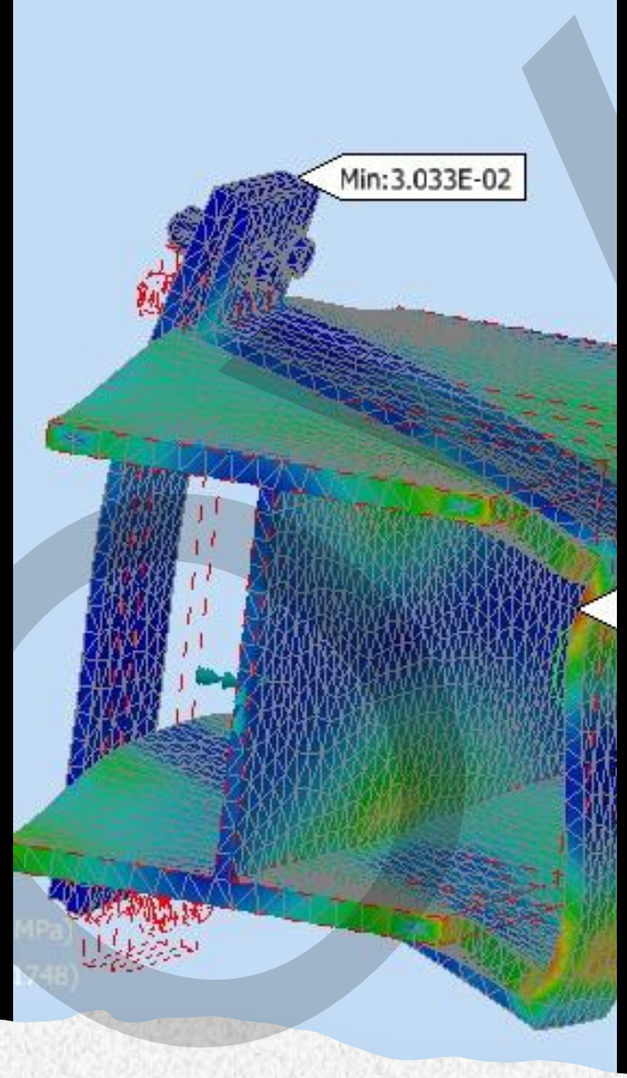
- Exclusive 3-floor villa + basement, with pool & underground tanks
- Unique architectural geometry with custom spatial deviations
- Complex structural system designed to accommodate distinct interior layouts per floor
- Fully compliant with the Saudi Building Code (SBC)
- Solution
- Innovative structural strategies—including transfer elements and adaptive column grids—were implemented to support the architectural vision while ensuring safety and efficiency.

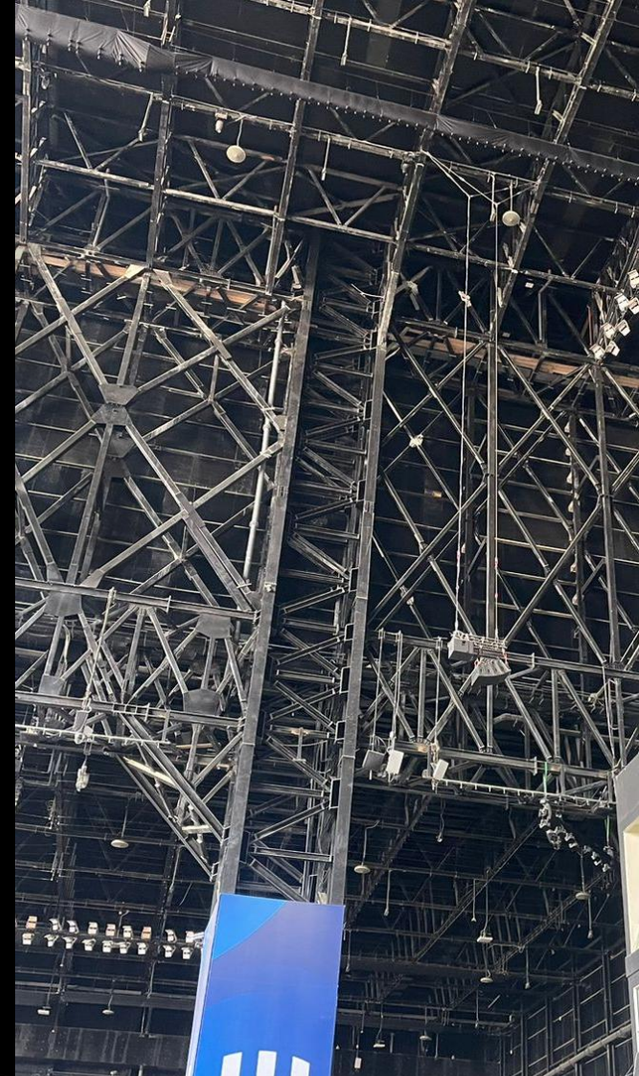






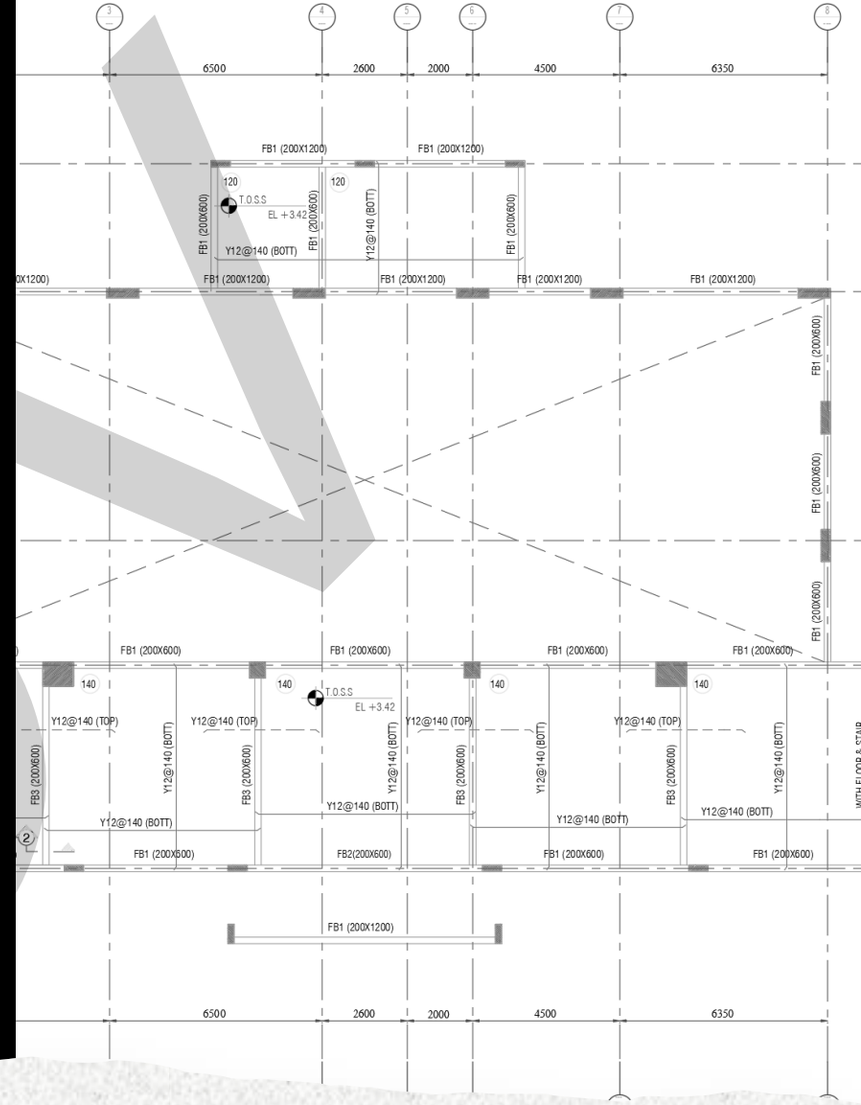






Advertising screens in the KINGDOM ARENA stadium (Riyadh city)

- Design and shop drawings were prepared for a digital screen fixation system erected at Kingdom Arena stadium, covering a total area of 1,600 m². The system consists of highly optimized steel members made of HSS and RHS sections.
- To avoid welding or bolting into the existing steel structure, the connections between the existing members and the new fixation system were designed as steel clamps.
- These clamp connections were analyzed using finite element analysis (FEA) to assess the impact of distortion values on both the clamp and the existing steel elements

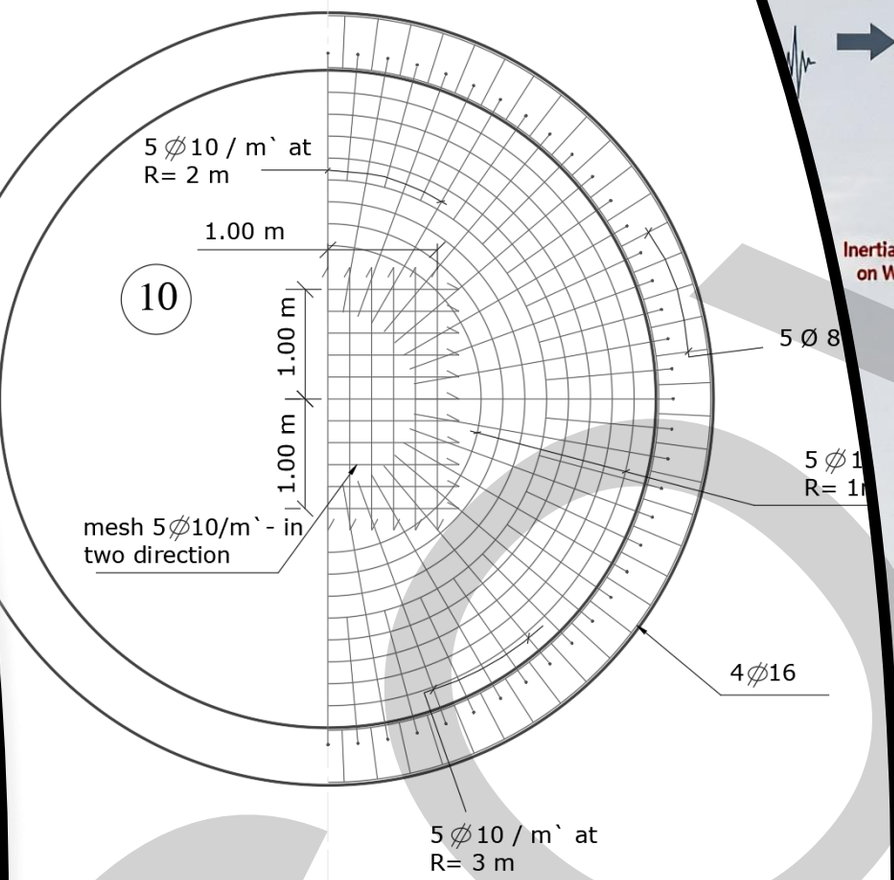


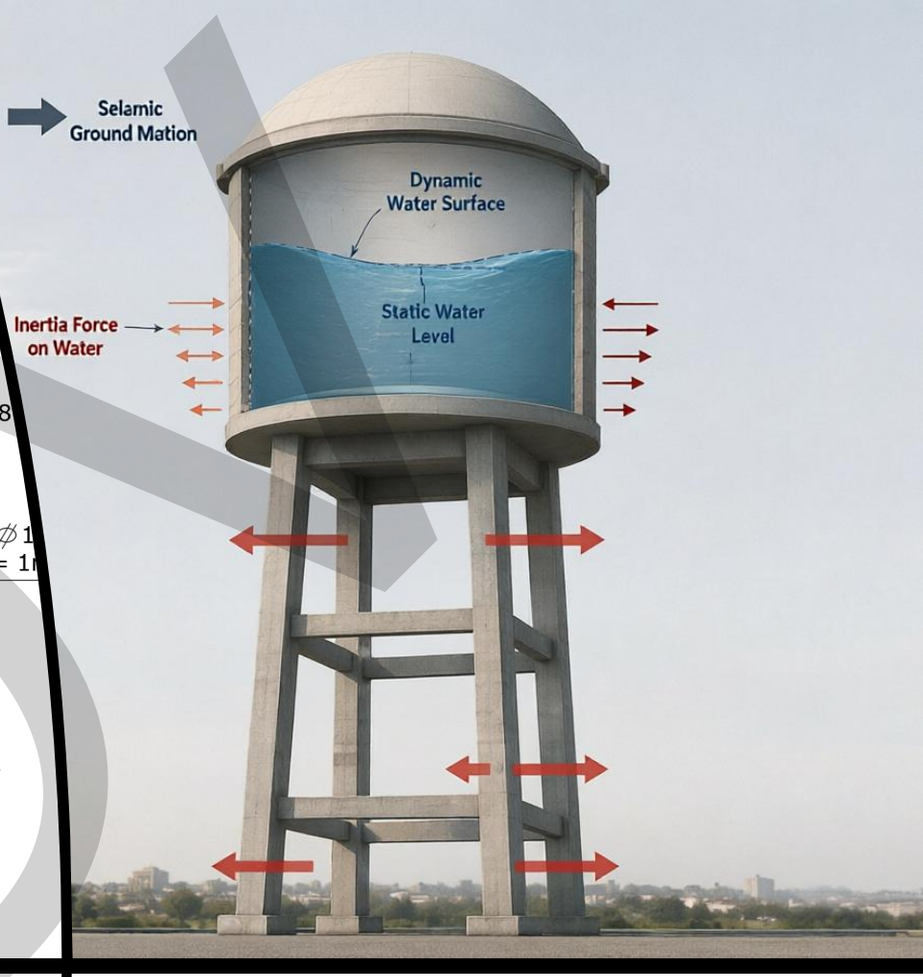
Riyadh Mosque

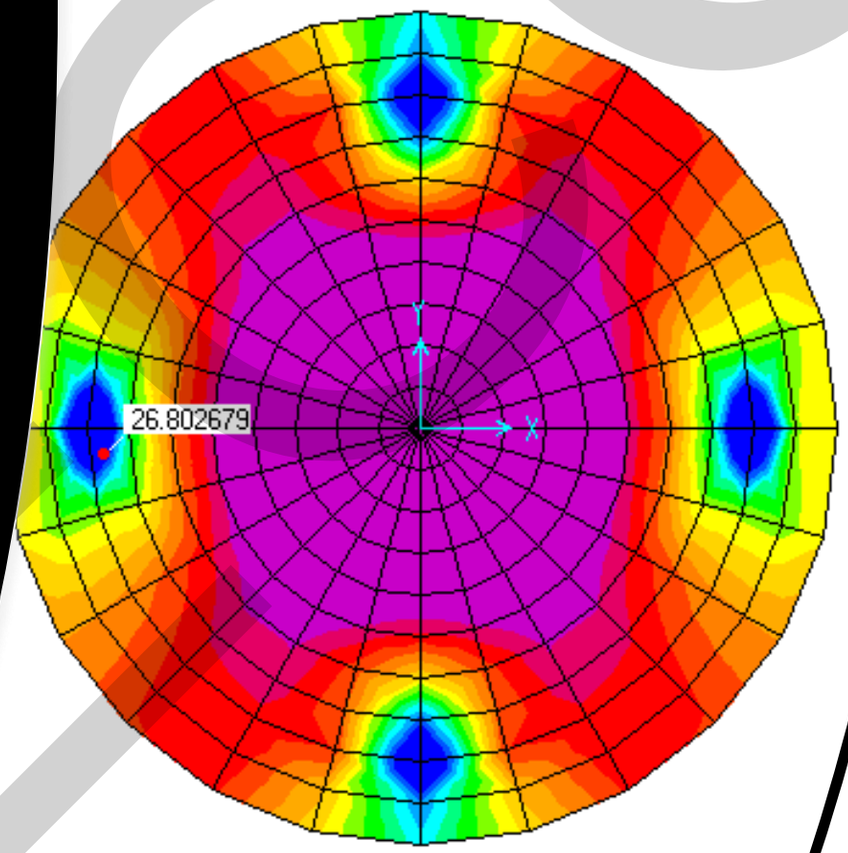
- Column-free prayer hall spanning 28.5 meters
- Interior design optimized for unobstructed prayer space and enhanced worshipper comfort
- An advanced long-span structural system designed to eliminate interior columns while maintaining structural integrity and creating a serene, spacious prayer environment.

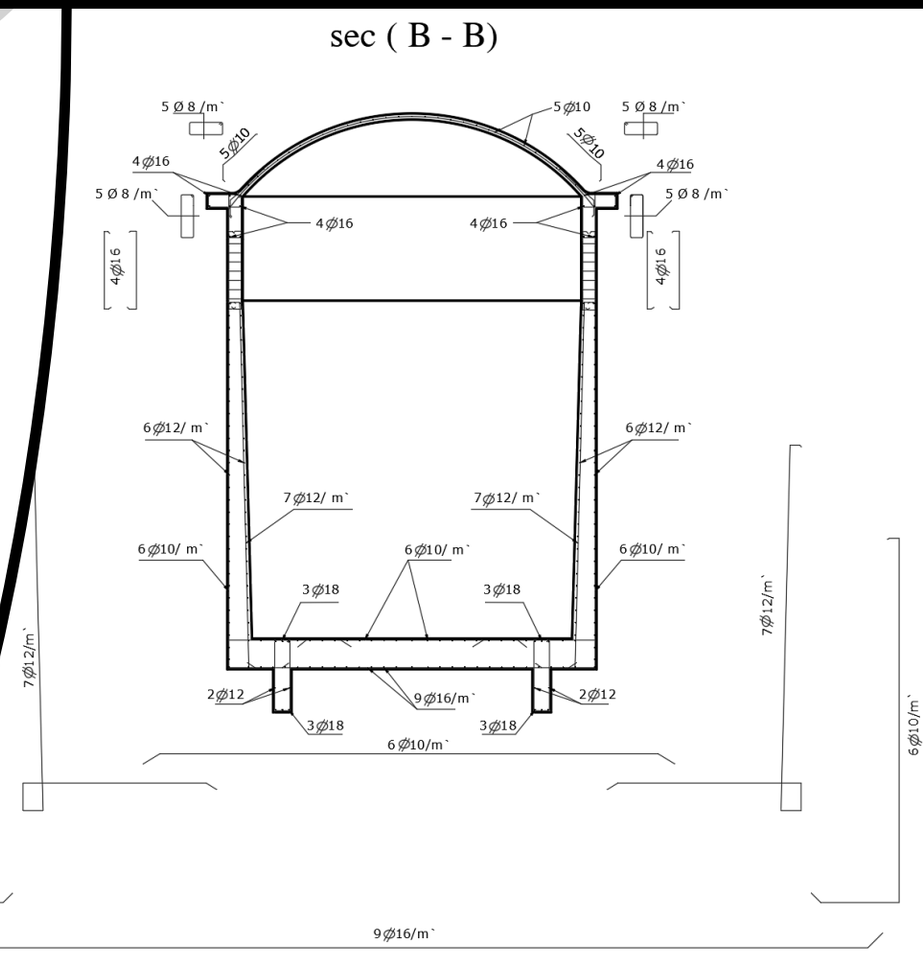
Elevated Water Tank

- Elevated storage facility for corporate operations
- Total capacity: 1,200 m³
- Optimized for long-term durability and seismic resilience
- Advanced crack-control design to ensure watertightness and extend service life
- Seismic hydrodynamic analysis accounting for sloshing and dynamic water pressures
- Compliant with international standards for liquid-retaining structures



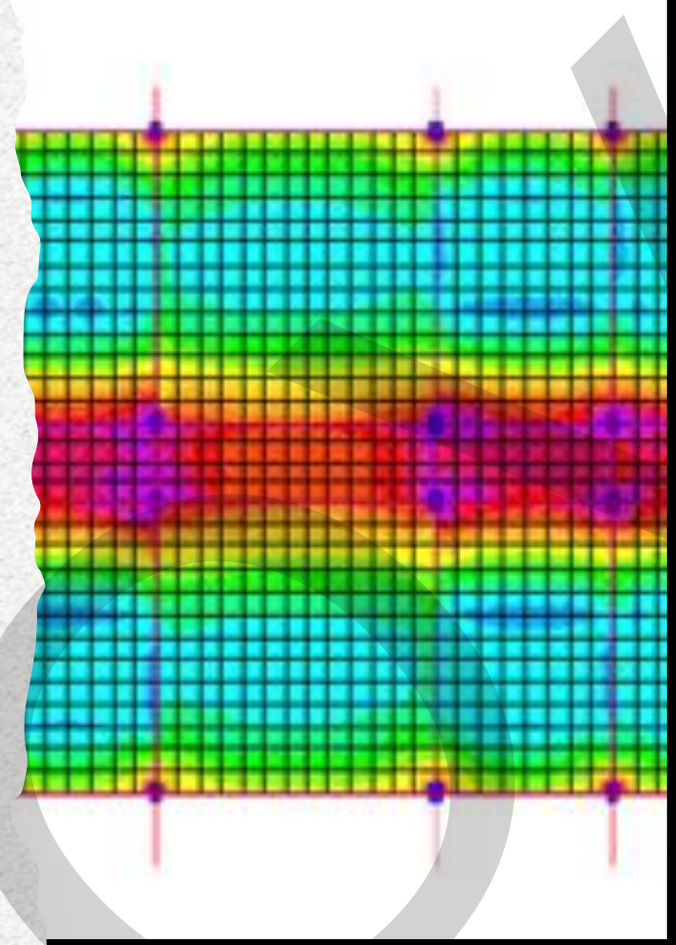


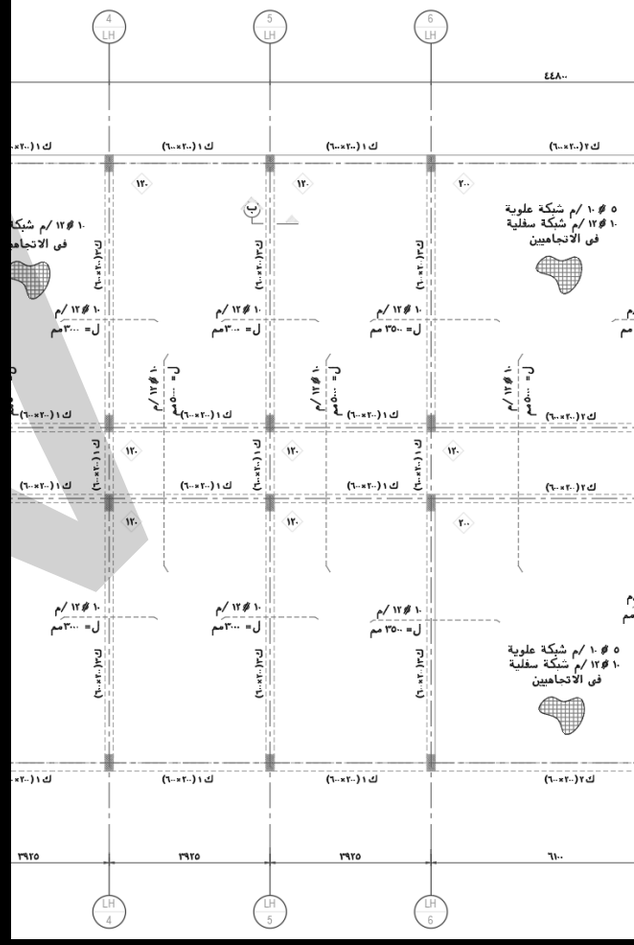


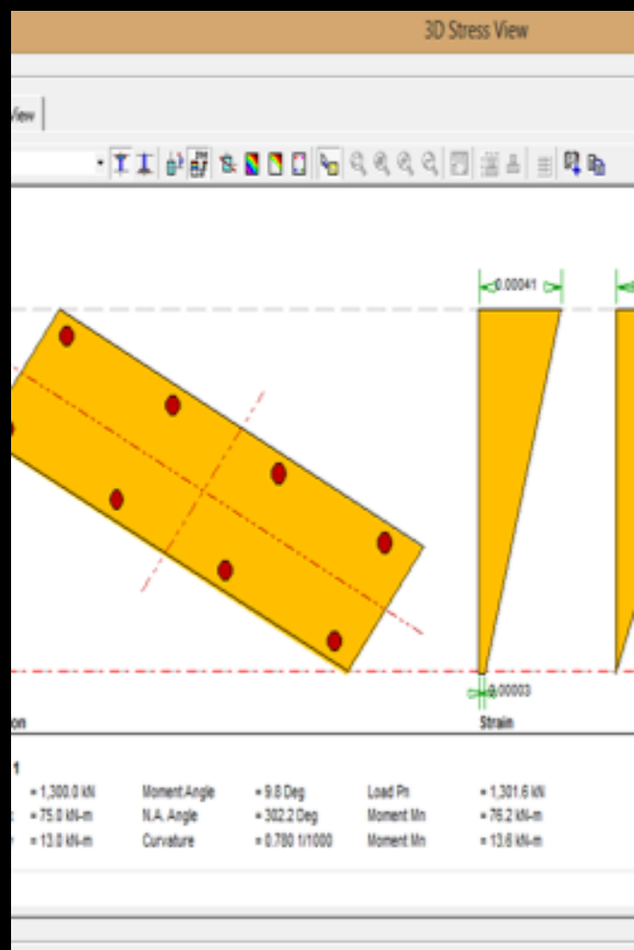


Labor Housing

- Staff accommodation project at Nayef University, Saudi Arabia
- Total built area: 650 m²
- Functional layout optimized for comfort, privacy, and efficient space utilization
- Practical structural design aligned with the Saudi Building Code (SBC), focusing on cost-effectiveness, durability, and rapid constructability to meet university housing demands.

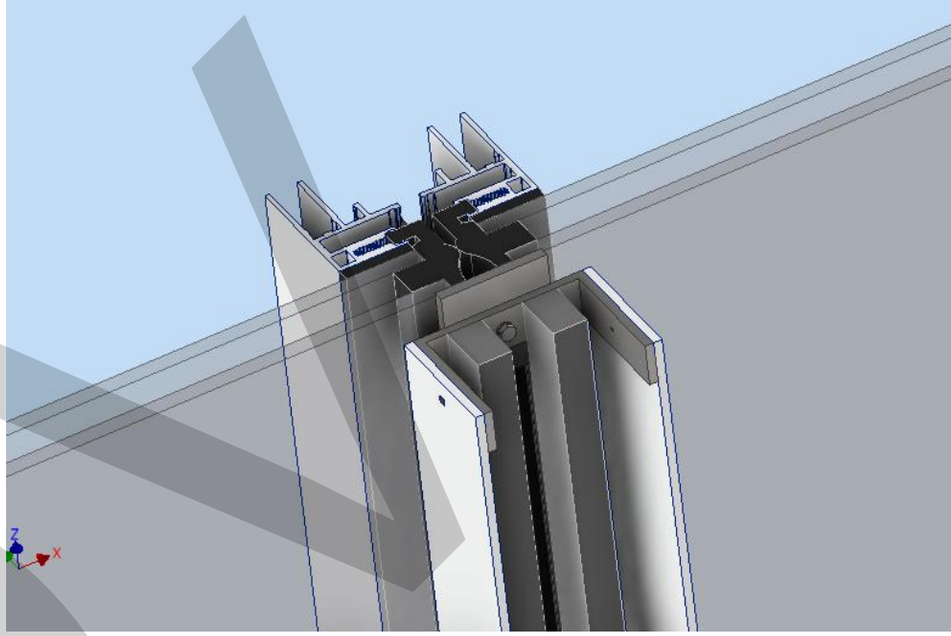


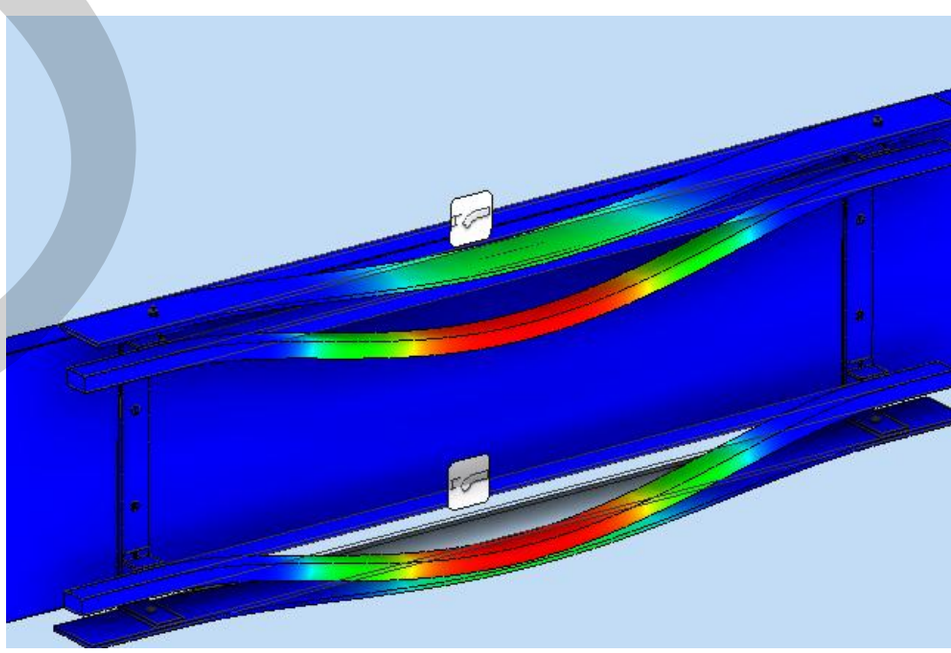


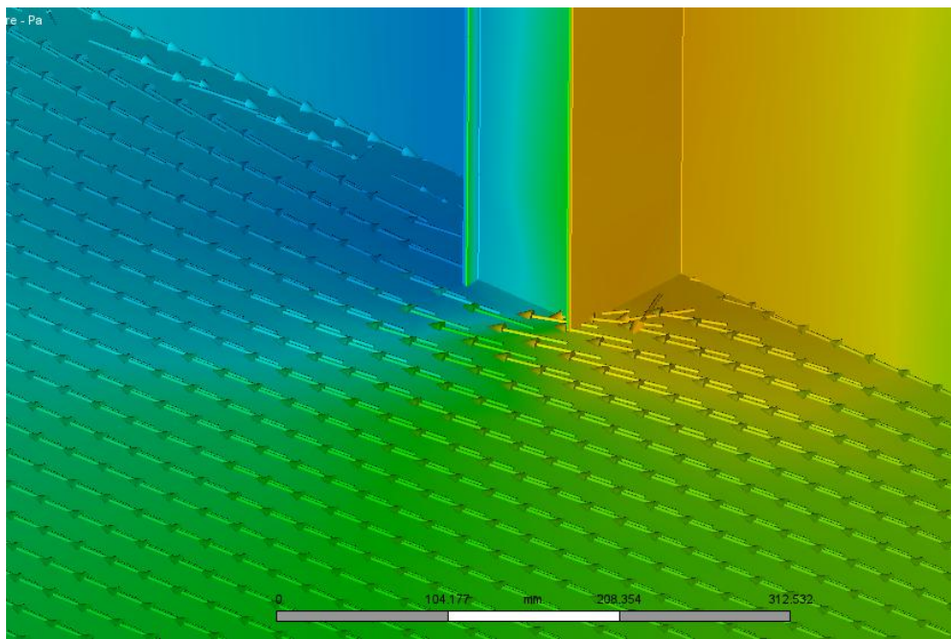


RAFAL tower LEDs screen fixation system.

- A specialized analysis and design was carried out for the LED screen fixation system at Rafal Tower in Riyadh.
- The LEDs are arranged as vertical and horizontal tubes, secured using special bolts placed within the rubber gaps between glass panels.
- The analysis was performed using finite element analysis (FEA) along with computational fluid dynamics (CFD) wind analysis.

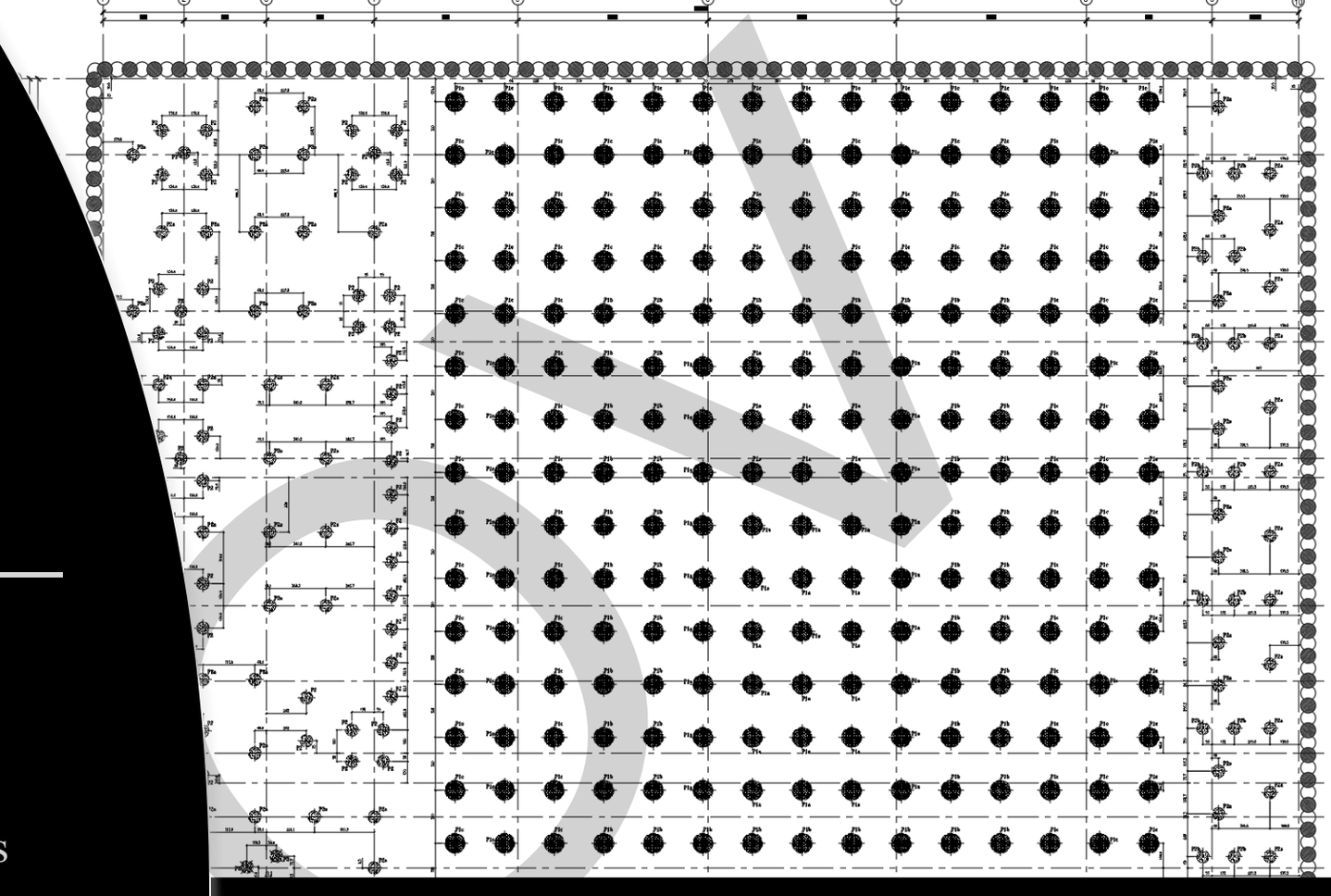






Mixed-Use Tower

- 25-story multi-functional tower in united emirates : 2 basements, retail, hotel, fitness centers & roof pool
- Integrated underground storage & utility tanks
- Complex vertical load distribution & dynamic roof pool analysis
- Hybrid floor system utilizing solid, hollow-slab, and post-tensioned slabs to optimize structural weight and span efficiency
- Seismically optimized piled raft foundation to manage combined gravity and lateral forces
- Tangent pile wall system installed as a deep retaining structure to safeguard adjacent buildings during excavation
- Advanced hydrodynamic modeling of the roof swimming pool to mitigate sloshing effects and ensure long-term structural integrity



Advertising screen in several locations of Riyadh city.

Design and shop drawings were prepared for digital screen fixation steel systems applied to various types of structural façades at multiple locations across Riyadh city, including:

- Steel structure façade (AL Nakheel Mall , Solitaire Mall)
- Concrete structure façade (Esplanade Mall –bridge and underpasses barriers).

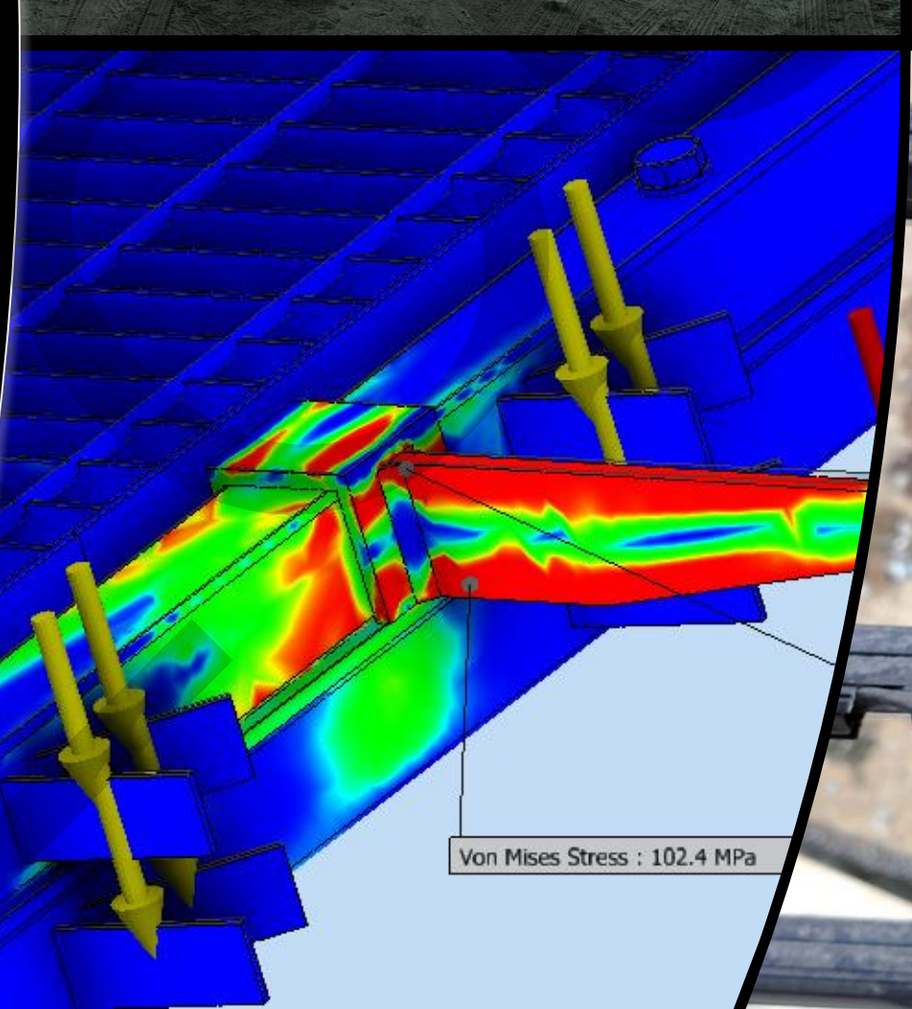
The analysis and design utilized highly optimized steel members to ensure economic efficiency and the safety of the existing structures, with a thorough study of the additional load effects..

Zain office LEDs screen fixation system.

- A specialized analysis and design was conducted for the LED screen fixation system on the facade of Zain's office building in Riyadh.

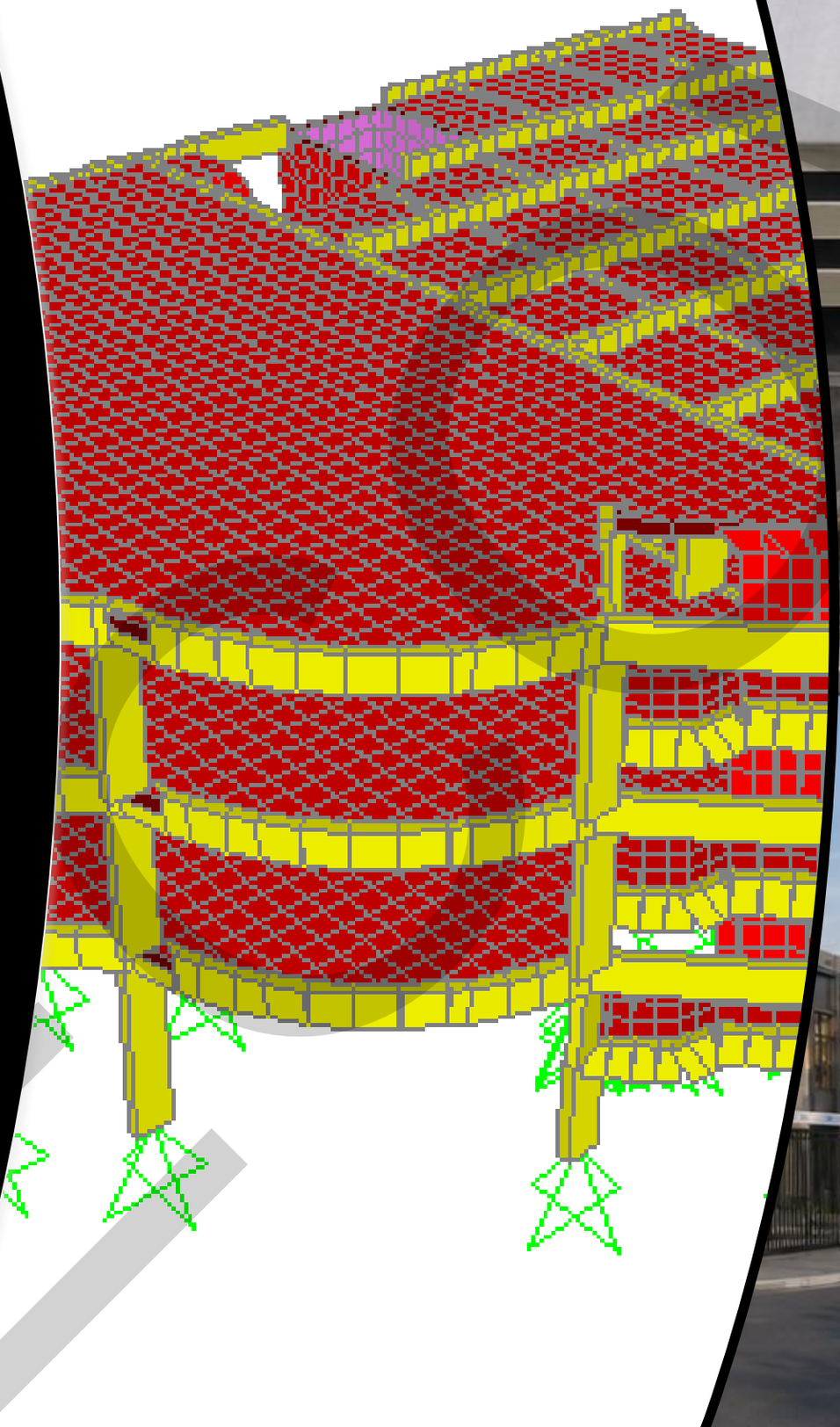
- The LEDs are arranged as horizontal tubes, suspended via wire rope clamps in front of the existing facade, using a custom steel connection to the existing maintenance corridor.

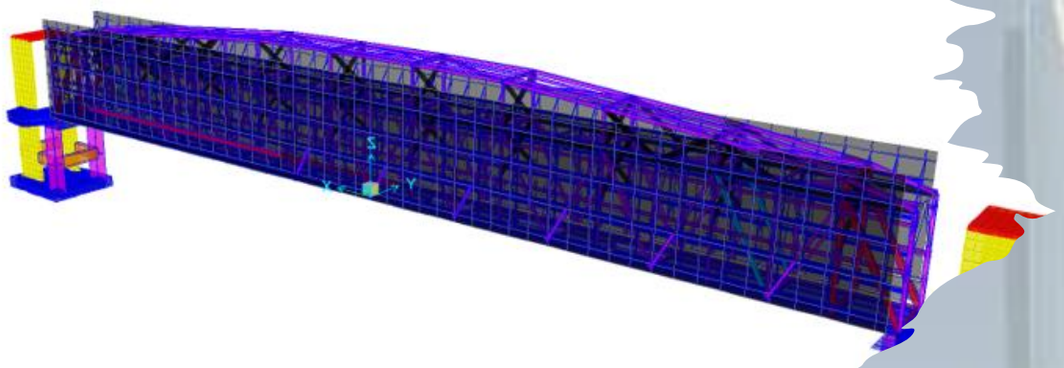
- Finite element analysis (FEA) was performed to study the effect of the additional loads imposed by the LED system.



Two-Story Mall

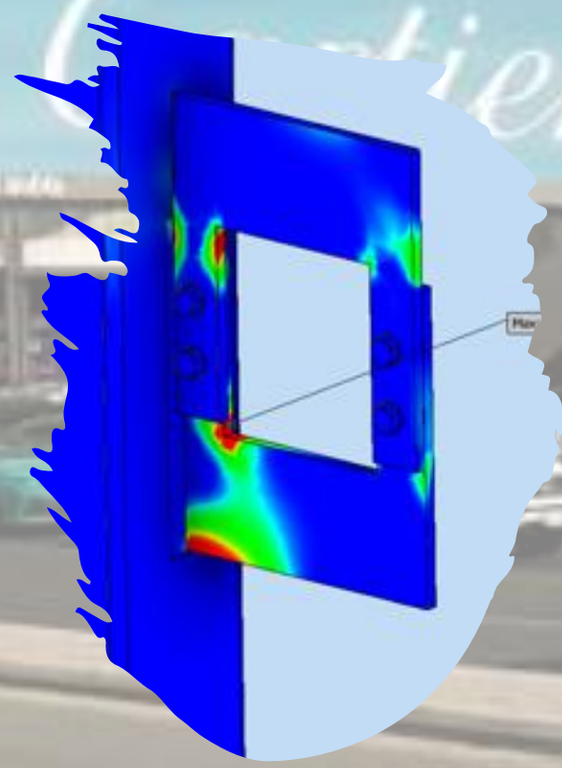
- Commercial mall (2 floors) with adjacent multi-level garage building Located in Egypt, optimized for high footfall and efficient circulation
- Integrated parking solution with seamless pedestrian access
- Mixed structural system combining flat slabs and post-tensioned (prestressed) slabs to achieve long spans, reduce floor thickness, and accelerate construction
- Optimized column grids to maximize retail flexibility and parking efficiency
- Designed for cost-effectiveness and constructability while meeting local code requirements





KING FAHD Pedestrian Bridges

- Design and shop drawings were prepared for a large digital screen steel fixation system installed on the King Fahad Pedestrian Bridges, which have spans of 64.5 meters and 70.9 meters.
- The steel fixation system consists of very lightweight SHS and RHS members.
- A horizontal SHS members Alonge the bridge length has been used as transition member between the bridge and the fixation system , wit a special connection with the vertical steel member of the bridge.
- All existing structure members has been checked and adding a new steel members as strengthen due to additional wight of the screen.



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