

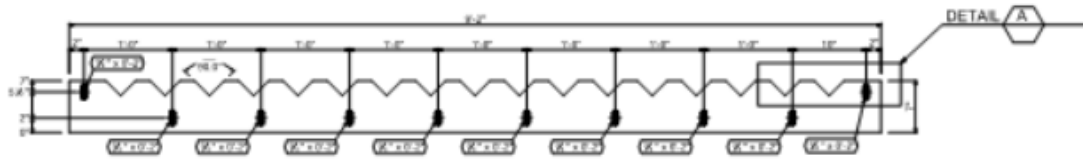
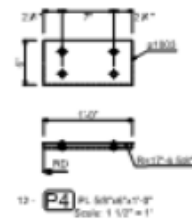
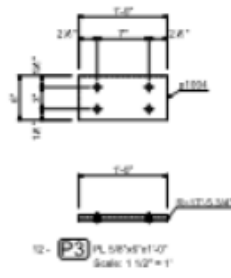
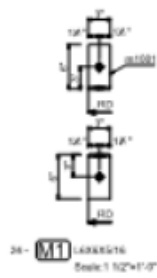
Structural BIM Modelling & Steel Detailing

(Structural Steel Modelling, BIM & VDC Coordination Services)

CASE STUDY



TECHTURE



Client : Mechanical & Structural Contractor

Team Size : 2 Nos. (BIM engineer & BIM Coordinator)

Disciplines : Structure

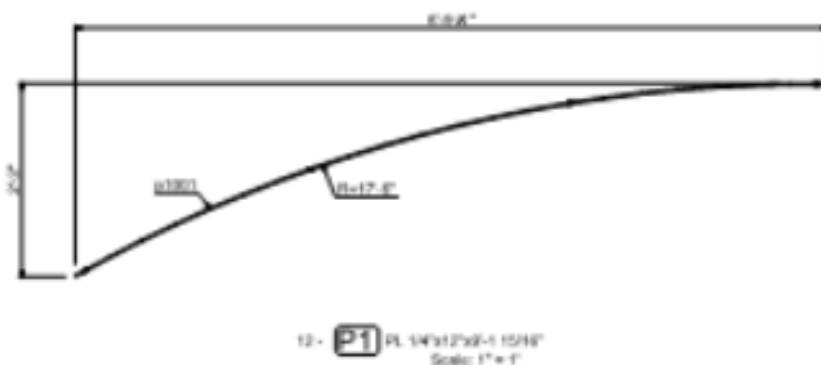
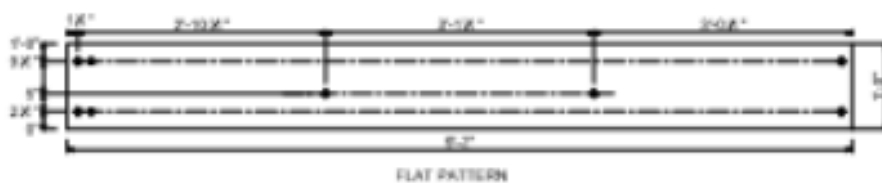
Duration : 1 Month

Scale : 172,000 Sq. ft.

Software : STAAD PRO & RISA

Type : Infrastructural

Location : Wisconsin, United States.



Project Overview

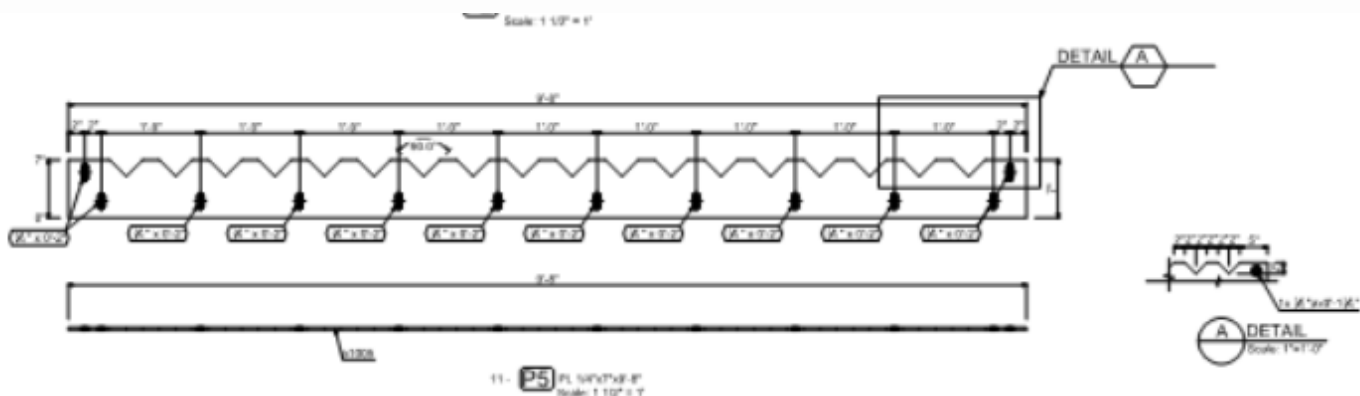
This project involved developing a high-accuracy structural BIM model at LOD 400 along with comprehensive steel shop drawings for multiple facility structures. All modelling was executed strictly based on the final issued design drawings. The scope included structural detailing, design calculations, and sealed engineering reports to support fabrication and installation workflows.

Scope & Deliverables

- Development of a discipline-specific LOD 400 structural BIM model based on the final design drawing set.
- Detailed modelling of lintels, galvanized steel walkways, guardrails, grating, ladders, pipe supports, weir assemblies, troughs, baffles, and railing systems.
- Preparation of approximately 30–35 steel shop drawings extracted from the BIM model.
- Structural engineering calculations, connection design reports, and sealed stamped documents for all steel elements included in the scope.

Challenges

- Ensuring complete alignment with the final design set without deviations or missing information.
- Managing complex steel element connections across multiple structures with varying detailing requirements.
- Maintaining fabrication-level accuracy throughout the LOD 400 modelling process within tight timelines.
- Coordinating calculations and drawings to ensure consistency, clarity, and approval readiness.



Techture Approach

- Utilized Advance Steel and AutoCAD for precise steel modelling and shop drawing generation.
 - Performed structural and connection design using Strap/RISA/STAAD or equivalent engineering tools.
 - Followed a strict input-driven workflow: modelling only elements reflected in the approved design set.
 - Integrated engineering calculations with BIM outputs to ensure end-to-end technical completeness.
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Benefits

- LOD 400 accuracy ensured fabrication-ready drawings with minimal RFIs during execution.
- Model-based extraction of shop drawings improved consistency and reduced manual drafting errors.
- Engineering calculations and stamped documents enabled faster approvals and compliance assurance.
- Clear data-driven workflows minimized rework and improved coordination efficiency across all deliverables.