Alstom Project Documentation: Design Drawings

**Executive Summary**

This report contains summaries of important design drawings documents from the Alstom project. These documents have been selected based on their relevance to key project aspects and organized to provide a comprehensive overview.

# Document Summaries

**1. Alston Factory - Borg El Arab - IFC List of Drawings 10-4-2025.pdf**  
Location: 01- IFC drawings

**Summary:** 1. The document contains a list of various building designs and associated electrical system drawings for a new manufacturing site, including an administrative building, canteen, guard post, and main workshop.  
  
2. The administrative building consists of ground floor and first floor lighting systems, facade lighting, power systems for each floor, panel schedules, low current systems, and fire alarm systems.  
  
3. The canteen building includes ground floor and roof floor lighting systems, power systems, panel schedules, low current systems, and fire alarm systems.  
  
4. The guard post has ground floor lighting systems, power systems, and low current systems.  
  
5. The main workshop contains complex electrical system drawings for the ground floor and roof floor lighting systems, power systems (including HVAC), cable routing systems, panel schedules, and more.  
  
6. Additional details such as scales, drawing numbers, and abbreviations are provided for each electrical system drawing in the document.

**2. Alstom Factory - Borg el Arab - Structural IFC Drawings 10-4-2025.pdf**  
Location: 01- IFC drawings\2- Structural Drawings

**Summary:** Error: Document 'Alstom Factory - Borg el Arab - Structural IFC Drawings 10-4-2025.pdf' has insufficient text content for summarization.

**3. Alstom Factory - Borg el Arab - Fire Fighting IFC Drawings 10-4-2025.pdf**  
Location: 01- IFC drawings\6- Fire Fighting Drawings

**Summary:**  This document appears to be a set of building plans for a facility, possibly a restaurant or kitchen-related establishment, with fire safety and firefighting systems detailed. The facility has multiple floors, including the basement (G-6), ground floor (G-0), first floor (A.G), and possibly additional floors not explicitly shown.  
  
The main features of the facility include:  
1. Kitchen areas on the ground and first floors, with various sections such as cold section, hot section, VIP area, and preparation area.  
2. Meals Area on the ground floor with a Buffet, Bakery, and Trays.  
3. Storage areas for merchandise and equipment.  
4. Toilets for men and women on various floors.  
5. A freezer and freezer oven on the ground and lower floors.  
6. Lobbies on multiple floors.  
7. Firefighting systems, including portable fire extinguishers (ABC and CO2), automatic air vents, fire riser landing valves, zone control valves with fire blankets, and a fire department valve.  
8. Other safety features such as steel ladders with cages and doors, cement board cladding, and ramp to the service road.  
  
It is important to note that this summary only covers the main features mentioned in the provided document, and there may be additional details not included here. The document also mentions that wet chemical fire extinguish systems may be provided by kitchen equipment suppliers if a hood kitchen is present.

**4. Alstom Factory - Borg el Arab - Mechanical IFC Drawings 27-3-2025.pdf**  
Location: 01- IFC drawings\8- Mechanical Drawings

**Summary:** Error: Document 'Alstom Factory - Borg el Arab - Mechanical IFC Drawings 27-3-2025.pdf' has insufficient text content for summarization.

**5. 08082024\_Topographic Survey Report - Alstom New Cabling Factory.pdf**  
Location: 05- Topographic survey

**Summary:**  Title: Topographic Survey Report - Alstom New Cabling Factory  
  
Date: 8th August 2024  
  
Location: New Borg Al Arab  
  
In July 2024, ACE Survey Department was tasked with producing a complete topographic survey for Alstom land at New Borg Al Arab. The report details the procedures, equipment used, and results of the survey.  
  
Procedures:  
- Construction of control points and benchmarks using GPS System (RTK method) and EDM equipment for traverse network observation.  
- Detailed surveying was carried out by 3 crews, recording over 1500 points with block data consisting of point number, slope distance, horizontal angle, and vertical angle.  
- Mapping was done using Wild software from Leica and AutoCAD software, creating maps in a scale of 1:1000.  
  
Output: The complete mapping information was submitted in digital format and an original hard copy of sheet A1 sized. Two site survey drawings were produced at a scale of 1:1000.  
  
Equipment Used: Total Stations (Wild Tc1610, Leica Tc 305), Level Instruments (Wild Na2), and software like Wild Soft, Auto CAD, ABC, D, E, FGATE, GATE, etc.

**6. Vendor List - 23 February 2025.pdf**  
Location: 06- Vendor list

**Summary:**  The document titled 'Vendor List - 23 February 2025.pdf' provides a consolidated list of suppliers for the construction and materials required for a new manufacturing cabling site by Alstom, with the goal of optimizing the detailed design. The vendor list includes various categories such as Architecture and Structure, Sanitary, Mechanical, HVAC, Fire Fighting, Electrical Vendors List (with sub-categories for elevators and light current), and other miscellaneous items.  
  
The document primarily focuses on the following details:  
  
1. Approved Architecture and Structure suppliers in Egypt, including Ready Mix Concrete, Steel Reinforcement, Structural Steel, and Cement suppliers.  
2. Concrete Additives, Light Weight Concrete, Masonry (Concrete Blocks & Bricks), Masonry Accessories, Interlock Tiles, Sandwich Panels/Built-Up Sections, Standing Seam Sandwich Panels, Waterproofing Materials, Wood Doors, Thermal Insulation, Hardware, Ceramic/Porcelain, Suspended Ceilings, Gypsum Boards Partitions, Mirrors & Glazing, External Paints, Internal Paints, Carpet Works, Raised Floors, Joints & Expansion Control, Sealant, Joint Coverage, Resilient Flooring, Tiles, Metal Handrail, Expansion Joints Cover, Fire Rated Hardware Sets, Foam Concrete for Roof, Wood Doors, Steel Doors, Decorative Steel Doors, Rubber Corner Guard, Marble & Granite, Curtain Walls.  
  
The list of suppliers is extensive and primarily consists of Egyptian companies with a few international brands such as Kingspan (UK), Forbo (Egypt), Hilti (3M. K - Flex ITAL), Clestra (France/UAE). This document serves as a crucial resource for managing the procurement process during the construction phase of the new manufacturing cabling site by Alstom.

**7. Coordinates Topographic Survey Report .pdf**  
Location: 09- Topo\01- 2025-05-05

**Summary:**  Here is a summary of the data provided:  
  
The data appears to be coordinates (x, y) for points on a 2D plane. The x-coordinates range from approximately -500 to 500, and the y-coordinates range from approximately -500 to 600. It is unclear what unit of measurement is being used as no scale is provided.  
  
The data appears to be grouped in chunks of 214 points each (except for the last chunk which has only 7 points). Each chunk is followed by "SUMMARY:" suggesting that this might be a subset of a larger dataset.  
  
It's not possible to draw any meaningful conclusions or perform any analysis on the data without further context or information. For example, knowing the purpose of the data collection, the variables being measured (if any), the units of measurement, and whether there are any trends, patterns, or relationships within the data would be helpful for interpretation and analysis.

**8. Lifting Plan.pdf**  
Location: 11- HSE

**Summary:**  Title: Lifting Plan for Alstom New Cabling Factory at Borg El Arab  
  
Effective Date: May 08, 2025  
  
Prepared by: Abdullah Ibrahim Atta, Assistant HSE Dept. Manager  
Reviewed and Approved by: Mohamed Reda, HSE Dept. Manager  
  
Project Details: Alstom New Cabling Factory in Borg Al-Arab, Egypt, with the scope of positioning caravans and site units delivered by flatbeds within the Site Mobilization Zone.  
  
Lifting Equipment Summary: The equipment includes a 50-ton mobile crane with a 10.5-40m boom, flatbed trucks (12–18 m length), an adjustable spreader beam for load balance, and slings/shackles made of polyester and chain sets to secure the caravans for lifting.  
  
Lifting Area Layout: An annotated schematic detailing the crane placement, truck routes, and exclusive zones.  
  
Execution Procedure:  
  
1. Preparation: Ground compaction if necessary, crane positioning based on lift radius, installation of safety barriers around the lift area.  
2. Delivery: Trucks enter via the Main Gate, park at the Loading & Unloading Zone (beside the crane), and receive guidance from a spotter and HSE personnel.  
3. Lifting: The caravan is lifted using a spreader beam and 4-point sling, slowly hoisted from the trailer, and guided to place it on its foundation by a banksman.  
4. Final Positioning: Caravans are set on blocks/footings, alignment and stability are verified.  
  
The plan emphasizes safety and environmental considerations throughout the lifting process at the Alstom New Cabling Factory in Borg El Arab.

**9. ALSTOM - STEEL SHED (1) STRUCTURAL REVISION REPORT.pdf**  
Location: 17- Check of design\01- workshop

**Summary:**  Title: ALSTOM - Steel Shed (1) Structural Revision Report  
 Date: May 2025  
 Project: Alstom New Cabling Factory - Steel Shed (1)  
 Location: Borg Al -Arab, Alexandria, Egypt  
  
Infinity Consulting Office was assigned to review the structural design of Steel Shed (1), a part of the Alstom New Cabling Factory in Egypt. The report presents the structural analysis performed and safety checks for all structural elements.  
  
The structure consists of foundations, tie beams, slab on grade, steel columns, steel beams, secondary elements, steel connections, steel bracing, and steel base plates.  
  
Scope of work includes reviewing the compatibility of architectural drawings with structural ones, performing analysis for all structural elements, and checking safety for each element.  
  
The structure was analyzed using ETABS 20, SAFE 2020, and SAP 2000 programs. Materials properties were assigned based on Egyptian codes for design and construction of reinforced concrete structures, steel construction, and bridge ASD (Allowable Stress Design).  
  
Reinforced Concrete Grades are 35.0 MPa for all structural elements, except for slab on grade with a grade of 30.0 MPa. Steel grades include Grade 52 for all bus steel sections, Grade 44 for rolled steel sections, and Grade 52 for cold-formed steel sections. The clear cover to reinforcement is 40.0 mm for columns, 35.0 mm for beams, 50.0 mm for foundations, slab on grade, and reinforcing steel grade is 420.0 MPa for all structural elements.  
  
The structure will be checked under characteristic Dead Loads (DL), Imposed Dead Loads, Live Loads (LL), Temperature, Wind Loads, and Earthquake Loads. The design loads also include Super Imposed Loads and Live Loads.  
  
In conclusion, the report presents the structural analysis of Steel Shed (1) for the Alstom New Cabling Factory in Egypt, using various programs and Egyptian codes. Safety checks were performed for all structural elements, including foundations, tie beams, slab on grade, steel columns, steel beams, secondary elements, steel connections, steel bracing, and steel base plates.

**10. ALSTOM - STEEL SHED (2) STRUCTURAL REVISION REPORT.pdf**  
Location: 17- Check of design\01- workshop

**Summary:**  The document is a Structural Revision Report for Steel Shed (2) at Alstom New Cable Factory in Borg Al-Arab, Alexandria, Egypt. The report was prepared by INFINITY Consulting Office upon request from Rowad Modern Engineering to review the structural design of all elements in the project.  
  
The scope of work includes:  
1. Reviewing the compatibility of architectural drawings with structural drawings.  
2. Performing analysis on all structural elements.  
3. Checking safety for all structural elements.  
  
Structural elements being checked include foundations, tie beams, slab on grade, steel columns, steel beams, secondary elements, steel connections, steel bracing, and steel base plates. The structure was analyzed using ETABS 2023, SAFE 2020, and SAP 2000 software programs. Material properties were assigned according to Egyptian codes of practice for design and construction of reinforced concrete structures, steel construction, and bridge ASD.  
  
The materials used in the structure include:  
1. Steel grades: All BUS steel sections (fy = 3.6 t/cm2), Rolled steel sections (fy = 2.8 t/cm2), Cold-formed steel sections (fy = 52), Reinforced Concrete Grades for all structural elements (fcu = 35.0 MPa), and Reinforced Concrete Grades for slab on grade (fcu = 30.0 MPa).  
2. Bolts grades: M24 Grade (8.8) for connections, M12 Grade (4.6) for purlins, ST.52/36 for anchored bolts.  
3. Clear cover to reinforcement: Columns = 40.0 mm, Beams = 35.0 mm, Foundations = 50.0 mm, Slab on Grade = 50.0 mm.  
4. Reinforcing steel grade: Reinforcement (f y) = 420.0 for all structural elements.  
  
Design loads considered are characteristic Dead Loads, Imposed Dead Loads, Live Loads, Temperature, Wind Loads, and Earthquake Loads. The structure is checked for normal weights of various materials like steel members, concrete, mortar, soil, blocks, and sandwiche panels as well as live loads like live load for accessible roofs and fabrication/maintenance loads.  
  
The report also includes architectural drawings (Appendix A) and structural drawings (Appendix B), finite element analysis for columns, beams, and secondary elements (Appendix C), and finite element analysis for foundation (Appendix D).