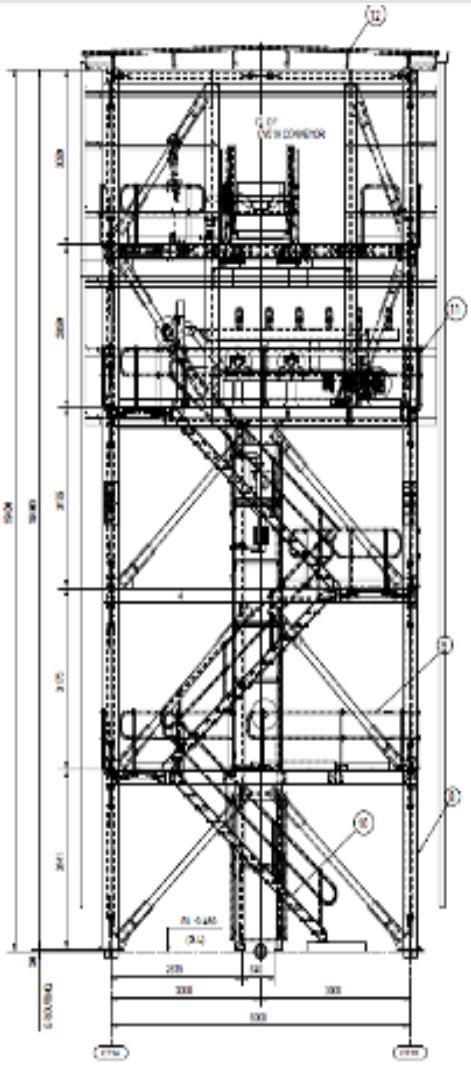
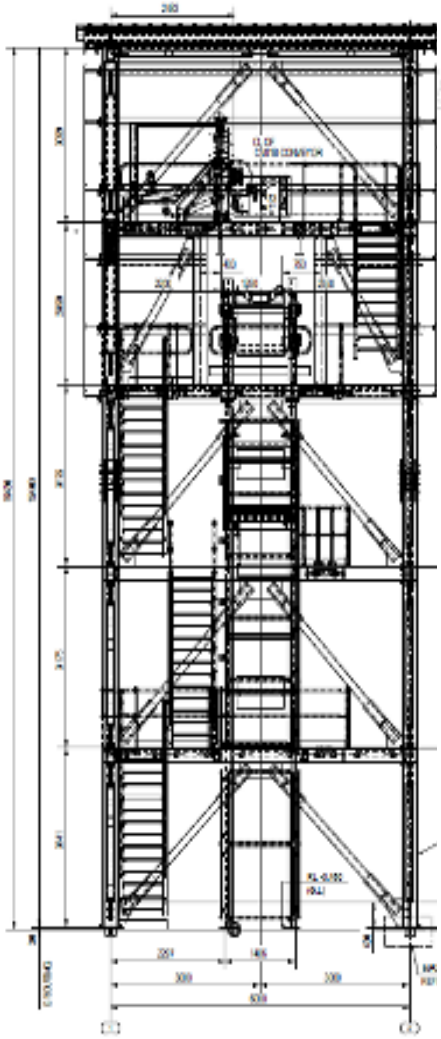
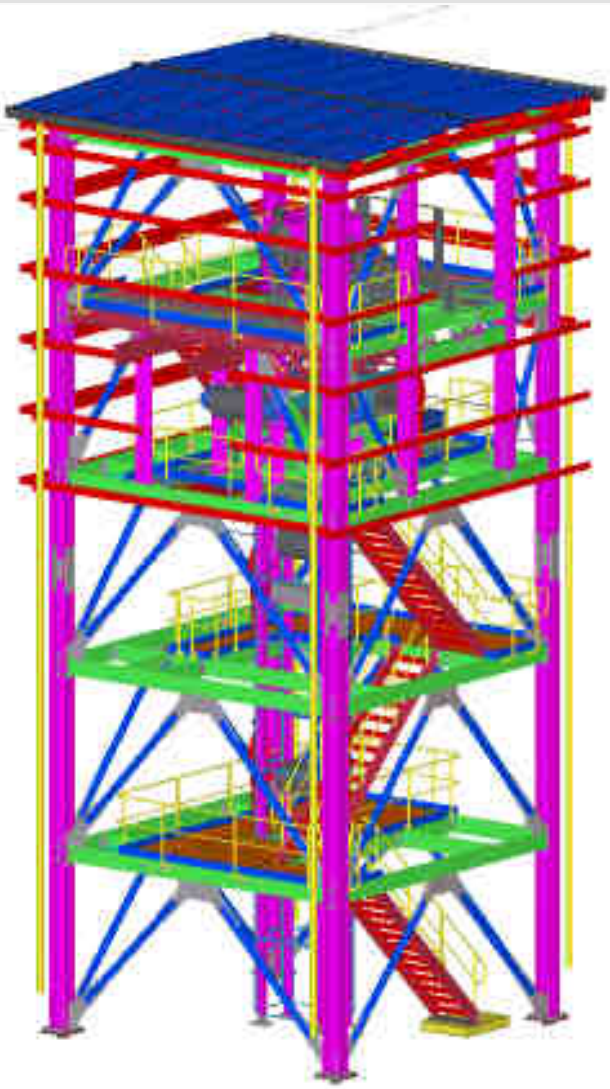
R3 plant design

Engineering & Drafting Support

For Metal Fabricators & Workshops







AS1657
AS4024
AS4100
AS1554

Engineering & Drafting Support

Shop drawings are the backbone of any fabrication workshop. In today's fast-paced construction, fabricators are facing tighter fabrication schedules and longer material lead times. Fabricators often find difficulty justifying their own design team or may have fewer draftees who are under constant ongoing pressure.

We support fabricators and design teams and we can provide cost-effective drawings at all levels – conceptual, assembly and detail with packaged DXF & NC files to reduce lead-time. We often support fabricators who have their client issued drawings, but not detailed enough to proceed with fabrication.
We have a highly experienced, skilled and specialized mechanical drafting and design team headed by an Engineering Manager with over 15 years' experience in Australian drawing offices.

With our Engineering calculation capabilities, design and detailing team, we help our clients provide a faster turnaround, and enhance business quality and capabilities by introducing new equipment & services.

Our Drafting Service Includes

- Fabrication shop floor drawings
- Generating tender models
- Erection plans
- Structural analysis & Report
- General Arrangement drawings
- Layout drawings.
- Fabrication drawings
- DXF Files for plate work & members
- NC Files for cutting & drilling
- Base plate & anchor plate details
- Material lists/Take-offs & Tonnage estimations
- Anchor bolt drawings
- Connection details
- Bolt list

Other Engineering Service Includes

Engineering & Designing

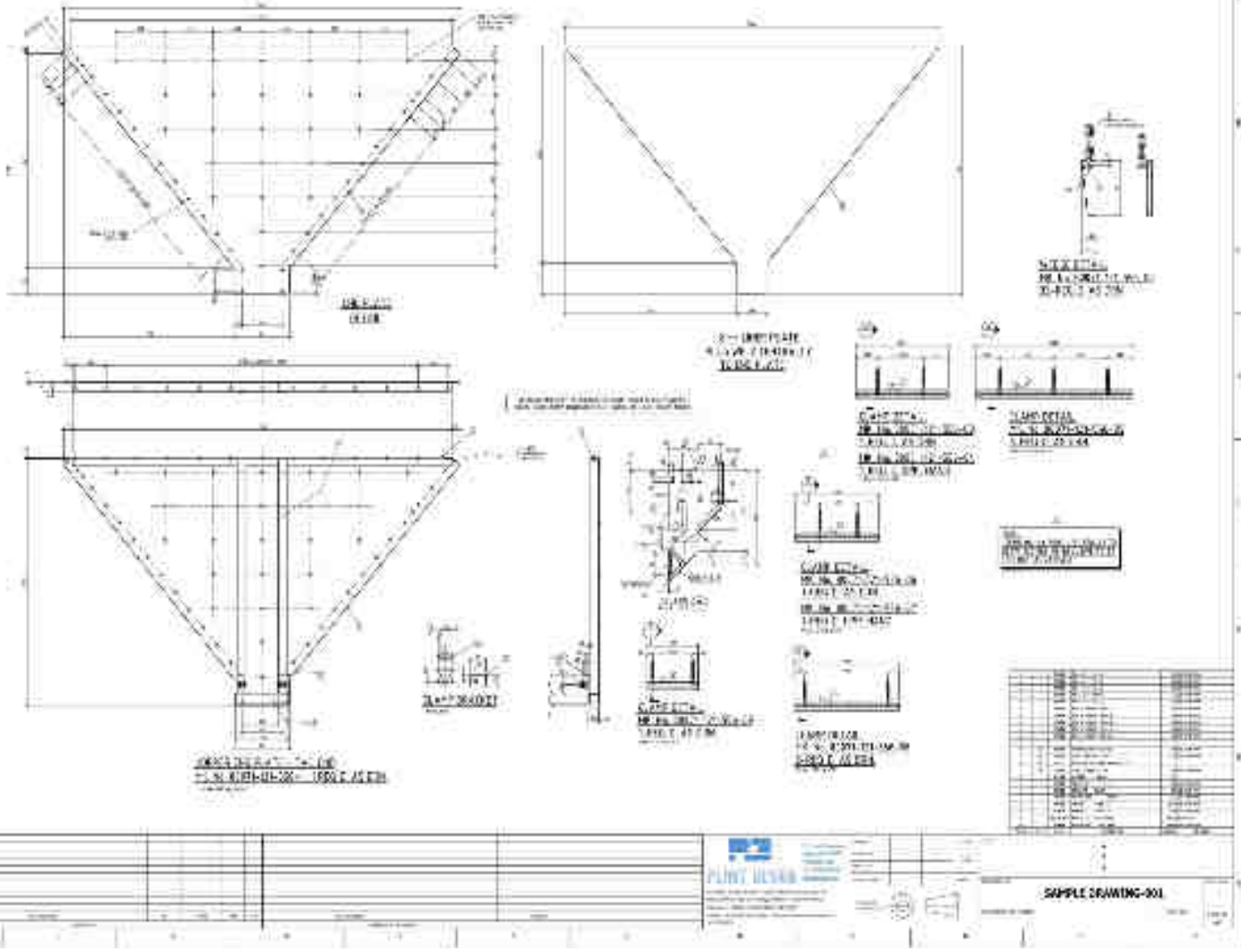
- Structures, Supports, Towers, Walkways & Stairs
- Structural design & reports
- Belt Conveyors, feeders & Stackers
- Screw Conveyors
- Chain Conveyors
- Bucket Elevators.
- Slide Gates & Diverter chutes.
- Pipe racks and supports

Cost Savings

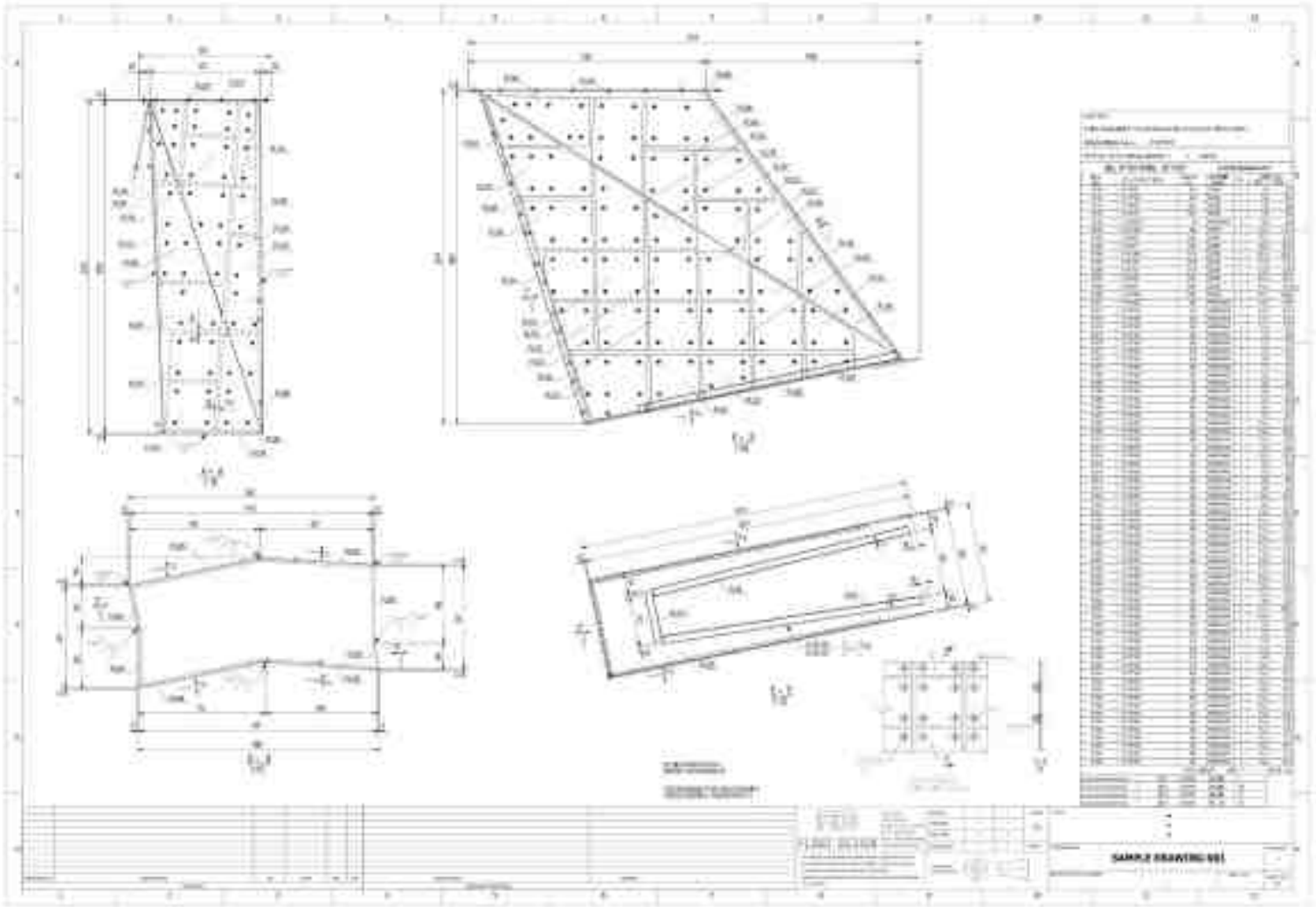
We provide significant cost savings to projects by utilizing local Engineering's, modelers and detailers, which help our clients win competitive projects.

Time Saving

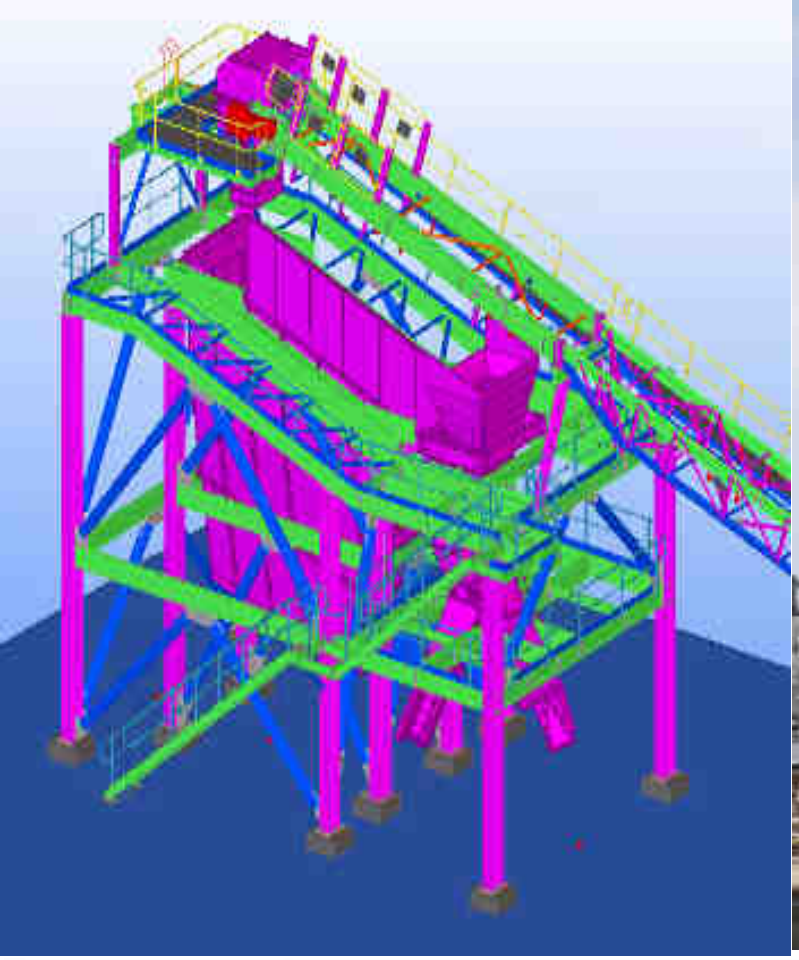
Overall design time is reduced when more labour is involved on your project – we provide both shift work and also time zone work, getting very close to 24 hour resources. This greatly reduces project lead-time and moreover, if any urgent design changes were made in Australia, these would be addressed by the following morning due to time zone work and shift work.



SAMPLE DRAWING-001



SAMPLE DRAWING-002

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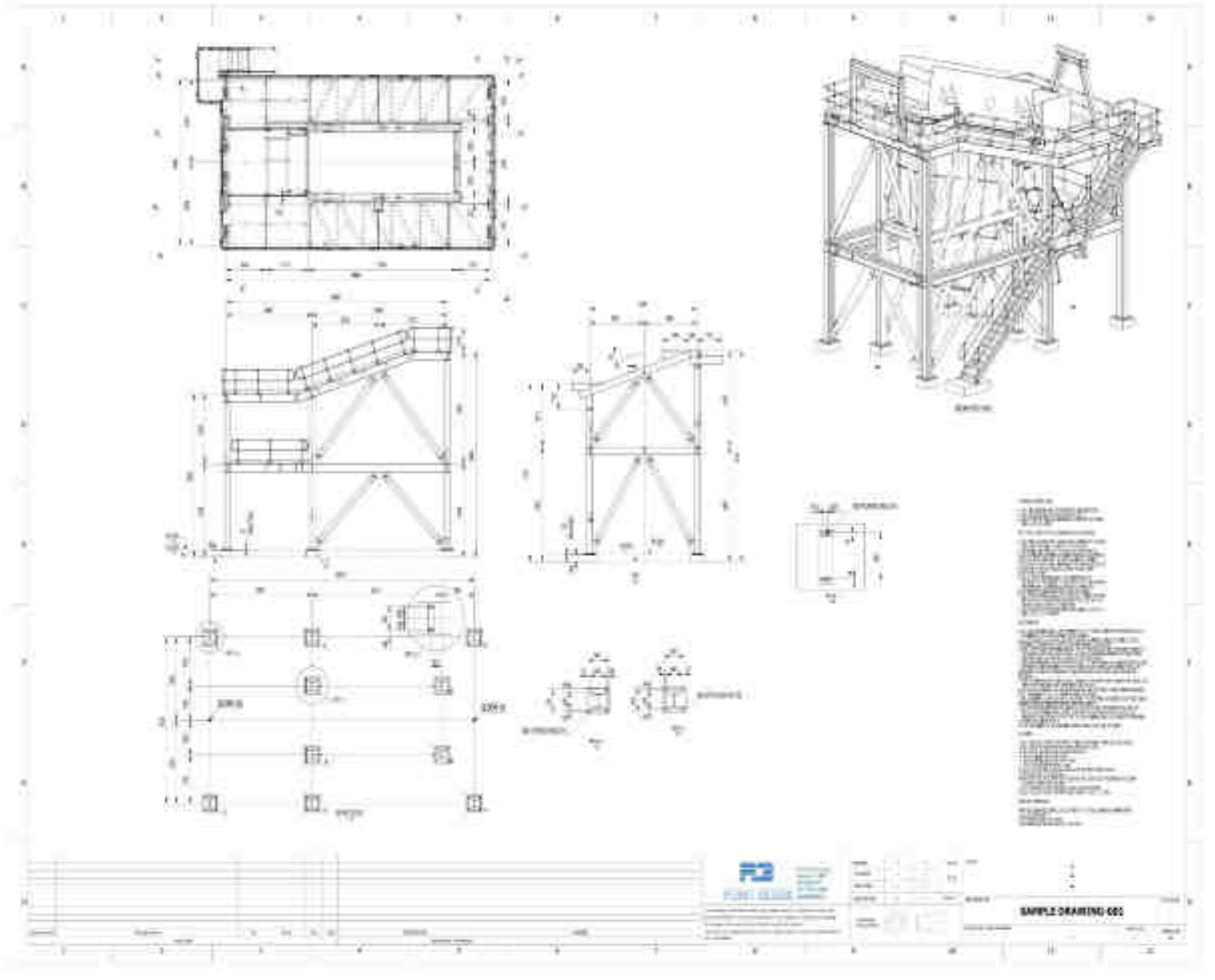
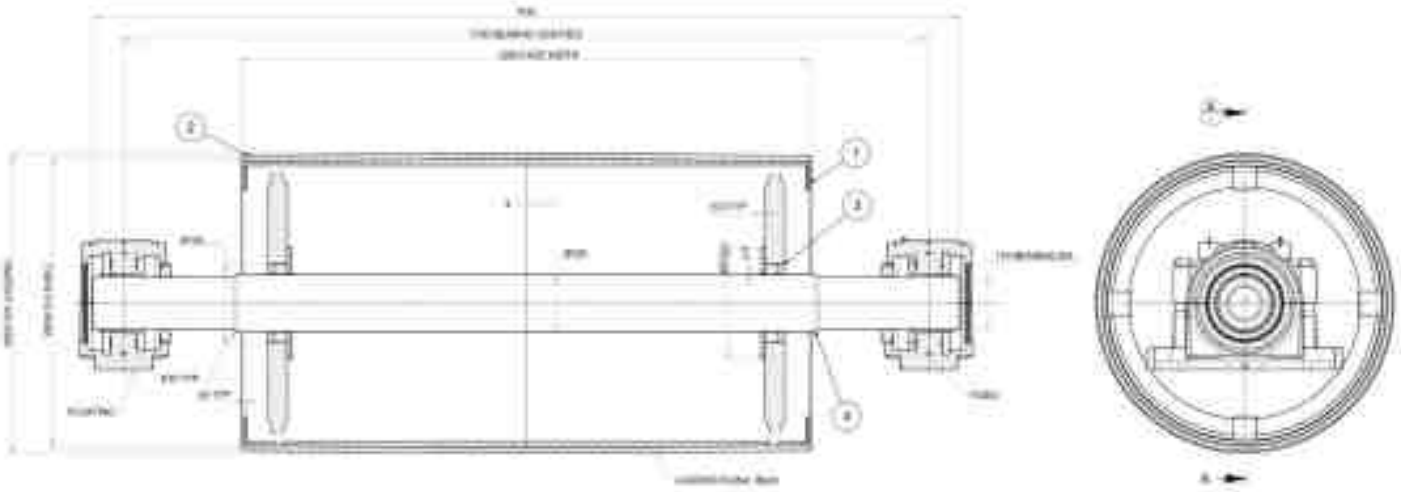
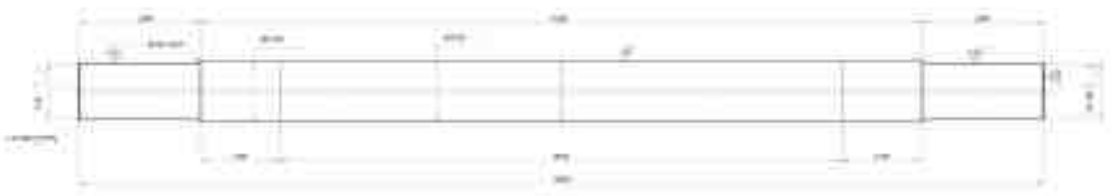
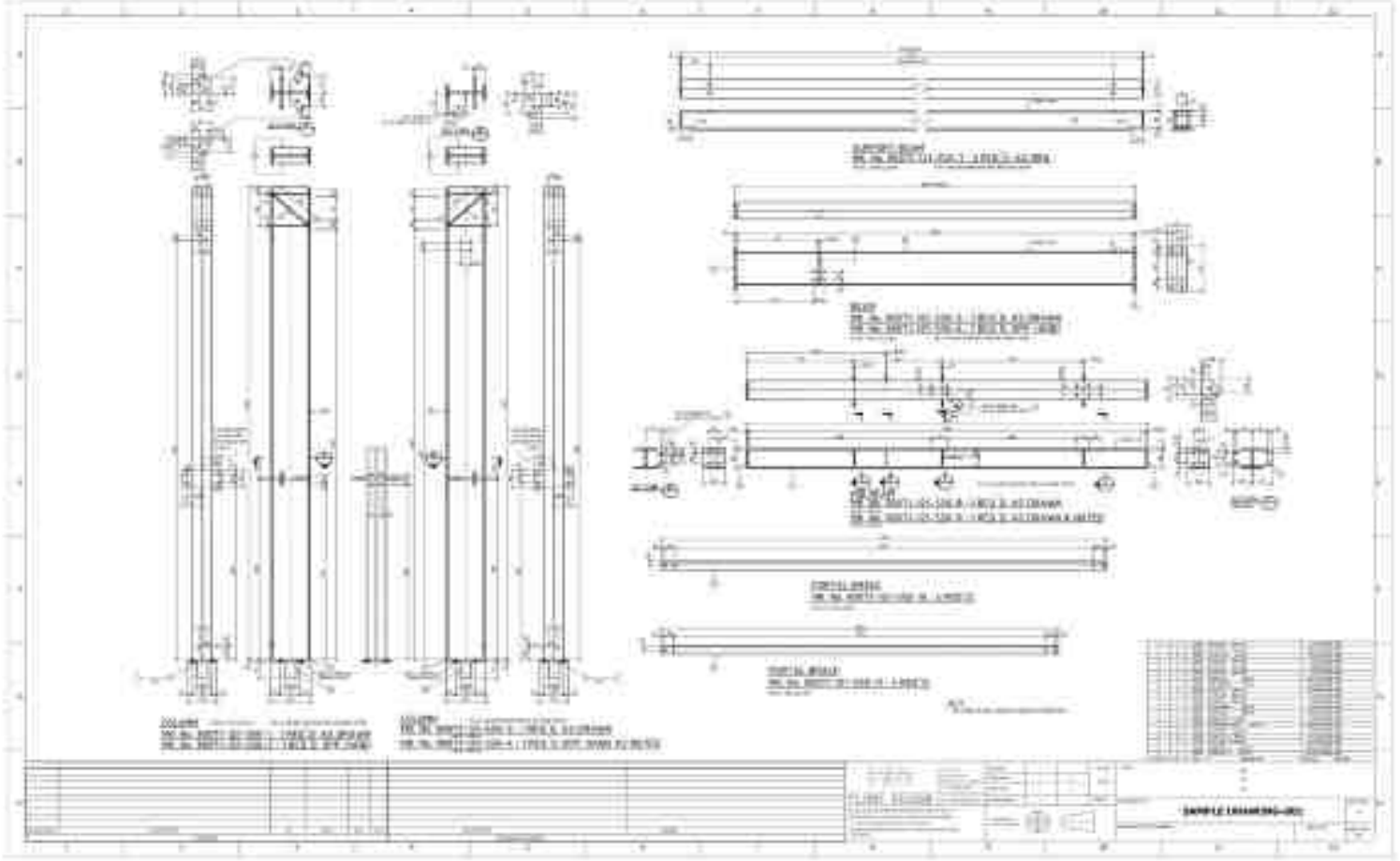


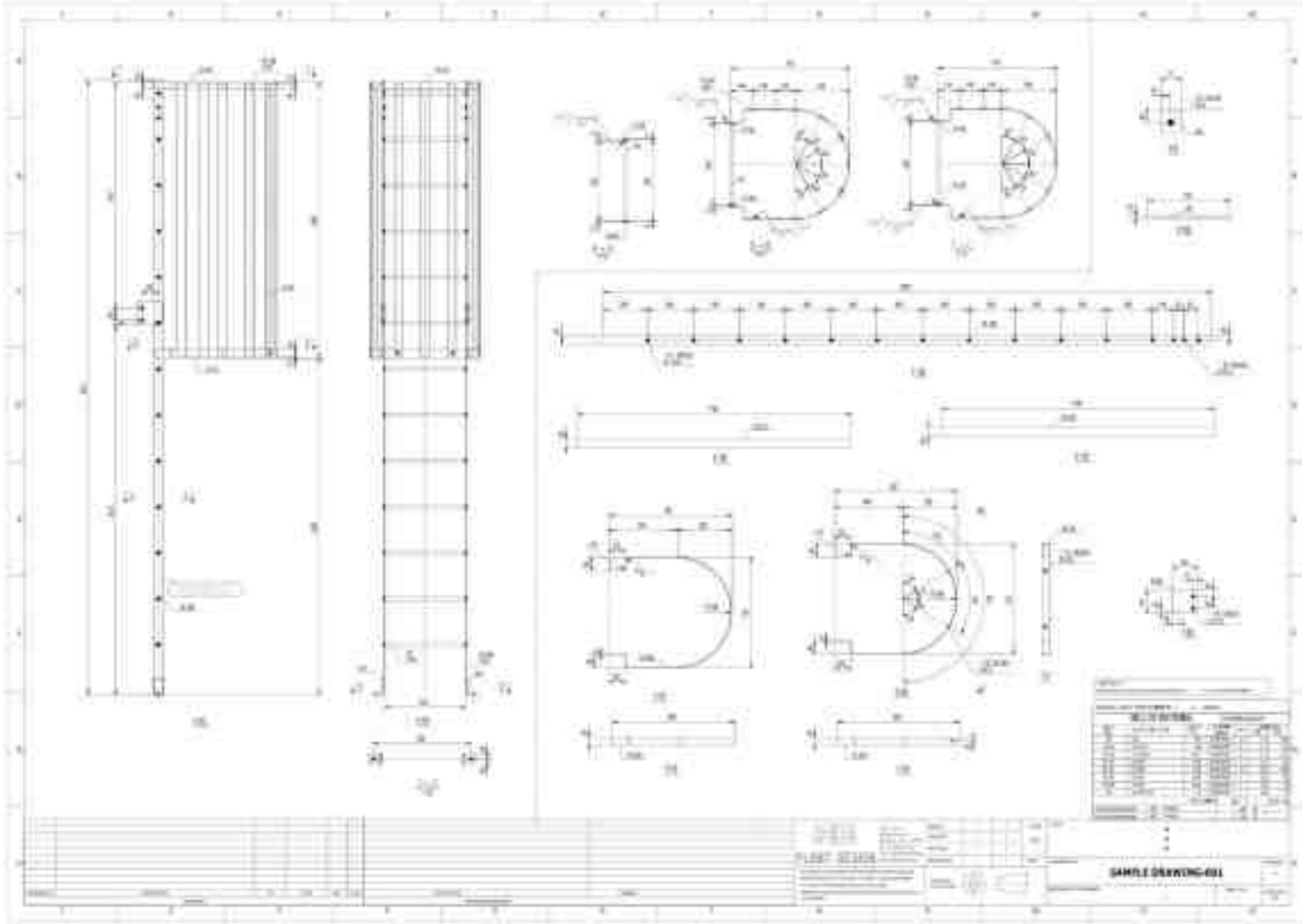


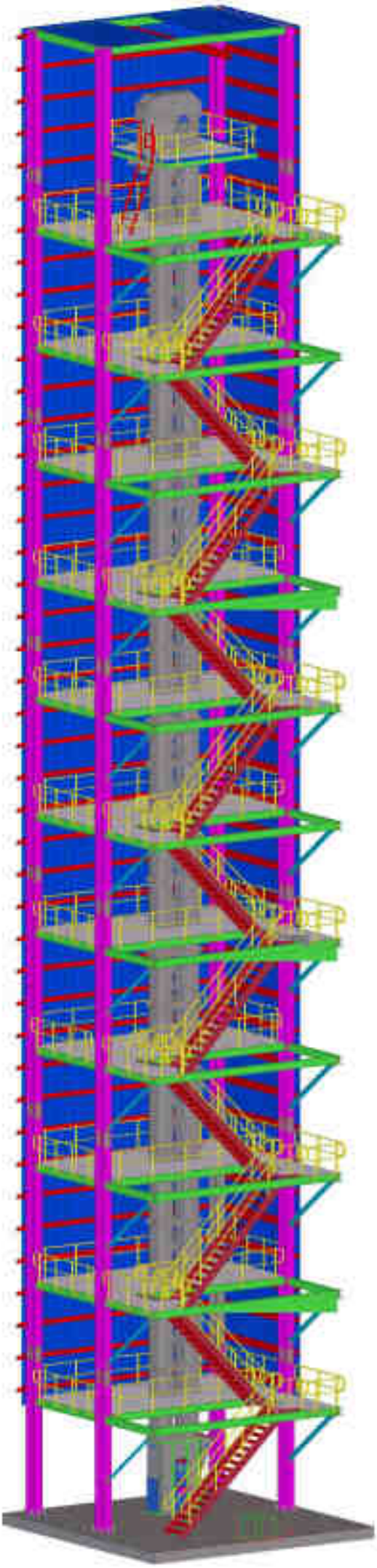
SECTION B-B
SCALE 1:1
SECTION ON PULLEY TAIL

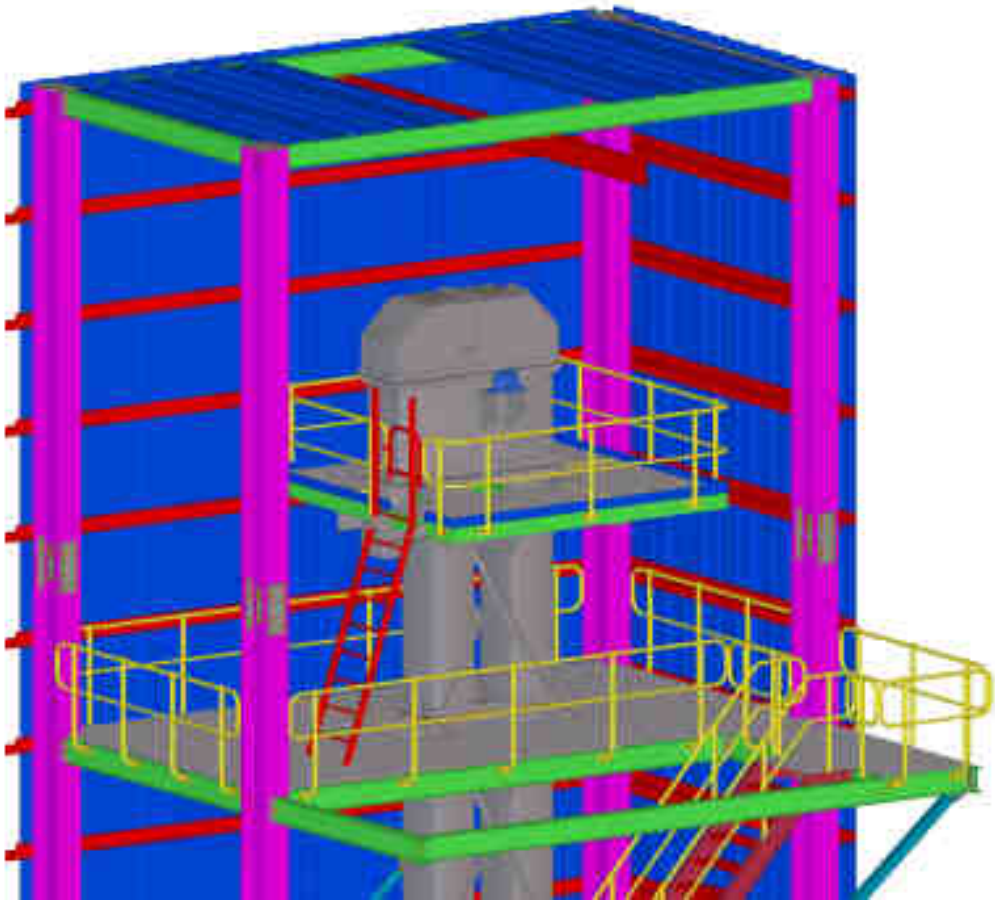


SCALE 1:1









Bucket Elevator Towers

Bucket elevator support towers are custom designed to suit client specifications.

Platforms built as separate units can be placed between tower sections, this design allows the installer to build the platform separately and then site place it between tower sections.

Design is available to pre-weld stair modules as single assemblies to greatly reduce erection time.

Structural Design & Detailing

We can provide optimized structure designs & reports for steel structures, Or we can work with your design inputs to generate models. We have experience working on Australian, AISC and IS Standards as required by our clients / overseas structural engineers.

Australian Codes and Standards

AS/NZS 1170.0-2002 Structural design actions
AS/NZS 1170.2-2002 Structural design actions
AS 1170.4-2007 Structural design actions –
AS 4100-1998 Steel structures

General Codes

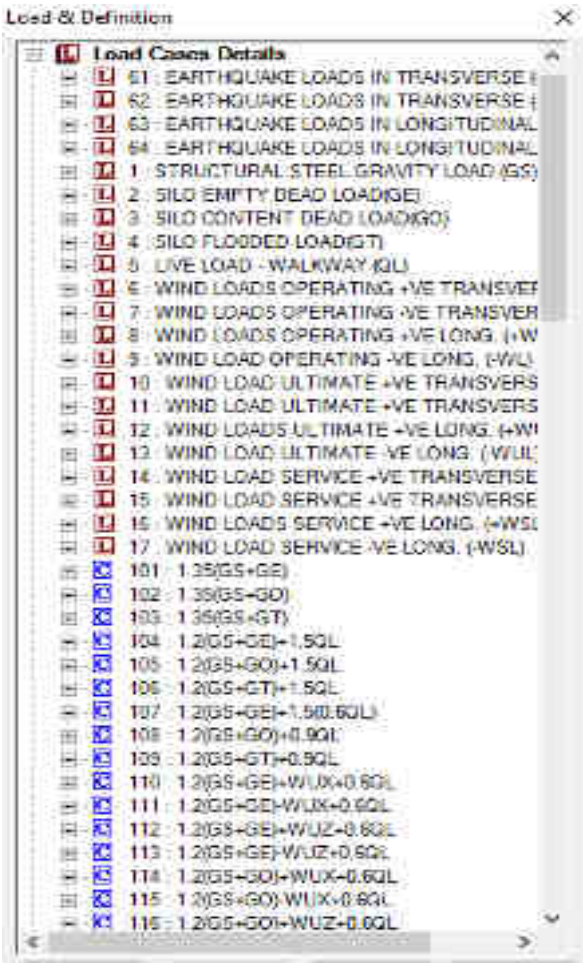
AS1657	Walkways maintenance and access platforms
AS4024-2015	Safety of Machinery
AS1755-2000	Conveyor Safety Requirements
AS4100	Steel Structures
AS1359	Rotating Electrical Machines,
AS1470	Health & Safety at Work,
AS 1554.1	Structural Steel Welding, Australian standard
AS3990	Mechanical Equipment – Steelwork,

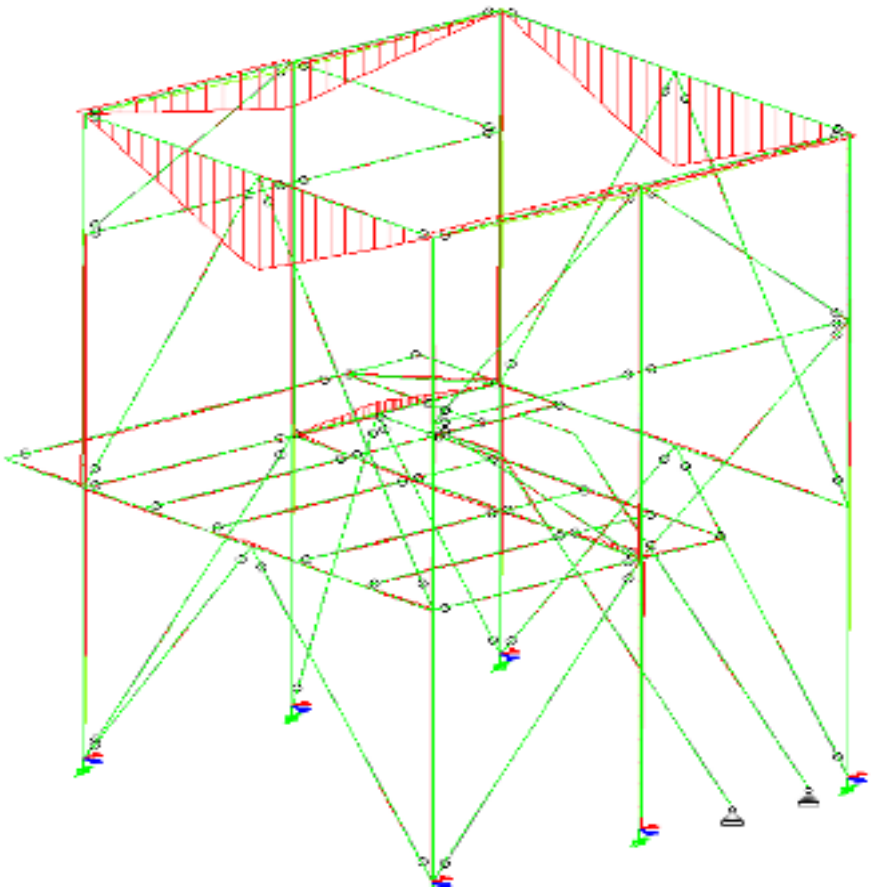
American Codes:

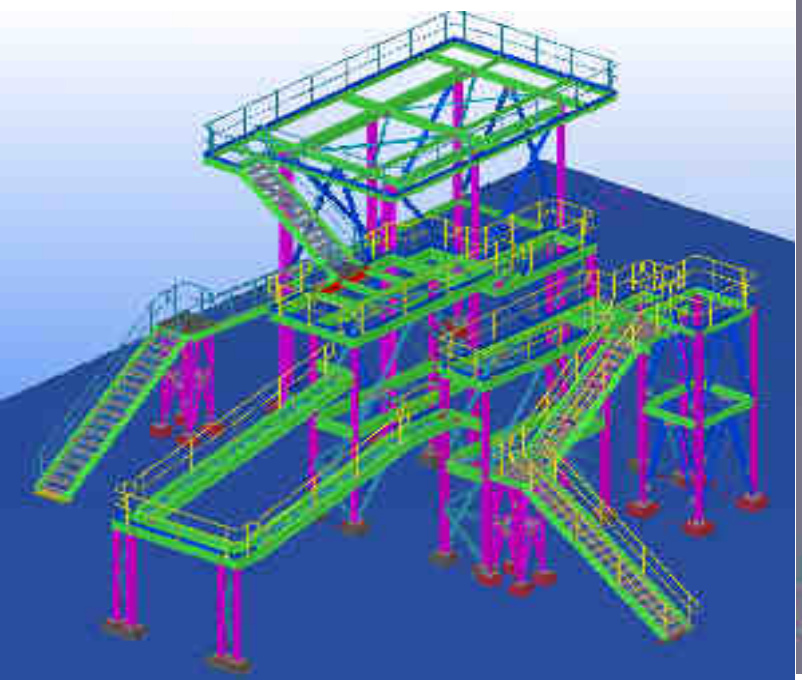
ASCE-7-10: Minimum Design Loads for Buildings & other structures.
ASCE-7-10: Wind Loads
ASCE-7-10: Seismic Loads
STEEL DESIGN: AISC Steel Construction Manual 14th Edition for Design of steel Structures.
AWS D 1.1 & 1.3: Structural Steel Welding, American standard

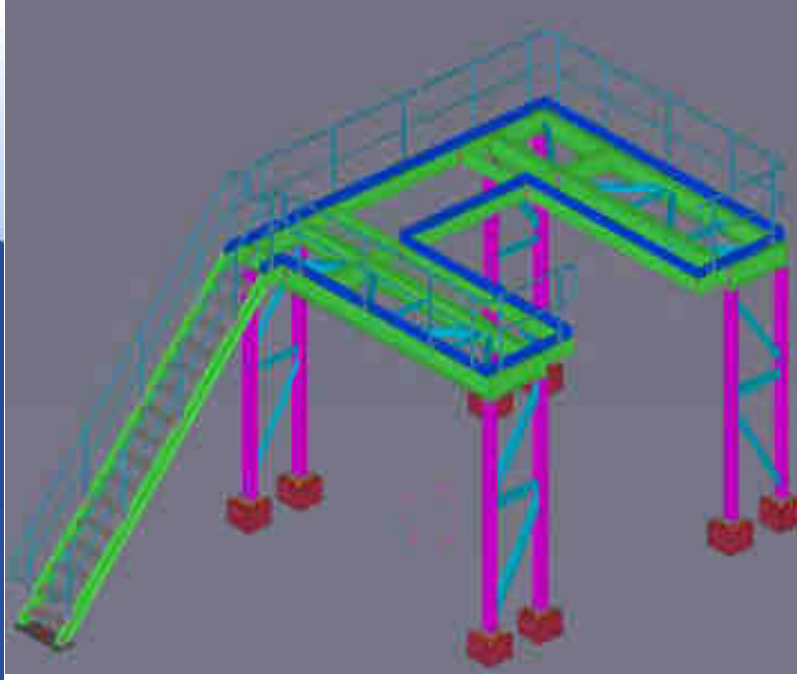
European Codes & Standards:

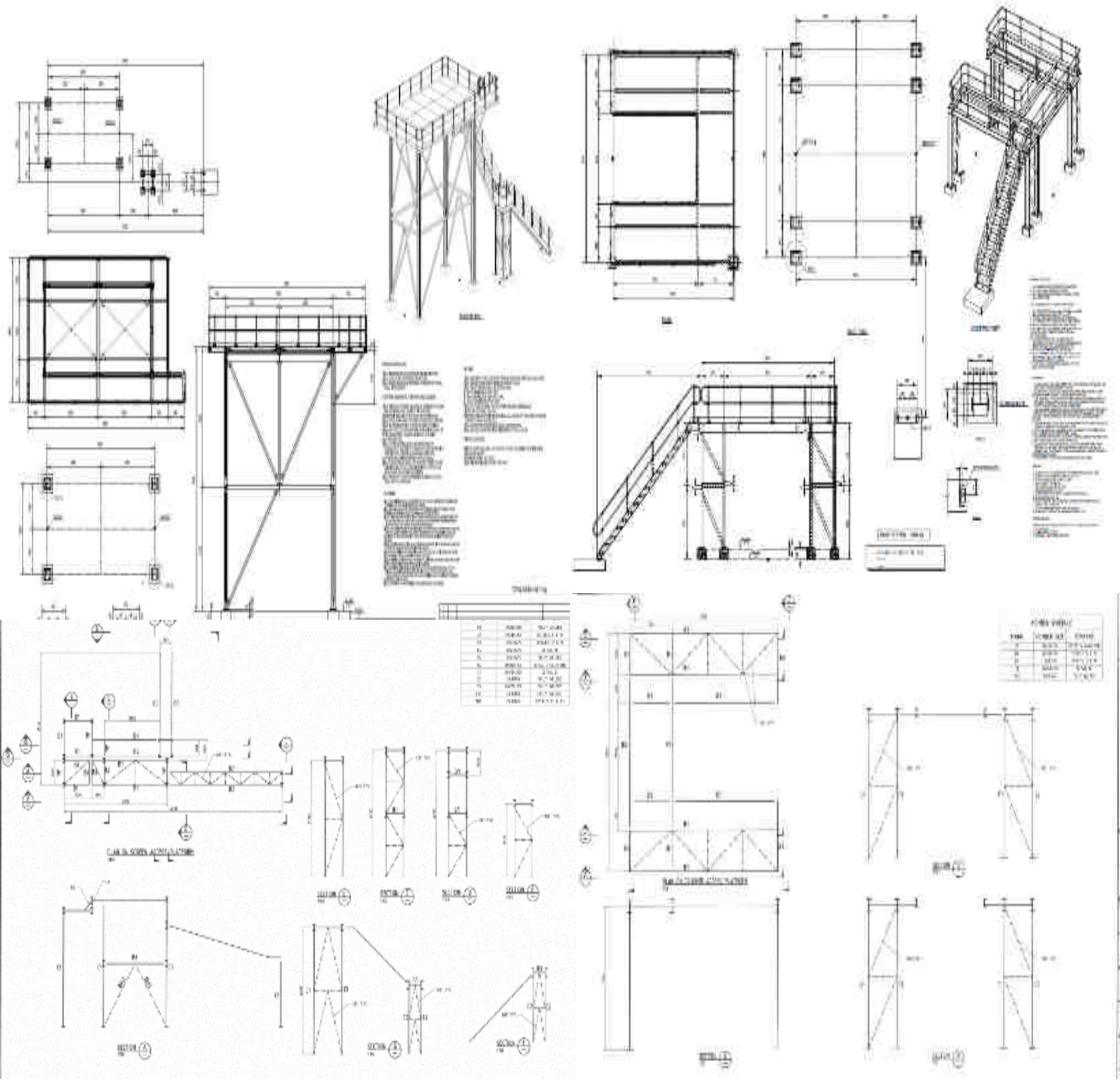
EN 1990 Euro code: - Basis of structural design
EN 1991 Euro code 1:- Actions on structures
EN 1993 Euro code 3:- Design of steel Structures
EN 1998 Euro code 8:- Design of structures for earthquake resistance.

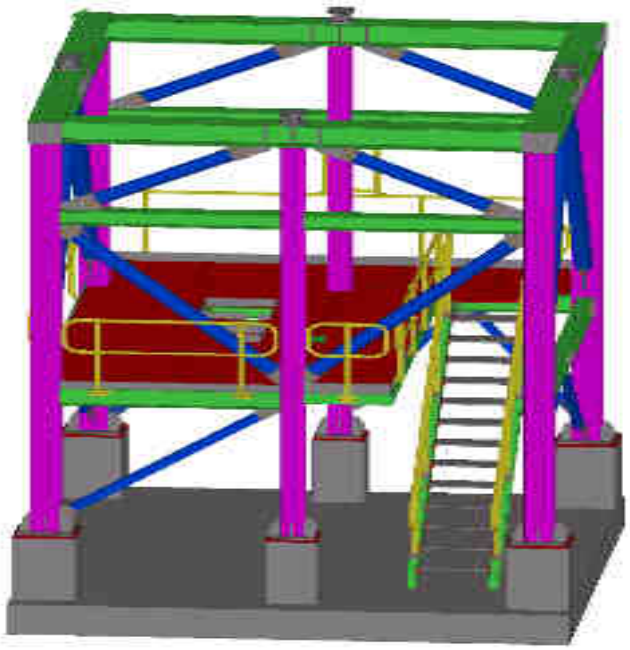


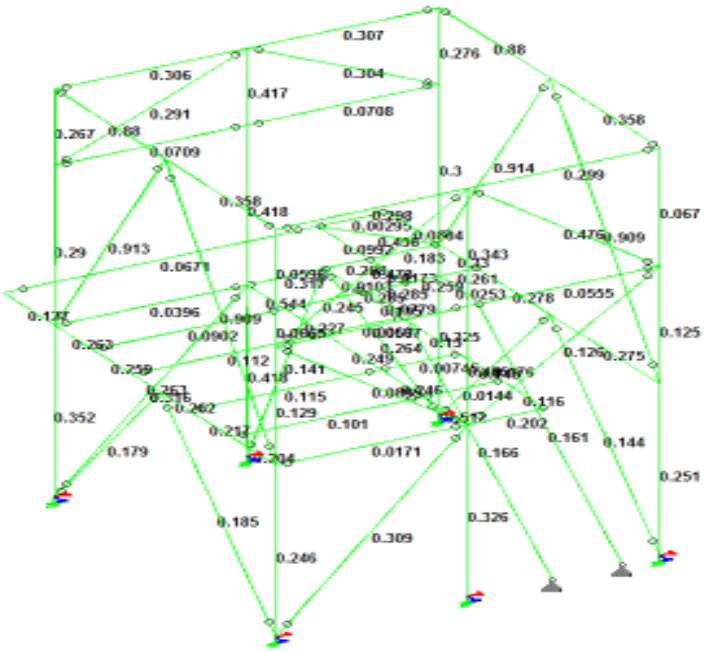


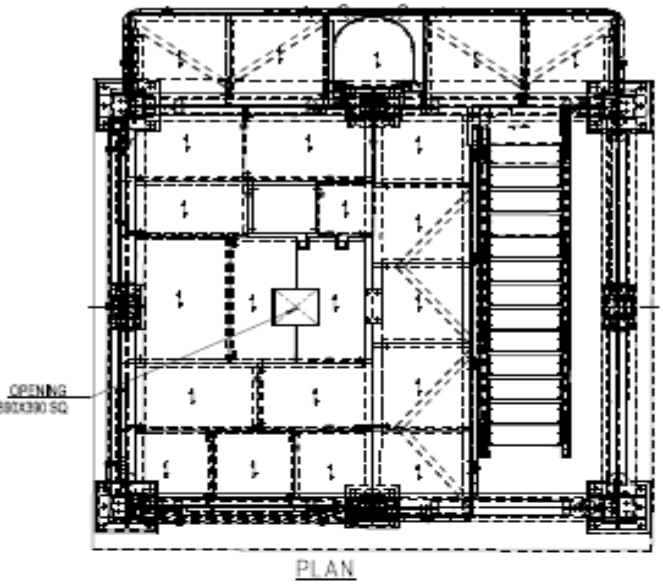


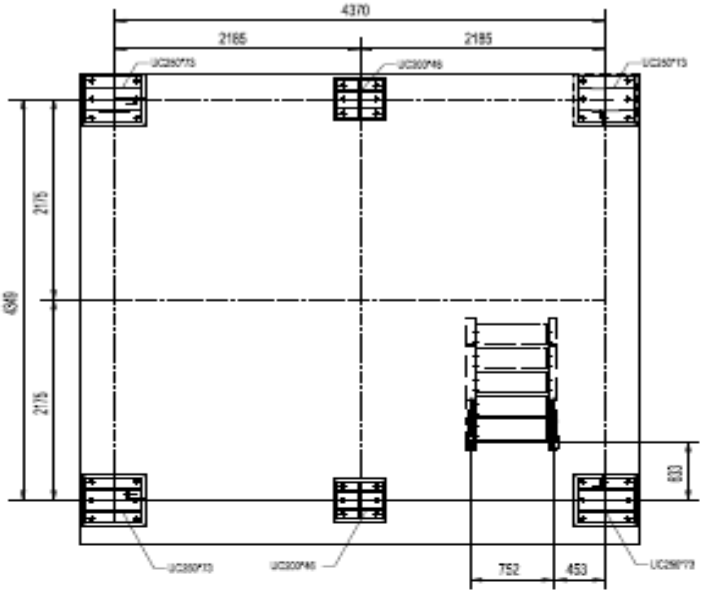




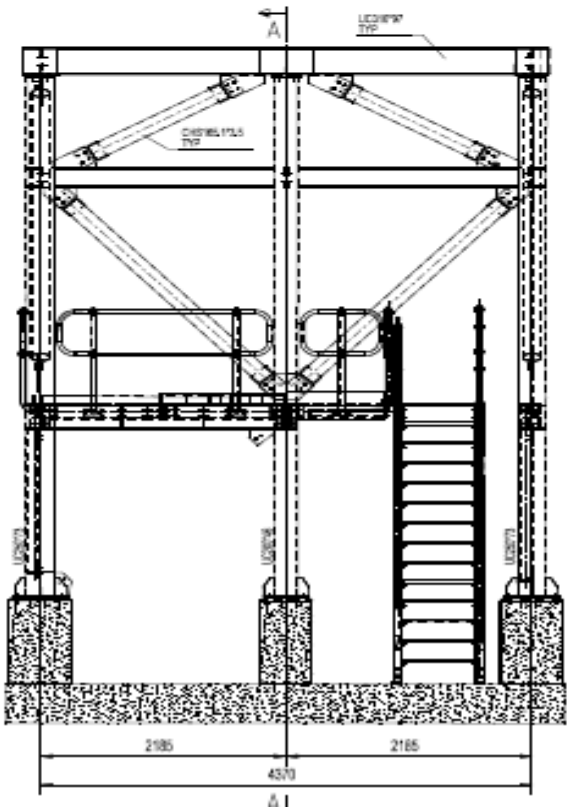


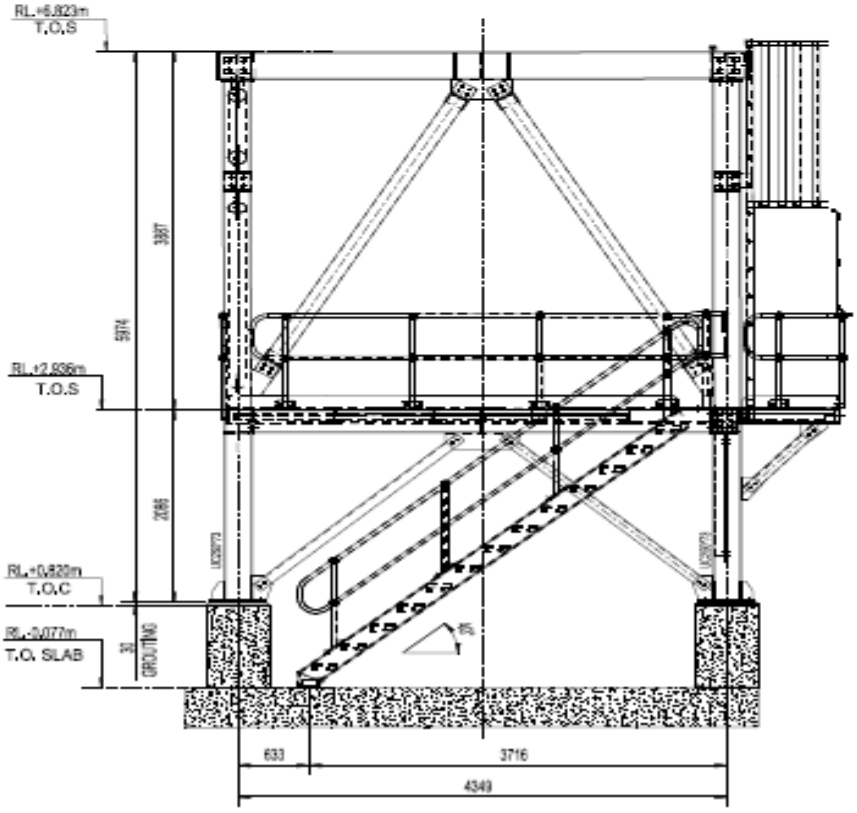


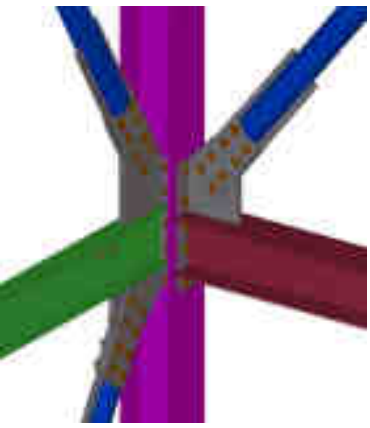
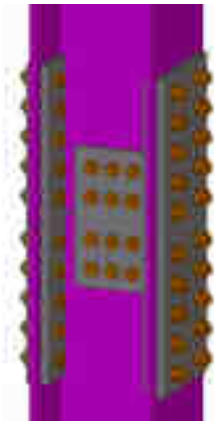
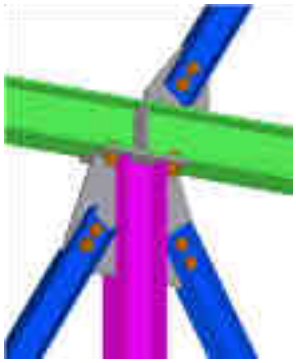
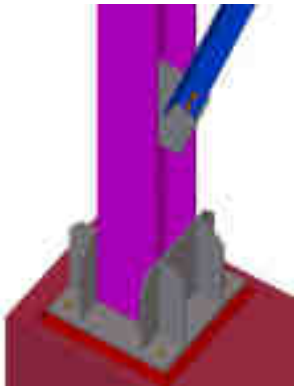
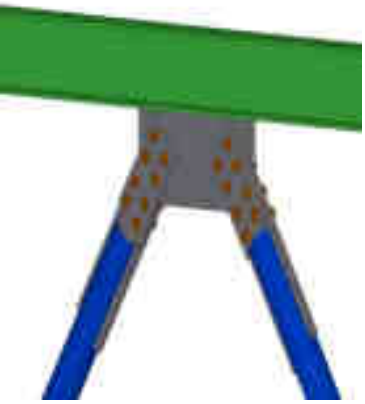
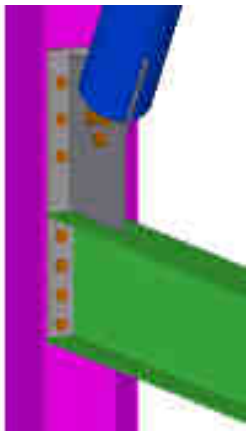
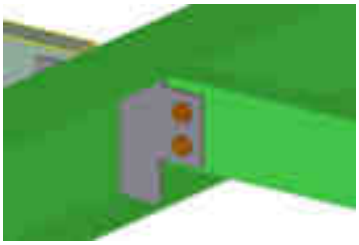




BASE PLATE PLAN
1:35





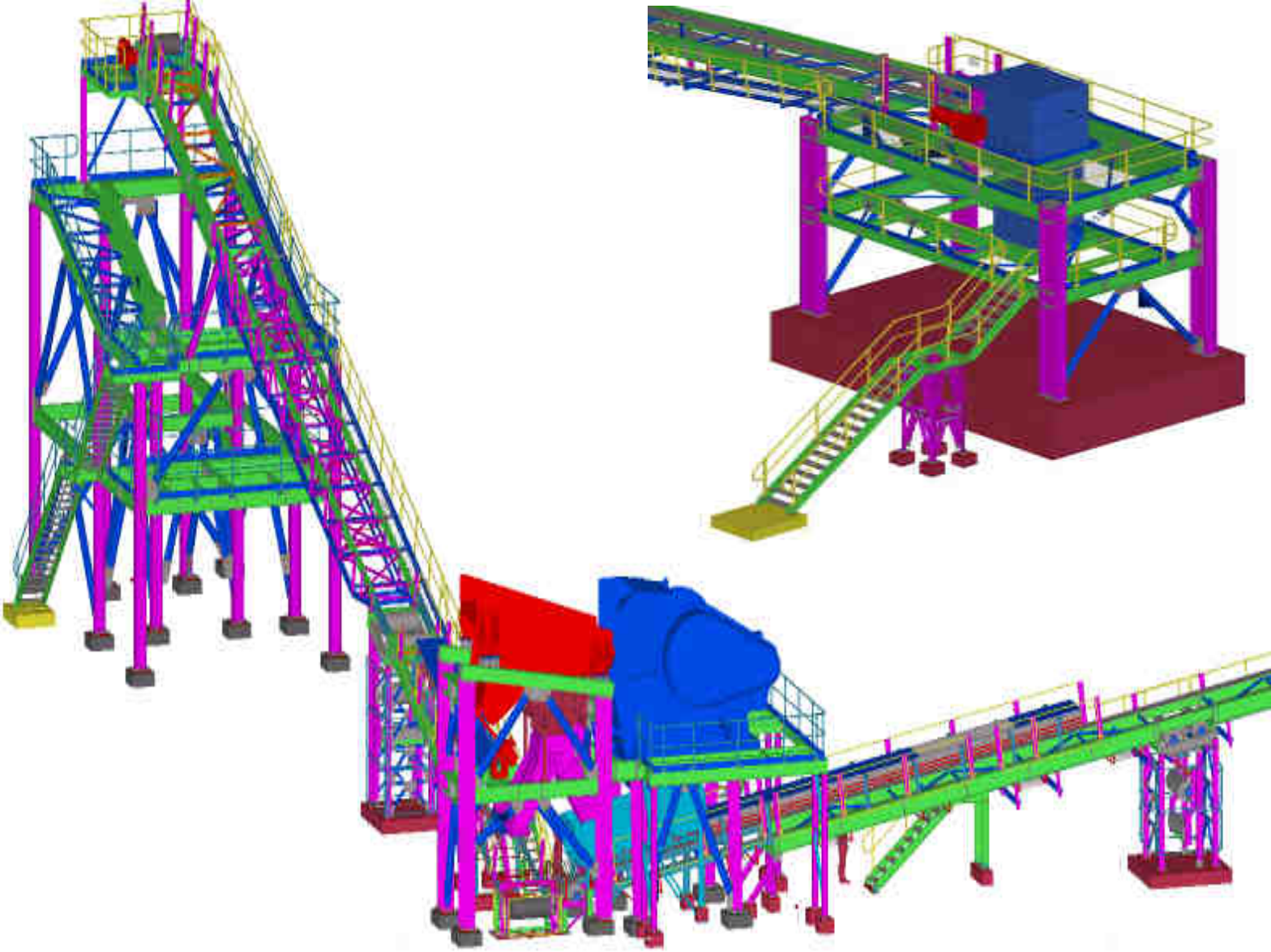









BOLT LIST

Sl No.	Grade	Site / Workshop	Size	Bolt Qty.	Nut Qty.	Washer Qty.	Bolt Wt. only(Kg)	Remarks
1	8.8S	Site	BOLT 12X25	10	10	10	0.4	BOLT QTY AS SHOWN EXACT
2	8.8S	Site	BOLT 12X35	82	82	82	4.9	
3	8.8S	Site	BOLT 16X35	54	54	54	5.04	
4	8.8S	Site	BOLT 16X40	107	107	107	9.58	
5	8.8S	Site	BOLT 16X45	462	462	462	43.36	
6	8.8S	Site	BOLT 16X50	54	54	54	4.87	
7	8.8S	Site	BOLT 16X55	8	8	8	1.06	
8	8.8S	Site	BOLT 16X65	2	2	2	0.19	
9	8.8S	Site	BOLT 20X45	24	24	24	3.12	
10	8.8S	Site	BOLT 20X50	210	210	210	20.67	
11	8.8S	Site	BOLT 20X55	32	32	32	4.56	
12	8.8S	Site	BOLT 20X60	8	8	8	0.59	
13	8.8S	Site	BOLT 20X70	4	4	4	1.29	

ASSEMBLY & PART LIST

SL No.	DRAWING NO & PART MARK	PROFILE	QTY	MATERIAL	LENGTH(mm)	WEIGHT/QTY	TOTAL WEIGHT
1	CPA-17-385-02-01-FR1		1			465.8	465.8
2	EA43	EA75*75*6	1	AS3678/250(GALV)	634	4.3	
3	EA44	EA75*75*6	1	AS3678/250(GALV)	819	5.6	
4	EA48	EA75*75*6	1	AS3678/250(GALV)	634	4.3	
5	EA49	EA75*75*6	1	AS3678/250(GALV)	819	5.6	
6	EA102	EA65*65*6	2	AS3678/250(GALV)	400	2.3	
7	PFC2	PFC100*50	1	AS3678/250(GALV)	160	1.3	
8	PFC34	PFC180*75	1	AS3678/250(GALV)	501	10.5	
9	PFC46	PFC180*75	1	AS3678/250(GALV)	645	13.5	
10	PFC47	PFC180*75	1	AS3678/250(GALV)	645	13.5	
11	PFC48	PFC180*75	1	AS3678/250(GALV)	1931	40.3	
12	PFC49	PFC180*75	1	AS3678/250(GALV)	1931	40.3	



SUPPORTS, WALKWAYS, STRUCTURES, WAREHOUSE, CONVEYORS, CHUTES, TRANSFER TOWERS

R3 Plant design founded By Anthony Foster, in 2010 collaborating with an Indian design company. The goal was to build a cost effective design and detailing company specializing in belt conveyors and structures. It is a unique combination of Australian design with Indian modelling and detailing team to meet the challenges of the Global Market. Nowadays the company is involved in various projects and expanding business activities to Europe Australia and South Africa.

Founder member, Anthony Foster has over 20 years' experience in designing belt conveyors & structures. He started his career at Worley Parsons in Australia as a Design Engineer and has worked at various senior levels in India and South Africa.

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