

Hala 45m x 25m x 4,5m = 1.125m/2

Total specification of Steel structure

A. design consignment

- Based on China's current norms and protocols.
 - <Code for design of steel structures>(GB50017-2003)
 - <Loading code for design of building structures>(GB5009-2001)
 - <Technical code for design of cold-formed thin-wall steel structures>(GB50018-2002)
 - <Steel Structure Construction Quality Acceptance of norms>(GB50205-2001)
 - <Unified standard for design of building structures>(GB68-84)
 - <Code for seismic design of buildings>(GB50011-2001)
 - <High-strength bolts connecting of steel structure design, construction and acceptance of order>(JGJ82-91)
 - <carbon construction steel>(GB/T700-86)
 - <Specification for welding of steel structure buildings>(JGJ81-2002)
 - <Code for design of concrete structures>(GB50010-2002)
 - <Code for design of building foundations>(GB50007-2002)

B. The designed elevation of this project is: ± 0.000, the relative positions determined at the site.

C. summary of Structure design:

- The safety rating of this project is Grade 2, and the reasonable life span of this project is 25 years.
- The basis of a separate design
- Roof Dead Load: 0.2 KN/m²
- Roof Live Load: 0.3 KN/m²
- Wind Load: 0.25 KN/m²
- Snow Load: 0.0 KN/m²

D. Material

- Main components' material of Steel frame beam, pillar is Q235, its material chemical composition and mechanical properties should be in line with national standards<carbon construction steel>(GB/T700-86)
- Purlin use cold-formed steel, with quality standard<general Cold forming sectional steel>(GB823-86).

2.welding rod:

a.Q235B steel weld by hand, adapt E43XX style welding rod, the function<carbon steel covered electrode>(GB/T5117-95). Adapt automatic or semi-automatic, use <Welded wires>(GB1300-77) with H08 or H08A wire with the manganese-based or high-manganese-based flux.

b.Q235B steel weld by hand, adapt E50XX style welding rod, Adapt automatic or semi-automatic, use <Welded wires>(GB1300-77) with H08MnA wire with the manganese-based or high-manganese-based flux.

3.Black rough bolts and washers adapt(Q3700-86) with Q235 steel, the heat treatment, productive and technical requirements will be to in line with(GB5780-86),(GB41-86),(GB95-85).

4.The 10.9 grade high-strength bolt adopt the big orthohexagonal bolts, its function will consistent with national standard <Alloy structure steel-Technical requirements>(GB3077-82) with 20MnTiB steel or 40B steel or with consistent with national standard<High-strength steel with large hexagon head bolts, large hexagon head nuts, washers and technological conditions>(GB1231-91)with 35B steel, the pre-pull of high-strength bolts is M16:P=100KN M20:P=155KN.

E. Manufacture of Structure:

- Steel structure should be in strict accordance with<GB50205-01>.All components is crucial to enlarge:isample to check.After size correct,then progressive blasting,will be pre-assembly inspection before delivery,finders production arch camber should be appropriate to reduce the actual beam deflection.
- Steel processing should be carried out before the correction, to make it straight.
- welding requirements:
 - Component compressure plate and column, the connections of end-plate and beam department weld and column flange:The butt weld of vertical sided should be adopted through the complete fusion weld and quality should be consistent with the 2grade weld quality requirements,Others as per 3grade welded quality demand.
 - When welding,Should choose a reasonable welding sequence,to reduce the steel produced in the welding stress and welding distortion, or Preheat hammering and overall tempering and other methods to achieve the same purpose.
 - When welding of frame beam,The flange and the vertical sided that the location of seams staggered more than 250mm.
 - Where the drawing do not indicate the leg of a fillet weld,The footsize of its size if welding this pieces of equal thickness, the weld length equal to the length of component overlap, and are full welding.

F. Installation of structure:

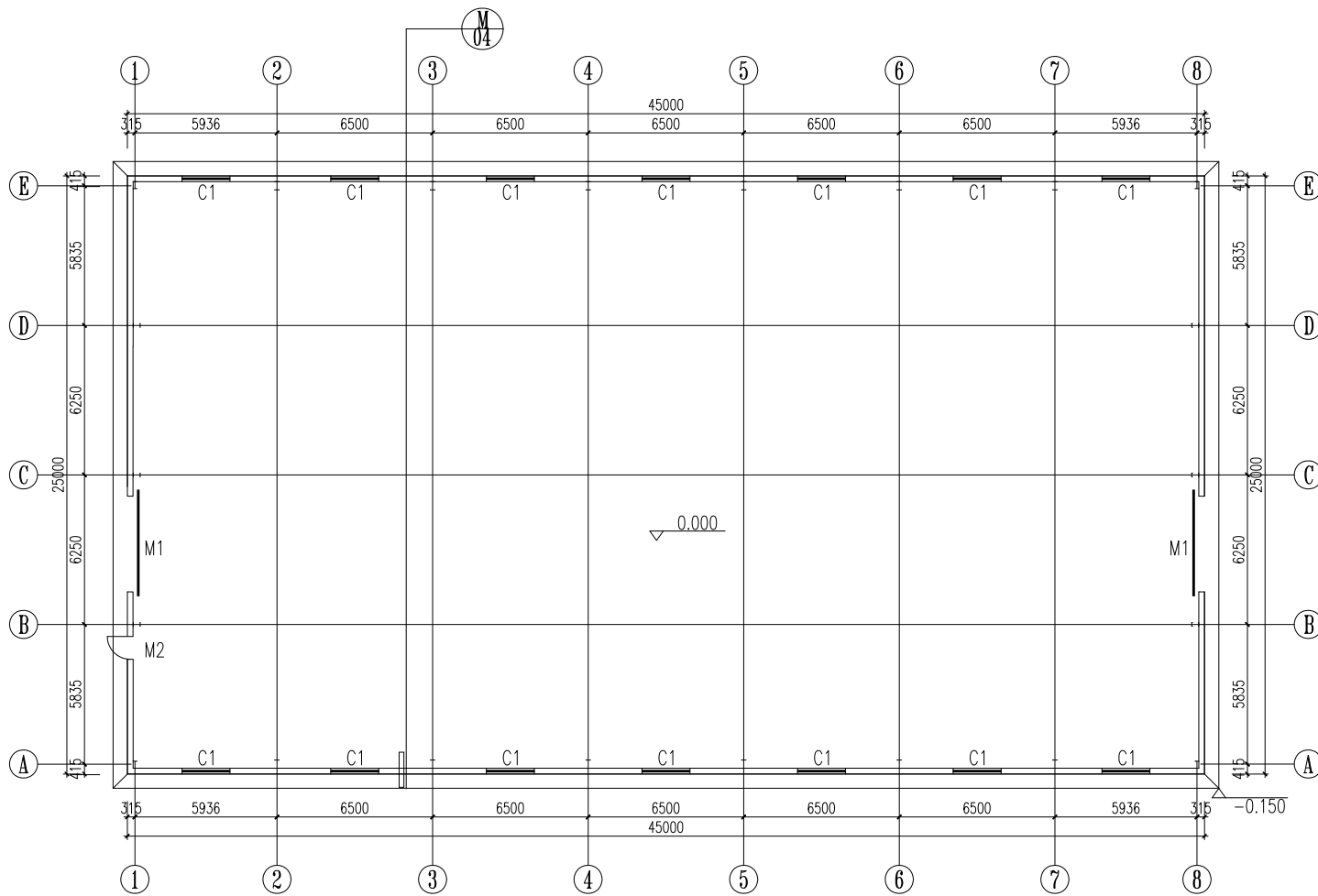
- Before with pre-Installation component to conduct a comprehensive inspection,such as the qty of component,length,perpendicularity, joint installed between the bolt hole size with the design requirements.
- When lifting,should take appropriate measures to prevent excessive bendline deformation.
- After lifting the structure in place,Should be fastened, timely support and other components connected to guarantee the stability of components.
- All of the structure lifting,must be in the lower part of the structure in place, correction and fastened support component,then would be required.
- Construction requirements of high-strength bolt:
 - High-strength bolt hole should be adapted drilled hole.
 - before installation,match with the bolts and nuts,and nut with a small amount of mineral oil.
 - In the high-strength bolts connecting the framework of the contact elements to deal with the use of sandblasting, anti-rust coefficient \rightarrow 0.45, may not paint or defaced.

G. Descaling and paint of steel structure:

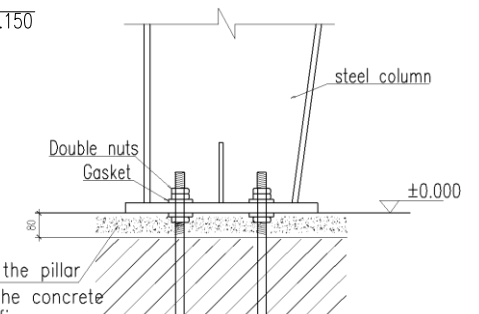
- Before coating of the components,must deal with surface shot blasting and derusting,the derusting grade is Sa2.5.
- The first painting with red lead paint, surface is alkyd ready mixed paint.
- Steel structure in the use of process,should be conducted every three years paint maintenance, and timely maintenance of local paint.
- This note as a general steel plant,if the production of corrosive gases or high temperature and humidity should be dealt with separately.

H. If there is anything else not in this specification,please be strict in accordance with current national norms and protocols relating to the construction.

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Layout of ground floor

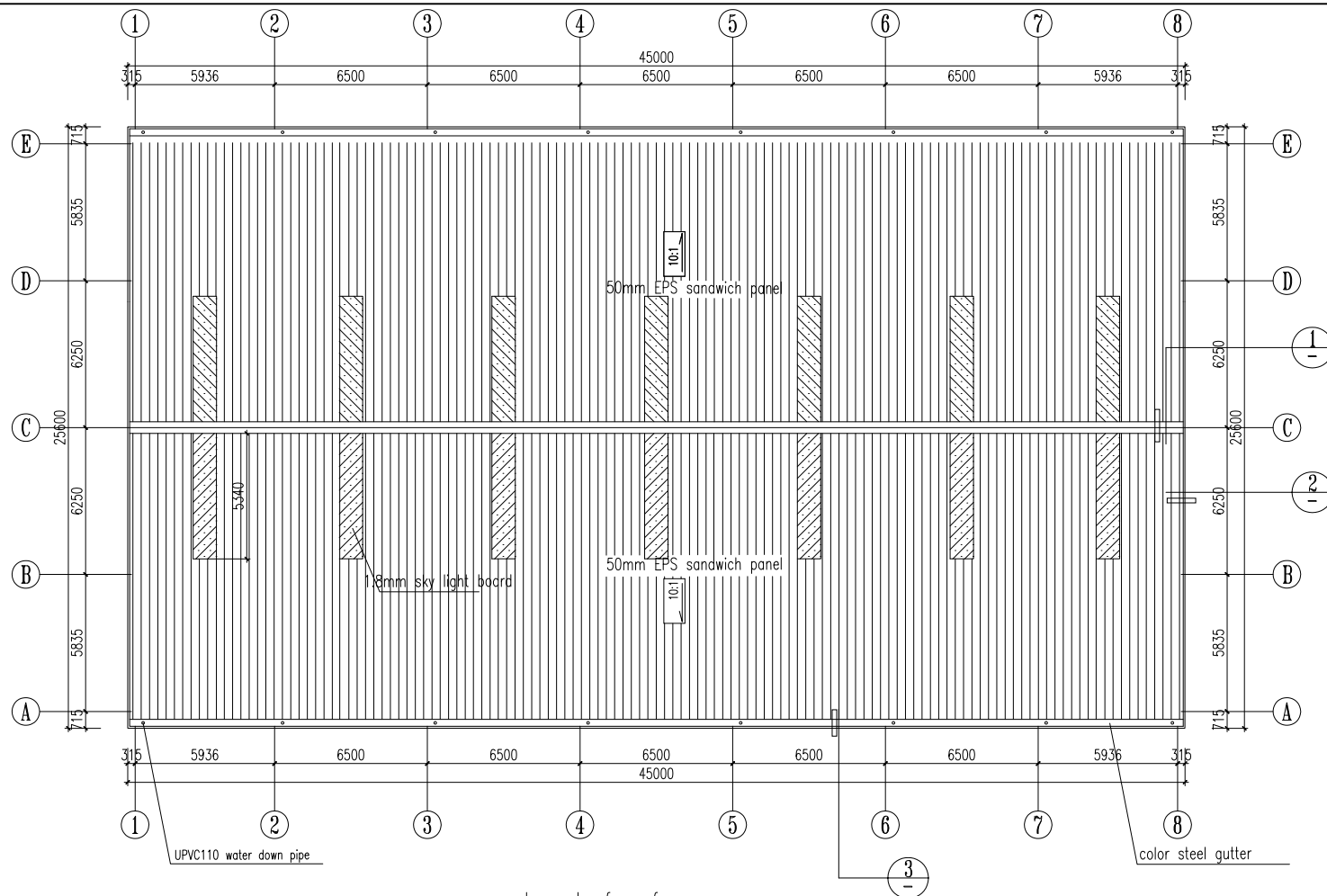


Foundation: After installing the pillar in the right position, make the concrete floor with Micro-expansive fine aggregate concrete.

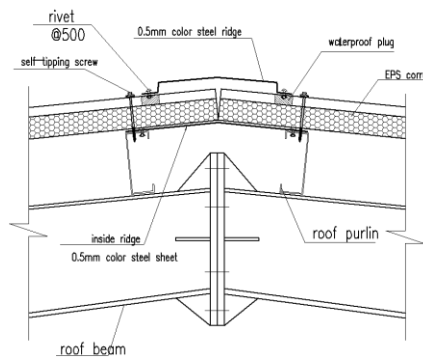
Plinth Detail

Lst for door & window			
I	N	N	S ()
D	M1		1000 1000
D	M2	I I I I	960 2050
W	C1	I I I I	2000 1200

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warehouse	Layout of ground floor	1W173		1:200
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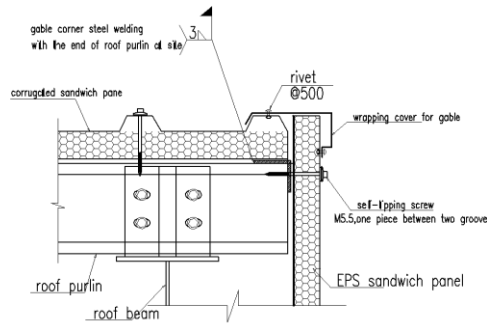


Layout of roof



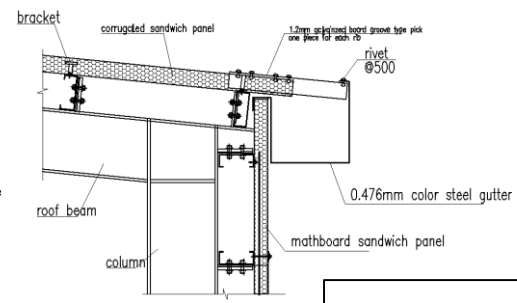
①

Details for ridge



②

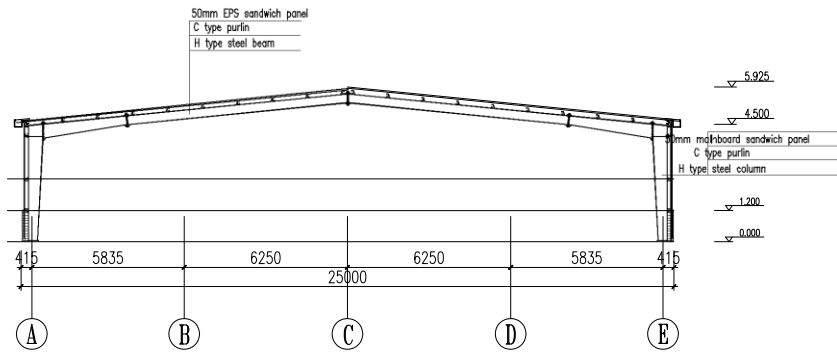
Details for wrapping cover of gable



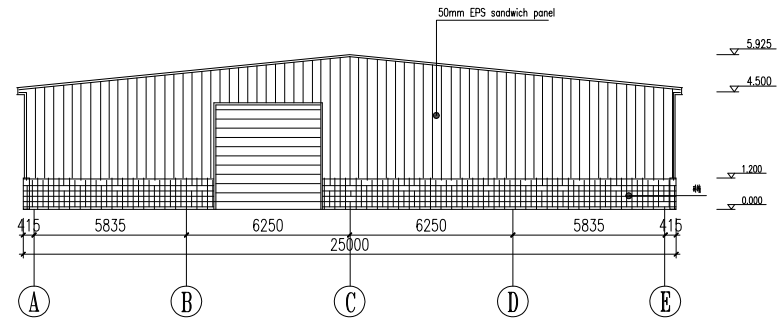
③

Details for gutter

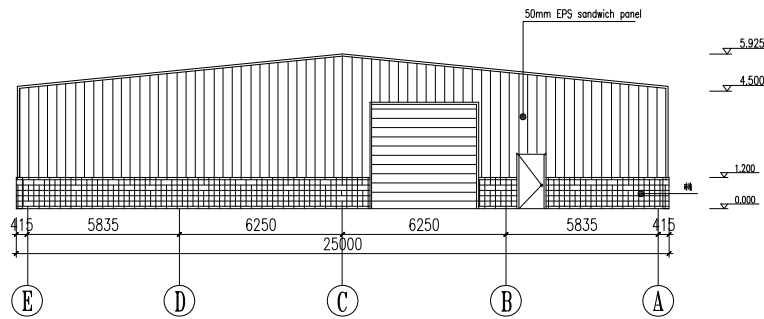
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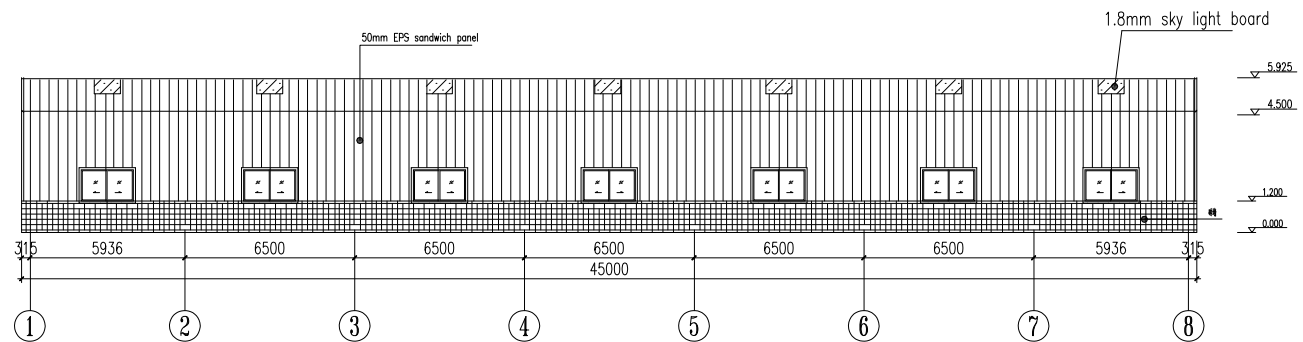
Section
M



8 axis elevation

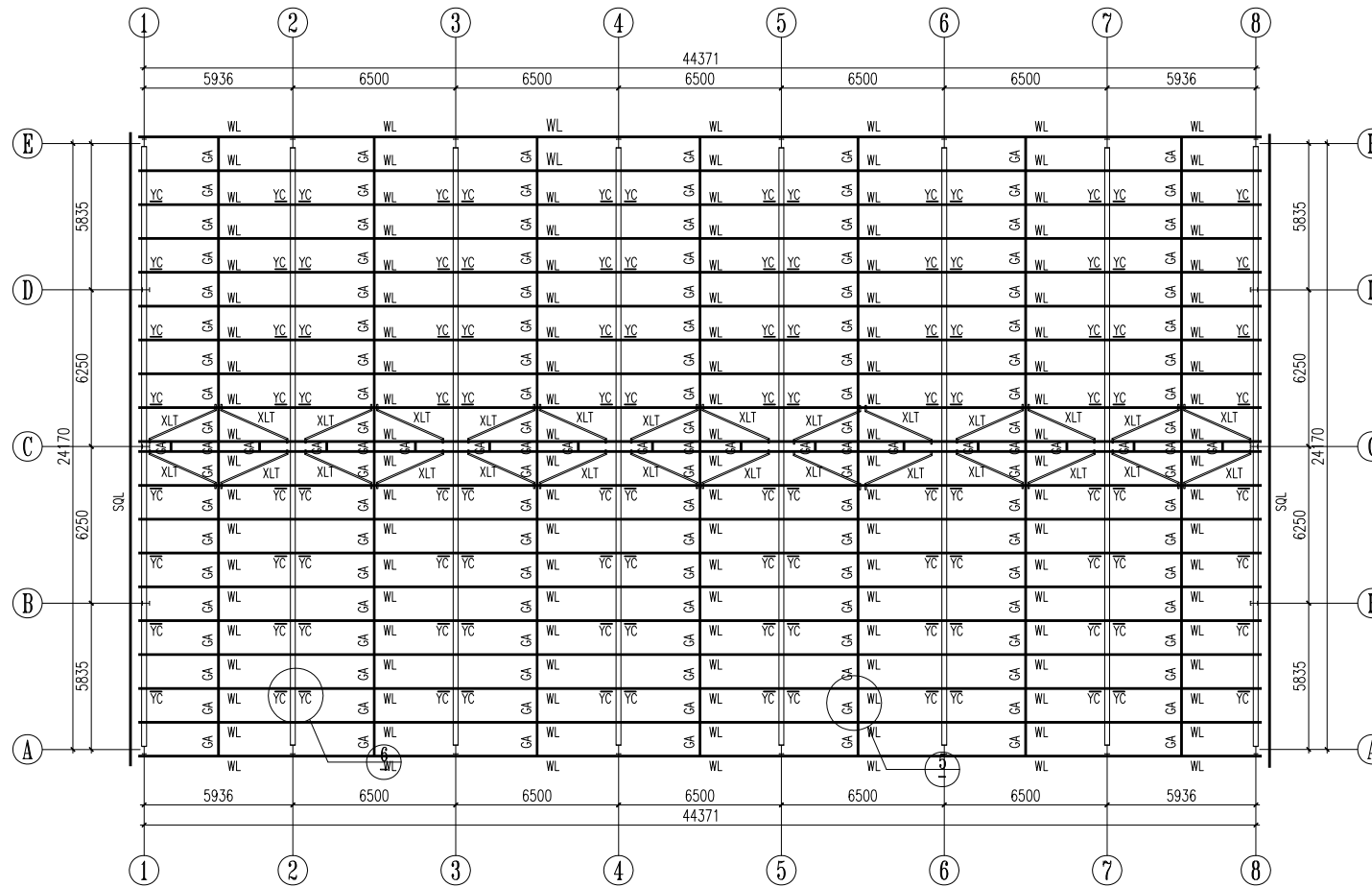


1 axis elevation



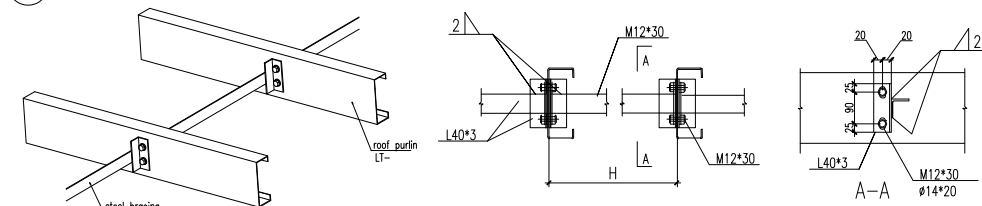
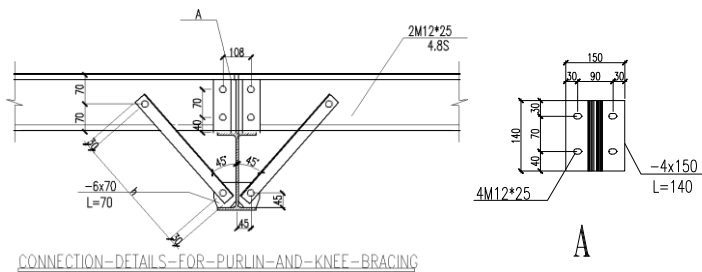
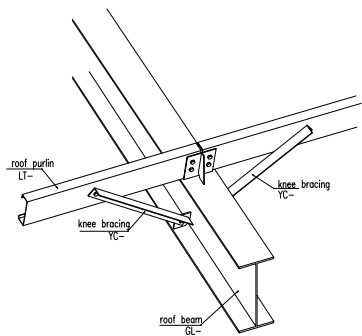
A/E axis elevation

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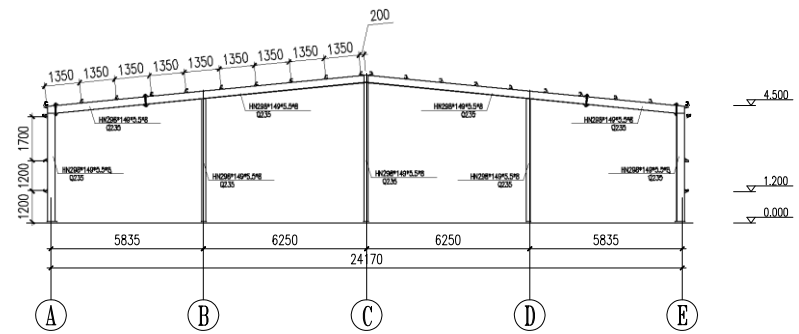
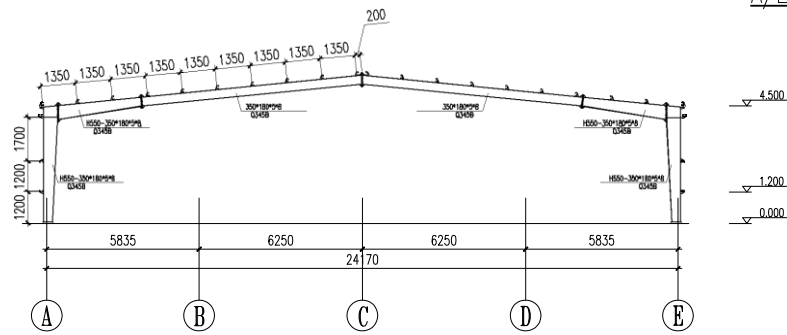
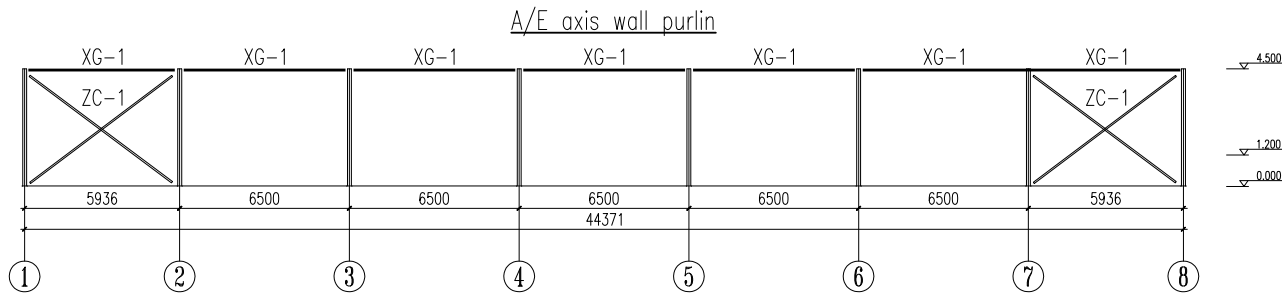
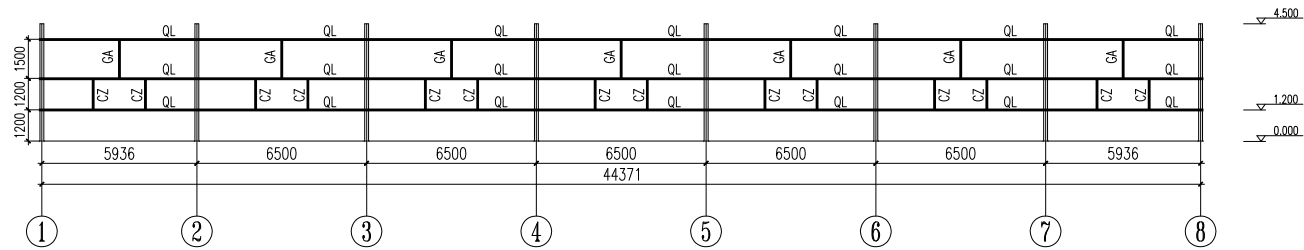
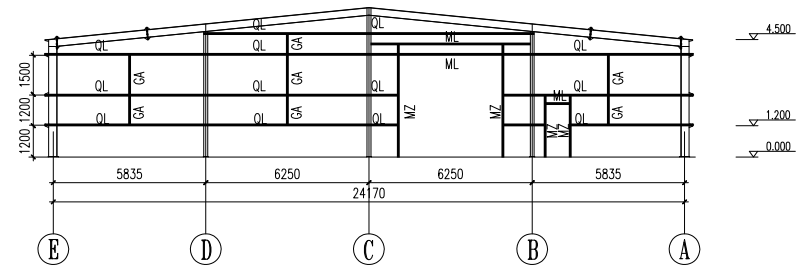
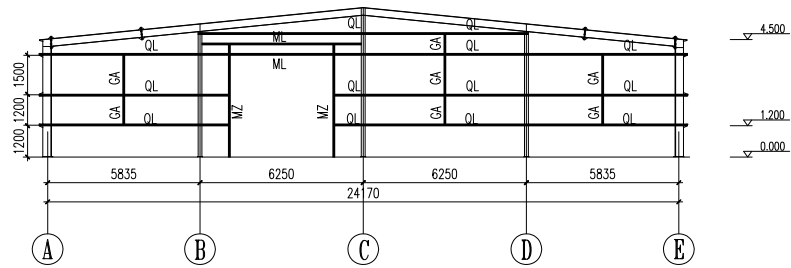


Layout of roof purlin

Cross-section List			
Item	Item	Specification	Material
purlin	WL	C140*50*20*2.0	Q235 galvanized
	CA	L40*3	Q235
bracing	YC	L50*4	Q235
	XLT	L40*3	Q235
	SQL	L50*4	Q235



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Cross-section List			
Item	No.	Specification	Material
Purlin	QL	C140*50*20*2.0	Q235 galvanized
	GA	L40*3	Q235
Supporting system	MZ	C140*50*20*2.0	Q235 galvanized
	ML	C140*50*20*2.0	Q235 galvanized
	CZ	C140*50*20*2.0	Q235 galvanized

Specification List		
Item	Specification(mm)	Material
XG-1	2C140*50*20*2.0	Q235 galvanized
ZC-1	φ16	Q235

Project name warehouse	Item Layout of wall purlin	Project No. 1W173	designer	Proportion 1:200
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