

**Bharat Heavy Electricals Limited**  
**High Pressure Boiler Plant**  
**Tiruchirappalli – 620 014. India**  
**Civil Engineering Department (Factory)**

**TENDER DOCUMENT (PRICE BID)**

**Name of work** : Construction of Infrastructure for  
new Piping Stores near RPS (30m X  
20m)

**Value of work** : Rs. 43.24 Lakh

**Tender Notice No.** : 11 / 13-14

**Tender Schedule No.** : 23 / 13-13

**Period of Contract** : 6 Months

**Issued to** :

**BHARAT HEAVY ELECTRICALS LIMITED  
TIRUCHIRAPPALLI – 620 014**

**CIVIL ENGINEERING DEPARTMENT (FACTORY)**

BHE: AGM: CP&P: F&T: 02/67:

04.04.2014

To

The Tenderer

Dear Sirs,

Sub: **Construction of Infrastructure for new Piping Stores near RPS  
(30m X 20m) – reg.**

Ref: 1. Tender Notice No. **11 / 13-14**  
2. Tender Schedule No. **23 / 13-14**

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Please find enclosed / attached non-transferable tender document containing i) Qualification bid consisting of Preamble, Specifications, General Conditions of Contract, Norms for Qualification and Qualification Proforma ii) Price bid consisting of Bill of Quantities to offer your most competitive rates for all the items of Bill of Quantities attached in the Price Bid.

**Tender for the work should be submitted in a sealed cover consisting of three inner sealed covers such as i) EMD cover ii) Qualification bid cover & iii) Price bid cover, all superscribing the name of work, tender schedule number etc.**

- 1) **EMD cover shall contain requisite EMD in the form of DD.** Tenderers who had already remitted one time EMD should furnish the details of cash receipt No. \_\_\_\_\_ dt. \_\_\_\_\_, on the top of EMD cover. **Tender without EMD / one time EMD reference will be summarily rejected** and the qualification bid & price bid shall not be considered.

In case of tender documents downloaded from website, tender shall accompany the tender cost of Rs.750/- in the form of Demand Draft (separate) in addition to the EMD amount in the form of Demand Draft.

All Demand Draft shall be drawn in favour of **BHEL, Trichy** payable at Tiruchirappalli.

- 2) Qualification bid cover shall contain duly filled in qualification bid document signed by the tenderer in all the pages with documentary evidences for pre-qualification such as experience, value of work executed in the similar nature of work, etc. Any bid without proper documentary evidence for pre-qualification shall not be considered for further evaluation.

- 3) The Price Bid cover shall contain price bid document duly filled in and signed by the tenderer in all the pages. **The tenderer has to quote most competitive rates for all the items in the Bill of Quantities from page No. 06 to 15 of Price Bid.**

The completed qualification bid and price bid along with requisite EMD of **Rs.1,00,000/-** for the work in the form of Demand Draft in favour of BHEL, Trichy shall reach the office of the undersigned on or before **30.04.2014 at 10.00 hrs.** Tenderers who had already remitted one time EMD should furnish the details of cash receipt No. \_\_\_\_\_ dt. \_\_\_\_\_, on the top of EMD cover. EMD in any other form will not be accepted. The qualification bid will be opened on the **same day at 10.15 hrs.** In case of opening day falls on holiday or happened to be declared as a holiday, the receipt and opening of the tender shall automatically fall on the same timing of the next working day. Date and time of opening of the Price Bid shall be intimated only to the bidders those who have qualified after evaluation of the qualification bid. You / your authorized representative may participate in the tender opening with authorization letter, without authorization letter the representative will not be allowed to witness the tender opening.

**Complete set of drawings as indicated in SCHEDULE D of Price Bid can be obtained from the undersigned on request and the same shall be signed and submitted along with the tender document.**

The tenderers who is desirous of sending their tender documents by post or courier are advised to send the same well in advance so as to reach the Office of the DY GEN MANAGER / CIVIL / FACTORY (Plg. & Design), Bldg. No. 53 Ground Floor, BHEL, Tiruchy – 620 014, Tamilnadu on or before **30.04.2014** at 10.00 hrs.

**The late tenders received after the tender submission / opening time will be summarily rejected and will not be considered for any reason.**

Clarification if any, can be obtained contacting following phone No. 0431 – 2574529 / 2574650. Fax No. : 0431 – 2520333 Email ID: **kguna@bheltry.co.in**

Kindly acknowledge the receipt of the entire set of tender document.

Thanking you,

Yours faithfully  
For and on behalf of  
BHARAT HEAVY ELECTRICALS LIMITED,

DGM / CIVIL / PLANNING & DESIGNS  
BUILDING No. 53.



**BHARAT HEAVY ELECTRICALS LIMITED**  
(A Government of India Undertaking )  
Unit : TIRUVERUMBUR, BOILER PROJECT, P.O.  
TIRUCHIRAPALLI - 620 014.

**CIVIL ENGINEERING DEPARTMENT**

**NOTICE INVITING TENDER**

01. Name of work: : Construction of Infrastructure for New Piping Stores near RPS (30X20 m)
02. Estimated Cost : Rs. 43.24 Lakh
03. Earnest Money Deposit : Rs.1,00,000/-
04. Completion Time : SIX ( 6 ) Months  
(From the date of commencement of the work which will be reckoned from the date of handing over to the Contractor )
05. Cost of Tender Document : **Rs.750/-**  
(Rs. 825/- if required by post) including Sales Tax in DD form This amount will not be refunded under any circumstances.
06. Last Date for Receipt of Tenders : **10.00 Hrs. on 30.04.2014**
07. Date of Tender Opening : **10.15 Hrs. on 30.04.2014**
08. Maintenance Period :6 (Six Months from the date of actual completion of the entire work and Handing over to Bharat Heavy Electricals Limited)

Tender document contains totally **252** pages, Qualification Bid - **234** pages, Price Bid - **18** pages including Bill of Quantities and **1** page as Drawing etc.

Issued to Messrs. / Thiru :

**ISSUING OFFICER**

**SCHEDULE 'A'**  
**LIST OF WORKS AND PRICES**

**NAME OF WORK:**

**Construction of Infrastructure for new Piping Stors near RPS (30m X 20m)**

**DETAILS & QUANTITIES of each item of work shown in the BILL OF QUANTITIES are only approximate and the same is attached as a separate excel file.** They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the corresponding rate quoted by the contractor in the BILL OF QUANTITIES

Sl.No.	Description of work / supplied	Total amount of work / supplies (in figures and words)		Period of contract
		Rs.	Ps.	
1.	<b>Construction of Infrastructure for new Piping Stors near RPS (30m X 20m)</b>	<b>43,24,000/-</b>		<b>SIX (6) MONTHS</b>

**BILL OF QUANTITIES**

Sl. No.	Appx. Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words)	Amount Rs. Ps.
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**AS PER SEPARATE SHEETS ATTACHED CONTAINING 10 PAGES.**

FROM Page No. **6 to 15.**

**CONTRACTOR**

5

**ACCEPTING OFFICER**

**NAME OF WORK: Construction of Infrastructure for new Piping Stores near RPS (30m X 20m)**

<b>Sl. No.</b>	<b>Quantity</b>	<b>Description of work</b>	<b>Rate (both in figures and in words)</b>	<b>Unit</b>	<b>Total Rs. P.</b>
1	200	Earthwork excavation (TRENCHES) in soils given below by mechanical means (Hydraulic excavator)/manual means and depositing the excavated earth at suitable places within the initial lead of 50 meter and initial lift of 1.5 meter for foundation in building works, roads, narrow drains, sewers, bridges, pipe lines etc., sectioning the subgrade to proper level and grade, watering and consolidating the subgrade to receive concrete bed, all as per standard specifications and instructions of Engineer-in-charge. <b>All kinds of soil except rock</b>		Cum	
2	85	Earthwork excavation (TRENCHES) in soils given below by mechanical means (Hydraulic excavator)/manual means and depositing the excavated earth at suitable places within the initial lead of 50 meter and initial lift of 1.5 meter for foundation in building works, roads, narrow drains, sewers, bridges, pipe lines etc., sectioning the subgrade to proper level and grade, watering and consolidating the subgrade to receive concrete bed, all as per standard specifications and instructions of Engineer-in-charge. <b>Ordinary rock</b>		Cum	
3	60	Earthwork excavation (TRENCHES) in soils given below by mechanical means (Hydraulic excavator)/manual means and depositing the excavated earth at suitable places within the initial lead of 50 meter and initial lift of 1.5 meter for foundation in building works, roads, narrow drains, sewers, bridges, pipe lines etc., sectioning the subgrade to proper level and grade, watering and consolidating the subgrade to receive concrete bed, all as per standard specifications and instructions of Engineer-in-charge. <b>Hard rock (requiring blasting)</b>		Cum	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
4	60	Earthwork excavation (TRENCHES) in soils given below by mechanical means (Hydraulic excavator)/manual means and depositing the excavated earth at suitable places within the initial lead of 50 meter and initial lift of 1.5 meter for foundation in building works, roads, narrow drains, sewers, bridges, pipe lines etc., sectioning the subgrade to proper level and grade, watering and consolidating the subgrade to receive concrete bed, all as per standard specifications and instructions of Engineer-in-charge. <b>Hard rock (blasting prohibited).</b>		Cum	
5	105	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50 m and lift up to 1.5 m etc. complete.		Cum	
6	204	Conveyance of earth, sand, gravel, rough stone, broken stone, brick bats (debris) etc. by contractor's own lorry including loading, leading, unloading, stacking or spreading, all as per instructions of Engineer-in-charge. Payment for conveyance of earth will be made based on pit measurement and for other items based on stack measurements. <b>Beyond 2 Km but upto 3 Km.</b>		Cum	
7	150	Earth work for surface excavation (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) in soils given below by mechanical means (Hydraulic excavator)/manual means including disposal of earth at suitable places within a lead upto 50 metres and lift upto 1.5 metre, sectioning the subgrade to proper level and grade. Disposed soil are to be leveled and neatly dressed. <b>All kinds of soil except rock</b>		Cum	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
8	151	Earth work for surface excavation (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) in soils given below by mechanical means (Hydraulic excavator)/manual means including disposal of earth at suitable places within a lead upto 50 metres and lift upto 1.5 metre, sectioning the subgrade to proper level and grade. Disposed soil are to be leveled and neatly dressed. <b>Ordinary Rock.</b>		Cum	
9	110	Providing and laying in position plain cement concrete of specified grade including consolidation, curing etc. complete, all as per standard specifications. All works upto plinth level. Rate excludes cost of centering and shuttering. <b>1:4:8 with graded stone aggregate 40 mm nominal size.</b>		Cum	
10	80	Random rubble masonry in foundation and basement in the mix given below including simultaneous flush pointing, all as per standard specifications. <b>In cement mortar 1:5</b>		Cum	
11	200	Damp proof course with cement mortar 1:3, 20 mm thick mixed with an admixture of crude oil at 5 % by weight of cement, all labour etc. complete as per standard specifications.		Sqm	
12	142	Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level. <b>Foundations, footings, bases of columns, equipment foundations, precast slabs, kerbs etc. for mass concrete</b>		Sqm	
13	5	Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level. <b>Pockets or holes in foundations for holding down bolts.</b>		Sqm	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
14	10	Straightening, cutting, bending, placing in position of MS/CTD bars and binding with MS binding wires of 18/20 gauge etc. for reinforcement of RCC works. Rate includes cover blocks, cost of binding wire , conveyance of MS/ CTD bars from BHEL stores to site of work, labour etc. complete. MS/CTD bars will be supplied by BHEL at Stores at free of cost.		MT	
15	45	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc complete but excluding cost of centring, shuttering,finishing and reinforcement.: <b>1:1.5:3 with graded stone aggregate 20 mm nominal size.- All works upto Plinth level.</b>		Cum	
16	10	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement. <b>1:1.5:3 with graded stone aggregate 20 mm nominal size - Above plinth upto floor five level.</b>		Cum	
17	120	Flooring with reinforced cement concrete of mix 1:2:4 using 40 mm and down graded hard broken granite stone jelly for thickness varying from 100 to 500 mm laid in panels not exceeding 6 x 30 m between expansion joints, including necessary vibration using needle / board / screed vibrators, all as required including necessary shuttering, painting the sides with bitumen, but excluding fabrication charges for reinforcement, all as per standard specifications.		Cum	
18	600	Floor finish with 40 mm thick granolithick flooring over the concrete base while it is wet for proper bonding, the bottom 25 mm thick consisting of one part of cement and one part of 6 mm gauge hard broken granite stone chips (the proportion being by volume) and the top 15 mm finished with hardening compound of proportion one part of hardonate (ironite or equivalent) four parts of cement and eight parts of 6 mm gauge blue granite stone chips (the proportion being by weight) including finishing and painting the sides with bitumen etc., complete, all as per standard specifications.		Sqm	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
19	1200	Plastering with cement mortar as per standard specifications. <b>In cement mortar 1:6, 12mm thick</b>		Sqm	
20	739	White washing on surfaces using best shell lime to give an even shade including cleaning, brushing of walls and preparing surfaces in accordance with standard specifications. Rate includes cost of all materials, labour etc., complete. <b>Three or more coats</b>		Sqm	
21	1500	Providing holding down bolts of required sizes with nuts, washers etc. and fixing in proper level, line, alignment etc., all as per drawings and instructions of Engineer-in-charge. Rate includes cost of steel materials, bolts, nuts, washers, fabrication and machining charges, fixing, all labour etc. complete. <b>Bolts including nuts and washers etc. complete in all sizes and lengths.</b>		K.G	
22	20	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement. <b>1:2:4 with graded stone aggregate 20 mm nominal size - All works upto plinth level.</b>		Cum	
23	100	Providing and laying in position machine batched, machine mixed and machine vibrated design mix of reinforced cement concrete of specified grade for structural elements using 10 to 20 mm hard broken granite stone jelly, excluding cost of centring, shuttering, finishing and reinforcement but including admixtures in recommended proportions (as per IS:9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability, all as per directions of Engineer-in-charge. M-20 Grade reinforced cement concrete. All work in foundation, basement and upto Floor V level.		Cum	
24	20	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement. <b>1:2:4 with graded stone aggregate 20 mm nominal size - Above plinth upto floor five level.</b>		Cum	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
25	200	Providing 50 mm thick precast cement concrete Jali 1:2:4 using graded stone aggregate 6 mm nominal size with suitable reinforcement including centring and shuttering, roughening, cleaning, fixing and finishing in cement mortar 1:3 etc.complete. Rate excludes reinforcement steel & fabrication charges.		Sqm	
26	200	Brick work with modular bricks (second class table moulded chamber bricks) of class designation 50/75 in foundation and plinth in: <b>Cement mortar 1:5.</b>		Cum	
27	200	Extra for Brick work in superstructure above plinth upto floor three level in all shapes and sizes.		Cum	
28	20	Providing and filling in position of bitumen mix filler of proportion 80 Kg of hot bitumen, 1 Kg of cement and 0.25 cubicmetre of coarse sand for expansion joints. Providing and fixing in position of 12 mm thick bitumen impregnated fibre board conforming to IS:1838 including cost of primer, sealing compound in expansion joints.		Sqm	
29	10	Providing and fixing G.I pipes and specials (B - Class) of approved brand with G.I fittings and clamps on walls and floors, including cutting and making good the walls and floors etc. complete. (Internal work - exposed on walls) <b>15 mm dia nominal bore.</b>		RM	
30	10	Providing and fixing G.I pipes and specials (B - Class) of approved brand with G.I fittings and clamps on walls and floors, including cutting and making good the walls and floors etc. complete. (Internal work - exposed on walls) <b>20 mm dia nominal bore.</b>		RM	
31	20	Providing and fixing G.I pipes and specials (B - Class) of approved brand with G.I fittings and clamps on walls and floors, including cutting and making good the walls and floors etc. complete. (Internal work - exposed on walls) <b>25 mm dia nominal bore.</b>		RM	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
32	31	Collection from BHEL stores and transporting the raw structural steel sections to the contractor's site fabrication shop, fabrication of steel work including all materials going into the process of fabrication and forming an integral part of the steel work together with all shop welding including using low hydrogen electrode wherever necessary, all as per drawings and standard specifications. Rate includes delivery of fabricated steel work at erection site ready for erection, including preparation and supply of drawing office despatch list for BHEL's approval, all charges for packing (wherever called for) handling, conveying, stacking and all other incidental charges both for raw materials and fabricated steel works. Rate excludes raw structural steel sections which will be supplied by BHEL at stores at free of cost.		MT	
33	31	Carrying from stacks at erection site to erection positions and erection of fabricated steel work including all handling, conveying, assembling, hoisting, erecting in position and site welding and or bolting, alignment of structures, all as per drawings and standard specifications. Rate includes bolts and nuts, hire for welding tools and plants, labour etc., but excluding cost of fabricated components. If required, power will be given free of cost by BHEL. Weight of fasteners will not be accounted for payment.		MT	
34	31	Painting one priming coat with approved primer over structural steel works in roof structures, columns etc., including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matters and scoured with wire brushes, fine steel wool scrapers and sand paper, all as per standard specifications. - Red oxide primer		MT	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
35	31	Painting (excluding priming coat) on structural steel works in roof structures, columns etc.with synthetic enamel paint of approved brand and shade, brushing to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, scaffolding charges etc., complete. All as per standard specifications.Two coats		MT	
36	700	Applying one coat of cement primer of approved brand and manufacturer on wall surfaces.		Sqm	
37	700	Painting with exterior emulsion paint (ACE or any other equivalent and approved brand) of approved shade on surfaces to give an even shade including preparing the surfaces, removal of dirt, thorough cleaning by watering etc., all as per standard specifications. Rate includes cost of necessary plaster of paris and putty wherever required, labour and all incidentals etc.complete. - Two coats		Sqm	
38	700	Supplying at site of work , hoisting and fixing in position of 0.47 to 0.50mm thick colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, North light curves, end curves, etc., as per technical specifications given in note below for roofing at all heights up to +24.00 meters with necessary xylon coated self tapping / self drilling screws with EPDM washers at every ribs etc., complete. All as per drawings, manufacturers specifications and instructions of Engineer-in-charge .Rate includes cost of all materials like colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, etc., wherever required self tapping / self drilling screws with EPDM washers at every ribs etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, providing lifeline and other provisions for safety, and all other incidental charges etc., complete. The payment will be made for the actual laid area only.		Sqm	

Sl. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
39	400	Supplying at site of work , hoisting and fixing in position of 0.47 to 0.50mm thick colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, etc., as per technical specifications given in note below for side sheeting at all heights up to +24.00 meters with necessary xylon coated self tapping / self drilling screws with EPDM washers at every valleys, etc., complete .All as per drawings, manufacturers specifications and instructions of Engineer-in-charge .Rate includes cost of all materials like colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, self tapping / self drilling screws with EPDM washers at every valleys, etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, providing lifeline and other provisions for safety, and all other incidental charges etc., complete. The payment will be made for the actual laid area only		Sqm	
40	20	Supplying at site of work, hoisting and fixing in position of 2mm thick embossed clear poly carbonate roof light sheets in specified locations and at heights up to (+) 24.00 meters with necessary xylon coated self tapping / self drilling screws with EPDM washers at every ribs, etc., complete to match the profile of Aluminium zinc alloy coated high tensile steel roof sheets, as per instructions of Engineer-in-charge. The rate includes cost of poly carbonate sheets ,self tapping / self drilling screws with EPDM washer, at every ribs, and labour charges, all scaffolding charges, tools and plants and all other incidental charges etc., complete .		Sqm	
41	30	Supplying roof extractors ( Turbo Air Ventilators ) of dia 600mm or thereabouts, fixing in position on AC / Aluminium zinc alloy coated high tensile steel sheet roofs at heights up to (+) 24.00 meters with necessary screws,, bolts etc., and finishing to match with existing roof. Rate to include cost of all labour charges for fixing the roof extractors with necessary cutting of sheets to the required size , drilling to suit the screws/ bolts, and finishing to match the existing profile including cost of roof extractors / ventilators. All as per manufacturers specifications and as directed by the Engineer in charge.		Each	

SI. No	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
42	10	Supply & fixing rolling shutters of approved make, made of 80 x 1.25mm of M.S laths interlocked together through their entire length & joined together at end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation etc., complete including cost of providing and fixing necessary 27.5 cm long wire springs grade No.2 and M.S top cover of 1.25mm thick for rolling shutter of area 10 Sq.m. to 16.80 Sq.m. (Gear operated type with gear box, crank, handle and ball bearings).		Sqm	
					<b>Total</b> _____
					_____
					<b>Service Tax @</b> ----- _____
					<b>Grand Total</b> _____
<b>Rupees</b> _____					<b>in Words</b> _____

## SCHEDULE 'B'

1. The following materials will be issued FREE of cost to contractor at BHEL Stores / Stock yard.

SI.No.	DESCRIPTION	PLACE OF ISSUE
1	Cement	BHEL STORES or Stock yard
2	M.S Rounds, C.T.D Bars & Structural Steel, rails and all railway materials	BHEL STORES or Stock yard

2. It will be the responsibility of the Contractor to submit his demands for the above stores in writing atleast seven days in advance of the actual requirement.
3. Issue of Stores is subject of the availability at the place of issue cited above, items of stores to be issued by BHEL which are not available at the time of indenting by the contractor may be supplied by BHEL after necessary procurement. The contractor shall not be entitled to any claim of compensation for delay in the supply of stores by BHEL under any circumstances.
4. The materials will be issued only during the working hours of the BHEL Stores Department ( 8.00 a.m. to 4.30 p.m. ). Contractor shall have to transport them to the site of work at his own cost as soon as they are issued to him.
5. The steel materials if issued will be in random lengths and sizes as stocked by the BHEL and the cost of all cutting, conversion, substitution and fabrication as well as wastage shall have to be borne by the Contractor.
6. The contractor shall from time to time render proper account of all materials issued to him by BHEL. If he fails to do so, no further issue of materials will be made to him and he will be held responsible for any delay in the execution of the work which may occur on this account.
7. Where A.C. Sheets and accessories, Doors, Windows, Sanitary fittings, Special glasses or other items are issued free of cost to the contractor, the contractor will have to make good at his own cost any loss or damage to any part or whole of the items issued to him as above. All wastage within the premises limits as fixed by BHEL will be charged for at the prescribed issued rates of BHEL. Excess wastage will be charged for at punitive rates which will be 100% higher than the issue rates.
8. All surplus materials in good condition which are not returned to the BHEL Stores as also quantities of materials consumed in excess of the max. permissible limit as fixed by BHEL shall be charged for at punitive rates.

The decision of the Senior Engineer / Dy. Manager / Manager as to the extent to which materials have been rendered surplus or consumed in excess of the actual requirements shall be final and conclusive and binding on the contractor

## SCHEDULE 'C'

### ISSUE OF TOOLS AND PLANTS TO CONTRACTORS

Sl.No.	Qty.	Particulars	Details of BHEL Crew Supplied	Hire Charges Per unit Per Day	Place of Issue	Remarks
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.....Nil.....

- a. Machineries shall not be operated over time without the written permission of the Sr. Engineer / Dy. Manager / Manager.
- b. All Coolies, Watermen etc., required in addition to BHEL crew mentioned in column 4 above shall be arranged by the contractor at his own expense.
- c.

## SCHEDULE 'D'

NOTE : All Drawings are to be signed by the Contractor as well as the officer entering into contract.

SL.No.	DRAWING NUMBER	DESCRIPTION
1	1-TP-CEG-01258	GENERAL ARRANGEMENT OF STORES SHED, DETAILS OF RCC FLOORING FOR PIPING CENTRE
2	1-TP-CEG-01291	STRUCTURAL DETAILS OF STORE SHED
3	1-TP-CEG-01292	STRUCTURAL DETAILS OF STORE SHED

The above drawings are enclosed in the Price Bid.

## SCHEDULE 'E'

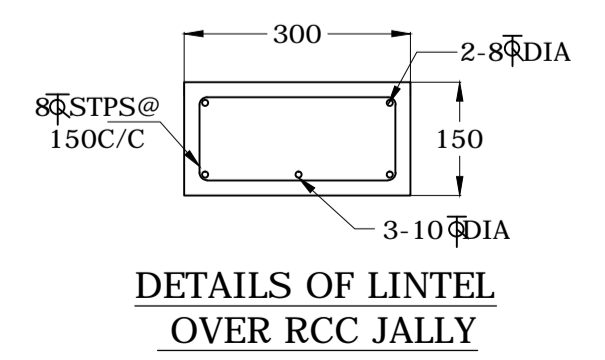
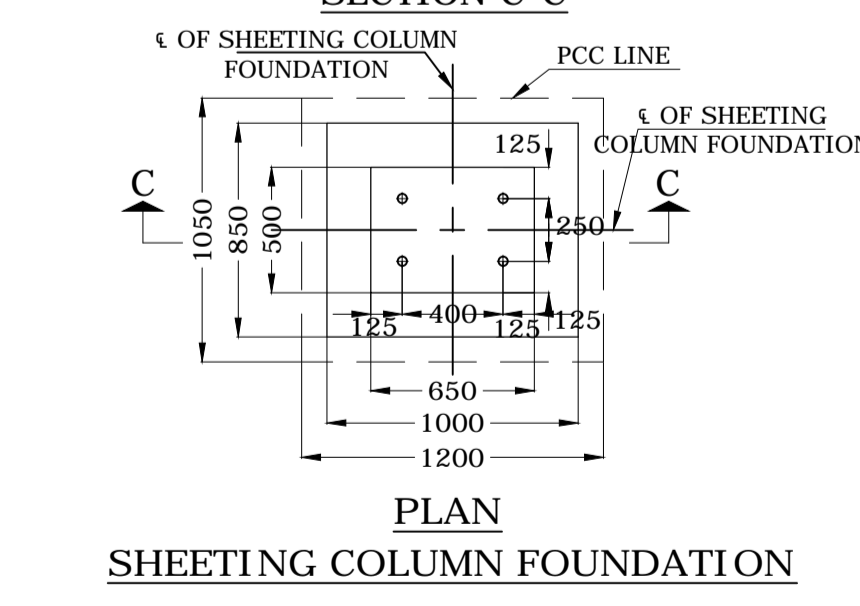
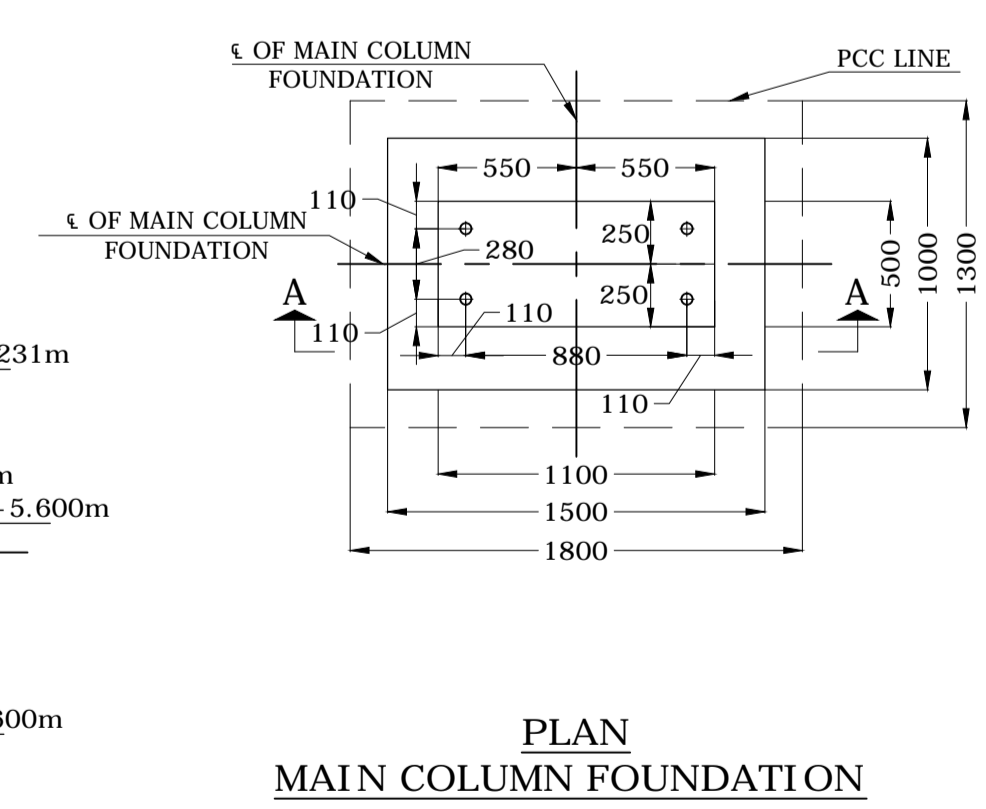
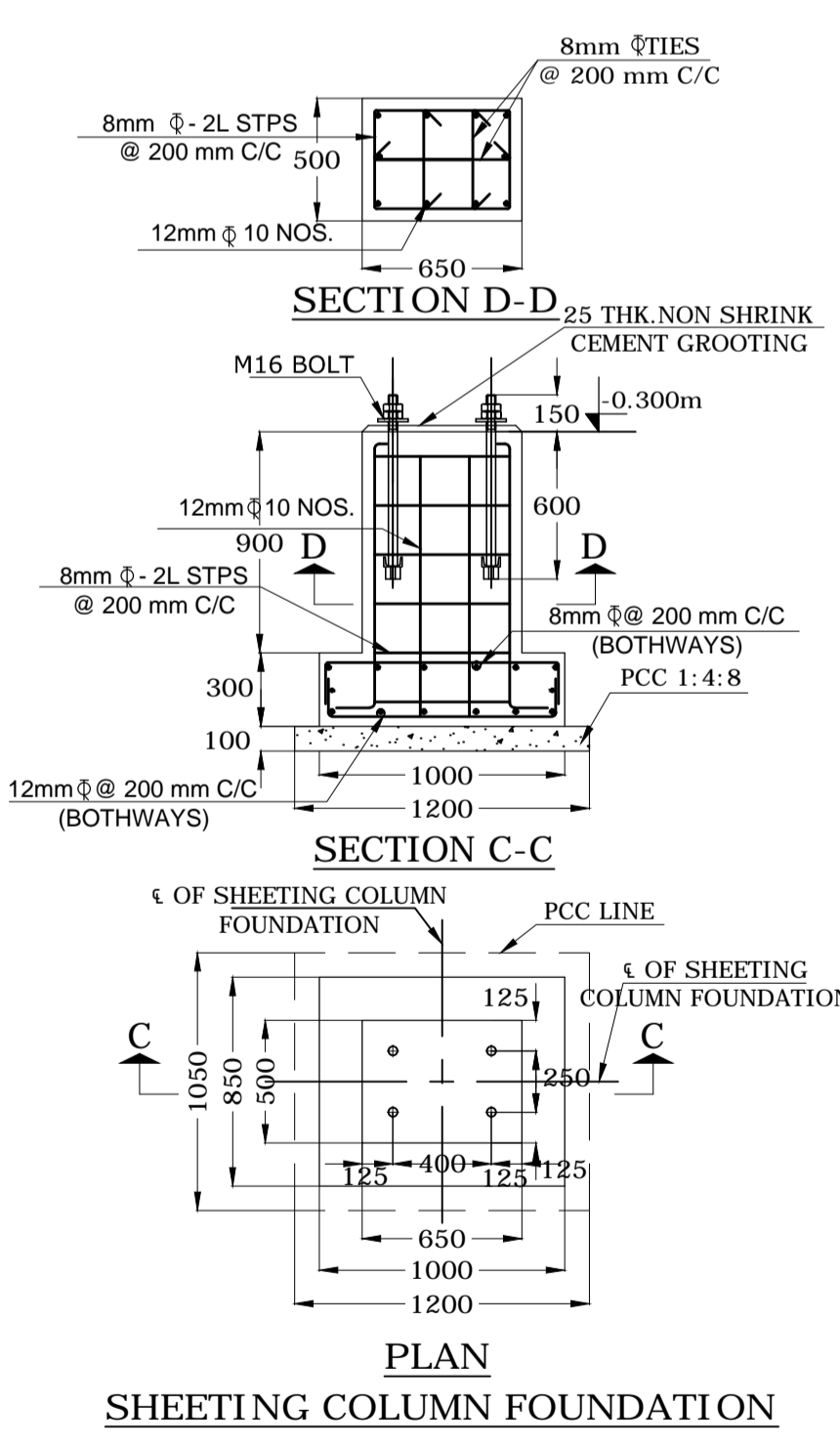
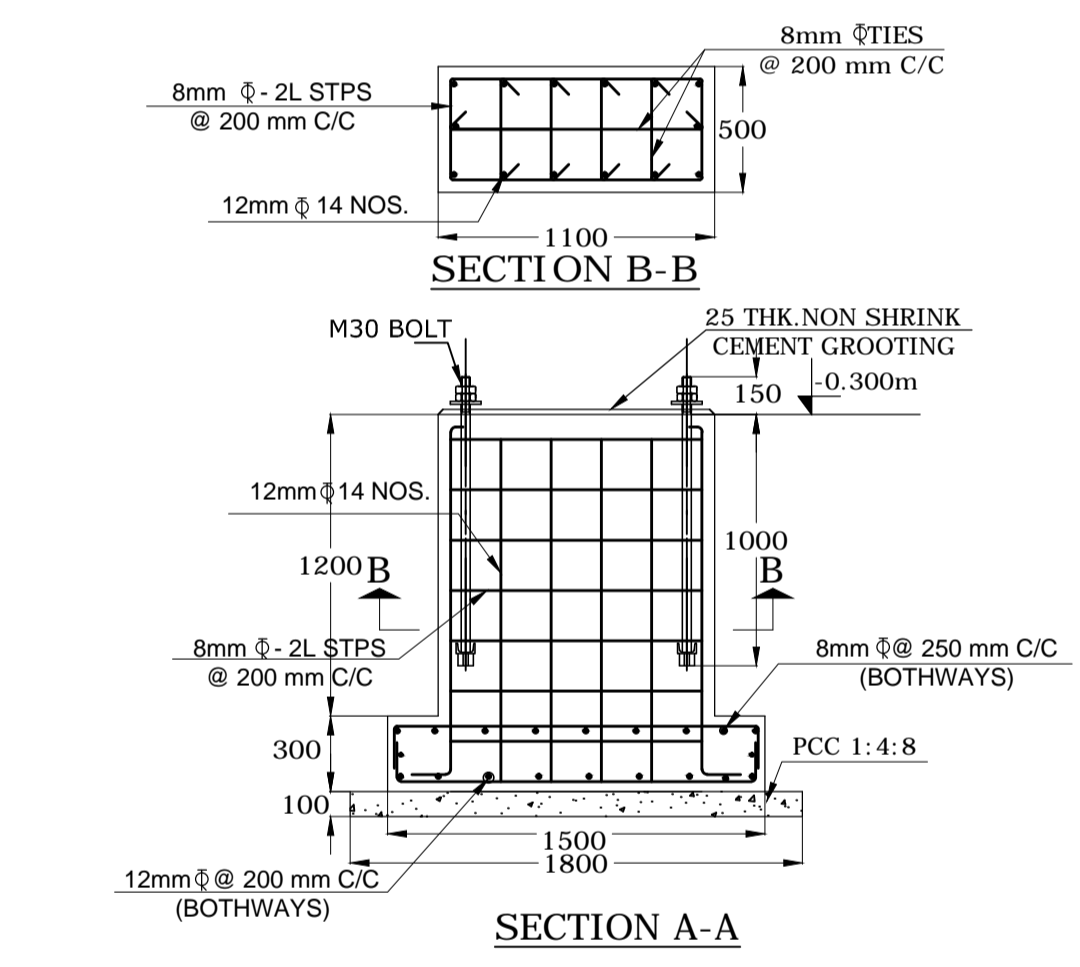
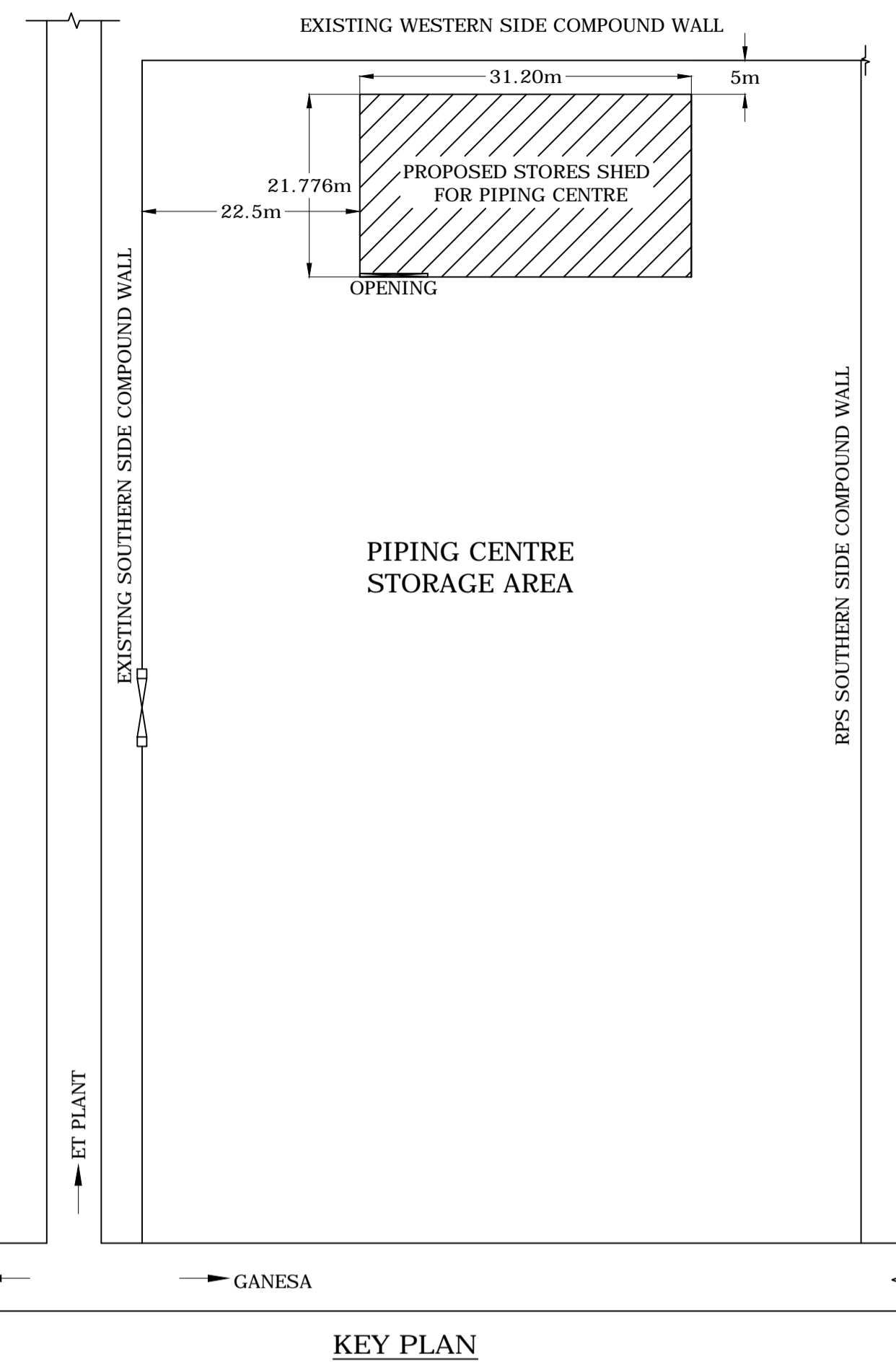
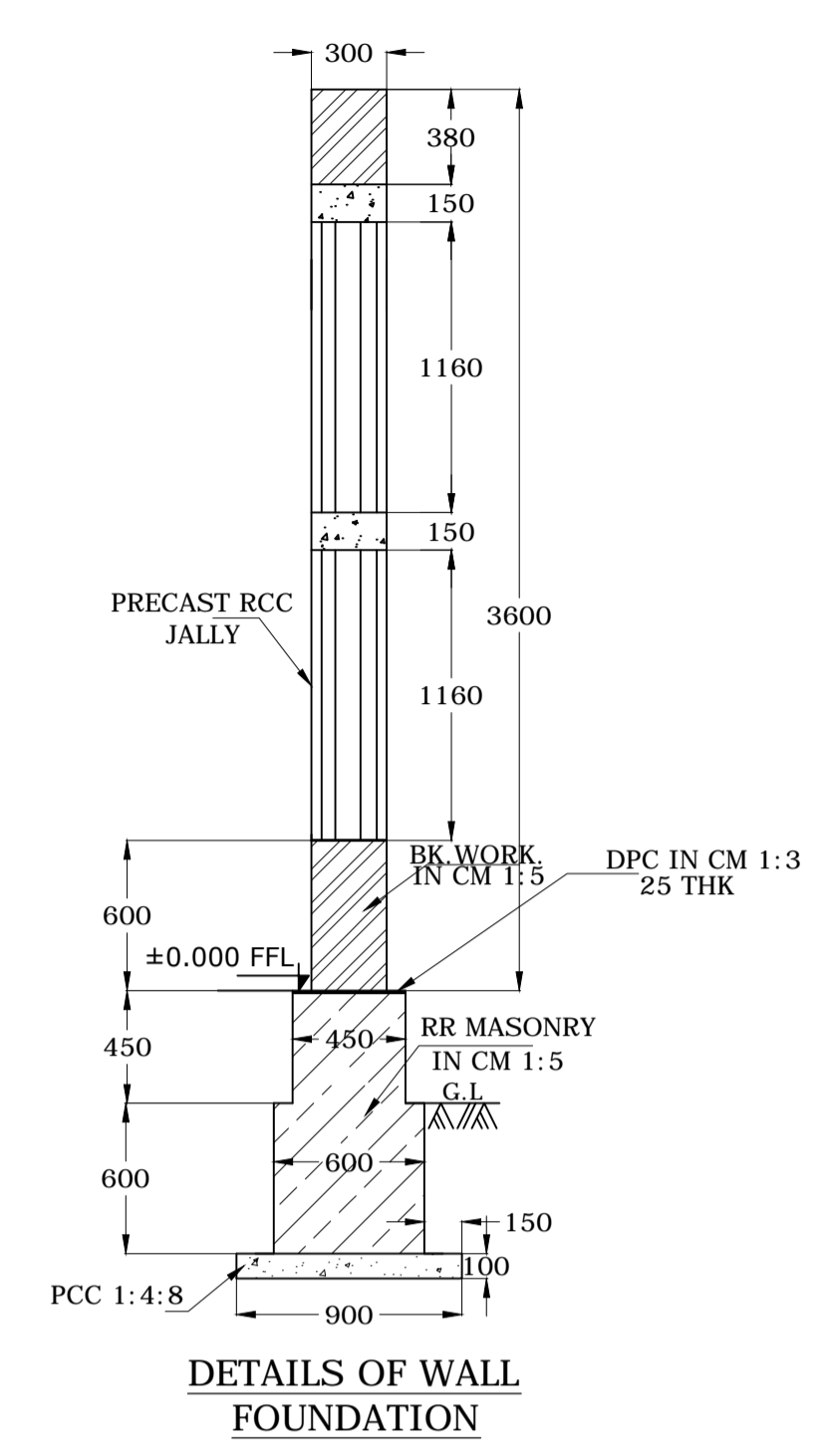
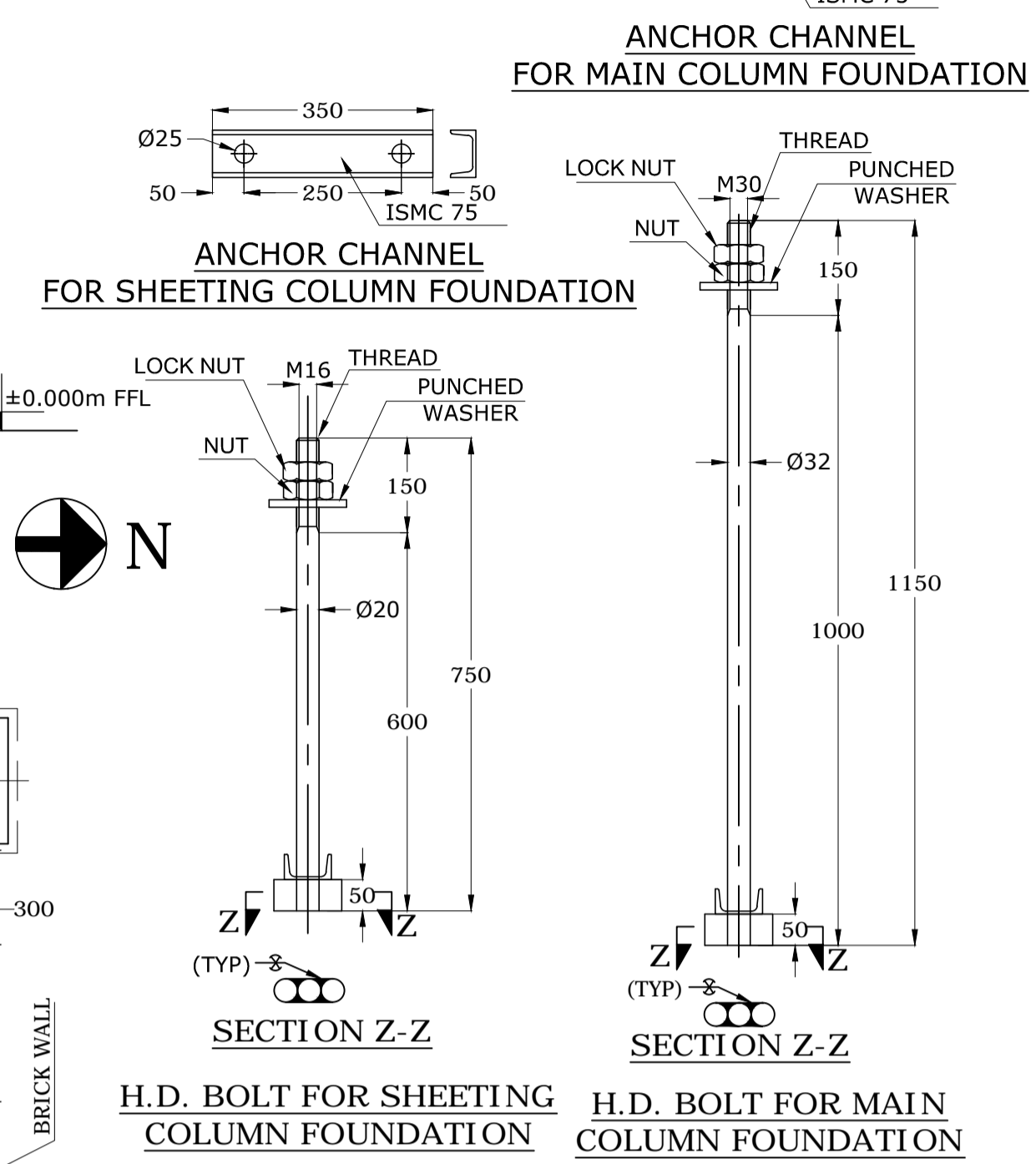
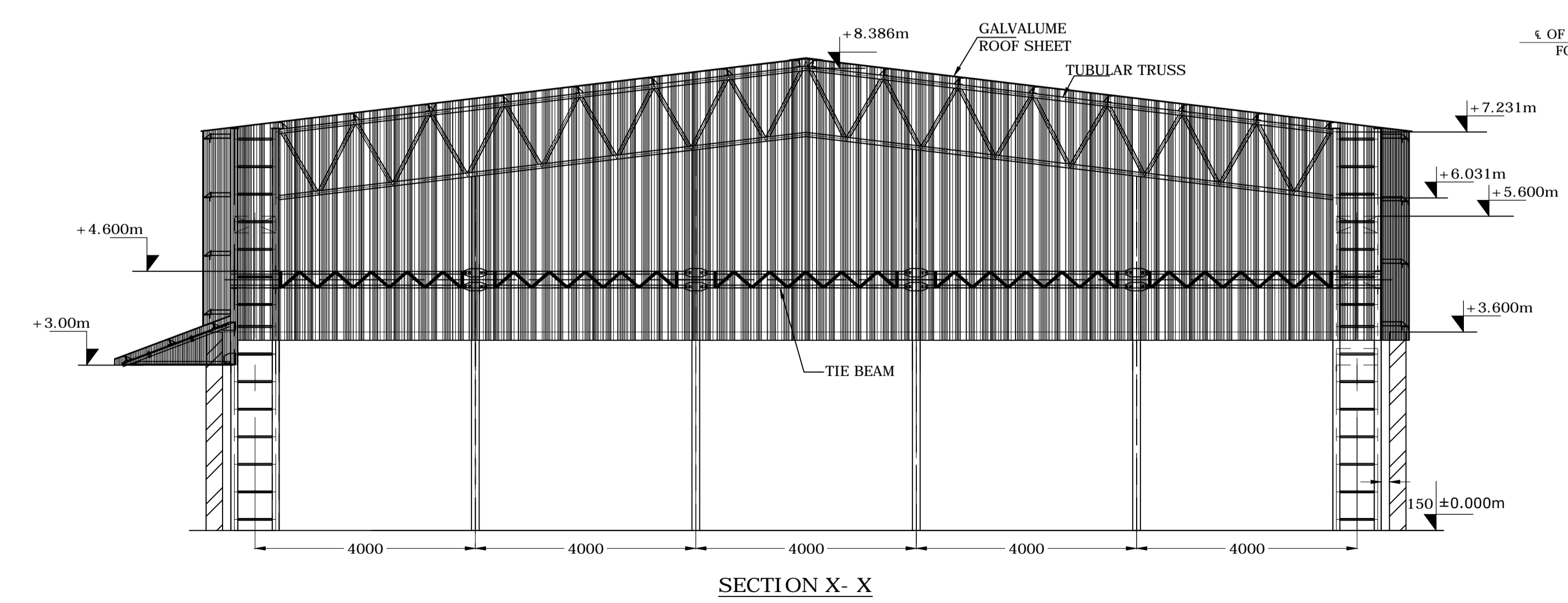
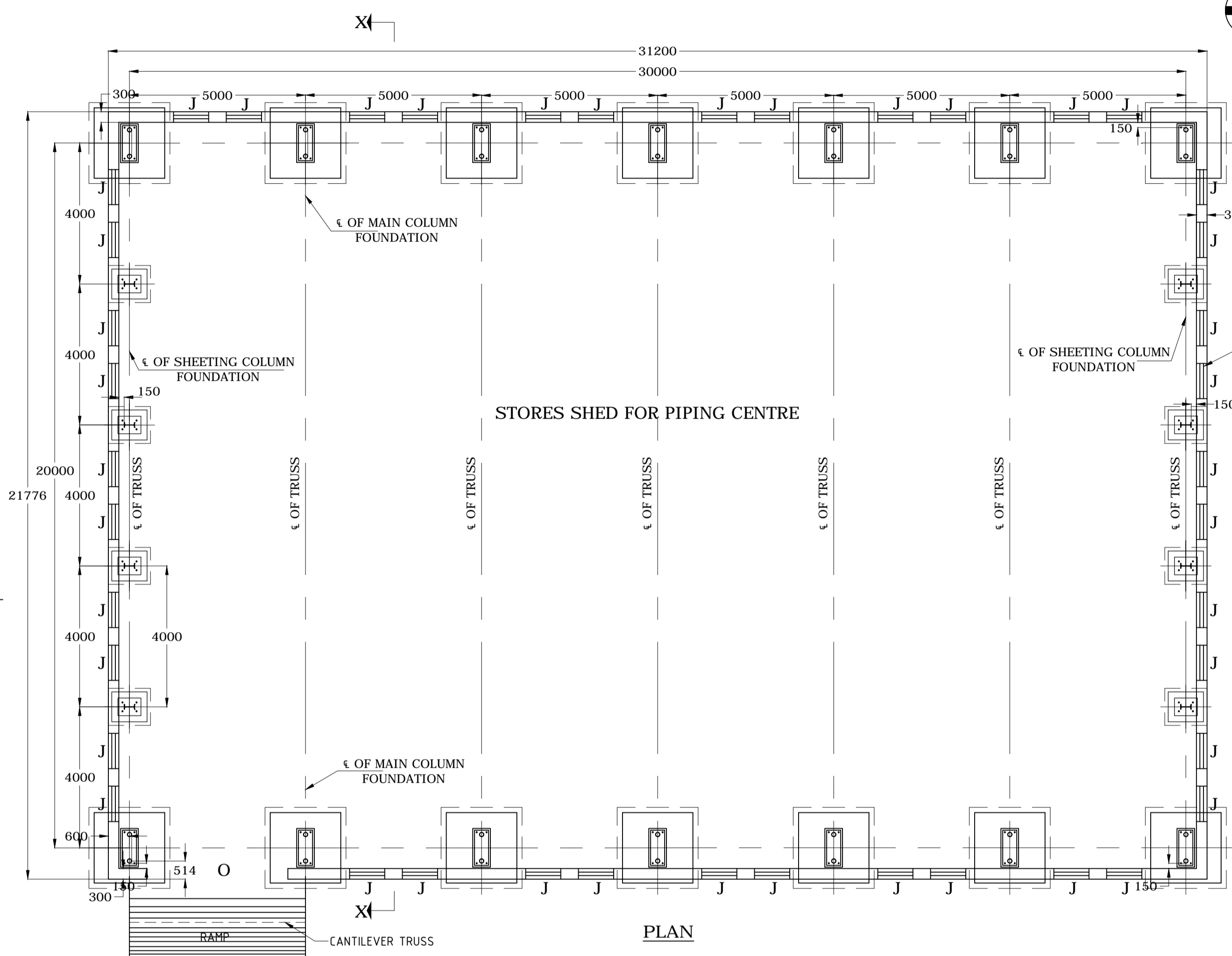
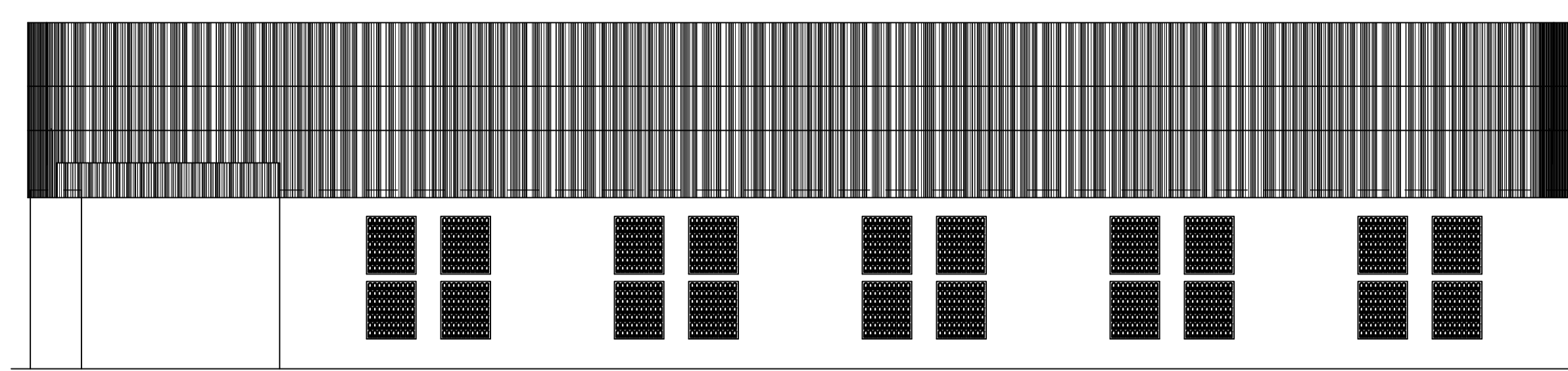
### LEAD STATEMENT

Sl.No.	Name of Material	Name of Source	Lead Particulars both for Factory and Township
1	Cement	BHEL Stores	2 Kilometre
2	M.S Rounds, C.T.D Bars & Structural Steel, rails and all railway materials	BHEL Stores	2 Kilometre

**CONTRACTOR**

17

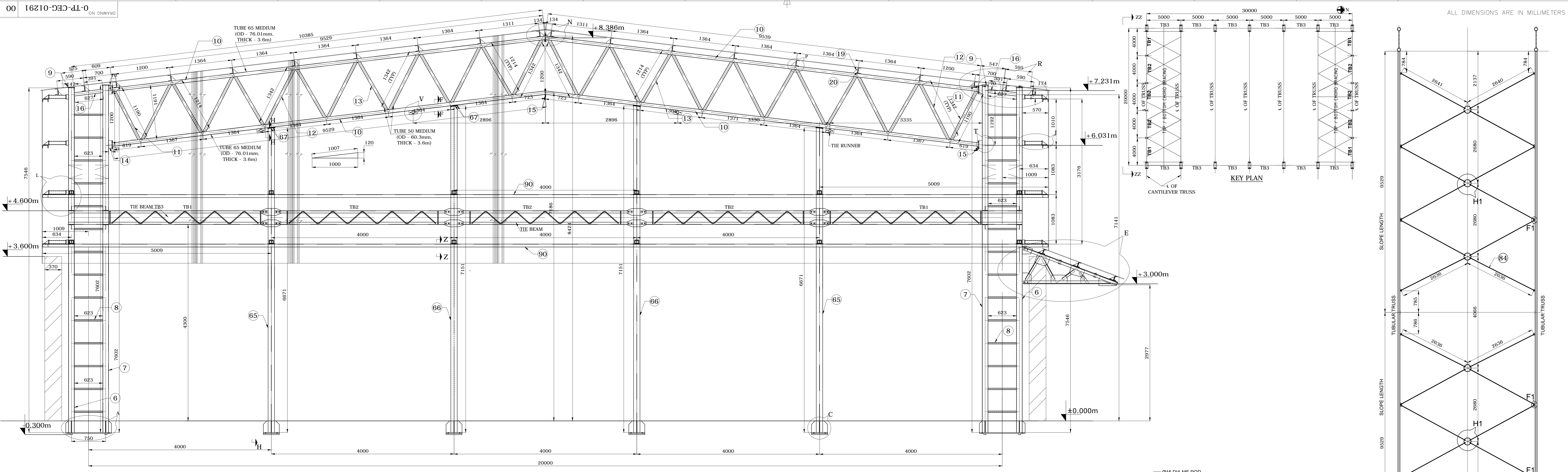
**ACCEPTING OFFICER**



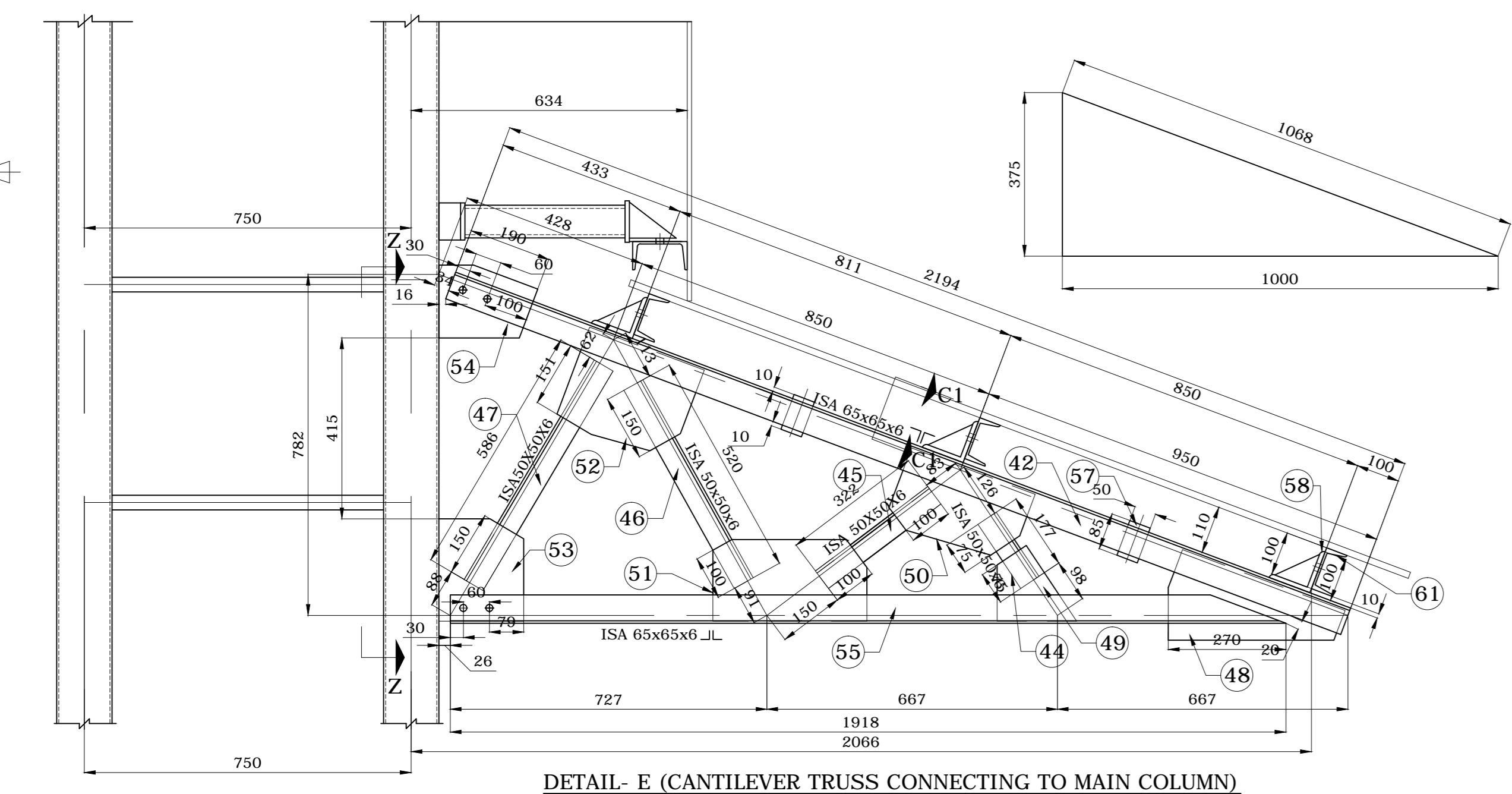
- NOTES:-**
- 1) ALL DIMENSIONS ARE IN 'MM' & LEVELS ARE IN 'M'
  - 2) DO NOT SCALE THE DRAWING. FOLLOW WRITTEN DIMENSION ONLY
  - 3) CLEAR COVER TO REINFORCEMENT AS FOLLOWS
    - a) FOOTING - 50 mm
    - b) PEDESTAL SIDE & TOP - 40 mm
  - 4) CONCRETE GRADE M20
  - 5) ALL REINFORCEMENT BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS CONFORMING TO IS: 1786-(LATEST REVISION)
  - 6) IF SOIL AT FOUNDING LEVEL IS LOOSE EXTRA EXCAVATION TO BE CARRIED OUT TILL HARD STRATA AND EXTRA EXCAVATED PORTION TO BE FILLED WITH PCC
  - 7) ALL HD BOLTS SHALL CONFORM TO IS:2062
  - 8) FOR DETAILS OF STRUCTURAL STEEL FABRICATION REFER SEPARATE DRAWINGS.
- LEGEND:-**
- O - OPENING - 4000 X 3600
  - J - RCC JALLY - 1000 X 1160

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		PIPING STORES NEAR RPS			
DEPT: CIVIL		GRADE OF UNTOL. DIM: C/M/F		SCALE	WEIGHT (Kg)
TIRUCHIRAPALLI - 620014		TIRUCHIRAPALLI - 620014		REF TO ASSY / OLD DWG	ITEM NO
GENERAL ARRANGEMENT OF STORES SHED FOR PIPING CENTRE		CARD CODE: U 01	DRAWING NO: 1-TP-CEG-01258		REV: 00
UNIT: HIGH PRESSURE BOILER PLANT		NAME: P. SEETHALAKSHMI		SIGNATURE: [Signature]	DATE: 04.04.2013
TIRUCHIRAPALLI - 620014		NAME: K. GUNASEKARAN		SIGNATURE: [Signature]	DATE: 04.04.2013

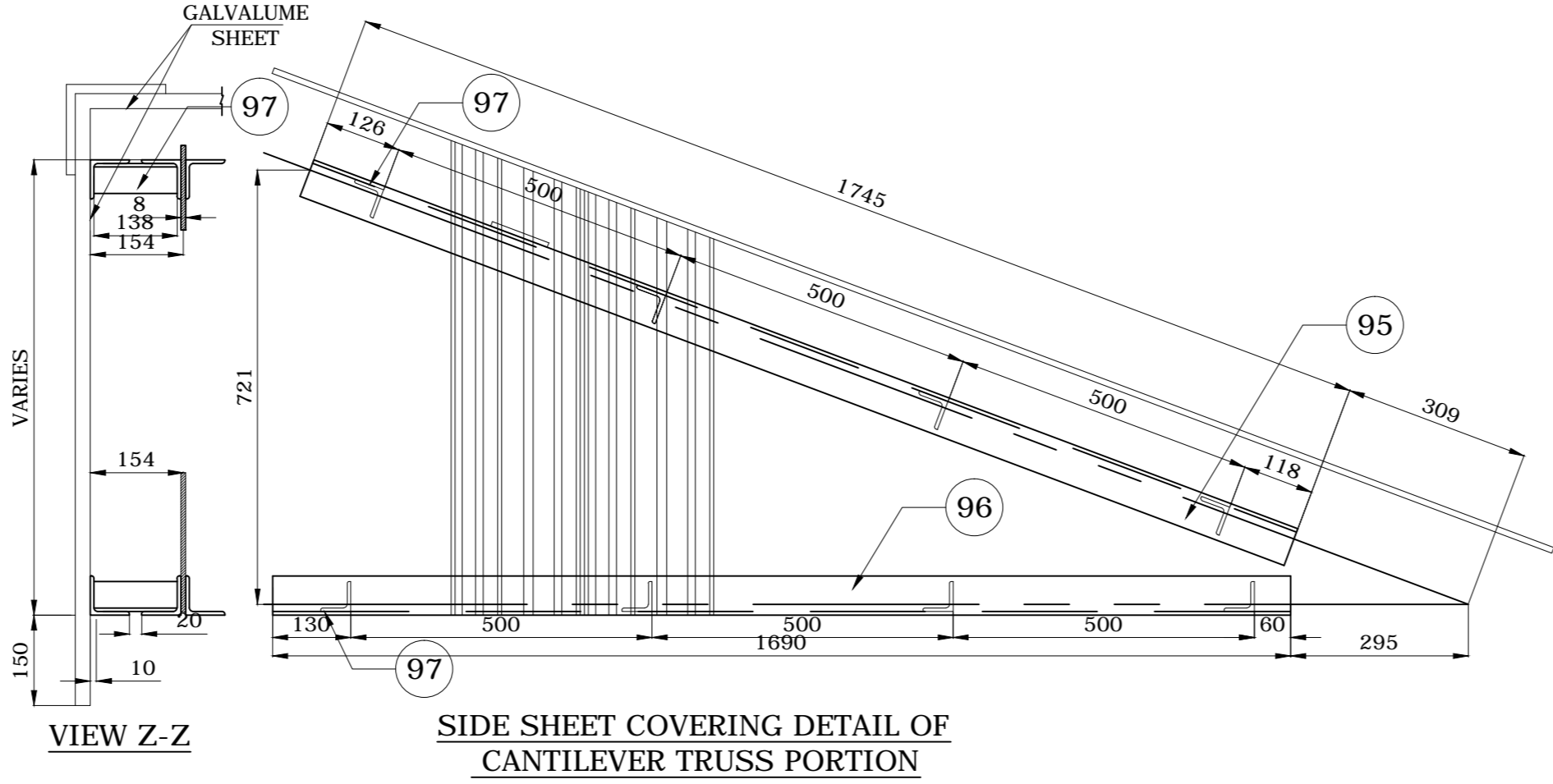
CAUTION: The information in this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way without the prior written consent of the company.



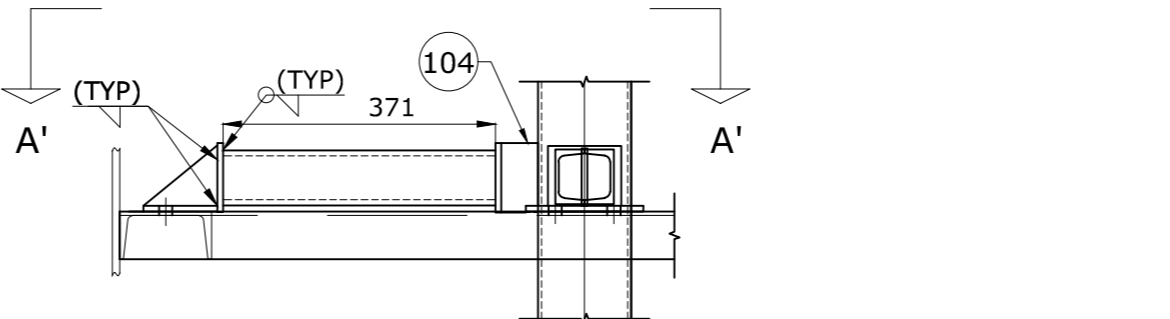
VIEW ZZ - ZZ



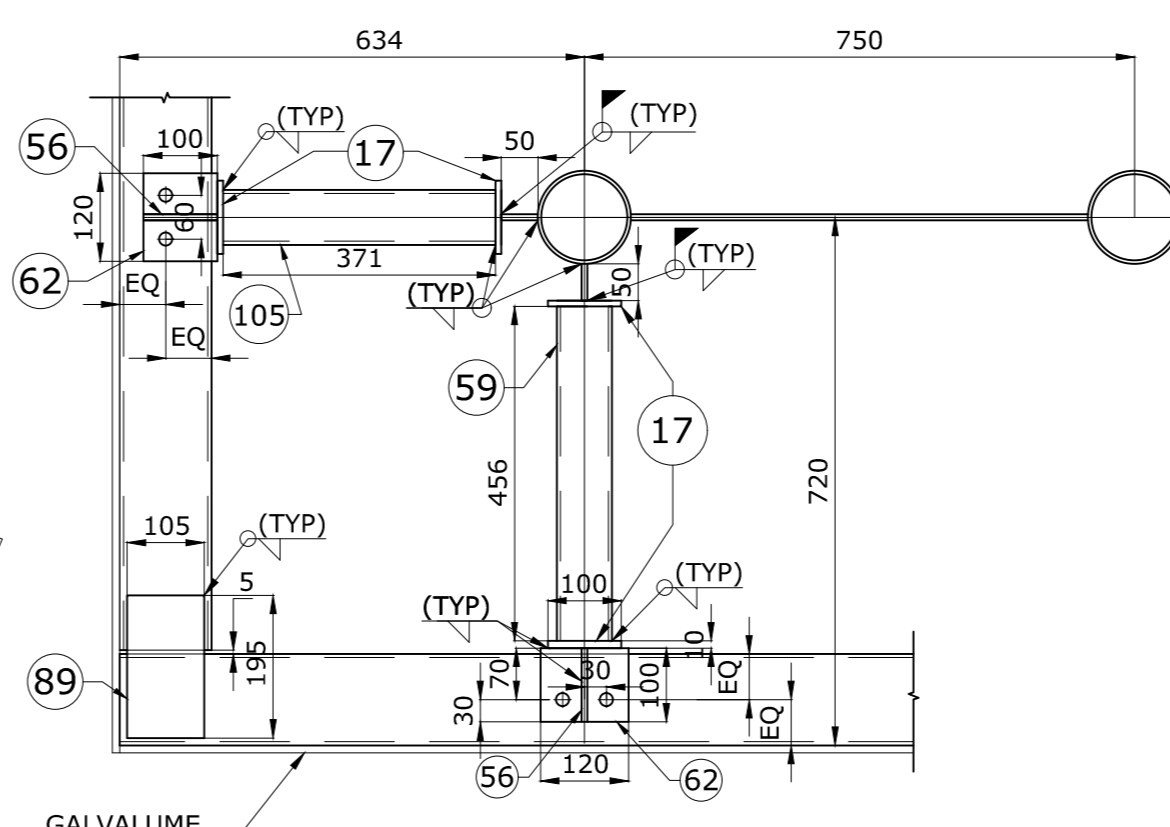
DETAIL - E (CANTILEVER TRUSS CONNECTING TO MAIN COLUMN)



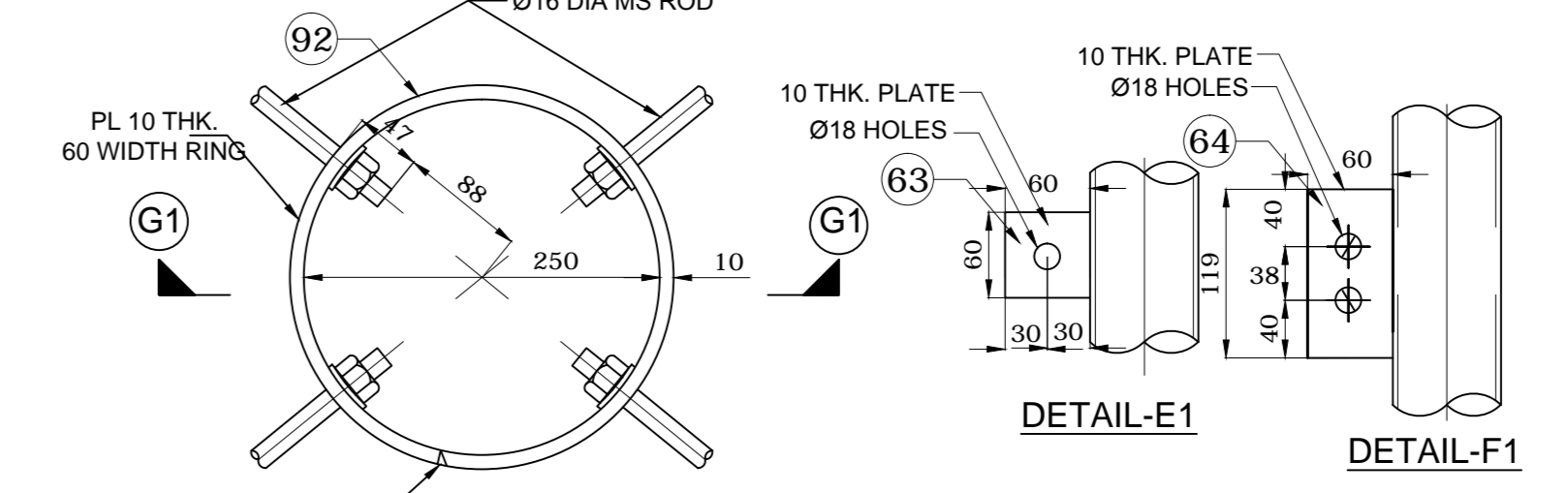
SIDE SHEET COVERING DETAIL OF CANTILEVER TRUSS PORTION



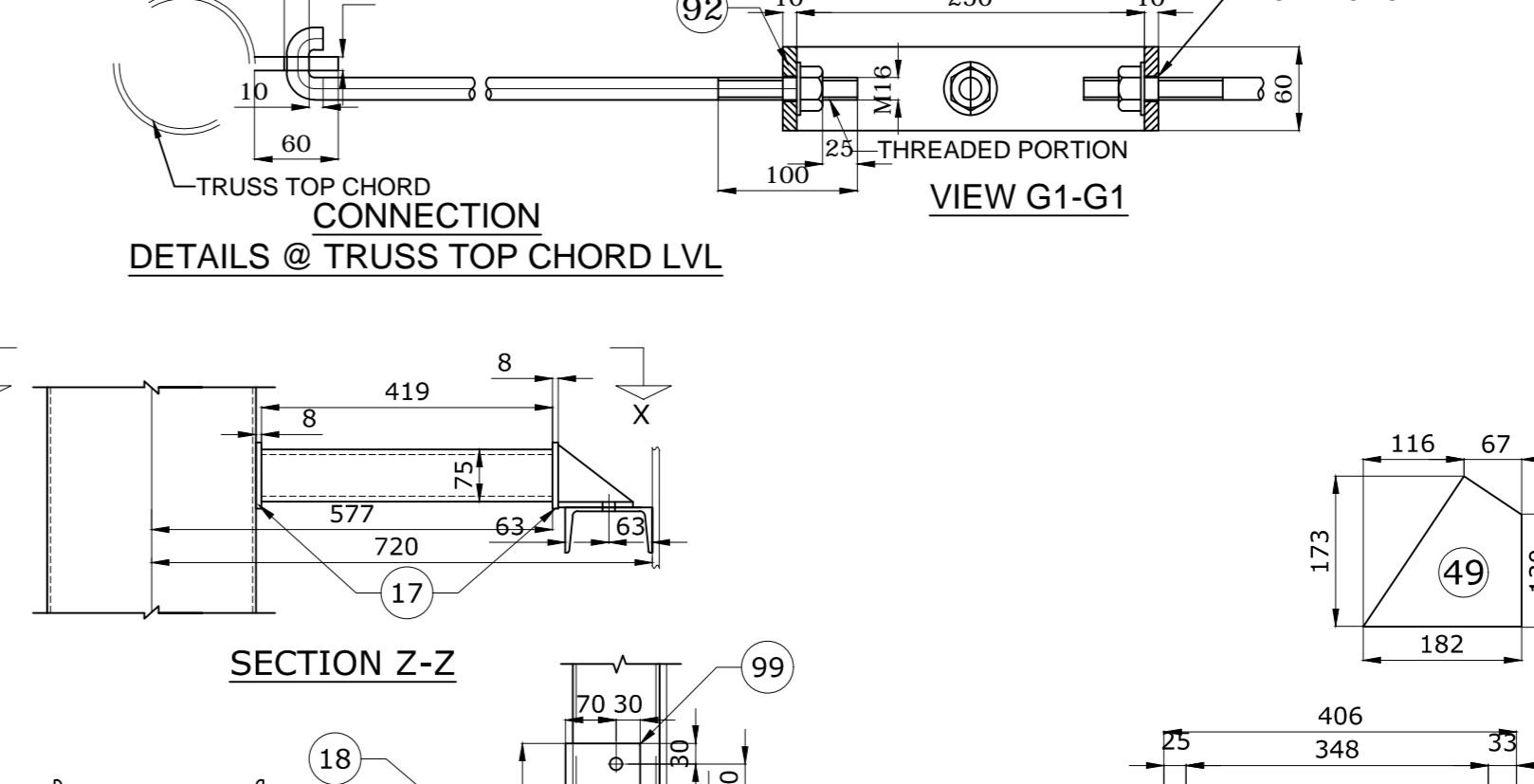
ENLARGED VIEW - L



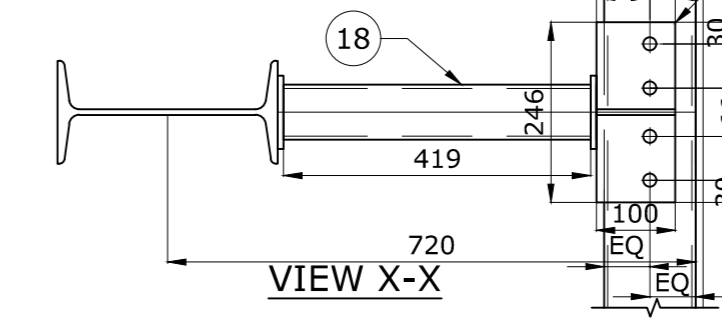
VIEW - A-A'



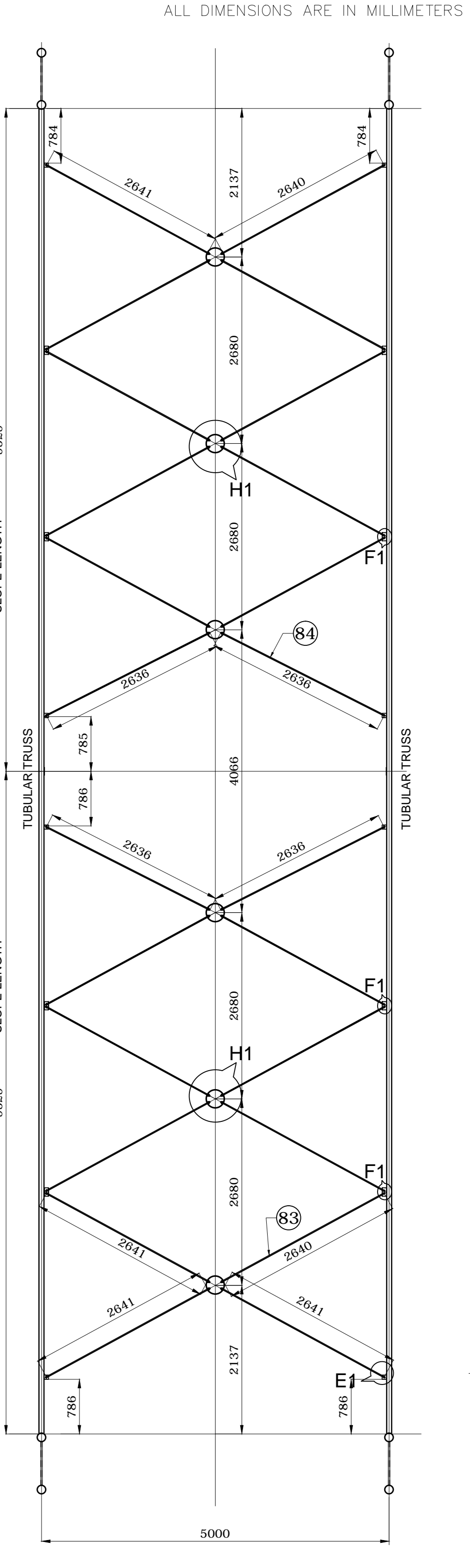
DETAILS @ TRUSS TOP CHORD LVL



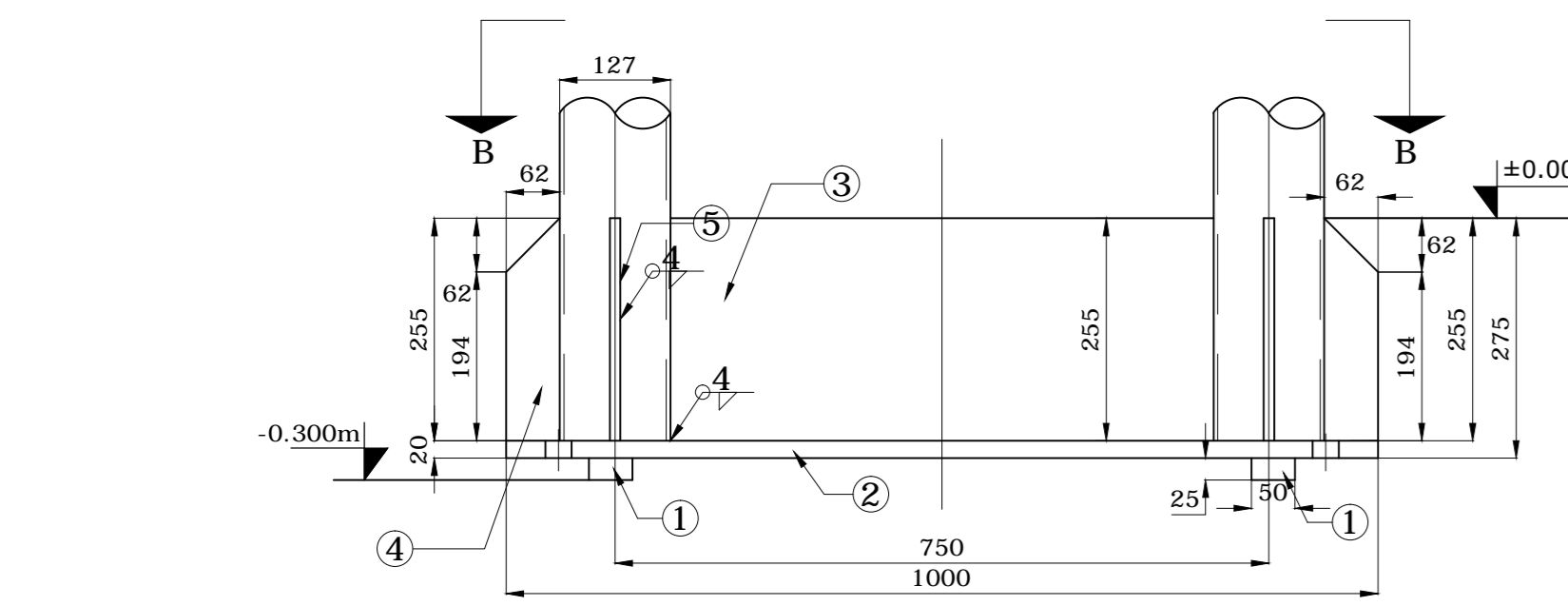
SECTION Z-Z



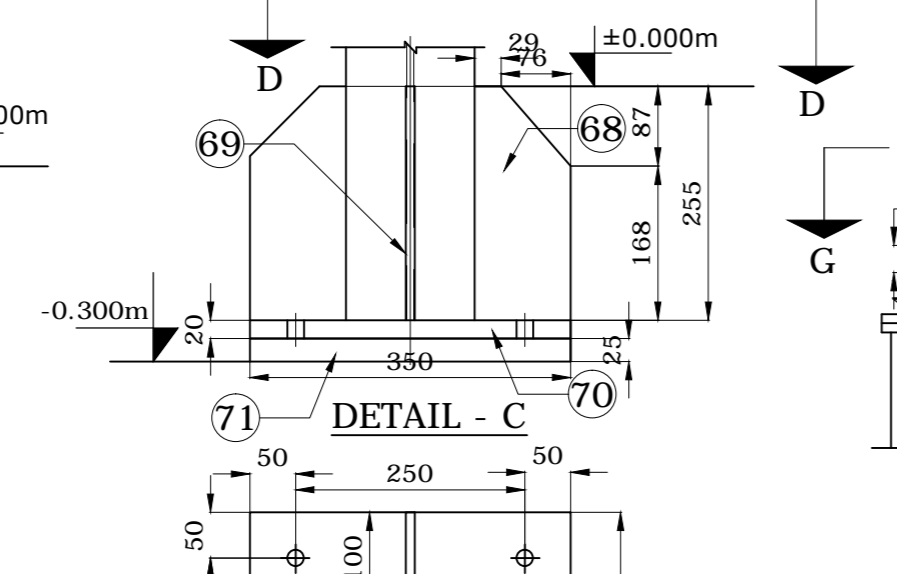
VIEW X-X'



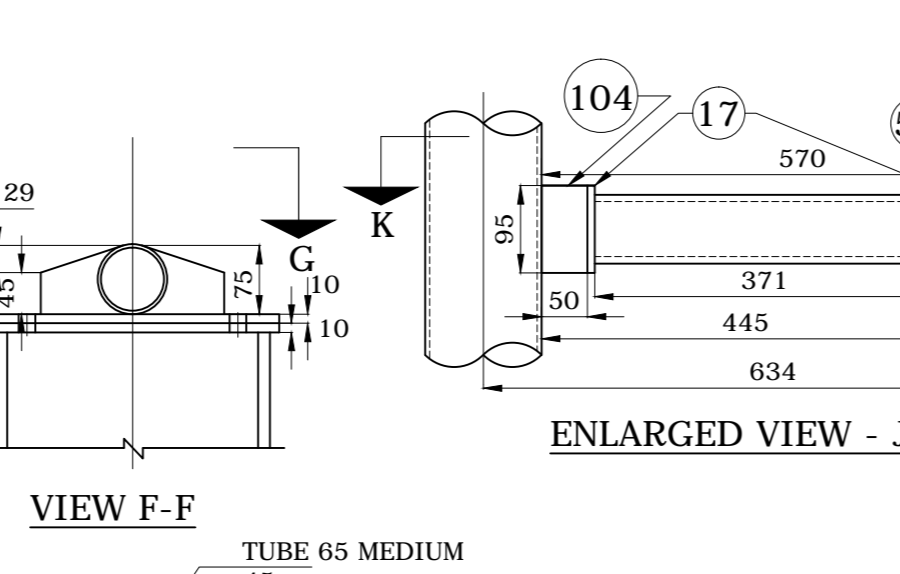
TOP CHORD BRACING / BOTTOM CHORD BRACING



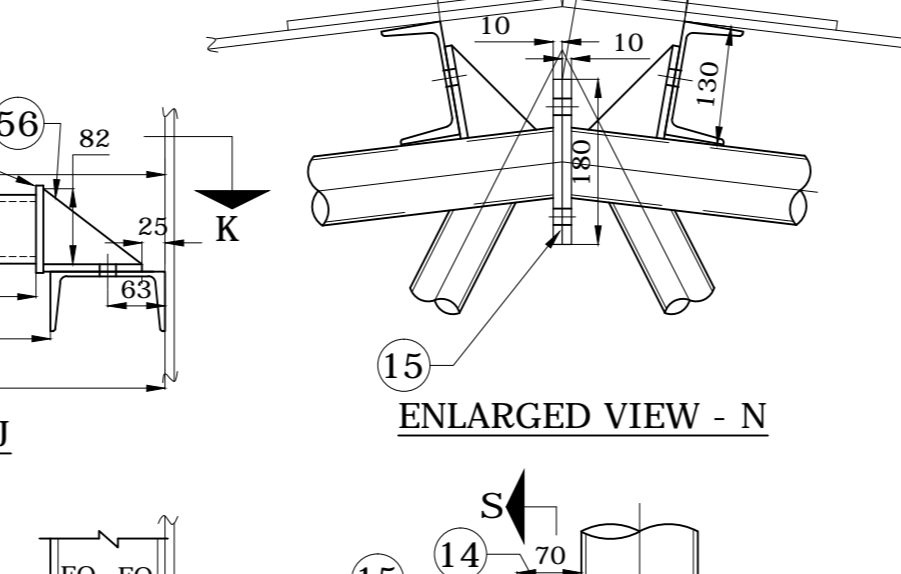
DETAIL - A



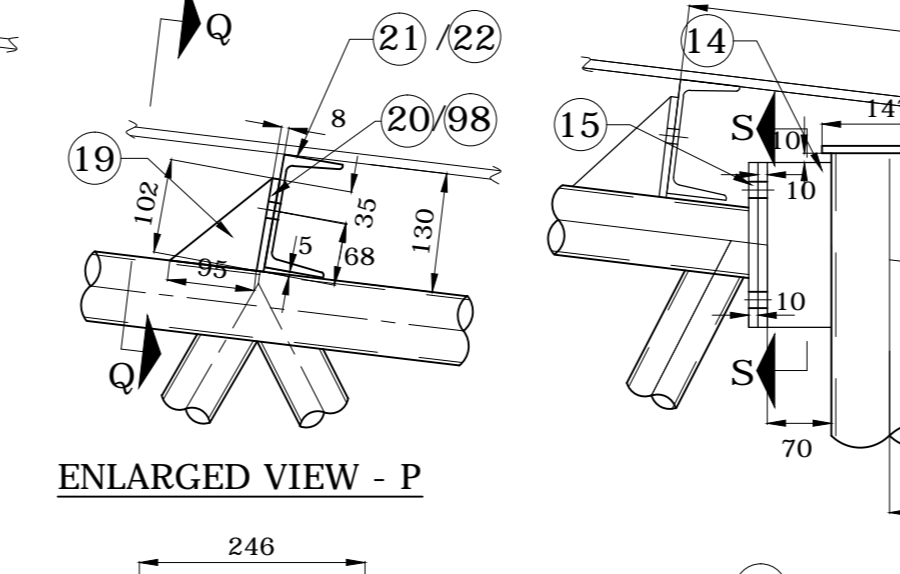
VIEW D-D



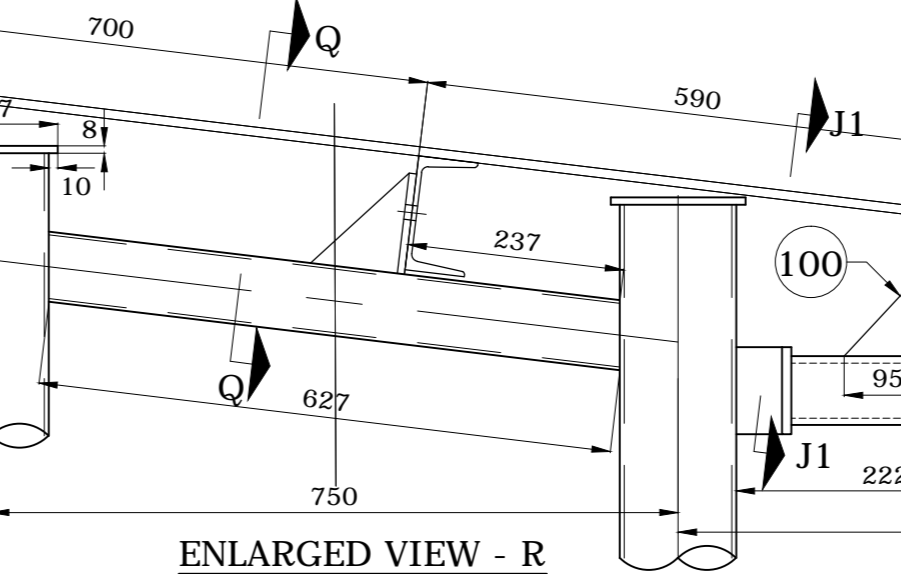
ENLARGED VIEW - J



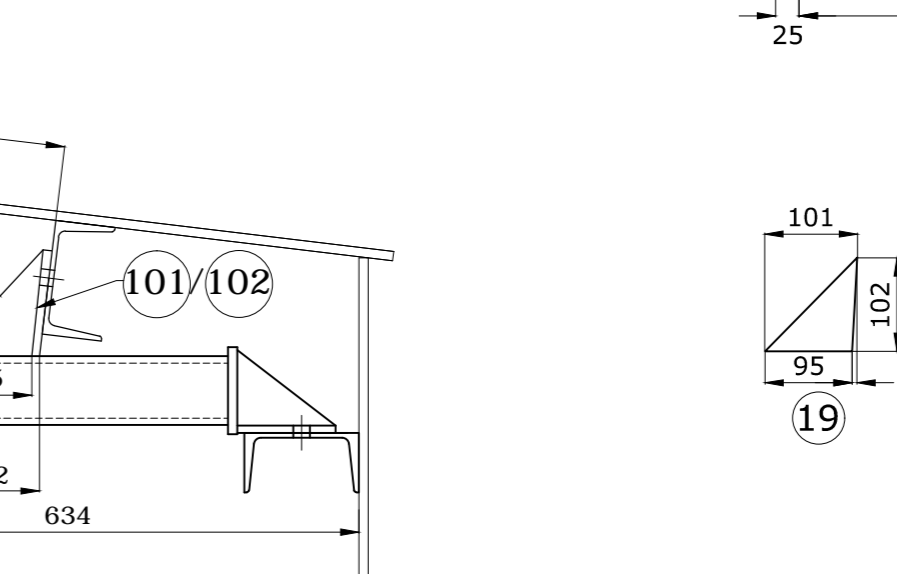
ENLARGED VIEW - N



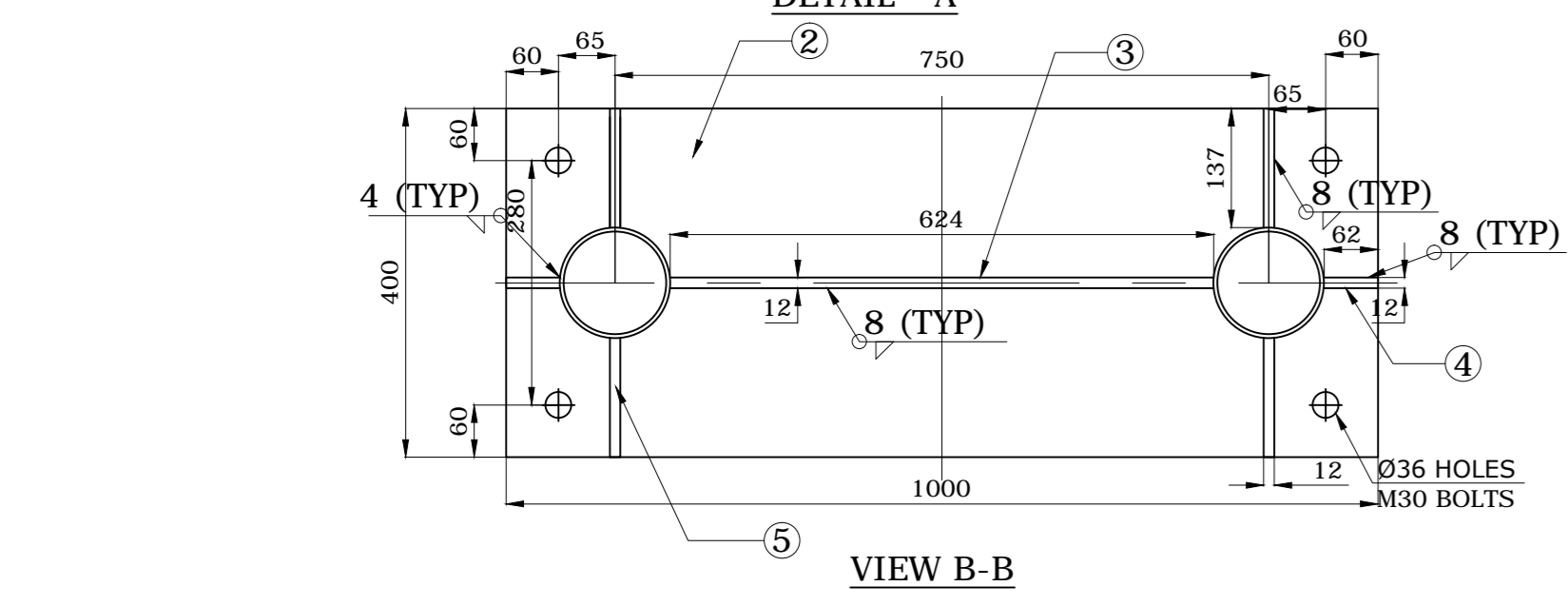
ENLARGED VIEW - P



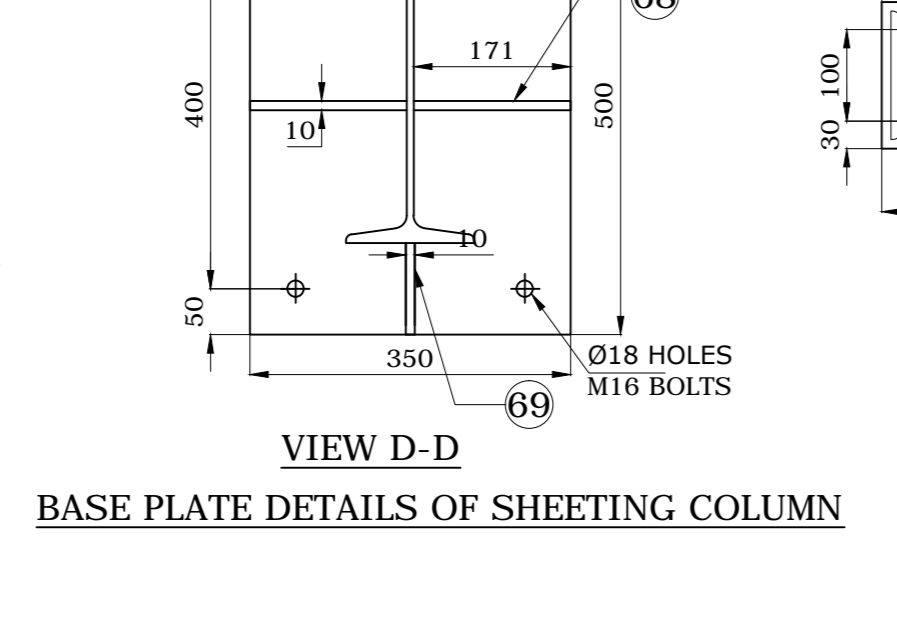
ENLARGED VIEW - R



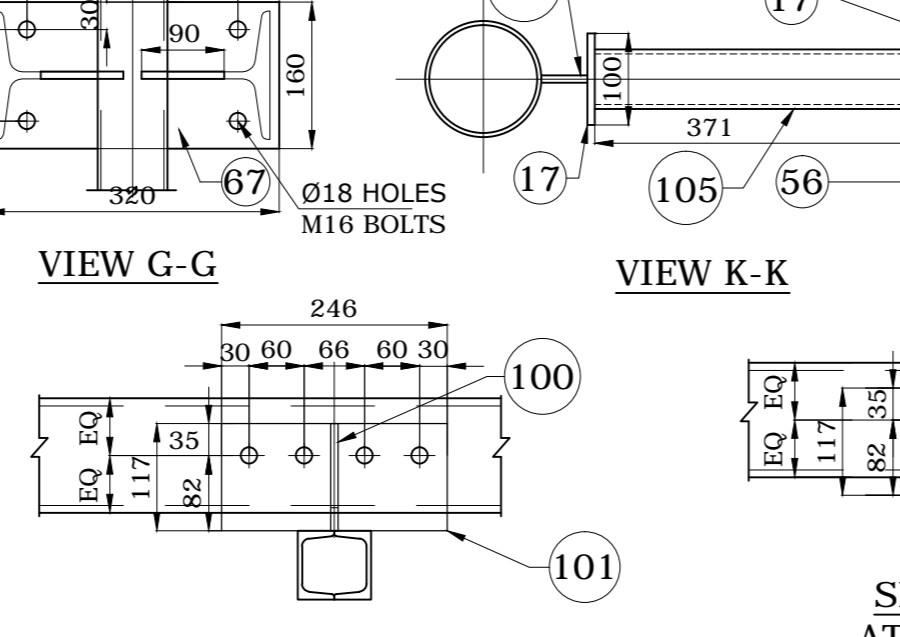
VIEW - W-W



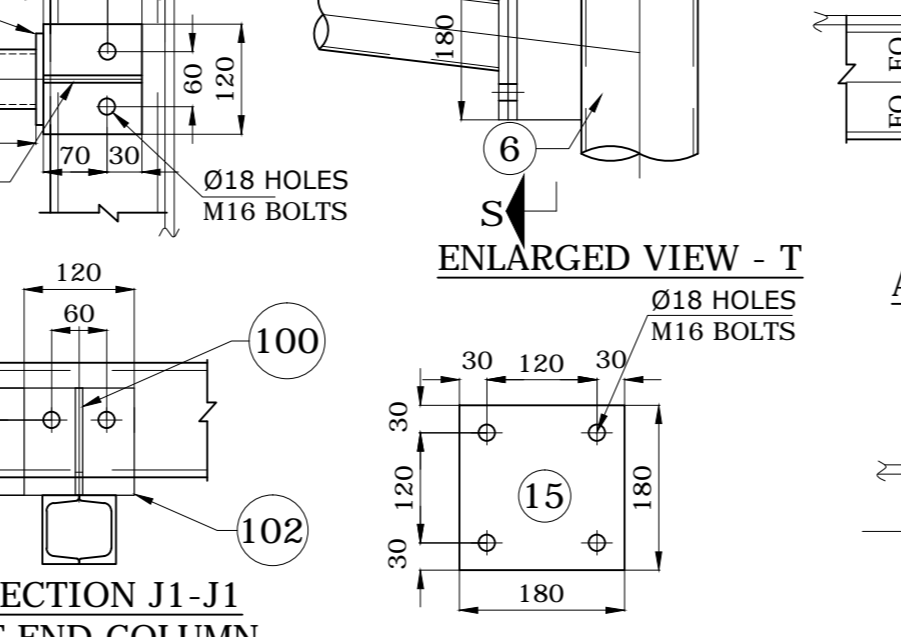
VIEW B-B



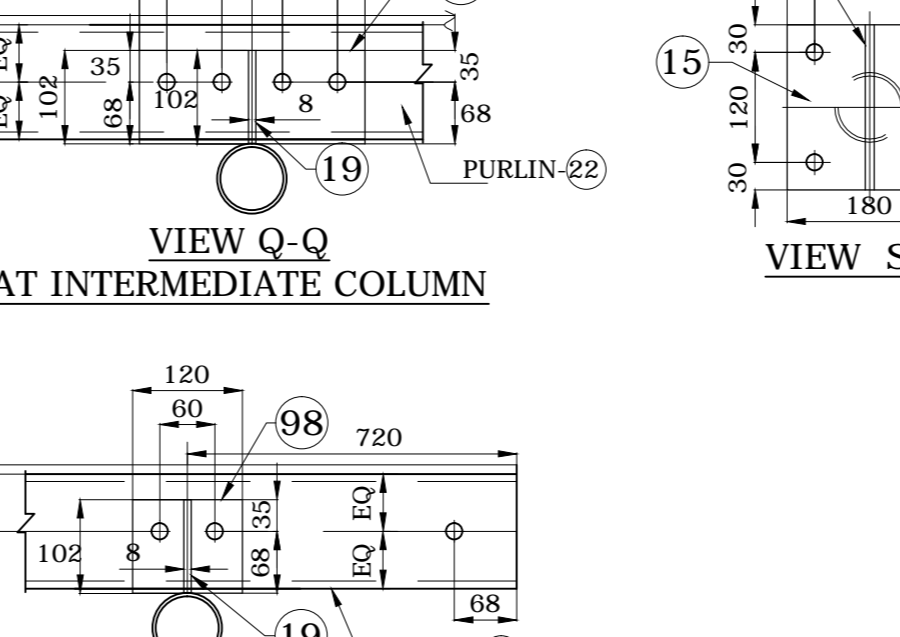
BASE PLATE DETAILS OF SHEETING COLUMN



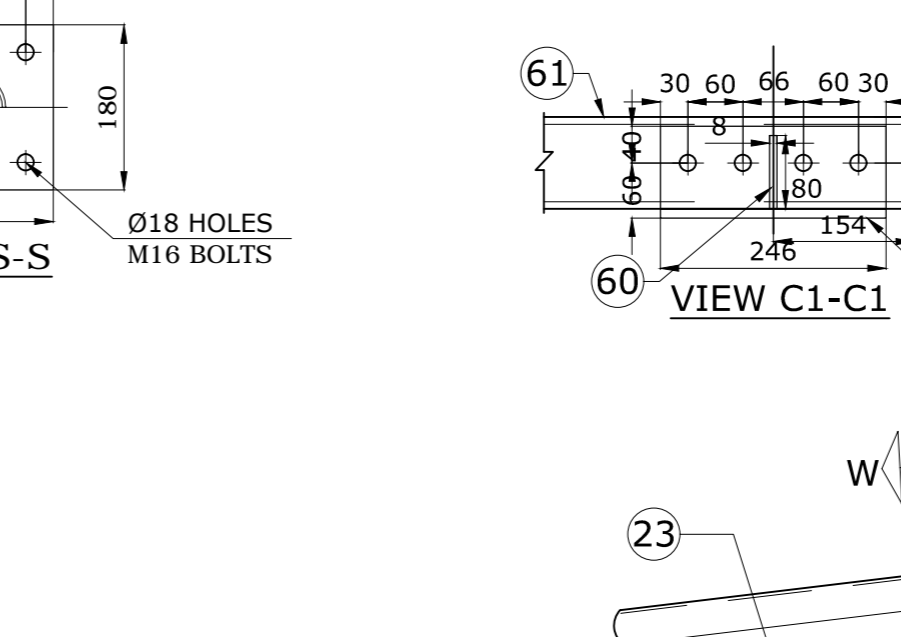
SECTION J1-J1 AT INTERMEDIATE COLUMN



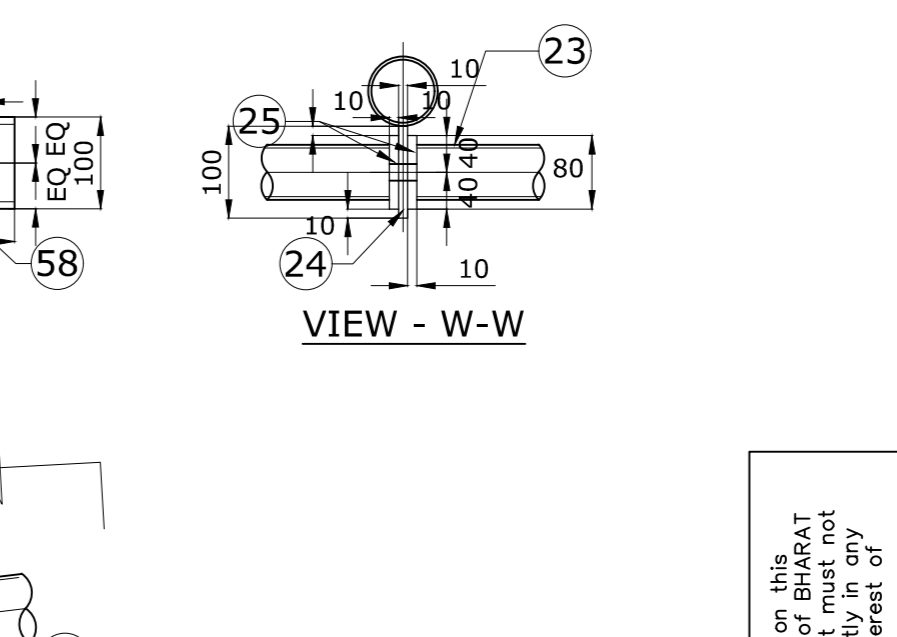
ENLARGED VIEW - T



VIEW Q-Q AT INTERMEDIATE COLUMN



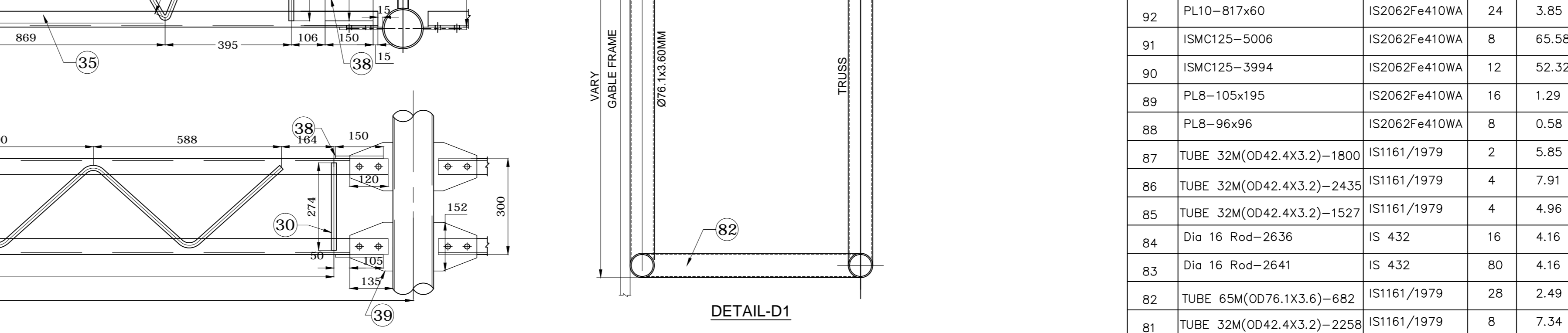
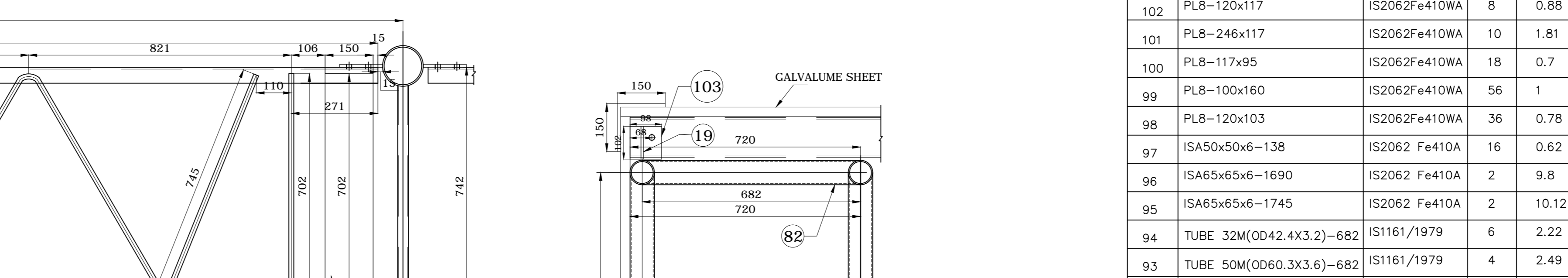
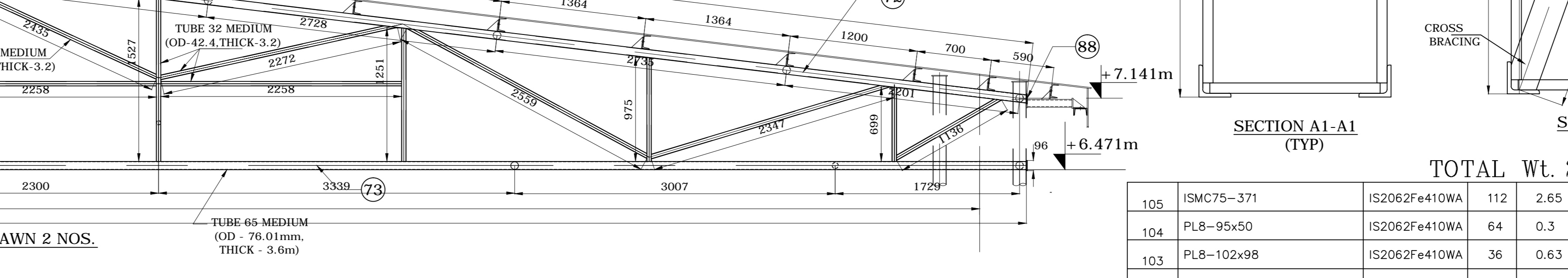
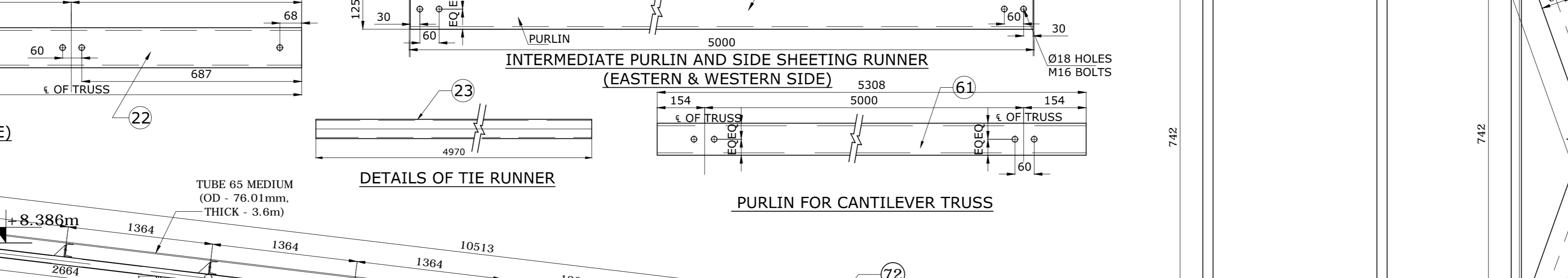
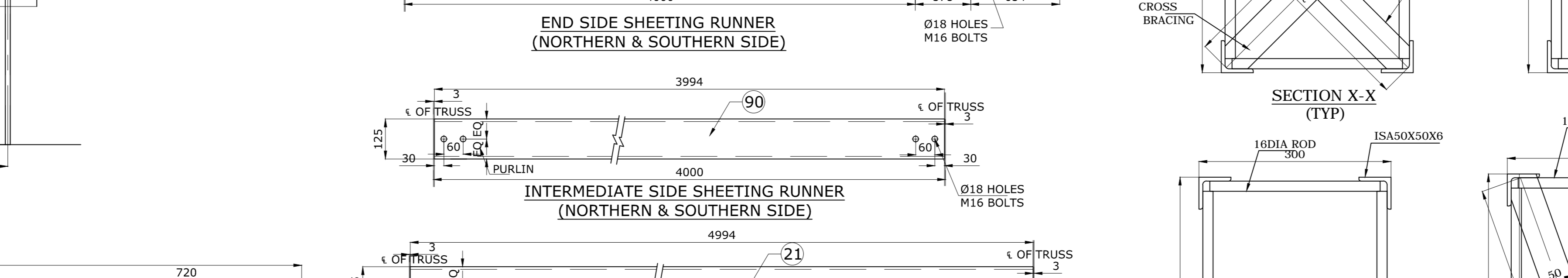
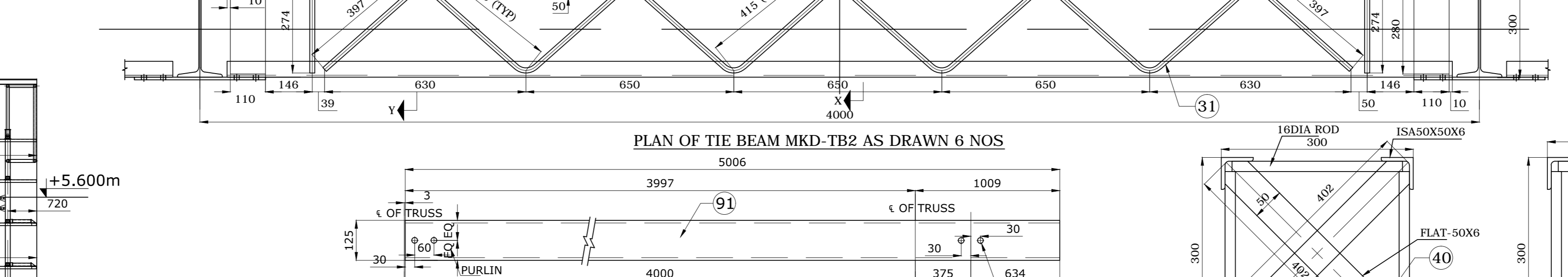
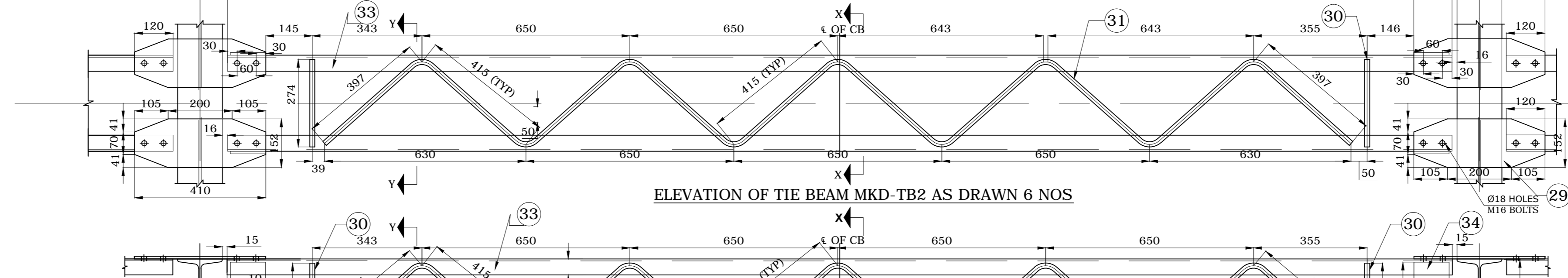
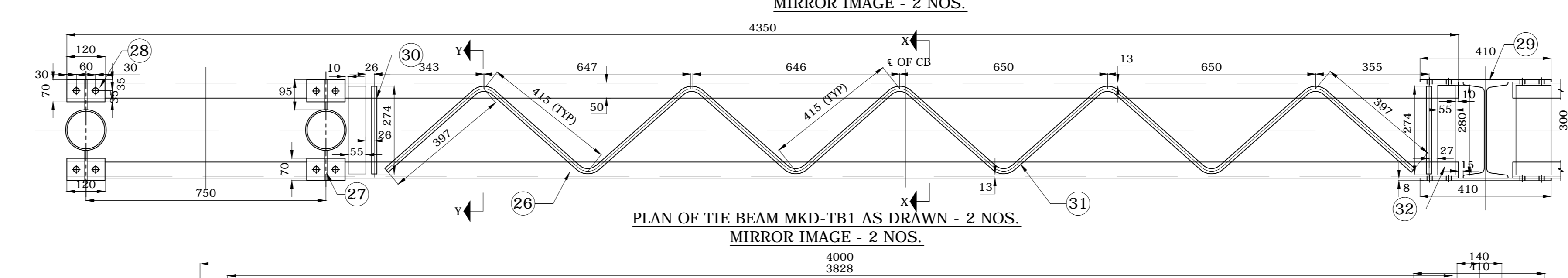
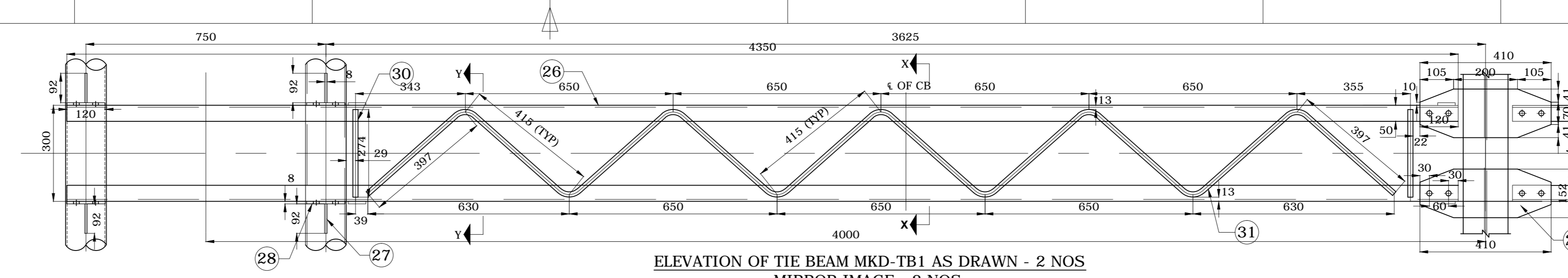
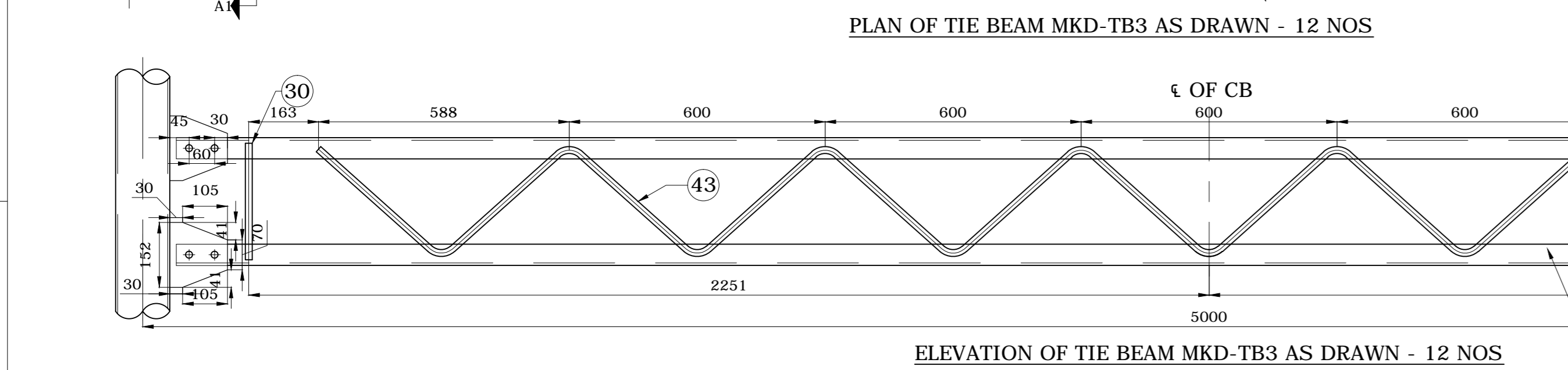
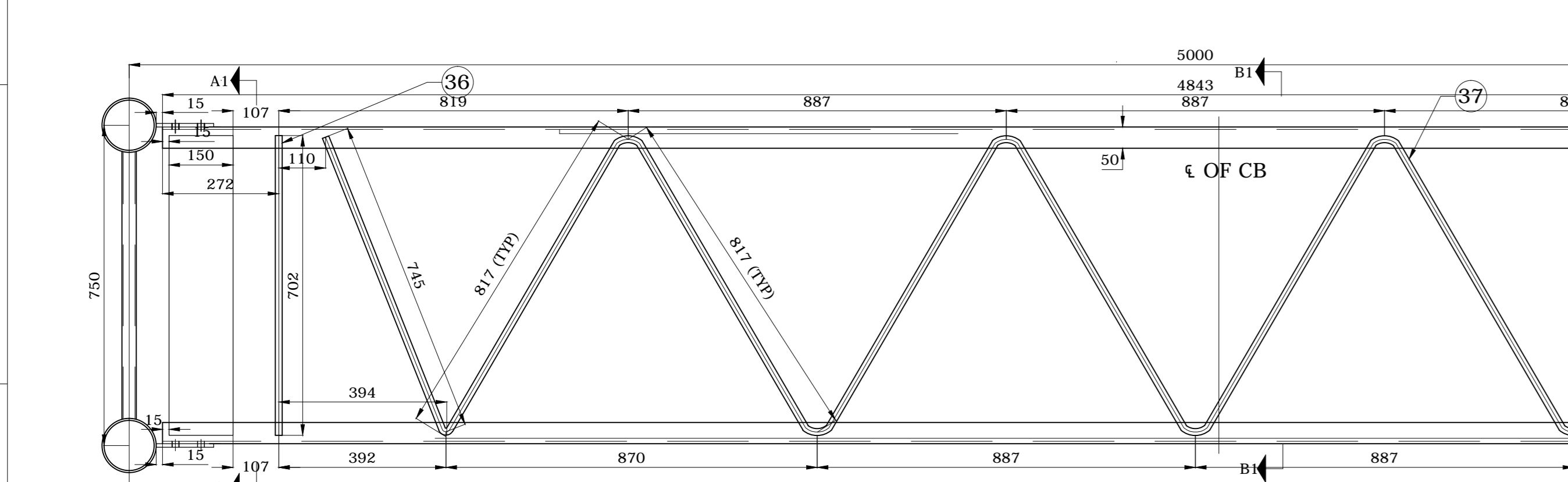
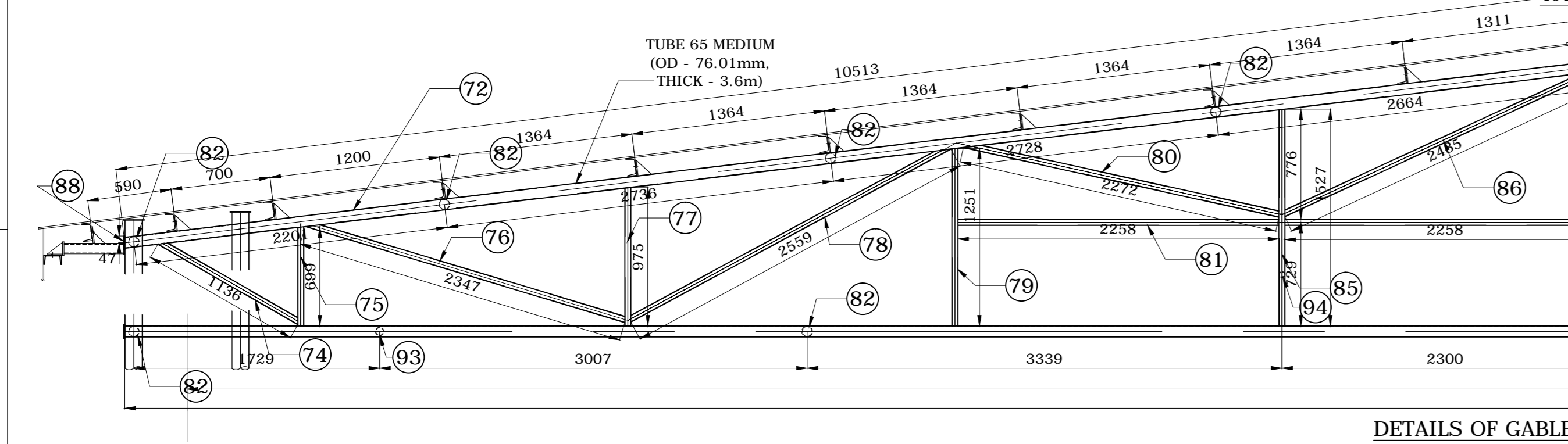
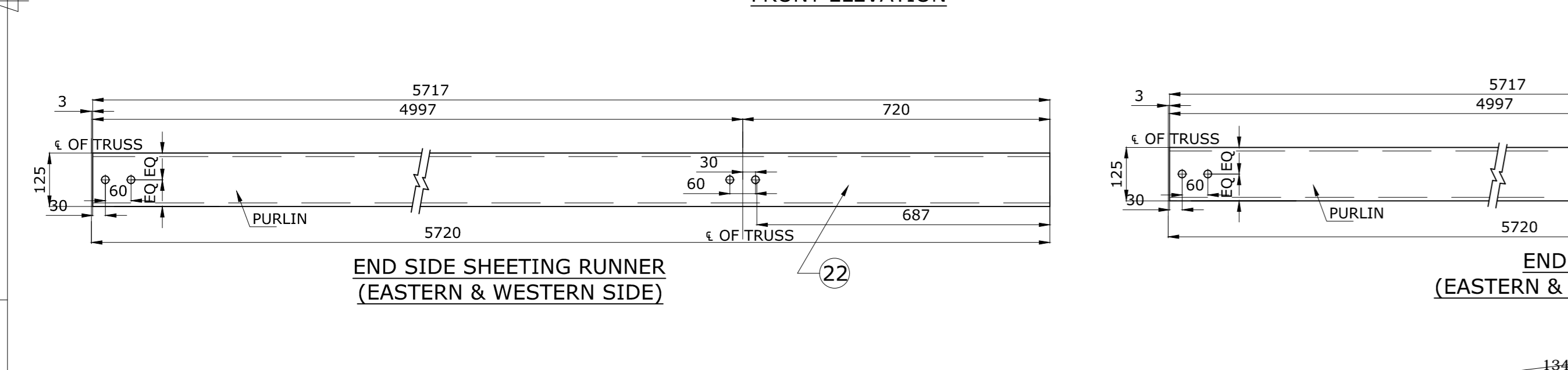
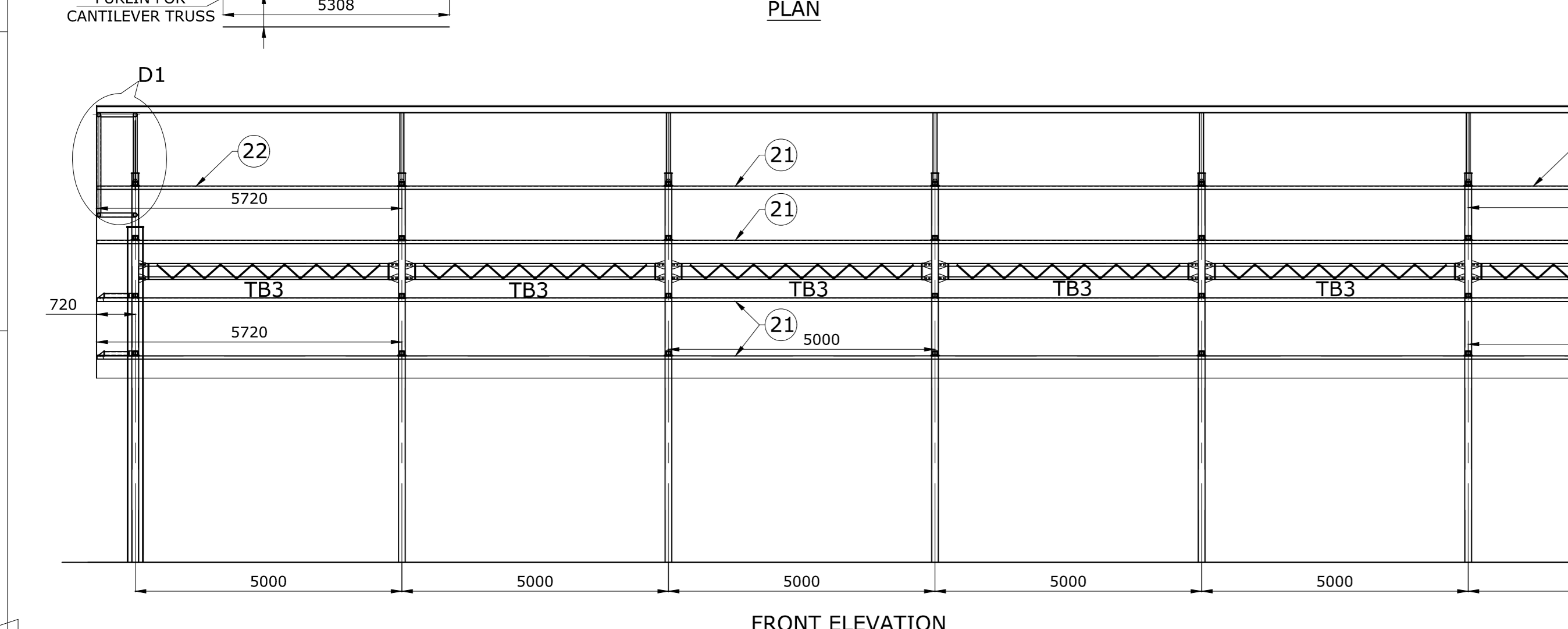
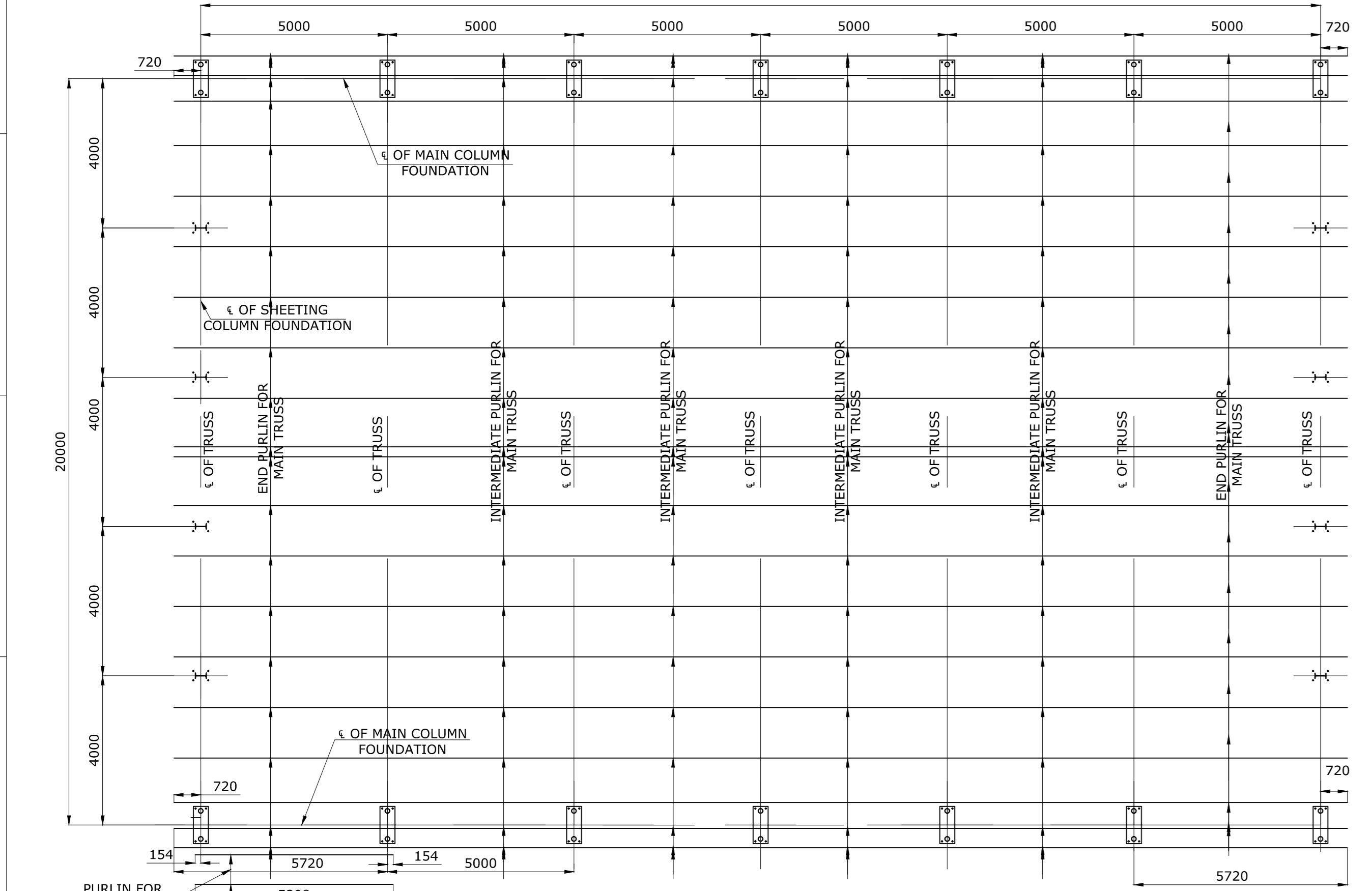
VIEW S-S



VIEW C1-C1

- NOTES**
1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES
  2. DO NOT SCALE THE DRAWING FOLLOW WRITTEN DIMENSIONS ONLY
  3. ALL STRUCTURAL STEEL CONFORMING TO IS- 2062-LATEST
  4. ALL THE STRUCTURAL TUBE CONFORMING TO IS 1161-1998
  5. ALL WELD SIZES ARE AS NOTED IN THE DRAWING AND MINIMUM SIZE OF WELD IS 3 MM FILLET FOR TUBULAR MEMBER AND 6MM FILLET FOR ROLLED SECTIONS
  6. ALL THE SIZES AND SHAPES OF THE MEMBERS ARE TO BE TAKEN FROM THE MARKING PLATFORM
  7. USE E6013 ELECTRODE FOR ALL WELDING
  8. ALL TUBULAR MEMBERS ARE END FLATTENED BEFORE WELDING AND CARE SHALL BE TAKEN WHILE FLATTENING TO AVOID CRACKING OF TUBES
  9. ALL THE MEMBERS ARE TO BE WELDED FOR ITS FULL CONTACT LENGTH
  10. MATERIAL LIST IS GIVEN FOR WHOLE ASSEMBLY
  11. FOR GENERAL ARRANGEMENT REF. DRG. No. 1-TP-CGC-1258

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT <b>PIPING STORES NEAR RPS</b>		NAME <b>VINOTH S</b>		SIGNATURE 		DATE <b>18.10.2013</b>		NO. OF SHEETS <b>1/2</b>	
UNIT: HIGH PRESSURE BOILER PLANT THIRUCHIRAPPALLI - 620014		DESIGNED BY <b>BEETHALAKSHMI P</b>		CHECKED BY <b>BEETHALAKSHMI P</b>		DATE <b>18.10.2013</b>		NO. OF SHEETS <b>1/2</b>	
SCALE <b>1:30, 1:10, 1:5</b>		WEIGHT (Kgs) <b>REF TO KEYSET / OLD DRG</b>		DRAWING NO. <b>0-TP-CEG-01291</b>		REV <b>00</b>		SHEET <b>(1/2)</b>	
TITLE <b>STRUCTURAL DETAILS OF STORES SHED</b>		CARD CODE <b>U 01</b>		DRAWING NO. <b>0-TP-CEG-01291</b>		SHEET <b>(1/2)</b>		REV <b>00</b>	



ALL DIMENSIONS ARE IN MILLIMETERS

ITEM NO.	DESCRIPTION	MATERIAL SPECN.	NOS	(KG)	GROSS WT (KG)	REMARKS
79	TUBE 32M(OD42.4X3.2)-1251	IS1161/1979	4	4.07	16.26	
78	TUBE 32M(OD42.4X3.2)-2558	IS1161/1979	4	8.31	33.25	
77	TUBE 32M(OD42.4X3.2)-975	IS1161/1979	4	3.17	12.68	
76	TUBE 32M(OD42.4X3.2)-2347	IS1161/1979	4	7.63	30.51	
75	TUBE 32M(OD42.4X3.2)-699	IS1161/1979	4	2.27	9.09	
74	TUBE 32M(OD42.4X3.2)-1136	IS1161/1979	4	3.69	14.77	
73	TUBE 65M (OD76.1X3.6)-20877	IS1161/1979	2	76.2	152.4	
72	TUBE 65M (OD76.1X3.6)-10513	IS1161/1979	4	38.37	153.49	
71	PL25-350x50	IS2062Fe410WB	16	3.43	54.95	
70	PL20-500x350	IS2062Fe410WA	8	27.48	219.8	
69	PL10-255x100	IS2062Fe410WA	16	2	32.03	
68	PL10-255x171	IS2062Fe410WA	16	3.42	54.77	
67	PL10-320x160	IS2062Fe410WA	16	4.02	64.31	
66	ISM300-7151	IS2062Fe410WA	4	259.58	1038.33	
65	ISM300-6671	IS2062Fe410WA	4	242.16	968.63	
64	PL10-119x60	IS2062Fe410WA	32	0.56	17.94	
63	PL10-60x60	IS2062Fe410WA	32	0.28	9.04	
62	PL8-100x120	IS2062Fe410WA	24	0.75	18.09	
61	ISM100-5308	IS2062Fe410WA	3	50.74	152.23	
60	PL8-80x80	IS2062Fe410WA	6	0.4	2.41	
59	ISM75-456	IS2062Fe410WA	16	3.26	52.09	
58	ISA100x100x10-246	IS2062 Fe410A	6	3.67	21.99	
57	PL8-85x50	IS2062Fe410WA	4	0.27	1.07	
56	PL8-100x82	IS2062Fe410WA	80	0.55	44.08	
55	ISA65x65x6-1918	IS2062 Fe410A	4	11.12	44.5	
54	PL8-227x167	IS2062Fe410WA	2	2.38	4.76	
53	PL8-235x195	IS2062Fe410WA	2	2.88	5.76	
52	PL8-281x229	IS2062Fe410WA	2	4.04	8.08	
51	PL8-354x187	IS2062Fe410WA	2	4.16	8.31	
50	PL8-304x182	IS2062Fe410WA	2	3.47	6.95	
49	PL8-182x173	IS2062Fe410WA	2	1.98	3.95	
48	PL8-406x208	IS2062Fe410WA	2	5.3	10.61	
47	ISA50x50x6-586	IS2062 Fe410A	2	2.64	5.27	
46	ISA50x50x6-520	IS2062 Fe410A	2	2.34	4.68	
45	ISA50x50x6-322	IS2062 Fe410A	2	1.45	2.9	
44	ISA50x50x6-177	IS2062 Fe410A	2	0.8	1.59	
43	Dia 16 Rod-5436	IS 432	24	8.57	205.74	
42	ISA65x65x6-2194	IS2062 Fe410A	4	12.73	50.9	
41	FL50x6-775	IS2062 Fe410A	24	1.86	44.64	
40	FL50x6-402	IS2062 Fe410A	20	0.96	19.3	
39	PL8-152x135	IS2062Fe410WA	96	1.29	123.71	
38	PL8-702x150	IS2062Fe410WA	48	6.61	317.42	
37	Dia 16 Rod-8108	IS 432	24	12.79	306.87	
36	Dia 16 Rod-702	IS 432	48	1.11	53.14	
35	ISA50x50x6-4843	IS2062 Fe410A	48	21.79	1046.09	
34	PL8-280x110	IS2062Fe410WA	24	1.93	46.42	
33	ISA50x50x6-3828	IS2062 Fe410A	24	17.23	413.42	
32	PL8-280x55	IS2062Fe410WA	16	0.97	15.47	
31	Dia 16 Rod-4157	IS 432	40	6.56	262.22	
30	Dia 16 Rod-274	IS 432	80	0.43	34.57	
29	PL8-410x152	IS2062Fe410WA	32	3.91	125.24	
28	PL8-120x70	IS2062Fe410WA	32	0.53	16.88	
27	PL8-95x92	IS2062Fe410WA	32	0.55	17.56	
26	ISA50x50x6-4350	IS2062 Fe410A	16	19.58	313.2	
25	PL10-80x180	IS2062Fe410WA	48	1.13	54.26	
24	PL10-100x180	IS2062Fe410WA	28	1.41	39.56	
23	TUBE 50M(OD60.3X3.6)-4970	IS1161/1979	24	18.14	435.37	
22	ISM125-5717	IS2062Fe410WA	56	74.89	4193.99	
21	ISM125-4494	IS2062Fe410WA	112	58.87	6593.6	
20	PL8-246x103	IS2062Fe410WA	90	1.59	143.21	
19	PL8-102x101	IS2062Fe410WA	162	0.65	104.81	
18	ISM75-419	IS2062Fe410WA	32	2.99	95.73	
17	PL8-100x95	IS2062Fe410WA	160	0.6	95.46	
16	TUBE 65M (OD76.1X3.6)-627	IS1161/1979	14	2.29	32.04	
15	PL10-180x180	IS2062Fe410WA	84	2.54	213.65	
14	PL10-70x180	IS2062Fe410WA	28	0.99	27.69	
13	TUBE 50M(OD60.3X3.6)-1214	IS1161/1979	84	4.43	372.21	
12	TUBE 50M(OD60.3X3.6)-1342	IS1161/1979	98	4.49	480.03	
11	TUBE 50M(OD60.3X3.6)-1190	IS1161/1979	14	4.34	60.81	
10	TUBE 65M(OD76.1X3.6)-9529	IS1161/1979	28	34.78	973.86	
9	PL8-147x147	IS2062Fe410WA	28	1.36	38	
8	TUBE 25M(OD33.7X3.2)-623	IS1161/1979	196	2.02	396.85	
7	TUBE 110M(OD127X4.8)-7602	IS1161/1979	14	110.22	1543.20	
6	TUBE 110M(OD127X4.8)-7546	IS1161/1979	14	109.41	1531.83	
5	PL12-255x137	IS2062Fe410WA	56	3.29	184.29	
4	PL12-255x62	IS2062Fe410WA	28	1.49	41.7	
3	PL12-624x255	IS2062Fe410WA	14	14.99	209.85	
2	PL20-1000x400	IS2062Fe410WA	14	62.8	879.2	
1	PL25-400x50	IS2062Fe410WB	28	3.92	109.9	

TOTAL Wt. 27969.67 kg

ITEM NO.	DESCRIPTION	MATERIAL SPECN.	NOS	(KG)	GROSS WT (KG)	REMARKS
105	ISM75-371	IS2062Fe410WA	112	2.65	296.68	
104	PL8-95x50	IS2062Fe410WA	64	0.3	19.09	
103	PL8-102x98	IS2062Fe410WA	36	0.63	22.6	
102	PL8-120x117	IS2062Fe410WA	8	0.88	7.05	
101	PL8-246x117	IS2062Fe410WA	10	1.81	18.08	
100	PL8-117x95	IS2062Fe410WA	18	0.7	12.56	
99	PL8-100x160	IS2062Fe410WA	56	1	56.27	
98	PL8-120x103	IS2062Fe410WA	36	0.78	27.94	
97	ISA50x50x6-138	IS2062 Fe410A	16	0.62	9.94	
96	ISA65x65x6-1690	IS2062 Fe410A	2	9.8	19.6	
95	ISA65x65x6-1745	IS2062 Fe410A	2	10.12	20.24	
94	TUBE 32M(OD42.4X3.2)-682	IS1161/1979	6	2.22	13.3	
93	TUBE 50M(OD60.3X3.6)-682	IS1161/1979	4	24.9	9.96	
92	PL10-817x60	IS2062Fe410WA	24	3.85	92.35	
91	ISM125-5006	IS2062Fe410WA	8	65.58	524.63	
90	ISM125-3994	IS2062Fe410WA	12	52.32	627.86	
89	PL8-105x195	IS2062Fe410WA	16	1.29	20.57	
88	PL8-96x96	IS2062Fe410WA	8	0.58	4.63	
87	TUBE 32M(OD42.4X3.2)-1800	IS1161/1979	2	5.85	11.7	
86	TUBE 32M(OD42.4X3.2)-2435	IS1161/1979	4	7.91	31.66	
85	TUBE 32M(OD42.4X3.2)-1527	IS1161/1979	4	4.96	19.85	
84	Dia 16 Rod-2636	IS 432	16	4.16	66.51	
83	Dia 16 Rod-2641	IS 432	80	4.16	333.19	
82	TUBE 65M(OD76.1X3.6)-682	IS1161/1979	28	2.49	69.7	
81	TUBE 32M(OD42.4X3.2)-2258	IS1161/1979	8	7.34	58.71	
80	TUBE 32M(OD42.4X3.2)-2272	IS1161/1979	4	7.38	29.54	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd  
UNIT: HIGH PRESSURE BOILER PLANT  
TRIRUCHIRAPPALLI - 620014

DATE: 18.10.2013  
DRAWN BY: VEETHALAKSHMI P  
CHECKED BY: SUNILKARAN K  
SCALE: 1:100, 1:50, 1:30, 1:15, 1:5

TITLE: STRUCTURAL DETAILS OF STORES SHED

DRAWING NO: 0-TP-CEG-01292  
SHEET (2/2)