

Corrigendum - 1 dated 10/05/2024 to CPC Tender No. BHEL/CPC/LRA/FAB STR/25/005

Corrigendum - 1 dated 17/02/2024 To CPC Tender No. BHEL : CPC : LRA : CHM : 24 : 001 for the work of “Construction of Two (2) Nos. 150 Mtr. tall single flue RCC chimneys EXCLUDING SUPPLY & APPLICATION OF BOROSILICATE GLASS BLOCK LINING SYSTEM with 02 (Two) nos. structural flue liners including all civil, electrical & elevator works of 2X800 MW NTPC Lara TPP STAGE II, Raigarh, Chhattisgarh state, India”.

A) Time Extension: Clause No. 1.0 Salient Features of NIT in NOTICE INVITING TENDER is revised as below:

Sl. No.	Clause No.	Existing in Tender	Revised As
1	Sl. No. v) DUE DATE & TIME OF OFFER SUBMISSION.	Date: 13/05/2024, Time: 10:00 Hrs	Date: 20/05/2024, Time: 10:00 Hrs
2	Sl. No. vi) OPENING OF TENDER	Date: 13/05/2024, Time: 16:30 Hrs	Date: 20/05/2024, Time: 16:30 Hrs

B) Some of the Bidders had asked queries in the published tender specification. The clarifications issued by BHEL are furnished below:

Sl. No.	Reference clause of Tender Document	Bidder's query	BHEL's Response
1	Sample Drawings or MTO - No Drawings	Some sample drawings or MTO for raw materials planning and fabrication estimation.	Sample drawing attached in the tender for reference purpose only. However, final drawings shall be issued during execution of contract.
		Request for issuing tentative drawings of the structures to be manufactured and supplied under package A, B, C, D to enable us to reach a more calculated cost pricing for the tender.	
		Provide manufacturing DRGs for entire free issue material quantities issued by the purchaser.	
		BOQ & drawings (GA + part) require. (We need full GA drawings to get the estimate of the buildings.)	
		Bill of Material required with Grade & dimensions for plate and Rolled section.	Material specification is as mentioned in BOQ and tender specification.

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		Will detailed engg be provided by bhel? as it is stated in scope of work 2.1 or we have to prepare as per clause 8.1 as in no B2301.Do clarify.	In general, detailed drawings shall be provided by BHEL. However, if required BHEL may instruct agency to prepare detailed drawing in line with tender clause, accordingly payment shall be made in line with BOQ item no. B2301.
		Properly plan DRGs and materials for all required quantities to avoid delays, which will be your responsibility.	Tender condition shall prevail.
		Plan material procurement according to DRG sizes to minimize scrap percentages, as specified in the tender. For example, if the DRG specifies a plate size of 40x900x900x11 meters, procuring a plate of 40x1800x11 meters can reduce scrap percentages and project costs.	Tender condition shall prevail.
2	TCC Vol-1A-2.22.4 - Transportation & Freight Charges	ODC charges are calculated based on size of consignment i.e bigger ODC more charges and small ODC less charges hence maximum sizes(all 3-)dimensions of consignment must be limited else BHEL can pay extra charges towards ODC.	Tender condition shall prevail.
		ODC quantity to be defined.	These details are completely dependent on detail engineering. However approx. 5% of total quantity may be considered as ODC consignment.
		Freight charges are included in our scope but ODC should be in scope of BHEL.	Tender condition shall prevail.
3	Clause no. 4.1 - 4.5 of Chapter IV of TCC - Payment Terms	Payment terms to be revised: a) 20% basic value Advance at the time of PO award against ABG. b) 20% basic value advance against Raw Material receipt at Works on Pro-Rata Basis. c) 60% against LC with usance period of 45 days IFC.	Tender condition shall prevail.

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		Also in modality 2 (with steel) an interim payment say 95% of the value of steel may be released against inspection of the same after arrival at vendors workshop. This will help in reducing the financial pressure on the vendor and the performance of the vendor will definitely be better. This interim payment may adjusted against payment of 95% of material cost when the material reaches the site. The same instruments as defined above can be issued by the vendor for security against your advance.	Tender condition shall prevail.
		Request BHEL for interest free advance for an amount of 5 or 10 percent for this work.	Tender condition shall prevail.
4	Note 2 of Clause 3.2 of TCC - Quantity Variation	+/- 30% PO quantity can be loaded or withdrawn based on the mutual agreement between BHEL & Vendor.	Tender condition shall prevail.
5	Annexure-B of TCC - Price Variation Compensation (PVC)	Index to be considered for PVC- Fast Market/Steel Mint or Fix & Firm.	Tender condition shall prevail.
		Considering the dynamic nature of Diesel Rates, please consider price variation in Transportation.	Revised PVC clause attached as Annexure - B1. Annexure - B and Annexure - D2 of TCC shall stand deleted.
		Include PVC transportation charges due to varying rates based on market conditions, material size, and diesel prices.	
		With material consider to PVC in material & consumables and diesel Lobur etc	
	PVC Clause 2.17.5	PVC shall not be payable for supplementary /additional items, extra works. However, PVC shall be payable for items executed under quantity variation of BOQ items under originally awarded Contract, but it should be payable on Quantity variation limit of +/-30% as mentioned in TCC Of Chapter III of Note 2. Pls Clarify & consider.	Refer clause 2.17.5 of Annex B of TCC: PVC will be payable for items executed under quantity variation of BOQ items.

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6	Clause no. 2.16 of TCC - Unloading of material at site, supplied by agency, shall be in the scope of BHEL.	During the prebid meeting, it was understood that it will take 45 days after the unloading of finished goods at site and MRN, for BHEL to process 95% payments and usually it takes about 20 days sometimes for unloading the material.	BHEL shall unload the material in 48-72 hrs from the time of entry of trailer in the plant premises. In case the supplied material is not being unloaded within 72 hrs., for the reason not attributable to fabricator/transporter, agency shall be entitled for demurrage charges. a. Demurrage charges for Truck shall be Rs. 1000/days. b. Demurrage charges for all types of Trailers shall be Rs. 2000/days.
		Review and add transportation charges for ODC consignments	
		Goods must be unloaded within 48 hours; any delays will result in penalty charges payable by BHEL.	
		Unloading at site should be strictly within 48 hrs from the date vehicle reaches at site. if more than 48 hrs then detention charges @ 3,000 per day should be given.	
7	Annexure-C of TCC - Bank Guarantee for free issue material	It is also fact that it will take approximately 3 months for the material churn-out- after receipt of raw material material and if the requirement is of 500 MT per month is required, A BG equating the value of 2500MT (500 MT x 5 Months) would be worth 16.50 crores and this will have huge implication and pressure for the vendor. Apart from this we will have to have separate stock for matching steel (scope of vendor's supply) and this will also entail a cost. Not all vendors might (atleast us) have that kind of BG limits and thus this limitation will make the vendor compromise on the speed of fabrication plus will affect vendor performance in other ways. Hence it is requested that the BG for RM may be replaced by one or all of the followings. A. Indemnity Bond B. a Corporate BGC. security cheques	Tender condition shall prevail.
		Review the bank guarantee for steel and consider reducing the value or replacing it with an insurance bond, etc.	Tender condition shall prevail.

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8	Bid Submission due Date: 13.05.2024 @ 1000Hrs	Requested for an extension of 15 days for submission of the tender, so that bidders (atleast us) can make arrangements required for tender.	Due date of Bid submission extended for 7 days i.e. upto 20.05.2024.
		Requested to provide Extension of Time for 7-10 working days as clarification points which raised will also play a major role during bidding stage. Pls consider.	
		Request for extension of bid due date upto 17th May 24.	
		With reference to NIT documents we need more days to understand drawings, technical documents and BOQ, So Kindly extend the tender submission date for 2 weeks more.	
		Also considering the very short period, we would request you to consider an extension of 15 days for filling the tender.	
9	Clause no. 4.5 of TCC - Performance Security	We expressed our concern for Performance security/BG @ 5%. While having worked previously in other BHEL jobs at Trichy, Bhopal, Haridwar, etc we had never given Performance security. However in this case if be given a chance, we can pay around 40 to 50 Lacs as security deposit in lieu of that.	Tender condition shall prevail.
		Kindly accept the request for submission of PG in two Parts (2% amount at the time of award of Work and rest 3% amount deduct from Running bill of Contract value)	Tender condition shall prevail.
		Confirmation whether we can submit insurance bonds instead of BG?	Tender condition shall prevail.

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10	NIT_Annexure 1, S.No. A- Mode 1 & 2-Pre-Qualifying Requirements (PQR)	Fabricated Steel Structure work at least 500 MT in a month and cumulative of 6000 MT within a period of 12 consecutive month in last seven years from the date of technical bid opening. Pls clarify that bidders have to submit the multiple Purchase/Work orders for the ongoing/Completed projects for the mentioned Qty but at least 500 MT in a month with cumulative of 6000 MT. If bidder supplied more than 6000MT in 12-months but not 500MT or more consecutively in 12-month. Shall the bidder treated qualified? In PQR condition, It is insisted for tonnage requirement of 6000 MT cumulative in consecutive 12 months and 500 MT in any one month in last 7 years. .Likewise we request you to increase the financial turnover years as 7 years .instead of 3 years (for achieving 10.26 cr for mode1and 26.67 for mode 2.) considering COVID. To qualify the tender technical QR and financial QR in Mode 2 - can credentials of "SISTER CONCERN" be included with the firm? <u>Also Note:</u> 1) Both the firms have common ownership and both firms are registered in the same address. 2) With regards to tenders in BHEL, Trichy - both the firms are considered as a single entity due to common ownership.	PQR for Mode 1 and Mode 2 (A) Technical QR: to be read asBidder should have Supplied* Fabricated Steel Structure work of minimum cumulative of 6000MT within a period of Twelve consecutive months, in last seven years from the latest date of technical bid opening. Towards above, bidder must submit the following:• Purchase/Work orders and proof of delivery/supply of Fabricated Steel Structure of at least 'cumulative of 6000 MT in any 12 consecutive months' within last seven years from the latest date of technical bid opening.

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		As per Tender Qualification Criteria we need to complete 500 MT in single month and 6000 MT in any consecutive months. Since we have 2 units, we would like to know whether dispatches made from both units amounting to 6000 MT are considered for qualification.	
		We are supplying 6,000 MT per year but our billing is not 500 MT or beyond 500 MT every month, we have crossed 500 MT mark 7-8 months in an year (can we quote) - Kindly Refer a image attached for Sales in last year.	
11	General Conditions of Contract (GCC): clause 2.11: Terms of Payment: Clause 2.11.2.1.1: Payment Terms as per Chapter IV of Technical Conditions of Contract (TCC)	90% Of Ex Works price of materials supplied along with applicable 100% taxes & duties, insurance & freight shall be paid after the receipt of material at site but In Chapter IV of Technical Conditions of Contract (TCC) Clause 4.2: 95% payment shall be released. Pls clarify.	Payment Terms as per Chapter IV of Technical Conditions of Contract (TCC) shall prevail.
		90% Of Ex Works price of materials supplied along with applicable 100% taxes & duties, insurance & freight shall be paid after the receipt of material at site. Bidder is requested to an Advance Payment@20% against advance bank guarantee as project value is more and bidder has to submit multiple BGs for which Cash flow will be affected very badly either it is Mode 1 or Mode 2.	Payment Terms as per Chapter IV of Technical Conditions of Contract (TCC) shall prevail.
		90% Of Ex Works price of materials supplied along with applicable 100% taxes & duties, insurance & freight shall be paid after the receipt of material at site. Bidder is requested to payment should release through Bill discounting scheme (like: RXIL, MARPA or JP Morgan Scheme) either it is Mode 1 or Mode 2 due to maintain the cash flow for such a high value of project.	Payment Terms as per Chapter IV of Technical Conditions of Contract (TCC) shall prevail. For MSME vendors bill discounting can be done through RXIL.

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12	Sl no. 1 (vii) & Sl.no.3 of NIT, Cl. No. 2.12 of GCC - Earnest Money Deposit (EMD)	In General Conditions of Contract (GCC): clause 2.12: Earnest Money Deposit: Clause 2.12.1 (ii): The EMD amount up to an amount of Rs 2 Lakh is to be paid only in the following forms through electronic fund transfer, banker's cheque, pay Order, DD, FDR, Bank Guarantee, and Insurance security Bonds. In case EMD is more than Rs 2 lakh, it may be in the form of Bank guarantee only. As per above details, bidder has to make the bank guarantee of Rs. 40 Lakhs. Pls clarify.	EMD of 40 Lakhs can be submitted in the form of Bank Guarantee.
		Bidder requesting to submit the bank guarantee as per E-BG format given by bank (attached for your reference). Please review and confirm.	Bank Guarantee can be submitted in the form of e-BG but the format given in the tender shall remain same. Beneficiary Bank details are as specified in Clause no. 3.0 of NIT 1. UIN / PAN Number - AAACB4146P
		Being a 100% Govt of India PSE, and being under the same Ministry, we seek exemption from submission of EMD.	The EMD is waived off for following cases : (i) Central/ State PSUs/ Government deptts/ Autonomous/ Educational/ Research institutions. (ii) Joint Venture or Subsidiary companies of BHEL.
13	Price Bid & Modality of award Clause 8.3 (VI) - Chapter VIII - Liquidated Damages/Penalty	Bidder requested that LD should be maximum of 5% of the total Contract value instead of 10%. Pls consider.	Tender condition shall prevail.
		Consider a maximum LD deduction of 10%, with 5% for the balance supply portion.	Tender condition shall prevail.
		Should be on balance left over quantity not on whole order?	Tender condition shall prevail.

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14	Chapter VIII of TCC Price Bid & Modality Of award	Bidder is requested to provide us Excel Sheet as mentioned. Pls consider.	Excel format of BOQ given to Bidders on mail request. "Same not to be made part of Tender"
		Can you make the price bid as Basic cost + transportation cost separate ,so that transportation cost may not be accounted for L1 as some common agreed price be arrived as the transportation cost.	Tender condition shall prevail.
15	Annexure D2 of TCC - Declaration by Bidders	Less Freight Charges which is not included under PVC Clause: Bidder is requested to cover the Freight Charges under PVC Clause. Pls consider.	Revised PVC clause attached as Annexure - B1. Annexure - B and Annexure - D2 of TCC shall stand deleted.
16	TCC Vol-1A-2.18.3 - After awards of work, BHEL at its discretion may increase/decrease the quantum of work depending upon the factors such as: Load on the vendor, Production capacity of the vendor and rate of production/performance by the vendor etc. Contractor shall be bound to execute such works as desired and as directed by BHEL engineer. The item rates & contract conditions shall remain unchanged for such works	Acceptance or rejection of quantity variation after completion of quantity under original order should be vendors choice because BHEL will not increase item rate that time.	Tender condition shall prevail.

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17	TCC Vol-1A-2.10 - Proper Office space with Desktop Computers/Laptop with Internet facility shall be provided to BHEL employees (02 Nos.) by successful Vendor for official use. Further, suitable transportation facility shall be arranged for BHEL Resident engineer for "To and Fro" movement from residing Location to Fabrication Location.	Residing location of resident engineer should be within 10KM limit.	Addl. clause: Depending upon the availability of suitable accommodation, the resident engineer shall stay at a reasonable distance from fabrication location.
18	TCC Vol-1A-2.26.14- The material rejected as PDO (Part Disposition Order) due to reasons other than faulty workmanship of Vendor shall be returned to BHEL Stores, failing which recovery shall be made as per relevant penal clause	BHEL must bear the transportation cost for returning such raw materials because such materials may be either out of specification or rejected by BHEL inspector for any material defect.	Amended clause 2.4 of TCC: As per instruction of BHEL, Vendor shall load the excess fresh material, rejected material (for the reasons other than faulty workmanship of Vendor) and requisite off cut material on the trailer/trucks, arranged by BHEL for transportation.
19	TCC Vol-1A-2.26.16 - After material issue, the Vendor should submit optimum cutting plan within 15 days from the date of material issue.	There is no need for cutting plan because scrap generation is limited to 4% only. Work progress will get affected if vendor keeps waiting for cutting plan approval. If cutting plan is prepared a) Who will approve this plan? b) Shall BHEL consider extra % of scrap generation if cutting plan shown more than 4% scrap?	Tender condition shall prevail.

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20	TCC Vol-1A-8.3(II)- PVC shall be applicable on item no. A2301 (a) and A2301 (b): Less Fright charges only	There shall be difference in transportation cost vendor wise depending upon the travel distance and it is difficult to justify rate of transportation declared by vendor under Annexure-D2. Transportation cost is also variable due to change in diesel price hence PVC should be paid including transportation cost.	Revised PVC clause attached as Annexure - B1 . Annexure - B and Annexure - D2 of TCC shall stand deleted.
21	TCC Vol-1A-8.3(v) - Delivery Terms	Free issued raw material should also be ensured by BHEL along with finished goods.	Tender condition shall prevail.
22	SSC-VOL-1B-6.4.1 - Return of Reinforcement Steel and Structural Steel including Scrap: All surplus steel and all wastage materials will be taken back on weightment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately at a place directed by BHEL/Engineer. For return of such materials, contractor will not be entitled to any handling and incidental charges. All wastage / scrap (including melting scrap, wastage, and unusable scrap) shall be promptly returned to the BHEL and a receipt obtained for material accounting purposes. Scrap for reinforcement steel and structural steel shall be returned separately.	Please confirm that scrap shall not be returned to BHEL however BHEL will debit the scrap amount from vendor at JPC rate on quarterly basis.	Clause 2.27 of TCC amended as RETURN OF MATERIALS Return Structural Steel including Scrap: All surplus steel will be taken back on weightment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately which will be returned by vendor (Deleted: transported by Vendor to Project Premise). As regard to the scrap generated will be the property of Vendor & the amount for same will be recovered from the Vendor at the rate as per BHEL scrap recovery rate policy as mentioned at clause 2.28.

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23	SSC-VOL-1B-6.4.3.2- Plates having both side greater than 1 Meter OR if any side is less than 1 Meter but greater than 0.5 Meter and the total area is equal or greater than 2 sq. Meter shall be considered as serviceable material.	Offcut generated in any random shape like L or Triangle having any side equal to or more than 500mm and total area of offcut plate is more than 2sq.m shall be treated as serviceable. Please confirm.	Tender condition shall prevail.
24	SSC-VOL-1B-6.4.4.S2b Wastage limited to plus four percent (+4%) of aforesaid theoretical consumption (S1) towards allowable wastage (including invisible wastage limited to 0.5%) but not returned to BHEL.	Invisible loss should be 2% because rolling margin is not accounted for reconcilliation. Total scrap=4%(2%+2%)	Tender condition shall prevail.
		A 0.5% allowance for invisible scrap is not acceptable; it should be minimum 2%.and total scrap percentage 5%	Tender condition shall prevail.
25	Vol IIB-Section-D(D-17)-6.02.05 For bunker wall plates, the minimum-circumscribing rectangle of the individual plate/pieces out of which these wall plates are assembled by butt welding, shall be measured. Care shall be taken to ensure maximum utilization of cut-pieces generated by providing extra butt joints (for which no extra payment shall be made).	Please confirm scope of fabricating bunker/hopper. If yes raw material reconcilliation of bunker/hopper shall be done as per 6.02.05 which states that min circumscribing rectangle area of plates shall be measured for billing.	Fabrication of Coal bunker is not a part of scope of this tender.

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26	Vol IIB-Section-D(D-17)-6.02.08- All cut-pieces and scrap generated due to cutting of holes, skew-cuts of plates, gussets, brackets, stiffeners, etc. shall be stacked separately and handed over to the project stores without being considered for material accounting as the circumscribing rectangle has been considered for payment.	Separately stacking such small pieces of scrap is practically not possible hence remove this clause.	All such cut pieces shall be considered as scrap and shall be dealt as per clause mentioned in TCC.
27	Clause no. 13 of NIT-Bidder to quote on F.O.R. Destination basis (including Freight, Packaging and Forwarding charges). Offers other than F.O.R. Destination Basis will not be accepted by BHEL.Offers will be evaluated based on Total cost to BHEL (excluding GST) on F.O.R. basis, as indicated in Price Bid of Tender. The evaluation currency for this tender shall be INR.	Though it is stated in the tender that price to be quoted FOR destination i.e., Lara Super Thermal Power Station, which means that the fabrication is to be carried out in our Yard and despatch to Lara STPS.But it there any possibility of carrying out the job in clients plant yard so that transportation cost can be saved. Pl confirm.	There is no possibility of carrying out the subject tender job in NTPC Lara project premises.

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28	TCC BOQ 3.2	Only GA drawing has been enclosed. Grade of steel mentioned as E250/E350. No structural drawing provided. There is involvement of different type of steel such as plates, pipes, tubular structure etc hence if the part drawings or some structural drawing can be made available, we can quoted competitively. Even proportion of such structural item may be mentioned. Pl confirm.	Sample drawing attached in this corrigendum for reference purpose only.
		Actual BOQs need to be provided, including the percentage of E350/E250 material, rolled sections, pipes, etc., to ensure accurate quoting.	Tender condition shall prevail.
		Grade of steel E250 & E350 both mentioned in BOQ require BOM or APX. % also SHS, RHS - sizes and grades required.	Tender condition shall prevail.
		Confirmation that no any detailing of drawings will be in our scope except BOQ Qty.	In general, detailed drawings shall be provided by BHEL. However, if required BHEL may instruct agency to prepare detailed drawing in line with tender clause, accordingly payment shall be made in line with BOQ item no. B2301.
29	Mode Supply of Steel by the vendor	2- In case of supply of steel by the vendor (Mode-2, there will be substantial blockage of inventory thus blockage of working capital. We seek release of 70% advance payment enabling us timely execution. Pl confirm.	Tender condition shall prevail.

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		Where raw material is in the scope of Vendor, i.e. to be procured by us, we propose 98% payment within 30 days of dispatch effective from the date of shipment. Here 2 % retention amount can be treated as security deposit which should be released after completion of order quantity and within 30 days. Also an amount of Rs 40 to 50 lakh LS as PBG can be paid by us for both the offers till the order executed. As we had associated earlier in BHEL jobs at Trichy, Bhopal, Jhansi, etc where payment term was 100% against supply, we would request you to consider the similar terms in this case too.	Tender condition shall prevail.
30	Mode 1- Free supply steel by BHEL	In case of supply of steel by BHEL (Mode-1), free supply steel shall be provided by BHEL against submission of BG for the supplied quantity of steel, which is expensive. We suggest to consider some other mode e.g. insurance etc for coverage against free supply steel of BHEL. Pl confirm.	Tender condition shall prevail.
		Wherein BHEL will supply the raw material, we are proposing to provide Insurance bond instead of Bank Guarantee as a Performance Security.	Tender condition shall prevail.
		Payment terms would be 95% against RA Bills payable within 30 days and 5% retention amount shall be paid after last RA bill along with raw material reconciliation certificate.	Tender condition shall prevail.

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31	Clause 4.1 and 4.2 of TCC - Terms of Payment: 95% payment (excl. GST) against RA bill shall be released within 45 days after receipt and acceptance of material at site and submission,...	We seek Terms of payment: 95% payment (excl GST) against RA bill shall be released within 45 days after despatch from vendor's works and submission Pl confirm.	Tender condition shall prevail.
32	Document no. P4F2R0 Vendor Questionnaire	Please confirm that Sub Contractor means Bidder i.e. Anil Steels Private Limited.	Sub Contractor means Bidder in the format no. P4F2R0 Vendor Questionnaire
33	Mode-1 & Mode- 2	Clarify whether we can participate in both modes i.e. Mode - 1 or Mode 2. For clarity we are ready to work on free issue material as well as our own material.	The bidder can opt for quoting for 'Mode 1' or 'Mode 2' or both 'Mode 1 & Mode 2', as per clause 2.1 of TCC.
34	Sub-contracting	Please let us know whether we can have sub contracting for fabrication.	Tender condition shall prevail.
35		The weight of rolled sections must be accounted for in running meters, not just accepted as is. For example, according to the drawing, this project requires 40 metric tons of rolled section, which equates to 200 meters. However, if the received material of 40 metric tons is only 180 meters, how should we calculate this?	Tender condition shall prevail.
36		Excess material, wrong purchases, off-cuts, etc., should be collected quarterly, with transportation costs borne by the purchaser.	Amended clause 2.4 of TCC: As per instruction of BHEL, Vendor shall load the excess fresh material, rejected material (for the reasons other than faulty workmanship of Vendor) and requisite off cut material on the trailer/trucks, arranged by BHEL for transportation.

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37		SCC for RA bills must be cleared by the 15th of each month, and MRCs for full supplied maximum quantity should be issued by the 10th of each month. Payments should be released within 30 days.	Addl. Clause: Agency shall be allowed to raise two RA Bills in a month along with requisit Documents.
38		Review the total deduction for SPBG/retention, considering only retention at 5% or releasing 100% against aSPBG bank guarantee.	Addl. Clause: On specific request of contractor, 5% amount can be released against submission of Bank Guarantee of 5% of Contract value, in acceptable form. Also, upon submission of the aforementioned BG further deduction of 5% from RA Bill shall not be made. BG shall be kept valid for a period of Contract duration and Extension if any.
		5% PBG is being asked to submit then why 95% payment is being released?	Tender condition shall prevail.
39		With material CLEAR BOQ required to coating	Tender condition shall prevail.
40		Confirmation if any galvanising work has to be done? if yes then % or weight of such work.	Galvanisation is not in the scope of the work.
41		Confirmation that R/M to be used only NTPC approved sources or from other sources purchase can be allowed.	Tender condition shall prevail.
42		one inspector to be stationed at Bhilai in BHEL account for per unit.	Tender condition shall prevail.
43		Please clear us the Hopper, Silo sizes.	Tender condition shall prevail.
44	8.2 Modality of award i. The total scope of work is being divided into Four (04) packages. Each package shall be awarded to four different Agencies on price		To be read as: 8.2 Modality of award i. The total scope of work is being divided into Four (04) packages. Each package shall be awarded on price matching philosophy, as mentioned hereunder.

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Sl. No.	Reference clause of Tender Document	Bidder's query	BHEL's Response
	matching philosophy, as mentioned hereunder.		
45		On BHEL scope ,materials tender submission do we have to quote 1000MT with materials (since 1000MT in vendor scope out of 10749MT materials)	Tender condition shall prevail.
46		On GST payment: Kindly clarify that can we avail 95% basic and 100% GST along with submission bill on pro rata basis.	Payment Terms as per Chapter IV and Taxes & Duties as per Chapter IX of Technical Conditions of Contract (TCC) shall prevail.
47	Price Bid Volume-II		Against column no. 7 of Price Bid Volume-II, i.e., "BASIC RATE In Figures To be entered by the Bidder in Rs. P" <u>Bidder to Quote:</u> Total price towards execution of work of Package A for Mode 1 against Sl. no. 1.01 Total price towards execution of work of Package A for Mode 2 against Sl. no. 1.02

Corrigendum - 1 dated 10/05/2024 to CPC Tender No. BHEL/CPC/LRA/FAB STR/25/005

Sl. No.	Reference clause of Tender Document	Bidder's query	BHEL's Response
48	Address for Sending Bank Guarantee		Beneficiary Bank details are as specified in Clause no. 3.0 of NIT. Original Bank Guarantee to be sent to following address: C/o. DGM/Purchase, BHEL Sadan, 8th Floor, Plot No. 25, Sec 16A, Noida - 201301
49	BOQ		Revised BOQ attached. Deletion strike out ~~(strike out)~~ and Changes highlighted in blue

Note:

- 1) All other terms and conditions against this NIT shall remain unchanged.
- 2) This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I).

for BHARAT HEAVY ELECTRICALS LTD
AGM / Purchase - CPC

ANNEXURE – B1

2.17 PRICE VARIATION COMPENSATION

PVC shall be applicable for Item no. A2301 a) and A2301 b) only for entire contract period and extended period if any. For balance items the awarded rates mentioned therein shall remain firm for entire contract period/extended period if any.

2.17.1 In order to take care of variation in cost of execution of work on either side, due to variation in the index of LABOUR, HIGH SPEED DIESEL OIL, WELDING ROD, CEMENT, STEEL, MATERIALS, Price Variation Formula as described herein shall be applicable

2.17.2 85% component of Contract Value shall be considered for PVC calculations and remaining 15% shall be treated as fixed component. The basis for calculation of price variation in each category, their component, Base Index, shall be as under:

SL NO.	CATEGORY	INDEX/ AVERAGE MINIMUM WAGE	PERCENTAGE COMPONENT ('K')	
			FABRICATION PACKAGES	
			Material in BHEL scope	Material in Agency scope
i)	LABOUR (ALL CATEGORIES)	'MONTHLY ALL-INDIA AVERAGE CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS' published by Labour Bureau, Ministry of Labour and Employment, Government of India. (Website: labourbureau.nic.in)	65	26
ii)	WELDING ROD	Name of Commodity: MANUFACTURE OF BASIC METALS Commodity Code: 1314000000 (See Note E)	15	6
iii)	HIGH SPEED DIESEL OIL	Name of Commodity: HSD Commodity Code: 1202000005 (See Note E)	5	2
iv)	STEEL (Structural)	Name of Commodity: MILD STEEL: LONG PRODUCTS Commodity Code: 1314040000 (See Note E)	0	51

2.17.3 As per the 'MONTHLY WHOLE SALE PRICE INDEX' for the respective Commodity and Type, published by Office of Economic Adviser, Ministry of Commerce and Industry, Government of India. (Website: eaindustry.nic.in). Revisions in the index or commodity will be re-adjusted accordingly.

2.17.4 Payment/recovery due to variation in index shall be determined on the basis of the following notional formula in respect of the identified COMPONENT ('K') viz LABOUR, HIGH SPEED DIESEL OIL, WELDING ROD, CEMENT, STEEL, MATERIALS.HSD

$$P = K \times R \times \frac{(X_N - X_o)}{X_o}$$

X_o

Where,

P = Amount to be paid/recovered due to variation in the Index for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials

ANNEXURE – B1

K = Percentage COMPONENT ('K') applicable for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials

R = Value of work done for the billing month (Excluding Taxes and Duties if payable extra)

X_N = Revised Index for Labour, Revised Average Minimum Wages for Labour, Revised Index for High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials for the billing month under consideration

X_o = Index for Labour, Average Minimum Wages for Labour, Index for High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials as on the Base date

2.17.5 PVC shall not be payable for Supplementary/Additional Items, Extra works. However, PVC will be payable for items executed under quantity variation of BOQ items under originally awarded contract.

2.17.6 Base date shall be the calendar month of the 'last date of bid submission'.

2.17.7 The contractor shall furnish necessary monthly bulletins in support of the requisite indices from the relevant websites along with his Bills.

2.17.8 The contractor will be required to raise the bills for price variation payments on a monthly basis along with the running bills irrespective of the fact whether any increase/decrease in the index for relevant categories has taken place or not. In case there is delay in publication of bulletins (final figure), the provisional values as published can be considered for payments and arrears shall be paid/recovered on getting the final values.

2.17.9 PVC shall be applicable for the entire original contract period plus the extended period, i.e. for the complete execution period, as follows:

For PVC computation of the n^{th} month:

Let the cumulative delay attributable to the Contractor is D_n in the n^{th} month.

Considering R_n as the billing value for the n^{th} month, PVC for the n^{th} month shall be calculated as follows:

- a) PVC for the portion of R_n for an amount of $D_{(n-1)}$ shall be payable as per indices for the $(n-1)^{\text{th}}$ month.
- b) PVC for the balance portion of R_n shall be payable as per indices for the n^{th} month

In case $D_{(n-1)}$ is greater than R_n , then entire R_n shall be payable as per indices for the $(n-1)^{\text{th}}$ month and the balance portion of $D_{(n-1)}$ shall be adjusted from $R_{(n+1)}$ of the $(n+1)^{\text{th}}$ month and will be payable as per indices for the $(n-1)^{\text{th}}$ month. The above process shall be continued for subsequent month(s) also till full $D_{(n-1)}$ is consumed.

i) For milestones mentioned in the contract, PVC shall be applicable as per average of the indices from the month of base date till the month of execution of milestone.

ii) PVC shall not be applicable for time extension provided for the delays solely attributable to the contractor. No PVC is payable during the period of Provisional Time Extension till grant of final time extension. Applicability of PVC will be decided at the time of grant of final time extension.

iii) The total amount of PVC shall not exceed 15% of the cumulatively executed contract value. Executed contract value for this purpose is exclusive of PVC, ORC, Supplementary/Additional Items and Extra works except items due to quantity variation.

Price bid for Structural fabrication work for 2X800 MW NTPC Lara Project

Mode 1: Total Price towards execution of work of Package A			Package A			
ST NO	Item Description	Unit	Quantity	RATE	AMOUNT	Weightage
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A2301	Fabrication and supply of structures (shop fabricated in customer approved shop as per specification including applying primer coat, intermediate coat and final coat and painting as per applicable corrosivity class mentioned in specification) with mild steel rolled section / Medium and High Tensile structural steel/ built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections conforming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS gratings (to be cut & fabricated from MS paltes supplied in standard available sizes) including in bunker area etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, hood for ground conveyors, monorail doors, stools, derbis chutes, landings, hand-rails etc including bunker area stools, gratings, monorails, platforms, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm) & use of low hydrogen / radiogenic electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Quality A/BR (Semi killed/killed) for Rolled section and B0 for plates (shall be tested for impact resistance at Room temperature), conforming to IS 2062. Plates beyond 12mm thickness and up to 40mm thickness shall be normalized rolled. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalised and shall also be 100% ultrasonically tested as per ASTM -A578 level BS2. ~~Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.~~					
a)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in BHEL scope)	MT	9749	0.00	₹ 0.00	0.580512142
b)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in agency scope)	MT	1000	0.00	₹ 0.00	0.230269368
B2301	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL PEM, BHEL ISG /BHEL customer. It incudes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	250	0.00	₹ 0.00	0.000657347
A2302	Extra over ST NO. C2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coat of two component moisture curing zinc (ethyl) Silicate primer (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as perASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique all complete	MT	10749	0.00	₹ 0.00	0.083897862
A2305	Providing Intermediate coat of two component Polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT . This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Colour as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	10749	0.00	₹ 0.00	0.052122592
B2305	Providing Finish coat of Two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT . This coat shall be applied shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	10749	0.00	₹ 0.00	0.052540688
TOTAL Amount					0	

Price bid for Structural fabrication work for 2X800 MW NTPC Lara Project

Mode 2: Total Price towards execution of work of Package A			Package A			
ST NO	Item Description	Unit	Quantity	RATE	AMOUNT	Weightage
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A2301	Fabrication and supply of structures (shop fabricated in customer approved shop as per specification including applying primer coat, intermediate coat and final coat and painting as per applicable corrosivity class mentioned in specification) with mild steel rolled section / Medium and High Tensile structural steel/ built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections conforming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS gratings (to be cut & fabricated from MS paltes supplied in standard available sizes) including in bunker area etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, hood for ground conveyors, monorail doors, stools, derbis chutes, landings, hand-rails etc including bunker area stools, gratings, monorails, platforms, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm) & use of low hydrogen / radiogenic electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Quality A/BR (Semi killed/killed) for Rolled section and B0 for plates (shall be tested for impact resistance at Room temperature), conforming to IS 2062. Plates beyond 12mm thickness and up to 40mm thickness shall be normalized rolled. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalised and shall also be 100% ultrasonically tested as per ASTM -A578 level BS2. ~~Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.~~					
a)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in BHEL scope)	MT	0			
b)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in agency scope)	MT	10749	0.00	₹ 0.00	0.926538022
B2301	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL, PEM, BHEL ISG /BHEL customer. It includes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	250	0.00	₹ 0.00	0.000261367
A2302	Extra over ST NO. C2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coat of two component moisture curing zinc (ethyl) Silicate primer (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as perASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique all complete	MT	10749	0.00	₹ 0.00	0.032569673
A2305	Providing Intermediate coat of two component Polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT . This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Colour as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	10749	0.00	₹ 0.00	0.020234315
B2305	Providing Finish coat of Two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT . This coat shall be applied shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	10749	0.00	₹ 0.00	0.020396623
TOTAL Amount					0	

ST NO	Item Description	Unit	Quantity			
			Package A	Package B	Package C	Package D
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A2301	Fabrication and supply of structures (shop fabricated in customer approved shop as per specification including applying primer coat, intermediate coat and final coat and painting as per applicable corrosivity class mentioned in specification) with mild steel rolled section / Medium and High Tensile structural steel/ built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections conforming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS gratings (to be cut & fabricated from MS plates supplied in standard available sizes) including in bunker area etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, hood for ground conveyors, monorail doors, stools, derbis chutes, landings, hand-rails etc including bunker area stools, gratings, monorails, platforms, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm) & use of low hydrogen / radiogenic electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Quality A/BR (Semi killed/killed) for Rolled section and B0 for plates (shall be tested for impact resistance at Room temperature), conforming to IS 2062. Plates beyond 12mm thickness and up to 40mm thickness shall be normalized rolled. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalised and shall also be 100% ultrasonically tested as per ASTM -A578 level BS2. ~~Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.~~					
a)/b)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections	MT	10749	9870	9662	6931
B2301	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL/PEM, BHEL ISG /BHEL customer. It includes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	250	250	250	250
A2302	Extra over ST NO. C2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coat of two component moisture curing zinc (ethyl) Silicate primer (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as perASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique all complete	MT	10749	9870	9662	6931
A2305	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL/PEM, BHEL ISG /BHEL customer. It includes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	10749	9870	9662	6931
B2305	Providing Finish coat of Two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT . This coat shall be applied shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	10749	9870	9662	6931

2x800MW NTPC Lara STPP- Stage-II			
Summary (Un-Priced Rate Schedule)			
S.No.	Modality	Description	Weightage (%)
1	Mode 1	Mode 1: Total price towards execution of work of Package A (refer BOQ S.No. 8.1 (a)): Fabrication and supply of finished factory fabricated structure (with surface finish and final painting) up-to Project Site, based on Input design & detailed drawing provided by BHEL for structural buildings as specified in scope of Technical Specification for 2X800MW Lara Super Thermal Power Station, Stage-II. Majority of raw material is in BHEL scope.	100.00%
2	Mode 2	Mode 2: Total price towards execution of work of Package A (refer BOQ S.No. 8.1 (b)): Fabrication and supply of finished factory fabricated structure (with surface finish and final painting) up-to Project Site, based on Input design & detailed drawing provided by BHEL for structural buildings as specified in scope of Technical Specification for 2X800MW Lara Super Thermal Power Station, Stage-II. All raw Material is in Agency Scope.	100.00%
NOTE: Bidder has to quote Total Amount included in Item Sl. No. 1 & S.No. 2 Seperately in Volume-II Price Bid at e-procurement portal.			

Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL PEM, BHEL ISG /BHEL customer. It incudes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.

FIRST ANGLE PROJECTION

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

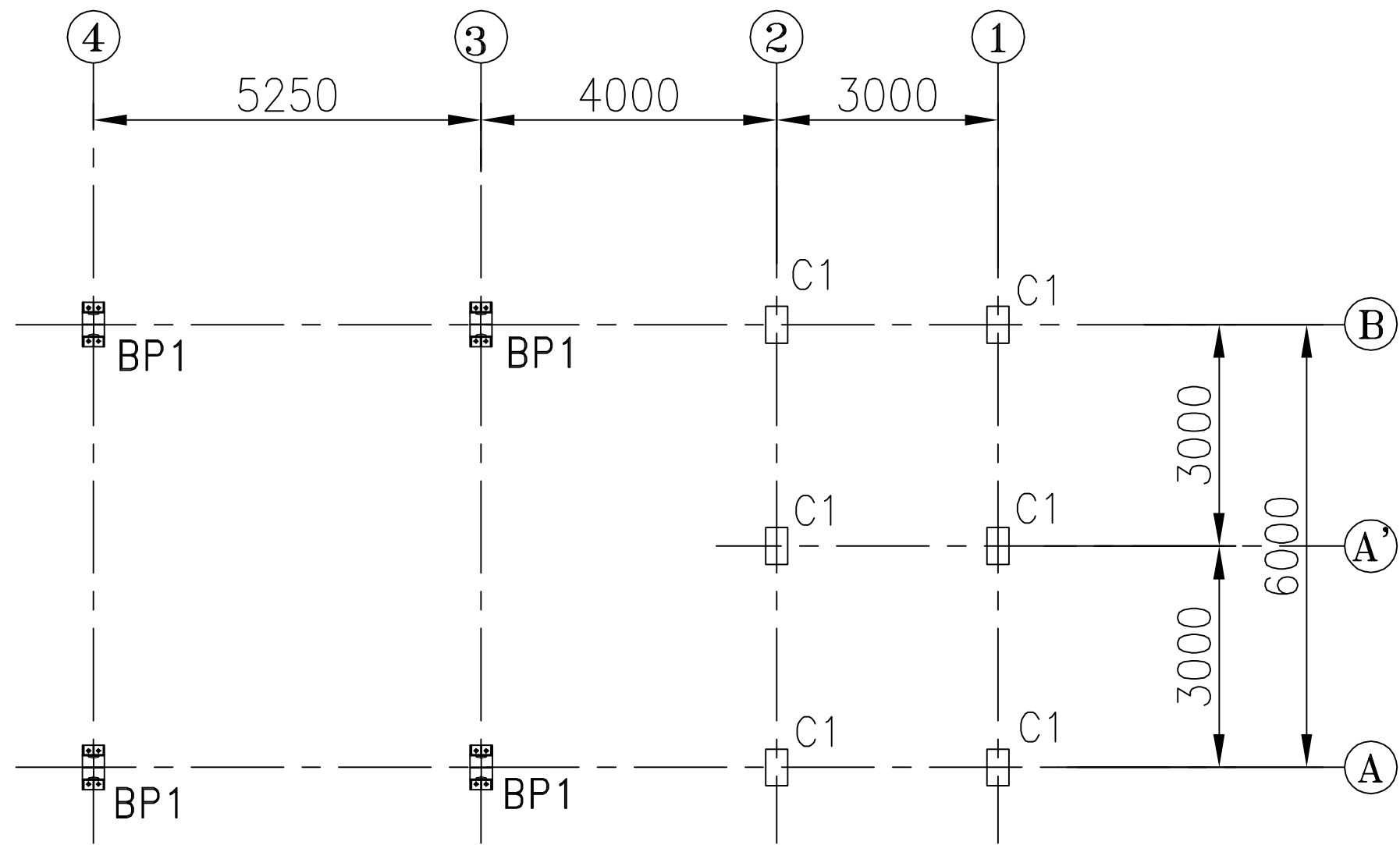
GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

INVENTORY NO

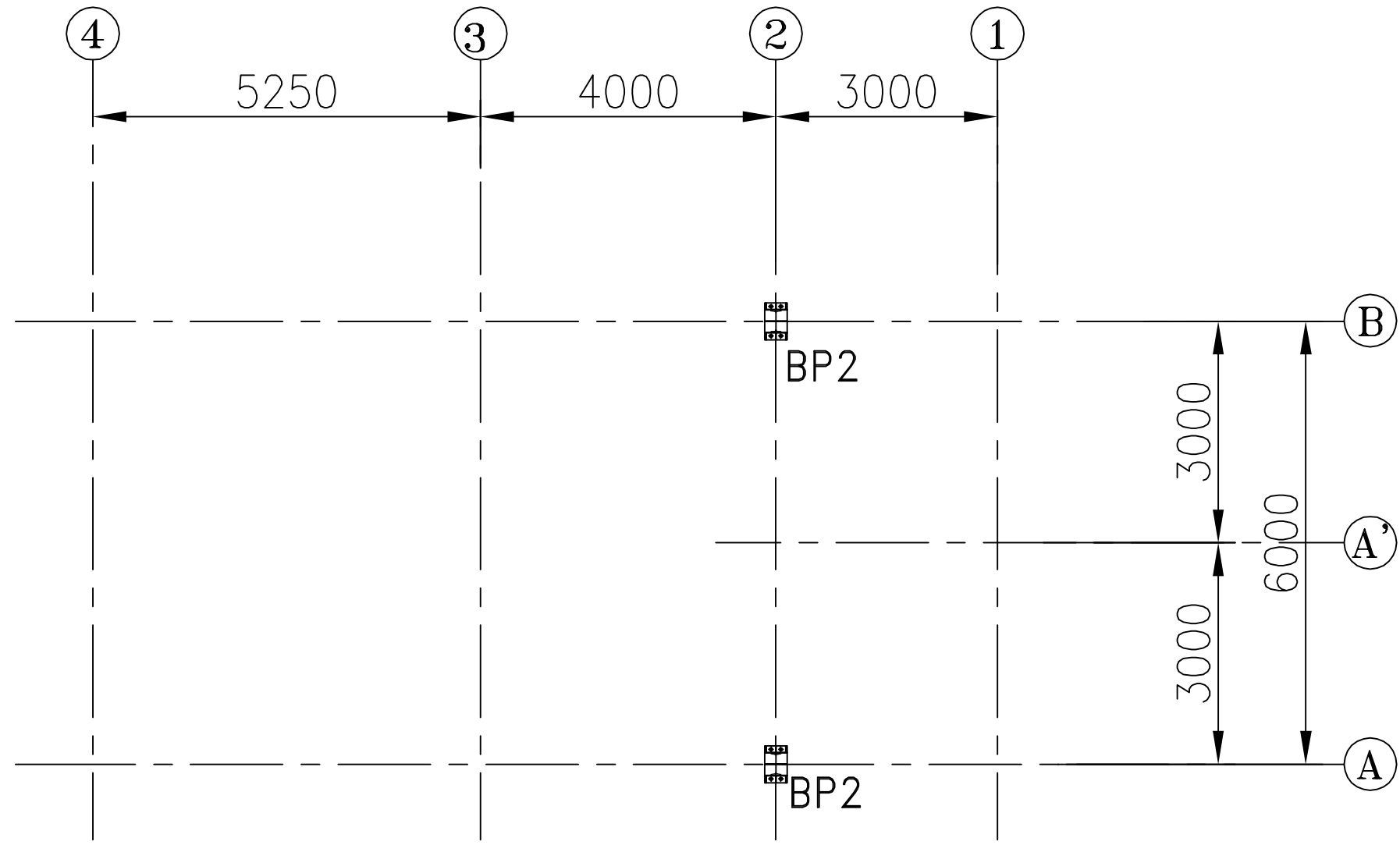
SIGN. AND DATE

COMPUTER FILE NAME

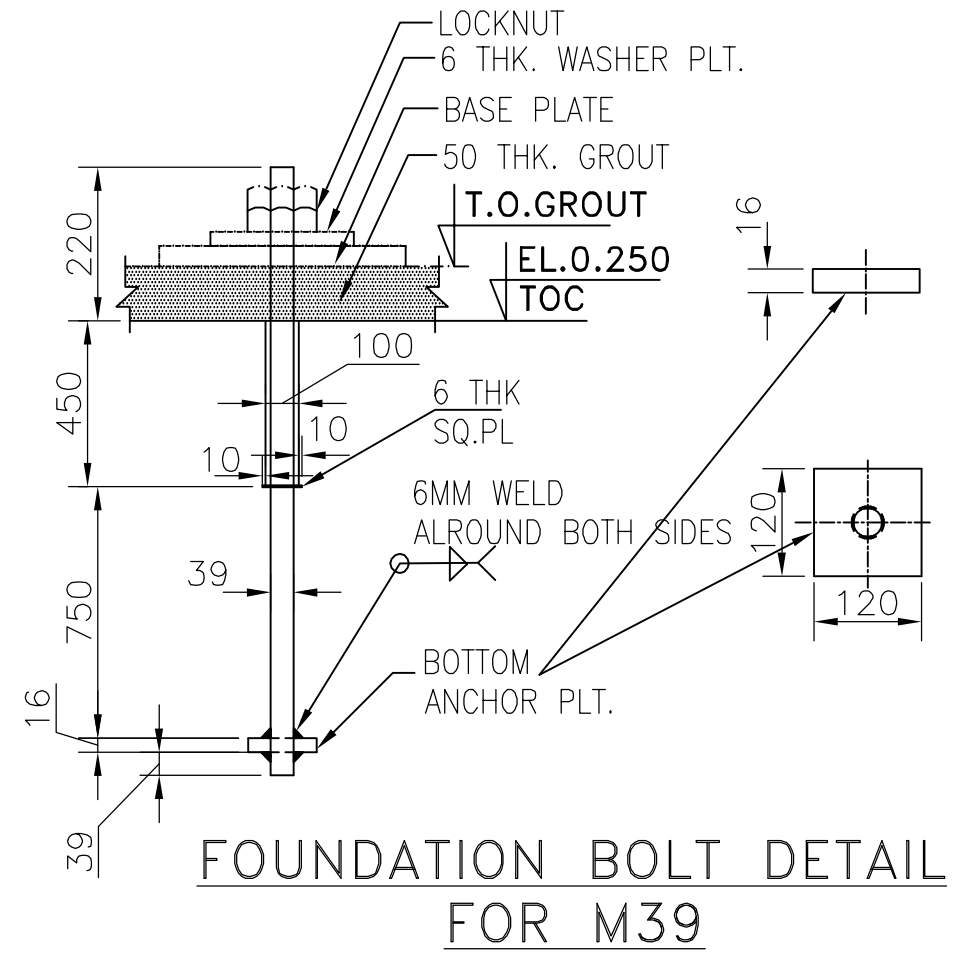
REF. DRG. NO.



PLAN AT EL+0.300M LEVEL (B.O.B.P.)
(LAYOUT OF BASE PLATE)



PLAN AT EL+4.300M LEVEL (B.O.B.P.)
(LAYOUT OF BASE PLATE)



FOUNDATION BOLT DETAIL
FOR M39

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METRES, UNO.
- ALL ELEVATIONS MARKED ARE WITH RESPECT TO TOP OF PAVING FOR BOILER / ESP AREA EL. (-) 0.20M.
- ALL STRUCTURAL STEEL SHALL BE GRADE E250 QUALITY BR CONFIRMING TO IS: 2062.
- ALL GUSSETS SHALL BE 10MM THICK U.N.O.
- SHOP FABRICATION SHALL BE WELDED CONNECTIONS AND FIELD/ SITE CONNECTIONS SHALL BE BOLTED. IN ADDITION, BOLTED CONNECTIONS SHALL BE PROVIDED FOR REMOVABLE TYPE MEMBERS.
- ALL SHOP WELDS SHALL BE 6MM & FIELD WELDS SHALL BE 8MM (UNO).
- STRUCTURAL STEEL SHALL BE PAINTED AS PER SPECIFICATIONS.
- ALL FABRICATION & ERECTION OF STRUCTURAL STEEL SHALL BE AS PER IS: 800.
- THIS DRAWING SHALL BE READ IN CONJUNCTIONS WITH TECHNICAL SPECIFICATION FOR CIVIL & ALL REFERENCE DRAWINGS.
- NO DIMENSIONS FROM THIS DRAWING ARE TO BE SCALED OFF AND ONLY FIGURED DIMENSIONS SHALL BE FOLLOWED.
- CHECK ALL DIMENSIONS, COORDINATES & ELEVATIONS IMMEDIATELY, REPORT ANY DISCREPANCIES, CONFLICTS OR ERROR FOR CLARIFICATION PRIOR TO COMMENCING WORK.
- MEMBER CONNECTION SHALL BE AS PER SECTION-12 OF IS:800-2007.
- ALL MOMENT CONNECTIONS ARE MARKED AS MC.
- ALL OTHER CONNECTION SHALL SHEAR CONNECTIONS UNO.
- WASHER PLATES SHALL TACK WELD WITH BASE PLATE AFTER ALIGNMENT OF COLUMN.
- BASE ORIENTATION SHALL BE AS PER BASE PLATE LAYOUT

REFERENCE DRAWING:-

- PLOT PLAN : PE-DG-497-100-M001/4540-001-301-POC-F-001
- EQUIPMENT LAYOUT & PIPING LAYOUT OF BOOSTER PUMP HOUSE: PY-LP-1-M195-8315-02 /4540-001-151-PVM-P-069.
- ARCH.DETAILS OF BOOSTER PUMP HOUSE : 4540-001-151-PVC-V-013.
- FOUNDATION & RC BEAM DETAILS OF BOOSTER PUMP HOUSE : 4540-001-151-PVC-V-008.

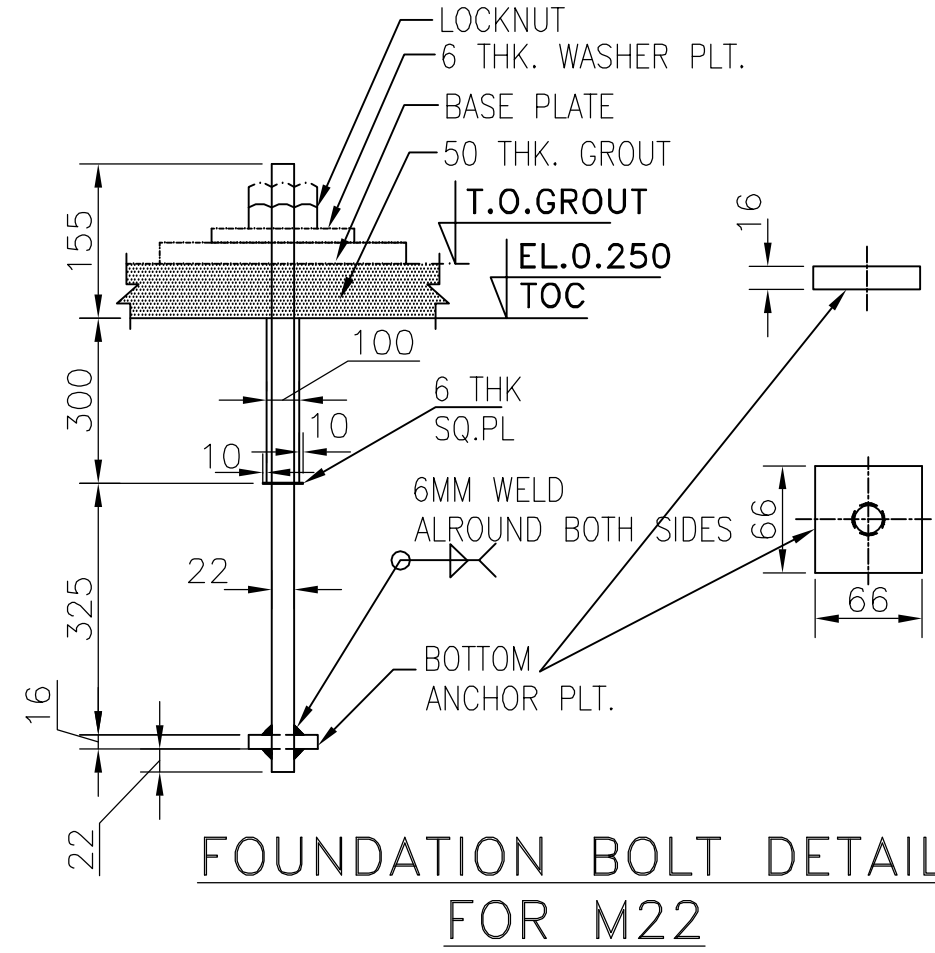
NOTE:
WE CONFIRM THAT THIS DOCUMENT MEETS ALL THE CONTRACT REQUIREMENTS INCLUDING SAFETY AND STATUTORY REQUIREMENTS AND FACILITATE EASE OF OPERATION AND MAINTENANCE. IN CASE ANY DEVIATION IS FOUND, THE CONTRACTOR SHALL CARRY OUT ALL REQUIRED CHANGES/ MODIFICATIONS WITHOUT ANY COST IMPLICATIONS TO NTPC. IN ADDITION, PENALTY ON ACCOUNT OF NONCOMPLIANCE OF CONTRACT SPECIFICATION AS DEEMED FIT BY THE EMPLOYER SHALL BE RECOVERED.

NAME OF PROJECT : 2 x 660 MW TALCHER, TPP, STAGE-III

NAME OF CUSTOMER : **NTPC Limited**
(A GOVERNMENT OF INDIA ENTERPRISE)

NAME	SIGN.	DATE	NO. OF VAR.
DRN. GOURI	-SD-	14.09.23	
CHD. USHA	-SD-	15.09.23	-N.A.-
APPD. ESHAN	-SD-	15.09.23	

DEPT. LPE CODE	UNTOL. DIMS. GR.	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS
450	G/M/F					
TITLE : GA & DETAILS OF BOOSTER PUMP HOUSE				CARD CODE : N.A.	BHEL DRAWING NO. : PY-DG-1-M195-1250-01	REV. : 00
					CUSTOMER DRAWING NO. : 4540-001-151-PVC-V-007	
					SHT. No 1	NO. OF SHT. 2

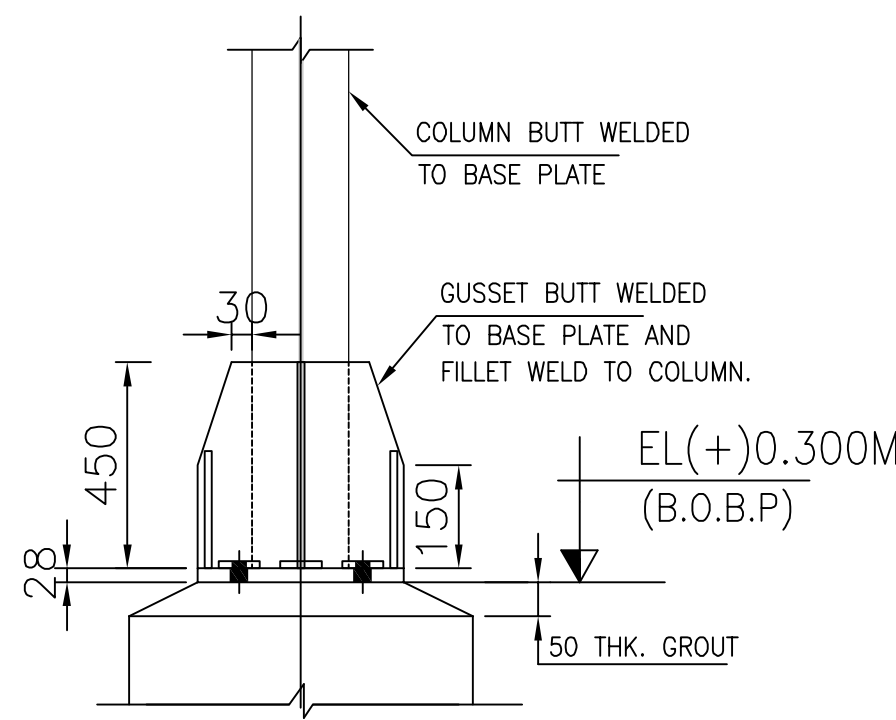


FOUNDATION BOLT DETAIL
FOR M22

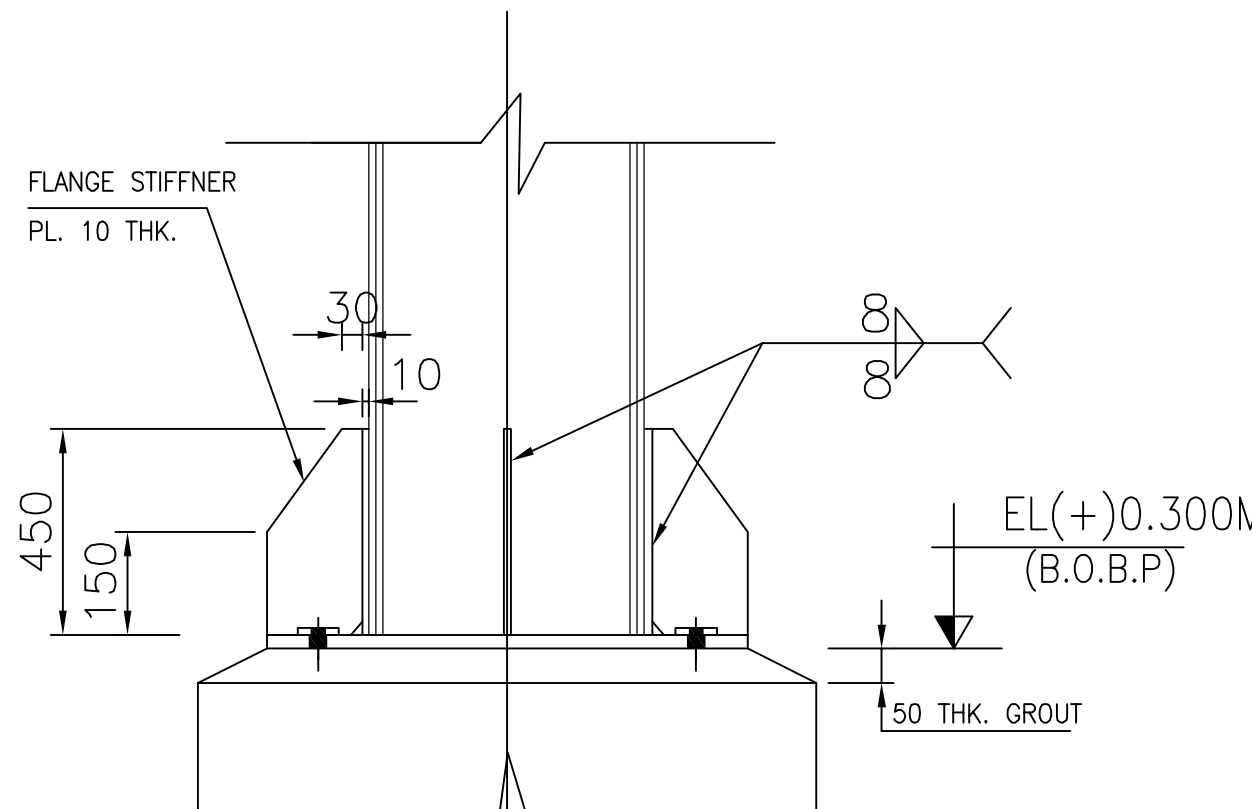
LEGEND

B.O.B.P - BOTTOM OF BASE PLATE
T.O.S - TOP OF STEEL
B.O.S - BOTTOM OF STEEL
T.O.C - TOP OF COLUMN
TYP - TYPICAL
NTS - NOT TO SCALE
THK - THICKNESS
GI - GALVANIZED IRON
TOG - TOP OF GRATING
TOC - TOP OF CONCRETE
MC - MOMENT CONNECTION
EL - ELEVATION
T.O.F - TOP OF FLOOR
T.O.BKT - TOP OF BRACKET

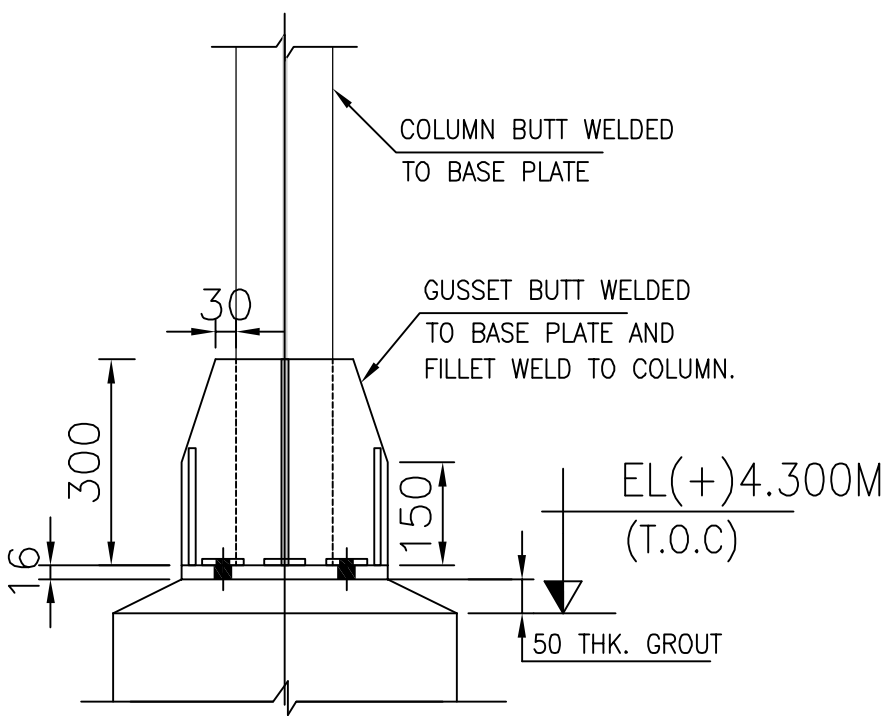
REV.	DATE	ALTERED
		CHD/APPD
ZONE		



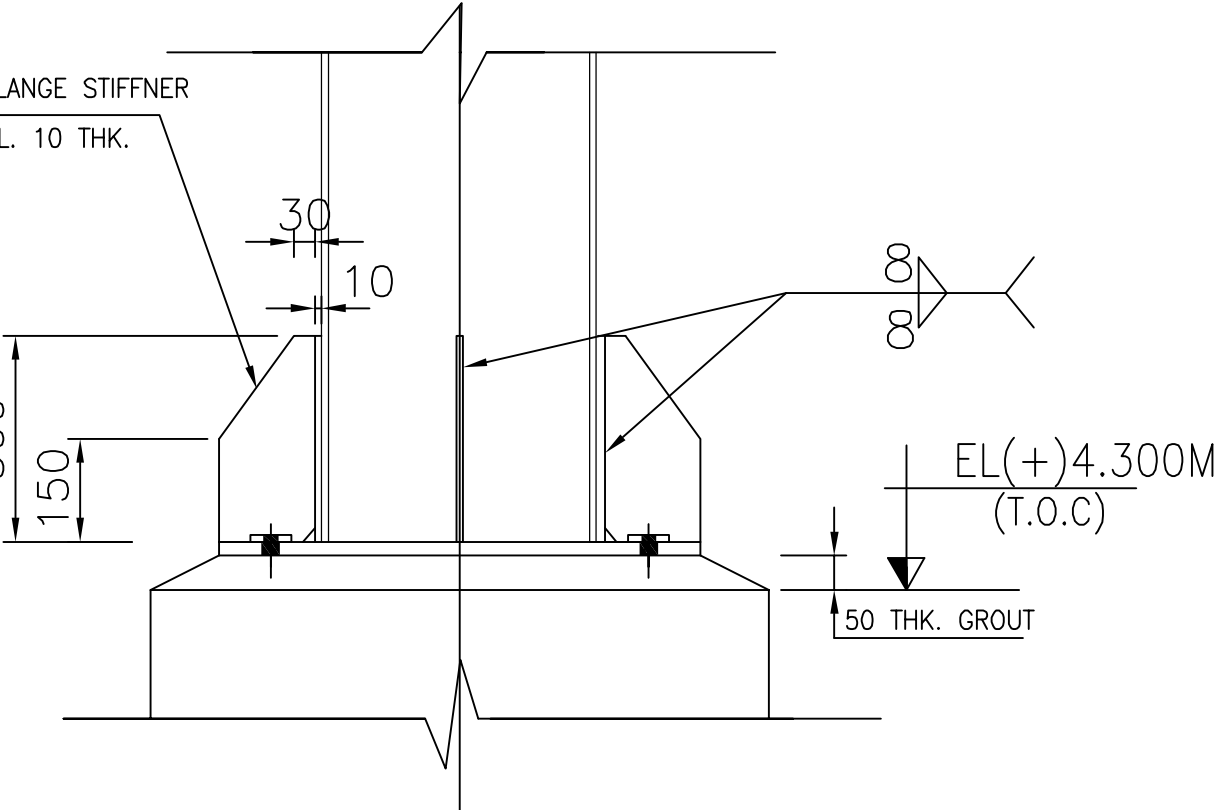
SECTION 1A-1A



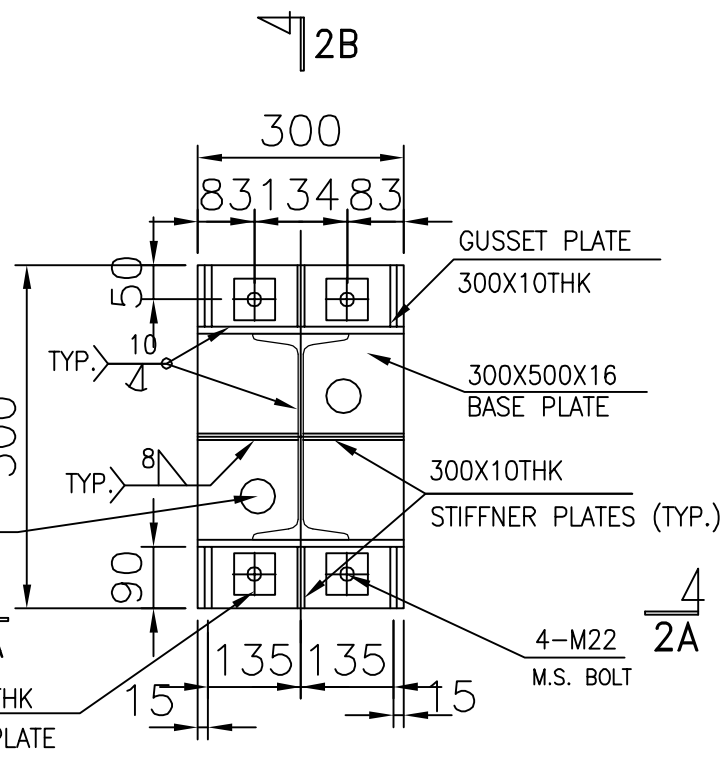
SECTION 1B-1B



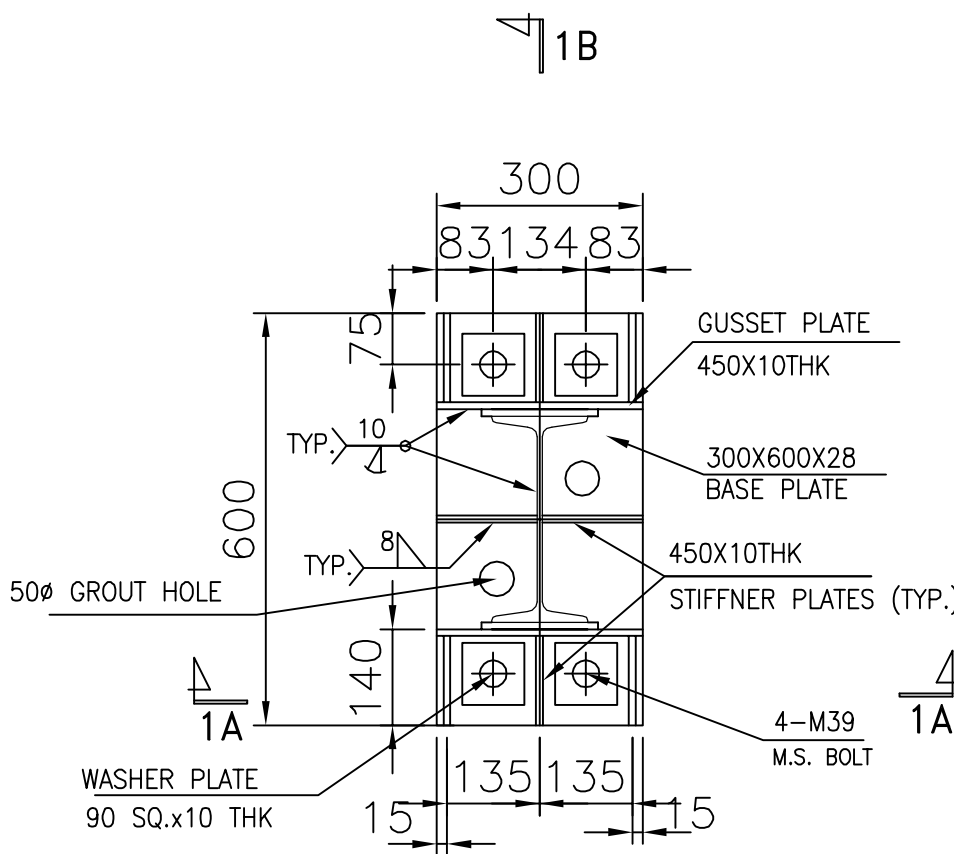
SECTION 2A-2A



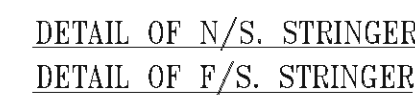
SECTION 2B-2B



BASE PLATE BP2
(2 Nos)



BASE PLATE BP1
(4 Nos)



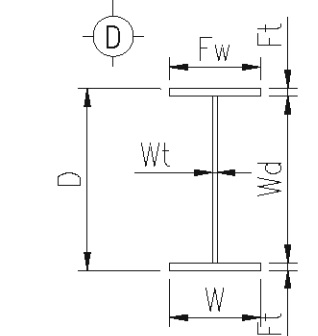
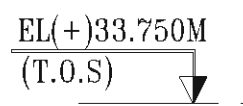
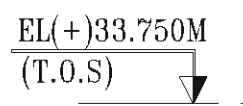
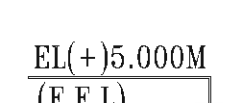
MID	SECTION	SCHEDULE
a	1	MB 600
b	1	MB 500
c	1	MB 450
d	1	MB 400
e	1	MB 300
f	1	MB 250
g	1	MB 200
h	1	MC 400
i	1	MC 300
j	1	MC 250
k	1	MC 200
m	1	MC 150
n	1	MC 100
qy	1	ISA 150X150X16
ba	1	ISA 150X150X10
bc	1	ISA 130X130X12
bb	1	ISA 130X130X10
be	1	ISA 110X110X10
ba	1	ISA 110X110X10
bj	1	ISA 100X100X8
bn	1	ISA 90X90X6
bs	1	ISA 65X65X6
bu	1	BOX MC400
bu	1	BOX MC300
bw	1	BOX MC250
bx	1	BOX MC200
by	1	BOX MC150

[illegible]

1. ALL DIMENSIONS ARE IN 'mm' & LEVELS ARE IN 'M'
2. EL(+/-) 0.000m CORRESPONDS TO RL 99.5m WHICH IS THE F.F.L OF STATION BUILDING
3. REFERENCE DRAWING
GA OF CRUSHER HOUSE WITH LOAD DATA GRD NO
IS-1-GA-690-108-M039
PLOT PLAN NO: IS-O-PL-690-100-M001
SURING SURVEY FOUNDATION FOR RING GRANULATOR CRUSHER
E-6444-2-02. FROM M/S ELECON ENGINEERING CO. LTD.
5. CRUSHER HOUSE- GA OF FLOORS GRD. NO:
IS-1-GA-690-111-0031
6. CRUSHER HOUSE- RC DETAIL OF FOUNDATION
IS-1-RC-690-111-0034

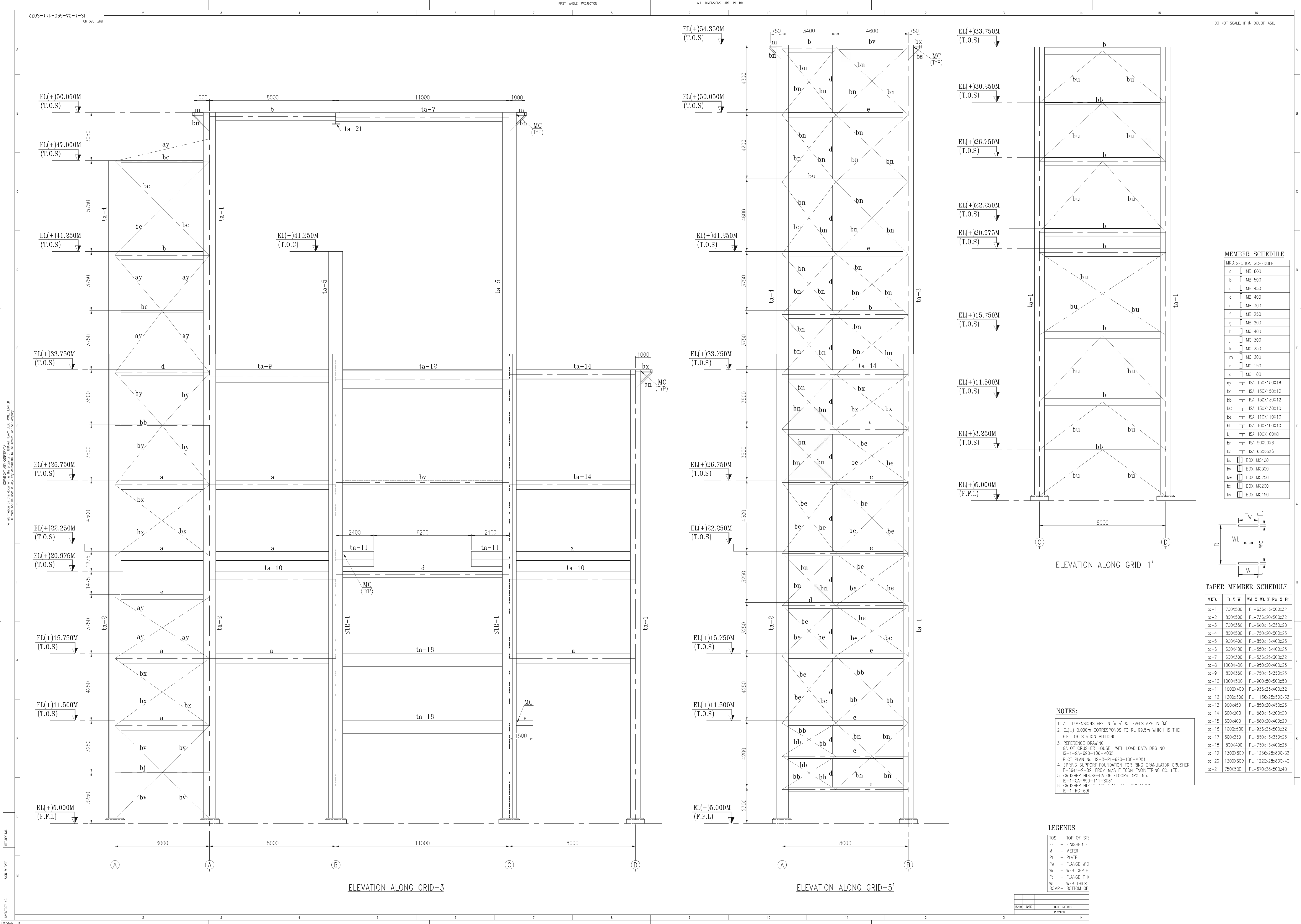
TOS	-	TOP OF STEEL
FFL	-	FINISHED FLOOR LEVEL
M	-	METER
PL	-	PLATE
Fw	-	FLANGE WIDTH
Wd	-	WEB DEPTH
Ft	-	FLANGE THICK
Wt	-	WEB THICK
BOMR	-	BOTTOM OF MONORAIL

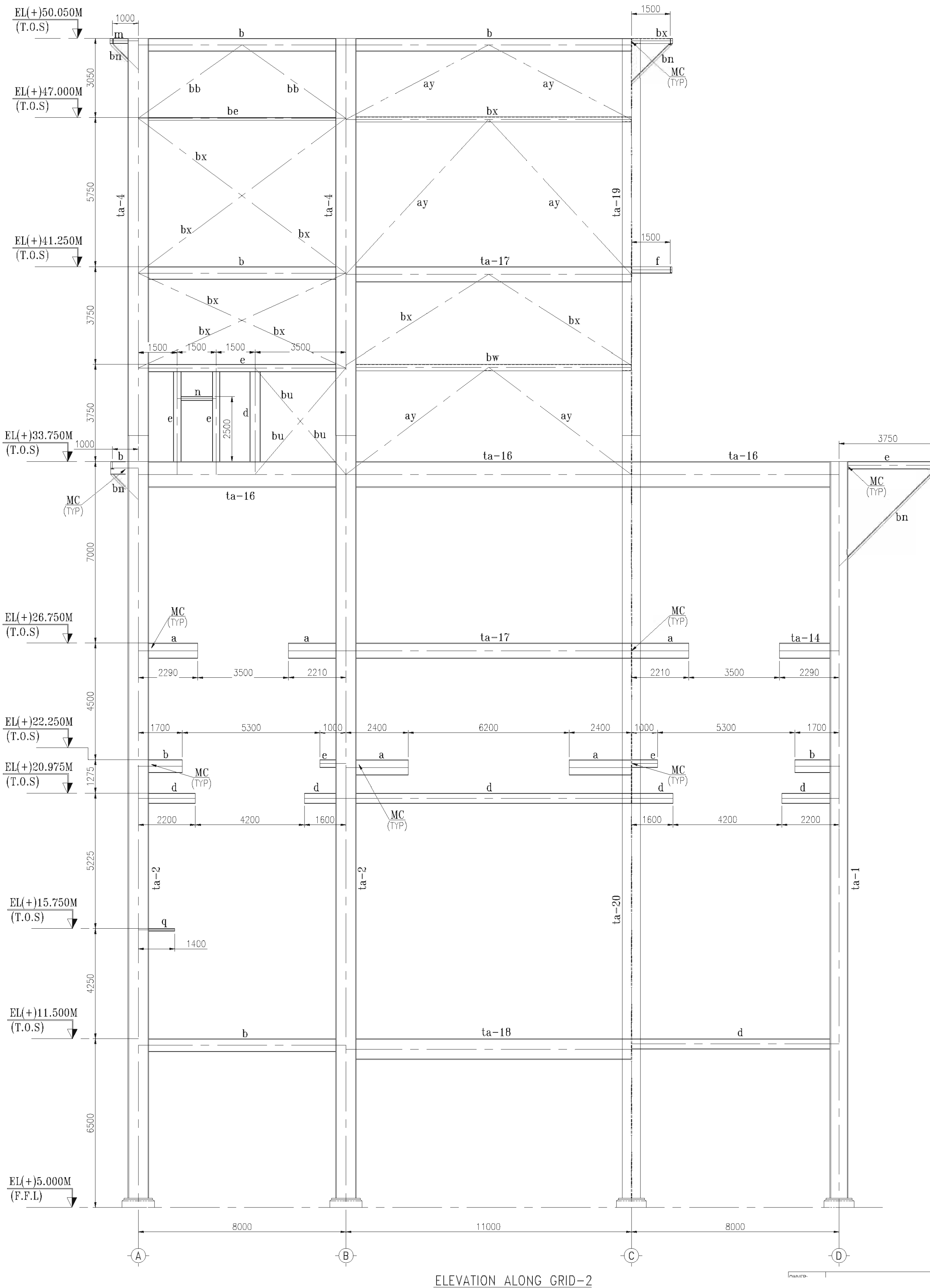
R.No:	DATE	BRIEF RECORD	BY
REVISIONS			



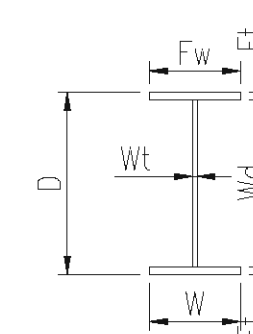
R.No:	DATE	BRIEF RECORD	BY
REVISIONS			

1. ALL DIMENSIONS ARE IN 'MM' & LEVELS ARE IN 'M'
2. EL(+/-) 0.000m CORRESPONDS TO RL 99.5m WHICH IS THE F.F.L OF STATION BUILDING
3. REFERENCE DRAWING
GA OF CRUSHER HOUSE WITH LOAD DATA DRG NO
IS-1-CA-690-100-M035
PLOT PLAN NO: IS-D-PL-690-100-M001
4. SPRING SUPPORT FOUNDATION FOR RING GRANULATOR CRUSHER
E-6644-2-02. FROM M/S ELECON ENGINEERING CO. LTD.
5. CRUSHER HOUSE-GA OF FLOORS DRG. NO:
IS-1-CA-690-111-0034
6. CRUSHER HOUSE-RC DETAIL OF FOUNDATION
IS-1-RC-690-111-0034





MIDSECTION SCHEDULE	
a	1 MB 600
b	1 MB 500
c	1 MB 450
d	1 MB 400
e	1 MB 300
f	1 MB 250
g	1 MB 200
h	MC 400
i	MC 300
j	MC 250
k	MC 200
m	MC 150
q	MC 100
qy	ISA 150K150X16
ba	ISA 150K150X10
bb	ISA 130K130X12
bc	ISA 130K130X10
be	ISA 110K110X10
bf	ISA 100K100X10
bj	ISA 100K100X8
bn	ISA 50X9X6
ba	ISA 65X65X6
bu	BOX MC400
bw	BOX MC300
bx	BOX MC250
by	BOX MC200
bx	BOX MC150

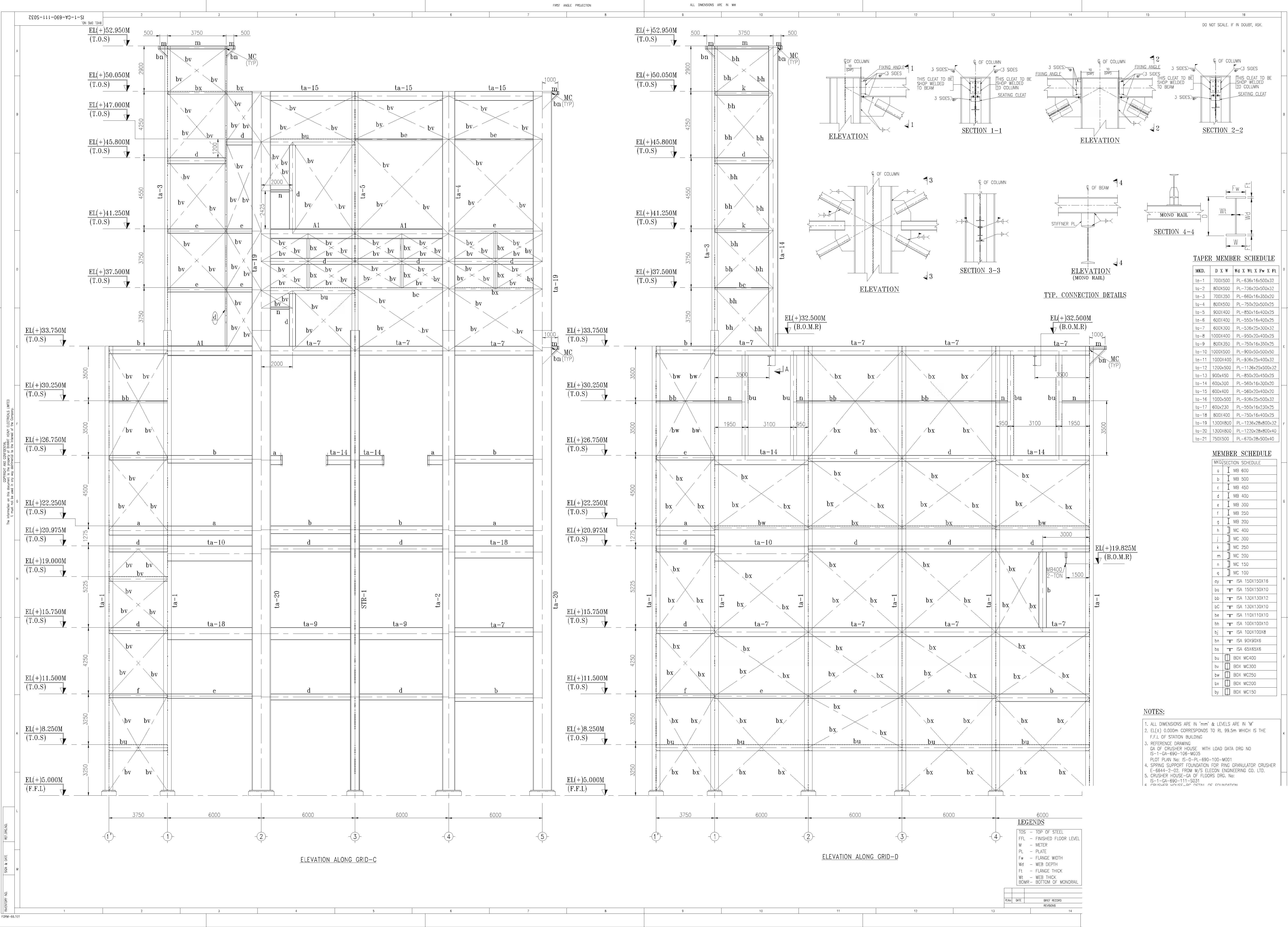


MKD.	D X W	Wd X Wt X Pw X Pw
1a-1	700x500	P-356/1.65x500x32
2-2	800x500	P-376x2.00x500x32
3-3	700x350	P-360/1.65x350x20
4-4	800x500	P-750/2.00x500x32
5-5	900x400	P-850/1.65x400x25
6-6	600x400	P-550/1.65x400x25
7-7	600x300	P-336x2.00x300x25
8-8	1000x400	P-950/2.00x400x25
9-9	800x350	P-750/1.65x350x25
10-10	500x350	P-550/1.50x350x25
11-11	1000x400	P-336x2.00x400x25
12-12	1200x450	P-1136x2.50x450x25
13-13	900x500	P-850/2.00x500x25
14-14	600x300	P-560/1.50x300x20
15-15	600x400	P-560/1.50x400x20
16-16	1000x500	P-336x2.50x500x25
17-17	600x300	P-550/1.65x300x25
18-18	800x400	P-750/2.00x400x25
19-19	1300x800	P-1236x2.80x800x32
20-20	1300x800	P-1220x2.80x800x40
21-21	750x500	P-670x2.00x500x40

1. ALL DIMENSIONS ARE IN 'mm' & LEVELS ARE IN 'M'
2. EL(+0.000m) CORRESPONDS TO RL 99.5m WHICH IS THE
F.F.L OF STATION BUILDING
3. REFERENCE DRAWING
GA OF CRUSHER HOUSE WITH LOAD DATA DRG NO
IS-1-GA-690-106-M035
PLOT PLAN No: IS-0-PL-690-100-M001
4. SLOPING SUPPORT FOUNDATION FOR GRINDING MILL CRU
E-6644-2-02. FROM M/S ELECON ENGINEERING CO. LTD.
5. CRUSHER HOUSE-GA OF FLOORS DRG. No:
IS-1-GA-690-111-S031
6. CRUSHER HOUSE-RC CHIMNEY & CHIMNEY OF FOUNDATION
DRG-690-111-S034

TOS - TOP OF STEEL
FFL - FINISHED FLOOR LEVEL
M - METER
PL - PLATE
Fw - FLANGE WIDTH
Wd - WEB DEPTH
Ft - FLANGE THICK
Wt - WEB THICK
BOMR - BOTTOM OF MONORAIL

R.No:	DATE	BRIEF RECORD	B
REVISIONS			

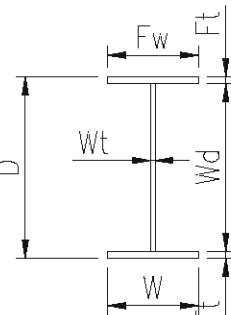




ELEVATION ALONG GRID-B

MEMBER SCHEDULE

MIXED-USE SCHEDULE	
a	I MB 600
b	I MB 500
c	I MB 450
d	I MB 400
e	I MB 300
f	I MB 250
g	I MB 200
h	MC 400
j	MC 300
k	MC 250
m	MC 200
n	MC 150
q	MC 100
dy	ISA 150150X16
bd	ISA 150150X10
tr	ISA 130130X12
bc	ISA 130130X10
ah	ISA 1101110X10
be	ISA 1001100X10
bj	ISA 100100X10
bs	ISA 90X90X6
bn	ISA 65X65X6
bu	BOX MC400
bv	BOX MC300
bw	BOX MC250
bx	BOX MC200
by	BOX MC150



TAPER MEMBER SCHEDULE

MKD.	D X W	Wd X Wt X Fw X Fu
to-1	700/500	Pl-63±6/15±00/32±3
to-2	800/500	Pl-73±6/20±00/35±3
to-3	700/350	Pl-66±1/18±35/30±3
to-4	800/500	Pl-75±0/25±00/35±3
to-5	900/400	Pl-85±0/16±00/25±3
to-6	600/300	Pl-55±0/16±00/25±3
to-7	600/300	Pl-53±6/25±00/32±3
to-8	1000/500	Pl-95±0/20±00/32±3
to-9	800/350	Pl-75±0/15±35/25±3
to-10	1000/500	Pl-80±0/50±0/32±3
to-11	1000/400	Pl-93±6/25±00/32±3
to-12	1200/500	Pl-113±6/25±00/32±3
to-13	900/450	Pl-85±0/20±00/35±3
to-14	600/300	Pl-56±1/16±00/20±3
to-15	600/400	Pl-56±0/20±00/27±3
to-16	1000/500	Pl-93±6/25±00/32±3
to-17	600/230	Pl-55±0/16±00/23±3
to-18	800/400	Pl-75±0/16±00/25±3
to-19	1300/800	Pl-123±6/28±00/40±3
to-20	1300/800	Pl-122±0/28±00/40±3
to-21	750/500	Pl-67±0/28±00/40±3

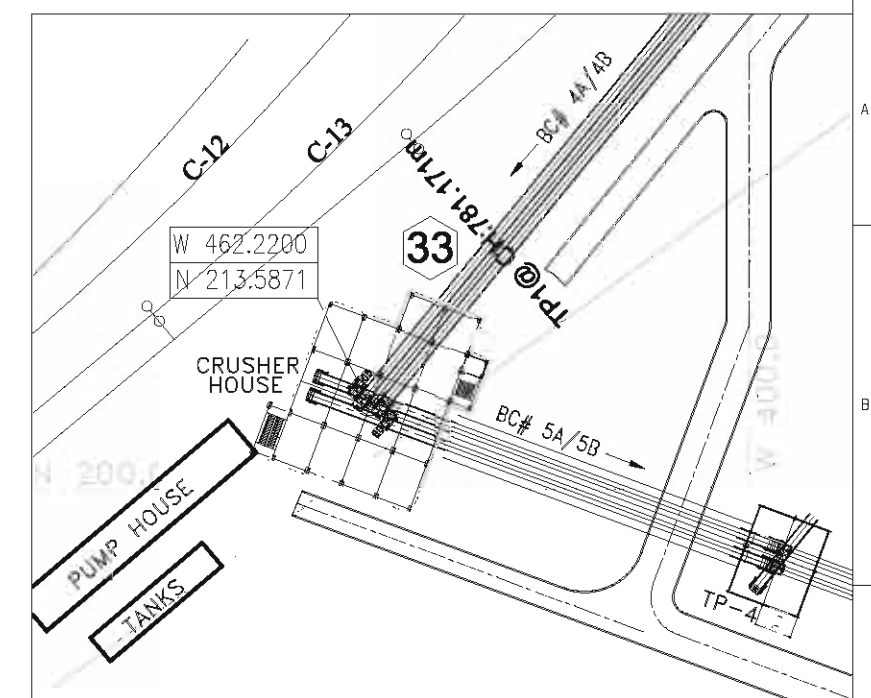
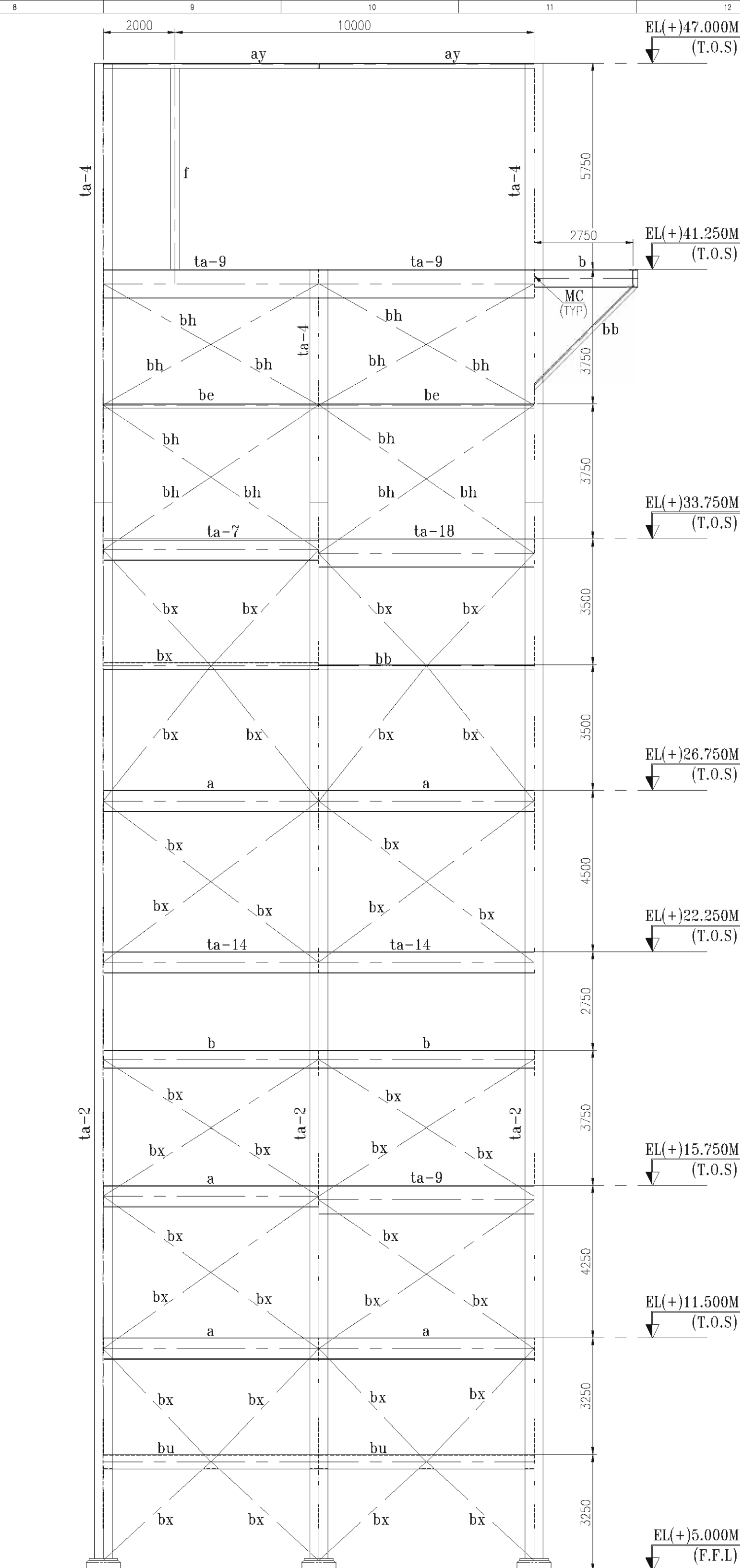
LEGENDS

TOS - TOP OF STEEL
FFL - FINISHED FLOOR LEVEL
M - METER
PL - PLATE
Fw - FLANGE WIDTH
Wd - WEB DEPTH
Ft - FLANGE THICK
Wt - WEB THICK
BOMR - BOTTOM OF MONORAIL

NOTES:

1. ALL DIMENSIONS ARE IN "MM" & LEVELS ARE IN "M"
2. EL(+).000mm CORRESPONDS TO RL 99.5m WHICH IS THE
F.F.L OF STATION BUILDING
3. REFERENCE DRAWING
GA OF CRUSHER HOUSE WITH LOAD DATA DRG NO
IS-1-GA-690-109-M035
PLOT PLAN NO: IS-0-PL-690-100-M001
4. SPRING SUPPLY DRAWING FOR RING GRANULATOR CRUSHER
E-6844-2-02. FROM M/S ELECON ENGINEERING CO. LTD.
5. CRUSHER HOUSE-GA OF FLOORS DRG. NO:
IS-1-GA-690-111-0034
6. CRUSHER HOUSE-RC DETAIL OF FOUNDATION
IS-1-RC-690-111-0034

R.No:	DATE	BRIEF RECORD
		REVISIONS
		14



WJQ/SECTION SCHEDULE	
a	I MB 600
b	I MB 500
c	I MB 450
d	I MB 400
e	I MB 300
f	I MB 250
g	I MB 200
h	J MC 400
i	J MC 300
k	J MC 250
m	J MC 200
n	J MC 150
q	J MC 100
gy	ISA 150X150X16
bb	ISA 150X150X10
bt	ISA 130X130X12
yc	ISA 130X130X10
be	ISA 110X110X10
bs	ISA 100X100X10
bj	ISA 100X100X8
bn	ISA 90X90X6
bs	ISA 65X65X6
bu	BOX MC400
bv	BOX MC300
bw	BOX MC250
bx	BOX MC200
by	BOX MC150



BEAM WITH PL. DETAIL

NAME	BASE PLATE THK. (T)	BOLT SIZE (B1)	COLUM
BP-1	50	φ25	to-2
BP-2	45	φ32	to-2
BP-3	50	φ40	to-2
BP-4	50	φ36	to-1
BP-5	45	φ32	to-2
BP-6	50	φ32	to-2
BP-7	50	φ40	to-2
BP-8	40	φ36	to-1
BP-9	63	φ48	to-2
BP-12	36	φ32	to-1
BP-15	63	φ40	to-2
BP-17	40	φ36	to-1
BP-18	45	φ36	to-1
BP-19	45	φ32	to-1
BP-20	50	φ40	to-1
BP-21	40	φ48	to-2
BP-22	45	φ48	to-2
BP-23	45	φ48	to-2
BP-24	45	φ36	to-1
BP-25	45	φ32	to-1
BP-26	45	φ36	to-1
BP-27	40	φ32	to-1
BP-28	32	φ32	to-1

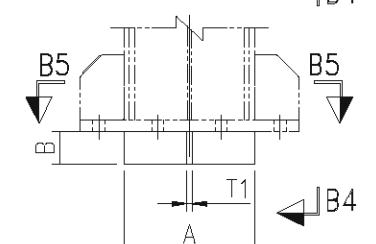
MKD.	D	X	W	Wd	X	W	X	Fw	X	F	F
to-1	700/500			PL-636/15x500x32							
to-2	800/500			PL-720/20x500x32							
to-3	700/350			PL-660/15x350x20							
to-4	800/500			PL-750/20x500x25							
to-5	900/400			PL-850/15x400x25							
to-6	600/400			PL-550/15x400x25							
to-7	600/300			PL-538/25x300x32							
to-8	1000/400			PL-950/20x400x25							
to-9	800/350			PL-750/15x350x25							
to-10	1000/500			PL-900/50x500x50							
to-11	1000/400			PL-938/25x400x32							
to-12	1200x500			PL-1136x25x500x32							
to-13	900x450			PL-850/20x450x25							
to-14	600/300			PL-560/15x300x20							
to-15	600/400			PL-560/20x400x20							
to-16	1000/500			PL-938/25x500x32							
to-17	600/230			PL-550/15x230x25							
to-18	800/400			PL-750/15x400x25							
to-19	1300/800			PL-1236/28x800x32							
to-20	1300/800			PL-1220x28x800x40							
to-21	750/500			PL-670x28x500x40							

1. ALL DIMENSIONS ARE IN 'mm' & LEVELS ARE IN 'M'
2. EL.(±) 0.000m CORRESPONDS TO RL 99.5m WHICH IS THE F.F.L OF STATION BUILDING
3. REFERENCE DRAWING
OF CRUISER HOUSE WITH LOAD DATA DRG NO

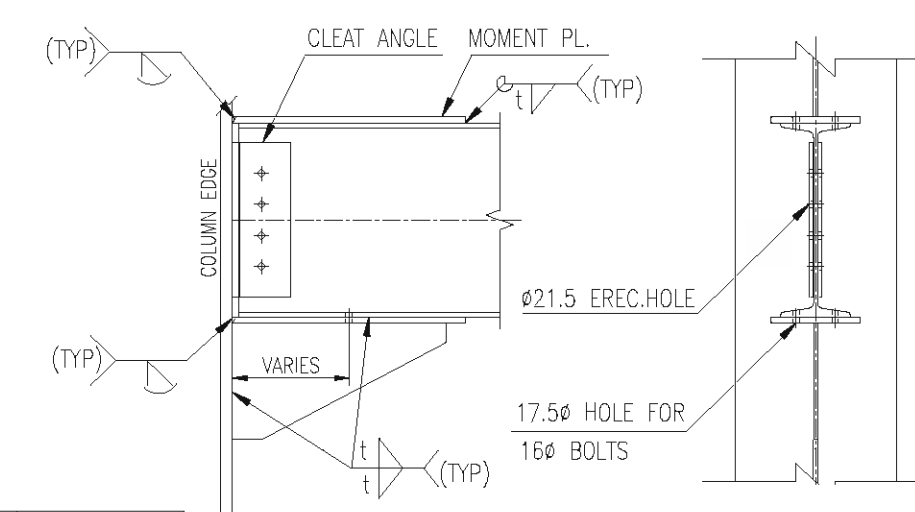


SHEAR KEY DETAIL

NAME	X-DIRECTION A X B x T1	Z-DIRECTION A X B x T1	BOTH WAYS A X B x T1
BP-2, BP-5 & BP-17	--	800X150X40	--
BP-3	--	500X150X40	--
BP-6	300X150X36	--	--
BP-8	800X150X36	--	--
BP-19	--	800X200X50	--
BP-20	500X150X25	--	--
BP-21	600X150X40	--	--
BP-22	--	300X150X25	--
BP-23	500X150X32	--	--
BP-24	300X150X32	--	--
BP-26	500X150X36	--	--
BP-27	300X150X20	--	--
BP-28	--	800X200X45	--



SECTION B4-B4

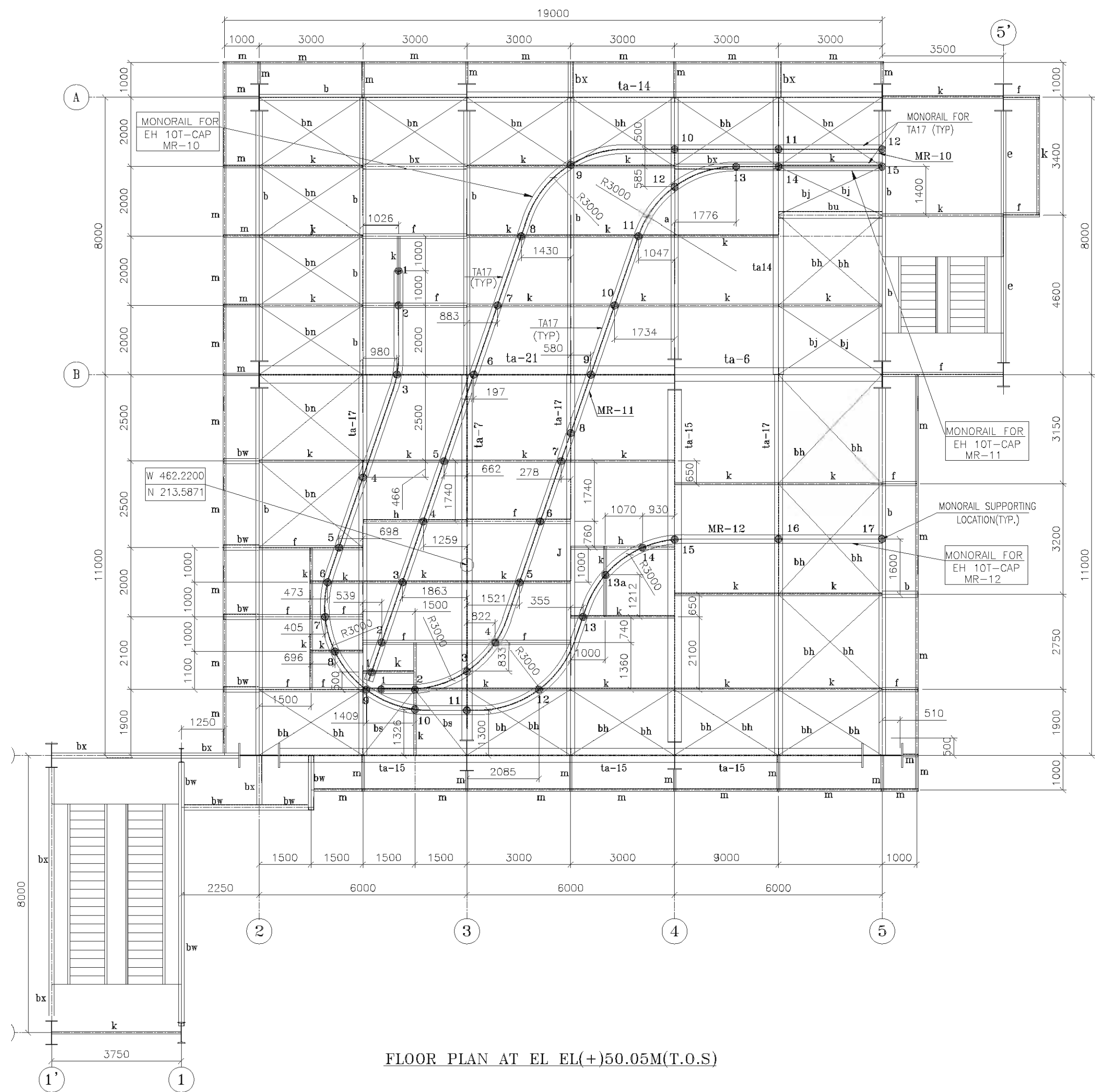
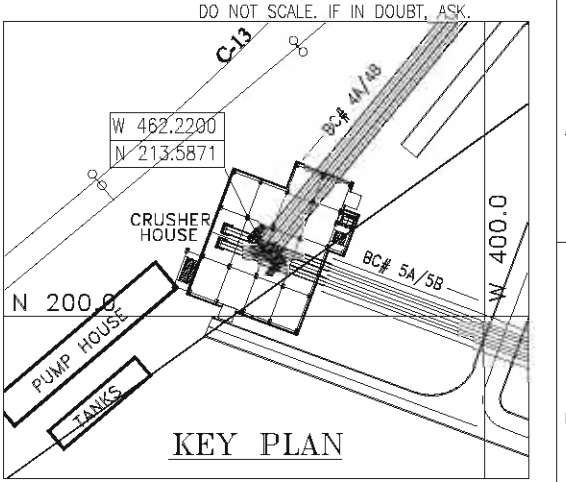
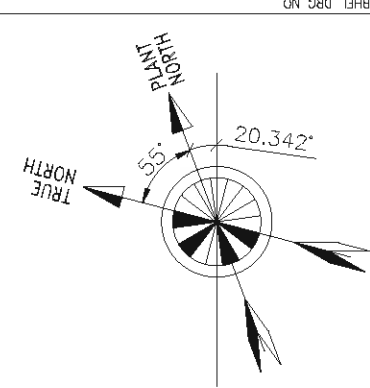


T1	TYPICAL MOMENT
	CONNECTION DET

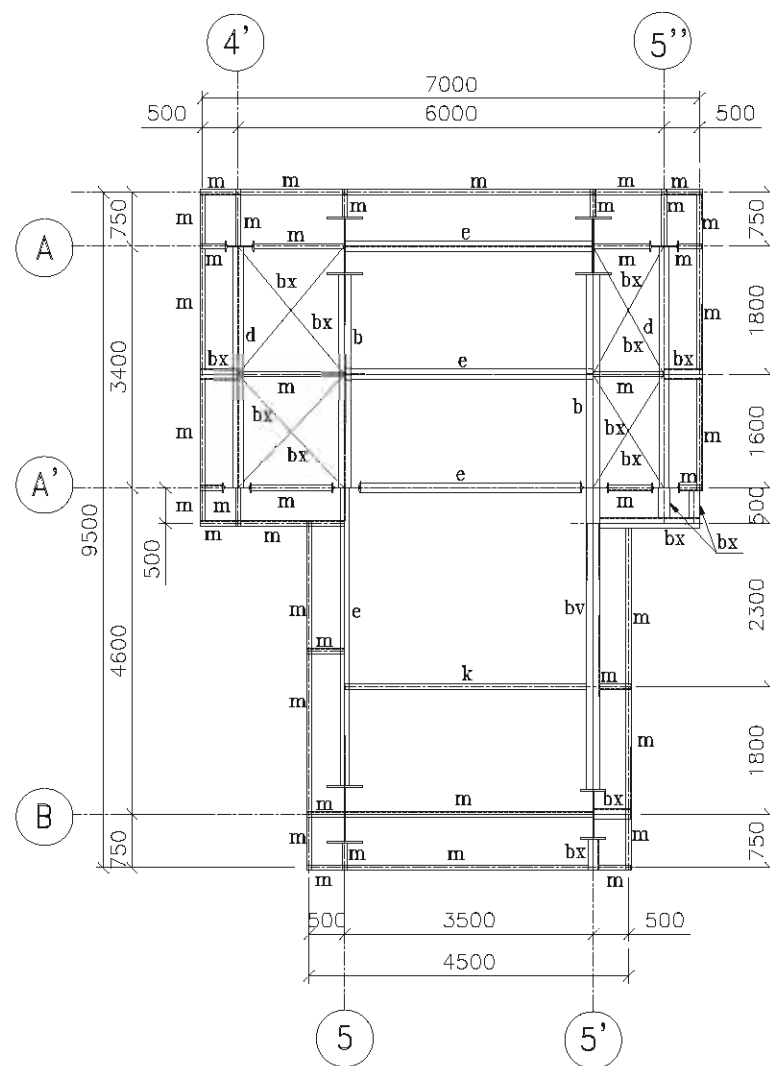
FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

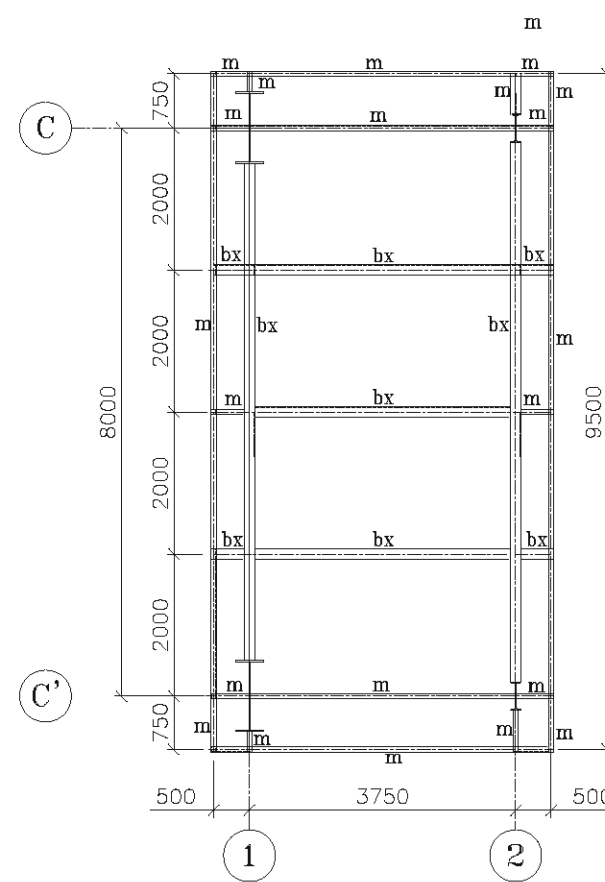
ISOS-111-069-VO-1-SI



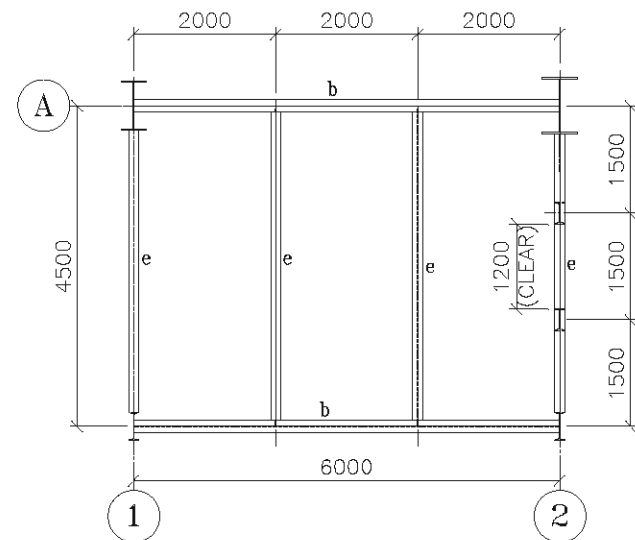
FLOOR PLAN AT EL EL(+50.05M(T.O.S))



FLOOR PLAN AT EL EL(+54.35M(T.O.S))



FLOOR PLAN AT EL EL(+52.550M(T.O.S))



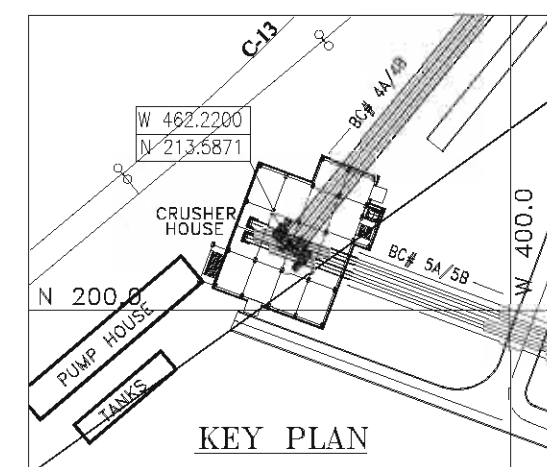
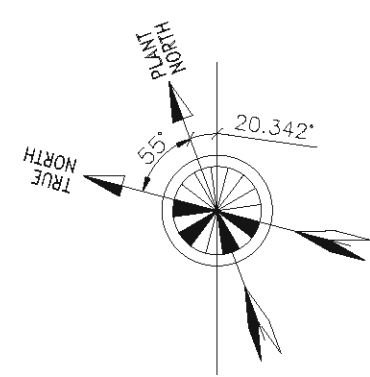
FLOOR PLAN AT EL EL(+37.500M(T.O.S))
(PLC CONTROL PANNEL ROOM AREA)

MONORAIL MEMBER SCHEDULE

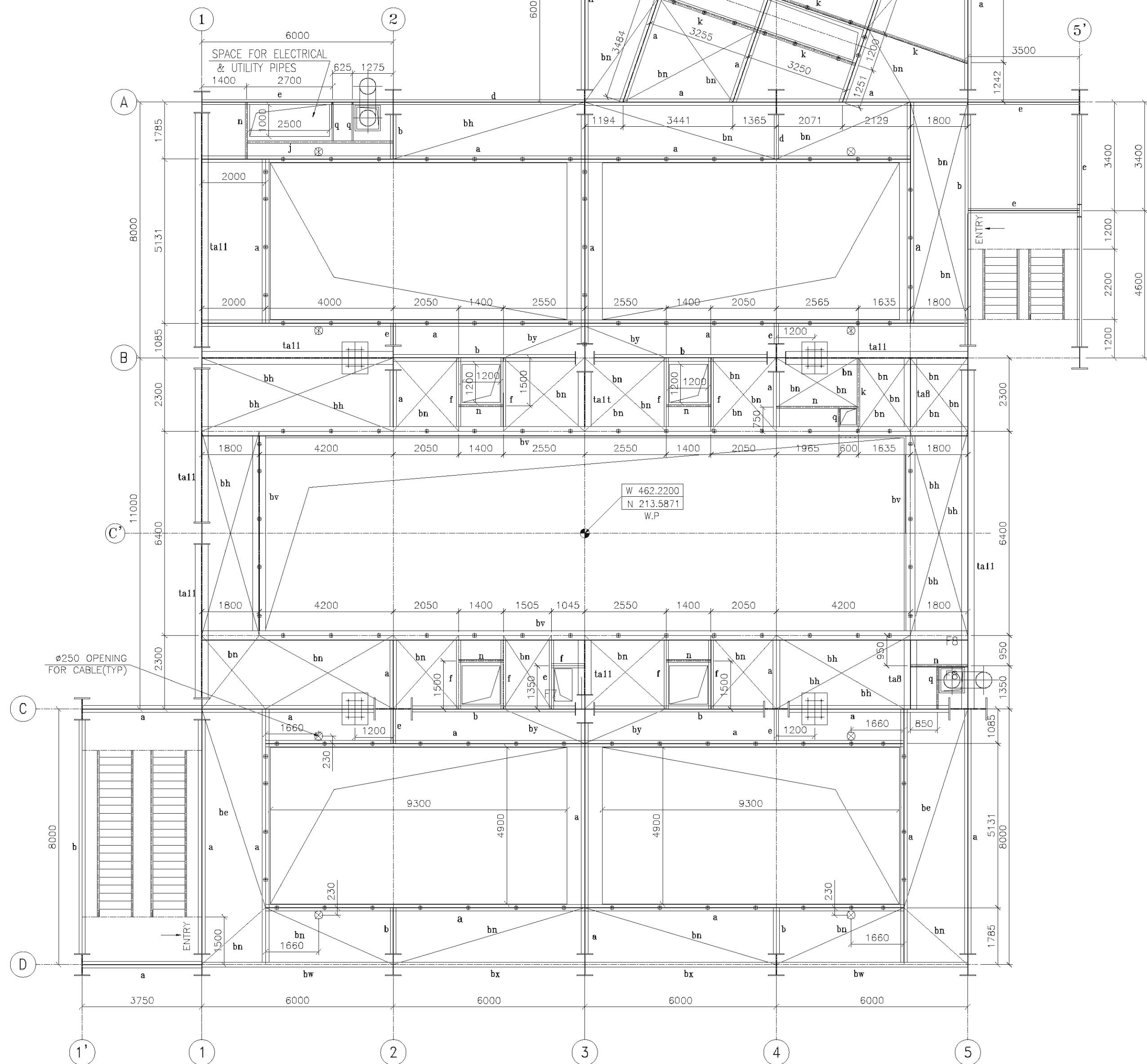
MKD.	MEMBER
MR-1	ISMB 400
MR-2	ISMB 200
MR-3	ISMB 200
MR-4	ISMB 200
MR-5	ISMB 600
MR-6	ISMB 200
MR-7	ISMB 600
MR-8	ISMB 200
MR-9	ISMB 200
MR-10	ISMB 600
MR-11	ISMB 600
MR-12	ISMB 600

MEMBER SCHEDULE

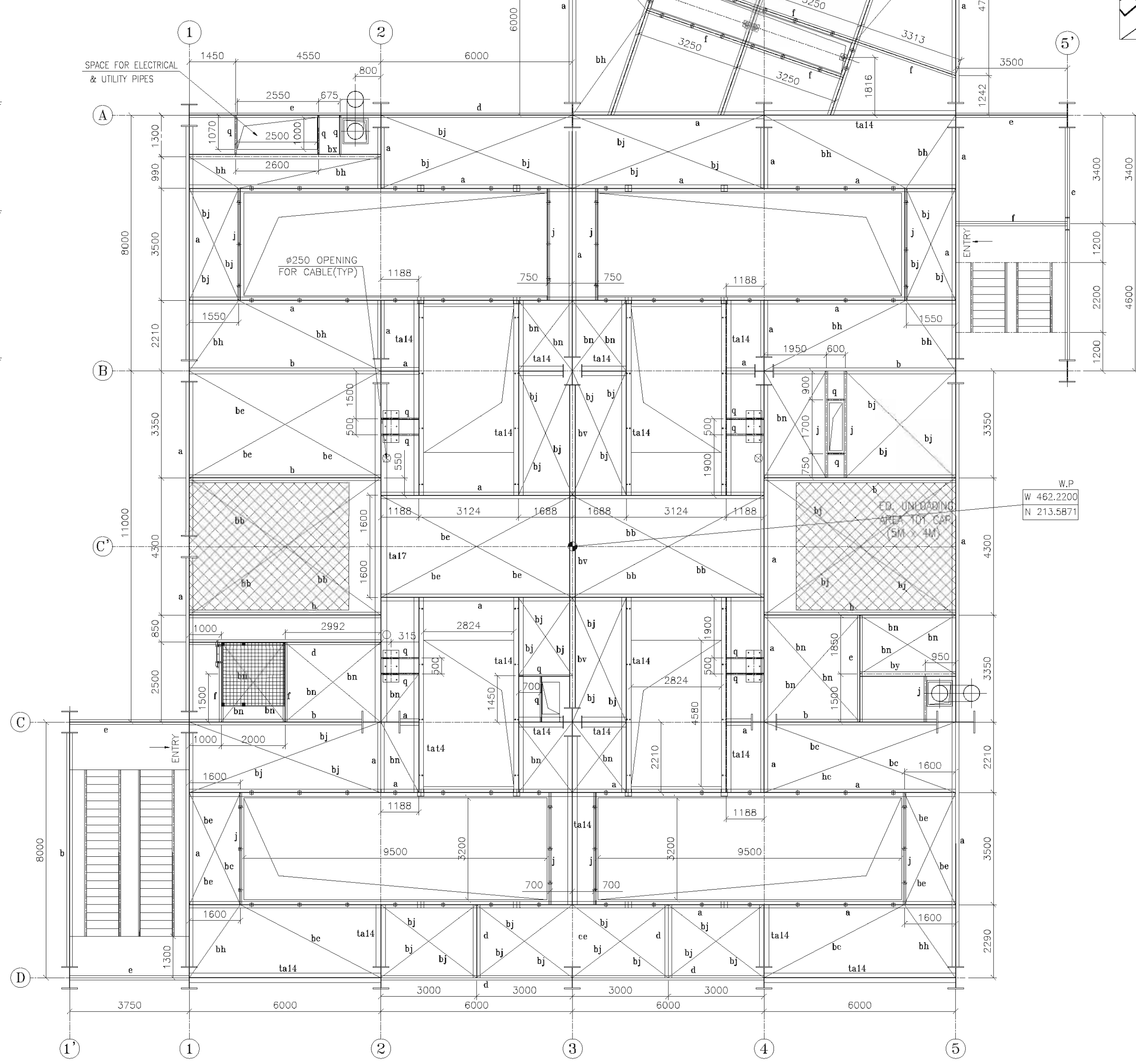
MKD.	SECTION	SCHEDULE
a	I	MB 600
b	I	MB 500
c	I	MB 450
d	I	MB 400
e	I	MB 300
f	I	MB 250
g	I	MB 200
h	I	MC 100
i	I	MC 150
j	I	MC 200
k	I	MC 250
l	I	MC 300
m	I	MC 350
n	I	MC 400
o	I	MC 450
p	I	MC 500
q	I	MC 550
r	I	MC 600
s	I	MC 650
t	I	MC 700
u	I	MC 750
v	I	MC 800
w	I	MC 850
x	I	MC 900
y	I	MC 950
z	I	MC 1000
aa	I	MC 1050
ab	I	MC 1100
ac	I	MC 1150
ad	I	MC 1200
ae	I	MC 1250
af	I	MC 1300
ag	I	MC 1350
ah	I	MC 1400
ai	I	MC 1450
aj	I	MC 1500
ak	I	MC 1550
al	I	MC 1600
am	I	MC 1650
an	I	MC 1700
ao	I	MC 1750
ap	I	MC 1800
aq	I	MC 1850
ar	I	MC 1900
as	I	MC 1950
at	I	MC 2000
au	I	MC 2050
av	I	MC 2100
aw	I	MC 2150
ax	I	MC 2200
ay	I	MC 2250
az	I	MC 2300
ba	I	MC 2350
bb	I	MC 2400
bc	I	MC 2450
bd	I	MC 2500
be	I	MC 2550
bf	I	MC 2600
bg	I	MC 2650
bh	I	MC 2700
bi	I	MC 2750
bj	I	MC 2800
bk	I	MC 2850
bl	I	MC 2900
bm	I	MC 2950
bn	I	MC 3000
bo	I	MC 3050
bp	I	MC 3100
bq	I	MC 3150
br	I	MC 3200
bs	I	MC 3250
bt	I	MC 3300
bu	I	MC 3350
bv	I	MC 3400
bw	I	MC 3450
bx	I	MC 3500
by	I	MC 3550
bz	I	MC 3600
ca	I	MC 3650
cb	I	MC 3700
cc	I	MC 3750
cd	I	MC 3800
ce	I	MC 3850
cf	I	MC 3900
cg	I	MC 3950
ch	I	MC 4000
ci	I	MC 4050
cj	I	MC 4100
ck	I	MC 4150
cl	I	MC 4200
cm	I	MC 4250
cn	I	MC 4300
co	I	MC 4350
cp	I	MC 4400
cq	I	MC 4450
cr	I	MC 4500
cs	I	MC 4550
ct	I	MC 4600
cu	I	MC 4650
cv	I	MC 4700
cw	I	MC 4750
cx	I	MC 4800
cy	I	MC 4850
cz	I	MC 4900
da	I	MC 4950
db	I	MC 5000
dc	I	MC 5050
dd	I	MC 5100
de	I	MC 5150
df	I	MC 5200
dg	I	MC 5250
dh	I	MC 5300
di	I	MC 5350
dj	I	MC 5400
dk	I	MC 5450
dl	I	MC 5500
dm	I	MC 5550
dn	I	MC 5600
do	I	MC 5650
dp	I	MC 5700
dq	I	MC 5750
dr	I	MC 5800
ds	I	MC 5850
dt	I	MC 5900
du	I	MC 5950
dv	I	MC 6000
dw	I	MC 6050
dx	I	MC 6100
dy	I	MC 6150
dz	I	MC 6200
ea	I	MC 6250
eb	I	MC 6300
ec	I	MC 6350
ed	I	MC 6400
ee	I	MC 6450
ef	I	MC 6500
eg	I	MC 6550
eh	I	MC 6600
ei	I	MC 6650
ej	I	MC 6700
ek	I	MC 6750
el	I	MC 6800
em	I	MC 6850
en	I	MC 6900
eo	I	MC 6950
ep	I	MC 7000
eq	I	MC 7050
er	I	MC 7100
es	I	MC 7150
et	I	MC 7200
eu	I	MC 7250
ev	I	MC 7300
ew	I	MC 7350
ex	I	MC 7400
ey	I	MC 7450
ez	I	MC 7500
fa	I	MC 7550
fb	I	MC 7600
fc	I	MC 7650
fd	I	MC 7700
fe	I	MC 7750
ff	I	MC 7800
fg	I	MC 7850
fh	I	MC 7900
fi	I	MC 7950
fj	I	MC 8000
fk	I	MC 8050
fl	I	MC 8100
fm	I	MC 8150
fn	I	MC 8200
fo	I	MC 8250
fp	I	MC 8300
fq	I	MC 8350
fr	I	MC 8400
fs	I	MC 8450
ft	I	MC 8500
fu	I	MC 8550
fv	I	MC 8600
fw	I	MC 8650
fx	I	MC 8700
fy	I	MC 8750
fz	I	MC 8800
ga	I	MC 8850
gb	I	MC 8900
gc	I	MC 8950
gd	I	MC 9000
ge	I	MC 9050
gf	I	MC 9100
gg	I	MC 9150
gh	I	MC 9200
gi	I	MC 9250
gj	I	MC 9300
gk	I	MC 9350
gl	I	MC 9400
gm	I	MC 9450
gn	I	MC 9500
go	I	MC 9550
gp	I	MC 9600
gq	I	MC 9650
gr	I	MC 9700
gs	I	MC 9750
gt	I	MC 9800
gu	I	MC 9850
gv	I	MC 9900
gw	I	MC 9950
gx	I	MC 10000
gy	I	MC 10050
gz	I	MC 10100
ha	I	MC 10150
hb	I	MC 10200
hc	I	MC 10250
hd	I	MC 10300
he	I	MC 10350
hf	I	MC 10400
hg	I	MC 10450
hh	I	MC 10500
hi	I	MC 10550
hj	I	MC 10600
hk	I	MC 10650
hl	I	MC 10700
hm	I	MC 10750
hn	I	MC 10800
ho	I	MC 10850
hp	I	MC 10900
hq	I	MC 10950
hr	I	MC 11000
hs	I	MC 11050
ht	I	MC 11100
hu	I	MC 11150
hv	I	MC 11200
hw	I	MC 11250
hx	I	MC 11300
hy	I	MC 11350
hz	I	MC 11400
ia	I	MC 11450
ib	I	MC 11500
ic	I	MC 11550
id	I	MC 11600
ie	I	MC 11650
if	I	MC 11700
ig	I	MC 11750
ih	I	MC 11800
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ij	I	MC 11900
ik	I	MC 11950
il	I	MC 12000
im	I	MC 12050
in	I	MC 12100
io	I	MC 12150
ip	I	MC 12200
iq	I	MC 12250
ir	I	MC 12300
is	I	MC 12350
it	I	MC 12400
iu	I	MC 12450
iv	I	MC 12500
iw	I	MC 12550
ix	I	MC 12600
iy	I	MC 12650
iz	I	MC 12700
ja	I	MC 12750
jb	I	MC 12800
jc	I	MC 12850
jd	I	MC 12900
je	I	MC 12950
jf	I	MC 13000
jf	I	MC 13050
kg	I	MC 13100
kg	I	MC 13150
kh	I	MC 13200
kh	I	MC 13250
ki	I	MC 13300
ki	I	MC 13350
kl	I	MC 13400
kl	I	MC 13450
km	I	MC 13500
km	I	MC 13550
kn	I	MC 13600
kn	I	MC 13650
ko	I	MC 13700
ko	I	MC 13750
kp	I	MC 13800
kp	I	MC 13850
kq	I	MC 13900
kq	I	MC 13950
kr	I	MC 14000
kr	I	MC 14050
ks	I	MC 14100
ks	I	MC 14150
kt	I	MC 14200
kt	I	MC 14250
ku	I	MC 14300
ku	I	MC 14350
kv	I	MC 14400
kv	I	MC 14450
kw	I	MC 14500
kw	I	MC 14550
kx	I	MC 14600
kx	I	MC 14650
ky	I	MC 14700
ky	I	MC 14750
kz	I	MC 14800
kz	I	MC 14850
la	I	MC 14900
la	I	MC 14950
lb	I	MC 15000
lb	I	MC 15050
lc	I	MC 15100
lc	I	MC 15150
ld	I	MC 15200
ld	I	MC 15250
le	I	MC 15300
le	I	MC 15350
lf	I	MC 15400
lf	I	MC 15450
lg	I	MC 15500
lg	I	MC 15550
lh	I	MC 15600
lh	I	MC 15650
li	I	MC 15700
li	I	MC 15750
lj	I	MC 15800
lj	I	MC 15850
lk	I	MC 15900
lk	I	MC 15950
ll	I	MC 16000
ll	I	MC 16050
lm	I	MC 16100
lm	I	MC 16150
ln	I	MC 16200
ln	I	MC 16250
lo	I	MC 16300
lo	I	MC 16350
lp	I	MC 16400
lp	I	MC 16450
lq	I	MC 16500
lq	I	MC 16550
lr	I	MC 16600
lr	I	MC 16650
ls	I	MC 16700
ls	I	MC 16750
lt	I	MC 16800
lt	I	MC 16850
lu	I	MC 16900
lu	I	MC 16950
lv	I	MC 17000
lv	I	MC 17050
lw	I	MC 17100
lw	I	MC 17150
lx	I	MC 17200
lx	I	MC 17250
ly	I	MC 17300
ly	I	MC 17350
lz	I	MC 17400
lz	I	MC 17450
ma	I	MC 17500
ma	I	MC 17550
mb	I	MC 17600
mb	I	MC 17650
mc	I	MC 17700
mc	I	MC 17750
md	I	MC 17800
md	I	MC 17850
me	I	MC 17900
me	I	MC 17950
mf	I	MC 18000
mf	I	MC 18050
mg	I	MC 18100
mg	I	MC 18150
mh	I	MC 18200
mh	I	MC 18250
mi	I	MC 18300
mi	I	MC 18350
mj	I	MC 18400
mj	I	MC 18450
mk	I	MC 18500
mk	I	MC 18550
ml	I	MC 18600
ml	I	MC 18650
mn	I	MC 18700
mn	I	MC 18750
mo	I	MC 18800
mo	I	MC 18850
mp	I	MC 18900
mp	I	MC 18950
mq	I	MC 19000
mq	I	MC 19050
mr	I	MC 19100
mr	I	MC 19150
ms	I	MC 19200
ms	I	MC 19250
mt	I	MC 19300
mt	I	MC 19350
mu	I	MC 19400
mu	I	MC 19450
mv	I	MC 19500
mv	I	MC 19550
mw	I	MC 19600
mw	I	MC 19650
mx	I	MC 19700
mx	I	MC 19750
my	I	MC 19800
my	I	MC 19850
mz	I	MC 19900
mz	I	MC 19950
na	I	MC 20000
na	I	MC 20050
nb	I	MC 20100
nb	I	MC 20150
nc	I	MC 20200
nc	I	MC 20250
nd	I	MC 20300
nd	I	MC 20350
ne	I	MC 20400
ne	I	MC 20450
nf	I	MC 20500
nf	I	MC 20550
ng	I	MC 20600
ng	I	MC



KEY PLAN



FOUNDATION PLAN AT EL(+22.250M(T.O.S))



FLOOR PLAN AT EL(+26.750M(T.O.S))

LEGENDS

TOS - TOP OF STEEL
FFL - FINISHED FLOOR LEVEL
M - METER
PL - PLATE
FOL - FINISHED GROUND LVL
BOSP - BOTTOM OF BASE PLATE
TF - THICKNESS OF FLANGE
TW - THICKNESS OF WEB
MC - MOMENT CONNECTION

REFERENCE DRAWING:

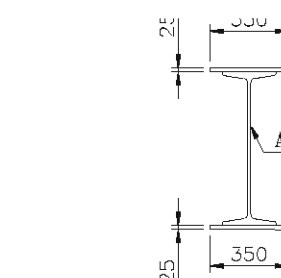
1. PLOT PLAN NO: IS-0-PL-690-100-M001
2. GA OF CRUSHER HOUSE
BHEL DRG. NO. IS-1-GA-690-106-M035-R1
STRUCTURE GA DRG. NO. IS-1-GA-690-111-S032
RC GA DRG. NO. IS-1-RC-690-111-C034
3. GENERAL NOTES FOR RCC WORKS: PE-DG-410-600-C001-REV2

NOTES

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN M.
2. EL(+2) 0.000m CORRESPONDS TO RL 99.5m WHICH IS THE F.F.L. OF STATION BUILDING
3. FOR STIFFENER DETAIL IN BUILTUP SECTION & SPLICE DETAIL IN BEAMS AND COLUMN REFER GENERAL NOTES.
STEEL STRUCTURE DRG. NO: PE-DG-410-600-C002-02
4. FOR GENERAL NOTES FOR RCC REFER DRG. NO: PE-DG-410-600-C001-02
5. MINIMUM WELD THICK SHALL BE 6MM UNLESS OTHERWISE NOTED.
6. ALL WELDS SYMBOLS ARE AS PER IS:813 (LATEST)
7. WELDING PROCEDURE WOULD BE AS PER IS:816(LATEST)
8. ELECTRODES FOR MILD STEEL SHALL CONFORM TO IS:814 AND 815 (LATEST)
9. ALL STRUCTURAL STEEL E250 AS PER IS:2062.
10. ALL GUSSET PLATES ARE 10 MM THK UNLESS OTHERWISE NOTED.
11. FOR SPLICE LOCATION SHALL BE PLACED ON AVAILABLE LENGTH OF MATERIAL WHEN JOINT SHALL BE STAGGERED.
12. ALL CONNECTIONS ARE SHEAR CONNECTION, UNLESS OTHERWISE SPECIFIED.

MONORAIL MEMBER SCHEDULE

MKD.	MEMBER
MR-1	ISMB 400
MR-2	ISMB 200
MR-3	ISMB 200
MR-4	ISMB 200
MR-5	ISMB 600
MR-6	ISMB 200
MR-7	ISMB 600
MR-8	ISMB 200
MR-9	ISMB 200
MR-10	ISMB 600
MR-11	ISMB 600
MR-12	ISMB 600



TOP & BOTTOM COVER PLATE MEMBER SCHEDULE

MKD.	H X T1 X T2 X B1 X B2
A1	MB 600X350X25X350X25

SOURCE:

TEJANPURA STATE POWER GENERATION CORPORATION LTD.

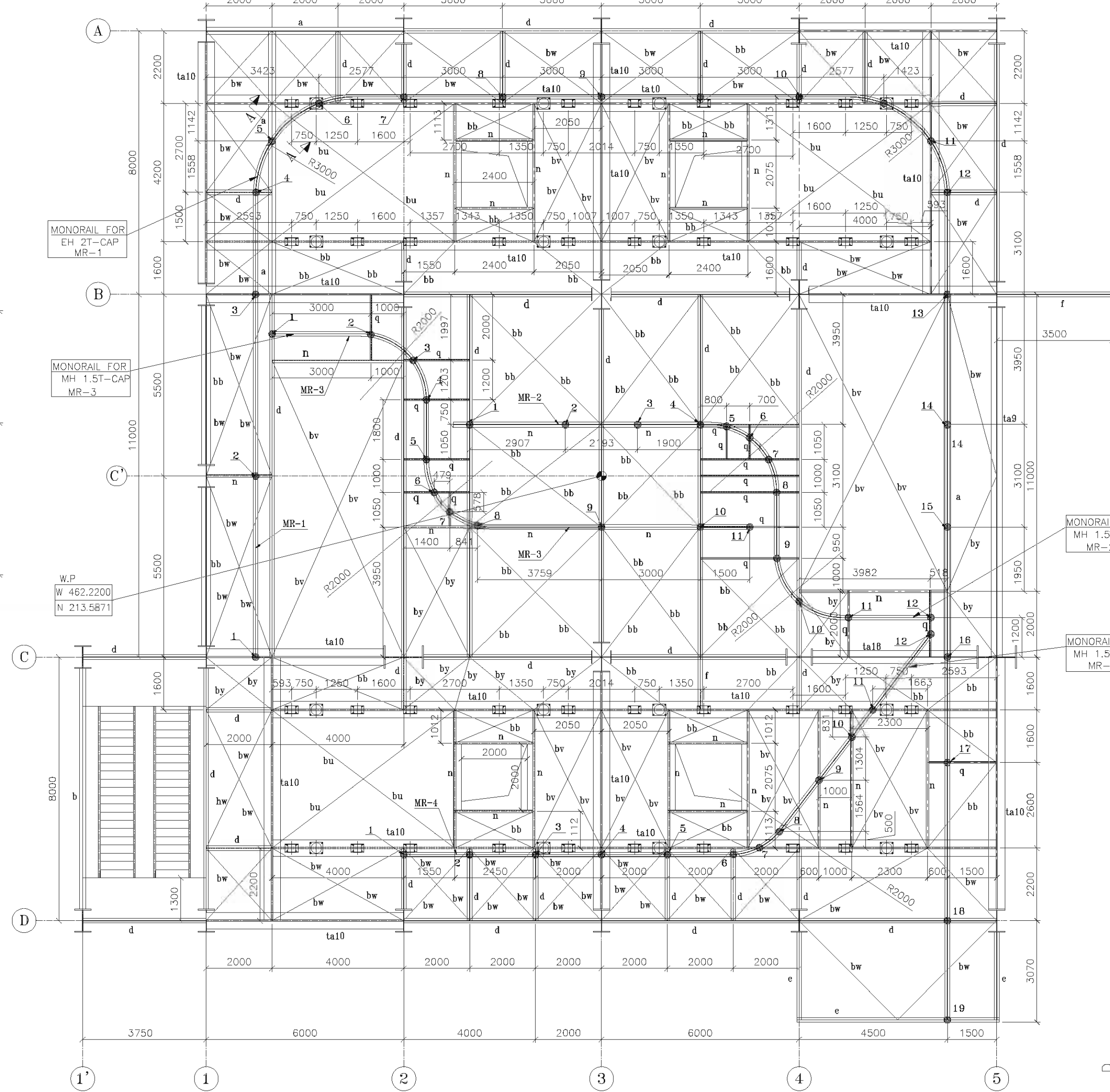
TAPER MEMBER SECTION TAPER MEMBER SCHEDULE

MKD.	D X W	Wd X Wt X Fw X Ft
ta-1	700X500	PL-636x16x500x32
ta-2	800X500	PL-736x20x500x32
ta-3	700X350	PL-660x16x350x20
ta-4	800X500	PL-750x20x500x25
ta-5	900X400	PL-850x16x400x25
ta-6	600X400	PL-550x16x400x25
ta-7	600X300	PL-536x25x300x32
ta-8	1000X400	PL-950x20x400x25
ta-9	800X350	PL-750x16x350x25
ta-10	1000X500	PL-900x25x500x32
ta-11	1000X400	PL-936x25x400x32
ta-12	1200X500	PL-1136x25x500x32
ta-13	900X450	PL-850x20x450x25
ta-14	600X300	PL-560x16x300x20
ta-15	600X400	PL-560x20x400x20
ta-16	1000X500	PL-936x25x500x32
ta-17	600X230	PL-550x16x230x25
ta-18	800X400	PL-750x16x400x25
ta-19	1300X800	PL-1236x28x800x32
ta-20	1300X800	PL-1220x28x800x40
ta-21	750X500	PL-670x28x500x40

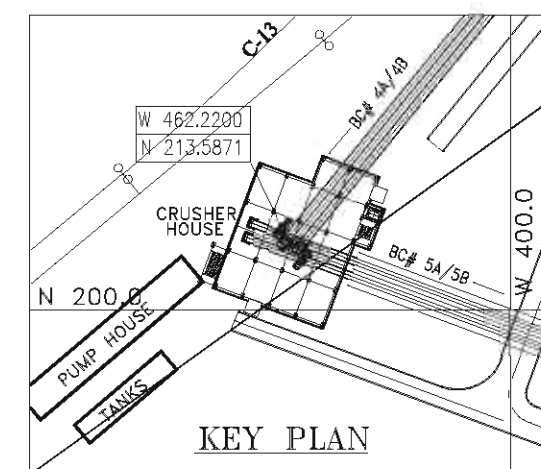
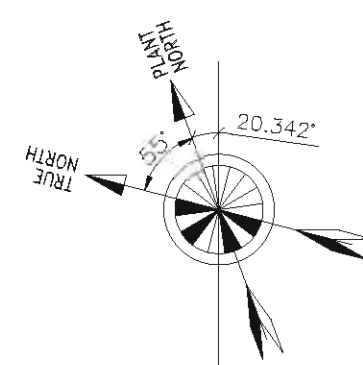
MEMBER SCHEDULE

MKD.	SECTION	SCHEDULE
q	MB 600	
b	MB 500	
c	MB 450	
d	MB 400	
e	MB 300	
f	MB 250	
g	MB 200	
q	MC 100	
n	MC 150	
m	MC 200	
k	MC 250	
h	MC 400	
j	MC 300	
by	MC 150 FR	
bx	MC 200 FR	
bw	MC 250 FR	
bv	MC 300 FR	
bu	MC 400 FR	
qy	ISA 150X150X16	
bb	ISA 130X130X12	
bc	ISA 130X130X10	
be	ISA 110X110X10	
bh	ISA 100X100X10	
bj	ISA 100X100X8	
bn	ISA 90X90X8	
bs	ISA 65X65X6	

DATE	REVISION



FLOOR PLAN AT EL(+)20.975M LVL(T.O.S)

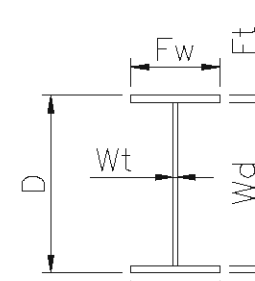


MONORAIL MEMBER SCHEDULE

MKD.	MEMBER
MR-1	ISMB 400
MR-2	ISMB 200
MR-3	ISMB 200
MR-4	ISMB 200
MR-5	ISMB 600
MR-6	ISMB 200
MR-7	ISMB 600
MR-8	ISMB 200
MR-9	ISMB 200
MR-10	ISMB 600
MR-11	ISMB 600
MR-12	ISMB 600

MEMBER SCHEDULE

MKD\SECTION	SCHEDULE
a	MB 600
b	MB 500
c	MB 450
d	MB 400
e	MB 300
f	MB 250
g	MB 200
q	MC 100
n	MC 150
m	MC 200
k	MC 250
h	MC 400
j	MC 300
by	MC 150 FR
bx	MC 200 FR
bw	MC 250 FR
bv	MC 300 FR
bu	MC 400 FR
aa	ISA 150X150X16
ab	ISA 130X130X12
ac	ISA 130X130X10
be	ISA 110X110X10
bh	ISA 100X100X10
bj	ISA 100X100X8
bn	ISA 90X90X8



TOP & BOTTOM COVER PLATE

MEMBER SCHEDULE

MKD.	H X T1 X T2 X B1 X B
A1	MB 600X350X25X350X25

LEGENDS

- TOS - TOP OF STEEL
FFL - FINISHED FLOOR LEVEL
M - METER
PL - PLATE
FGL - FINISHED GROUND LVL
BOBP - BOTTOM OF BASE PLATE
TF - THICKNESS OF FLANGE
TW - THICKNESS OF WEB
MC - MOMENT CONNECTION

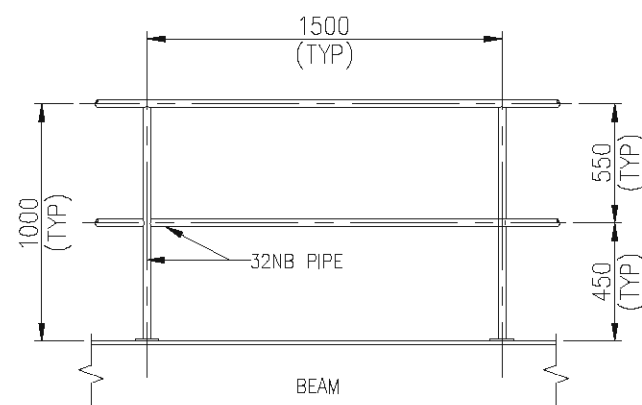
NOTES

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN M.
2. EL(4) 0.000M CORRESPONDS TO RL 98.5M
WHICH IS THE F.F.L. OF STATION BUILDING
3. FOR STIFFENER DETAIL IN SUTURE SECTION & SPLICE DETAIL IN BEAMS
AND COLUMN REFER GENERAL NOTES.
STEEL STRUCTURE DPG. NO: PE-DG-410-800-C002-02
4. FOR GENERAL NOTES FOR RICH PAPER
DPG. NO: PE-DG-410-800-C001-02
5. MINIMUM WELD THICK SHALL BE 6MM UNLESS OTHERWISE NOTED.
6. ALL WELDS SYMBOLS ARE AS PER IS:813 (LATEST)
7. WELDING PROCEDURE WOULD BE AS PER IS:816(LATEST)
8. ELECTRODES FOR MILD STEEL SHALL CONFORM TO IS:814 AND 815 (LATEST)
9. ALL STRUCTURAL STEEL E250 AS PER IS:2622.
10. ALL OUSSET PLATES ARE 10 MM THK UNLESS OTHERWISE NOTED.
11. FOR SPICE LOCATION SHALL BE PLACED ON AVAILABLE LENGTH OF MATERIAL
WHEN JOINT SHALL BE STAGGERED.
12. ALL CONNECTIONS ARE SHEAR CONNECTION, UNLESS OTHERWISE SPECIFIED.

REFERENCE DRAWING:

1. PLOT PLAN NO: IS-D-PL-690-100-M001
2. GA OF CRUSHER HOUSE
BHSL DRG. NO. IS-1-GA-690-106-M035-R1
STRUCTURE GA DRG. NO.IS-1-GA-690-111-S032
RC GA DRG. NO.IS-1-RC-690-111-C034
3. GENERAL NOTES FOR RCC.WORKS: PE-DG-410-600-C001-REV2

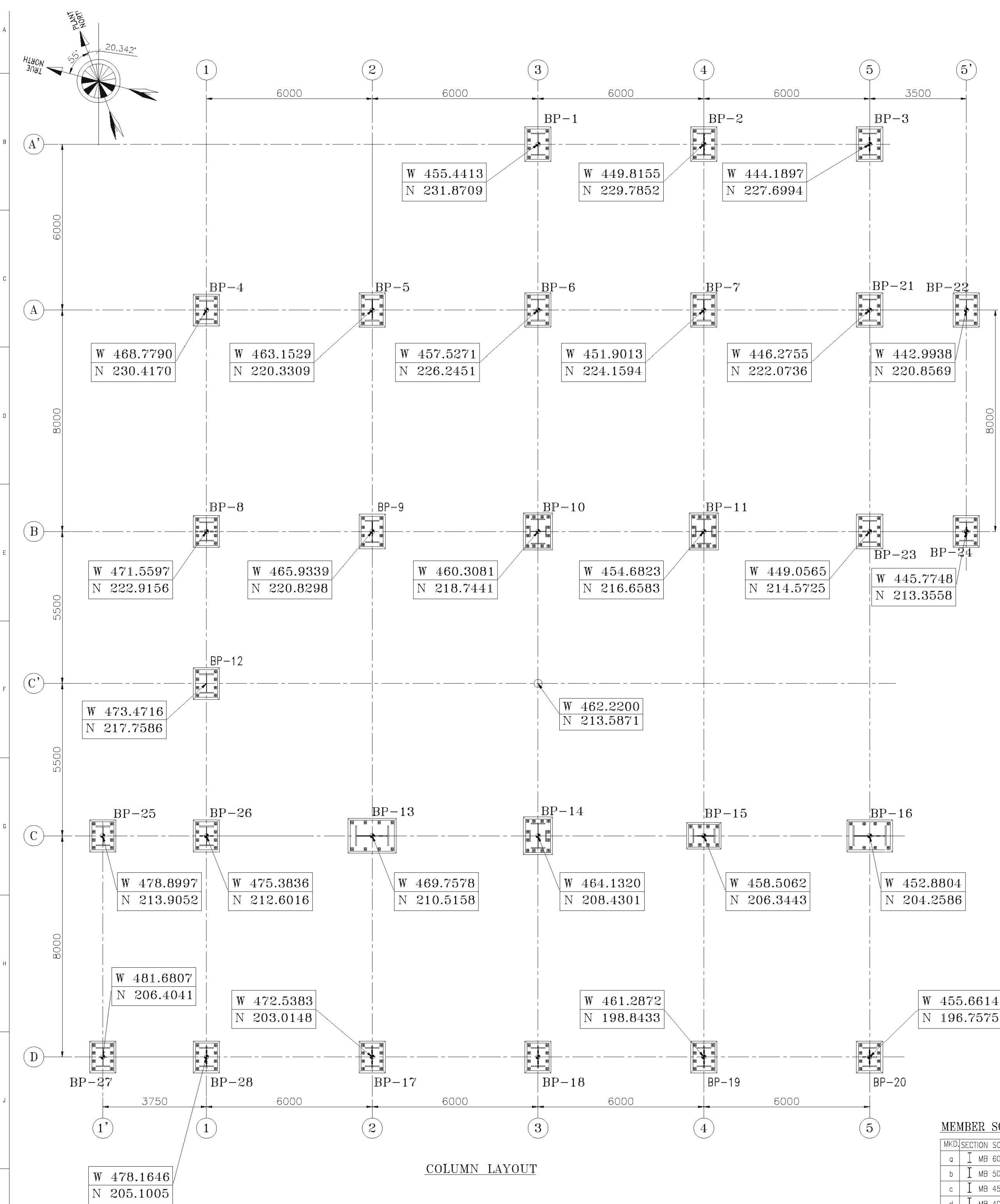
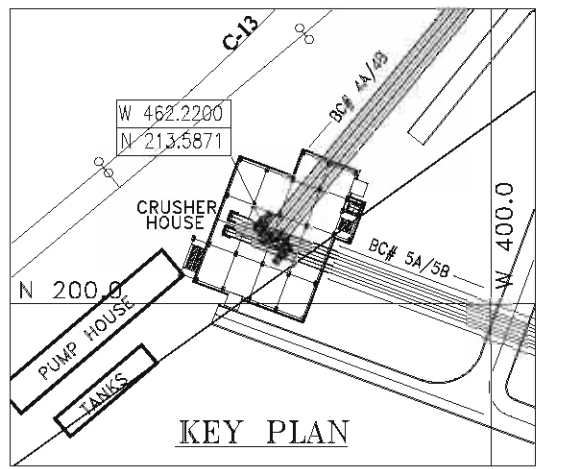
TYPICAL SECTION HAND RAIL DETAIL



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

DO NOT SCALE. IF IN DOUBT, ASK.



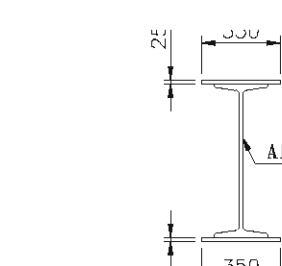
COLUMN LAYOUT

MEMBER SCHEDULE

MKD	SECTION	SCHEDULE
a	MB 600	
b	MB 500	
c	MB 450	
d	MB 400	
e	MB 300	
f	MB 250	
g	MB 200	
q	MC 100	
n	MC 150	
m	MC 200	
k	MC 250	
h	MC 300	
j	MC 350	
by	MC 150 FR	
bx	MC 200 FR	
bw	MC 250 FR	
bv	MC 300 FR	
bu	MC 400 FR	
ay	ISA 150X150X16	
bb	ISA 130X130X12	
bc	ISA 130X130X10	
be	ISA 110X110X10	
bh	ISA 100X100X10	
bj	ISA 100X100X8	
bn	ISA 80X80X8	
bs	ISA 65X65X6	

MONORAIL MEMBER SCHEDULE

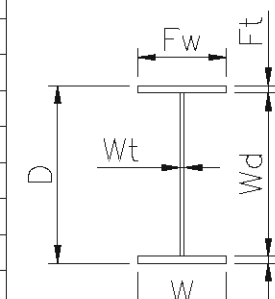
MKD.	MEMBER
MR-1	ISMB 400
MR-2	ISMB 200
MR-3	ISMB 200
MR-4	ISMB 200
MR-5	ISMB 600
MR-6	ISMB 200
MR-7	ISMB 600
MR-8	ISMB 200
MR-9	ISMB 200
MR-10	ISMB 600
MR-11	ISMB 600
MR-12	ISMB 600

TOP & BOTTOM COVER PLATE
MEMBER SCHEDULE

MKD.	H X T1 X T2 X B1 X B2
A1	MB 600X350X25X350X25

TAPER MEMBER SCHEDULE

MKD.	D X W	Wd X Wt X Fw X Ft
tg-1	700X500	PL-636X16X500X32
tg-2	800X500	PL-736X20X500X32
tg-3	700X350	PL-660X16X350X20
tg-4	800X500	PL-750X20X500X25
tg-5	900X400	PL-850X16X400X25
tg-6	600X400	PL-550X16X400X25
tg-7	600X300	PL-536X25X300X32
tg-8	1000X400	PL-950X20X400X25
tg-9	800X350	PL-750X16X350X25
tg-10	1000X500	PL-900X50X500X50
tg-11	1000X400	PL-936X25X400X32
tg-12	1200X500	PL-1136X25X500X32
tg-13	800X450	PL-850X25X450X25
tg-14	600X300	PL-560X16X300X20
tg-15	600X400	PL-560X20X400X20
tg-16	1000X600	PL-936X25X500X32
tg-17	800X230	PL-550X16X230X25
tg-18	800X400	PL-750X16X400X25
tg-19	1300X800	PL-1236X28X800X32
tg-20	1300X800	PL-1220X28X800X40
tg-21	750X500	PL-670X28X500X40



TAPER MEMBER SECTION

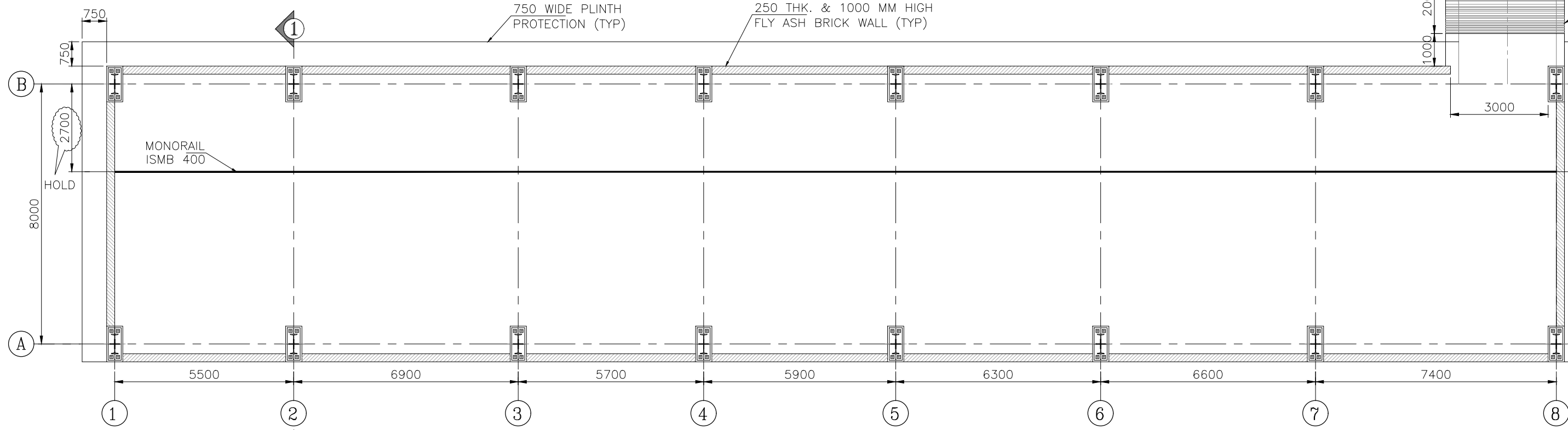
PLAN AT EL(+11.500M LVL.(T.O.S))

NOTES

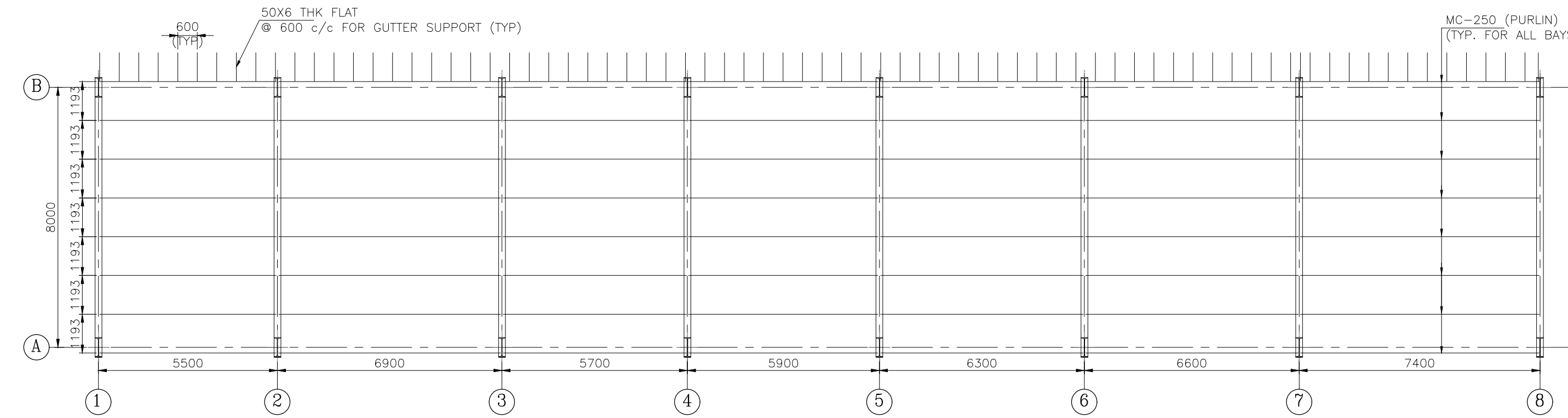
1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN M.
2. EL(+11.500M) CORRESPONDS TO RL 99.5M WHICH IS THE F.F.L. OF STATION BUILDING.
3. FOR STIFFENER DETAIL IN BUILTUP SECTION & SPLICE DETAIL IN BEAMS AND COLUMN REFER GENERAL NOTES.
4. FOR GENERAL NOTES FOR RCC REFER. DRG. No. PE-DG-410-600-C001-02
5. MINIMUM WELD THICK SHALL BE 6MM UNLESS OTHERWISE NOTED.
6. ALL WELDS SYMBOLS ARE AS PER IS:813 (LATEST)
7. WELDING PROCEDURE WOULD BE AS PER IS:816(LATEST)
8. ELECTRODES FOR MILD STEEL SHALL CONFORM TO IS:814 AND 815 (LATEST)
9. ALL STRUCTURAL STEEL E250 AS PER IS:2062.
10. ALL GUSSET PLATES ARE 10 MM THK UNLESS OTHERWISE NOTED.
11. FOR SPLICE LOCATION SHALL BE PLACED ON AVAILABLE LENGTH OF MATERIAL WHEN JOINT SHALL BE STAGGERED.
12. ALL CONNECTIONS ARE SHEAR CONNECTION, UNLESS OTHERWISE SPECIFIED.

PE-DG-497-635-C011

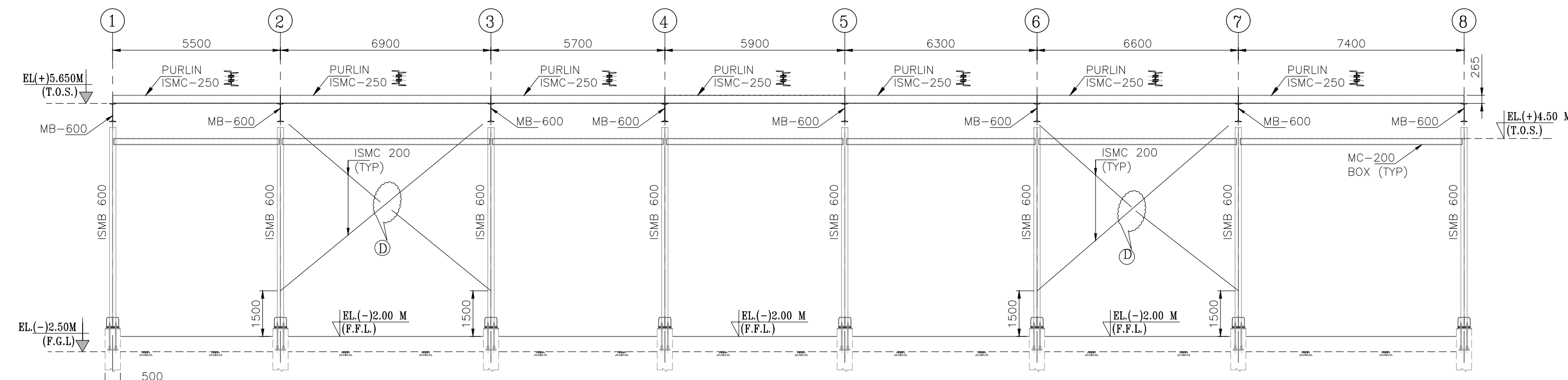
ON 9N1WV8D/11K2K 1.2512



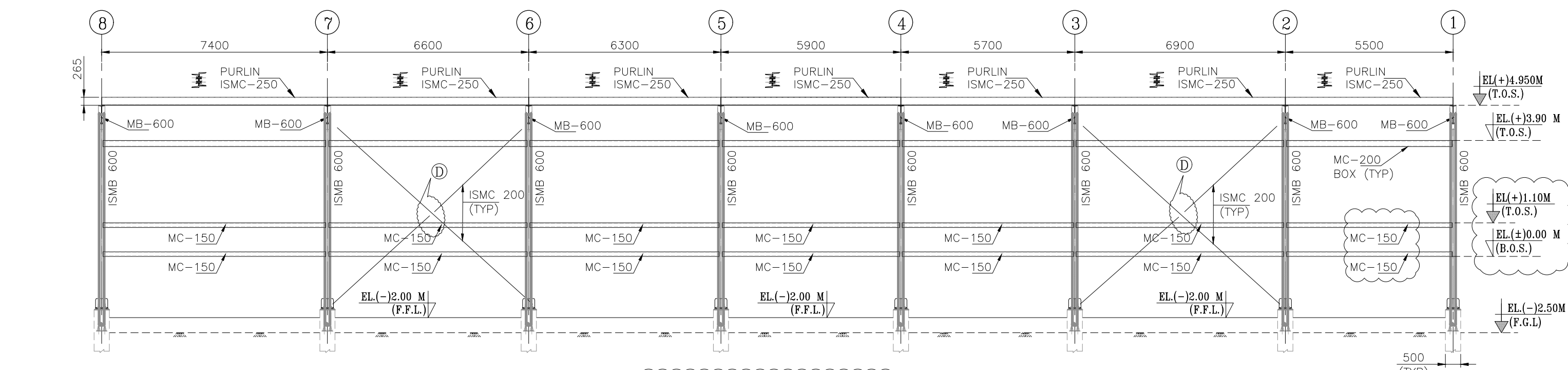
PLAN AT ELEVATION EL (-) 2.000M



PLAN AT PURLIN LEVEL



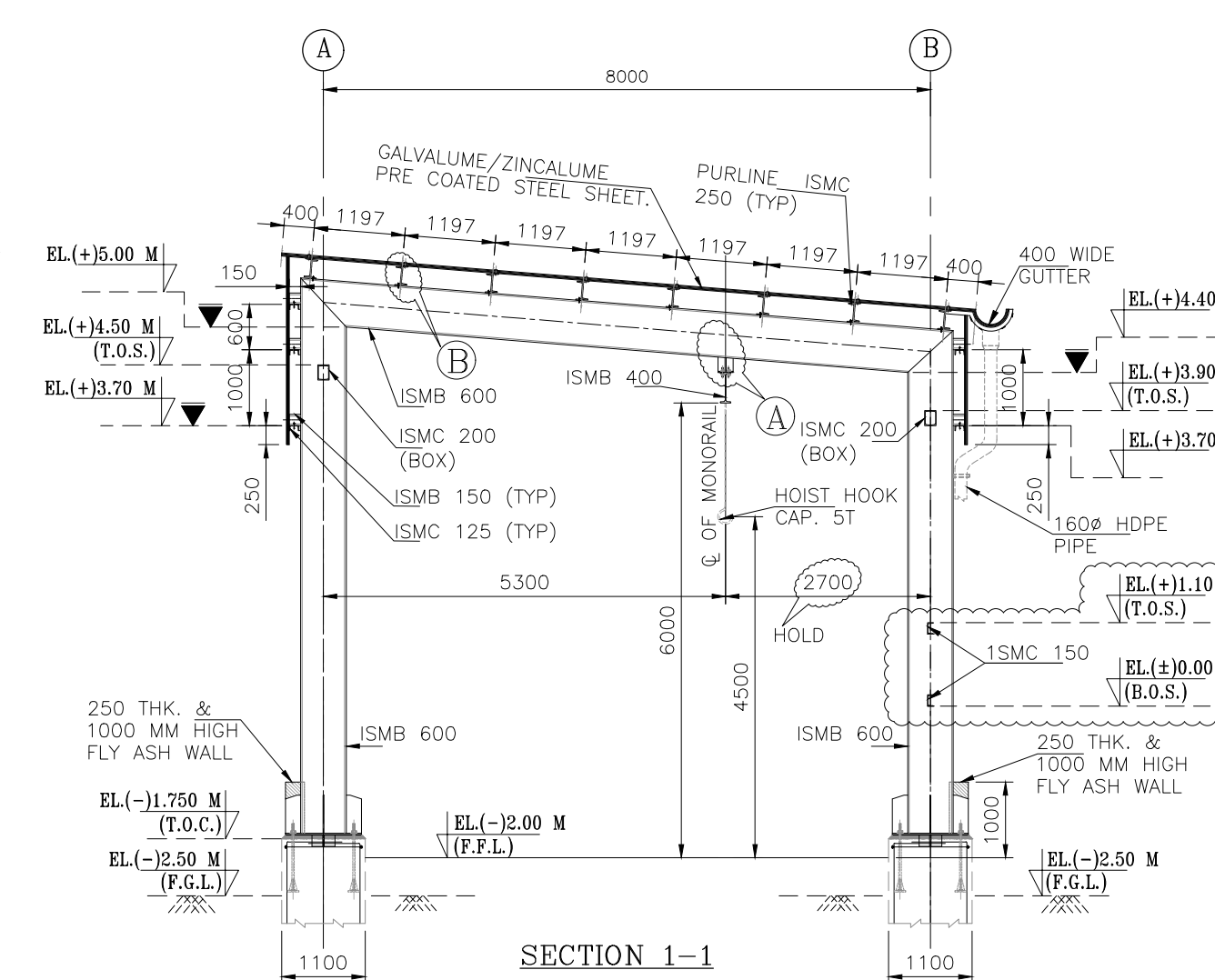
ELEVATION ALONG GRID-A



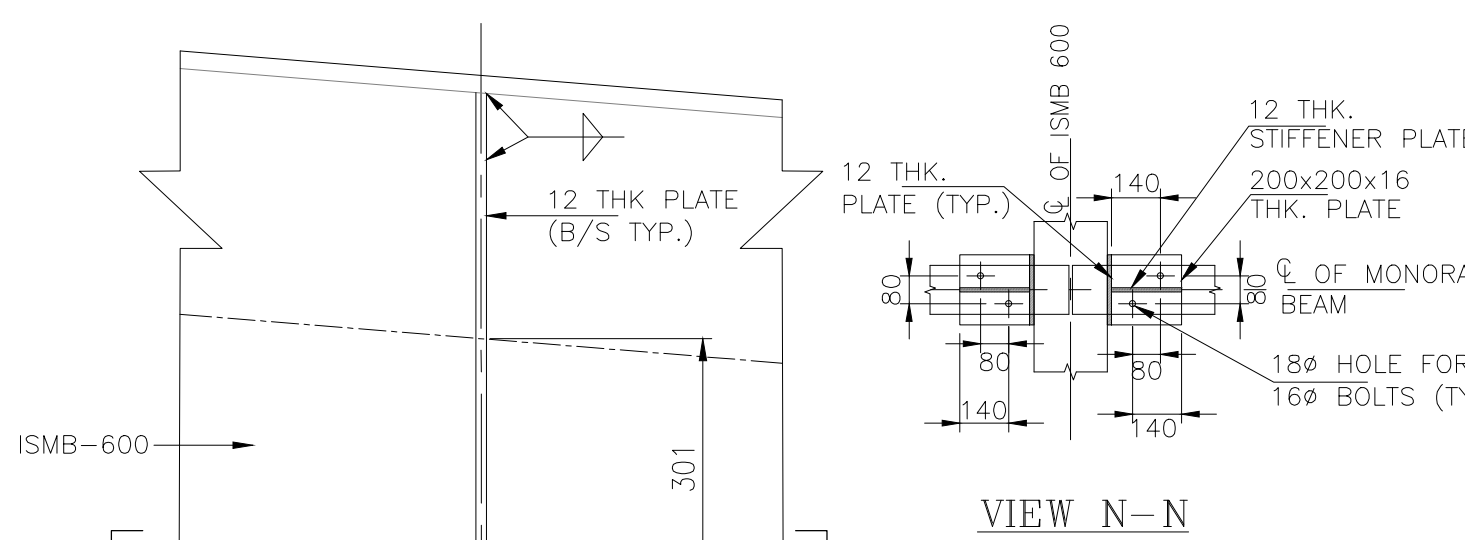
ELEVATION ALONG GRID-B

परीक्षण REV.	दिनांक DATE	परीक्षण ALTD	जंजक CHD	अनुमोदन APPD	परीक्षण REV.	दिनांक DATE	परीक्षण ALTD	जंजक CHD	अनुमोदन APPD	परीक्षण REV.	दिनांक DATE	परीक्षण ALTD	जंजक CHD	अनुमोदन APPD	परीक्षण REV.	दिनांक DATE	परीक्षण ALTD	जंजक CHD	अनुमोदन APPD	परीक्षण REV.	दिनांक DATE	परीक्षण ALTD	जंजक CHD	अनुमोदन APPD
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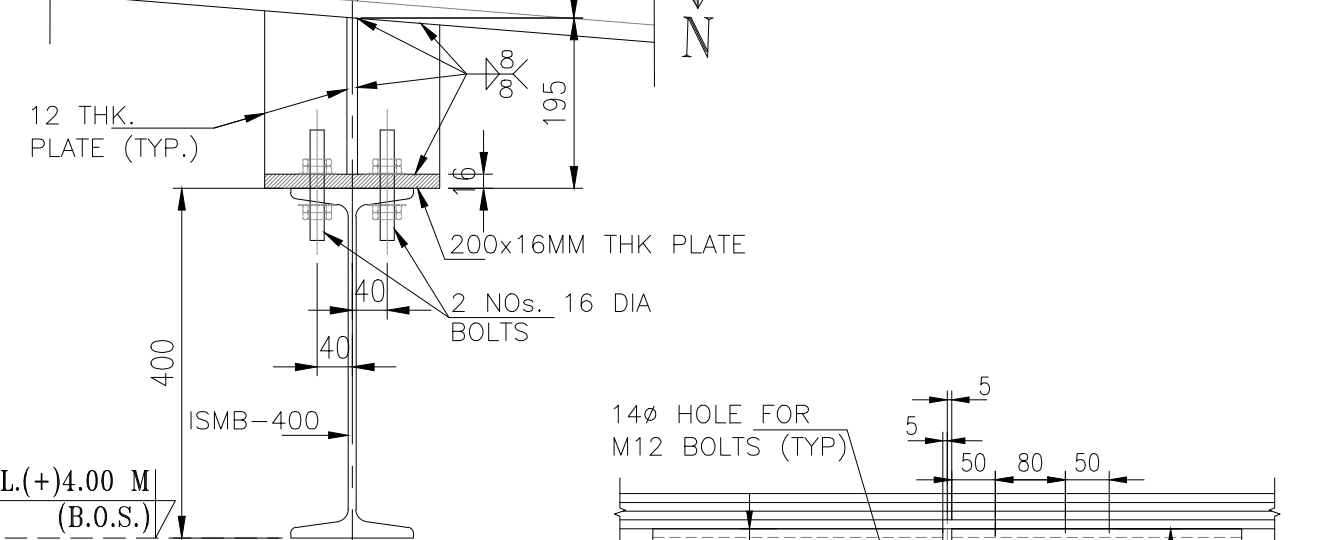
सभी माप मि.मी. में है / ALL DIMENSIONS ARE IN MM



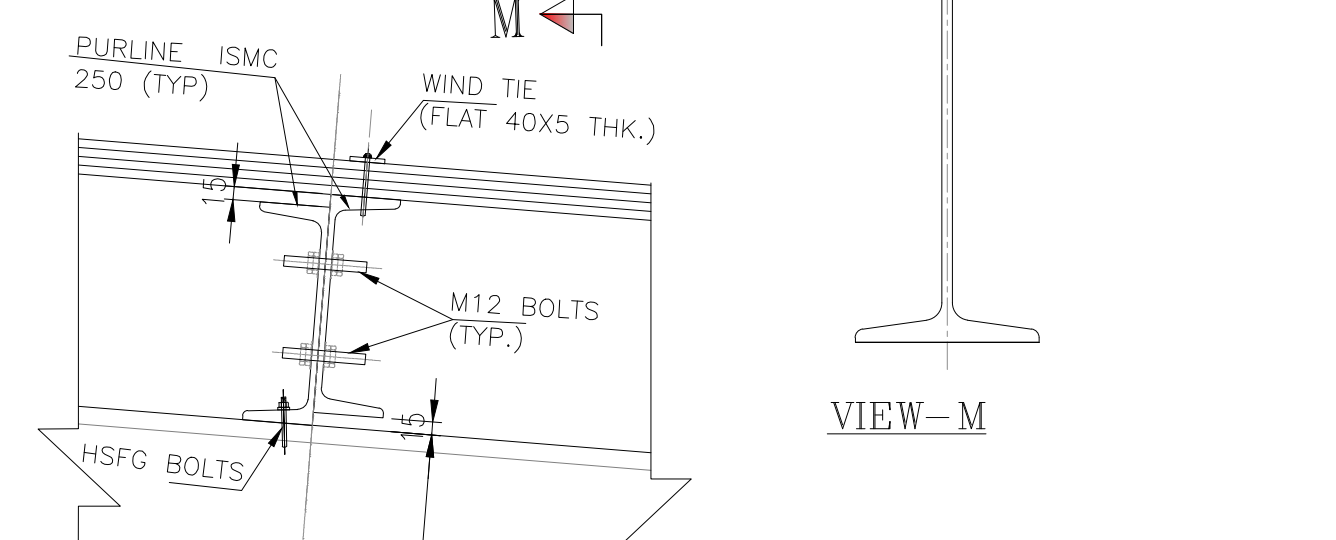
SECTION 1-1



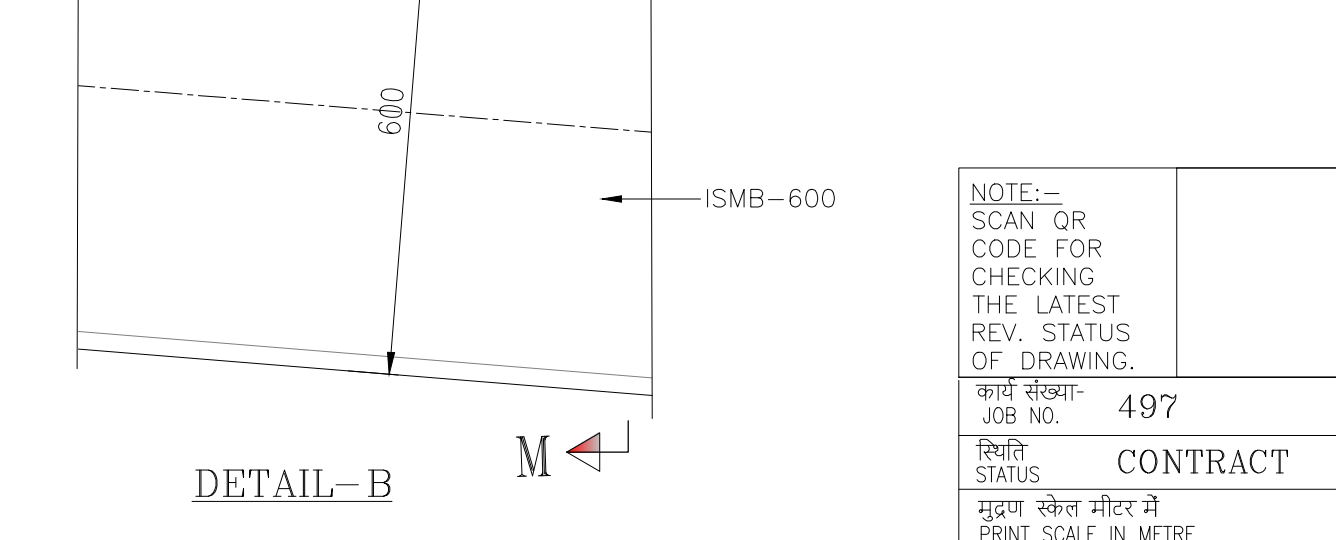
VIEW N-N



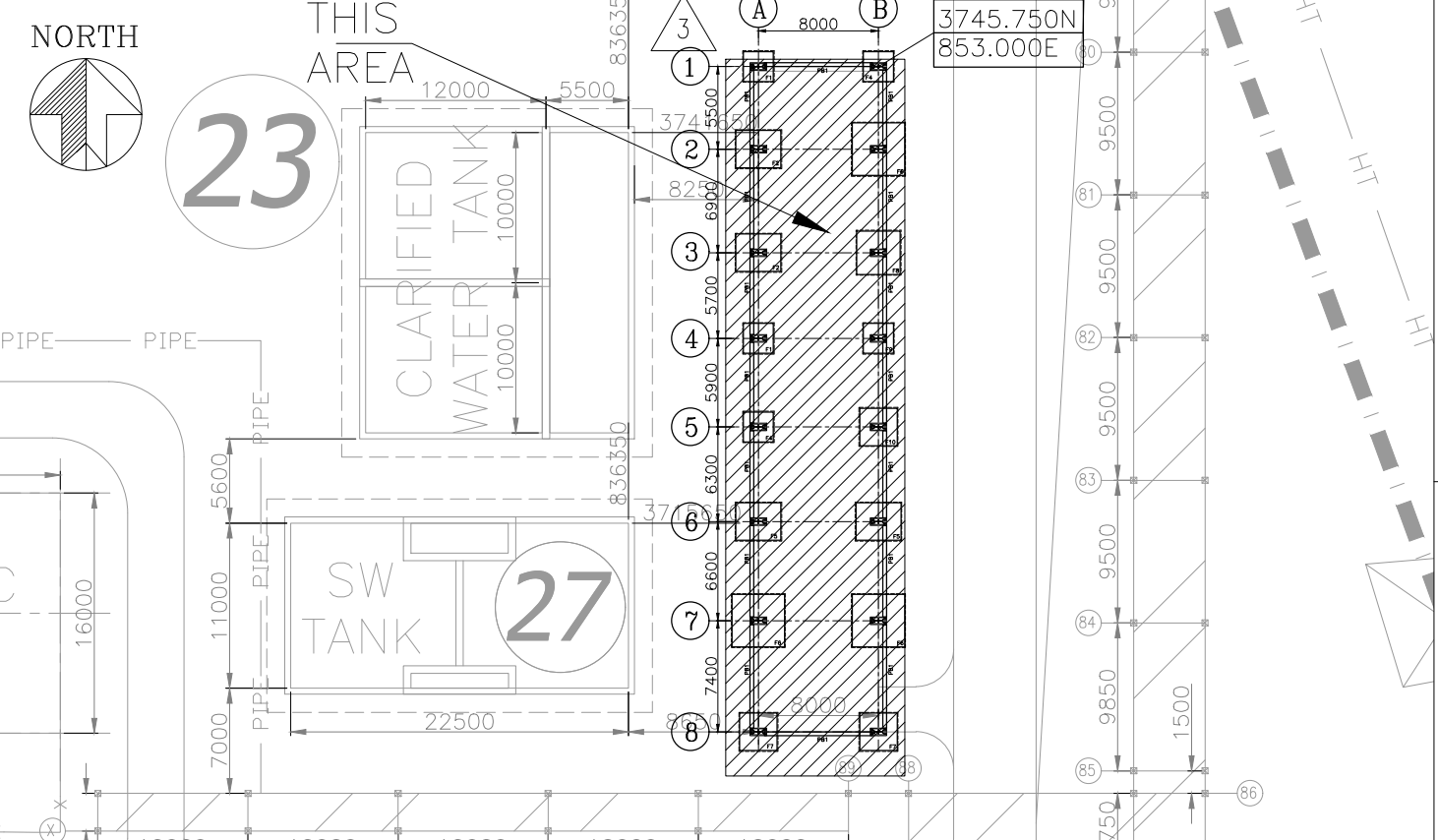
DETAIL-A



VIEW-M



DETAIL-B



- NOTE:-
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
 - ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
 - ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL.(±)0.00 M WHICH IS CORRESPONDENCE TO RL.(+71.50) M, THE FINISHED FLOOR LEVEL OF CLARIFIED WATER PUMP HOUSE IS EL.(-)2.00 M CORRESPONDENCE TO RL. (+)69.50 M (F.F.L.).
 - FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-497-600-C001 (NTPC No. 4540-001-315-PVC-C-0451B)
 - UNLESS NOTED OTHERWISE ALL STRUCTURAL STEEL WORK SHALL BE OF MILD STEEL (Fe250) CONFORMING TO IS:2062.
 - ALL STRUCTURAL AND MISCELLANEOUS STEEL WORK SHALL BE AS PER STD STEEL DRG. NO. PE-DG-497-600-C002

ENGINEERING REFERENCE DRAWINGS :-

- PE-DG-497-100-M001 (4540-001-301-POC-F-001)---PLOT PLAN
- PE-V0-497-100-M044 (4540-001-136-PVM-F-186)---LAOUT OF PIPING IN & AROUND CLARIFIED WATER P/H.

CONSTRUCTION REFERENCE DRAWINGS :-

- PE-DG-497-603-C001 (4540-001-301-POC-C-101) ----SITE LEVELING WORKS-PLAN & SECTION
- PE-DG-497-603-C002 (4540-001-301-POC-C-107) ----LAYOUT OF ROADS
- PE-DG-497-603-C003 (4540-001-301-POC-C-108) ----CROSS SECTION DETAILS OF ROADS
- PE-DG-497-603-C004 (4540-001-301-POC-C-111) ----LAYOUT OF DRAINS
- PE-DG-497-603-C005 (4540-001-301-POC-C-112) ----CROSS SECTION DETAILS OF DRAINS
- PE-DG-497-635-C006 (4540-001-136-PVC-B-095) ----CLARIFIED WATER PUMP HOUSE-GA & RC DETAIL OF FOUNDATIONS PEDESTALS & PLINTH BEAMS
- PE-DG-497-635-C012 (4540-001-136-PVC-U-098) ----CLARIFIED WATER PUMP HOUSE-GA & RC DETAILS OF GRADE SLAB
- PE-DG-497-675-C015 (4540-001-315-PVC-C-1468) ----PIPE RACK-FR-4-BOP AREA-GA & RC DETAILS OF FOUNDATIONS & PEDESTALS

SPECIAL NOTE:

BHEL HEREBY CONFIRMS THAT THIS DRAWING MEETS ALL THE CONTRACT REQUIREMENTS INCLUDING SAFETY & STATUARY REQUIREMENTS & FACILITATE EASE OF OPERATION & MAINTENANCE. IN CASE ANY DEVIATION IS FOUND, THE CONTRACTOR SHALL CARRY OUT ALL REQUIRED CHANGES/ MODIFICATIONS WITHOUT ANY COST IMPLICATIONS TO NTPC. IN ADDITION, PENALTY ON ACCOUNT OF NONCOMPLIANCE OF CONTRACT SPECIFICATION AS DEEMED FIT BY THE EMPLOYER SHALL BE RECOVERED.

REASON FOR HOLD:- VENDOR INPUT OF CRANE DETAILS AWAITED.

BILL OF QUANTITIES

SL.NO.	DESCRIPTION	UNIT	QUANTITY
1	STRUCTURAL STEEL	MT	
1a.	ISMC 250	MT	16.23
2a.	ISMC 200	MT	07.36
3a.	ISMC 150	MT	01.45
4a.	ISMB 400	MT	02.72
	TOTAL	MT	27.76

LEGEND:-

- E/F -EACH FACE
- T.O.P. -TOP OF PEDESTAL
- F.G.L. -FINISHED GROUND LEVEL
- TYP -TYPICAL
- B/F -BOTH FACE
- F.F.L. -FLOOR FINISHED LEVEL
- T.O.C. -TOP OF CONCRETE
- B.O.F. -BOTTOM OF FOOTING
- T.O.S. -TOP OF STEEL
- RCC HATCH
- CENTER LINE
- LEAN CONCRETE

BHEL-PROJECT ENGINEERING MANAGEMENT (CIVIL)

THIS DRAWING MARKED(✓) IS RELEASED FOR

☐ COMMENTS/APPROVAL	☐ FABRICATION
☐ PLANNING	☐ INFORMATION
☒ CONSTRUCTION	☐ AS BUILT DRAWING

Before proceeding with construction please scan the QR code to know the latest revision

STAMP ALL PREVIOUS REVISION AS SUPERSEDED

ISSUED BY

NAME	AJIT KUMAR
SIGNATURE	-Sd-
DATE	03.04.2024

NOTE:-
SCAN OR
CODE FOR
CHECKING
THE LATEST
REV. STATUS
OF DRAWING.

कार्ड संख्या- JOB NO.	497
स्थिति STATUS	CONTRACT
मुद्रण स्केल मीटर में PRINT SCALE IN METRE	0246810 20 30 40 50

ग्राहक ड्राइंग संख्या CUSTOMER DRAWING NO.	4540-001-136-PVC-U-097
ग्राहक/CUSTOMER	एन टी पी सी लिमिटेड N T P C LIMITED

परियोजना PROJECT	2X660 मेगावाट तालचर थर्मल पावर परियोजना चरण -III 2X660MW TALCHER THERMAL POWER PROJECT STAGE-III
भारत हेवी इलेक्ट्रिकल्स लिमिटेड BHARAT HEAVY ELECTRICALS LTD	पावर सेक्टर /POWER SECTOR परियोजना अभियांत्रिकी प्रबंधन PROJECT ENGINEERING MANAGEMENT नोएडा (उ.प्र.) /NOIDA (U.P.)
DEPT CODE	डिपार्टमेंट/DRN डिजाइन/DESIGN जोब कार्ड/CHD स्वीकृत/APPD
नाम NAME	हस्ताक्षर SIGNATURE
16/03/2024	16/03/2024
16/03/2024	16/03/2024
16/03/2024	16/03/2024

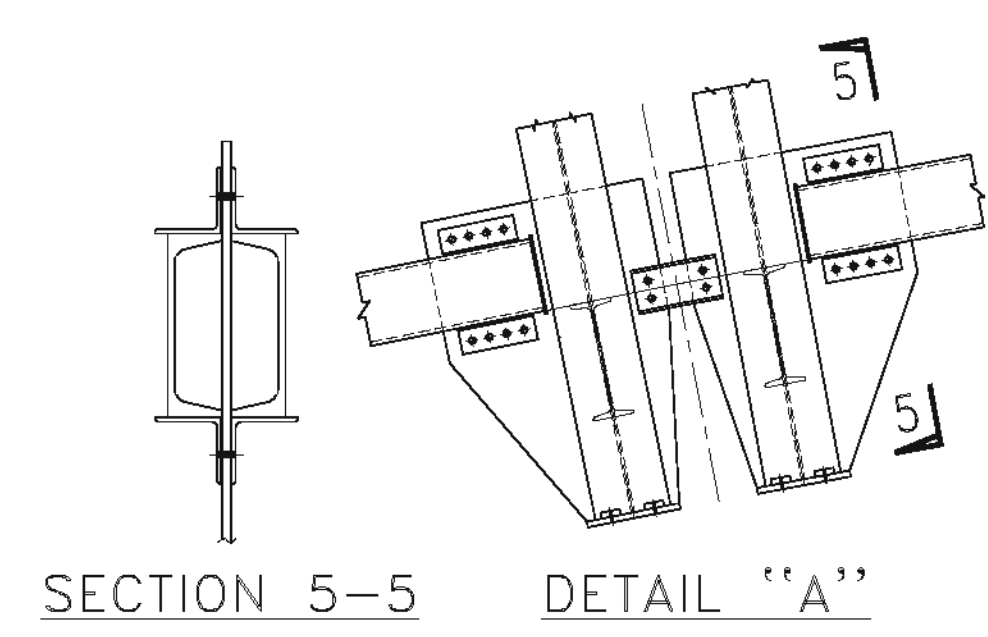
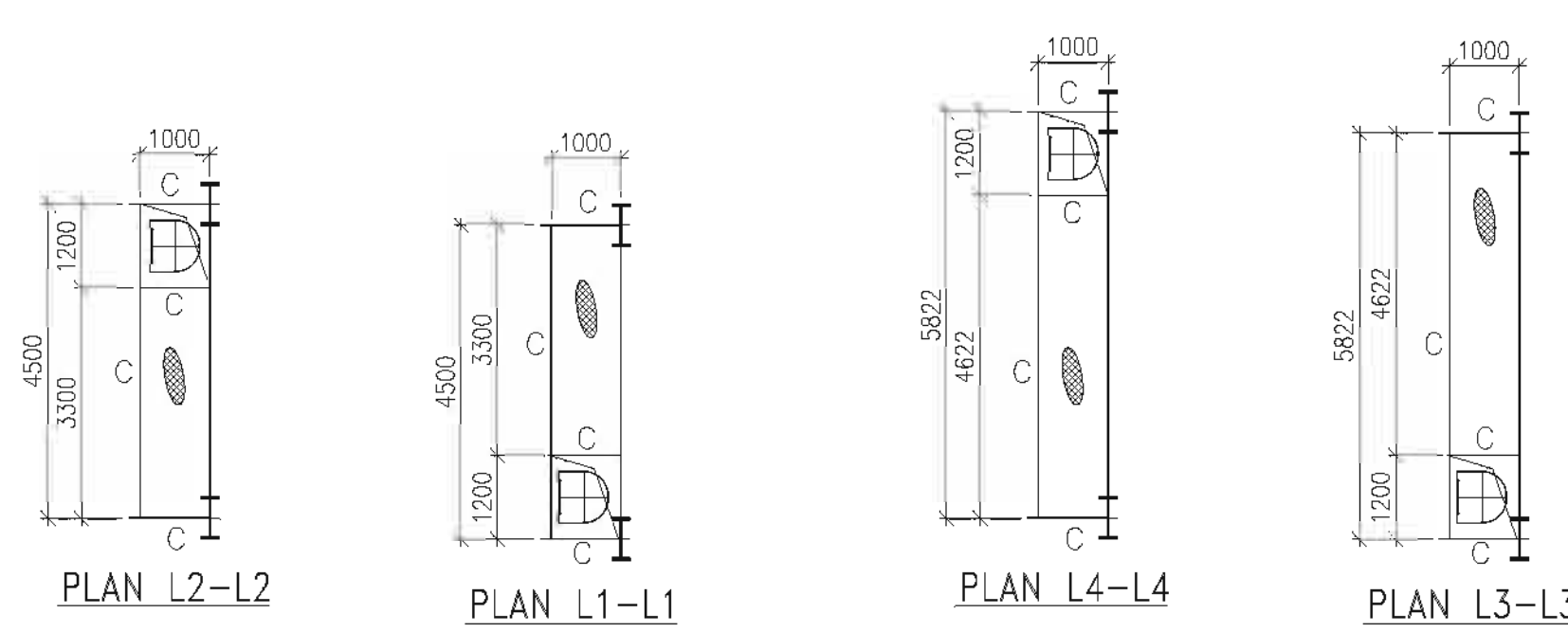
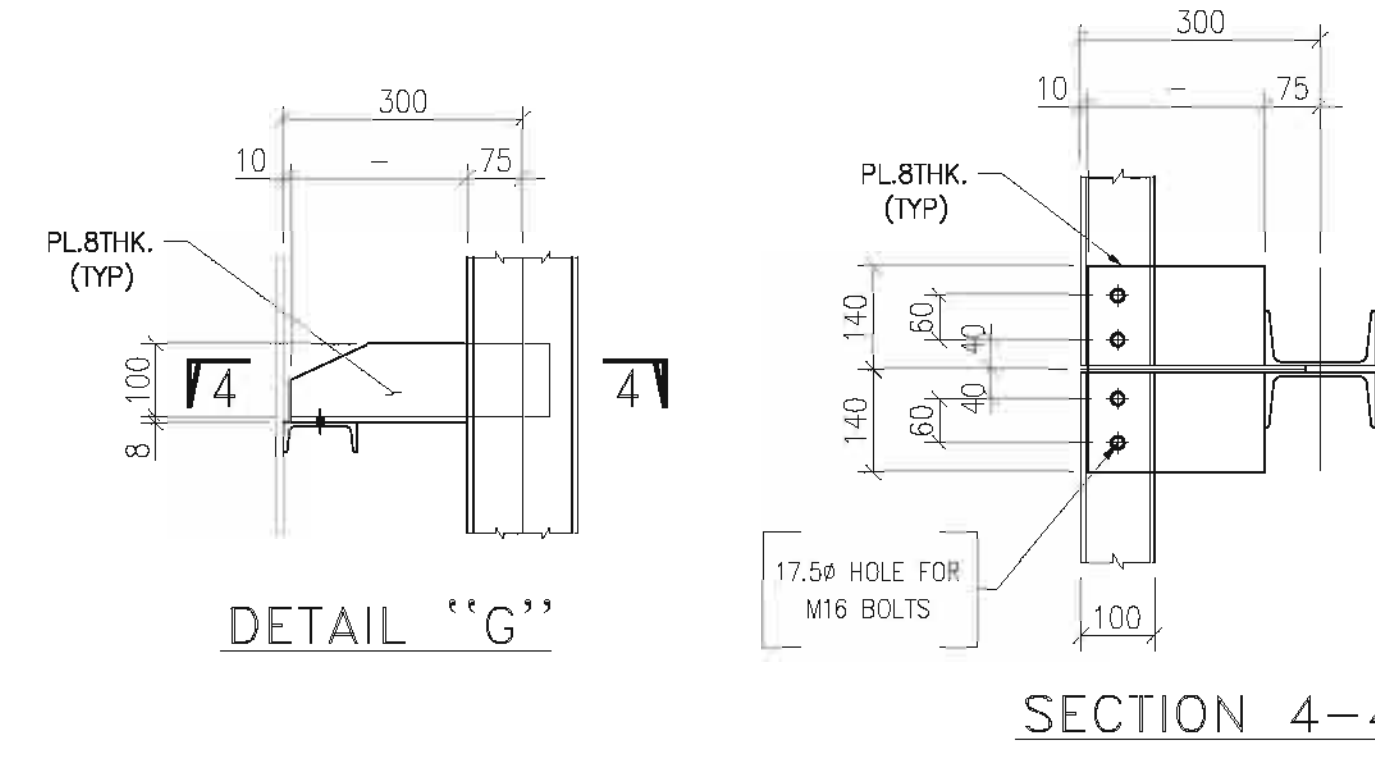
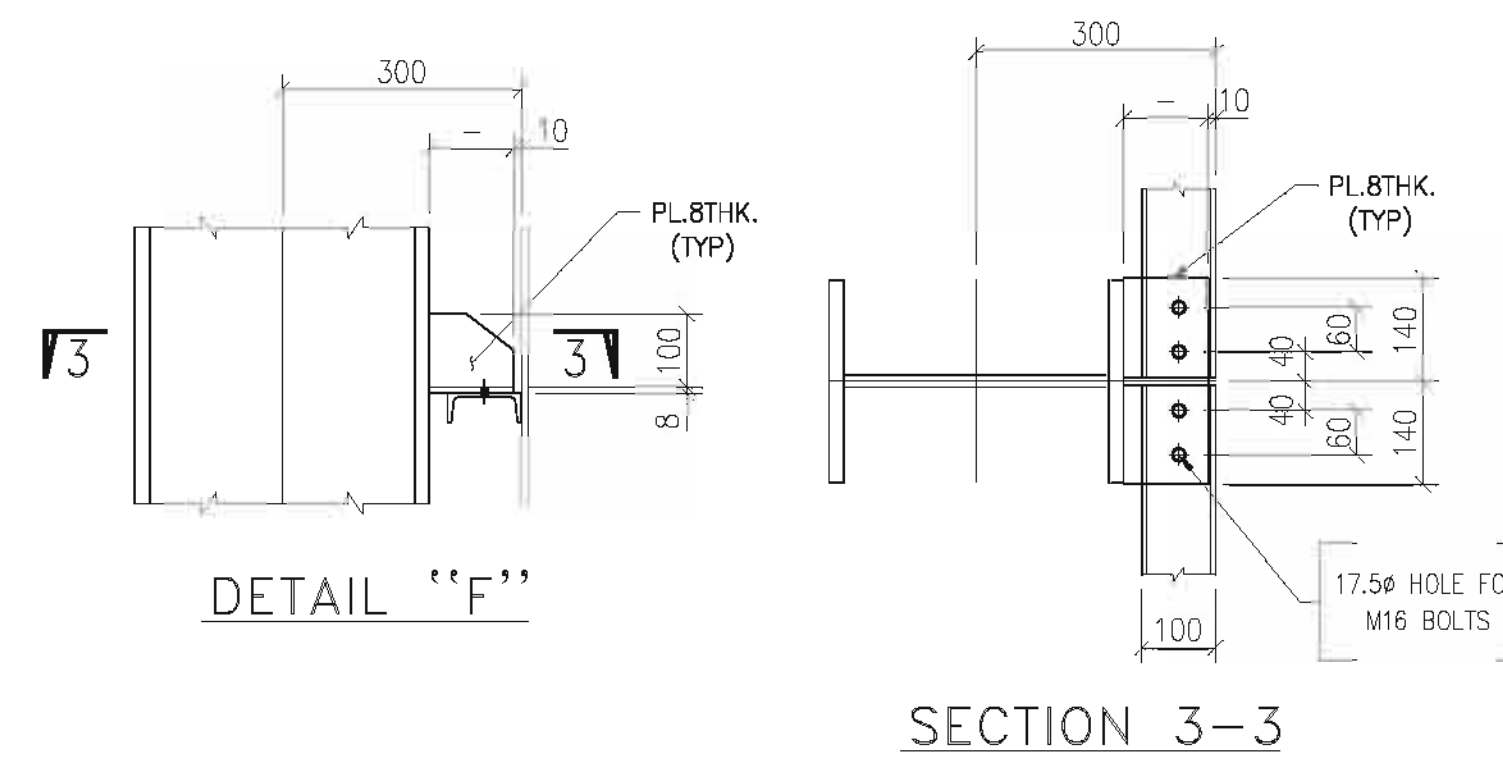
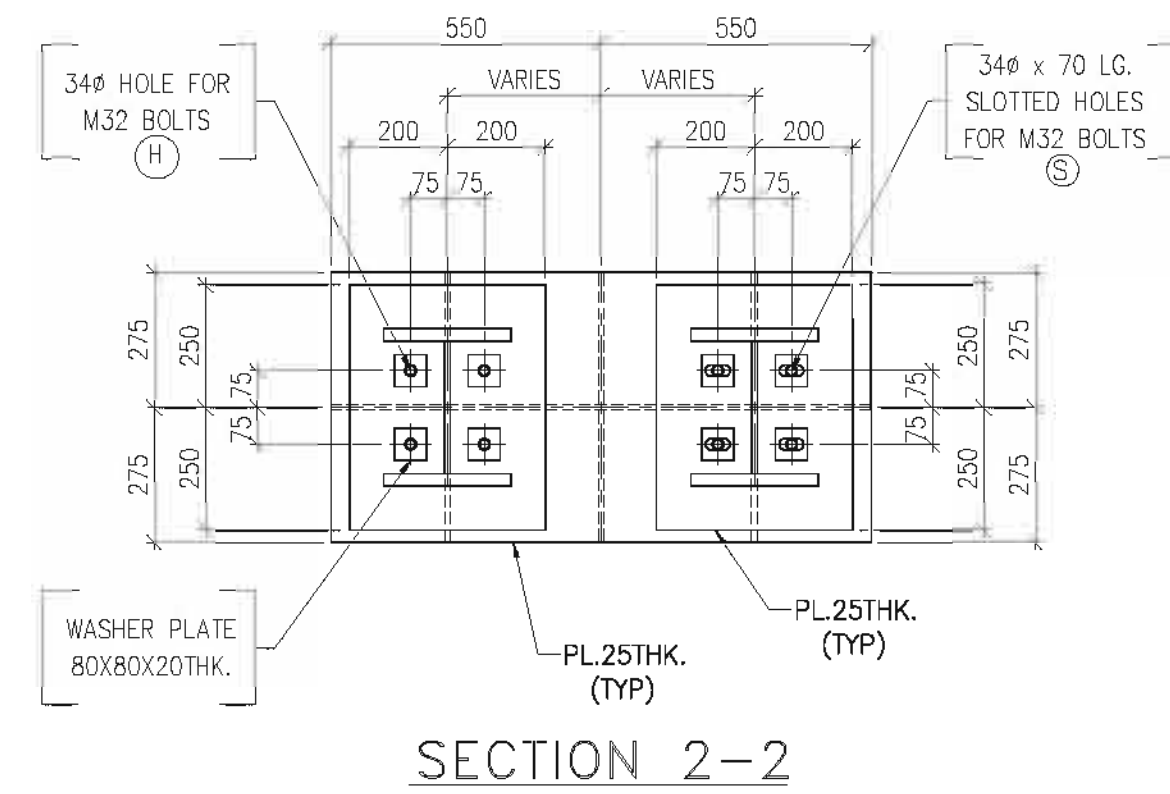
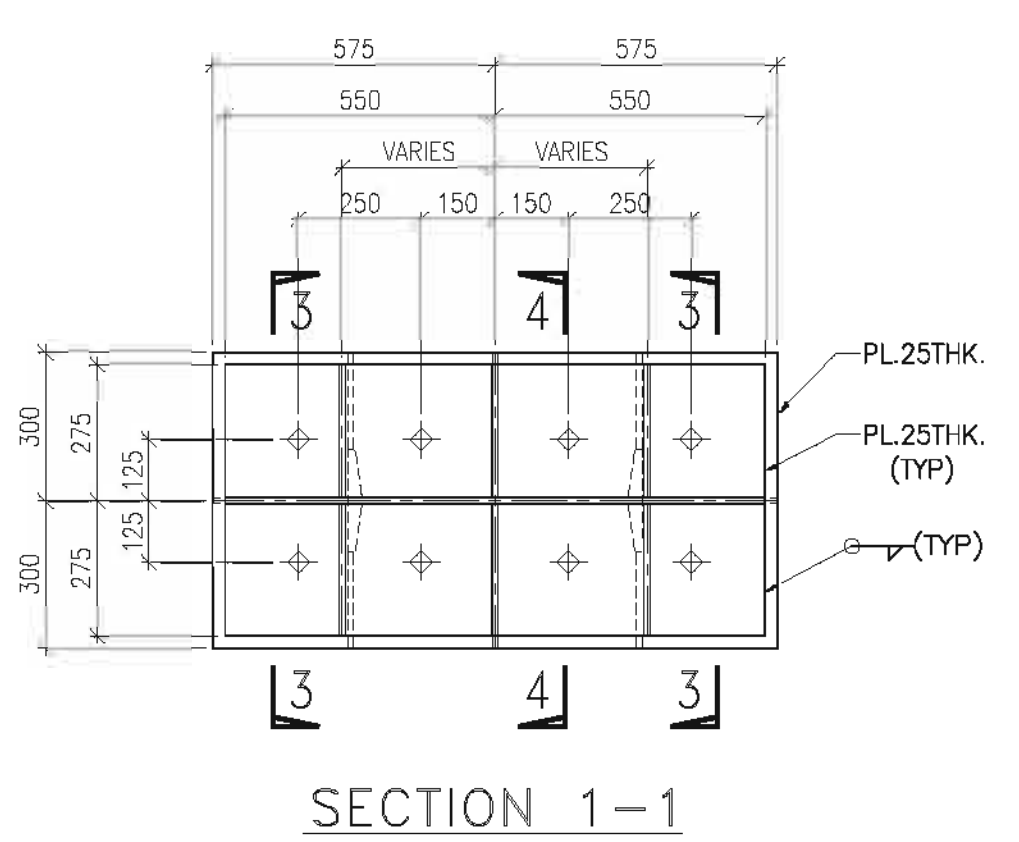
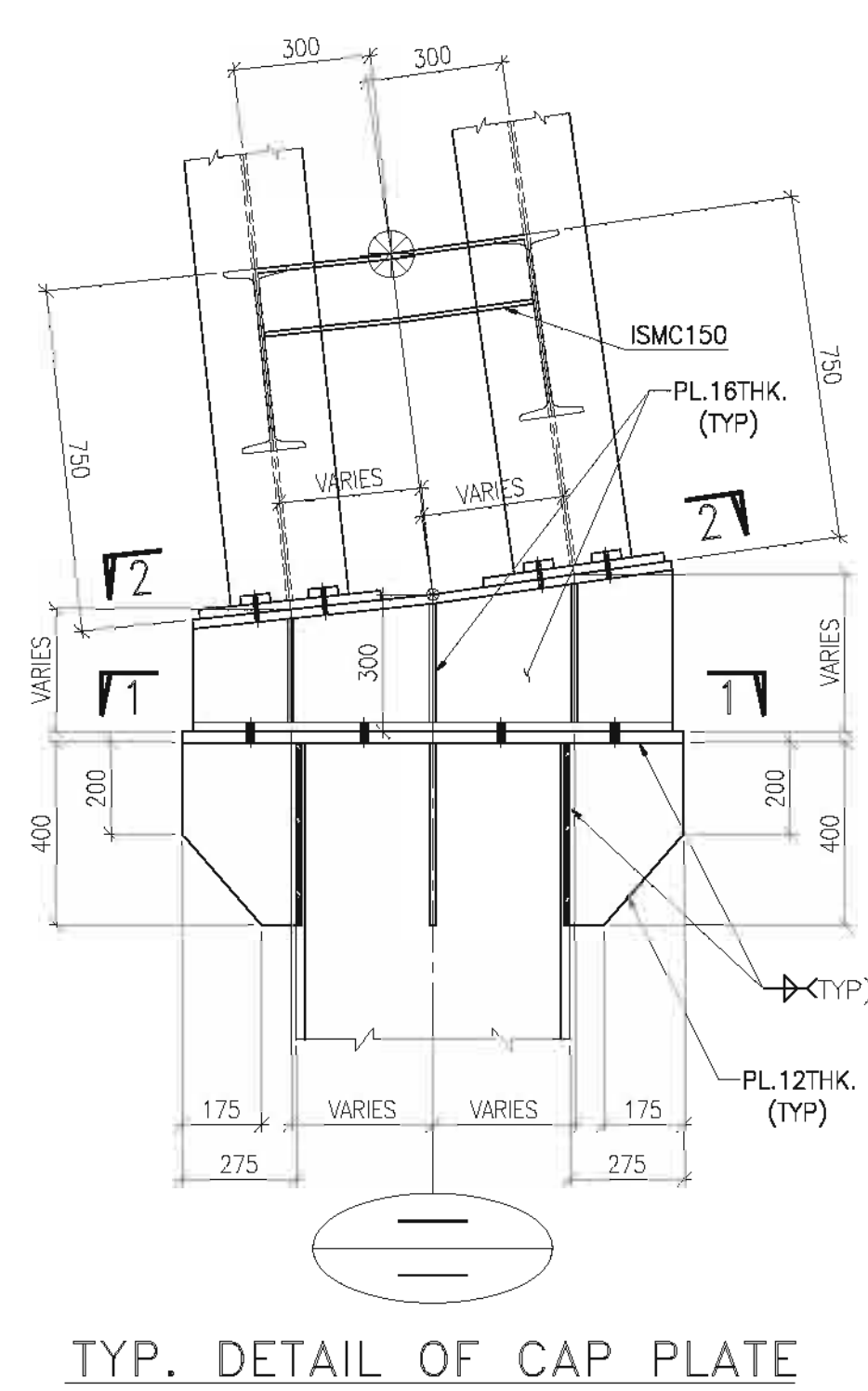
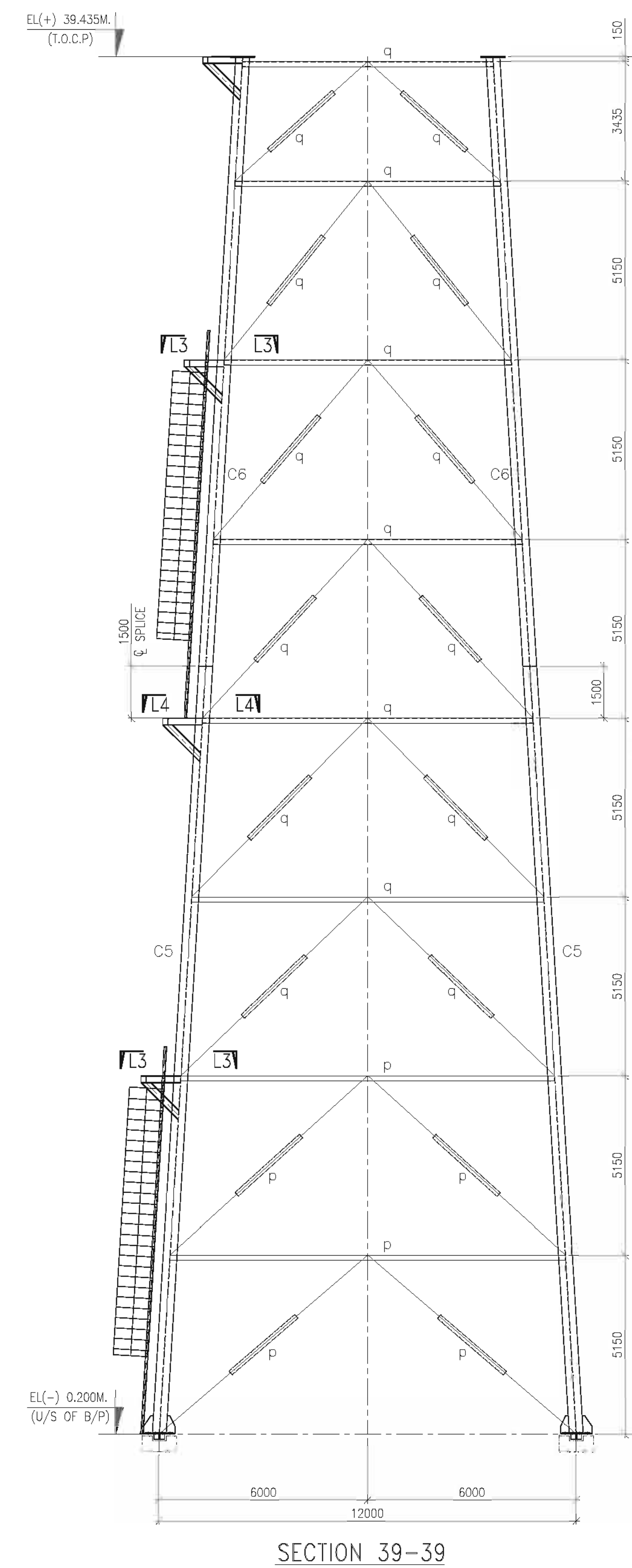
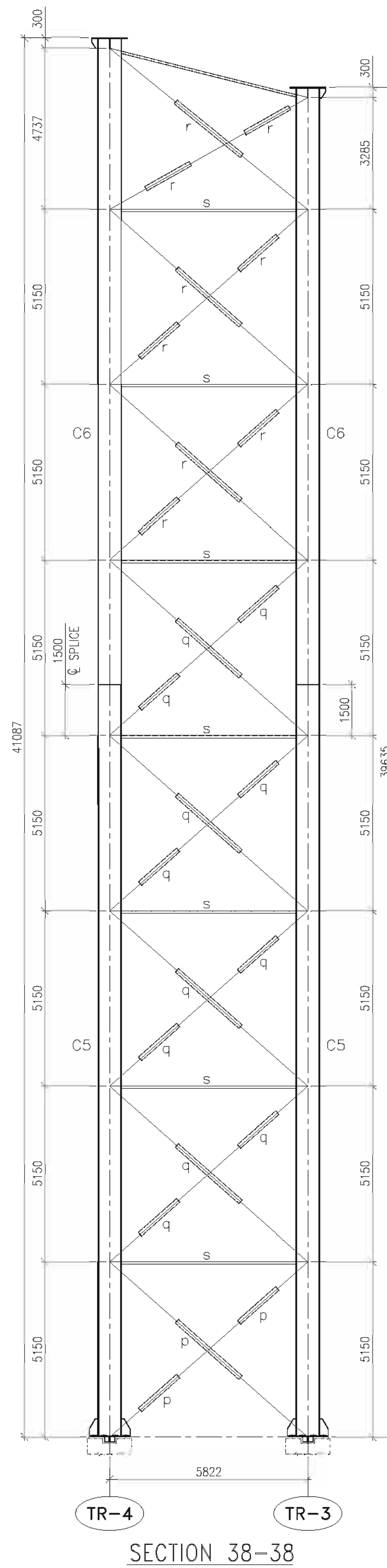
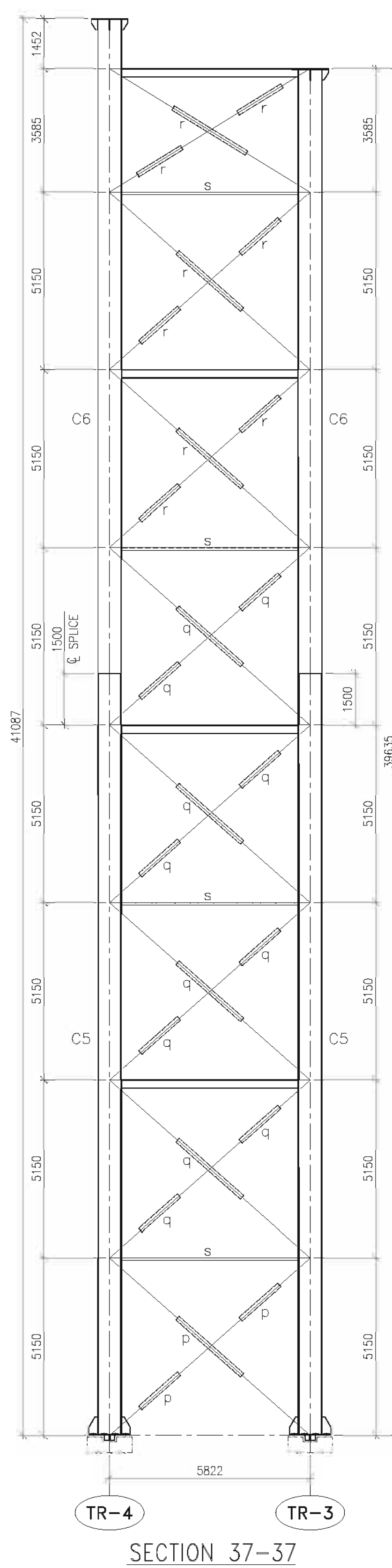
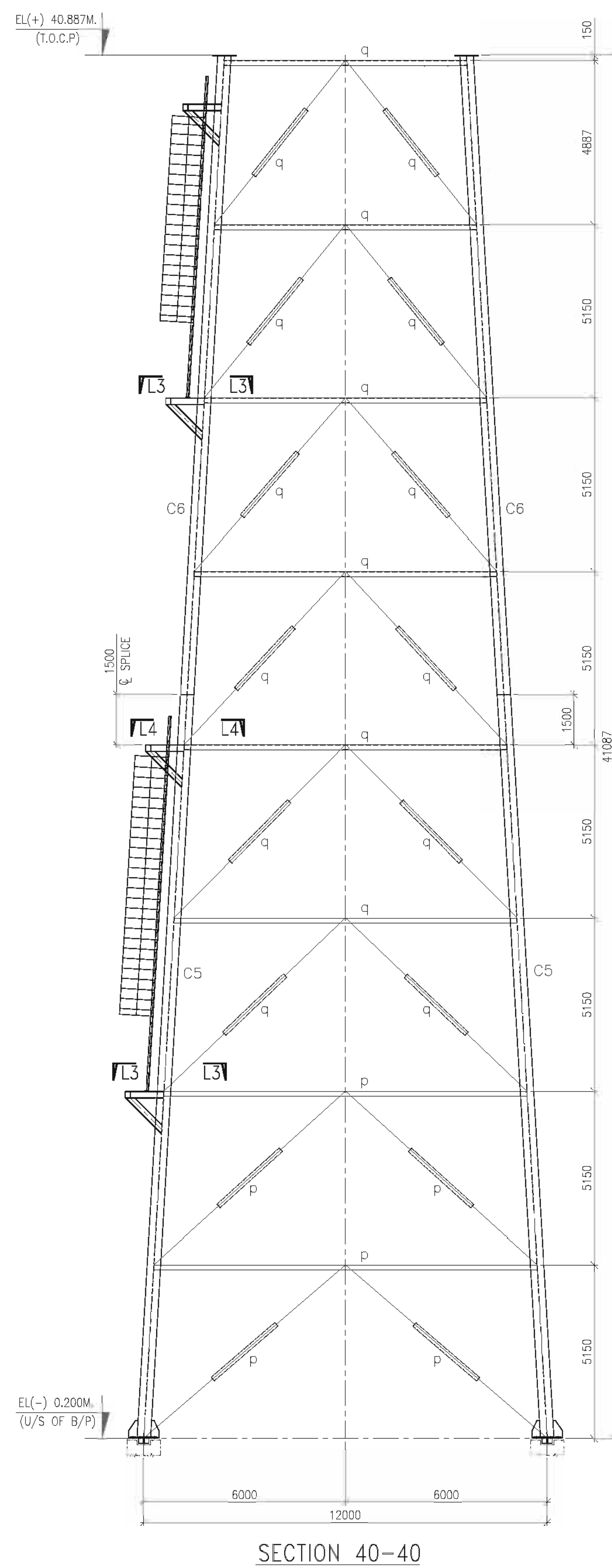
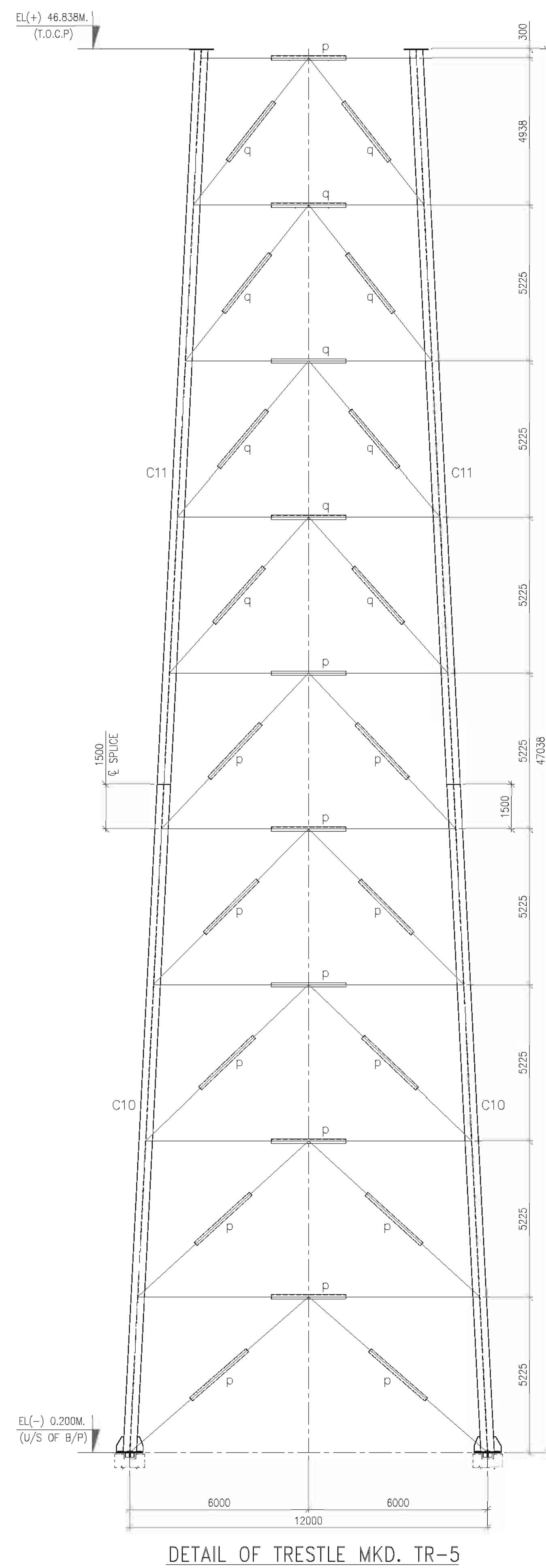
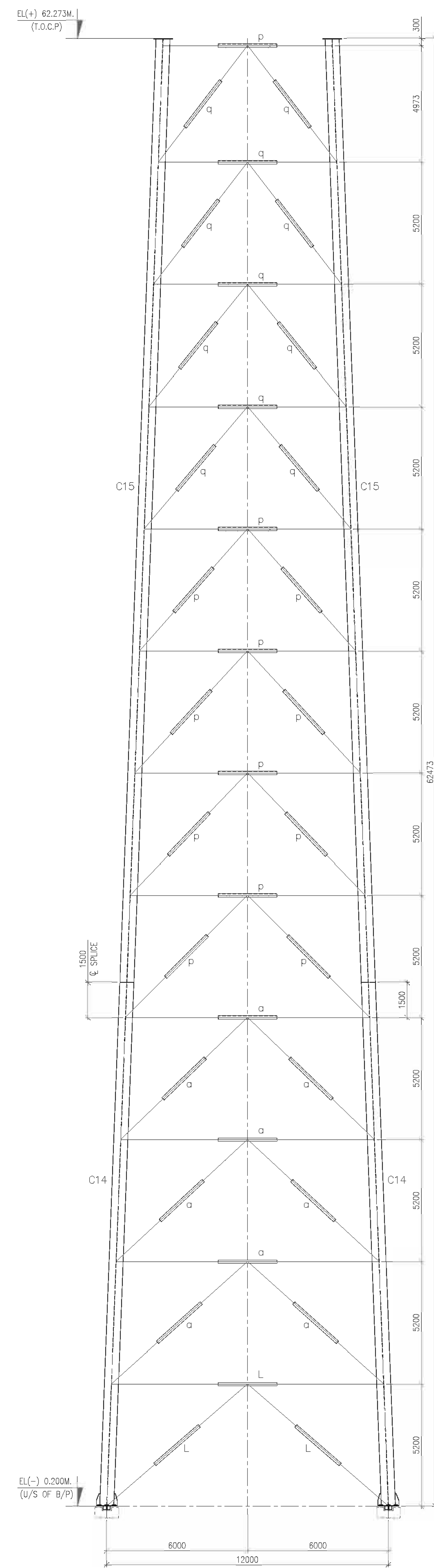
CLARIFIED WATER PUMP HOUSE
STRUCTURAL DETAILS OF SUPERSTRUCTURE

एमपीएल MPL	सिविल CIVIL	इलेक्ट्रिकल ELEC	सौरखण्ड C&I	मसई MSE	मैक्स MAX	विभाग DEPT.	स्केल - SCALE-	ड्राइंग संख्या / DRAWING NO. PE-DG-497-635-C011
हस्ताक्षर SIGN	सोड SHEET	1	OF	1	पुनरीक्षण REV.	0		

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COMPUTER FILE NAME:





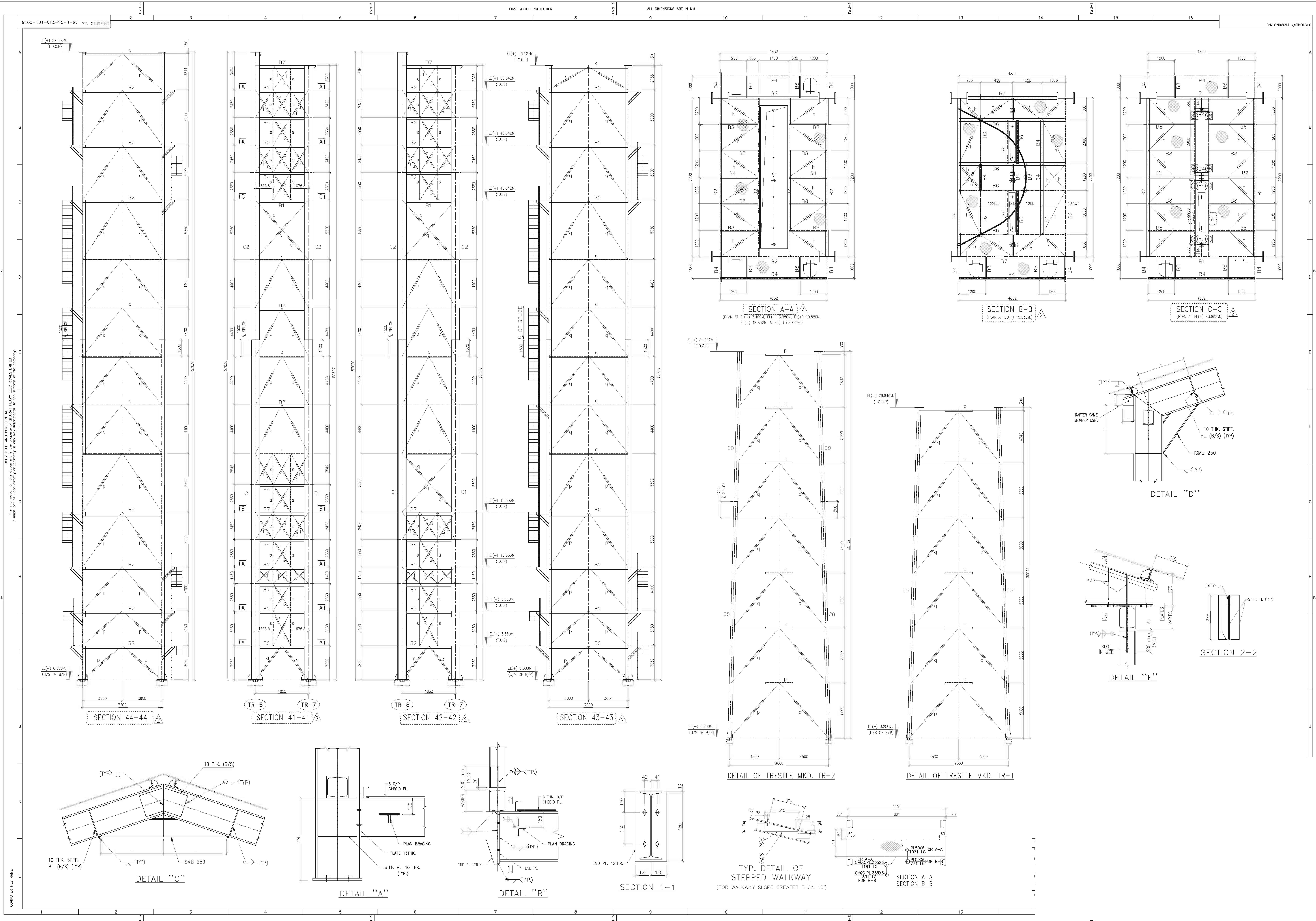
1-4





4-3

[illegible]

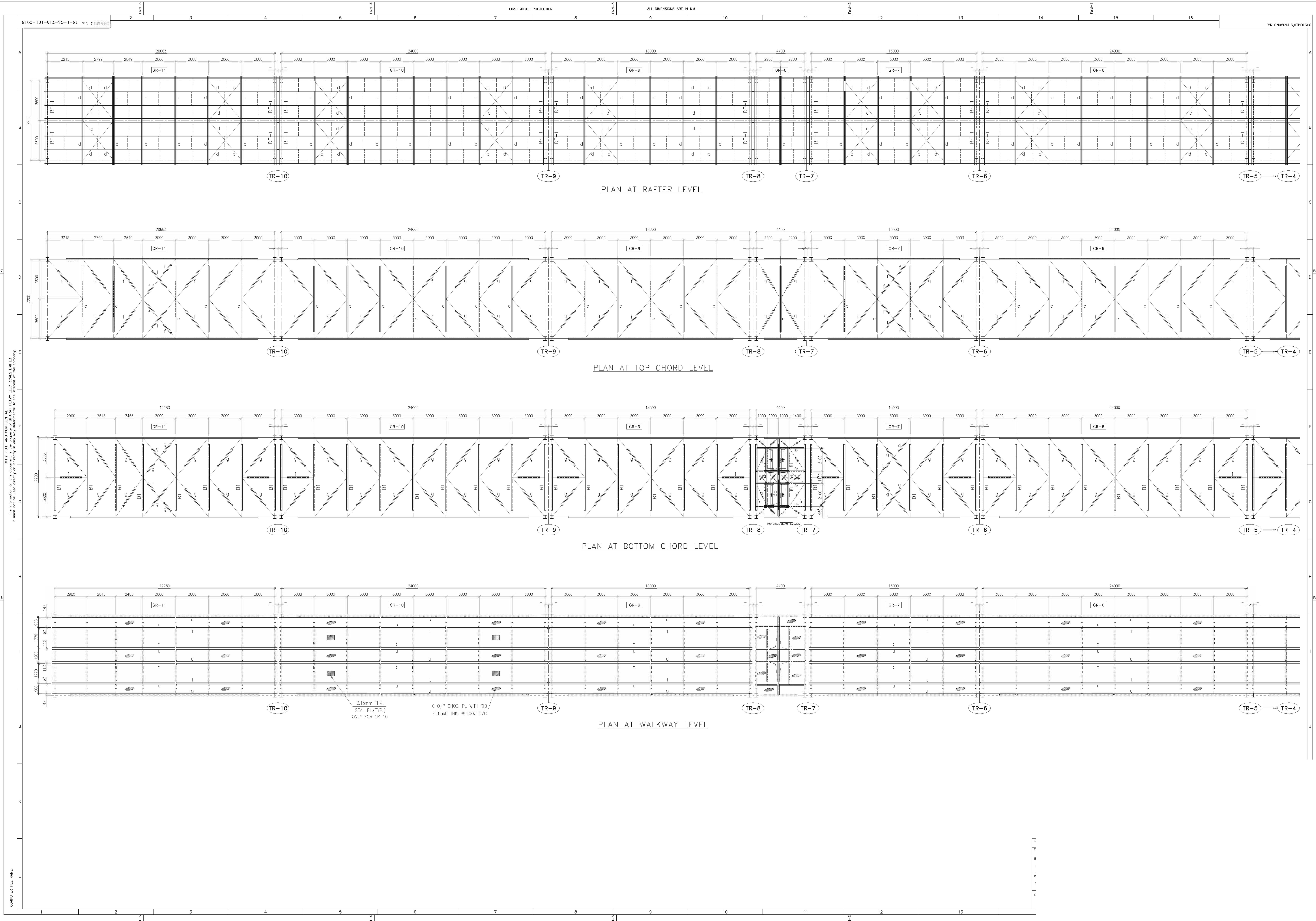


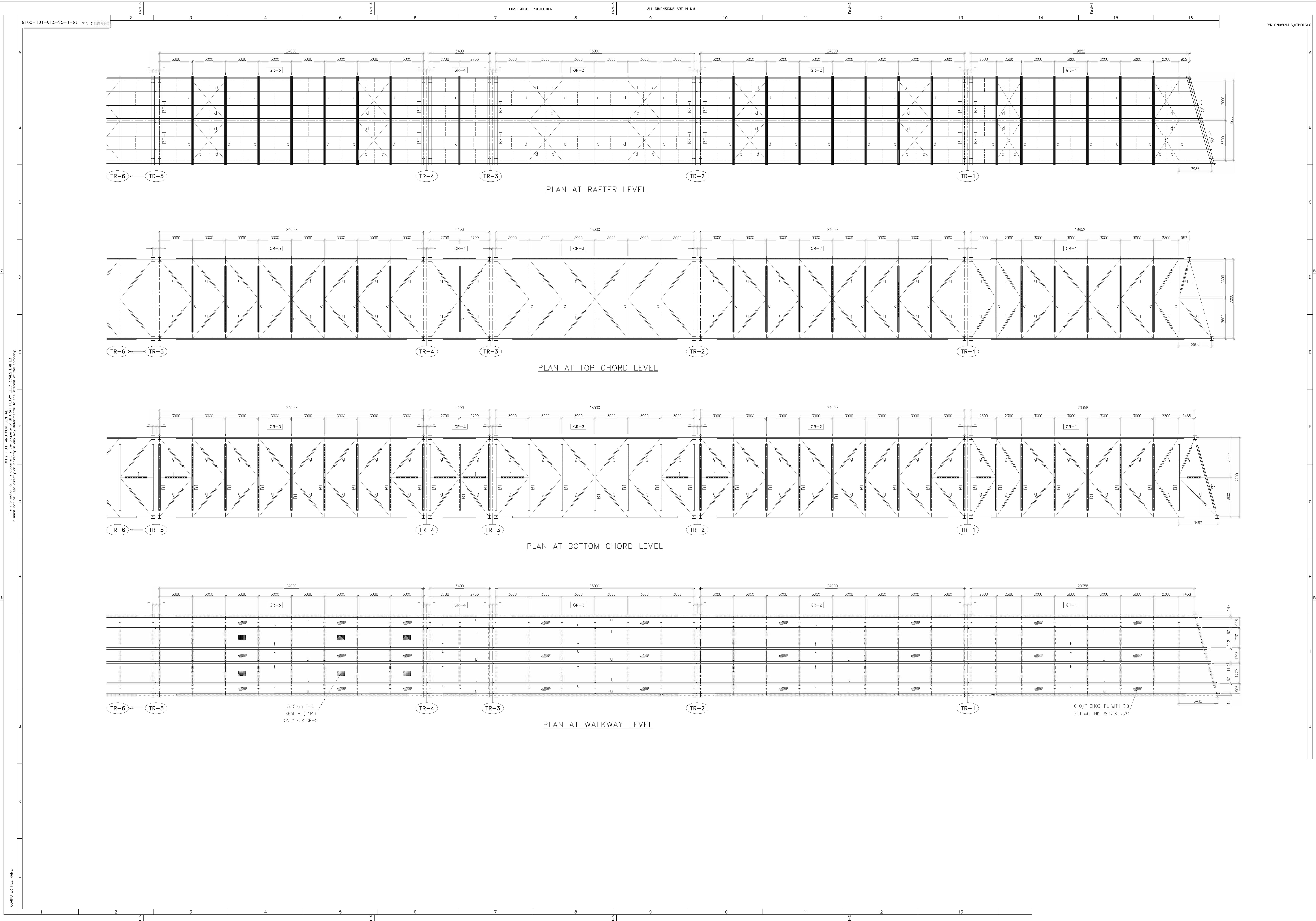


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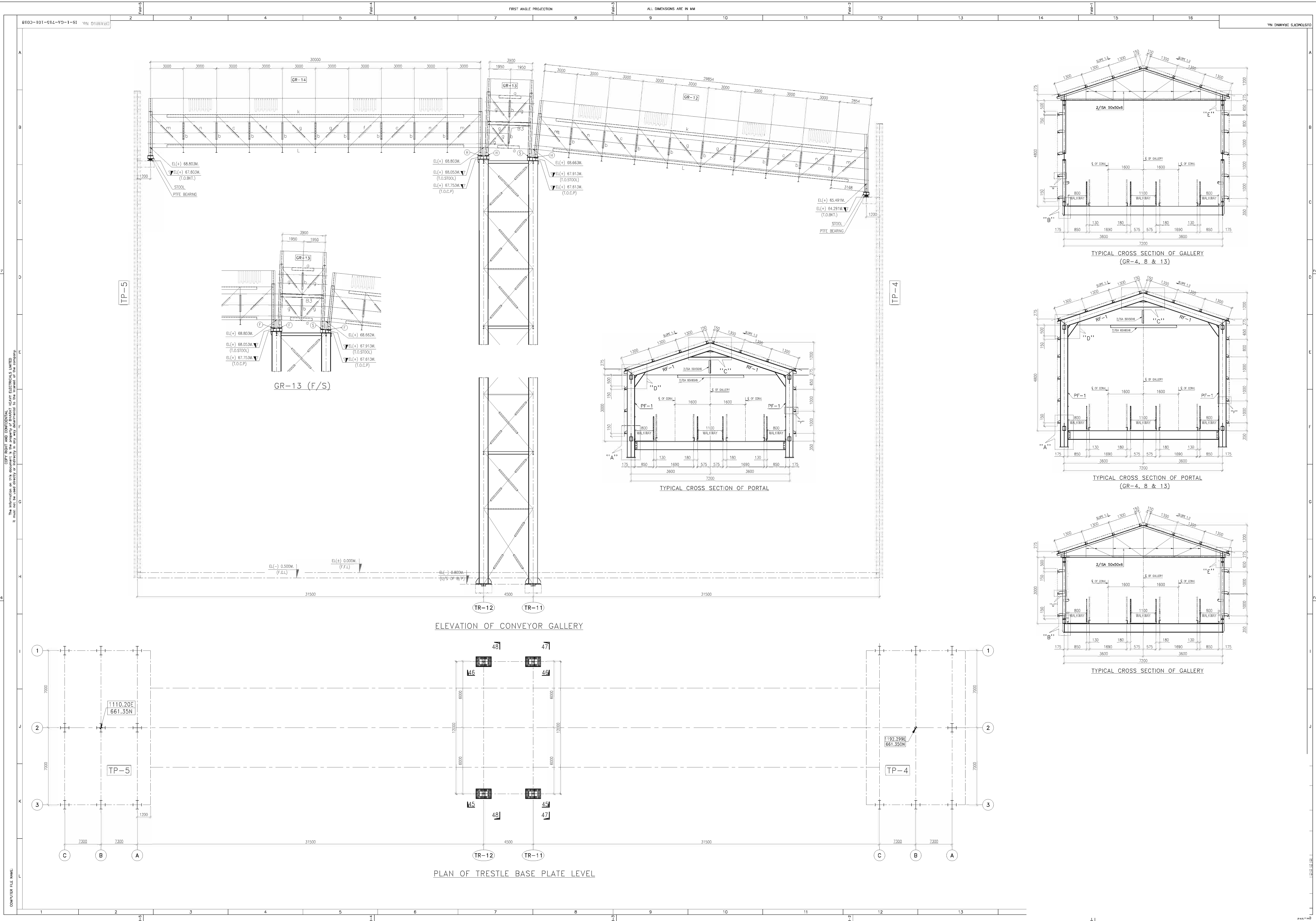
ONLY FOR GR-12





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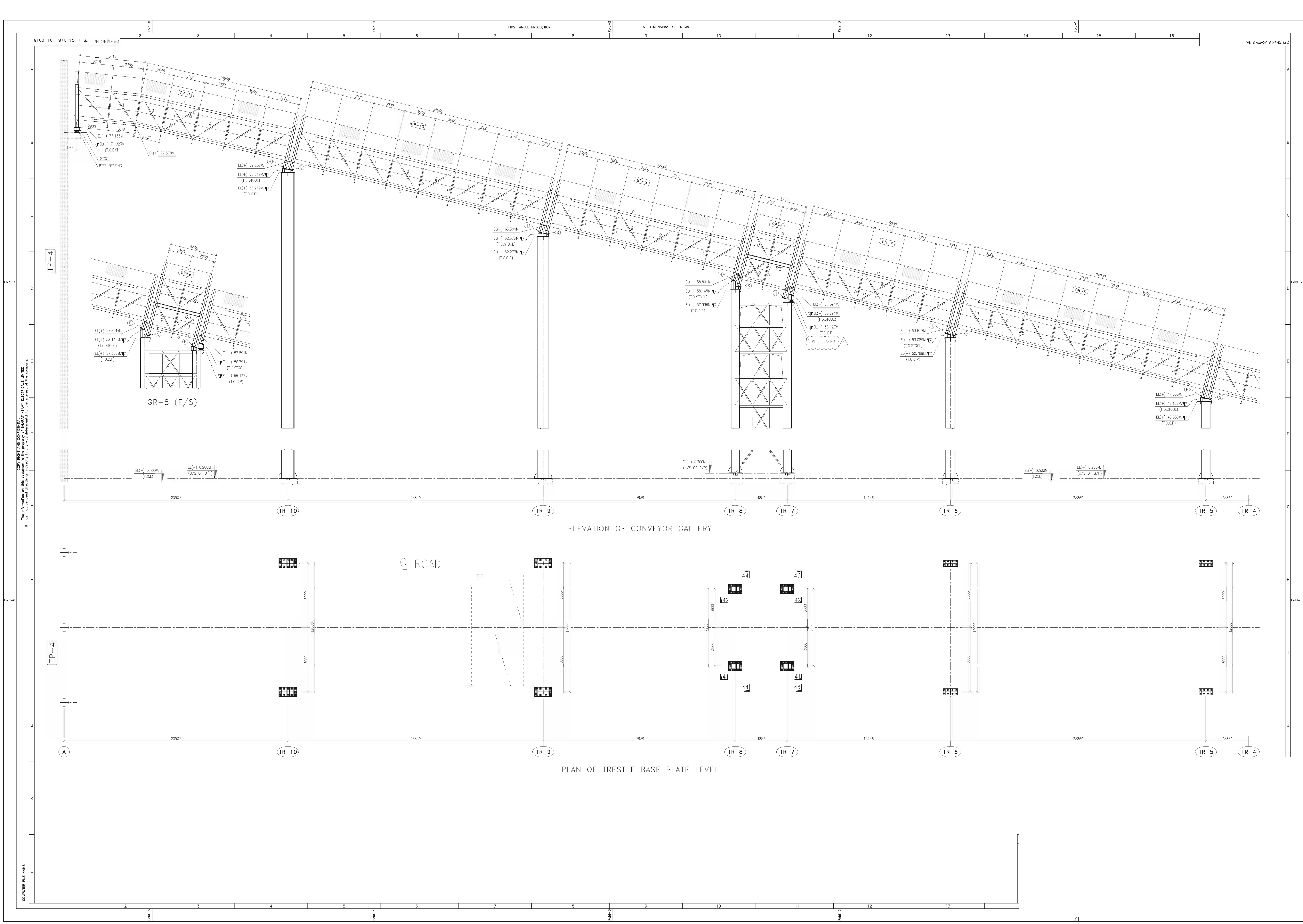
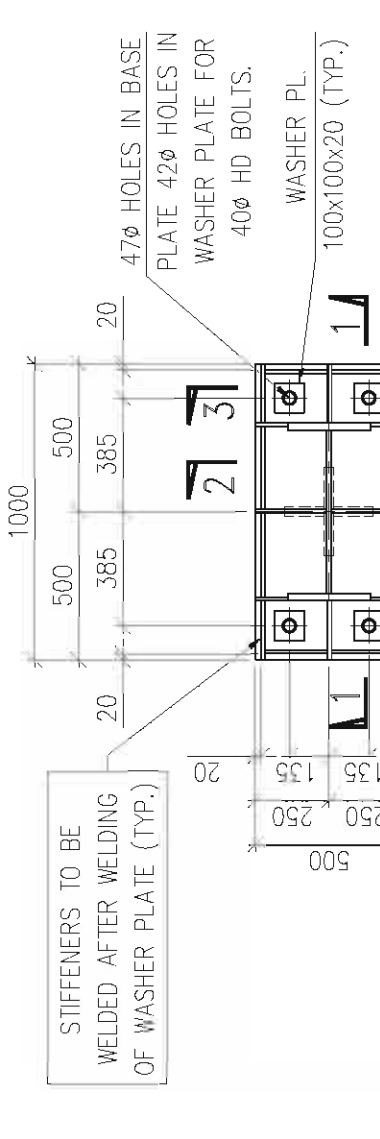


TABLE OF MEMBERS				REMARKS
MARK	PROFILE	SECTION		
C1	♂	① PL 500-50 THK.		
		② PL 700-25 THK.		
C2	♂	① PL 500-20 THK.		
		② PL 760-20 THK.		
C3	♂	① PL 500-36 THK.		
		② PL 778-20 THK.		
C4	♂	① PL 500-20 THK.		
		② PL 810-20 THK.		
C5	♂	① PL 400-25 THK.		
		② PL 650-16 THK.		
C6	♂	① PL 400-16 THK.		
		② PL 668-16 THK.		
C7	♂	① PL 300-25 THK.		
		② PL 550-16 THK.		
C8	♂	① PL 350-32 THK.		
		② PL 538-16 THK.		
C9	♂	① PL 350-20 THK.		
		② PL 560-16 THK.		
C10	♂	① PL 450-32 THK.		
		② PL 736-20 THK.		
C11	♂	① PL 450-20 THK.		
		② PL 760-20 THK.		
C12	♂	① PL 450-36 THK.		
		② PL 628-20 THK.		
C13	♂	① PL 450-20 THK.		
		② PL 860-20 THK.		
C14	♂	① PL 600-36 THK.		
		② PL 1028-20 THK.		
C15	♂	① PL 600-20 THK.		
		② PL 1060-20 THK.		
C16	♂	① PL 700-50 THK.		
		② PL 1100-20 THK.		
C17	♂	① PL 700-20 THK.		
		② PL 1160-20 THK.		
PF1	♂	① PL 300-25 THK.		
		② PL 300-16 THK.		
RF1	♂	① PL 300-25 THK.		
		② PL 300-16 THK.		
B1	I	ISM8 450		
a	□	BOX ISMC 200		
b	I	ISM2 150		
c	T	2/ISA 500-50		
d	T	2/ISA 900-50		
e	T	2/ISA 75-75		
f	T	2/ISA 75-75		
g	T	2/ISA 65-65		
h	T	2/ISA 50-50		
i	T	ISA 75-75		
B2	I	ISM8 250		
j	J	ISM2 125		
B3	♂	① PL 150-16 THK.		
		② PL 268-12 THK.		
B4	I	ISM8 200		
B5	♂	① PL 200-25 THK.		
		② PL 400-16 THK.		
k	□	BOX ISMC 300		
L	□	BOX ISMC 250		
m	T	2/ISA 100-100		
n	T	2/ISA 100-100		
B6	I	ISM8 400		
B7	I	ISM8 300		
p	□	BOX ISMC 150		
q	□	BOX ISMC 25		
r	□	BOX ISMC 100		
s	□	BOX ISMC 75		
t	J	ISM2 150		
u	J	ISM2 100		
B8	J	ISM2 100		

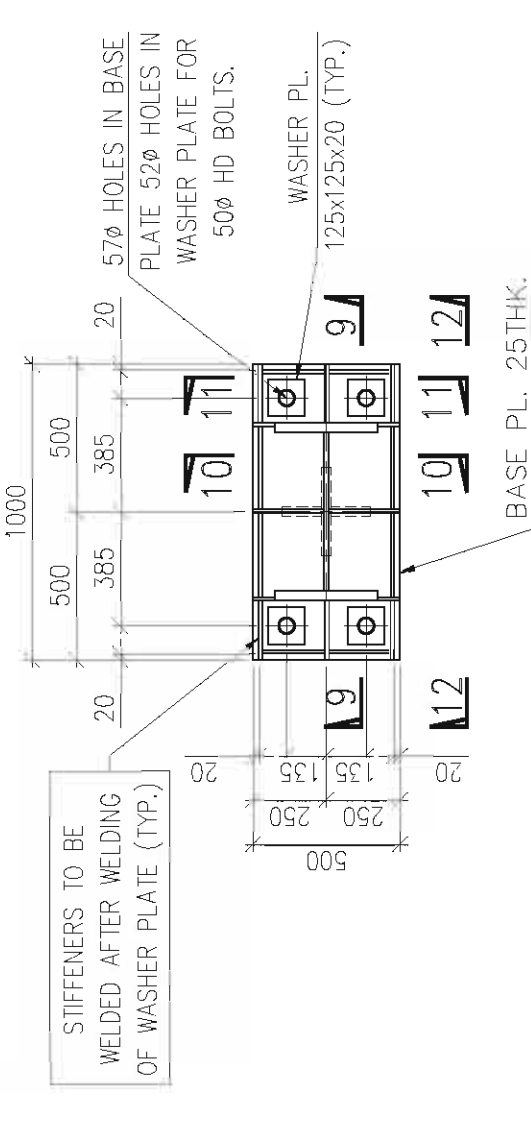
TABLE OF MEMBERS

MARK	PROFILE	SECTION	REMARK
C1		① PL. 500x25 THK. ② PL. 700x25 THK.	
C2		① PL. 500x20 THK. ② PL. 760x20 THK.	
C3		① PL. 500x36 THK. ② PL. 778x20 THK.	
C4		① PL. 500x20 THK. ② PL. 810x20 THK.	
C5		① PL. 400x25 THK. ② PL. 650x16 THK.	
C6		① PL. 400x16 THK. ② PL. 688x16 THK.	
C7		① PL. 300x25 THK. ② PL. 550x16 THK.	
C8		① PL. 350x32 THK. ② PL. 538x16 THK.	
C9		① PL. 350x20 THK. ② PL. 560x16 THK.	
C10		① PL. 450x32 THK. ② PL. 738x20 THK.	
C11		① PL. 450x20 THK. ② PL. 760x20 THK.	
C12		① PL. 450x36 THK. ② PL. 760x20 THK.	
C13		① PL. 450x20 THK. ② PL. 829x20 THK.	
C14		① PL. 600x36 THK. ② PL. 1029x20 THK.	
C15		① PL. 600x20 THK. ② PL. 1060x20 THK.	
C16		① PL. 700x50 THK. ② PL. 1100x20 THK.	
C17		① PL. 700x20 THK. ② PL. 1160x20 THK.	
PF1		① PL. 300x25 THK. ② PL. 300x16 THK.	
RF1		① PL. 300x25 THK. ② PL. 300x16 THK.	
B1		ISM 450	
a		BOX ISMC 200	
b		ISM 150	
c		2/ISA 90x9x5.8	
d		2/ISA 90x9x6	
e		2/ISA 75x7x5.8	
f		2/ISA 75x7x5.6	
g		2/ISA 65x6x5.6	
h		2/ISA 50x5x5.6	
i		ISA 75x7x5.6	
B2		ISM 250	
j		ISM 125	
B3		① PL. 150x16 THK. ② PL. 258x12 THK.	
B4		ISM 200	
B5		① PL. 200x25 THK. ② PL. 200x12 THK.	
k		BOX ISMC 300	
l		BOX ISMC 250	
m		2/ISA 100x10x10	
n		2/ISA 100x10x8	
B6		ISM 400	
B7		ISM 300	
p		BOX ISMC 150	
q		BOX ISMC 25	
r		BOX ISMC 100	
s		BOX ISMC 75	
t		ISM 150	
u		ISM 100	
B8		ISM 100	

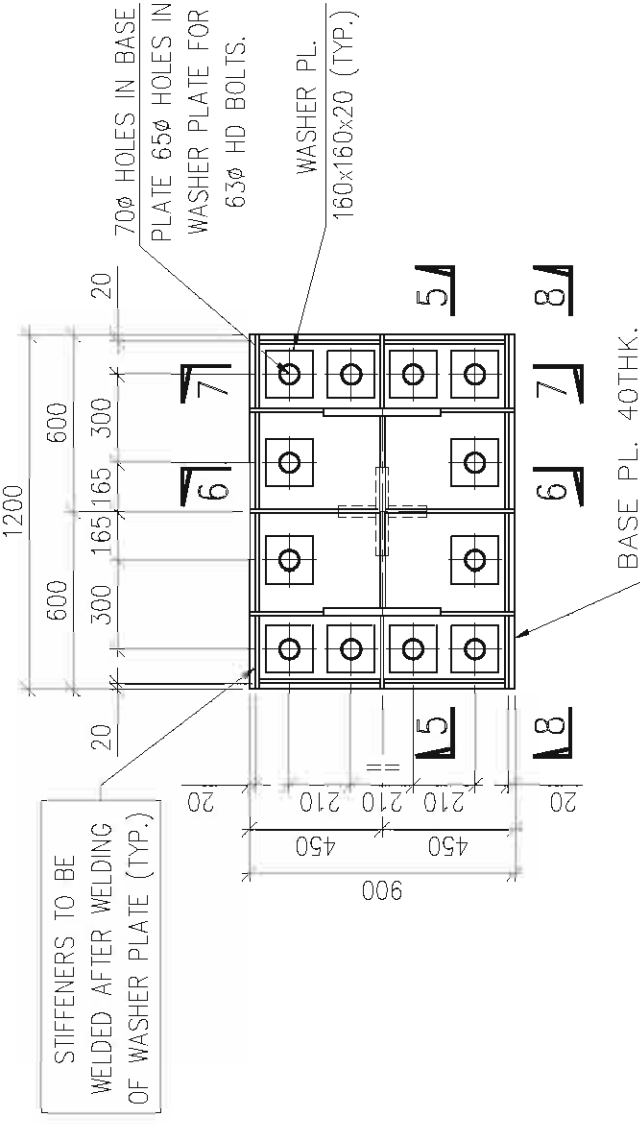
DETAILS OF BASE PLATE



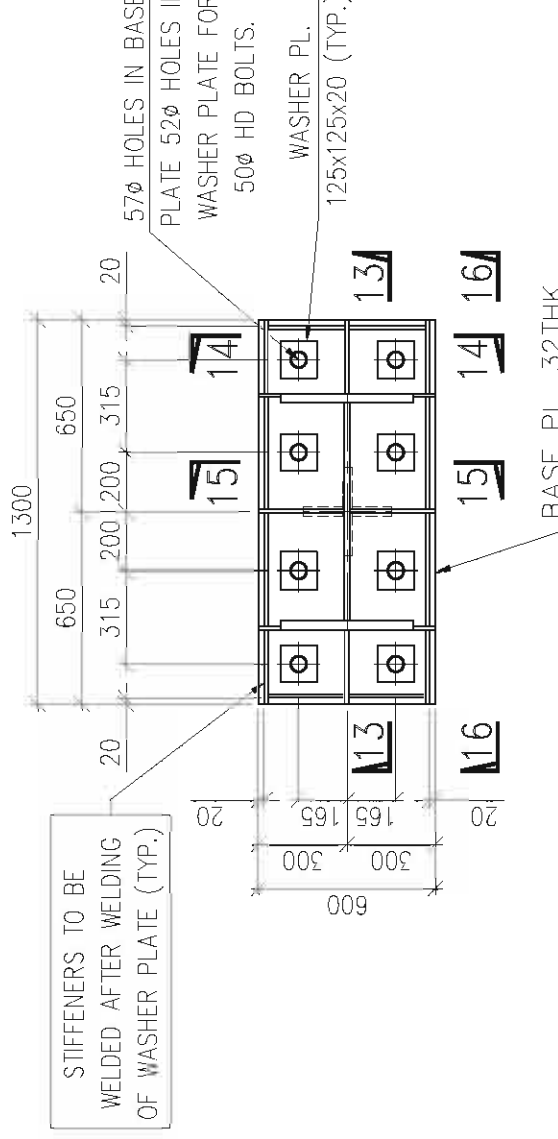
TYP. DETAIL OF BASE PLATE FOR TR-1



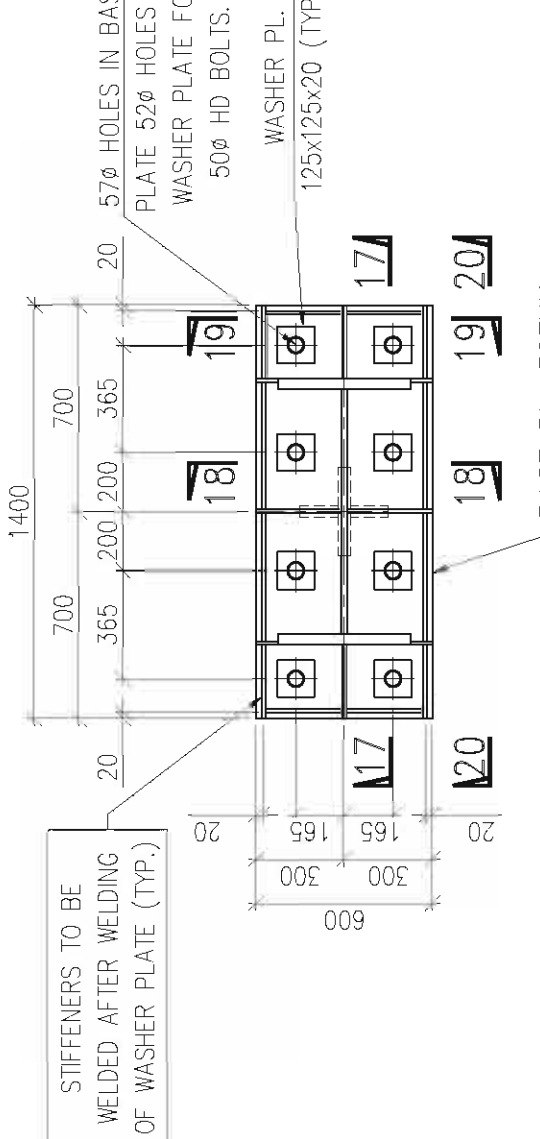
BASE PL. 23 (HK)
TYP. DETAIL OF BASE PLATE FOR TR-2



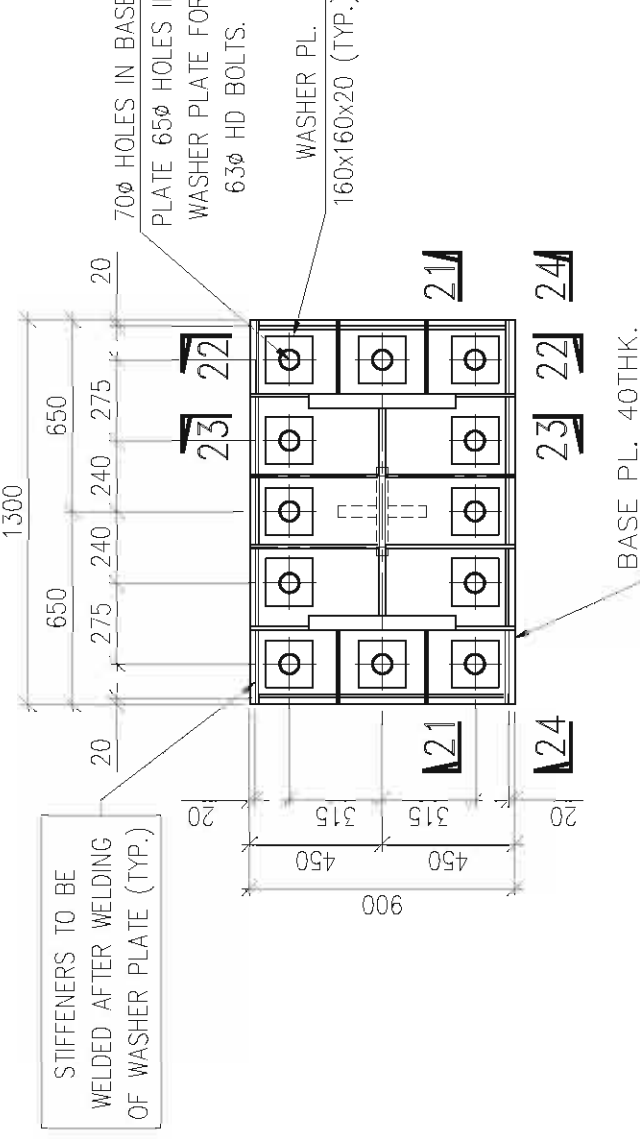
TYP. DETAIL OF BASE PLATE FOR TR-3 & 4
(BASE L.L. FORMING)



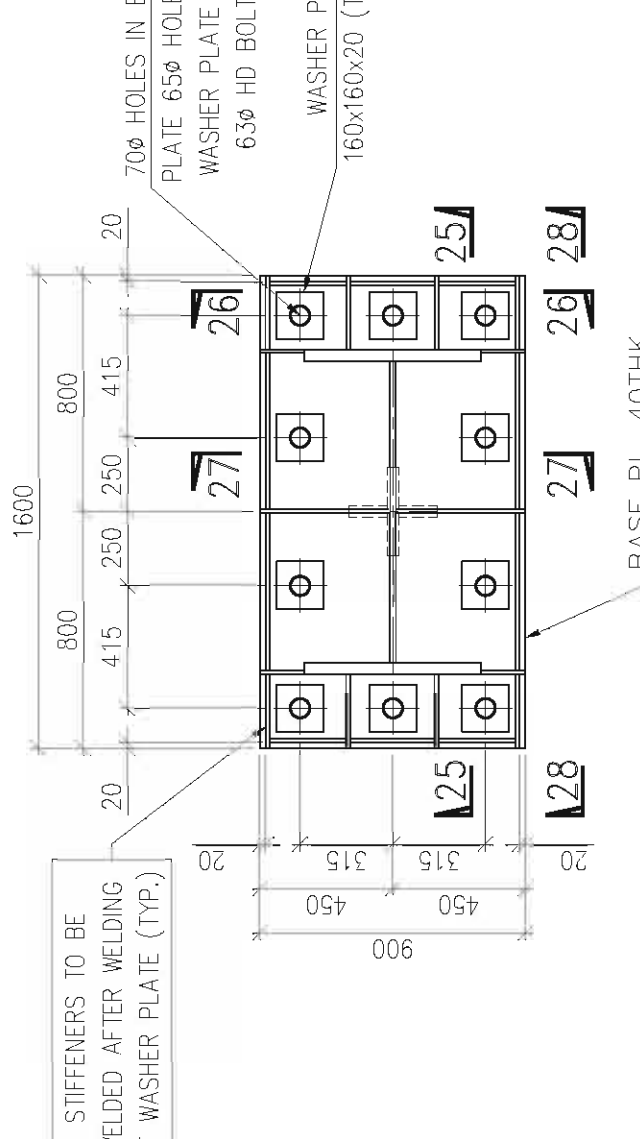
TYP. DETAIL OF BASE PLATE FOR TR-5



TYP. DETAIL OF BASE PLATE FOR TR-6
[BASE PL. 32THK.]

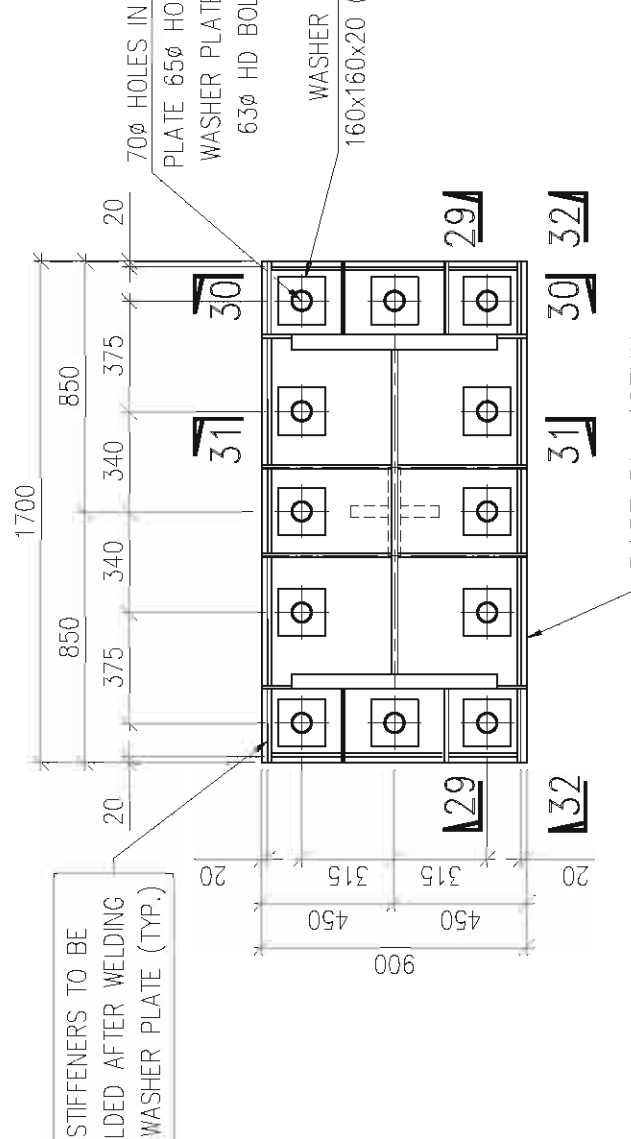


TYP. DETAIL OF BASE PLATE FOR TR-7 & 8

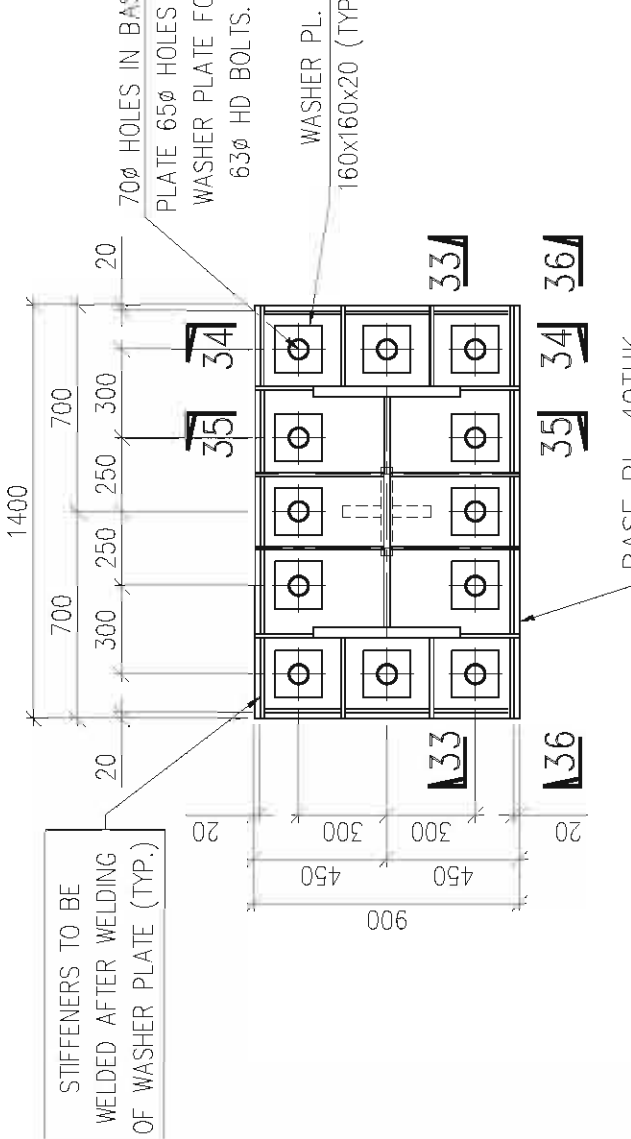


BASE P.L. 4011K.

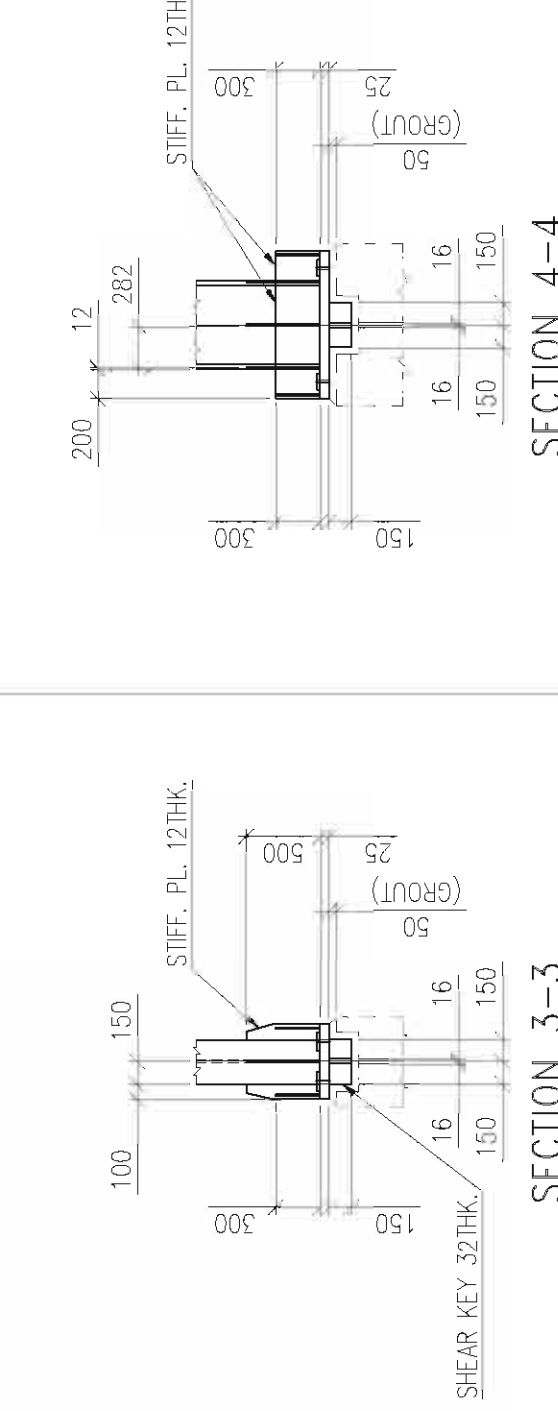
TYP. DETAIL OF BASE PLATE FOR TR-9



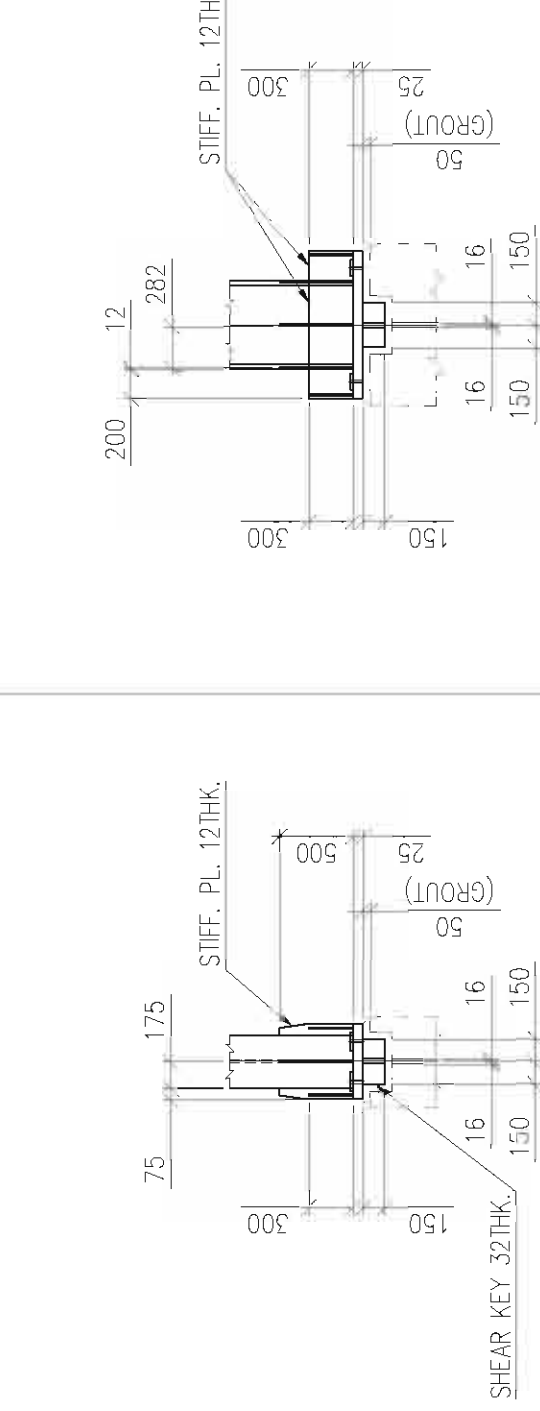
TYP. DETAIL OF BASE PLATE FOR TR-10



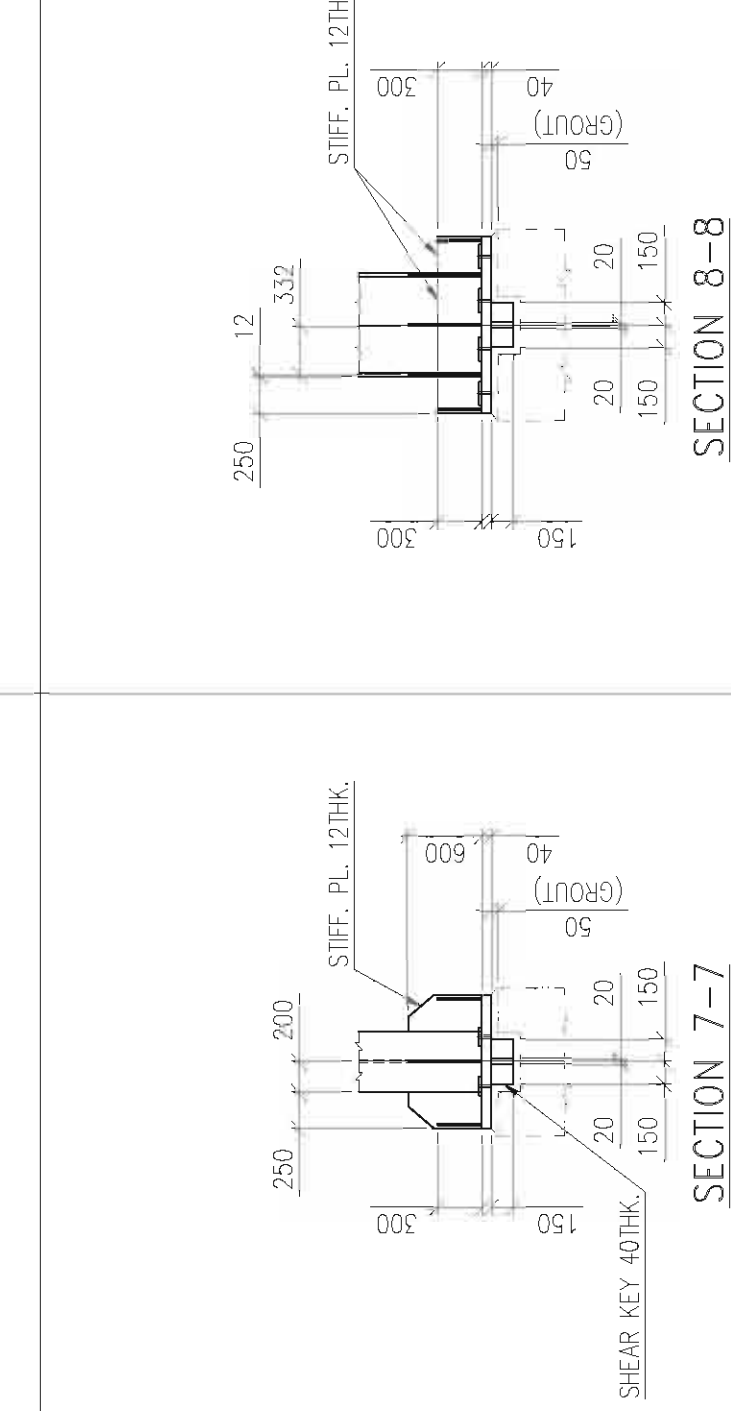
BASE PL. 401RK.
TYP. DETAIL OF BASE PLATE FOR TR-11 & 12



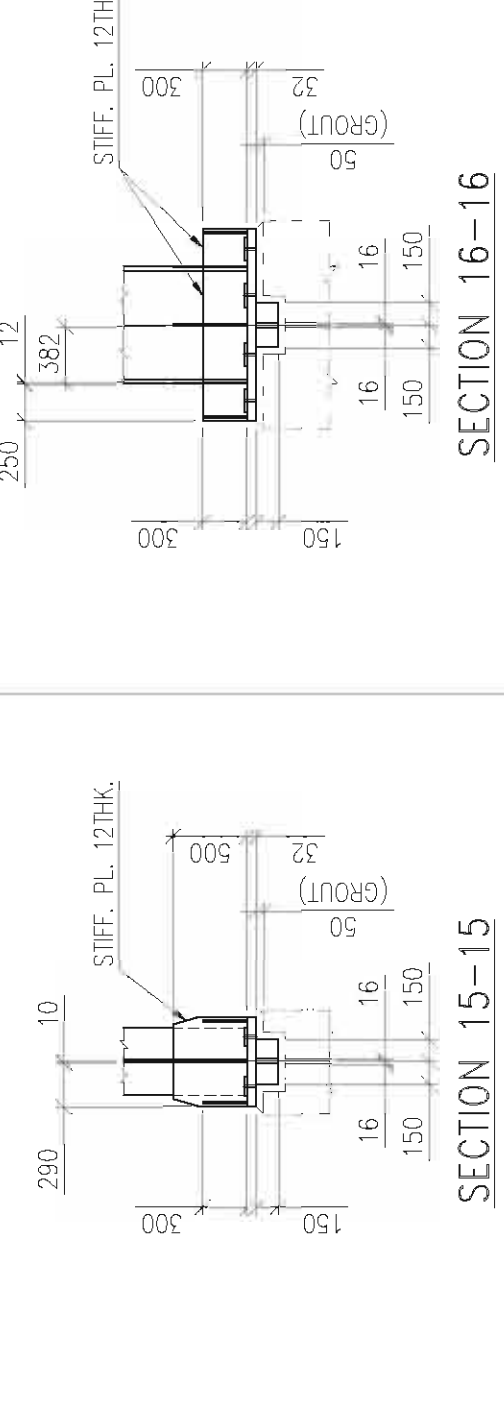
SECTION 4-4



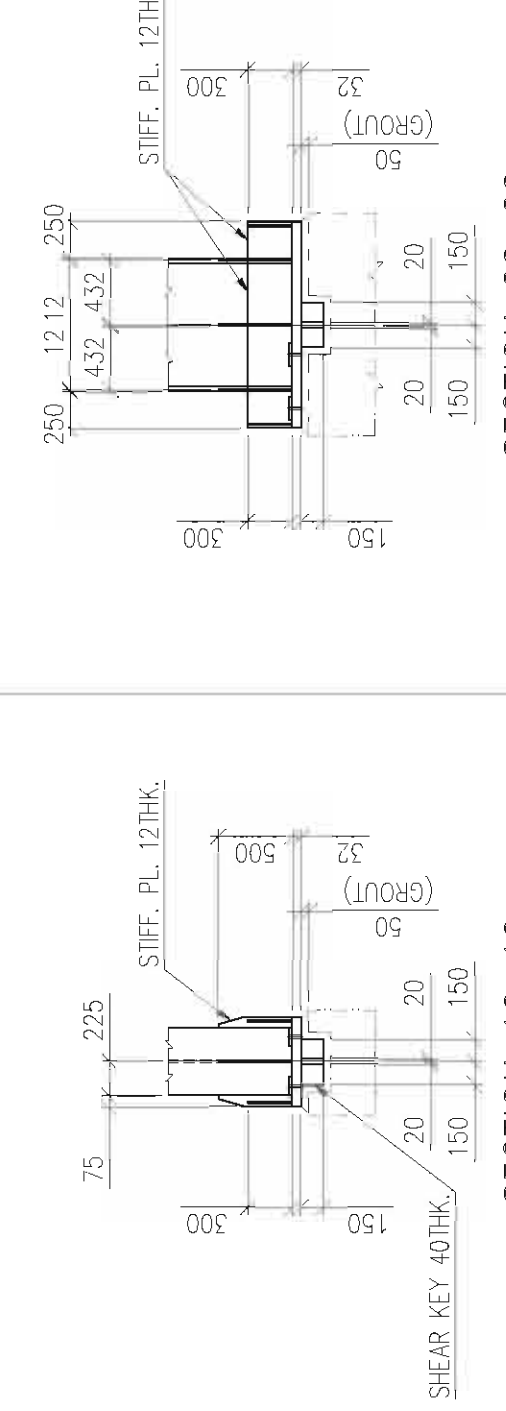
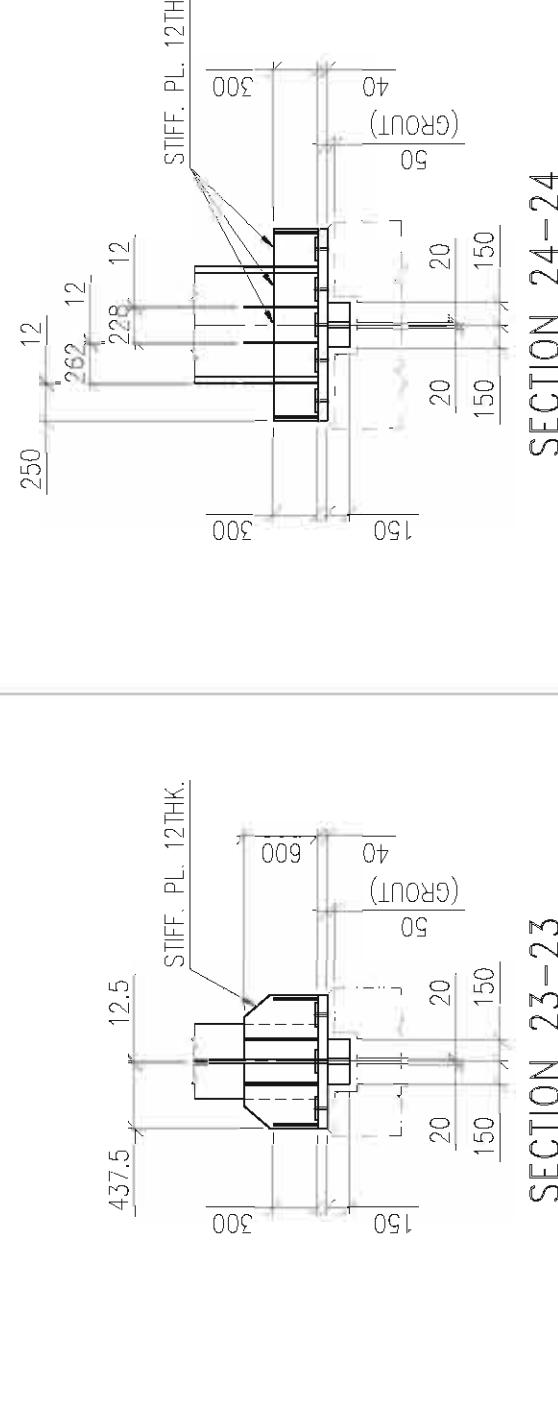
SECTION 12-12



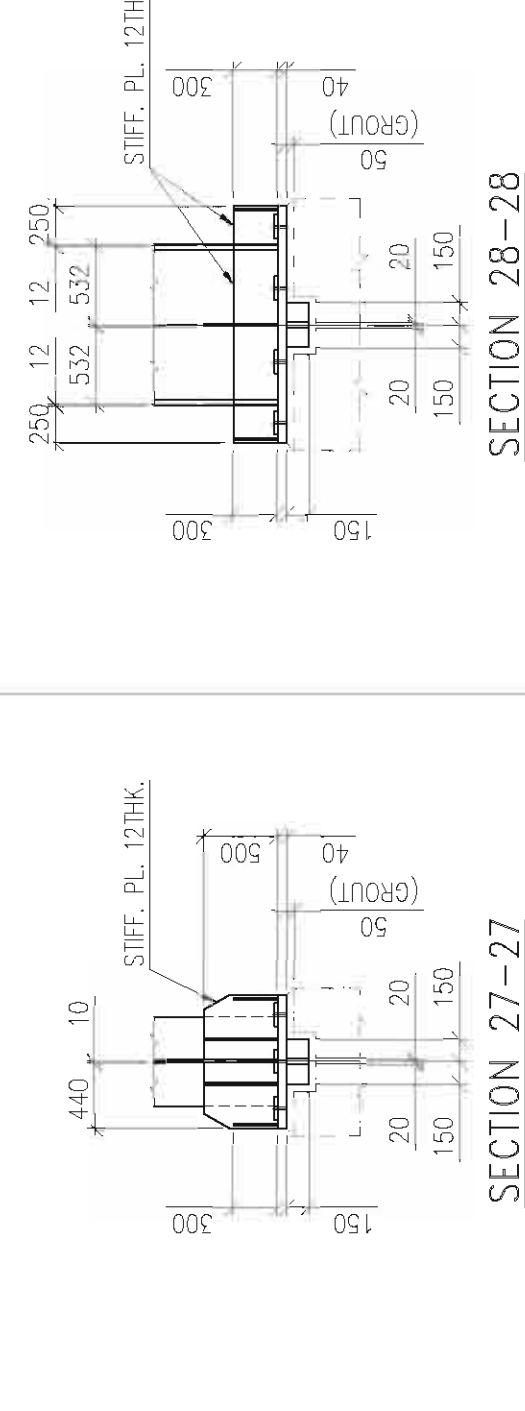
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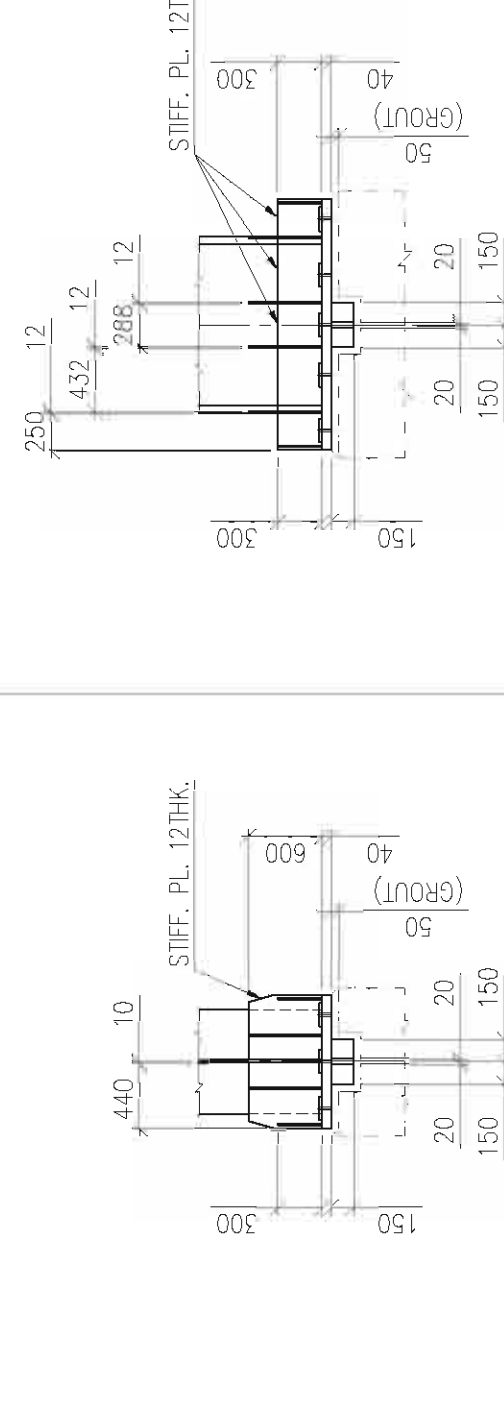
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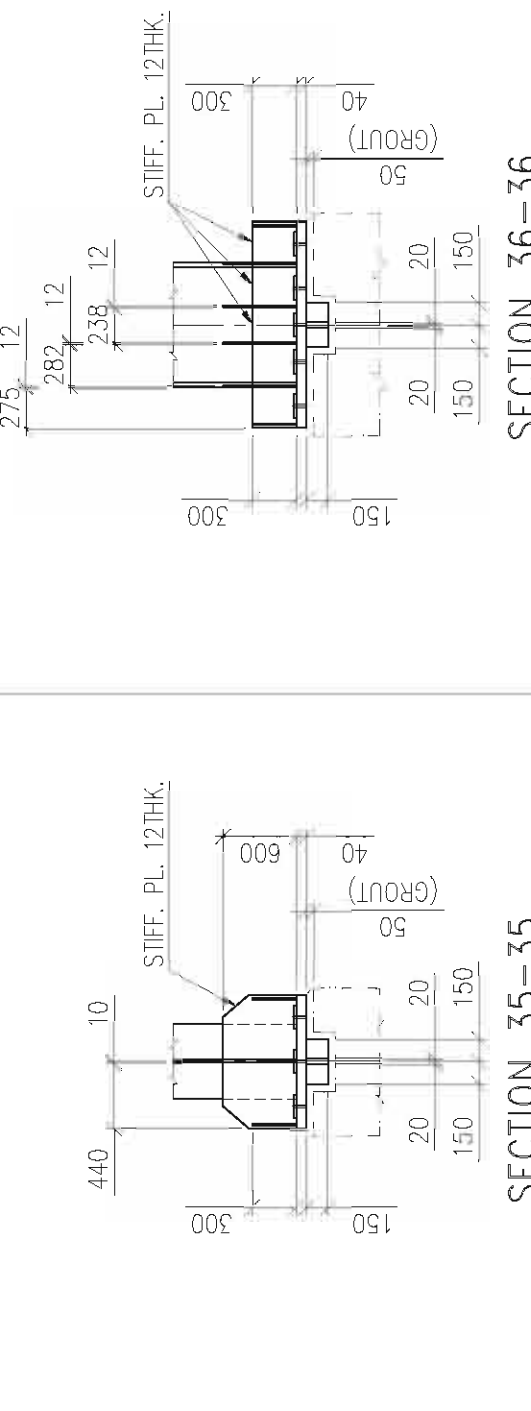
SECTION 24-150



SECTION 28-28



SECTION 32-32



SECTION 36-36



1. ALL DIMENSIONS ARE IN MILLIMETRES
2. ALL MATERIALS SHALL BE NEW, CLEAN, RUST FREE & STRAIGHTENED IF NECESSARY BEFORE BEING WORKED.
3. FINISHED FLOOR LEVEL FFL EL (+) 0.00 M CORRESPONDS TO RL (+) 71.50 M. FGL EL(-) 0.50 M CORRESPONDS TO RL (+) 71.00 M.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. 4540-001-155-PVC-C-0147
5. ROLLED SECTIONS SHALL BE OF GRADE DESIGNATION E250, QUALITY A/BR, SEMI-KILLED/ KILLED CONFORMING TO IS 2062. ALL STEEL PLATES SHALL BE OF GRADE DESIGNATION E250, QUALITY BR (FULLY KILLED), CONFORMING TO IS 2062 AND SHALL BE TESTED FOR IMPACT RESISTANCE AT ROOM TEMPERATURE. PLATES BEYOND 12MM THICKNESS AND UP TO 40MM THICKNESS SHALL BE NORMALIZED ROLLED. PLATES BEYOND 40MM THICKNESS SHALL BE VACUUM DEGASS & FURNACE NORMALISED AND SHALL ALSO BE 100% ULTRASONICALLY TESTED AS PER ASTM -A578 LEVEL B-S2.
6. ALL STEEL STRUCTURES SHALL BE FABRICATED IN FACTORY, TRANSPORTED AND ERECTED AT SITE. ALL FACTORY FABRICATED STRUCTURES SHALL HAVE BOLTED FIELD CONNECTIONS.
7. ALL FILLET WELDS SHALL BE MINIMUM 6mm THK UN OTHERWISE.
8. CONNECTION DETAILS SHOWN ARE INDICATIVE AND ACTUAL SIZE OF GUSSETS, LENGTH OF WELD, NO OF BOLTS ETC, SHALL BE AS PER ACTUAL FABRICATION DWG.
9. ALL SPLICES SHALL BE DESIGNED FOR ITS FULL TENSILE CAPACITY
10. ALL BOLTS SHALL BE MINIMUM 16 DIA UN OTHERWISE AND TO BE FITTED WITH WASHER AND NUT.
11. ALL FIELD CONNECTIONS SHALL BE BOLTED WITH HIGH STRENGTH FRICTION GRIP (H.S.F.G.) BOLTS OF GRADE 8.8 / 10.9 CONFORMING TO IS:1367 FOR ALL MAJOR CONNECTIONS. ALL NOMINAL CONNECTIONS IN THE FIELD LIKE PURLINS, STAIRS, WALL BEAMS ETC. SHALL BE DONE USING M.S. BLACK BOLTS OF GRADE 4.6 CONFORMING TO IS:1367. 11.WELDING SYMBOLS SHALL CONFORM TO IS-813.
12. FIELD CONNECTION OF PURLINS & RUNNERS AS SHOWN IN THE DWG SHALL BE DONE BY M.S BOLTS (GRADE 4.6 CONFORMING TO IS-1393) WITH SPRING WASHER & LOCK NUTS.
13. ELECTRODES FOR MILD STEEL SHALL CONFORM TO IS:814 AND 815 (LATEST)
14. ALL GUSSET PLATES ARE 10 MM THK UNLESS OTHERWISE NOTED.
15. FOR SPlice LOCATION SHALL BE PLACED ON AVAILABLE LENGTH OF MATERIAL WHEN JOINT SHALL BE STAGGERED.
16. ALL CONNECTIONS ARE SHEAR CONNECTION, UNLESS OTHERWISE SPECIFIED.
17. SEAL PLATE AND CHEQUERED PLATE SHALL BE CONTINUOUSLY WELDED WITH WATER SEAL ARRANGEMENT FOR GALLERY.
18. ALL PURLINS AND SIDE RUNNERS SHALL BE CONTINUOUS OVER ATLEAST TWO PANELLS i.e 6M.
19. CAGE LADDER WITH ACCESS PLATFORM SHALL BE PROVIDED ON EACH TRESTLE FOR HEIGHT 10 MTR OR MORE AND ON ALTERNATE TRESTLE FOR LESS THAN 10 MTR
20. THE WALKWAY SHALL BE CHEQUERED PLATE CONSTRUCTION WITH ANTI-SKID ARRANGEMENT WILL CONSIST OF WELDING OF 10 MM SQUARE STEEL BARS AT SPACING OF 500 MM ALONG THE LENGTH OF CONVEYOR.
21. SEAL PLATE AND CHEQUERED PLATE SHALL BE CONTINUOUSLY WELDED FOR WATER SEALING.
22. STEPPED WALKWAY IN GALLERY / TUNNEL SHALL BE PROVIDED FOR CONVEYOR INCLINATION MORE THAN 10 DEGREE
23. 3MM THK PARTITION PLATE SHALL BE PROVIDED AT PULLEY TAKE-UP ZONE.
24. SEAL PLATE MADE OF HR SHEET OF THICKNESS 3.15 MM HR-1 GRADE CONFORMING TO IS 1079.
25. SHS CORRESPONDS TO SQUARE HOLLOW SECTION CONFORMING TO IS 4923

"WE CONFIRM THAT THIS DOCUMENT MEETS ALL THE CONTRACT REQUIREMENTS INCLUDING SAFETY AND STATUTORY REQUIREMENT AND FACILITATE EASE OF OPERATION AND MAINTENANCE. IN CASE ANY DEVIATION IS FOUND, THE CONTRACTOR SHALL CARRY OUT ALL REQUIRED CHANGES /MODIFICATIONS WITHOUT ANY COST IMPLICATIONS TO NTPC. IN ADDITION, PENALTY ON ACCOUNT OF NONCOMPLIANCE OF CONTRACT SPECIFICATION AS DEEMED FIT BY THE EMPLOYER SHALL BE RECOVERED"

ZONE

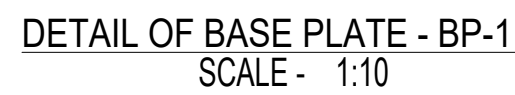
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00	DRN.			FILE NO. :	
	CHD.				
	APPD.				
ZONE				TITLE : DUST SUPPRESSION GA OF SUPER	

I SECTION (ISMB)		
Symbols	Mark No.	Section Size
	I3	ISMB 200

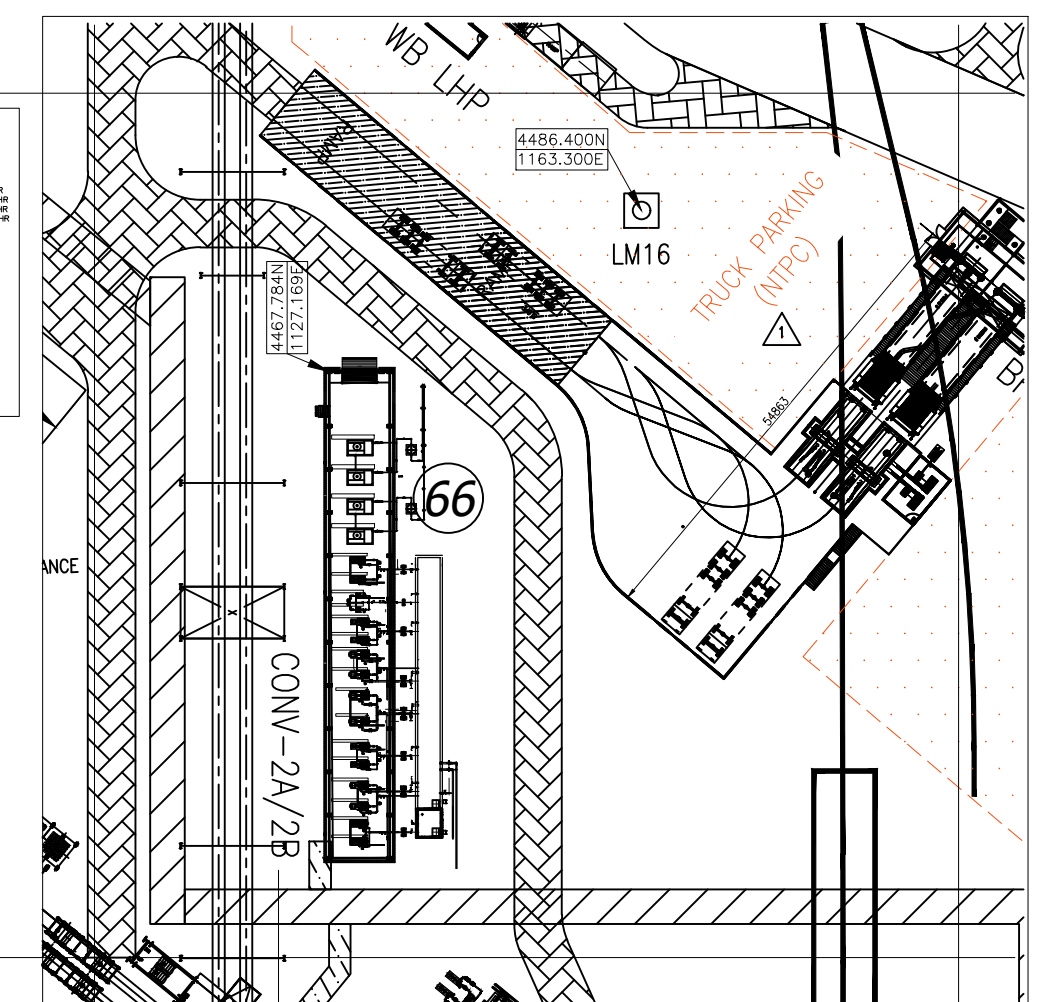
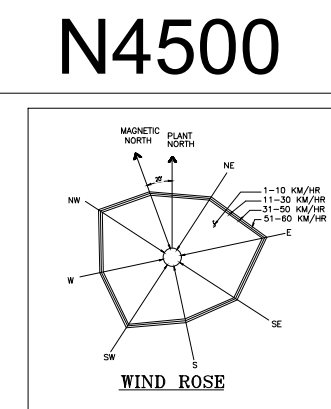
Mar 04, 2024 - 9:40am

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM



MATERIAL SUMMARY		
Sno	Size	Weight(kg)
1	ISA75X75X6	4568.0
2	ISA90X90X6	1046.7
3	ISA100X100X8	145.3
4	ISM8200	2260.9
5	ISMC150	20086.6
6	ROD Ø 16	1576.7
7	UB305X165X46	10475.3
8	UB356X171X51	8251.9
9	UB406X178X60	5402.8
10	PLT 5	9
11	PLT 8	232
12	PLT 10	2684.4
13	PLT 12	3558
14	PLT 16	314.8
15	PLT 20	150.9
16	PLT 25	1766.3
17	PLT 32	443.3
TOTAL		62972.9



N4400

KEY PLAN

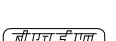
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REV.	NAME	SIGN	DATE
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CHD.			
APPD.			
ZONE			

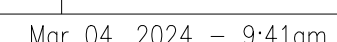
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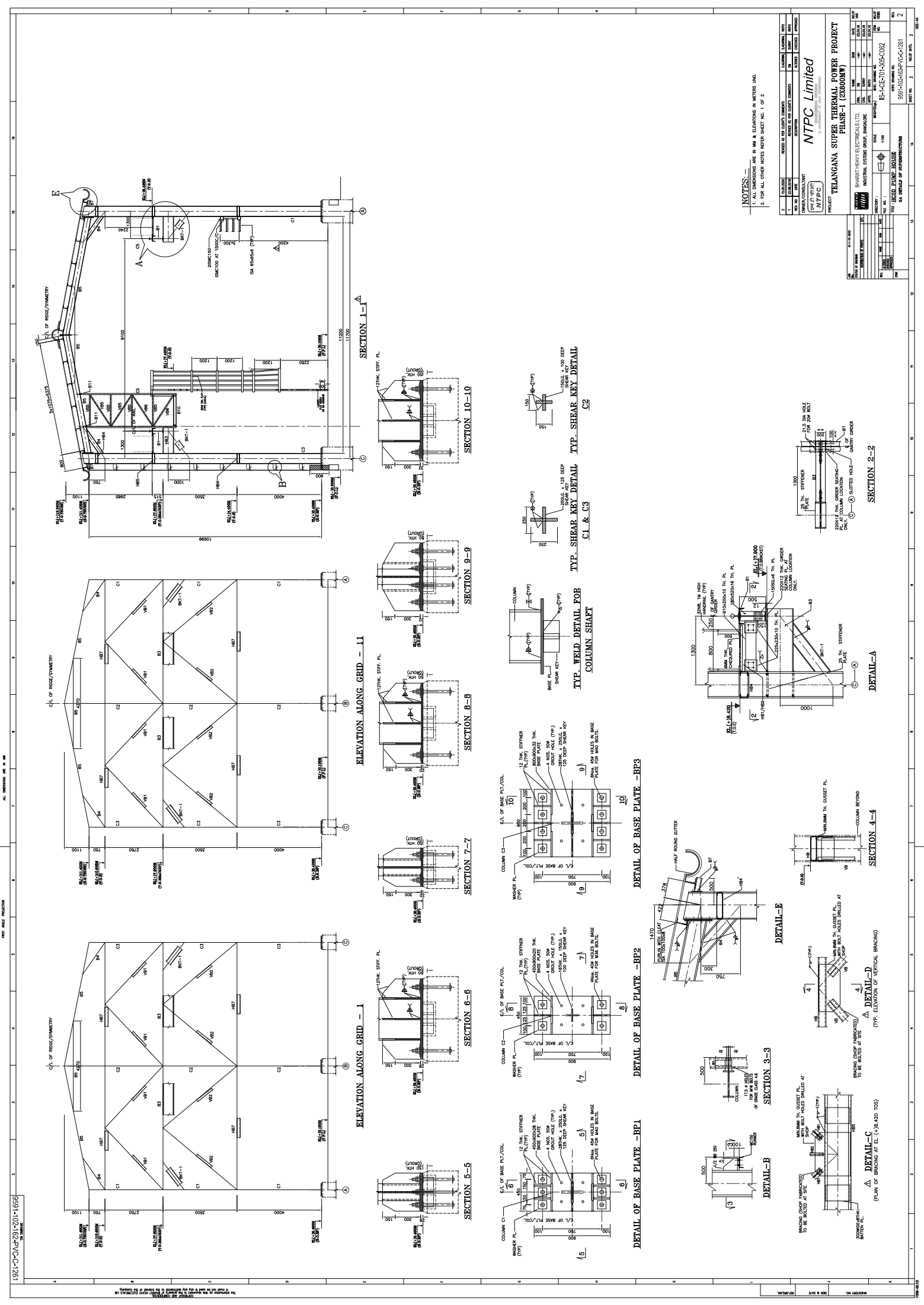
REV.	NAME	SIGN	DATE
00	DRN.		
	CHD.		
	APPD.		
ZONE			

DRN. _____ 		BHARAT HEAVY ELECTRICALS LTD. INDUSTRIAL SYSTEMS GROUP, BANGALORE		DRN. _____		NAME _____	SIGN _____	DATE _____	NO. OF VAR _____
				CHD. _____		RANJAN _____		_____	_____
E		DIRECTORY : _____				SCALE 1:100		WEIGHT(Kgs.) _____	
FILE NO. : _____		TITLE : _____		IS-1-GA-765-112-C19		NTPC DRAWING NO. _____		REV. _____	
		DUST SUPPRESSION PUMP HOUSE-1 : GA OF SUPERSTRUCTURE		4540-001-155-PVC-C-129				00	
						SHEET NO. 02 _____		NO. OF SHTS. 04 _____	



OWNER / CONSULTANT		NTPC Limited ENGINEERING DIVISION (A GOVERNMENT OF INDIA ENTERPRISE)																	
																			
PROJECT 2X660 मेगावाट तालचर सुपर थर्मल पावर परियोजना लिमिटेड 2X660MW TALCHER SUPER THERMAL POWER PROJECT LTD.																			
 BHARAT HEAVY ELECTRICALS LTD. INDUSTRIAL SYSTEMS GROUP, BANGALORE		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">DRN.</td> <td style="width: 30%;">NAME</td> <td style="width: 20%;">SIGN</td> <td style="width: 20%;">DATE</td> </tr> <tr> <td>CHD.</td> <td>SOMPRAKASH</td> <td>—SD—</td> <td>28.02.2024</td> </tr> <tr> <td>APPD.</td> <td>RAJAN</td> <td>—SD—</td> <td>29.02.2024</td> </tr> <tr> <td></td> <td>PRASANTH RAI</td> <td>—SD—</td> <td>01.03.2024</td> </tr> </table>		DRN.	NAME	SIGN	DATE	CHD.	SOMPRAKASH	—SD—	28.02.2024	APPD.	RAJAN	—SD—	29.02.2024		PRASANTH RAI	—SD—	01.03.2024
DRN.	NAME	SIGN	DATE																
CHD.	SOMPRAKASH	—SD—	28.02.2024																
APPD.	RAJAN	—SD—	29.02.2024																
	PRASANTH RAI	—SD—	01.03.2024																
ITEM NO. NO. OF ITEMS		NO. OF SHEETS 04																	





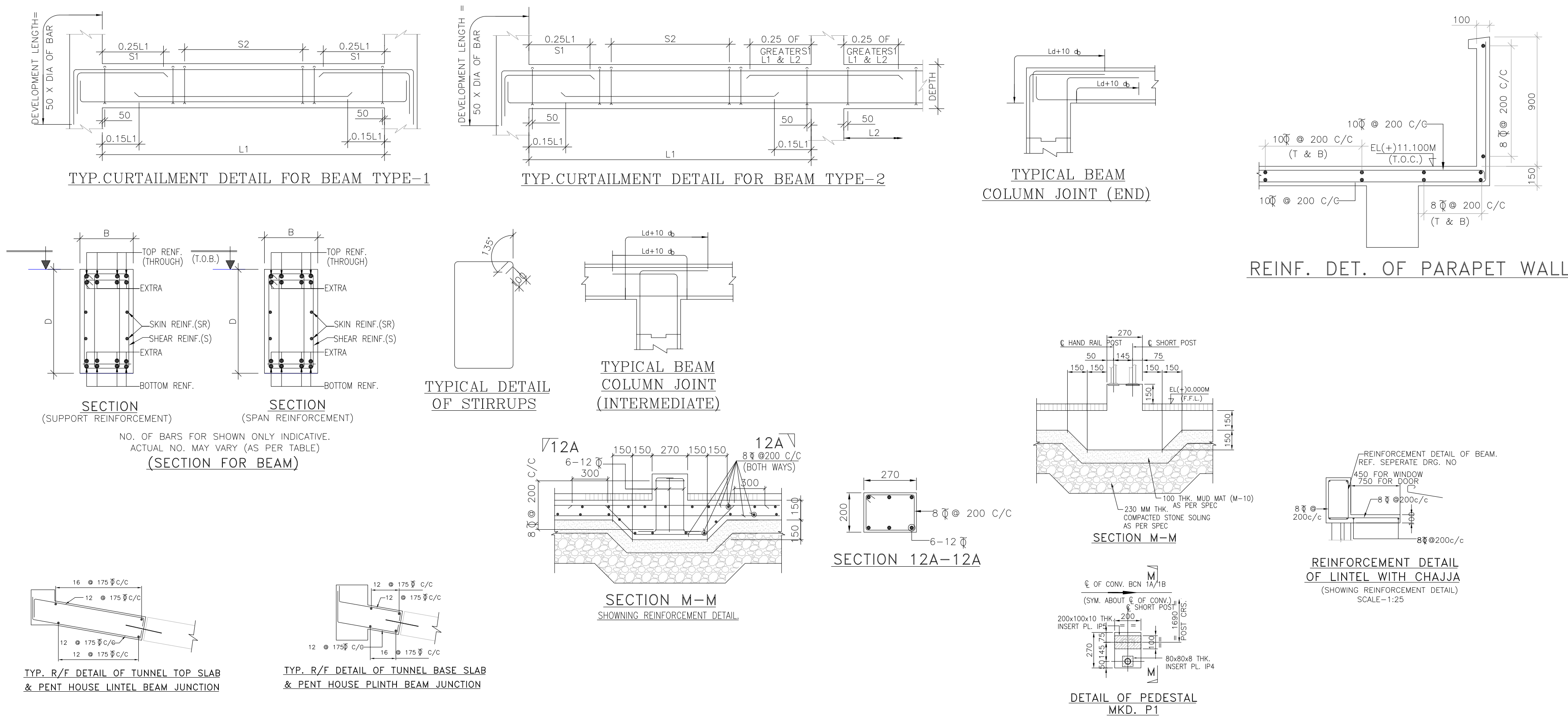
NOTES:-
1. ALL DIMENSIONS ARE IN MM & RELATIONS IN METRIC UNITS.
2. FOR ALL OTHER NOTES REFER SHEET NO. 1 OF 2

PROJECT		TELANGANA SUPER THERMAL POWER PROJECT	
PHASE-I (2x600MW)		NTPC Limited	
DESIGNER/CONSULTANT		NTPC	
DRAWN BY		S. S. S. S.	
CHECKED BY		S. S. S. S.	
DATE		10/01/2010	
SCALE		1:100	
SHEET NO.		2	
TOTAL SHEETS		2	
PROJECT NO.		TS-402-701-305-0002	
SHEET NO.		2	
TOTAL SHEETS		2	
PROJECT NAME		TELANGANA SUPER THERMAL POWER PROJECT	
PHASE-I (2x600MW)		NTPC Limited	
DESIGNER/CONSULTANT		NTPC	
DRAWN BY		S. S. S. S.	
CHECKED BY		S. S. S. S.	
DATE		10/01/2010	
SCALE		1:100	
SHEET NO.		2	
TOTAL SHEETS		2	
PROJECT NO.		TS-402-701-305-0002	
SHEET NO.		2	
TOTAL SHEETS		2	

SUMMARY OF FOUNDATION			
Foundation Mkd	F1	F2	F3
Length of foundation along Z-Z, Lz (m)	2.300	2.600	2.100
Length of foundation along X-X, Lx (m)	2.300	2.600	2.100
Depth of foundation, D (m)	0.650	0.650	0.600
Reinforcement along Z (bottom)			
Dia of Bar (mm)	16	16	16
Spacing of bar (mm)	200	200	225
Reinforcement along Z (top)			
Dia of Bar (mm)	12	12	12
Spacing of bar (mm)	160	160	175
Reinforcement along X (bottom)			
Dia of Bar (mm)	16	16	16
Spacing of bar (mm)	200	200	225
Reinforcement along X (top)			
Dia of Bar (mm)	12	12	12
Spacing of bar (mm)	160	160	175

COLUMN SCHEDULE				
COLUMN MARKED	COLUMN SIZES	FOUNDATION TO ROOF LEVEL	TOTAL NO. OF COLUMN	COLUMN TERMINATION LEVEL
C1	500x500	PER SET (01-1)+(02-1) ZONE A- 8Y @100C/C ZONE B- 8Y @150C/C	06	EL.(+)11.100 (T.O.C)
SC1	400x400	PER SET (01-1)+(02-1) ZONE A- 8Y @100C/C ZONE B- 8Y @150C/C	02	EL.(+)11.100 (T.O.C)

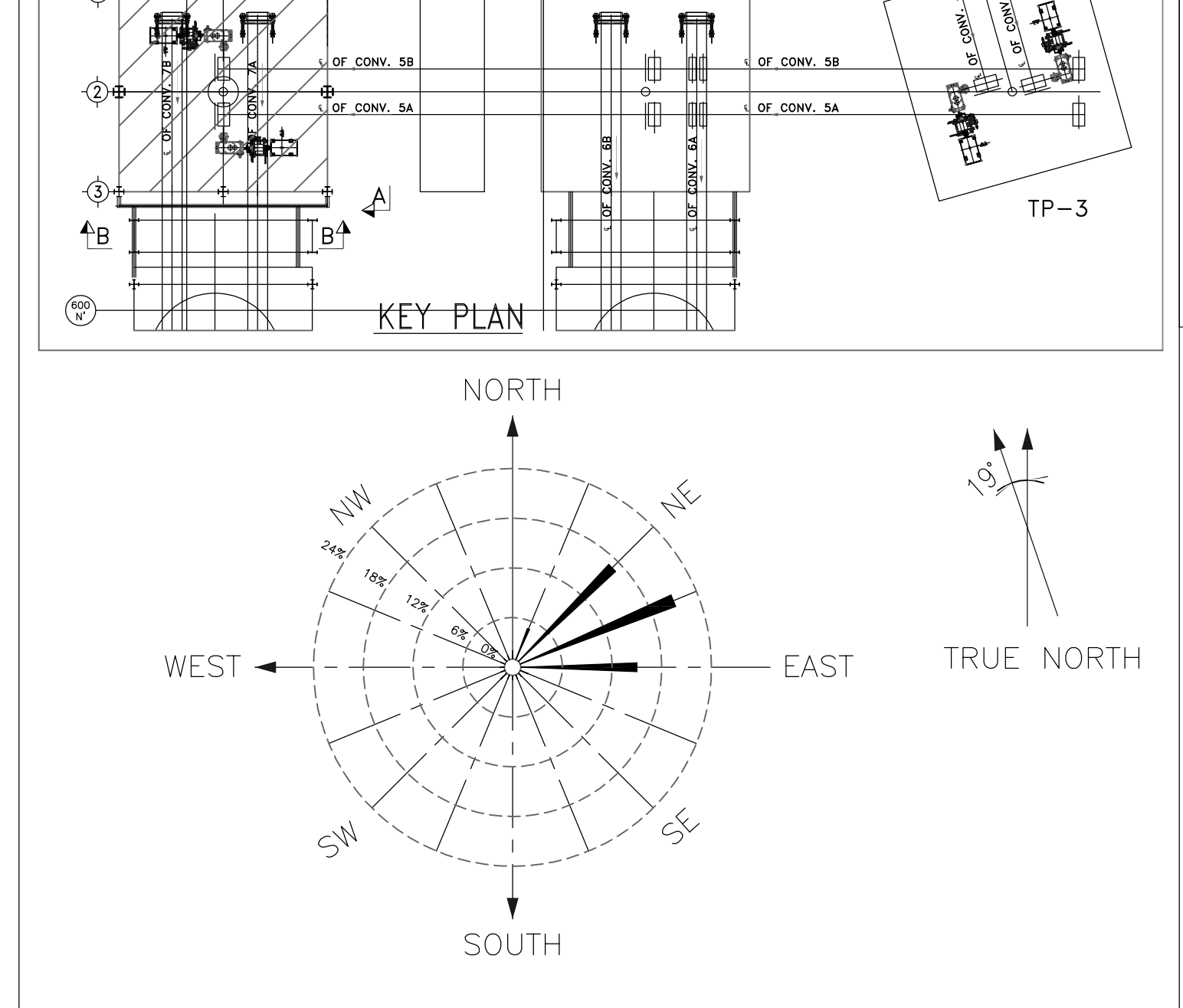
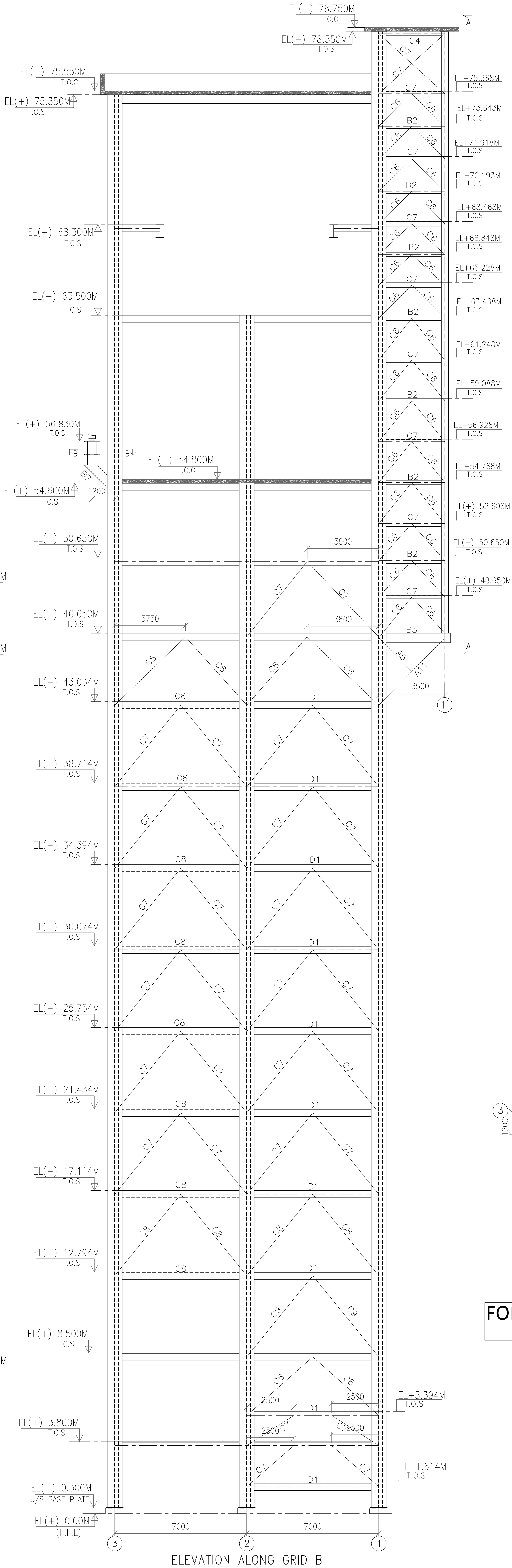
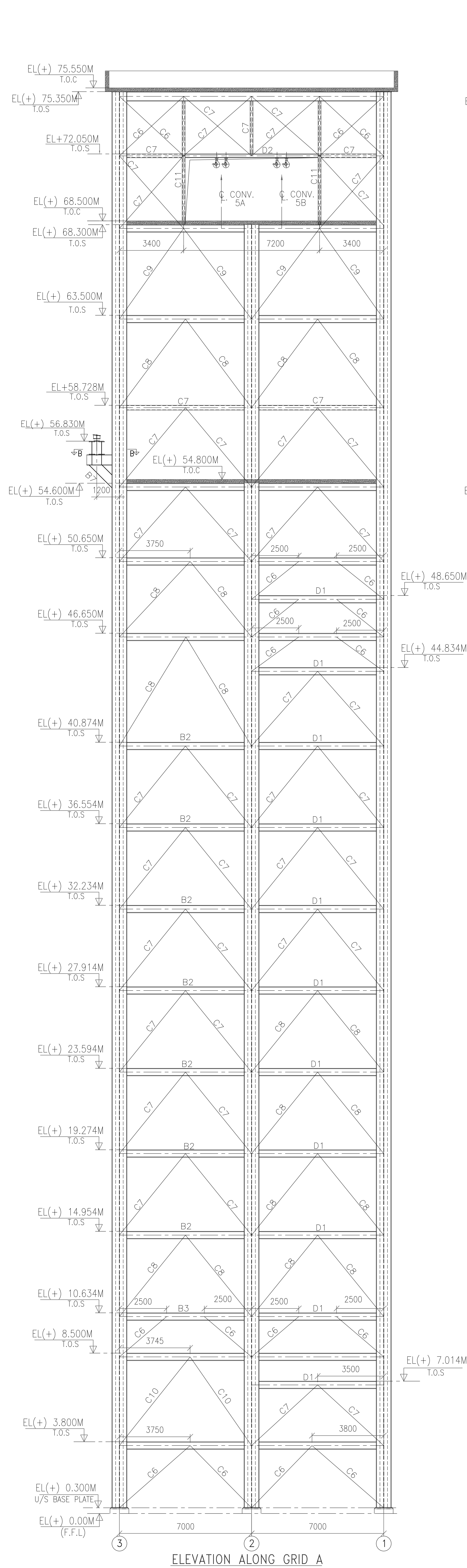
BEAM REINFORCEMENT SUMMARY									
PLINTH BEAM									
BEAM MKD			TOP		BOTTOM		Side Face R/f	STIRUPS	
	B	D	CONT.	EXTRA	CONT.	EXTRA		At Support S1	At Span S2
PB1	400	700	4-25Y	2-20Y	4-25Y	2-20Y	3-12Y (EACH FACE)	2L-Y8-150C/C	2L-Y8-200/C
PB2	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
PB3	350	650	3-20Y	3-20Y	3-20Y	3-20Y	-	2L-Y8-150C/C	2L-Y8-200/C
PB4	350	700	3-16Y	-	3-16Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
LINTEL BEAM									
BEAM NO	D	M	TOP		BOTTOM			STIRUPS	
	W	D	CONT.	EXTRA	CONT.	EXTRA		S1	S2
LB1	300	500	3-25Y	-	3-25Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
LB2	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
LB3	350	650	3-20Y	3-20Y	3-20Y	3-20Y	-	2L-Y8-150C/C	2L-Y8-200/C
TIE BEAM									
BEAM NO	D	M	TOP		BOTTOM			STIRUPS	
	W	D	CONT.	EXTRA	CONT.	EXTRA		S1	S2
TB1	300	500	3-25Y	-	3-25Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
TB2	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
TB3	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
ROOF BEAM									
BEAM MKD			TOP		BOTTOM		Side Face R/f	STIRUPS	
	B	D	CONT.	EXTRA	CONT.	EXTRA		At Support S1	At Span S2
RB1	450	900	4-25Y	2-20Y	4-25Y	2-20Y	3-12Y (EACH FACE)	4L-Y8-150C/C	4L-Y8-175C/C
RB2	350	650	4-20Y	-	4-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
RB3	450	900	4-25Y	-	4-25Y	-	3-12Y (EACH FACE)	4L-Y8-150C/C	4L-Y8-175C/C
RB4	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
RB5	300	500	3-16Y	-	3-16Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
RB6	450	900	4-25Y + 2-20Y	-	4-25Y	-	3-12Y (EACH FACE)	4L-Y8-150C/C	4L-Y8-175C/C



BEAM REINFORCEMENT SUMMARY									
PLINTH BEAM									
BEAM MKD			TOP		BOTTOM		Side Face R/f	STIRUPS	
	B	D	CONT.	EXTRA	CONT.	EXTRA		At Support S1	At Span S2
PB1	400	700	4-25Y	2-20Y	4-25Y	2-20Y	3-12Y (EACH FACE)	2L-Y8-150C/C	2L-Y8-200/C
PB2	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
PB3	350	650	3-20Y	3-20Y	3-20Y	3-20Y	-	2L-Y8-150C/C	2L-Y8-200/C
PB4	350	700	3-16Y	-	3-16Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
LINTEL BEAM									
BEAM NO	D	M	TOP		BOTTOM			STIRUPS	
	W	D	CONT.	EXTRA	CONT.	EXTRA		S1	S2
LB1	300	500	3-25Y	-	3-25Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
LB2	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
LB3	350	650	3-20Y	3-20Y	3-20Y	3-20Y	-	2L-Y8-150C/C	2L-Y8-200/C
TIE BEAM									
BEAM NO	D	M	TOP		BOTTOM			STIRUPS	
	W	D	CONT.	EXTRA	CONT.	EXTRA		S1	S2
TB1	300	500	3-25Y	-	3-25Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
TB2	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
TB3	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
ROOF BEAM									
BEAM MKD			TOP		BOTTOM		Side Face R/f	STIRUPS	
	B	D	CONT.	EXTRA	CONT.	EXTRA		At Support S1	At Span S2
RB1	450	900	4-25Y	2-20Y	4-25Y	2-20Y	3-12Y (EACH FACE)	4L-Y8-150C/C	4L-Y8-175C/C
RB2	350	650	4-20Y	-	4-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
RB3	450	900	4-25Y	-	4-25Y	-	3-12Y (EACH FACE)	4L-Y8-150C/C	4L-Y8-175C/C
RB4	300	500	3-20Y	-	3-20Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
RB5	300	500	3-16Y	-	3-16Y	-	-	2L-Y8-150C/C	2L-Y8-200/C
RB6	450	900	4-25Y + 2-20Y	-	4-25Y	-	3-12Y (EACH FACE)	4L-Y8-150C/C	4L-Y8-175C/C

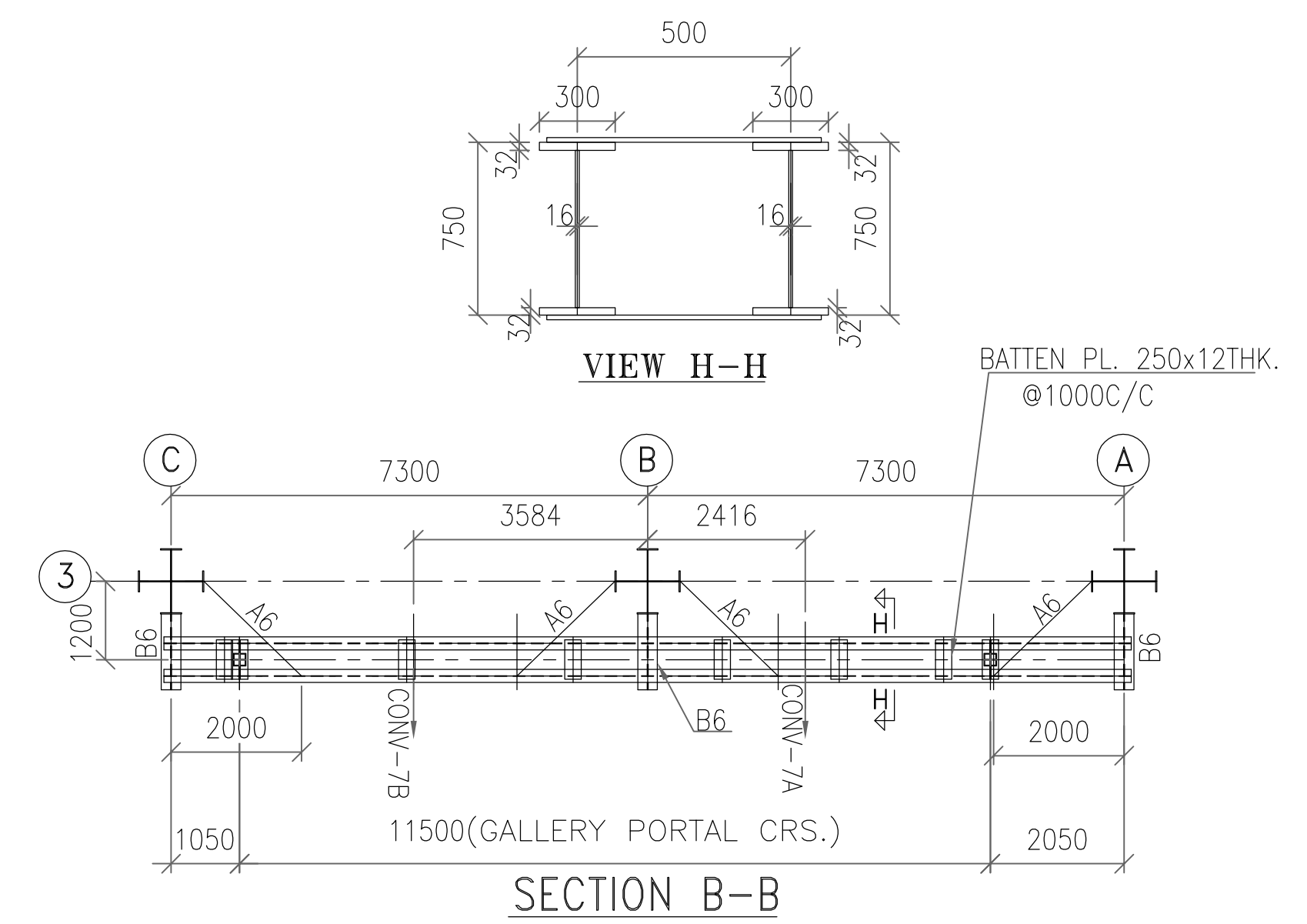
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STATUS OF DRAWING				
DISTRIBUTION OF PRINTS				QTY.
REV.				
	DRN.	NAME	SIGN	DATE
	CHD.			
	APPD.			
ZONE				

OWNER /CONSULTANT		NTPC Limited ENGINEERING DIVISION (A GOVERNMENT OF INDIA ENTERPRISE)				
एन टी पी सी NTPC						
PROJECT 2X660 मेगावाट तालचर सुपर थर्मल पावर परियोजना लिमिटेड						
2X660MW TALCHER SUPER THERMAL POWER PROJECT LTD.						
भारत भारी बिजली लिमिटेड BHARAT HEAVY ELECTRICALS LTD. INDUSTRIAL SYSTEMS GROUP, BANGALORE		DRN. ADA CHD. PKRGR APPD. MPR		NAME —SD— —SD— —SD— —SD—		DATE 23.02.24 23.02.24 23.02.24
NO. OF VAR						
DIRECTORY :				SCALE		1:100
FILE NO. :		WEIGHT(kgs.)		NTPC DRAWING NO.		ITEM NO.
				4540-001-155-PVC-C124		NO. OF ITEMS
TITLE :		PENT HOUSE-1 FOR CONVEYOR 1A/B : GA & RC DETAILS OF SUPERSTRUCTURE AND FOUNDATION		DRAWING NO.		REV.
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				SHEET NO. 2		NO.OF SHTS. 02

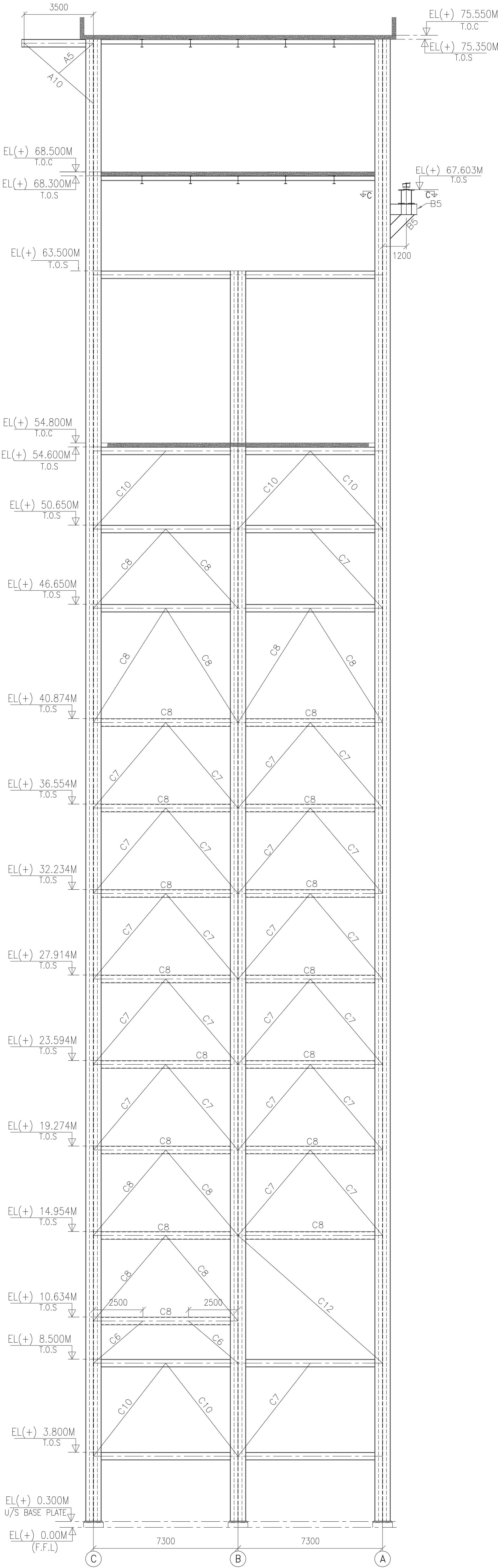


SCHEDULE OF MEMBERS.

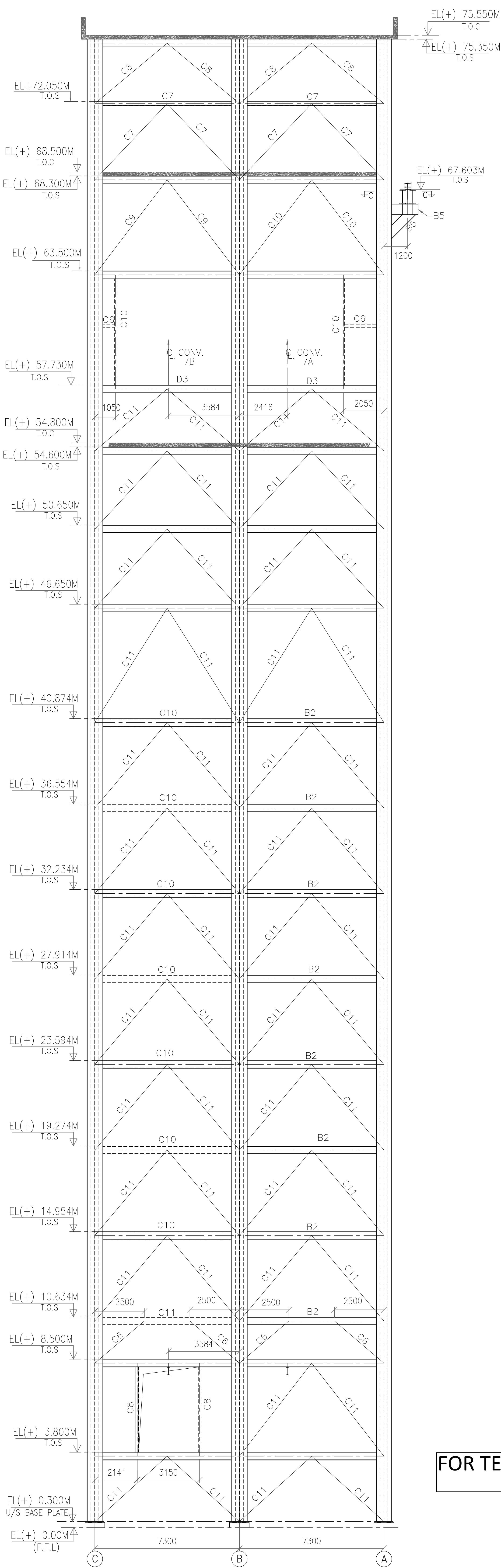
BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	50X50X6
A6	65X65X6
A7	90X90X6
A8	100X100X8
A9	L90X90X8
A10	90X90X8
A11	130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	BOX MC100
C7	BOX MC125
C8	BOX MC150
C9	BOX MC200
C10	BOX MC250
C11	BOX MC300
C12	BOX MC400
D1	BUP400 -FLG.PL.250X10THK. -WEB.PL.380X8THK.
D2	BUP450 -FLG.PL.250X20THK. -WEB.PL.410X10THK.



FOR TENDER PURPOSE ONLY

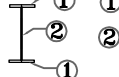


ELEVATION ALONG GRID 2

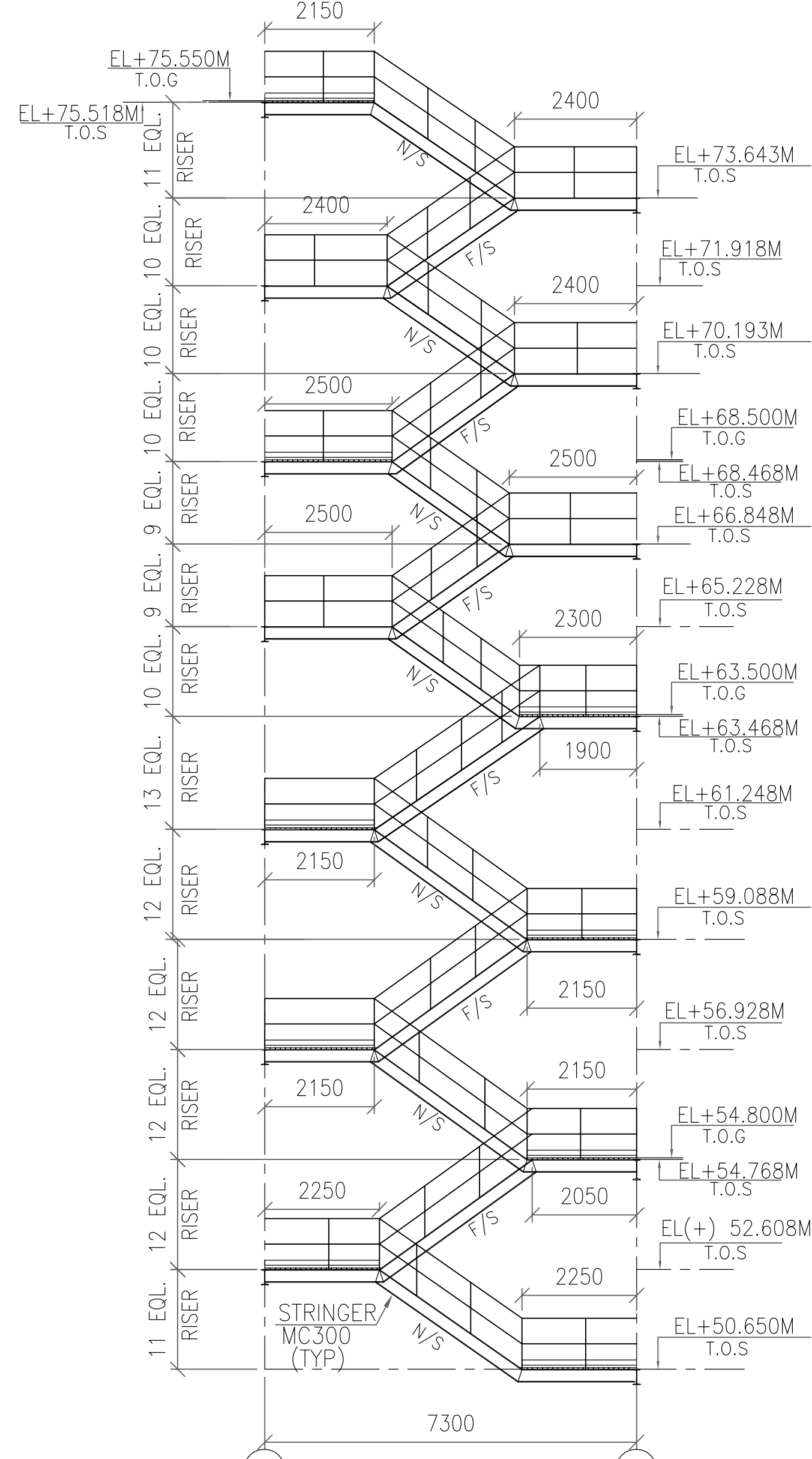


ELEVATION ALONG GRID 3

SCHEDULE OF MEMBERS.

BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	┐ 50X50X6
A6	┐ 65X65X6
A7	┐ 90X90X6
A8	┐ 100X100X8
A9	L90X90X8
A10	┐ 90X90X8
A11	┐ 130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	□ BOX MC100
C7	□ BOX MC125
C8	□ BOX MC150
C9	□ BOX MC200
C10	□ BOX MC250
C11	□ BOX MC300
C12	□ BOX MC400
D3	BUP500 

FOR TENDER PURPOSE ONLY

[illegible]

LAN AT EL+ 10.634M. & EL+14.954M. LEVEL	PLAN AT EL+ 12.794M. & EL+17.114M. LEVEL
LAN AT EL+ 19.274M. & EL+23.594M. LEVEL	PLAN AT EL+ 21.434M. & EL+25.754M. LEVEL
LAN AT EL+ 27.914M. & EL+32.234M. LEVEL	PLAN AT EL+ 30.074M. & EL+34.394M. LEVEL
LAN AT EL+ 36.554M. & EL+40.874M. LEVEL	PLAN AT EL+ 38.174M. LEVEL

PLAN AT EL+ 44.834M LEVEL

2250

32 THK. GRATING. (TYP.)

UP

DN

7300

3500

1200

1200

1100

6000

PLAN AT EL+ 52.608M LEVEL

2150

32 THK. GRATING.
(TYP.)

3500

1200

1200

1100

600

UP

DN

7300

C

B

PLAN AT EL+ 56.928M LEVEL

PLAN AT EL+ 61.248M LEVEL

32 THK. GRATING.
(TYP.)

2150

300

1200

200

3500

600

7300

DN

UP

PLAN AT EL + 59.088M LEVEL

PLAN AT EL+ 65.228M LEVEL

[illegible]

32 THK. GRATING.
(TYP)

2400

300

1200

1200

200

3500

600

7300

DN

UP

(C) (B)

PLAN AT EL+ 70.193M LEVEL

PLAN AT EL+ 73.643M LEVEL

2400 32 THK. GRATING. (TYP)

3500 1200 1200 100

7300

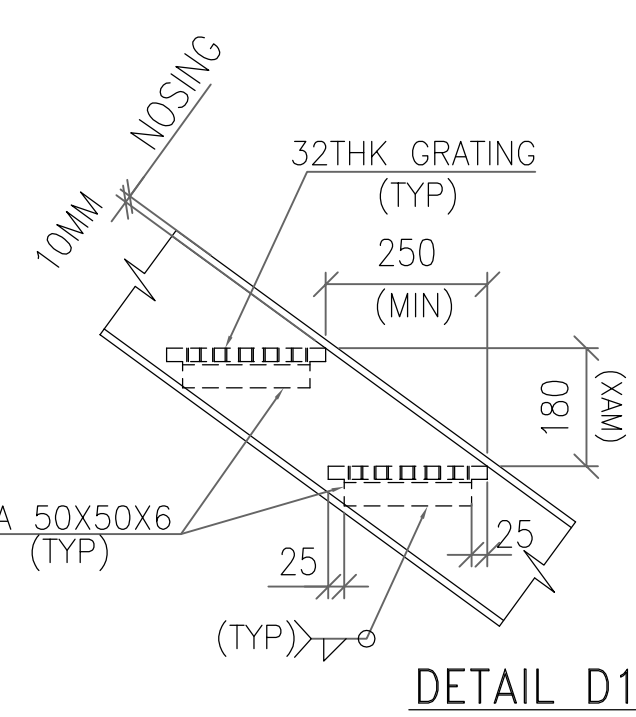
1 1

UP DN

C B

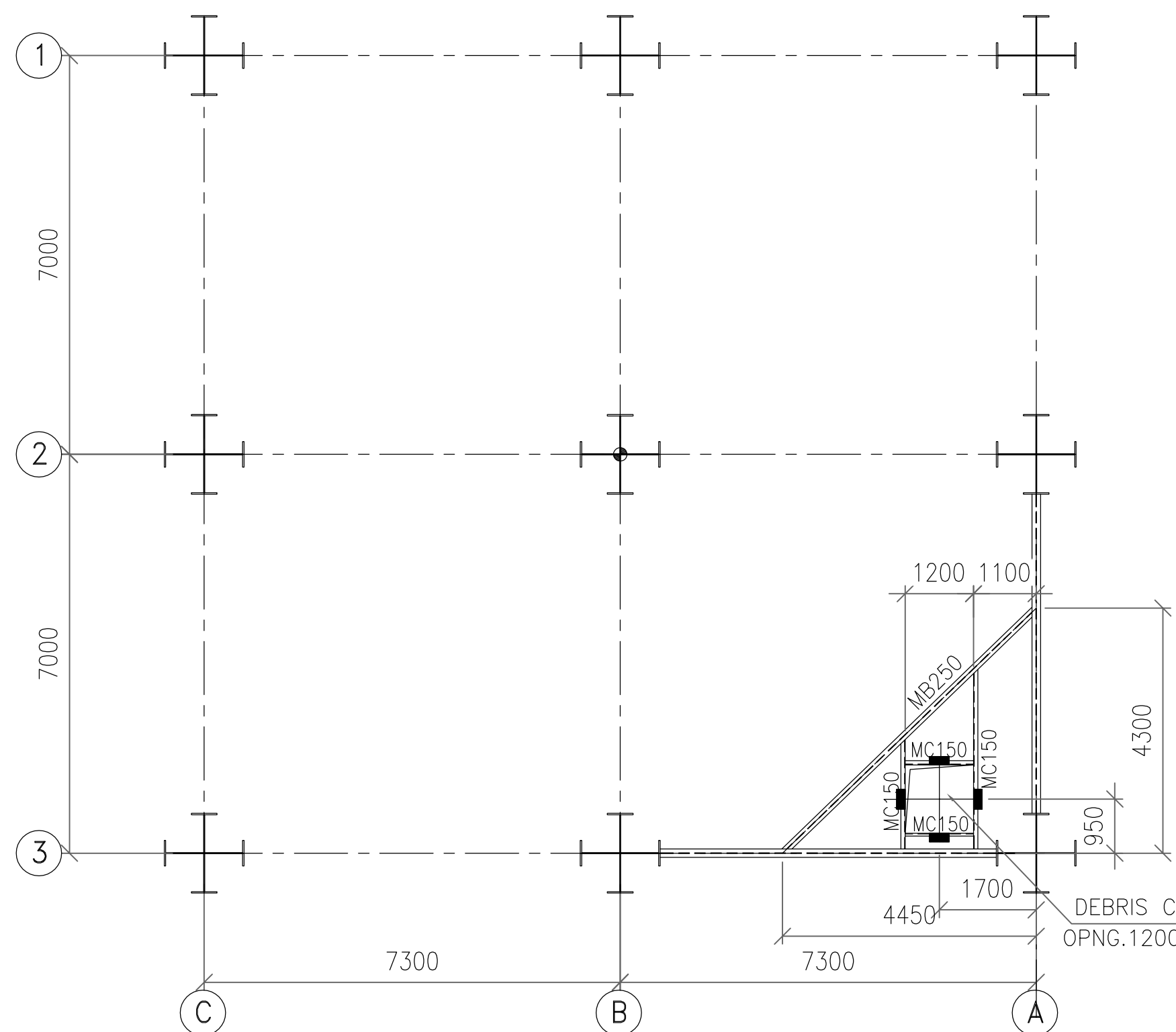
PLAN AT EL+ 71.918M LEVEL

PLAN AT EL+ 71.918M LEVEL



DETAIL D1

DETAIL-D2

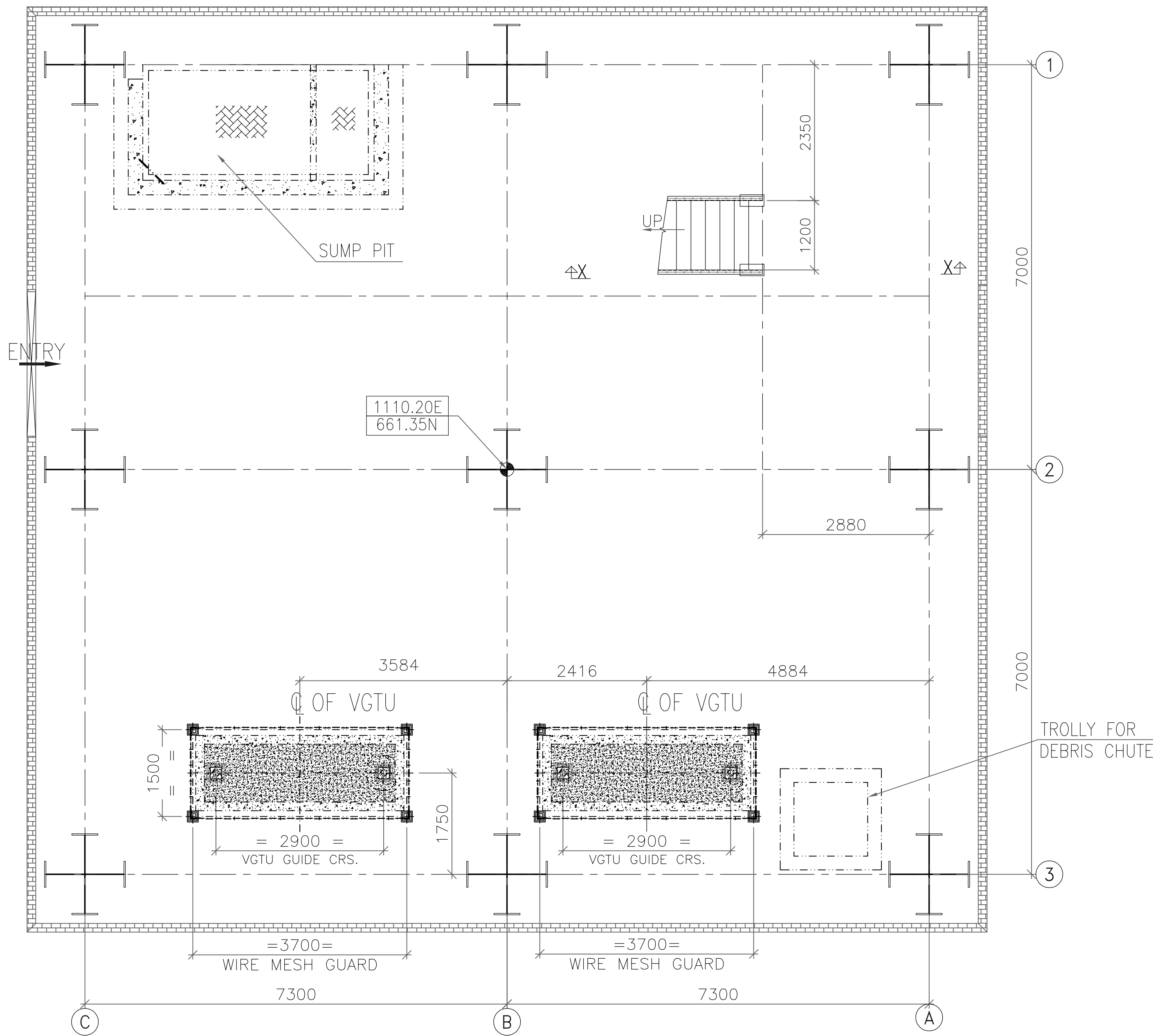


PLAN AT EL+10.634, EL+ 14.954M, EL+19.274M, EL+23.594M,
EL+27.914M, EL+32.234M, EL+36.554M & 40.874M LEVEL(T.O.S)

FOR TENDER PURPOSE ONLY

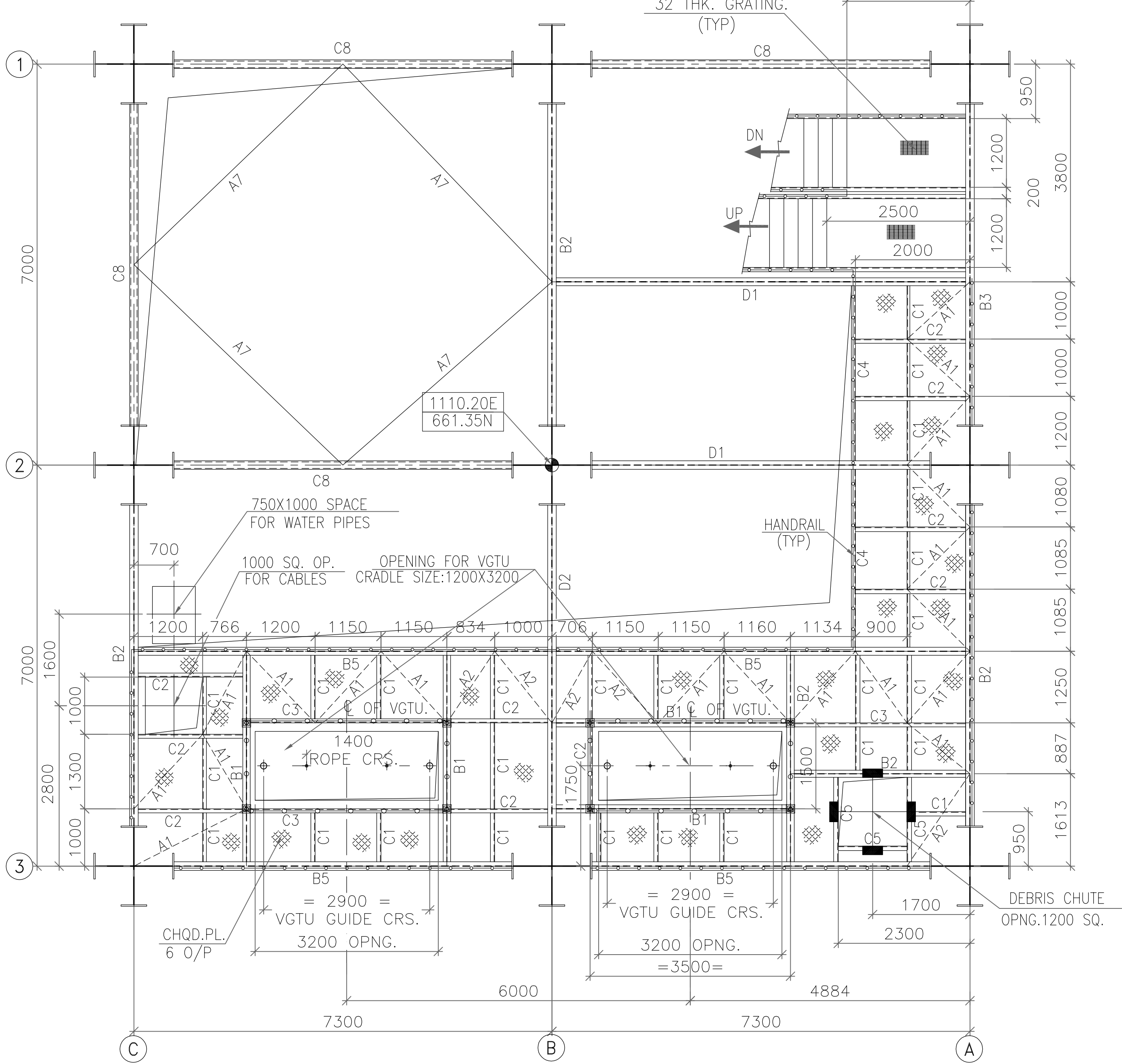
SCHEDULE OF MEMBERS.

BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	T 50X50X6
A6	T 65X65X6
A7	T 90X90X6
A8	T 100X100X8
A9	L90X90X8
A10	T 90X90X8
A11	T 130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	BOX MC100
C7	BOX MC125
C8	BOX MC150
C9	BOX MC200
D1	BUP350
D2	BUP450



PLAN AT BASE PLATE LEVEL

FOR SECTION X-X REFER DWG.NO.
IS-1-GA-715-104-C025-SH-4

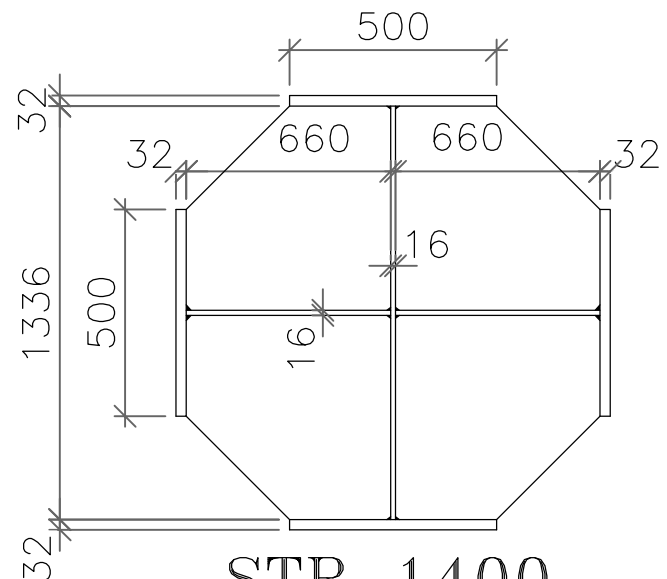


FLOOR PLAN AT EL+ 3.800M LEVEL(T.O.S)

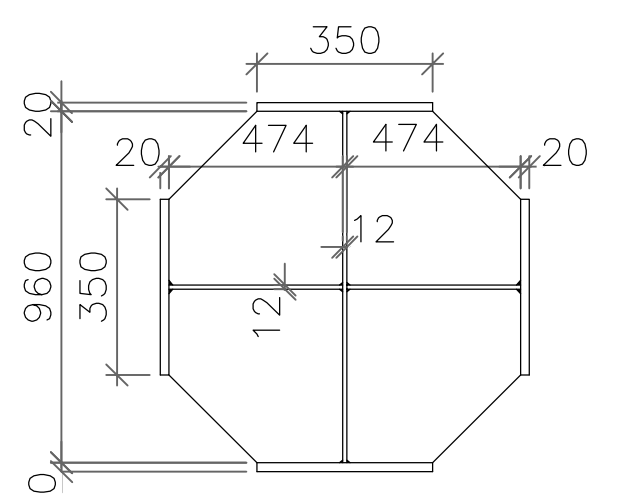
COLUMN SCHEDULE

SECTION DETAIL

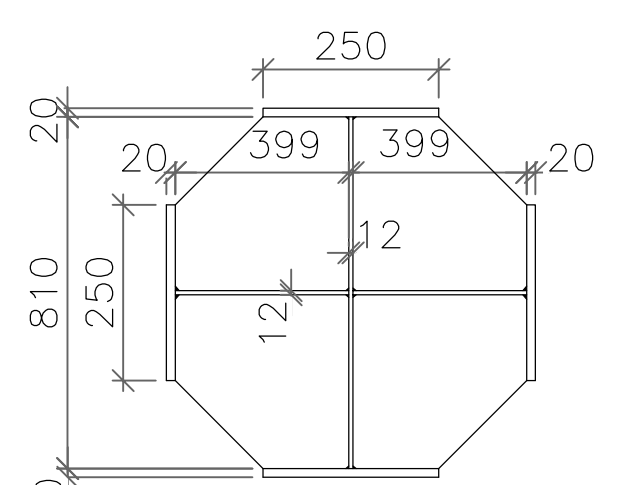
COLUMN. MKD.					
A-1	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650A FROM EL+36.554M TO EL+58.728M.	STR 450 FROM EL+58.728M TO TOP LEVEL
A-2	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650A FROM EL+36.554M TO EL+68.30M.	
A-3	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650B FROM EL+36.554M TO EL+68.30M.	STR 450 FROM EL+68.30M TO TOP LEVEL
B-1	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650A FROM EL+36.554M TO EL+58.728M.	STR 450 FROM EL+58.728M TO TOP LEVEL
B-2	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 450 FROM EL+36.554M TO EL+63.500M.	
B-3	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650B FROM EL+36.554M TO EL+68.30M.	STR 450 FROM EL+68.30M TO TOP LEVEL
C-1	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650A FROM EL+36.554M TO EL+58.728M.	STR 450 FROM EL+58.728M TO TOP LEVEL
C-2	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650A FROM EL+36.554M TO EL+68.30M.	STR 450 FROM EL+68.30M TO TOP LEVEL
C-3	STR 1400 FROM U/S OF BASE PL. TO EL+10.634	STR 1000 FROM EL+10.634M TO EL+23.594M.	STR 850 FROM EL+23.594M TO EL+36.554M.	STR 650B FROM EL+36.554M TO EL+68.30M.	STR 450 FROM EL+68.30M TO TOP LEVEL



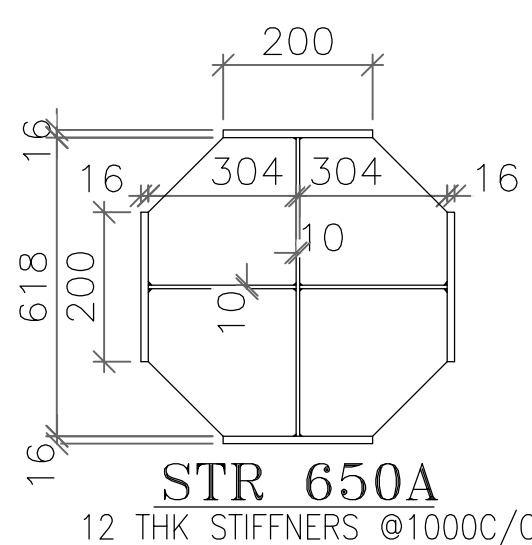
STR 1400
12 THK STIFFNERS @2100C/C



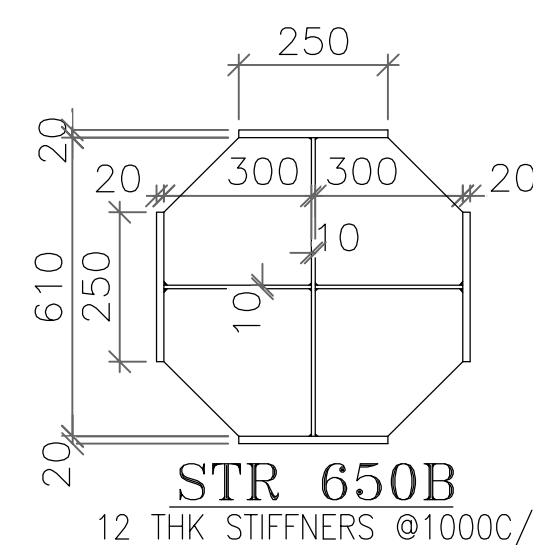
STR 1000
12 THK STIFFNERS @1500C/C



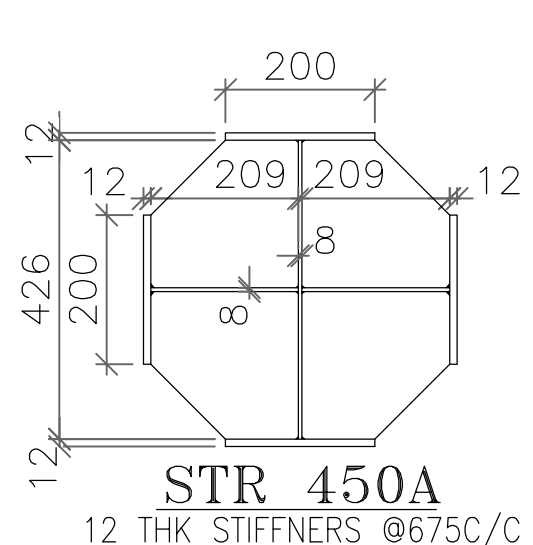
STR 850
12 THK STIFFNERS @1300C/C



STR 650A
12 THK STIFFNERS @1000C/C

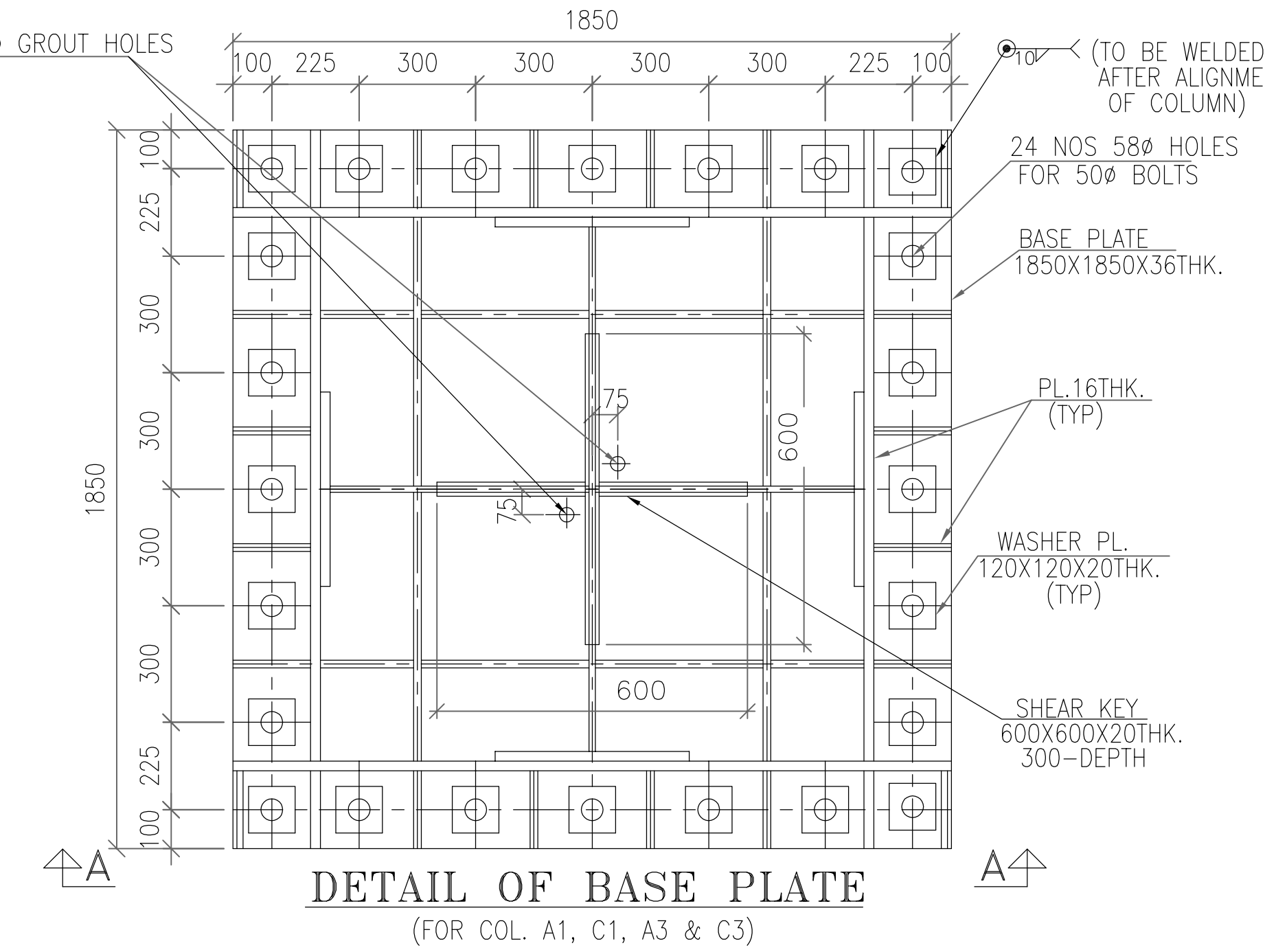


STR 650B
12 THK STIFFNERS @1000C/C

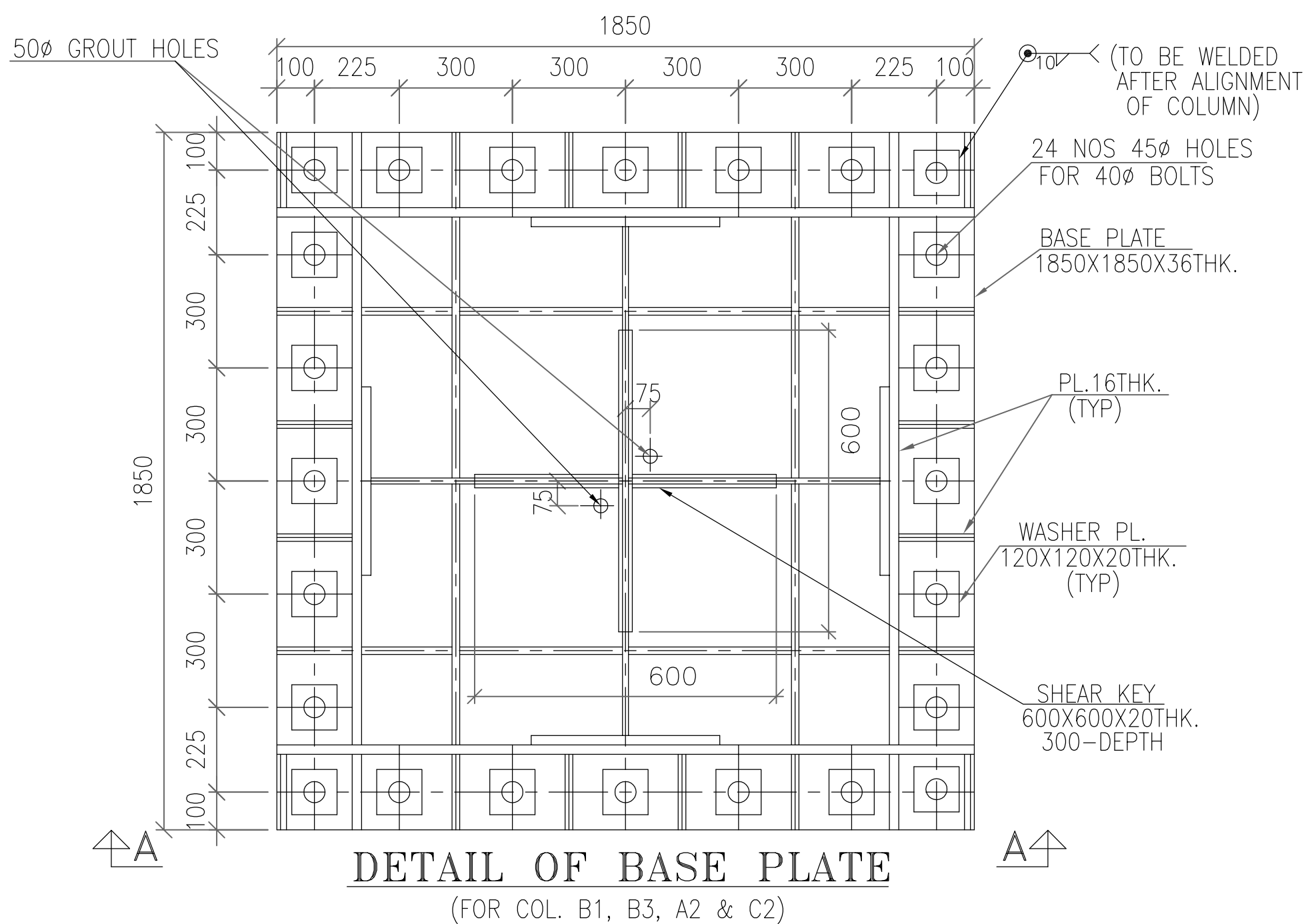


STR 450A
12 THK STIFFNERS @675C/C

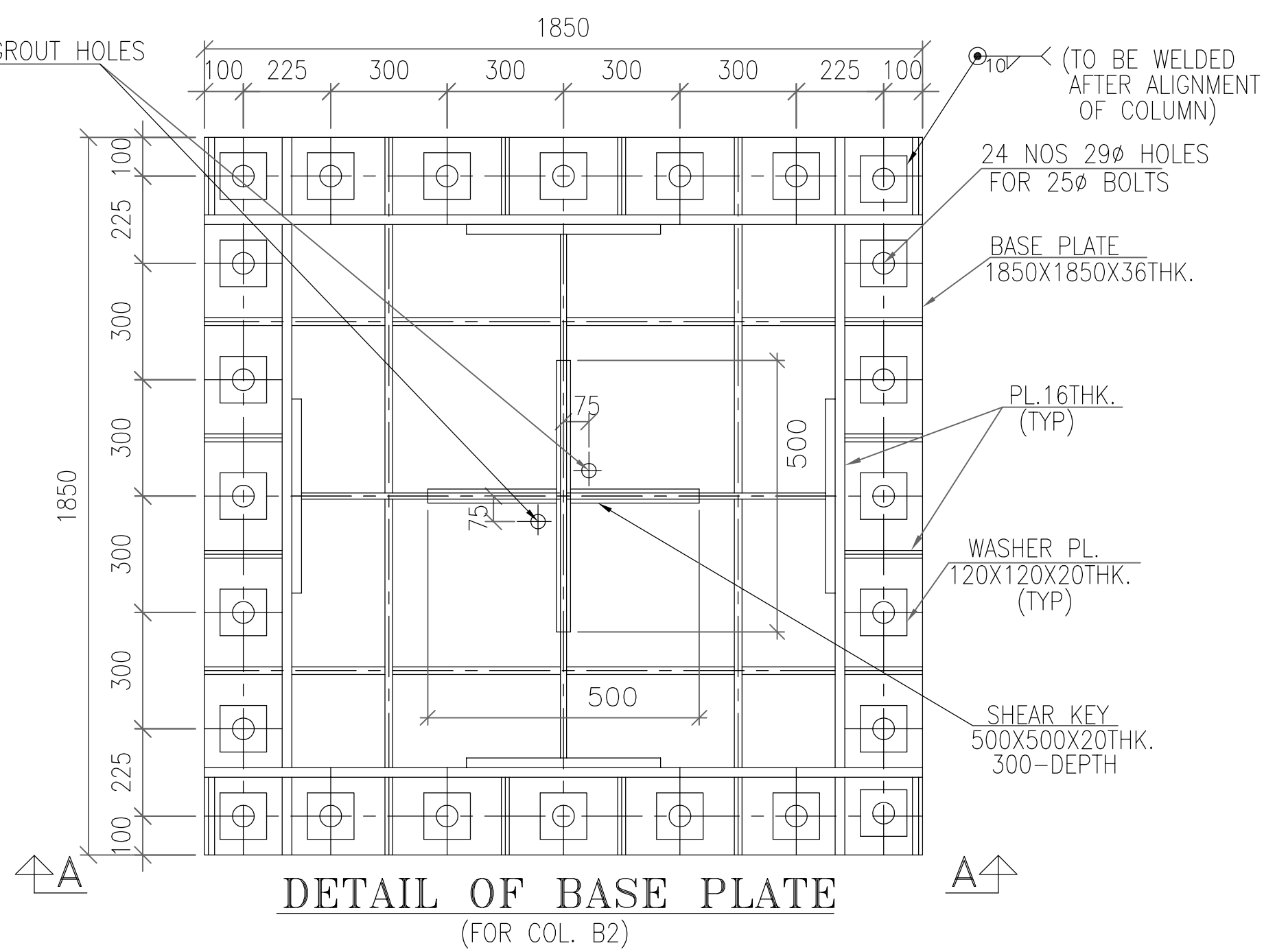
FOR TENDER PURPOSE ONLY



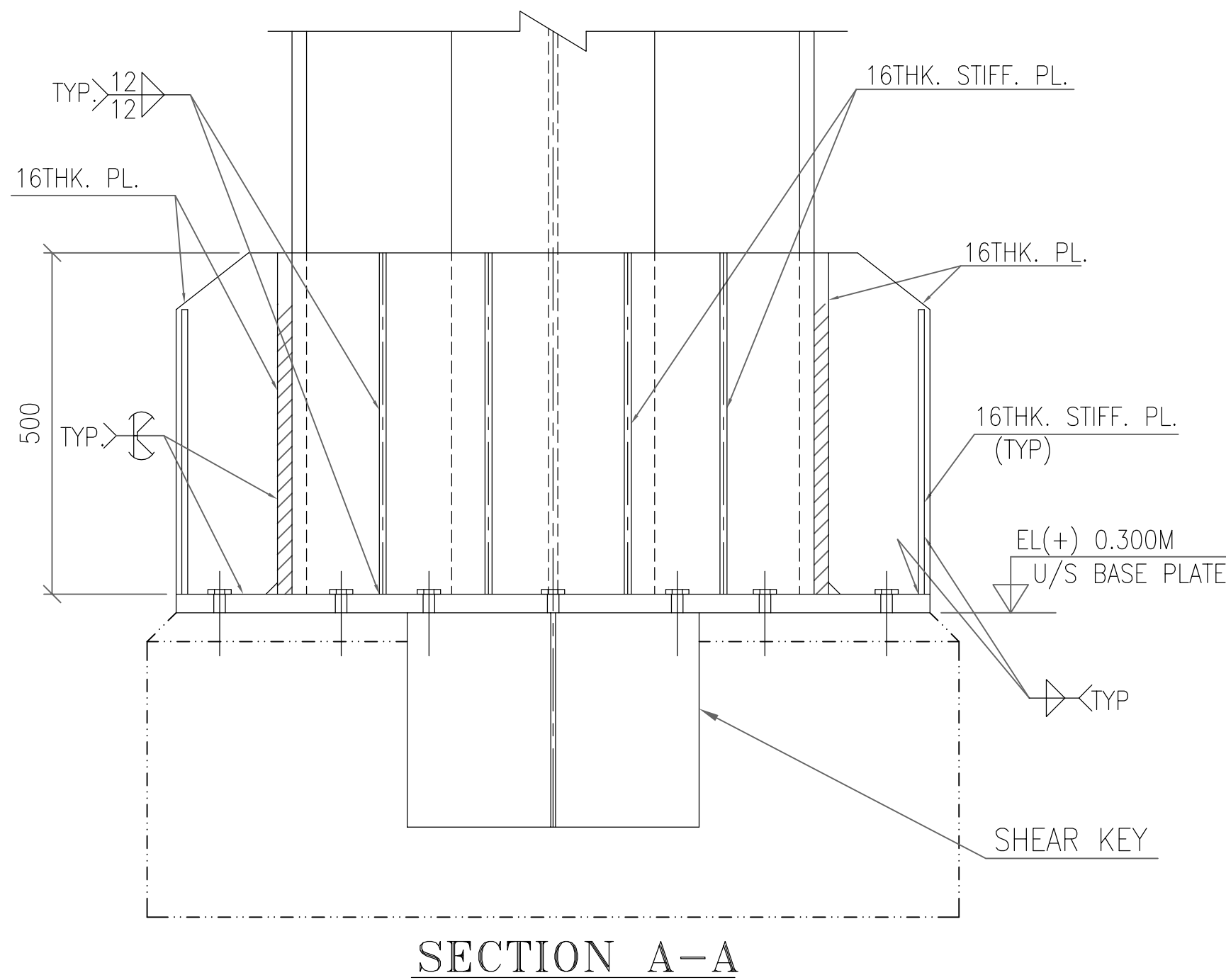
DETAIL OF BASE PLATE
(FOR COL. A1, C1, A3 & C3)



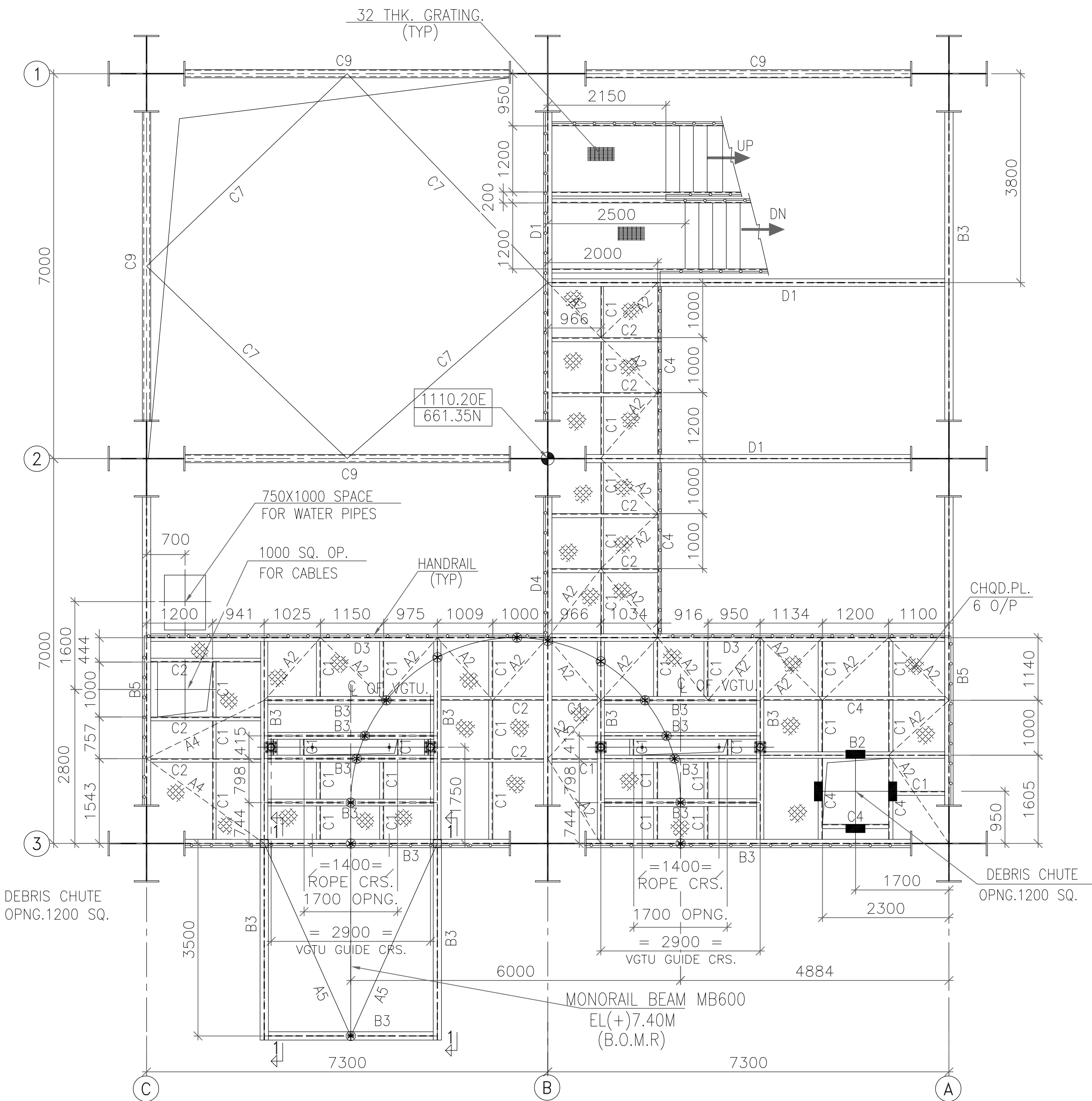
DETAIL OF BASE PLATE
(FOR COL. B1, B3, A2 & C2)



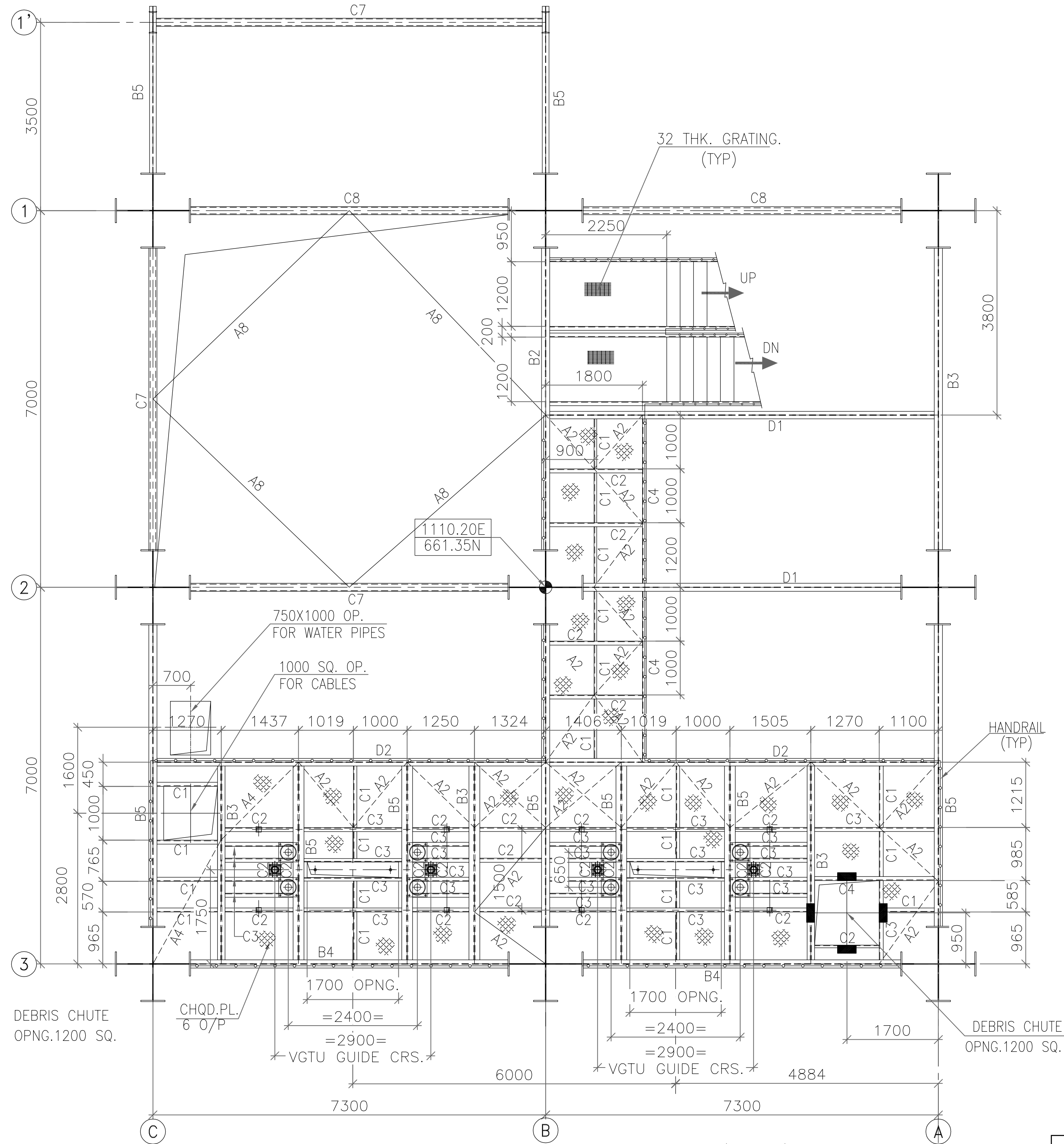
DETAIL OF BASE PLATE
(FOR COL. B2)



SECTION A-A



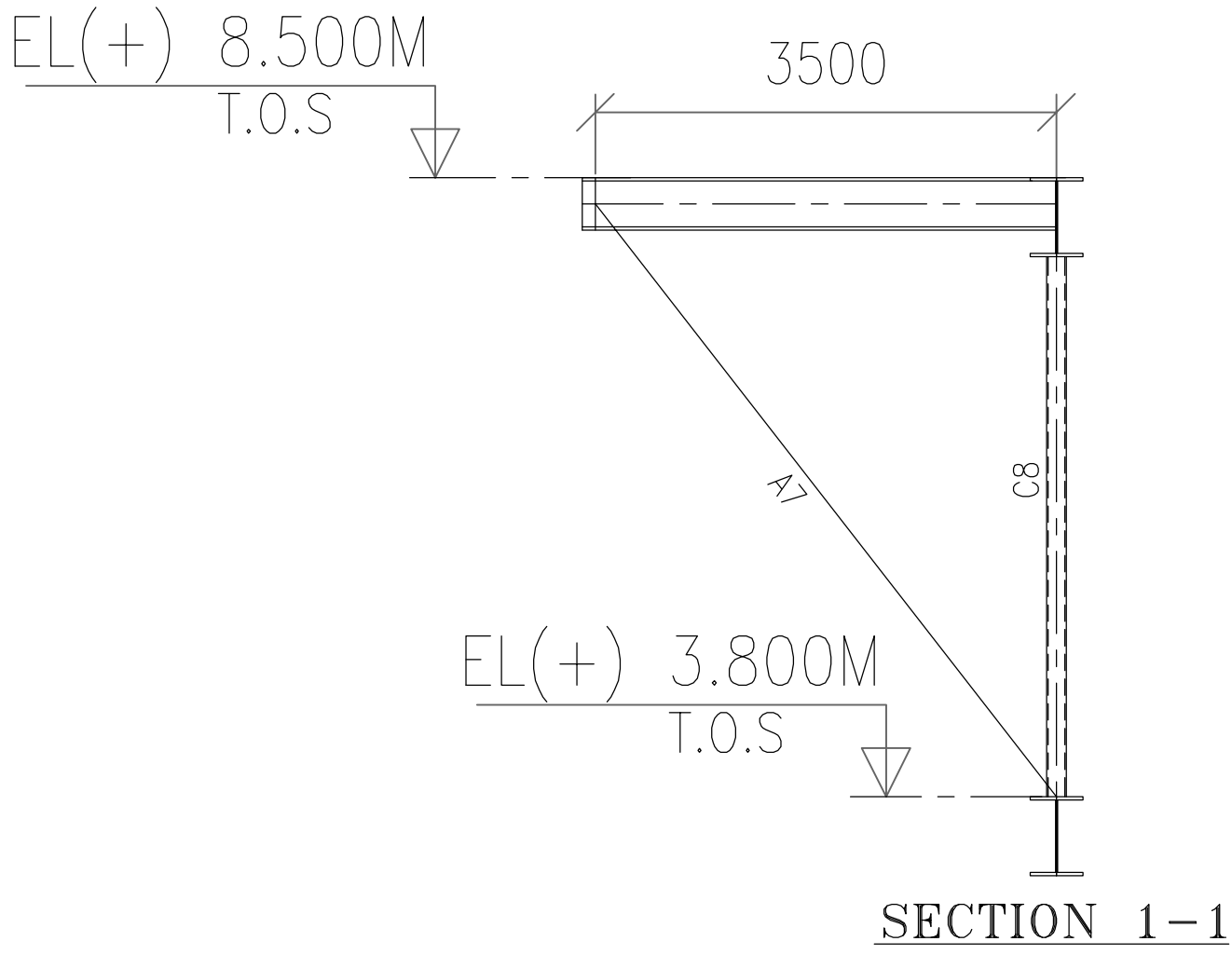
FLOOR PLAN AT EL+ 8.500M LEVEL(T.O.S)



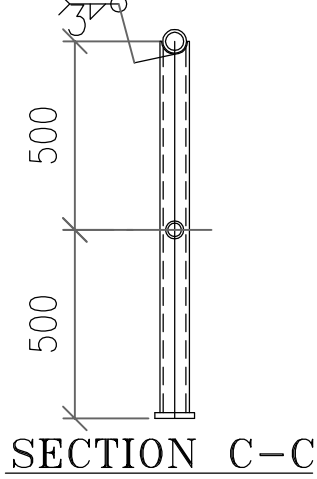
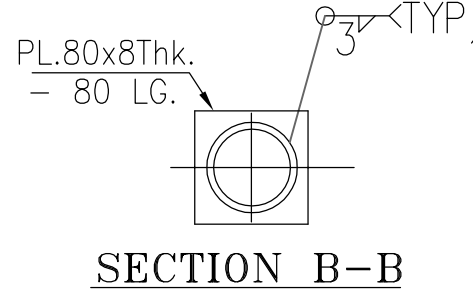
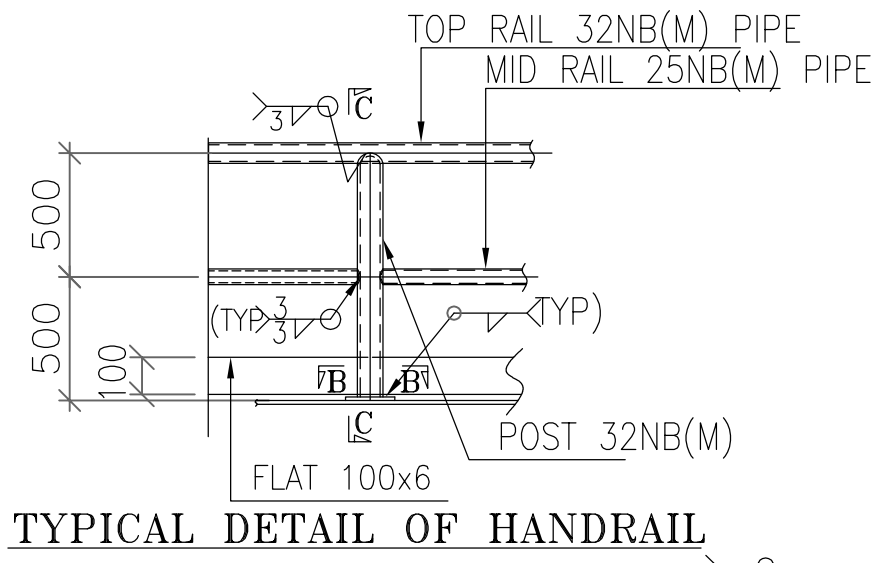
FLOOR PLAN AT EL+ 46.650M LEVEL(T.O.S)

SCHEDULE OF MEMBERS.

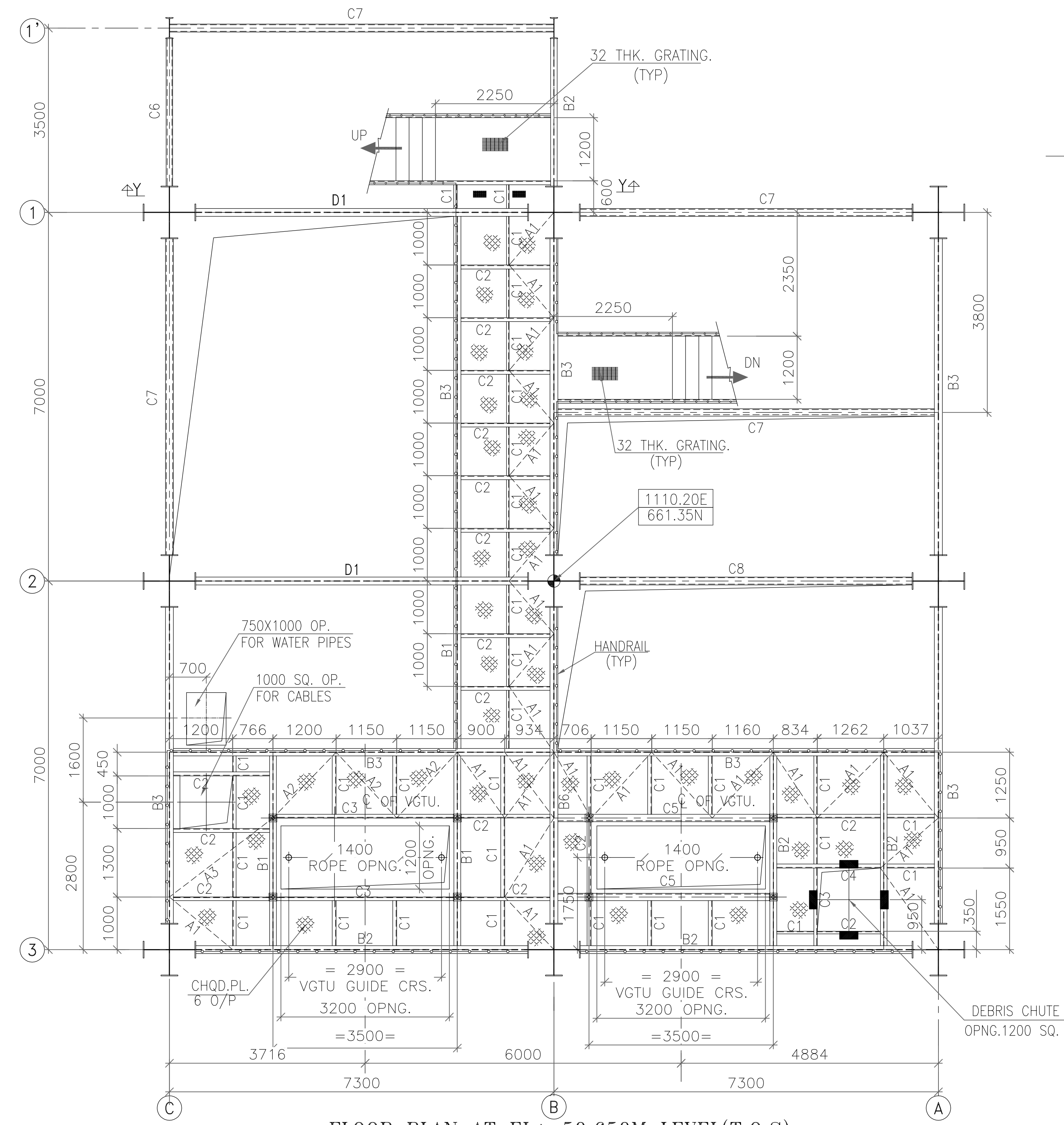
BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	T 50X50X6
A6	T 65X65X6
A7	T 90X90X6
A8	T 100X100X8
A9	L90X90X8
A10	T 90X90X8
A11	T 130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	BOX MC100
C7	BOX MC125
C8	BOX MC150
C9	BOX MC200
D1	BUP350
D2	BUP450
D3	BUP450
D4	BUP500



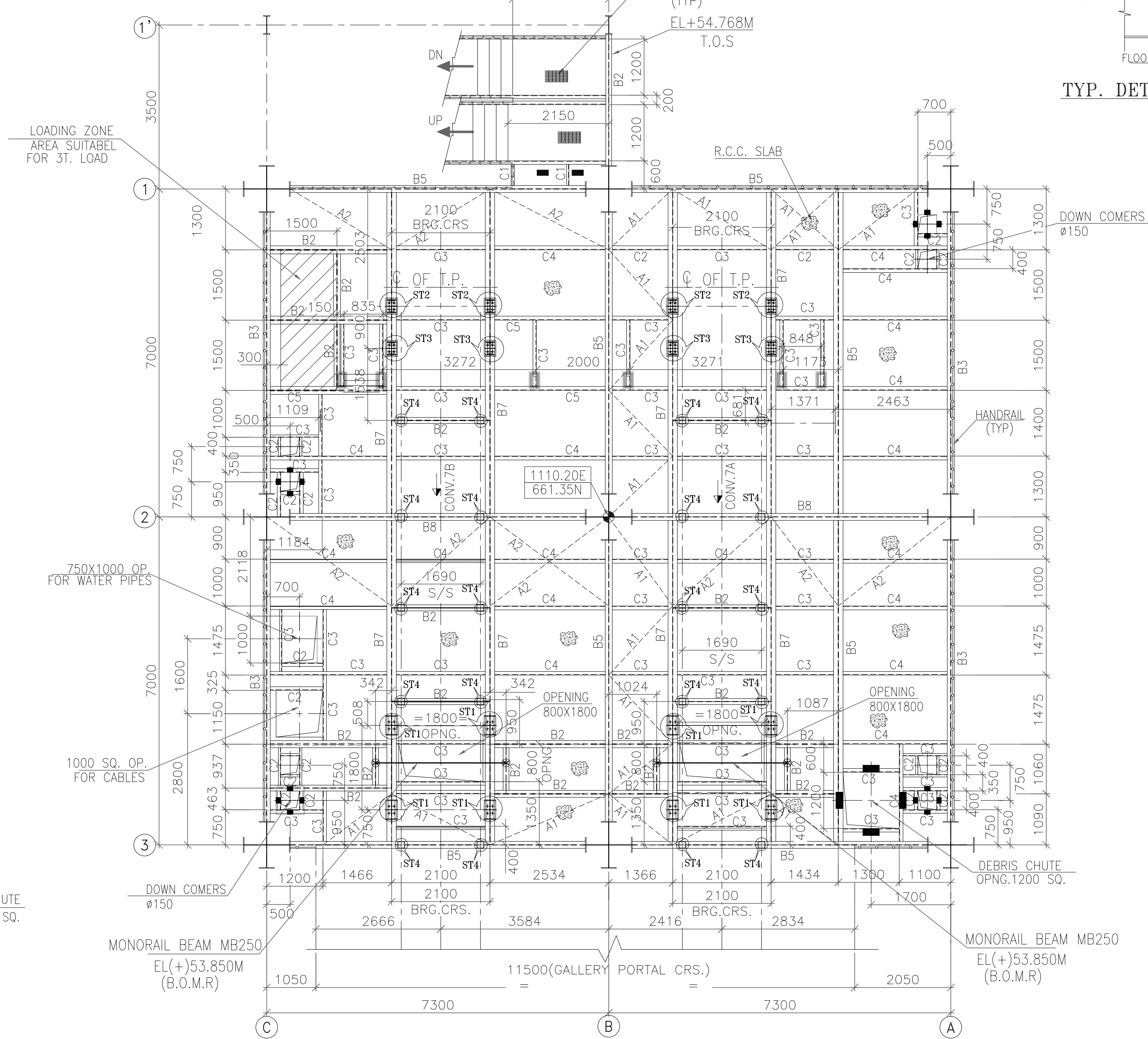
SECTION 1-1



FOR TENDER PURPOSE ONLY



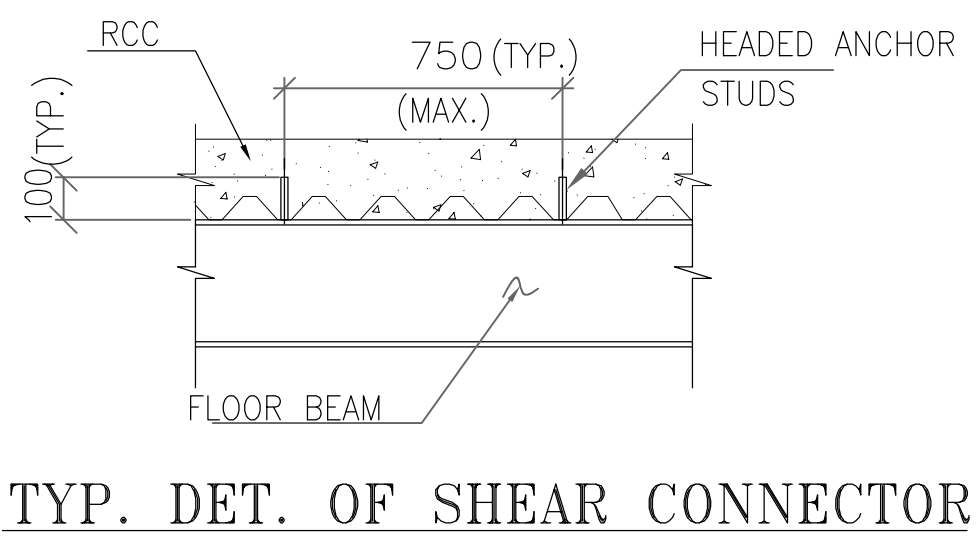
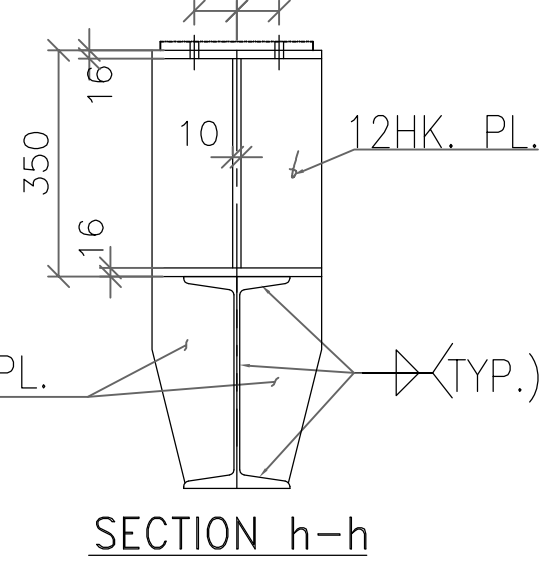
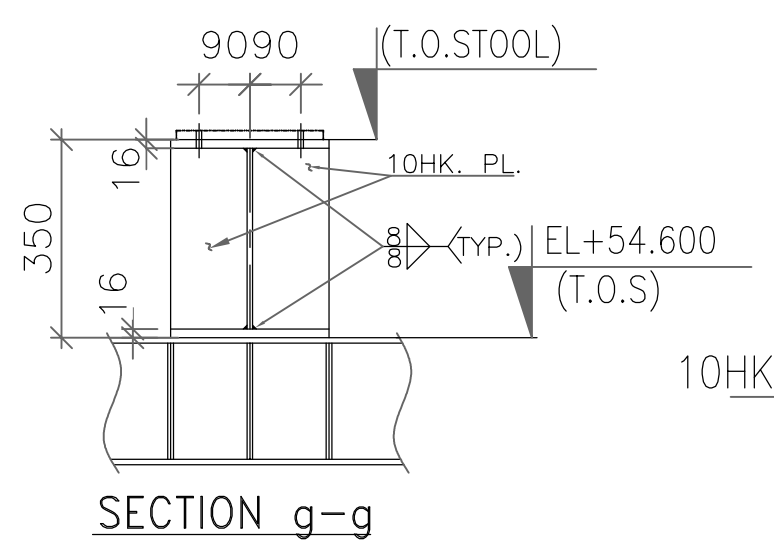
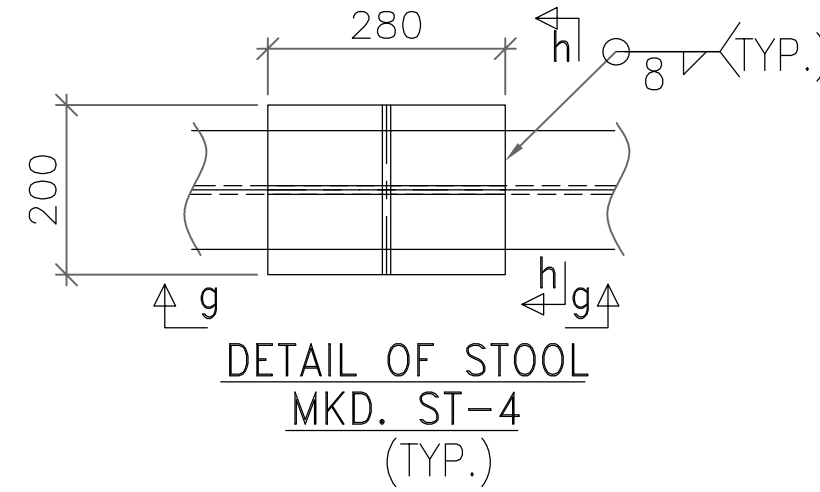
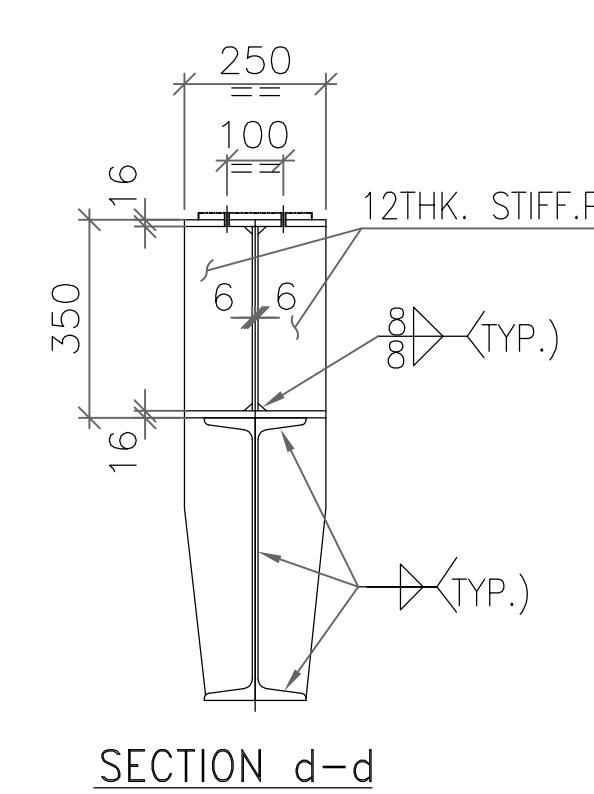
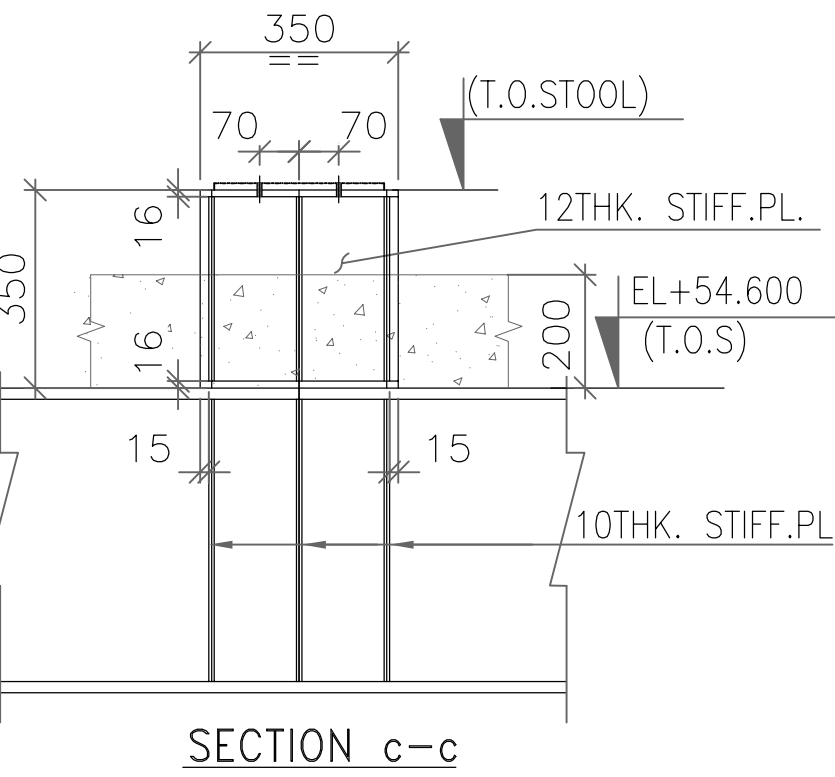
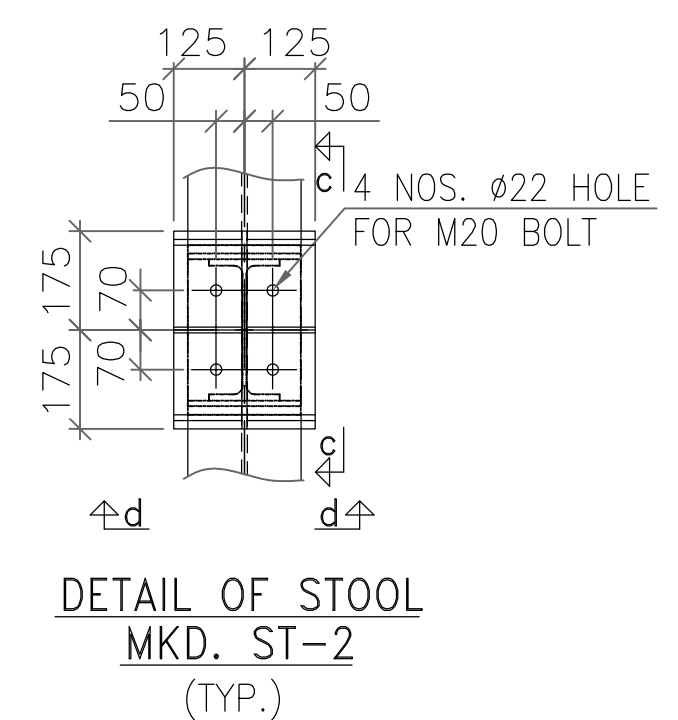
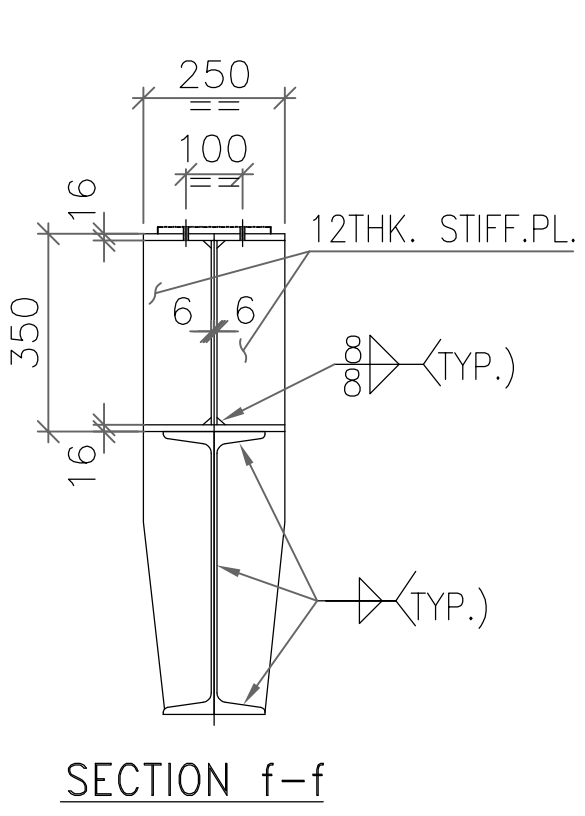
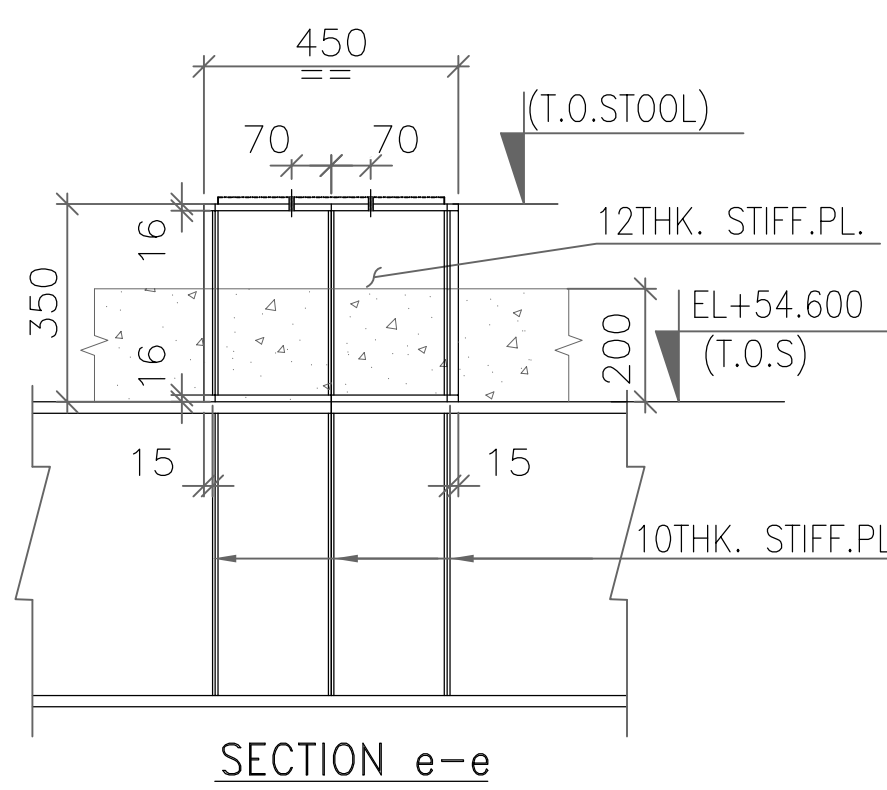
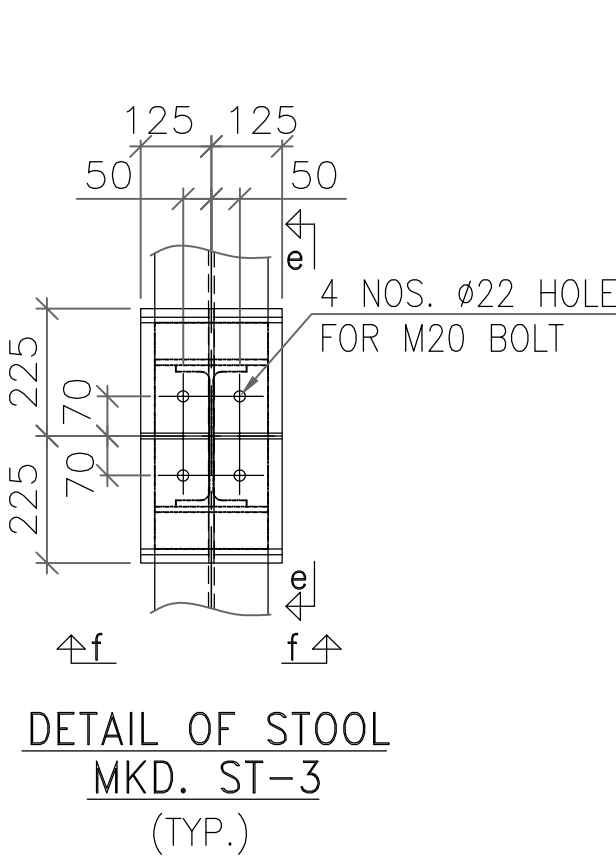
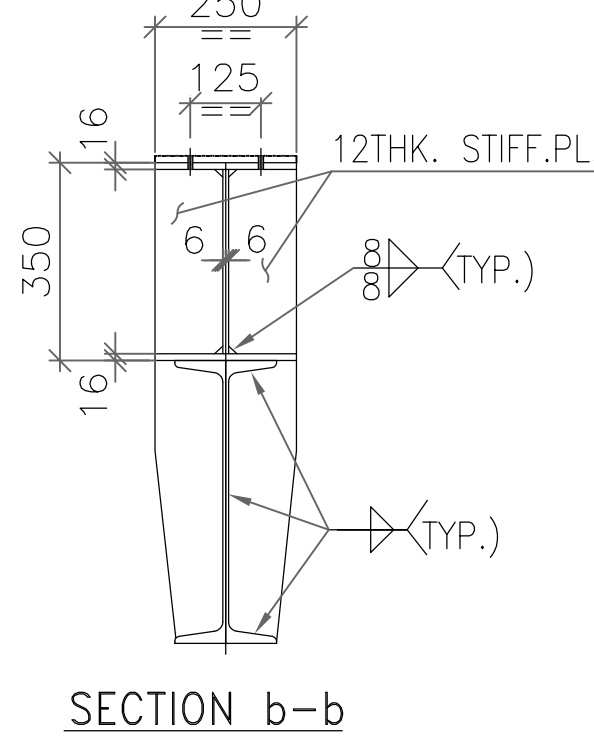
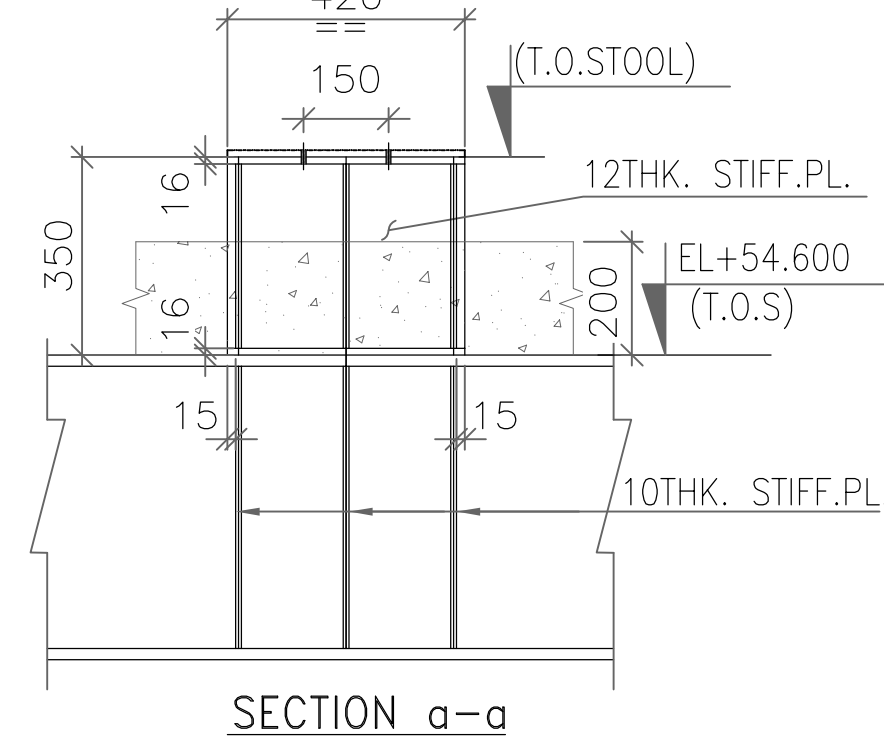
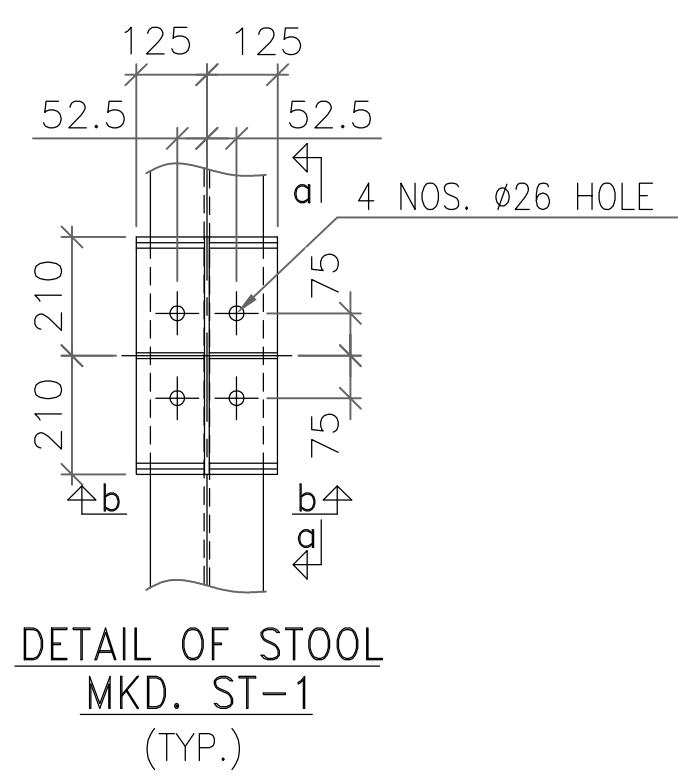
FLOOR PLAN AT EL+ 50.650M LEVEL(T.O.S)



FLOOR PLAN AT EL+ 54.600M LEVEL(T.O.S)
FLOOR PLAN AT EL+ 54.800M LEVEL(T.O.C)

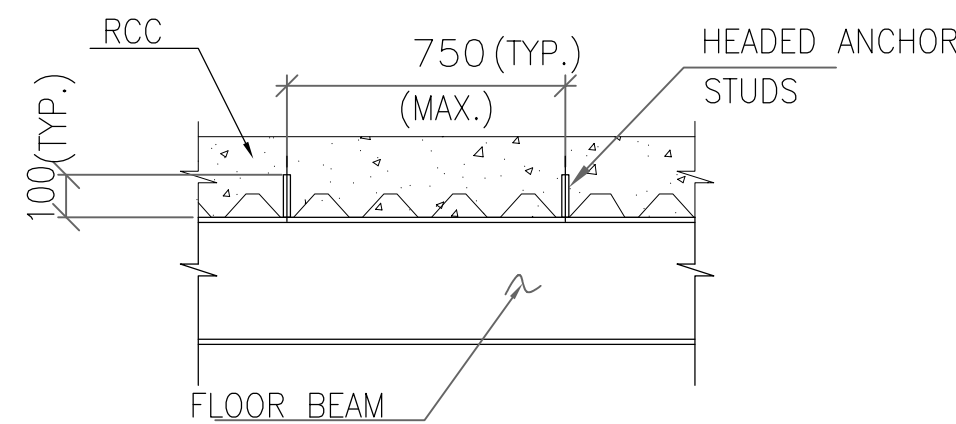
SCHEDULE OF MEMBERS.

BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	T 50X50X6
A6	T 65X65X6
A7	T 90X90X6
A8	T 100X100X8
A9	L90X90X8
A10	T 90X90X8
A11	T 130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	BOX MC100
C7	BOX MC125
C8	BOX MC150
C9	BOX MC200
D1	BUP350

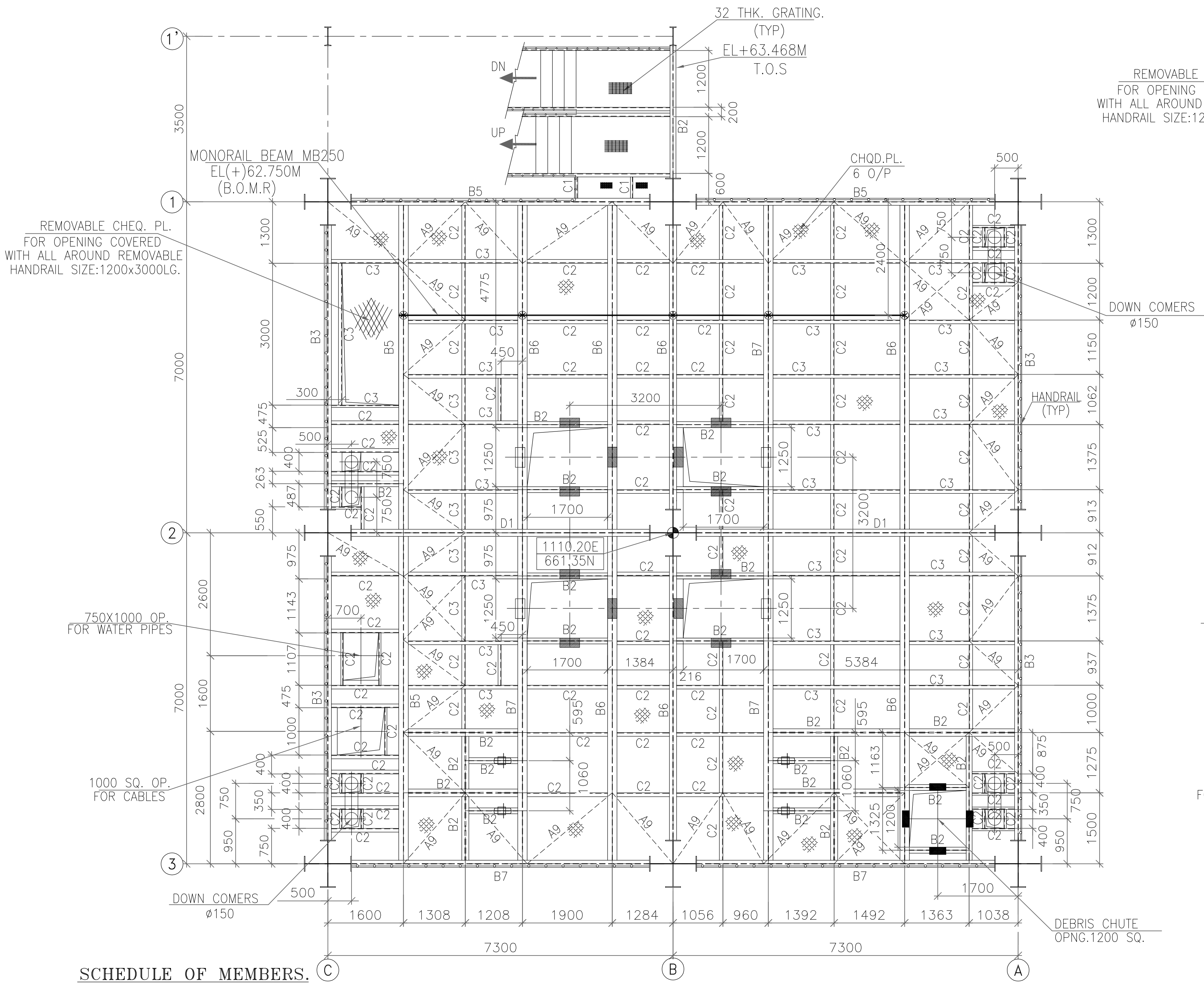


TYP. DET. OF SHEAR CONNECTOR

FOR TENDER PURPOSE ONLY



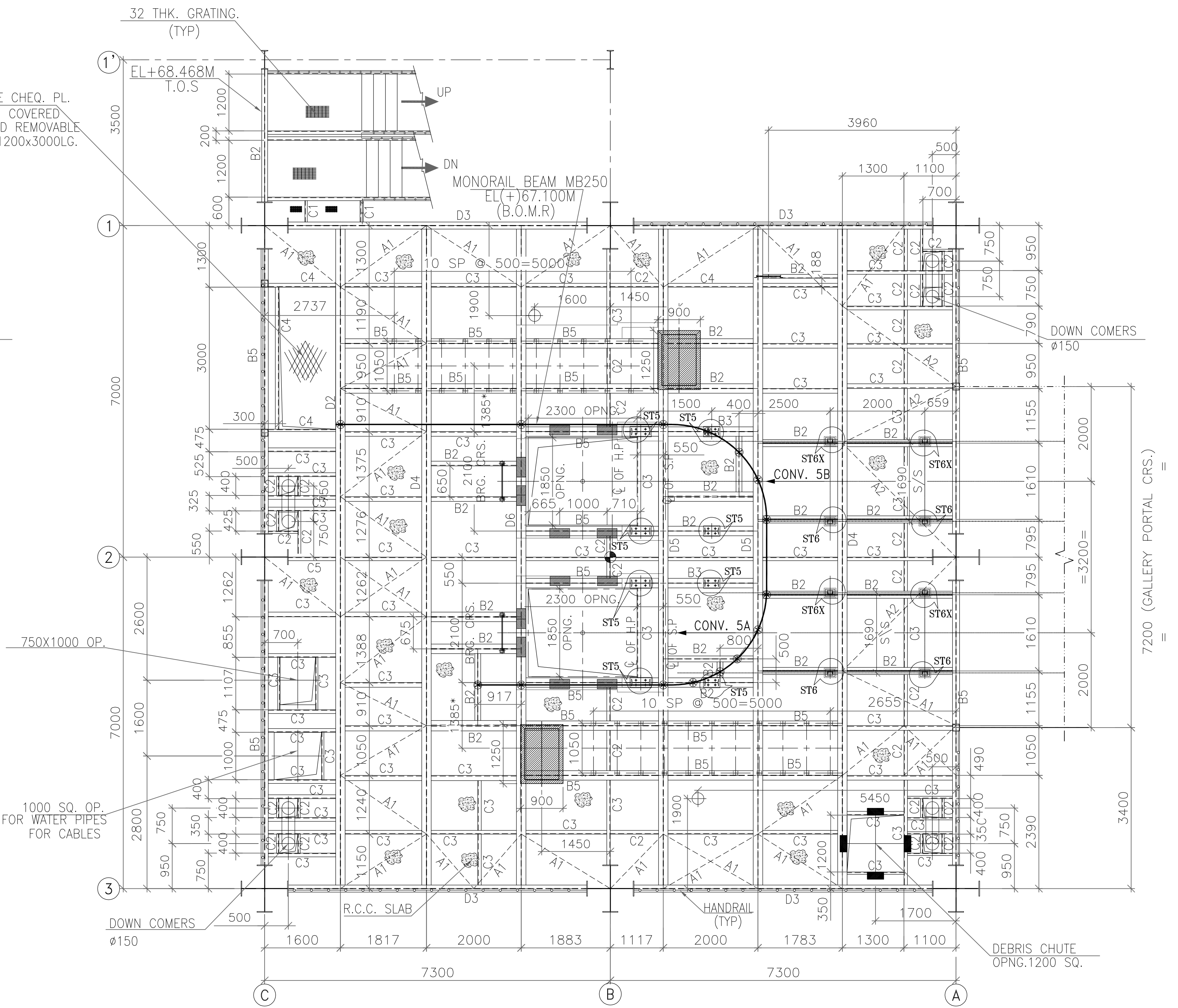
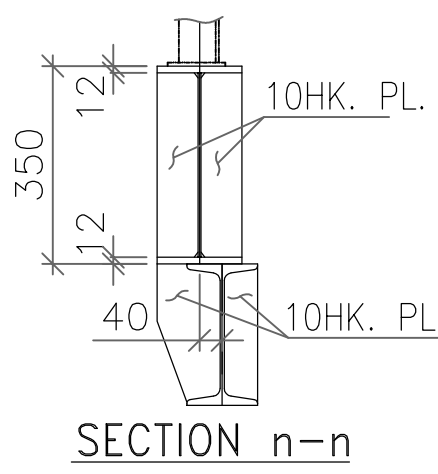
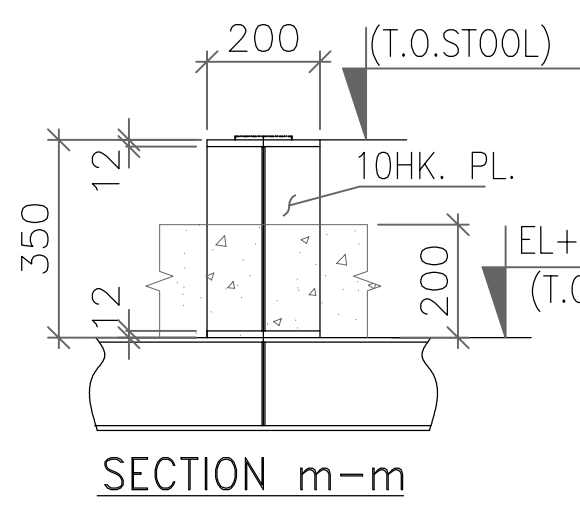
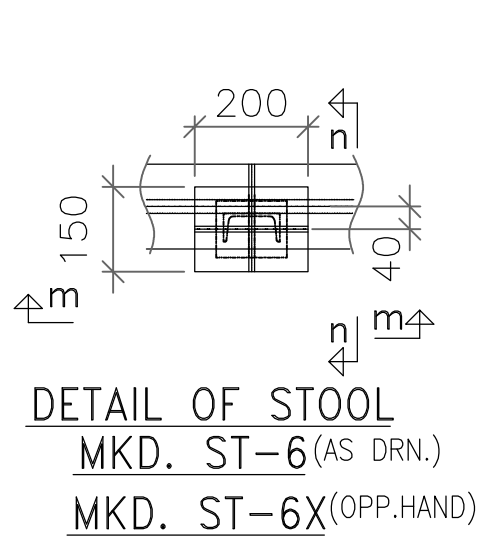
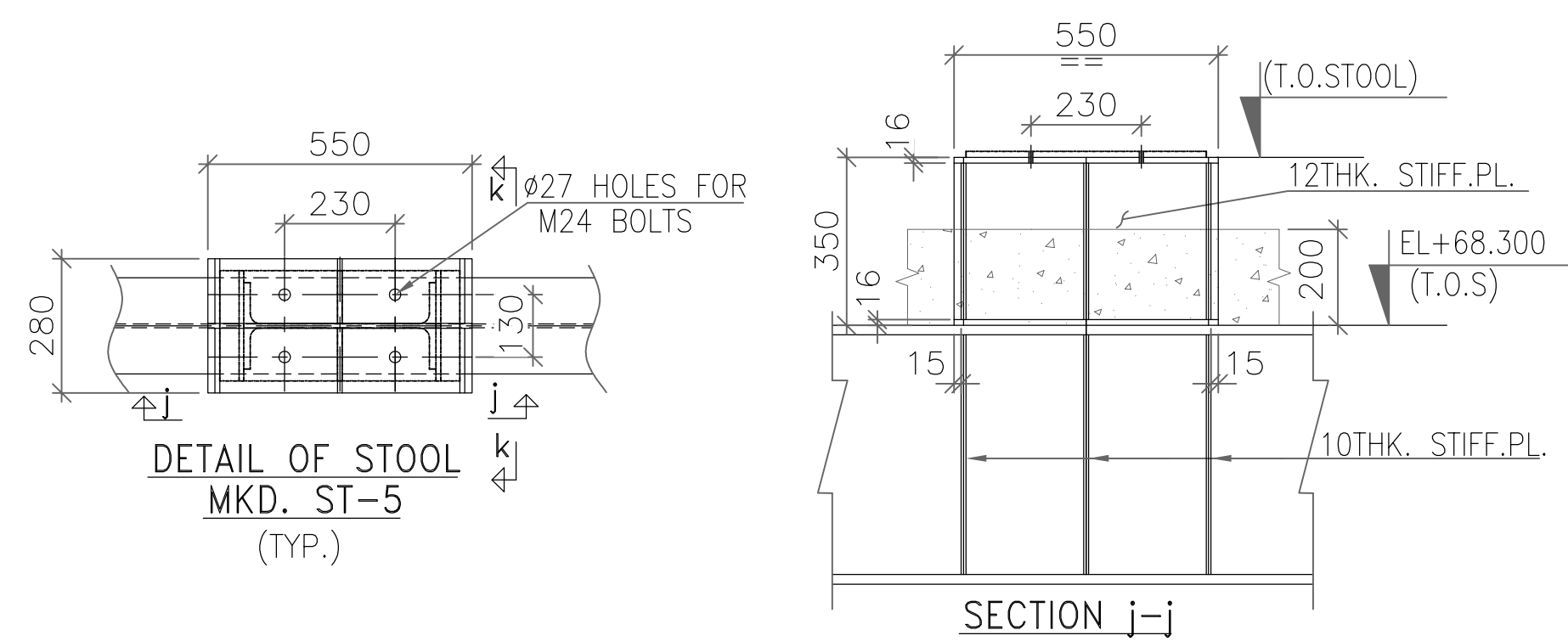
TYP. DET. OF SHEAR CONNECTOR



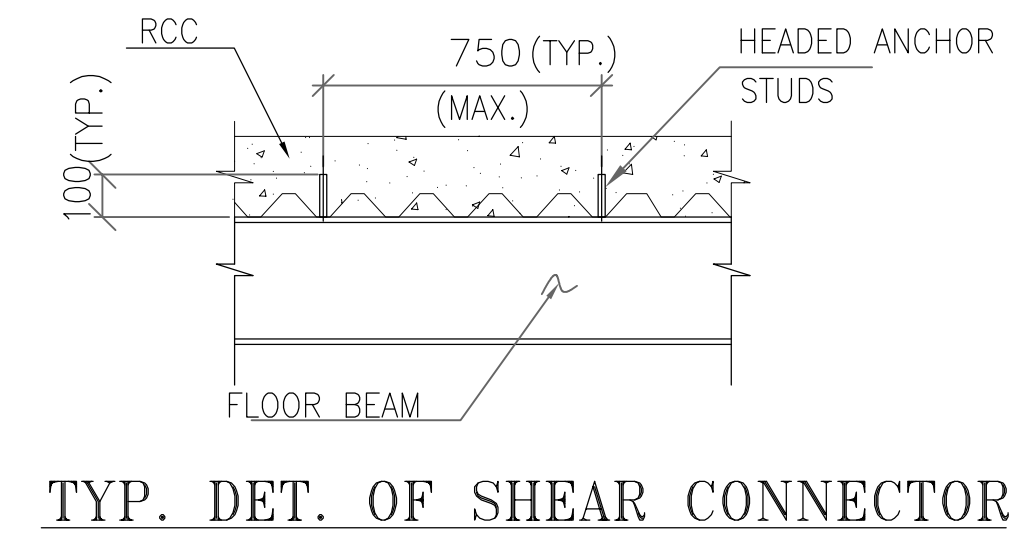
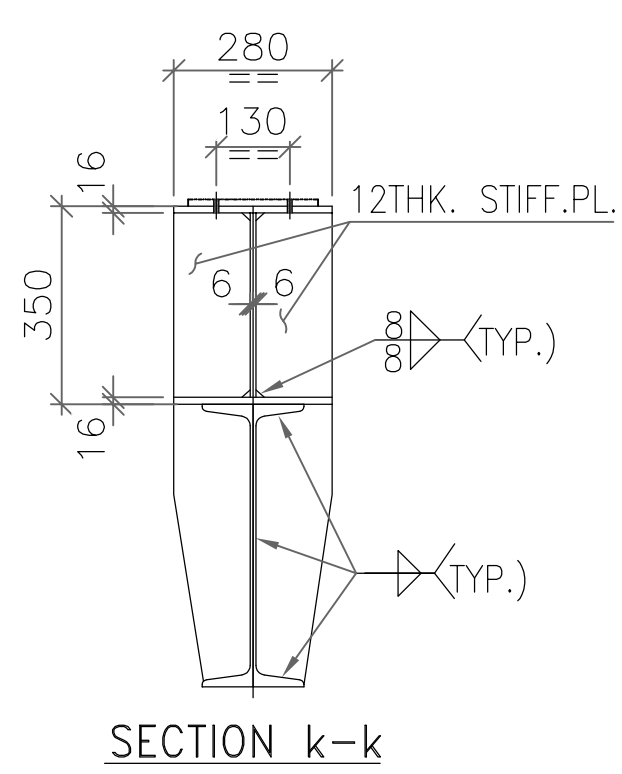
SCHEDULE OF MEMBERS. C

BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	T 50X50X6
A6	T 65X65X6
A7	T 90X90X6
A8	T 100X100X8
A9	L90X90X8
A10	T 90X90X8
A11	T 130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	BOX MC100
C7	BOX MC125
C8	BOX MC150
C9	BOX MC200
D1	BUP650
D2	BUP700
D3	BUP750
D4	BUP800
D5	BUP850
D6	BUP950

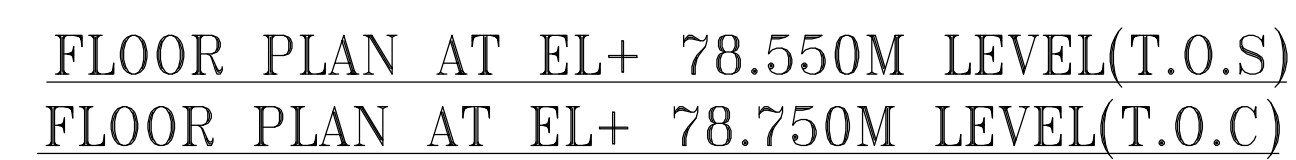
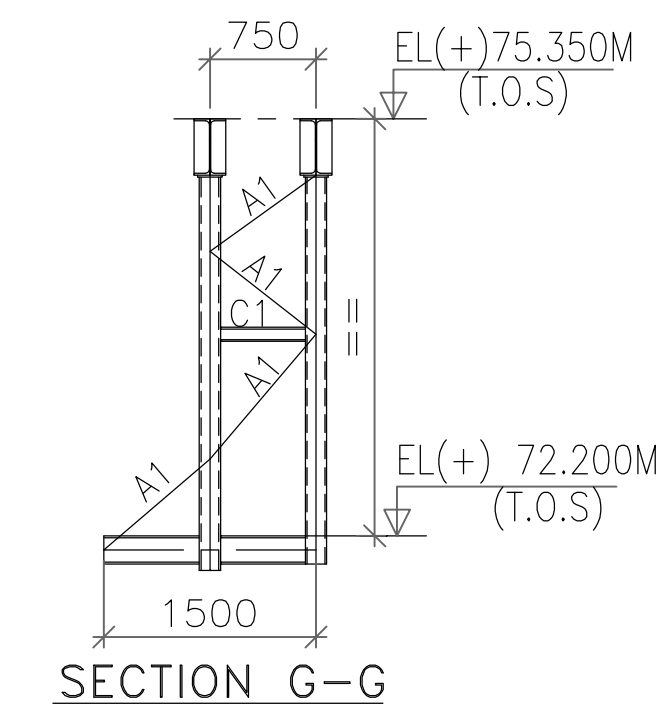
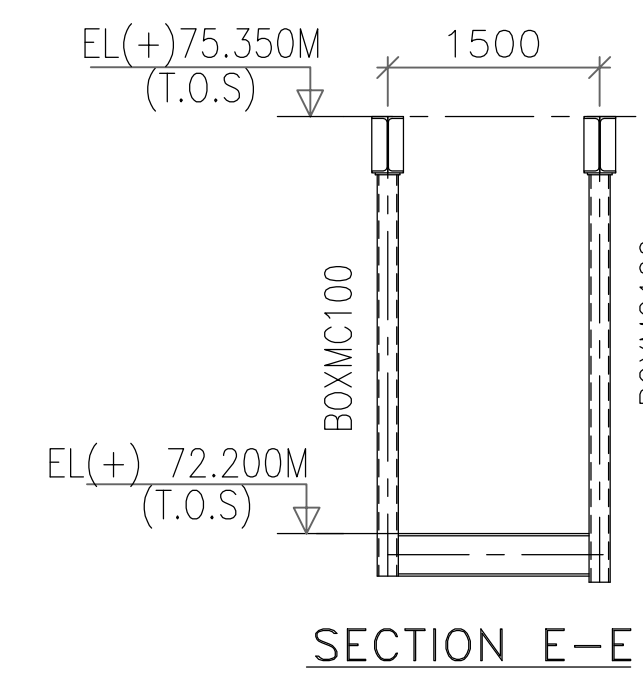
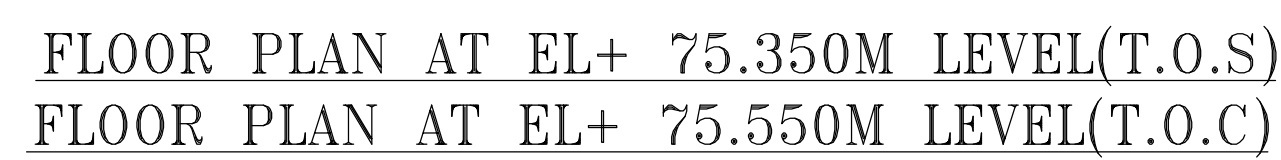
FLOOR PLAN AT EL+ 63.500M LEVEL(T.O.S)

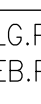


FLOOR PLAN AT EL+ 68.300M LEVEL(T.O.S)
FLOOR PLAN AT EL+ 68.500M LEVEL(T.O.C)



FOR TENDER PURPOSE ONLY



BEAM. MKD.	MEMBER
A1	L50X50X6
A2	L65X65X6
A3	L75X75X6
A4	L90X90X6
A5	┐ 50X50X6
A6	┐ 65X65X6
A7	┐ 90X90X6
A8	┐ 100X100X8
A9	L90X90X8
A10	┐ 90X90X8
A11	┐ 130X130X10
B1	ISMB200
B2	ISMB250
B3	ISMB300
B4	ISMB350
B5	ISMB400
B6	ISMB450
B7	ISMB500
B8	ISMB600
C1	ISMC75
C2	ISMC100
C3	ISMC125
C4	ISMC150
C5	ISMC200
C6	□ BOX MC100
C7	□ BOX MC125
C8	□ BOX MC150
C9	□ BOX MC200
D1	BUP650  ① – FLG.PL.250X20THK. ② – WEB.PL.610X10THK.
D2	BUP750  ① – FLG.PL.300X20THK. ② – WEB.PL.710X10THK.

FOR TENDER PURPOSE ONLY