

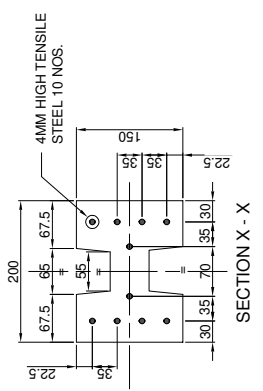
SECTION Y - Y

LEGEND :-

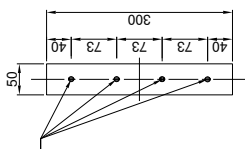
- 1. NGL : NATURAL GROUND LEVEL.
- 2. C/C : CENTER TO CENTER.
- 3. TYP : TYPICAL.
- 4. DIA. : DIAMETER.
- 5. NOS. : NUMBERS.

NOTES :-

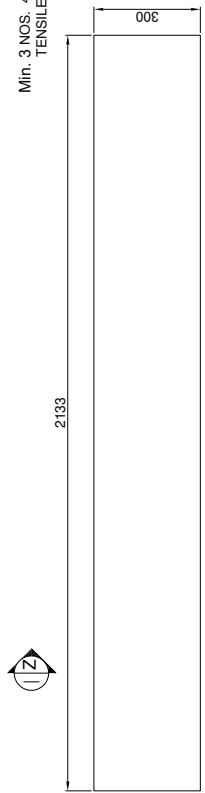
- 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH PLOT PLAN, SPECIFICATION & SCHEDULE OF ITEMS, CONTRACT TERMS AND CONDITIONS.
- 2. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M.
- 3. GRADE OF CONCRETE FOR PRECAST STRESSED RCC WORK IN COLUMN & PANEL SHALL BE MIN. M 30 AS PER IS : 456 & IS : 1343.
- 4. GRADE OF CONCRETE FOR FOUNDATION BLOCK SHALL BE MIN. M 25 AS PER IS : 456.
- 5. PRESTRESSING TENDONS OF HIGH TENSILE STEEL / WIRE SHALL BE AS PER IS : 2090 OR IS : 6006.
- 6. GALVANIZED MS ISA ANGLE 50 X 50 X 5 MM INCLUDING NUTS AND BOLTS CONFORMING TO IS : 2062 & IS : 4759 SHALL BE USED.
- 7. GALVANIZED BARBED WIRE AS PER IS 278 MADE FROM 4 LINE WIRE OF 2.5MM THICKNESS EACH.
- 8. CONCERTINA RAZOR WIRE SHALL BE OF SIZE BTO 10 CONFORMING TO ASTM A653.
- 9. GROOVE BETWEEN COLUMN AND PANEL TO BE FILLED WITH CEMENT MORTAR (1:4).
- 10. SOME MINOR CHANGES IN DETAILED CONSTRUCTION DRAWINGS WITH RESPECT TO TENDER DRAWINGS MAY BE PROPOSED BY BIDDER FOR EASY EXECUTION & BETTER PERFORMANCE. THE SAME SHALL BE SUBJECT TO NTPC APPROVAL.
- 11. THE DETAILED CONSTRUCTION DRAWINGS OF PRE - STRESSED PRECAST BOUNDARY WALL SHALL BE DEVELOPED BY BIDDER AND SUBMITTED TO NTPC FOR APPROVAL BEFORE START OF WORKS.
- 12. DEPTH OF FOUNDATION SHALL BE MINIMUM 1000 MM FROM NGL AND HEIGHT OF BOUNDARY WALL SHALL BE TAKEN FROM FGL.
- 13. ALL MEMBERS OF CONCERTINA TENSION WIRES AND Y-ANGLES SHALL BE GALVANIZED IN LINE WITH IS CODE PROVISIONS.
- 14. BIDDER SHALL PREPARE CONSTRUCTION DRAWING OF BOUNDARY WALL IN CHANGE IN GROUND LEVELS, CORNERS, JOINTS, WATER BODY CROSSING ETC.



SECTION X - X

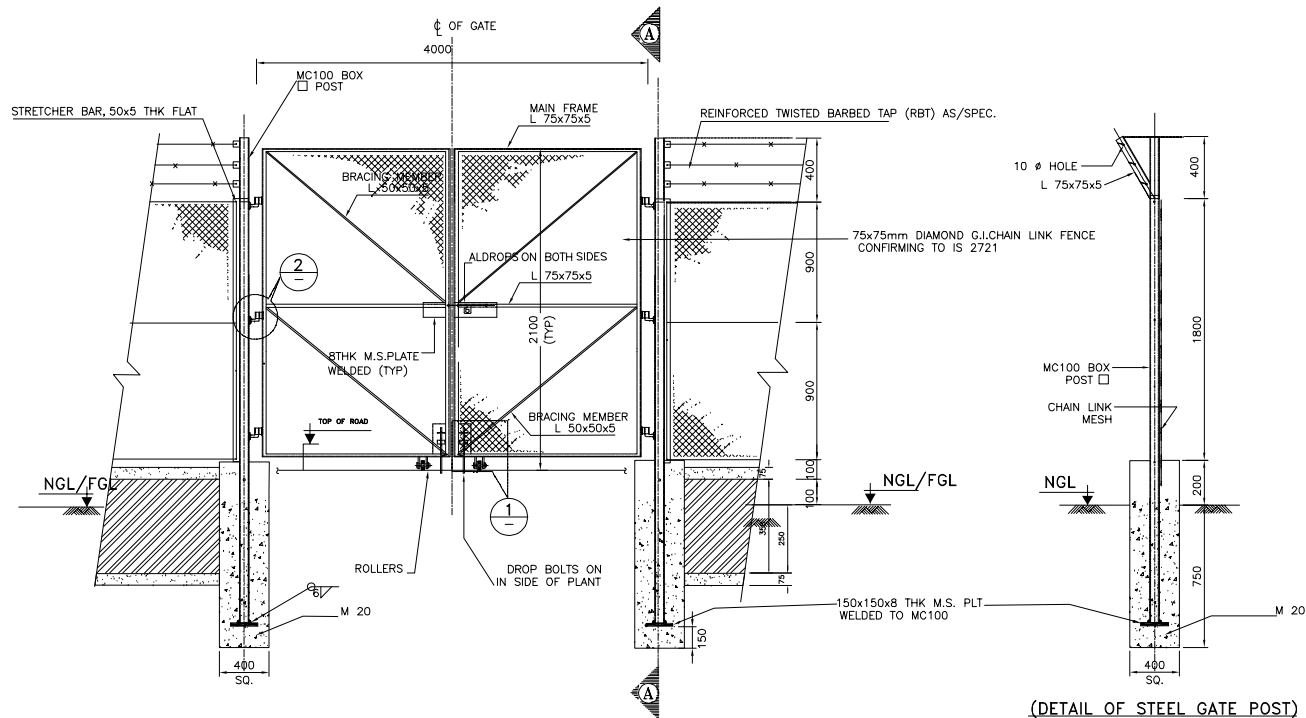


SECTION Z - Z



SECTION OF PANEL
(PANEL SIZE 2133 X 300 X 50MM THK)

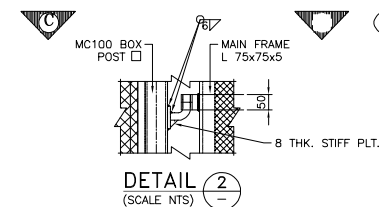
*DEPTH AND TYPE OF FOUNDATION OF BOUNDARY WALL COLUMN SHALL BE AS PER APPROVED GEOTECHNICAL REPORT. Else, minimum 700mm Depth to be provided.



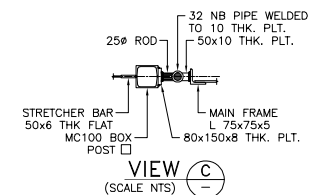
ELEVATION OF MAIN ENTRY GATE
(SCALE NTS)

(DETAIL OF STEEL GATE POST)

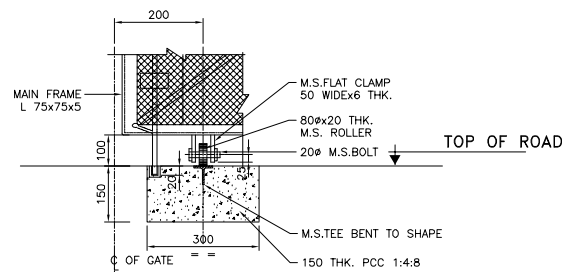
VIEW A
(SCALE NTS)



DETAIL 2
(SCALE NTS)



VIEW C
(SCALE NTS)



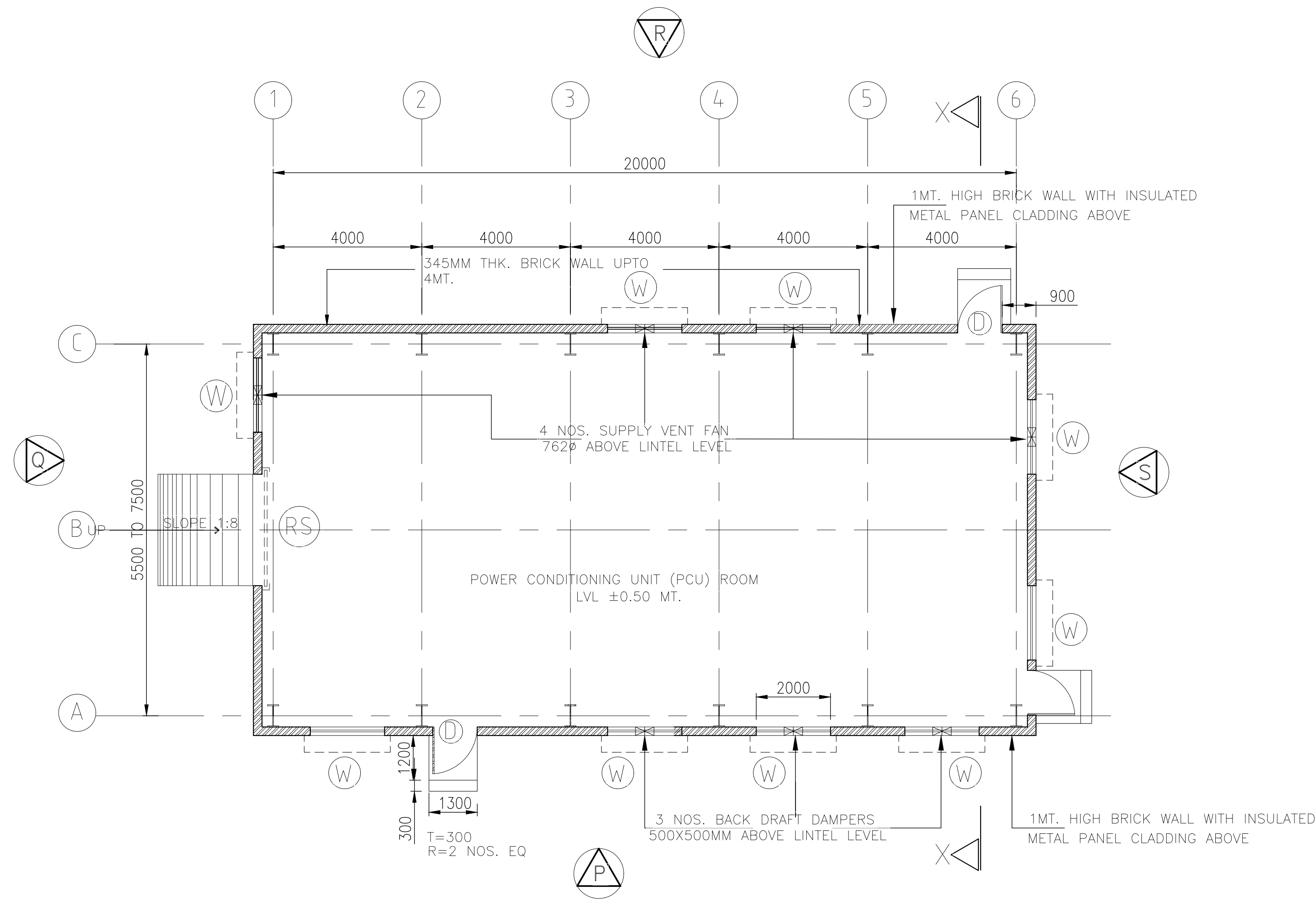
DETAIL 1
(SCALE NTS)

LEGEND

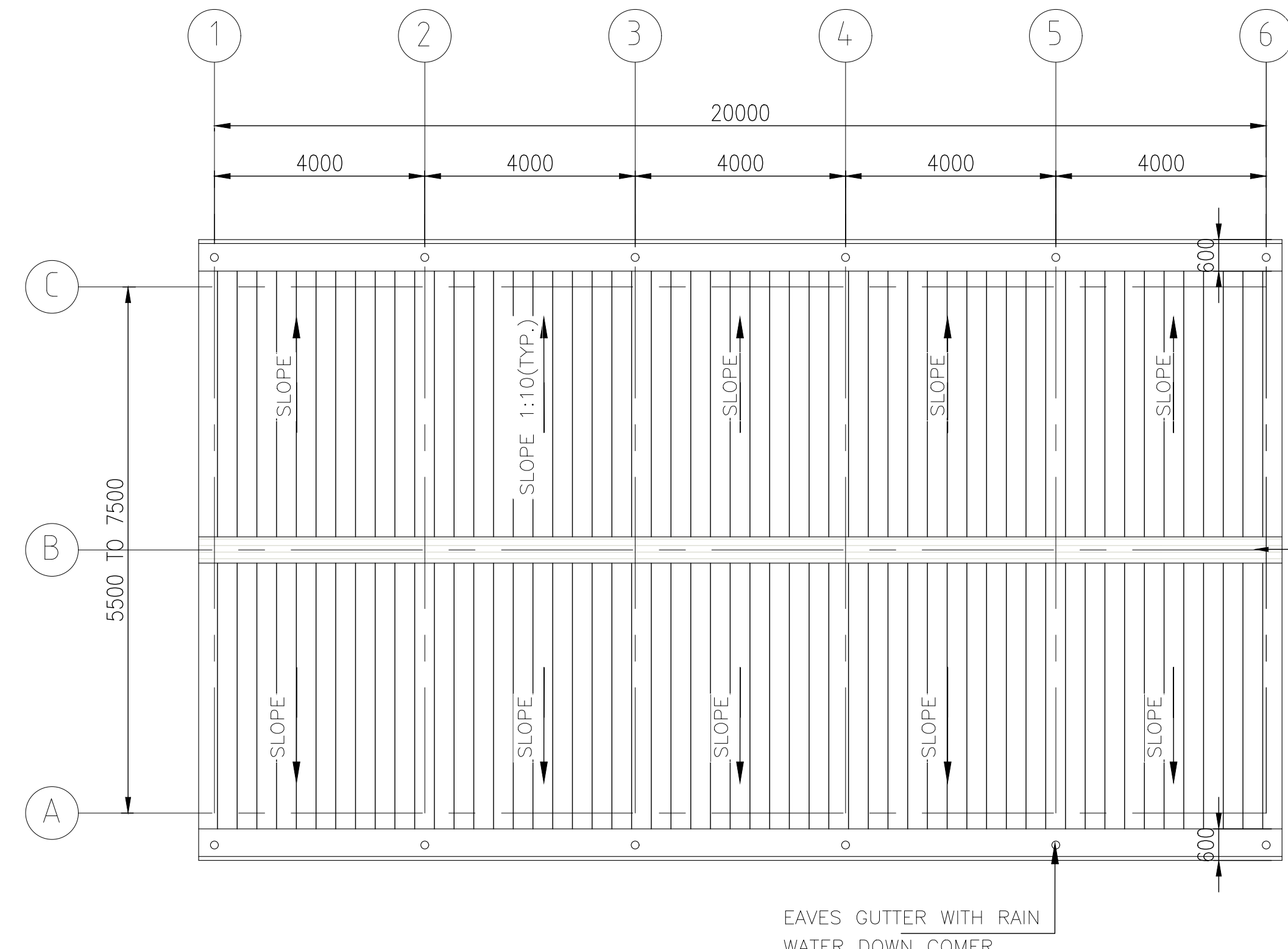
FGL	FINISH GROUND LEVEL
NTS	NOT TO SCALE
TYP	TYPICAL
EL	ELEVATION

NOTE:

1. ALL LEVELS ARE IN METERS & DIMENSIONS ARE IN MM.
2. CHAIN LINK FENCE & FIXING DETAILS INCLUDING MATERIALS FOR THE WORKS SHALL BE AS PER IS: 2721.
3. HTSS WIRE AND CHAIN LINK FENCE SHALL BE ERECTED ONLY AFTER ERECTION OF EACH SEGMENT OF FENCE POST AND STAY POST.
4. CONCRETE / MASONRY TOE WALL SHALL BE PROVIDED BETWEEN FENCING POST.
5. GRADE OF CONCRETE MIX SHALL BE PCC NOMINAL MIX OF 1:1.5:3
6. THE DEPTH OF FOUNDATION SHALL BE TAKEN FROM NGL AND HEIGHT OF STRUCTURE SHALL BE TAKEN FROM FGL.



PLAN AT ± 0.0 MTS. LVL.



ROOF PLAN

INSULATED DOUBLE SKIN METAL PANEL ROOF SHEETING WITH COLOUR SHADE RAL 5012 ON OUTSIDE FACE & INSIDE VISIBLE WITH COLOUR SHADE RAL 9002

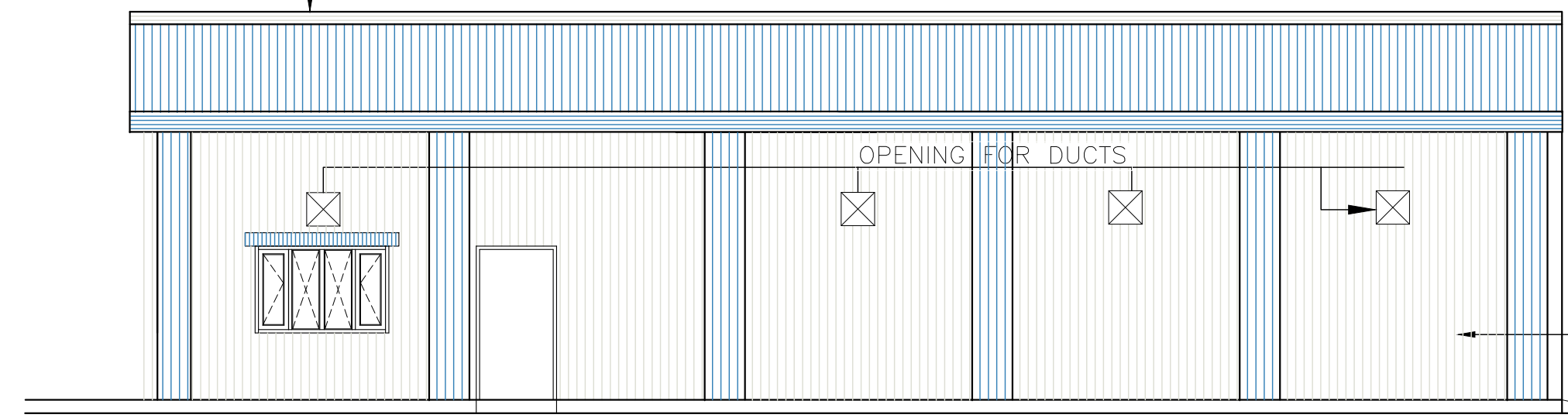
RIDGE FINISHED WITH INSULATED DOUBLE SKIN METAL PANEL SHEETING AS/SPEC. WITH RAL 9002 COLOUR SHADE ON OUTSIDE & INSIDE FACE

EAVES GUTTER WITH RAIN WATER DOWN COVER

INSULATED DOUBLE SKIN METAL PANEL ROOF SHEETING WITH COLOUR SHADE RAL 5012 ON OUTSIDE FACE & INSIDE VISIBLE WITH COLOUR SHADE RAL 9002

OPENING FOR SUPPLY VENT

RIDGE FINISHED WITH INSULATED DOUBLE SKIN METAL PANEL SHEETING AS/SPEC. WITH RAL 9002 COLOUR SHADE ON OUTSIDE & INSIDE FACE



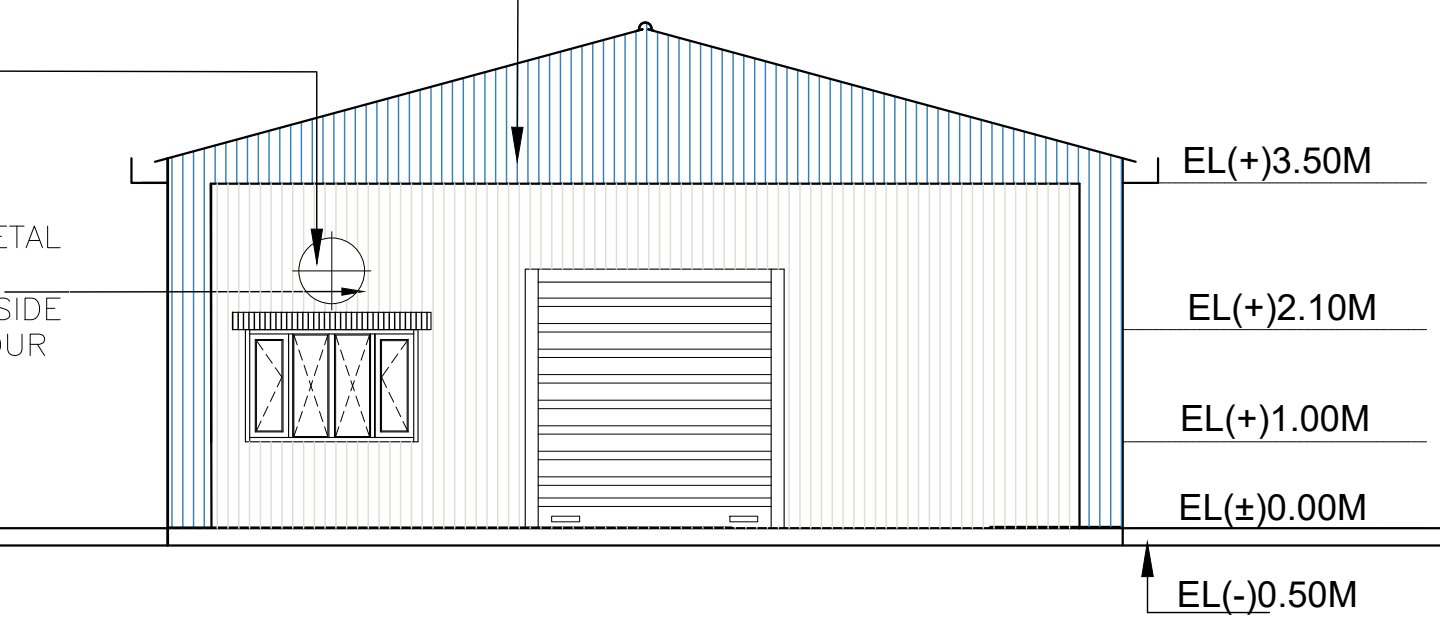
ELEVATION AT P

INSULATED DOUBLE SKIN METAL PANEL SHEETING COLOUR SHADE RAL 9002 ON OUTSIDE FACE & INSIDE WITH COLOUR SHADE RAL 9002

INSULATED DOUBLE SKIN METAL PANEL ROOF SHEETING WITH COLOUR SHADE RAL 5012 ON OUTSIDE FACE & INSIDE VISIBLE WITH COLOUR SHADE RAL 9002

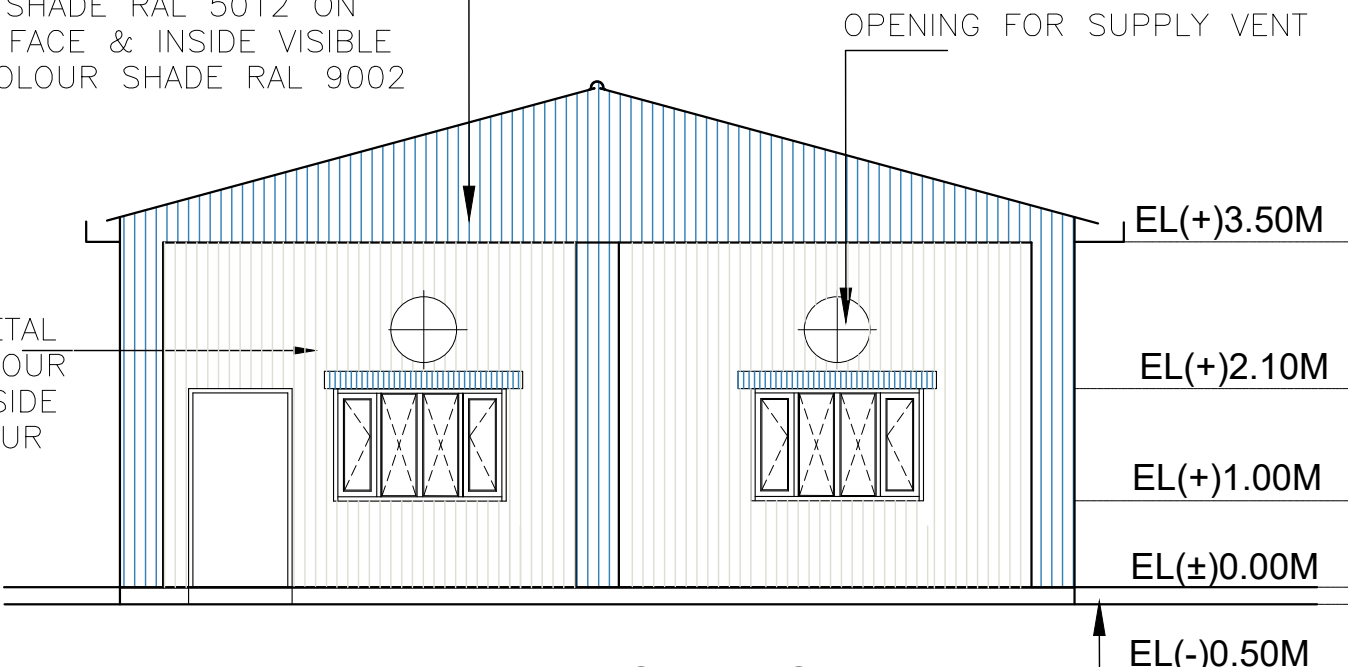
OPENING FOR SUPPLY VENT

INSULATED DOUBLE SKIN METAL PANEL SHEETING COLOUR SHADE RAL 9002 ON OUTSIDE FACE & INSIDE WITH COLOUR SHADE RAL 9002



ELEVATION AT Q

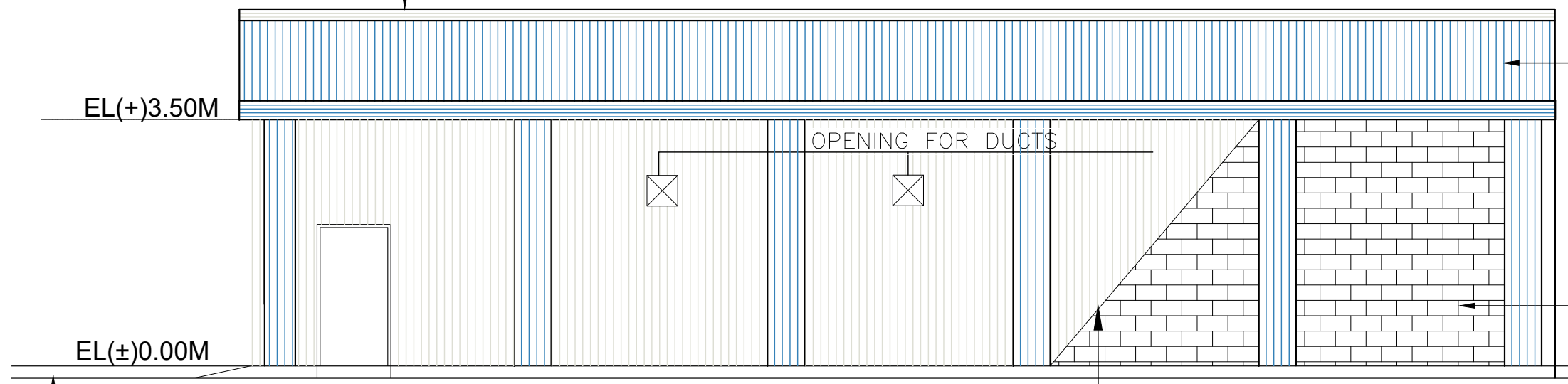
INSULATED DOUBLE SKIN METAL PANEL SHEETING WITH COLOUR SHADE RAL 9002 ON OUTSIDE FACE & INSIDE WITH COLOUR SHADE RAL 9002



ELEVATION AT S

EL(+)3.50M
EL(+)2.10M
EL(+)1.00M
EL(+)0.00M
EL(-)0.50M

RIDGE FINISHED WITH INSULATED DOUBLE SKIN METAL PANEL SHEETING AS/SPEC. WITH RAL 9002 COLOUR SHADE ON OUTSIDE & INSIDE FACE



ELEVATION AT R

INSULATED DOUBLE SKIN METAL PANEL ROOF SHEETING WITH COLOUR SHADE RAL 5012 ON OUTSIDE FACE & INSIDE VISIBLE WITH COLOUR SHADE RAL 9002

INSULATED DOUBLE SKIN METAL PANEL SHEETING COLOUR SHADE RAL 9002 ON OUTSIDE FACE & INSIDE WITH COLOUR SHADE RAL 9002

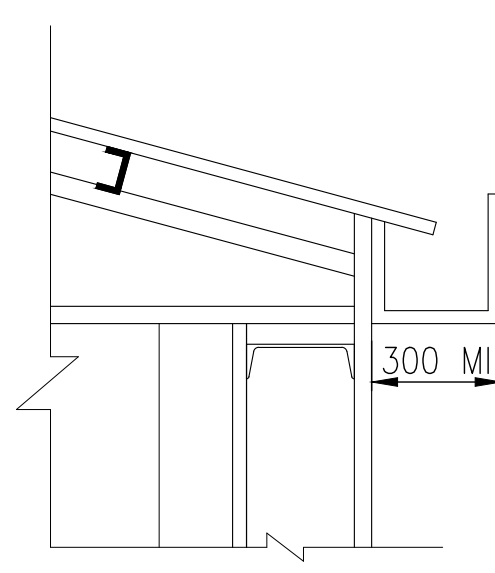
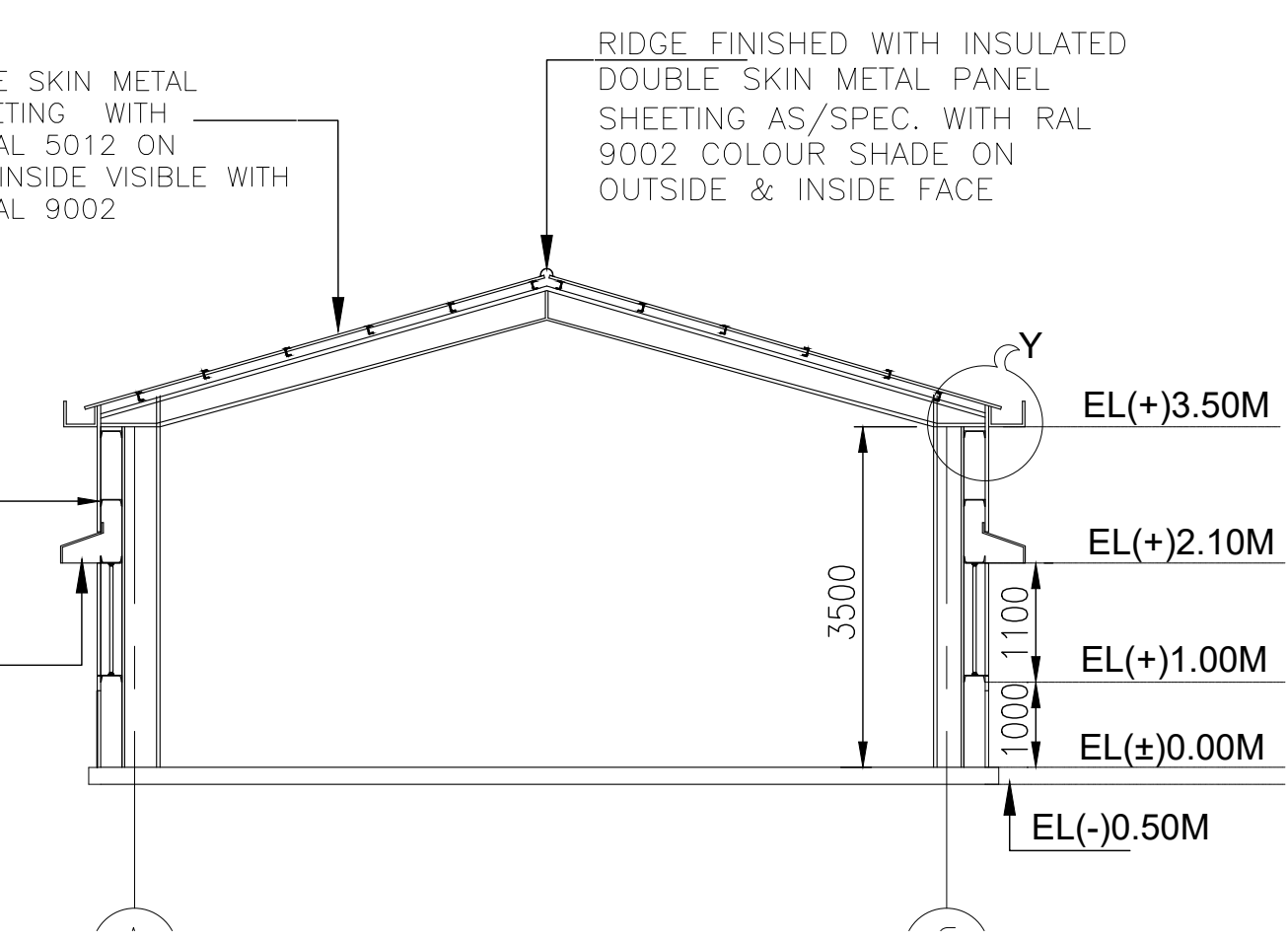
INSULATED DOUBLE SKIN METAL PANEL SHEETING OR FIRE WALL AS/SPEC.

INSULATED DOUBLE SKIN METAL PANEL ROOF SHEETING WITH COLOUR SHADE RAL 5012 ON OUTSIDE FACE & INSIDE VISIBLE WITH COLOUR SHADE RAL 9002

RIDGE FINISHED WITH INSULATED DOUBLE SKIN METAL PANEL SHEETING AS/SPEC. WITH RAL 9002 COLOUR SHADE ON OUTSIDE & INSIDE FACE

INSULATED DOUBLE SKIN METAL PANEL SHEETING COLOUR SHADE RAL 9002 ON OUTSIDE FACE & INSIDE WITH COLOUR SHADE RAL 9002

450MM WIDE SUNSHADE IN METAL SHEET(TYP.)



DETAIL AT Y

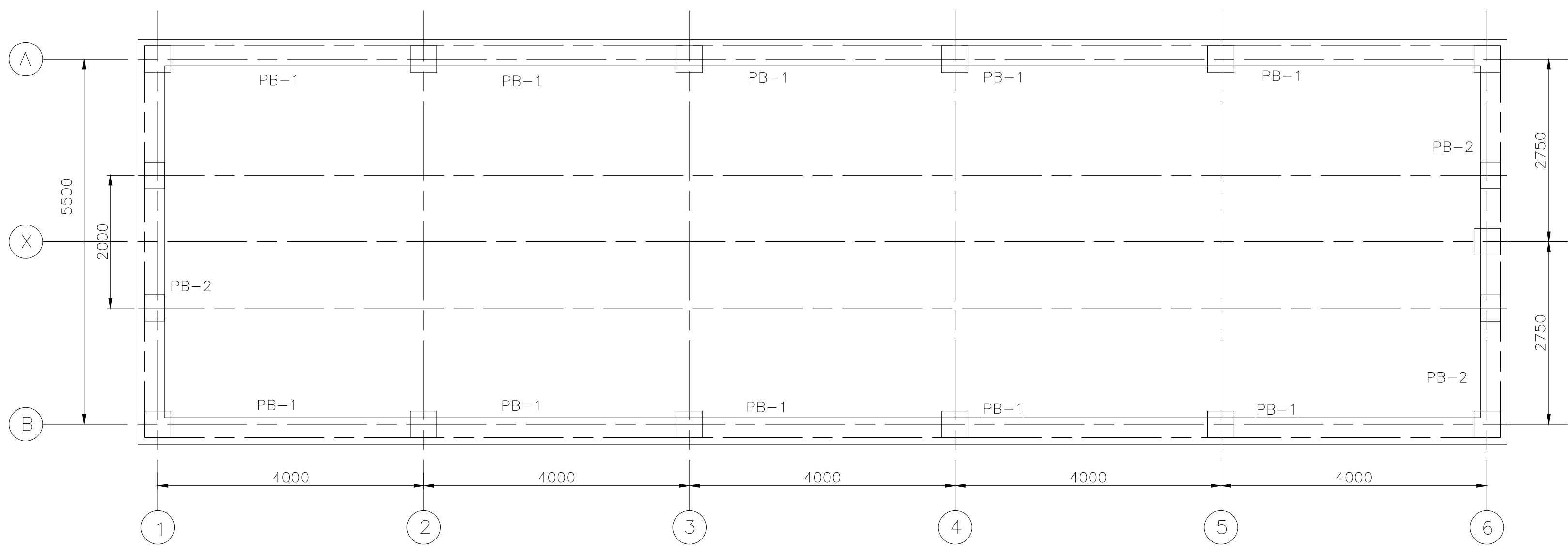
GUTTER FINISHED WITH METAL SHEETING (DOUBLE SKIN) AS/SPEC. WITH RAL-5012 COLOUR SHADE

NOTES:-

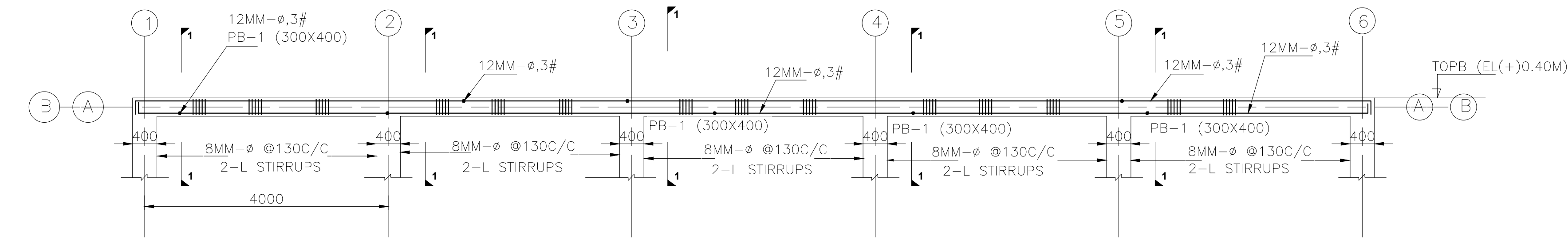
1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. DRAWING SHALL NOT BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ANY DOUBT OR DISCREPANCY IN THE DRAWING SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER-IN-CHARGE BEFORE EXECUTING THE WORK.
4. WORK SHALL BE CARRIED OUT BASED ON DETAIL WORKING DRAWINGS TO BE PREPARED BY THE VENDOR & GOT APPROVED FROM NTPC, BEFORE EXECUTION.
5. OPENING FOR ROLLING SHUTTER, DUCTS AND VENTILATOR'S SHALL BE AS PER INVERTER (PCU) MANUFACTURER RECOMMENDATIONS AND VENDOR DESIGN SUBJECT ON NTPC APPROVAL.
6. LOCATIONS OF DOOR, ROLLING SHUTTER, WINDOWS, VENTS & DUCTS ARE INDICATIVE ONLY. VENTILATION AND DUCTS SHALL BE DESIGN CONSIDERING HEAT CALCULATION OF PEB ROOM.
7. REFER TECHNICAL SPECIFICATION FOR PEB-INVERTER ROOM IN CIVIL WORKS.

DOOR/ROLLING SHUTTER/WINDOWS/VENTS/DUCTS

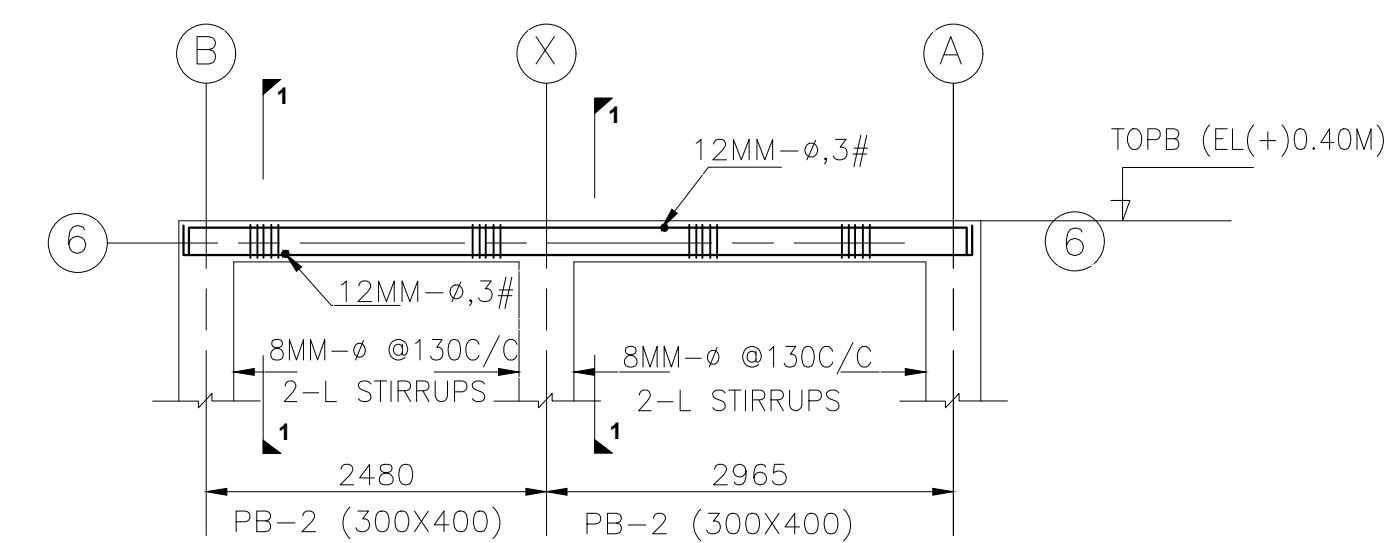
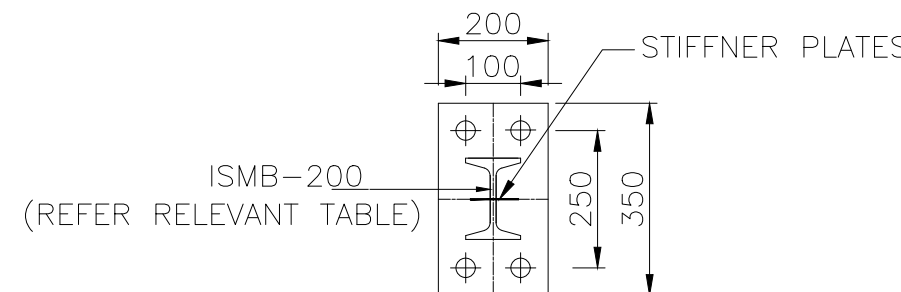
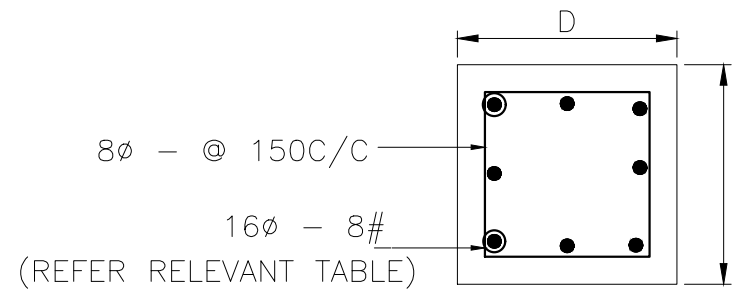
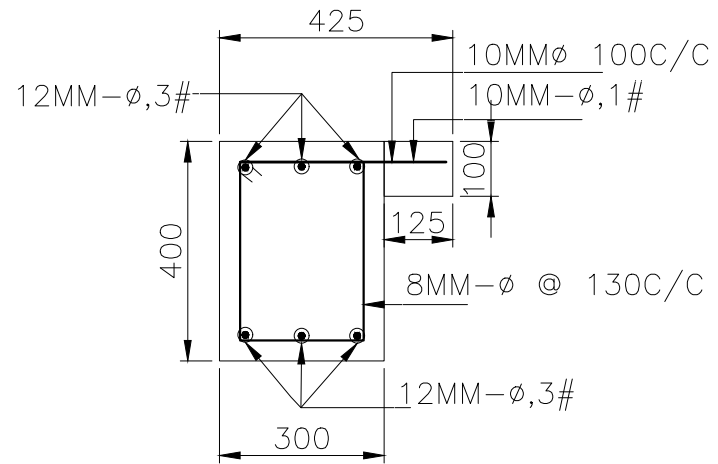
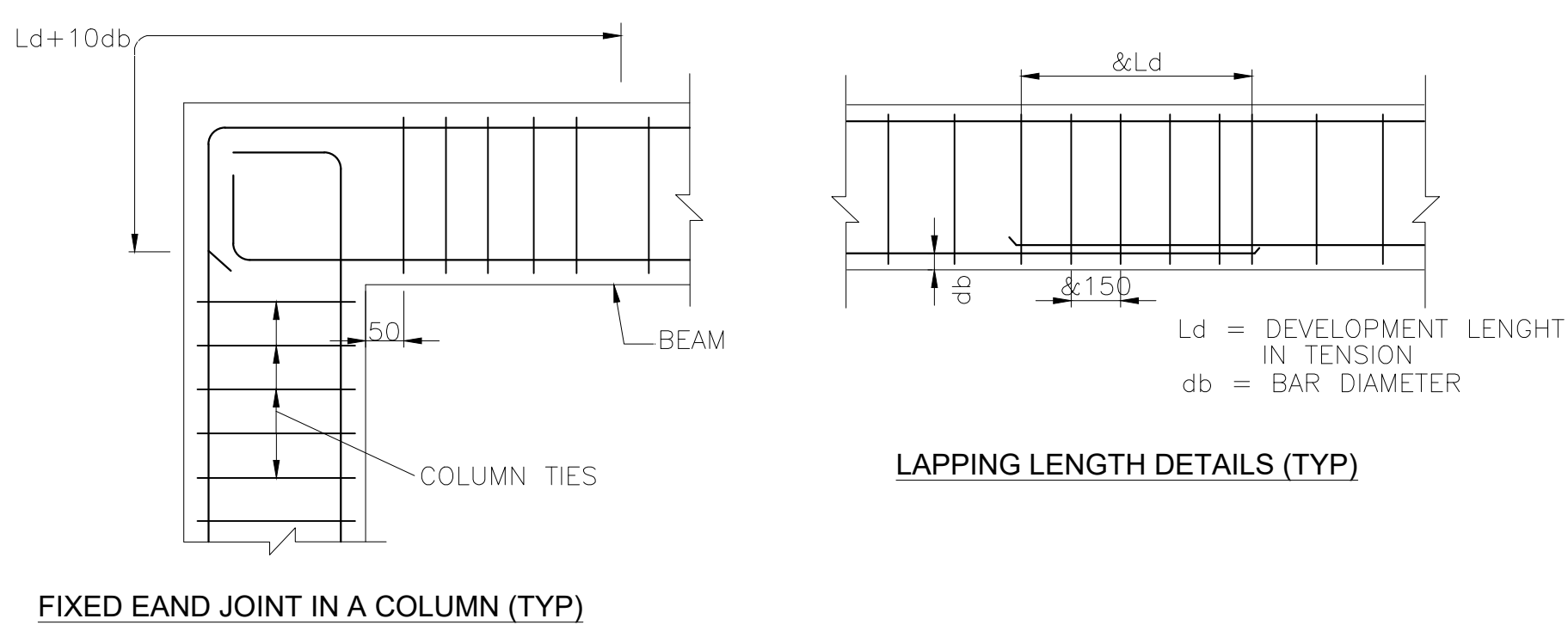
TYPE	SIZE	CILL LVL.	LINTEL LVL.	DESCRIPTION
D	1200X2100	0.00	2100	
RS	REFER NOTE 5 & 6	0.00	H	
WINDOWS VENTILATORS DUCTS	REFER NOTE 5 AND 6.			



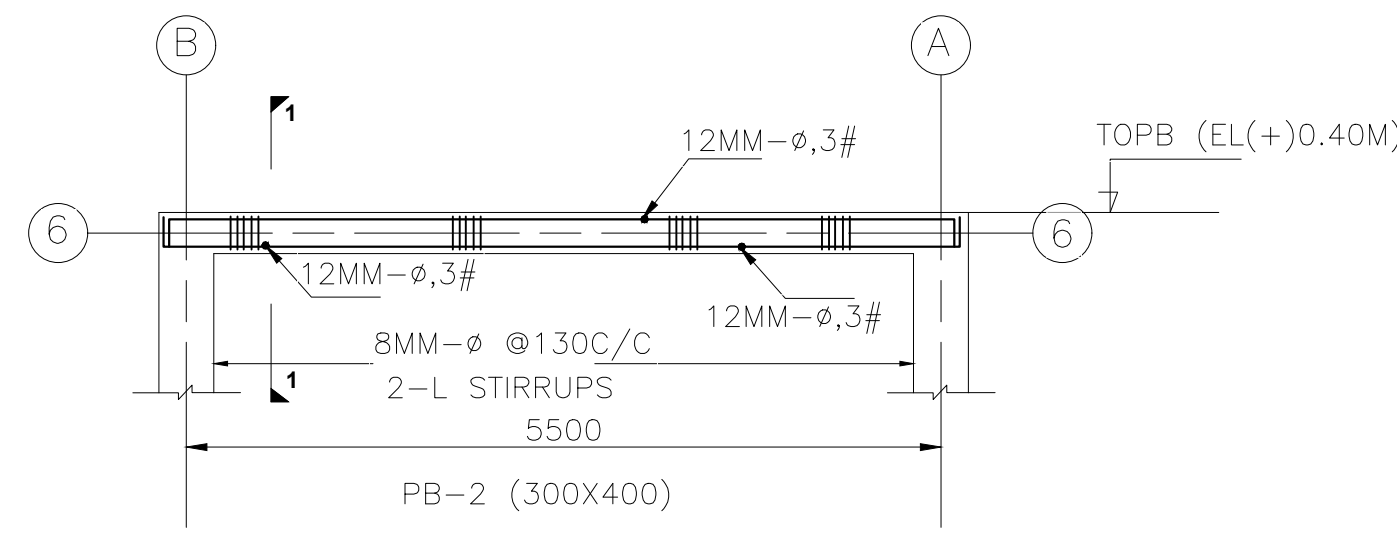
PLINTH BEAM PLAN AT ELEVATION +0.40M



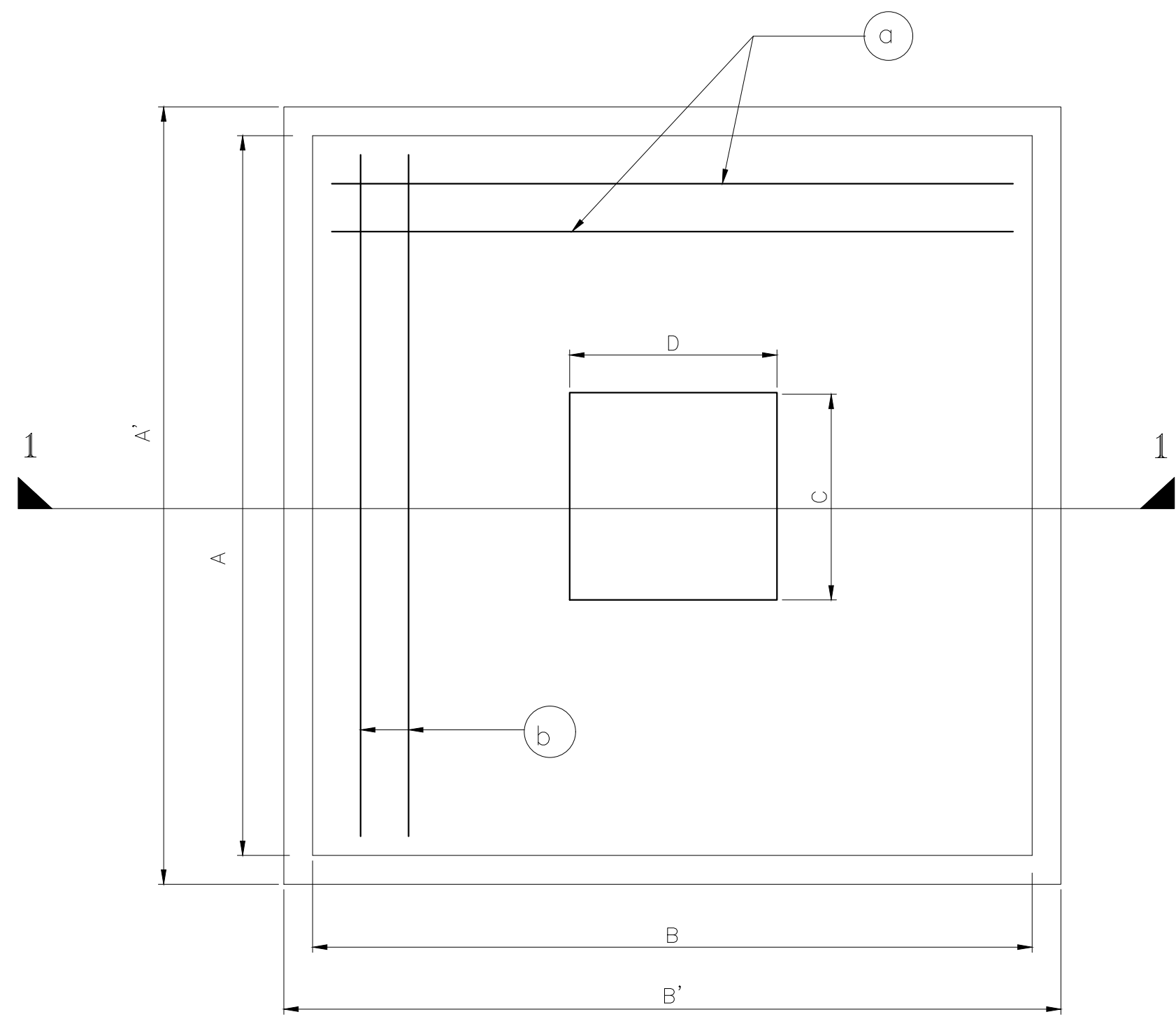
ALONG GRID A & B



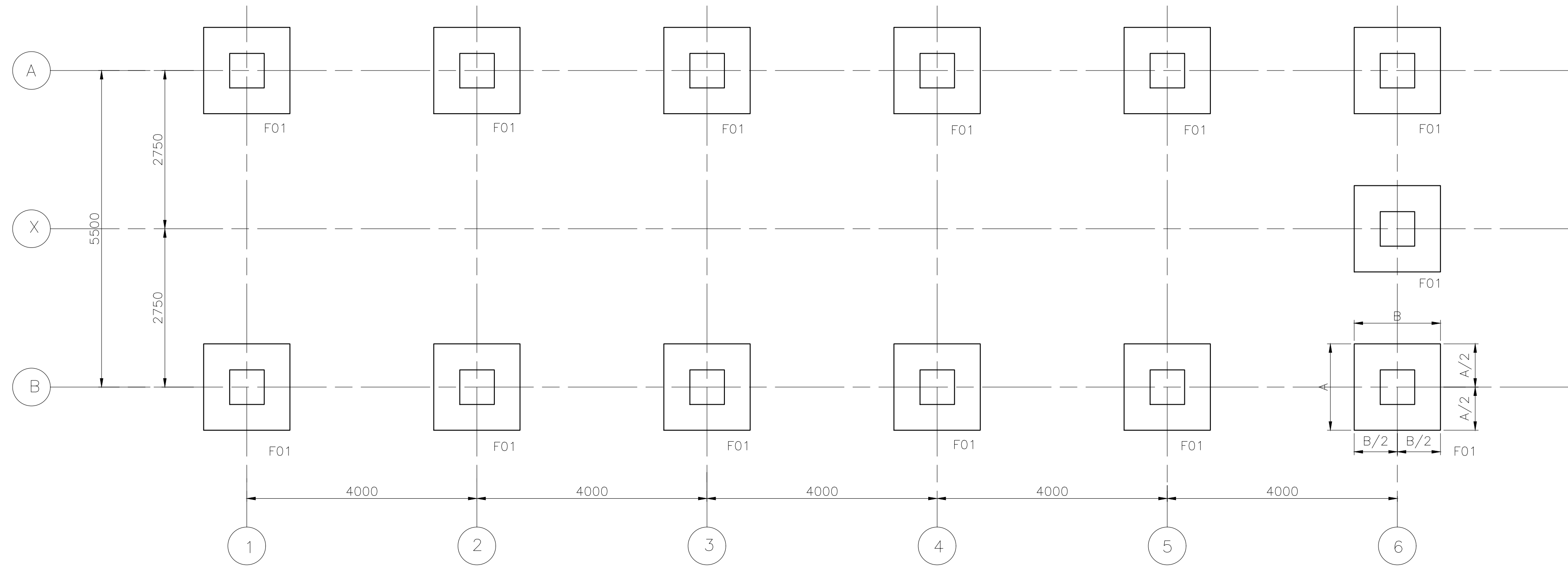
PLINTH BEAM ALONG GRID-6



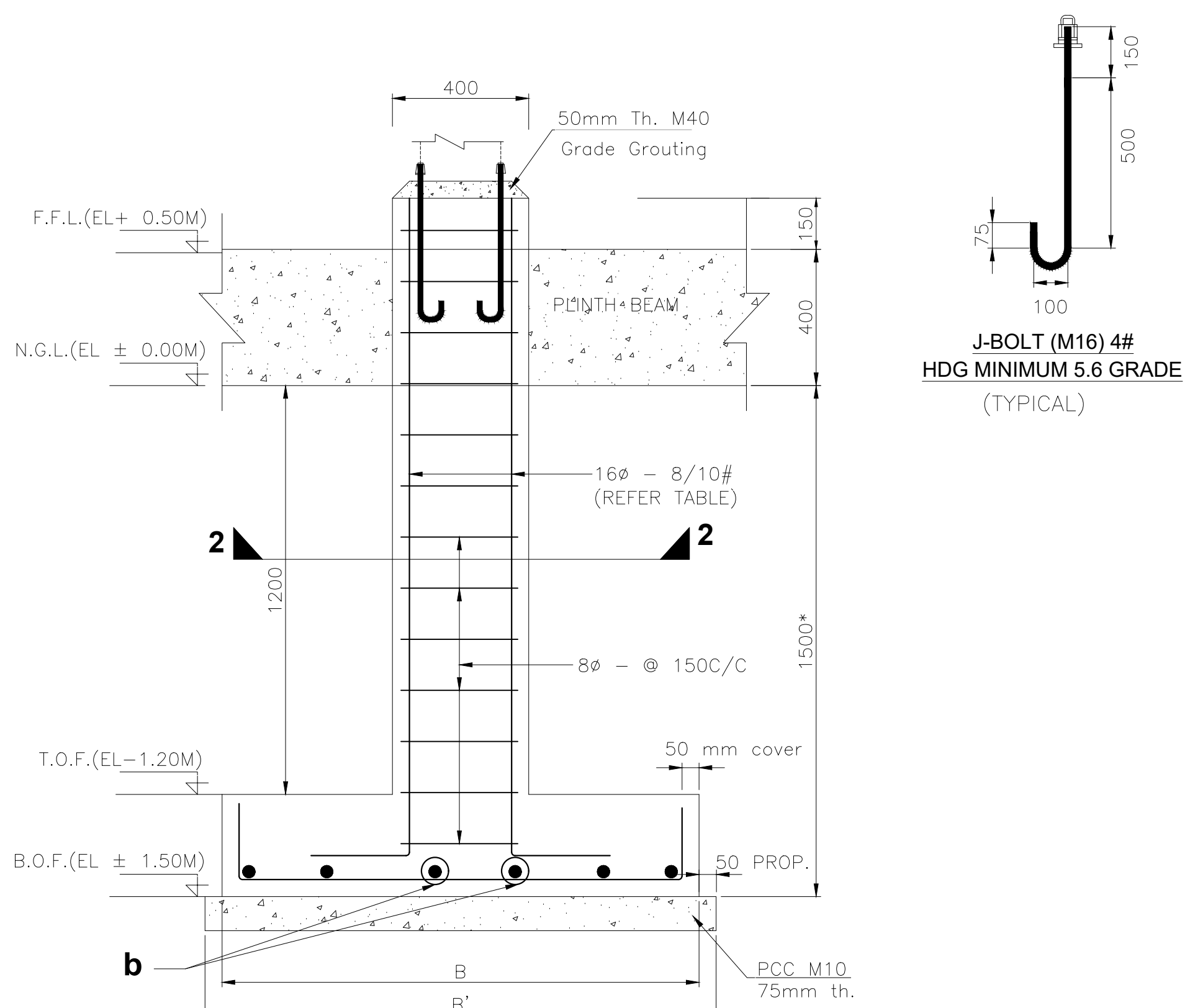
PLINTH BEAM ALONG GRID-1



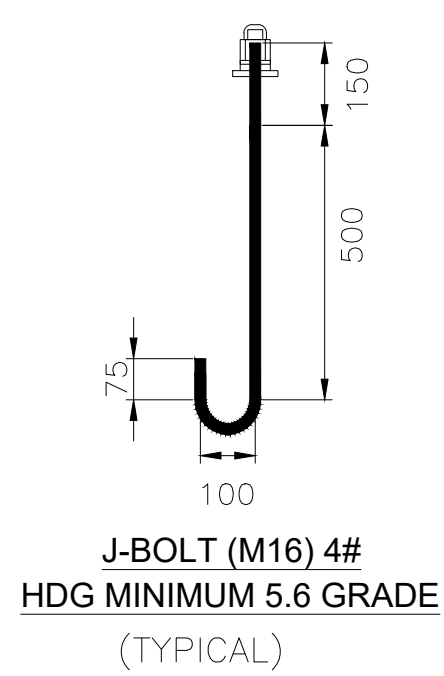
FOOTING PLAN. (TYPE F01)



FOUNDATION FOR INVERTER ROOM
AT EL. (- 1.20M)



SECTION 1-1
FOUNDATION DETAILS



NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
- GRADE OF CONCRETE SHALL BE M-30 WITH 20mm DOWN GRADED AGGREGATES
- REINFORCEMENT SHALL BE OF HIGH YIELD STRENGTH DEFORMED BAR OF GRADE Fe500 CONFORMING TO IS:1786
- MIN CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS FOOTING - 50MM, COLUMN - 50MM, PLINTH BEAM-50MM, SLAB-20MM.
- LAP LENGTH SHALL BE 50D WHERE D IS THE DIA OF THE SMALLER BAR BEING LAPPED
- LAPPING OF BARS SHALL BE SUITABLY STAGGERED AND IN NO CASE MORE THAN 50% BARS SHALL BE LAPPED AT ANY SECTION.
- ALL HOOKS, BENDS, LAPS AND SPLICES SHALL BE AS PER RELEVANT IS CODE
- BIDDER MAY CHOOSE BUILDING SPAN (C/C) FROM 5.5M TO 7.5M. FOUNDATION DETAILS HAVE BEEN MENTIONED FOR DIFFERENT RANGES OF SAFE BEARING CAPACITY (SBC). FOUNDATION COLUMN PEDESTAL, BASE PLATE, REINFORCEMENT DETAILS. SIZES ETC. SHALL BE DECIDED BASED ON TABLE-1 & TABLE-2 CONSIDERING THE SBC AND C/C SPAN. IN CASE OF SBC LESS THEN 5 T/SQM, FOUNDATION SHALL BE DESIGN BY BIDDER CONSIDERING PROJECT SPECIFIC CONDITIONS AND SHALL BE SUBMITTED FOR NTPC APPROVAL.
- NO FOUNDATION SHALL BE LAID ON BACK FILLED SOIL.
- IF ROCK IS ENCOUNTERED AT SHALLOW DEPTH, THEN FOUNDATION MAY BE PLACED AT TOP OF ROCKY STRATA, HOWEVER IN NO CASE DEPTH OF FOUNDATION SHALL BE LESS THAN 1M. SBC SHALL BE DECIDED BY GEOTECHNICAL INVESTIGATION WORK CARRIED OUT BY CONTRACTOR AND APPROVAL BY NTPC IN GEOTECHNICAL INVESTIGATION REPORT.
- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- PERIPHERAL GARLAND DRAIN SHALL BE MADE ALL AROUND THE PEB INVERTER ROOMS AND CONNECTED TO NEAR BY DRAINS.
- 750MM WIDE PLINTH PROTECTION WITH 100MM THK. PCC LAID OVER WELL COMPACTED 100MM DRY BRICK BALLAST ALL AROUND THE PEB ROOM IN LINE WITH TECHNICAL SPECIFICATION.
- THE FGL OF PEB ROOM SHALL BE MINIMUM 500MM ABOVE SURROUNDING NGL.
- ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED. THE THICKNESS OF GALVANIZATION SHALL BE IN LINE WITH IS4759. HOWEVER MINIMUM THICKNESS OF GALVANIZATION SHALL BE MAINTAINED AS 110 MICRON FOR ALL MEMBERS.
- BIDDER SHALL SUBMIT THE DETAILED FABRICATION DRAWING AND PUFF PANEL DETAILS (DEVELOPED BASED ON NTPC TENDER DRAWING AND TECHNICAL SPECIFICATION) FOR NTPC INFORMATION BEFORE START OF WORK. ALL WORKS SHALL BE EXECUTED IN LINE WITH APPROVED DRAWING'S.
- ALL BRACING'S LIKE BRC-1, BRC-2 SHALL BE CONTINUED IN EVERY ALTERNATE BAY IN CASE THE NO. OF BAYS ARE INCREASED. THE NO OF BAYS MAY BE REDUCED BASED ON BIDDER REQUIREMENT MAINTAINING THE BRACING IN EVERY ALTERNATE BAY. BIDDER SHALL ENSURE THAT THE BRACING IN BOTH THE DIAGONAL DIRECTIONS ARE PROVIDED IN PEB.
- THE OPENINGS SHOWN IN PEB ARE TENTATIVE VENDOR SHALL FINALIZE THE SAME DURING DETAILED ENGG. BASED ON NTPC APPROVAL. VENTILATION AND DUCTS SHALL BE DESIGN CONSIDERING HEAT CALCULATION AND SUBMIT FOR NTPC APPROVAL BEFORE EXECUTION/MANUFACTURING.
- THE SIZES OF FOUNDATION MENTIONED IN TABLE-1 FOR DIFFERENT RANGES OF SBC ARE MINIMUM SIZE TO BE ADOPTED BY BIDDER.
- THE SIZES OF STRUCTURAL STEEL MEMBERS IN TABLE-2 ARE MINIMUM SIZES TO BE ADOPTED FOR DIFFERENT RANGES OF SPAN.

TABLE -1, PART-A (FOR SPAN S=5.5M)

FOUNDATION REINFORCEMENT SCHEDULE									
S.NO.	SBC (IN T/SQM)	COLUMN	A	A'	B	B'	T	a	b
1	20 <= SBC	F01	1400	1500	1400	1500	300	12ø - @250c/c	12ø - @250c/c
2	10 <=SBC < 20	F01	1800	1900	1800	1900	325	12ø - @250c/c	12ø - @250c/c
3	7 <=SBC < 10	F01	2000	2100	2000	2100	350	12ø - @200c/c	12ø - @200c/c
4	5 = SBC < 7	F01	2200	2300	2200	2300	375	12ø - @200c/c	12ø - @200c/c

TABLE -1, PART-B (FOR 5.5M < SPAN <= 6.5M)

FOUNDATION REINFORCEMENT SCHEDULE									
S.NO.	SBC (IN T/SQM)	COLUMN	A	A'	B	B'	T	a	b
1	20 <= SBC	F01	1500	1600	1500	1600	325	12ø - @250c/c	12ø - @250c/c
2	10 <=SBC < 20	F01	1900	2000	1900	2000	350	12ø - @250c/c	12ø - @250c/c
3	7 <=SBC < 10	F01	2100	2200	2100	2200	375	12ø - @200c/c	12ø - @200c/c
4	5 = SBC < 7	F01	2300	2400	2300	2400	400	12ø - @200c/c	12ø - @200c/c

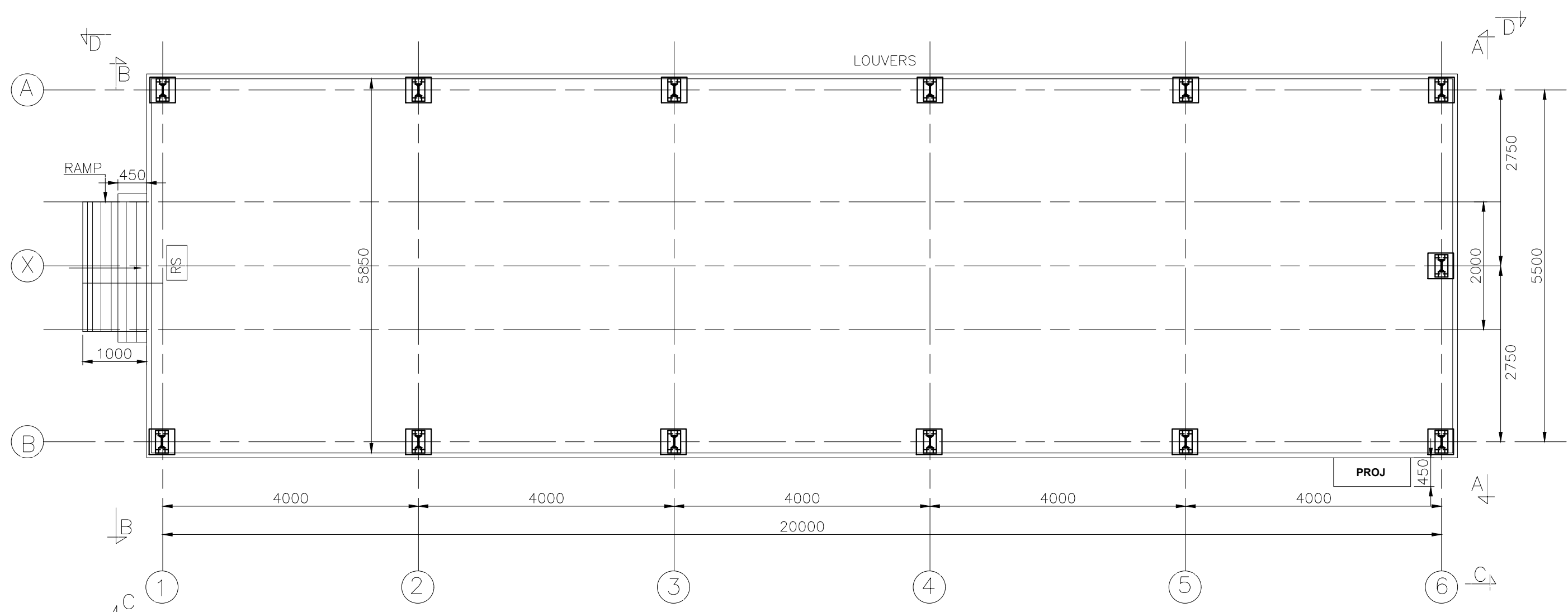
TABLE -1, PART-C (FOR 6.5M < SPAN <= 7.5M)

FOUNDATION REINFORCEMENT SCHEDULE									
S.NO.	SBC (IN T/SQM)	COLUMN	A	A'	B	B'	T	a	b
1	20 <= SBC	F01	1600	1700	1600	1700	350	12ø - @250c/c	12ø - @250c/c
2	10 <=SBC < 20	F01	2000	2100	2000	2100	375	12ø - @250c/c	12ø - @250c/c
3	7 <=SBC < 10	F01	2200	2300	2200	2300	400	12ø - @200c/c	12ø - @200c/c
4	5 = SBC < 7	F01	2400	2500	2400	2500	400	12ø - @200c/c	12ø - @200c/c

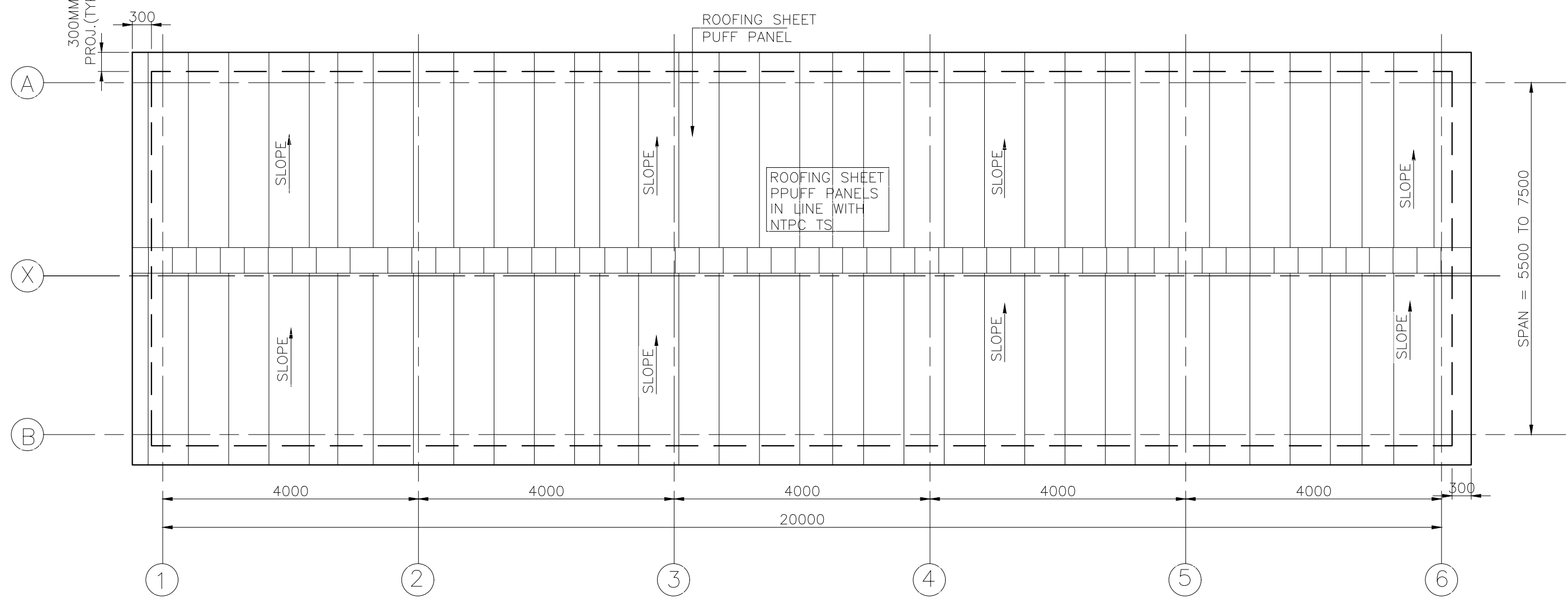
TABLE -2

SPAN (S)	COLOUMN / RAFTER	BASE PLATE SIZE	PEDESTAL SIZE	MAIN RAINFORCEMENT OF PEDESTAL
S = 5.5M	ISMB 200	350X200	400X400	16ø-8NOS
5.5M< S <=6.5M	ISMB 250	400X225	450X400	16ø-8NOS
6.5M< S <= 7.5M	ISMB 300	450X250	500X400	16ø-10NOS

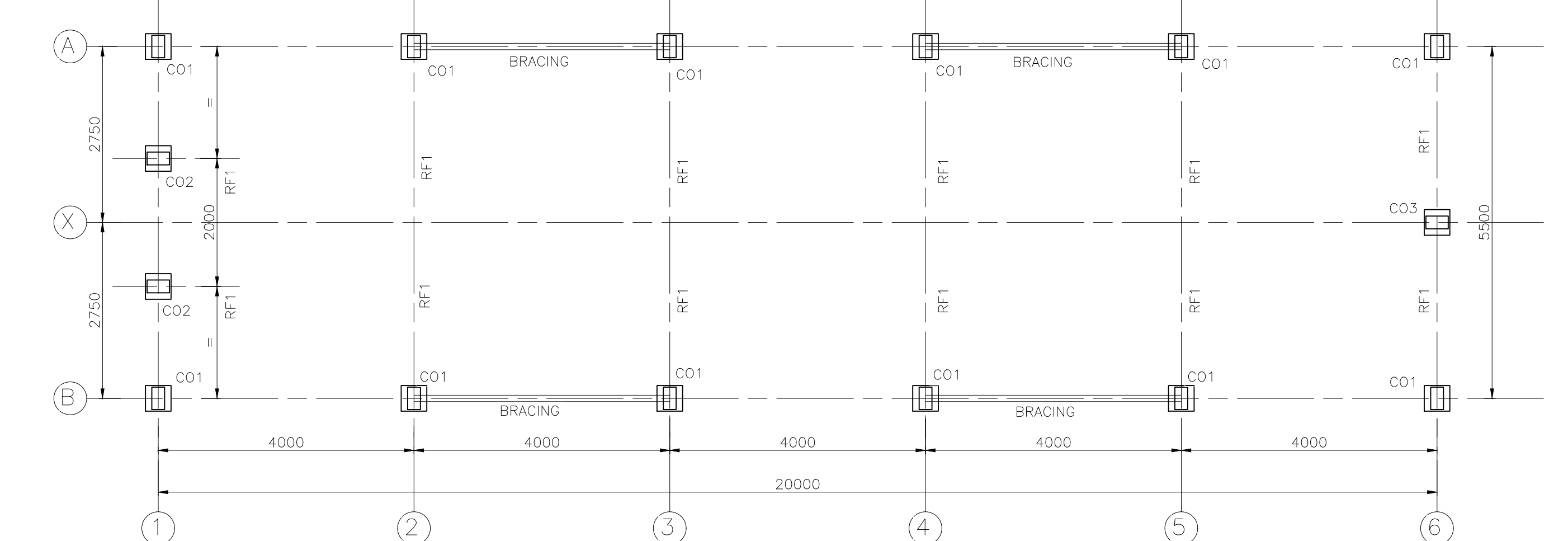
PREPARED BY	CHECKED BY	
	CIVIL	ELE.
RAM	SG	AT



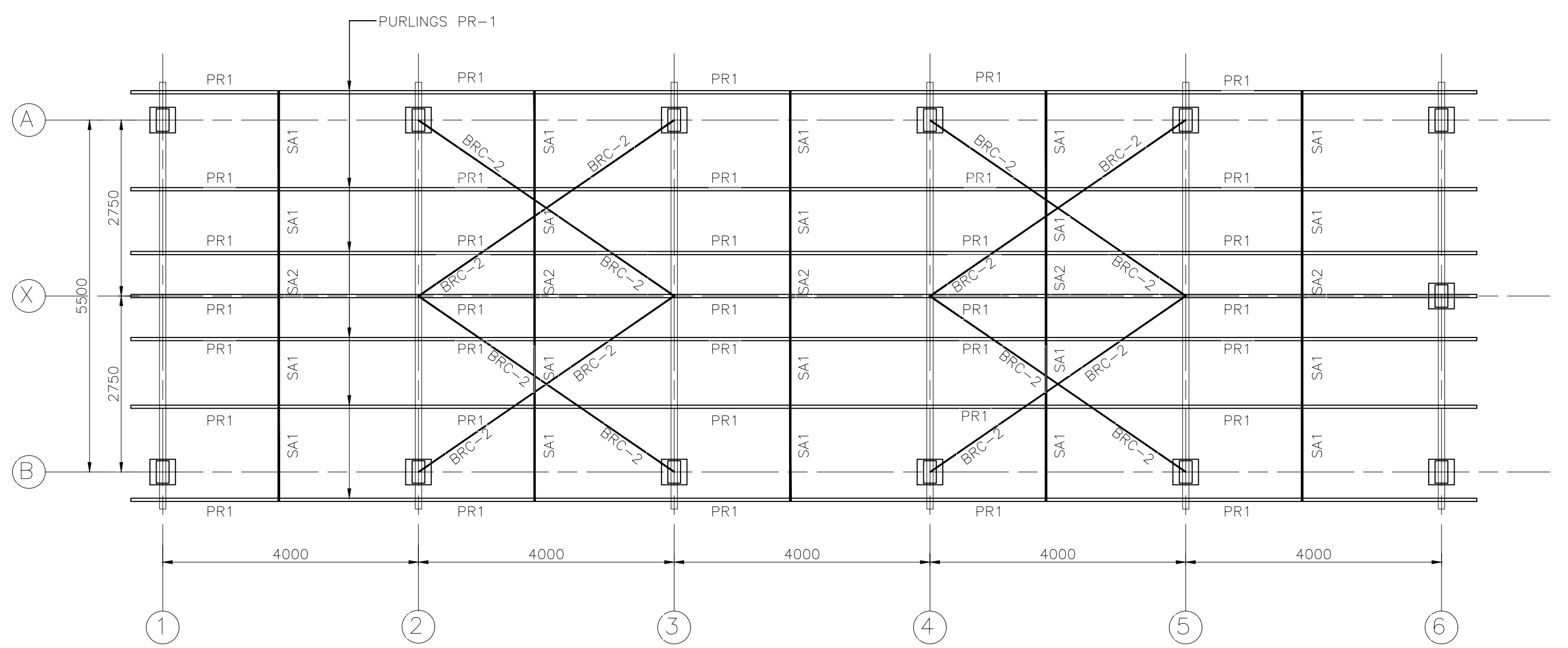
FLOOR PLAN (ELV +0.60M)



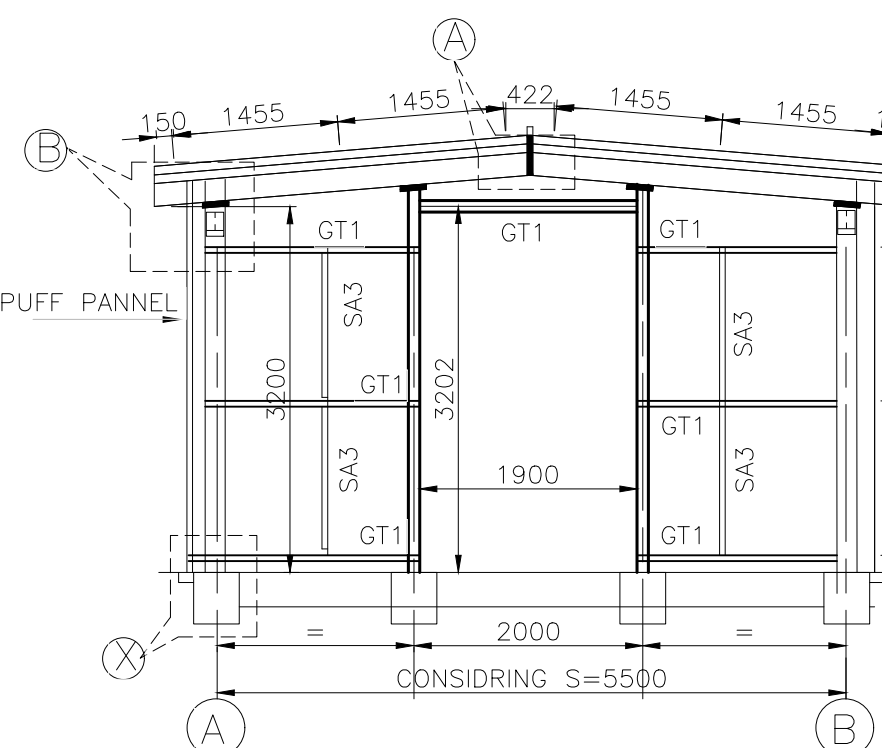
ROOF PLAN



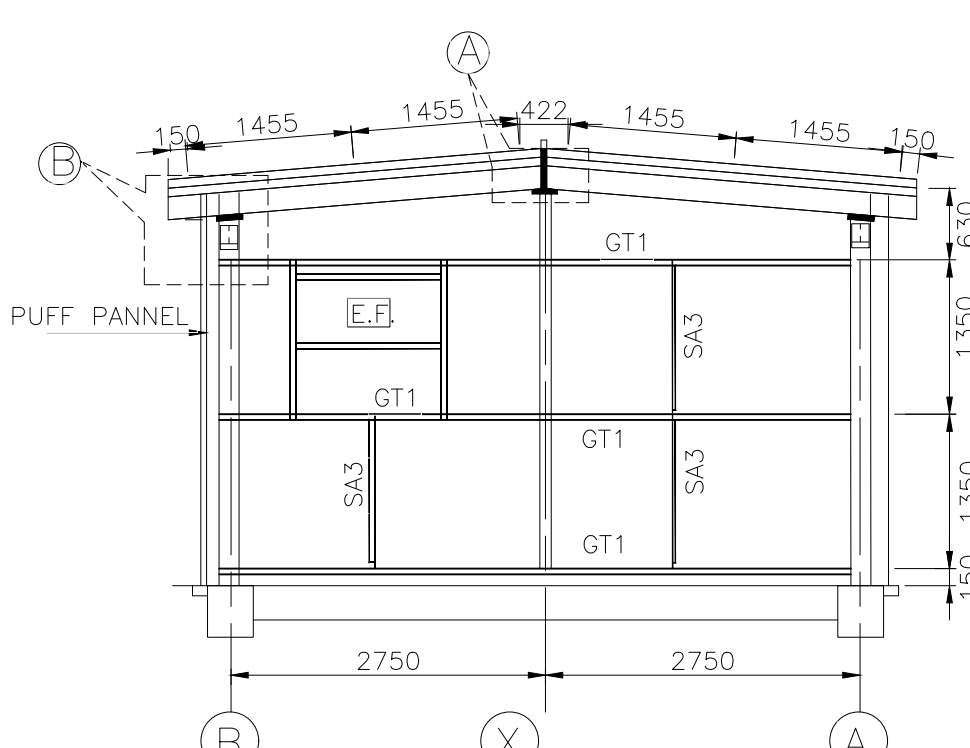
SIDE BRACING PLAN



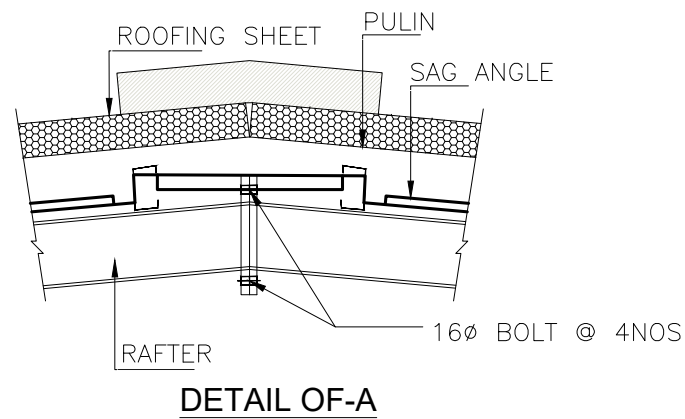
PURLINS PLANS & TOP BRACING PLAN



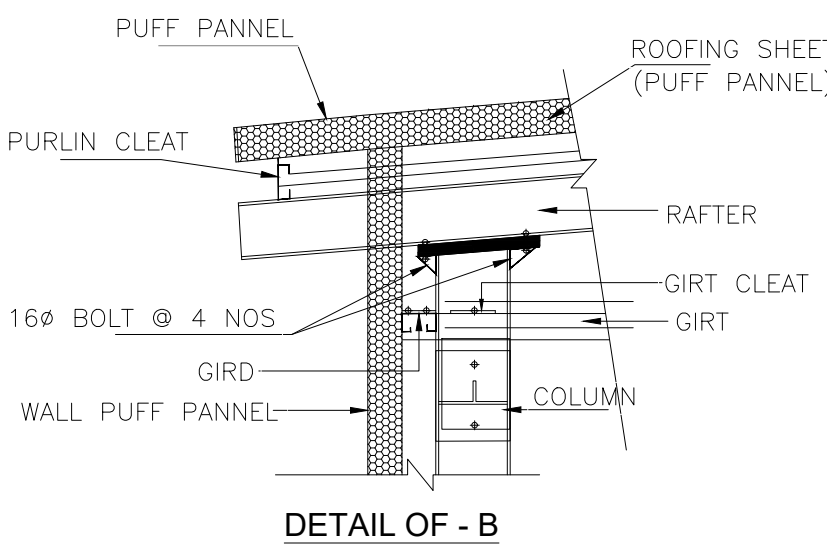
GABLE END ELEVATION ALONG GRID-1



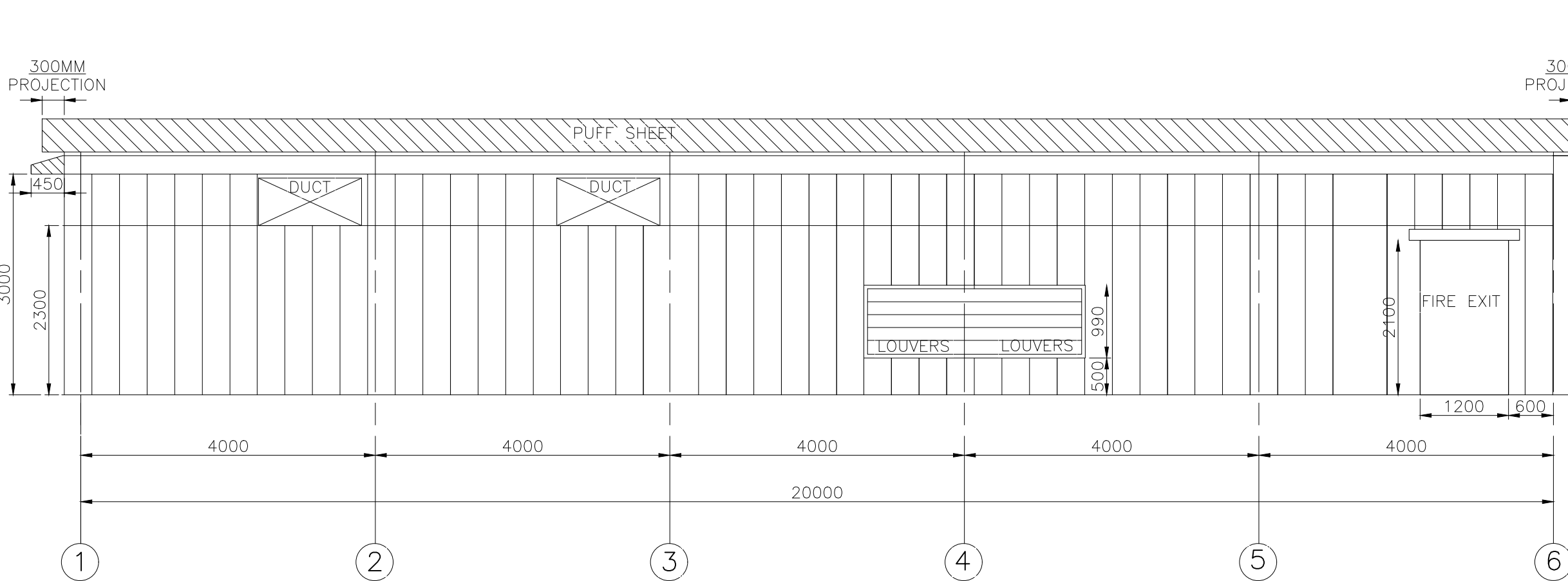
GABLE END ELEVATION ALONG GRID-6



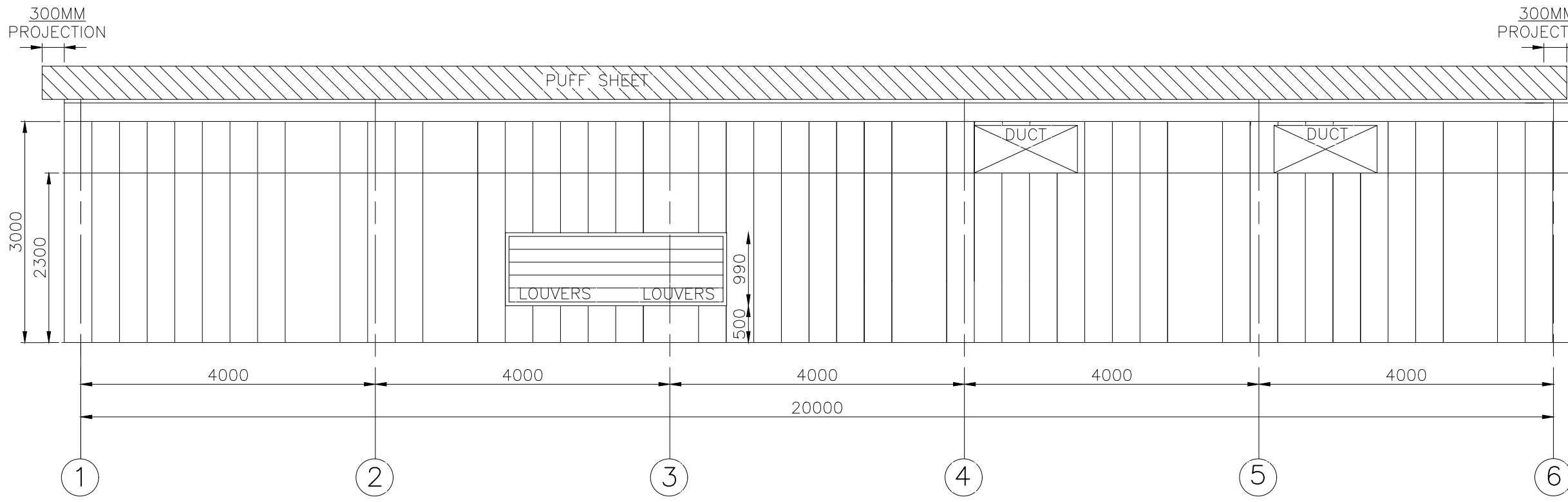
DETAIL OF-A



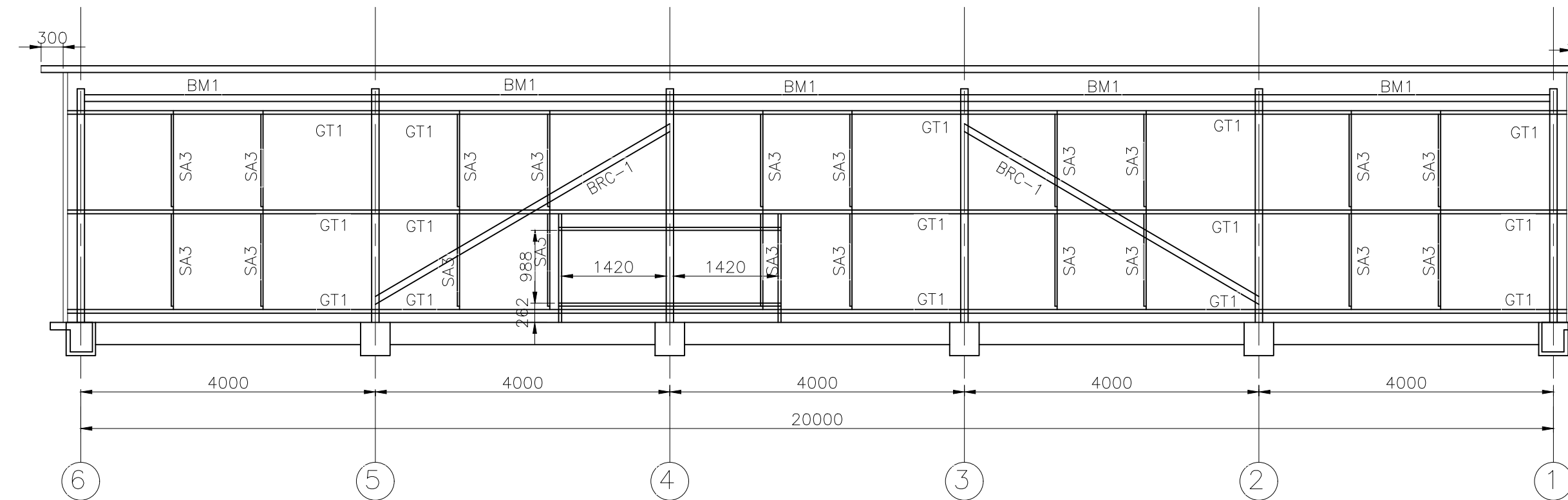
DETAIL OF -B



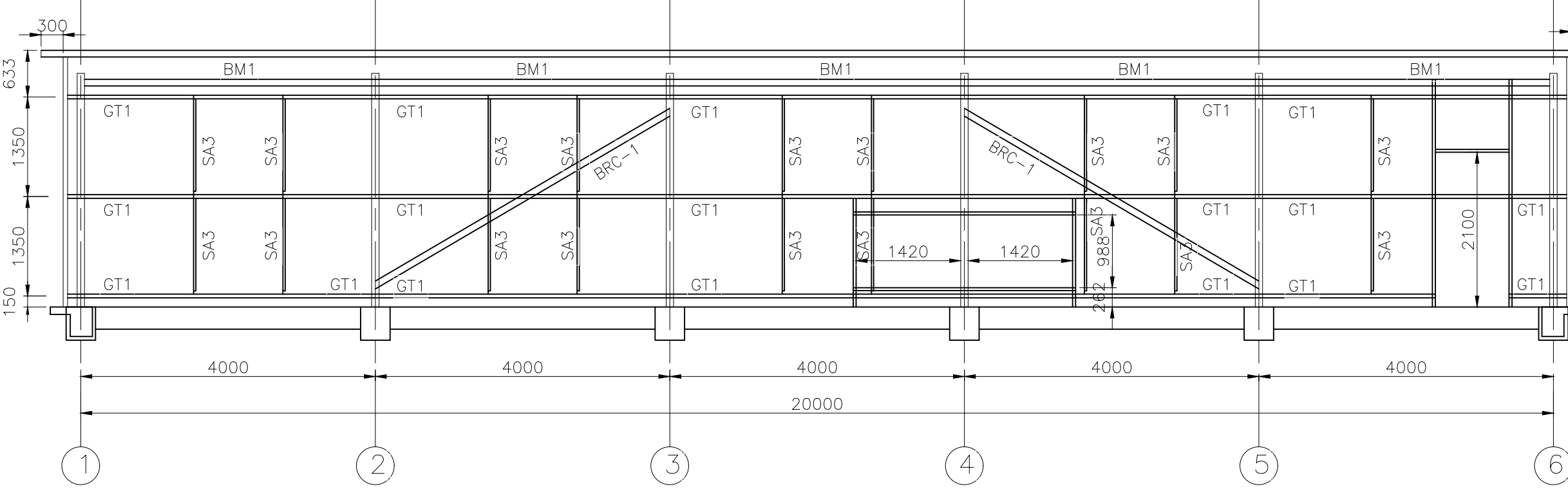
SIDE WALL ELEVATION ALONG GRID-B



SIDE WALL ELEVATION ALONG GRID-A



SIDE WALL MEMBERS VIEW ALONG GRID B

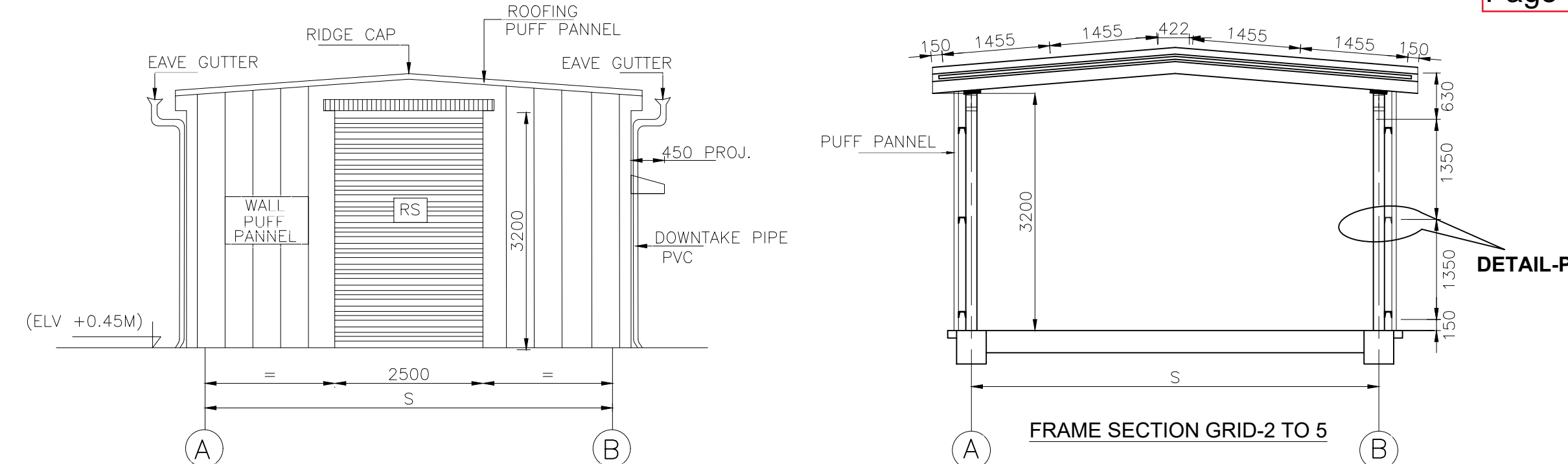


SIDE WALL MEMBERS VIEW ALONG GRID A

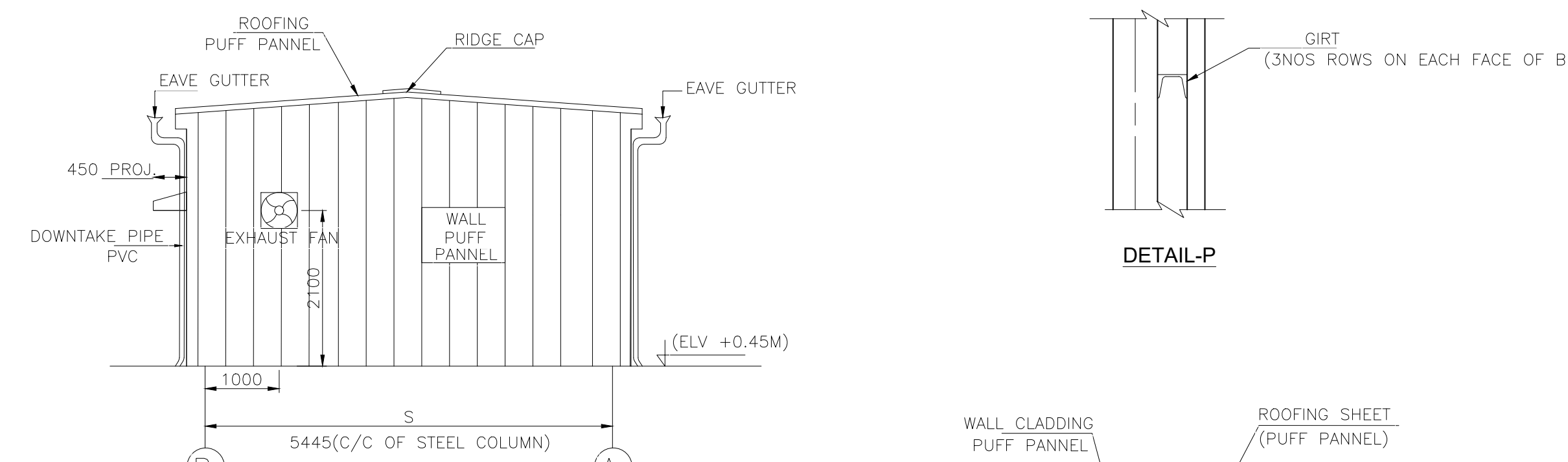
TABLE -2, BILL OF MATERIAL

S.NO	PART MARK	DESCRIPTION	SPAN (S)			SHAPE	MATERIAL SPECIFICATION	GRADE OF MATERIAL	GALVANIZATION COATING THICKNESS
			S = 5.5M	5.5M< S <= 6.5M	6.5M< S <= 7.5M				
1	PR1	C-PURLIN	100x50x20x3.15	100x50x20x3.15	100x50x20x3.15		COLD FORM	350	AS PER IS 4759
2	GT1	C-GIRT	100x50x20x3.15	100x50x20x3.15	100x50x20x3.15		COLD FORM	350	AS PER IS 4759
3	RF1	RAFTER	ISMB-200	ISMB-250	ISMB-300		HOT ROLLED	250	AS PER IS 4759
4	CO1	COLUMN	ISMB-200	ISMB-250	ISMB-300		HOT ROLLED	250	AS PER IS 4759
5	CO2	COLUMN	ISMB-200	ISMB-250	ISMB-300		HOT ROLLED	250	AS PER IS 4759
6	CO3	COLUMN	ISMB-200	ISMB-250	ISMB-300		HOT ROLLED	250	AS PER IS 4759
7	SP1	STRUT ANGLE	ANGLE-65x65x5	ANGLE-65x65x5	ANGLE-65x65x5		HOT ROLLED	250	AS PER IS 4759
8	BM1	BEAM HEADER	ISMB-150	ISMB-150	ISMB-150		HOT ROLLED	250	AS PER IS 4759
9	SA-1	SAG ANGLE	50X50X3	50X50X3	50X50X3		HOT ROLLED	250	AS PER IS 4759
10	SA-2	SAG ANGLE	50X50X3	50X50X3	50X50X3		HOT ROLLED	250	AS PER IS 4759
11	SA-3	SAG ANGLE	50X50X3	50X50X3	50X50X3		HOT ROLLED	250	AS PER IS 4759
12	BRC-1,BRC-2	STRUT PIPE	89MM (OD)	89MM (OD)	89MM (OD)		HOT ROLLED	250	AS PER IS 4759

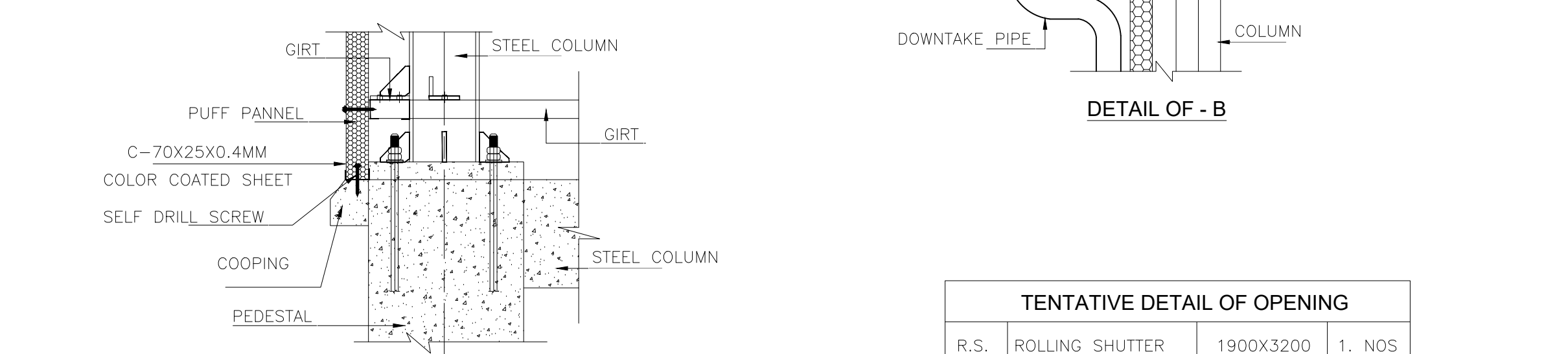
* PURLIN SPACING SHALL BE MAINTAINED AS MAXIMUM 1450 MM FOR ALL SIZES OF SPANS.



GABLE END ELEVATION ALONG GRID-1



GABLE END ELEVATION ALONG GRID-6



DETAILS OF -X

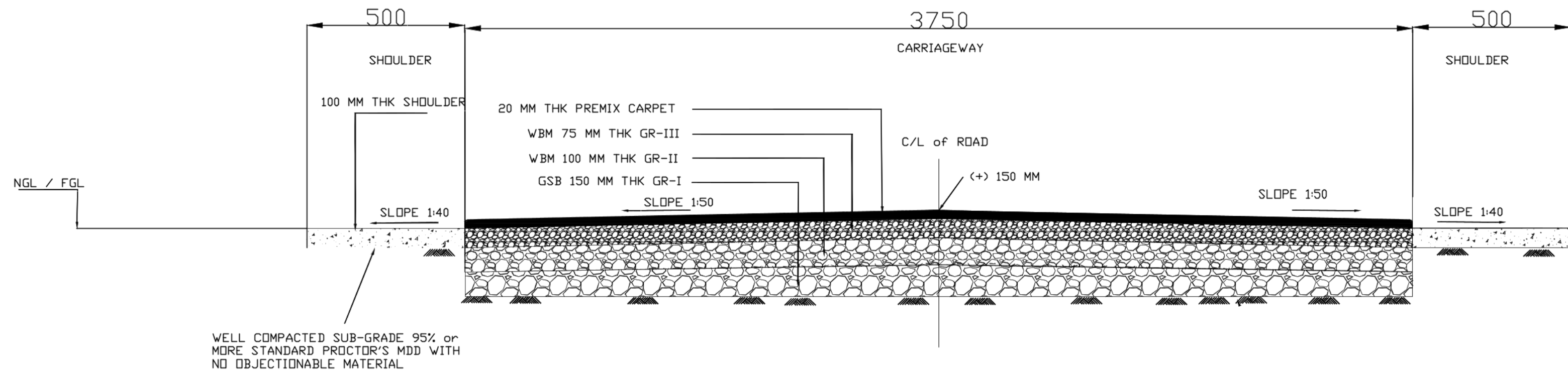
FLOOR & PUFF PANEL CONNECTION DETAIL

NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
- GRADE OF CONCRETE SHALL BE M-30 WITH 20mm DOWN GRADED AGGREGATES
- REINFORCEMENT SHALL BE OF HIGH YIELD STRENGTH DEFORMED BAR OF GRADE Fe500 CONFORMING TO IS:1786
- MIN CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS FOOTING - 50MM , COLUMN - 50MM, PLINTH BEAM-50MM, SLAB-20MM.
- LAP LENGTH SHALL BE 50D WHERE D IS THE DIA OF THE SMALLER BAR BEING LAPPED
- LAPPING OF BARS SHALL BE SUITABLY STAGGERED AND IN NO CASE MORE THAN 50% BARS SHALL BE LAPPED AT ANY SECTION.
- ALL HOOKS, BENDS, LAPS AND SPLICES SHALL BE AS PER RELEVANT IS CODE
- BIDDER MAY CHOOSE BUILDING SPAN (C/C) FROM 5.5M TO 7.5M. FOUNDATION DETAILS HAVE BEEN MENTIONED FOR DIFFERENT RANGES OF SAFE BEARING CAPACITY (SBC). FOUNDATION COLUMN PEDESTAL, BASE PLATE, REINFORCEMENT DETAILS, SIZES ETC SHALL BE DECIDED BASED ON TABLE-1 & TABLE-2 CONSIDERING THE SBC AND C/C SPAN. IN CASE OF SBC LESS THEN 5 T/SQM, FOUNDATION SHALL BE DESIGN BY BIDDER CONSIDERING PROJECT SPECIFIC CONDITIONS AND SHALL BE SUBMITTED FOR NTPC APPROVAL.
- NO FOUNDATION SHALL BE LAID ON BACK FILLED SOIL.
- IF ROCK IS ENCOUNTERED AT SHALLOW DEPTH THEN FOUNDATION MAY BE PLACED AT TOP OF ROCKY STRATA, HOWEVER IN NO CASE DEPTH OF FOUNDATION SHALL BE LESS THAN 1M. SBC SHALL BE DECIDED BY GEOTECHNICAL INVESTIGATION WORK CARRIED OUT BY CONTRACTOR AND APPROVAL BY NTPC IN GEOTECHNICAL INVESTIGATION REPORT.
- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- PERIPHERAL GARLAND DRAIN SHALL BE MADE ALL AROUND THE PEB INVERTER ROOMS AND CONNECTED TO NEAR BY DRAINS.
- 750MM WIDE PLINTH PROTECTION WITH 75MM THK. PCC LAID OVER WELL COMPACTED 75MM DRY BRICK BALLAST ALL AROUND THE PEB ROOM IN LINE WITH TECHNICAL SPECIFICATION.
- THE FGL OF PEB ROOM SHALL BE MINIMUM 500MM ABOVE SURROUNDING NGL.
- ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED. THE THICKNESS OF GALVANIZATION SHALL BE IN LINE WITH IS4759. HOWEVER MINIMUM THICKNESS OF GALVANIZATION SHALL BE MAINTAINED AS 110 MICRON FOR ALL MEMBERS.
- BIDDER SHALL SUBMIT THE DETAILED FABRICATION DRAWING AND PUFF PANEL DETAILS (DEVELOPED BASED ON NTPC TENDER DRAWING AND TECHNICAL SPECIFICATION) FOR NTPC INFORMATION BEFORE START OF WORK.
- ALL WORKS SHALL BE EXECUTED IN LINE WITH APPROVED DRAWINGS.
- ALL BRACING LIKE BRC-1, BRC-2 SHALL BE CONTINUED IN EVERY ALTERNATE BAY IN CASE THE NO. OF BAYS ARE INCREASED. THE NO OF BAYS MAY BE REDUCED BASED ON BIDDER REQUIREMENT MAINTAINING THE BRACING IN EVERY ALTERNATE BAY. BIDDER SHALL ENSURE THAT THE BRACING IN BOTH THE DIAGONAL DIRECTIONS ARE PROVIDED IN PEB.
- THE OPENINGS SHOWN IN PEB ARE TENTATIVE. VENDOR SHALL FINALIZE THE SAME DURING DETAILED ENGG. BASED ON NTPC APPROVAL. VENTILATION AND DUCTS SHALL BE DESIGN CONSIDERING HEAT CALCULATION AND SUBMIT FOR NTPC APPROVAL BEFORE EXECUTION/MANUFACTURING
- THE SIZES OF FOUNDATION MENTIONED IN TABLE-1 FOR DIFFERENT RANGES OF SBC ARE MINIMUM SIZE TO BE ADOPTED BY BIDDER.
- THE SIZES OF STRUCTURAL STEEL MEMBERS IN TABLE-2 ARE MINIMUM SIZES TO BE ADOPTED FOR DIFFERENT RANGES OF SPAN.

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TYPICAL CROSS SECTION OF APPROACH & Switchyard ROADS (Inside the Plot)

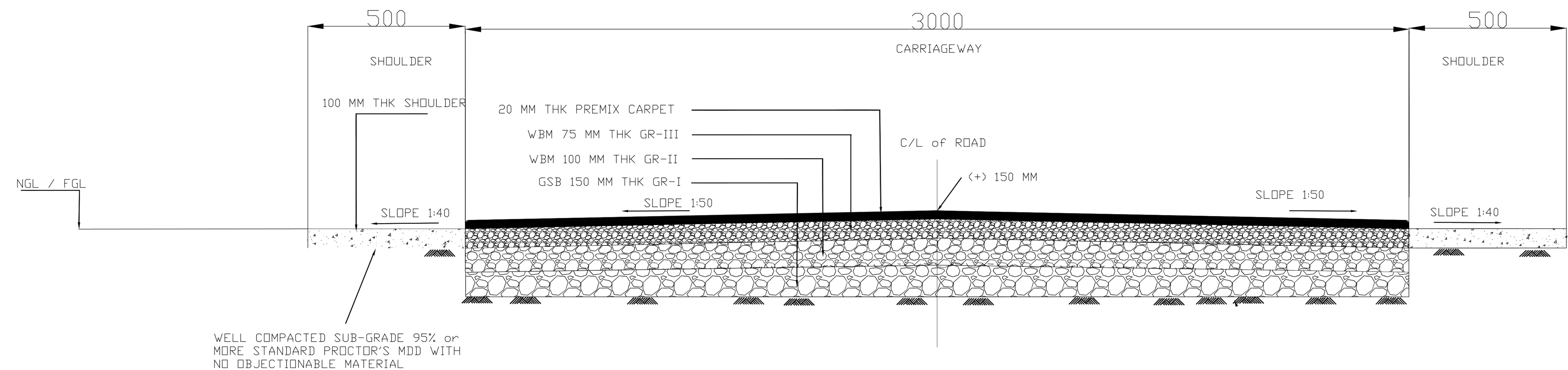


TYPICAL SECTION FOR ROADS

NOTES:

1. ALL DIMENSIONS ARE IN MM AND LEVELS IN METERS.
2. THE LEVEL AT THE TOP OF THE ROAD SHALL CORRESPOND TO THE LEVEL AT THE TOP OF BITUMINOUS CARPET AT THE CENTER OF THE ROAD.
3. CAMBER SHALL BE PROVIDED AT SUB-GRADE LEVEL
4. CBR VALES OF THE SUB-GRADE LEVEL SHOULD BE MIN. 4%. IF THE ACTUAL CBR IS LESS THAN 4% IN A PARTICULAR STRETCH THEN THE SAME MATERIAL SHALL BE MODIFIED WITH INCREASE IN GSB THICKNESS.
5. THE SHOULDERS ON BOTH SIDE OF THE ROAD SHALL BE PROPERLY COMPACTED.
6. THE ROAD SHALL BE MINIMUM 150 MM ABOVE FGL.
7. WBM 100 MM THK AMY BE MODIFIED TO 75 MM THK FOR WBM CONSTRUCTION WITH CORRESPONDING INCREASE OF 50 MM IN GSB THICKNESS.
8. ROADS WOULD BE SUITABLY CONNECTED WITH SLOPING APPROACHES WITH MAIN ROAD BY THE BIDDER WHERE EVER SUCH CONNECTIONS ARE ENVISAGED.

TYPICAL CROSS SECTION OF INTERNAL ROADS (Inside the Plot)



TYPICAL SECTION FOR ROADS

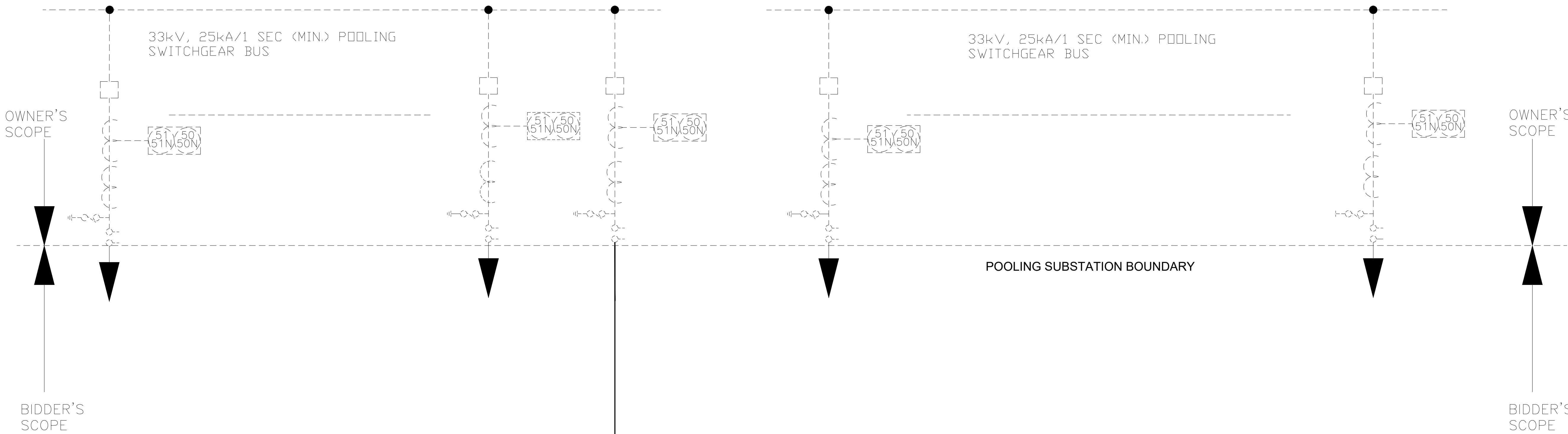
NOTES:

1. ALL DIMENSIONS ARE IN MM AND LEVELS IN METERS.
2. THE LEVEL AT THE TOP OF THE ROAD SHALL CORRESPOND TO THE LEVEL AT THE TOP SHALL CORRESPOND TO THE LEVEL AT THE TOP OF BITUMINOUS CARPET AT THE CENTER OF THE ROAD.
3. CAMBER SHALL BE PROVIDED AT SUB-GRADE LEVEL
4. CBR VALES OF THE SUB-GRADE LEVEL SHOULD BE MIN. 4%. IF THE ACTUAL CBR IS LESS THAN 4% IN A PARTICULAR STRETCH THEN THE SAME MATERIAL SHALL BE MODIFIED WITH INCREASE IN GSB THICKNESS.
5. THE SHOULDERS ON BOTH SIDE OF THE ROAD SHALL BE PROPERLY COMPACTED.
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8. ROADS WOULD BE SUITABLY CONNECTED WITH SLOPING APPROACHES WITH MAIN ROAD BY THE BIDDER WHERE EVER SUCH CONNECTIONS ARE ENVISAGED.

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33 kV MAIN POOLING INDOOR SWITCHGEAR AT OWNER'S POOLING SUBSTATION SWITCHYARD

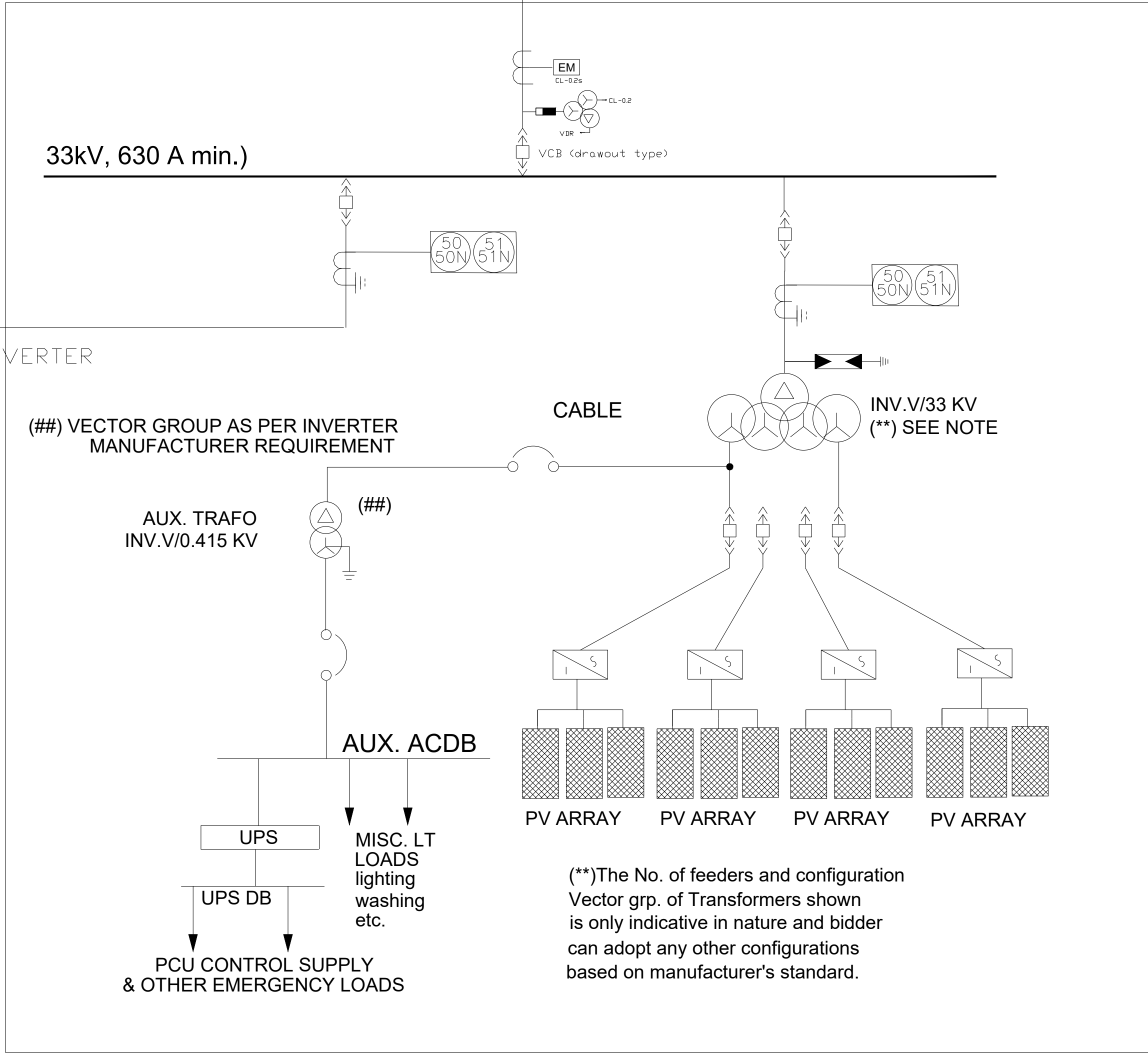
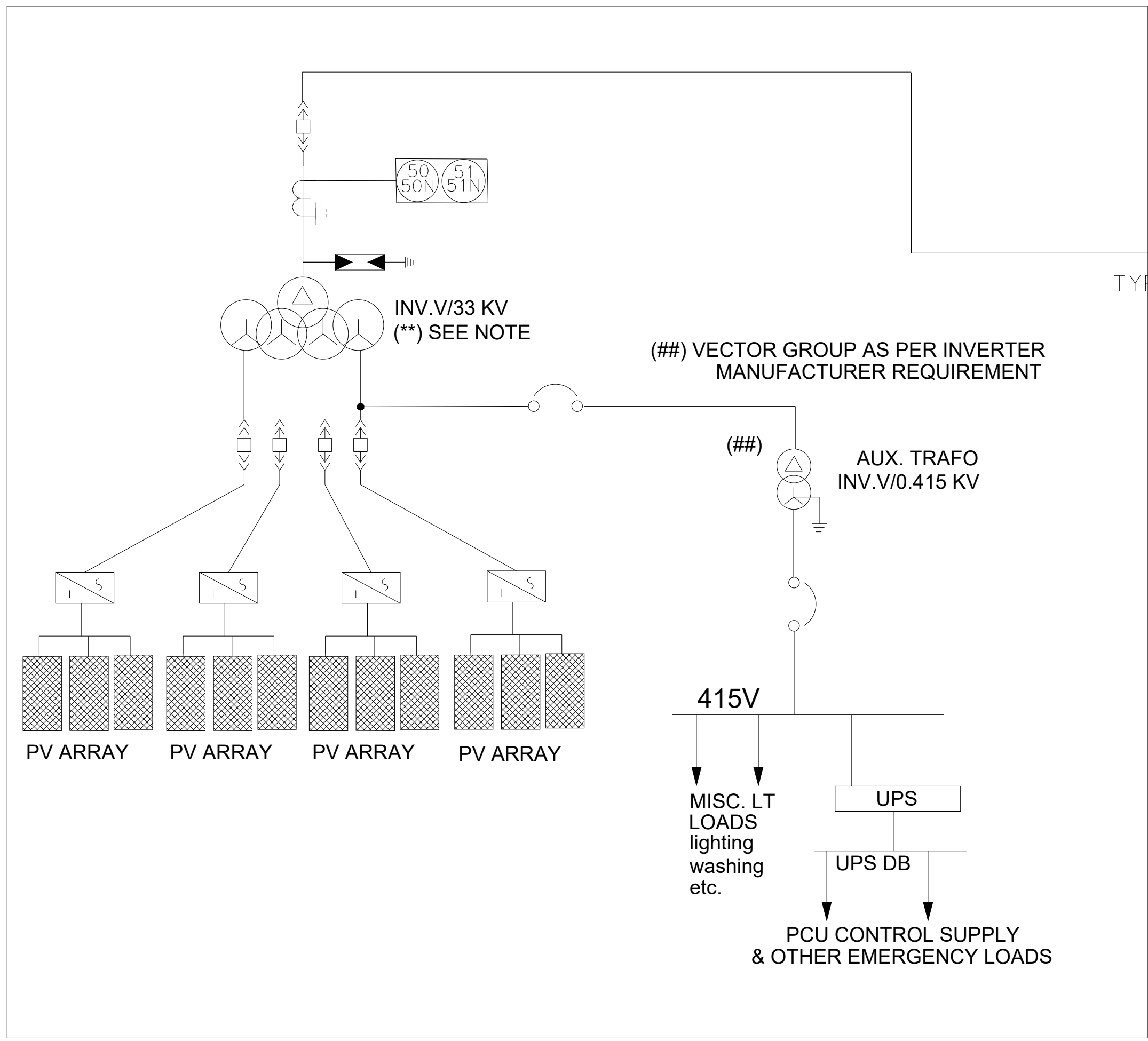


THE MAXIMUM NUMBER OF 33KV INCOMER FEEDERS AVAILABLE AT 33KV MAIN POOLING SWITCHGEAR OF OWNER'S POOLING SUBSTATION, FOR INTERCONNECTION OF SOLAR PLANT CABLES, DYNAMIC REACTIVE POWER COMPENSATION EQUIPMENT AND HARMONIC FILTERS OF 400MW SOLAR BLOCK IS TWENTY SIX(26) AND OF 500MW SOLAR BLOCK IS THIRTY THREE (33). THE POWER FROM THE BLOCKS SHALL BE EQUALLY DIVIDED (TO THE EXTENT POSSIBLE) AMONG THE ABOVE 33KV FEEDERS DESIGNATED FOR THE RESPECTIVE BLOCKS. 33KV CABLES SHALL BE SUITABLY SIZED TO CARRY THE POWER FROM SOLAR PLANT. NO ADDITIONAL FEEDERS WILL BE PROVIDED BEYOND THE SPECIFIED NUMBER OF FEEDERS FOR INTERCONNECTION OF SOLAR BLOCKS, HARMONIC FILTERS, REACTIVE POWER COMPENSATION EQUIPMENT ETC.

(Max. 35 MW)
33kV CABLES

ALTERNATE CONFIGURATION TO LOCAL POOLING SWITCHGEAR :-

BIDDER CAN DIRECTLY TERMINATE CABLE (UPTO 2 SETS) FROM UPTO TWO SEPARATE SAME CAPACITY SOLAR INVERTER BLOCKS (WITH ICOG) AT ONE MAIN POOLING STATION 33kV FEEDER. IF THE INVERTER BLOCK (WITH ICOG) PROPOSED BY THE BIDDER FOR TERMINATION AT ONE NTPC REL'S 33kV POOLING SWITCHGEAR FEEDER ARE OF DIFFERENT CAPACITY FROM THE OTHER, THEN THE SAME MAY ALSO BE ALLOWED FOR INTERCONNECTION TO THE SAME FEEDER, AFTER REVIEWING THE INVERTER BLOCK CAPACITIES TAKING INTO ACCOUNT THE ELECTRICAL PROTECTION REQUIREMENTS.



NOTES:

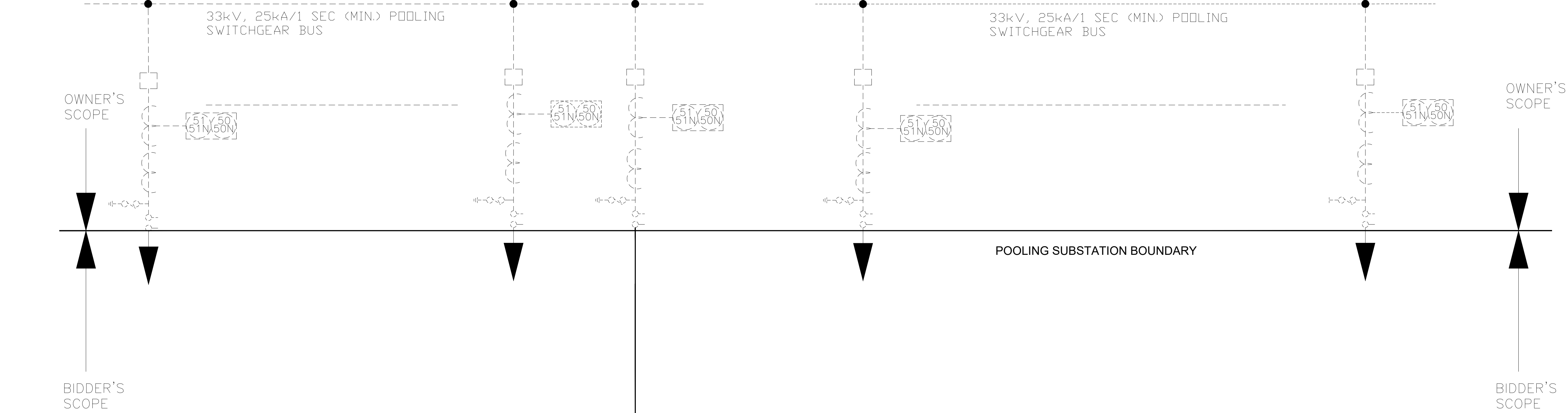
- THERE IS NO CMCS BUILDING ENVISAGED FOR THE 400MW AND 500MW SOLAR PROJECTS UNDER BIDDER'S SCOPE. BIDDER SHALL PLACE THE SCADA/OWS/EWS PANEL, AT OWNER'S RESPECTIVE POOLING SUBSTATION SWITCHYARD CONTROL BUILDING. NTPC REL SHALL PROVIDE REDUNDANT 220V DC AND 230V AC SUPPLY SOURCE TO THE BIDDER FOR SCADA/OWS/EWS PANEL AT OWNER'S SWITCHYARD CONTROL ROOM. NECESSARY WIRING IS IN BIDDER'S SCOPE. BIDDER SHALL PROVIDE SUITABLE UPS WITH BACK UP TIME AS MENTIONED IN THE TECHNICAL SPECIFICATIONS FOR THE AFORESAID EQUIPMENT IN OWNER'S SWITCHYARD CONTROL BUILDING (AS REQUIRED).
- IN CASE OF OUTDOOR INVERTER, THE INBUILT LT TRANSFORMER FOR AUX SUPPLY SHOULD BE DESIGNED AND SIZED IN ORDER TO TAKE CARE OF ALL EMERGENCY LOADS AND MISCELLANEOUS LOADS RELATED TO MAINTENANCE ACTIVITY WITH REDUNDANCY.
- SUITABLE UPS AND/OR DC SYSTEM WITH BACK UP AS PER TS IS TO BE PROVIDED FOR AUXILIARY POWER SUPPLY FOR PCS (IF REQUIRED) AND OTHER PROTECTION, CONTROL AND ANY EMERGENCY LOADS.
- THE INVERTER TRANSFORMER ARRANGEMENT SHOWN IS TYPICAL, THE TRANSFORMER CONFIGURATION, VECTOR GROUP, IMPEDANCE, INSULATION CLASS ETC. AS PER INVERTER MANUFACTURER RECOMMENDED DESIGN PARAMETER /ARRANGEMENT.
- BIDDER SHALL USE 33KV CABLES FOR CONNECTING FROM LOCAL POOLING SWITCHGEAR/ICOG (AS APPLICABLE) TO OWNER'S 33KV MAIN POOLING SWITCHGEAR DIRECTLY. SUPPLY OF CABLES AND ACCESSORIES INCLUDING JOINTING AND TERMINATION KITS INCLUDING LAYING AND TERMINATION SHALL BE IN THE SCOPE OF THE BIDDER.
- OTOT TEST SHALL BE PERFORMED AT THE METERING POINT SPECIFIED IN TECHNICAL SPECIFICATION.
- BIDDER MAY USE LOCAL POOLING SWITCHGEAR FOR LOCAL POOLING OR CONNECT INVERTER TRANSFORMER OUTPUT TO THE 33KV POOLING SWITCHGEAR THROUGH ICOG TYPE BREAKER PANEL AT INVERTER TRANSFORMER END.
- BIDDER TO PROVIDE ALL TECHNICAL DETAILS INCLUDING INVERTER PSSE MODEL, PSCAD MODEL & INVERTER BENCHMARKING REPORT TO NTPC REL AND FACILITATE NTPC REL FOR CONDUCTING GRID CONNECTIVITY COMPLIANCE AS PER LATEST CEA TECHNICAL STANDARD FOR CONNECTIVITY TO GRID AND ACTUAL REQUIREMENT OF INVERTER DETAILS SHALL BE INTIMATED BY NTPC REL DURING DETAILED ENGINEERING.
- INVERTER SHALL BE PROVIDED WITH DUAL OR MULTIMASTER FACILITY & VMS SHALL BE PROVIDED WITH DUAL OR SINGLE MASTER FACILITY.
- BIDDER TO PROVIDE NECESSARY ARRANGEMENT TO TRANSMIT SOLAR PLANT DATA TO STATE LDC/RLDC/REMC AS PER TELEMETRY REQUIREMENT OF RELEVANT REGULATION, GUIDELINES. NECESSARY COMMUNICATION INFRASTRUCTURE/SOFTWARE IN THIS REGARD UPTO LDC SHALL BE UNDER BIDDER'S SCOPE. BIDDER SHALL USE PROPOSED FOTE PANEL TO BE INSTALLED AT NTPC REL SWITCHYARD CONTROL ROOM FOR SOLAR SCADA DATA AVAILABILITY TO RLDC/REMC. IF ANY MODIFICATIONS /UPGRADATION IS REQUIRED AT FOTE, IT SHALL BE DONE BY THE BIDDER.
- THE METALLIC SCREEN/ARMOUR OF CORE AND CONDUCTOR OF HT CABLES SHALL BE CAPABLE OF CARRYING SYSTEM EARTH FAULT CURRENT.
- HARMONIC FILTERS SHALL BE INSTALLED AT NECESSARY LOCATIONS KEEPING IN VIEW OF POWER TRANSFORMER CONFIGURATION OF INDIVIDUAL BLOCKS SUCH THAT THE STATUTORY REQUIREMENTS AT POI ARE MET WITH.
- SUPPLY OF SOLAR PV MODULES IS NOT IN THE SCOPE OF THE BIDDER.

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33 kV MAIN POOLING INDOOR SWITCHGEAR AT OWNER'S POOLING SUBSTATION SWITCHYARD



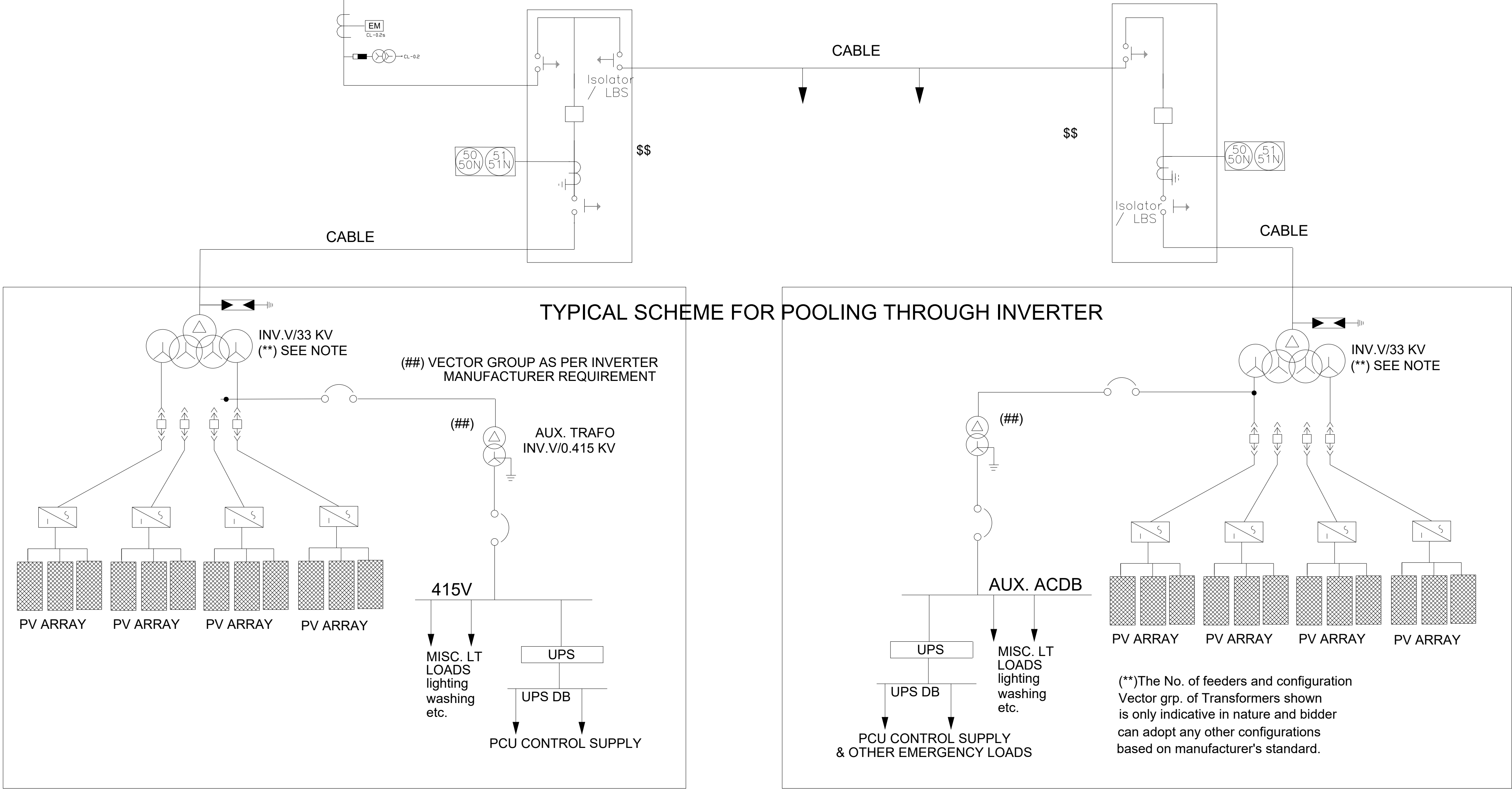
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(Max. 35 MW)
33kV CABLES

\$\$ BIDDER CAN FOLLOW ANY OF THE FOLLOWING ARRANGEMENT TO ACHIEVE

1. BIDDER MAY OFFER OUTDOOR ARRANGEMENT WITH VCB,CT AND ISOLATOR. ASSOCIATED RELAY PANEL SHALL BE KEPT WITHIN SUITABLE KIOSK .
2. BIDDER MAY OFFER THE PROPOSED ARRANGEMENT USING 33KV
3. BIDDER MAY OFFER STANDALONE SWITCHGEAR PANEL FOR INVERTER TRANSFORMER FEEDER INSIDE THE INVERTER ROOM AND CONNECT THROUGH SUITABLE OUTDOOR ISOLATOR.
4. ISOLATOR SHALL BE LOCATED IN RING SO THAT EACH SECTION OF RING CAN BE ISOLATED, SUBJECTED TO APPROVAL DURING DETAIL ENGINEERING.
5. PROTECTION SCHEME IN RMU AS PER RELATED SPECIFICATION.



NOTES:

1. THERE IS NO CMCS BUILDING ENVISAGED FOR THE 450MW AND 300MW SOLAR PROJECTS UNDER BIDDER'S SCOPE. BIDDER SHALL PLACE THE SCADA/OWSEWS PANEL. AT OWNER'S RESPECTIVE POOLING SUBSTATION SWITCHYARD CONTROL BUILDING. NTPC REL SHALL PROVIDE REDUNDANT 220V DC AND 230V AC SUPPLY SOURCE TO THE BIDDER FOR SCADA/OWSEWS PANEL AT OWNER'S SWITCHYARD CONTROL ROOM. NECESSARY WIRING IS IN BIDDER'S SCOPE. BIDDER SHALL PROVIDE SUITABLE UPS WITH BACK UP TIME AS MENTIONED IN THE TECHNICAL SPECIFICATIONS FOR THE AFORESAID EQUIPMENT IN OWNER'S SWITCHYARD CONTROL BUILDING (AS REQUIRED).
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