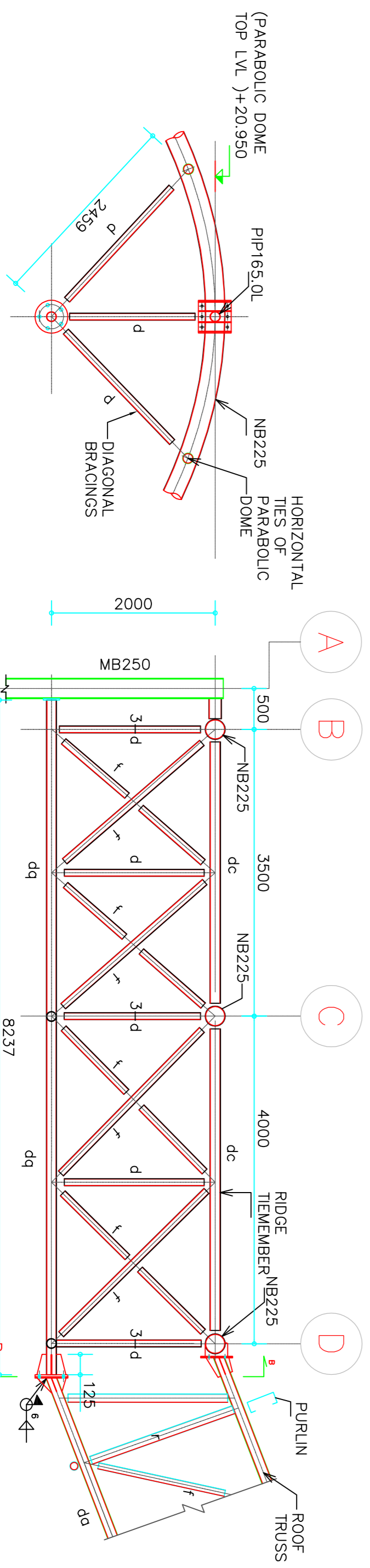


SCALE 1:100

**TYPICAL SECTIONAL  
VIEW B-B**  
(LONGITUDINAL DIRECTION)

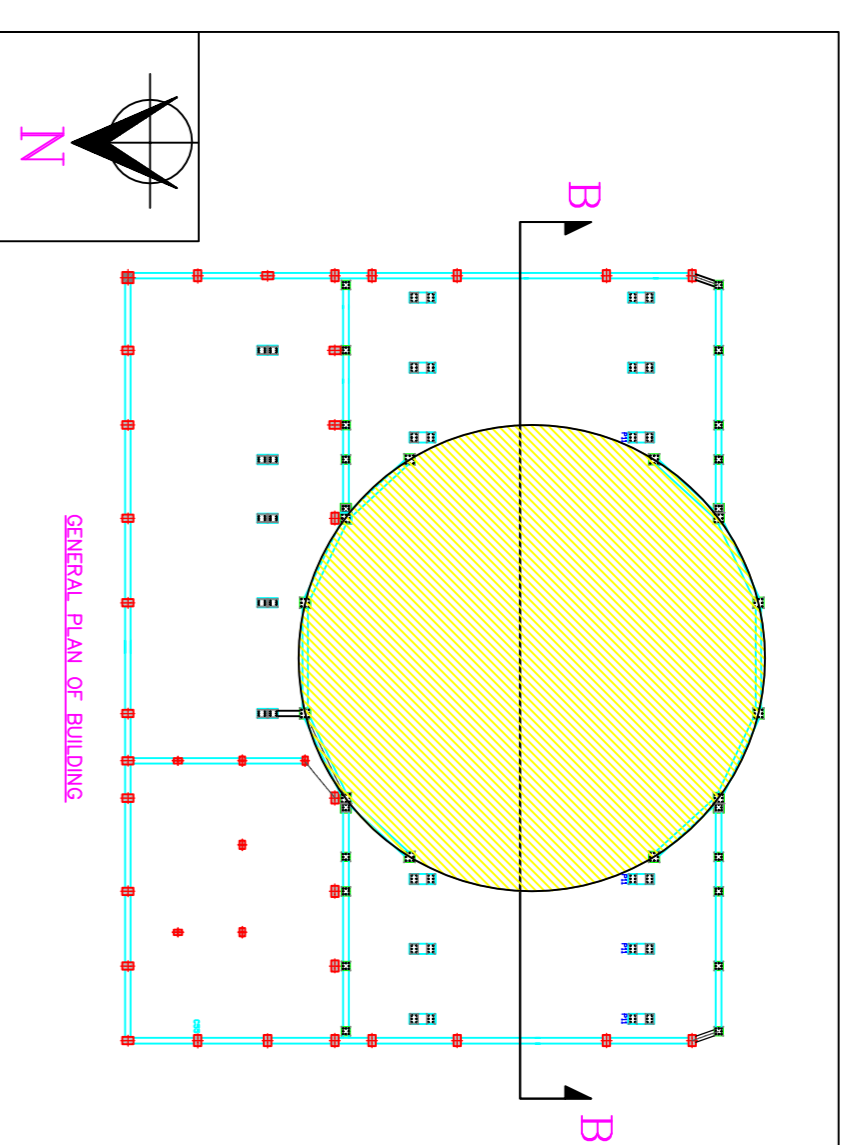


TYPICAL VIEW (B-B)

SCALE 1:50

TYPICAL CONNECTION DETAIL OF TRUSS  
ALONG GRID LINE 7 TO PARABOLA COL.  
MEMBER SIDE VIEW (DETAIL-A)-2 NOS

SCALE 1:50



- NOTES**
1. DIMENSION IN MILLIMETRES. LEVELS IN METRES.
  2. DON'T SCALE THE DIAGRAMS FROM DRAWING FOLLOW WRITTEN
  3. LEVELS INDICATED REFER TO UPPER SIDE STEEL PROFILES.
  4. REFER GENERAL SPECIFICATION DRAWINGS FOR DETAILS.

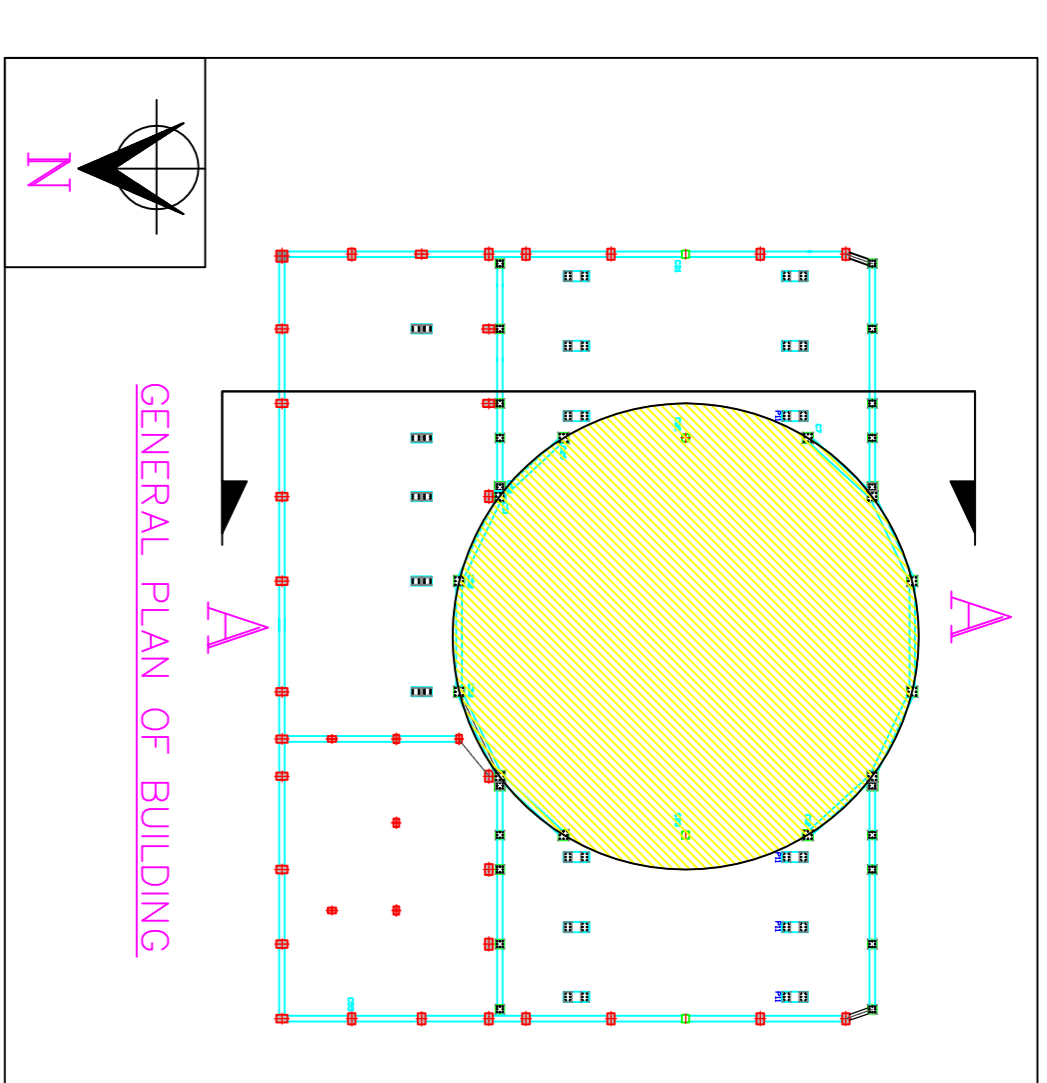
MEMBER DETAILS OF THE MEMBER TRUSS AT PARABOLA RIDGE LVL -2 NOS						
MEMBER DETAILS	NOS	PIECE LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (KG/M)	TOTAL WEIGHT (KG/M)	REMARKS
dc - PIP 152.4(NB-135L)	4	---	---	---	---	TOP HORIZONTAL (RIDGE MEMBER)
dq - PIP 114.3M(NB-100M)	2	8.23	16.46	12.20	200.81	BOTTOM HORIZONTAL MEMBER
d - PIP 889.0H(NB-80H)	10	2.00	20.00	9.90	198.00	VERTICAL POST
f - PIP 761.0H(NB-65H)	12	2.45	29.40	7.93	291.06	CROSS MEMBERS
	16	2.80	44.91	7.93	356.15	DIAGONAL MEMBERS
			TOTAL		1046.02	

PROJECT:	PROPOSED HV LAB AT BHEL R&D, BALANAGAR, HYDERABAD.
CLIENT :	BHEL R&D

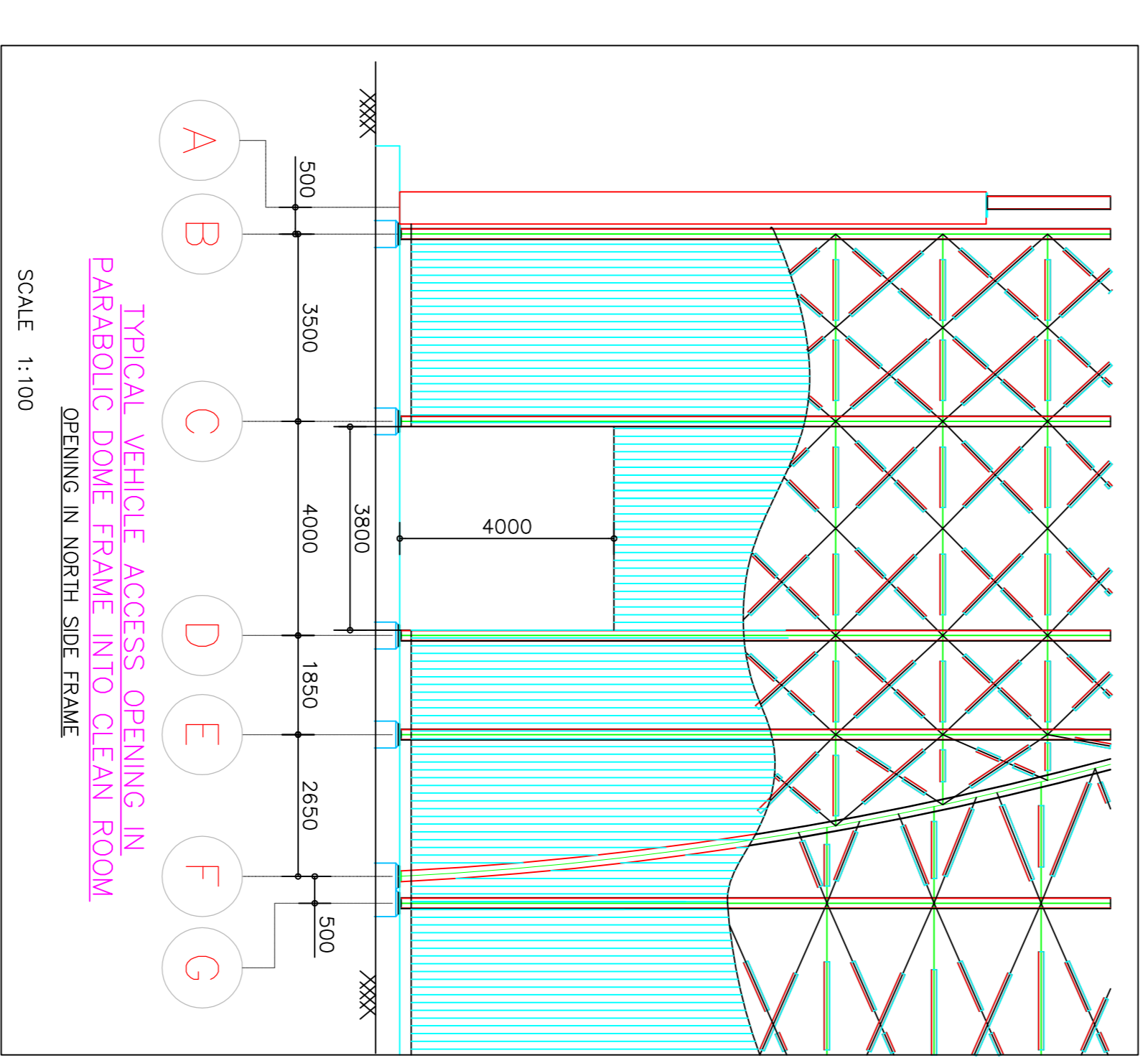
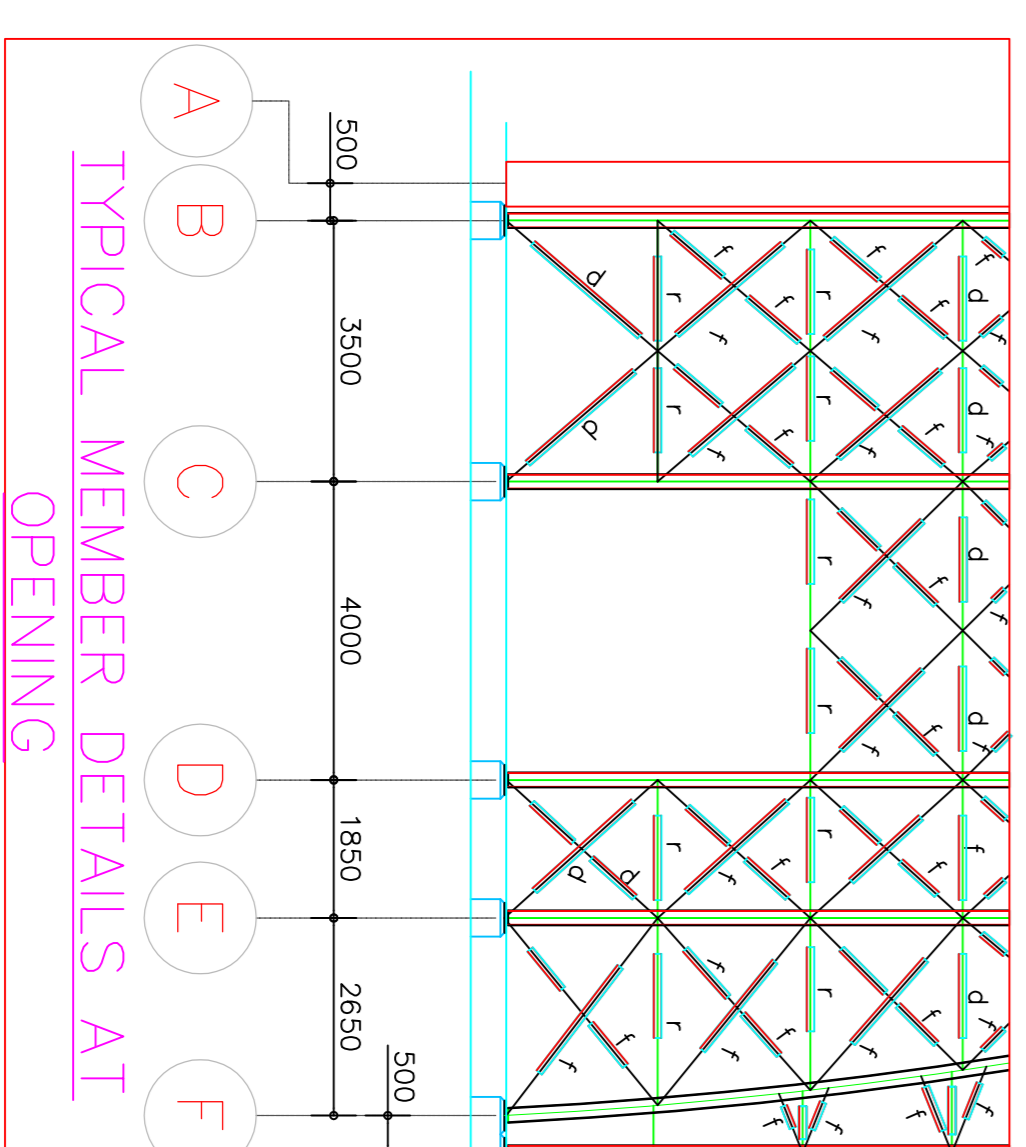
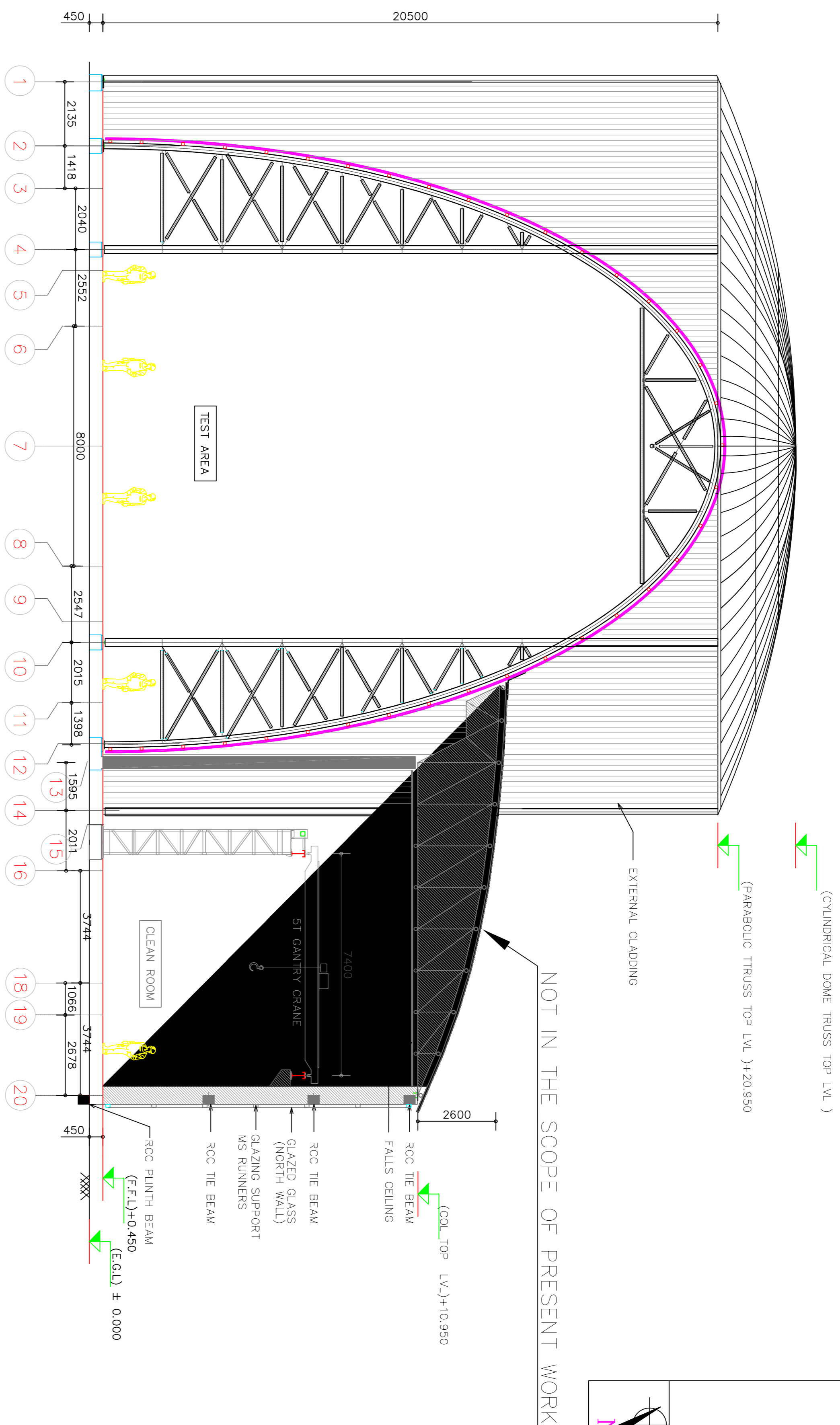
**TDR DRG No. 12**

ARCHITECT	SATVA	DESIGNER'S GUILD
DESIGNER	VLKS	A 105, HOJAT BALKHA, ROAD NO.12, BALANAGAR, HYDERABAD 500 024, INDIA
CHECKED BY	VASU	RESPONSIBILITY DOCUMENT, 2011
APPROVED BY		
DWG. NO.		
TITLE	GENERAL SECTIONAL VIEW OF LAB IN LONGITUDINAL DIRECTION	
REV. NO.	0	SCALE: 1:100
DATE	27-06-2010	

# TDR DRG No. 13



- NOTES**
1. DIMENSION IN MILLIMETRES, LEVELS IN METRES.
  2. DON'T SCALE THE DIAGRAMS FROM DRAWING FOLLOW WRITTEN
  3. WRITTEN DIMENSIONS ONLY.
  4. LEVELS INDICATED REFER TO UPPER SIDE STEEL PROFILES.
  5. REFER GENERAL SPECIFICATION DRAWINGS FOR DETAILS.

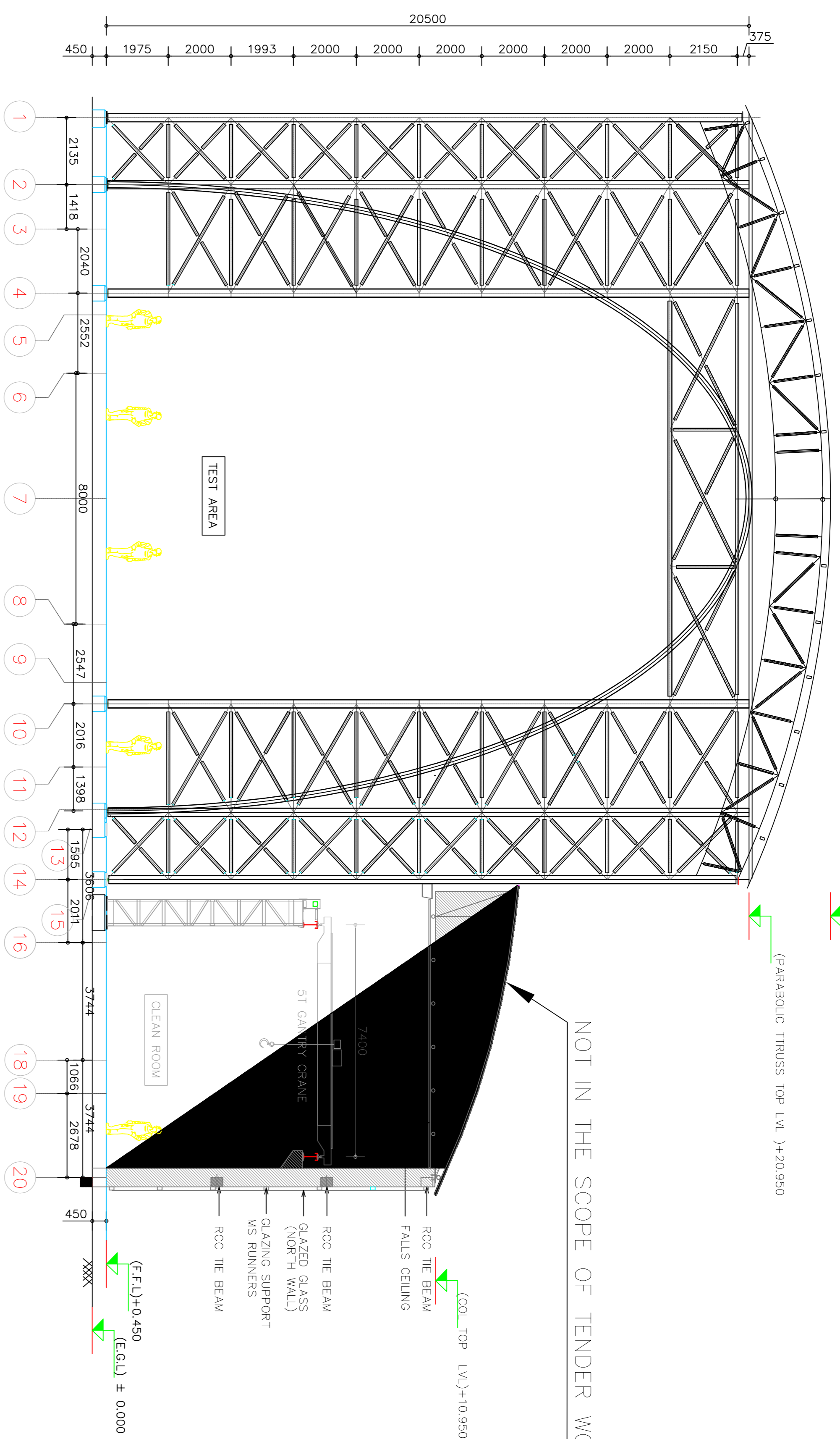


PROJECT: PROPOSED HV LAB AT BHEL R&D, BALANAGAR, HYDERABAD.

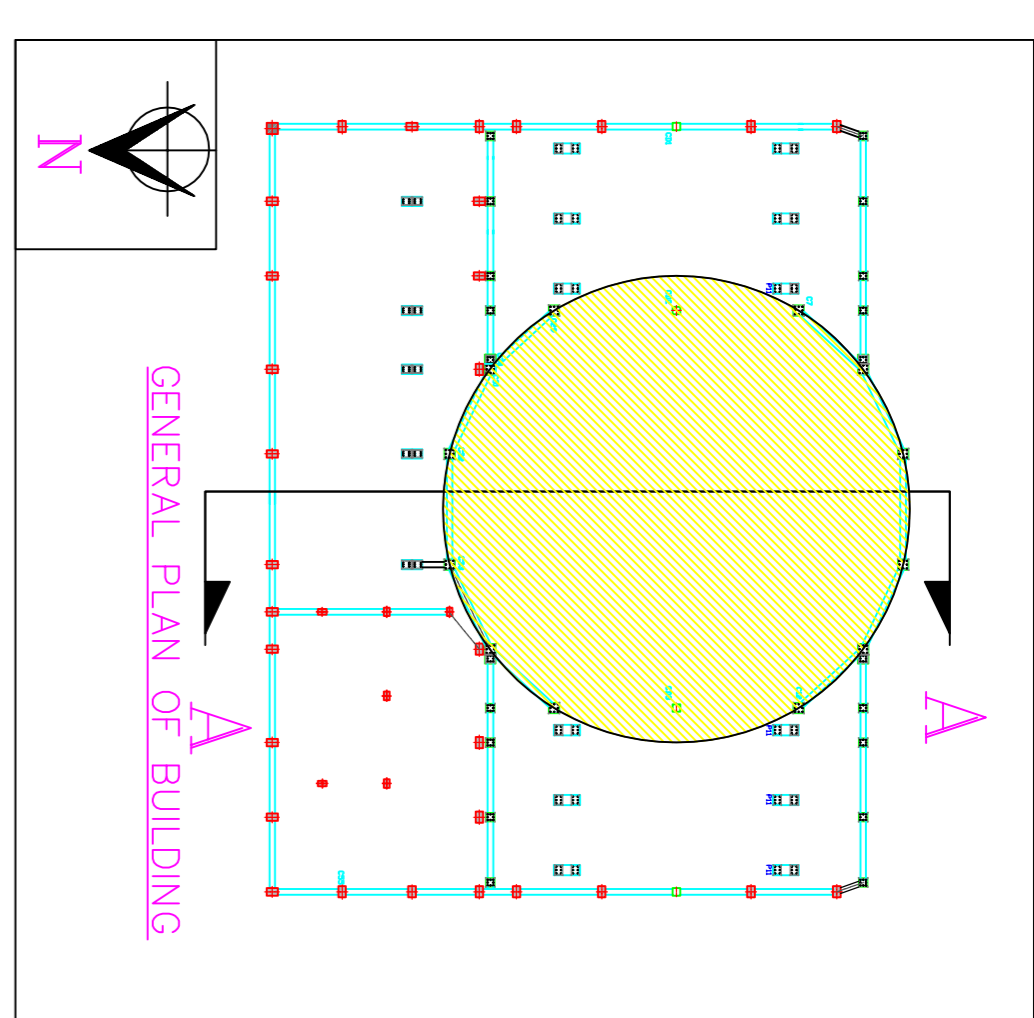
CLIENT: BHEL R&D

ARCHITECT	SATVA	DESIGNER'S GUILD
DESIGNED BY	UJAS	A 105, HOJAT BALAJA, ROAD NO.12, BANAJA HILLS, HYDERABAD 500 041, ANDHRA PRADESH, INDIA
CHECKED BY	UJAS	DESIGNER'S GUILD HYDRABAD, INDIA
APPROVED BY		
DWG. NO.		TITLE
REV. NO.	0	GENERAL SECTIONAL VIEW OF LAB IN TRANSVERSE DIRECTION
DATE	22-04-2020	SCALE
		1:100

# TDR DRG No. 14

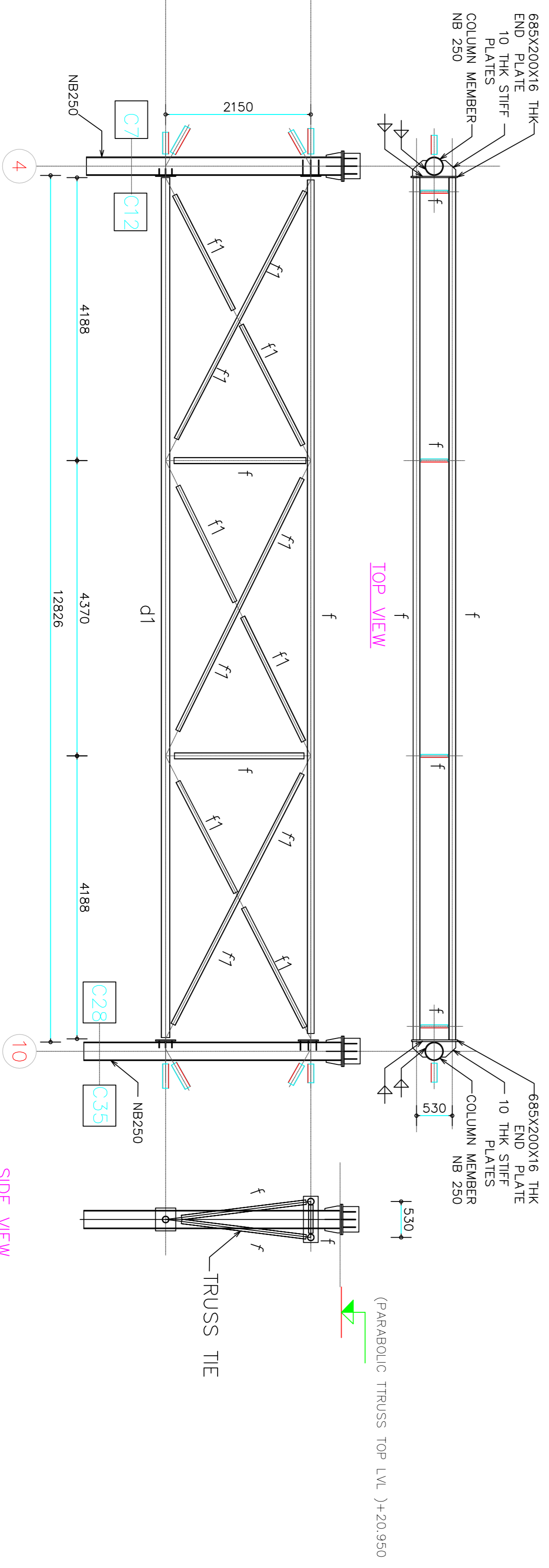


NOT IN THE SCOPE OF TENDER WORK

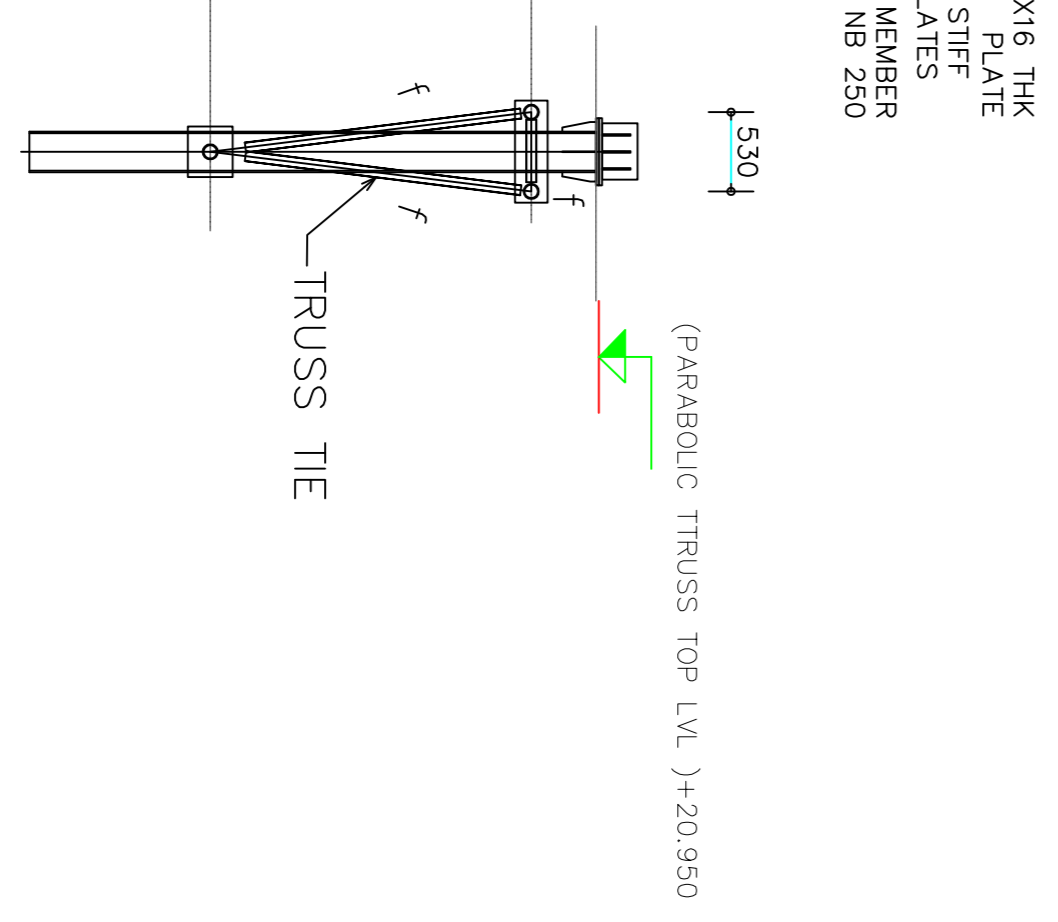


- NOTES**
1. DIMENSION IN MILLIMETRES, LEVELS IN METRES.
  2. DON'T SCALE THE DIAGRAMS FROM DRAWING FOLLOW WRITTEN WRITTEN DIMENSIONS ONLY.
  3. LEVELS INDICATED REFER TO UPPER SIDE STEEL PROFILES.

TYPICAL SECTIONAL VIEW A-A  
(TRANSVERSE DIRECTION)  
SCALE 1:100



TYPICAL CONNECTION OF THE TIE TO  
CYLINDRICAL DOME COLUMNS AT TOP IN  
GRID LINE -4.10 (2 NOS)  
SCALE 1:50



SIDE VIEW  
SCALE 1:50

MEMBER DETAILS OF THE MEMBER TRUSS AT 20.00M LVL -2 NOS						
MEMBER DETAILS	NO'S	PIECE LENGTH (m)	TOTAL LENGTH (m)	UNIT WEIGHT (KG/M)	TOTAL WEIGHT (KG/M)	REMARKS
f - PIP 761.0H(NB-69H)	8	2.150	17.20	135.88	135.88	VERTICAL POSTS
f - PIP 889.0L(NB-80L)	8	0.541	4.328	34.277	34.277	TOP TRANSVERSE TIE MEMBER
f1 - PIP603.0L1(NB-50L)	4	12.826	51.304	406.32	406.32	TOP HORIZONTAL RAFTER MEMBER
d1 - PIP 889.0L(NB-80L)	24	4.667	112.00	456.96	456.96	DIAGONAL MEMBERS
d1 - PIP 889.0L(NB-80L)	2	12.826	25.652	8.70	223.17	BOTTOM HORIZONTAL TIE MEMBER
				<b>TOTAL</b>	<b>1256.00</b>	

PROJECT: PROPOSED HV LAB AT BHEL R&D,  
BALANAGAR, HYDERABAD.

CLIENT: BHEL R&D

ARCHITECT:	SATVA	DESIGNER'S GUILD
DESIGNED BY:	JVS	A 105, HOUSAT BANAJARA, ROAD NO.12, BANAJARA HILLS, HYDERABAD 500 034, INDIA
DRAWN BY:	VASU	INDIA
APPROVED BY:		INDIA
DWG. NO:		
REV. NO:	0	
DATE:	22-04-2010	SCALE: 1:100

## NOTES

1. ALL STRUCTURAL STEEL SHALL HAVE MINIMUM YIELD STRENGTH OF 250 N/mm<sup>2</sup> AND SHOULD CONFIRM TO IS:2062.
2. ALL WELDING WHERE SPECIFIED OR AUTHORISED SHALL CONFIRM TO ALL THE REQUIREMENTS OF IS SPECIFICATIONS AND THE STRUCTURAL WELDING CODE LATEST EDITION IS: 814 & WELD SPECIFICATION AS PER IS:9595.
3. ALL SHOP CONNECTIONS SHALL BE WELDED OR MADE WITH HIGH STRENGTH BOLTS.
4. FIELD CONNECTIONS FOR PURLINS, GIRTS AND DOOR FRAMES SHALL BE MADE WITH MACHINE BOLTS.
5. ALL OTHER FIELD CONNECTIONS SHALL BE MADE WITH HIGH YIELD STRENGTH BOLTS, FIELD WELDING WILL BE ALLOWED ONLY WHERE NOTED.
6. ALL HIGH STRENGTH BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE AND WITH STANDARD HOLES, UNLESS NOTED.
7. GUSSET PLT. SHALL BE 10mm THK. UNLESS NOTED, OVER HANGING CORNERS SHALL BE NEATLY CHOPPED.
8. ONE SIDED CONNECTION FOR BEAMS SHALL NOT BE USED UNLESS CALLED FOR ON THE DESIGN DWGS. OR AS APPROVED.
9. AN ERECTION SEAT SHALL BE PROVIDED WHERE REQUIRED.
10. ALL VERTICAL BRACINGS AND KNEE BRACINGS SHALL BE ON COLUMN CENTER LINE UNLESS NOTED.
11. ALL COLUMNS SHALL BE MILLED AT BASES AND SPLICES UNLESS NOTED. ALL COMPRESSION CHORDS OF TRUSSES SHALL BE MILLED AT SPLICES. ALL FINISHED BEARING SURFACE SHALL BE A TRUE PLANE + OR -2mm.
12. MONORAIL AND HOIST BEAM CAPACITIES SHALL BE POSTED ON SIDE OF BEAMS BY PERMANENT METHOD SUCH AS WELD BEADS AND PAINTS SO AS TO BE VISIBLE FROM THE FLOOR BELOW.
13. ERECTOR SHALL PROVIDE ALL TEMPORARY SUPPORTS AS REQUIRED FOR STABILITY AND RESISTANCE UNTIL STRUCTURES ARE COMPLETED.
14. ALL DAMAGE TO GALVANISED ITEMS DUE TO FIELD WELDING SHALL BE REPAIRED.
15. DEFECTIVE TACK WELDS SHALL BE CHIPPED OUT BEFORE FINAL WELDING.
16. BEFORE FABRICATION ALL SECTIONS AND PLATES SHALL BE STRAIGHTENED & WIRE BRUSHED TO COMPLETELY REMOVE SCALE AND DUST.
17. LIFTING BEAMS, MONORAILS ETC. SHALL BE CLEARLY PAINTED TO INDICATE ITS LIFTING CAPACITY.
18. ALL STRUCTURAL STEEL TUBES SHALL HAVE MINIMUM YIELD STRENGTH OF 210 N/mm<sup>2</sup>
19. ALL CLOSED ROLLED SECTIONS SHALL HAVE MINIMUM YIELD STRENGTH OF 310 N/mm<sup>2</sup>
20. UNLESS OTHERWISE MENTIONED, ALL BOLTS ARE 20ø.
21. UNLESS OTHERWISE MENTIONED, ALL WELDS ARE 6mm FILLET CONTINUOUS.
22. ALL SHAPES, SIZES, LENGTHS OF GUSSETS & MEMBERS TO BE OBTAINED FROM ACTUAL LAYOUT IN SHOP.

## STAIRCASE

1. ALL STAIRS SHALL BE PROVIDED WITH LANDINGS AT INTERVALS OF NOT MORE THAN 4.0 METERS.
2. MINIMUM FLIGHT WIDTH SHALL BE 750mm AND MINIMUM LANDING SHALL BE 1000mm.
3. MINIMUM HEAD ROOM CLEARANCE SHALL BE 2.1 METERS, SLOPE OF STAIR WAYS SHALL NOT BE MORE THAN 40 DEGREES AND RISER SHOULD NOT BE EXCEED 200mm, TREADS SHALL BE 230mm.
4. MAXIMUM TREAD AND GREATEST RISER HEIGHT WITH ANY IN FLIGHT OF STAIR SHALL NOT BE EXCEED THE SMALLEST BY 10mm.
5. MINIMUM RECOMMENDED SIZE OF STRINGER IS ISMC-150, U.O.S.

## HANDRAILS

1. HANDRAILS SHALL BE PROVIDED FOR :
  - PERIPHERY OF EACH LOADED FLOOR OF PLATFORM.
  - PERIPHERY OF LARGER FLOOR OPENINGS.
  - STAIRS AND WALKWAYS.
  - AROUND PITS WHERE DEPTH IS MORE THAN 1.0 METER.
2. HANDRAILS SHALL CONSIST OF 40mm NB STEEL TUBES FOR THE HANDRAILS AND THE VERTICAL POSTS. VERTICAL POSTS SHALL BE SPACED AT ABOUT 1.50 TO 2.0 METERS c/c , SECONDARY HORIZONTAL RODS SHALL BE 25mm NB TUBE. HEIGHT ABOVE FLOOR SHALL BE 1.0 METER.
3. HANDRAILS SHALL BE IN WELDED CONSTRUCTION IN CASE OF CONNECTION TO STEEL STRUCTURES AND SHALL BE WELDED TO EMBEDMENT PLATES PREVIOUSLY PROVIDED IN CASE OF R.C.C. FLOORS.

## LADDERS

1. LADDERS SHALL BE PROVIDED AT SUCH PLACES WHERE THERE IS NO REGULAR MAINTENANCE IS NECESSARY AND ONLY OCCASIONAL ACCESS IS NEEDED.
2. NORMALLY LADDERS SHALL BE PLACED AT 60 DEGREES ANGLE, HOWEVER WHERE THERE IS SPACE CONSTRAINT, THESE MAY BE PLACED VERTICALLY.
3. LADDERS SHALL BE 450mm WIDE WITH 20mm DIA MS ROD LUGS PLACED AT 300mm c/c. 75x6 FLATS SHALL BE PROVIDED AS VERTICALS. IN CASE OF LADDER IS MORE THAN OF 2.50 METERS HEIGHT CAGE SHALL BE PROVIDED.

## PROTECTIONS

1. ALL SURFACES SHALL BE EASILY APPROACHABLE FOR PAINTING. BACK TO BACK SECTIONS WITH GUSSET PLTS, IN BETWEEN CAN BE AVOIDED. BOX MEMBERS CAN BE USED, BUT WELDING SHOULD BE THROUGH AND ENDS SHALL BE CLOSED. NUMBER OF JOINTS AND MEMBERS SHOULD BE MINIMIZED. WELDING SHOULD BE ALL ALONG AND GAPS BETWEEN CONNECTING PLATES AND MEMBERS SHOULD BE AVOIDED.
2. SAND BLASTING AND CHLORINATED RUBBER PAINTING SHALL BE APPLIED TO ALL MEMBERS. PROTECTION TREATMENT SHALL BE AS UNDER:
  - a.) SURFACE PREPARATION: SAND BLAST CLEAN (Sa 2 1/2)
  - b.) PREFABRICATION PRIMER: ETHYL ZINC SILICATE 20 MICRONS.
  - c.) POST FABRICATION: INTERMEDIATE COAT WITH HIGH BUILD MICACEOUS IRON OXIDE CHLORINATED RUBBER 75 MICRONS AND TOP COAT WITH HIGH BUILD IRON OXIDE CHLORINATED RUBBER 75 MICRONS.

## MATERIALS AND CONSTRUCTIONS SHALL CONFIRM TO THE FOLLOWING INDIAN STANDARDS. (LATEST REVISION)

- |   |                          |
|---|--------------------------|
| A. STRUCTURAL STEEL, M.S PLATES, CHECKERED PLATES. (STANDARD QUALITY) | IS:2062                  |
| B. FABRICATION AND ERECTION   | IS:800                   |
| C. PAINTING   | IS:123, IS:4180, IS:1477 |
| D. TOLERANCE FOR FABRICATION & ERECTION                               | IS:7215                  |
| E. COLD FORMED HIGH GAUGE STEEL                                       | IS:801                   |
| F. STEEL TUBES IN GENERAL BUILDING CONSTRUCTION                       | IS:806                   |
| G. STEEL TUBES FOR STRUCTURAL PURPOSE                                 | IS:1161                  |

UNLESS MENTIONED ELSEWHERE, IN ANY SPECIFIC DRAWING, THESE NOTES TO BE FOLLOWED.

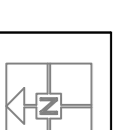
# TDR DRG No. 15

PROPOSED HV LAB AT BHEL R&D,  
BALANAGAR, HYDERABAD.

PROJECT: **BHEL R&D**

CLIENT : **BHEL R&D**

REFERENCE DRAWINGS

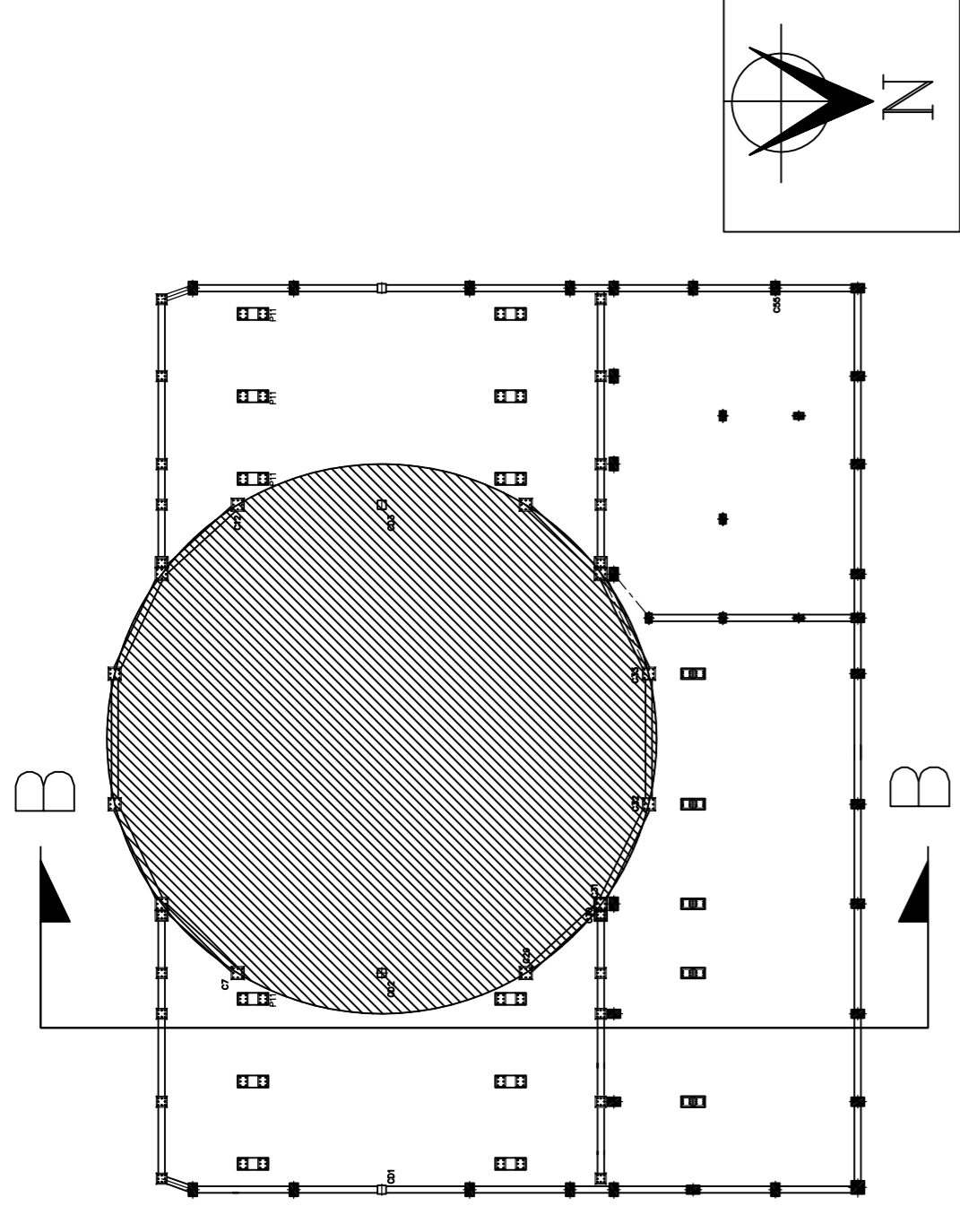


ARCHITECT	SATVA	DESIGNER'S GUILD
DESIGNED BY	A.V.S	A 105, NIKANT BANAJARA, ROAD NO.12, BANAJARA HILLS, HYDERABAD 500 034, INDIA
DRAWN BY	KRISHNAV	REGISTERED ARCHITECT, INDIA
APPROVED BY		
DWG. NO.	BHEL/00355	TITLE
BHEL/00355		GENERAL NOTES AND SPECIFICATIONS OF CONSTRUCTION

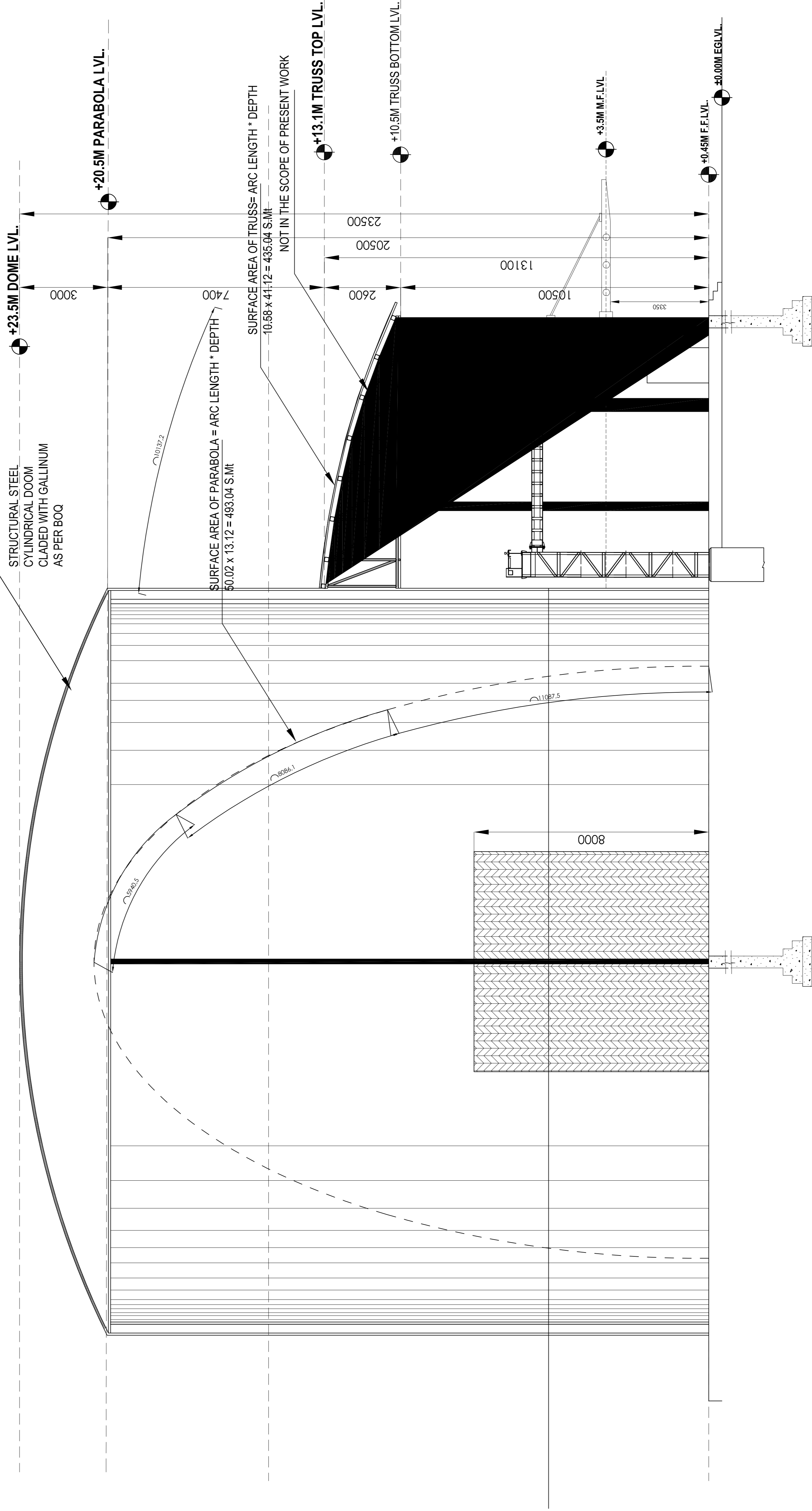
REV. NO.	DATE	SCALE
0	22-04-2010	1:100



# TDR DRG No. 17



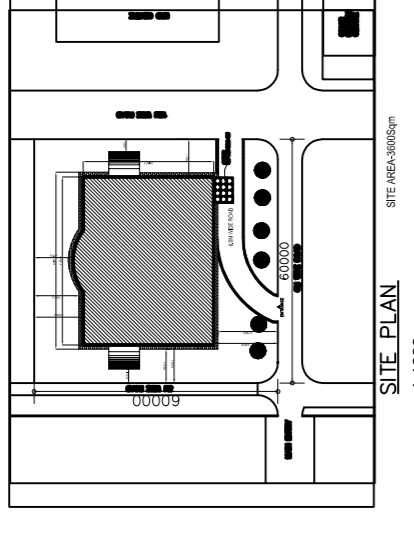
GENERAL PLAN OF BUILDING



# SECTION BB

NOTES

1. ALL DIMENSIONS IN MM ONLY
2. DO NOT SCALE DRAWING.
3. FOLLOW WRITTEN DIMENSIONS.
4. ALL DIMENSIONS ARE UNFINISHED DIMENSIONS.



SCHEDULE OF OPENINGS

<b>D1</b>	GLAZED DOUBLE SWING DOOR WITH PIVOTS AND FLOOR SPRING AND A HANDLE 100 X 2100MM
<b>D2</b>	12MM GLASS POWDER COATED FISHER CHANNEL FRAME WITH FLOOR SPRING 110 MAGNET 1200MM X 2100MM
<b>D3</b>	GLAZED SINGLE SWING DOOR 1200MM X 2100MM
<b>D4</b>	FIRE PROOF DOOR 1200MM X 2100MM
<b>D5</b>	FIRE PROOF DOOR 3000MM X 2100MM
<b>D6</b>	SLIDING DOOR 7500MM X 8000MM
<b>D7</b>	SKIN DOOR FOR TOILETS 900MM X 2100MM
<b>D8</b>	VENNER DOOR FOR A.H.U. ROOM 900MM X 2100MM

	AEROCON BRICK WALL
	75MM RUNNERS ARE WELDED TO COLUMNS AND THEN CLADDED WITH M.S. SHEETING

SIGNATURE

CLIENT

**B.H.E.L. R&D**

CONSULTANT

**designer's guild**  
 a 105, mount banjara, road no.12,  
 banjara hills, hyderabad 500 034.  
 + 91 40 30585457  
 satsri.dg@gmail.com

DRAWING VALIDITY

DRAWN BY	SCALE	NORTH
VANI.G	1:100	
CHECKED BY	DATE	
SATHYA	02-02-10	

PROJECT TITLE

**PROPOSED HV LAB AT BHEL R&D,  
 BALANAGAR, HYDERABAD.**

DRAWING TITLE

**SECTION BB**

PROJECT NO.	DRAWN:	REV. NO.	DWG. NO.
		R3	A-302