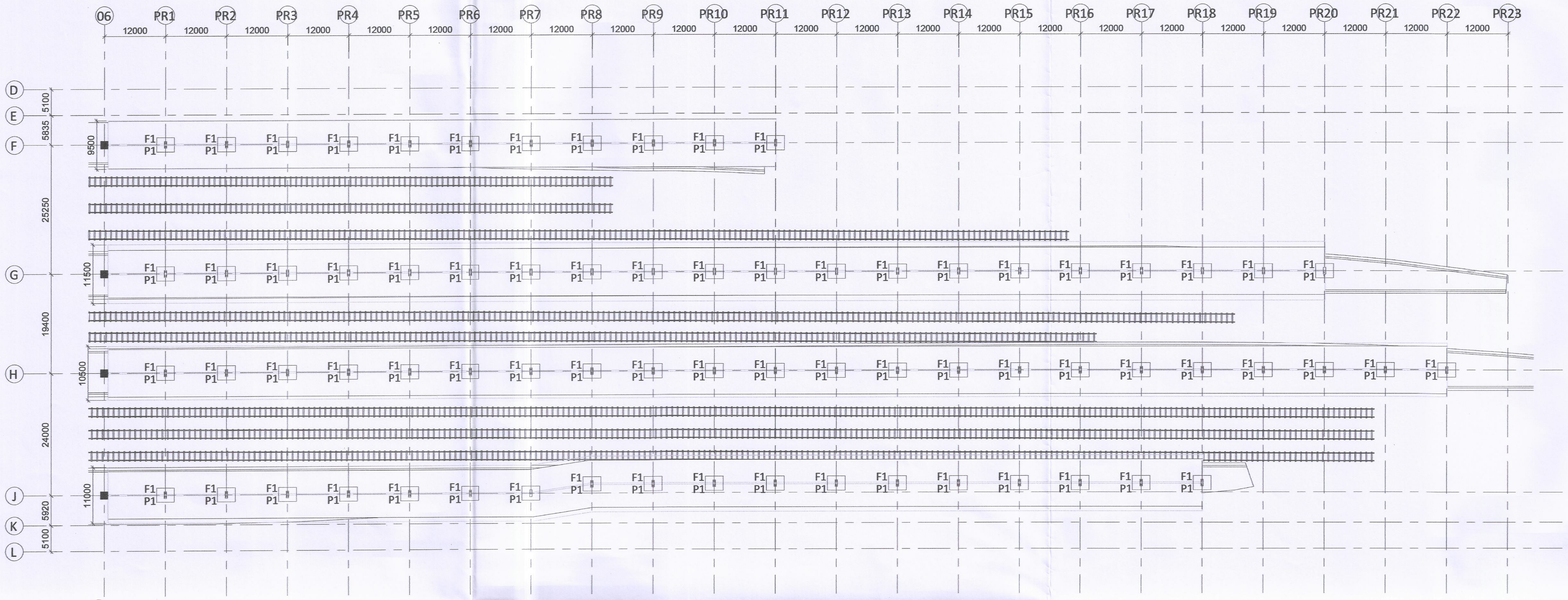
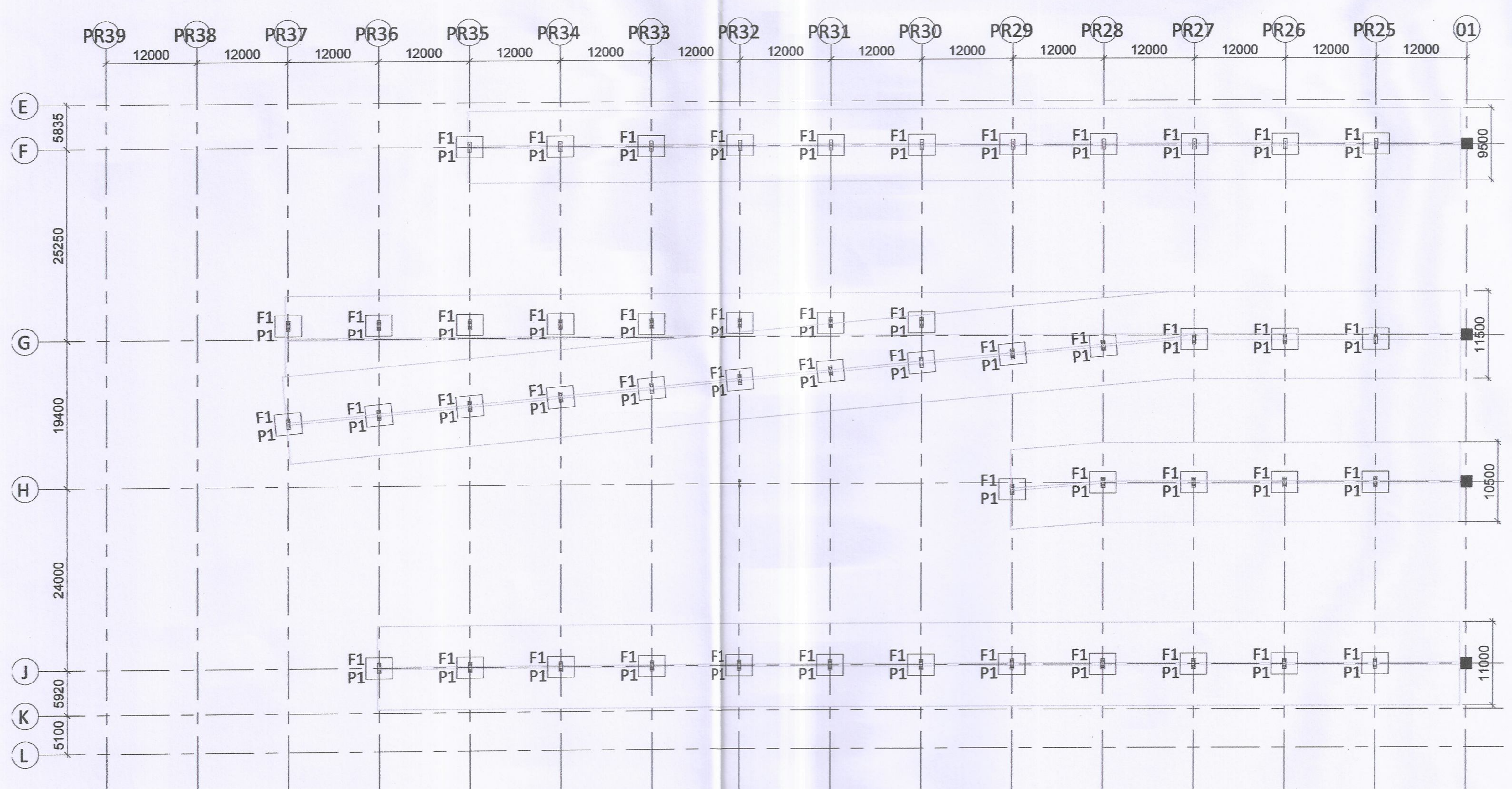


1 Platform-North side
1 : 500



2 Platform-South side
1 : 500

CONSTRUCTURE
DESIGNS PVT.LTD
APPROVED FOR CONSTRUCTION
Date 29.06.2023

PROOF CONSULTANT
IIT MADRAS
S R Satish Kumar
Dr. S.R. SATISH KUMAR
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, INDIA

Consultant-Structural		
CDPL	Drawn By-	
	Name & Designation	Signature & Stamp
	PREETI	
	Designed and Checked By-	
	Name & Designation	Signature & Stamp
	HARIOM GERA (DETAILED DESIGNER)	
Consultant:Architect+MEP		
ANA Design	Drawn By-	
	Name & Designation	Signature & Stamp
	SITARAM GUPTA ARCHITECT	
	Checked By-	
	Name & Designation	Signature & Stamp
	SITARAM GUPTA ARCHITECT	
EPC Contractor		
ACIL	Site-In-Charge:	
	Name & Designation	Signature & Stamp
	RAJEEV BANSODE (SR. GM PROJECTS)	
	Design Director:	
	Name & Designation	Signature & Stamp
	KAVI PRAKASH (DESIGN DIRECTOR)	KAVI PRAKASH Digitally signed by Kavi Prakash DN: C=IN, E=kavi.prakash@acilnet.com, O="Ahluwalia Contracts India limited", OU="Sr General Manager EPC and Coordination", CN=Kavi Prakash Reason: I have reviewed this document Date: 2023.07.21 19:44:06+05'30'
Authority Engineer (VS		
VSPL	Project Architect/Lead Designer	
	Name & Designation	Signature & Stamp
	DR. S.K. SINGH (Lead Designer)	Design Expert-Voyants Dr. S.K. Singh
	Approved By:	
	Name & Designation	Signature & Stamp
	RAJIV UPADHYAY (Team Leader)	VOYANTS SOLUTIONS PVT. LTD. GURUGRAM 22/7/2023 Team Leader-Voyants Rajiv Upadhyay
Proof Consultant		
IIT/ Madras	Name & Designation	Signature & Stamp
	S.R Satish Kumar (Associate Professor)	

GENERAL NOTE:

1. ALL DIMENSIONS ARE IN MM,UNLESS SPECIFIED OTHERWISE.
2. IN CASE OF ANY DISCREPANCY, IMMEDIATELY CONSULT THE ARCHITECT / ENGINEER IN-CHARGE.
3. PLEASE DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
4. PLEASE REFER CO-ORDINATED LAYOUT.

NOTES:

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4. STEEL BEAM & COLUMN GRADE E 450
   FOR UB/UC SECTION GRADE E 350
   FOR HOLLOW SECTION GRADE YST 310
5. BOLTS GRADE 8.8 HIGH TENSION
6. SPRAY APPLIED FIRE PROOFING FOR 3 HOURS SHALL BE CEMENTITIOUS VERMICULITE (NON GYPSUM BASED) WITH MINIMUM DENSITY > 350 KG/CUM AND BOND (ADHESIVE) STRENGTH OF >400 KPA AS PER ASTM E736 AND COMPRESSIVE STRENGTH > 1400 KPA AS PER ASTM E 761
7. I) COLUMN/SHEAR WALL SHALL BE OF 4 HOUR FIRE RATING.
   II) BEAM SHALL BE OF 2 HOUR FIRE RATING.
   III) SLAB SHALL BE OF 2 HOURS FIRE RATING
8. CONC MIX FOR COMPOSITE SLAB SHALL BE
   I.) FLOOR DECK SLAB M-40
   II.) TOP REINF. SHOULD BE PLACED 30MM BELOW THE TOP OF THE CONCRETE.
   III.) BOTTOM REINF. SHOULD BE PLACED 50MM ABOVE THE BOTTOM OF THE CONCRETE.
9. STEEL DECK GRADE E 350
10. ALL SHEAR STUDS OF GRADE E-350 SHALL BE 19mm/22mm/25mm DIA 120mm HEIGHT.
11. REINFORCEMENT SHALL BE TMT BARS OF GRADE fe 500D AND CONFORMING TO I.S.1786-2008.

NO.	DESCRIPTION	DATE
R1	GFC	08/06/2023
R0	GFC	06/06/2023

REVISION DESCRIPTION:

DESIGN QUALITY ASSURANCE
(CONSULTANTS & EPC CONTRACTOR)
THE DRAWING HAS BEEN PREPARED BASED ON ACTUAL SITE SURVEY AND OTHER TERMS AND CONDITIONS OF THE EPC AGREEMENT. RESPONSIBILITY OF ACCURACY CORRECTNESS, COMPLETENESS AND INTEGRITY AND FULL COMPLIANCE OF RELEVANT CODES AND MANUALS/ RULES. (AS PER EPC AGREEMENT PROVISIONS) RESTS WITH DESIGN CONSULTANT AND CONTRACTOR.

CONSULTANT: STRUCTURE

CONSTRUCTURE DESIGN P. LTD
3RD FLOOR, ABHISHEK PLAZA, PART, POCKET B, MAYUR VIHAR, PHASE 2, NEW DELHI - 110091
1TEL-(011)-2277,2272,4917
EMAIL- constructure@gmail.com

BAL MUKAND
DRAWN BY
HARIOM GERA
STRUCTURE ENGINEER

CONSULTANT : ARCHITECT + MEP SERVICES

ANA DESIGN STUDIO PVT. LTD.
321,3RD FLOOR, USMSS COMPLEX, 120 MATHURA ROAD, OPP. APOLLO HOSPITAL
TEL-(011)-2684-4227
EMAIL- info@ana-design.com

DRAWN BY
ARCHITECT / ENGINEER

EPC CONTRACTORS:

AHLUWALIA CONTRACTS (INDIA) LTD.
PLOT NO. A, 177, POCKET A, OKHLA I, OKHLA, NEW DELHI, DELHI, 110020.
TEL-011 4941 0500

CHECKED BY
DESIGN DIRECTOR

DESIGN QUALITY ASSURANCE
(PMC)
THE DRAWING INCLUDING ITS DESIGN AND DETAILING HAS BEEN CHECKED IN ACCEPTANCE WITH THE REQUIREMENT OF EPC AGREEMENT AND FOUND SUITABLE FOR EXECUTION PURPOSE.

PMC:

VOYANTS SOLUTIONS PRIVATE LIMITED
BPTP PARK CENTRA, 403, 4TH, BLOCK A, JAL VAYU VIHAR, SECTOR 30, GURUGRAM, HARYANA 122001

PROJECT ARCHITECT
TEAM LEADER

DESIGN QUALITY ASSURANCE
(CLIENTS)
NOTICE OF NO OBJECTION FROM RLDA IS BEING ACCORDED FOR DESIGN PRINCIPLES BASED ON THE RECOMMENDATIONS OF THE ARCHITECT (ANA DESIGN STUDIO) AND PROPOSED BY THE CONTRACTOR. HOWEVER THE OVERALL RESPONSIBILITY OF COORECTNESS OF DESIGN, DETAILING COMPLIANCE WITH EPC AGREEMENT, BYELAWS, RELEVANT CODES, STANDARDS, STATUTORY REGULATIONS, DESIGN ACCURACY LIES WITH THE ARCHITECTURE DESIGN CONSULTANTS AND THE CONTRACTOR (AHLUWALIA CONTRACTS (INDIA) LTD.)

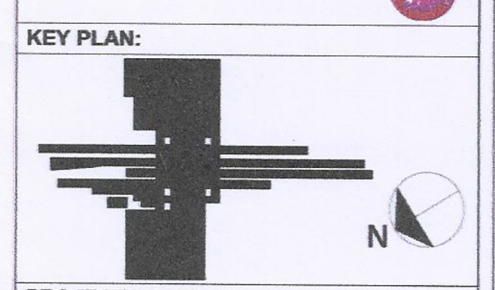
CLIENT:

RAIL LAND DEVELOPMENT AUTHORITY

APE/CDG
DGM/P/CDG
CPM /CDG

MINISTRY OF RAILWAYS

KEY PLAN:



PROJECT NAME:

LIGHTHOUSE PROJECT FOR UP-GRADATION OF CHANDIGARH RAILWAY STATION

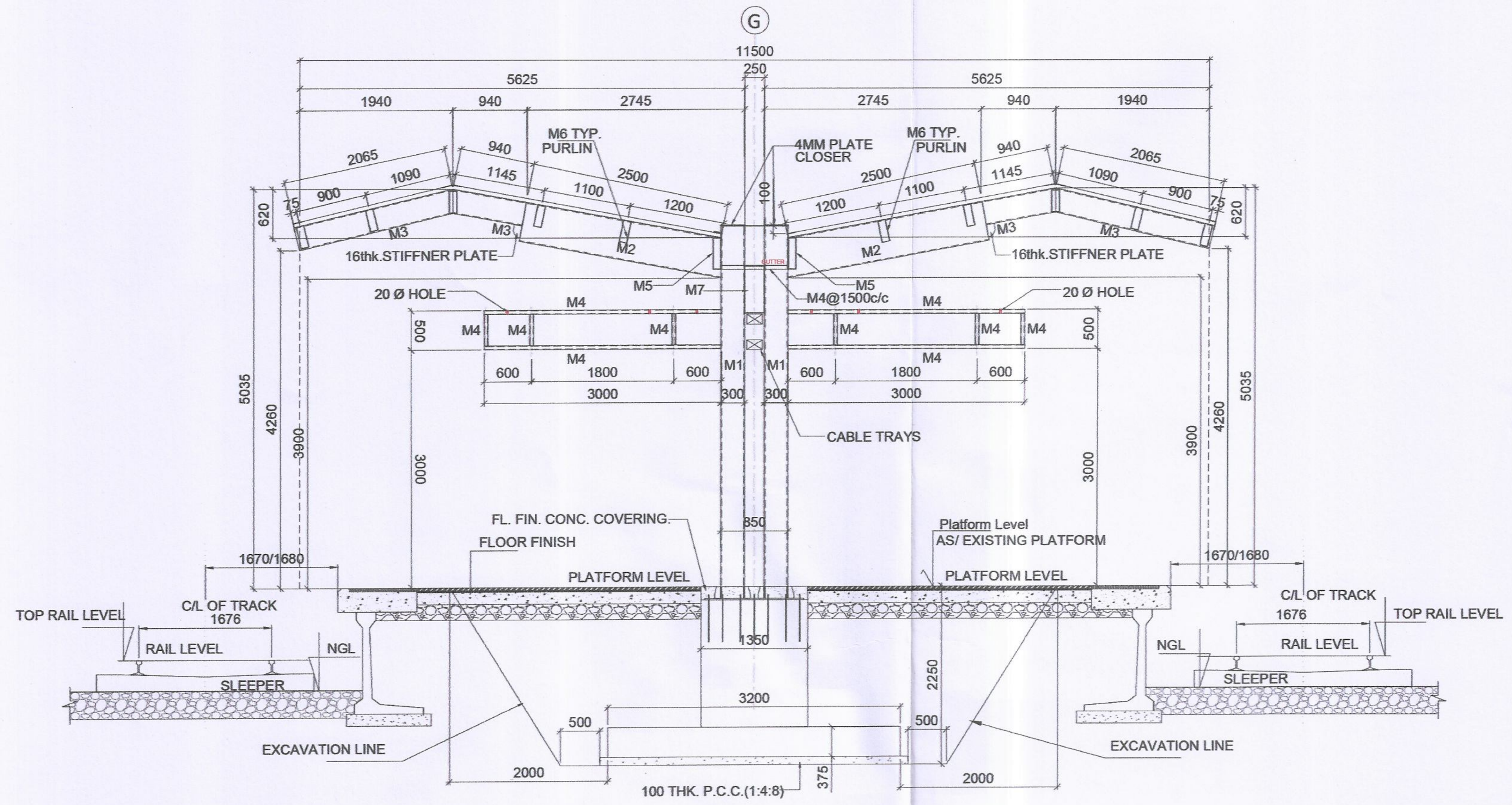
CHANDIGARH, PUNJAB & HARYANA

SHEET SIZE:	SCALE:
A1	1:100

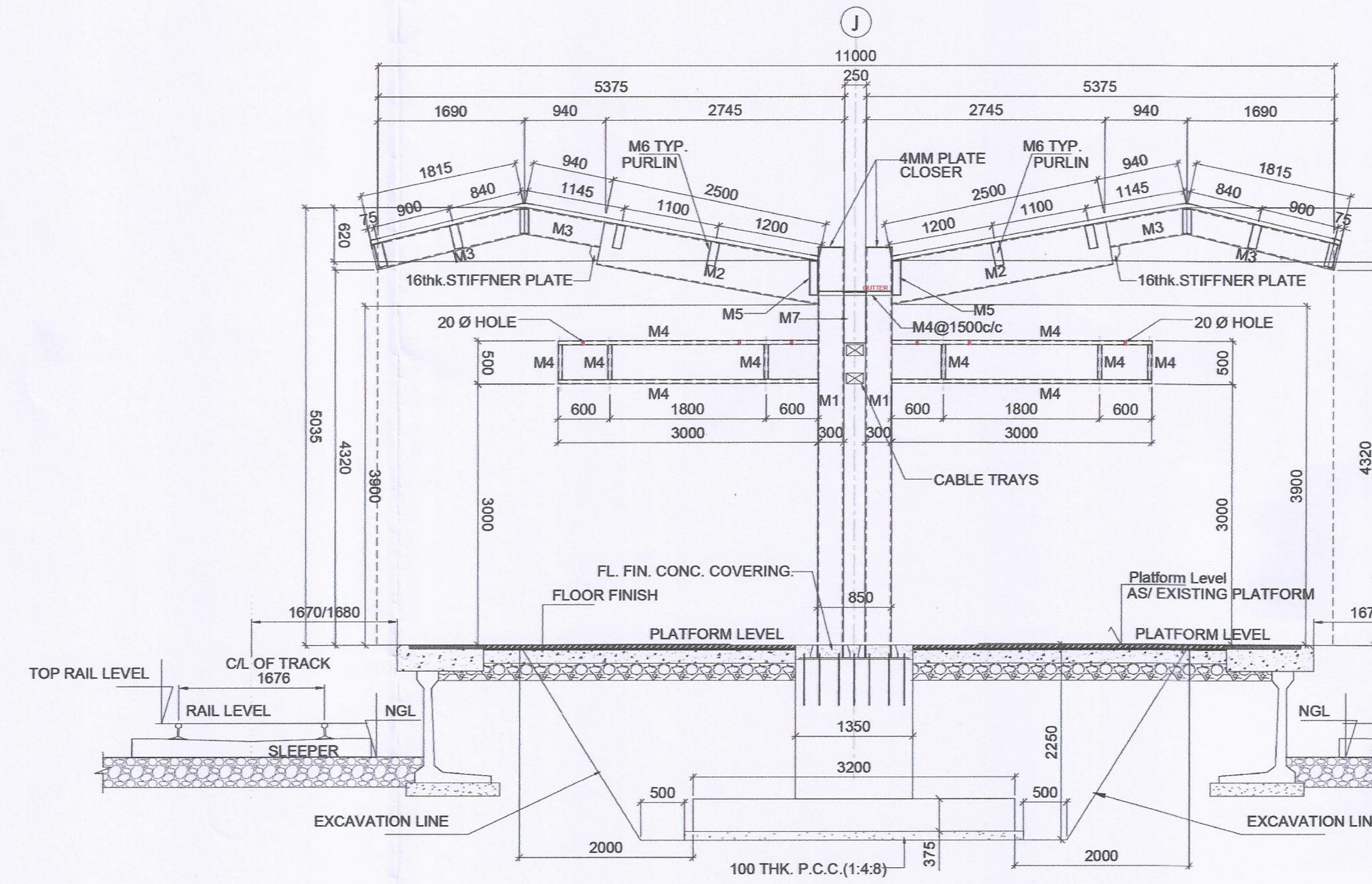
DRAWING TITLE:

COP FOUNDATION LOCATION PLAN AT PLATFORM-NORTH AND SOUTH SIDE

DRAWING NO.:	REV.
CDPL/CRS/COP-S01	R0



TYP. C.O.P SECTION FOR 11.50M SPAN

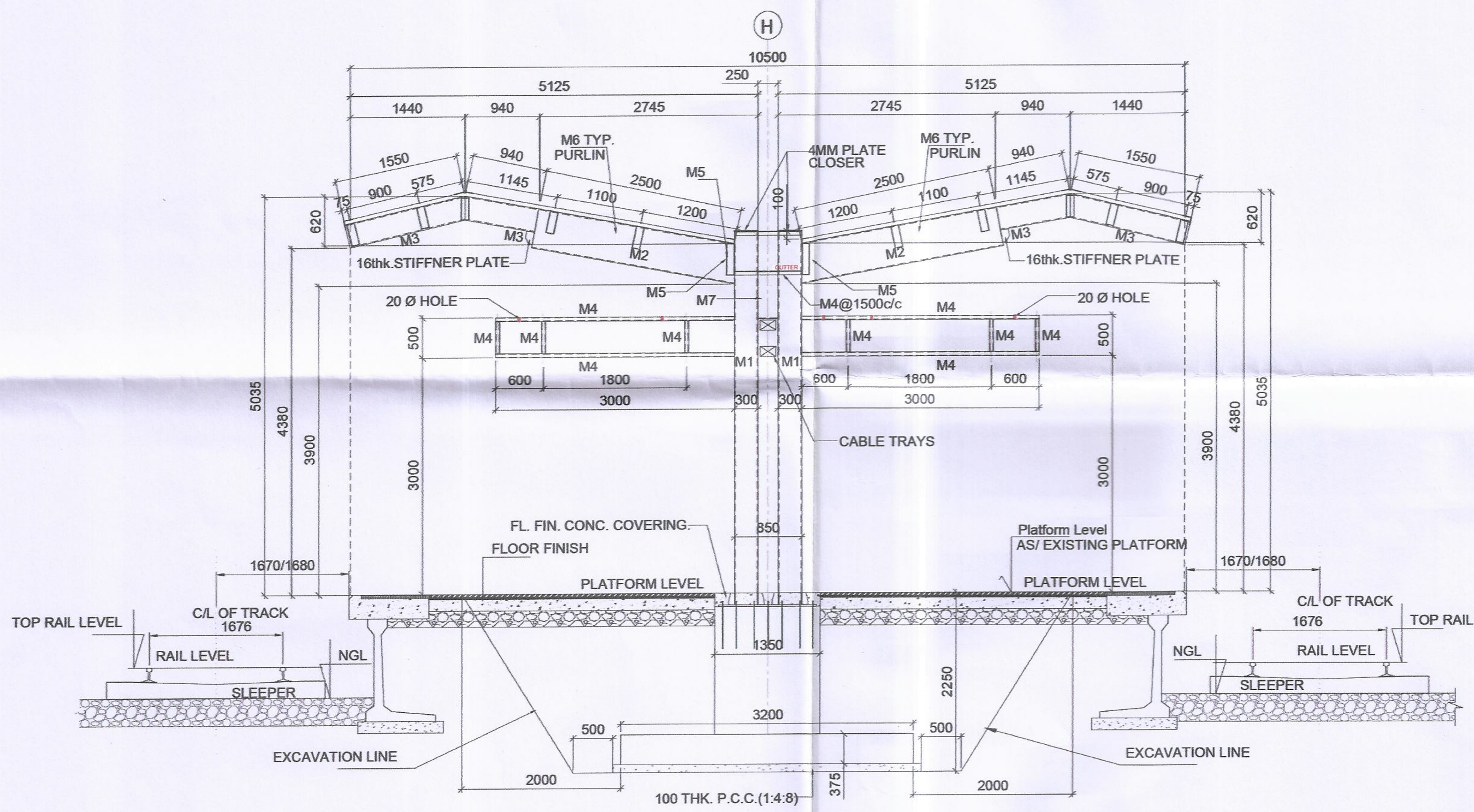


TYP. C.O.P SECTION FOR 11.00M SPAN

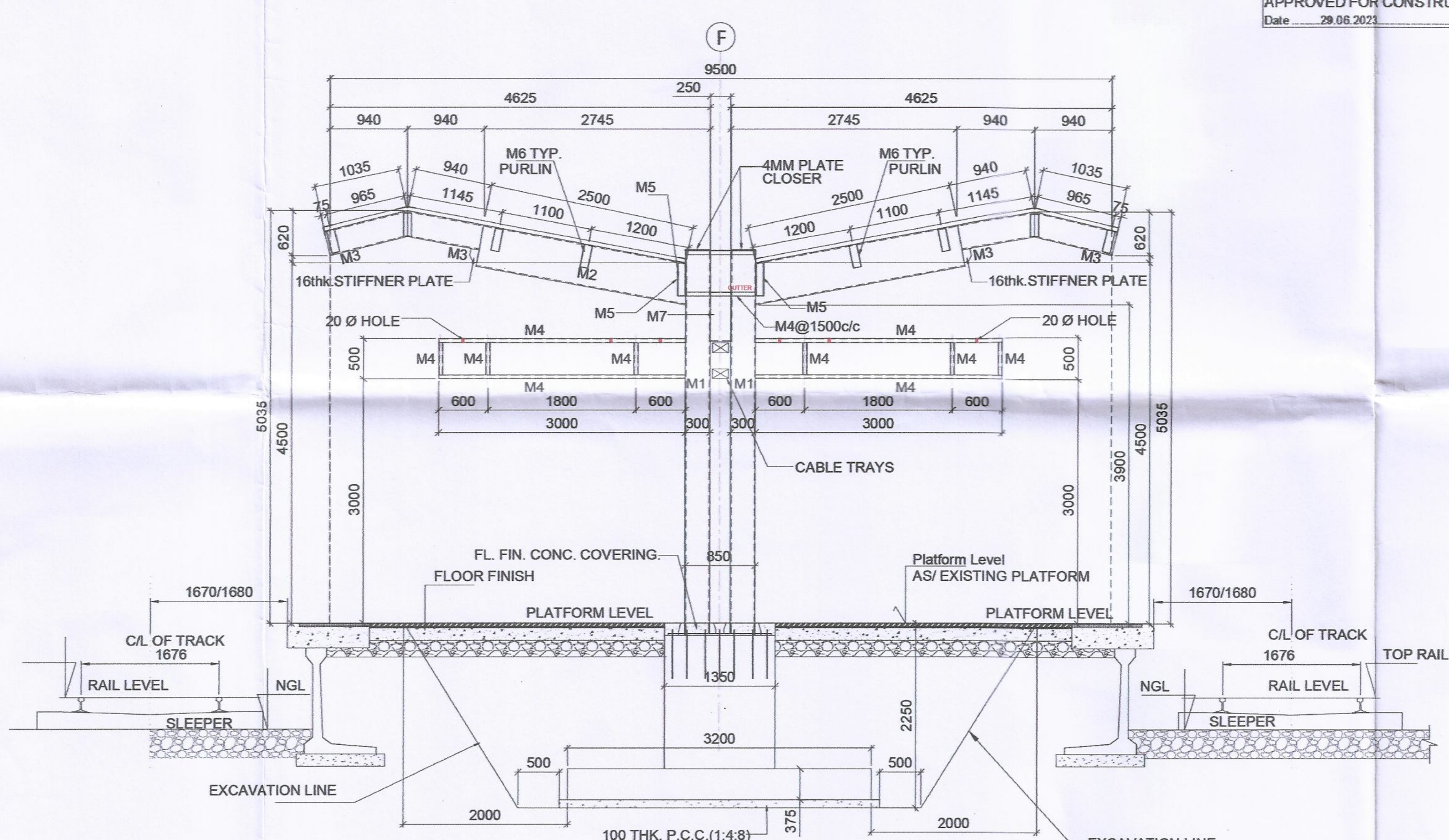
MEMBER SIZE

ITEM NO.	D1	W	t	GARDE
M1	300	200	8	E-350
M2	500	200	8	E-350
M3	300	200	8	E-350
M4	50	50	3.2	E-350
M5	400	150	5	E-350
M6	280	100	5	E-350
M7	600	300	10	E-350

CONSTRUCTURE DESIGNS PVT.LTD
APPROVED FOR CONSTRUCTION
Date 29.06.2023

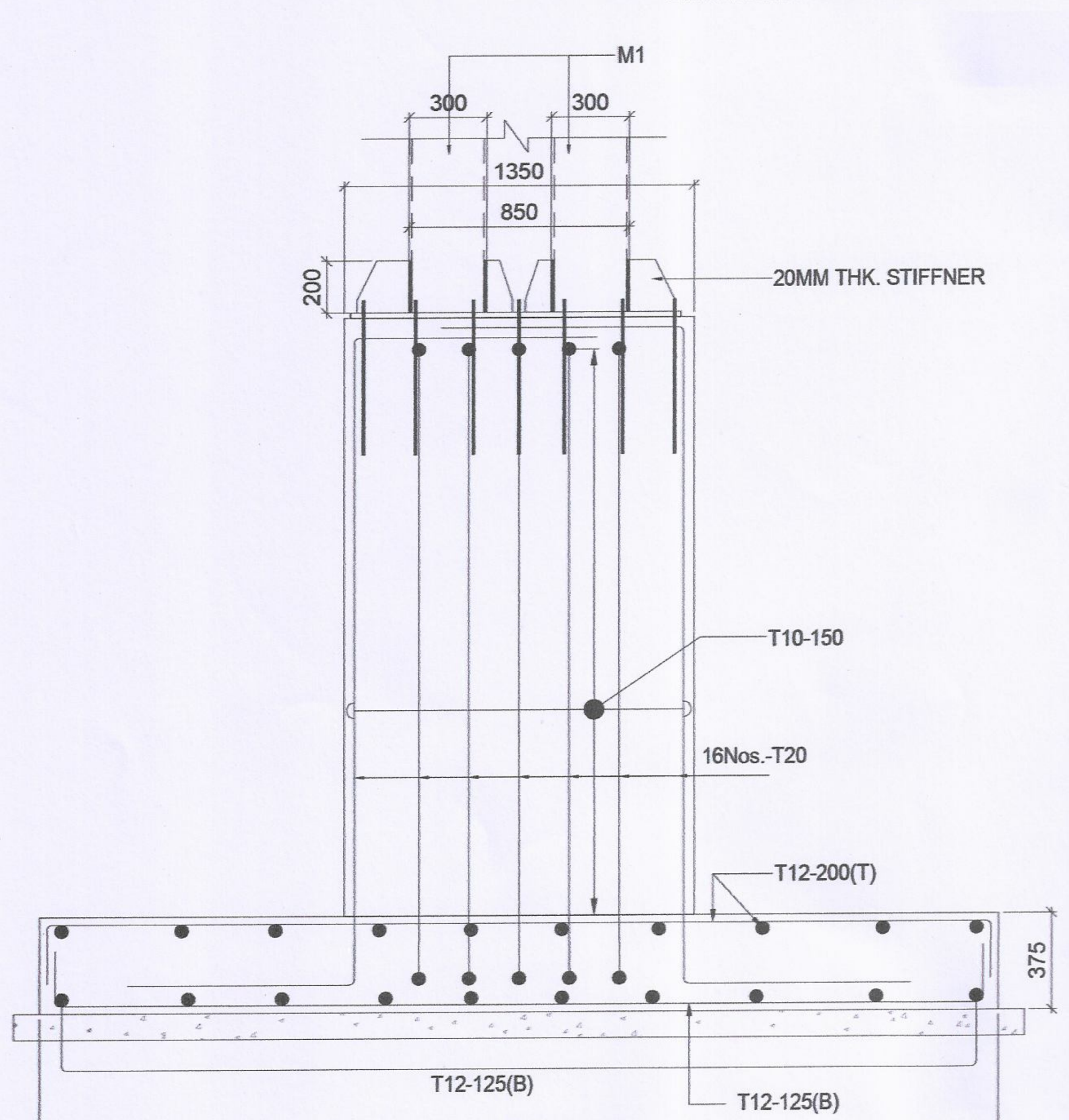


TYP. C.O.P SECTION FOR 10.50M SPAN

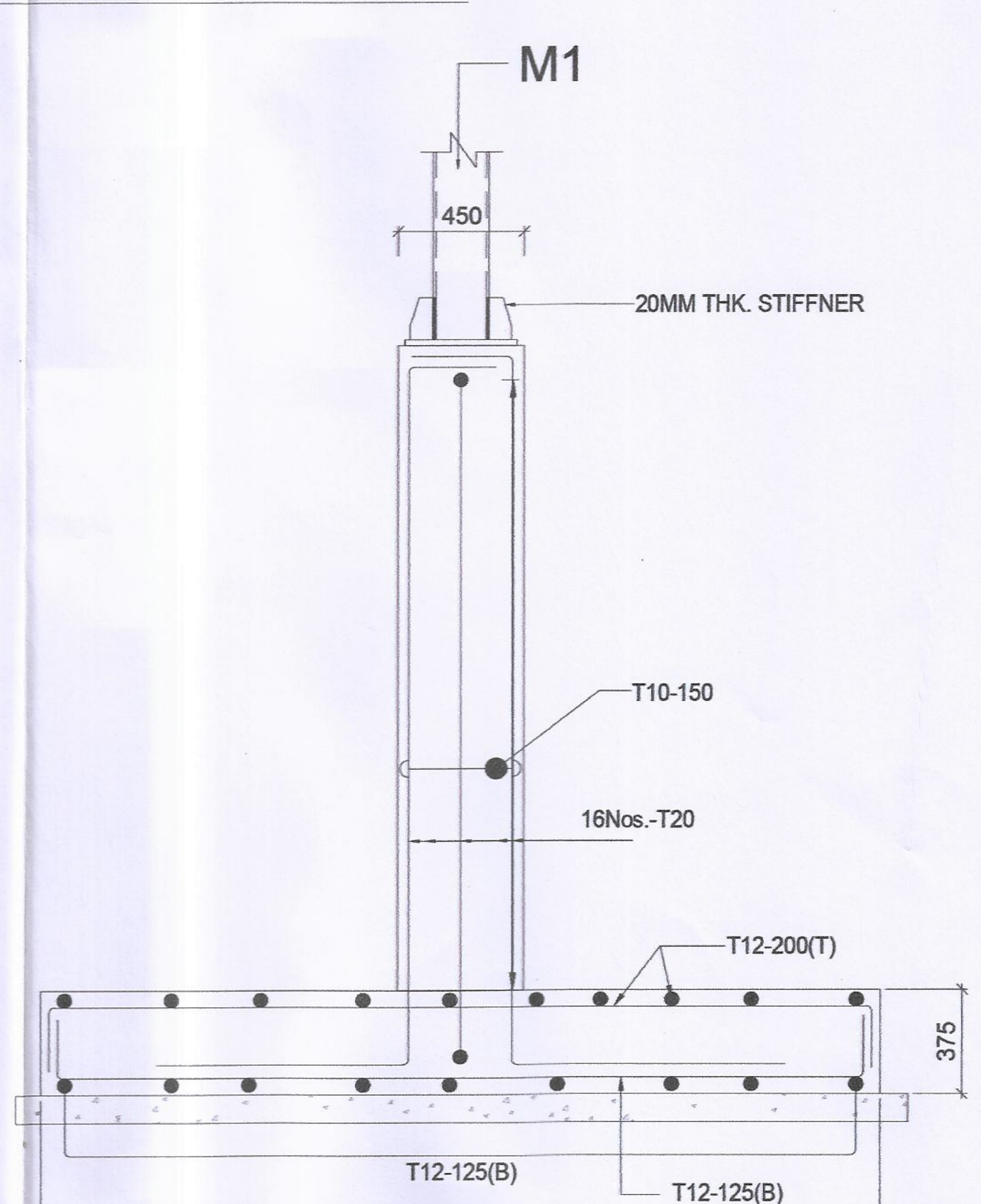


TYP. C.O.P SECTION FOR 9.50M SPAN

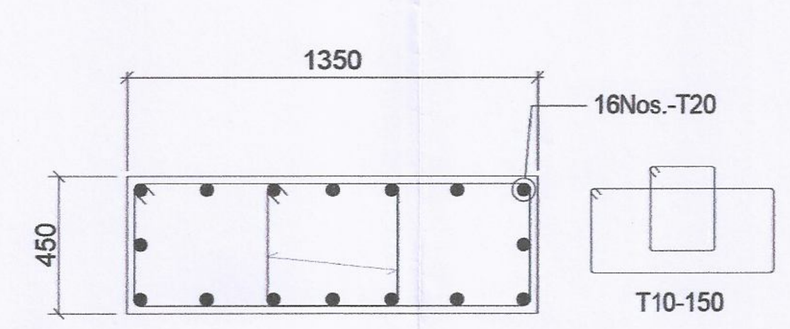
PROOF CONSULTANT
IIT MADRAS
Dr. S.R. SATISH KUMAR
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, INDIA



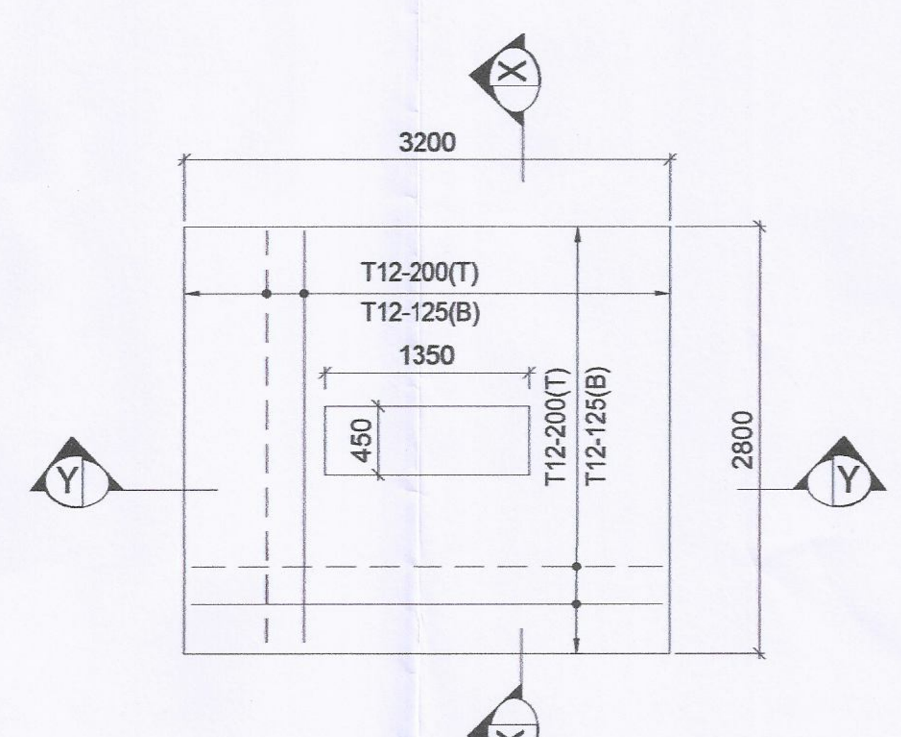
SEC. Y-Y



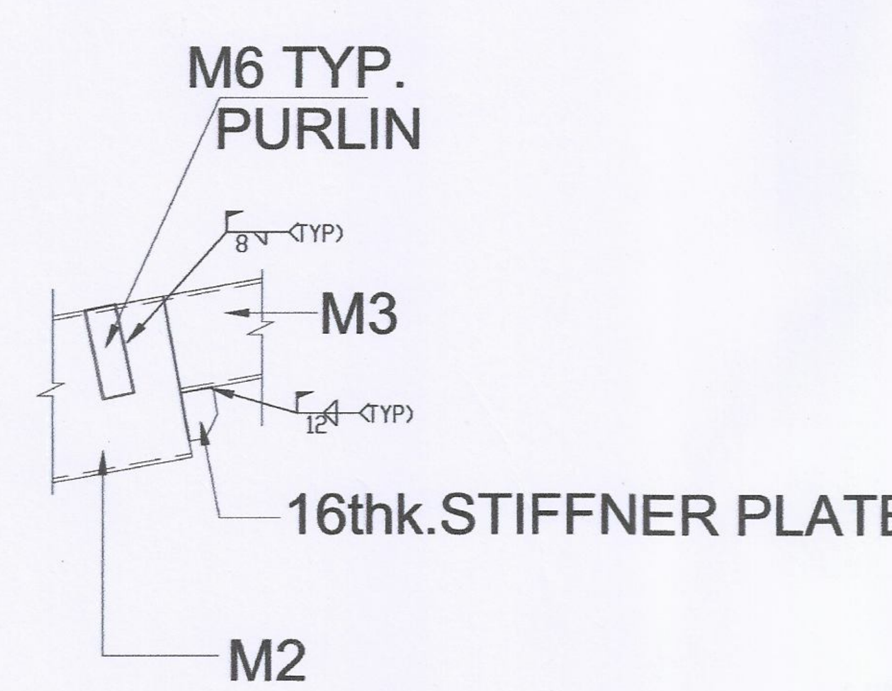
SEC. X-X



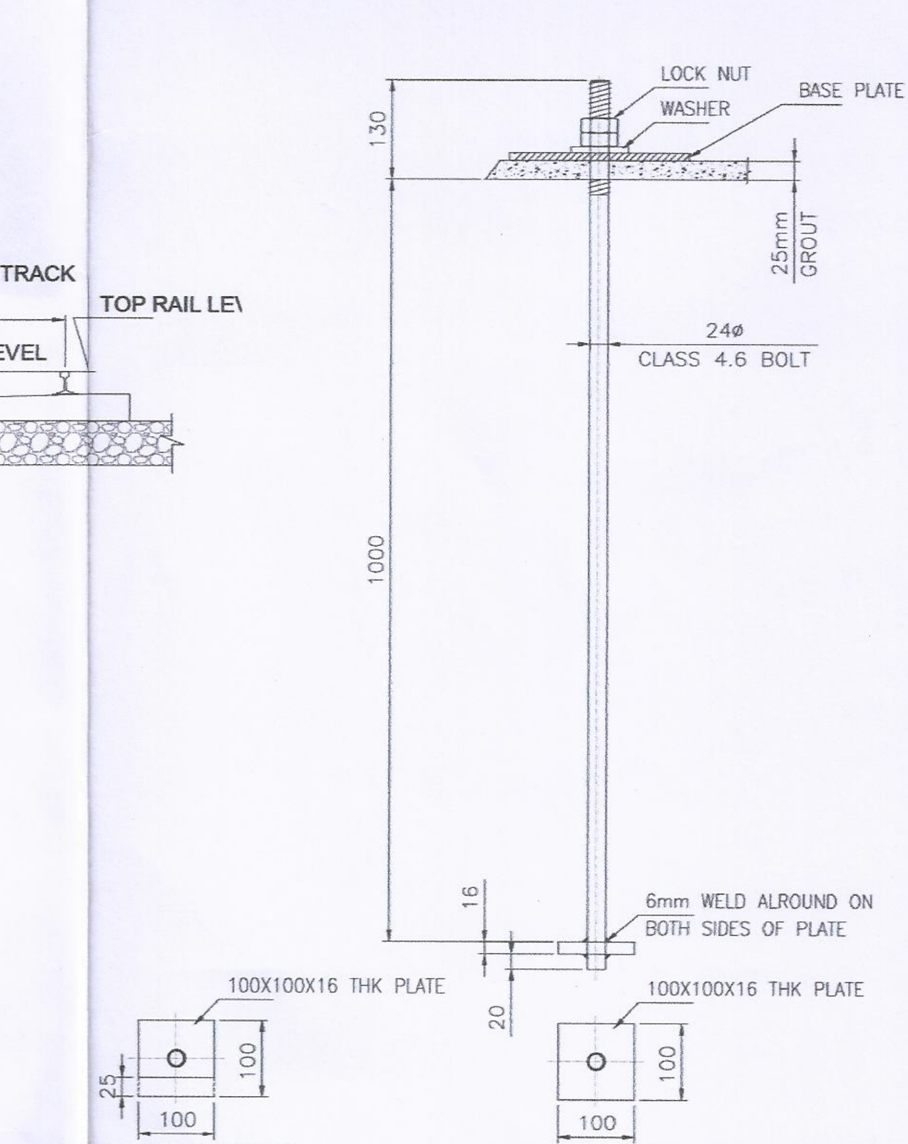
PEDESTAL R/F



R/F DETAIL OF FOOTING-F1 3200X2800

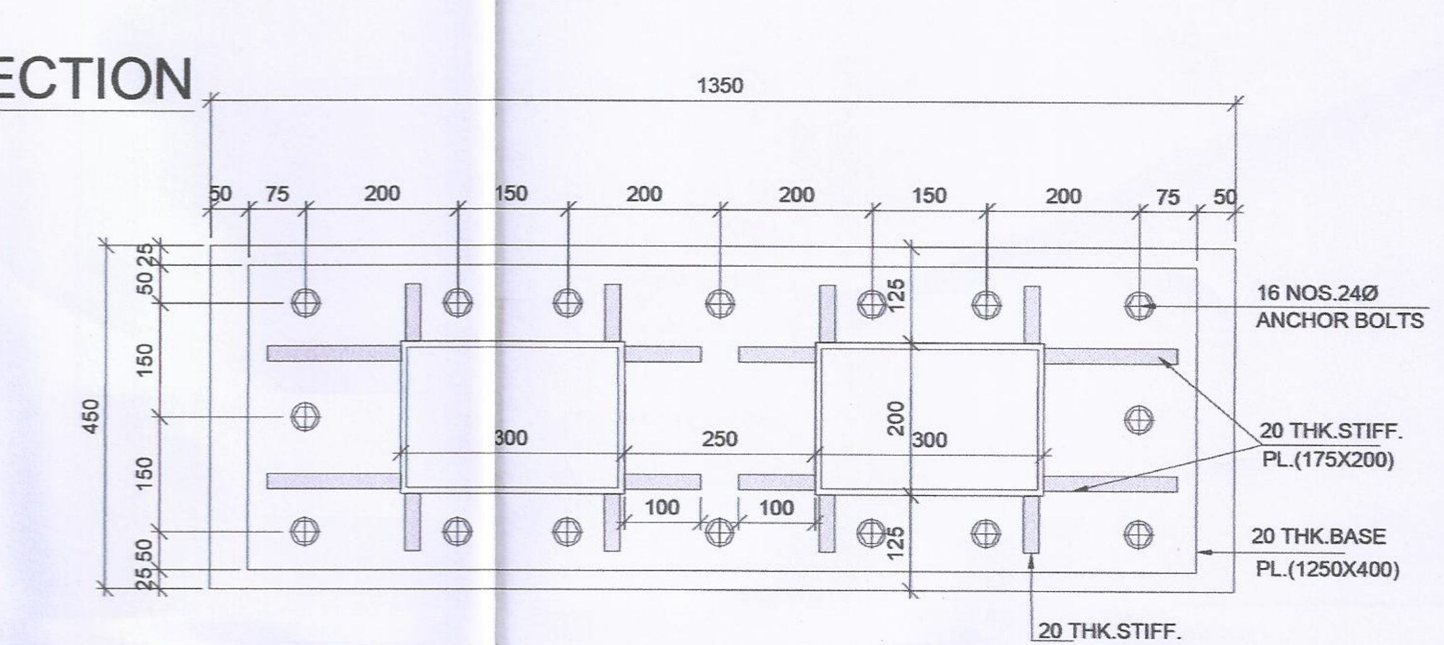


RAFTER M2 TO M3 CONNECTION



DETAILS OF 24Ø BOLT

(SCALE 1:10)



BASE PLATE DETAIL

Consultant-Structural		
CDPL	Drawn By- PREETI	Signature & Stamp
	Designed and Checked By- HARIOM GERA (DETAILED DESIGNER)	Signature & Stamp
Consultant:Architect+MEP		
ANA Design	Drawn By-	Signature & Stamp
	Checked By- SITARAM GUPTA ARCHITECT	Signature & Stamp
EPC Contractor		
ACIL	Site-In-Charge: RAJEEV BANSODE (SR. GM PROJECTS)	Signature & Stamp
	Design Director: KAVI PRAKASH (DESIGN DIRECTOR)	Digitally signed by Kavi Prakash DN: C=IN, E=kavi.prakash@acilnet.com, O="Ahluwalia Contracts India Limited ", OU="General Manager EPC and Coordination ", CN=Kavi Prakash Reason: I have reviewed this document Date: 2023.07.21 22:40:25+05'30'
Authority Engineer (VSPL)		
VSPL	Project Architect/Lead Designer: DR. S.K. SINGH (Lead Designer)	Design Expert-Voyants Dr. S.K. Singh
	Approved By: RAJIV UPADHYAY (Team Leader)	Team Leader-Voyants Rajiv Upadhyay
Proof Consultant		
IIT/ Madras	S.R Satish Kumar (Associate Professor)	Signature & Stamp

GENERAL NOTE:

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10. ALL SHEAR STUDS OF GRADE E-350 SHALL BE 19mm/22mm/25mm DIA 120mm HEIGHT.
11. REINFORCEMENT SHALL BE TMT BARS OF GRADE fe 500D AND CONFORMING TO I.S.1786-2008.
12. ALL WELDS ARE 6MM FILLET WELDS EXCEPT WHERE OTHERWISE STATED IN DETAIL DRAWINGS.
13. ALL WELDS WILL BE IN FULL LENGTH ALL AROUND THE SECTION AT EACH JOINT.

NO.	DESCRIPTION	DATE
R5	REVISED AS / COMMENTS	29/06/2023
R4	REVISED AS / ACIL COMMENTS	23/06/2023
R3	REVISED M5 MEMBER SIZE	14/06/2023
R2	REVISED AS PER ARCH.	06/06/2023
R1	REVISED AS PER ARCH.	20/05/2023
R0	GFC	02/05/2023

REVISION DESCRIPTION:

DESIGN QUALITY ASSURANCE
(CONSULTANTS & EPC CONTRACTOR)
THE DRAWING HAS BEEN PREPARED BASED ON ACTUAL SITE SURVEY AND OTHER TERMS AND CONDITIONS OF THE EPC AGREEMENT. RESPONSIBILITY OF ACCURACY CORRECTNESS, COMPLETENESS AND INTEGRITY AND FULL COMPLIANCE OF RELEVANT CODES AND MANUALS/ RULES. (AS PER EPC AGREEMENT PROVISIONS) RESTS WITH DESIGN CONSULTANT AND CONTRACTOR.

CONSULTANT: STRUCTURE
CONSTRUCTURE DESIGN P. LTD
3RD FLOOR, ABHISHEK PLAZA, PART, POCKET B, MAYUR VIHAR, PHASE 2, NEW DELHI - 110091
TEL-(011)-2277,2272,4917
EMAIL - constructure@gmail.com
BAL MUKAND — DRAWN BY
HARIOM GERA — STRUCTURE ENGINEER

CONSULTANT : ARCHITECT + MEP SERVICES
ANA DESIGN STUDIO PVT. LTD.
321,3RD FLOOR, USMSS COMPLEX, 120 MATHURA ROAD, OPP. APOLLO HOSPITAL
TEL-(011)-2684-4227
EMAIL - info@ana-design.com
DRAWN BY
ARCHITECT / ENGINEER

EPC CONTRACTORS:
AHLUWALIA CONTRACTS (INDIA) LTD.
PLOT NO. A 177, POCKET A, OKHLA I, OKHLA, NEW DELHI, 110020.
TEL-011 4941 0500
CHECKED BY
DESIGN DIRECTOR

DESIGN QUALITY ASSURANCE
(PMC)
THE DRAWING INCLUDING ITS DESIGN AND DETAILING HAS BEEN CHECKED IN ACCEPTANCE WITH THE REQUIREMENT OF EPC AGREEMENT AND FOUND SUITABLE FOR EXECUTION PURPOSE.

PMC:
VOYANTS SOLUTIONS PRIVATE LIMITED
BPTP PARK CENTRA, 403, 4TH, BLOCK A, JAL VAYU VIHAR, SECTOR 30, GURUGRAM, HARYANA 122001
PROJECT ARCHITECT
TEAM LEADER

DESIGN QUALITY ASSURANCE
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CLIENT:
RAIL LAND DEVELOPMENT AUTHORITY
APE/CDG
DGM/P/CDG
CPM /CDG
MINISTRY OF RAILWAYS

KEY PLAN:

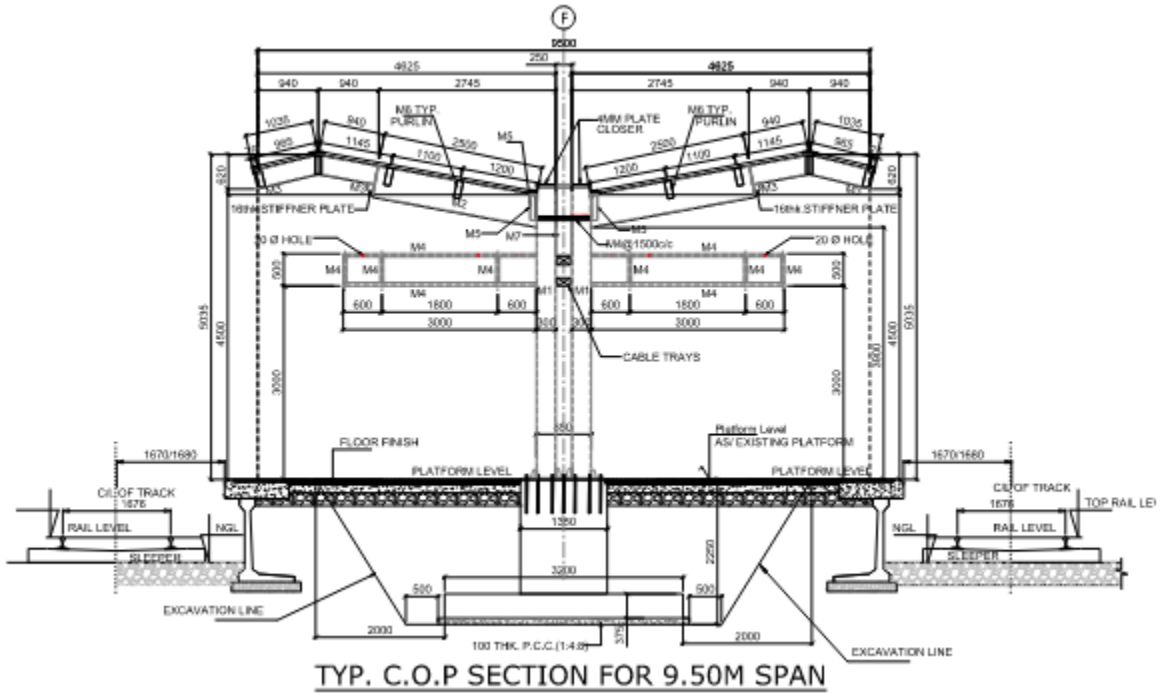
PROJECT NAME:
LIGHTHOUSE PROJECT FOR UP-GRADATION OF CHANDIGARH RAILWAY STATION
CHANDIGARH, PUNJAB & HARYANA

SHEET SIZE: A1	SCALE: 1:100

DRAWING TITLE: COP DETAIL & SECTION

DRAWING NO.:	REV.
CDPL/CRS/COP-S02	R1

STRUCTURE DESIGN INTENT: Cover over Platform (COP)



TYP. C.O.P SECTION FOR 9.50M SPAN

Material Used : Concrete Grade: M40
Reinforcement : Fe 500-D
Structural Steel : YST-310 Grade

Service Boom and Services Design integrated with COP,

COP Columns Designed for OHE Loads and Solar Panels,

Prefabricated hollow sections to avoid bird nuisance.

COP designed as Per IRS Seismic Code 2020

Height from Ground: Varying with height at platform edge as per IRSOD.

Design Life: 100 years

Seismic Importance Factor : 1.5 (Important Building)

Seismic Zone : IV

Wind Speed : 50 m/s (NBC 2016)

Foundation Type : Isolated Precast Footing

Bearing Capacity : 12 t/m2

Exposure Condition: Moderate

Load Considered :
Solar Panels,
Twin Track Cantilever for OHE @ 100kn/m moment

Grid Size : 12 m along platform length