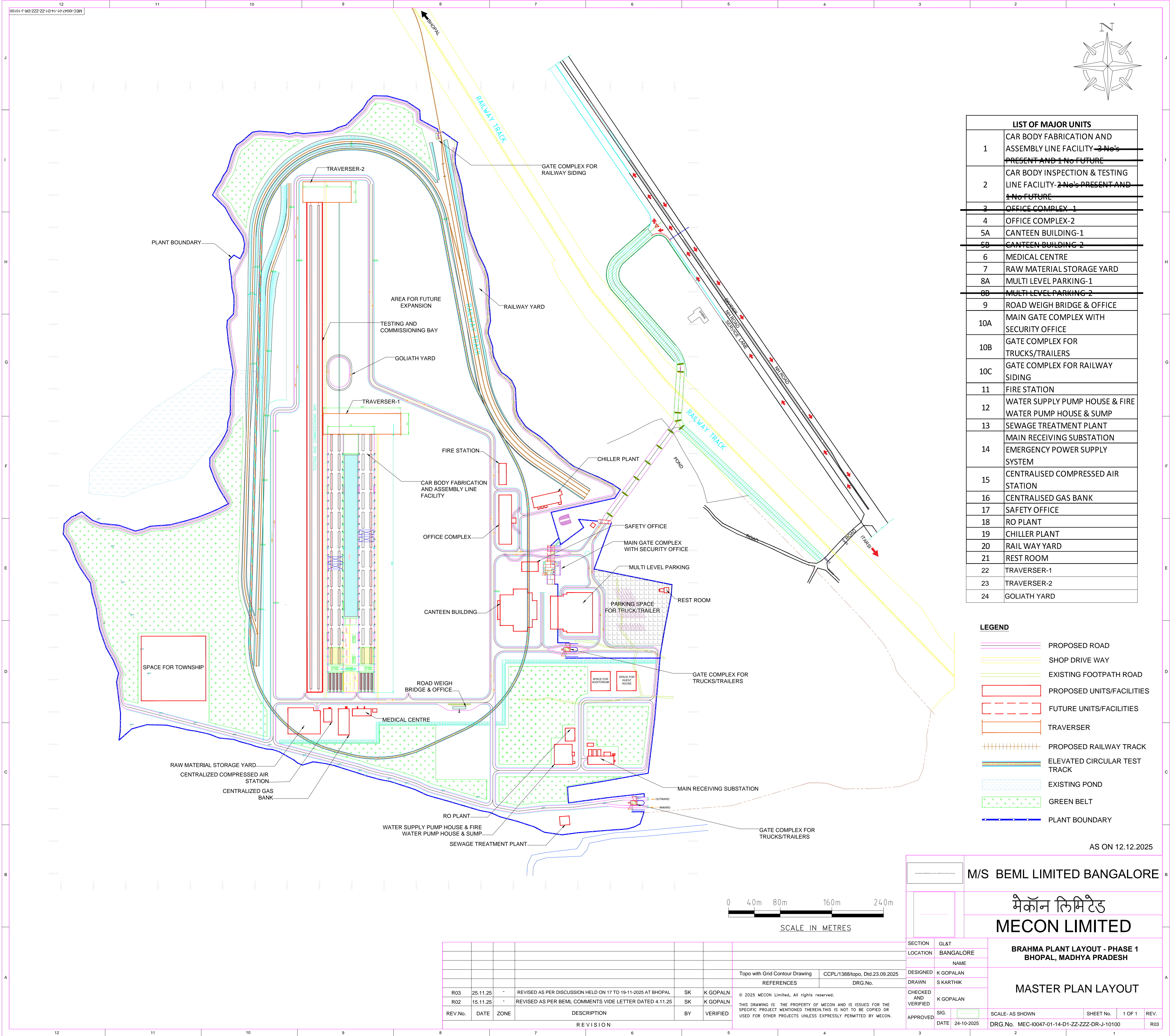


Overall master list of DraWings/DoCument				
SI No	Name of Building / Facility	Facility Code	MECON Drawing reference No	Drawing Description
1	<u>Master Plan Layout-Orientation 01</u>		MEC-I0047-01-14-D1-ZZ-ZZZ-DR-J-10100-01	Buildings Facilities orientation
A	ARCHITECTURAL DRAWINGS			
1	CAR BODY FABRICATION AND ASSEMBLY FACILITY	01A	MEC-I0047-01-48-D1-XX-01-A-01100	FLOOR PLAN
2	CAR BODY FABRICATION AND ASSEMBLY FACILITY	01B	MEC-I0047-01-48-D1-XX-01-A-01200	SECTIONS
3	CAR BODY FABRICATION AND ASSEMBLY FACILITY	01C	MEC-I0047-01-48-D1-XX-01-A-01300	ELEVATION
4	CAR BODY INSPECTION AND TESTING FACILITY	02A	MEC-I0047-01-48-D1-XX-02-A-01100	FLOOR PLAN
5	CAR BODY INSPECTION AND TESTING FACILITY	02B	MEC-I0047-01-48-D1-XX-02-A-01200	SECTIONS
6	CAR BODY INSPECTION AND TESTING FACILITY	02C	MEC-I0047-01-48-D1-XX-02-A-01300	ELEVATION
7	OFFICE COMPLEX -2	4	MEC-I0047-01-48-D1-XX-04-DR-A-01101	SECOND FLOOR PLAN AND THIRD FLOOR PLAN
8	OFFICE COMPLEX -2	4	MEC-I0047-01-48-D1-XX-04-DR-A-01102	FOURTH FLOOR PLAN AND FIFTH FLOOR PLAN
9	OFFICE COMPLEX -2	4	MEC-I0047-01-48-D1-XX-04-DR-A-01200	SECTIONN AND ELEVATION
10	OFFICE COMPLEX -2	4	MEC-I0047-01-48-D1-XX-04-DR-A-01201	SECTIONS AND VIEWS
11	CANTEEN BUILDING	05A	MEC-I0047-01-48-D1-XX-5A & 5B-DR-A-01100	CANTEEN BUILDING-GROUND FLOOR PLAN AND SECTION
12	CANTEEN BUILDING	05B	MEC-I0047-01-48-D1-XX-5A & 5B-DR-A-01101	CANTEEN BUILDING-3D - RENDERS
13	MEDICAL CENTRE	6	MEC-I0047-01-48-D1-XX-06-DR-A-01100	GROUND FLOOR PLAN AND SECTIONS
14	RAW MATERIAL STORAGE YARD	7	MEC-I0047-01-48-D1-XX-07-DR-A-01100	SITE PLAN, OFFICE FLOOR PLAN, SECTION & 3D RENDER
15	MULTILEVEL CAR PARKING(OPTION-1)	08A&08B	MEC-I0047-01-48-D1-XX-8A&8B-DR-A-01100	GROUND FLOOR PLAN
16	MULTILEVEL CAR PARKING(OPTION-1)	08A&08B	MEC-I0047-01-48-D1-XX-8A&8B-DR-A-01101	FIRST FLOOR PLAN & VIEWS
17	MAIN GATE COMPLEX WITH SECURITY OFFICE	10A	MEC-I0047-01-48-D1-XX-10A-DR-A-01100	GROUND FLOOR PLAN AND FIRST FLOOR PLAN
18	MAIN GATE COMPLEX WITH SECURITY OFFICE	10A	MEC-I0047-01-48-D1-XX-10A-DR-A-01200	SECTION, FRONT ELEVATION & VIEWS
19	GATE COMPLEX FOR TRUCK ENTRY / EXIT	10B	MEC-I0047-01-48-D1-XX-10B-DR-A-01100	GROUND FLOOR PLAN, SECTION,ELEVATION & VIEWS
20	GATE COMPLEX FOR RAILWAY SIDING	10C	MEC-I0047-01-48-D3-XX-10C-DR-A-01100	FLOOR PLANS, SECTION, ELEVATION AND 3-D RENDER
21	FIRE STATION	11	MEC-I0047-01-48-D1-XX-11-DR-A-01100	GROUND FLOOR PLAN AND SECTIONS
22	PUMP HOUSE AND SUMP	12	MEC-I0047-01-48-D1-XX-12-DR-A-01100	GROUND FLOOR PLAN ,ELEVATIONS, SECTION & VIEW
23	100 KLD MBR BASED STP BUILDING	13	MEC-I0047-01-48-D1-XX-13-DR-A-01100	GROUND FLOOR PLAN , SECTION & VIEW
24	MRSS BUILDING	14	MEC-I0047-01-48-D1-XX-14-DR-A-01100	GROUND FLOOR PLAN, SECTIONS AND VIEW
25	MRSS BUILDING	14	MEC-I0047-01-48-D1-XX-14-DR-A-01200	ELEVATIONS AND VIEW
26	AIR COMPRESSOR STATION BUILDING	15	MEC-I0047-01-48-D1-XX-15-DR-A-01100	GROUND FLOOR PLAN , SECTION & VIEW
27	CENTRALISED GAS BANK	16	MEC-I0047-01-48-D1-XX-16-DR-A-01100	GROUND FLOOR PLAN , SECTION,ELEVATION & VIEW
28	SAFETY OFFICE	17	MEC-I0047-01-48-D1-XX-17-DR-A-01100	GROUND FLOOR PLAN, SECTION & 3D RENDER
29	COMMON CHILLER PLANT	19	MEC-I0047-01-48-D1-XX-19-DR-A-01100	GROUND FLOOR PLAN & SECTIONS
30	TOILET BLOCK AND RESTROOM AT PARKING AREA	21	MEC-I0047-01-48-D1-XX-21-DR-A-01100	GROUND FLOOR PLAN,ELEVATION, SECTIONS AND VIEW
31	MASTER PLAN LAYOUT	ZZZ	MEC-I0047-01-14-D1-ZZ-ZZZ-DR-J-10100	
B	ELECTRICALS			
1	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY	ZZZ	MEC-I/0047-01-E1-D1-ZZ-ZZZ-DR-E-07220	SINGLE LINE DIAGRAM KEY POWER DISTRIBUTION SCHEME

SI No	Name of Building / Facility	Facility Code	MECON Drawing reference No	Drawing Description
C	EPSS			
1	EPSS	ZZZ	MEC-I/0047-01-40-D1-ZZ-14-DR-N-03003	LAYOUT & SECTIONS OF DG SETS FOR EMERGENCY POWER
D	INSTRUMENTATION&PROCESS CONTROL			
1	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY	ZZZ	MEC-I/0047-01-E5-D1-XX-01-DR-I-00001	SCHEMATIC FDA SYSTEM
2	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY	ZZZ	MEC-I/0047-01-E5-D1-XX-01-DR-I-00002	SCHEMATIC LAN SYSTEM
E	COMPRESSED AIR			
1	CAR BODY FABRICATION AND ASSEMBLY FACILITY	ZZZ	MEC-/I0047-01-40-D1-ZZ-15-DR-N-03002	PDF OF COMPRESSED AIR FACILITY
F	GAS BANK			
1	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY	ZZZ	MEC-I/0047-01-40-D1-ZZ-16-DR-N-03004	PFD OF INDUSTRIAL GASES
G	HVAC			
1	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY	ZZZ	MEC-I/0047-01-40-D1-ZZ-ZZZ-DR-H-05001	CHILLED WATER SYSTEM P&ID
H	WATER SUPPLY SYSTEM			
1	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY	ZZZ	MEC-I/0047-01-40-D1-ZZ-12-DR-N-03001	PFD OF WATER SUPPLY FACILITIES
I	FIRE FIGHTING SYSTEM			
1	FIRE FIGHTING SYSTEM	ZZZ	MC-I0047-01-14-D1-ZZ-ZZZ-DR-N-04002	P&I DIAGRAM OF AUTOMATIC SPRINKLER SYSTEM
2	FIRE FIGHTING SYSTEM	ZZZ	MEC-I0047-01-14-D1-ZZ-ZZZ-DR-N-04001	P&I DIAGRAM FIRE WATER PUMPING SYSTEM
3	FIRE FIGHTING SYSTEM	ZZZ	MEC-I0047-01-14-D1-ZZ-ZZZ-DR-N-04100	FIRE WATER PIPELINE NETWORK
J	FUNCTIONAL LAYOUT			
1	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY	1	MEC-I/0047-01-31-D1-XX-01-DR-T-13200	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY FUNCTIONAL LAYOUT-USABLE PRODUCTS & WAREHOUSE AREA
2	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY	1	MEC-I/0047-01-31-D1-XX-01-DR-T-13201	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY FUNCTIONAL LAYOUT-FUNCTIONAL ZONE AREA
3	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY	1	MEC-I/0047-01-31-D1-XX-01-DR-T-13202	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY FUNCTIONAL LAYOUT-FLOOR PLAN
4	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY	1	MEC-I/0047-01-31-D1-XX-01-DR-T-13203	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY FUNCTIONAL LAYOUT-DETAILED FLOOR PLAN
5	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY	1	MEC-I/0047-01-31-D1-XX-01-DR-T-13300	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY FUNCTIONAL LAYOUT-TYPICAL SECTION
6	CAR BODY INSPECTION AND TESTING FACILITY	2	MEC-I/0047-02-31-D1-XX-02-DR-T-13200	CAR BODY INSPECTION AND TESTING FACILITY FUNCTIONAL LAYOUT-FLOOR PLAN
7	CAR BODY INSPECTION AND TESTING FACILITY	2	MEC-I/0047-02-31-D1-XX-02-DR-T-13300	CAR BODY INSPECTION AND TESTING FACILITY FUNCTIONAL LAYOUT-TYPICAL SECTION



LIST OF MAJOR UNITS	
1	CAR BODY FABRICATION AND ASSEMBLY LINE FACILITY - 3 No's PRESENT AND 1 No FUTURE
2	CAR BODY INSPECTION & TESTING LINE FACILITY - 2 No's PRESENT AND 1 No FUTURE
3	OFFICE COMPLEX - 1
4	OFFICE COMPLEX-2
5A	CANTEEN BUILDING-1
5B	CANTEEN BUILDING - 2
6	MEDICAL CENTRE
7	RAW MATERIAL STORAGE YARD
8A	MULTI LEVEL PARKING-1
8B	MULTI LEVEL PARKING - 2
9	ROAD WEIGH BRIDGE & OFFICE
10A	MAIN GATE COMPLEX WITH SECURITY OFFICE
10B	GATE COMPLEX FOR TRUCKS/TRAILERS
10C	GATE COMPLEX FOR RAILWAY SIDING
11	FIRE STATION
12	WATER SUPPLY PUMP HOUSE & FIRE WATER PUMP HOUSE & SUMP
13	SEWAGE TREATMENT PLANT
14	MAIN RECEIVING SUBSTATION
15	CENTRALISED COMPRESSED AIR STATION
16	CENTRALISED GAS BANK
17	SAFETY OFFICE
18	RO PLANT
19	CHILLER PLANT
20	RAIL WAY YARD
21	REST ROOM
22	TRAVERSER-1
23	TRAVERSER-2
24	GOLIATH YARD

LEGEND	
	PROPOSED ROAD
	SHOP DRIVE WAY
	EXISTING FOOTPATH ROAD
	PROPOSED UNITS/FACILITIES
	FUTURE UNITS/FACILITIES
	TRAVERSER
	PROPOSED RAILWAY TRACK
	ELEVATED CIRCULAR TEST TRACK
	EXISTING POND
	GREEN BELT
	PLANT BOUNDARY

AS ON 12.12.2025

M/S BEML LIMITED BANGALORE

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MECON LIMITED

BRAHMA PLANT LAYOUT - PHASE 1
BHOPAL, MADHYA PRADESH

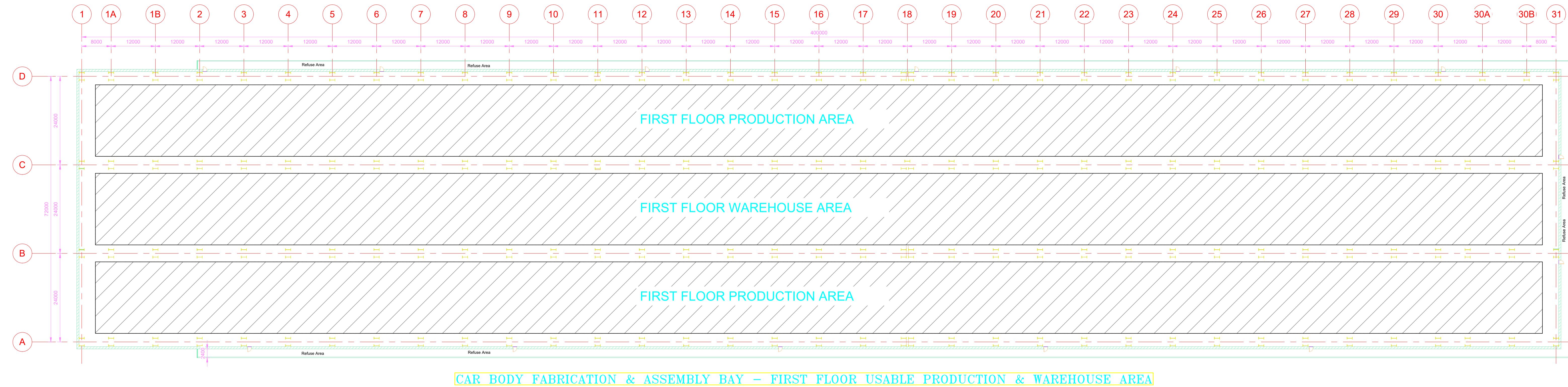
MASTER PLAN LAYOUT

SECTION	GL&T
LOCATION	BANGALORE
NAME	
DESIGNED	K GOPALAN
DRAWN	S KARTHIK
CHECKED AND VERIFIED	K GOPALAN
SIG.	
DATE	24-10-2025
APPROVED	

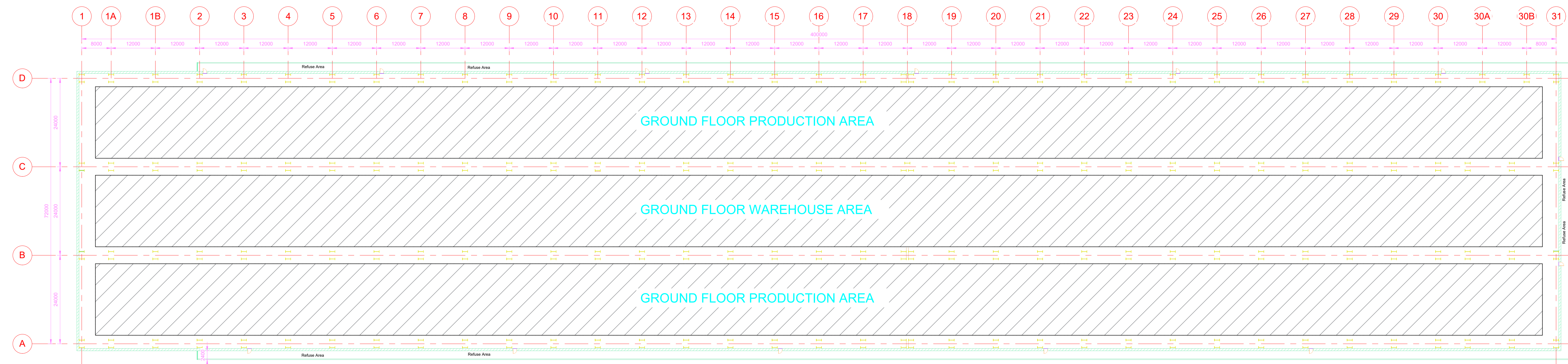
SCALE- AS SHOWN	SHEET No.	1 OF 1	REV.
DRG.No.	MEC-10047-01-14-D1-ZZ-ZZZ-DR-J-10100		R03

REV.No.	DATE	ZONE	DESCRIPTION	BY	VERIFIED
R03	25.11.25	*	REVISED AS PER DISCUSSION HELD ON 17 TO 19-11-2025 AT BHOPAL	SK	K GOPALN
R02	15.11.25	*	REVISED AS PER BEML COMMENTS VIDE LETTER DATED 4.11.25	SK	K GOPALN
REVISION					

Topo with Grid Contour Drawing	OCPL/1388/topo, Dtd 23.09.2025
REFERENCES	DRG.No.
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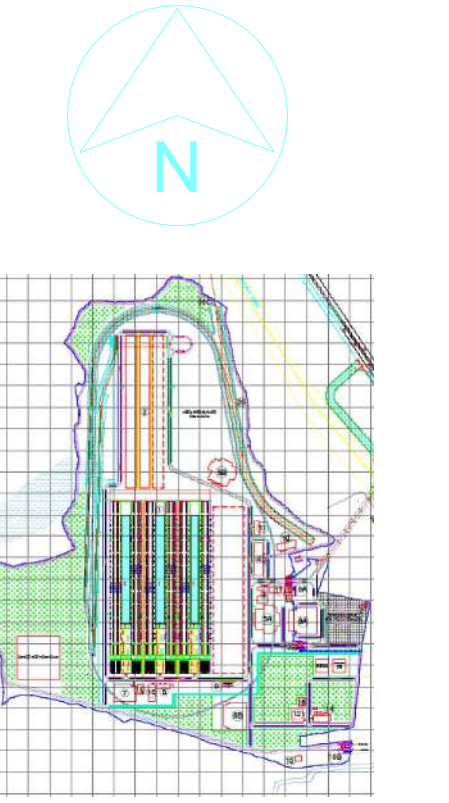


CAR BODY FABRICATION & ASSEMBLY BAY – FIRST FLOOR USABLE PRODUCTION & WAREHOUSE AREA



CAR BODY FURNISHING BAY – GROUND FLOOR USABLE PRODUCTION & WAREHOUSE AREA

WORK SHOP BAY – USABLE PRODUCTION & WAREHOUSE AREA



KEY PLAN

NOTE :

All dimensions are in MM unless otherwise mentioned

FUNCTIONAL LAYOUT DRAWINGS

0	09-01-20	FOR FINAL DPR SUBMISSION	OK	OK	PKJ	PKJ
0	29-11-25	FOR DPR SUBMISSION	OK	OK	PKJ	PKJ
EV	DATE	DESCRIPTION	BY	CHK	RWW	APP

REVISIONS
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COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

UPPER BODY FABRICATION & ASSEMBLY LINE FACILITY



CAR BODY FABRICATION & ASSEMBLY LINE FACILITY

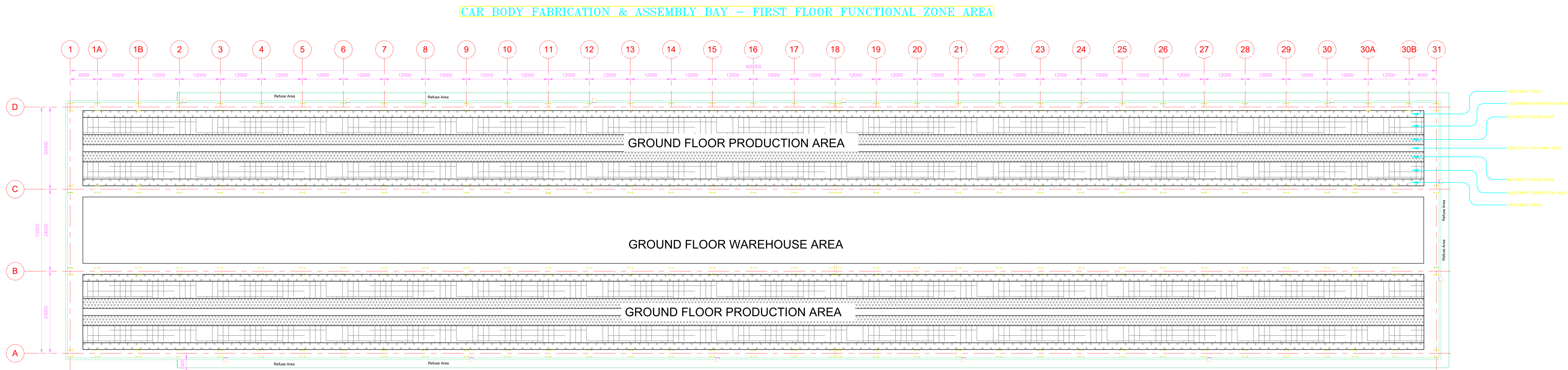
FUNCTIONAL LAYOUT - FLOOR PLAN

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TE: 29-11-2025		SCALE:		SIZE: A0	
F No.: 590062340/0 dated		PROJECT No.: W047			

DRAWING No.:		REVISION:
MEC-I/0047-01-31-D1-XX-01-DR-T-13200		

NOTE :

All dimensions are in MM unless otherwise mentioned



CAR BODY FURNISHING BAY – GROUND FLOOR FUNCTIONAL ZONE AREA

[illegible]

COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

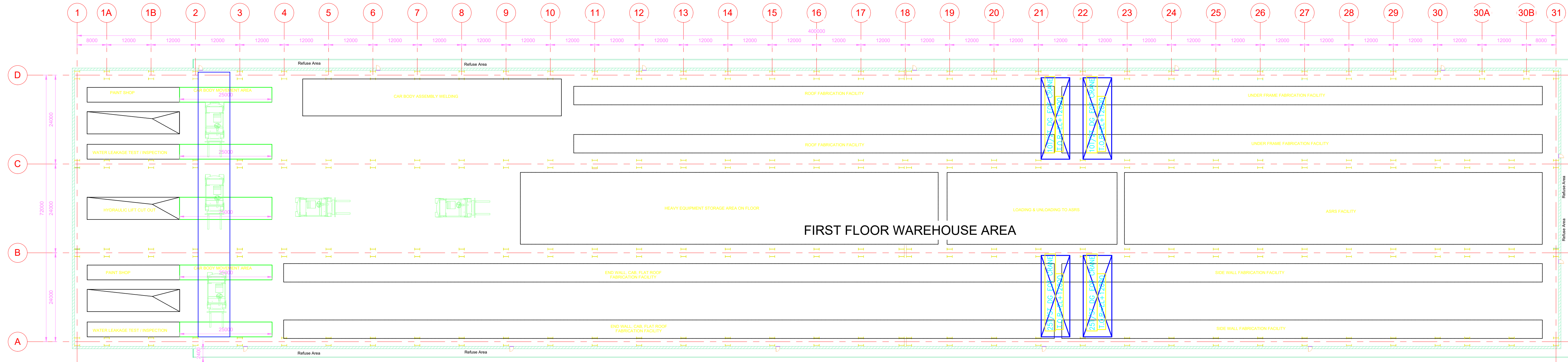


**CAR BODY FABRICATION & ASSEMBLY
LINE FACILITY**

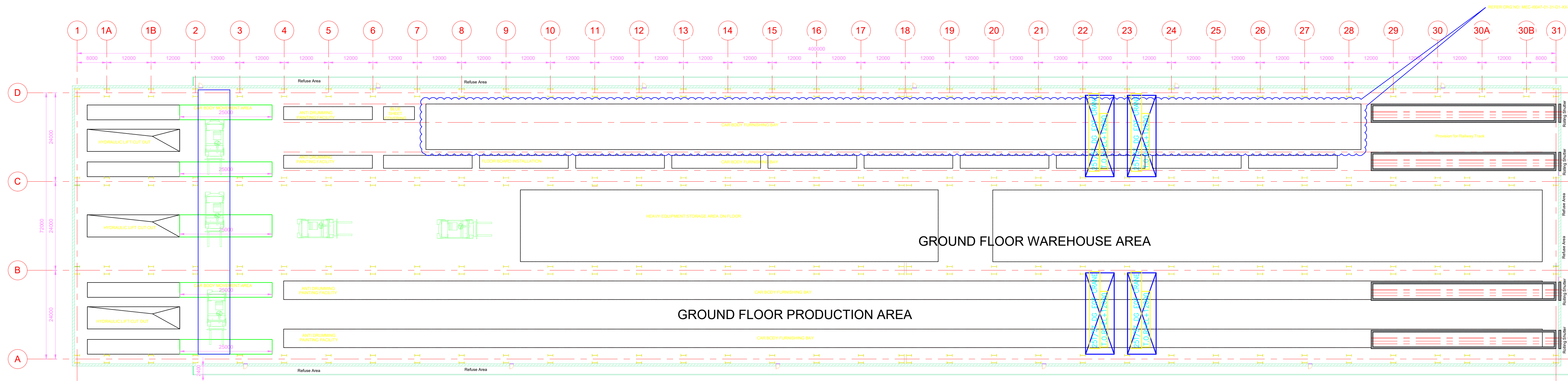
FUNCTIONAL LAYOUT - FLOOR PLAN

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DATE: 00-11-2006				SITE: 10

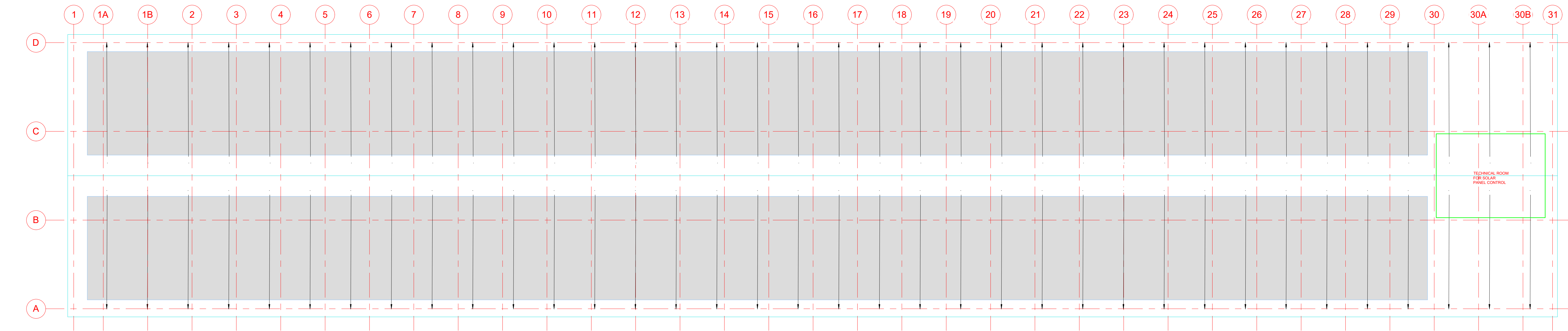
DRAWING No.: MEC-I/0047-01-31-D1-XX-01-DR-T-13201



FIRST FLOOR PLAN_ VANDE BHARAT /LHB - CAR BODY FABRICATION & ASSEMBLY BAY



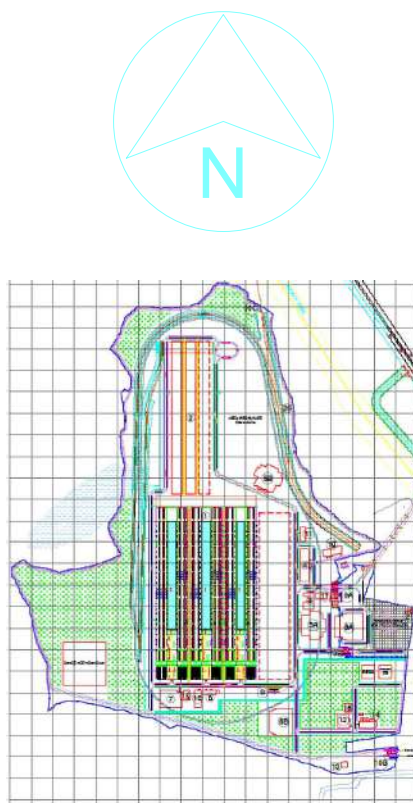
GROUND FLOOR PLAN_ VANDE BHARAT /LHB - CAR BODY FURNISHING BAY



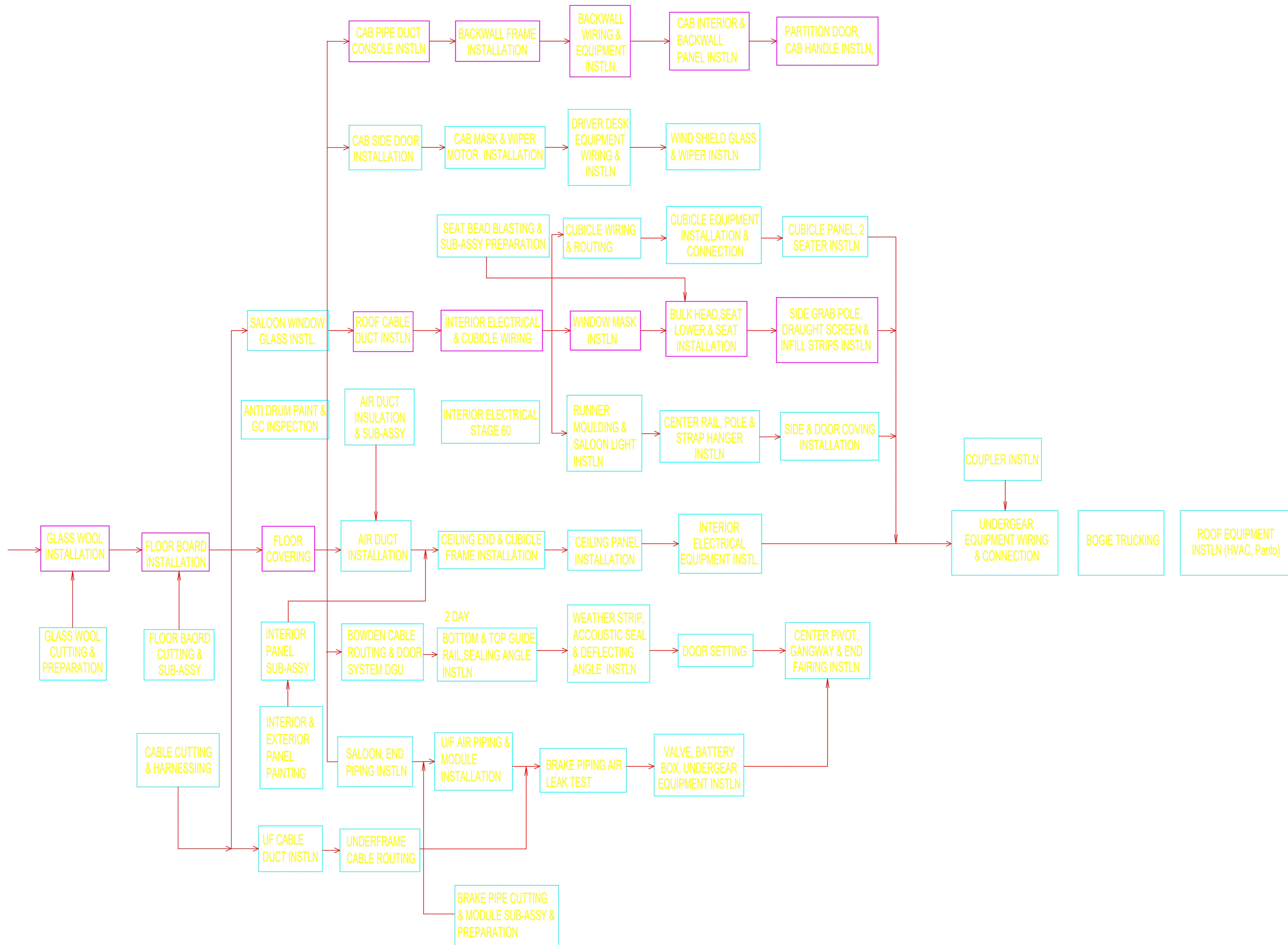
ROOF PLAN_ VANDE BHARAT /LHB - CAR BODY ASSEMBLY BAY

Car Body Fabrication & Assembly Line Equipment List - TENTATIVE

S.No	Equipment	Quantity
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KEY PLAN
NOTE :
1. All dimensions are in MM unless otherwise mentioned.



KEY PLAN

NOTE :

1. All dimensions are in MM unless otherwise mentioned

FUNCTIONAL LAYOUT DRAWINGS

R02.0	09-01-20	FOR FINAL DPR SUBMISSION	OK	OK	PKJ	PKJ
R01.0	20-11-25	FOR DPR SUBMISSION	OK	OK	PKJ	PKJ
REV	DATE	DESCRIPTION	BY	CHK	RWW	APP

REVISIONS



COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

CAR BODY FABRICATION &
ASSEMBLY LINE FACILITY



TITLE CAR BODY FABRICATION & ASSEMBLY
LINE FACILITY

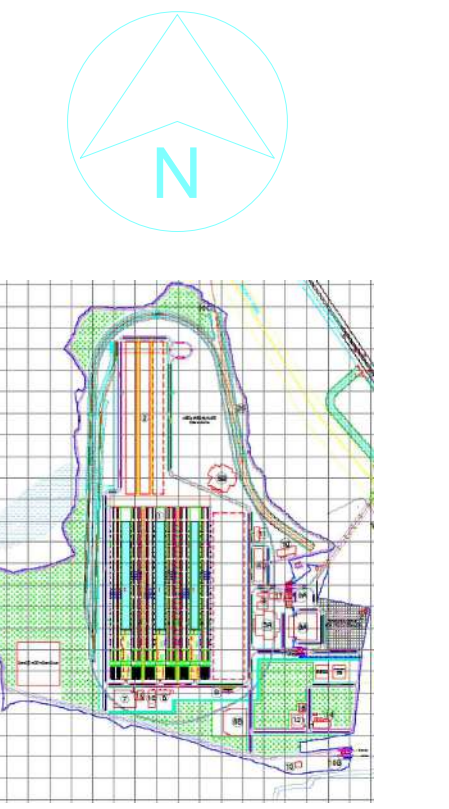
FUNCTIONAL LAYOUT -
FLOOR PLAN

DRAWN: GK [REDACTED] GK REVIEWED: PKJ APPROVED: PKJ

DATE:	29-11-2025	SCALE :	SIZE: A2
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REF No.: 5900052343/1-0 Excel 30 July 2025	PROJECT No.: 10047
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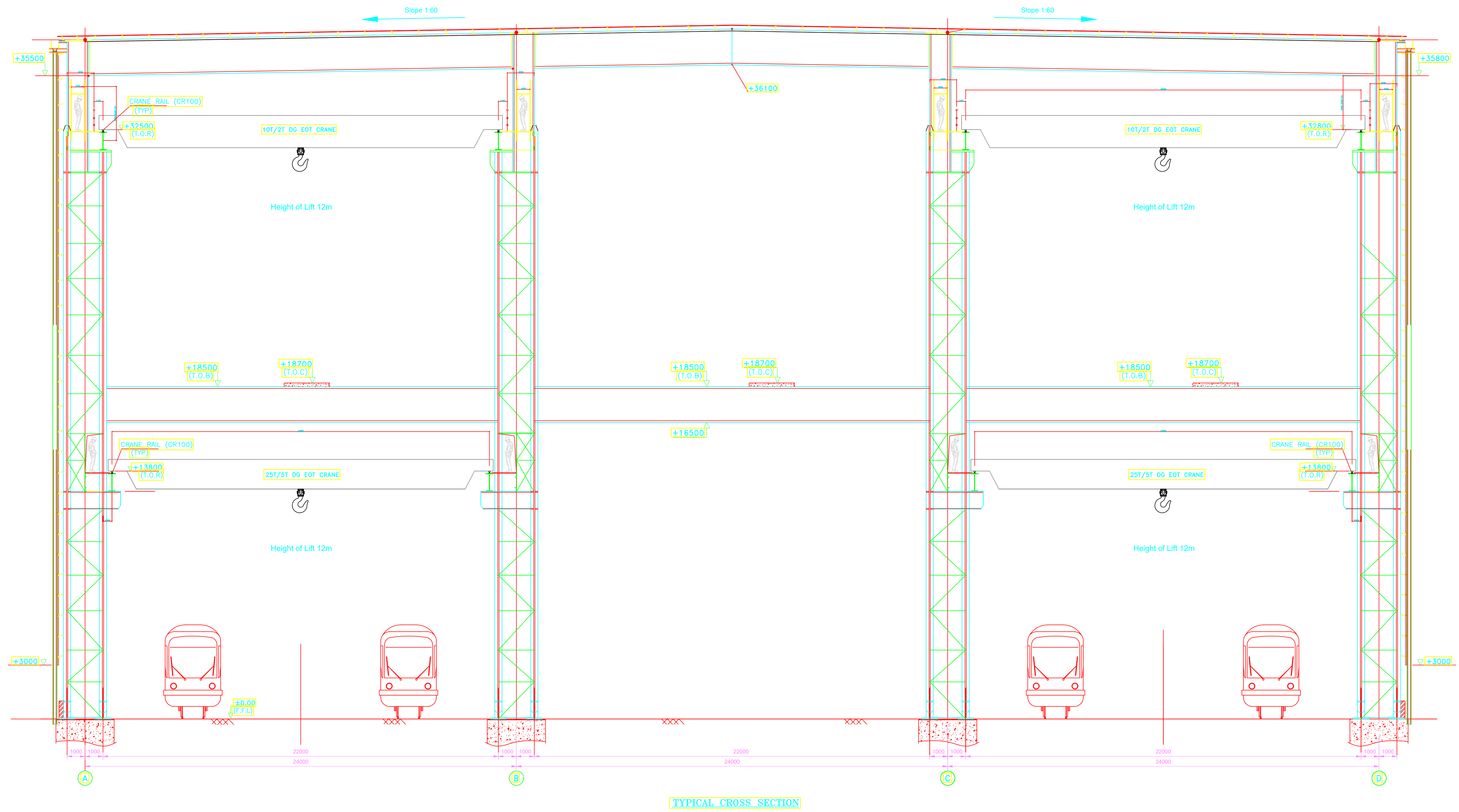
DRAWING No.:	REVISION:
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KEY PLAN

NOTE :

All dimensions are in MM unless otherwise mentioned



FUNCTIONAL LAYOUT DRAWINGS

2.0	09-21-20	FOR FINAL DPR SUBMISSION	OK	OK	PKJ	PKJ
1.0	20-11-20	FOR DPR SUBMISSION	OK	OK	PKJ	PKJ
EV	DATE	DESCRIPTION	BY	CHK	RWV	APP

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BEML
Second Possibilities

BEML LIMITED
BANGALORE

COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

UPPER BODY FABRICATION & ASSEMBLY LINE FACILITY



IECON LIMITED
BANGALORE

**CAR BODY FABRICATION & ASSEMBLY
LINE FACILITY**

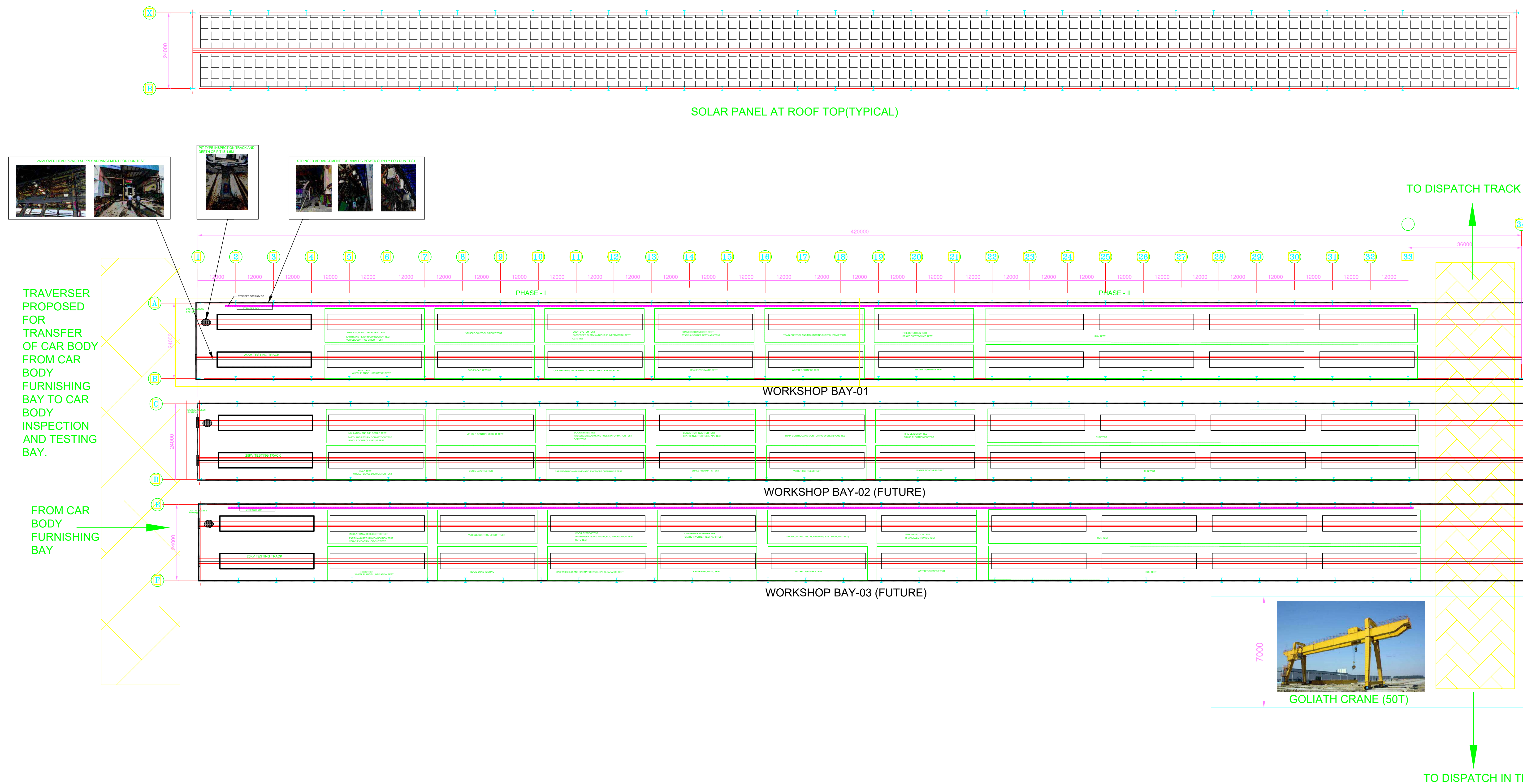
FUNCTIONAL LAYOUT - FLOOR PLAN

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DATE: 29-11-2025		SCALE:	SIZE: A0
REF No.: 59000623407-0 dated 30.11.2025		PROJECT No.: U0047	

RAWING No.:	REVISION:
MEC-I/0047-01-31-D1-XX-01-DR-T-13300	



1. All dimensions are in MM unless otherwise mentioned



Car Body Inspection & Testing Line		
Equipment List - TENTATIVE		
S.No	Equipment	Quantity
1	750 V DC power supply Singer box	1
2	25 KV AC power supply (OHE System)	1
3	Bogie Load Testing Equipment	1
4	Car Weighing Equipment	1
5	Universal Brake System Test Benches	1
6	Megger Tester	4
7	Hipot Tester	4
8	Kinematic Envelope gauge	1
9	water leak testing system/Nozzles/Pumps)	1
10	Ground Bond Testers	1
11	Digital Multimeters (DMMs)	4
12	Analog Oscilloscopes	2
13	Circuit Testers/Light Lights (LED/Probe-based)	2
14	Rain Test Chamber	1
15	All-in-One CCTV Testers	1
16	Programmable DC Supplies	1
17	Regenerative AC Loads/Supplies	1
18	Traverser	1
19	HVAC Testing Facility	1
20	Dielectric and Insulation Testing Facility	1
21	Vehicle Control Circuit Test Facility	1
22	All Electrical Testing Facility	1
23	PCMS	1
24	Fire Detection Testing Facility	1
25	Brake Electronics Testing Facility	1
26	Brake Pneumatics Testing Facility	1
27	Passenger Alarm and Public Information Test Facility	1

FUNCTIONAL LAYOUT DRAWINGS

REQ ID	09-01-20	FOR FINAL DPR SUBMISSION	OK	OK	PKU	PKU
REQ ID	20-11-05	FOR DPR SUBMISSION	OK	OK	PKU	PKU
REQ ID	15-11-05	SUBMITTED FOR APPROVAL	OK	OK	PKU	PKU
REV	DATE	DESCRIPTION	BY	CHK	R/W	APP

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COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

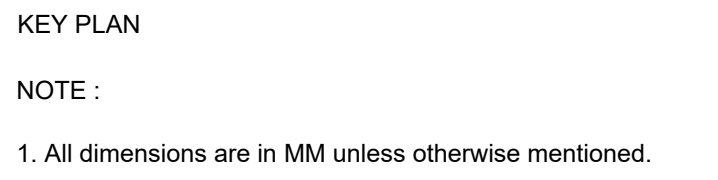
CENTRAL SCRAP YARD & DUMMY
BOGIE & JIGS STORAGE COMPLEX



TITLE **CAR BODY INSPECTION & TESTING LINE**

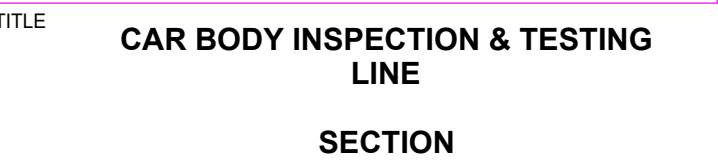
FUNCTIONAL LAYOUT - FLOOR PLAN

DRAWN: MK		CHECKED: GK	REVIEWED: PKJ	APPROVED: PKJ
DATE: 29-11-2025		SCALE:		SIZE: A0
REF No.: 910090313407-0 dated 30 July 2025		PROJECT No.: I0047		
DRAWING No.: MEC-I/0047-01-31-D1-XX-02-DR-T-13200				REVISION

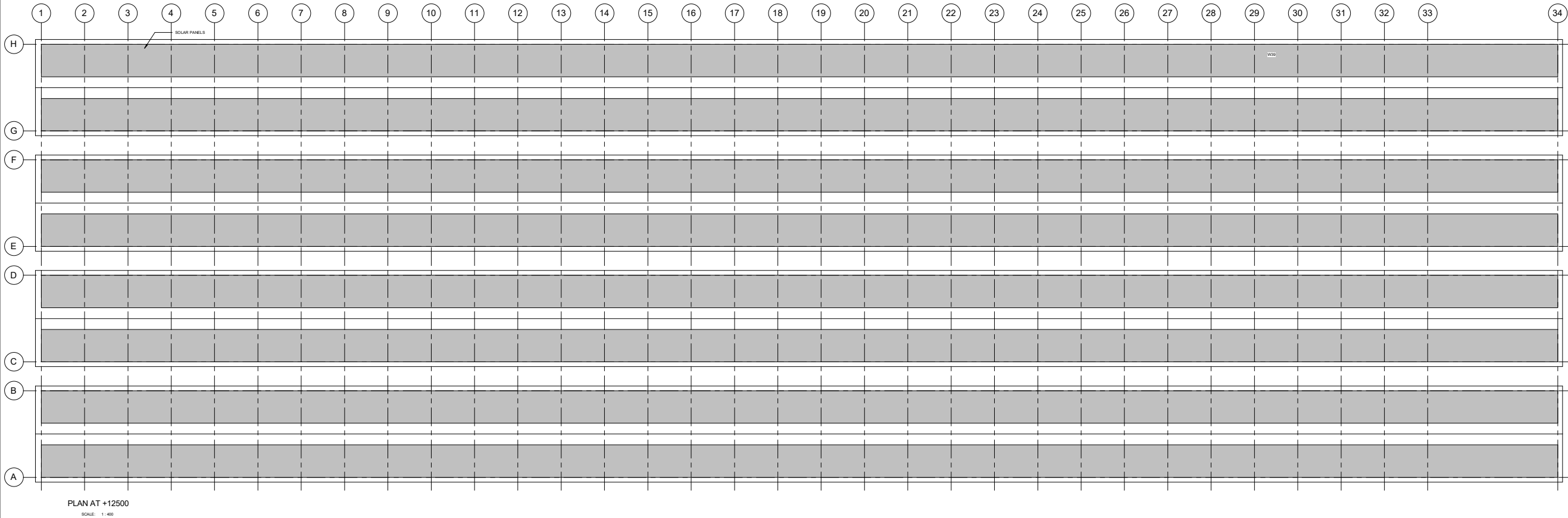
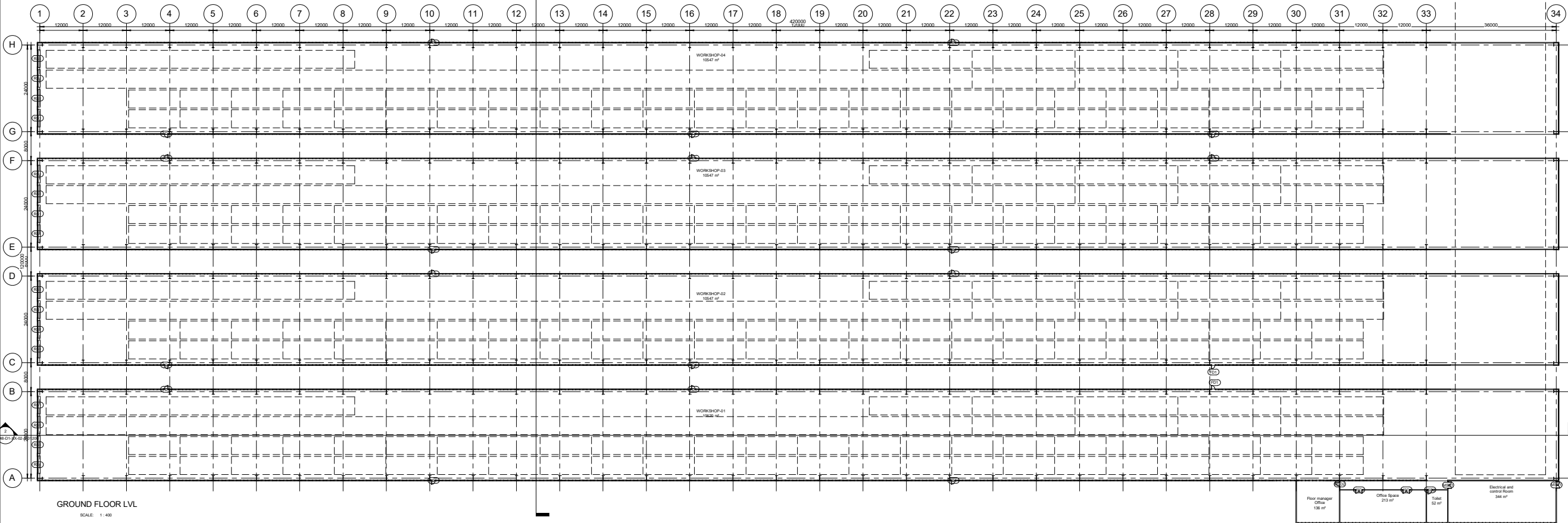


REV	DATE	DESCRIPTION	BY	CHK	RWW	APP
002	09-01-06	FOR FINAL DPR SUBMISSION	OK	OK	PKJ	PKJ
003	20-11-05	FOR DPR SUBMISSION	OK	OK	PKJ	PKJ

**CENTRAL SCRAP YARD & DUMMY
BOGIE & JIGS STORAGE COMPLEX**



DRAWING No.:	REVISION:
MEC-I/0047-01-31-D1-XX-02-DR-T-13300	



CONCEPT DRAWING

01/10/2020	FOR CONSTRUCTION	MEC	ME	AT	PS
REV	DATE	DESCRIPTION	BY	CHK	BY

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CLIENT



Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

CAR BODY INSPECTION AND TESTING FACILITY

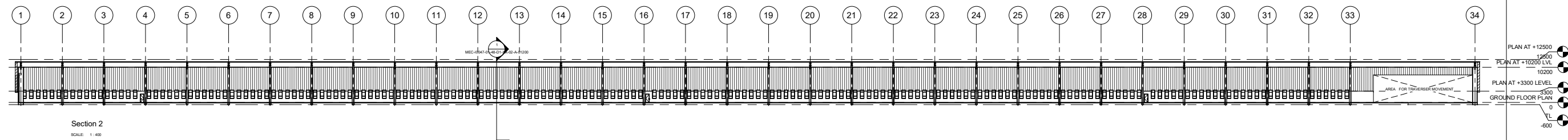
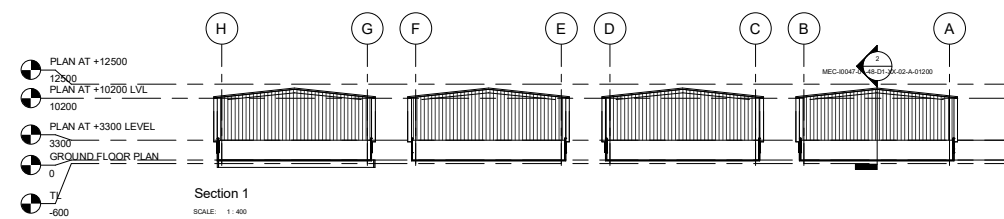


FLOOR PLAN

DRAWN	CHECKED	REVIEWED	APPROVED
DATE	DATE	DATE	DATE

DRAWING No. MEC-10047-01-48-01-00-02-A-01100

REVISION



CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	R/W	APP

REV	DATE	DESCRIPTION	BY	CHK	REV	APP
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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

CAR BODY INSPECTION AND TESTING FACILITY

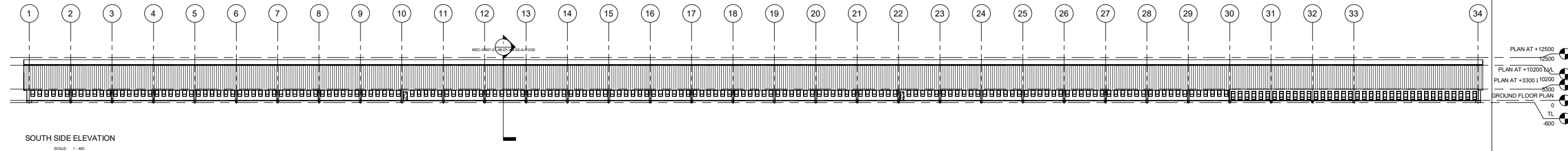
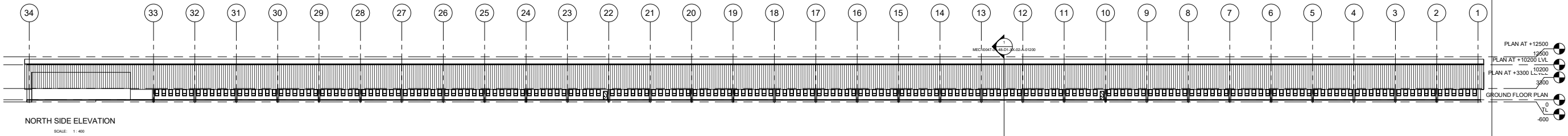
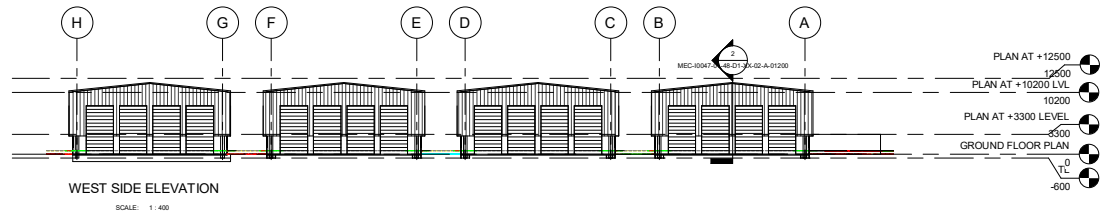
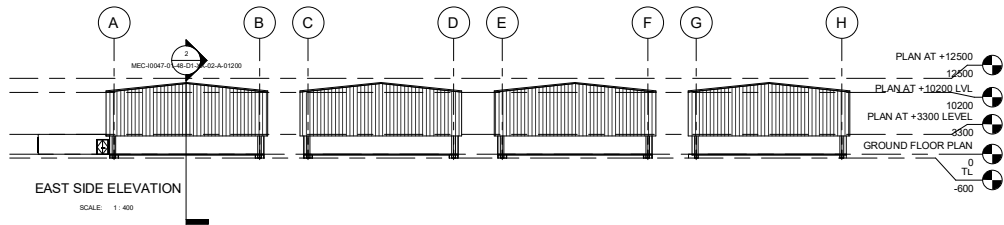


MECON LIMITED
BANGALORE

TITLE	SECTIONS
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DRAWN: JT	CHECKED: MSB	REVIEWED: MM	APPROVED: BGS
DATE:		SCALE : 1 : 400	SIZE: A0
REF No.:			

DRAWING No.:	REVISION:
MFG 10047.01 48 D1 XX 03 A 04200	



CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	REV	APP
REVISIONS						

CLIENT

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

CAR BODY INSPECTION AND TESTING FACILITY

MECON LIMITED
BANGALORE

TITLE
ELEVATION

DRAWN	CHECKED	REVIEWED	APPROVED
DATE	DATE	DATE	DATE
SCALE: 1:400	SCALE: 1:400	SCALE: 1:400	SCALE: 1:400

DRAWING No. MEC-10047-01-48-01-00-02-A-01000



VIEW OF EXECUTIVE ENTRY



VIEW OF EXECUTIVE EMERGENCY EXIT



OVERALL VIEW OF CANTEEN BUILDING

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	RW	APP
R02.0	26-11-25	FOR DPR SUBMISSION	MSB	MSB	MA	BGS
R01.0	13-11-25	SUBMITTED FOR APPROVAL	MSB	MSB	MA	BGS

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Bharat Electronics Limited

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

CANTEEN BUILDING

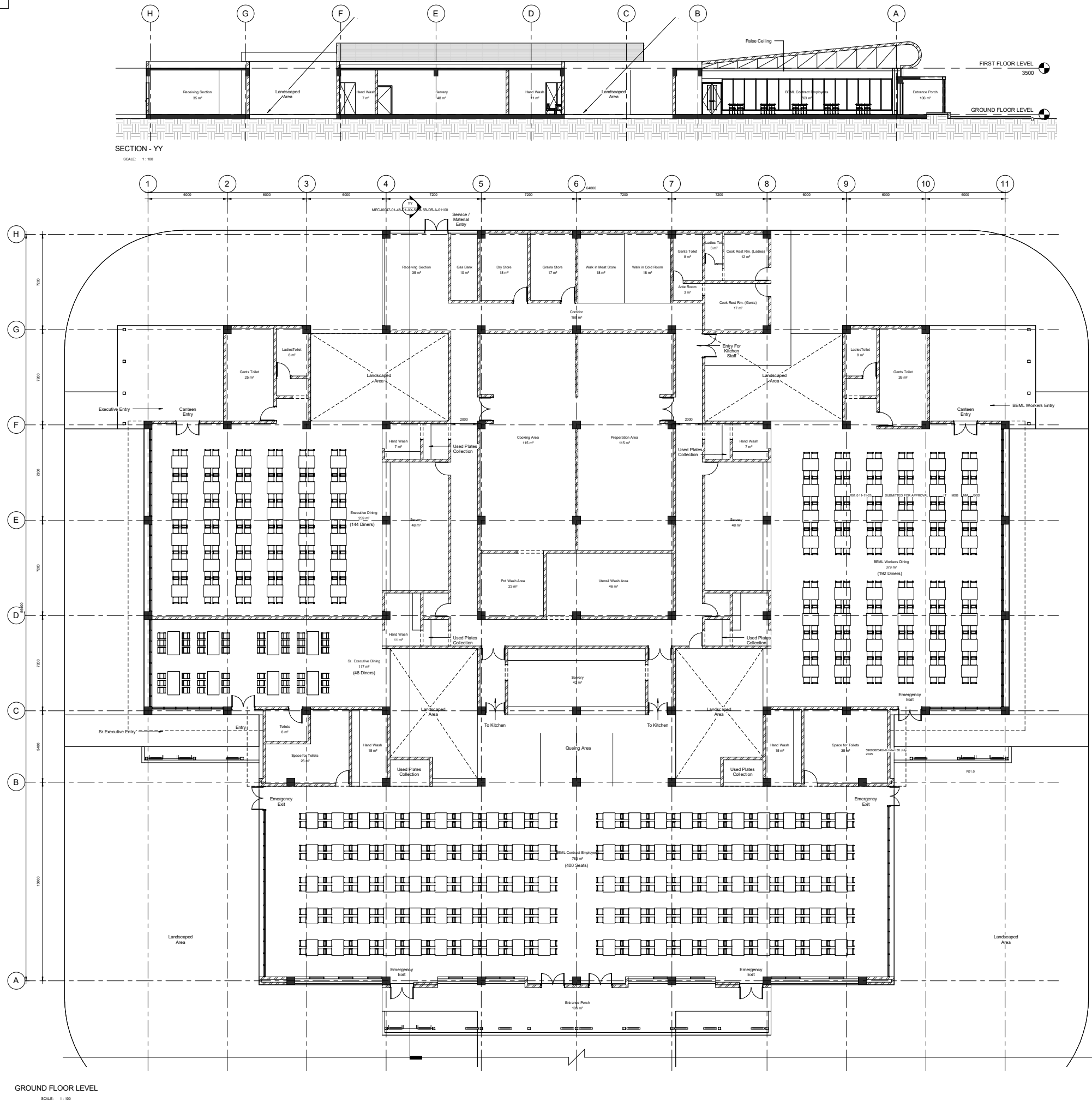


MECON LIMITED
BANGALORE

TITLE

3D - RENDER

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DATE: 13-11-2025		SCALE: 1:1	SIZE: A1
REF No.: 5000062340/-0 dated 30 July 2025		PROJECT No.: 10047	
DRAWING No.: MEC-0047-01-48-D1-XX-5A & 5B-DR-A-01101			REVISION: R02.0



BUILT UP AREA SCHEDULE	
Name	Area(Sqm)
GROUND FLOOR	3015
TOTAL BUILT UP AREA	3015

CONCEPT DRAWING



Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

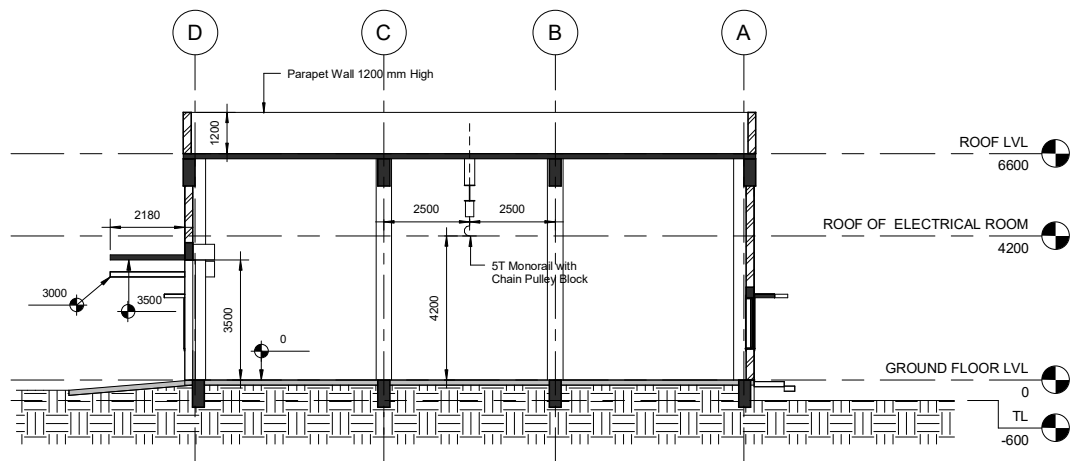
CANTEEN BUILDING



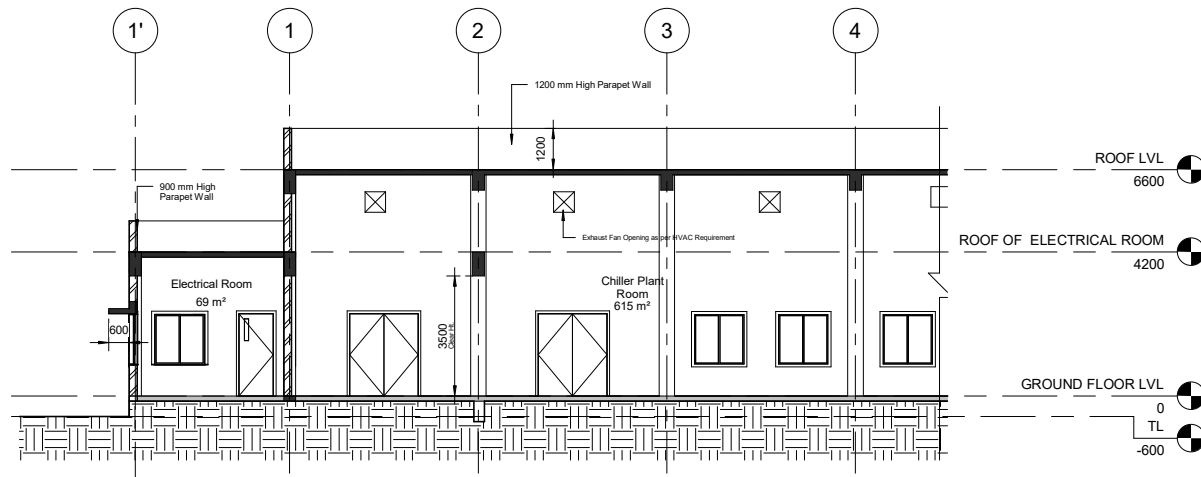
GROUND FLOOR PLAN AND SECTION

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DATE: 05-10-2022	SCALE: 1:100	DATE: 05-10-2022	SCALE: 1:100
REF No: 500052340-2 dated 30 July 2022	PROJECT No: 01/20/2787		

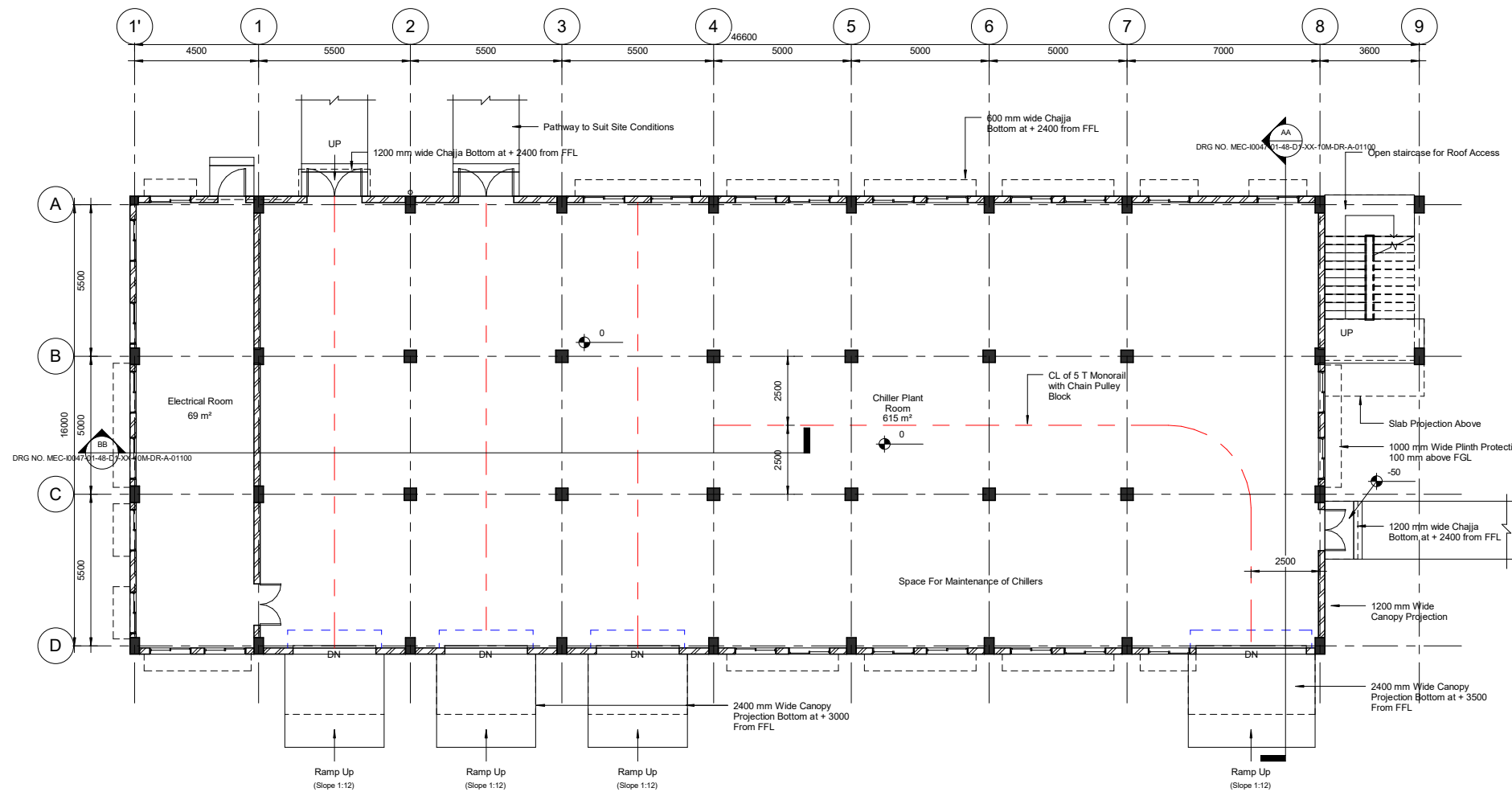
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	REV 2



SECTION - AA
SCALE: 1 : 100



SECTION - BB
SCALE: 1 : 100



GROUND FLOOR PLAN
SCALE: 1 : 100

Area Schedule (Gross Building)		
Name	Level	Area
CHILLER PLANT	GROUND FLOOR LVL	720 m²
STAIRCASE	GROUND FLOOR LVL	22 m²
TOTAL BUILT UP AREA		742 m²

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	RW	APP
01	11-11-25	SUBMITTED FOR APPROVAL	JT	MSB	MM	BGS



Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

COMMON CHILLER PLANT



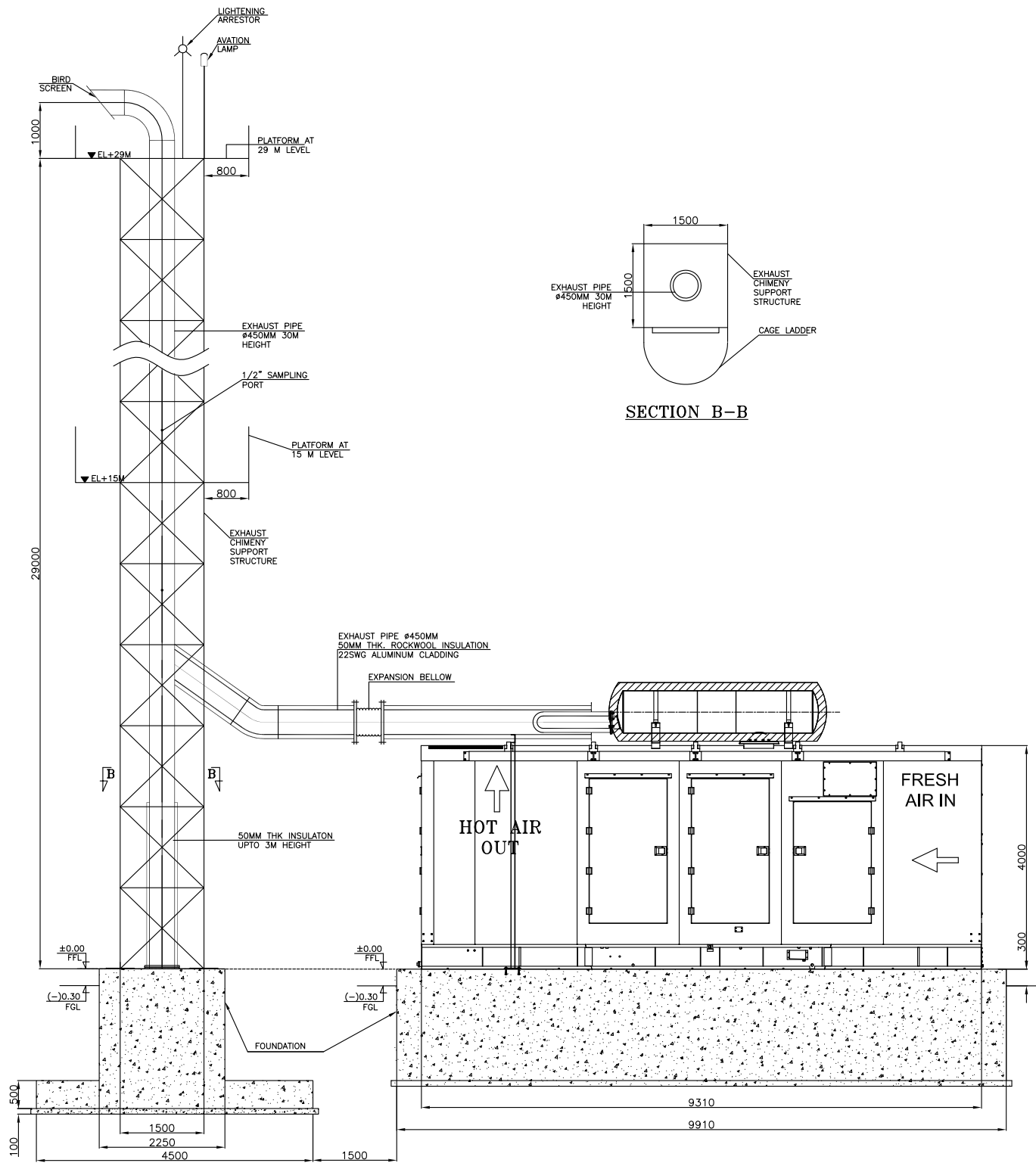
GROUND FLOOR PLAN & SECTIONS

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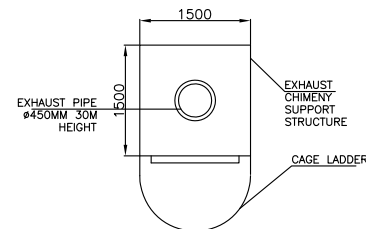
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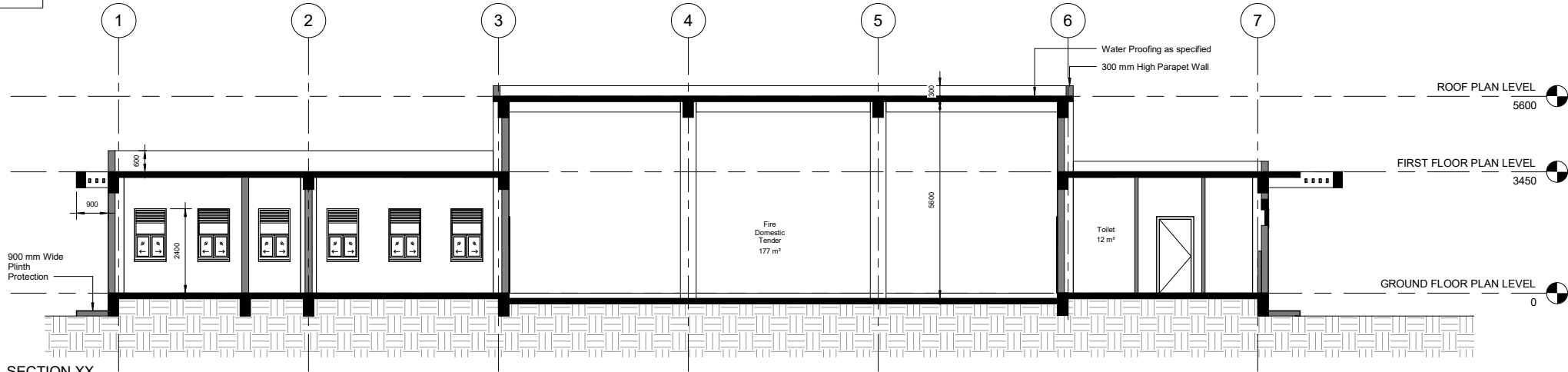
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SECTION B-B

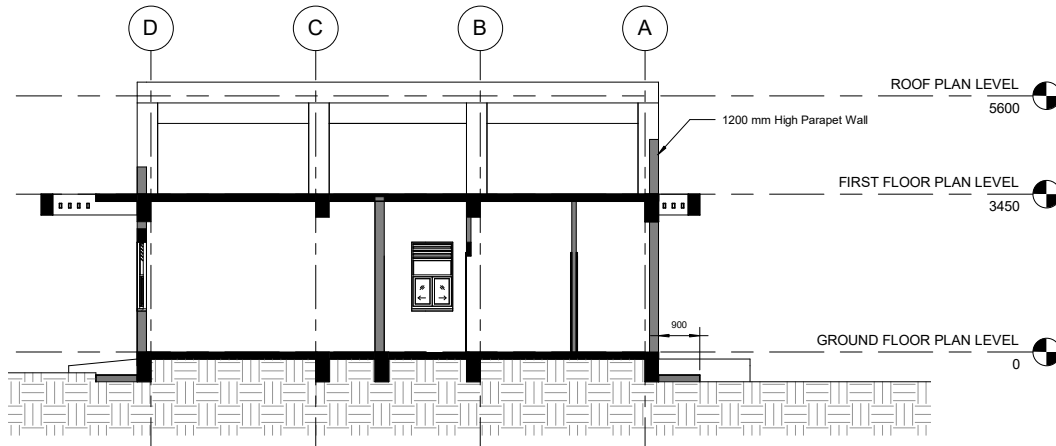


REV	DATE	FIRST SUBMISSION	ESA	DS	SS	IS			
REV	DATE	DESCRIPTION	BY	CHK	REV	APP			
							REVISIONS		
CLIENT									
			BEML LIMITED BANGALORE						
COMPREHENSIVE DETAILED PROJECT REPORT (DPR) FOR ESTABLISHING A STATE-OF-THE-ART GREENFIELD ROLLING STOCK MANUFACTURING PLANT AT BHOPAL, MADHYA PRADESH									
CAR BODY FABRICATION & ASSEMBLY LINE FACILITY									
			MECON LIMITED BANGALORE						
TITLE									
LAYOUT & SECTIONS OF DG SETS FOR EMERGENCY POWER									
DRAWING NO.	CHECKED :	SS	REVISED:	SS	APPROVED:	SS			
DATE:	27-1-2009		SCALE:	N/S	SIZE:	A3			
REF. NO.:	SRO0023142/G dated 30 July 2025		PROJECT NO.:	BQAT					
DRAWING NO.: MEC / 0047-01-01-DZ-14-DR-N-03003							REVISION		
							REV		



SECTION XX

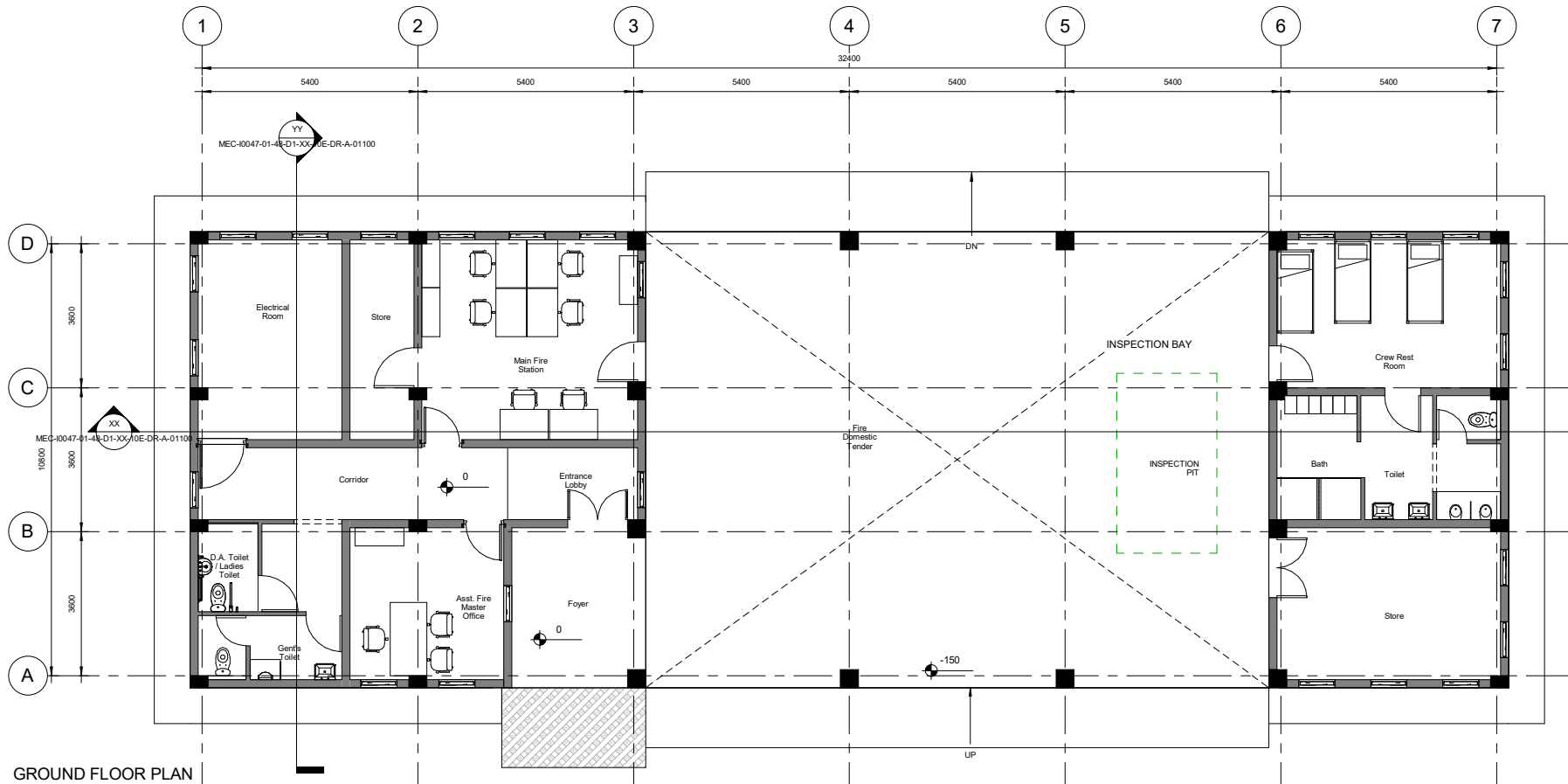
SCALE: 1 : 75



SECTION YY

SCALE: 1 : 75

BUILT UP AREA SCHEDULE	
Name	Area(Sqm)
GROUND FLOOR	376 m²
TOTAL BUILT UP AREA	376 m²



GROUND FLOOR PLAN

SCALE: 1 : 75

CONCEPT DRAWING



Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

FIRE STATION



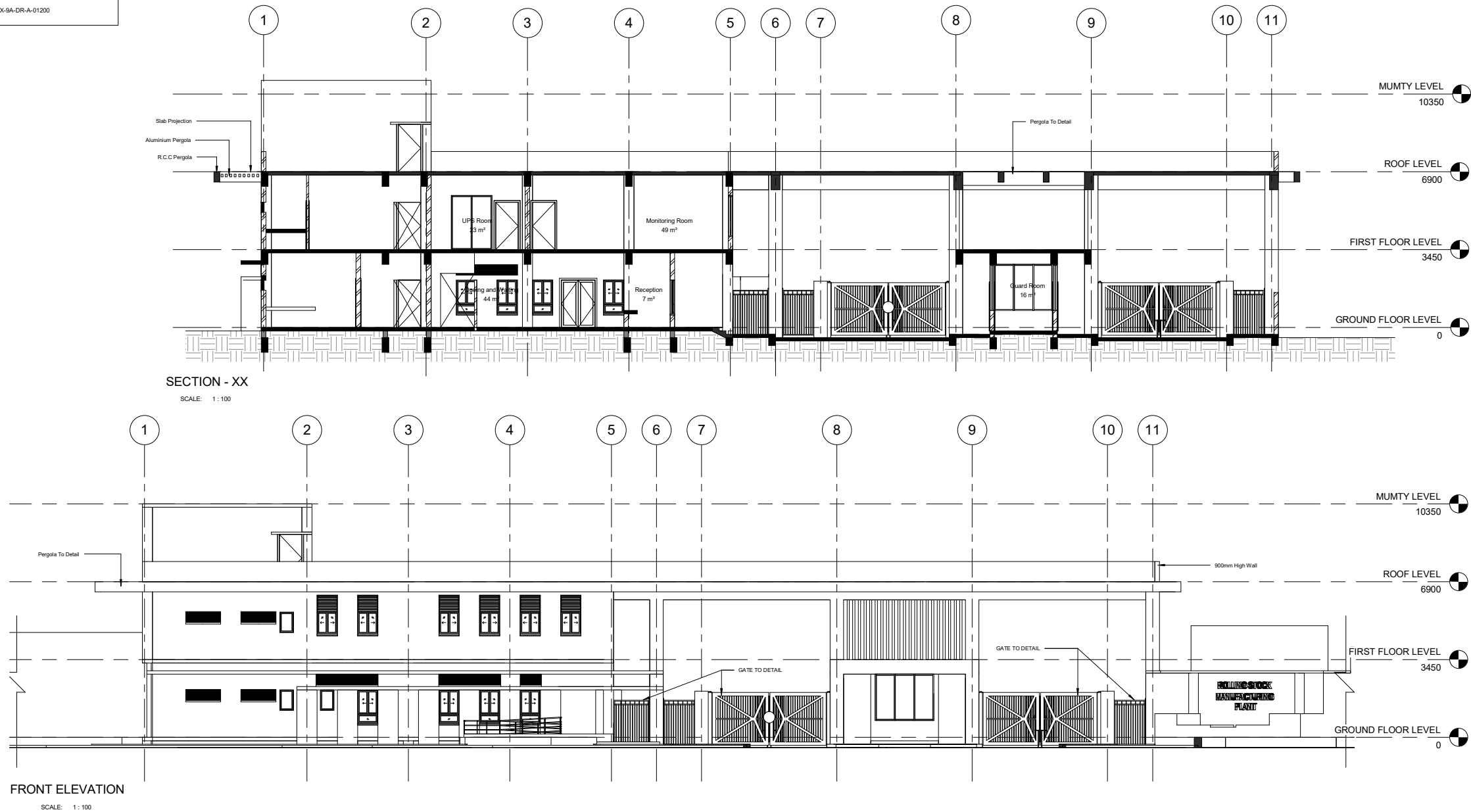
**MECON LIMITED
BANGALORE**

GROUND FLOOR PLAN AND SECTIONS

DRAWN: MS BRUNO
CHECKED: MS BRUNO
REVIEWED: MALAYA
APPROVED: BG SAJJIT
DATE: 21-10-2025
SCALE: 1 : 75
SIZE: A1

REF No.: 5900062340-0 dated 30 July 2025
PROJECT No.: 10047

DRAWING No.: MEC-0047-01-48-D1-XX-10E-DR-A-01100
REVISION: R01.0



CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	RW	APP

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

MAIN GATE COMPLEX WITH SECURITY OFFICE

MECON LIMITED
BANGALORE

SECTION, FRONT ELEVATION & VIEWS

DRAWN: Author	CHECKED: Checker	REVIEWED: Designer	APPROVED: Approver
DATE: 11/04/25	SCALE: 1 : 100	SIZE: A1	

REF No.: 58000623401-0 dated 30 July 2025

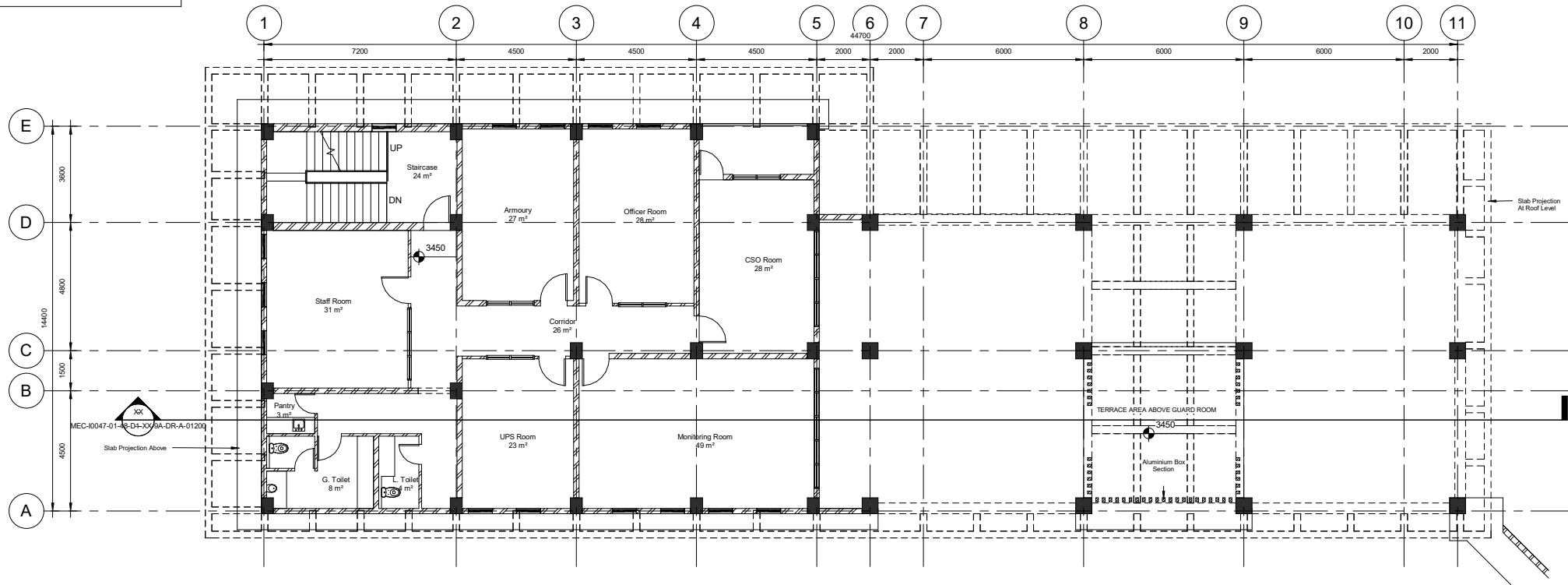
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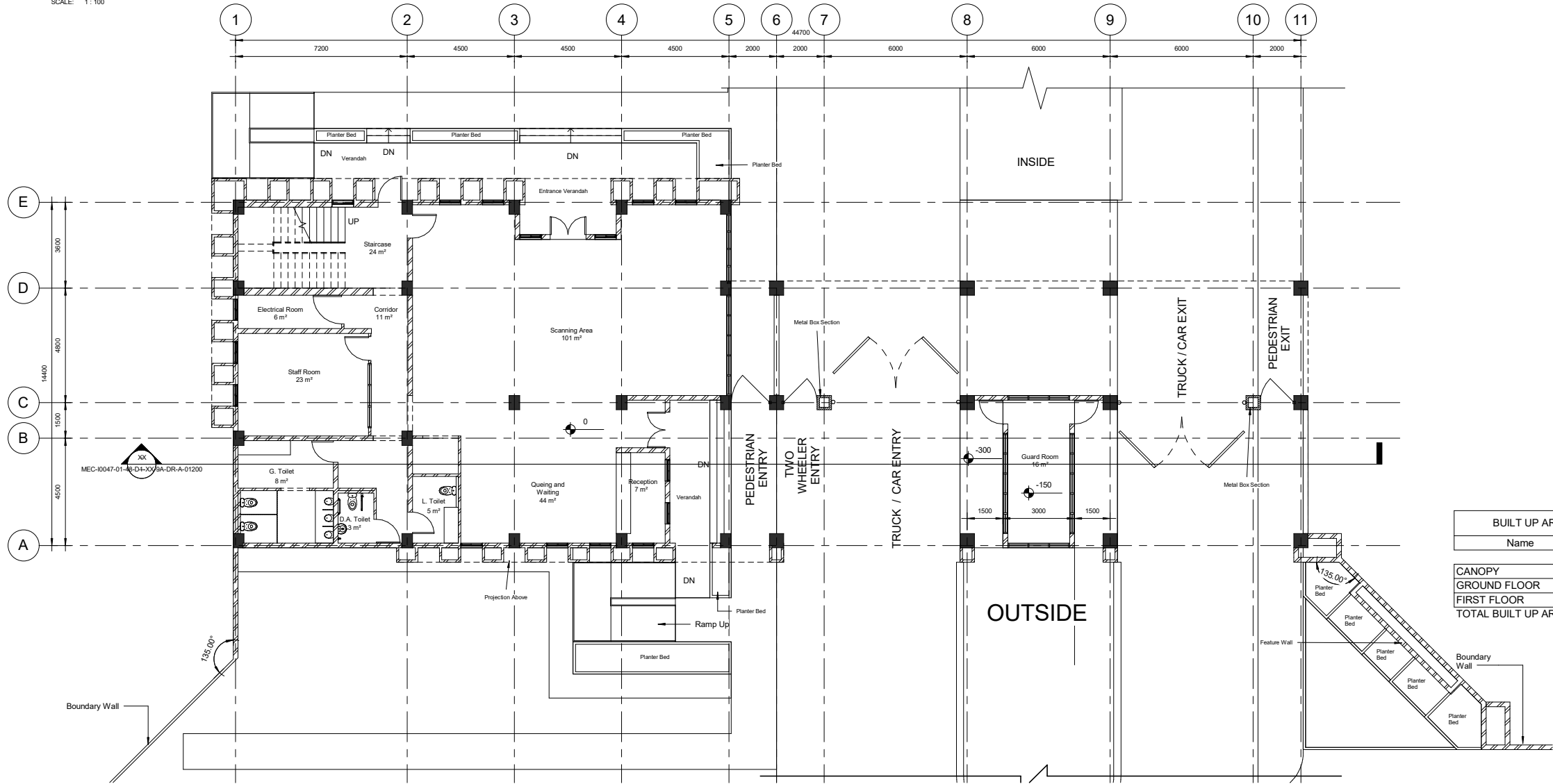
VIEW OF MAIN GATE FROM VISITOR'S PARKING AREA



VIEW OF MAIN GATE FROM ACCESS ROAD



FIRST FLOOR LEVEL
SCALE: 1 : 100



GROUND FLOOR LEVEL
SCALE: 1 : 100

BUILT UP AREA SCHEDULE	
Name	Area(Sqm)
CANOPY	253
GROUND FLOOR	305
FIRST FLOOR	305
TOTAL BUILT UP AREA	863

CONCEPT DRAWING

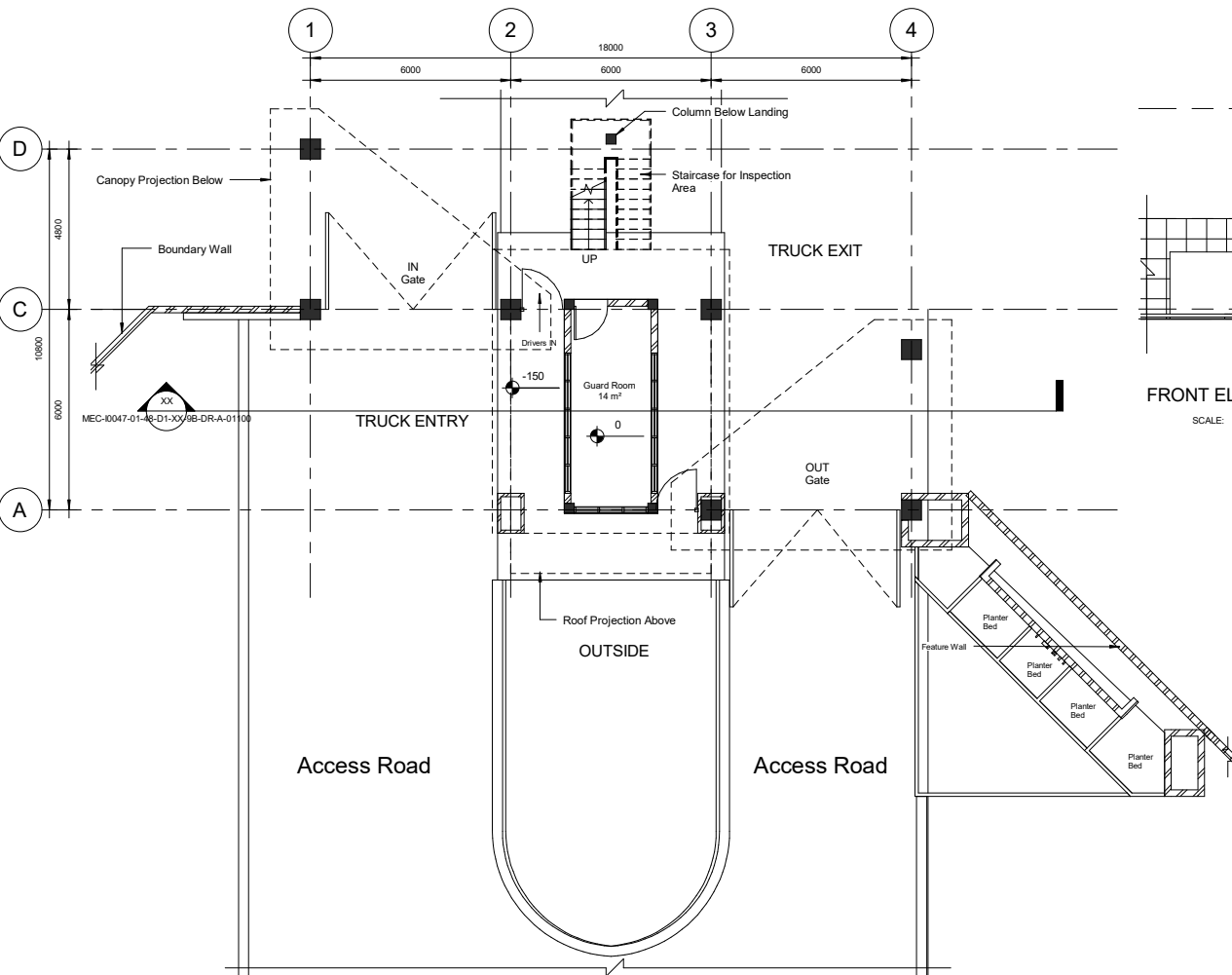
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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

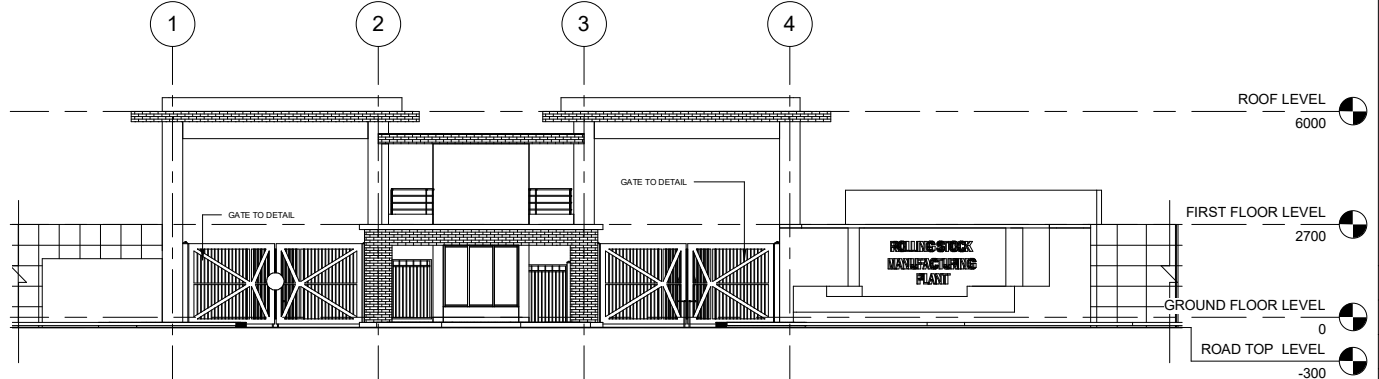
MAIN GATE COMPLEX WITH SECURITY OFFICE

MECON LIMITED BANGALORE

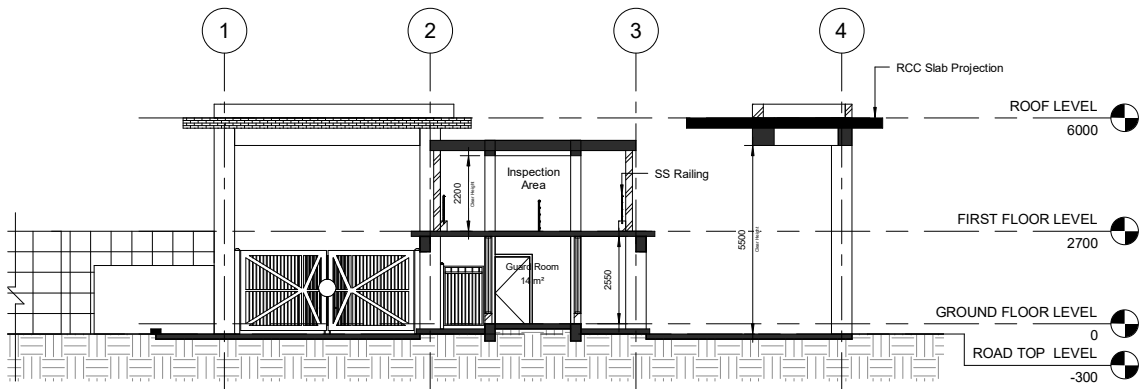
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R01.0				R01.0			



GROUND FLOOR LEVEL
SCALE: 1 : 100



FRONT ELEVATION
SCALE: 1 : 100



SECTION - XX
SCALE: 1 : 100

BUILT UP AREA SCHEDULE	
Name	Area(Sqm)
GROUND FLOOR	146
INSPECTION AREA	47
TOTAL BUILT UP AREA	193

CONCEPT DRAWING

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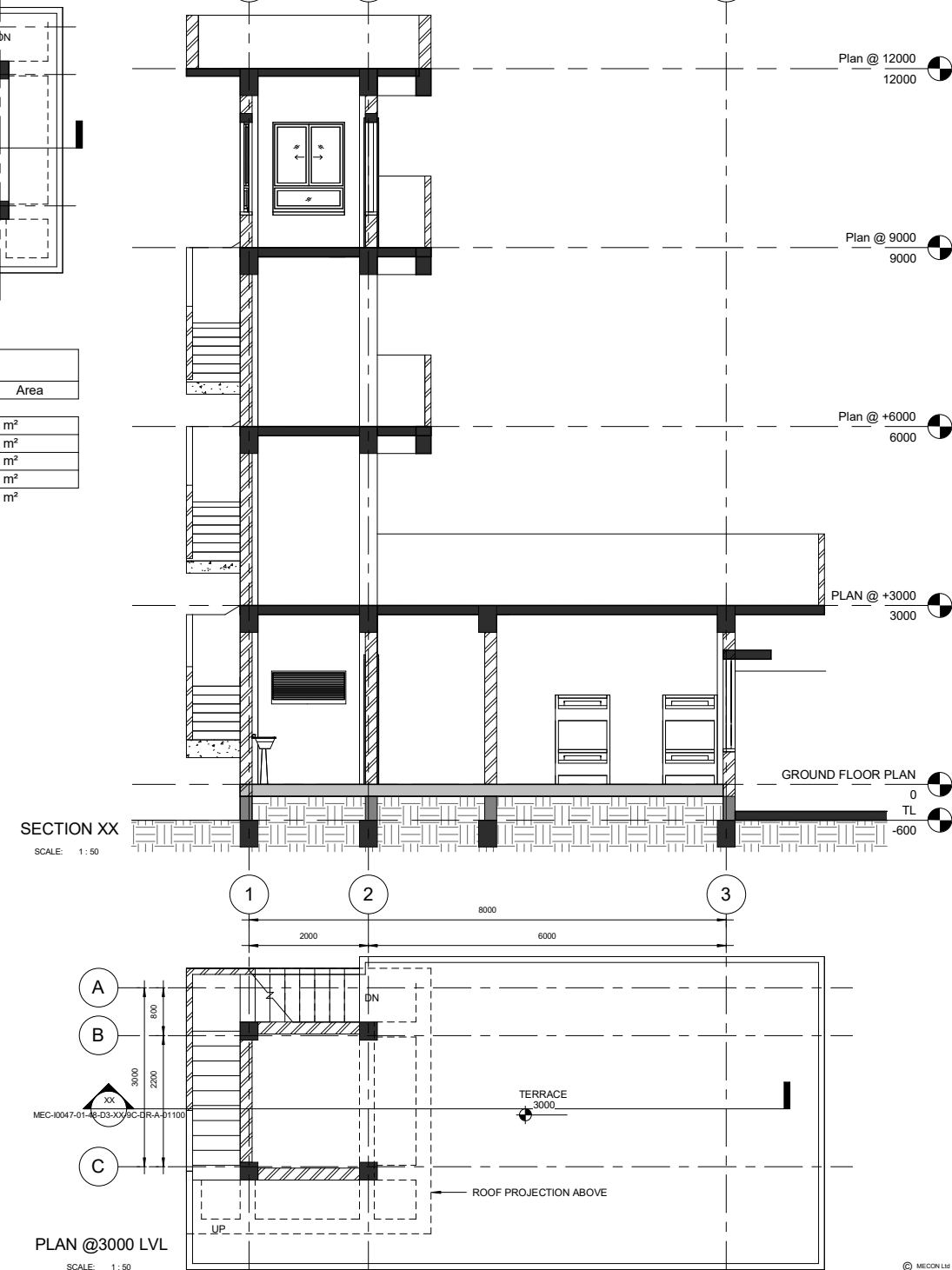
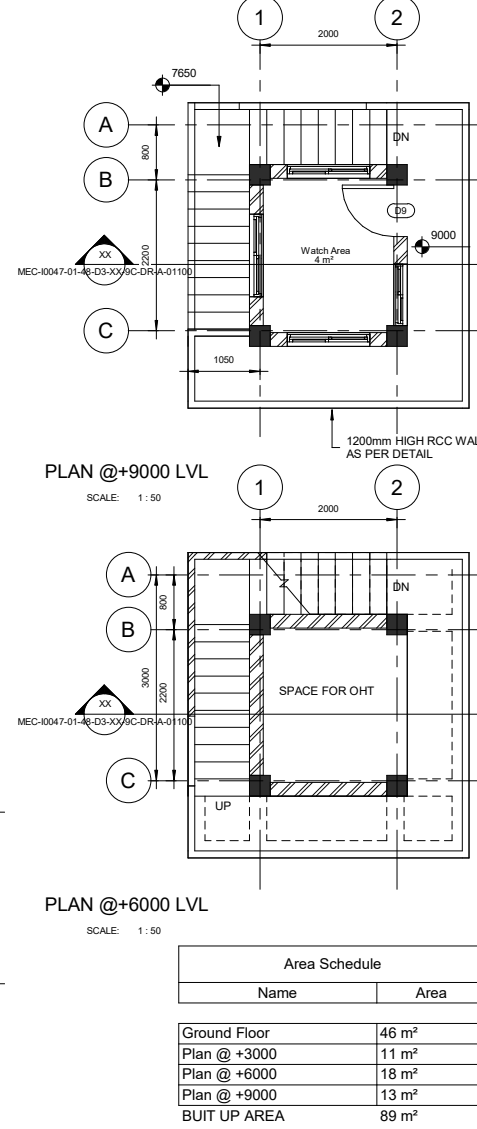
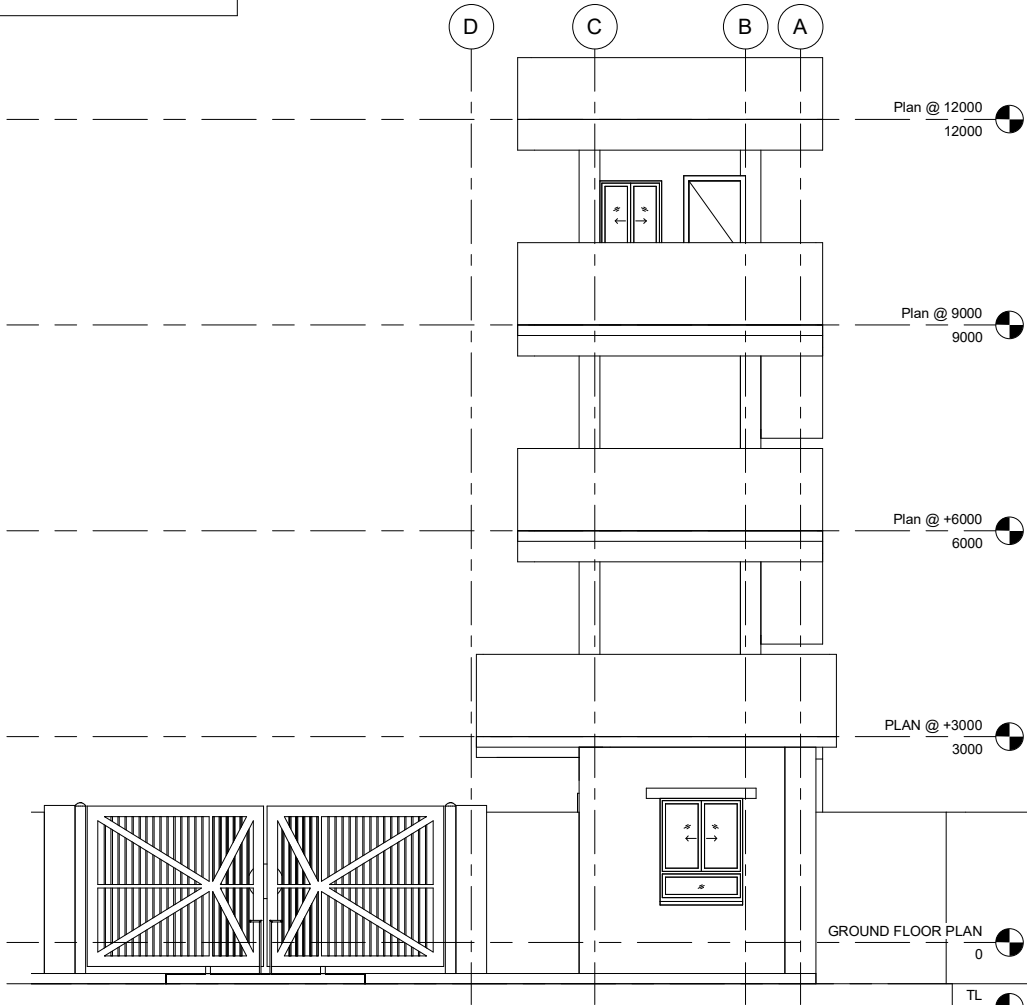
Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

GATE COMPLEX FOR TRUCK ENTRY / EXIT

MECON LIMITED
BANGALORE

GROUND FLOOR PLAN, SECTION, ELEVATION & VIEWS

DRAWN: THILAGAN	CHECKED: MS BRUNO	REVIEWED: MALAYA	APPROVED: BG SAJJIT
DATE: 06-11-2025	SCALE: 1 : 100	SIZE: A1	
REF No.: 5900062340/-G dated 30 July 2025		PROJECT No.: 10047	
DRAWING No.: MEC-0047-01-48-D1-XX-9B-DR-A-01100			REVISION: R01.0



CONCEPT DRAWING

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

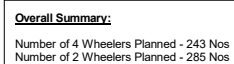
GATE COMPLEX FOR RAILWAY SIDING

MECON LIMITED
BANGALORE

TITLE

FLOOR PLANS, SECTION, ELEVATION AND 3-D RENDER

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DATE: 06-11-2025		SCALE: 1 : 50	SIZE: A1
REF No.: 590062340/G dated 30 th July 2025		PROJECT No.: 10047	
DRAWING No.: MEC-0047-01-48-D3-XX-9C-DR-A-01100			REVISION: R01.0



Number of 4 Wheelers Planned - 54 Nos
Number of 2 Wheelers Planned - 285 Nos

GROUND FLOOR LEVEL

CONCEPT DRAWING

R01	10-11-20	SUBMITTED FOR APPROVAL	JT	MGB	NM		
REV	DATE	DESCRIPTION	BY	CHK	RWN	A	

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

MULTILEVEL CAR PARKING
(OPTION - 1)



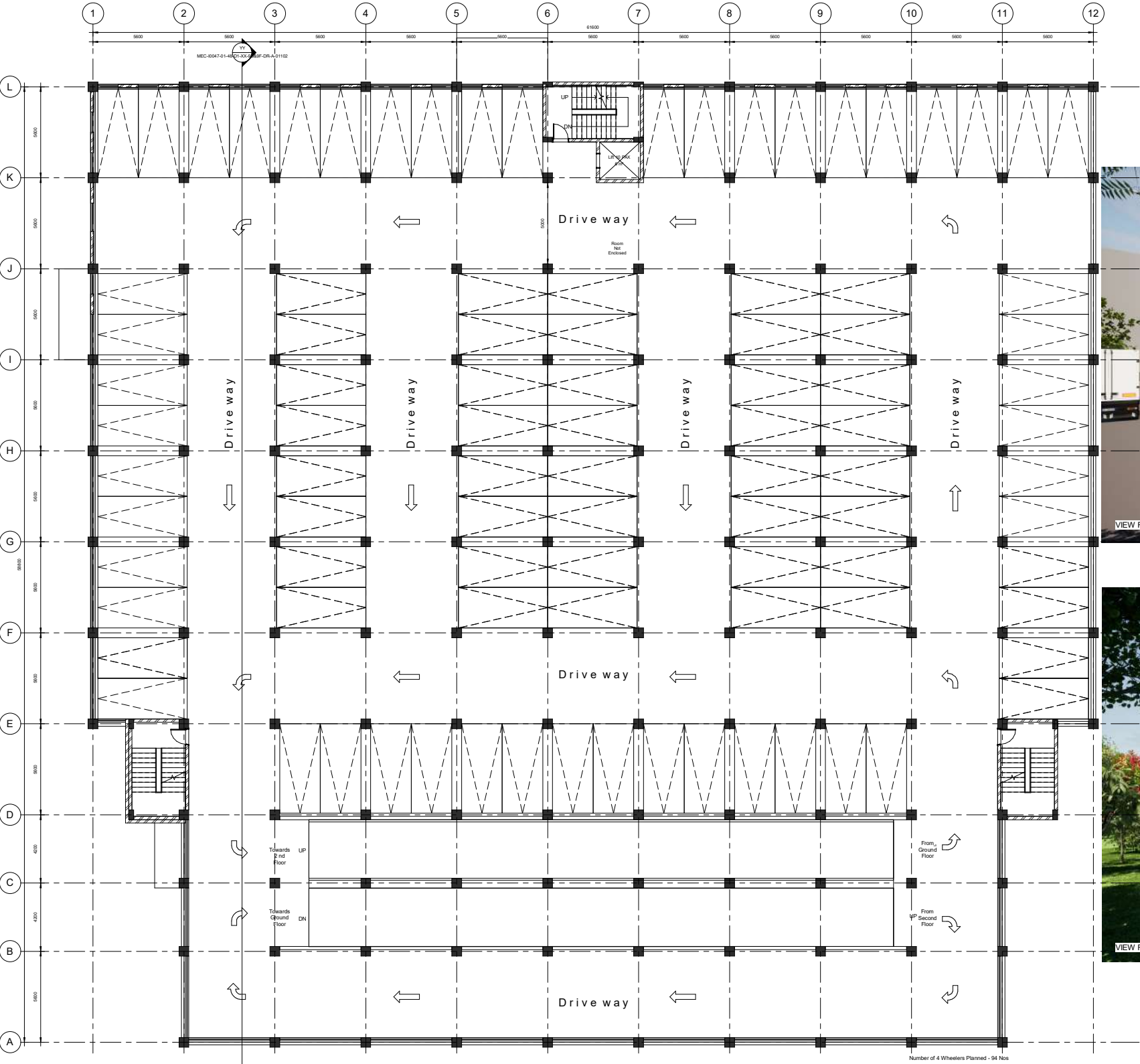
**MECON LIMITED
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TITLE

GROUND FLOOR PLAN

DRAWN: MS BRUNO	CHECKED: MS BRUNO	REVIEWED: MALAYA	APPROVED: BG SAJIT
DATE: 10-11-2025		SCALE : 1 : 100	SIZE: A0
REF No.: 5900062340-0 dated 30 July 2025		PROJECT No.: DJ1034/798T	

MEC-10047-01-48-D1-XX-00M2F-CR-A-01100



FIRST FLOOR LEVEL



BUILT UP AREA SCHEDULE	
Name	Area(Sqm)
GROUND FLOOR	3510
FIRST FLOOR	3510
Area	3224
TOTAL BUILT UP AREA	10244

Number of 4 Wheelers Planned - 94 Nos

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	REV	APP
1	10/10/2020	SUBMITTED FOR APPROVAL	JT	MS	BM	BS

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

MULTILEVEL CAR PARKING (OPTION - 1)

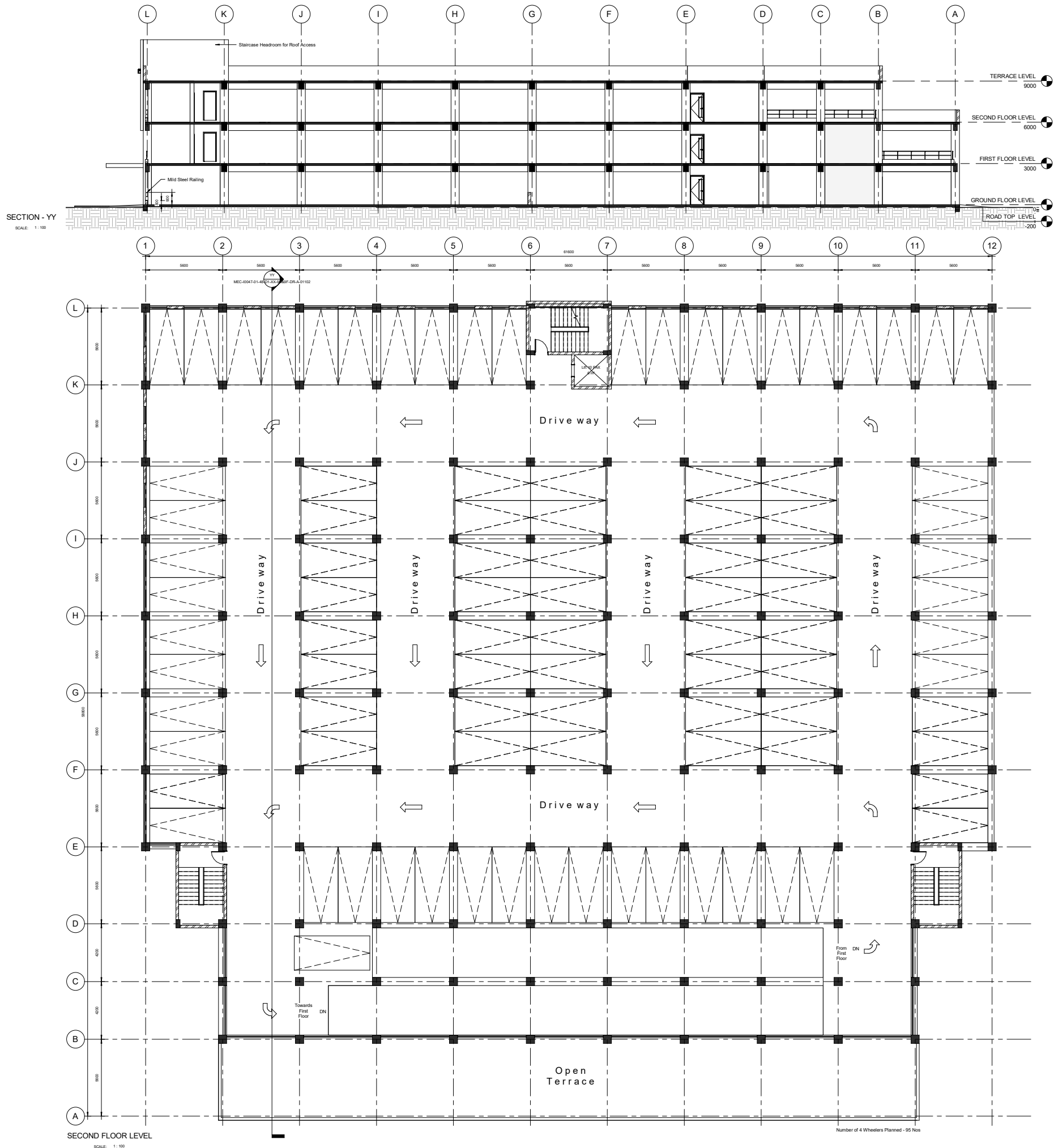
MECON LIMITED BANGALORE

TITLE
FIRST FLOOR PLAN & VIEWS

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DATE	10/10/2020	SCALE: 1:100	SHEET: A3

REF No.	PROJECT No.	REVISION
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DRAWING No. MEC-0047-01-4B-D1-00-0000F-D1A-01101



CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	REV	APP
1	10/11/2020	SUBMITTED FOR APPROVAL	JT	MSB	MM	BSB

REVISIONS

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

MULTILEVEL CAR PARKING
(OPTION - 1)

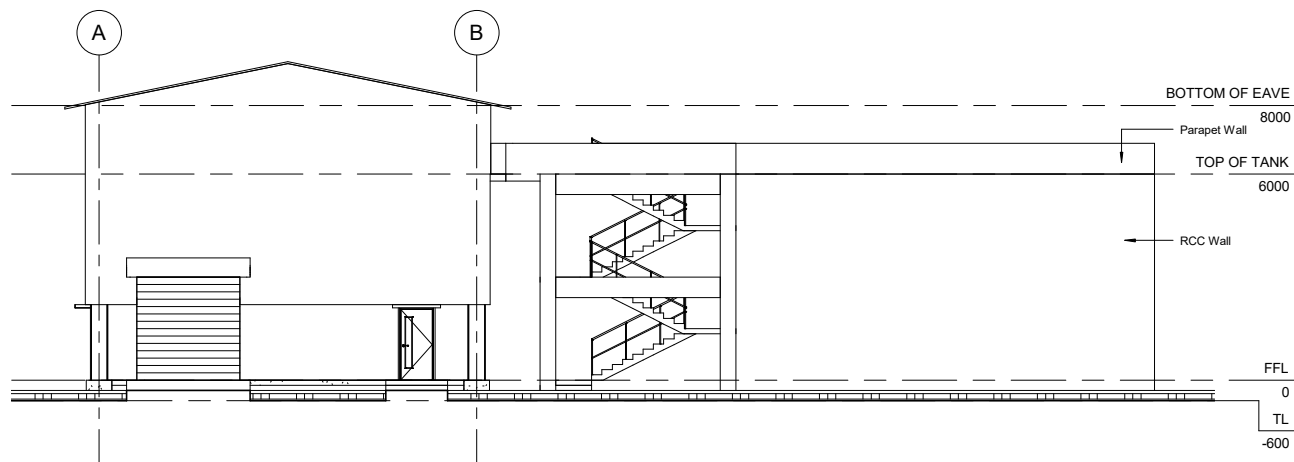


TITLE

SECOND FLOOR PLAN & SECTION

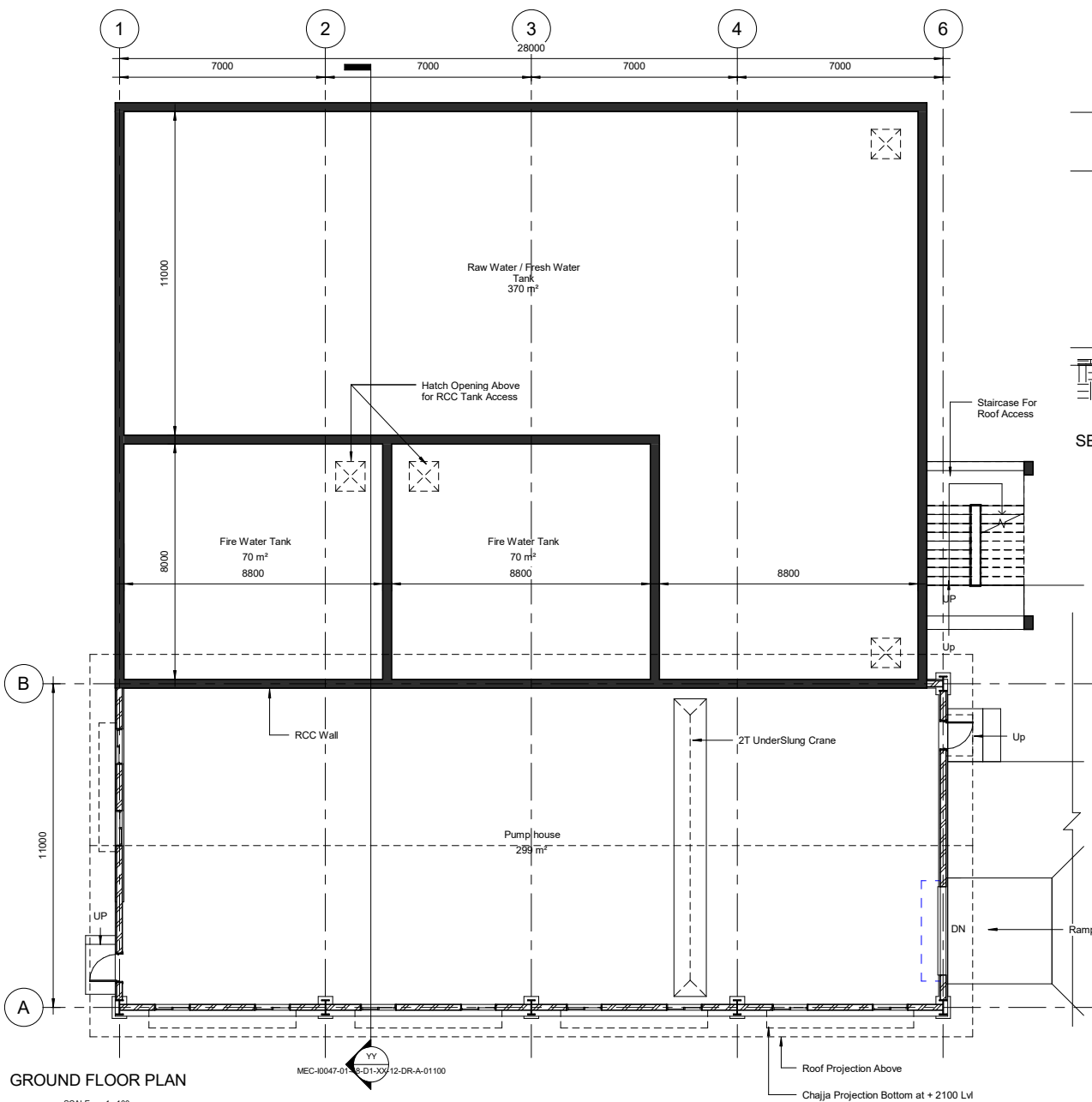
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DATE	10/11/2020	SCALE	1 : 100
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DRAWING No. MEC-10047-01-45-D1-00-0000F-DRA-01102



ELEVATION ALONG GRID 6

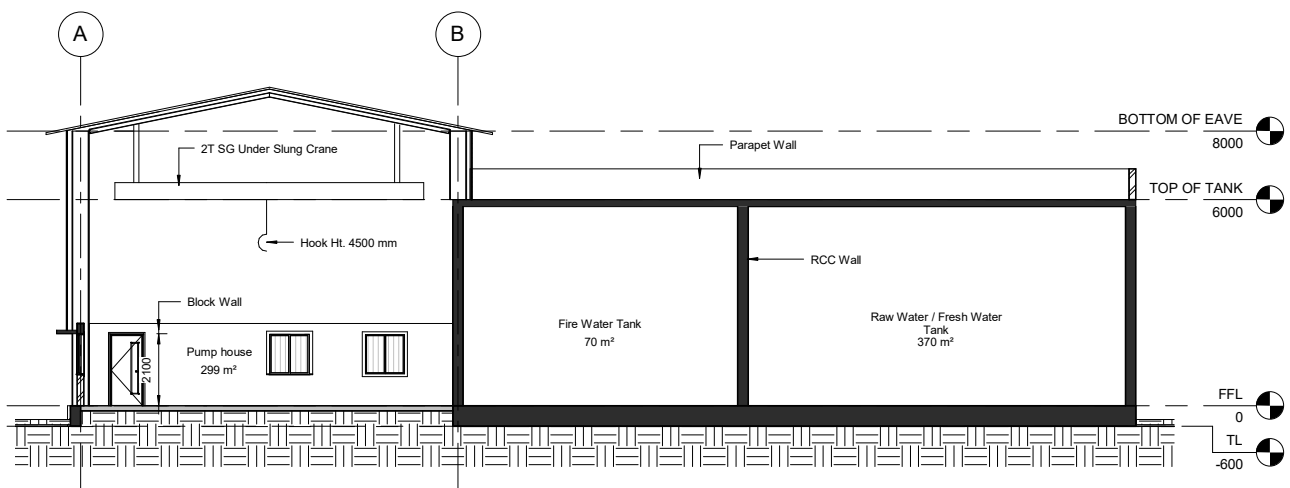
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GROUND FLOOR PLAN

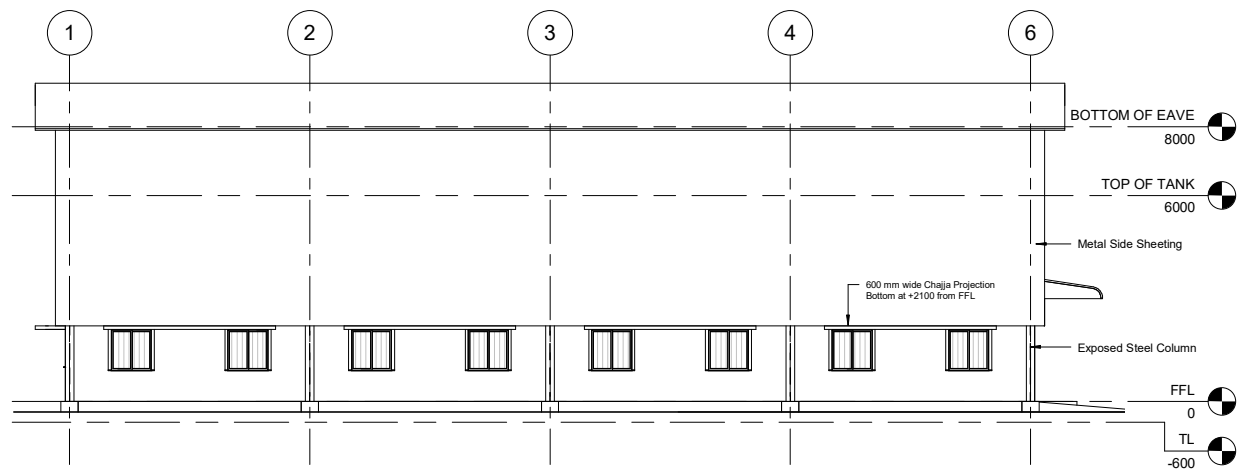
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MEC-0047-01-48-D1-XX-12-DR-A-01100



SECTION - YY

SCALE: 1 : 100



ELEVATION ALONG GRID A

SCALE: 1 : 100

Area Schedule (Gross Building)	
Name	Area
FLOOR AREA	545 m²
TANK AREA	314 m²
TOTAL BUILT UP AREA	859 m²

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	R/W	APP
REVISIONS						

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DOMESTIC AND FIRE WATER
PUMP HOUSE AND SUMP
BUILDING

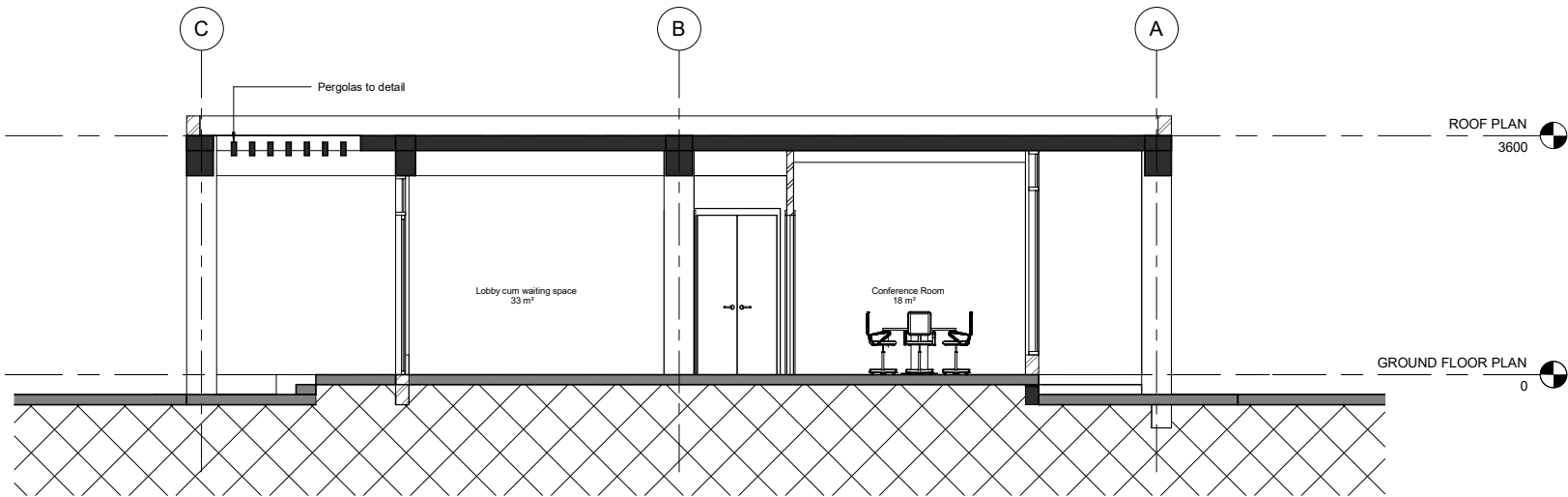
MECON LIMITED
BANGALORE

**GROUND FLOOR PLAN, ELEVATIONS,
SECTION & VIEW**

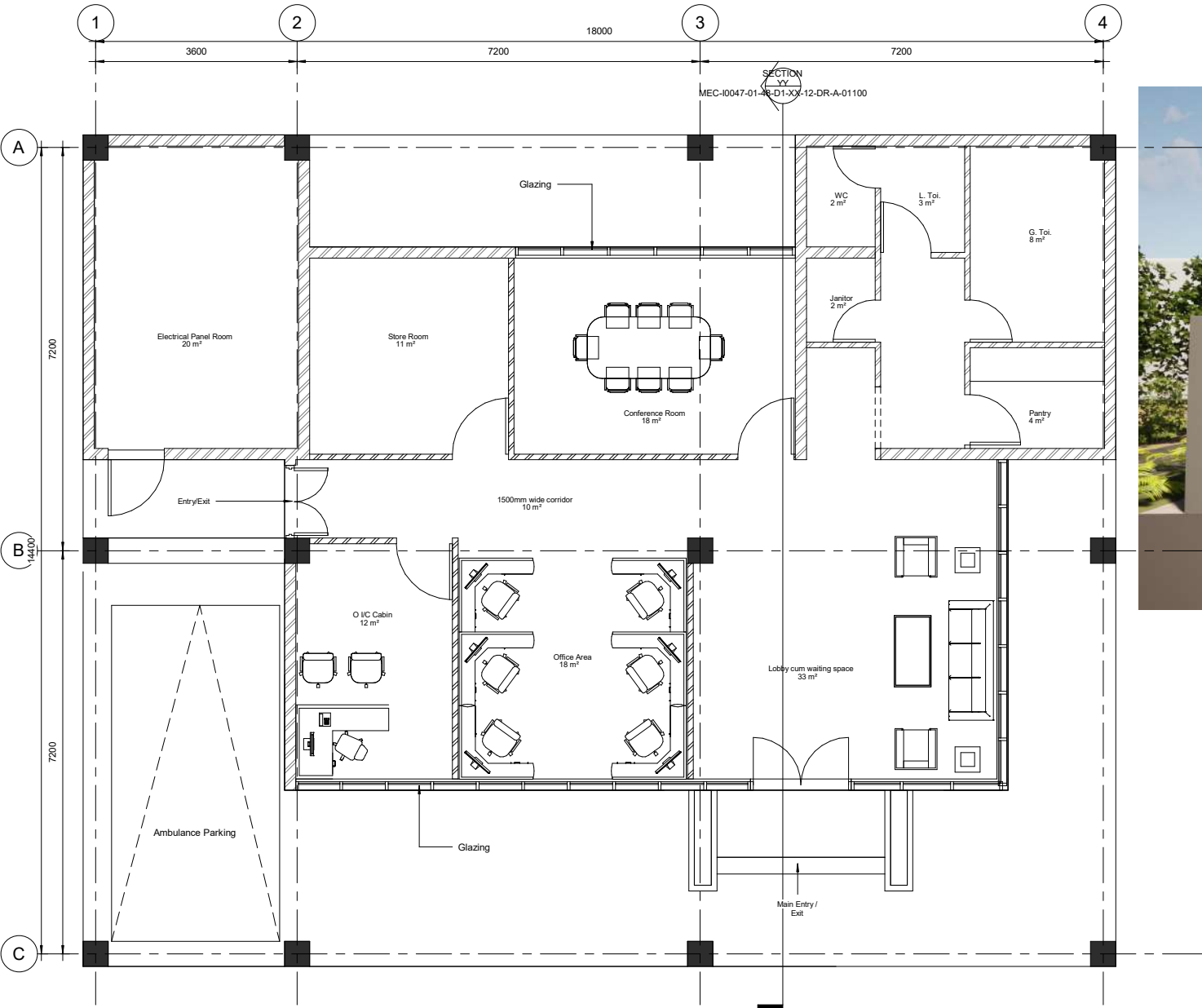
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REF No.: 5900062340-0 dated 30 July 2025	PROJECT No.: 10047
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DRAWING No.: MEC-0047-01-48-D1-XX-12-DR-A-01100	REVISION: R01.0
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SECTION YY
SCALE: 1 : 50



GROUND FLOOR PLAN
SCALE: 1 : 50



Area Schedule (Gross Building)	
Level	Area
GROUND FLOOR PLAN	274 m²
TOTAL BUILT UP AREA	274 m²

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	R/W	APP
01	12-11-25	SUBMITTED FOR APPROVAL	JT	MSB	MM	BGS

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SAFETY OFFICE

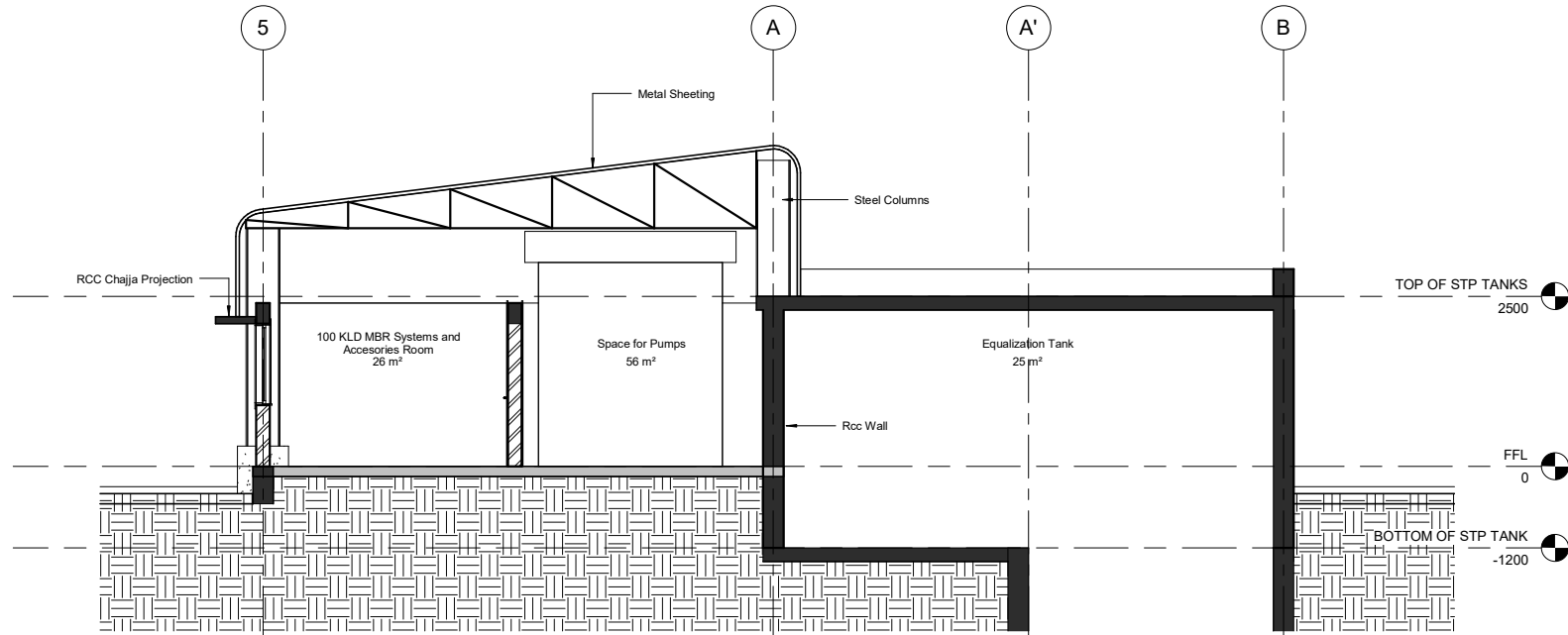
 **MECON LIMITED**
BANGALORE

TITLE
GROUND FLOOR PLAN, SECTION & 3D RENDER

DRAWN: THILAGAN	CHECKED: MS BRUNO	REVIEWED: MALAYA	APPROVED: BG SAJJIT
DATE: 13-11-2025	SCALE: 1 : 50	SIZE: A1	

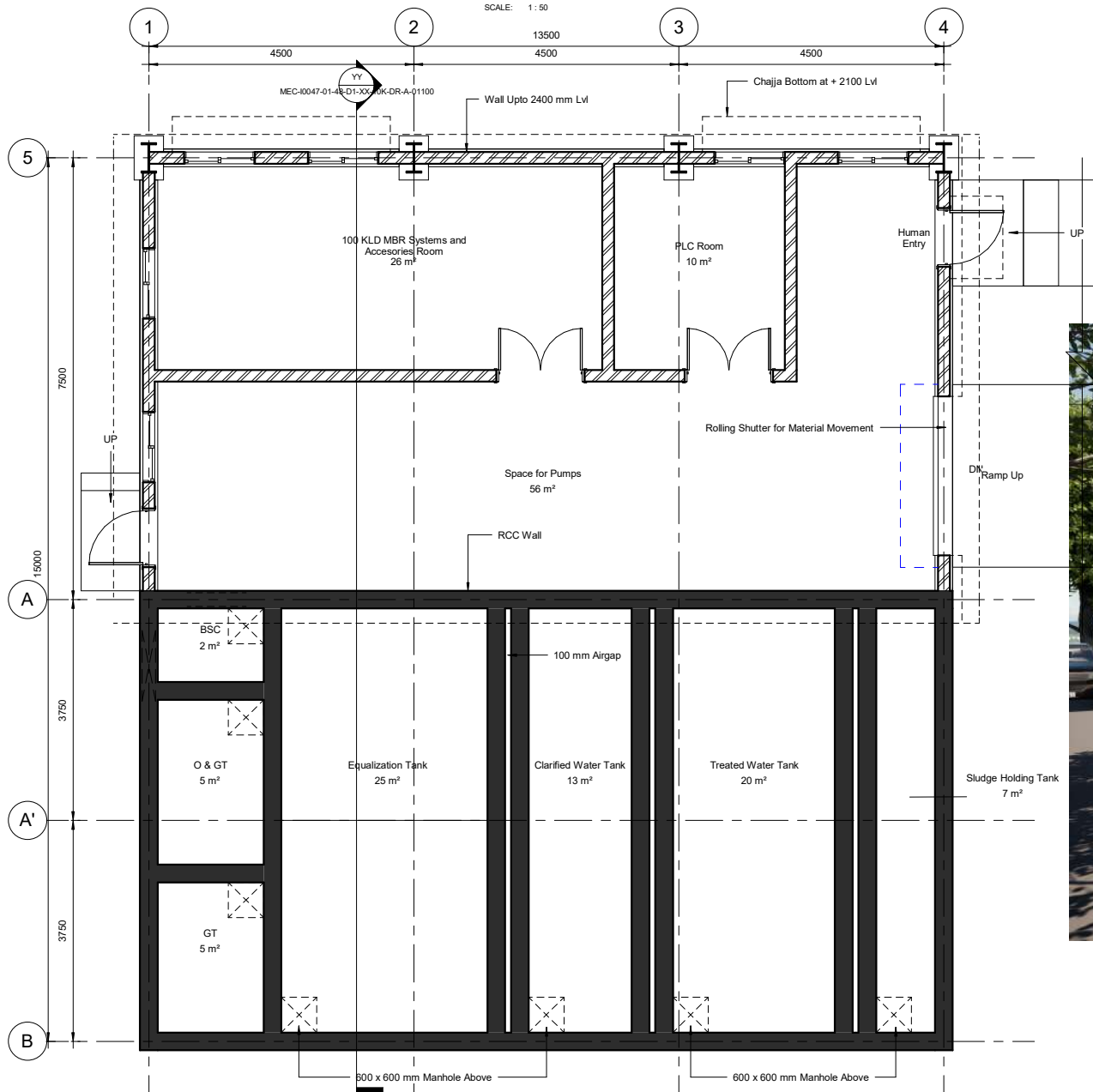
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DRAWING No.: MEC-0047-01-48-D1-XX-12-DR-A-01100	REVISION: R01.0
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SECTION - YY

SCALE: 1 : 50



GROUND FLOOR PLAN

SCALE: 1 : 50

Area Schedule (Gross Building)	
Name	Area
FLOOR AREA	104 m²
TANK AREA	108 m²
TOTAL BUILT UP AREA	211 m²



CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	R/W	APP

REV	DATE	DESCRIPTION	BY	CHK	R/W	APP

CLIENT

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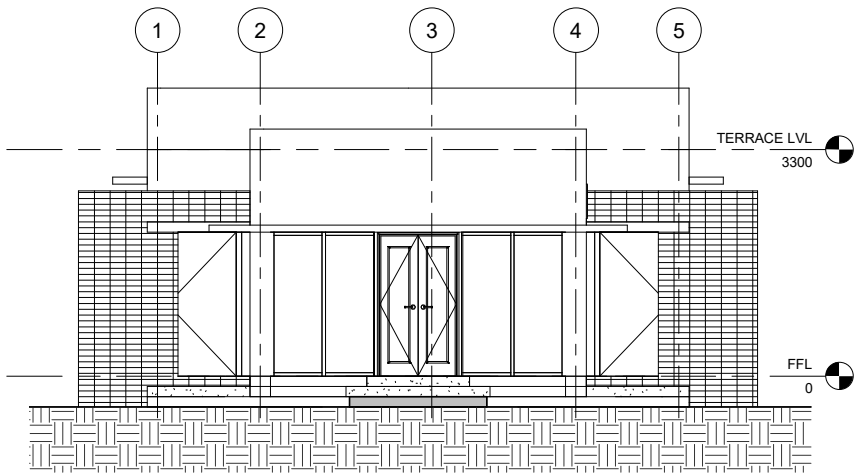
Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

100 KLD MBR BASED STP BUILDING

MECON LIMITED
BANGALORE

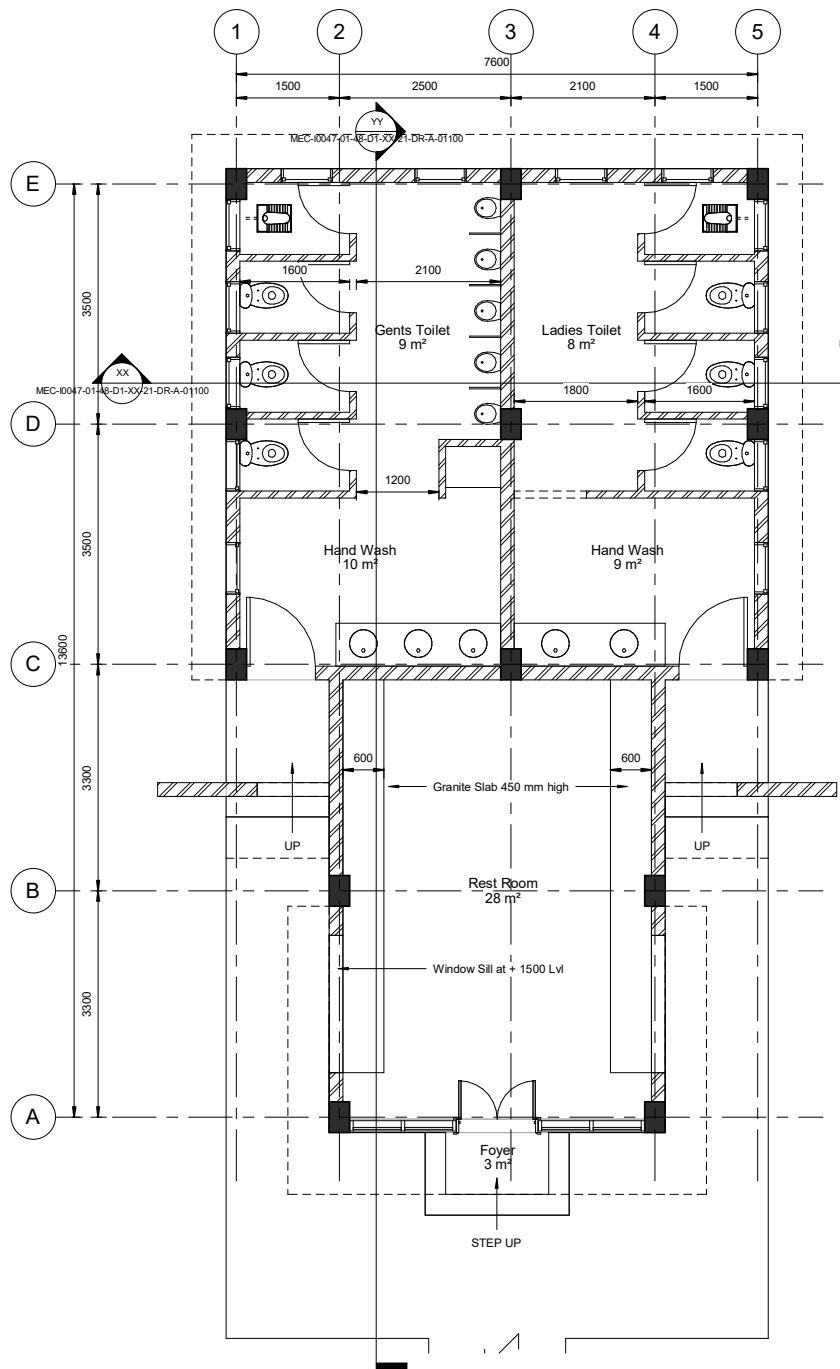
TITLE
GROUND FLOOR PLAN , SECTION & VIEW

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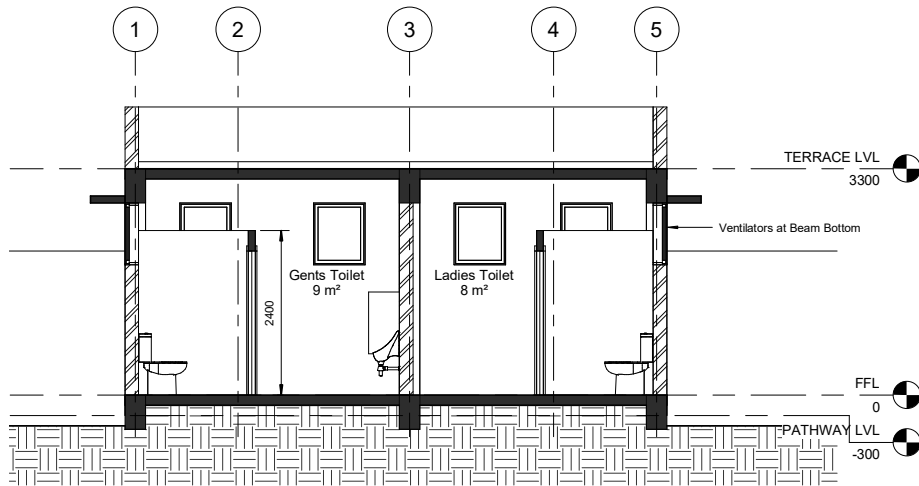
ELEVATION ALONG GRID - A

SCALE: 1 : 50



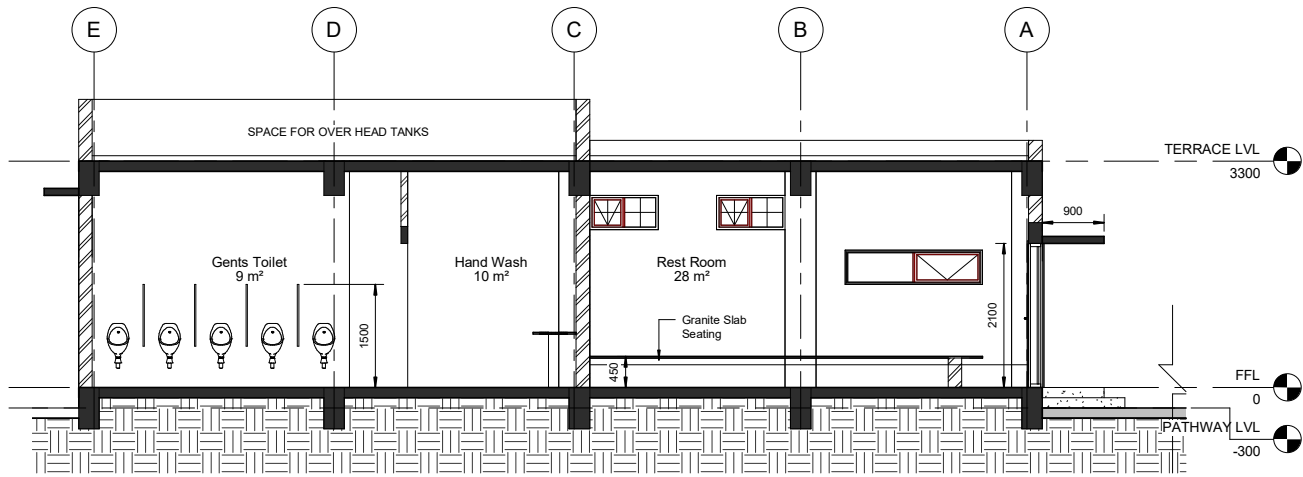
GROUND FLOOR PLAN

SCALE: 1 : 50



SECTION - XX

SCALE: 1 : 50



SECTION - YY

SCALE: 1 : 50

Area Schedule (Gross Building)	
Name	Area
FLOOR AREA	96 m²
TOTAL BUILT UP AREA	96 m²

CONCEPT DRAWING



Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

TOILET BLOCK AND RESTROOM AT PARKING AREA

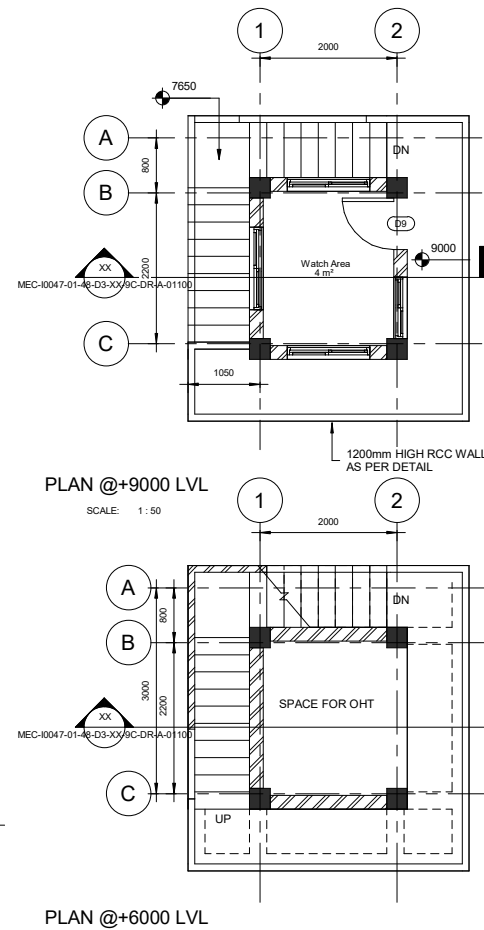
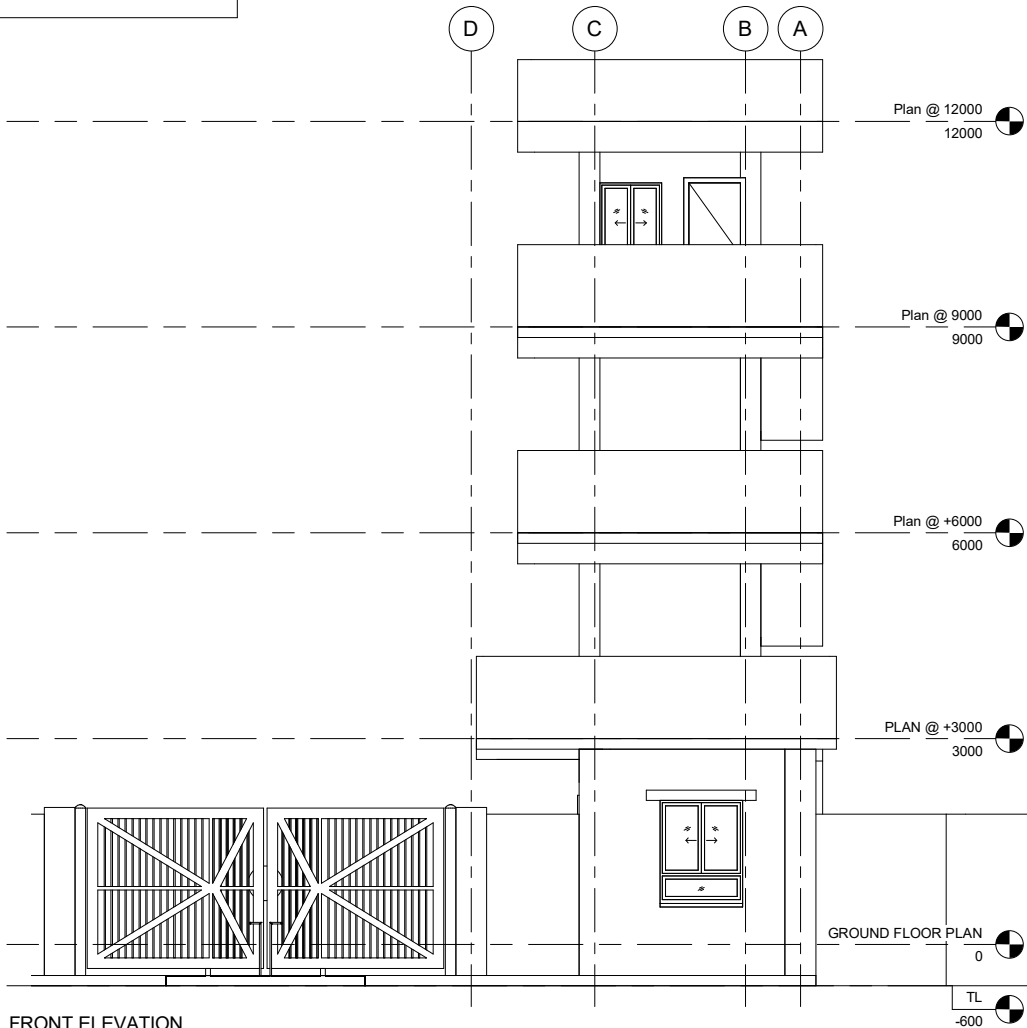


GROUND FLOOR PLAN, ELEVATION, SECTIONS AND VIEW

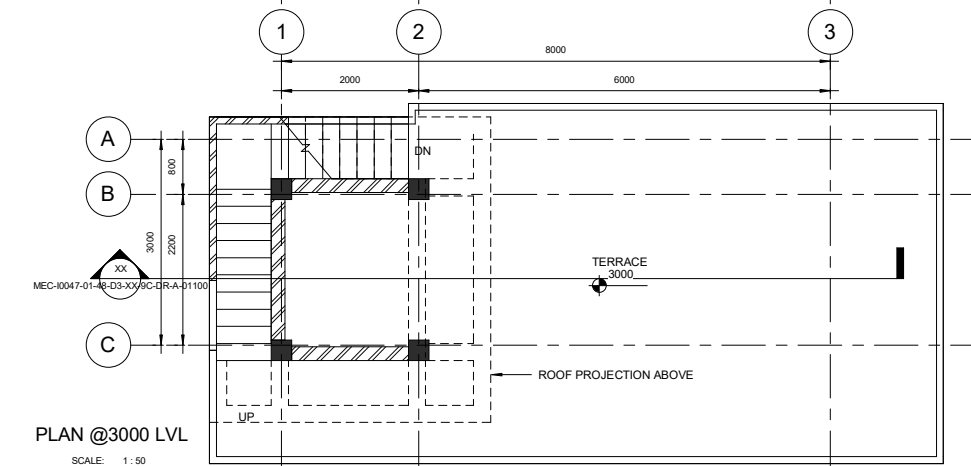
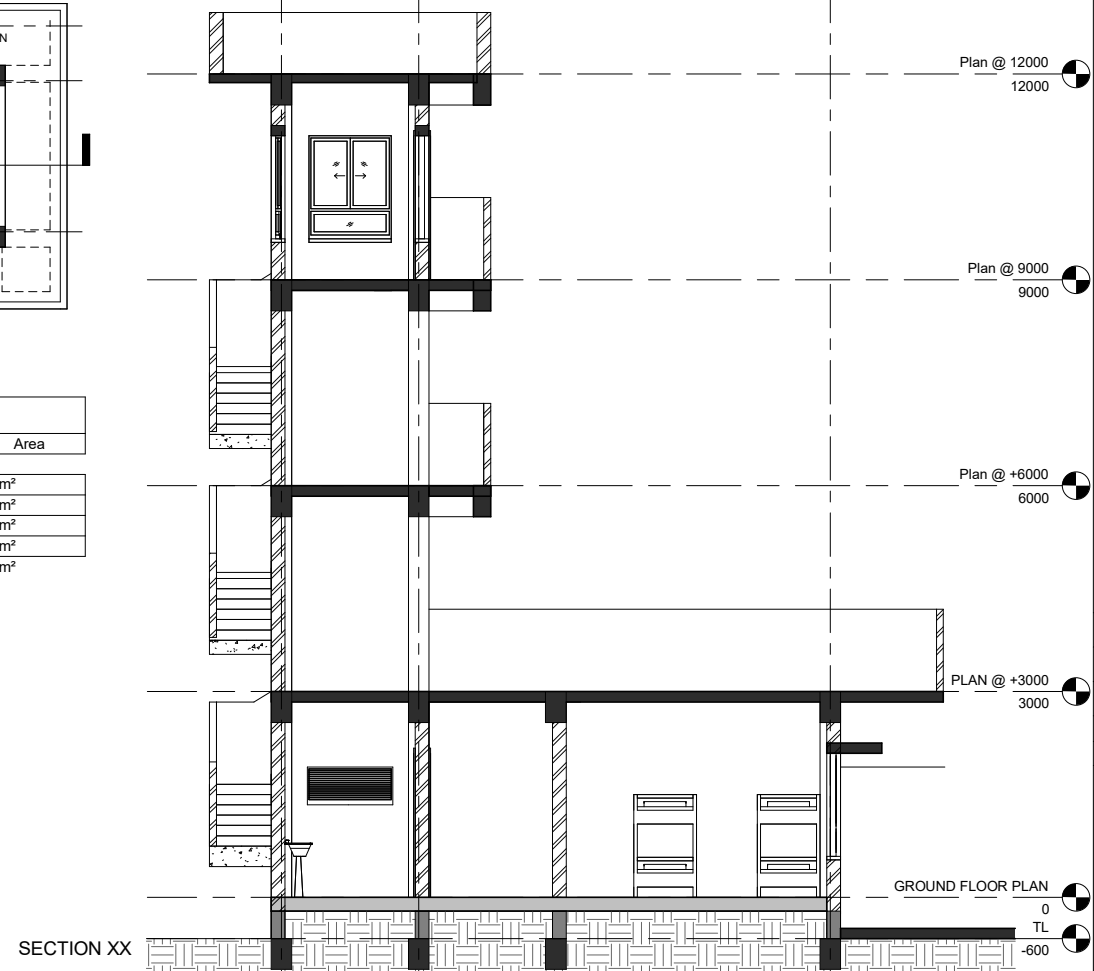
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DATE: 10/04/25		SCALE: 1 : 50	SIZE: A1

REF No.: 5900062340-0 dated 30 July 2025	PROJECT No.: 10047
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DRAWING No.: MEC-0047-01-48-D1-XX-21-DR-A-01100	REVISION: R01.0
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Area Schedule	
Name	Area
Ground Floor	46 m ²
Plan @ +3000	11 m ²
Plan @ +6000	18 m ²
Plan @ +9000	13 m ²
BUILT UP AREA	89 m ²



CONCEPT DRAWING



Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

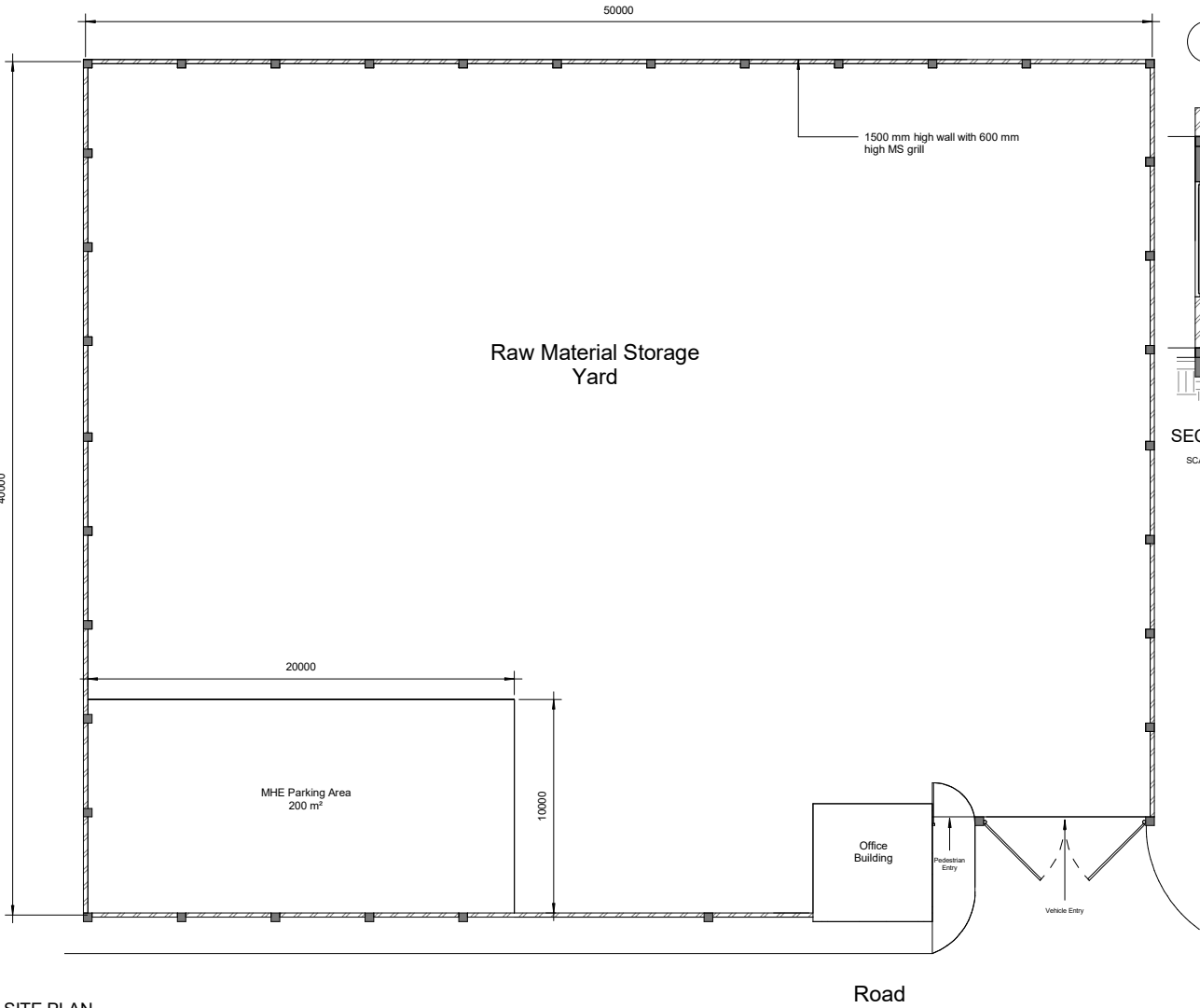
GATE COMPLEX FOR RAILWAY SIDING



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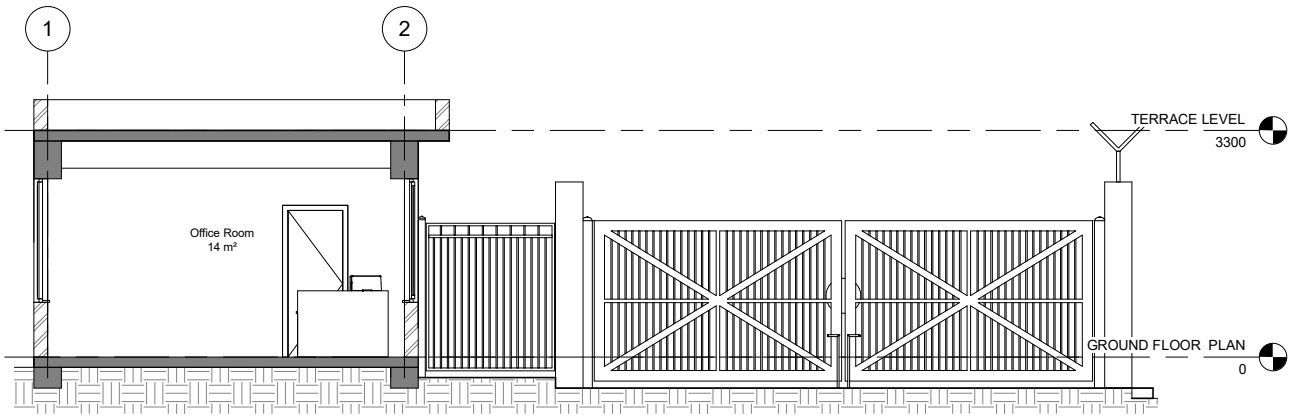
TITLE
FLOOR PLANS, SECTION, ELEVATION AND 3-D RENDER

DRAWN: THILAGAN	CHECKED: MS BRUNO	REVIEWED: MALAYA	APPROVED: BG SAJIT
DATE: 06-11-2025	SCALE: 1 : 50	SIZE: A1	PROJECT No.: 10047
REF No.: 590062340/G dated 30 th July 2025			REVISION: R01.0
DRAWING No.: MEC-0047-01-48-D3-XX-9C-DR-A-01100			



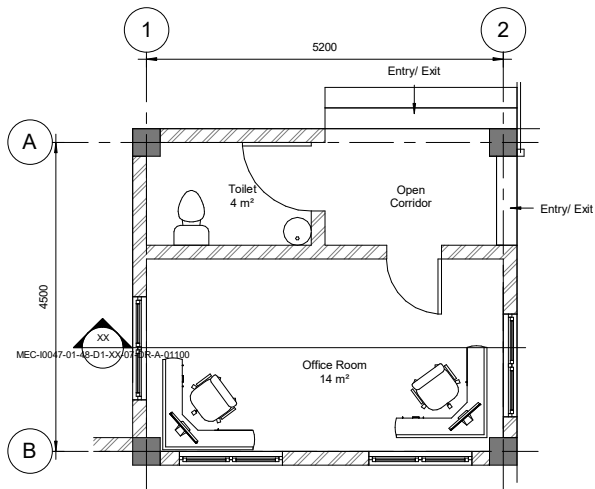
SITE PLAN

SCALE: 1:150



SECTION XX

SCALE: 1:50



FLOOR PLAN - OFFICE AREA

SCALE: 1:50

Area Schedule (Gross Building)	
Name	Area
OFFICE GROUND FLOOR	41 m ²

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	R/W	APP
R02.0	27-11-2025	FOR DPR SUBMISSION	JT	MSB	MM	BOS
R01.0	15-11-2025	SUBMITTED FOR APPROVAL	JT	MSB	MM	BOS

REVISIONS

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

RAW MATERIAL STORAGE YARD

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SITE PLAN, OFFICE FLOOR PLAN, SECTION & 3D RENDER

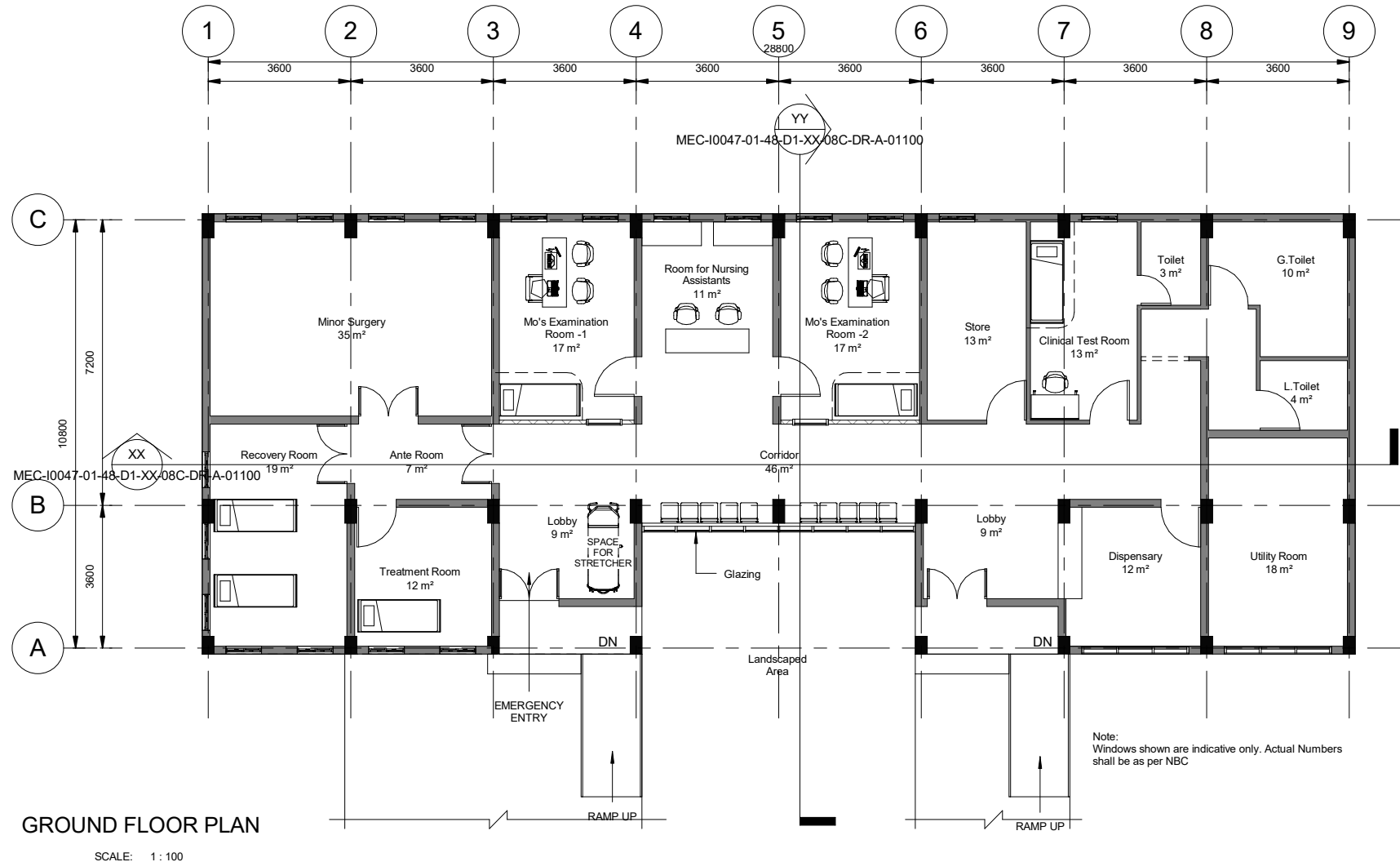
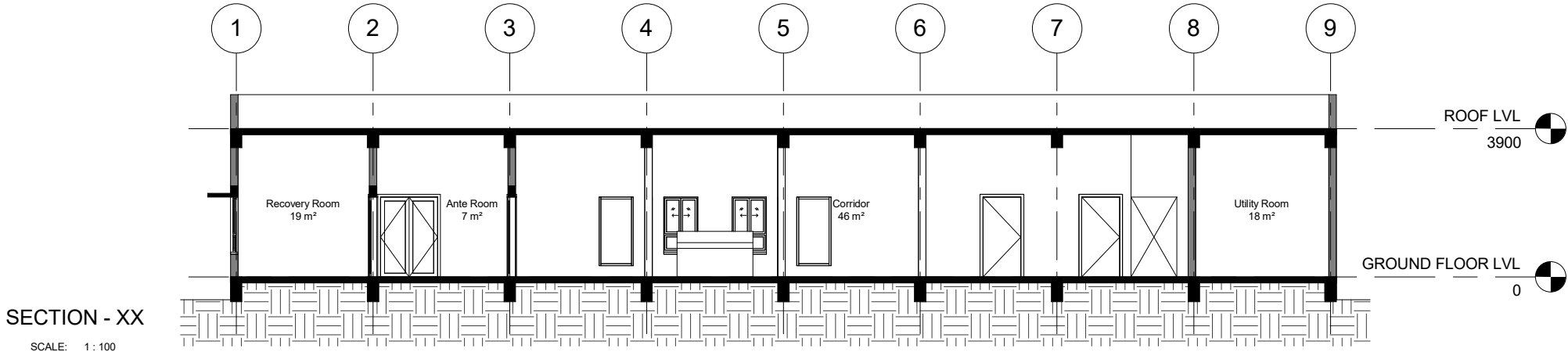
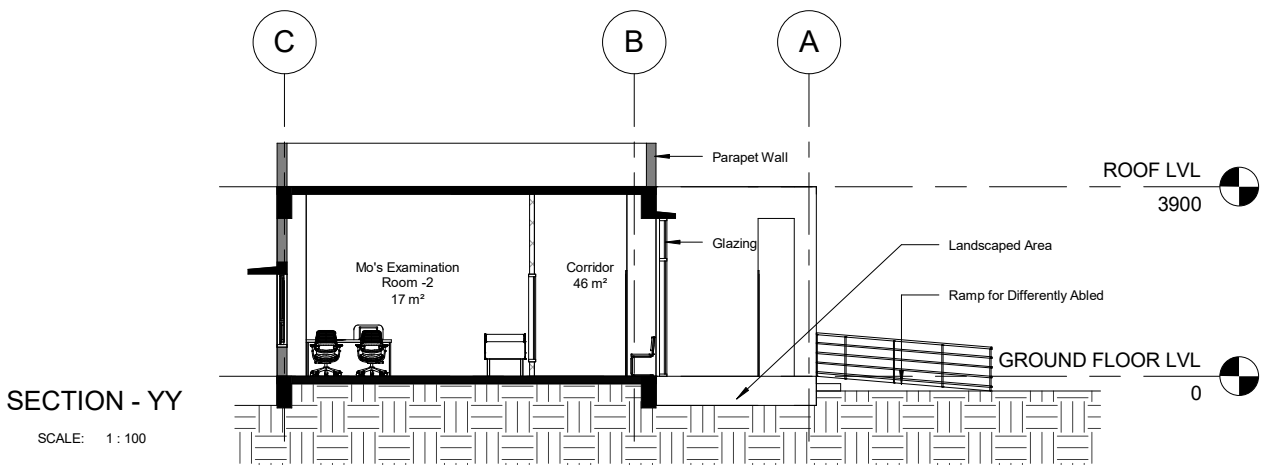
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DATE: 15-11-2025	SCALE: As Indicated	SIZE: A1	
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DRAWING No.: MEC-0047-01-48-D1-XX-07-DR-A-01100			REVISION: R02.0



FRONT VIEW OF OFFICE BUILDING



FRONT VIEW



Area Schedule	
Level	Area
GROUND FLOOR LVL	300 m²
TOTAL BUILTUP AREA	300 m²

Note:
Windows shown are indicative only. Actual Numbers
shall be as per NBC

CONCEPT DRAWING

REV	DATE	DESCRIPTION	BY	CHK	RWV	APP
R01.0	21-10-25	SUBMITTED FOR APPROVAL	MSB	MSB	MM	BGS

REVISIONS

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Comprehensive Detailed Project Report (DPR) for Establishing a State-of-the-Art Greenfield Rolling Stock Manufacturing Plant at Bhopal, Madhya Pradesh

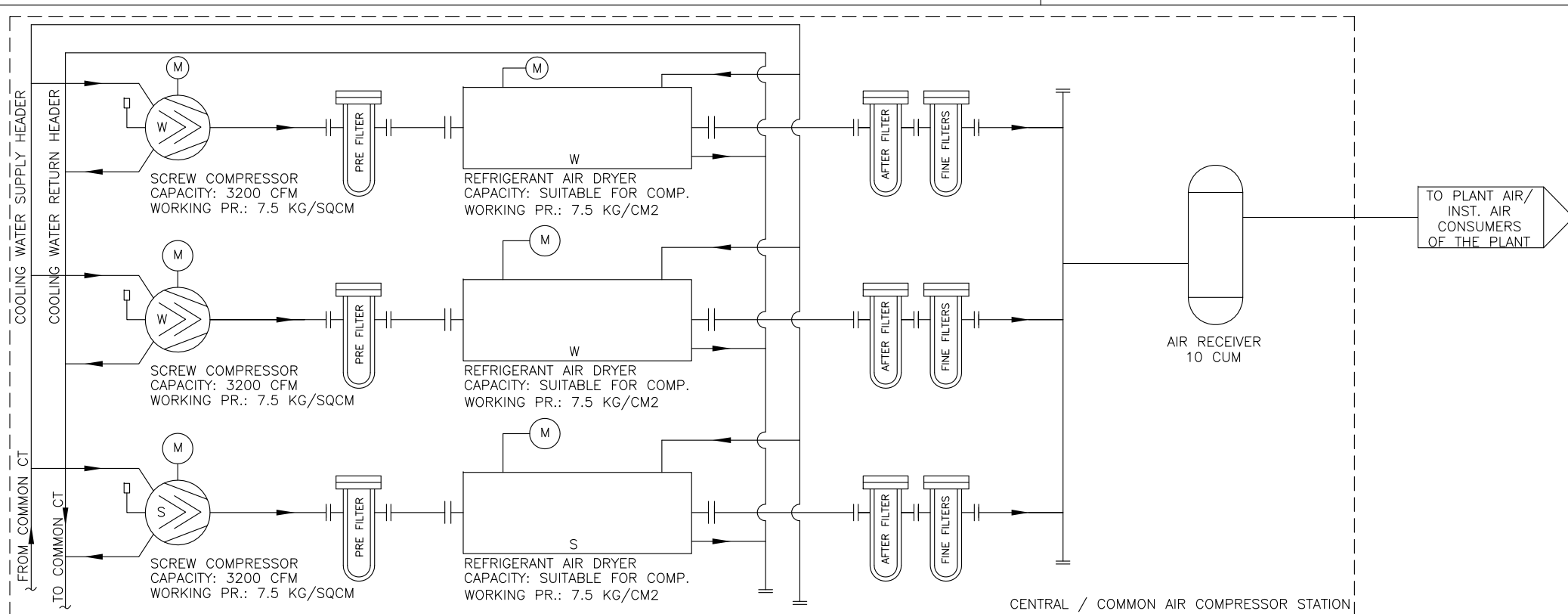
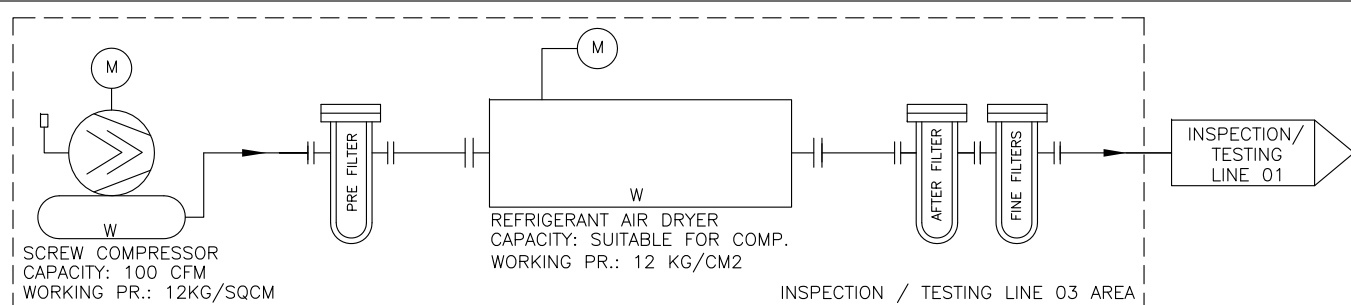
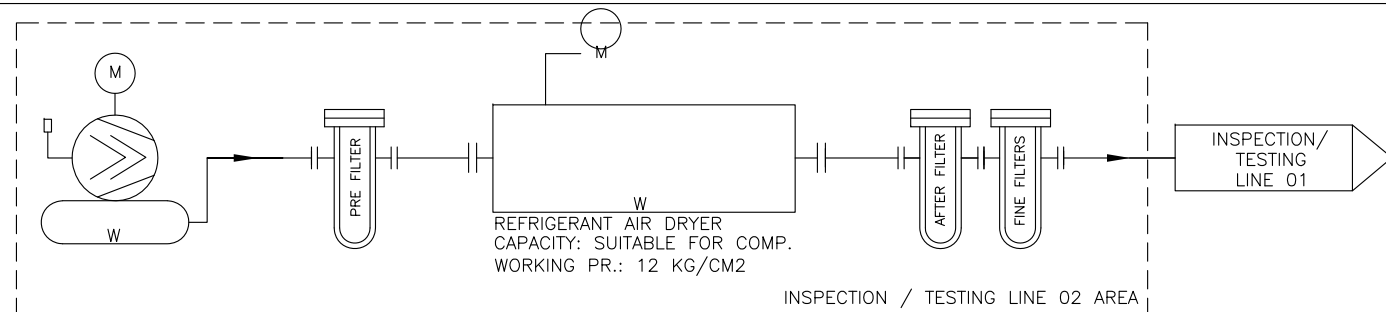
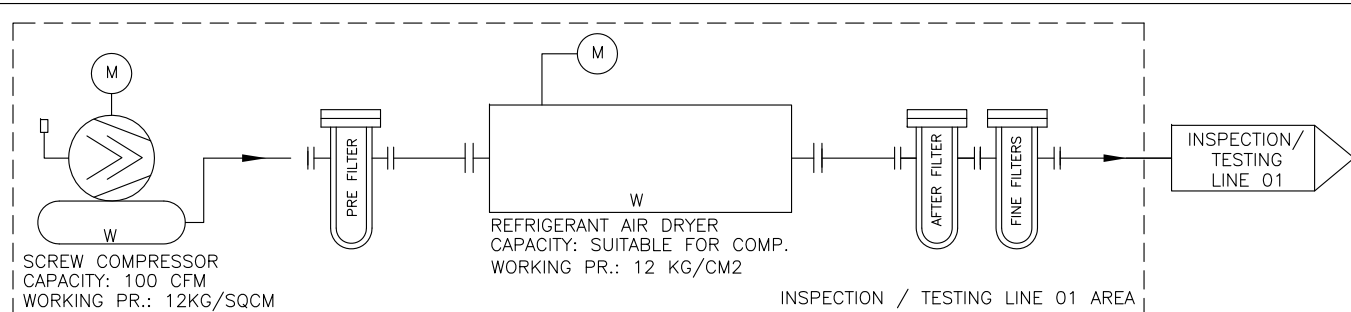
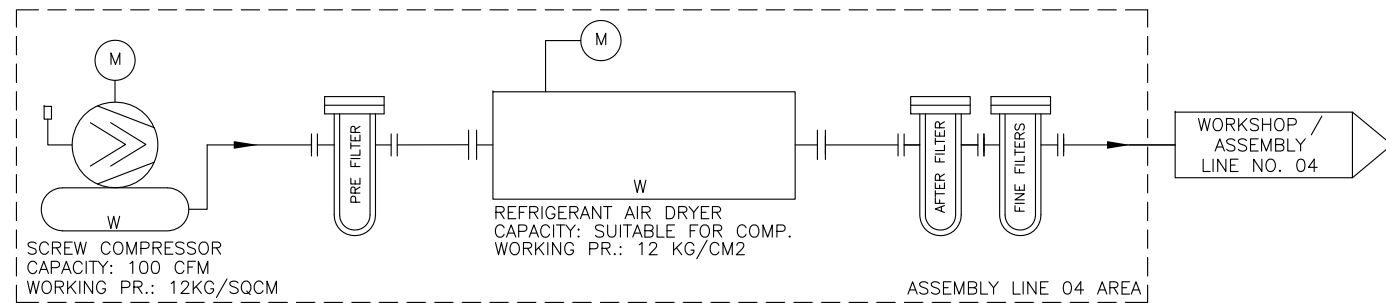
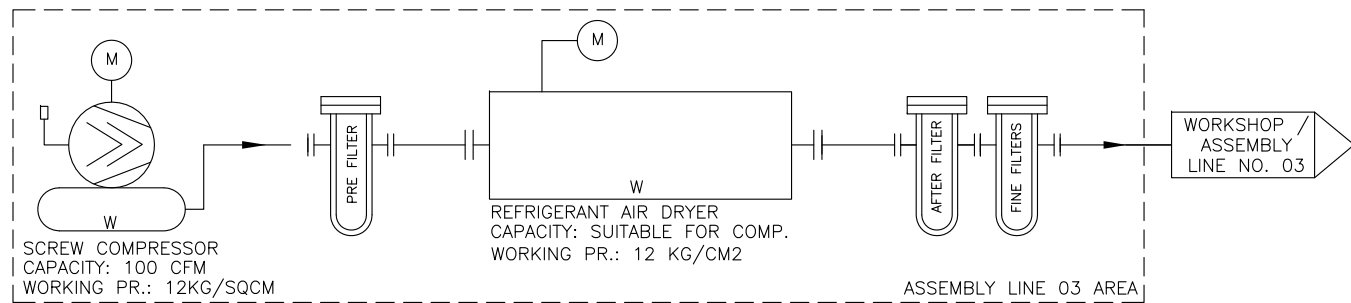
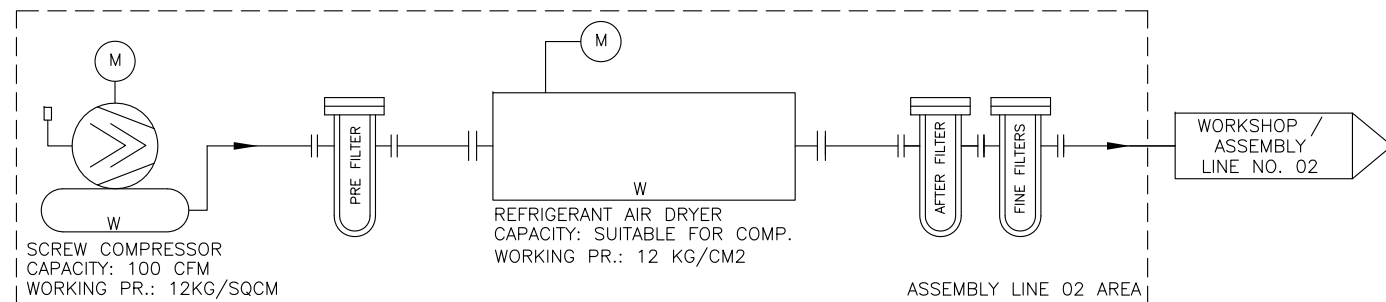
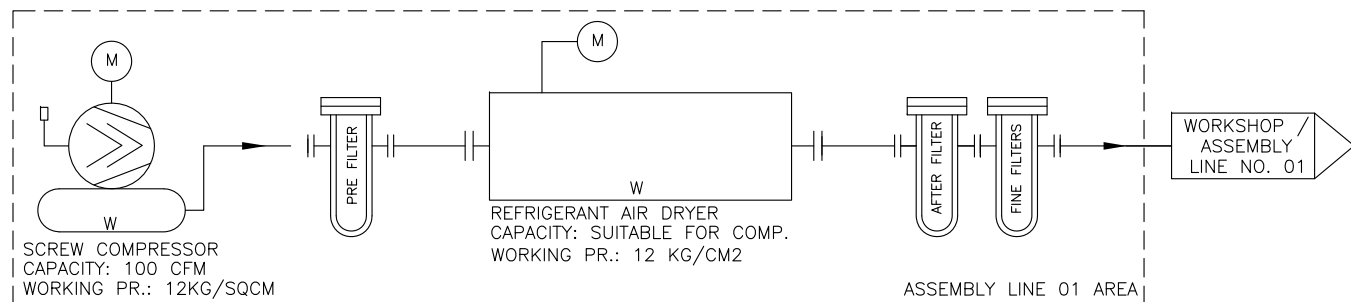
MEDICAL CENTRE



TITLE

GROUND FLOOR PLAN AND SECTIONS

DRAWN: MS BRUNO	CHECKED: MALAYA	REVIEWED: MS BRUNO	APPROVED: BG SAJIT
DATE: 21-10-2025	SCALE : 1 : 100	SIZE: A2	
REF No.: 5900062340/I-0 dated 30 July 2025		PROJECT No.: I/0047	
DRAWING No.: MEC-I0047-01-48-D1-XX-08C-DR-A-01100			REVISION: R01.0



REV.	DATE	DESCRIPTION	BY	CHK.	RWN.	A
REVISION#:						
CLIENT _____						

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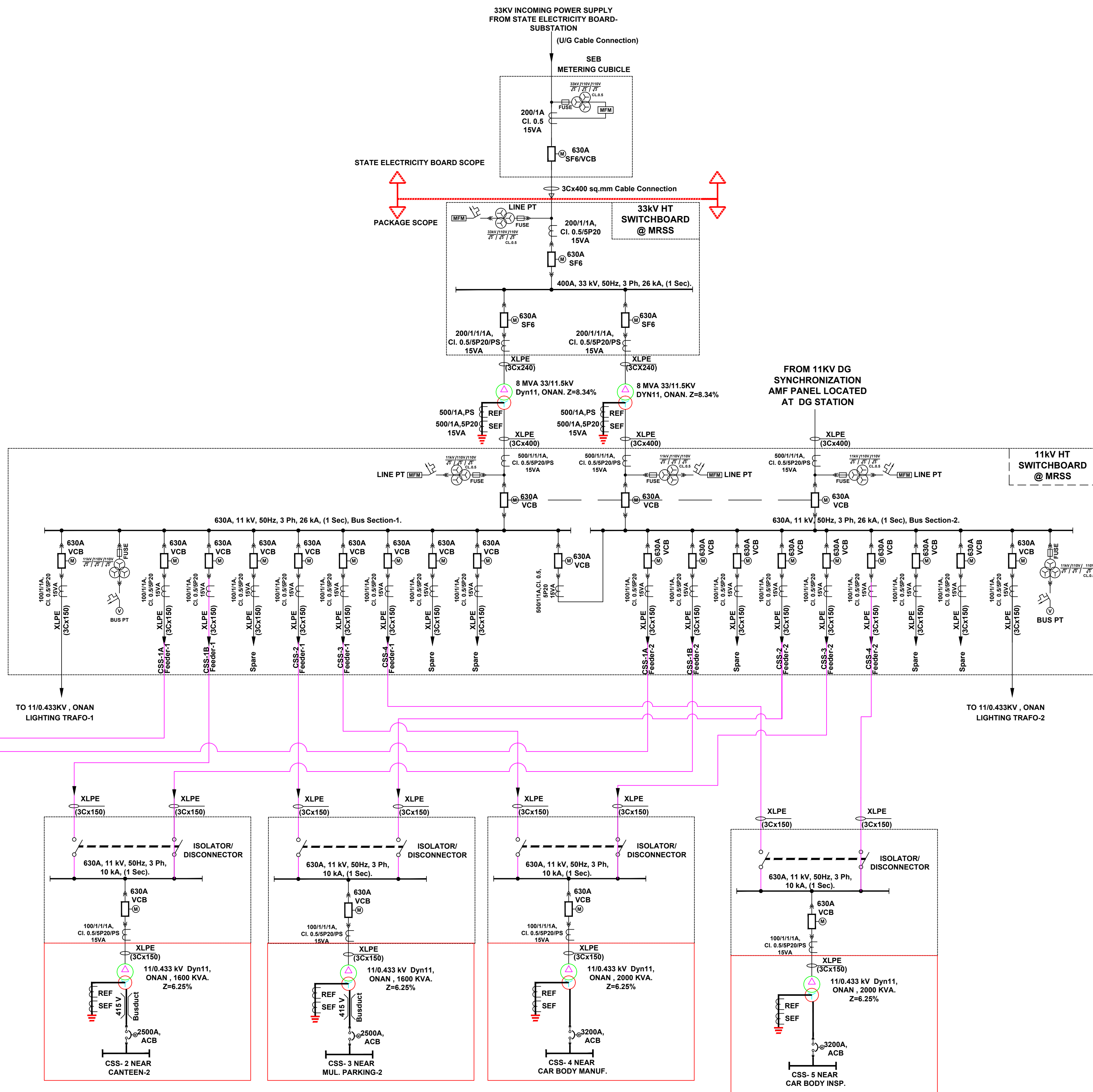
COMPREHENSIVE DETAILED PROJECT REPORT (DPR) FOR ESTABLISHING A STATE-OF-THE-ART GREENFIELD ROLLING STOCK MANUFACTURING PLANT AT BHOPAL, MADHYA PRADESH

CAR BODY FABRICATING &
ASSEMBLY LINE FACILITY

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TITLE _____
PFD OF COMPRESSED AIR FACILITY

DRAWING NO.: MEC-/0047-01-40-D1-ZZ-15-DR-N-03002	PROJECT No./1047
DATE: 27-11-2025	SCALE: 1/MS
REF NO.: SGGGGLMFG/O dated 30-Mar-2025	
DRAWN BY: _____	CHECKED: SS
	APPROVED: SI



LEGEND

	MOTORISED SF6/VACUUM CIRCUIT BREAKER - DRAW OUT TYPE
	11 KV ISOLATOR SWITCH
	MOTORISED AIR CIRCUIT BREAKER - DRAW OUT TYPE
	TWO WINDING POWER/DISTRIBUTION TRANSFORMER
	THREE WINDING POTENTIAL TRANSFORMER STAR - STAR WITH FUSE
	MICRO PROCESSOR BASED MULTI FUNCTION METER WITH FOLLOWING: AMMETER, VOLT METER, ACTIVE POWER (IMP & EMP), MEGAVAR (I & E), MEGAWATT AMPERE REACTIVE HOUR (I& E), FREQUENCY, PREDICTIVE LOAD MANAGEMENT, PF METER ETC.
	CURRENT TRANSFORMER
	MCB



KEY PLAN

NOTE

1. All dimensions are in MM unless otherwise mentioned.

OVERALL POWER DISTRIBUTION SCHEME

[illegible]

REV	DATE	DESCRIPTION	BY	CHK	RVW	APP
REVISIONS						

CLIENT



COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

CAR BODY FABRICATION & ASSEMBLY LINE FACILITY



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TITLE

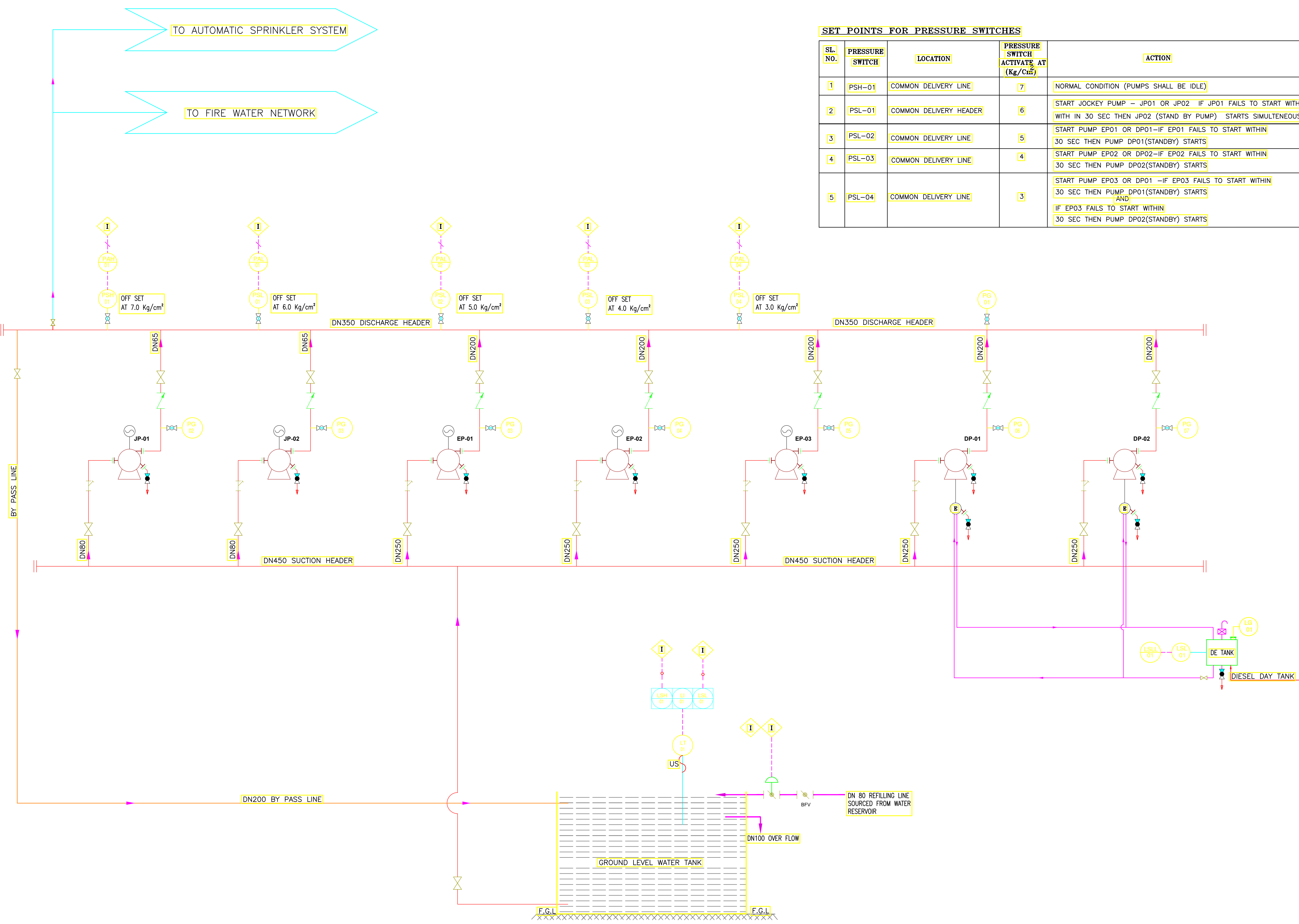
SINGLE LINE DIAGRAM

KEY POWER DISTRIBUTION SCHEME













DRAWN: YM [REDACTED] YM REVIEWED: YM APPROVED: JRK

DATE: 27-11-2025	SCALE:	SIZE: A0
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REF No.: 5900062380/ O dated 30 July 2025	PROJECT No.: I/0047
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SET POINTS FOR PRESSURE SWITCHES				
SL. NO.	PRESSURE SWITCH	LOCATION	PRESSURE SWITCH ACTIVATE AT (Kg/Cm ²)	ACTION
1	PSH-01	COMMON DELIVERY LINE	7	NORMAL CONDITION (PUMPS SHALL BE IDLE)
2	PSL-01	COMMON DELIVERY HEADER	6	START JOCKEY PUMP – JP01 OR JP02 IF JP01 FAILS TO START WITHIN 30 SEC THEN JP02 (STAND BY PUMP) STARTS SIMULTANEOUSLY.
3	PSL-02	COMMON DELIVERY LINE	5	START PUMP EP01 OR DP01 –IF EP01 FAILS TO START WITHIN 30 SEC THEN PUMP DP01(STANDBY) STARTS
4	PSL-03	COMMON DELIVERY LINE	4	START PUMP EP02 OR DP02 –IF EP02 FAILS TO START WITHIN 30 SEC THEN PUMP DP02(STANDBY) STARTS
5	PSL-04	COMMON DELIVERY LINE	3	START PUMP EP03 OR DP01 –IF EP03 FAILS TO START WITHIN 30 SEC THEN PUMP DP01(STANDBY) STARTS AND IF EP03 FAILS TO START WITHIN 30 SEC THEN PUMP DP02(STANDBY) STARTS

LEGEND			
SYMBOL		SYMBOL	
	DESCRIPTION		DESCRIPTION
	CENTRIFUGAL PUMP	PG	PRESSURE GAUGE
	DIESEL ENGINE	PSH	PRESSURE SWITCH (HIGH)
	ELECTRIC MOTOR	PSL	PRESSURE SWITCH (LOW)
	BALL VALVE (NO)	PAL	PRESSURE ALARM (LOW)
	BALL VALVE (NC)	PAH	PRESSURE ALARM (HIGH)
	GATE VALVE	LSL	LEVEL SWITCH (LOW)
	NON-RETURN VALVE	LSL	LEVEL SWITCH (LOW,LOW)
	STRAINER	LG	LEVEL GAUGE
	FIELD MOUNT	LI	LEVEL INDICATOR
	INTERLOCK	LT	LEVEL TRANSMITTER
	BUTTERFLY VALVE		PANEL MOUNT IN PUMP HOUSE

- NOTES:**
1. ALL HYDRANT ARE PROVIDED CONSIDERING ROLLING STOCK MANUFACTURING FACILITIES PREMISES AN LIGHT HAZARD OCCUPANCY EXCEPT MLCOP BUILDINGS.
 2. FIRE FIGHTING SYSTEM SHALL BE DESIGNED BASED ON REQUIREMENT OF CFEES DELHI.
 3. ALL PUMPS SHALL HAVE MANUAL STARTING IN ADDITION TO AUTO START.
 4. THE FIRE HYDRANT NETWORK SHALL BE CONTINUOUSLY KEPT PRESSURISED AT 7.0 KG/CM.
 5. THE PUMPS OPERATION SHALL BE AS FOLLOWS:—
 - (A) THE JOCKEY PUMP SHALL KEEP THE NETWORK PRESSURISED AT 7 KG/CM². IN CASE THE NETWORK PRESSURE DROPS TO 6.0 KG/CM² IT SHALL START AUTOMATICALLY TILL THE PRESSURE BUILDS UPTO 7.0 KG/CM². AT 7.0 KG/CM² IT SHALL AUTOMATICALLY STOP.
 - (B) IN CASE PRESSURE CONTINUES TO FALL BELOW 6.0 KG/CM² THERE SHALL BE AN ALARM IN PUMP STATION. AT PRESSURE LESS THAN 5.0 KG/CM² THE MAIN PUMPS SHALL START AUTOMATICALLY.
 6. MAIN PUMPS SHALL BE STOPPED MANUALLY AFTER GETTING PROPER SIGNAL FROM LOCATION IN CHARGE.
 7. TOTAL NO. OF MAIN WORKING ELECTRICAL DRIVEN PUMP ARE 3 + 2 DIESEL ENGINE DRIVEN PUMP AS STANDBY.
 8. JOCKEY PUMP SHALL STOP AUTOMATICALLY ONCE THE MAIN PUMP STARTS.
 9. DIESEL DAY TANK TO BE LOCATED INSIDE THE FIRE WATER PUMP HOUSE.
 10. WATER FOR SPRINKLER SYSTEM SHALL BE SUPPLIED BY COMMON PUMPS INDICATED ABOVE.
 11. FIRE WATER SYSTEM IS AS PER BIS—13039:2014, BIS—15301:2003(RA 2018) AND NBC PART—4

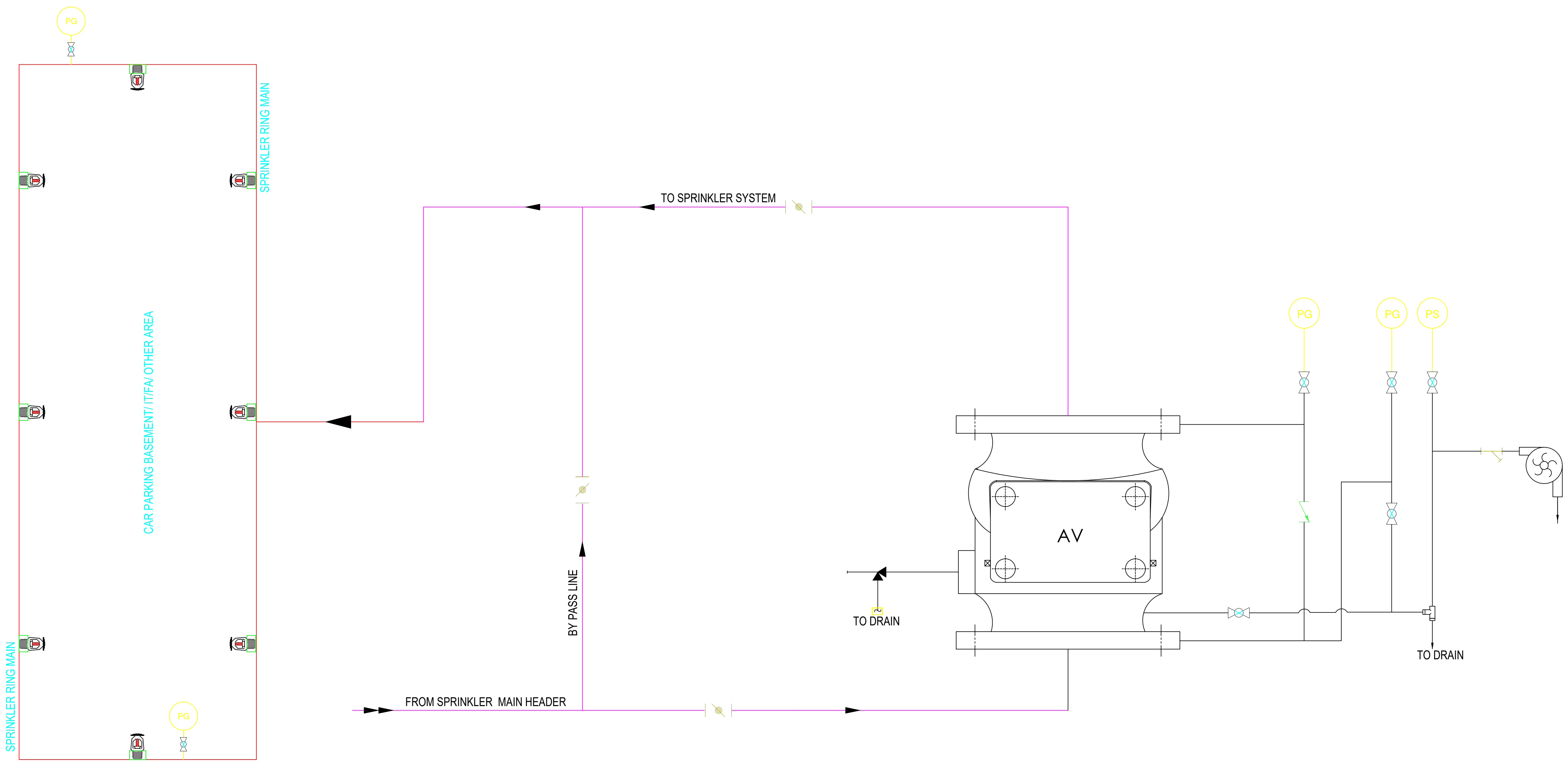
SL NO.	PUMP NO.	DESCRIPTION	CAPACITY m³/hr	HEAD MMC	DRIVE
1	JP-01	MAIN JOCKEY PUMP	18	88	ELECTRIC MOTOR
2	JP-02	STANDBY JOCKEY PUMP	18	88	ELECTRIC MOTOR
3	EP-01	MAIN FIRE WATER PUMP	171	88	ELECTRIC MOTOR
4	EP-02	MAIN FIRE WATER PUMP	171	88	ELECTRIC MOTOR
5	EP-03	MAIN FIRE WATER PUMP	171	88	ELECTRIC MOTOR
6	DP-01	STANDBY FIRE WATER PUMP	171	88	DIESEL ENGINE
7	DP-02	STANDBY FIRE WATER PUMP	171	88	DIESEL ENGINE

TANK/SUMP DETAILS				
SL NO	DESCRIPTION	(CU.M)	TANK SIZE(M)	Nos
1	FIRE WATER STORAGE TANK	513	20(L)X8.5(W)X3.2(H)	1











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SECTION	GL&T	ROLLING STOCK MANUFACTURING FACILITY AT BHOPAL, MADHYA PRADESH			
DESIGNED	S KARTHIK	FIRE FIGHTING SYSTEM			
CAD	S KARTHIK				
CHECKED & VERIFIED	K GOPALAN	P&I DIAGRAM FIRE WATER PUMPING SYSTEM			
APPROVED	SIG & DATE : 18-11-2025	SCALE NTS		SHEET	REV
	NAME: K. GOPALAN, GM	DRG NO. MEC-10047-01-14-D1-ZZZ-DR-N-04001		1 OF 1	R0

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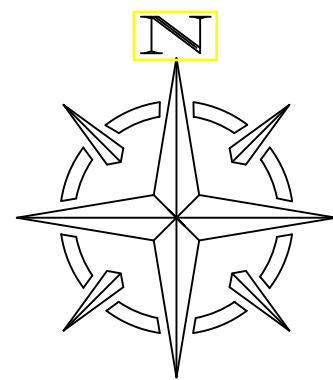


SYMBOL LEGEND

- | | | | |
|------------------|---|--------------------------|---|
| ALARM VALVE |  | GAUGE VALVE |  |
| NON RETURN VALVE |  | STRAINER |  |
| BUTTERFLY VALVE |  | ANGLE VALVE |  |
| PRESSURE SWITCH |  | WATER MOTOR GONG |  |
| PRESSURE GAUGE |  | QUARTZOID BULB SPRINKLER |  |

		M/S BEML LIMITED BANGALORE	
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SECTION	GL&T	ROLLING STOCK MANUFACTURING FACILITY AT BHOPAL, MADHYA PRADESH	
DESIGNED	S KARTHIK	FIRE FIGHTING SYSTEM	
CAD	S KARTHIK	P&I DIAGRAM OF AUTOMATIC SPRINKLER SYSTEM	
CHECKED & VERIFIED	K GOPALAN		
SIG & DATE	 18-11-2025	SCALE	NTS
APPROVED		DRG NO.	MC-10047-01-14-D1-ZZ-ZZZ-DR-N-04002
NAME: K. GOPALAN, GM		1 OF 1	REV

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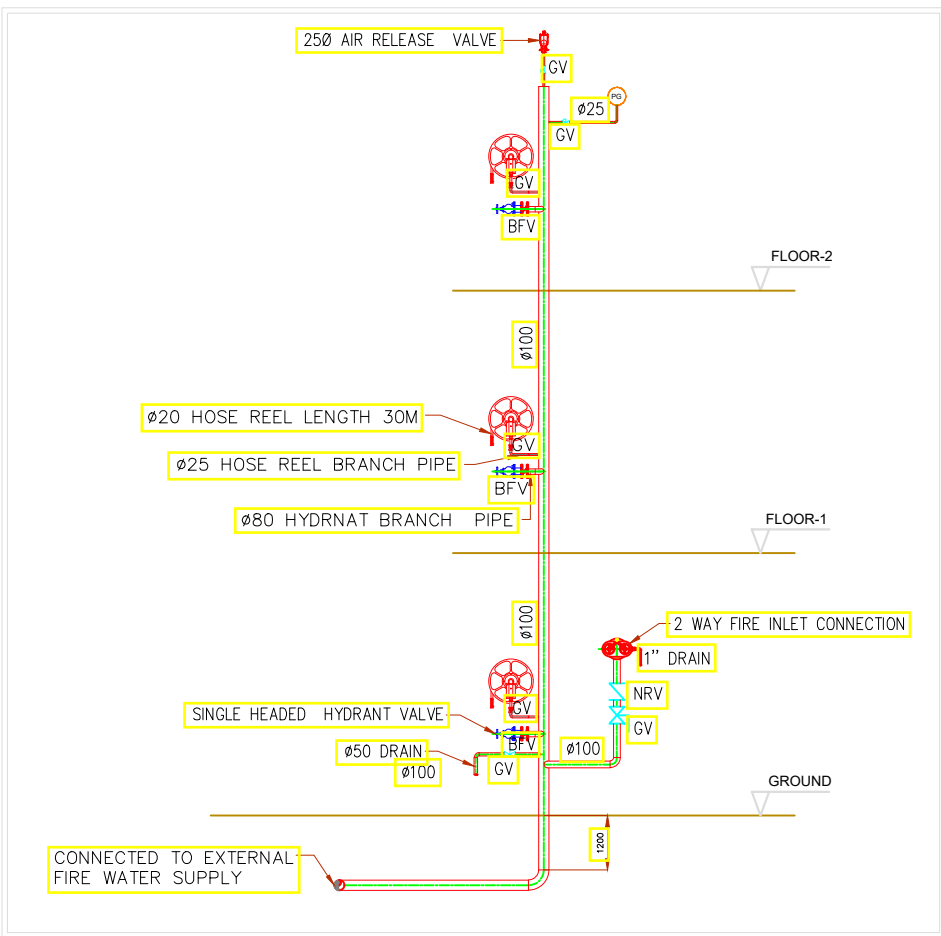


LEGENDS:-

FIRE HYDRANT PIPE	
SINGLE HEADED HYDRANT	
WATER MONITOR	
GATE VALVE WITH CHAMBER	
HOSE BOX	
PRESSURE GAUGE	

NOTES:-

- ALL HYDRANTS ARE PROVIDED CONSIDERING PLANT AS ARE LIGHT HAZARD OCCUPANCY
- THE SYSTEM NETWORK SHALL BE MAINTAINED AT 7.0 Kg/Cm. ^[2]
- INTERNAL HYDRANT (WET RISER) FOR INSIDE BUILDING SHALL BE ENVISAGED FOR VARIOUS BUILDING AS PER NBC (2016) PART-4 REQUIREMENT.
- INTERNAL HYDRANT (WET RISER) PROVIDED FOR HIGH RISE(MORE THAN 15M) BUILDING/STRUTURES AS PER NBC REQUIREMENT.
- HYDRANTS SHALL BE SPACED AT NOT MORE THAN 60M APART AND MONITORS AT STRATEGIC LOCATIONS.
- FIRE WATER LINES AT ROAD CROSSING SHALL BE LAID WITHIN HUME PIPE.
- TAPPING FOR WET RISER SYSTEM FOR INSIDE BUILDING SHALL BE TAKEN FROM MAIN HYDRANT NETWORK RUNNING NEAR BUILDINGS.
- FIRE HYDRANT SYSTEM NETWORK SHALL BE IS AS PER IS:-13039:2014 & TAC.
- INTERNAL FIRE HYDRANT (WET RISER) SYSTEM FOR THE BUILDING SHALL BE NETWORK SHALL BE AS PER IS : 3844, NBC PART-4 & TAC.
- HVWS SHALL BE PROVIDED FOR THE TRANSFORMER HAVING MORE THAN 10MVA OR 2000 LTRS OIL CAPACITY.
- WATER MONITOR SHALL BE PROVIDED NEAR TO THE BUILDING/STRUTURE OF HEIGHT MORE THAN 15M
- FIRE SERVICE INLET CONNECTION SHALL BE PROVIDED ON RISER OF BUILDING/STRUTURE.
- TAPPING FOR AUTOMATIC SPRINKLER SYSTEM SHALL BE TAKEN FROM HYDRANT HEADER.



TYPICAL ARRANGEMENT OF INTERNAL HYDRANT SYSTEM



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ROLLING STOCK MANUFACTURING FACILITY AT
BHOPAL, MADHYA PRADESH

FIRE FIGHTING SYSTEM

FIRE WATER PIPELINE NETWORK

SCALE NTS SHEET REV
DRG NO: MEC-10047-01-14-D1-ZZ-ZZZ-DR-N-04100 1 OF 1 R0

SECTION GL&T

DESIGNED S KARTHIK

CAD S KARTHIK

CHECKED & VERIFIED K GOPALAN

SIG & DATE: 18-11-2025

APPROVED NAME: K. GOPALAN, GM

REFERENCES

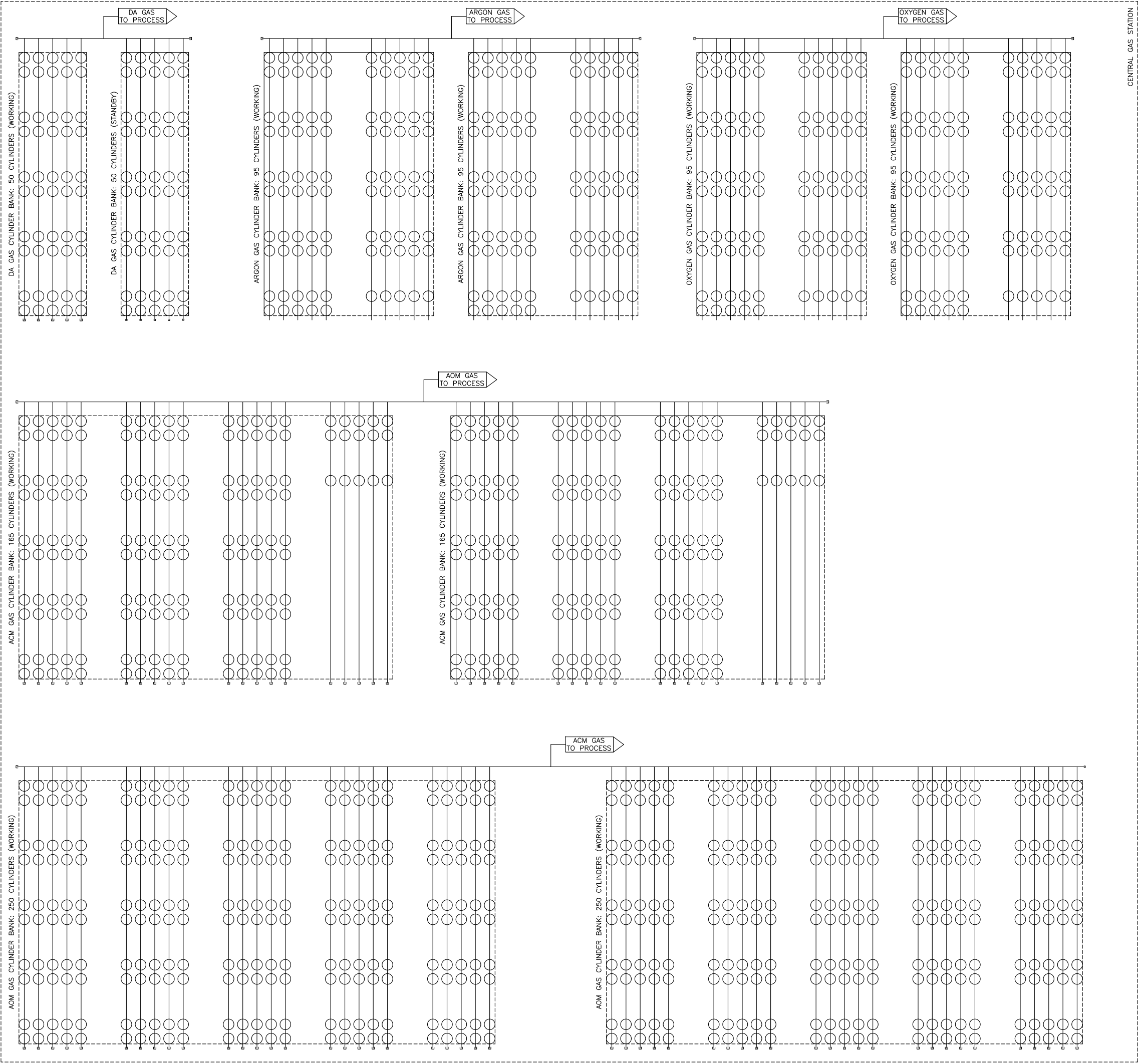
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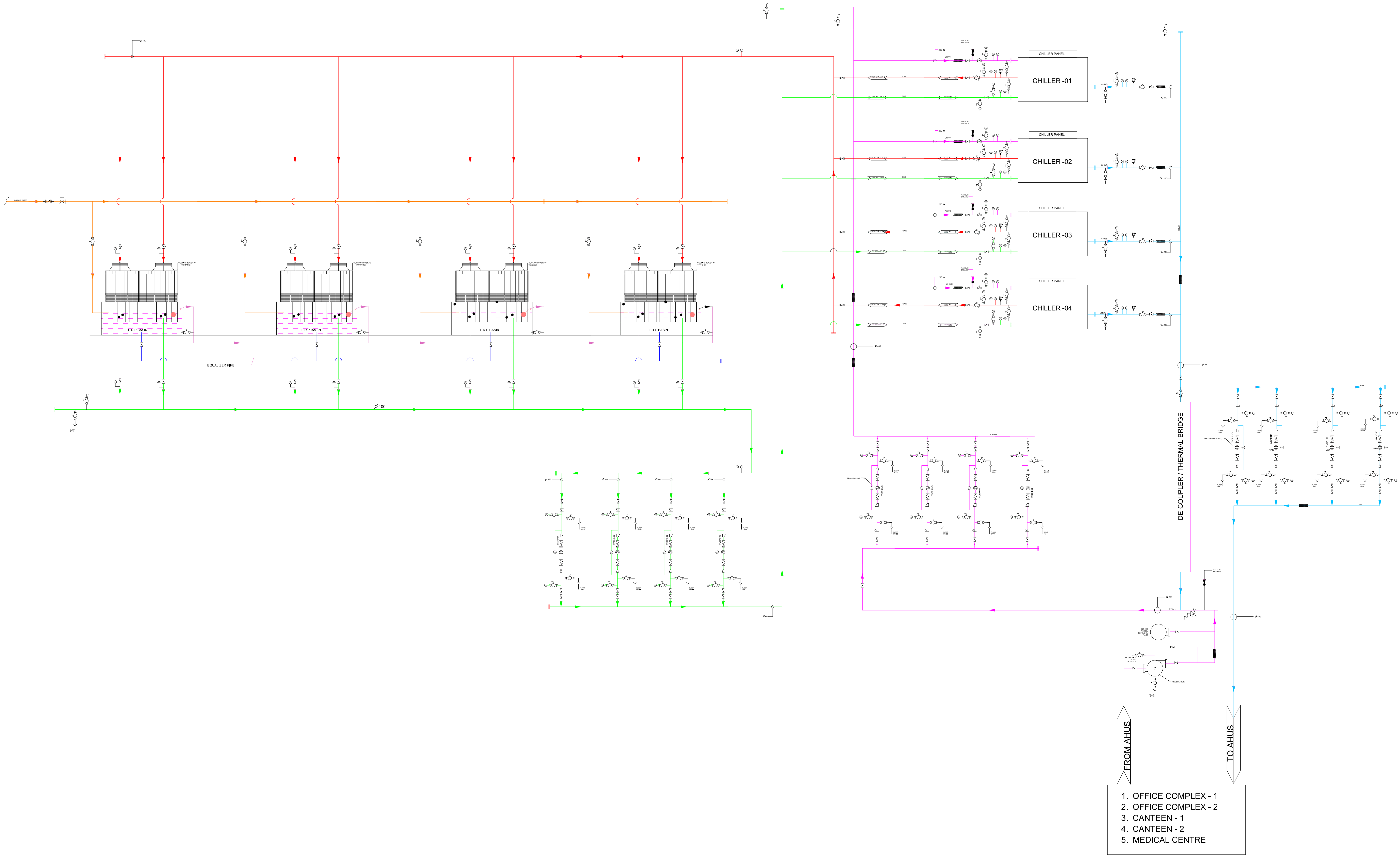
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REV NO. DATE ZONE DESCRIPTION BY VERIFIED

NOTES

CONCURRED BY





KEY PLAN

NOTES:

1. CHILLED WATER INLET & OUTLET TEMPERATURE = 7°C & 12°C
2. CONDENSER WATER INLET & OUTLET TEMPERATURE = 32°C & 37°C
3. VENTS ARE LOCATED AT THE HIGHEST POINT & DRAINING ARE LOCATED ON THE LOWEST POINTS OF THE PIPING SYSTEM.
4. ALL EQUIPMENT DRAIN SHALL BE CONNECTED TO NEAREST SURFACE DRAIN.
5. LEVEL SWITCHES SHALL BE INTERLOCKED WITH CONDENSER WATER PUMPS.
6. ALL DIMENSIONS IN MM UNLESS OTHERWISE MENTIONED.

SYMBOLS	DESCRIPTION
	AUTO PURGE
	SAFETY VALVE
	BUTTERFLY VALVE
	MOTORIZED BUTTERFLY VALVE
	BALL VALVE
	Y-STRAINER
	CONTROL VALVE
	MANUAL BALANCING VALVE
	FLOAT VALVE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	NON RETURN VALVE
	FLEXIBLE CONNECTOR
	DIFFERENTIAL PRESSURE SWITCH
	PRESSURE GAUGE
	TEMPERATURE GAUGE
	TEMPERATURE SENSER
	CHILLED WATER SUPPLY (CHWS)
	CHILLED WATER RETURN (CHWR)
	CONDENSER WATER RETURN (CWR)
	CONDENSER WATER SUPPLY (CWS)
	BLOW DOWN LINE
	MAKE WATER LINE
	DRAIN LINE

Not For
Construction

REV	DATE	DESCRIPTION	BY	CHK	RW	APP
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REVISIONS

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**BEML LIMITED**
BANGALORE

COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
**GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH**

CAR BODY FABRICATION &
ASSEMBLY LINE FACILITY

**MECON LIMITED**
BANGALORE

TITLE
**CAR BODY FABRICATION & ASSEMBLY
LINE FACILITY**
**CHILLED WATER SYSTEM
P&ID**

DRAWING: KSK CHECKED: KSK REVIEWED: KSK APPROVED: KSK

DATE: 15-11-2025 SCALE: NTS SIZE: A0

REF No.: PROJECT No.: R0047

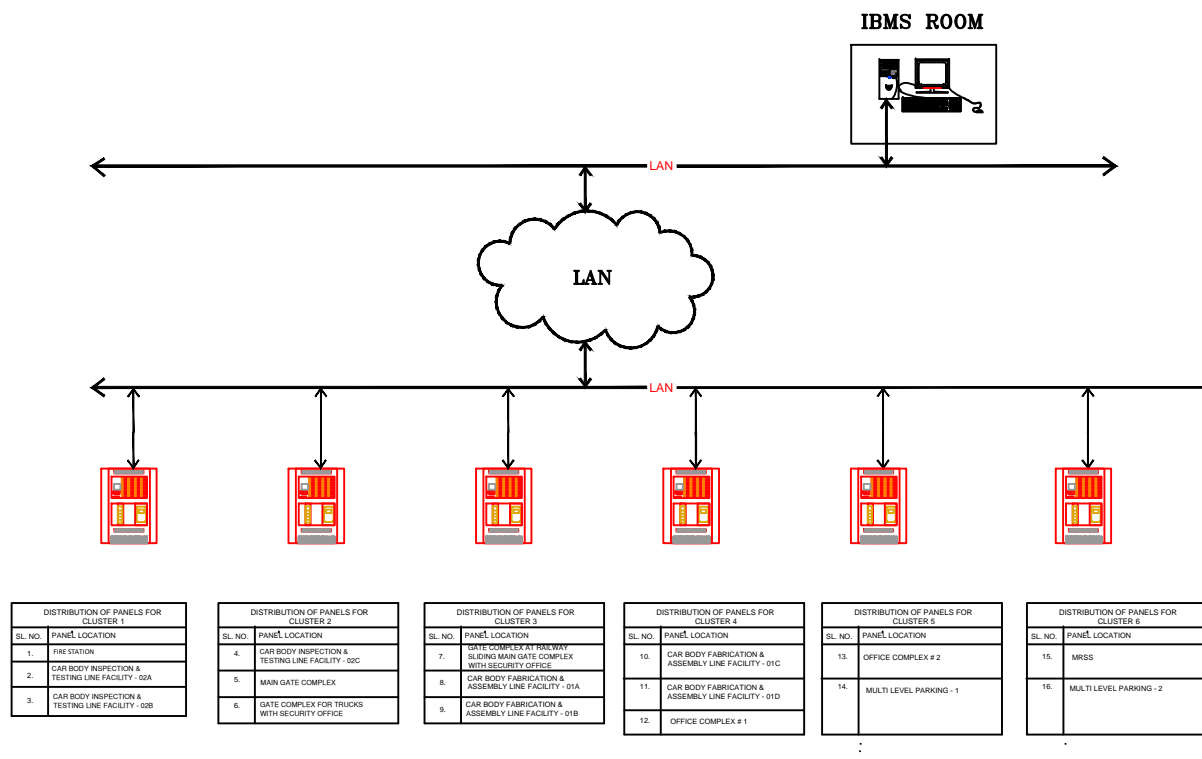
DRAWING No.: REVISION:



KEY PLAN

● 2019年10月1日

1. All dimensions are in MM unless otherwise mentioned



DISTRIBUTION OF PANELS FOR CLUSTER 1	
SL. NO.	PANEL LOCATION
1.	FIRE STATION
2.	CAR BODY INSPECTION & TESTING LINE FACILITY - 02A
3.	CAR BODY INSPECTION & TESTING LINE FACILITY - 02B

DISTRIBUTION OF PANELS FOR CLUSTER 2	
SL. NO.	PANEL LOCATION
4.	CAR BODY INSPECTION & TESTING LINE FACILITY - 02C
5.	MAIN GATE COMPLEX
6.	GATE COMPLEX FOR TRUCKS WITH SECURITY OFFICE

DISTRIBUTION OF PANELS FOR CLUSTER 3	
SL. NO.	PANEL LOCATION
7.	GATE COMPLEX AT RAILWAY SLIDING MAIN GATE COMPLEX WITH SECURITY OFFICE
8.	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY - 01A
9.	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY - 01B

DISTRIBUTION OF PANELS FOR CLUSTER 4	
SL. NO.	PANEL LOCATION
10.	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY - 01C
11.	CAR BODY FABRICATION & ASSEMBLY LINE FACILITY - 01D
12.	OFFICE COMPLEX # 1

DISTRIBUTION OF PANELS FOR CLUSTER 5	
SL. NO.	PANEL LOCATION
13.	OFFICE COMPLEX # 2
14.	MULTI LEVEL PARKING - 1

DISTRIBUTION OF PANELS FOR CLUSTER 6	
SL. NO.	PANEL LOCATION
15.	MRSS
16.	MULTI LEVEL PARKING - 2

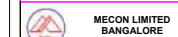
FILE	2011-01	SUBMITTED FOR APPROVAL	PG	PG	PG
REV	DATE	DESCRIPTION	BY	CHK	APP

1000



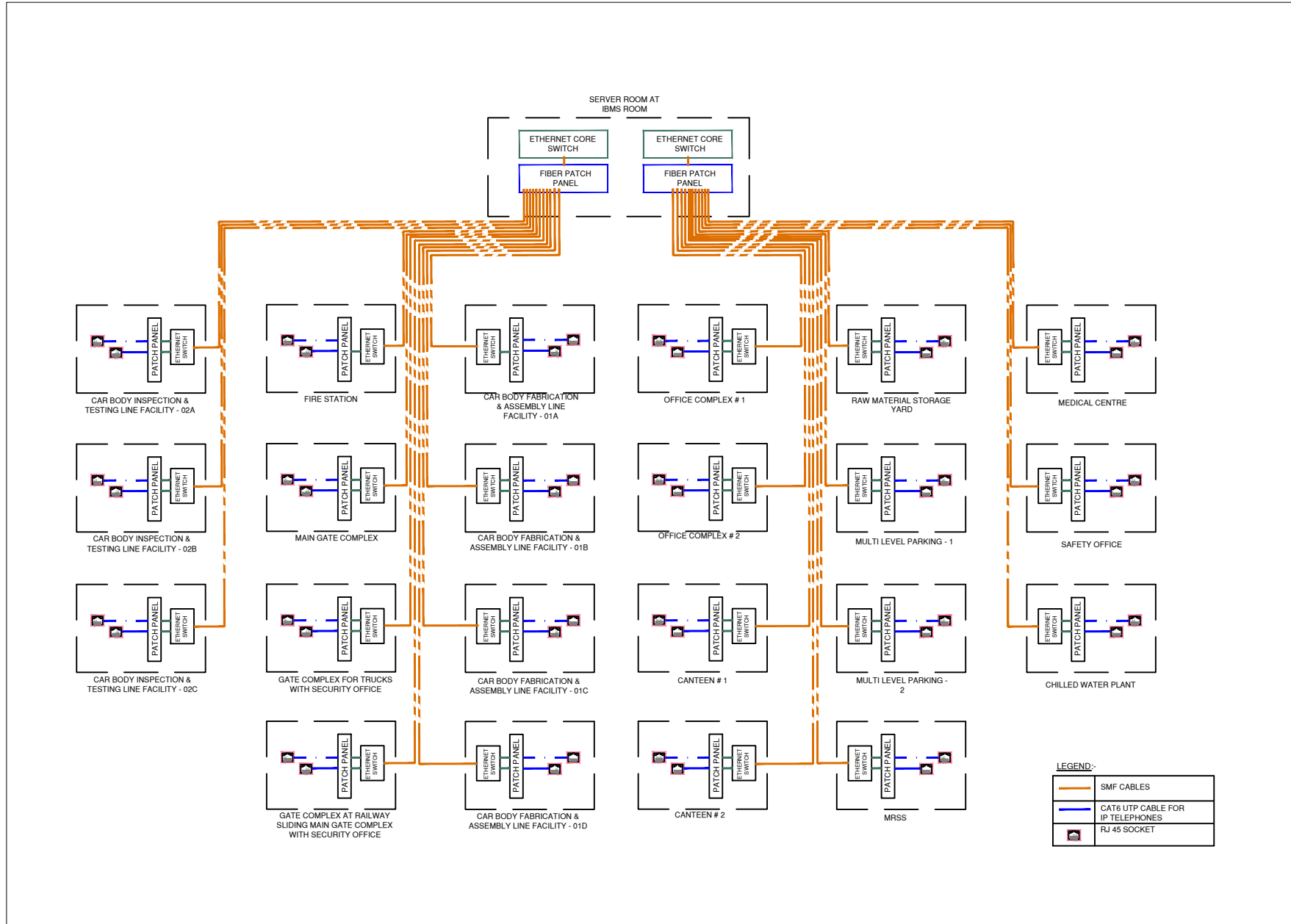
COMPREHENSIVE DETAILED
PROJECT REPORT (DPR) FOR
ESTABLISHING A
STATE-OF-THE-ART
GREENFIELD ROLLING STOCK
MANUFACTURING PLANT AT
BHOPAL, MADHYA PRADESH

CAR BODY FABRICATION &
ASSEMBLY LINE FACILITY



ITUG CAR BODY FABRICATION & ASSEMBLY
LINE FACILITY
SCHEMATIC
FDA SYSTEM

DESIGNED BY: PG	CHECKED BY: PG	REVIEWED BY: PG	APPROVED BY: PG
DATE: 25-11-2025		SCALE: 1:1	SEE: A1
DWG No.: 1001010101010101		DWG No.: 1001010101010101	



KEY PLAN
NOTE:
1. All dimensions are in MM unless otherwise mentioned.

REV	NO.	DATE	DESCRIPTION	BY	CHK	APP
1	1					
2	2					
3	3					
4	4					
5	5					
6	6					
7	7					
8	8					
9	9					
10	10					

CLIENT:
BEML LIMITED BANGALORE
COMPREHENSIVE DETAILED PROJECT REPORT (DPR) FOR ESTABLISHING A STATE-OF-THE-ART GREENFIELD ROLLING STOCK MANUFACTURING PLANT AT BHOPAL, KARNATAKA PRADESH.

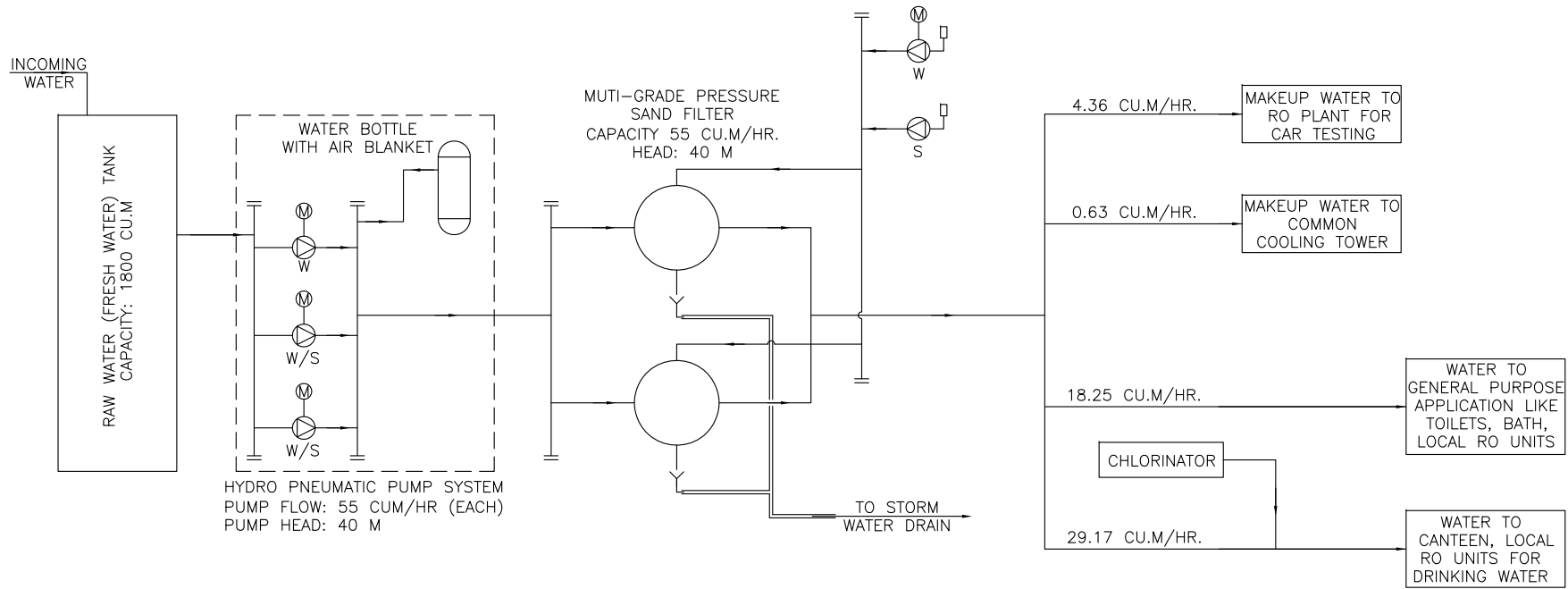
CAR BODY FABRICATION & ASSEMBLY LINE FACILITY

MECON LIMITED BANGALORE

PROJECT: CAR BODY FABRICATION & ASSEMBLY LINE FACILITY
SCHEMATIC LAN SYSTEM

DRAWN BY	DESIGNED BY	REVIEWED BY	APPROVED BY
DATE	DATE	DATE	DATE
REV	NO.	DATE	DESCRIPTION

PROJECT NO. MEC /0087-03-ES-03-XR-03-04-00002
SHEET NO. 1/1

[illegible]