Taking Precast To The Limit

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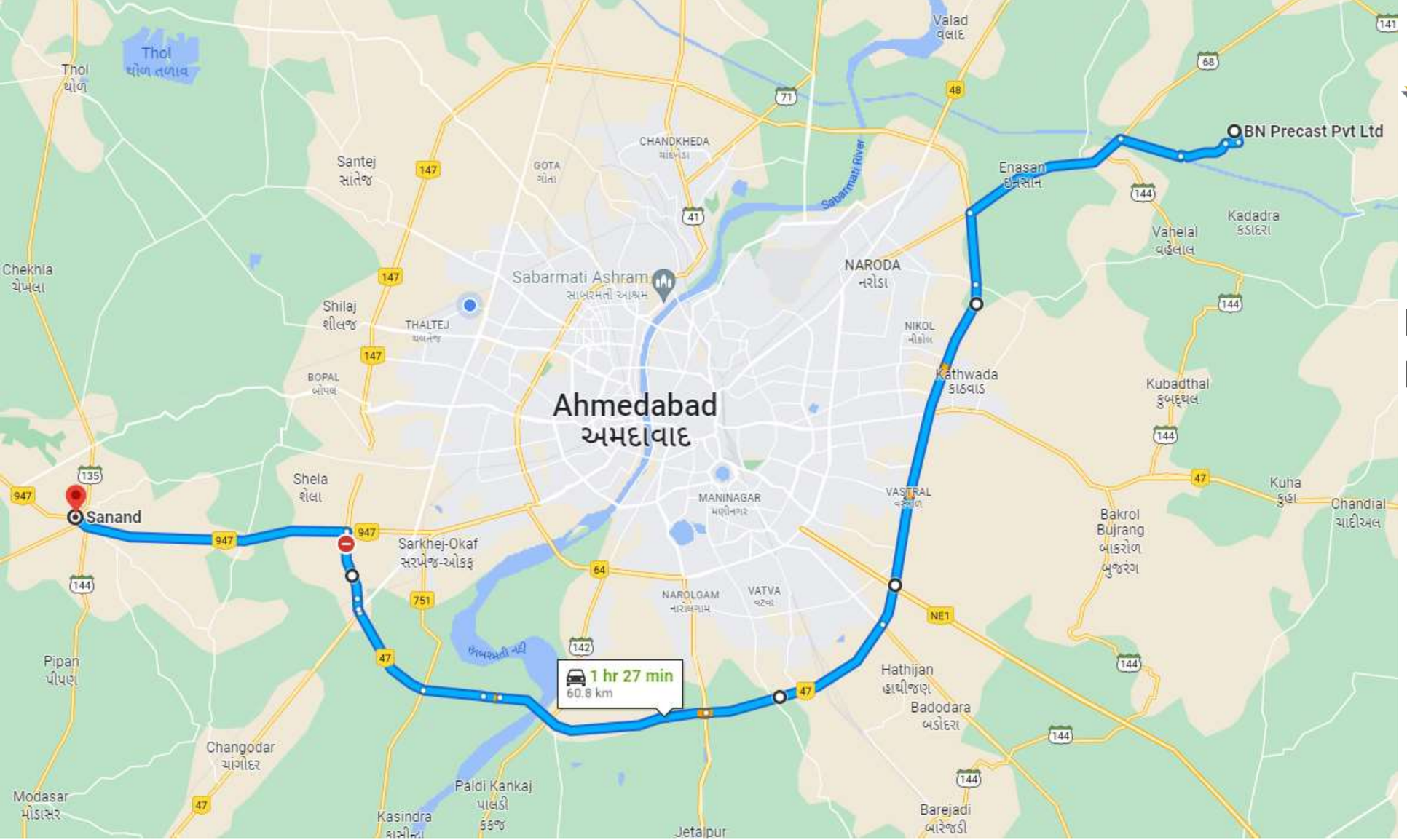

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Factory : Jalundra
Mota, Dehgam road.

Site : Sanand, Gujarat

Location of Site and Factory

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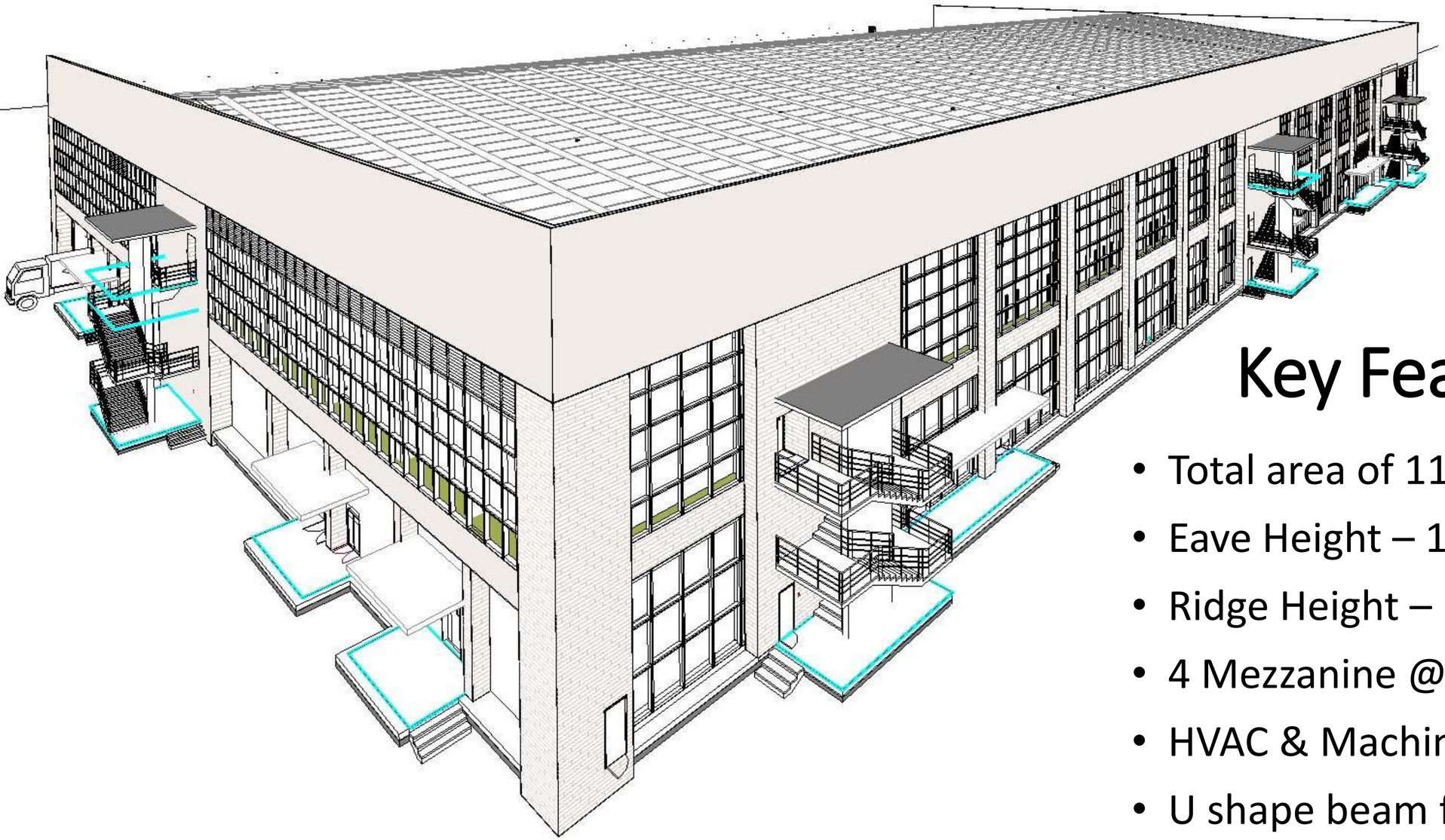

Key Feature

- Total area of 115x77 = 8855m^2
- Eave Height – 12m
- Ridge Height – 16.5m
- 4 Mezzanine @ 5.95m lvl
- HVAC & Machinery Floor @ 7.5m lvl
- U shape beam for water down take and resting of Facade wall
- Facade of height 4.5m above the Eave
- 7 free standing staircase

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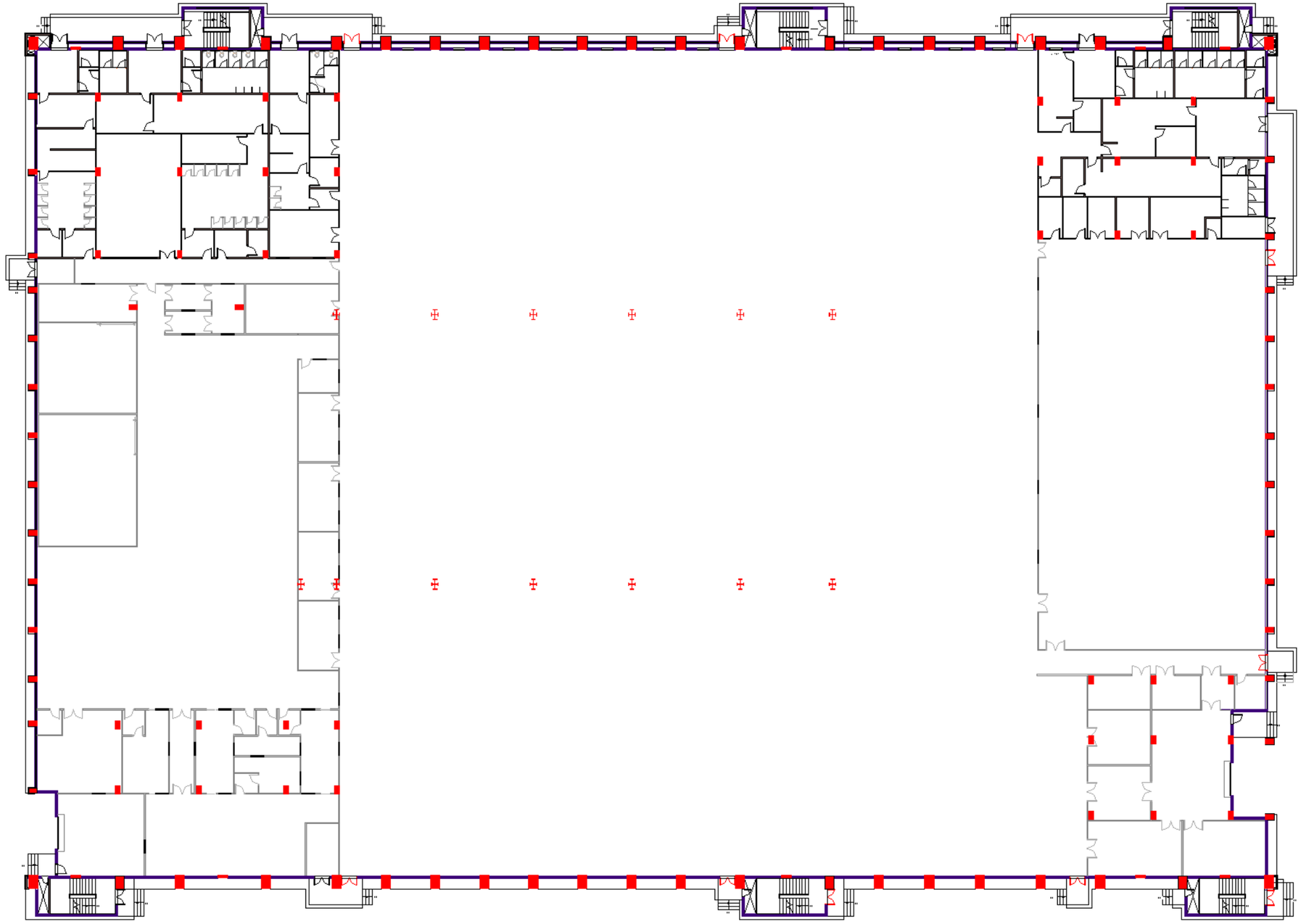

- Original Proposed Plan with
  - 22nos of Rafter
  - 12nos of Mezzanine Beam @7.5m lvl

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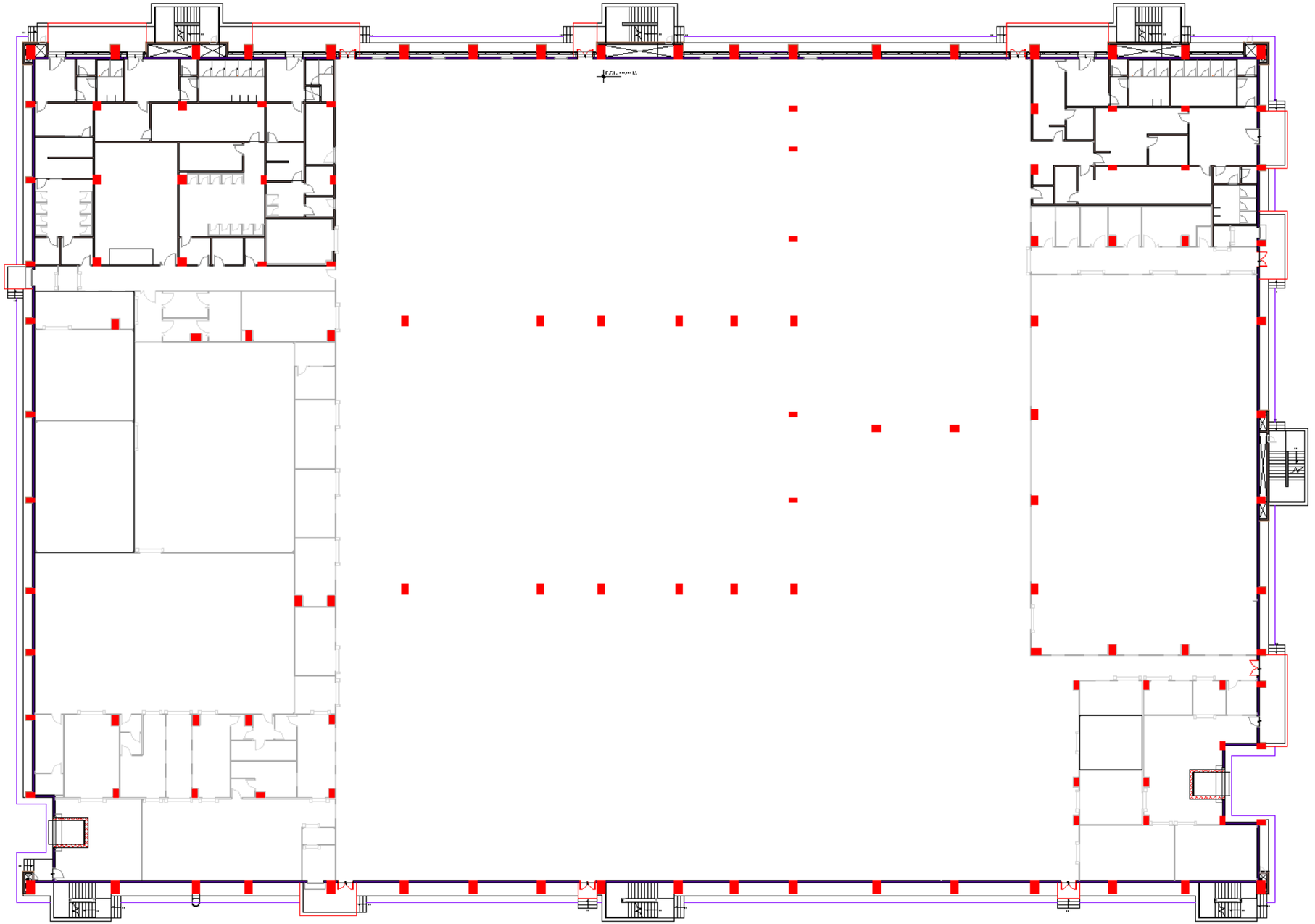

- BN Precast Proposed Column grid with
  - 18nos of Rafter
  - 9nos of Mezzanine Beam @7.5m lvl

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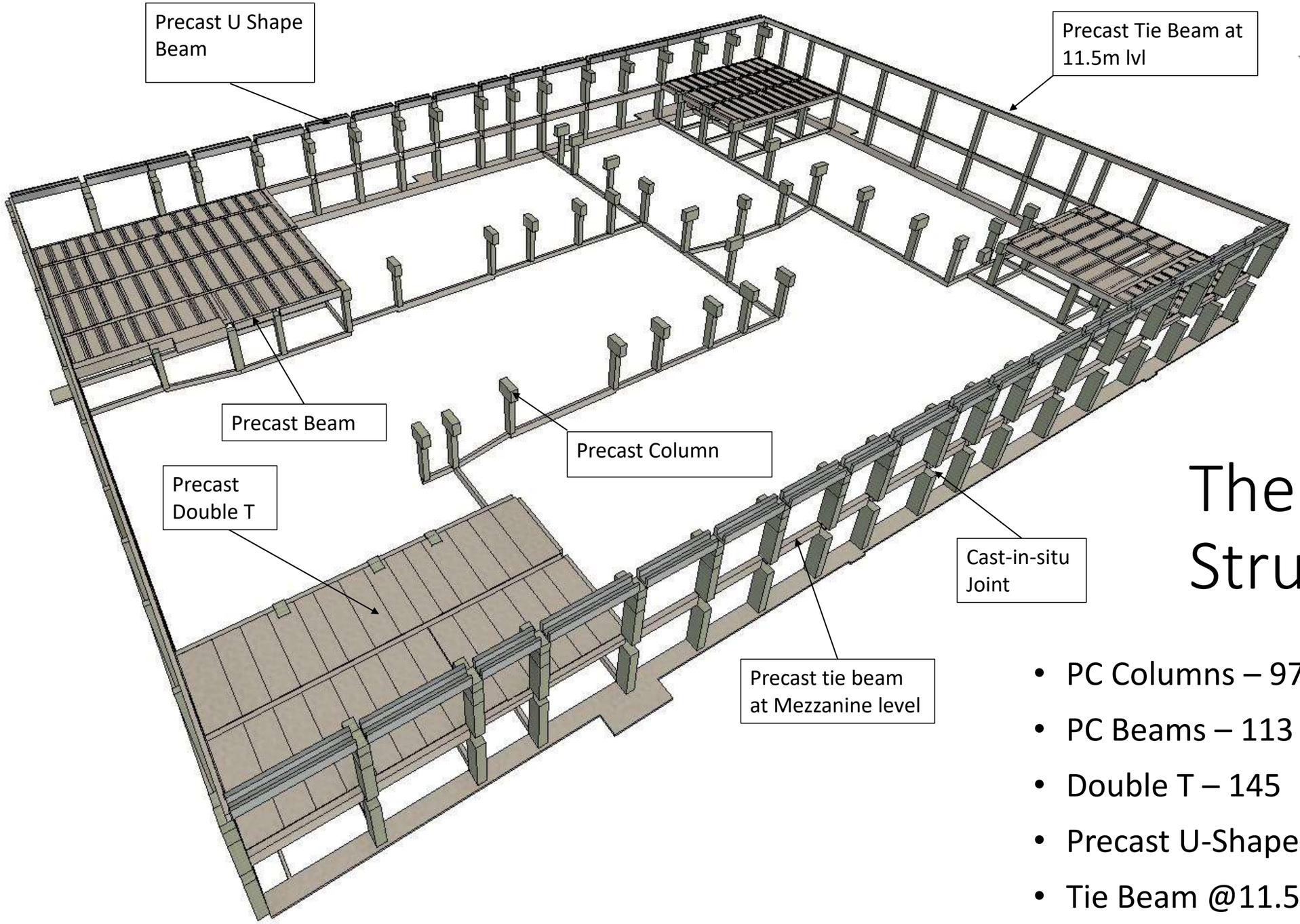

The Main Structural System

- PC Columns – 97(PC-G) + 39(PC-R) = 136
- PC Beams – 113
- Double T – 145
- Precast U-Shape beam – 34
- Tie Beam @11.5m - 23

Design Criteria

1. Introduction

1.1. Project Description

Name of the Project / Building	
Location of the Building	Sanand, Gujarat
Purpose & applicability of the building	Factory Building

1.2. Dimension of the building

Maximum plan dimension in either direction : 114200 x 77000 mm
No. of Floors : GF + Mezzanine + Rafter
Maximum height of building : 17000 mm

1.3. Structural System

SN	Specification	Detail
1.	TYPE	RCC Column/Beam/Slab, PEB RAFTER SYSTEM Symmetrical Frame / Ridge clear span. Mezzanine beam rest on RCC column at internal location
2.	FUTURE EXPANSION	Future Expansion of building is considered on grid no 12.
3.	WIDTH	77.0 meter C/C of Steel Column/RCC COLUMNS
4.	LENGTH	114.200 meter C/C of Steel Column/RCC COLUMNS
5.	CLEAR HEIGHT	11.500 meter
6.	ROOF SLOPE	1:10
7.	BAY SPACING	1 @ 7.82MC/C + 1 @ 7.483MC/C+1 @ 6.187MC/C + 1 @ 6.38MC/C + 1 @ 6.871MC/C +2 @ 6.285MC/C + 1 @ 5.652MC/C + 1 @ 7.17MC/C +1 @ 5.17MC/C + 1 @ 5.528MC/C + 1 @ 7.7MC/C +1 @ 7.234MC/C + 1 @ 7.467MC/C + 1 @ 7.192MC/C + 1 @ 6.778MC/C + 1 @ 7.0MC/C
8.	INTERNAL COLUMN GRID SPACING	1 @ 27.25M C/C + 1 @ 25.275M C/C
9.	END WALL COLUMN GRID SPACING	AS PER PROPOSAL DRAWING
10.	ROOF SHEETING	30 mm PUFF PANEL with Top & bottom 0.5mm Color coated galvalume sheet.
11.	WALL	As Suggested in Proposed Plan
12.	Periphery Sheeting	N/A
18.	ADDITIONAL LOAD	FOR FALSE CEILING FROM RAFTER & BELOW MEZZANINE.
19.	WIND LOAD	AS PER IS 875 (Part-3) 2015

1.4. Structural System for PEB

SN	Specification	Detail
1.	Response Reduction Factor	5
2.	Importance Factor	1
3.	Damping	5%
4.	TYPE OF FRAME	OMF
5.	WEBS & FLANG	SEMI COMPACTED CONSIDERED.
		0.99 STRESS RATIO MENTIONED
6.	SLENDERNESS RATIO FOR BRACING	350
7.	BRACING TYPE	TUBE/PIPE
8.	CONNECTION DESIGN	ACTUAL MOMENT AT SPLICE LOCATION CONDIDERED.
9.	MEZZANINE CHEQURED PLATE	6mm
10.	MEZZANINE LL + Hanging load	800 kg/m2
11.	MEZZANINE CHEQURED PLATE PLATFORM LVL	7.5m TOP.
12.	MEZZANINE BEAM & JOIST TAPERED	Yes
13.	WALL SHEETING,FRAME OPENING,CANOPY.	No

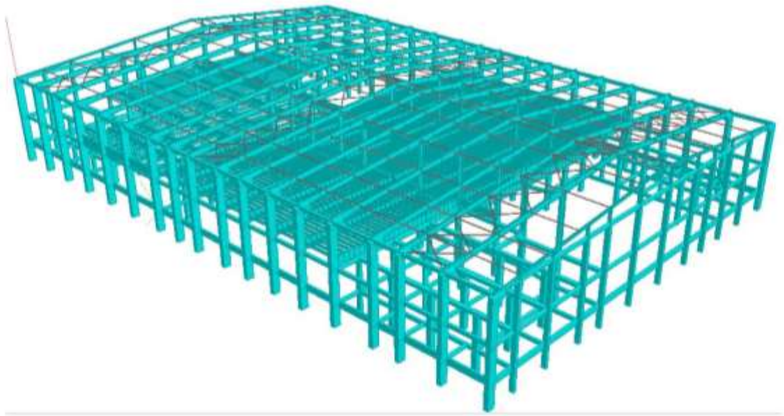

Fig- 1Schematic 3D View of Whole Structure

2. MATERIAL SPECIFICATION

2.1. Concrete for Cast in Place (CIP) Sub-structure

The specified concrete shall have a minimum cement content of 373 kg/m^3, Ordinary Port- land cement and a maximum water to cement ratio of 0.5. The concrete grade shall be M25 with maximum 20 mm coarse aggregates. The compressive strength (fck) at 28 days shall be 25N/mm^2 based on 150 mm cube crushing strength.

2.2. Concrete for Precast Sub-structure &Precast Super-structure

The specified concrete shall have a minimum cement content of 360 kg/m^3, Ordinary Port- land cement and a maximum water to cement ratio of 0.45. The concrete grade shall be M40 with maximum 20 mm coarse aggregates. The compressive strength (fck) at 28 days shall be 40N/mm^2 based on 150 mm cube crushing strength.

2.3. Reinforcement Bar

Reinforcement steel shall be high yield strength hot rolled or cold worked deformed bars with characteristic strength fy= 500 N/mm2. The minimum diameter of used reinforcement will be T8 and the largest size used will be T32.

2.4. Fabricated Structure

- Primary member : 345Mpa Gr-50
- Secondary CF : 275GSM, 345Mpa.
- Hardware : HSFG Black Bolts
- Chequred Plate : With Paint & Full Welding
- Roof sheet : 30mm PUFF PANEL with Top & bottom 0.5mm Color coated galvalume sheet.

Material Design Parameters

Description	Value
Ec = 5000Vfck (M40)	31662.8 N/mm2
Poisson's ratio (concrete)	0.2
Elastic modulus of steel, Es	200000 N/mm2
Poisson's ratio (steel)	0.3

3. Loads

3.1. Dead Load

Self-weight of Double Tee PC Slab = 5.65 kN/m^2

Dead load on Roof rafter = 0.1x7.65 = 0.765 kN/m

Chequered plate = 50 kg/m^2

Wall load from Plinth to Tie level (250mm thick wall including plaster) = 5.5 x 0.25 x 20 = 27.5 kN/m

Wall load at Elevation level (250mm thick wall including plaster) = 4 x 0.25 x 20 = 20 kN/m

Wall load from tie to Eave height (250mm thick wall including plaster) = 6.6 x 0.25 x 20 = 33 kN/m

Screed Weight on slab (Included in double T beam design) = 0.06 x 25 = 1.6kN/m^2

SIDL (Floor finish) (Included in double T beam design) = 3 kN/m^2

3.2. Live load & Collateral Load (Ref: Table 1 IS: 875 (Part 2) – 1987)

Typical Floor areas = 8 kN/m^2

Canteen Area = 3 kN/m^2

Roof Live load = 0.6 kN/m^2

Non-walkable ceiling load = 7.65 x 0.5 = 3.825 kN/m

Cable tray load = 40 kg/m^2

Load on rafter = 3 kN/m

Pipe Rack load = 5 kN/m

Machinery load =

3.3. Seismic Load

Seismic loads calculated in accordance with IS 1893 and analysis is performed using the codal Equivalent Static Lateral Force Method.

Seismic Load Parameter

Description	Nomenclature	Value	Reference
Zone Factor	III	0.16	IS: 1893
Soil Type	Medium	II	IS: 1893
Importance Factor	I	1	IS: 1893
Response Reduction Factor(Table 7)	R	5	IS: 1893

Seismic dead weight will be in accordance with IS 1893:2016.

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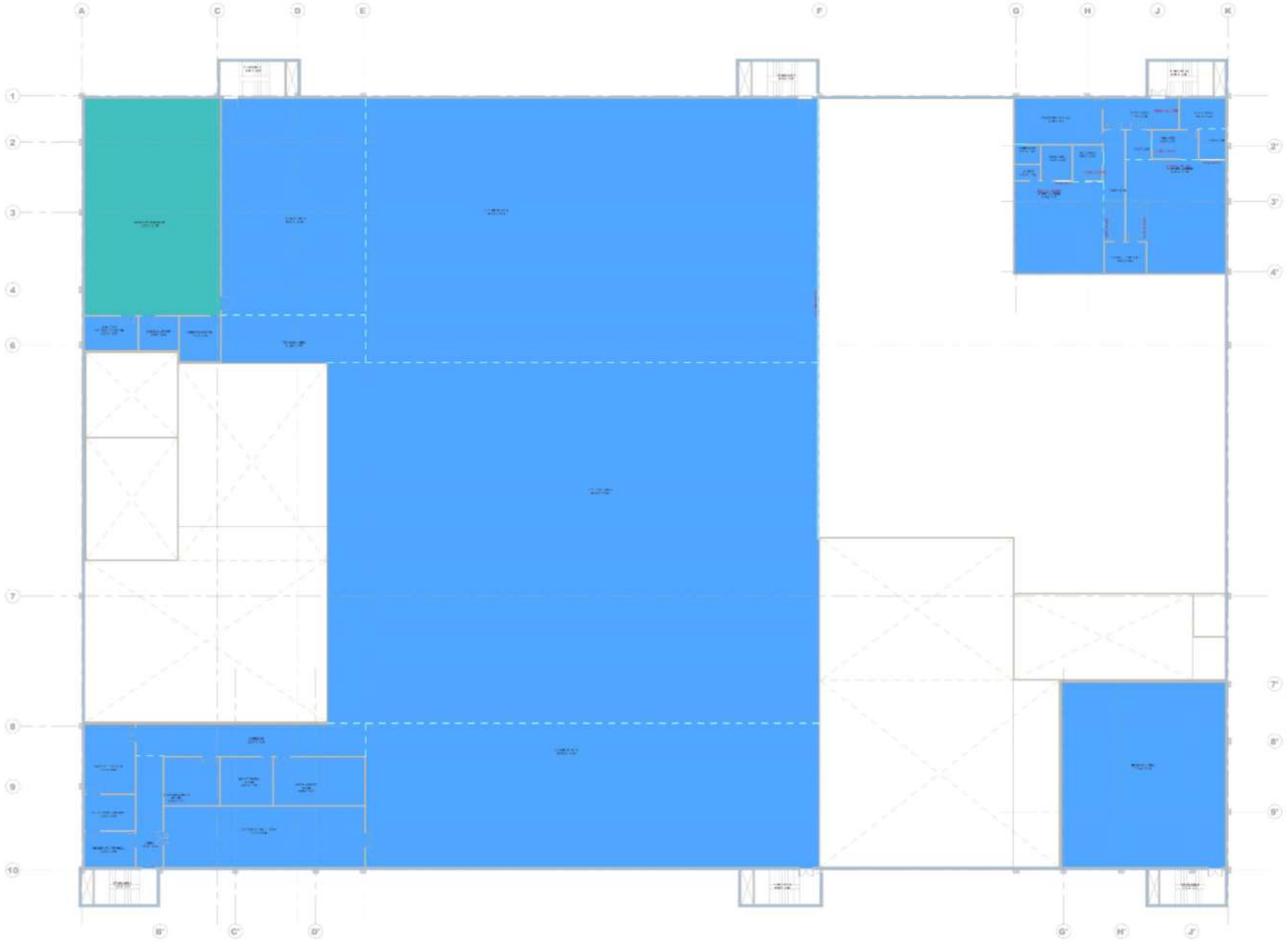
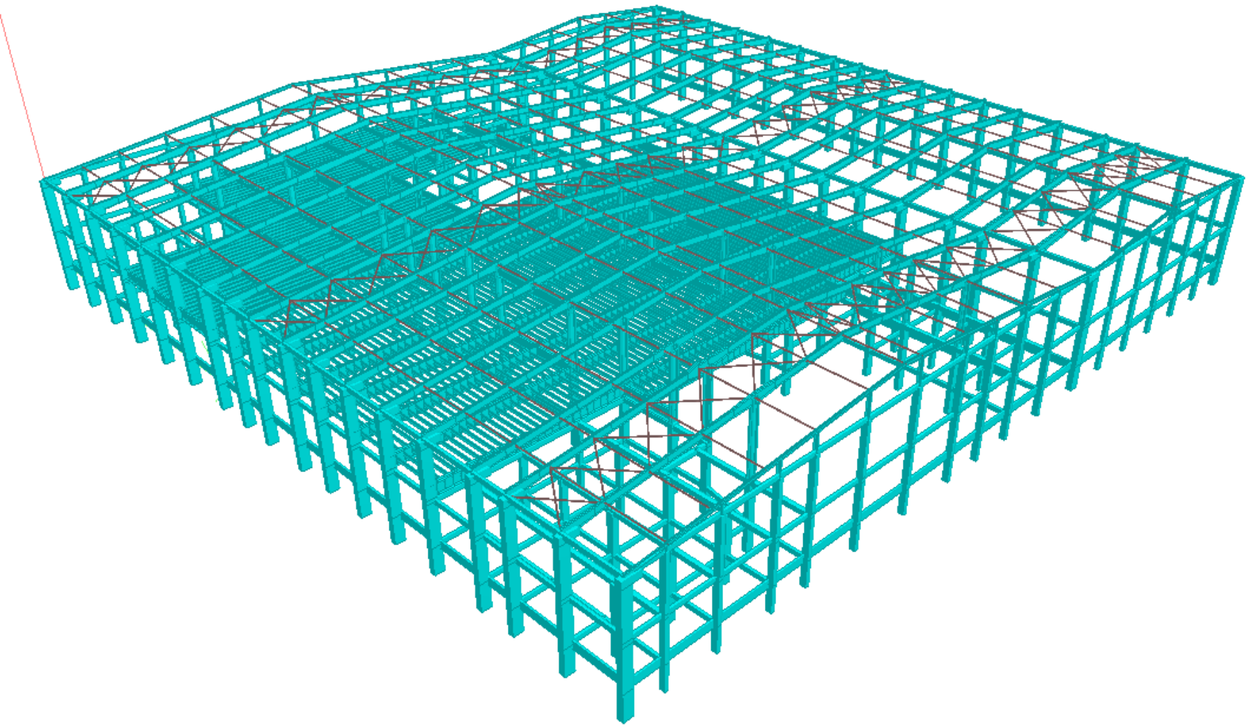


Loading Data

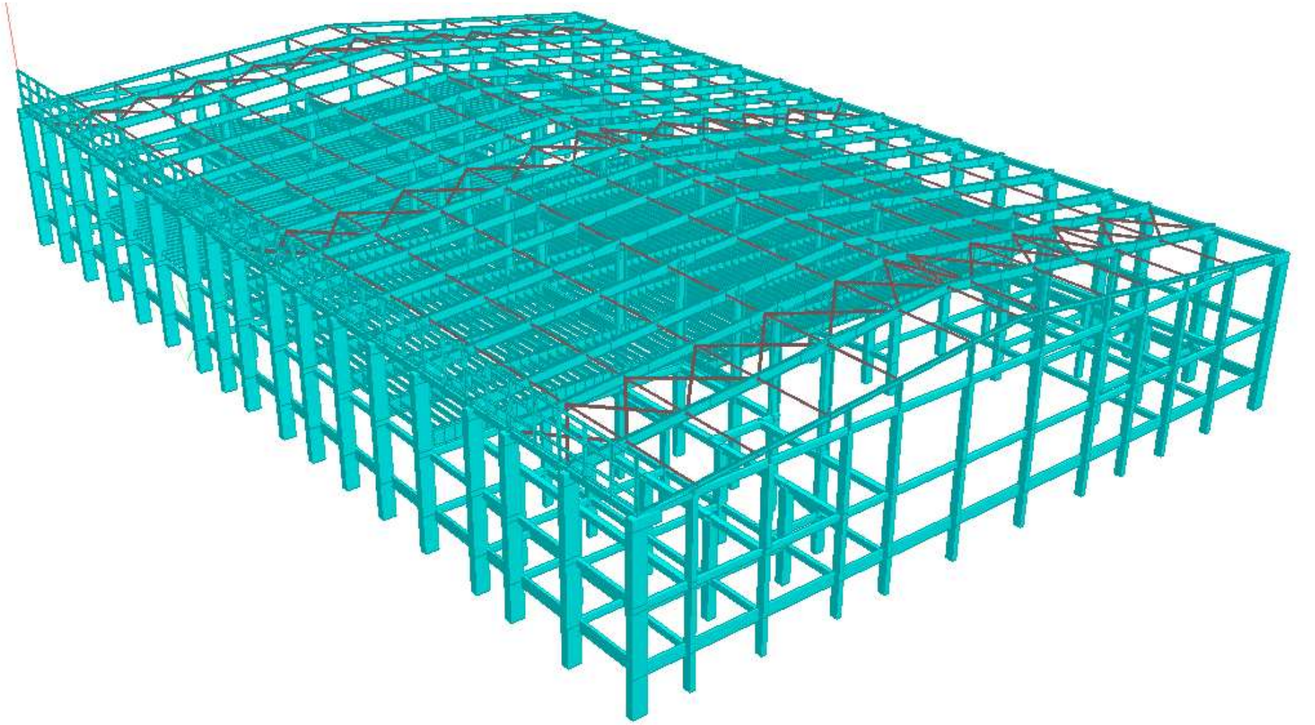
Slab Load Leagend

- 800 KG PER SQUAER METER
- 5000 KG PER SQUARE METER

Mezzanine Floor
Plan @ 5.95m lvl



- Initially Main building and future expansion building were connected to each other.
- Building has been designed as per picture shown above.



- But Building is executed as per picture shown above.

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Building Layout

Ground Floor
Plan @ lvl 0m

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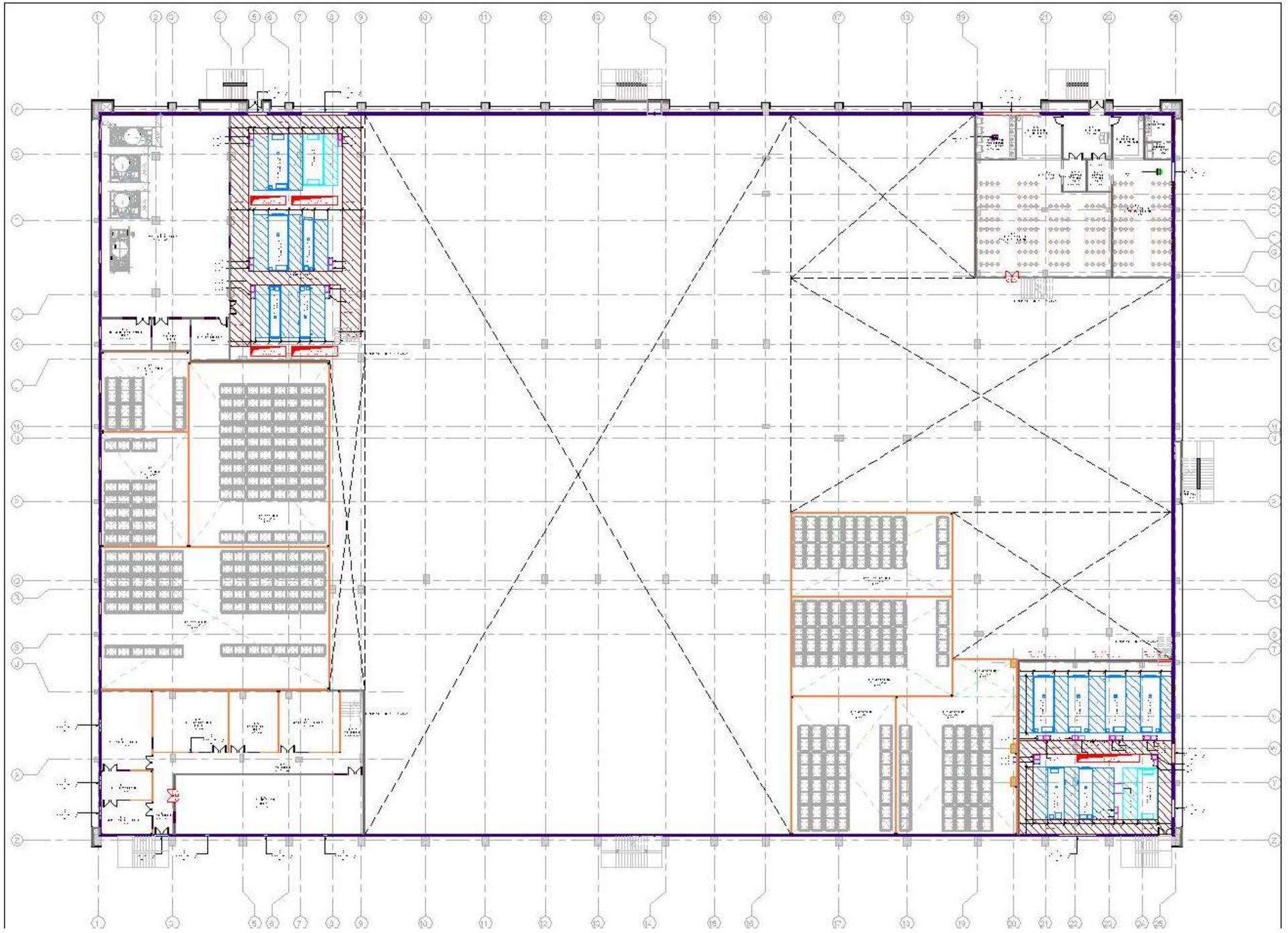
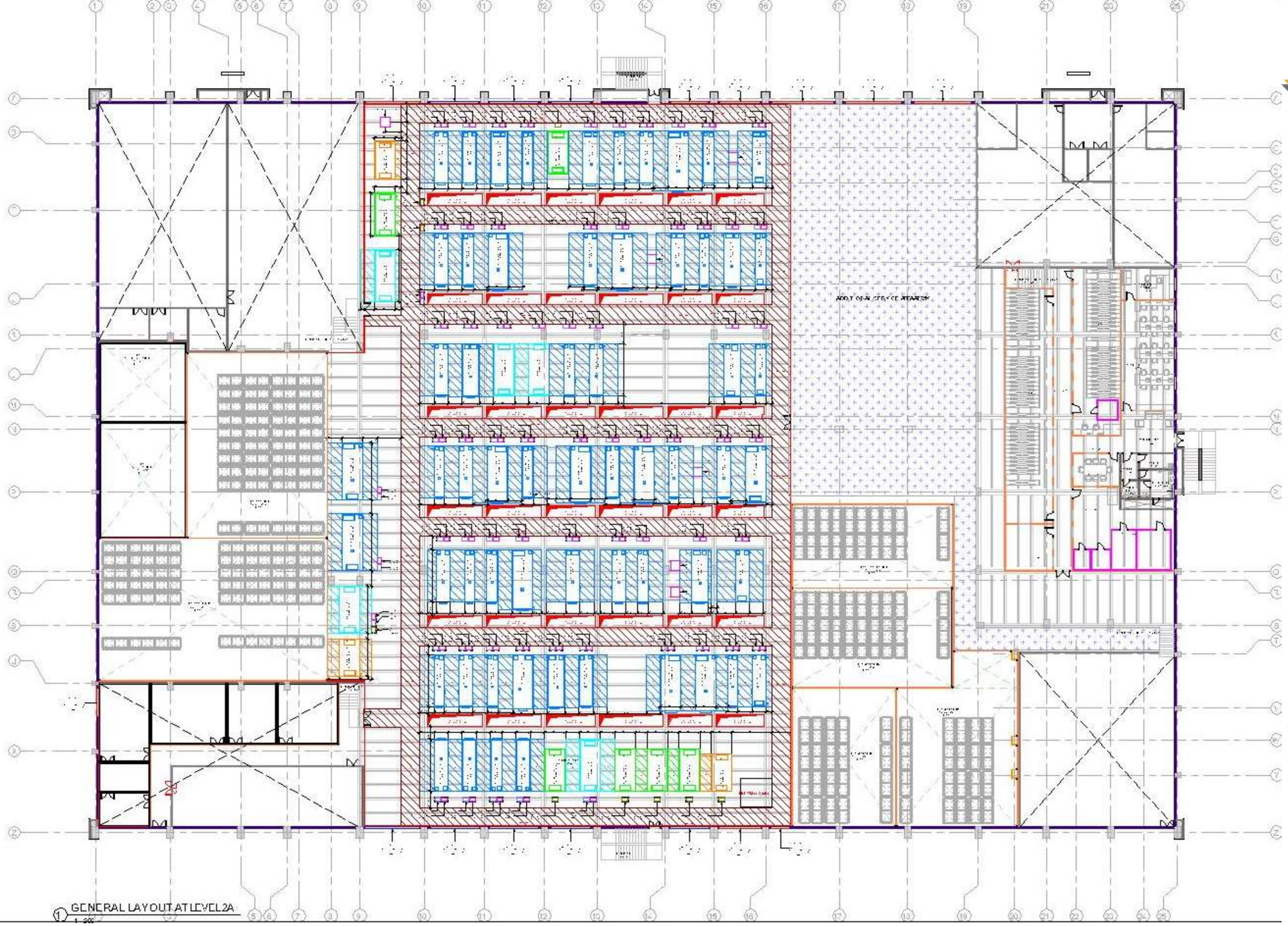


Mezzanine Floor
Plan @ lvl 5.95m



Mezzanine Floor
Plan @ lvl 7.5m

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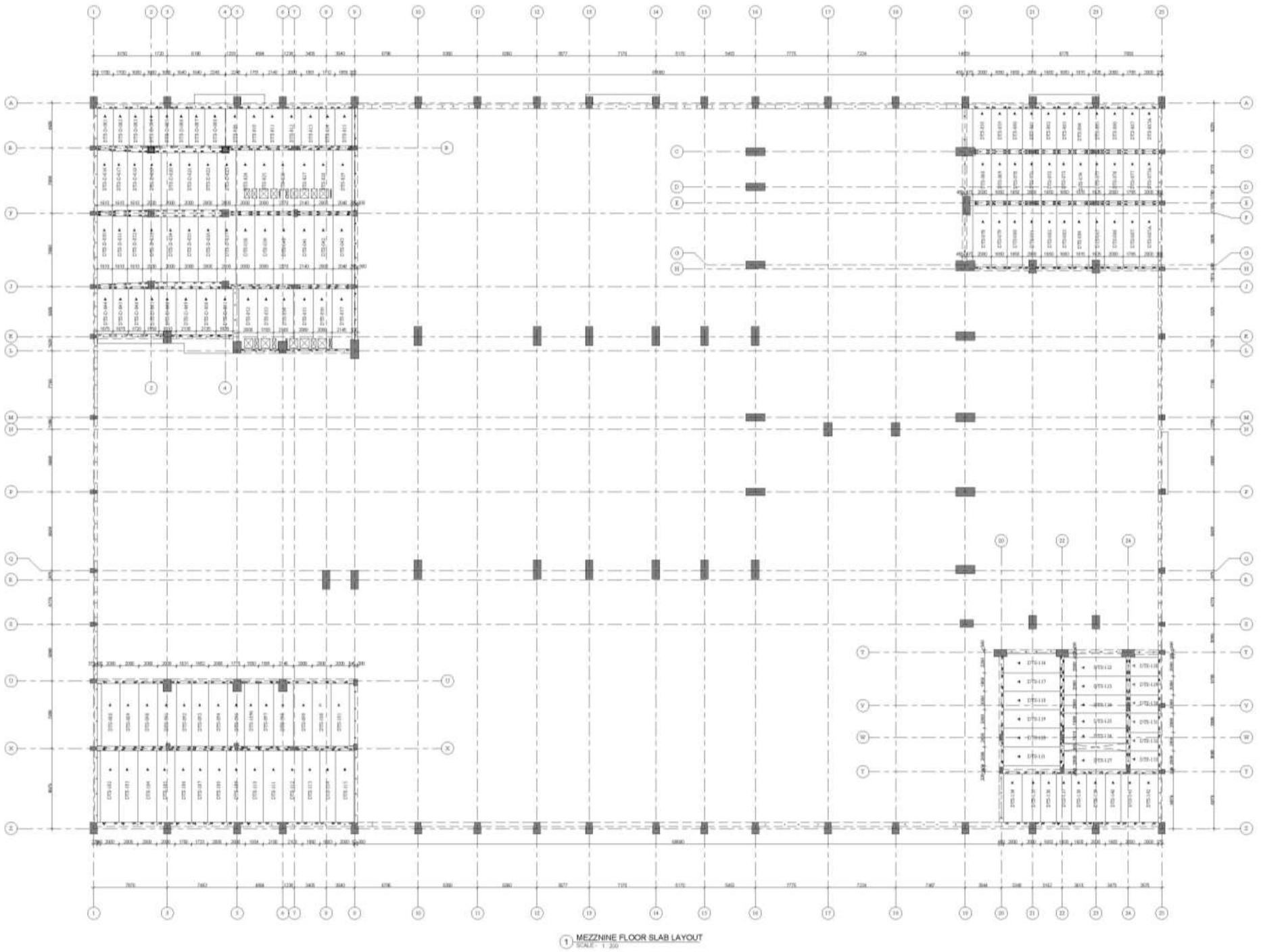
Structural Layout @ Mezzanine Floor Slab



1 MEZZNINE FLOOR SLAB LAYOUT
SCALE - 1 : 100

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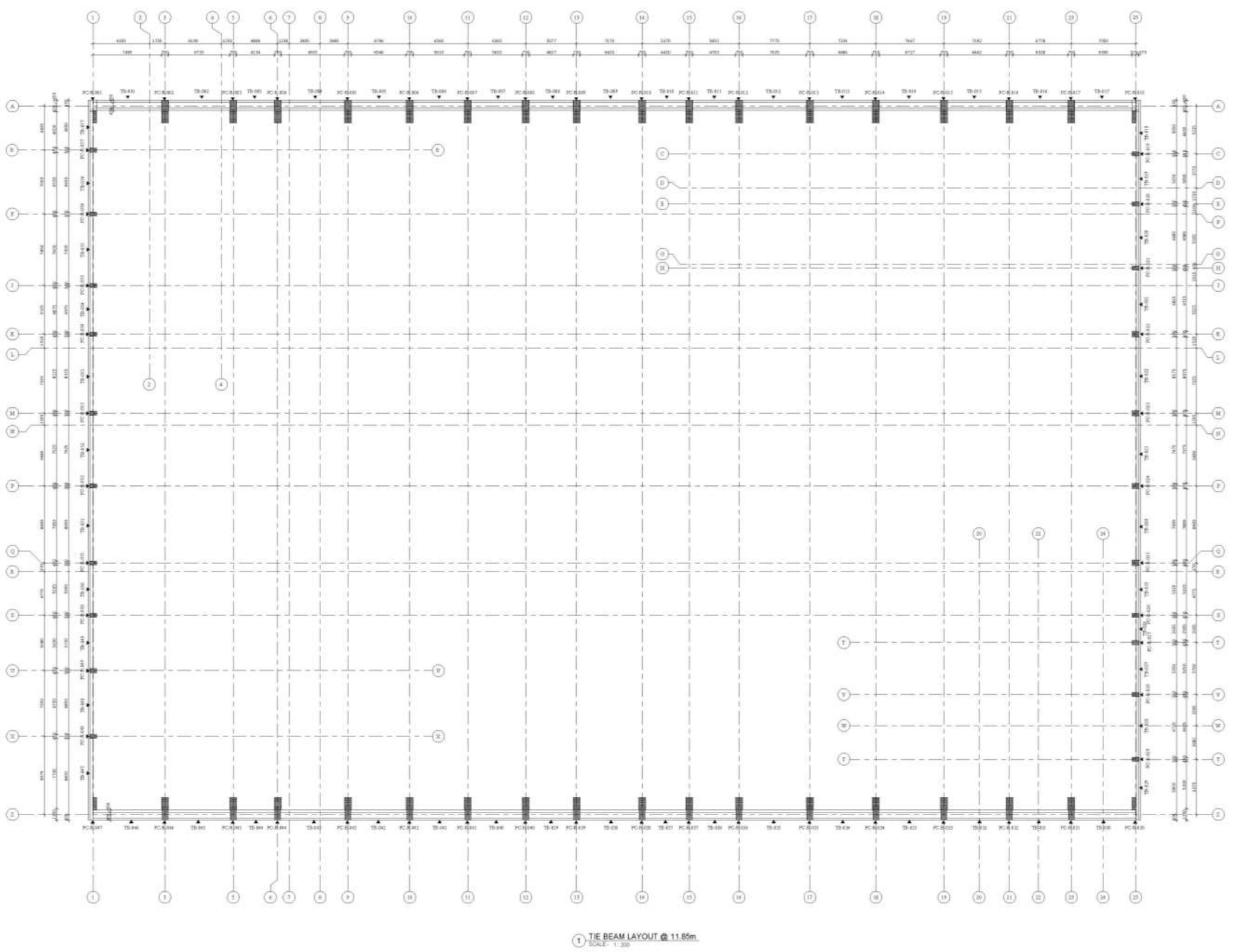
Structural Tie Beam Layout @ 11.85m



1 TIE BEAM LAYOUT @ 11.85m
SCALE - 1: 300

Structural Connection

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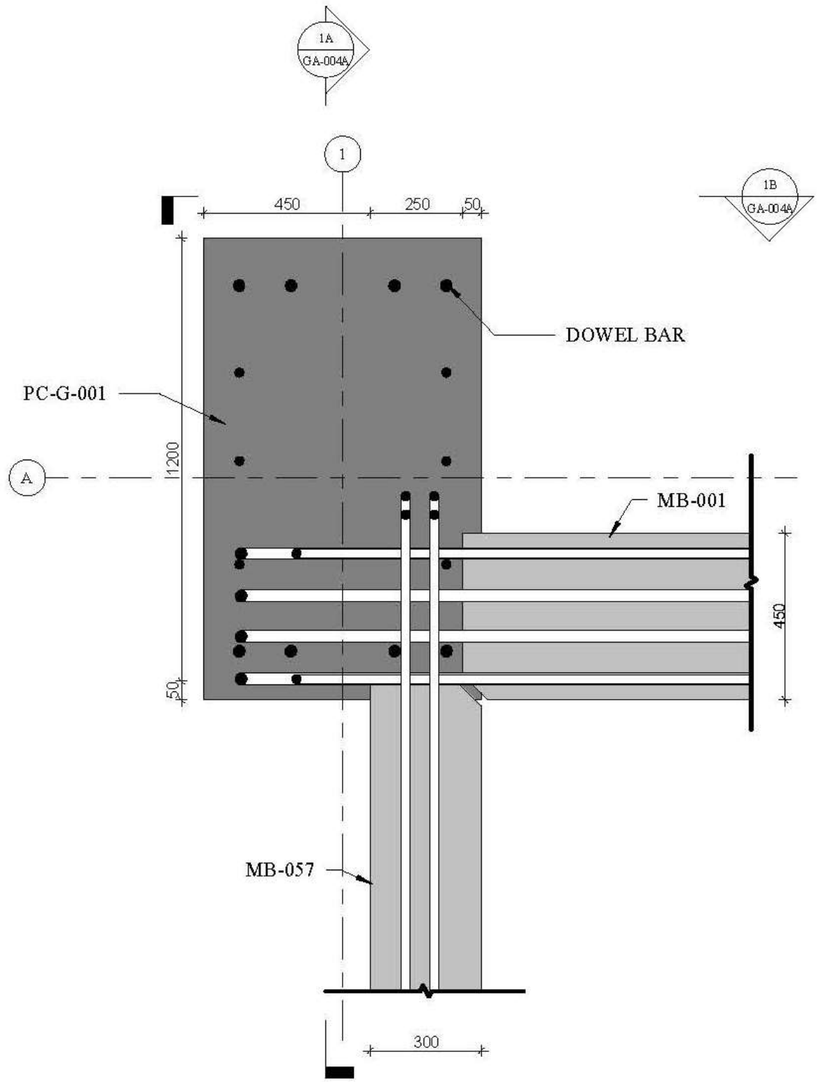
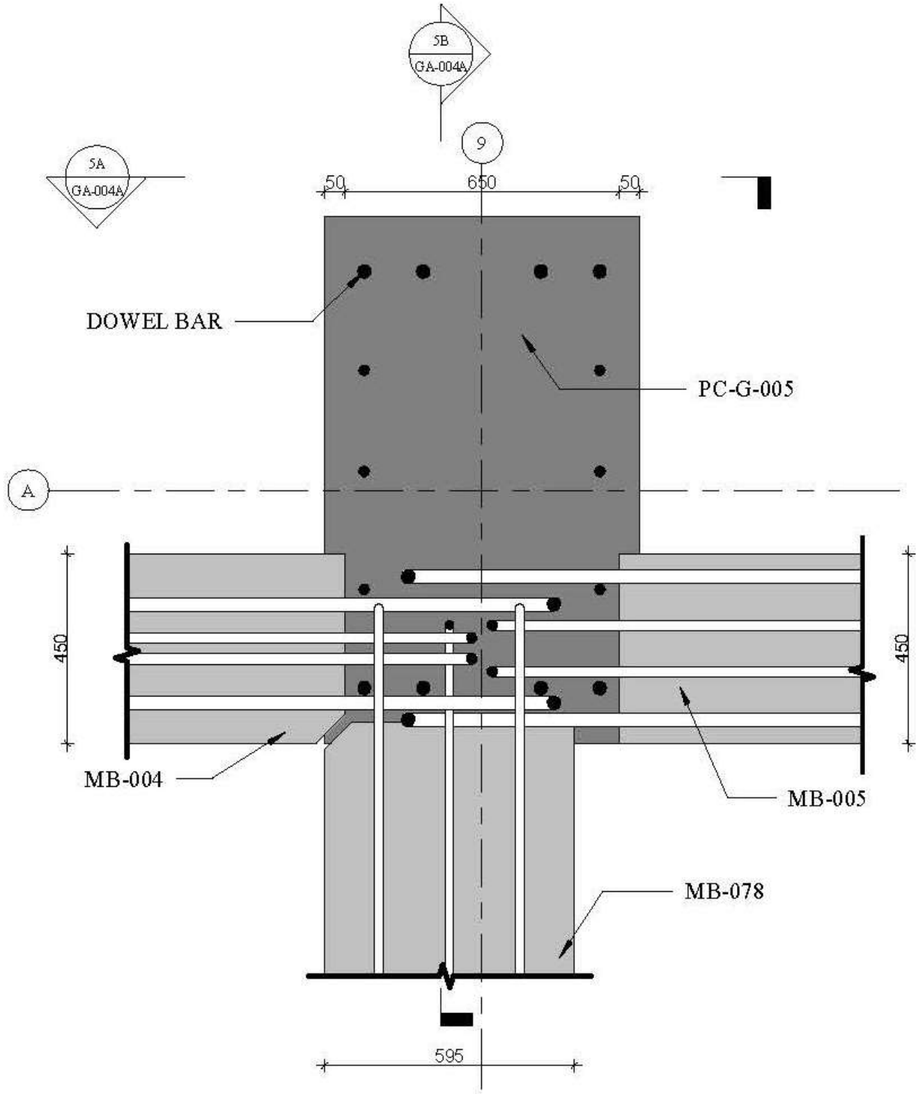
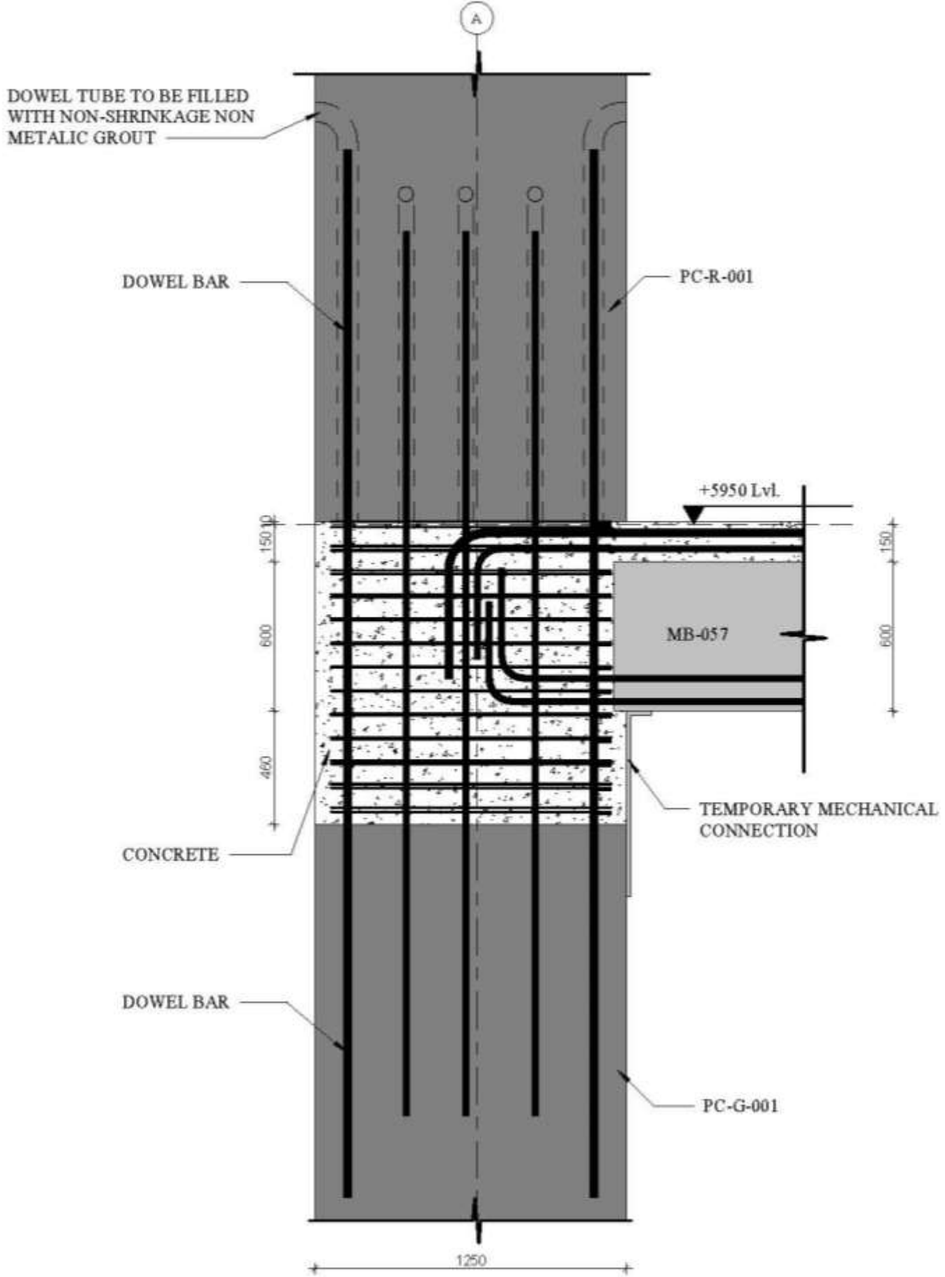


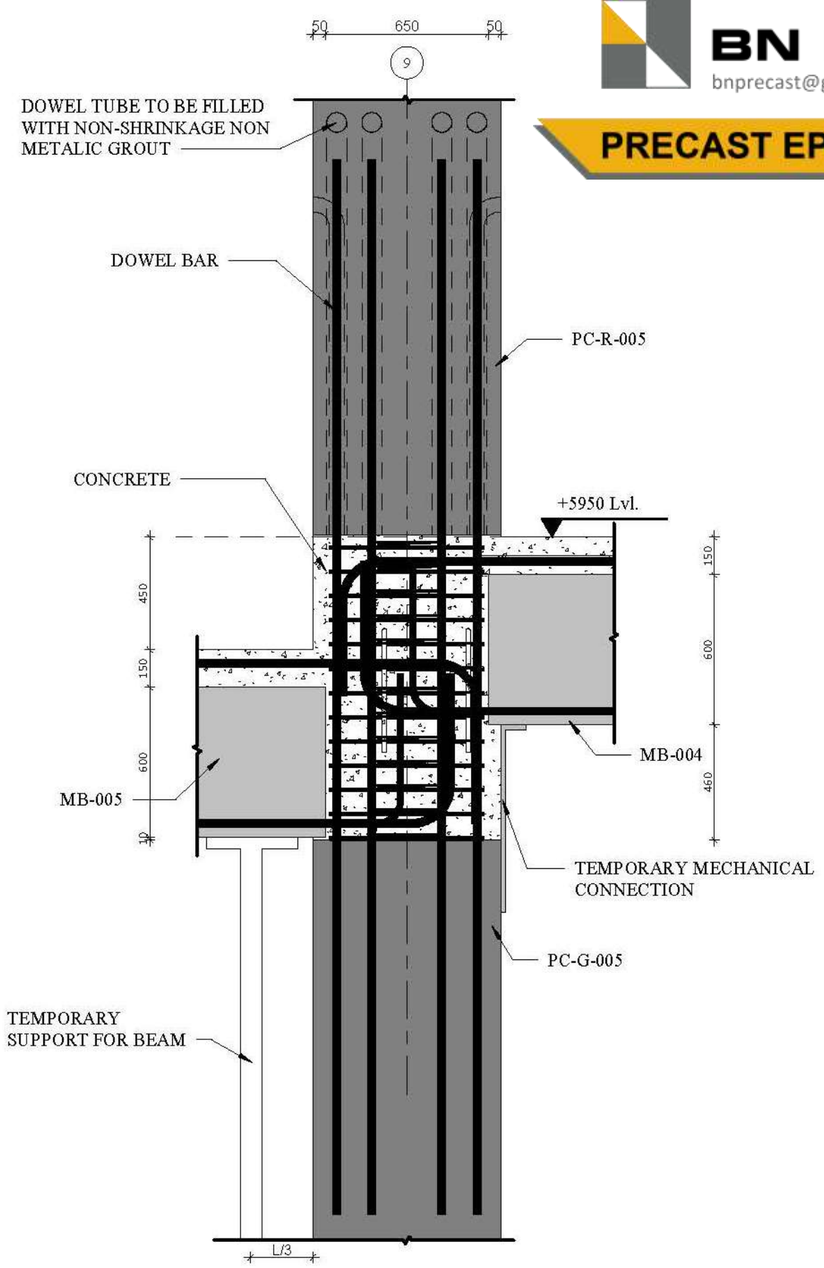
2 beam to Column Connection Plan



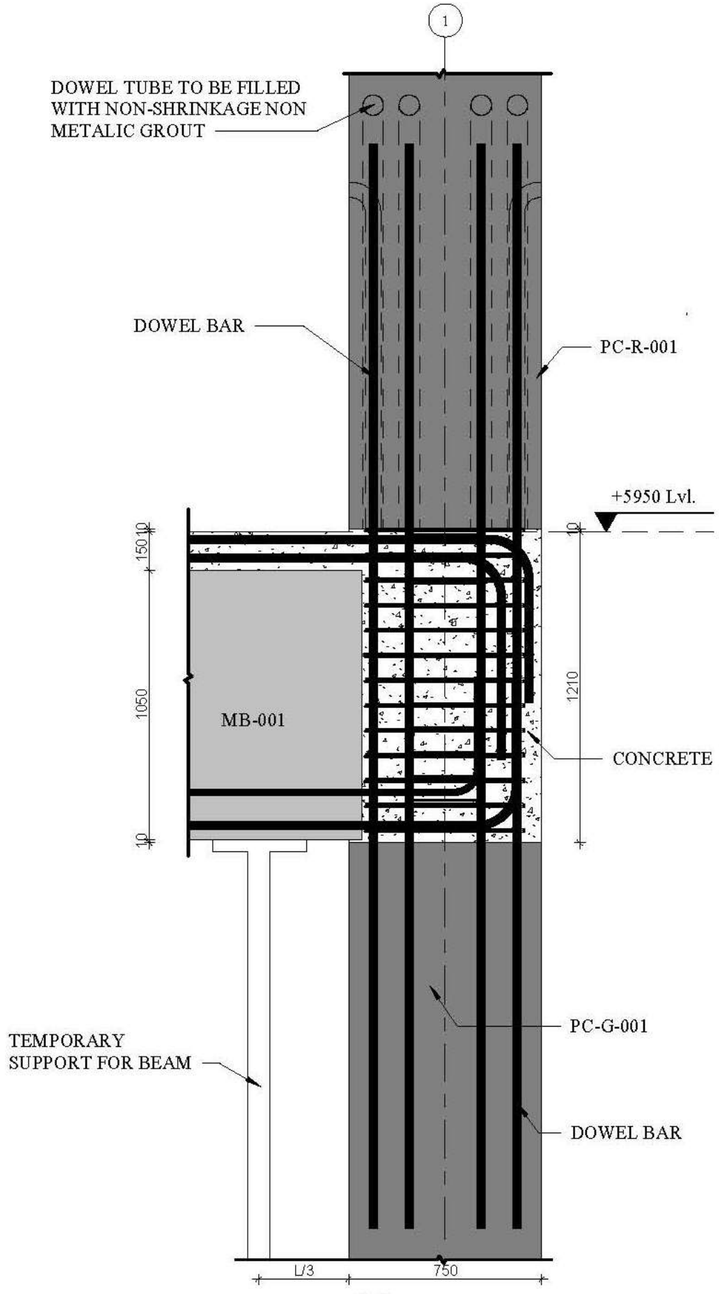
3 beam to Column Connection Plan



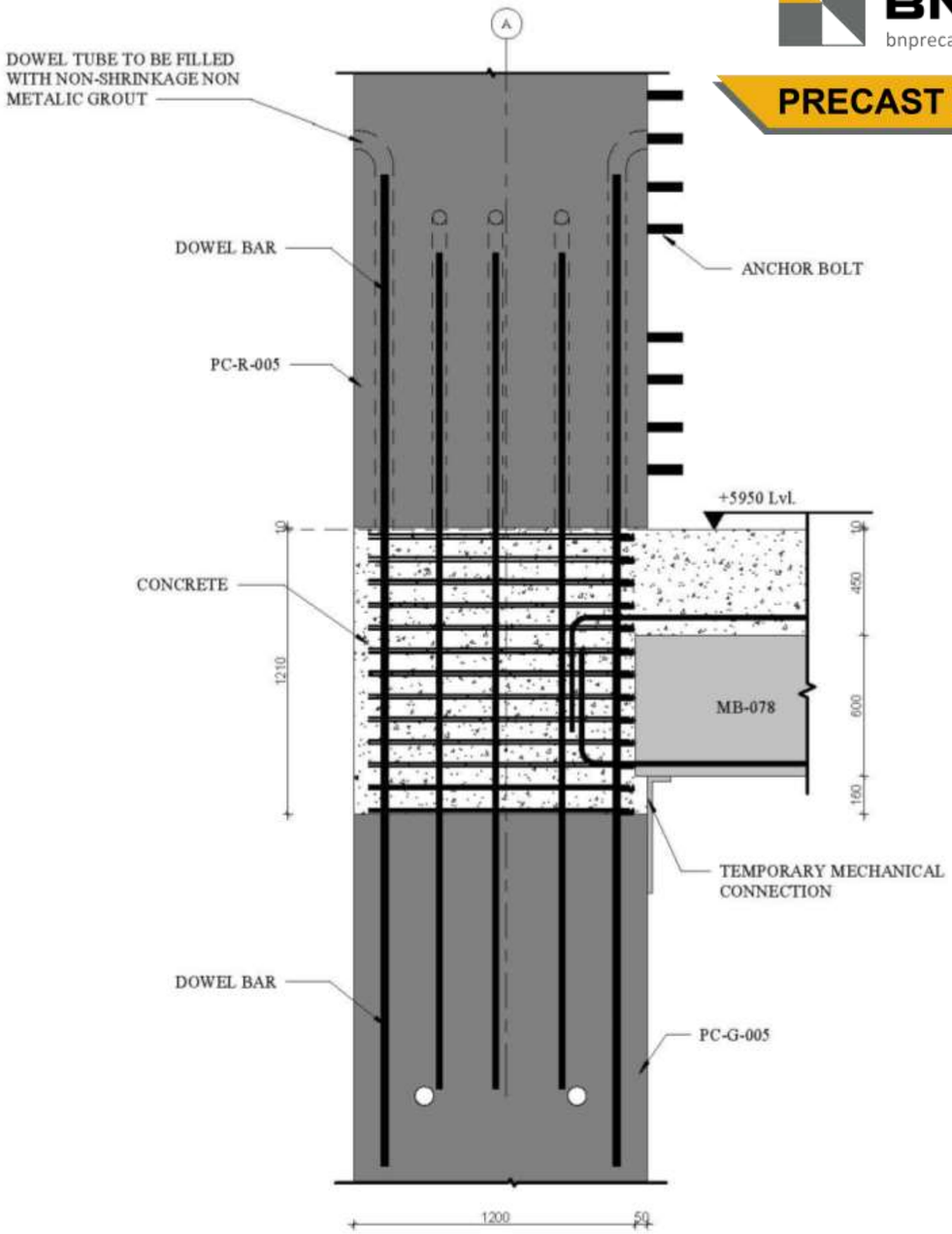
1 beam to Column Connection Section



2 beam to Column Connection Section



1 beam to Column Connection Section



1 beam to Column Transverse Connection Section

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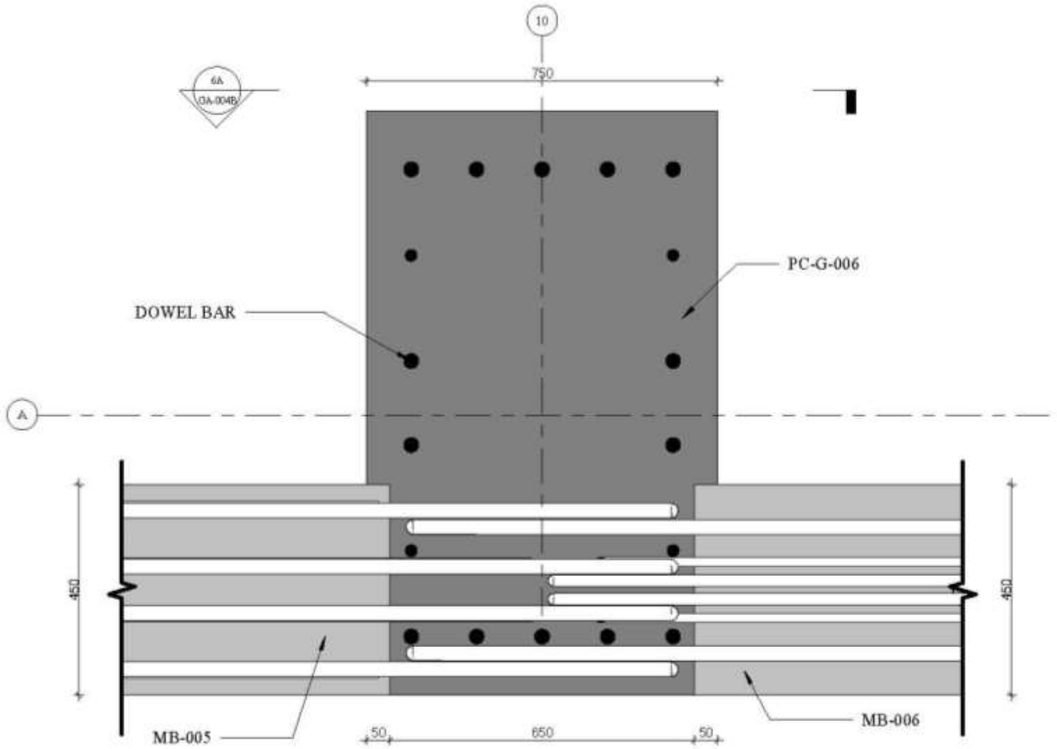
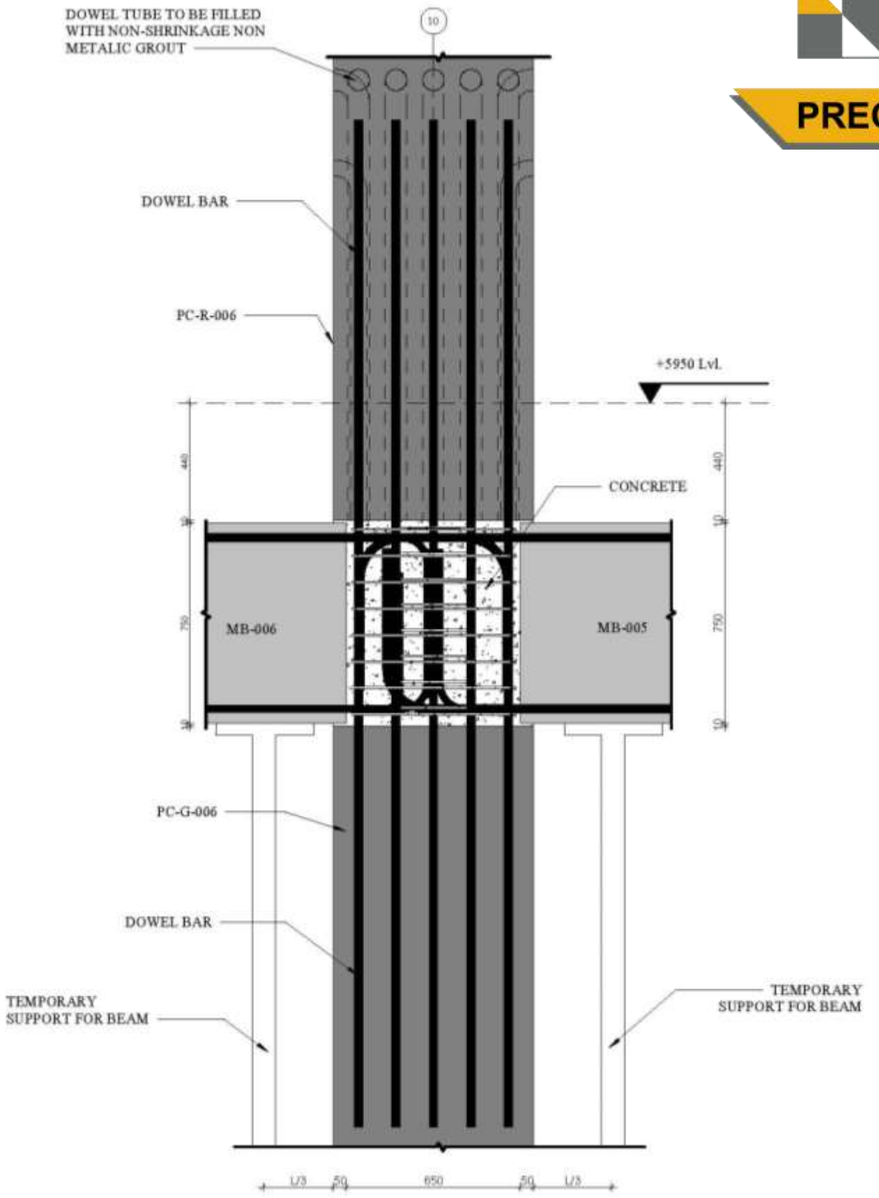
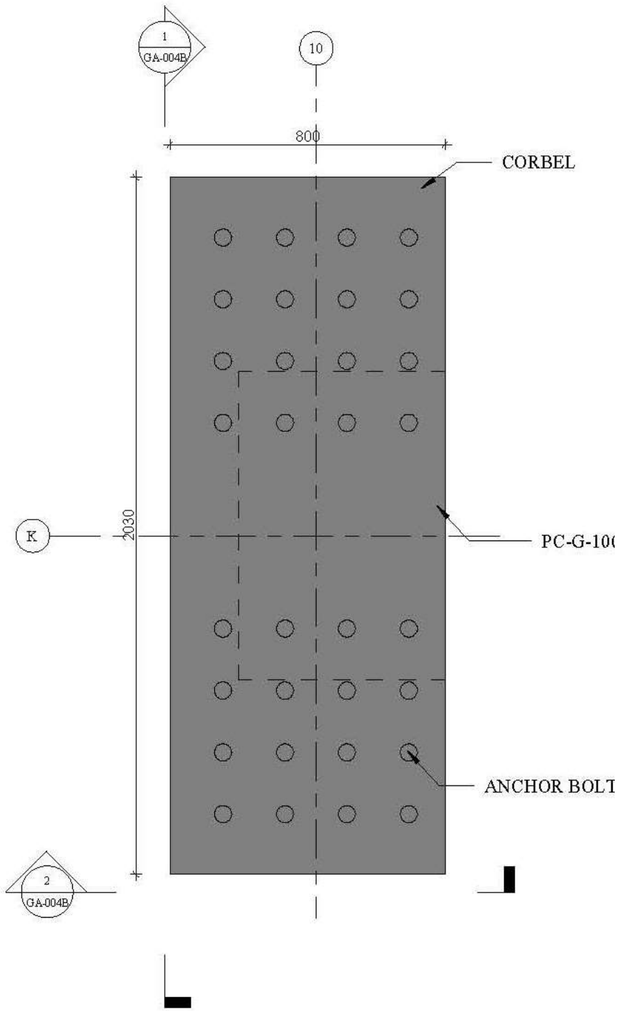


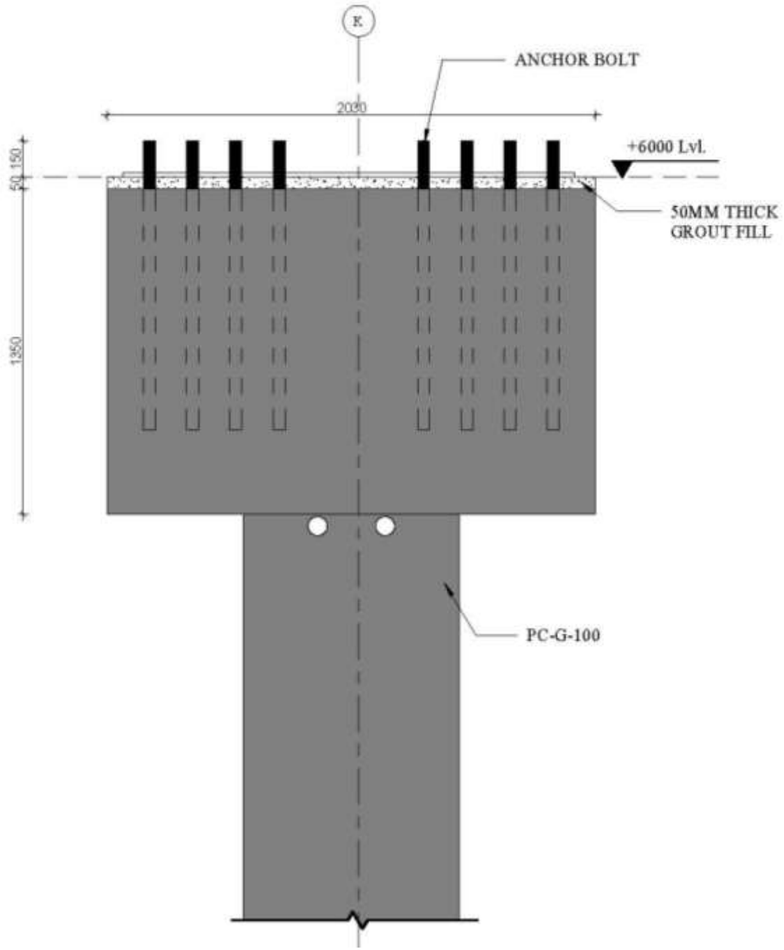
2 Consecutive beam to Column Connection Plan Section



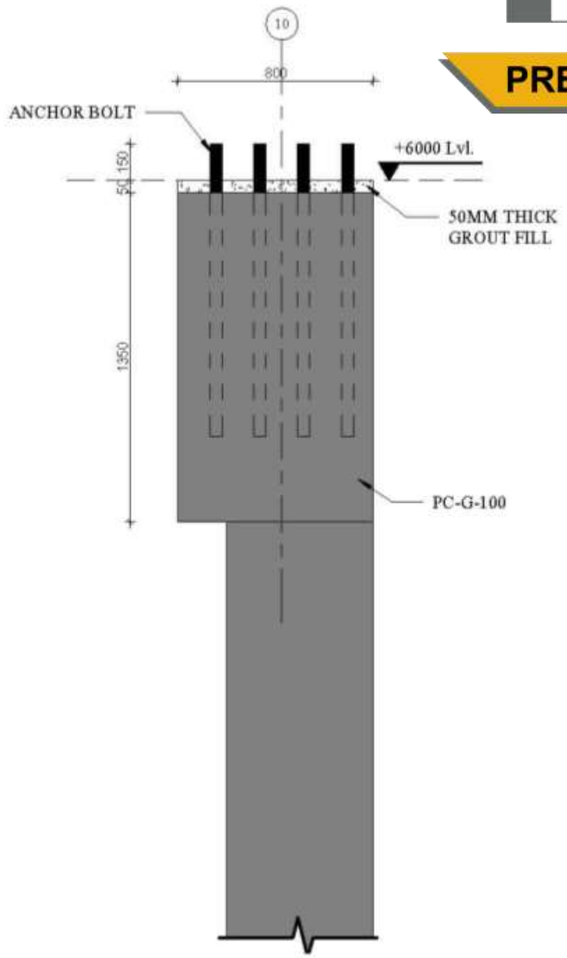
2 Consecutive beam to Column Connection Vertical Section



Plan of Column Corbel



Longitudinal Elevation of Column Corbel



Transverse Elevation of Column Corbel

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Site Photos

Excavation for Footing

July 2021

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March 2022

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Erection of Column

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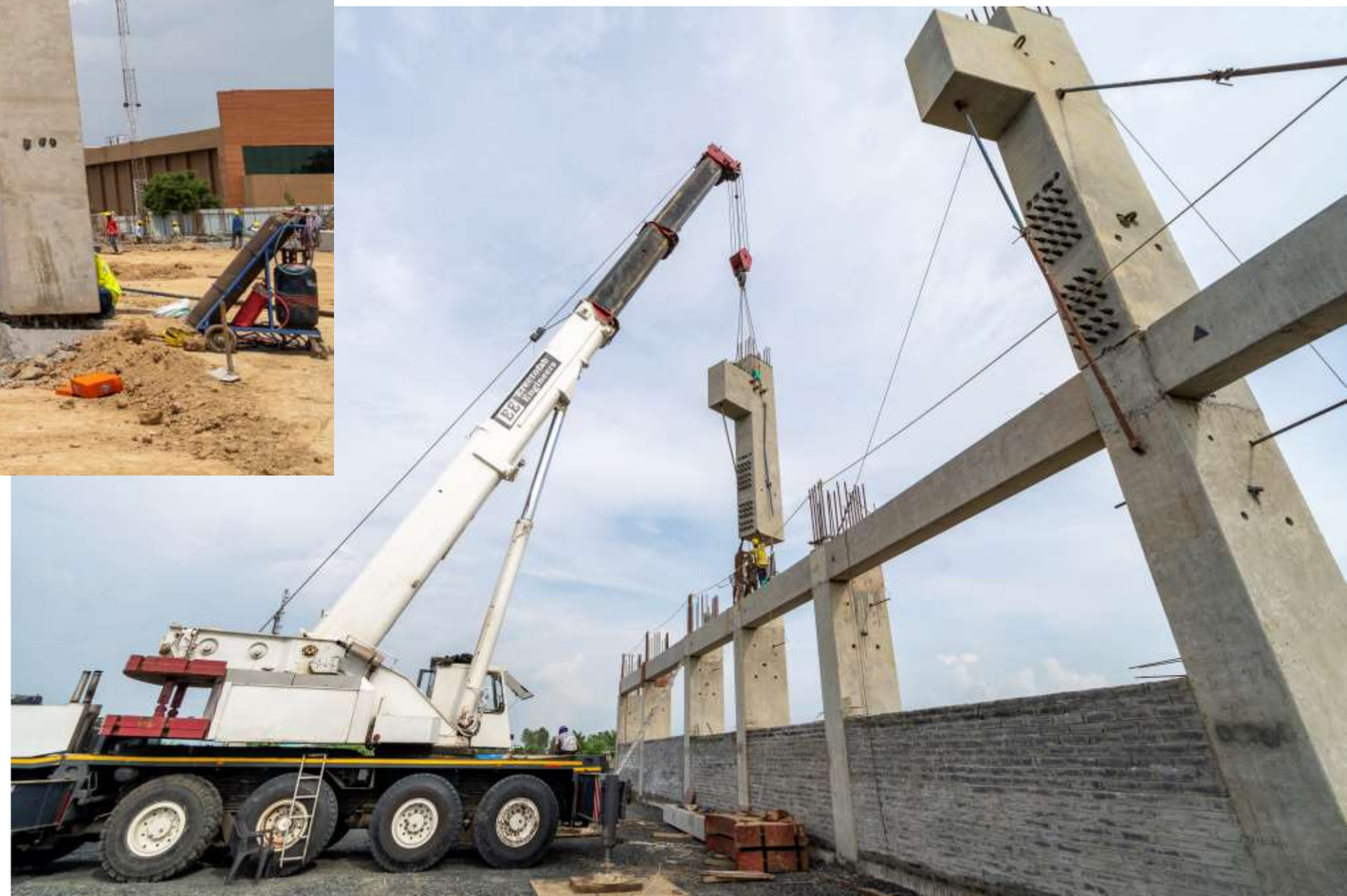
Alignment of Column



Erection of upper level column

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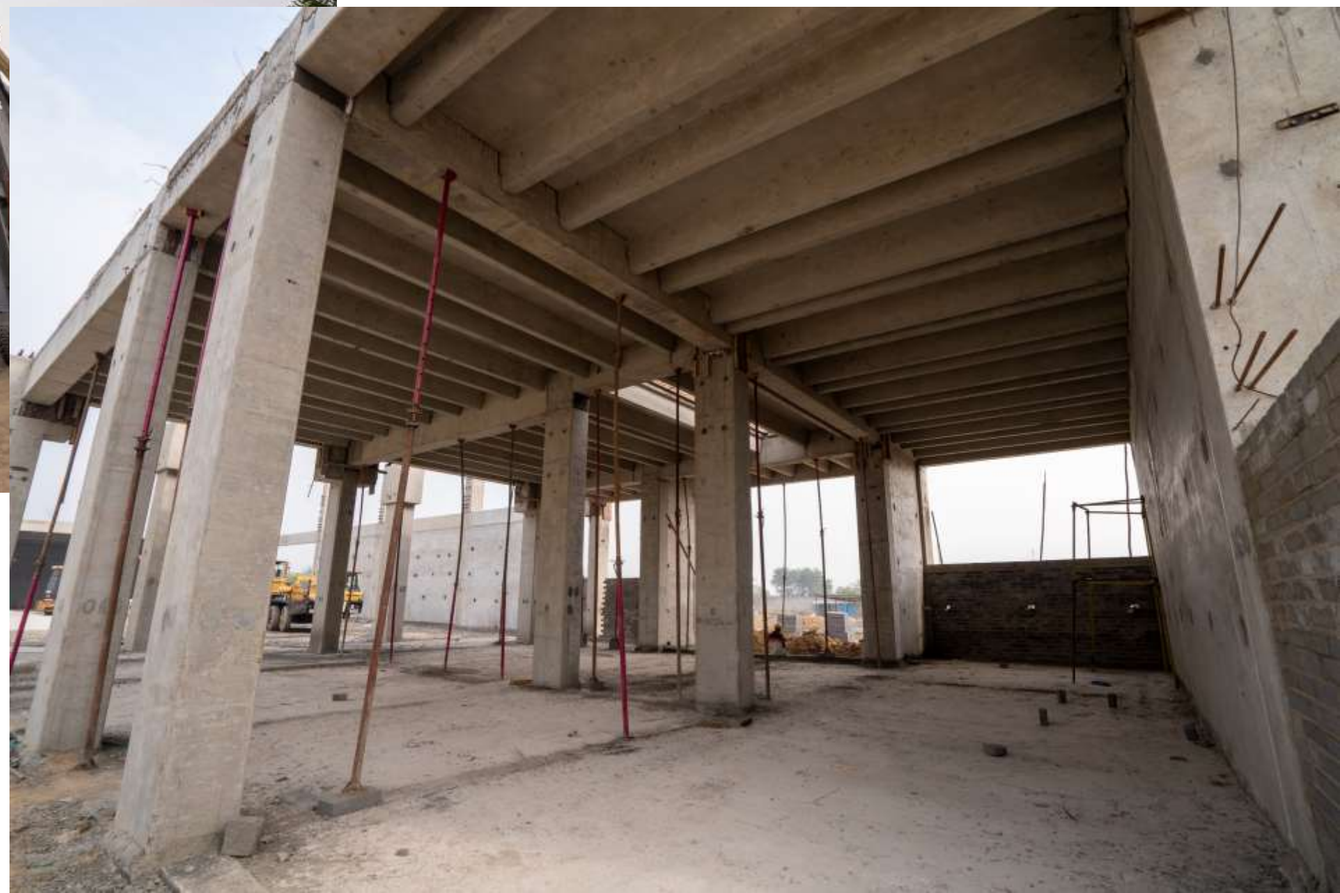
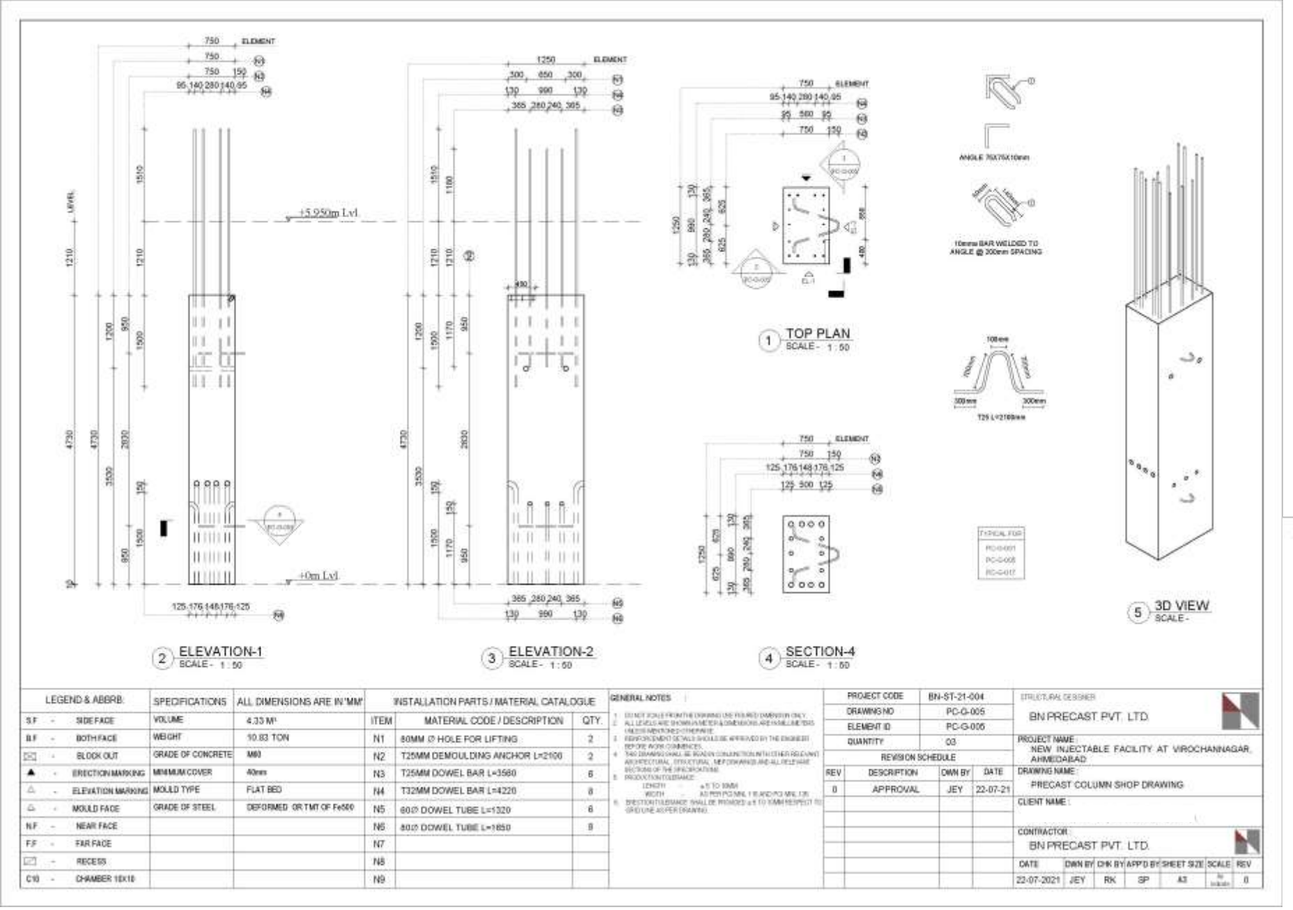
Installation of U-Shape Beam

Installed Double T Slab





LEGEND & ABBRB.			SPECIFICATIONS	ALL DIMENSIONS ARE IN 'MM'
S.F	-	SIDE FACE	VOLUME	4.33 M³
B.F	-	BOTH FACE	WEIGHT	10.83 TON
	-	BLOCK OUT	GRADE OF CONCRETE	M60
	-	ERECTION MARKING	MINIMUM COVER	40mm
	-	ELEVATION MARKING	MOULD TYPE	FLAT BED
	-	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	-	NEAR FACE		
F.F	-	FAR FACE		
	-	RECESS		
C10	-	CHAMBER 10X10		

ITEM	INSTALLATION PARTS / MATERIAL CATALOGUE MATERIAL CODE / DESCRIPTION	QTY.
N1	80MM Ø HOLE FOR LIFTING	2
N2	T25MM DEMOULDING ANCHOR L=2100	2
N3	T25MM DOWEL BAR L=3580	6
N4	T32MM DOWEL BAR L=4220	8
N5	80Ø DOWEL TUBE L=1320	6
N6	80Ø DOWEL TUBE L=1850	8
N7		
N8		
N9		

GENERAL NOTES

1. DO NOT SCALE FROM THE DRAWING USE FIGURED DIMENSION ONLY.
2. ALL LEVELS ARE SHOWN IN METER & DIMENSIONS ARE IN MILLIMETERS UNLESS MENTIONED OTHERWISE.
3. REINFORCEMENT DETAILS SHOULD BE APPROVED BY THE ENGINEER BEFORE WORK COMMENCES.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PRODUCTION TOLERANCE
   LENGTH ±5 TO 30MM
   WIDTH AS PER IS:2096, IT SHALL NOT EXCEED ±5 MM.
6. ERECTION TOLERANCE SHALL BE PROVIDED ±5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

PROJECT CODE	BN-ST-21-004
DRAWING NO	PC-G-005
ELEMENT ID	PC-G-005
QUANTITY	03

REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	JEY	22-07-21

STRUCTURAL DESIGNER
BN PRECAST PVT. LTD.

PROJECT NAME :
NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD

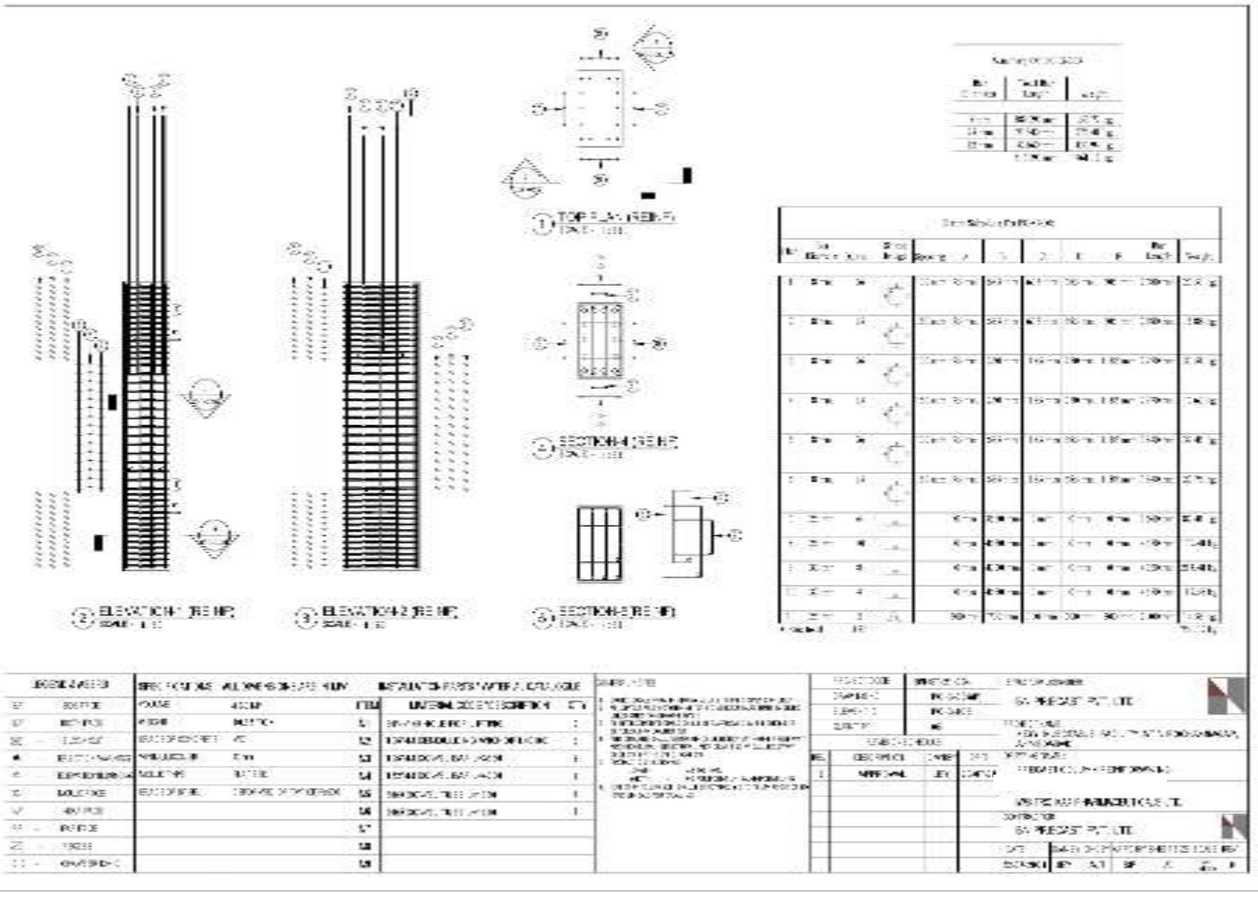
DRAWING NAME :
PRECAST COLUMN SHOP DRAWING

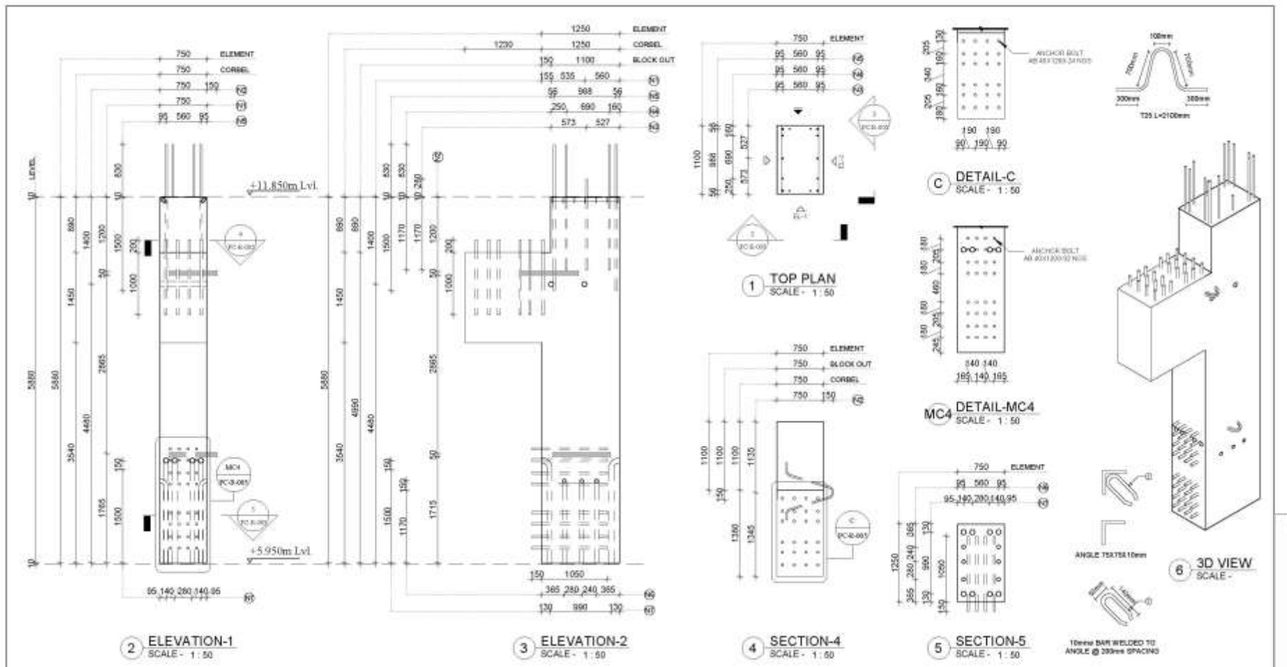
CLIENT NAME :

CONTRACTOR :
BN PRECAST PVT. LTD.

DATE	DWN BY	CHK BY	APP'D BY	SHEET SIZE	SCALE	REV
22-07-2021	JEY	RK	SP	A3	N.T.S	0

Column Lower Level





LEGEND & ABBRB.			SPECIFICATIONS	ALL DIMENSIONS ARE IN 'MM'
S.F	-	SIDE FACE	VOLUME	6.66 M³
B.F	-	BOTH FACE	WEIGHT	16.65 TON
	-	BLOCK OUT	GRADE OF CONCRETE	M60
▲	-	ERECTION MARKING	MINIMUM COVER	40mm
△	-	ELEVATION MARKING	MOULD TYPE	FLAT BED
△	-	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	-	NEAR FACE		
F.F	-	FAR FACE		
	-	RECESS		
C10	-	CHAMBER 10X10		

ITEM	INSTALLATION PARTS / MATERIAL CATALOGUE	QTY.
N1	80MM Ø HOLE FOR LIFTING	2
N2	T25MM DEMOULDING ANCHOR L=2100	4
N3	T25MM PROJECTION BAR L=1460	2
N4	T25MM PROJECTION BARL=2010	4
N5	T32MM PROJECTION BAR L=2340	4
N6	60Ø DOWEL TUBE L=1320	6
N7	80Ø DOWEL TUBE L=1650	8
N8		
N9		

GENERAL NOTES :
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2. ALL LEVELS ARE SHOWN IN METER & DIMENSIONS ARE IN MILLIMETERS UNLESS MENTIONED OTHERWISE.
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4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL , STRUCTURAL , MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PRODUCTION TOLERANCES :
LENGTH - ±5 TO 10MM
WIDTH - AS PER PCI MNL 116 AND PCI MNL 135
6. ERECTION TOLERANCE SHALL BE PROVIDED ± 5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

PROJECT CODE	BN-ST-21-004
DRAWING NO	PC-R-005
ELEMENT ID	PC-G-005
QUANTITY	01

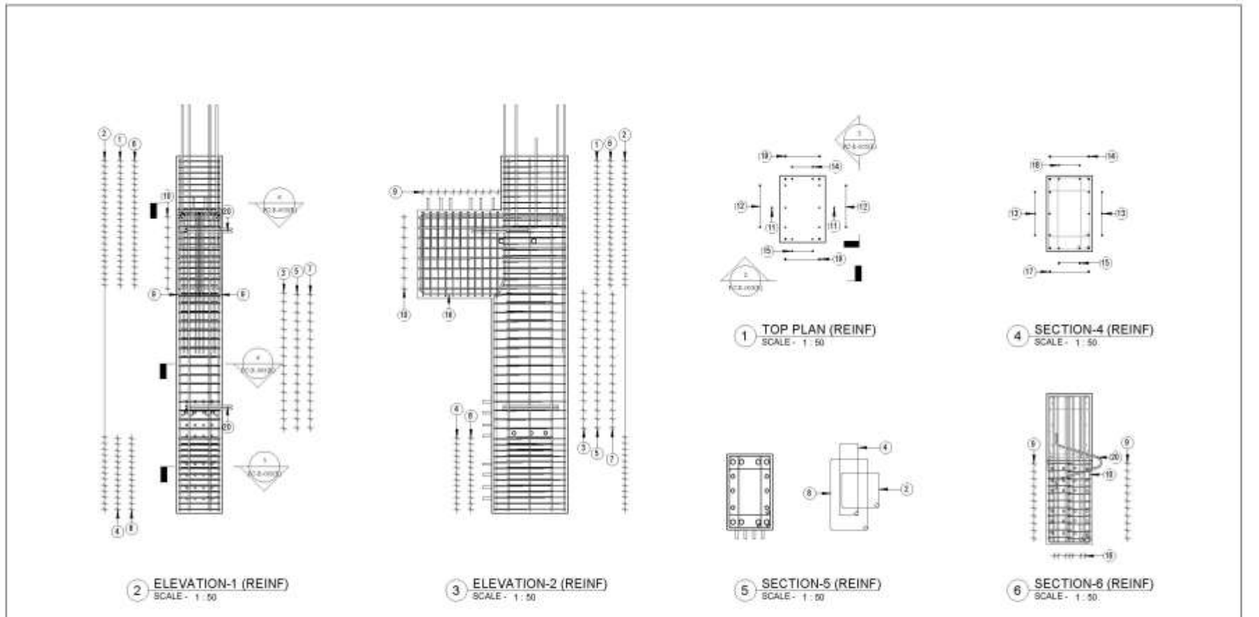
REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	JEY	26-07-21

STRUCTURAL DESIGNER : BN PRECAST PVT. LTD.
PROJECT NAME : NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD
DRAWING NAME : PRECAST COLUMN SHOP DRAWING
CLIENT NAME :
CONTRACTOR : BN PRECAST PVT. LTD.

DATE	DWN BY	CHK BY	APPD BY	SHEET SIZE	SCALE	REV
26-07-2021	JEY	RK	SP	A3	AS SHOWN	0

Column Upper Level



LEGEND & ABBRB.			SPECIFICATIONS	ALL DIMENSIONS ARE IN 'MM'
S.F	-	SIDE FACE	VOLUME	6.66 M³
B.F	-	BOTH FACE	WEIGHT	16.65 TON
	-	BLOCK OUT	GRADE OF CONCRETE	M60
▲	-	ERECTION MARKING	MINIMUM COVER	40mm
△	-	ELEVATION MARKING	MOULD TYPE	FLAT BED
△	-	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	-	NEAR FACE		
F.F	-	FAR FACE		
	-	RECESS		
C10	-	CHAMBER 10X10		

ITEM	INSTALLATION PARTS / MATERIAL CATALOGUE	QTY.
N1	80MM Ø HOLE FOR LIFTING	2
N2	T25MM DEMOULDING ANCHOR L=2100	4
N3	T25MM PROJECTION BAR L=1460	2
N4	T25MM PROJECTION BARL=2010	4
N5	T32MM PROJECTION BAR L=2340	4
N6	60Ø DOWEL TUBE L=1320	6
N7	80Ø DOWEL TUBE L=1650	8
N8		
N9		

GENERAL NOTES :
1. DO NOT SCALE FROM THE DRAWING USE FIGURED DIMENSION ONLY.
2. ALL LEVELS ARE SHOWN IN METER & DIMENSIONS ARE IN MILLIMETERS UNLESS MENTIONED OTHERWISE.
3. REINFORCEMENT DETAILS SHOULD BE APPROVED BY THE ENGINEER BEFORE WORK COMMENCES.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL , STRUCTURAL , MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PRODUCTION TOLERANCE :
LENGTH - ±5 TO 10MM
WIDTH - AS PER PCI MNL 116 AND PCI MNL 135
6. ERECTION TOLERANCE SHALL BE PROVIDED ± 5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

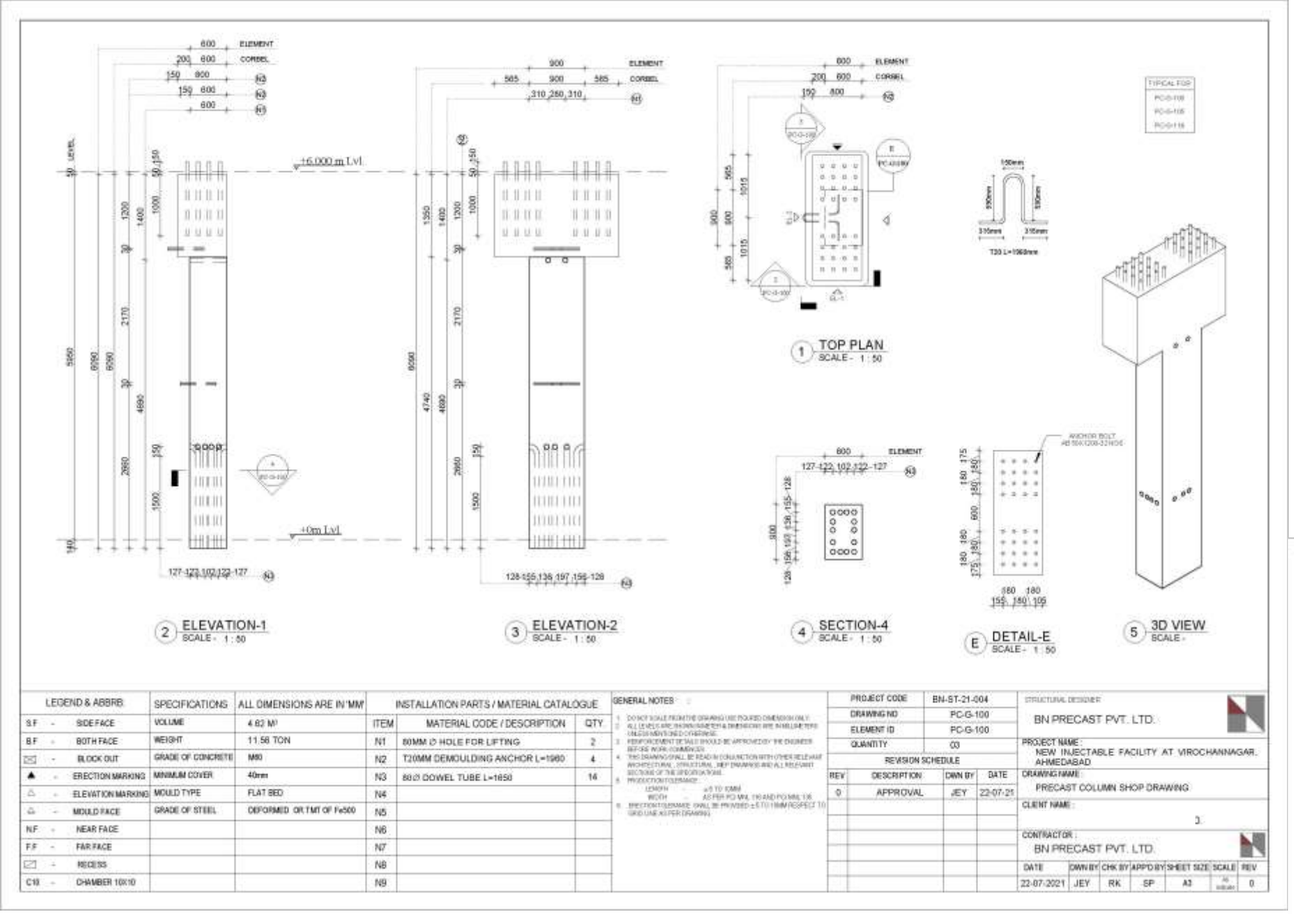
PROJECT CODE	BN-ST-21-004
DRAWING NO	PC-R-005(R)
ELEMENT ID	PC-G-005
QUANTITY	01

REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	JEY	26-07-21

STRUCTURAL DESIGNER : BN PRECAST PVT. LTD.
PROJECT NAME : NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD
DRAWING NAME : PRECAST COLUMN REINF DRAWING
CLIENT NAME :
CONTRACTOR : BN PRECAST PVT. LTD.

DATE	DWN BY	CHK BY	APPD BY	SHEET SIZE	SCALE	REV
26-07-2021	JEY	RK	SP	A3	AS SHOWN	0



LEGEND & ABBRB.		SPECIFICATIONS	ALL DIMENSIONS ARE IN 'MM'
S.F	SIDE FACE	VOLUME	4.82 M³
B.F	BOTH FACE	WEIGHT	11.56 TON
	BLOCK OUT	GRADE OF CONCRETE	M60
	ERECTION MARKING	MINIMUM COVER	40mm
	ELEVATION MARKING	MOULD TYPE	FLAT BED
	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	NEAR FACE		
F.F	FAR FACE		
	RECESS		
C10	CHAMBER 10X10		

INSTALLATION PARTS / MATERIAL CATALOGUE			
ITEM	MATERIAL CODE / DESCRIPTION	QTY	
N1	80MM Ø HOLE FOR LIFTING	2	
N2	T20MM DEMOULDING ANCHOR L=1960	4	
N3	80Ø DOWEL TUBE L=1650	16	
N4			
N5			
N6			
N7			
N8			
N9			

GENERAL NOTES :

1. DO NOT SCALE FROM THE DRAWING USE FIGURED DIMENSION ONLY.
2. ALL LEVELS ARE IN MM UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
3. REPORT ANY ERROR OR DISCREPANCY IN THE DRAWINGS TO THE ENGINEER BEFORE WORK COMMENCES.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PROJECTION TOLERANCE :
   LENGTH : ±5 TO 10MM
   WIDTH : AS PER PCI MNL 116 AND PCI MNL 135
6. ERECTION TOLERANCE SHALL BE PROVIDED ±5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

PROJECT CODE	BN-ST-21-004
DRAWING NO	PC-G-100
ELEMENT ID	PC-G-100
QUANTITY	03

REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	JEY	22-07-21

STRUCTURAL DESIGNER :
BN PRECAST PVT. LTD.

PROJECT NAME :
NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD

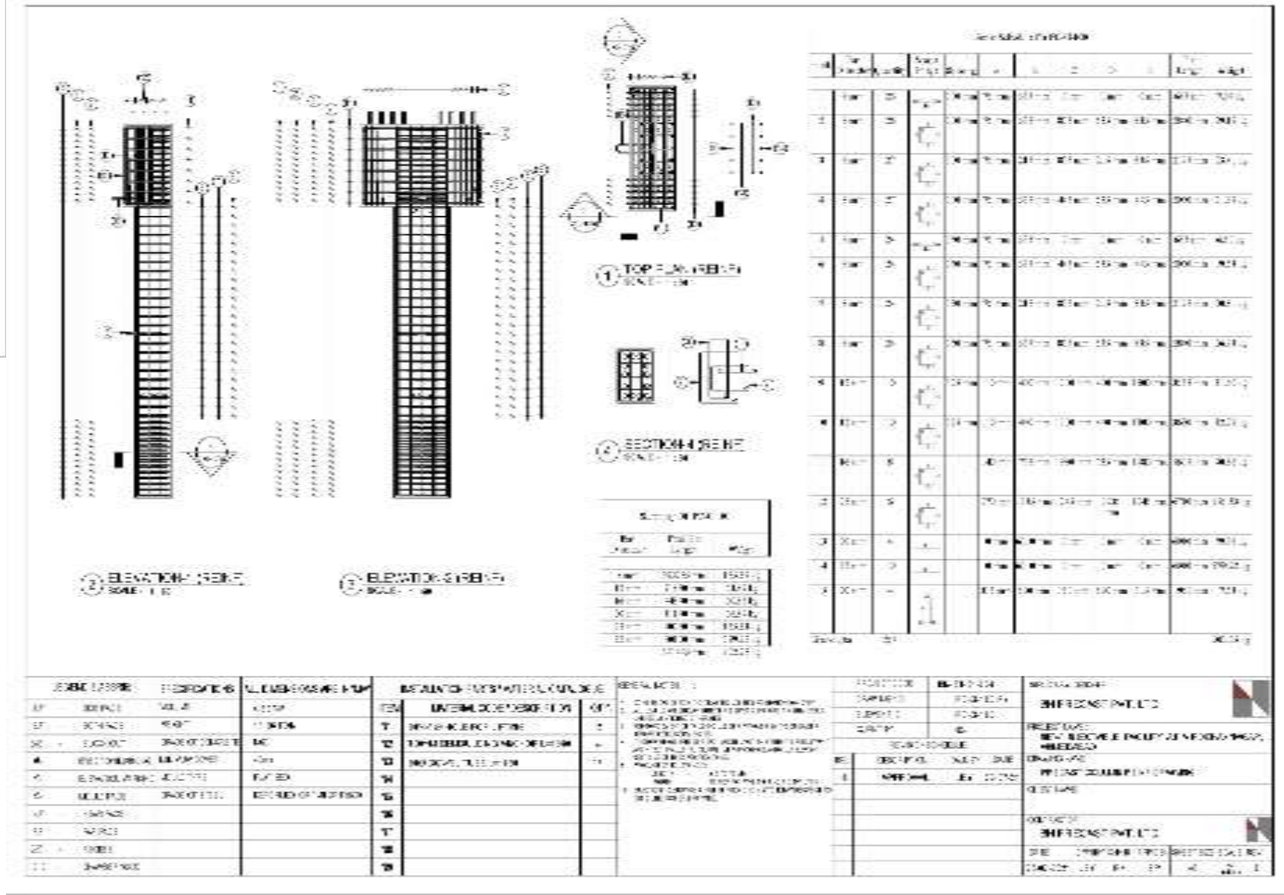
DRAWING NAME :
PRECAST COLUMN SHOP DRAWING

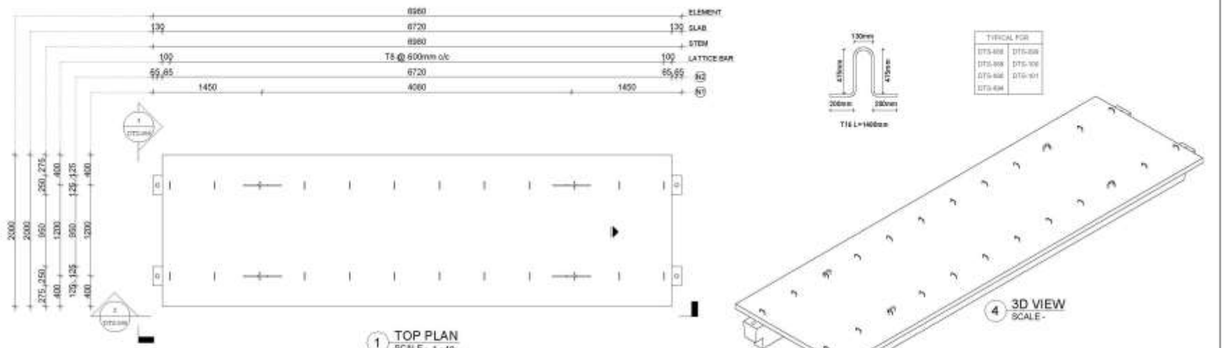
CLIENT NAME :

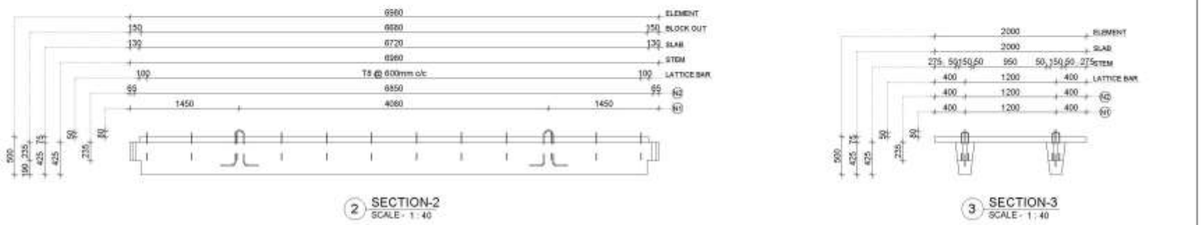
CONTRACTOR :
BN PRECAST PVT. LTD.

DATE	DWN BY	CHK BY	APPD BY	SHEET SIZE	SCALE	REV
22-07-2021	JEY	RK	SP	A3	AS SHOWN	0

Column Lower Column







LEGEND & ABBRB:			SPECIFICATIONS	ALL DIMENSIONS ARE IN MM
S.F	-	SIDE FACE	VOLUME	2.17 M³
B.F	-	BOTH FACE	WEIGHT	5.43 TON
BO	-	BLOCK OUT	GRADE OF CONCRETE	M40
▲	-	ERECTION MARKING	MINIMUM COVER	20mm
△	-	ELEVATION MARKING	MOULD TYPE	FLAT BED
△	-	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	-	NEAR FACE		
F.F	-	FAR FACE		
☑	-	RECESS		
C10	-	CHAMBER 10X10		

ITEM	MATERIAL CODE / DESCRIPTION	QTY.
N1	T16MM DEMOULDING ANCHOR L=1480	4
N2	50Ø DOWEL TUBE L=235	4
N3		
N4		
N5		
N6		
N7		
N8		
N9		

GENERAL NOTES

1. DO NOT SCALE FROM THE DRAWING USE FIGURED DIMENSION ONLY.
2. ALL LEVELS ARE SHOWN IN METER & DIMENSIONS ARE IN MILLIMETERS UNLESS MENTIONED OTHERWISE.
3. NO PROCESS OR DETAILS SHOULD BE APPROVED BY THE ENGINEER BEFORE WORK COMMENCES.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PRODUCTION TOLERANCE:
   LENGTH : +5 TO -10MM
   WIDTH : AS PER CPM MIL 1 B AND POSING LIB
6. ERECTION TOLERANCE SHALL BE PROVIDED +5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

PROJECT CODE	BN-ST-21-004
DRAWING NO	DTS-068
ELEMENT ID	DTS-068
QUANTITY	07

REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	JEY	19-03-21

STRUCTURAL DESIGNER
BN PRECAST PVT. LTD

PROJECT NAME :
NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD

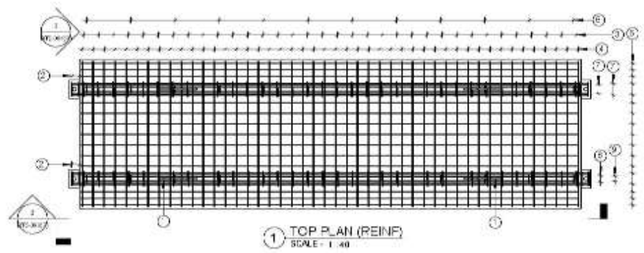
DRAWING NAME :
DOUBLE TEE SLAB SHOP DRAWING

CLIENT NAME :

CONTRACTOR :
BN PRECAST PVT. LTD

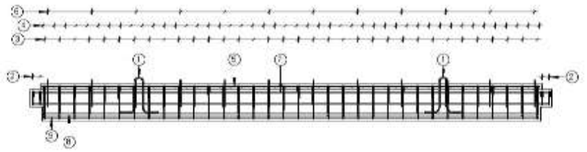
DATE	DWN BY	CHK BY	APPD BY	SHEET SIZE	SCALE	REV
19-08-2021	JEY	RK	SP	A3	AS INDICATED	0

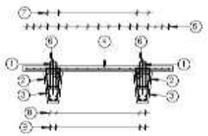
Double T



Rebar Schedule For DTS-068

	Bar Diameter	Quantity	Shape Image	Spacing	A	B	C	D	E	Bar Length	Weight
1	16 mm	4			200 mm	475 mm	130 mm	475 mm	200 mm	1480 mm	8.38 kg
2	8 mm	8		200 mm	75 mm	180 mm	150 mm	180 mm	180 mm	815 mm	2.58 kg
3	8 mm	68		200 mm	75 mm	450 mm	105 mm	450 mm	205 mm	1320 mm	33.46 kg
4	8 mm	96		150 mm	0 mm	1950 mm	0 mm	0 mm	0 mm	1950 mm	35.41 kg
5	8 mm	17		150 mm	0 mm	6670 mm	0 mm	0 mm	0 mm	6670 mm	44.80 kg
6	8 mm	24		450 mm	0 mm	365 mm	120 mm	365 mm	0 mm	795 mm	7.54 kg
7	12 mm	8			0 mm	6930 mm	0 mm	0 mm	0 mm	6930 mm	49.28 kg
8	20 mm	4			0 mm	6630 mm	0 mm	0 mm	0 mm	6630 mm	65.49 kg
9	25 mm	4			0 mm	6630 mm	0 mm	0 mm	0 mm	6630 mm	102.32 kg
Grand total		183									351.28 kg





Summary Of DTS-068

Bar Diameter	Total Bar Length	Weight
8 mm	110450 mm	12.83 kg
12 mm	55440 mm	49.28 kg
16 mm	5900 mm	8.38 kg
20 mm	26520 mm	65.49 kg
25 mm	26520 mm	102.32 kg
	432220 mm	351.28 kg

LEGEND & ABBRB:			SPECIFICATIONS	ALL DIMENSIONS ARE IN MM
S.F	-	SIDE FACE	VOLUME	2.17 M³
B.F	-	BOTH FACE	WEIGHT	5.43 TON
BO	-	BLOCK OUT	GRADE OF CONCRETE	M40
▲	-	ERECTION MARKING	MINIMUM COVER	20mm
△	-	ELEVATION MARKING	MOULD TYPE	FLAT BED
△	-	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	-	NEAR FACE		
F.F	-	FAR FACE		
☑	-	RECESS		
C10	-	CHAMBER 10X10		

ITEM	MATERIAL CODE / DESCRIPTION	QTY.
N1	T16MM DEMOULDING ANCHOR L=1480	4
N2	50Ø DOWEL TUBE L=235	4
N3		
N4		
N5		
N6		
N7		
N8		
N9		

GENERAL NOTES

1. DO NOT SCALE FROM THE DRAWING USE FIGURED DIMENSION ONLY.
2. ALL LEVELS ARE SHOWN IN METER & DIMENSIONS ARE IN MILLIMETERS UNLESS MENTIONED OTHERWISE.
3. NO PROCESS OR DETAILS SHOULD BE APPROVED BY THE ENGINEER BEFORE WORK COMMENCES.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PRODUCTION TOLERANCE:
   LENGTH : +5 TO -10MM
   WIDTH : AS PER CPM MIL 1 B AND POSING LIB
6. ERECTION TOLERANCE SHALL BE PROVIDED +5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

PROJECT CODE	BN-ST-21-004
DRAWING NO	DTS-068(P)
ELEMENT ID	DTS-068
QUANTITY	07

REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	JEY	19-08-21

STRUCTURAL DESIGNER
BN PRECAST PVT. LTD

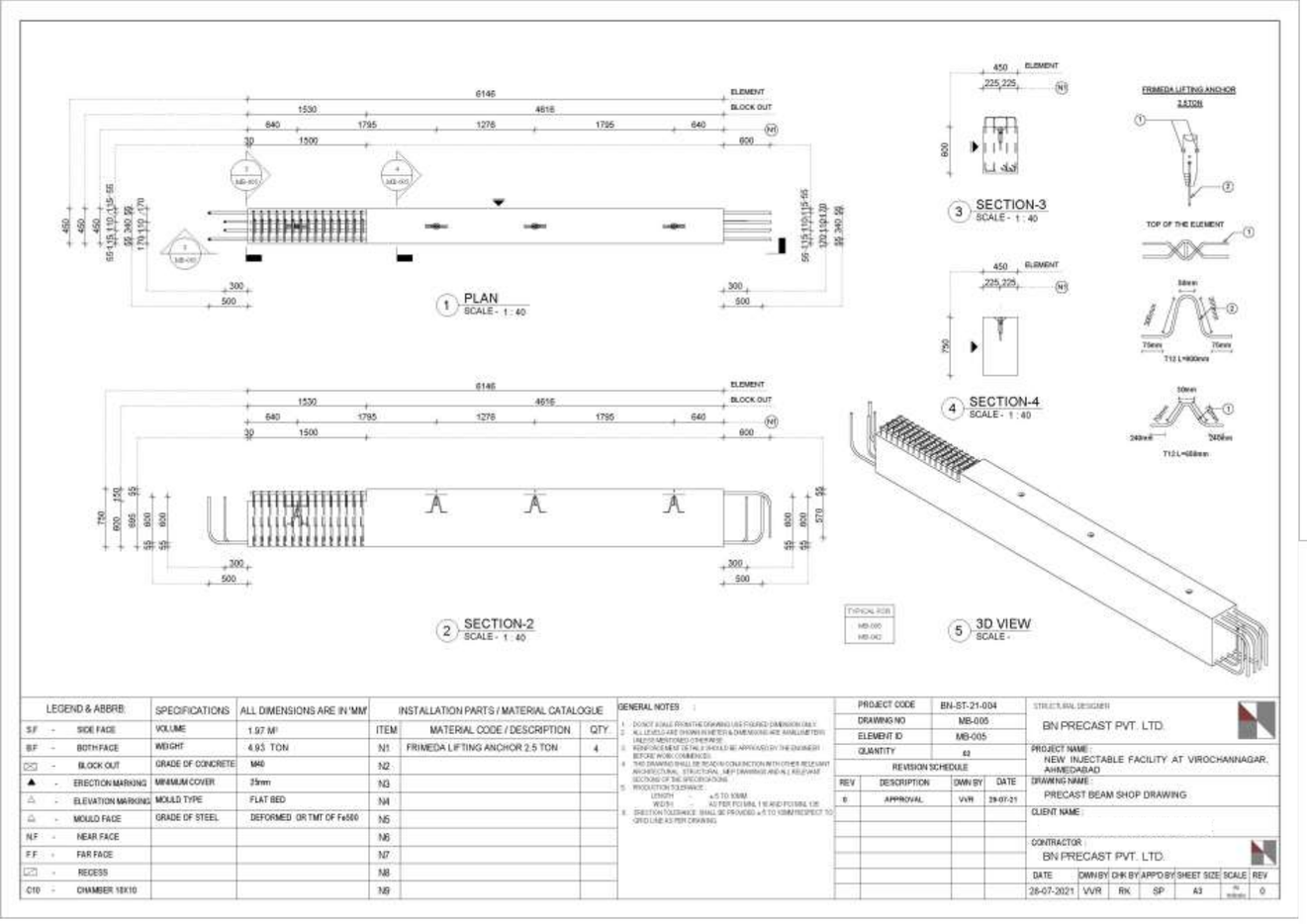
PROJECT NAME :
NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD

DRAWING NAME :
DOUBLE TEE SLAB REINF DRAWING

CLIENT NAME :

CONTRACTOR :
BN PRECAST PVT. LTD

DATE	DWN BY	CHK BY	APPD BY	SHEET SIZE	SCALE	REV
19-08-2021	JEY	RK	SP	A3	AS INDICATED	0



LEGEND & ABBRB.			SPECIFICATIONS	ALL DIMENSIONS ARE IN 'MM'
SF	-	SIDE FACE	VOLUME	1.97 M³
BF	-	BOTH FACE	WEIGHT	4.93 TON
⊠	-	BLOCK OUT	GRADE OF CONCRETE	M40
▲	-	ERECTION MARKING	MINIMUM COVER	25mm
△	-	ELEVATION MARKING	MOULD TYPE	FLAT BED
⏢	-	MOULD FACE	GRADE OF STEEL	DEFORMED OR TMT OF Fe500
N.F	-	NEAR FACE		
F.F	-	FAR FACE		
⊠	-	RECESS		
C10	-	CHAMBER 10X10		

INSTALLATION PARTS / MATERIAL CATALOGUE			
ITEM	MATERIAL CODE / DESCRIPTION	QTY.	
N1	FRIMEDA LIFTING ANCHOR 2.5 TON	4	
N2			
N3			
N4			
N5			
N6			
N7			
N8			
N9			

GENERAL NOTES :
1. DO NOT SCALE FROM THE DRAWING USE FIGURED DIMENSION ONLY.
2. ALL LEVELS ARE SHOWN IN METERS & DIMENSIONS ARE AVAILABLE IN MM UNLESS MENTIONED OTHERWISE.
3. REINFORCEMENT DETAILS SHOULD BE APPROVED BY THE ENGINEER BEFORE WORK COMMENCES.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, MEP DRAWINGS AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.
5. PRODUCTION TOLERANCE :
LENGTH : ±5 TO 10MM
WIDTH : AS PER PDI MM, THEAND POSITION : AS PER PDI MM
6. ERECTION TOLERANCE SHALL BE PROVIDED ±5 TO 10MM RESPECT TO GRID LINE AS PER DRAWING.

PROJECT CODE	BN-ST-21-004
DRAWING NO	MB-005
ELEMENT ID	MB-005
QUANTITY	02

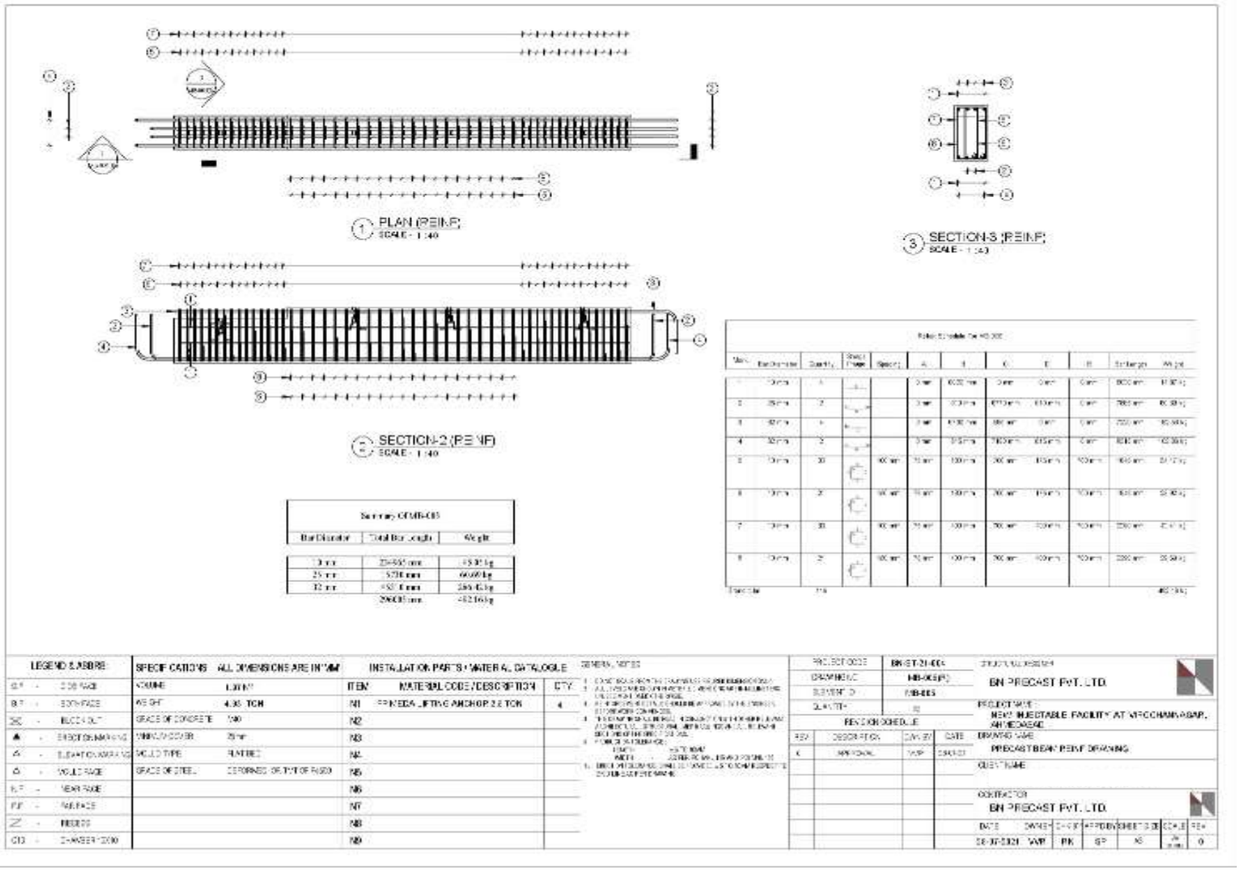
REVISION SCHEDULE

REV	DESCRIPTION	DWN BY	DATE
0	APPROVAL	VVR	29-07-21

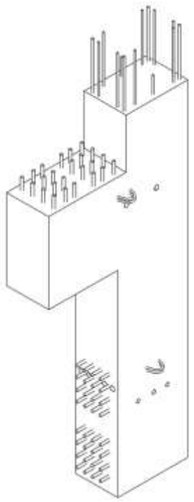
STRUCTURAL DESIGNER :
BN PRECAST PVT. LTD.
PROJECT NAME :
NEW INJECTABLE FACILITY AT VIROCHANNAGAR, AHMEDABAD
DRAWING NAME :
PRECAST BEAM SHOP DRAWING
CLIENT NAME :
CONTRACTOR :
BN PRECAST PVT. LTD.

DATE	DWN BY	CHK BY	APPD BY	SHEET SIZE	SCALE	REV
28-07-2021	VVR	RK	SP	A3	N.T.S	0

Beam



Precast Foundation Difficult to transport	Due to too many number's of bolts and horizontal placement, it was difficult to place and cast at site.	Lesser thickness of block allowed them to use more floor space and eventually lead to lighter plinth & tie beams.	Client may puncher slab at many location as discussed at early stage. So, we decided not to put any prestressed element.	At some location percentage of reinforcement required was more then 4% at some location of column.
Cast-in-situ Foundation and Plinth Beam	Placing of Anchor Bolt in Precast column instead of placing it at site.	Use of 190mm thick concrete block instead of 230mm burnt clay brick.	Choosing Double-T over Hollow Core Slab	Choosing M60 instead of M40 grade of concrete at some location.
Earlier completion in casting of footing.	Earlier completion in casting of Column.	Earlier completion in casting of footing.	• Double Tee is designed for heavier load than Hollow Core Slab. • Slab portion of Double Tee profile can be punchured after consulting Structure Engineer.	By increasing grade of concrete we were able to reduce the percentage of reinforcement.



Q&A

You may send your Questions to our
Mail Id : nishant.bnprecast@gmail.com