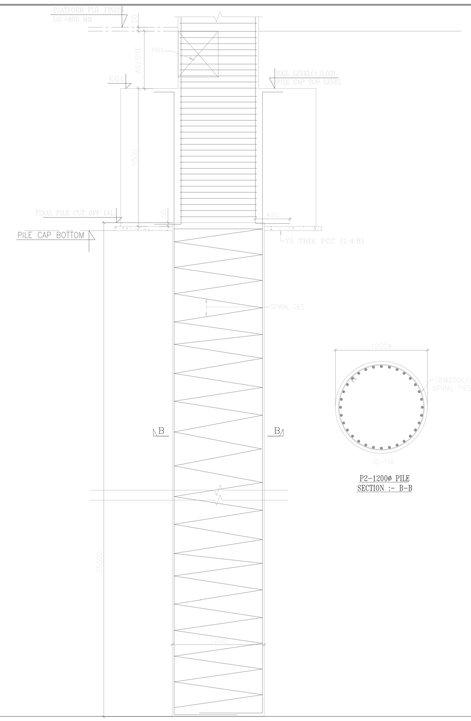
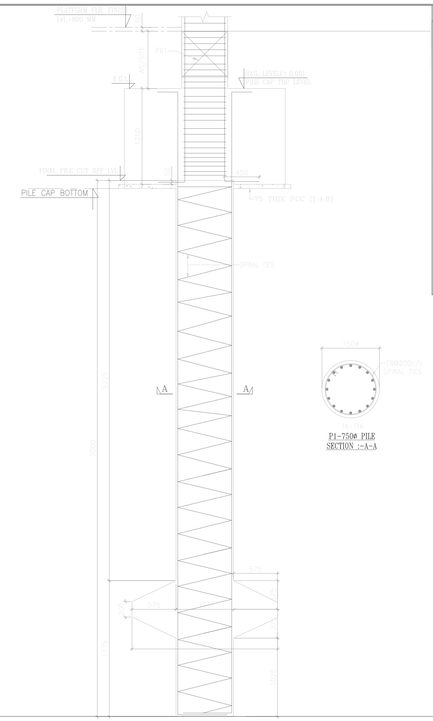


TYP. SECTION OF 1200ø PILE



TYP. SECTION OF 750ø PILE

notes:-

1. Grade of concrete for Pile should be M35 with minimum cement content of 380kg/m³.
2. Lap length is 50d, where 'd' is the diameter of bar and not more than half the bar shall be spliced at the section.
3. To ensure building up of pile up to the required level with good concrete, pile has to be built up initially to a length more than that is required and this is to be cut off to remove all laitance layer of concrete at its top.
4. The Pile should be taken into Pile Cap by 75mm.
5. Initial load test on test piles and Routine Load Tests on working pile should be carried out as per I.S 2911 –2013.
6. Grade of steel shall be Fe500/550D.
7. The building is designed for G +3 Floors only.
8. Safe carrying capacity of 75 diameter pile is 67.9 tonnes as per soil investigation report.
9. Uplift Capacity pr pile is 48.0 tonnes as per soil investigation report.

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe–500/550 D) conforming to 1786–1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows

(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm

6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS – 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
b. Earth below foundation shall be properly compacted before laying lean concrete (COLUMNS)
c. Links in column shall be provided at uniform spacing,between beam–column junction.
d. Over laps shall be restricted to only middle zone of the columns.
e. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
f. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length. (GENERAL)
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone– II

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

STRUCTURE HEAD:

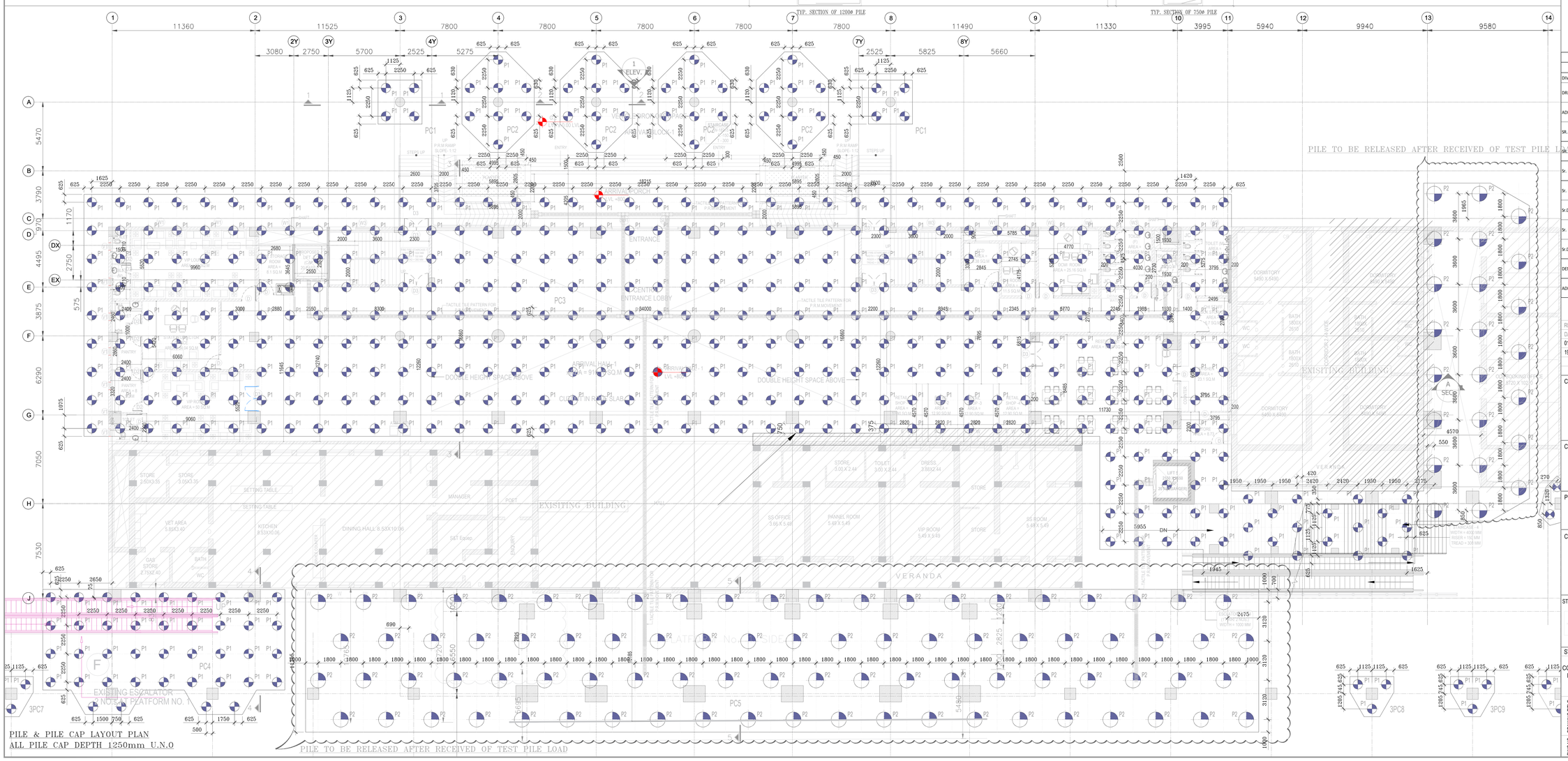
GOOD FOR CONSTRUCTION
For S&S DESIGN ASSOCIATION
Authorised Signatory

ER. SHASHI

PILE TABLE-1

PILE CAP	PILE NAME	PILE DIA IN (MM)	LENGTH BELOW CUT OFF LVL. IN (M)	DEPTH (D)	LOAD CARRYING CAPACITIES	PILE CAP REINFORCEMENT	
						BOTTOM BOTHWAYS	TOP BOTHWAYS
PC1	P1	750	7	1250	40.0t	AS/PLAN	AS/PLAN
PC2	P1	750	7	1250	40.0t	AS/PLAN	AS/PLAN
PC3	P1	750	7	1250	40.0t	AS/PLAN	AS/PLAN
PC4	P1	750	7	1250	40.0t	AS/PLAN	AS/PLAN
PC5	P2	1200	25	1800	85.0t	AS/PLAN	AS/PLAN

HOLD



PILE & PILE CAP LAYOUT PLAN
ALL PILE CAP DEPTH 1250mm U.N.O

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/W/WCR/UBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------	CE/SD/WCR----------
ADRM INFRA /KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
SR.DEN/SD/KOTA----------	CSTE/PROJ/WCR----------
Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	JE/DRG/HQ/JBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
01.07.2023	R0	FOR APROVAL	S.P	RS	JS
19.09.2023	R1	GOOD FOR CONSTRUCTION	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING
YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

STAMP/SIGN :DESIGN DIRECTOR

MEP HEAD:

ER. PUNIT SHARMA

STRUCTURE HEAD:

For S&S DESIGN ASSOCIATION
Authorised Signatory
ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	19-09-2023
	SCALE @ A1 1:150	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: FRONT RAILWAY STAION PILE LAYOUT PLAN & DETAILS

CATEGORY : STRUCTURE

DWG NO. 20040-ST-FRS-SD-DWG-101

REV. NO : R1

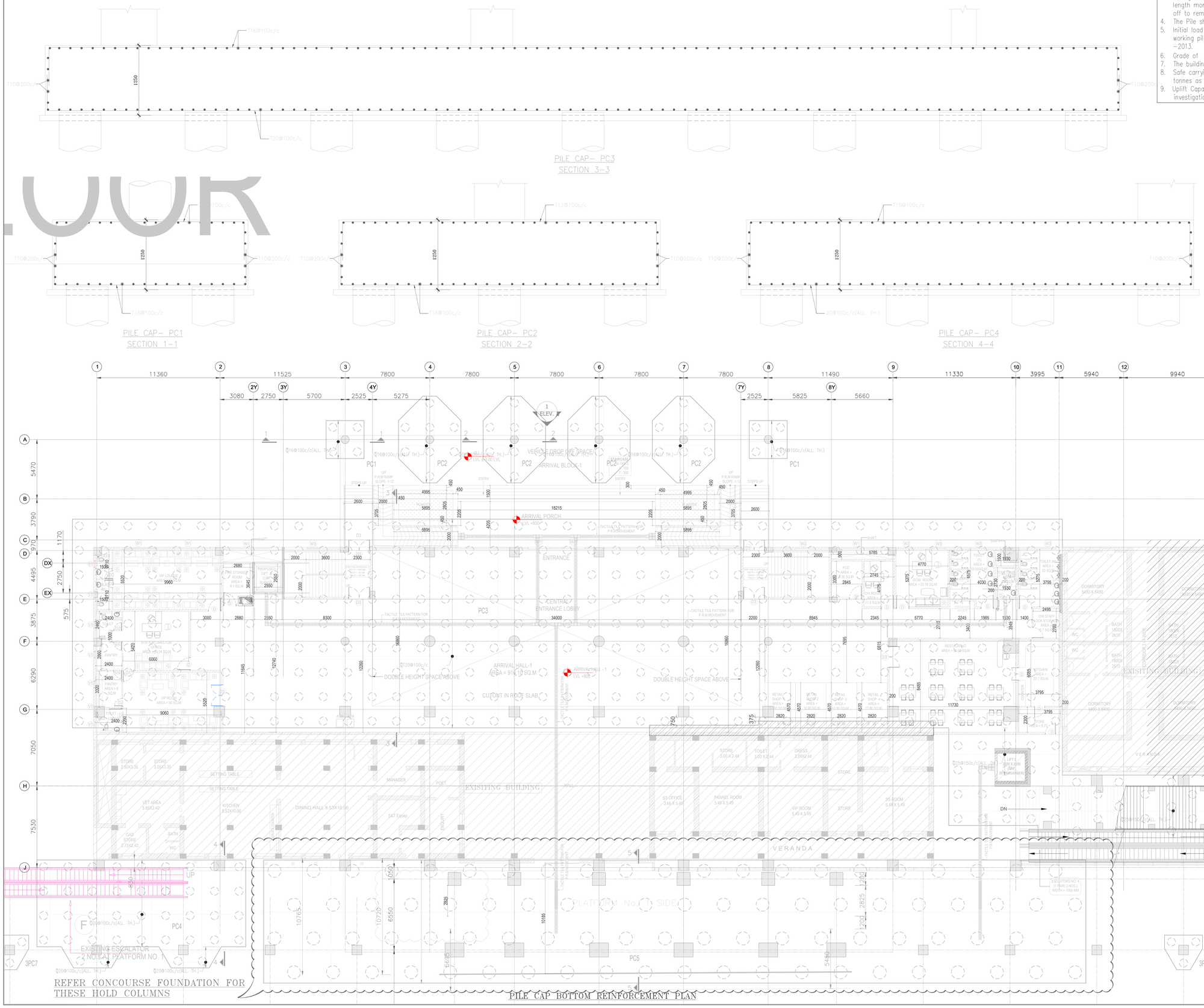
notes:-

1. Grade of concrete for Pile should be M35 with minimum cement content of 380kg/m³.
2. Lap length is 50d, where 'd' is the diameter of bar and not more than half the bar shall be spliced at the section.
3. To ensure building up of pile up to the required level with good concrete, pile has to be built up initially to a length more than that is required and this is to be cut off to remove all laitance layer of concrete at its top.
4. The Pile should be taken into Pile Cap by 75mm.
5. Initial load test on test piles and Routine Load Tests on working pile should be carried out as per I.S 2911 –2013.
6. Grade of steel shall be Fe500/550D.
7. The building is designed for G +3 Floors only.
8. Safe carrying capacity of 75 diameter pile is 67.9 tonnes as per soil investigation report.
9. Uplift Capacity pr pile is 48.0 tonnes as per soil investigation report.

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe–500/550 D) conforming to 1786–1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows
(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm
6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS – 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
b. Earth below foundation shall be properly compacted before laying lean concrete (COLUMNS)
c. Links in column shall be provided at uniform spacing,between beam–column junction.
d. Over laps shall be restricted to only middle zone of the columns.
e. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
f. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length. (GENERAL)
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone– II



PILE CAP BOTTOM REINFORCEMENT PLAN

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

STRUCTURE HEAD:

GOOD FOR CONSTRUCTION
For S&S DESIGN ASSOCIATION
Authorised Signatory

ER. SHASHI

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WWCR/UBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------	CE/SD/WCR----------
ADRM INFRA /KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
SR.DEN/SD/KOTA----------	CSTE/PROJ/WCR----------
Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	JE/DRG/HQ/IBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
01.07.2023	R0	FOR APROVAL	S.P	RS	JS
19.09.2023	R1	GOOD FOR CONSTRUCTION	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING — YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

STAMP/SIGN .DESIGN DIRECTOR | MEP HEAD: ER. PUNIT SHARMA | STRUCTURE HEAD: For S&S DESIGN ASSOCIATION, Authorised Signatory, ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	19-09-2023
	SCALE @ A1 1:150	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: FRONT RAILWAY STAION
PILE CAP BOTTOM REINF. PLAN & DETAILS

CATEGORY : STRUCTURE

DWG NO. 20040-ST-FRS-SD-DWG-102

REV. NO : R1

notes:-

1. Grade of concrete for Pile should be M35 with minimum cement content of 380kg/m³.
2. Lap length is 50d, where 'd' is the diameter of bar and not more than half the bar shall be spliced at the section.
3. To ensure building up of pile up to the required level with good concrete, pile has to be built up initially to a length more than that is required and this is to be cut off to remove all laitance layer of concrete at its top.
4. The Pile should be taken into Pile Cap by 75mm.
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6. Grade of steel shall be Fe500/550D.
7. The building is designed for G +3 Floors only.
8. Safe carrying capacity of 75 diameter pile is 67.9 tonnes as per soil investigation report.
9. Uplift Capacity pr pile is 48.0 tonnes as per soil investigation report.

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe–500/550 D) conforming to 1786–1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows
(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm
6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS – 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
b. Earth below foundation shall be properly compacted before laying lean concrete (COLUMNS)
c. Links in column shall be provided at uniform spacing,between beam–column junction.
d. Over laps shall be restricted to only middle zone of the columns.
e. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
f. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length. (GENERAL)
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone– II

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

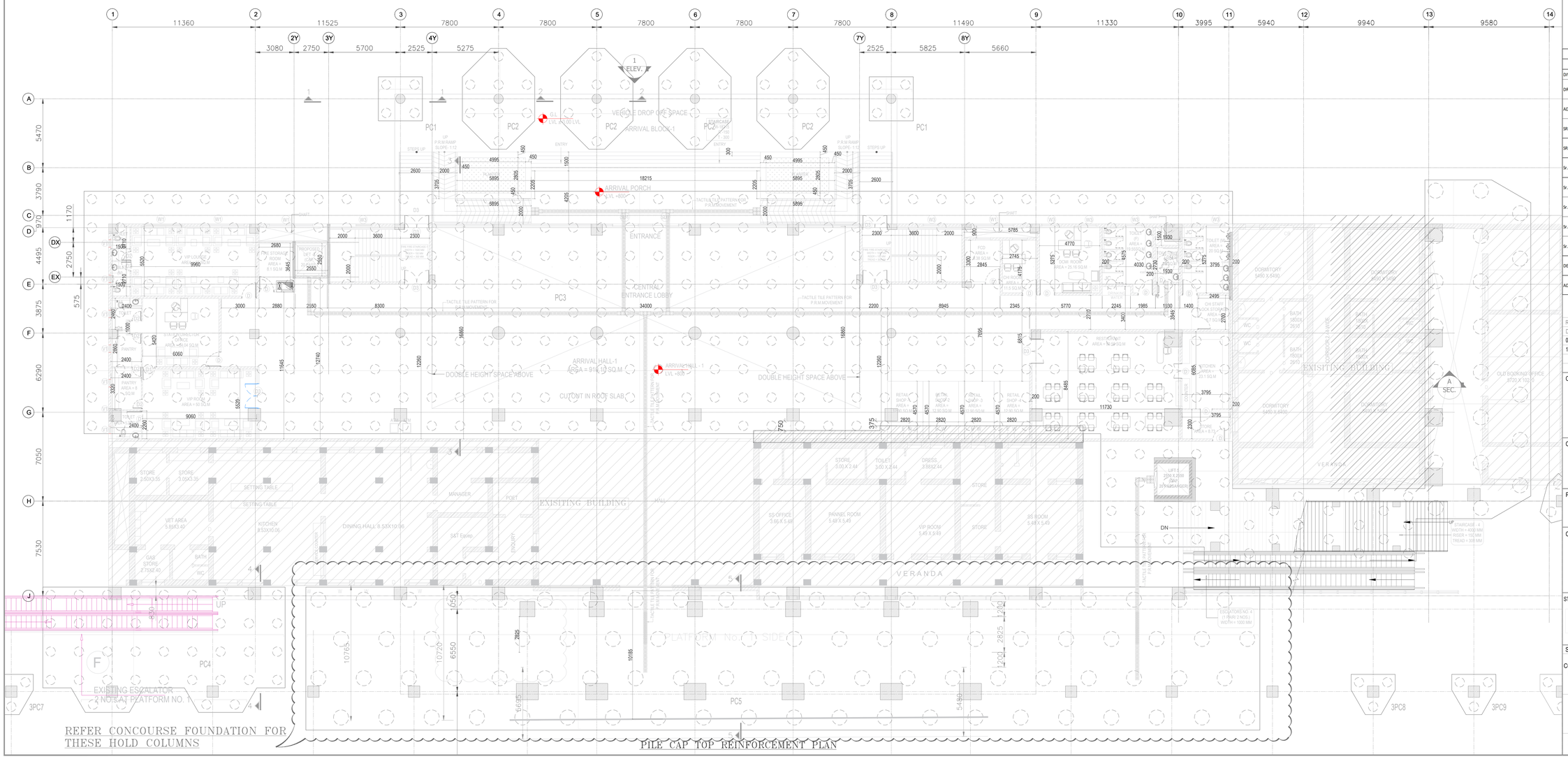
STRUCTURE HEAD:

GOOD FOR CONSTRUCTION
For S&S DESIGN ASSOCIATION
Authorised Signatory
ER. SHASHI

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.



PILE CAP TOP REINFORCEMENT PLAN

H.Q. WCR DRG. No. GM/WWCR/UBP/.....	
WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------	CE/SD/WCR----------
ADRM INFRA /KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
SR.DEN/SD/KOTA----------	CSTE/PRO.I/WCR----------
Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	JE/DRG/HQ/IBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
01.07.2023	R0	FOR APROVAL	S.P	RS	JS
19.09.2023	R1	GOOD FOR CONSTRUCTION	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING
YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	For S&S DESIGN ASSOCIATION Authorised Signatory ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	19-09-2023
	SCALE @ A1 1:150	VETTED DRAWING FROM I.I.T.ROORKEE	

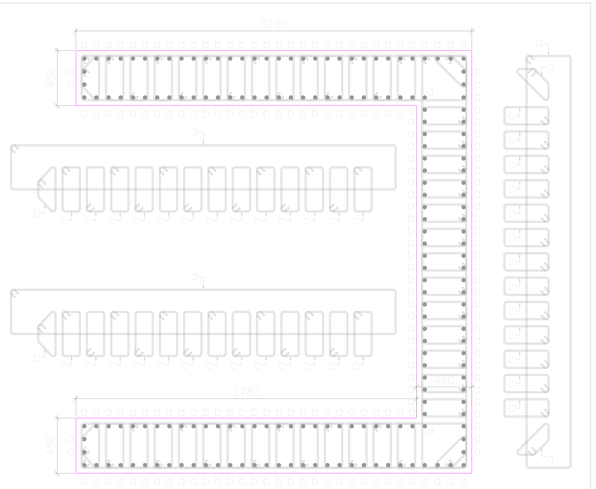
DRAWING TITLE: FRONT RAILWAY STAION PILE CAP TOP REINF. PLAN & DETAILS

CATEGORY : STRUCTURE

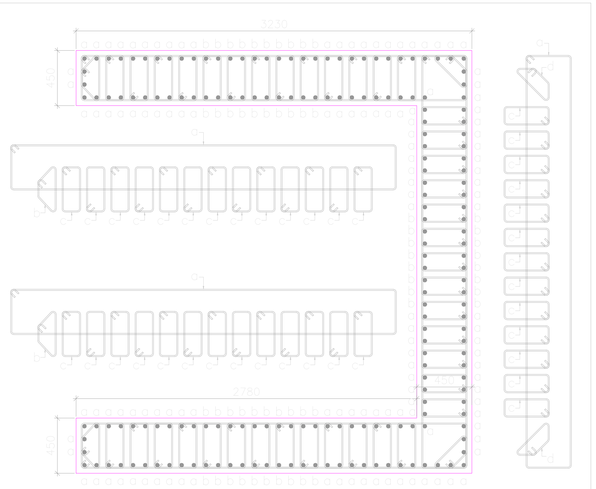
DWG NO. 20040-ST-FRS-SD-DWG-103

REV. NO : R1

FOUNDATION TO TO FIRST FLOOR	SIZE	(AS/PLAN)
	MAIN REINF	a-100-T25+ b-84-T120
	TIES SET	46/SETS (3a+2b+ 39c+2d)
	TIE GROUP	1
	CONC. MIX	M-40
COLUMN MKD.	SW3	



FIRST FLOOR TO TERMINATION	SIZE	(AS/PLAN)
	MAIN REINF	a-100-T20+ b-84-T16
	TIES SET	46/SETS (3a+2b+ 39c+2d)
	TIE GROUP	1
	CONC. MIX	M-40
COLUMN MKD.	SW3	



1) TIES SPACING OF ALL COLUMN IS 225mm IN BOTH ZONE (LAPPING & NON LAPPING
2) Ld-FOR 500 39d
3) Ld-FOR 550 36d

TIES SCHEDULE

	TIE GROUP 2
	T8@100c/c

TIES SCHEDULE

	TIE GROUP 1
	T8@125c/c

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe-500 & 500 D) conforming to 1786-1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows

(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm

6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
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13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
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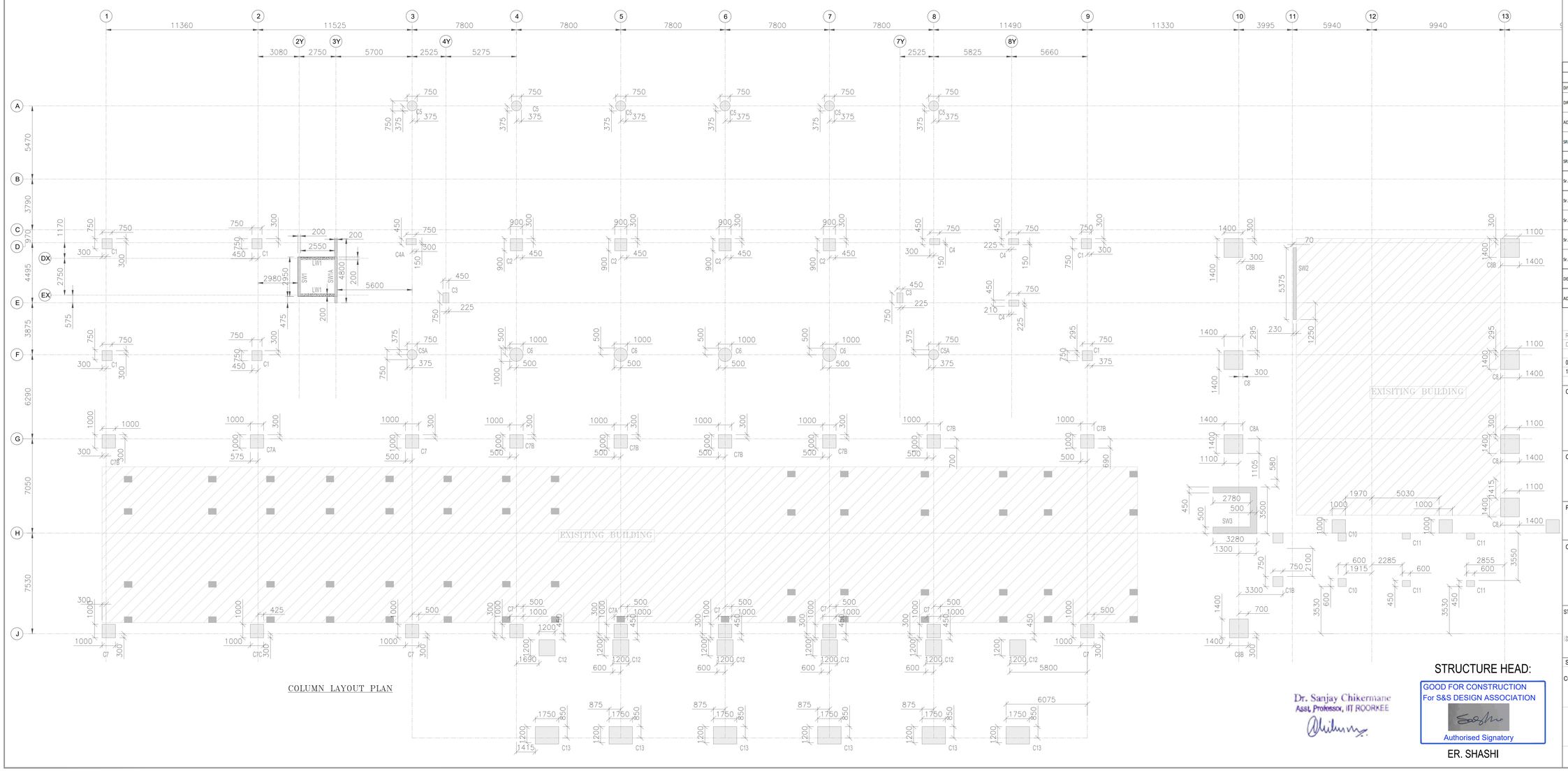
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone- II

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.



COLUMN LAYOUT PLAN

H.Q. WCR DRG. No. GM/WWCR/UBP/.....	
WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------	CE/SD/WCR----------
ADRM INFRA /KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
SR.DEN/SD/KOTA----------	CSTE/PROJ/WCR----------
Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	JE/DRG/HQ/IBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

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19.09.2023	R1	GOOD FOR CONSTRUCTION	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING — YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

DESIGN FORUM OF ARCHITECTS
www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR — MEP HEAD: ER. PUNIT SHARMA — STRUCTURE HEAD: For S&S DESIGN ASSOCIATION, Authorised Signatory, ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	01.07.2023
	SCALE @ A1 1:150 , 1:25	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: FRONT RAILWAY STAION COLUMN LAYOUT & SCHEDULE

CATEGORY : STRUCTURE

DWG NO. 20040-ST-FRS-SD-DWG-104

REV. NO : R1

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

STRUCTURE HEAD:

GOOD FOR CONSTRUCTION
For S&S DESIGN ASSOCIATION
Authorised Signatory
ER. SHASHI

COLUMN

		C5A	C6	C7	C7A	C7B
FIRST FLOOR TO TERMINATION LVL.	SIZE	(750-DIA)	(1000-DIA)	(1000X1000)	(1000X1000)	(1000X1000)
	MAIN REINF	a= 22-T20	a= 28-T20	a=8-T32+ b=28-T25	a=36-T25	a=4-T25+ b=32-T20
	TIES SET	3/SETS (a+2b)	3/SETS (a+2b)	9/SETS (a+8b)	9/SETS (a+8b)	9/SETS (a+8b)
	TIE GROUP	2	2	1	1	1
	CONC. MIX	M-40	M-40	M-40	M-40	M-40
FOUNDATION TO TO FIRST FLOOR	SIZE	(750X750)	(1000-DIA)	(1000X1000)	(1000X1000)	(1000X1000)
	MAIN REINF	a= 22-T20	a= 28-T20	a=8-T32+ b=28-T25	a=36-T25	a=4-T25+ b=32-T20
	TIES SET	3/SETS (a+2b)	3/SETS (a+2b)	9/SETS (a+8b)	9/SETS (a+8b)	9/SETS (a+8b)
	TIE GROUP	2	2	1	1	1
	CONC. MIX	M-40	M-40	M-40	M-40	M-40
COLUMN MKD.		C5A	C6	C7	C7A	C7B

COLUMN SCHEDULE (STIRRUPS T8@225c/c)

		C1	C2	C3	C4	C4A	C5
FIRST FLOOR TO TERMINATION LVL.	SIZE	(750X750)	(900X900)	(450X750)	(450X750)	(450X750)	(750-DIA)
	MAIN REINF	a=14-T25+ b=10-T20	a=32-T20	a=18-T20	a=8-T25 + b=10-T20	a=8-T25 + b=10-T20	a= 22-T20
	TIES SET	7/SETS (a+4b+2c)	9/SETS (a+6b+2c)	5/SETS (a+b+2c+d)	5/SETS (a+b+2c+d)	5/SETS (a+b+2c+d)	3/SETS (a+2b)
	TIE GROUP	1	1	1	1	1	2
	CONC. MIX	M-40	M-40	M-40	M-40	M-40	M-40
FOUNDATION TO TO FIRST FLOOR	SIZE	(750X750)	(900X900)	(450X750)	(450X750)	(450X750)	(750X750)
	MAIN REINF	a=24-T25	a=32-T20	a=18-T20	a=18-T25	a=18-T25	a= 22-T20
	TIES SET	7/SETS (a+4b+2c)	9/SETS (a+6b+2c)	5/SETS (a+b+2c+d)	5/SETS (a+b+2c+d)	5/SETS (a+b+2c+d)	3/SETS (a+2b)
	TIE GROUP	1	1	1	1	1	2
	CONC. MIX	M-40	M-40	M-40	M-40	M-40	M-40
COLUMN MKD.		C1	C2	C3	C4	C4A	C5

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

STRUCTURE HEAD:

GOOD FOR CONSTRUCTION
For S&S DESIGN ASSOCIATION
Authorised Signatory
ER. SHASHI

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe-500 & 500 D) conforming to 1786-1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows
(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm
6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
b. Earth below foundation shall be properly compacted before laying lean concrete (COLUMNS)
c. Links in column shall be provided at uniform spacing,between beam-column junction.
d. Over laps shall be restricted to only middle zone of the columns.
e. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
f. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length. (GENERAL)
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone- II

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WWWCR/UBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------	CE/SD/WCR----------
ADRM INFRA /KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
SR.DEN/SD/KOTA----------	CSTE/PROJ/WCR----------
Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	JE/DRG/HQ/IBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
01.07.2023	R0	FOR APROVAL	S.P	RS	JS
19.09.2023	R1	GOOD FOR CONSTRUCTION	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING
YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :
MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

DESIGN FORUM OF ARCHITECTS
www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	For S&S DESIGN ASSOCIATION Authorised Signatory ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	01.07.2023
	SCALE @ A1 1:25	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: FRONT RAILWAY STAION COLUMN SCHEDULE

CATEGORY : STRUCTURE

DWG NO. 20040-ST-FRS-SD-DWG-105

REV. NO : R1

COLUMN SCHEDULE (STIRRUPS T8@225c/c)

FOUNDATION TO TO TERMINATION LVL.	SIZE	(750X750)		SIZE	(600X600)	TERMINATION AT BOTTOM OF LANDING	SIZE	(450X600)	TERMINATION AT BOTTOM OF LANDING
	MAIN REINF	a=4-T25+ b=20-T20		MAIN REINF	a=18-T20		MAIN REINF	a=16-T20	
	TIES SET	7/SETS (a+4b+2c)		TIES SET	5/SETS (a+4b)		TIES SET	4/SETS (a+3b)	
	TIE GROUP	1		TIE GROUP	1		TIE GROUP	1	
	CONC. MIX	M-40		CONC. MIX	M-40		CONC. MIX	M-40	
COLUMN MKD.	C1B			C10			C11		

COLUMN SCHEDULE (STIRRUPS T8@225c/c)

FOUNDATION TO TO TERMINATION LVL.	SIZE	(1200X1200)		SIZE	(1200X1200)
	MAIN REINF	a=44-T32 b=26-T32		MAIN REINF	a=54-T32 b=46-T32
	TIES SET	9/SETS (a+8b)		TIES SET	9/SETS (a+8b)
	TIE GROUP	1		TIE GROUP	1
	CONC. MIX	M-50		CONC. MIX	M-50
COLUMN MKD.	C12			C13	

COLUMN

FIRST FLOOR TO TERMINATION LVL.	SIZE	(1000X1000)		SIZE	(1400X1400)		SIZE	(1400X1400)		SIZE	(1400X1400)
	MAIN REINF	a=20-T32+ b=16-T25		MAIN REINF	a=52-T20		MAIN REINF	a=24-T25+ b=28-T16		MAIN REINF	a=16-T32+ b=12-T25+ c=24-T16
	TIES SET	9/SETS (a+8b)		TIES SET	13/SETS (a+12b)		TIES SET	13/SETS (a+12b)		TIES SET	13/SETS (a+12b)
	TIE GROUP	1		TIE GROUP	1		TIE GROUP	1		TIE GROUP	1
	CONC. MIX	M-40		CONC. MIX	M-40		CONC. MIX	M-40		CONC. MIX	M-40
FOUNDATION TO TO FIRST FLOOR	SIZE	(1000X1000)		SIZE	(1400X1400)		SIZE	(1400X1400)		SIZE	(1400X1400)
	MAIN REINF	a=20-T32+ b=16-T25		MAIN REINF	a=52-T20		MAIN REINF	a=12-T32+ b=40-T25		MAIN REINF	a=40-T32+ b=12-T25
	TIES SET	9/SETS (a+8b)		TIES SET	13/SETS (a+12b)		TIES SET	13/SETS (a+12b)		TIES SET	13/SETS (a+12b)
	TIE GROUP	1		TIE GROUP	1		TIE GROUP	1		TIE GROUP	1
	CONC. MIX	M-40		CONC. MIX	M-40		CONC. MIX	M-40		CONC. MIX	M-40
COLUMN MKD.	C7C			C8			C8A			C8B	

General

1. All Dimension are in mm unless otherwise mentioned.
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3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
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5. Clear cover of outer layer reinf shall be as follows

(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm

6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
b. Earth below foundation shall be properly compacted before laying lean concrete (COLUMNS)
c. Links in column shall be provided at uniform spacing,between beam-column junction.
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f. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length. (GENERAL)
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone- II

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WWCR/UBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
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Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	IE/DRG/HQ/IBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

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01.07.2023	R0	FOR APROVAL	S.P	RS	JS
19.09.2023	R1	GOOD FOR CONSTRUCTION	S.P	RS	JS

CLIENT :

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CONTRACTOR :

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CONSULTANT :

DESIGN FORUM OF ARCHITECTS
www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR — MEP HEAD: ER. PUNIT SHARMA — STRUCTURE HEAD: For S&S DESIGN ASSOCIATION, Authorised Signatory, ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	01.07.2023
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Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

STRUCTURE HEAD:

GOOD FOR CONSTRUCTION
For S&S DESIGN ASSOCIATION
Authorised Signatory
ER. SHASHI

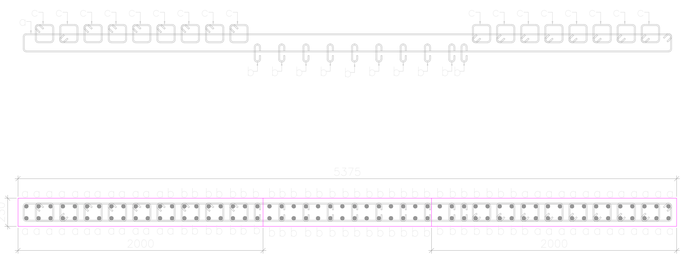
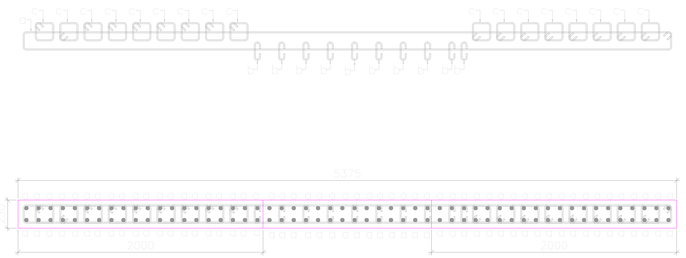
DRAWING TITLE: FRONT RAILWAY STAION COLUMN SCHEDULE

CATEGORY : STRUCTURE

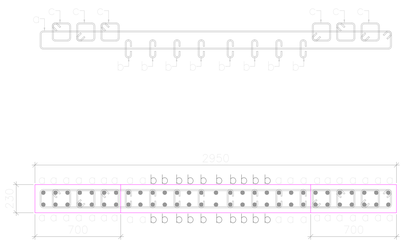
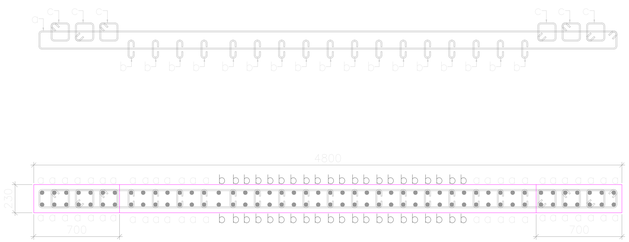
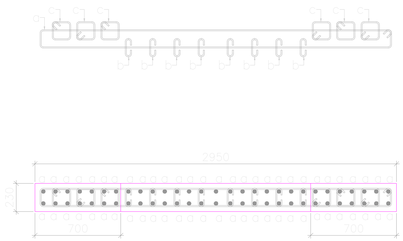
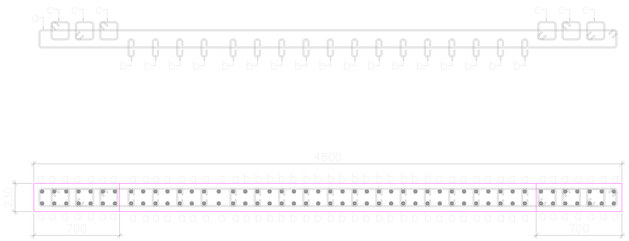
DWG NO. 20040-ST-FRS-SD-DWG-106

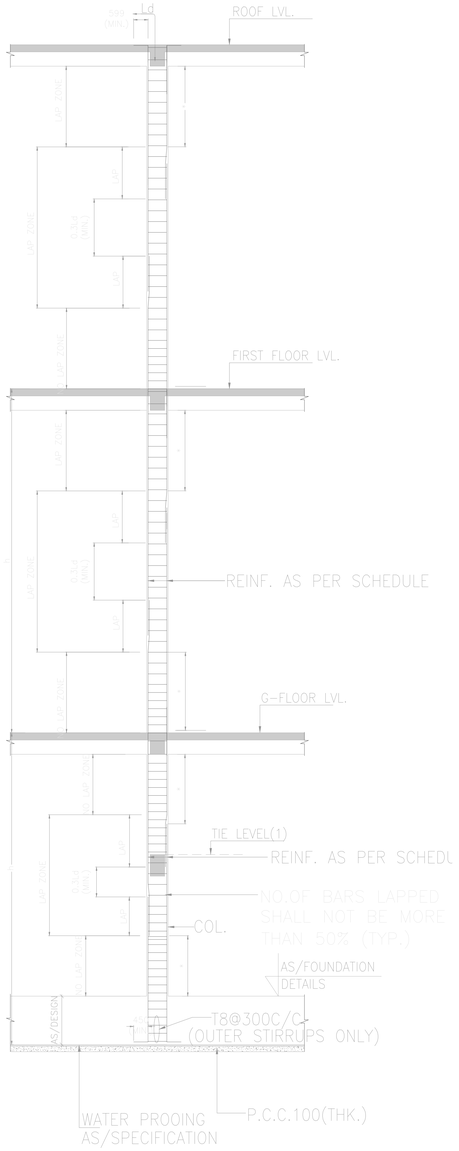
REV. NO : R1

SHEAR W

FIRST FLOOR TO TERMINATION	SIZE	(AS/PLAN)	
	MAIN REINF	a-50-T20+ b-58-T16	
	TIES SET	27/SETS (a+10b+16c	
	TIE GROUP	1	
	CONC. MIX	M-40	
FOUNDATION TO TO FIRST FLOOR	SIZE	230x5375	
	MAIN REINF	a-108-T20	
	TIES SET	27/SETS (a+10b+16c	
	TIE GROUP	1	
	CONC. MIX	M-40	
COLUMN MKD.	SW2		

SHEAR WALL SCHEDULE (STIRRUPS T8@225c/c)

FIRST FLOOR TO TERMINATION	SIZE	(AS/PLAN)		SIZE	(AS/PLAN)	
	MAIN REINF	a-38-T25 b-20-T16		MAIN REINF	a-50-T25 b-42-T12	
	TIES SET	15/SETS (a+8b+6c		TIES SET	15/SETS (a+17b+6c)	
	TIE GROUP	1		TIE GROUP	1	
	CONC. MIX	M-40		CONC. MIX	M-40	
FOUNDATION TO TO FIRST FLOOR	SIZE	230x2950		SIZE	230x2950	
	MAIN REINF	a-58-T25		MAIN REINF	a-60-T25 b-30-T20	
	TIES SET	15/SETS (a+8b+6c)		TIES SET	15/SETS (a+17b+6c)	
	TIE GROUP	1		TIE GROUP	1	
	CONC. MIX	M-40		CONC. MIX	M-40	
COLUMN MKD.	SW1			SW1A		



TYP.SECTION THROUGH COLUMN

(a) FOR COLUMNS:-

*=DISTANCE SHOULD BE h/6 OR LARGER LATERAL DIMENSION OF COLUMN WHICHEVER IS BIGGER.

General

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4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe-500 & 500 D) conforming to 1786-1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows

(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm

6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick . (BELOW PILE CAP)

a. The layout of building shall be as per relevant Arch drg.
b. Earth below foundation shall be properly compacted before laying lean concrete (COLUMNS)
c. Links in column shall be provided at uniform spacing,between beam-column junction.
d. Over laps shall be restricted to only middle zone of the columns.
e. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
f. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length. (GENERAL)
g. The building foundation is designed for (G+3) Floor for future extension.
h. The structure has been designed for seismic zone- II

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WWCR/UBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------	CE/SD/WCR----------
ADRM INFRA /KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
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DEN/E/KOTA----------	JE/DRG/HQ/IBP----------
ADEN(SD)/KOTA----------	DRAWING NO.:----------

REVISIONS

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M/S ZMBPL-YFC (JV)

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CONSULTANT :

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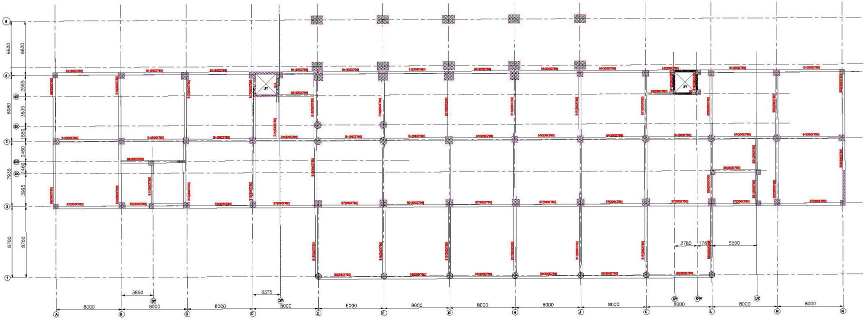
STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	01.07.2023
	SCALE @ A1 1:25	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: FRONT RAILWAY STAION COLUMN SCHEDULE

CATEGORY : STRUCTURE

DWG NO. 20040-ST-FRS-SD-DWG-107

REV. NO : R1



FRAMING PLAN AT TIE LVL.-1250
ALL BEAM SIZES ARE 300,230x750

HATCH INDICATE COLUMN THROUGH FONDATION TO TERMINATION

General
1. All Dimension are in mm unless otherwise mentioned.
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3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe-500 & 500 D) conforming to 1786-1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows
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9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick .

(FOUNDATION)
1. Grade of concrete and steel shall be M40 & Fe500 respectively.
2. The layout of building shall be as per relevant Arch drg.
3. Earth below foundation shall be properly compacted before laying lean concrete

(COLUMNS)
1. Grade of concrete and steel shall be M40 & Fe500 respectively
2. Links in column shall be provided at uniform spacing,between beam-column junction.
3. Over laps shall be restricted to only middle zone of the columns.
4. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
5. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length.

(GENERAL)
1. The building foundation is designed for (G+3) Floor for future extension.
2. Building is designed for SBC 8.0 TON/SQM @ 4.0M BELOW N.G.L
3. The structure has been designed for seismic zone- II.
4. Design temperature for casting has been considered to be within the range of 16° - 34° c and if concreting is done beyond these temperatures, appropriate measures should be taken to maintain the temperature of concrete in these limits.

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	38 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/W/WCR/JBP/..................	
WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA--------------------	CE/SD/WCR--------------------
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SR.DEN/SD/KOTA--------------------	CSTE/PROJ/WCR--------------------
Sr. DOM/KOTA--------------------	COM(PS)/WCR--------------------
Sr. DCM/KOTA--------------------	
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Sr. DSTE(Co.)/KOTA--------------------	
Sr.DEE(TRD)/KOTA--------------------	

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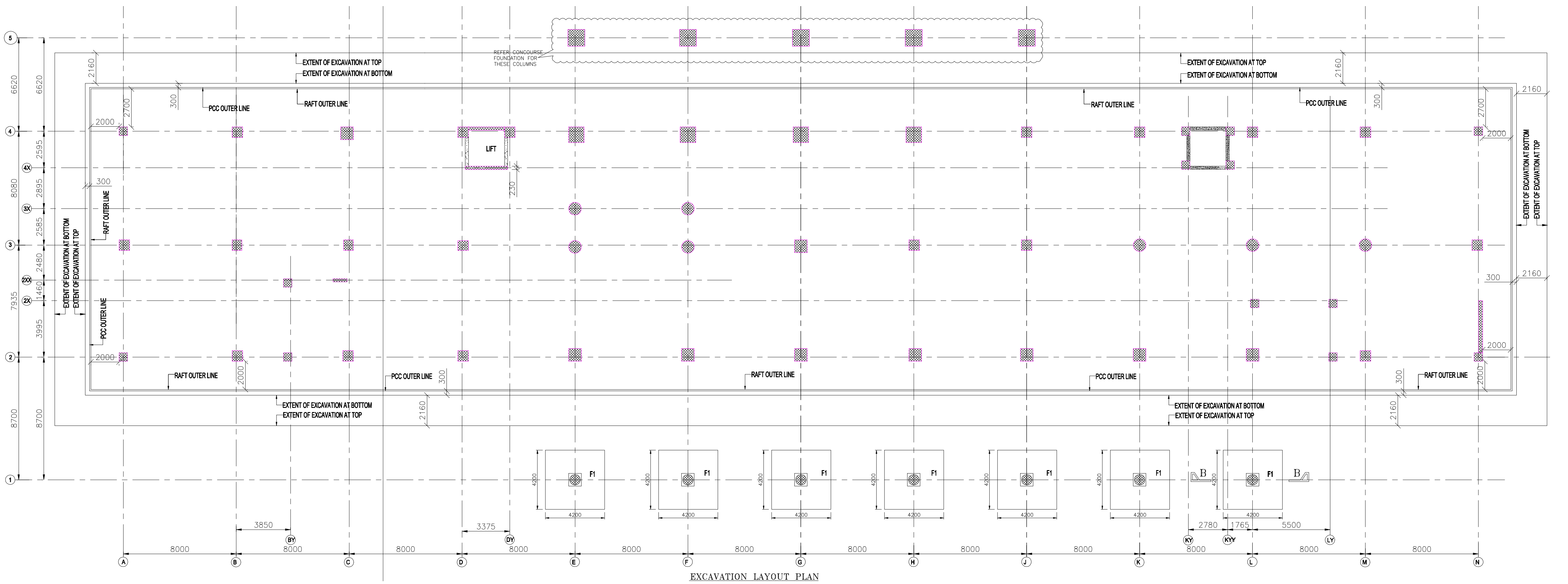
	ER. PUNIT SHARMA	ER. SHASHI

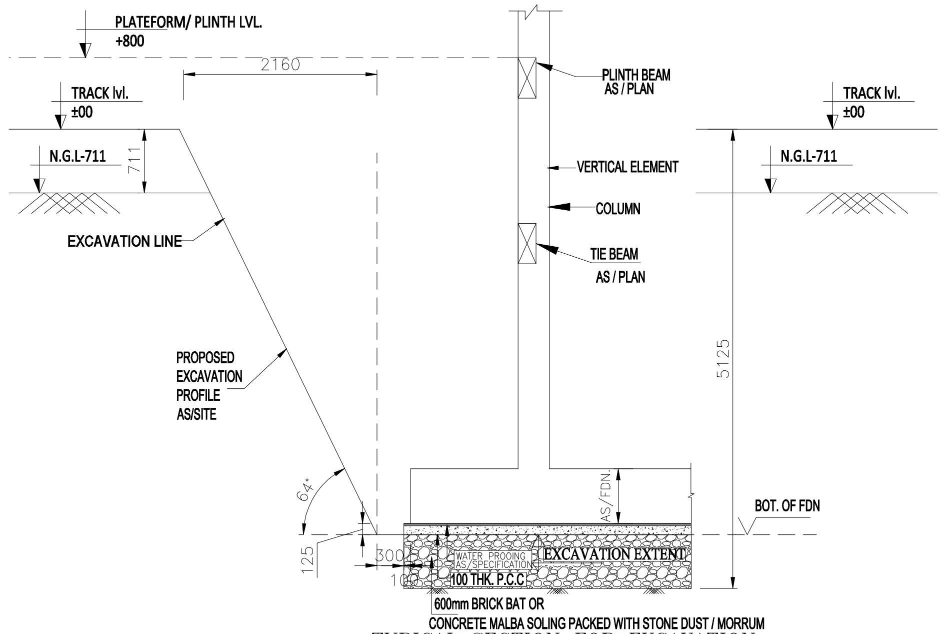
STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2023
	SCALE @ A1 1:100	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE	REAR RAILWAY STAION TIE LVL. FRAMING PLAN	CATEGORY : STRUCTURE
DWG NO.	20040-ST-RS-SD-DWG-105	REV. NO : R0

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE



EXCAVATION LAYOUT PLAN



TYPICAL SECTION FOR EXCAVATION

EXCAVATION NOTES:-

1. THIS DRAWING SHOWS EXTENT OF PROPOSED BULK EXCAVATION FOR FOUNDATION
2. THE CONTRACTOR SHALL ENSURE THAT THE SIDE SLOPES DO NOT COLLAPSE DURING AND AFTER EXCAVATION
3. THE CONTRACTOR SHALL TAKE ADEQUATE MEANS TO ENSURE PROPER BARRICADING AND SAFETY OF MEN AND MATERIAL AT SITE
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR POINT NOS. 2 & 3 MENTIONED ABOVE
5. THE EXCAVATION PROFILE IS BASED ON JUDGEMENT AND EXPERIENCE CONSIDERING 1:1 SLOPE FOR SOIL STABILITY IN LIEU OF SPECIFICATIONS FROM SOIL CONSULTANTS.
6. THE STRUCTURAL CONSULTANT AND THE ARCHITECT SHALL NOT BE HELD RESPONSIBLE FOR SOIL SLOPES.
7. IT IS ADVISED TO GET THIS DRAWING APPROVED BY THE SOIL CONSULTANTS BEFORE EXCAVATION.
8. IT IS ADVISED TO DO MANUAL EXCAVATION FROM 300MM ABOVE FFL AND FOR FOOTINGS.

Dr. Sanjay Chikermane
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General
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3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe-500 & 500 D) conforming to 1786-1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows
(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm
6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick .

(FOUNDATION)
1. Grade of concrete and steel shall be M35 & Fe500 respectively.
2. The layout of building shall be as per relevant Arch drg.
3. Earth below foundation shall be properly compacted before laying lean concrete

(COLUMNS)
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(GENERAL)
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DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/W/WCR/JBP/....................

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA ----------------------------	CE/SD/WCR----------------------------
ADRM INFRA /KOTA----------------------------	DY.CE/SD/WCR----------------------------
SR. DEN(Co.)/KOTA----------------------------	CEE (EEM)/WCR----------------------------
SR.DEN/SD/KOTA----------------------------	CSTE/PROJ/WCR----------------------------
Sr. DOM/KOTA----------------------------	CCM(PS)/WCR----------------------------
Sr. DCM/KOTA----------------------------	
Sr.DEE/G/KOTA----------------------------	
Sr. DSTE(Co.)/KOTA----------------------------	
Sr.DEE(TRD)/KOTA----------------------------	
DEN/E/KOTA----------------------------	JE/DRG/HQ/JBP----------------
ADEN(SD)/KOTA----------------------------	DRAWING NO.--------------------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
09.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R1	LIFT AND STAIRCASE ADDED AS/ARCH. DWG	S.P	RS	JS

CLIENT :
West Central Railway

CONTRACTOR :
ZETWERK MAXIMIZE MANUFACTURING
YFC PROJECTS
M/S ZMBPL-YFC (JV)

PROJECT :
MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :
dfA DESIGN FORUM OF ARCHITECTS www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	For S&S DESIGN ASSOCIATION Authorised Signatory ER. SHASHI

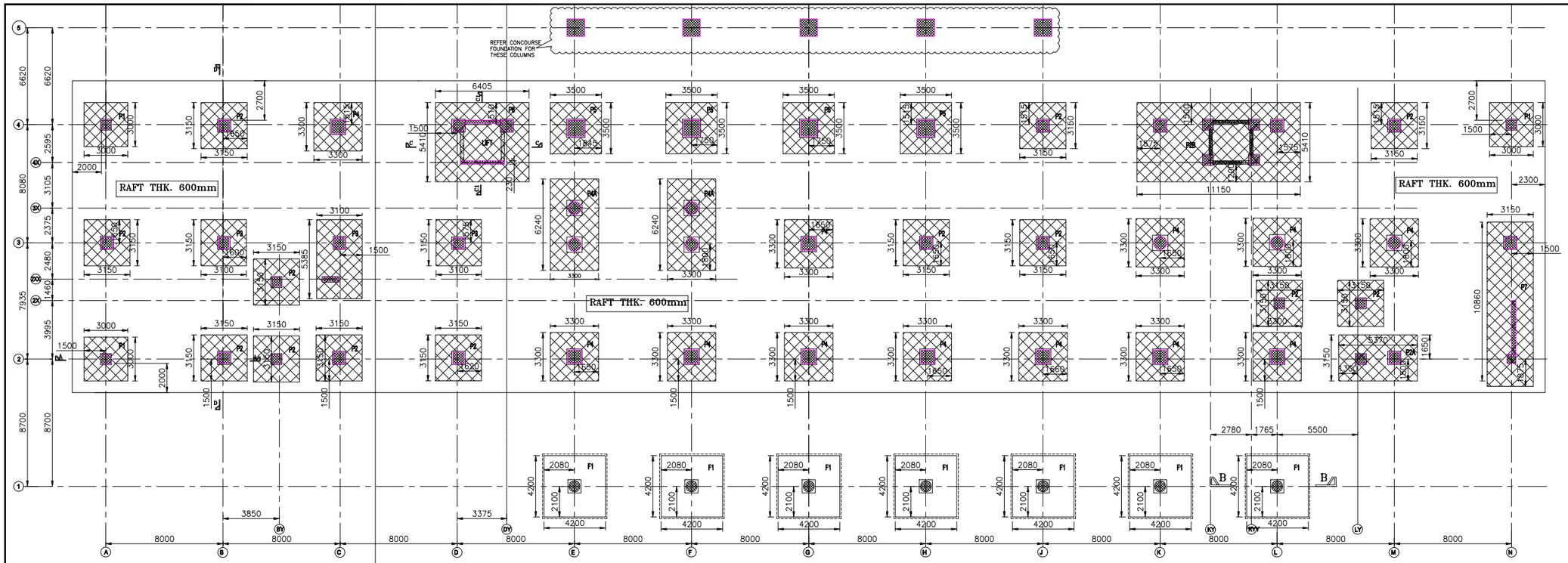
STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	24.05.2023
	SCALE @ A1 1:100	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: REAR RAILWAY STAION EXCAVATION LAYOUT PLAN

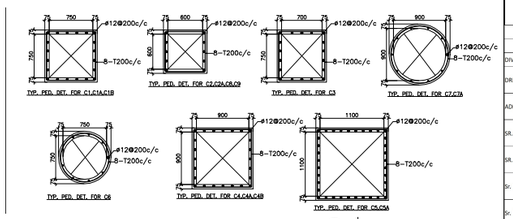
CATEGORY : STRUCTURE

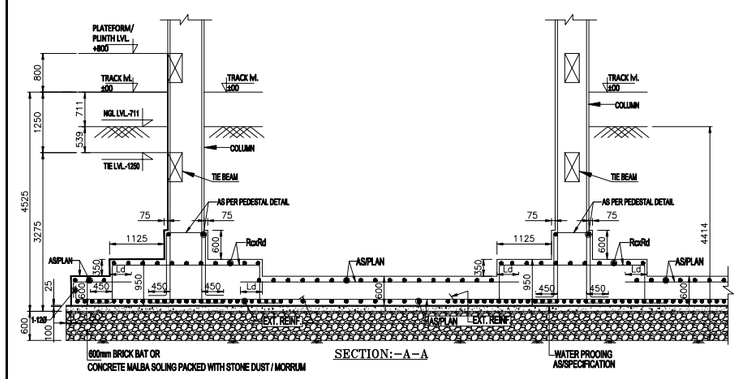
DWG NO. 20040-ST-RS-SD-DWG-102

REV. NO : R1

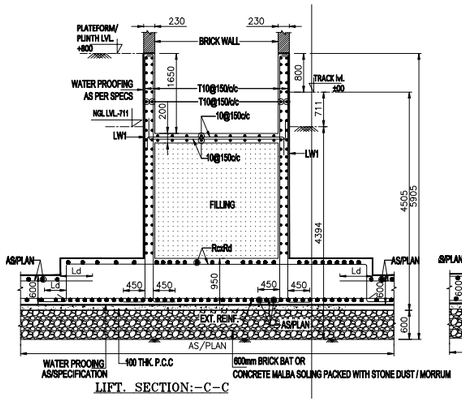


FOUNDATION LAYOUT PLAN
RAFT – 600
MESH:– 16@200C/C PLACED AT TOP & BOTTOM.
(NOT SHOWN IN PLAN FOR CLARITY)

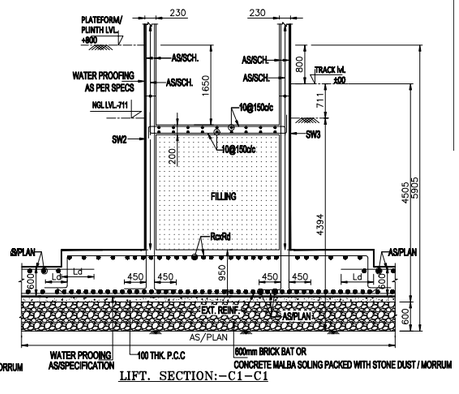




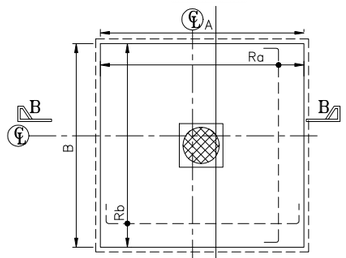
SECTION:–A–A



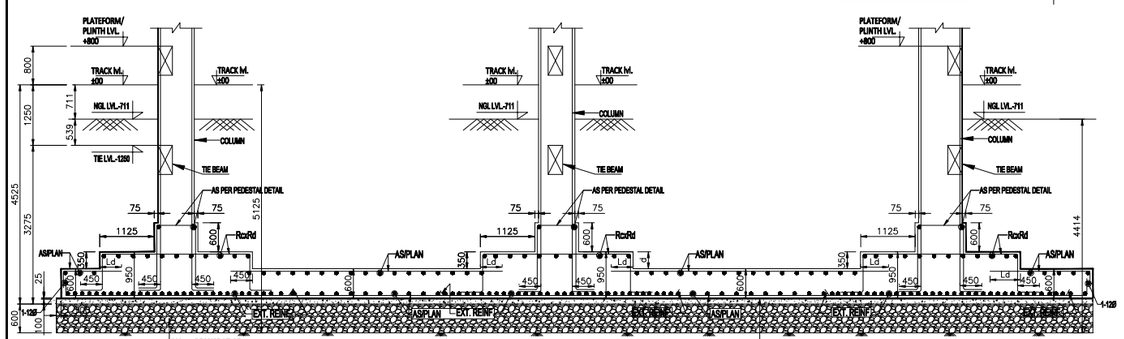
LIFT. SECTION:–C–C



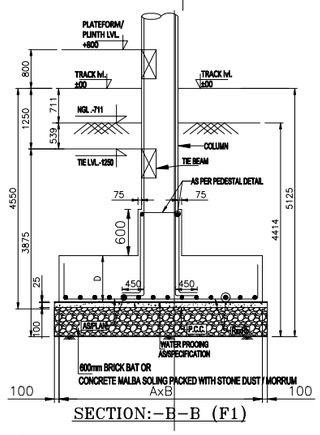
LIFT. SECTION:–C1–C1



ISOLATED TYPICAL FOOTING PLAN

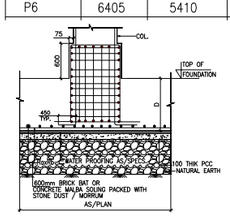


SECTION:–D–D



SECTION:–B–B (F1)

PEDESTAL SECHEDULE					PEDESTAL TOP REINF	
PEDESTAL NUMBER	PEDESTAL SIZE		DEPTH		SHORTER SPAN Rc	LONGER SPAN Rd
	Length	Breadth	RAFT (D)	ABOVE RAFT(d)		
P1	3000	3000	600	350	Φ12@150c/c	Φ12@150c/c
P2	3150	3150	600	350	Φ12@150c/c	Φ12@150c/c
P2A	5370	3150	600	350	Φ12@150c/c	Φ12@150c/c
P2B	11150	5410	600	350	Φ12@150c/c	Φ12@150c/c
P3	3150	3100	600	350	Φ12@150c/c	Φ12@150c/c
P3A	5385	3100	600	350	Φ12@150c/c	Φ12@150c/c
P4	3300	3300	600	350	Φ12@150c/c	Φ12@150c/c
P4A	6240	3300	600	350	Φ12@150c/c	Φ12@150c/c
P5	3500	3500	600	350	Φ12@150c/c	Φ12@150c/c
P6	6405	5410	600	350	Φ12@150c/c	Φ12@150c/c



TYPICAL PEDESTAL SECTION

ISOLATED FOOTING SCHEDULE									
FOOTING NUMBER	PCC SIZE		FOOTING SIZE		DEPTH		BOTTOM REINF		TOP REINF	
	Length(L)	Breadth(B)	Length(L)	Breadth(B)	D	d	SHORTER SPAN (A) Ra	LONGER SPAN (B) Rb	SHORTER SPAN (A) Rc	LONGER SPAN (B) Rd
F1	4400	4400	4200	4200	800	---	Φ12@75c/c	Φ12@75c/c	Φ12@200c/c	Φ12@200c/c

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REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/W/WCR/JBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA	CE/SD/WCR
ADRM INFRA /KOTA	DY.CE/SD/WCR
Sr. DEN(Co.)/KOTA	CEE (EEM)/WCR
Sr.DEN(SD)/KOTA	CSTE/PROJ/WCR
Sr. DOM/KOTA	CCM(PS)/WCR
Sr. DCM/KOTA	
Sr.DEE/G/KOTA	
Sr. DSTE(Co.)/KOTA	
Sr.DEE(TRD)/KOTA	
DEN/E/KOTA	JE/DRG/HQ/JBP
ADEN(SD)/KOTA	DRAWING NO.

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
08.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R1	LIFT AND STAIRCASE ADDED AS/ARCH. DWG	S.P	RS	JS

CLIENT : West Central Railway

CONTRACTOR : ZETWERK MAXIMIZE MANUFACTURING / YFC PROJECTS
M/S ZMBPL-YFC (JV)

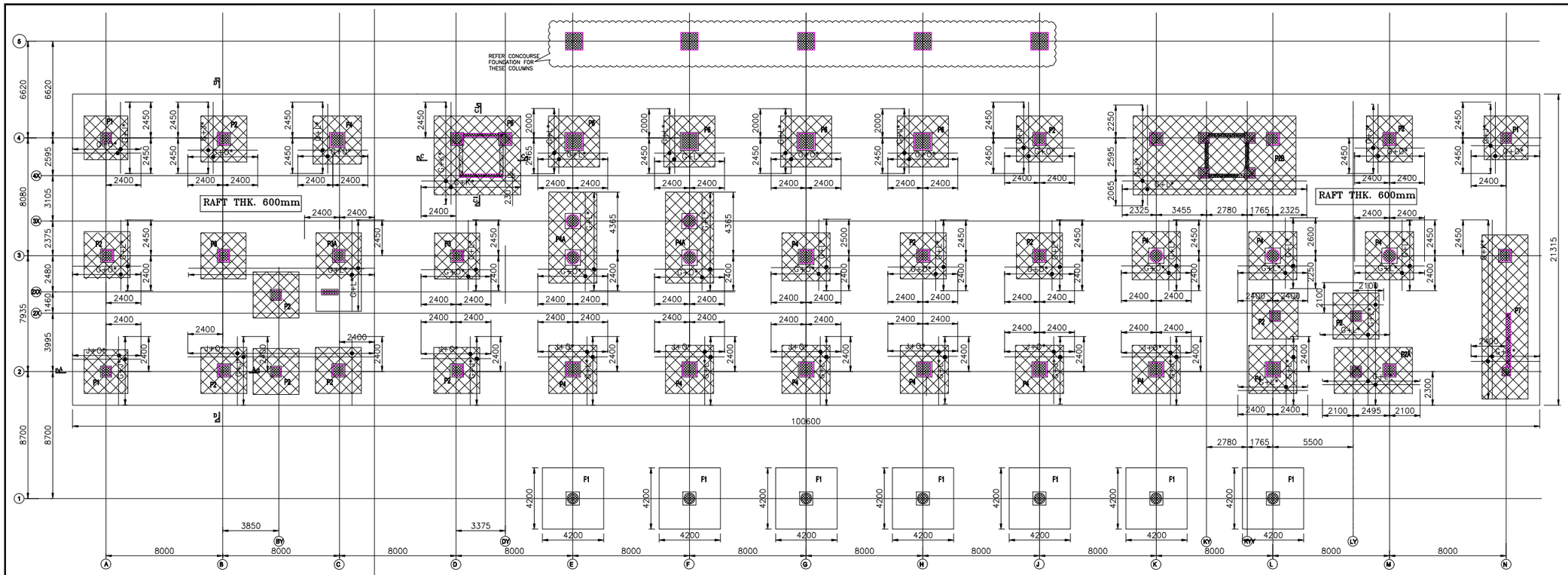
PROJECT : MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT : DESIGN FORUM OF ARCHITECTS www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR | MEP HEAD: ER. PUNIT SHARMA | STRUCTURE HEAD: ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	24.05.2023
	SCALE @ A1 1:100	VETTED DRAWING FROM I.I.T.ROORKEE	

DRWING TITLE: REAR RAILWAY STAION FOUNDATION PLAN AND DETAILS,
CATEGORY : STRUCTURE
DWG NO. 20040-ST-RS-SD-DWG-103
REV. NO : R1



RAFT BOTTOM EXT. REINF. PLAN
MESH:– 16@200C/C PLACED AT BOTTOM.
(NOT SHOWN IN PLAN FOR CLARITY)

MESH:– 16@200C/C PLACED AT TOP & BOTTOM.
(NOT SHOWN IN PLAN FOR CLARITY)

(RAFT REINF.SCHEDULE)

LEGEND	DESCRIPTION	LAYER	LOCATION
A	20@200c/c	1ST/2ND LAYER	TOP RAFT EXT.
B	16@200c/c	1ST/2ND LAYER	TOP RAFT EXT.
C*	20@100c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
D	12@200c/c	1ST/2ND LAYER	BOTTOM MESH
E	12@200c/c	1ST/2ND LAYER	TOP MESH
F	16@200c/c	1ST/2ND LAYER	TOP RAFT EXT.
G	20@200c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
H*	20@200c/c	3RD/4TH LAYER	TOP. RAFT EXT.
J	16@200c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
J*	16@200c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
K*	25@100c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
L*	16@100c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
M	12@200c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
N	25@400c/c+ 20@400c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
O*	12@200c/c	3RD/4TH LAYER	BOTT. RAFT EXT.

* INDINCATES BAR IN 3RD/4TH LAYERS.
----- SHOWS BOTTOM REINF.

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Asst. Professor, IIT ROORKEE

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H.Q. WCR DRG. No. GM/W/WCR/JBP/.....

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Sr. DOM/KOTA.....	CCM(PS)/WCR.....
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Sr.DEE(TRD)/KOTA.....	
DEN/E/KOTA.....	JE/DRG/HQ/JBP.....
ADEN(SD)/KOTA.....	DRAWING NO.:.....

REVISIONS

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09.06.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
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M/S ZMBPL-YFC (JV)

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MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :
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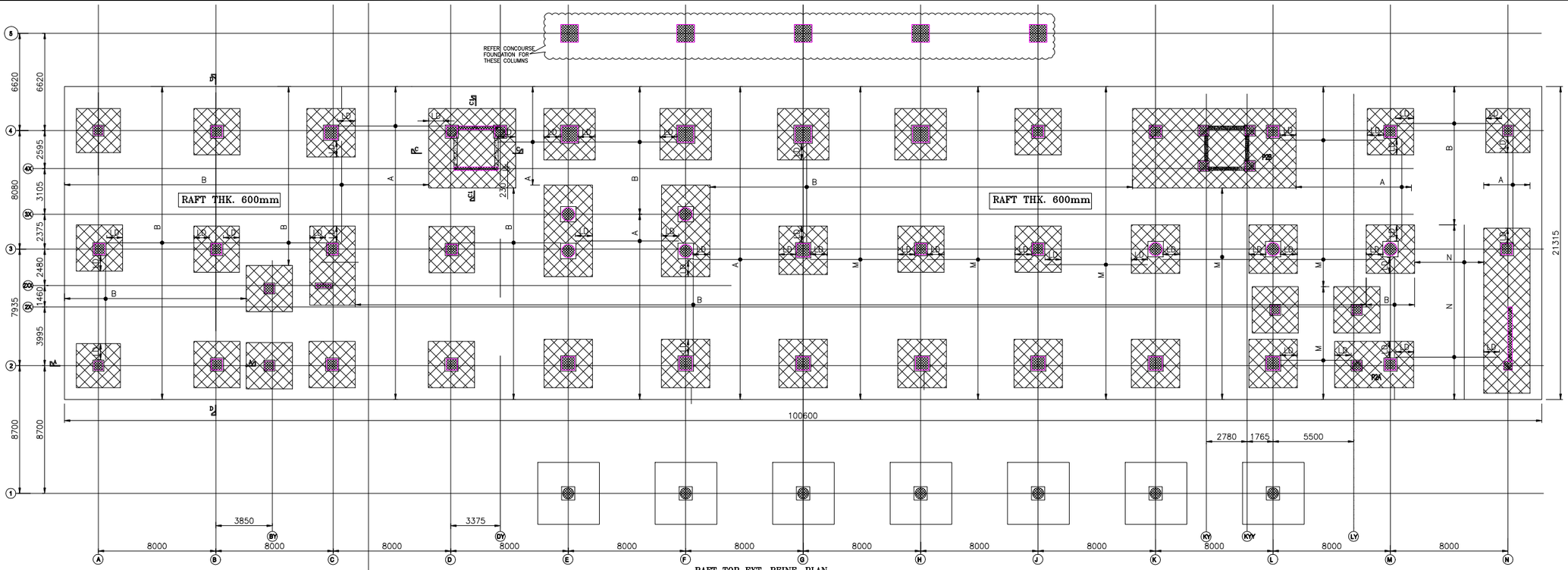
STAMP/SIGN :DESIGN DIRECTOR | MEP HEAD: ER. PUNIT SHARMA | STRUCTURE HEAD: ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	15.05.2023
	SCALE @ A1 1:100	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: REAR RAILWAY STAION RAFT BOTTOM EXT. REINF. PLAN
CATEGORY : STRUCTURE
DWG NO. 20040-ST-RS-SD-DWG-104
REV. NO : R1



RAFT TOP EXT. REINF. PLAN
MESH:– 16@200C/C PLACED AT TOP.
(NOT SHOWN IN PLAN FOR CLARITY)

MESH:– 16@200C/C PLACED AT TOP & BOTTOM.
(NOT SHOWN IN PLAN FOR CLARITY)

(RAFT REINF.SCHEDULE)

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D	12@200c/c	1ST/2ND LAYER	BOTTOM MESH
E	12@200c/c	1ST/2ND LAYER	TOP MESH
F	16@200c/c	1ST/2ND LAYER	TOP RAFT EXT.
G	20@200c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
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J	16@200c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
J*	16@200c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
K*	25@100c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
L*	16@100c/c	3RD/4TH LAYER	BOTT. RAFT EXT.
M	12@200c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
N	25@400c/c+ 20@400c/c	1ST/2ND LAYER	BOTT. RAFT EXT.
O*	12@200c/c	3RD/4TH LAYER	BOTT. RAFT EXT.

* INDINCATES BAR IN 3RD/4TH LAYERS.
– – – – – SHOWS BOTTOM REINF.
——— SHOWS TOP REINF.

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4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe–500 & 500 D) conforming to 1786–1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows
(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm
6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS – 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick .

(FOUNDATION)
1. Grade of concrete and steel shall be M35 & Fe500 respectively.
2. The layout of building shall be as per relevant Arch drg.
3. Earth below foundation shall be properly compacted before laying lean concrete

(COLUMNS)
1. Grade of concrete and steel shall be M35 & Fe500 respectively
2. Links in column shall be provided at uniform spacing,between beam–column junction.
3. Over laps shall be restricted to only middle zone of the columns.
4. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
5. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length.

(GENERAL)
1. The building foundation is designed for (G+3) Floor for future extension.
2. Building is designed for SBC 8.0 TON/SQM @ 4.0M BELOW N.G.L
3. The structure has been designed for seismic zone– II.
4. Design temperature for casting has been considered to be within the range of 16° – 34° c and if concreting is done beyond these temperatures, appropriate measures should be taken to maintain the temperature of concrete in these limits.

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/W/WCR/JBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA	CE/SD/WCR.....
ADRM INFRA /KOTA.....	DY.CE/SD/WCR.....
SR. DEN(Co.)/KOTA.....	CEE (EEM)/WCR.....
SR.DEN/SD/KOTA.....	CSTE/PROJ/WCR.....
Sr. DOM/KOTA.....	CCM(PS)/WCR.....
Sr. DCM/KOTA.....	
Sr.DEE/G/KOTA.....	
Sr. DSTE(Co.)/KOTA.....	
Sr.DEE(TRD)/KOTA.....	
DEN/E/KOTA.....	JE/DRG/HQ/JBP.....
ADEN(SD)/KOTA.....	DRAWING NO.....R1

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
09.06.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.06.2023	R1	LIFT AND STAIRCASE ADDED AS/ARCH. DWG	S.P	RS	JS

CLIENT : West Central Railway

CONTRACTOR : ZETWERK MAXIMIZE MANUFACTURING, YFC PROJECTS
M/S ZMBPL-YFC (JV)

PROJECT : MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

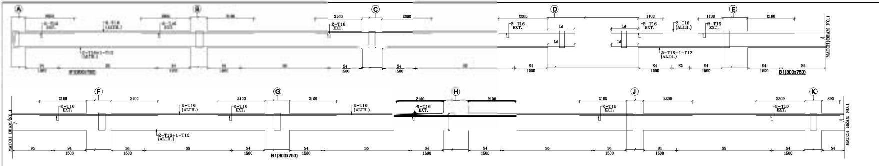
CONSULTANT : DESIGN FORUM OF ARCHITECTS www.dfa.in

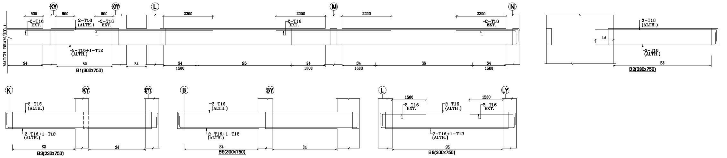
STAMP/SIGN :DESIGN DIRECTOR | MEP HEAD: ER. PUNIT SHARMA | STRUCTURE HEAD: ER. SHASHI

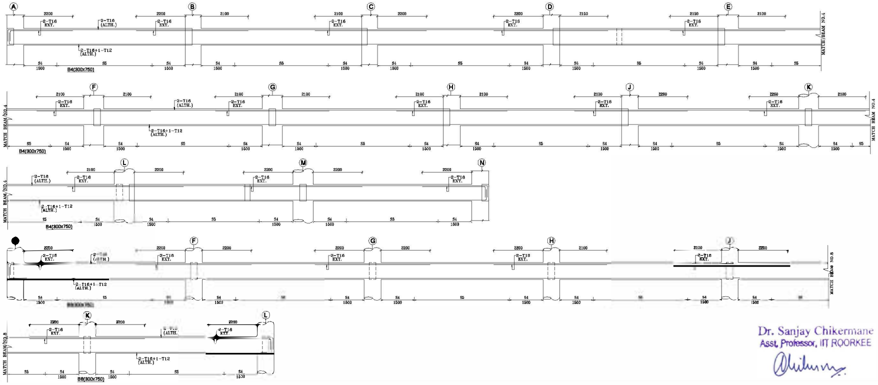
STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	15.05.2023
	SCALE @ A1 1:100	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: REAR RAILWAY STAION RAFT TOP EXT. REINF. PLAN
CATEGORY : STRUCTURE
DWG NO. 20040-ST-RS-SD-DWG-104
REV. NO : R1

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE







(STIRRUPS SCHEDULE)

(MARK)	(DESCRIPTION)
S1	T8-(2L)@100c/c
S2	T8-(2L)@125c/c
S3	T8-(2L)@150c/c
S4	T8-(2L)@175c/c
S5	T8-(2L)@200c/c
S6	T10-(2L)@100c/c
S7	T10-(2L)@125c/c
S8	T10-(2L)@150c/c
S9	T10-(2L)@175c/c
S10	T10-(2L)@200c/c
S11	T8-(4L)@100c/c
S12	T8-(4L)@125c/c
S13	T10-(4L)@100c/c
S14	T10-(4L)@125c/c

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
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9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick .

(FOUNDATION)

1. Grade of concrete and steel shall be M40 & Fe500 respectively.
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3. Earth below foundation shall be properly compacted before laying lean concrete

(COLUMNS)

1. Grade of concrete and steel shall be M40 & Fe500 respectively
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(GENERAL)

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DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M40	39 X d	31 X d
M35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WCR/JBP/..................

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA---------------------	CE/SD/WCR---------------------
ADRM INFRA/KOTA---------------------	DY.CE/SD/WCR---------------------
SR. DEN(Co.)/KOTA---------------------	CEE (EDM)/WCR---------------------
SR.DEN/SD/KOTA---------------------	CSTE/PROJ/WCR---------------------
Sr. DOM/KOTA---------------------	COM/PS/WCR---------------------
Sr. DCM/KOTA---------------------	
Sr.DEE/G/KOTA---------------------	
Sr. DSTE(Co.)/KOTA---------------------	
Sr.DEE(TRD)/KOTA---------------------	
DEN/E/KOTA---------------------	IE/DRG/HQ/JBP---------------------
ADEN(SD)/KOTA---------------------	DRAWING NO..................

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
08.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R0	LIFT AND STAIRCASE ADDED AS ARCH. DWG	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

STAMP/SIGN :DESIGN DIRECTOR | MEP HEAD: ER. PUNIT SHARMA | STRUCTURE HEAD: ER. GHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2023
	SCALE @ A1 1:50	VETTED DRAWING FROM I.I.T.ROORKEE	

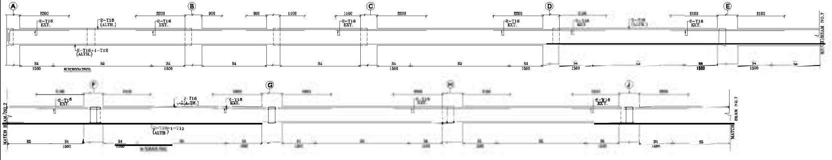
DRAWING TITLE: REAR RAILWAY STAION TIE LVL. BEAM DETAILS

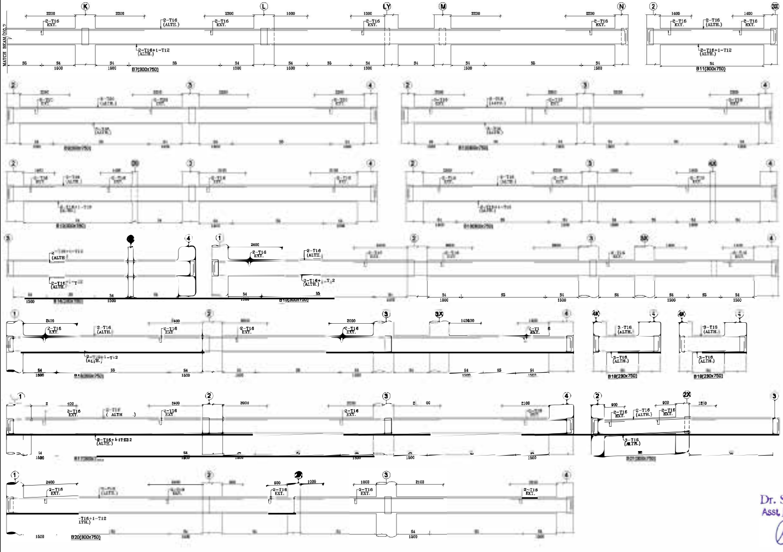
CATEGORY : STRUCTURE

DWG NO. 20040-ST-RS-SD-DWG-105A

REV. NO : R0

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE





(STIRRUPS SCHEDULE)

(MARK)	(DESCRIPTION)
S1	T8–(2L)@100c/c
S2	T8–(2L)@125c/c
S3	T8–(2L)@150c/c
S4	T8–(2L)@175c/c
S5	T8–(2L)@200c/c
S6	T10–(2L)@100c/c
S7	T10–(2L)@125c/c
S8	T10–(2L)@150c/c
S9	T10–(2L)@175c/c
S10	T10–(2L)@200c/c
S11	T8–(4L)@100c/c
S12	T8–(4L)@125c/c
S13	T10–(4L)@100c/c
S14	T10–(4L)@125c/c

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
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DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WCR/JBP/..................

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA------------------	CE/SD/WCR------------------
ADRM INFRA/KOTA------------------	DY.CE/SD/WCR------------------
Sr. DEN(Co.)/KOTA------------------	CEE (GEN)/WCR------------------
SR.DEN/SD/KOTA------------------	CSTE/PROJ/WCR------------------
Sr. DOM/KOTA------------------	COM(PS)/WCR------------------
Sr. DCM/KOTA------------------	
Sr.DEE/G/KOTA------------------	
Sr. DSTE(Co.)/KOTA------------------	
Sr.DEE(TRD)/KOTA------------------	
DEN/E/KOTA------------------	JE/DRG/HQ/JBP------------------
ADEN(SD)/KOTA------------------	DRAWING NO. ....

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
08.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R0	LIFT AND STAIRCASE ADDED AS ARCH. DWG	S.P	RS	JS

CLIENT : West Central Railway

CONTRACTOR : ZETWERK MAXIMIZE MANUFACTURING / YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :
MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT : dfA DESIGN FORUM OF ARCHITECTS www.dfa.in

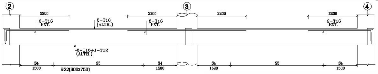
STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	ER. SHASHI

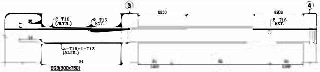
STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2023
	SCALE @ A1 1:50	VETTED DRAWING FROM I.I.T.ROORKEE	

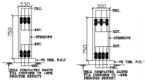
Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

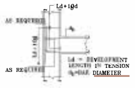
DRAWING TITLE	CATEGORY :
REAR RAILWAY STAION TIE LVL. BEAM DETAILS	STRUCTURE

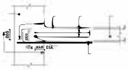
DWG NO.	REV. NO :
20040-ST-RS-SD-DWG-105B	R0

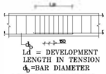




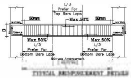








LAP DETAIL IN BEAM



(STIRRUPS SCHEDULE)

(MARK)	(DESCRIPTION)
S1	T8-(2L)@100c/c
S2	T8-(2L)@125c/c
S3	T8-(2L)@150c/c
S4	T8-(2L)@175c/c
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S7	T10-(2L)@125c/c
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S9	T10-(2L)@175c/c
S10	T10-(2L)@200c/c
S11	T8-(4L)@100c/c
S12	T8-(4L)@125c/c
S13	T10-(4L)@100c/c
S14	T10-(4L)@125c/c

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(FOUNDATION)

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DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WCR/JBP/..................

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA------------------------	CE/SD/WCR------------------------
ADRM INFRA/KOTA------------------------	DY.CE/SD/WCR------------------------
Sr.DEE(TRD)/KOTA------------------------	
DEN/E/KOTA------------------------	JE/DRG/HQ/JBP--------------
ADEN(SD)/KOTA------------------------	DRAWING NO. ....

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
08.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R0	LIFT AND STAIRCASE ADDED AS ARCH. DWG	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING

YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

DESIGN FORUM OF ARCHITECTS www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2023
	SCALE @ A1 1:50	VETTED DRAWING FROM I.I.T.ROORKEE	

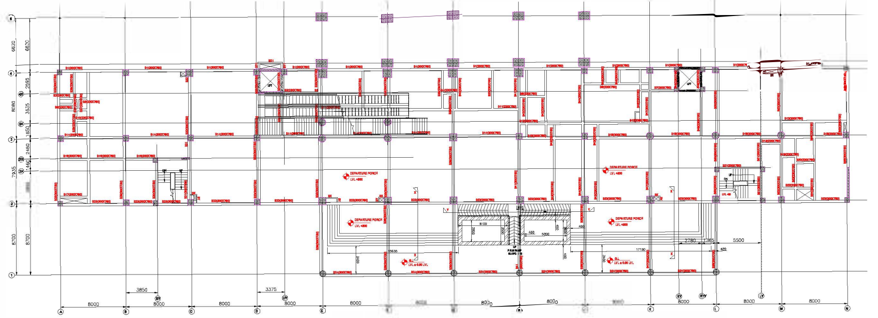
DRAWING TITLE: REAR RAILWAY STAION TIE LVL. BEAM DETAILS

CATEGORY : STRUCTURE

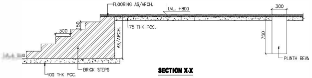
DWG NO. 20040-ST-RS-SD-DWG-105C

REV. NO : R0

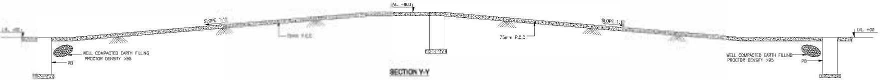
Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE



FRAMING PLAN AT GROUND FLOOR LVL. +800



SECTION X-X



SECTION Y-Y

General

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MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M40	39 X d	31 X d
M35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/WWCR/JBP/.................

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA----------------	CE/SD/WCR----------------
ADRM INFRA/KOTA----------------	DY.CE/SD/WCR----------------
SR. DEN(Co.)/KOTA----------------	CEE (EDM)/WCR----------------
SR.DEN/SD/KOTA----------------	CSTE/PROJ/WCR----------------
Sr. DOM/KOTA----------------	COM/PS/WCR----------------
Sr. DCM/KOTA----------------	
Sr.DEE/G/KOTA----------------	
Sr. DSTE(Co.)/KOTA----------------	
Sr.DEE(TRD)/KOTA----------------	
DEN/E/KOTA----------------	IE/DRG/HQ/JBP----------------
ADEN(SD)/KOTA----------------	DRAWING NO. ....

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
08.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R1	LIFT AND STAIRCASE ADDED AS/ARCH. DWG	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING

YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

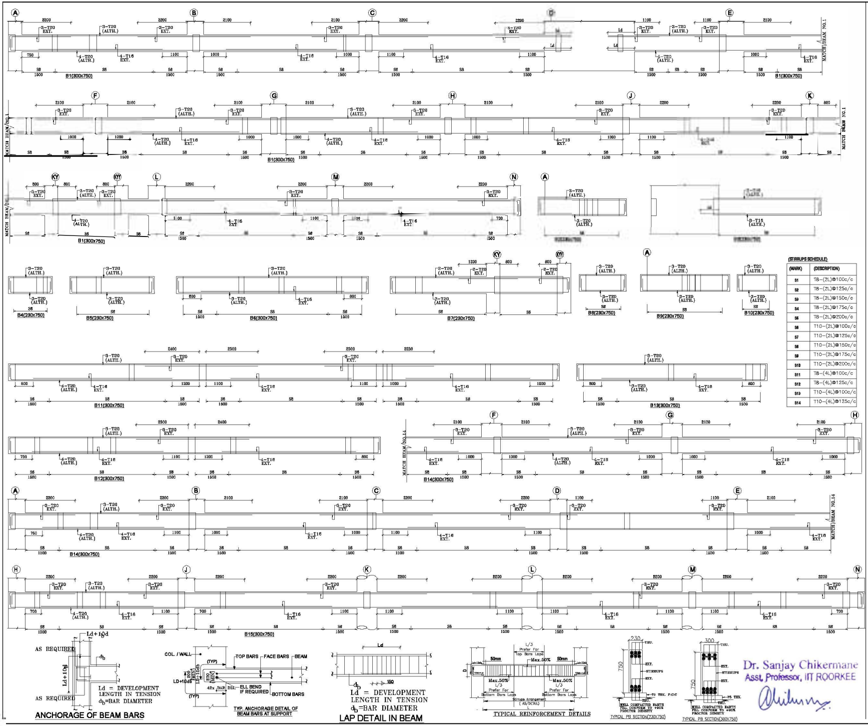
dfA DESIGN FORUM OF ARCHITECTS www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	12.09.2023
	SCALE @ A1 1:150	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE	REAR RAILWAY STAION GROUND FLOOR FRAMING PLAN	CATEGORY : STRUCTURE
DWG NO.	20040-ST-RS-SD-DWG-106	REV. NO : R1

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE



(STIRRUPS SCHEDULE)

(MARK)	(DESCRIPTION)
S1	T8-(2L)@100c/c
S2	T8-(2L)@125c/c
S3	T8-(2L)@150c/c
S4	T8-(2L)@175c/c
S5	T8-(2L)@200c/c
S6	T10-(2L)@100c/c
S7	T10-(2L)@125c/c
S8	T10-(2L)@150c/c
S9	T10-(2L)@175c/c
S10	T10-(2L)@200c/c
S11	T8-(4L)@100c/c
S12	T8-(4L)@125c/c
S13	T10-(4L)@100c/c
S14	T10-(4L)@125c/c

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5. Clear cover of outer layer reinf shall be as follows
(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm
6. End side cover of all reinforcement in beams - 30mm & slab - 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick .

(FOUNDATION)
1. Grade of concrete and steel shall be M40 & Fe500 respectively.
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(COLUMNS)
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SR. DEN(Co)/KOTA---------------	CEE (GEM)/WCR---------------
SR.DEN/SD/KOTA---------------	CSTE/PROJ/WCR---------------
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Sr.DEE(TRD)/KOTA---------------	
DEN/E/KOTA---------------	SE/DRG/HQ/JBP---------------
ADEN(SD)/KOTA---------------	DRAWN NO.---------------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY

CLIENT :
West Central Railway

CONTRACTOR :
ZETWERK
MAXIMIZE MANUFACTURING
YFC PROJECTS
M/S ZMBPL-YFC (JV)

PROJECT :
MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :
DESIGN FORUM OF ARCHITECTS
www.dfa.in

STAMP/SIGN :DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
	ER. PUNIT SHARMA	ER. SHASHI

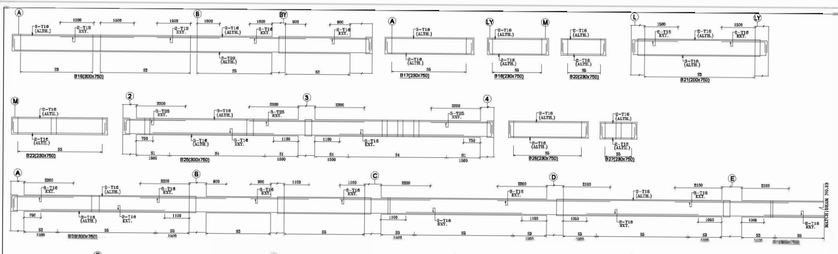
STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2023
	SCALE @ A1 1:50	VETTED DRAWING FROM I.I.T.ROORKEE	

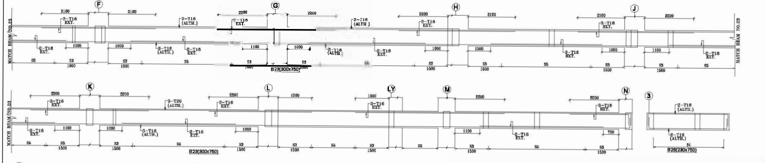
DRAWING TITLE: REAR RAILWAY STAION GROUND FLOOR BEAM DETAIL

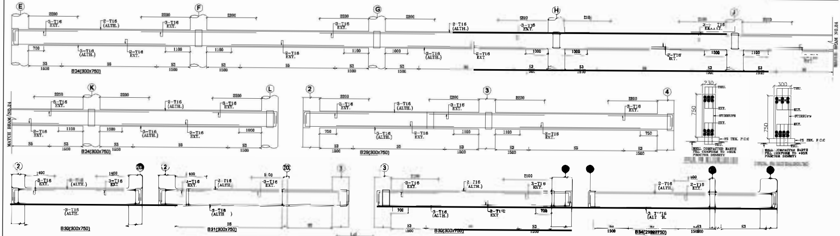
CATEGORY : STRUCTURE

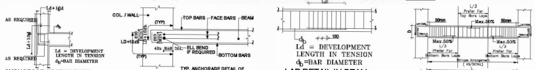
DWG NO.: 20040-ST-RS-SD-DWG-106A

REV. NO : R1









ANCHORAGE OF BEAM BARS

TYP. ANCHORAGE DETAIL OF BEAM BARS AT SUPPORT

LAP DETAIL IN BEAM

TYPICAL REINFORCEMENT DETAILS

Dr. Sanjay Chikermane
Asst. Professor, IIT ROORKEE

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H.Q. WCR DRG. No. GM/WCR/JBP/
WEST CENTRAL RAILWAY | KOTA DIVISION

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY

CLIENT : West Central Railway

CONTRACTOR : ZETWERK MAXIMIZE MANUFACTURING / YFC PROJECTS
M/S ZMBPL-YFC (JV)

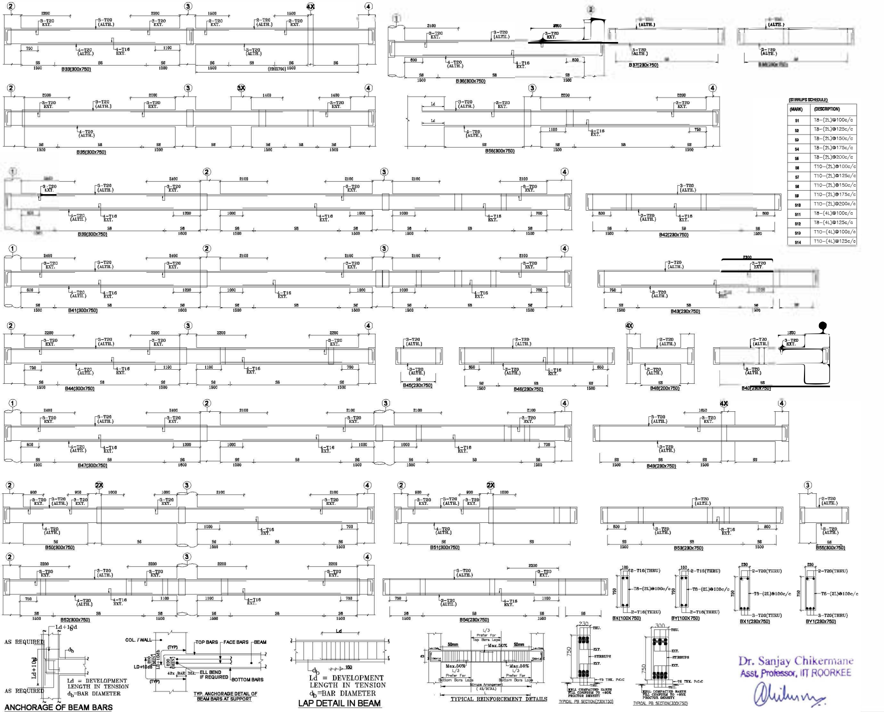
PROJECT : MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT : dfA DESIGN FORUM OF ARCHITECTS www.dfa.in

STAMP/SIGN DESIGN DIRECTOR | MEP HEAD: | STRUCTURE HEAD:

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2023
	SCALE @ A1 1:50	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: REAR RAILWAY STAION GROUND FLOOR BEAM DETAIL
CATEGORY : STRUCTURE
DWG NO. 20040-ST-RS-SD-DWG-106B
REV. NO : R1



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WEST CENTRAL RAILWAY	KOTA DIVISION
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Sr.DEE(TRD)/KOTA------------------	
DEN/E/KOTA------------------	JE/DRG/HQ/JBP------------------
ADEN(SD)/KOTA------------------	DRAWING NO..................

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY

CLIENT :

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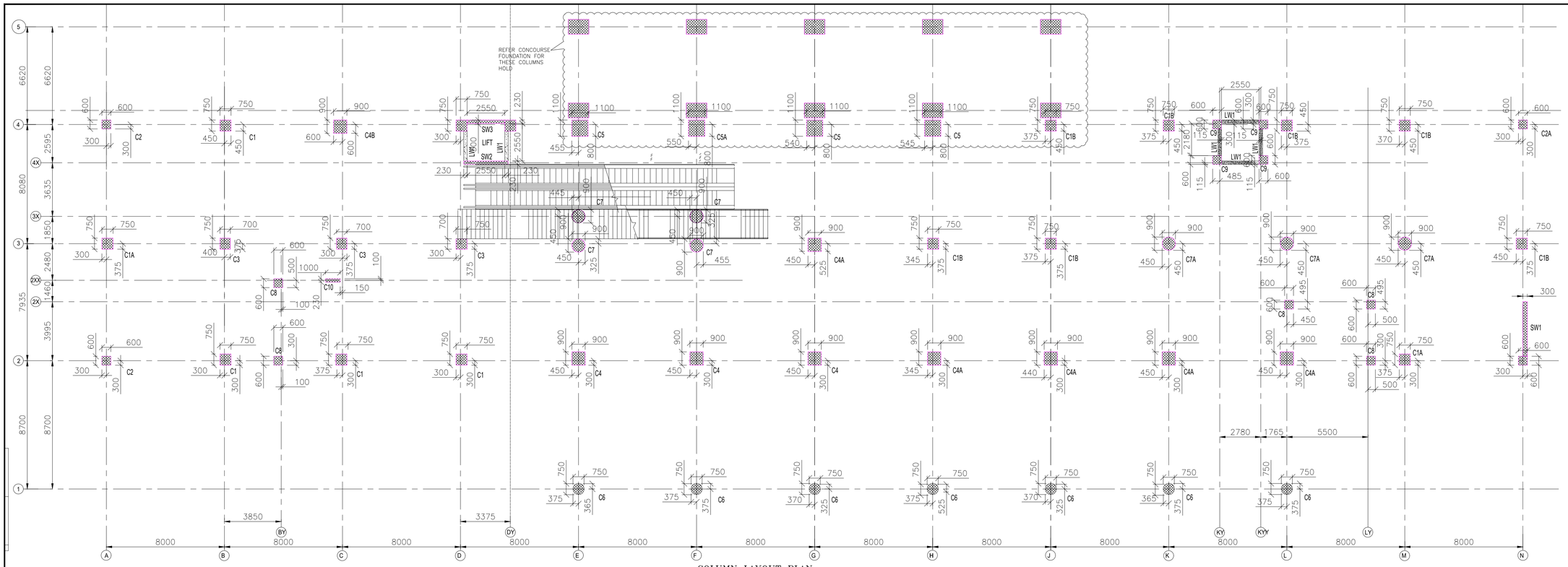
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	08.07.2025
	SCALE @ A1	VETTED DRAWING FROM I.I.T.ROORKEE	
	1:50		

DRAWING TITLE	REAR RAILWAY STAION GROUND FLOOR BEAM DETAIL	CATEGORY : STRUCTURE
DWG NO.	20040-ST-RS-SD-DWG-106C	REV. NO : R1



COLUMN LAYOUT PLAN

COLUMN SCHEDULE (STIRRUPS T8@225c/c)

COLUMN MKD.	C1	C1A	C1B	C2	C2A	C3	C4	C4A	C4B	C5	C5A	C6
FIRST FLOOR TERMINATION LVL. SIZE	(750X750)	(750X750)	(750X750)	(600X600)	(600X600)	(750X700)	(900X900)	(900X900)	(900X900)	(1100X1100)	(1100X1100)	(750-DIA)
MAIN REINF	α=20-T32+ b=4-T25	α=4-T32+ b=20-T25	α=12-T25+ b=12-T20	α= 4-T32+ b= 16-T25	α= 20-T20	α= 8-T32+ b=16-T25	α=20-T25+ b=12-T20	α=4-T25+ b=28-T20	α=12-T32+ b=20-T25	α= 20-T32+ b= 20-T25	α= 20-T32+ b= 20-T25	15-T25
TIES SET	7/SETS (α+4b+2c)	7/SETS (α+4b+2c)	7/SETS (α+4b+2c)	5/SETS (α+4b)	5/SETS (α+4b)	7/SETS (α+4b+2c)	9/SETS (α+6b+2c)	9/SETS (α+6b+2c)	9/SETS (α+6b+2c)	11/SETS (α+8b+2c)	11/SETS (α+8b+2c)	3/SETS (α+2b)
TIE GROUP	1	1	1	1	1	1	1	1	1	1	1	1
CONC. MIX	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40
FOUNDATION TO FIRST FLOOR SIZE	(750X750)	(750X750)	(750X750)	(600X600)	(600X600)	(750X700)	(900X900)	(900X900)	(900X900)	(1100X1100)	(1100X1100)	(750X750)
MAIN REINF	α=20-T32+ b=4-T25	α=4-T32+ b=20-T25	α=12-T25+ b=12-T20	α= 4-T32+ b= 16-T25	α= 20-T20	α= 8-T32+ b=16-T25	α=20-T25+ b=12-T20	α=4-T25+ b=28-T20	α=12-T32+ b=20-T25	α= 20-T32+ b= 20-T25	α= 52-T32	15-T25
TIES SET	7/SETS (α+4b+2c)	7/SETS (α+4b+2c)	7/SETS (α+4b+2c)	5/SETS (α+4b)	5/SETS (α+4b)	7/SETS (α+4b+2c)	9/SETS (α+6b+2c)	9/SETS (α+6b+2c)	9/SETS (α+6b+2c)	11/SETS (α+8b+2c)	11/SETS (α+8b+2c)	3/SETS (α+2b)
TIE GROUP	1	1	1	1	1	1	1	1	1	1	1	1
CONC. MIX	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40	M-40

COLUMN SCHEDULE (STIRRUPS T8@225c/c)

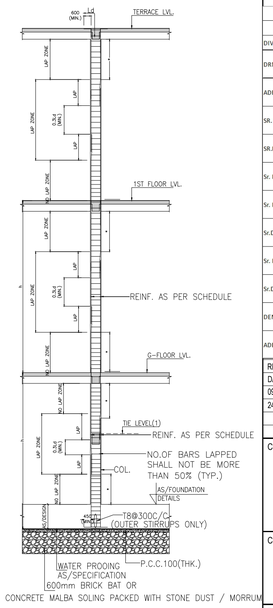
COLUMN MKD.	C7	C7A	C8	C9	C10
FIRST FLOOR TERMINATION LVL. SIZE	(900-DIA)	(900-DIA)	(600X600)	(600X600)	(230X1000)
MAIN REINF	α= 20-T32	α= 4-T25+ b=16-T20	α= 4-T32+ b= 16-T25	α= 20-T20	α= 20-T25
TIES SET	3/SETS (α+2b)	3/SETS (α+2b)	5/SETS (α+4b)	5/SETS (α+4b)	5/SETS (α+4b)
TIE GROUP	1	1	1	1	1
CONC. MIX	M-40	M-40	M-40	M-40	M-40
FOUNDATION TO FIRST FLOOR SIZE	(900-DIA)	(900-DIA)	(600X600)	(600X600)	(230X1000)
MAIN REINF	α= 20-T32	α= 4-T25+ b=16-T20	α= 4-T32+ b= 16-T25	α= 20-T20	α= 20-T25
TIES SET	3/SETS (α+2b)	3/SETS (α+2b)	5/SETS (α+4b)	5/SETS (α+4b)	5/SETS (α+4b)
TIE GROUP	1	1	1	1	1
CONC. MIX	M-40	M-40	M-40	M-40	M-40

SHEAR WALL SCHEDULE (STIRRUPS T8@225c/c)

COLUMN MKD.	SW1	SW2	SW3
FIRST FLOOR TERMINATION SIZE	(AS/PLAN)	(230x3010)	(AS/PLAN)
MAIN REINF	α=35-T32+ b=30-T25+ c=32-T20	α=14-T25+ b=32-T12	α=48-T32+ b=52-T20
TIES SET	29/SETS (α+7b+16c+4d+e)	22/SETS (α+9b+c6)	39/SETS (α+26b+8c+4d)
TIE GROUP	1	1	1
CONC. MIX	M-40	M-40	M-40
FOUNDATION TO FIRST FLOOR SIZE	(AS/PLAN)	(230x3010)	(AS/PLAN)
MAIN REINF	α=35-T32+ b=30-T25+ c=32-T20	α=14-T25+ b=32-T12	α=48-T32+ b=52-T20
TIES SET	29/SETS (α+7b+16c+4d+e)	22/SETS (α+9b+c6)	39/SETS (α+26b+8c+4d)
TIE GROUP	1	1	1
CONC. MIX	M-40	M-40	M-40

1) TIES SPACING OF ALL COLUMN IS 150mm IN BOTH ZONE (LAPPING & NON LAPPING
2) Ld-FOR 500 39d
3) Ld-FOR 550 36d

TIES SCHEDULE	TIE GROUP 1
	T8@225c/c



TYP.SECTION THROUGH COLUMN

(α) FOR COLUMNS:-
*-DISTANCE SHOULD BE h/6 OR LARGER LATERAL DIMENSION OF COLUMN WHICHEVER IS BIGGER.

General

1. All Dimension are in mm unless otherwise mentioned.
2. Only figured dimensions are to be followed.
3. Any discrepancy in the drawings,shall be brought to the notice of consultant and clarification obtained in writing prior to execution of work.
4. High yield strength deformed bars of yield stress 500 KN/m2 (Fe-500 & 500 D) conforming to 1786-1985 shall be used as reinforcement.
5. Clear cover of outer layer reinf shall be as follows

(a) Footing = 50 mm (b) Column = 40mm (c) Beam = 30mm (d) Slab = 25mm

6. End side cover of all reinforcement in beams = 30mm & slab = 25mm
7. The cover block of cement mortar shall be used to esure the required cover to reinforcement.
8. Necessary fixture for electrical,plumbing,etc shall be placed in position in slab,beams before execution as per relevant drawings.
9. P.C.C of grade 1:3:6 shall be provided wherever required.
10. All plain concrete & RCC shall be strictly in accordance with the provisions of IS - 456:2000
11. Design life of the structure shall be 70 Years
12. The wall shall be of AAC blocks of 200 mm and 100 mm width
13. PCC Thickness to be minimum 100mm thick .

(FOUNDATION)

1. Grade of concrete and steel shall be M35 & Fe500 respectively.
2. The layout of building shall be as per relevant Arch drg.
3. Earth below foundation shall be properly compacted before laying lean concrete

(COLUMNS)

1. Grade of concrete and steel shall be M40 & Fe500 respectively
2. Links in column shall be provided at uniform spacing,between beam-column junction.
3. Over laps shall be restricted to only middle zone of the columns.
4. Not more than 50% of bars shall be overlapped at any section and laps shall be staggered.
5. Longitudinal bars of RCC columns shall be extended upto top of beam & bent into slab by development length.

(GENERAL)

1. The building foundation is designed for (G+3) Floor for future extension.
2. Building is designed for SBC 8.0 TON/SQM @ 4.0M BELOW N.G.L
3. The structure has been designed for seismic zone- II.
4. Design temperature for casting has been considered to be within the range of 16° - 34° c and if concreting is done beyond these temperatures, appropriate measures should be taken to maintain the temperature of concrete in these limits.

DEVELOPMENT LENGTH FOR REINFORCEMENT (FOR Fe500) TOR STEEL

MIX OF CONC.	BAR IN TENSION & BENDING	BAR IN COMPRESSION
M 40	39 X d	31 X d
M 35	44 X d	35 X d

REFER THIS DRG. IN CORRELATION TO ARCHITECTURAL DRAWINGS.

H.Q. WCR DRG. No. GM/W/WCR/JIBP/.....

WEST CENTRAL RAILWAY	KOTA DIVISION
DIVISION SIGNATURE	H.Q. SIGNATURE
DRM/KOTA----------	CE/SD/WCR----------
ADRM INFRA./KOTA----------	DY.CE/SD/WCR----------
SR. DEN(Co.)/KOTA----------	CEE (EEM)/WCR----------
SR.DEN/SD/KOTA----------	CSTE/PRO)/WCR----------
Sr. DOM/KOTA----------	CCM(PS)/WCR----------
Sr. DCM/KOTA----------	
Sr.DEE/G/KOTA----------	
Sr. DSTE(Co.)/KOTA----------	
Sr.DEE(TRD)/KOTA----------	
DEN/E/KOTA----------	JE/DRG/HQ/JBP----------
ADEN(SD)/KOTA----------	DRAWING NO.----------

REVISIONS

DATE	NO.	DESCRIPTION	DRN BY	CHK BY	APP BY
09.05.2023	R0	FOUNDATION DRAWINGS + ABOVE FOR APPROVAL	S.P	RS	JS
24.05.2023	R1	LIFT AND STAIRCASE ADDED AS/ARCH. DWG	S.P	RS	JS

CLIENT :

West Central Railway

CONTRACTOR :

ZETWERK MAXIMIZE MANUFACTURING — YFC PROJECTS

M/S ZMBPL-YFC (JV)

PROJECT :

MAJOR UPGRADATION OF KOTA RAILWAY STATION OF ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) MODE

CONSULTANT :

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STAMP/SIGN .DESIGN DIRECTOR	MEP HEAD:	STRUCTURE HEAD:
D:\Shared\Kota\dfd-logo.jpg D:\Shared\Kota\dfd-logo.jpg	ER. PUNIT SHARMA	For S&S DESIGN ASSOCIATION Authorised Signatory ER. SHASHI

STAGE :	DRAWN BY :	CHECKED BY :	DATE :
CONSTRUCTION REFERENCE DRAWING	S.P	R.S.	24.05.2023
	SCALE @ A1 1:100	VETTED DRAWING FROM I.I.T.ROORKEE	

DRAWING TITLE: REAR RAILWAY STAION COLUMN LAYOUT PLAN

CATEGORY : STRUCTURE

DWG NO. 20040-ST-RS-SD-DWG-101

REV. NO : R1