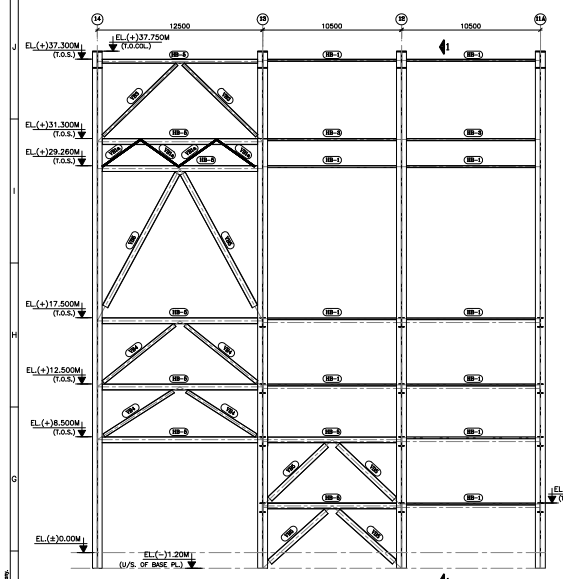
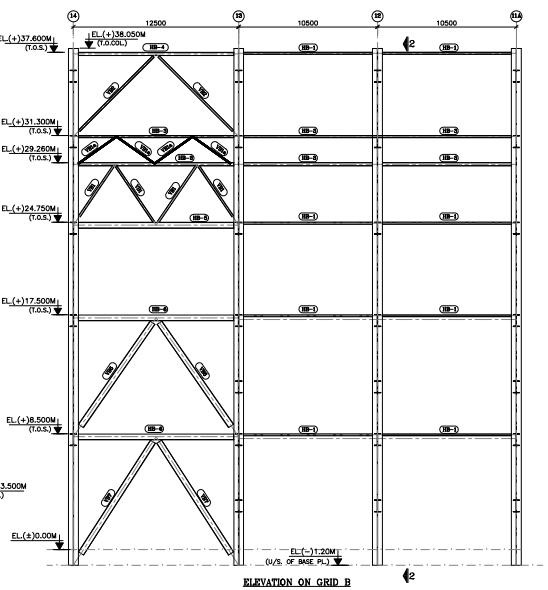
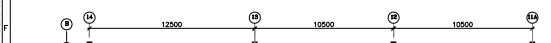


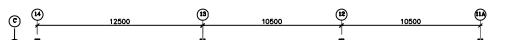
ELEVATION ON GRID A



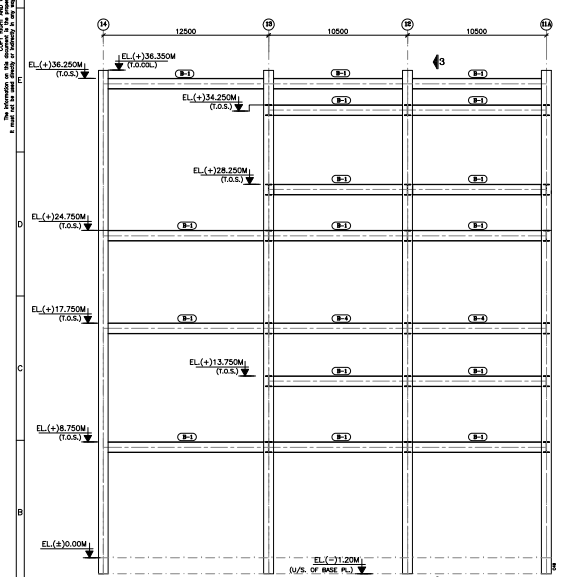
ELEVATION ON GRID B



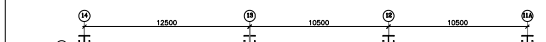
COLUMN PLAN ON AXIS – A



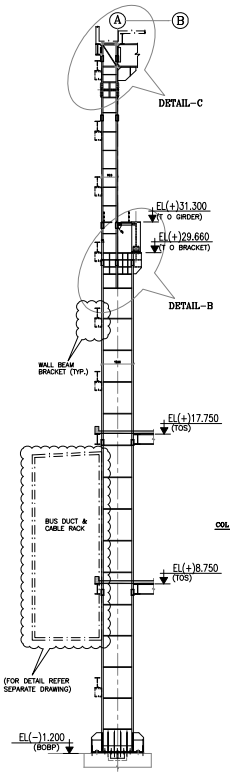
COLUMN PLAN ON AXIS – B



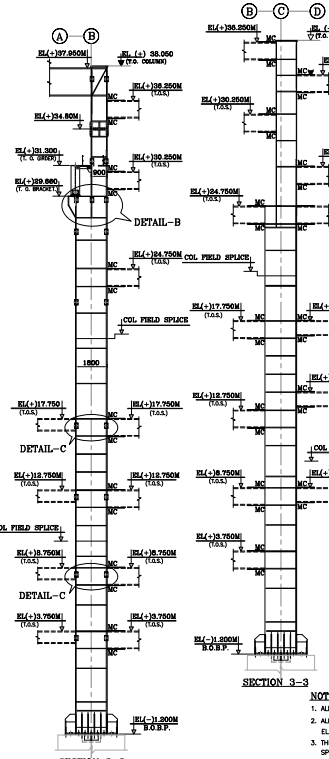
ELEVATION ON GRID C



COLUMN PLAN ON AXIS – C

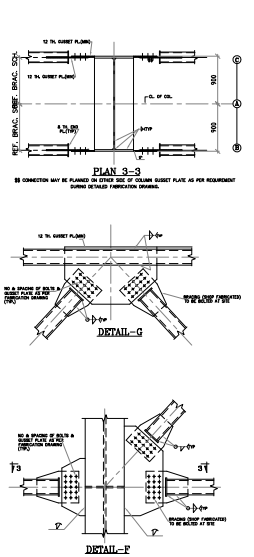


SECTION 1–1



SECTION 2–2

SECTION 3–3



A–ROW COLUMN SCHEDULE

ELEVATION / AXIS	TYPE	AXIS – A					REMARKS
+37.750 (T.O. COLUMN)		A–14, A–13, A–12, A–11a	740	32	900	20	PROVIDE 10 TH. WEB STIFF. @ 900 C/C (TYP)
+29.660		A–14, A–13, A–12, A–11a	740	32	1800	20	PROVIDE 10 TH. WEB STIFF. @ 1800 C/C
(−)1.200 (U/S. OF BASE PL.)		GRID	FW	FPL	WD	WPL	
			FLANGE		WEB		

B–ROW COLUMN SCHEDULE

ELEVATION / AXIS	TYPE	AXIS – B					REMARKS
+38.050 (T.O. COLUMN)		B–14	740	32	900	20	PROVIDE 10 TH. WEB STIFF. @ 900 C/C (TYP)
		B–13	740	45	900	28	
		B–12	740	45	900	28	
		B–11a	740	32	900	20	
+29.660		B–14	740	32	1800	20	PROVIDE 10 TH. WEB STIFF. @ 1800 C/C (TYP)
		B–13	740	32	1800	20	
		B–12	740	32	1800	20	
		B–11a	740	32	1800	20	
+18.250		B–14	740	32	1800	20	
		B–13	740	36	1800	25	
		B–12	740	36	1800	25	
		B–11a	740	32	1800	20	
+9.250		B–14	740	50	1800	32	
		B–13	740	50	1800	32	
		B–12	740	50	1800	32	
		B–11a	740	36	1800	25	
(−)1.200 (U/S. OF BASE PL.)		GRID	FW	FPL	WD	WPL	
			FLANGE		WEB		

C–ROW COLUMN SCHEDULE

ELEVATION / AXIS	TYPE	AXIS – C							REMARKS
+36.350 (T.O. COLUMN)		C–14, C–13, C–12, C–11a	740X32	20 THK.	400X32	20 THK.			PROVIDE 10 TH. WEB STIFF. @ 900 C/C (TYP)
+25.250		C–14	740X32	20 THK.	400X32	20 THK.			PROVIDE 10 TH. WEB STIFF. @ 1800 C/C (TYP)
		C–13	740X32	20 THK.	400X32	20 THK.			
		C–12	740X32	20 THK.	400X32	20 THK.			
		C–11a	740X32	32 THK.	400X32	25 THK.			
+9.250		C–14	740X32	20 THK.	400X32	25 THK.			
		C–13	740X45	32 THK.	400X32	25 THK.			
		C–12	740X45	32 THK.	400X32	25 THK.			
		C–11a	740X32	20 THK.	400X32	20 THK.			
(−)1.200 (U/S. OF BASE PL.)		GRID	FPL1	WPL1	FPL2	WPL2			
			FLANGE	WEB	FLANGE	WEB			

HORIZONTAL BRACING SCHEDULE

BRACING MKD.	BRACING SECTION	TYPE	REMARKS
HB–1	2–MC 150 BOX		(*) BRACING TYP. ON BOTH FLANGES OF COLUMN (SHALL BE CONNECTED TOE TO TOE WITH CONTINUOUS WELD
HB–2	2–MC 200 BOX		
HB–3	2–MC 250 BOX		
HB–4	2–MC 300 BOX		
HB–5	1–WEB. PLT 280X10 2–FLG PLT. 320X10		
HB–6	1–WEB. PLT 326X12 2–FLG PLT. 370X12		

VERTICAL BRACING SCHEDULE

BRACING MKD.	BRACING SECTION	TYPE	REMARKS
VB1a	2–MC 100 BOX		(*) BRACING TYP. ON BOTH FLANGES OF COLUMN (SHALL BE CONNECTED TOE TO TOE WITH CONTINUOUS WELD
VB1	2–MC 150 BOX		
VB2	2–MC 200 BOX		
VB3	2–MC 250 BOX		
VB4	2–MC 300 BOX		
VB5	1–WEB. PLT 280X10 2–FLG PLT. 320X10		
VB6	1–WEB. PLT 326X12 2–FLG PLT. 370X12		
VB7	1–WEB. PLT 318X16 2–FLG PLT. 370X16		

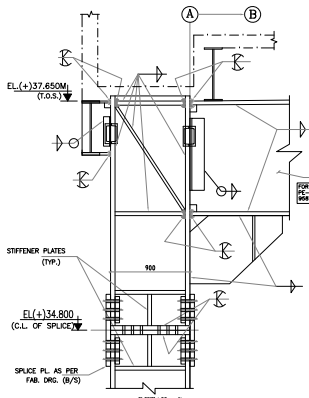
PLATE GIRDER DETAILS

GIRDER MKD.	D	FW	FT	WT
B–1	800	480	25	16
B–4	800	480	28	16
B–2	900	480	25	16
B–3	900	480	28	20

(PROVIDE 8 TH. WEB STIFF. @ 1000 C/C (MAX) (FABRICATOR TO CHECK INTERFERENCE WITH SECONDARY BEAMS) REFER SEPARATE CONNECTION REF. PERSPECTIVE FLOOR FRAME DRAWING

B–C BAY GIRDER SCHEDULE

EL. / GRID	11a	12	13	14
EL.+3.750	B–2	B–2	B–2	–
EL.+8.750	B–2	B–2	B–2	B–2
EL.+12.750	B–2	B–2	B–2	–
EL.+17.750	B–2	B–2	B–2	B–2
EL.+24.750	B–2	B–2	B–2	B–2
EL.+30.250	B–2	B–2	B–2	B–2
EL.+36.250	B–2	B–3	B–3	B–2



DETAIL–C

(STIFFENER PLATE & WELD SIZES SHOWN ARE TENTATIVE ONLY. HOWEVER, ACTUAL SIZES SHALL BE DECIDED DURING FABRICATION STAGE)

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE–DG–508–600–C002 (9587–001–315–PVC–C–0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE–DG–508–611–C002 (9587–001–315–PVC–C–0036)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E–250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E–350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE–DG–508–100–M003 (9587–001–110–PVM–F–049) – TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE–DG–508–100–M004 (9587–001–110–PVM–F–050) – TG EQUIPMENT PLAN AT MEZZANINE FLOOR
3. PE–DG–508–100–M005 (9587–001–110–PVM–F–051) – TG EQUIPMENT PLAN AT OPERATING FLOOR
4. PE–DG–508–100–M006 (9587–001–110–PVM–F–052) – TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
5. PE–DG–508–100–M007 (9587–001–110–PVM–F–053) – CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE–DG–508–612–C006 (9587–001–315–PVC–C–0148) – PH BUILDING DETAILS OF ROOF GIRDERS
2. PE–DG–508–612–C007 (9587–001–315–PVC–C–0149) – PH BUILDING GA AND DETAILS OF AB BAY GANTRY GIRDERS
3. PE–DG–508–612–C005 (9587–001–315–PVC–C–0147) – PH BLDG–CLADDING FRAMING ELEVATION ON AXIS A
4. PE–DG–508–611–C002 (9587–001–315–PVC–C–0036) – PH BUILDING G.A. & R.C. OF COLS FDN ON ROW A TO C UNIT–4 & CCR
5. PE–DG–508–612–C008 (9587–001–315–PVC–C–0150) – PH BUILDING–DETAILS OF ROOF PURLIN (AB BAY)
6. PE–DG–508–612–C023 (9587–001–315–PVC–C–0165) – MPH BLDG. –(AB BAY–CCR) FRAMING PLAN AT EL 9.0M FFL
7. PE–DG–508–612–C026 (9587–001–315–PVC–C–0168) – MPH BLDG.(AB BAY– CCR) – FRAMING PLAN @ EL 18.0M FFL
8. PE–DG–508–612–C039 (9587–001–315–PVC–C–0179) –MPH BLDG. – BUS DUCT SUPPORTING STRUCTURE ALONG AXIS–A

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. TH. = THICK
9. PL. = PLATE

REV.	DATE	ALTD	CHD	APPD
01	17.07.24	KD	AKT	DKM

BRACING AT B–ROW UPDATED AS PER NTPC COMMENTS

REV.	DATE	ALTD	CHD	APPD

SHELF–PROJECT ENGINEERING MANAGEMENT (SEMS)
THIS DRAWING MARKED (✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS VERSIONS AS SUPERSEDED
ISSUED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 17/07/2024

NTPC DRG. NO. 9587–001–315–PVC–C–0145

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

JOB NO.	508
STATUS	CONTRACT
DISTRIBUTION	

ACT. CODE	NAME	SIGN	DATE
DRN.	TYSR	Sd/–	22.04.2024
DESIGNED		Sd/–	22.04.2024
CHD. BY		Sd/–	22.04.2024
APPD/DKM		Sd/–	22.04.2024

TITLE: MPH–CCR BUILDING
STRUCTURAL FRAMING ALONG A ROW TO C ROW

MPL	ELEC	C&I	MSE	MAX	DEPT. SIGN / DATE	SCALE –

DRAWING NO. PE–DG–508–612–C004

SHEET 1 OF 2 REV. 01

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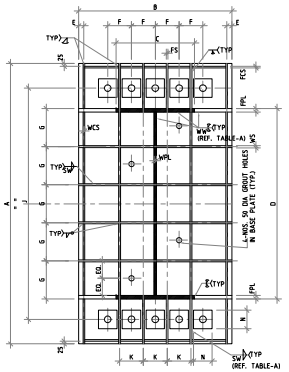
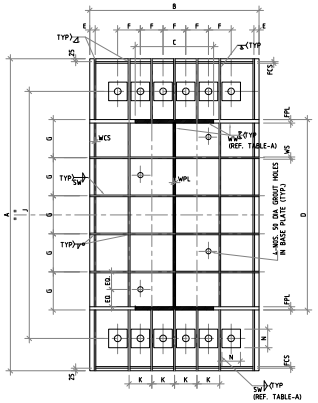
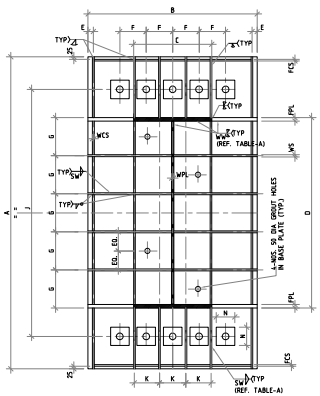


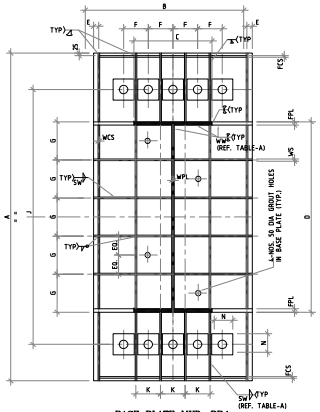
BASE PLATE MKD. BP1
(FOR COLUMN A-14)



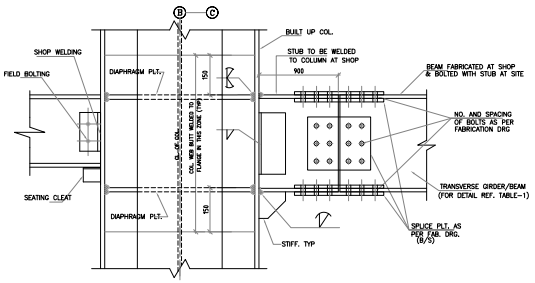
BASE PLATE MKD. BP2
(FOR COLUMN A-13 & A-11a)



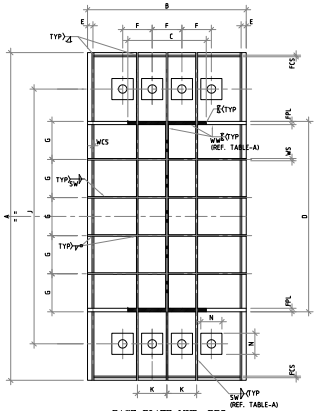
BASE PLATE MKD. BP3
(FOR COLUMN A-12)



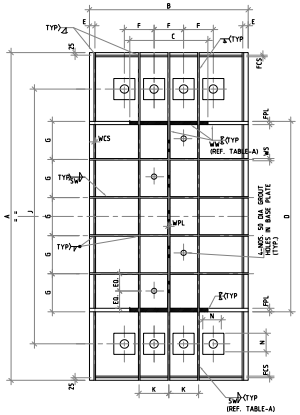
BASE PLATE MKD. BP4
(FOR COLUMN B-14)



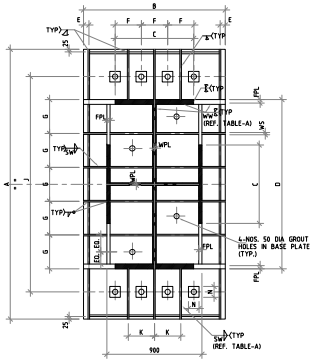
MOMENT CONNECTION & SPLICE DETAIL FOR MAIN BEAM (TYP.)



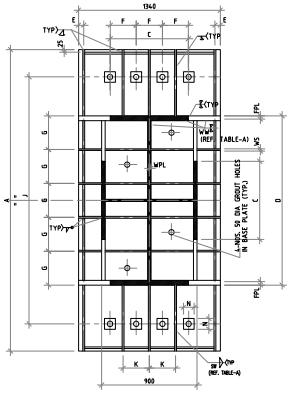
BASE PLATE MKD. BP5
(FOR COLUMN B-13 & B-12)



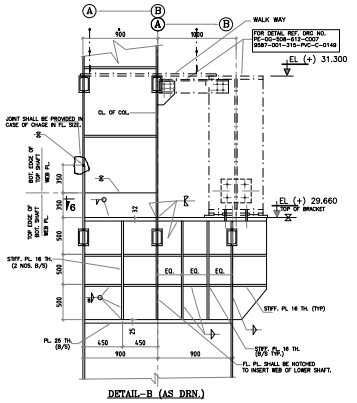
BASE PLATE MKD. BP6
(FOR COLUMN B-11a)



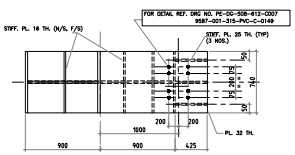
BASE PLATE MKD. BP7
(FOR COLUMN C-14 & C-11a)



BASE PLATE MKD. BP8
(FOR COLUMN C-13 & C-12)



DETAIL-B (AS DRN.)



SECTION 6-6

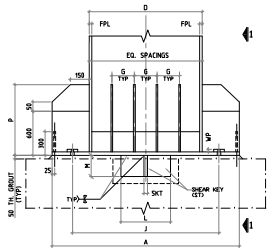
BASE PL. SCHEDULE

GROUP MKD.	BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8	
COL SEC. MKD.	A-14	A-13 A-11a	A-12	B-14	B-13 B-12	B-13 B-11a	C-14 C-11a	C-13 C-12	REMARKS
ITEM MKD.									
A	2650	2950	2950	3100	3100	2950	2550	2850	BASE PLATE
B	1450	1600	1600	1500	1500	1500	1340	1340	
C	740	740	740	740	740	740	740	740	COL SIZE
D	1800	1800	1800	1800	1800	1800	1600	1600	
E	50	50	50	50	50	50	50	50	REF. PLAN
G	360	360	360	360	360	360	320	320	
F	270	250	300	280	350	350	310	310	
J	2225	2375	2375	2450	2450	2375	2075	2225	C/C OF BOLT
J1	–	–	–	–	–	–	–	–	
K	270	250	300	280	350	350	310	310	
P	1000	1000	1060	1000	1000	1000	1000	1000	
L	1000	1000	1000	1100	1100	1000	1000	1000	
M	150	150	150	150	150	150	150	150	SHEAR KEY
SKT	32	36	36	40	40	40	40	32	
TYPE	1	2	2	2	2	1	1	2	
N	150	150	150	200	150	150	150	150	WASHER PLATE

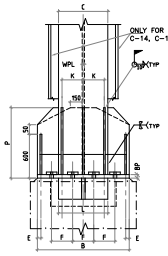
BASE PL. SCHEDULE
(READ WITH DETAIL A)

GROUP MKD.	BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8	
COL SEC. MKD.	A-14	A-13 A-11a	A-12	B-14	B-13 B-12	B-13 B-11a	C-14 C-11a	C-13 C-12	REMARKS
ITEM MKD.									
BP	36	40	40	40	40	36	36	40	BASE PL WITH 4 NOS. 50Ø GROUT HOLES AND 1 Ø BOLT HOLE
DIA OF BOLT	63	63	63	80	50	50	50	50	DIA OF BOLT
FPL	SAME AS COL FL PL THICKNESS								PL. BUTT WELDED TO COL. FL. PL.
WPL	REFER COLUMN SECTION								COL. WEB PL.
FS	16	16	16	16	16	16	16	16	FL. STIFF. PL.
WS	16	16	16	16	16	16	16	16	WEB STIFF. PL.
WP	16	16	16	20	16	16	16	16	WASHER PL WITH 1-** Ø BOLT HOLE
FCS	12	12	12	12	12	12	12	12	FL. CROSS STIFF. PL.
WCS	12	12	12	12	12	12	12	12	WEB CROSS STIFF. PL.
NOS. OF BOLT	10	12	10	10	8	8	8	8	TOTAL NUMBER OF BOLT

* Ø HOLES. = DIA. OF BOLT + 16 MM
** Ø HOLES. = DIA. OF BOLT + 3 MM



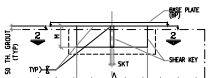
TYP. SECTION OF BASE PLATE



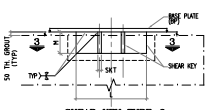
VIEW 1-1

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT	GRADE
1.	10 THK. PLT.	30	IS2062-E350
2.	12 THK. PLT.	14	IS2062-E350
3.	16 THK. PLT.	74	IS2062-E350
4.	20 THK. PLT.	104	IS2062-E350
5.	25 THK. PLT.	88	IS2062-E350
6.	28 THK. PLT.	8	IS2062-E350
	32 THK. PLT.	190	IS2062-E350
	36 THK. PLT.	17	IS2062-E350
	40 THK. PLT.	12	IS2062-E350
	45 THK. PLT.	19	IS2062-E350
	50 THK. PLT.	18	IS2062-E350
	ISMC100	1.5	IS2062-E250
	ISMC150	18	IS2062-E250
	ISMC200	3.5	IS2062-E250
	ISMC250	4	IS2062-E250
	ISMC300	8.5	IS2062-E250
	TOTAL TONNAGE= MT 609.5		



SHEAR KEY TYPE-1



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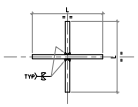
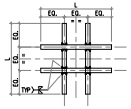


PLAN 2-2



PLAN 3-3

TABLE - A

PL. THICKNESS	MIN SIZE OF WELD IN MM	MIN SIZE OF WELD IN MM
8 & 10	DOUBLE BEVEL BUTT WELD WITH BACKING RUN OR DOUBLE BEVEL BUTT WELD WITH REMOVABLE BACKING RUN OR FILLET WELD OF 8 MM THROAT SIZE	6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		20
45 & 50		25

REV.	DATE	ALTD	CHD	APPD
01	17.07.24	KD	AKT	DKM

BRACING AT B-ROW UPDATED AS PER NTPC COMMENTS

REV.	DATE	ALTD	CHD	APPD

BHEL-PROJECT ENGINEERING MANAGEMENT (EPM)
THIS DRAWING MARKED (✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 17/07/2024

NTPC DRG. NO. 9587-001-315-PVC-C-0145

OWNER: NTPC LIMITED
PROJECT: LARA SUPER THERMAL POWER PROJECT
2X800MW STAGE-II

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

	NAME	SIGN	DATE
DRN	TYSR	Sd/-	22.04.2024
DESIGNED		Sd/-	22.04.2024
CHD	JV	Sd/-	22.04.2024
APPD/DKM		Sd/-	22.04.2024

TITLE
MPH-CCR BUILDING
STRUCTURAL FRAMING ALONG A ROW TO C ROW

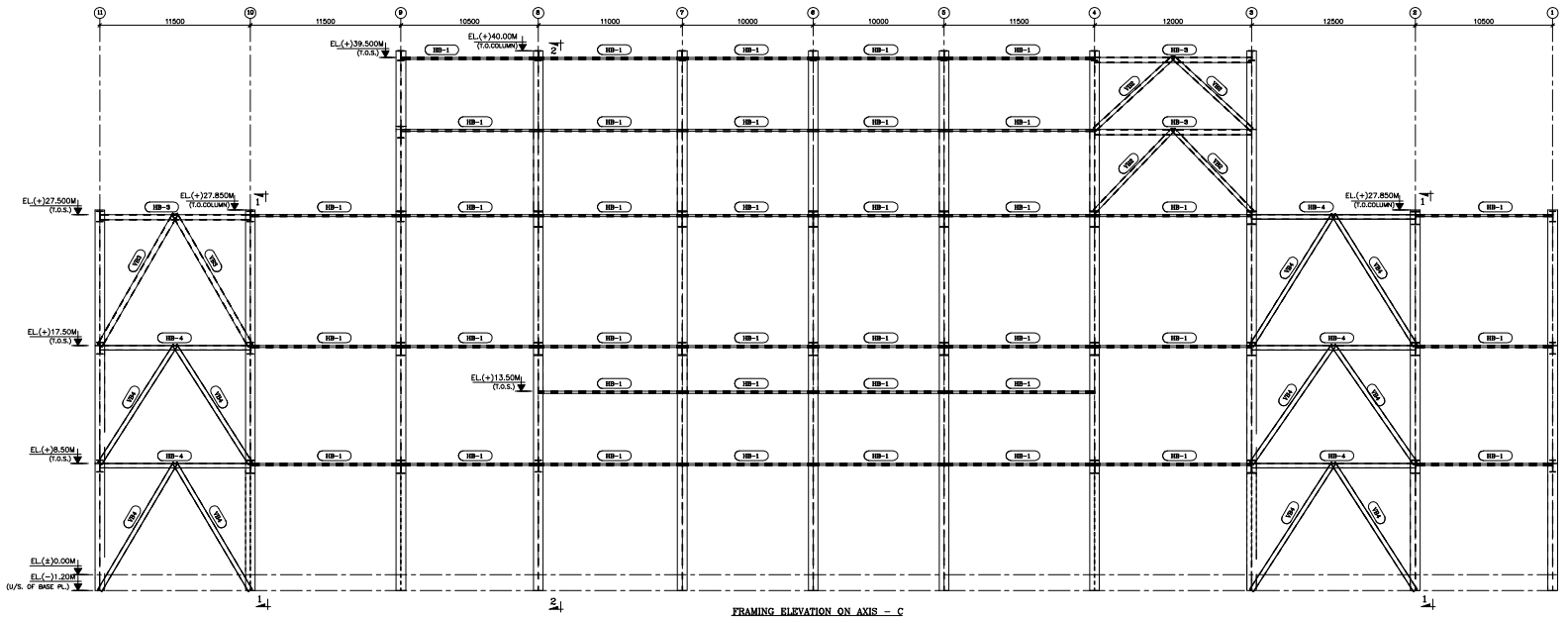
MPL	ELEC	C&I	MSE	MAX

DEPT. SCALE - | DRAWING NO. PE-DG-508-612-C004
SIGN
DATE | SHEET 2 OF 2 | REV. 01

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

FORMAT SIZE A0

FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM | DRAWING NO. PE-DG-508-612-C003



FRAMING ELEVATION ON AXIS – C
(UNIT # 3)

BILL OF MATERIAL

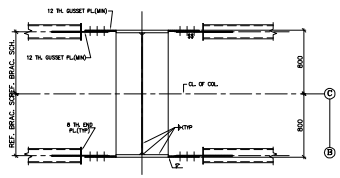
SECTION	WT (MT)	GRADE
ISMC150	28.29	E250
ISMC250	2.32	E250
ISMC300	6.55	E250
ISMC400	11.74	E250
PLATE 10	38.02	E350
PLATE 16	10.37	E350
PLATE 20	18.85	E350
PLATE 25	2.63	E350
PLATE 28	25.42	E350
PLATE 32	87.85	E350
PLATE 36	31.53	E350
PLATE 40	22.53	E350
PLATE 45	40.26	E350
PLATE 50	90.69	E350
TOTAL	417	

HORIZONTAL BRACING SCHEDULE

BRACING MKD.	BRACING SECTION	TYPE	REMARKS
HB-1	2-MC 150 BOX		(*) BRACING TYP. ON BOTH FLANGES OF COLUMN SHALL BE CONNECTED TOE TO TOE WITH CONTINUOUS WELD
HB-2	2-MC 300 BOX		
HB-3	2-MC 400 BOX		
HB-4	1-WEB PLT 330X10 2-FLG PLT. 370X10		

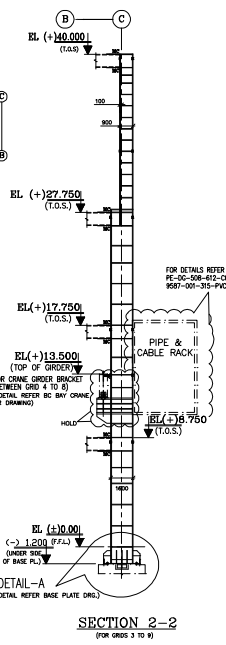
VERTICAL BRACING SCHEDULE

BRACING MKD.	BRACING SECTION	TYPE	REMARKS
VB1	2-MC 250 BOX		(*) BRACING TYP. ON BOTH FLANGES OF COLUMN SHALL BE CONNECTED TOE TO TOE WITH CONTINUOUS WELD
VB2	2-MC 300 BOX		
VB3	2-MC 400 BOX		
VB4	1-WEB PLT 330X10 2-FLG PLT. 370X10		

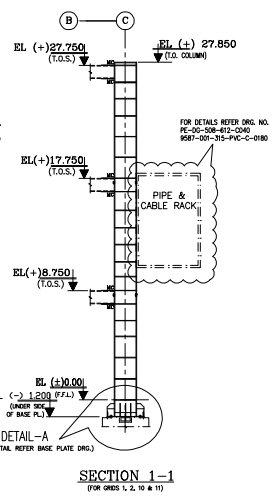


PLAN 3-3

$$ CONNECTION MAY BE PLANNED ON EITHER SIDE OF COLUMN GUSSET PLATE AS PER REQUIREMENT DURING DETAILED FABRICATION DRAWING.



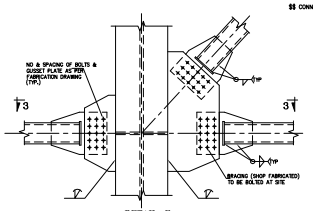
SECTION 2–2
(FOR GRIDS 3 TO 9)



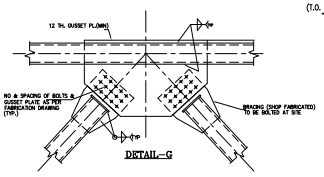
SECTION 1–1
(FOR GRIDS 1, 2, 10 & 11)

COLUMN SCHEDULE

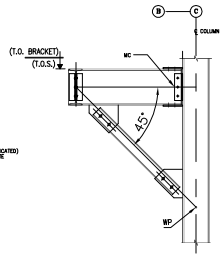
EL(+)40.000 (T.O. COLUMN) COL. MKD. C3 TO C11										REMARKS
	C-11	–	–	–	–					PROVIDE 10 TH. WEB STIFF. @ 1800 C/C (TYP)
	C-10	–	–	–	–					
	C-9	900	740	32	16					
	C-8	900	740	32	16					
	C-7	900	740	32	16					
	C-6	900	740	32	16					
	C-5	900	740	32	16					
	C-4	900	740	32	16					
	C-3	900	740	32	16					
	C-2	–	–	–	–					
	C-1	–	–	–	–					
EL(+)28.250 EL(+)27.850 (T.O. COLUMN) FOR COL. MKD. C1, C2, C10, C11	C-11	1600	740	32	20					PROVIDE 10 TH. WEB STIFF. @ 1800 C/C (TYP)
	C-10	1600	740	32	20					
	C-9	1600	740	32	20					
	C-8	1600	740	36	28					
	C-7	1600	740	45	32					
	C-6	1600	740	45	32					
	C-5	1600	740	45	32					
	C-4	1600	740	40	28					
	C-3	1600	740	40	32					
	C-2	1600	740	36	20					
	C-1	1600	740	32	20					
EL(+)18.250	C-11	1600	740	36	28					PROVIDE 10 TH. WEB STIFF. @ 1800 C/C (TYP)
	C-10	1600	740	36	28					
	C-9	1600	740	36	28					
	C-8	1600	740	45	32					
	C-7	1600	740	45	32					
	C-6	1600	740	45	32					
	C-5	1600	740	45	32					
	C-4	1600	740	40	28					
	C-3	1600	740	40	32					
	C-2	1600	740	36	20					
	C-1	1600	740	32	20					
EL(+)9.250	C-11	(-)1.200	1600	740	50	50	25	345	1 RIB	PROVIDE 10 TH. WEB STIFF. @ 1800 C/C (TYP)
	C-10	(-)1.200	1600	740	50	50	25	345	1 RIB	
	C-9	(-)1.200	1600	740	50	50	–	–	–	
	C-8	(-)1.200	1600	740	50	50	–	–	–	
	C-7	(-)1.200	1600	740	50	50	–	–	–	
	C-6	(-)1.200	1600	740	50	50	36	345	1 RIB	
	C-5	(-)1.200	1600	740	50	50	–	–	–	
	C-4	(-)1.200	1600	740	50	50	25	345	1 RIB	
	C-3	(-)1.200	1600	740	50	50	36	345	1 RIB	
	C-2	(-)1.200	1600	740	50	40	–	–	–	
	C-1	(-)1.200	1600	740	40	28	–	–	–	
(–)1.200 (U/S. OF BASE PL.)		GRID	LVL. (U/S. OF BASE PL.)	WD	FLANGE FW	WEB WPL	RPL	RFT	TYPE	
ELEVATION	TYPE			R ROW			RIB DETAIL			REMARKS



DETAIL–F



DETAIL–G



TYP. DET. BRACKET ON B & C ROW COLUMN FLANGES

(FOR BRACKET ELEVATION & SIZE DETAIL REFER DRG. NO. 9587-001-315-PVC-C-0170 (PE-DG-508-612-C028)

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL.(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE-DG-508-100-M003 (9587-001-110-PVM-F-049)	– TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE-DG-508-100-M004 (9587-001-110-PVM-F-050)	– TG EQUIPMENT PLAN AT MEZZANINE FLOOR
3. PE-DG-508-100-M005 (9587-001-110-PVM-F-051)	– TG EQUIPMENT PLAN AT OPERATING FLOOR
4. PE-DG-508-100-M006 (9587-001-110-PVM-F-052)	– TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
5. PE-DG-508-100-M007 (9587-001-110-PVM-F-053)	– CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE-DG-508-612-C011 (9587-001-315-PVC-C-0153)	– PH BLDG-CLADDING FRAMING ELEVATION ON AXIS C
2. PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)	– PH BUILDING G.A. & R.C. OF COLS FDN ON ROW A TO C UNIT-3
3. PE-DG-508-612-C028 (9587-001-315-PVC-C-0170)	– MPH BLDG. – (BC–BAY–TG) FRAMING PLAN 9.0M FFL
4. PE-DG-508-612-C031 (9587-001-315-PVC-C-0173)	– MPH BLDG. – (BC–BAY–TG) FRAMING PLAN 18.0M FFL
5. PE-DG-508-612-C033 (9587-001-315-PVC-C-0175)	– MPH BLDG. – (BC–BAY–TG) FRAMING PLAN 28.0M FFL
6. PE-DG-508-612-C036 (9587-001-315-PVC-C-0178)	– MPH BLDG. – (BC–BAY) FRAMING PLAN +40.0M TOS
7. PE-DG-508-612-C107 (9587-001-315-PVC-C-0184)	– PH BUILDING GA AND DETAILS OF BC BAY GANTRY GIRDERS

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. TH. = THICK
9. PL. = PLATE

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
SIGNED ALL PREVIOUS REVISIONS AS SUPERSEDING
SIGNED BY: AMIT THAKUR
DATE: 24/05/2024

REV.	DATE	ALTD	CHD	APPD

JOB NO.	508
STATUS	CONTRACT
DISTRIBUTION	

NTPC DRG. NO. 9587-001-315-PVC-C-0144

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II

BHEL: BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

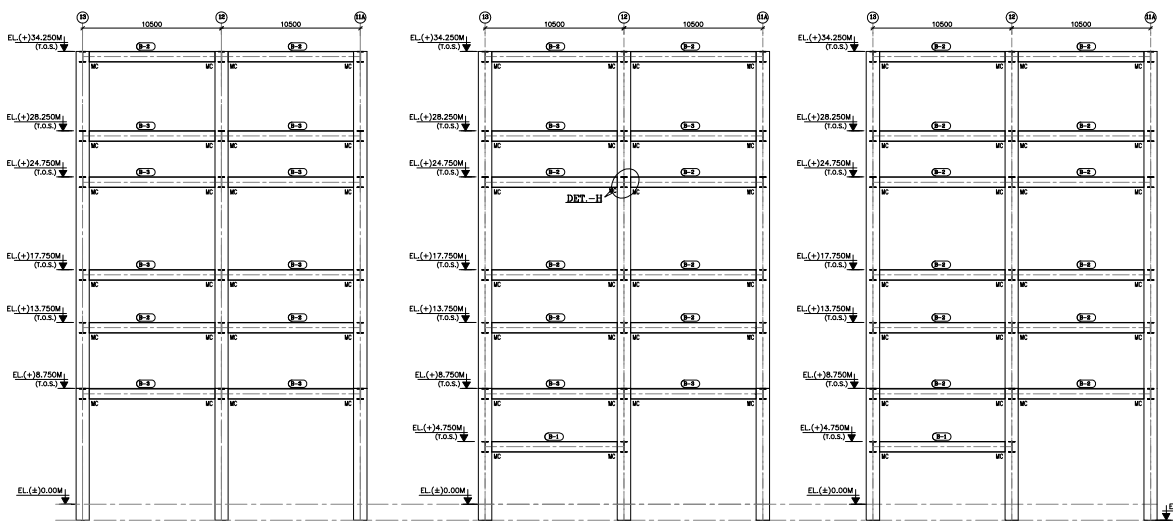
DEPT.	NAME	SIGN	DATE
DRN.	YSR		24.05.2024
DES/CKD/MK			24.05.2024
CHD_AT			24.05.2024
APPD/DKM			24.05.2024

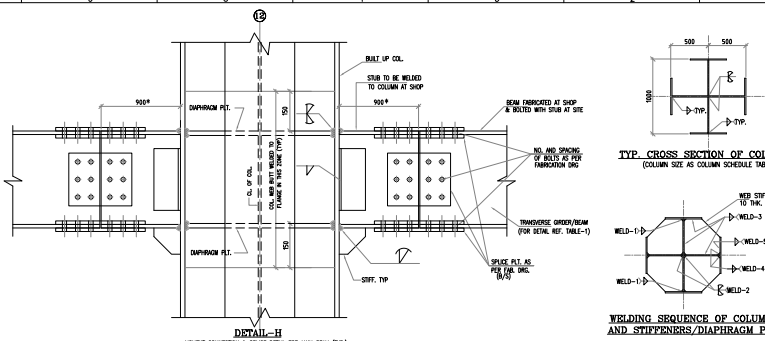
TITLE: MPH BUILDING
STRUCTURAL FRAMING & COLUMN DETAILS ALONG C ROW (UNIT–3)

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –
					SIGN	
					DATE	

DRAWING NO. PE-DG-508-612-C003
SHEET OF REV. 0

FORMAT SIZE A0





D-H ROW COLUMN SCHEDULE

+34.350 (T.O. COLUMN)		COL-13	500X25	16 THK.	500X25	16 THK.
		COL-12	500X25	16 THK.	500X25	16 THK.
		COL-11a	500X25	16 THK.	500X25	16 THK.
+8.750		COL-13	500X32	25 THK.	500X32	25 THK.
		COL-12	500X36	25 THK.	500X36	25 THK.
(–)1.200 (U/S. OF BASE PL.)		COL-11a	500X32	25 THK.	500X32	25 THK.
		GRID	FPL1	WPL1	FPL2	WPL2
ELEVATION / AXIS	TYPE		FLANGE	WEB	FLANGE	WEB
			AXIS – D TO H			

I-ROW COLUMN SCHEDULE

+36.900 (T.O. COLUMN) (I-13, I-12)		I-13	740	32	1000	16
+34.350 (T.O. COLUMN) (I-12, I-11a)		I-12	740	32	1000	16
		I-11a	740	32	1000	16
+8.750		I-13	740	36	1000	20
		I-12	740	50	1000	28
(–)1.200 (U/S. OF BASE PL.)		I-11a	740	50	1000	28
ELEVATION / AXIS	TYPE	GRID	FW	FPL	WD	WPL
			FLANGE		WEB	

REMARKS: PROVIDE 10 THK. @ 1000 C/C

PLATE GIRDER DETAILS

GIRDER MKD.	D	FW	FT	WT
B-1	800	300	16	16
B-2	800	480	25	16
B-3	800	480	28	16
B-4	700	300	16	16

(PROVIDE 8 TH. WEB STIFF. @ 1000 C/C. DMAG FABRICATOR TO CHECK INTERFERENCE WITH SECONDARY BEAMS) FOR SHEAR CONNECTOR REF. RESPECTIVE FLOOR FRAME DRAWING

C-H BAY GIRDER SCHEDULE

EL. / GRID MKD. T.O.S.	11a	12	13
EL.+8.750	B-4	B-4	B-4
EL.+13.750	B-4	B-4	B-4
EL.+17.750	B-4	B-4	B-4
EL.+24.750	B-4	B-4	B-4
EL.+28.250	B-4	B-4	B-4
EL.+34.250	B-4	B-4	B-4

H-I BAY GIRDER SCHEDULE

EL. / GRID MKD. T.O.S.	11a	12	13
EL.+8.750	B-4	B-4	B-4
EL.+13.750	B-4	B-1	B-4
EL.+17.750	B-4	B-1	B-4
EL.+24.750	B-4	B-1	B-4
EL.+28.250	B-4	B-1	B-4
EL.+34.250	B-4	B-4	B-4

E-G BAY GIRDER SCHEDULE

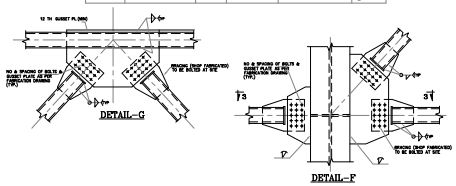
EL. / GRID MKD. T.O.S.	11a	12	13
EL.+4.750	–	B-1	B-1

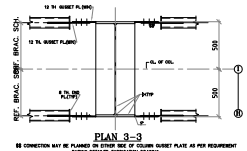
HORIZONTAL BRACING SCHEDULE

BRACING MKD.	BRACING SECTION	TYPE	REMARKS
HB-1	2-MC 150 BOX		(*) BRACING TYP. ON BOTH FLANGES OF COLUMN SHALL BE CONNECTED TOE TO TOE WITH CONTINUOUS WELD
HB-2	2-MC 200 BOX		
HB-3	2-MC 250 BOX		
HB-4	2-MC 300 BOX		
HB-5	1-WEB. PLT 280X10 2-FLG PLT. 320X10		
HB-6	1-WEB. PLT 326X12 2-FLG PLT. 370X12		

VERTICAL BRACING SCHEDULE

BRACING MKD.	BRACING SECTION	TYPE	REMARKS
VB2	2-MC 200 BOX		(*) BRACING TYP. ON BOTH FLANGES OF COLUMN SHALL BE CONNECTED TOE TO TOE WITH CONTINUOUS WELD
VB5	1-WEB. PLT 280X10 2-FLG PLT. 320X10		
VB7	1-WEB. PLT 318X16 2-FLG PLT. 370X16		





NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE–DG–508–600–C002 (9587–001–315–PVC–C–0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE–DG–508–611–C002 (9587–001–315–PVC–C–0036)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE ARE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E–250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E–350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE–DG–508–100–M003 (9587–001–110–PVM–F–049) – TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE–DG–508–100–M004 (9587–001–110–PVM–F–050) – TG EQUIPMENT PLAN AT MEZZANINE FLOOR
3. PE–DG–508–100–M005 (9587–001–110–PVM–F–051) – TG EQUIPMENT PLAN AT OPERATING FLOOR
4. PE–DG–508–100–M006 (9587–001–110–PVM–F–052) – TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
5. PE–DG–508–100–M007 (9587–001–110–PVM–F–053) – CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

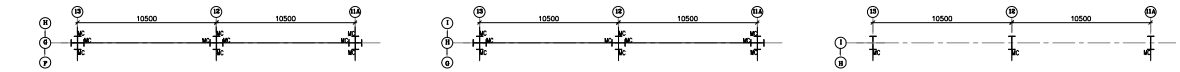
CONSTRUCTION REFERENCE DRAWINGS :–

1. PE–DG–508–612–C006 (9587–001–315–PVC–C–0148) – PH BUILDING DETAILS OF ROOF GIRDERS
2. PE–DG–508–612–C007 (9587–001–315–PVC–C–0149) – PH BUILDING GA AND DETAILS OF AB BAY GANTRY GIRDERS
3. PE–DG–508–612–C005 (9587–001–315–PVC–C–0147) – PH BLDG–CLADDING FRAMING ELEVATION ON AXIS A
4. PE–DG–508–611–C002 (9587–001–315–PVC–C–0036) – PH BUILDING G.A. & R.C. OF COLS FDN ON ROW A TO C UNIT–4 & CCR
5. PE–DG–508–612–C008 (9587–001–315–PVC–C–0150) – PH BUILDING–DETAILS OF ROOF PURLIN (AB BAY)
6. PE–DG–508–612–C023 (9587–001–315–PVC–C–0165) – MPH BLDG. –(AB BAY–CCR) FRAMING PLAN AT EL 9.0M FFL
7. PE–DG–508–612–C026 (9587–001–315–PVC–C–0168) – MPH BLDG.(AB BAY–CCR) – FRAMING PLAN @ EL 18.0M FFL
8. PE–DG–508–612–C039 (9587–001–315–PVC–C–0179) –MPH BLDG. – BUS DUCT SUPPORTING STRUCTURE ALONG AXIS–A

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. TH. = THICK
9. PL. = PLATE

BHEL–PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISIONS AS SUPERSEDED
BASED AT
MADE: AMIT THAKUR
CHECKED:
DATE: 25/07/2024



REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587–001–315–PVC–C–0146

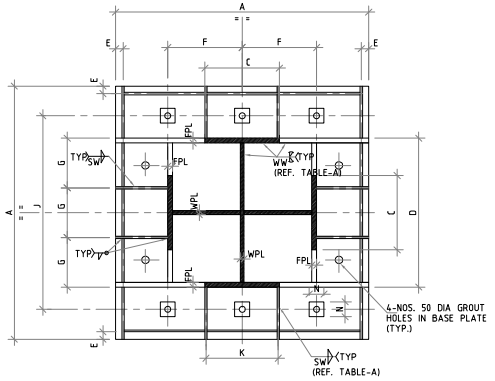
OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)
PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II
BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

	NAME	SIGN	DATE
DSN	TYSR		22.07.2024
DRN	TYSR		22.07.2024
DESIGNED			
CHD	AT		22.07.2024
APPD/DKM			22.07.2024

TITLE: MPH–CCR BUILDING
STRUCTURAL FRAMING FROM D ROW TO I ROW

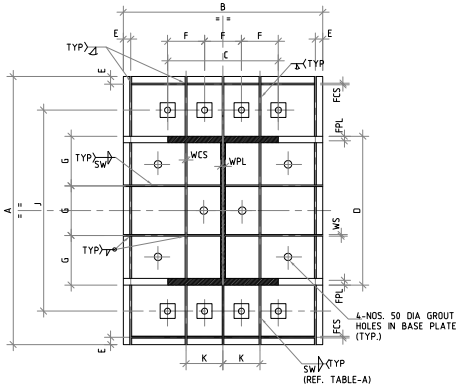
MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –
					SIGN	
					DATE	

DRAWING NO. PE–DG–508–612–C004A
SHEET 1 OF 2 REV. 0
FORMAT SIZE A0



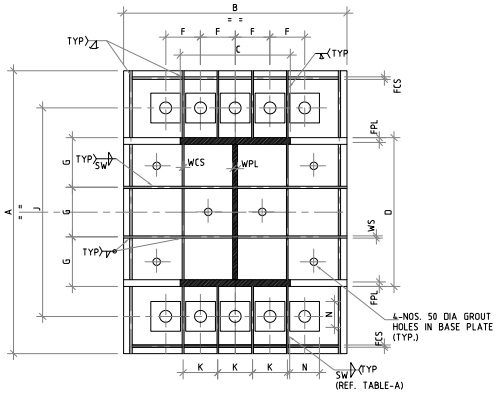
BASE PLATE MKD. BP1/BP2

(FOR COLUMN MKD. D-12, D-13, D-11a, E-12, E-13, E-11a, F-12, F-13, F-11a, G-12, G-13, G-11a, H-12, H-13, H-11a)



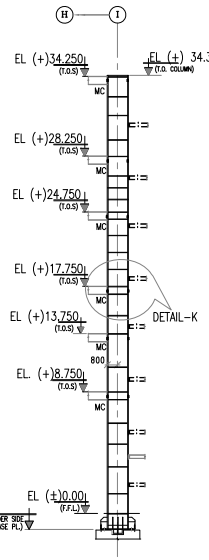
BASE PLATE MKD. BP3

(FOR COLUMN MKD. I-13)

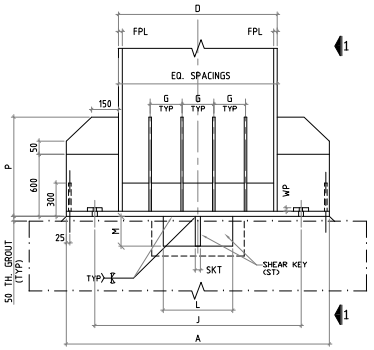


BASE PLATE MKD. BP3

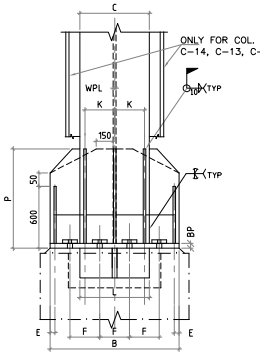
(FOR COLUMN MKD. I-12 , I11a)



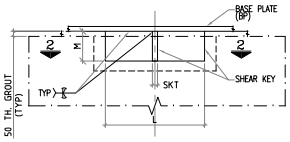
SECTION A-A



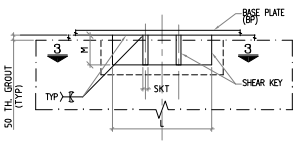
TYP. SECTION OF BASE PLATE



VIEW 1-1



SHEAR KEY TYPE-1



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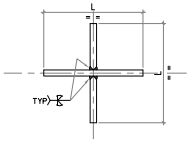
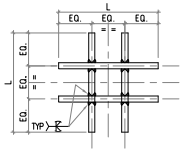
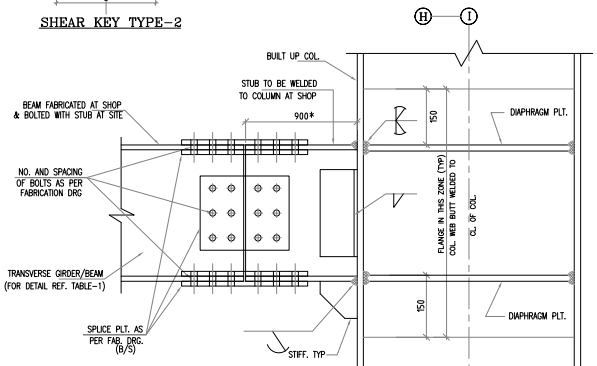


PLAN 2-2



PLAN 3-3



DETAIL-K

MOMENT CONNECTION & SPLICE DETAL FOR MAIN BEAM (TYP.)

(* MAY VARY DURING DETAILED FABRICATION DRAWING)

BASE PL. SCHEDULE

GROUP MKD. / COL. MKD. / DIM MKD.	BP1	BP2	BP3	BP4	REMARKS
	D-13, D-11a, E-13, E-11a, F-13, F-11a, G-13, G-11a, H-12, H-13, H-11a	D-12, E-12, F-12, G-12	I13	I12, I11a	
A	1600	1700	1800	1900	BASE PLATE
B	1600	1700	1400	1500	
C	500	500	740	740	COL. SIZE
D	1000	1000	1000	1000	
E	50	50	50	50	REF. PLAN
F	625	650	325	280	
G	333	333	333	333	C/C OF BOLT
J	1250	1300	1400	1450	
J1	–	–	–	–	
K	500	500	325	280	
P	1000	1000	1000	1000	STIFF. PL. HEIGHT
L	1000	1000	1000	1000	SHEAR KEY
M	150	150	150	150	
SKT	25	32	25	36	
TYPE	1	1	1	2	
N	120	120	120	200	WASHER PLATE

BASE PL. SCHEDULE

(READ WITH DETAIL A)

GROUP MKD. / COL. MKD. / ITEM MKD.	BP1	BP2	BP3	BP4	REMARKS
	D-13, D-11a, E-13, E-11a, F-13, F-11a, G-13, G-11a, H-12, H-13, H-11a	D-12, E-12, F-12, G-12	I13	I12, I11a	
BP	36	40	36	40	BASE PL WITH 4 NOS. 50ø GROUT HOLES AND * ø BOLT HOLE
DIA OF BOLT	40	32	36	80	DIA OF BOLT
FPL	SAME AS COL. FL. PL. THICKNESS				PL. BUTT WELDED TO COL. FL. PL.
WPL	REFER COLUMN SECTION				COL. WEB PL.
FS	12	16	12	12	FL. STIFF. PL.
WS	12	16	12	12	WEB STIFF. PL.
WP	12	12	12	20	WASHER PL. WITH 1-** ø BOLT HOLE
FCS	12	12	12	12	FL. CROSS STIFF. PL.
WCS	12	12	12	12	WEB CROSS STIFF. PL.
NOS. OF BOLT	8	8	8	10	TOTAL NUMBER OF BOLT

* ø HOLES. = DIA. OF BOLT + 16 MM

** ø HOLES. = DIA. OF BOLT + 3 MM

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT	GRADE
1.	10 THK. PLT.	2.80	IS2062-E350
2.	12 THK. PLT.	19.0	IS2062-E350
3.	16 THK. PLT.	345.5	IS2062-E350
4.	20 THK. PLT.	3.0	IS2062-E350
5.	25 THK. PLT.	310.0	IS2062-E350
6.	28 THK. PLT.	32.0	IS2062-E350
7.	32 THK. PLT.	82.0	IS2062-E350
8.	36 THK. PLT.	42.0	IS2062-E350
9.	40 THK. PLT.	6.0	IS2062-E350
10.	45 THK. PLT.	–	IS2062-E350
11.	50 THK. PLT.	12.0	IS2062-E350
12.	ISMC150	4.5	IS2062-E250
13.	ISMC200	2.8	IS2062-E250
14.	ISMC250	1.5	IS2062-E250
15.	ISMC300	1.8	IS2062-E250
TOTAL TONNAGE- MT 865.0			

TABLE – A

(SHOWING SIZE OF WELD) PL. THICKNESS.	WW (SIZE OF WELD IN MM)	SW (SIZE OF WELD IN MM)
8 & 10	DOUBLE BEVEL BUTT WELD WITH REINFORCED FILLET WELD OF 6 MM THICK WHEREVER REQD.	6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		20
45 & 50		25

BHEL-PROJECT ENGINEERING MANAGEMENT (EMD)

THIS DRAWING MARKED ✓ IS RELEASED FOR
☒ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISIONS AS SUPERSEDED

ISSUED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 25/07/2024

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587-001-315-PVC-C-0146

OWNER (NTPC): NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE-II

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

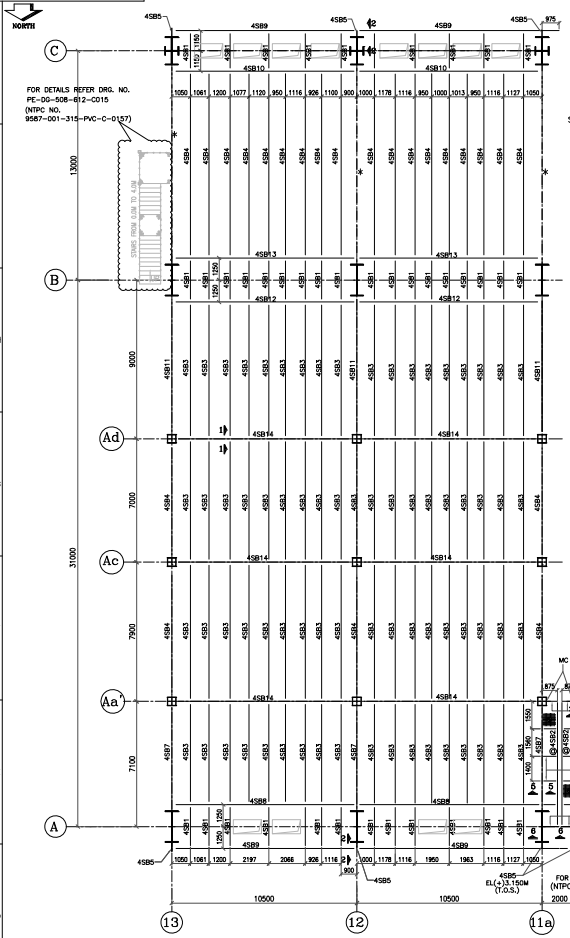
	NAME	SIGN	DATE
DSN	DRN TSR	Sd/-	23.07.2024
DSN	DESIGNED	Sd/-	23.07.2024
CHD	CHD AT	Sd/-	23.07.2024
APPD	APPD DGM	Sd/-	23.07.2024

C

TITLE: MPH-CCR BUILDING
STRUCTURAL FRAMING FROM D ROW TO I ROW

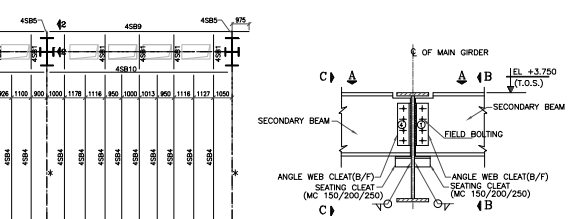
MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO.
					SIGN		PE-DG-508-612-C004A
					DATE		SHEET 2 OF 2 REV. 0

FORMAT SIZE A0

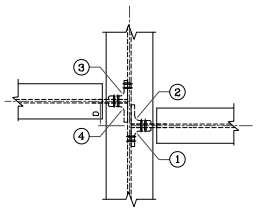


PLAN AT EL (+)3.750 (T.O.S.) (CCR)

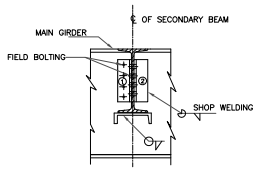
* FOR SIZE REFER DRG. NO. PE-DG-508-612-C004 (NTPC DRG. NO. 9587-001-315-PVC-C-0145)
(⊕-MARKED MEMBERS ARE AT T.O.S. (+)3.960 U.N.O.)
(Ⓡ- MARKED BEAMS ARE REMOVABLE BEAMS)
(ALL CONNECTIONS ARE SHEAR CONNECTIONS UNLESS NOTED OTHERWISE)



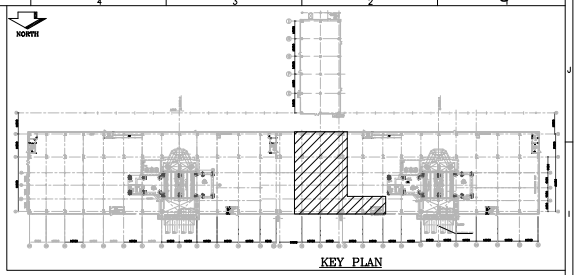
SECTION 1–1
TYP. CONNECTION DETAIL OF SECONDARY BEAM TO PRIMARY BEAM



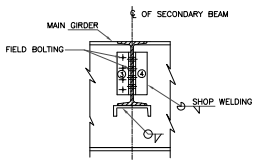
VIEW A–A
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



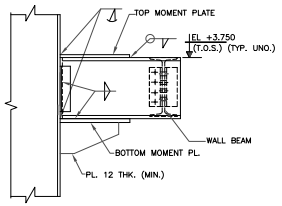
VIEW B–B
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



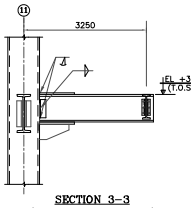
KEY PLAN



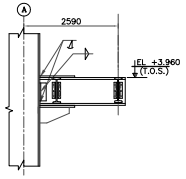
VIEW C–C
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



SECTION 2–2
TYP.BRACKET DETAIL WITHOUT KNEE (MOMENT CONNECTION)



SECTION 3–3
(MOMENT CONNECTION)



SECTION 4–4
(MOMENT CONNECTION)

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT(MT)	GRADE
1	ISMC150	0.08	IS2062---E250
2	ISMB200	2.65	IS2062---E250
3	ISMB250	1.08	IS2062---E250
4	ISMB400	32.16	IS2062---E250
5	ISMB500	20.09	IS2062---E250
6	ISMB600	0.87	IS2062---E250
7	16 THK. PLT.	10.16	IS2062---E350
8	20 THK. PLT.	8.76	IS2062---E350
9	25 THK. PLT.	14.36	IS2062---E350
10	28 THK. PLT.	2.17	IS2062---E350
11	36 THK. PLT.	16.02	IS2062---E350
12	40 THK. PLT.	7.25	IS2062---E350
13	50 THK. PLT.	4.95	IS2062---E350
	TOTAL	120.60	(APPROX.)

BEAM SCHEDULE

PL. GIRDER DETAILS	BEAM MKD.	BEAM SECTION			
	4SB1	MB 200			
	4SB2	MB 250			
	4SB3	MB 400			
	4SB4	MB 500			
	4SB5	MB 600			
– BUILT UP GIRDER SHALL BE PROVIDED WITH 2 LINES OF SHEAR CONNECTORS (STUDS) SHALL BE WELDED ON TOP PL. CONNECTED TO AUX. COL. ON TOP OF PL. GIRDER. – ALL SECONDARY BEAMS SHALL HAVE SHEAR CONNECTORS.	4SB6	PL. GIRDER	D – 500	FL. PL.– 250X16	WEB PL.– 16 TH.
	4SB7	PL. GIRDER	D – 550	FL. PL.– 300X20	WEB PL.– 16 TH.
	4SB8	PL. GIRDER	D – 550	FL. PL.– 300X40	WEB PL.– 28 TH.
	4SB9	PL. GIRDER	D – 600	FL. PL.– 250X25	WEB PL.– 16 TH.
	3SB10	PL. GIRDER	D – 600	FL. PL.– 300X50	WEB PL.– 40 TH.
	4SB11	PL. GIRDER	D – 700	FL. PL.– 300X20	WEB PL.– 16 TH.
	4SB12	PL. GIRDER	D – 700	FL. PL.– 300X25	WEB PL.– 20 TH.
	4SB13	PL. GIRDER	D – 700	FL. PL.– 300X36	WEB PL.– 20 TH.
	4SB14	PL. GIRDER	D – 700	FL. PL.– 350X36	WEB PL.– 25 TH.
	BKT–1	4SB2 + KNEE BRACING			

NOTES:–
1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL.(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE–DG–508–600–C002 (9587–001–315–PVC–C–0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE–DG–508–611–C001 (9587–001–315–PVC–C–0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E–250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E–350.

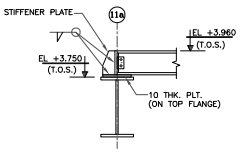
ENGINEERING REFERENCE DRAWINGS :–
1. PE–DG–508–100–M003 (9587–001–110–PWM–F–049) – TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE–DG–508–100–E002 (9587–001–199–PVE–F–001) – LAYOUT OF MV SWITCHGEAR ROOM

CONSTRUCTION REFERENCE DRAWINGS :–
1. PE–DG–508–612–C004 --------- CCR BLDG.– STRUCTURAL FRAMING ALONG A TO C ROW (NTPC DRG. NO. 9587–001–315–PVC–C–0145)
2. PE–DG–508–612–C016 --------- MPH BLDG.– DETAILS OF STAIRCASE A–B BAY. MKD. SC–1 & SC–2 (NTPC DRG. NO. 9587–001–315–PVC–C–0158)
3. PE–DG–508–612–C005 --------- PH BLDG–CLADDING FRAMING ELEVATION ON AXIS A (NTPC DRG. NO. 9587–001–315–PVC–C–0147)
4. PE–DG–508–612–C015 --------- MPH BLDG. – DETAILS OF MISC. PLATFORMS & STAIRS (NTPC DRG. NO. 9587–001–315–PVC–C–0157)

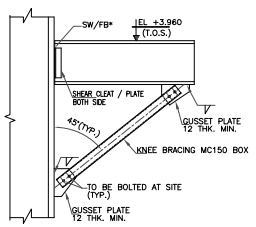
ERECTION SEQUENCE–1
1. ONE LEG OF ANGLE 2/4 SHALL BE WELDED WITH MAIN BEAM AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OTHER OUTSTANDING LEG OF ANGLE 2/4 AS PER FABRICATION DRAWING.
3. ANGLE 1/3 WILL HAVE HOLES DRILLED IN BOTH LEGS AT SHOP AS PER FABRICATION DRAWING AND SHALL BE SHIPPED LOOSE TO SITE.
4. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 1 & 2 SHALL BE BOLTED TO SECONDARY BEAM
5. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 3 & 4 SHALL BE BOLTED TO SECONDARY BEAM
6. OUTSTANDING LEG OF ANGLE 1/3 SHALL BE BOLTED TO MAIN BEAM.
7. PLEASE ENSURE THAT WHEN 'D' IS LESS THAN 500MM, SHEAR CLEAT ANGLES 2 & 4 SHALL NECESSARILY BE CONNECTED ON THE NEAR SIDE WEB FACES OF BOTH SECONDARY BEAMS.

ERECTION SEQUENCE–2
1. TWO LEGS OF T–BEAM SHALL BE WELDED WITH COLUMN AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OUTSTANDING LEG OF T–BEAM AS PER FABRICATION DRAWING.
3. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, OUTSTAND LEG OF T–BEAM SHALL BE BOLTED TO SECONDARY BEAM.

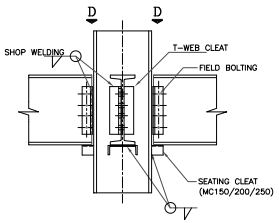
LEGEND:
CL. = CENTRE LINE
EL = ELEVATION
TYP = TYPICAL
MC = MOMENT CONNECTION
T.O.S. = TOP OF STEEL
SW = SHOP WELDING
FB = FIELD BOLTING
B.O.S. = BOTTOM OF STEEL
N.T.S. = NOT TO SCALE
T.O.P. = TOP OF PLATE
WP. = WEB PLATE
= 40 THICK GRATING
Ⓡ = REMOVABLE BEAM
= REMOVABLE GRATING
PTF. = PLATE ON TOP FLANGE



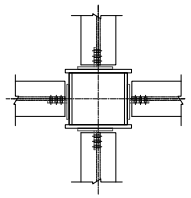
SECTION 5–5



SECTION 6–6
TYP.BRACKET DETAIL WITH KNEE
(* TO BE DECIDED BY DETAILER DURING DETAILED FABRICATION DRAWING)



TYP. CONNECTION DETAIL OF PRIMARY BEAM TO AUX COL.
(REFER ERECTION SEQUENCE–2)



VIEW D–D
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–2)

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

THIS DRAWING IS RELEASED FOR
☐ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
Amit Thakur
16.07.2024

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587–001–315–PVC–C–0163
OWNER NTPC
PROJECT LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II
BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DEPT	NAME	SIGN	DATE
DRN	SEEMA	Sd/–	16.07.2024
DESIGN	K	Sd/–	16.07.2024
CHD	AT	Sd/–	16.07.2024
APPD/DKM		Sd/–	16.07.2024

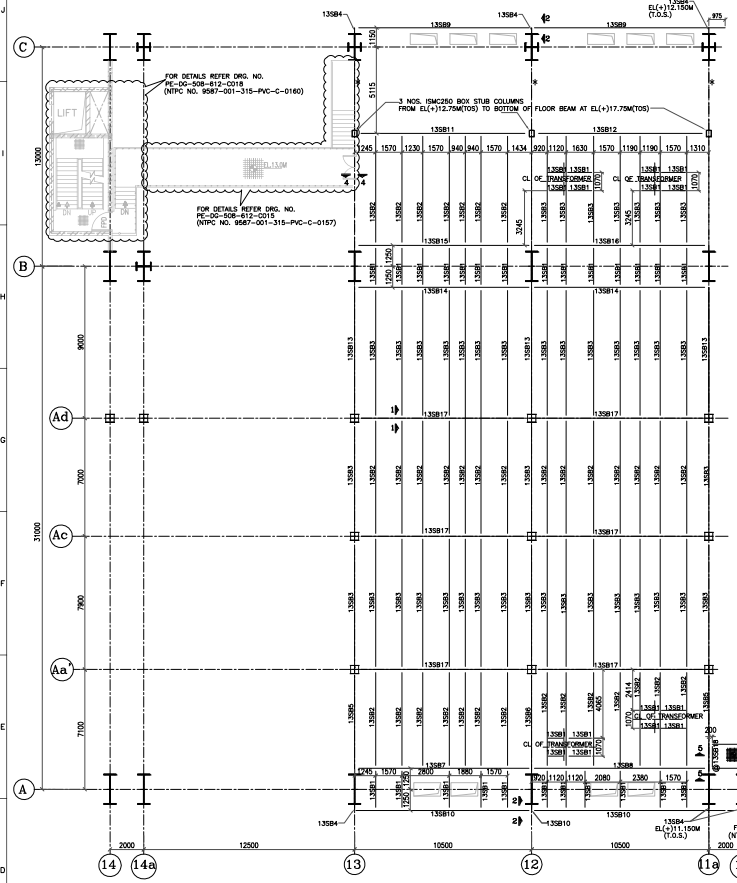
TITLE
MPH BUILDING
FRAMING PLAN AT EL (+) 4.00M (FFL) (CCR BUILDING)

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO. PE–DG–508–612–C021
					SIGN		
					DATE		SHEET 1 OF 1 REV. 0

FORMAT SIZE A0

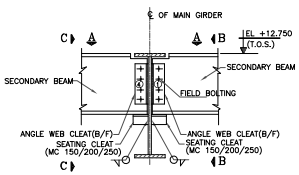
FIRST ANGLE PRJECTION — ALL DIMENSIONS ARE IN MM

DRAWING NO. PE-DG-508-612-C024

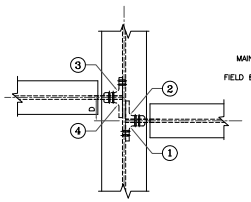


PLAN AT EL (+)12.750 (T.O.S.) (CCR)

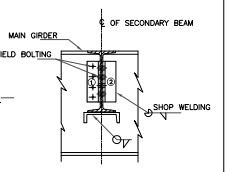
* FOR SIZE REFER DRG. NO. PE-DG-508-612-C004 (NTPC DRG. NO. 9587-001-315-PVC-C-0145)
(B-MARKED MEMBERS ARE AT T.O.S. (+)12.960 U.N.O.)
(B)– MARKED BEAMS ARE REMOVABLE BEAMS)
(ALL CONNECTIONS ARE SHEAR CONNECTIONS UNLESS NOTED OTHERWISE)



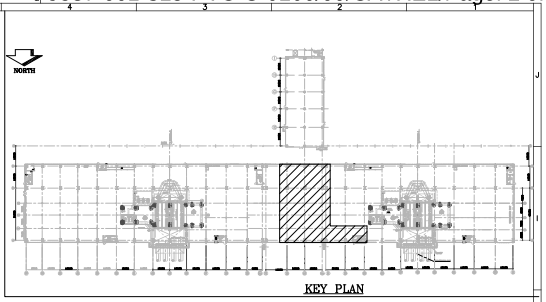
SECTION 1–1
TYP. CONNECTION DETAIL OF SECONDARY BEAM TO PRIMARY BEAM



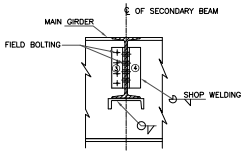
VIEW A–A
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



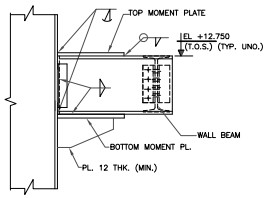
VIEW B–B
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



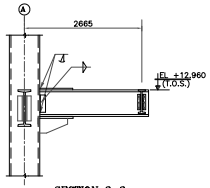
KEY PLAN



VIEW C–C
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



SECTION 2–2
TYP.BRACKET DETAIL WITHOUT KNEE (MOMENT CONNECTION)



SECTION 3–3
(MOMENT CONNECTION)

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT(MT)	GRADE
1	ISMC75	0.01	IS2062--E250
2	ISMB200	2.00	IS2062--E250
3	ISMB400	14.08	IS2062--E250
4	ISMB500	27.20	IS2062--E250
5	ISMB600	3.93	IS2062--E250
6	16 THK. PLT.	8.41	IS2062--E350
7	20 THK. PLT.	8.72	IS2062--E350
8	25 THK. PLT.	3.46	IS2062--E350
9	28 THK. PLT.	14.95	IS2062--E350
10	32 THK. PLT.	1.58	IS2062--E350
11	36 THK. PLT.	14.24	IS2062--E350
12	40 THK. PLT.	1.98	IS2062--E350
13	45 THK. PLT.	2.22	IS2062--E350
14	50 THK. PLT.	2.47	IS2062--E350
	TOTAL	105.30	(APPROX.)

BEAM SCHEDULE

PL. GIRDER DETAILS	BEAM MKD.	BEAM SECTION			
	13SB1	MB 200			
	13SB2	MB 400			
	13SB3	MB 500			
	13SB4	MB 600			
– BUILT UP GIRDERS SHALL BE PROVIDED WITH 5 NO. WEB STIFF. PL AS PER ISSOC. – STIFFENERS SHALL BE PROVIDED FOR BEAMS CONNECTED TO AUX. COL. AS PER ISSOC. – ALL SECONDARY BEAMS SHALL HAVE SHEAR CONNECTION.	13SB5	PL. GIRDER	D – 550	FL. PL.– 250X16	WEB PL.– 16 TH.
	13SB6	PL. GIRDER	D – 550	FL. PL.– 300X20	WEB PL.– 20 TH.
	13SB7	PL. GIRDER	D – 550	FL. PL.– 300X45	WEB PL.– 28 TH.
	13SB8	PL. GIRDER	D – 550	FL. PL.– 300X50	WEB PL.– 28 TH.
	13SB9	PL. GIRDER	D – 600	FL. PL.– 250X16	WEB PL.– 16 TH.
	13SB10	PL. GIRDER	D – 600	FL. PL.– 250X25	WEB PL.– 16 TH.
	13SB11	PL. GIRDER	D – 600	FL. PL.– 300X28	WEB PL.– 20 TH.
	13SB12	PL. GIRDER	D – 600	FL. PL.– 300X32	WEB PL.– 20 TH.
	13SB13	PL. GIRDER	D – 700	FL. PL.– 300X20	WEB PL.– 16 TH.
	13SB14	PL. GIRDER	D – 700	FL. PL.– 300X28	WEB PL.– 20 TH.
	13SB15	PL. GIRDER	D – 700	FL. PL.– 300X36	WEB PL.– 20 TH.
	13SB16	PL. GIRDER	D – 700	FL. PL.– 300X40	WEB PL.– 25 TH.
	13SB17	PL. GIRDER	D – 700	FL. PL.– 350X36	WEB PL.– 28 TH.
	13SB18	ISMC 75			

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE–DG–508–600–C002 (9587–001–315–PVC–C–0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE–DG–508–611–C001 (9587–001–315–PVC–C–0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E–250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E–350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE–DG–508–100–M004 (9587–001–110–PVM–F–050) – TG EQUIPMENT LAYOUT DRAWING AT MEZZANINE FLOOR 9.0M
2. PE–DG–508–100–E003 (9587–001–200–PVE–F–102) – LAYOUT OF LV SWITCHGEAR ROOM
3. JHS–9587–00–002 (9587–001–215–JHS–PVE–B–220) – 2500 KVA DRY TYPE TRANSFORMER– OGA

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE–DG–508–612–C004 -------- CCR BLDG.– STRUCTURAL FRAMING ALONG A TO C ROW (NTPC DRG. NO. 9587–001–315–PVC–C–0145)
2. PE–DG–508–612–C018 -------- MPH BLDG.– DETAILS OF STAIRCASE MKD. SC–04 & SC–05 (NTPC DRG. NO. 9587–001–315–PVC–C–0160)
3. PE–DG–508–612–C005 -------- PH BLDG–CLADDING FRAMING ELEVATION ON AXIS A (NTPC DRG. NO. 9587–001–315–PVC–C–0147)
4. PE–DG–508–612–C015 -------- MPH BLDG. – DETAILS OF MISC. PLATFORMS & STAIRS (NTPC DRG. NO. 9587–001–315–PVC–C–0157)

ERECTION SEQUENCE–1

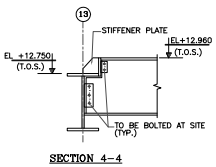
1. ONE LEG OF ANGLE 2/4 SHALL BE WELDED WITH MAIN BEAM AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OTHER OUTSTANDING LEG OF ANGLE 2/4 AS PER FABRICATION DRAWING.
3. ANGLE 1/3 WILL HAVE HOLES DRILLED IN BOTH LEGS AT SHOP AS PER FABRICATION DRAWING AND SHALL BE SHIPPED LOOSE TO SITE.
4. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 1 & 2 SHALL BE BOLTED TO SECONDARY BEAM
5. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 3 & 4 SHALL BE BOLTED TO SECONDARY BEAM
6. OUTSTANDING LEG OF ANGLE 1/3 SHALL BE BOLTED TO MAIN BEAM.
7. PLEASE ENSURE THAT WHEN 'D' IS LESS THAN 500MM, SHEAR CLEAT ANGLES 2 & 4 SHALL NECESSARILY BE CONNECTED ON THE NEAR SIDE WEB FACES OF BOTH SECONDARY BEAMS.

ERECTION SEQUENCE–2

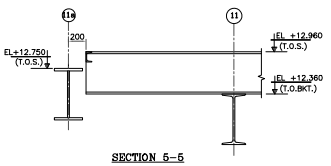
1. TWO LEGS OF T–BEAM SHALL BE WELDED WITH COLUMN AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OUTSTANDING LEG OF T–BEAM AS PER FABRICATION DRAWING.
3. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, OUTSTAND LEG OF T–BEAM SHALL BE BOLTED TO SECONDARY BEAM.

LEGEND:

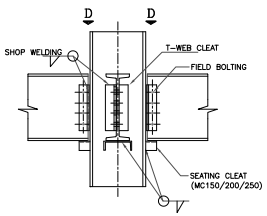
CL. = CENTRE LINE
EL = ELEVATION
TYP = TYPICAL
MC = MOMENT CONNECTION
T.O.S. = TOP OF STEEL
SW = SHOP WELDING
FB = FIELD BOLTING
B.O.S. = BOTTOM OF STEEL
N.T.S. = NOT TO SCALE
T.O.P. = TOP OF PLATE
WP. = WEB PLATE
= 40 THICK GRATING
(R) = REMOVABLE BEAM
(D) = REMOVABLE GRATING
PTF. = PLATE ON TOP FLANGE



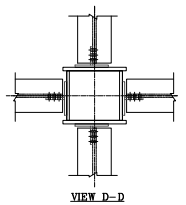
SECTION 4–4



SECTION 5–5



TYP. CONNECTION DETAIL OF PRIMARY BEAM TO AUX COL
(REFER ERECTION SEQUENCE–2)



VIEW D–D
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–2)

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587–001–315–PVC–C–0166
OWNER NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)
PROJECT LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II
BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

	NAME	SIGN	DATE
DRN	SEEMA	Sd/–	19.07.2024
DESIGN	NK	Sd/–	19.07.2024
CHD	AT	Sd/–	19.07.2024
APPD	GKM	Sd/–	19.07.2024

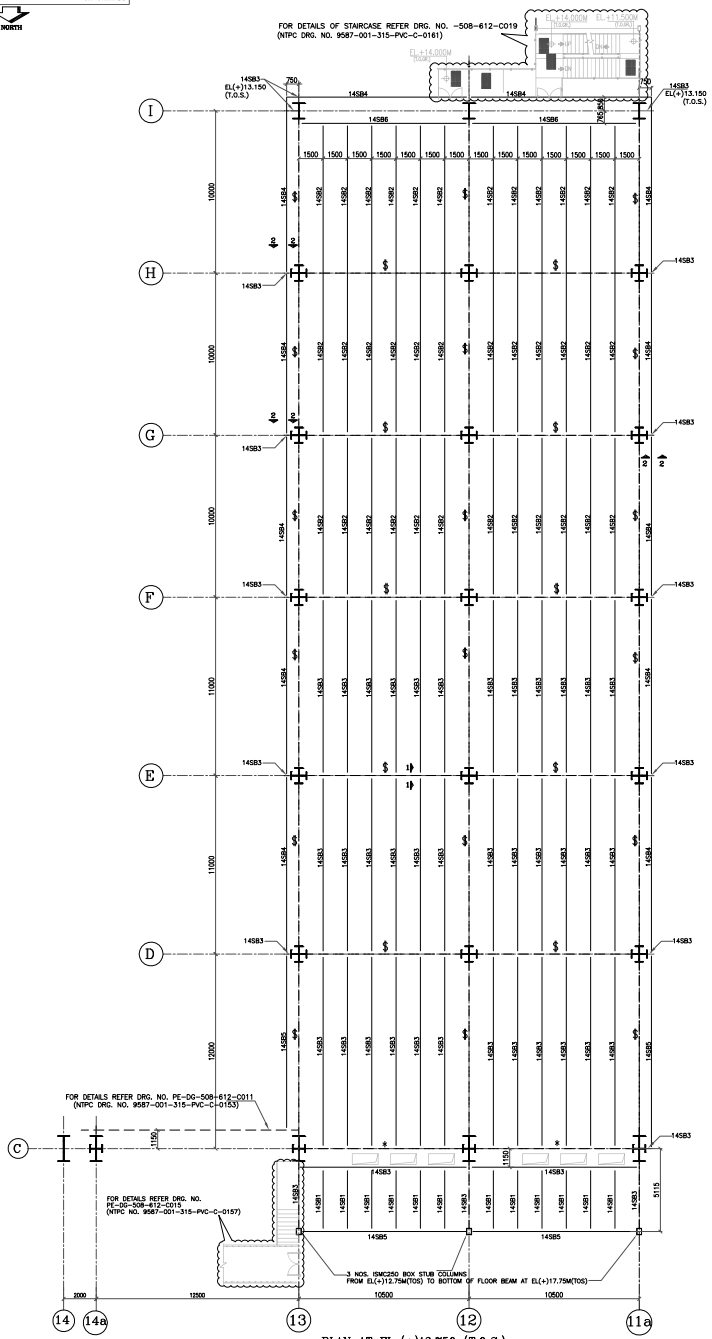
TITLE MPH BUILDING
FRAMING PLAN AT EL (+) 13.00M (FFL) (CCR BUILDING)

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO.
					SIGN		PE–DG–508–612–C024
					DATE		SHEET 1 OF 1 REV. 0

FORMAT SIZE A0

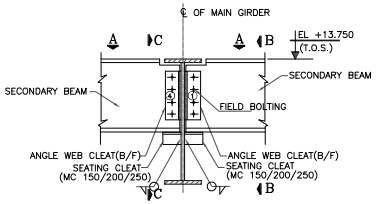
FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM

DRAWING NO. PE-DG-508-612-C030

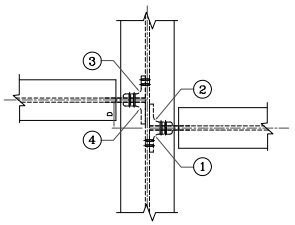


PLAN AT EL (+)13.750 (T.O.S.)
(CCR BUILDING)

* FOR SIZE REFER DRG. NO. PE-DG-508-612-C004 (NTPC DRG. NO. 9587-001-315-PVC-C-0145)
$ FOR SIZE REFER DRG. NO. PE-DG-508-612-C004A (NTPC DRG. NO. 9587-001-315-PVC-C-0146)
(ALL CONNECTIONS ARE SHEAR CONNECTIONS UNLESS NOTED OTHERWISE)

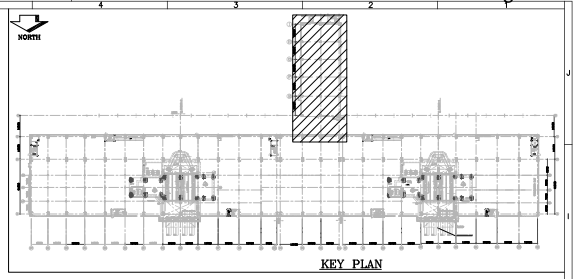


SECTION 1–1
TYP. CONNECTION DETAIL OF SECONDARY BEAM TO PRIMARY BEAM

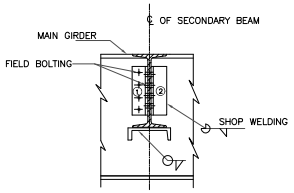


VIEW A–A

(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)

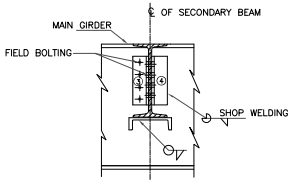


KEY PLAN



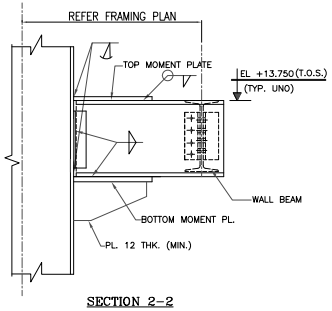
VIEW B–B

(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



VIEW C–C

(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



SECTION 2–2
TYP.BRACKET DETAIL WITHOUT KNEE

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT(MT)	GRADE
1	ISMB250	1.77	IS2062––E250
2	ISMB500	30.49	IS2062––E250
3	ISMB600	55.16	IS2062––E250
4	16 THK. PLT.	21.67	IS2062––E350
5	20 THK. PLT.	5.51	IS2062––E350
	TOTAL	114.61	

BEAM SCHEDULE

PL. GIRDER DETAILS	BEAM MKD.	BEAM SECTION			
PL. GIRDER: TK. PL. / WEB PL. / FL. PL.	14SB1	MB 250			
	14SB2	MB 500			
	14SB3	MB 600			
	14SB4	PL. GIRDER	D – 600	FL. PL.– 250X16	WEB PL.– 16 TH.
	14SB5	PL. GIRDER	D – 600	FL. PL.– 250X20	WEB PL.– 16 TH.
	14SB6	PL. GIRDER	D – 700	FL. PL.– 300X20	WEB PL.– 16 TH.

– BUILT UP GIRDERS SHALL BE PROVIDED WITH 8 TH. WEB STIFF. PL. AS PER IS:800.
– ALL SECONDARY BEAMS SHALL HAVE SHEAR CONNECTION.

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL.(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E–250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E–350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE–DG–508–100–M004 (9587–001–110–PVM–F–050) – TG EQUIPMENT LAYOUT DRAWING AT MEZZANINE FLOOR 9.0M

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE–DG–508–612–C004 --------- CCR BLDG.– STRUCTURAL FRAMING ALONG A TO C ROW (NTPC DRG. NO. 9587–001–315–PVC–C–0145)
2. PE–DG–508–612–C004A ------- CCR BLDG.– STRUCTURAL FRAMING ALONG D TO I ROW (NTPC DRG. NO. 9587–001–315–PVC–C–0146)
3. PE–DG–508–612–C019 --------- MPH BLDG.– DETAILS OF STAIRCASE MKD. SC–07 (NTPC DRG. NO. 9587–001–315–PVC–C–0161)
4. PE–DG–508–612–C011 --------- PH BLDG–CLADDING FRAMING ELEVATION ON AXIS C (NTPC DRG. NO. 9587–001–315–PVC–C–0153)
5. PE–DG–508–612–C015 --------- MPH BLDG. – DETAILS OF MISC. PLATFORMS & STAIRS (NTPC DRG. NO. 9587–001–315–PVC–C–0157)

ERECTION SEQUENCE–1

1. ONE LEG OF ANGLE 2/4 SHALL BE WELDED WITH MAIN BEAM AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OTHER OUTSTANDING LEG OF ANGLE 2/4 AS PER FABRICATION DRAWING.
3. ANGLE 1/3 WILL HAVE HOLES DRILLED IN BOTH LEGS AT SHOP AS PER FABRICATION DRAWING AND SHALL BE SHIPPED LOOSE TO SITE.
4. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 1 & 2 SHALL BE BOLTED TO SECONDARY BEAM.
5. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 3 & 4 SHALL BE BOLTED TO SECONDARY BEAM
6. OUTSTANDING LEG OF ANGLE 1/3 SHALL BE BOLTED TO MAIN BEAM.
7. PLEASE ENSURE THAT WHEN 'D' IS LESS THAN 500MM, SHEAR CLEAT ANGLES 2 & 4 SHALL NECESSARILY BE CONNECTED ON THE NEAR SIDE WEB FACES OF BOTH SECONDARY BEAMS.

ERECTION SEQUENCE–2

1. TWO LEGS OF T–BEAM SHALL BE WELDED WITH COLUMN AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OUTSTANDING LEG OF T–BEAM AS PER FABRICATION DRAWING.
3. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, OUTSTAND LEG OF T–BEAM SHALL BE BOLTED TO SECONDARY BEAM.

LEGEND:

CL. = CENTRE LINE
EL = ELEVATION
TYP = TYPICAL
MC = MOMENT CONNECTION
T.O.S. = TOP OF STEEL
SW = SHOP WELDING
FB = FIELD BOLTING
B.O.S. = BOTTOM OF STEEL
N.T.S. = NOT TO SCALE
T.O.P. = TOP OF PLATE
WP. = WEB PLATE
= 40 THICK GRATING
(R) = REMOVABLE BEAM
= REMOVABLE GRATING
PTF. = PLATE ON TOP FLANGE

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

THIS DRAWING SUBMITTED TO REVIEW FOR
✔ COMMENTS/APPROVAL
☐ CLEARANCE/INFORMATION
☐ CONSTRUCTION
DRAWING IS CLEARED FOR CONSTRUCTION
ISSUED BY
NAME Ayush Thakur
SIGNATURE
DATE 23/07/2024

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587–001–315–PVC–C–0172
OWNER NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)
PROJECT LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

	NAME	SIGN	DATE
DSN	SEEMA		23.07.2024
DSN	NK		23.07.2024
CHD	AT		23.07.2024
APPD	GKM		23.07.2024

C

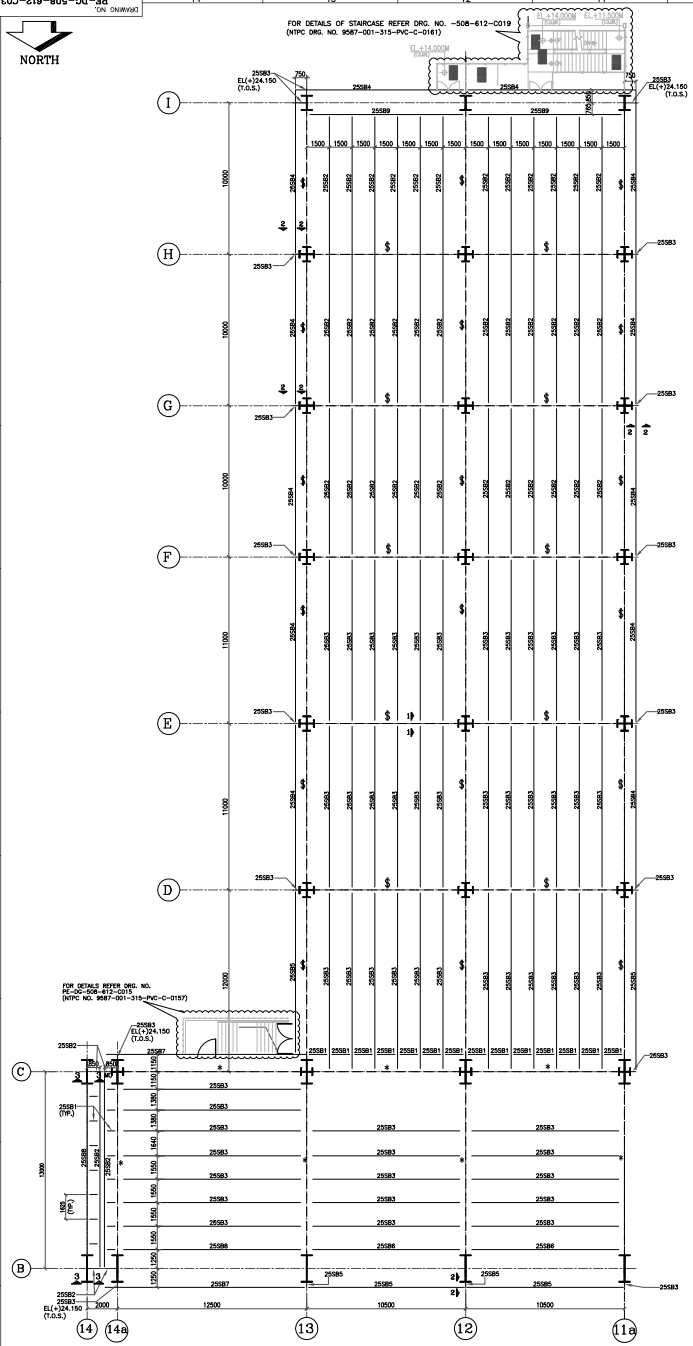
TITLE: MPH BUILDING
FRAMING PLAN AT EL (+) 14.00M (PFL) (CCR BUILDING)

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO.
					SIGN		PE–DG–508–612–C030
					DATE		SHEET 1 OF 1 REV. 0

FORMAT SIZE A0

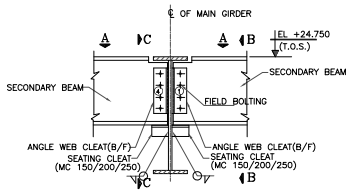
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

DRAWING NO. PE-DG-508-612-C034

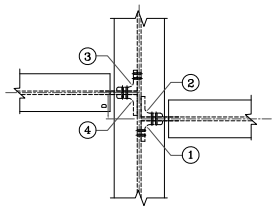


PLAN AT EL (+)24.750 (T.O.S.)
(CCR BUILDING)

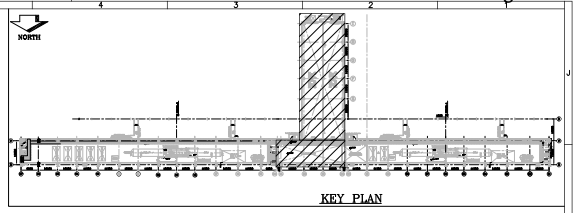
* FOR SIZE REFER DRG. NO. PE-DG-508-612-C004 (NTPC DRG. NO. 9587-001-315-PVC-C-0145)
$ FOR SIZE REFER DRG. NO. PE-DG-508-612-C004A (NTPC DRG. NO. 9587-001-315-PVC-C-0146)
(ALL CONNECTIONS ARE SHEAR CONNECTIONS UNLESS NOTED OTHERWISE)



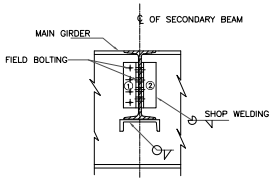
SECTION 1–1
TYP. CONNECTION DETAIL OF SECONDARY BEAM TO PRIMARY BEAM



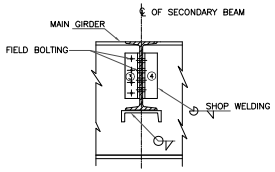
VIEW A–A
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



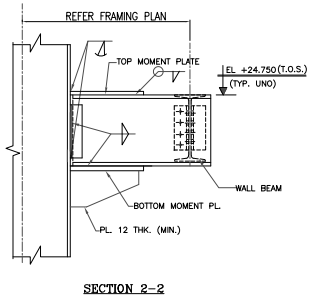
KEY PLAN



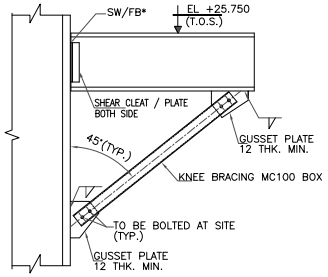
VIEW B–B
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



VIEW C–C
(DIA. & NO. OF BOLTS ARE INDICATIVE. ACTUAL DIA. & NO. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)
(REFER ERECTION SEQUENCE–1)



SECTION 2–2
TYP.BRACKET DETAIL WITHOUT KNEE



SECTION 3–3
TYP. BRACKET DETAIL WITH KNEE
(* TO BE DECIDED BY DETAILER DURING DETAILED FABRICATION DRAWING)

BEAM SCHEDULE

PL. GIRDER DETAILS	BEAM MKD.	BEAM SECTION			
	25SB1	MB 200			
	25SB2	MB 500			
	25SB3	MB 600			
PL. GIRDER D FL. PL. WEB PL FL. PL.	25SB4	PL. GIRDER	D – 600	FL. PL– 250X16	WEB PL.– 16 TH.
	25SB5	PL. GIRDER	D – 600	FL. PL– 250X20	WEB PL.– 16 TH.
	25SB6	PL. GIRDER	D – 600	FL. PL– 250X25	WEB PL.– 16 TH.
	25SB7	PL. GIRDER	D – 600	FL. PL– 250X36	WEB PL.– 20 TH.
	25SB8	PL. GIRDER	D – 600	FL. PL– 300X36	WEB PL.– 20 TH.
	25SB9	PL. GIRDER	D – 700	FL. PL– 300X20	WEB PL.– 16 TH.

– BUILT UP GIRDERS SHALL BE PROVIDED WITH 8 TH. WEB STIFF. PL. AS PER IS:800.
– ALL SECONDARY BEAMS SHALL HAVE SHEAR CONNECTION.

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT(MT)	GRADE
1	ISMC100	0.07	IS2062--E250
2	ISMB200	0.81	IS2062--E250
3	ISMB500	34.07	IS2062--E250
4	ISMB600	74.34	IS2062--E250
5	16 THK. PLT.	23.22	IS2062--E350
6	20 THK. PLT.	9.80	IS2062--E350
7	25 THK. PLT.	2.06	IS2062--E350
8	36 THK. PLT.	7.86	IS2062--E350
	TOTAL	152.30	(APPROX.)

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0025)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE-DG-508-100-MD06 (9587-001-110-PVM-F-052) – TG EQUIPMENT PLAN AT UPPER FLOORS IN B–C BAY

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE-DG-508-612-C004 --------- CCR BLDG.– STRUCTURAL FRAMING ALONG A TO C ROW (NTPC DRG. NO. 9587-001-315-PVC-C-0145)
2. PE-DG-508-612-C004A --------- CCR BLDG.– STRUCTURAL FRAMING ALONG D TO I ROW (NTPC DRG. NO. 9587-001-315-PVC-C-0146)
3. PE-DG-508-612-C019 --------- MPH BLDG.– DETAILS OF STAIRCASE MKD. SC–07 (NTPC DRG. NO. 9587-001-315-PVC-C-0161)
4. PE-DG-508-612-C011 --------- PH BLDG–CLADDING FRAMING ELEVATION ON AXIS C (NTPC DRG. NO. 9587-001-315-PVC-C-0153)
5. PE-DG-508-612-C015 --------- MPH BLDG. – DETAILS OF MISC. PLATFORMS & STAIRS (NTPC DRG. NO. 9587-001-315-PVC-C-0157)

ERECTION SEQUENCE–1

1. ONE LEG OF ANGLE 2/4 SHALL BE WELDED WITH MAIN BEAM AT SHOP.
2. HOLES FOR BOLT SHALL BE DRILLED AT SHOP IN OTHER OUTSTANDING LEG OF ANGLE 2/4 AS PER FABRICATION DRAWING.
3. ANGLE 1/3 WILL HAVE HOLES DRILLED IN BOTH LEGS AT SHOP AS PER FABRICATION DRAWING AND SHALL BE SHIPPED LOOSE TO SITE.
4. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 1 & 2 SHALL BE BOLTED TO SECONDARY BEAM
5. AFTER PLACING SECONDARY BEAM IN POSITION WITH CRANE, BOTH ANGLE 3 & 4 SHALL BE BOLTED TO SECONDARY BEAM
6. OUTSTANDING LEG OF ANGLE 1/3 SHALL BE BOLTED TO MAIN BEAM.
7. PLEASE ENSURE THAT WHEN "D" IS LESS THAN 600MM, SHEAR CLEAT ANGLES 2 & 4 SHALL NECESSARILY BE CONNECTED ON THE NEAR SIDE WEB FACES OF BOTH SECONDARY BEAMS.

LEGEND:

CL. = CENTRE LINE
EL = ELEVATION
TYP = TYPICAL
MC = MOMENT CONNECTION
T.O.S. = TOP OF STEEL
SW = SHOP WELDING
FB = FIELD BOLTING
B.O.S. = BOTTOM OF STEEL
N.T.S. = NOT TO SCALE
T.O.P. = TOP OF PLATE
WP. = WEB PLATE
= 40 THICK GRATING
(R) = REMOVABLE BEAM
= REMOVABLE GRATING
PTF. = PLATE ON TOP FLANGE

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587-001-315-PVC-C-0176
OWNER NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)
PROJECT LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II
BHARAT HEAVY ELECTRICALS LTD (POWER SECTOR) PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

	NAME	SIGN	DATE
DSN	SEEMA		26.07.2024
DSN	NK		26.07.2024
CHD	AT		26.07.2024
APPD	GKM		26.07.2024

TITLE MPH BUILDING
FRAMING PLAN AT EL (+) 25.00M (FFL) (CCR BUILDING)

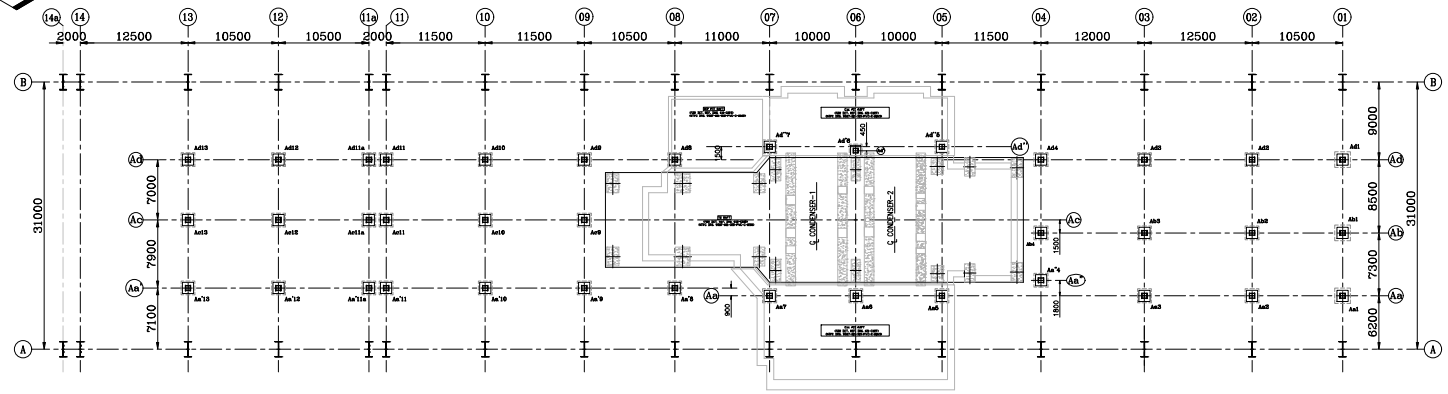
MPL	ELEC	C&I	MSE	MAX

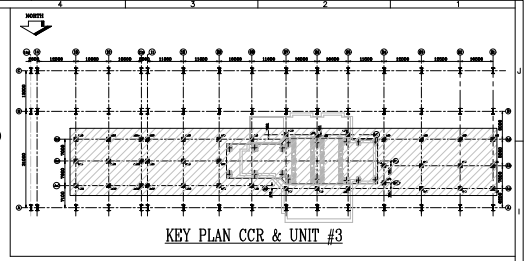
DEPT. SCALE – DRAWING NO. PE-DG-508-612-C034
SIGN DATE SHEET 1 OF 1 REV. 0
FORMAT SIZE A0

DRAWING NO. PE-DG-508-612-C009

FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM

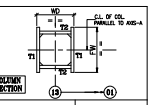
NORTH





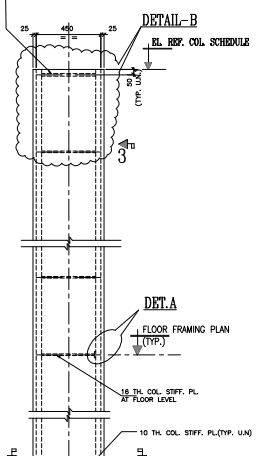
FOUNDATION PLAN (CCR & UNIT#3)

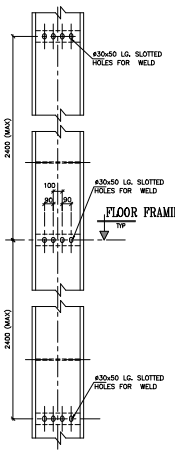
INTERMEDIATE COLUMN CCR & UNIT # 3



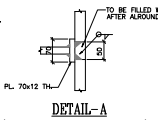
COLUMN MARKED	FW	WD	FLANGE THICKNESS T1	WEB THICKNESS T2	COL. ELEVATION (UNDER SIDE OF BASE PL.)	COL. ELEVATION (T.O.S.)
Ac'13	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ac13	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ad13	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac'12	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac12	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad12	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac'11a	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ac11a	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ad11a	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac'11	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ac11	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ad11	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ac'10	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac10	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ad10	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac'9	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac9	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad9	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac'8	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ac8	500	450	16	16	EL(-) 3.950M	EL(+) 17.800M
Ac7	500	450	20	20	EL(-) 6.200M	EL(+) 17.800M
Ac'7	500	450	20	20	EL(-) 3.950M	EL(+) 17.800M
Ac6	500	450	20	20	EL(-) 6.200M	EL(+) 17.800M
Ac'6	500	450	20	20	EL(-) 5.700M	EL(+) 17.800M
Ac5	500	450	20	20	EL(-) 6.200M	EL(+) 17.800M
Ac'5	500	450	20	20	EL(-) 5.700M	EL(+) 17.800M
Ac'4	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ab4	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad4	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac3	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ab3	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ad3	500	450	36	36	EL(-) 1.200M	EL(+) 17.800M
Ac2	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ab2	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad2	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac1	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ab1	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad1	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M

FOR COLS ABOVE EL +18.00 ON GRID – 1 REF. DETAIL B AND DRG. PE-DG-508-612-C012 (NTPC DRG. NO.– 9587-001-315-PVC-C-0154)

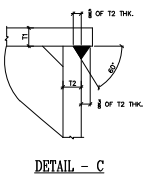




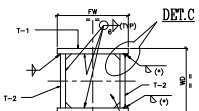
VIEW 3-3



DETAIL-A
(AVOID THIS DET. AT MOMENT CONNECTION)

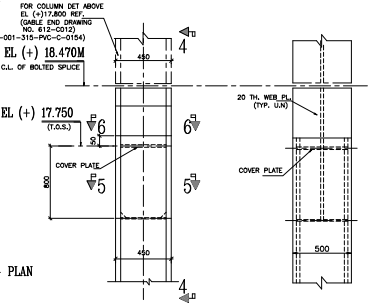


DETAIL – C



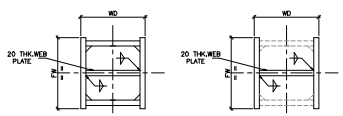
SECTION 2-2
(*) BUTT WELD REINFORCED WITH FILLET WELD

VIEW 1-1
NOTE:– IF ANY BRACKET TO BE SUPPORTED, STIFF. SHALL BE PROVIDED INSIDE COL. IN LINE WITH BRACKET.

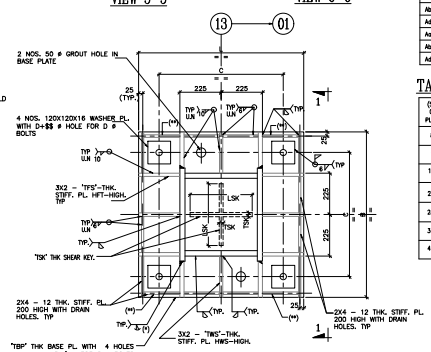


DETAIL B
(ONLY FOR GABLE END ON GRID 1)

VIEW 4-4



VIEW 5-5 VIEW 6-6



DETAIL OF COLUMN & BASE PLATE
(*) BUTT WELD REINFORCED WITH FILLET WELD
REFER BASE PLATE SCHEDULE FOR THICKNESS OF PLATES
(**) THIS PLATE SHALL BE WELDED AFTER ALIGNMENT OF COLUMN
$ ø HOLES. = ø OF BOLT + 10 MM
$$ ø HOLES. = ø OF BOLT + 3 MM

AUX COLUMN BASE PLATES (CCR & UNIT#3)

COLUM MARKED	LENGTH OF THE BASE PLATE L	WIDTH OF THE BASE PLATE B	THK. OF BASE PLATE, TBP	BOLT DISTANCE CENTRED TO CENRE C	THK. OF FLANGE STIFFENER PLATE, TFS	THK. OF WEB STIFFENER PLATE, TWS	HEIGHT OF FLANGE STIFFENER, HFT	HEIGHT OF WEB STIFFENER, HWS	DIA OF HOLES, D	THICKNESS OF SHEAR KEY, TSK (NO. OF SHEAR KEY = 2 NOS.)	WIDTH OF SHEAR KEY, LSK	DEPTH OF SHEAR KEY, DSK
Ac'13	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ac13	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ad13	1100	1100	25	775	12	12	600	600	32	4	16	200	150
Ac'12	1200	1200	25	825	12	12	800	800	32	4	16	200	150
Ac12	1200	1200	25	825	12	12	800	800	32	4	16	200	150
Ad12	1300	1300	25	875	12	12	900	900	32	4	16	200	150
Ac'11a	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ac11a	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ad11a	1100	1100	25	775	12	12	600	600	32	4	16	200	150
Ac'11	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac11	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad11	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac'10	1000	1000	25	725	12	12	700	700	25	4	16	200	150
Ac10	1000	1000	25	725	12	12	700	700	25	4	16	200	150
Ad10	1100	1100	25	775	12	12	850	850	25	4	16	200	150
Ac'9	1000	1000	25	725	12	12	700	700	25	4	16	200	150
Ac9	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad9	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac'8	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac8	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac7	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac'7	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac6	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac'6	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac5	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac'5	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac'4	1000	1000	25	725	12	12	700	700	25	4	16	200	150
Ab4	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad4	1100	1100	25	775	12	12	850	850	25	4	16	200	150
Ac3	1000	1000	25	725	12	12	700	700	25	4	16	200	150
Ab3	1100	1100	25	775	12	12	850	850	25	4	16	200	150
Ad3	1200	1200	25	825	16	16	1000	1000	25	4	16	200	150
Ac2	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ab2	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad2	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ac1	1000	1000	20	725	12	12	600	600	32	4	16	200	150
Ab1	1000	1000	20	725	12	12	600	600	32	4	16	200	150
Ad1	1000	1000	20	725	12	12	600	600	25	4	16	200	150

TABLE – A

(SHOWING SIZE OF PL. THICKNESS.	(SIZE OF WELD IN MM)	(SIZE OF WELD IN MM)
8 & 10	DOUBLE BEVEL BUTT WELD WITH REINFORCED & MM THICK BACKING RODS.	6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		22
45 & 50		25

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT	GRADE
1.	12 THK. PLT.	11.17	IS2062-E350
2.	16 THK. PLT.	38.66	IS2062-E350
3.	20 THK. PLT.	40.76	IS2062-E350
4.	25 THK. PLT.	80.92	IS2062-E350
5.	32 THK. PLT.	79.59	IS2062-E350
6.	36 THK. PLT.	8.87	IS2062-E350
TOTAL TONNAGE– MT 260			

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL. (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE-DG-508-100-M003 (9587-001-110-PWI-F-048) – TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE-DG-508-100-M004 (9587-001-110-PWI-F-050) – TG EQUIPMENT PLAN AT MEZZANINE FLOOR
3. PE-DG-508-100-M005 (9587-001-110-PWI-F-051) – TG EQUIPMENT PLAN AT OPERATING FLOOR
4. PE-DG-508-100-M006 (9587-001-110-PWI-F-052) – TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
5. PE-DG-508-100-M007 (9587-001-110-PWI-F-053) – CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE-DG-508-612-C001 (NTPC DRG. NO.– 9587-001-315-PVC-C-0142) – PH BUILDING: STRUCTURAL FRAMING ALONG A ROW
2. PE-DG-508-612-C002 (NTPC DRG. NO.– 9587-001-315-PVC-C-0143) – PH BUILDING: STRUCTURAL FRAMING ALONG B ROW
3. PE-DG-508-612-C004 (NTPC DRG. NO.– 9587-001-315-PVC-C-0145) – PH BUILDING: CCR STRUCTURAL FRAMING ALONG A TO C ROW
4. PE-DG-508-612-C012 (NTPC DRG. NO.– 9587-001-315-PVC-C-0154) – PH BUILDING: DETAILS OF GABLE END COLUMNS

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. TH. = THICK
9. PL. = PLATE

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED ☑ IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 22/06/2024

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

NTPC DRG. NO. 9587-001-315-PVC-C-0151

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PLANT 2X800MW STAGE–II

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

C

DEPT CODE	NAME	SIGN	DATE
DRN	KKAS	Sd/–	20.06.2024
DESIGN		Sd/–	19.06.2024
CHD	MT	Sd/–	21.06.2024
APPD	DKM	Sd/–	22.06.2024

TITLE: MPH BUILDING
DETAILS OF INTERMEDIATE COLUMNS (CCR & UNIT#3)

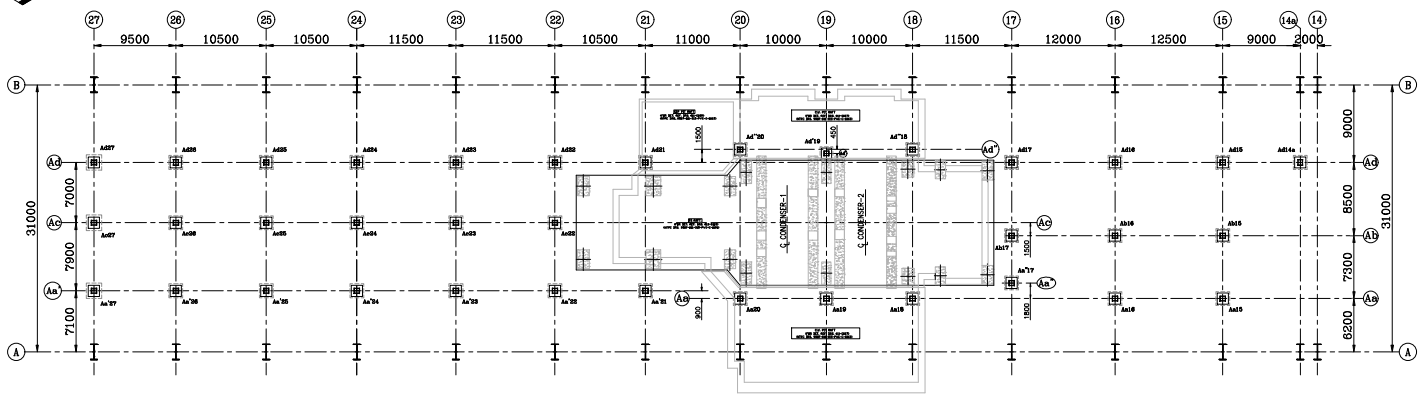
MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –
					SIGN	DRAWING NO. PE-DG-508-612-C009
					DATE	SHEET 1 OF 2 REV. 0

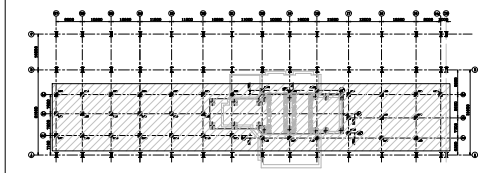
FORMAT SIZE A0

FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM

DRAWING NO. PE-DG-508-612-C009

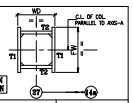
NORTH





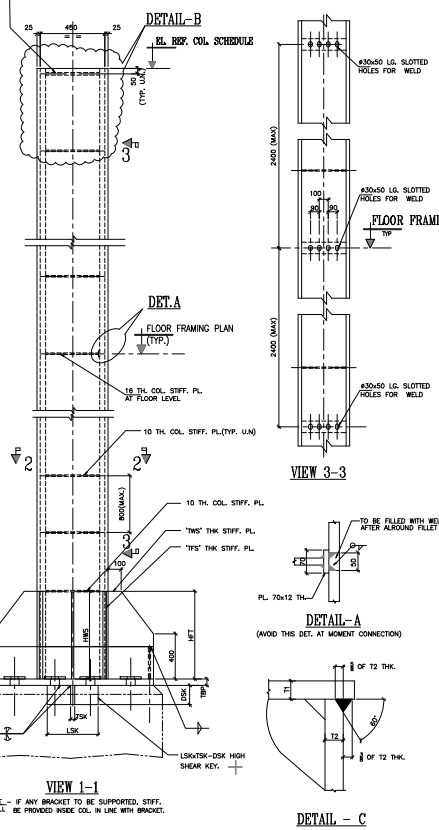
FOUNDATION PLAN (UNIT#4)

INTERMEDIATE COLUMN UNIT # 4



COLUMN MARKED	FW	WD	FLANGE THICKNESS T1	WEB THICKNESS T2	COL. ELEVATION (UNDER SIDE OF BASE PL.)	COL. ELEVATION (T.O.S.)
Ac'27	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac27	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad27	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ae'26	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac26	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad26	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac'25	500	450	36	36	EL(-) 1.200M	EL(+) 17.800M
Ac25	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ad25	500	450	36	36	EL(-) 1.200M	EL(+) 17.800M
Ae'24	500	450	36	36	EL(-) 1.200M	EL(+) 17.800M
Ac24	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ad24	500	450	36	36	EL(-) 1.200M	EL(+) 17.800M
Ac'23	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac23	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ad23	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac'22	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac22	500	450	20	20	EL(-) 1.200M	EL(+) 17.800M
Ad22	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ac'21	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ad21	500	450	16	16	EL(-) 3.950M	EL(+) 17.800M
Ae20	500	450	16	16	EL(-) 6.200M	EL(+) 17.800M
Ad'20	500	450	16	16	EL(-) 3.950M	EL(+) 17.800M
Ac19	500	450	16	16	EL(-) 6.200M	EL(+) 17.800M
Ad'19	500	450	16	16	EL(-) 5.700M	EL(+) 17.800M
Ac18	500	450	16	16	EL(-) 6.200M	EL(+) 17.800M
Ad'18	500	450	16	16	EL(-) 5.700M	EL(+) 17.800M
Ae'17a	500	450	20	20	EL(-) 1.200M	EL(+) 17.800M
Ac17	500	450	16	16	EL(-) 1.200M	EL(+) 17.800M
Ad17	500	450	28	28	EL(-) 1.200M	EL(+) 17.800M
Ae16	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ac16	500	450	32	32	EL(-) 1.200M	EL(+) 17.800M
Ad16	500	450	36	36	EL(-) 1.200M	EL(+) 17.800M
Ae15	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ab15	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad15	500	450	25	25	EL(-) 1.200M	EL(+) 17.800M
Ad14a	500	450	20	20	EL(-) 1.200M	EL(+) 17.800M

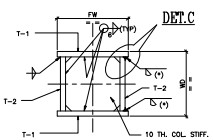
FOR COLS ABOVE EL +18.00 ON GRID – 27
DETAIL B AND DRG. PE-DG-508-612-C012
(NITPC DRG. NO. 9587-001-315-PVC-C-0154)



VIEW 3-3

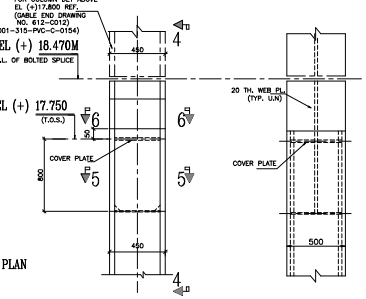
DETAIL-A
(AVOID THIS DET. AT MOMENT CONNECTION)

DETAIL – C



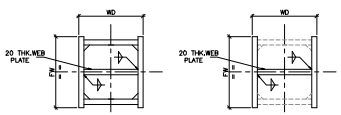
SECTION 2-2
(*) BUTT WELD REINFORCED WITH FILLET WELD

VIEW 1-1
NOTE:– IF ANY BRACKET TO BE SUPPORTED, STIFF. SHALL BE PROVIDED INSIDE COL. IN LINE WITH BRACKET.



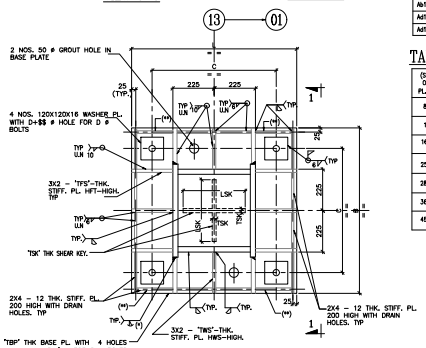
DETAIL B
(ONLY FOR GABLE END ON GRID 27)

VIEW 4-4



VIEW 5-5

VIEW 6-6



DETAIL OF COLUMN & BASE PLATE
(*) BUTT WELD REINFORCED WITH FILLET WELD
REFER BASE PLATE SCHEDULE FOR THICKNESS OF PLATES
(**) THIS PLATE SHALL BE WELDED AFTER ALIGNMENT OF COLUMN
$ ø HOLES. = ø. OF BOLT + 10 MM
$$ ø HOLES. = ø. OF BOLT + 3 MM

AUX. COLUMN BASE PLATES (UNIT#4)

COLUM MARKED	LENGTH OF THE BASE PLATE, L	WIDTH OF THE BASE PLATE, B	THK. OF BASE PLATE, TBP	BOLT DISTANCE CENTRED TO CENTRE, C	THK. OF FLANGE STIFFENER PLATE, TFS	THK. OF WEB STIFFENER PLATE, TWS	HEIGHT OF GUSSET STIFFENER, HFT	HEIGHT OF WEB STIFFENER, HWS	DIA OF HOLES, D	NOS. OF BOLTS (ON EACH SIDE)	THICKNESS OF SHEAR KEY, TSK	WIDTH OF SHEAR KEY, LSK	DEPTH OF SHEAR KEY, DSK
Ae'27	1000	1000	20	725	12	12	600	600	32	4	16	200	150
Ac27	1000	1000	20	725	12	12	600	600	32	4	16	200	150
Ad27	1000	1000	20	725	12	12	600	600	32	4	16	200	150
Ae'26	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ac26	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ad26	1000	1000	25	725	12	12	600	600	32	4	16	200	150
Ac'25	1100	1100	25	775	12	12	600	600	32	4	16	200	150
Ac25	1100	1100	25	775	12	12	600	600	32	4	16	200	150
Ad25	1100	1100	25	775	12	12	600	600	32	4	16	200	150
Ae'24	1200	1200	25	825	12	12	700	700	32	4	16	200	150
Ac24	1100	1100	25	775	12	12	600	600	32	4	16	200	150
Ad24	1200	1200	25	825	12	12	700	700	32	4	16	200	150
Ae'23	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ac23	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ad23	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ac'22	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ac22	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad22	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ac'21	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad21	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ae20	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad'20	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ae19	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad'19	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ae18	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad'18	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ae'17	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad17	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad17	1100	1100	25	775	12	12	600	600	25	4	16	200	150
Ae16	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ab16	1100	1100	25	775	12	12	600	600	25	4	16	200	150
Ad16	1200	1200	25	825	12	12	600	600	25	4	16	200	150
Ae15	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ab15	1000	1000	20	725	12	12	600	600	25	4	16	200	150
Ad15	1000	1000	25	725	12	12	600	600	25	4	16	200	150
Ad14a	1000	1000	20	725	12	12	600	600	32	4	16	200	150

TABLE – A

(SHOWING SIZE OF WELD) PL. THICKNESS.	(SIZE OF WELD IN MM)	SIZE OF WELD IN MM)
8 & 10	DOUBLE BEVEL BUTT WELD WITH REINFORCED FILLET OF 4 MM THICK WHEREVER NEEDS.	6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		22
45 & 50		25

BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT	GRADE
1.	12 THK. PLT.	10.03	IS2062-E350
2.	16 THK. PLT.	43.76	IS2062-E350
3.	20 THK. PLT.	17.86	IS2062-E350
4.	25 THK. PLT.	73.97	IS2062-E350
5.	28 THK. PLT.	7.03	IS2062-E350
6.	32 THK. PLT.	55.71	IS2062-E350
7.	36 THK. PLT.	44.34	IS2062-E350
TOTAL TONNAGE– MT 253			

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL.(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :–

1. PE-DG-508-100-M003 (9587-001-110-PVM-F-048) – TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE-DG-508-100-M004 (9587-001-110-PVM-F-050) – TG EQUIPMENT PLAN AT MEZZANINE FLOOR
3. PE-DG-508-100-M005 (9587-001-110-PVM-F-051) – TG EQUIPMENT PLAN AT OPERATING FLOOR
4. PE-DG-508-100-M006 (9587-001-110-PVM-F-052) – TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
5. PE-DG-508-100-M007 (9587-001-110-PVM-F-053) – CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

CONSTRUCTION REFERENCE DRAWINGS :–

1. PE-DG-508-612-C001 (NITPC DRG. NO.- 9587-001-315-PVC-C-0142) – PH BUILDING: STRUCTURAL FRAMING ALONG A ROW
2. PE-DG-508-612-C002 (NITPC DRG. NO.- 9587-001-315-PVC-C-0143) – PH BUILDING: STRUCTURAL FRAMING ALONG B ROW
3. PE-DG-508-612-C004 (NITPC DRG. NO.- 9587-001-315-PVC-C-0145) – PH BUILDING: COR STRUCTURAL FRAMING ALONG A TO C ROW
4. PE-DG-508-612-C012 (NITPC DRG. NO.- 9587-001-315-PVC-C-0154) – PH BUILDING: DETAILS OF GABLE END COLUMNS

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. TH. = THICK
9. PL. = PLATE

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED "C" IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 22/06/2024

NTPC DRG. NO. 9587-001-315-PVC-C-0151

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II

BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DEPT CODE	NAME	SIGN	DATE
DRN	VIKAS		20.06.2024
DESIGN			19.06.2024
CHD	MT		21.06.2024
APPD	DNM		22.06.2024

C

TITLE: MPH BUILDING
DETAILS OF INTERMEDIATE COLUMNS (UNIT#4)

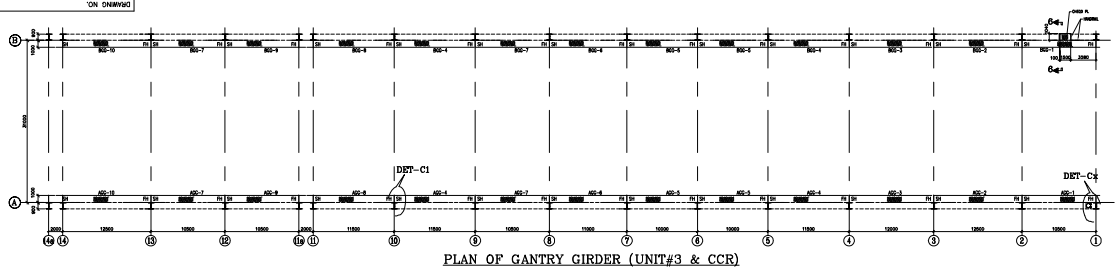
MPL	ELEC	C&I	MSE	MAX

DEPT. SCALE –
SIGN
DATE
DRAWING NO. PE-DG-508-612-C009
SHEET 2 OF 2 REV. 0

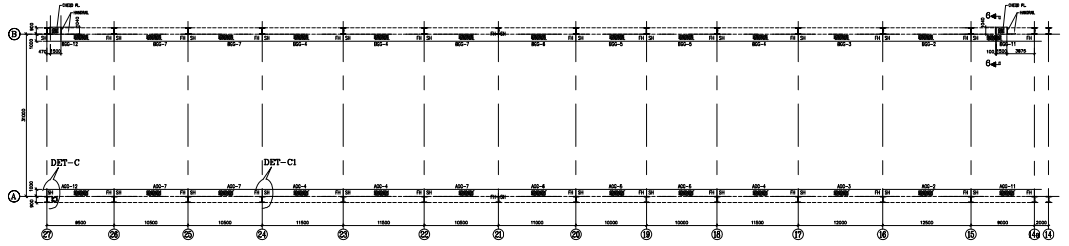
JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

REV.	DATE	ALTD	CHD	APPD

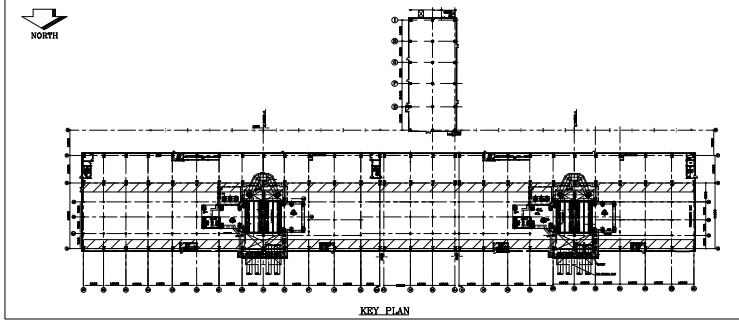
FORMAT SIZE A0



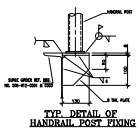
PLAN OF GANTRY GIRDER (UNIT#3 & CCR)



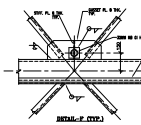
PLAN OF GANTRY GIRDER (UNIT#4)



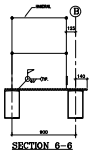
KEY PLAN



TYP. DETAIL OF HANDRAIL POST FIXING



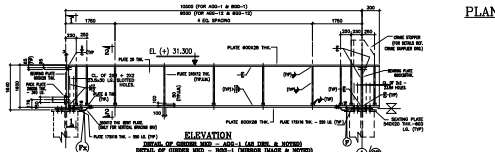
DETAIL-F (TYP.)



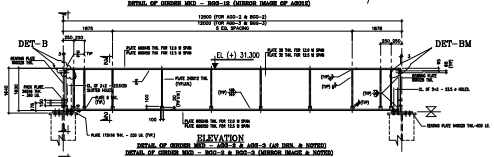
SECTION 6-6

BILL OF MATERIAL

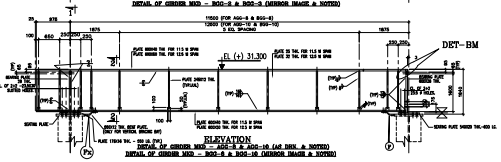
SNO.	MEMBER	WEIGHT	GRADE
1.	LT57X08	14.53	IS2062-E250
2.	25 THK. PLT.	134.35	IS2062-E350
3.	28 THK. PLT.	107.78	IS2062-E350
3.	32 THK. PLT.	28.28	IS2062-E350
3.	36 THK. PLT.	14.92	IS2062-E350
4.	40 THK. PLT.	62.00	IS2062-E350
4.	45 THK. PLT.	20.35	IS2062-E350
4.	50 THK. PLT.	35.33	IS2062-E350
TOTAL TONNAGE MT 408 (APPROX.)			



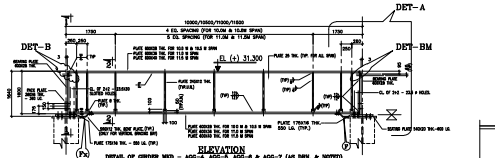
ELEVATION
DETAIL OF GIRDER MID – AGC-1 (AS DRN. & NOTED)
DETAIL OF GIRDER END – BGC-1 (MIRROR IMAGE & NOTED)
DETAIL OF GIRDER MID – AGC-12 (OPP. HAND)
DETAIL OF GIRDER MID – BGC-12 (MIRROR IMAGE OF AGC-12)



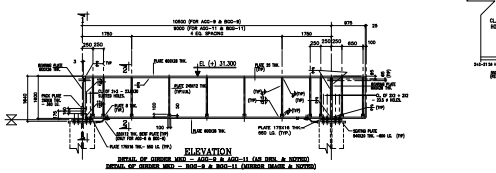
ELEVATION
DETAIL OF GIRDER MID – AGC-2 & AGC-3 (AS DRN. & NOTED)
DETAIL OF GIRDER MID – BGC-2 & BGC-3 (MIRROR IMAGE & NOTED)



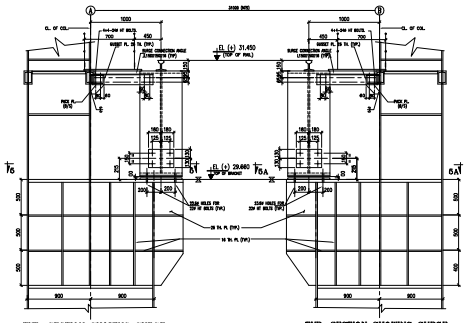
ELEVATION
DETAIL OF GIRDER MID – AGC-4 & AGC-10 (AS DRN. & NOTED)
DETAIL OF GIRDER MID – BGC-4 & BGC-10 (MIRROR IMAGE & NOTED)



ELEVATION
DETAIL OF GIRDER MID – AGC-5, AGC-6, AGC-8 & AGC-9 (AS DRN. & NOTED)
DETAIL OF GIRDER MID – BGC-5, BGC-6 & BGC-8 (MIRROR IMAGE & NOTED)

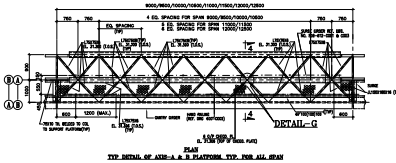


ELEVATION
DETAIL OF GIRDER MID – AGC-7 & AGC-11 (AS DRN. & NOTED)
DETAIL OF GIRDER MID – BGC-7 & BGC-11 (MIRROR IMAGE & NOTED)

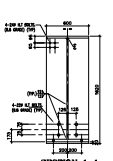


TYP. SECTION SHOWING SURGE CONNECTION AT COL. A ROW

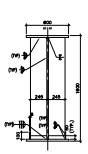
TYP. SECTION SHOWING SURGE CONNECTION AT COL. B ROW



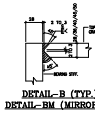
TYP. DETAIL OF AXIS-A & B PLATFORM TYP. FOR ALL SPAN



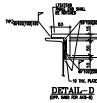
SECTION 1-1



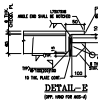
SECTION 2-2



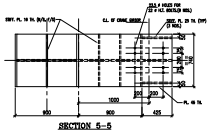
DETAIL-B (TYP.)
DETAIL-BM (MIRROR IMAGE)



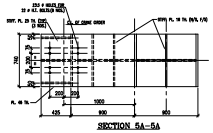
DETAIL-D



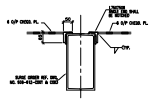
DETAIL-E



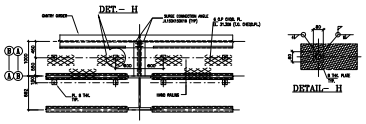
SECTION 5-5



SECTION 5A-5A

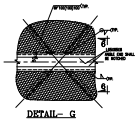


DETAIL D2

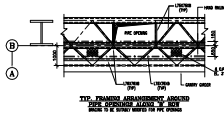


DETAIL- C1

DETAIL- H



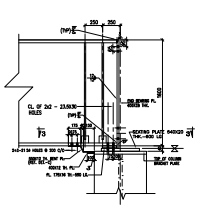
DETAIL- G



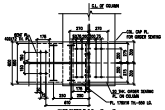
TYP. FRAMING ARRANGEMENT AROUND PIPE OPENINGS ALONG 'A' ROW SIMILAR TO BE SUITABLY MODIFIED FOR PIPE OPENING

TABLE - A

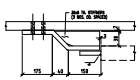
PL. THICKNESS.	MIN SIZE OF WELD (t in MM)	MIN SIZE OF WELD in MM
6 & 10		6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		22
45 & 50		25



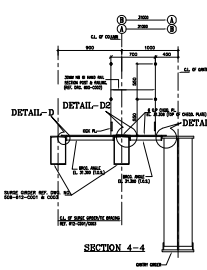
DETAIL-A



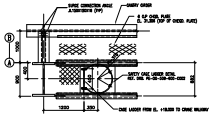
SECTION 3-3



DETAIL-F (AS DRN.)
DETAIL-Fx (OPP. HAND)



SECTION 4-4



DETAIL- C (AS DRN)
DETAIL- Cx (MIRROR IMAGE)

NOTES:-

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE -A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :-

1. PE-DG-508-501-M001 (9587-001-110-PVM-B-395) – CRANE CLEARANCE DIAGRAM OF TG HALL
2. PE-DG-508-100-M003 (9587-001-110-PVM-F-049) – TG EQUIPMENT PLAN AT GROUND FLOOR
3. PE-DG-508-100-M004 (9587-001-110-PVM-F-050) – TG EQUIPMENT PLAN AT MEZZANINE FLOOR
4. PE-DG-508-100-M005 (9587-001-110-PVM-F-051) – TG EQUIPMENT PLAN AT OPERATING FLOOR
5. PE-DG-508-100-M006 (9587-001-110-PVM-F-052) – TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
6. PE-DG-508-100-M007 (9587-001-110-PVM-F-053) – CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

CONSTRUCTION REFERENCE DRAWINGS :-

1. PE-DG-508-612-C006 (9587-001-315-PVC-C-0148) – PH BUILDING DETAILS OF ROOF GIRDERS
2. PE-DG-508-612-C001 (9587-001-315-PVC-C-0050) – PH BLDG-STRUCTURAL FRAMING ALONG A ROW (UNIT-3)
3. PE-DG-508-612-C002 (9587-001-315-PVC-C-0051) – PH BLDG-STRUCTURAL FRAMING ALONG B ROW (UNIT-3)

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. TH. = THICK
9. PL. = PLATE
10. FH = FIX HOLES
11. SH = SLOTTED HOLES

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISIONS AS SUPERSEDED
Issued by
NAME AMIT THAKUR
SIGNATURE
DATE 17/06/2024

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

NTPC DRG. NO. 9587-001-315-PVC-C-0149

OWNER (ON C/ WITH NTPC)

NTPC Limited
A GOVERNMENT OF INDIA ENTERPRISE

PROJECT
LARA SUPER THERMAL POWER PROJECT
2X800MW STAGE-II

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

DEPT. CODE	DRN.	NAME	SIGN	DATE
C	DRN.	RPC	Sd/-	15.04.2024
	DESIGN	K	Sd/-	15.04.2024
	CHD	AT	Sd/-	15.04.2024
	APPD/DKM		Sd/-	15.04.2024

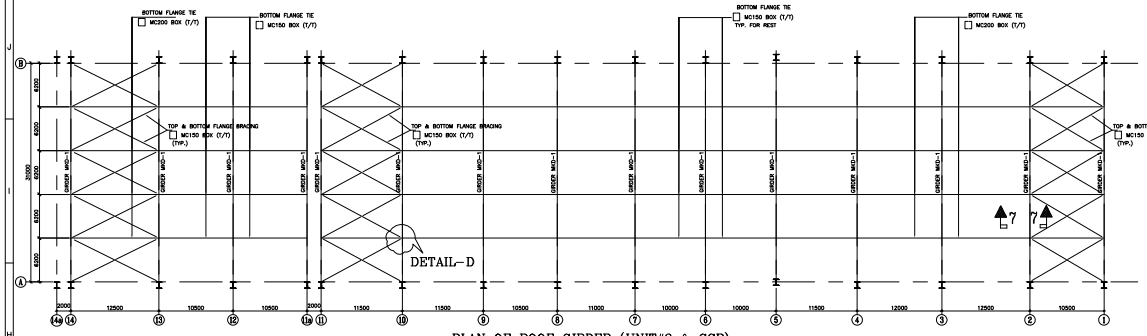
TITLE
MPH BUILDING
GA AND DETAILS OF AB BAY GANTRY GIRDERS

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO.
					SIGN		PE-DG-508-612-C007
					DATE		SHEET OF REV. 0

FORMAT SIZE A0

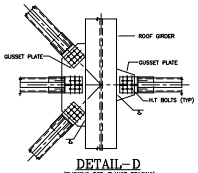
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

DRAWING NO. PE-DG-508-612-C006



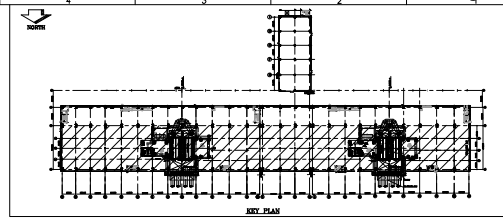
PLAN OF ROOF GIRDER (UNIT#3 & CCR)

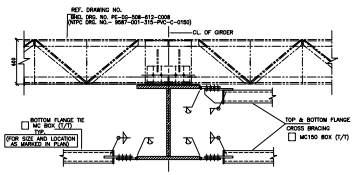
(SHOWING GIRDERS, TOP & BOTTOM FLANGE BRACINGS)
(PURLINS NOT SHOWN FOR CLARITY)



DETAIL-D

(SHOWING BOT. FLANGE BRACING)
(BOLTS SHOWN ARE INDICATIVE ONLY)

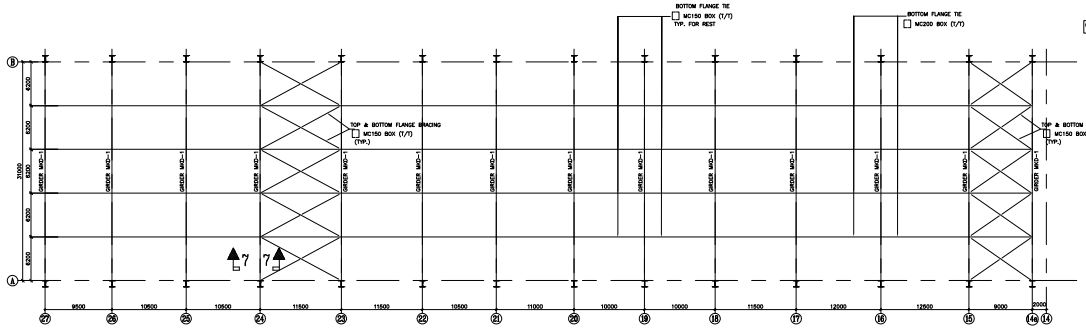




SECTION: 7-7

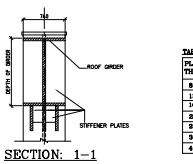
BILL OF MATERIAL

S.NO.	MEMBER	WEIGHT	GRADE
1.	ISMC 150	72.10	IS2062-E250
2.	ISMC 200	10.95	IS2062-E250
3.	20 THK. PLT.	187.44	IS2062-E350
4.	36 THK. PLT.	376.00	IS2062-E350
TOTAL TONNAGE MT 647 (APPROX.)			



PLAN OF ROOF GIRDER (UNIT#4)

(SHOWING GIRDERS, TOP & BOTTOM FLANGE BRACINGS)
(PURLINS NOT SHOWN FOR CLARITY)

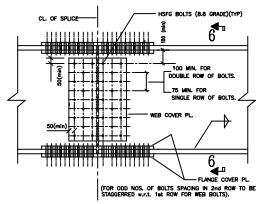


SECTION: 1-1

TABLE-A: SIZE OF WELD

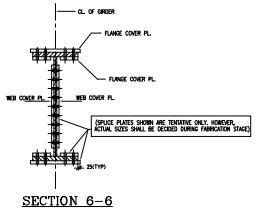
PLATE THICKNESS(MM)	WW SIZE OF WELD IN(MM)	SW SIZE OF WELD IN(MM)
8 & 10		6
12		8
20		12
25		14
28 & 32		20
36 & 40		22
45 & 50		25

WW: WORKSHOP WELD
SW: SITE WELD
OTHER SIDE WELDING SHALL BE DONE AT SITE AFTER ERECTION

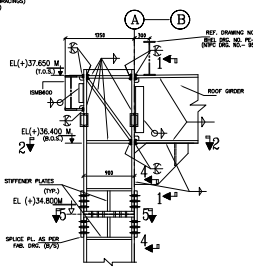


DETAIL-C (TYP. ARRANGEMENT OF GIRDER SPLICE DETAIL (BOLTED FIELD CONNECTION)

(BOLTS SHOWN ARE INDICATIVE AND SHALL BE DESIGNED AS PER RESPECTIVE MEMBER CAPACITY FOR FRICTION TYPE CONNECTION)

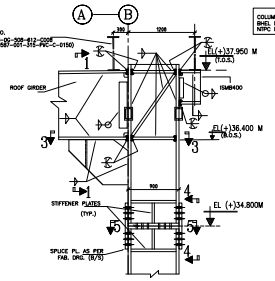


SECTION 6-6



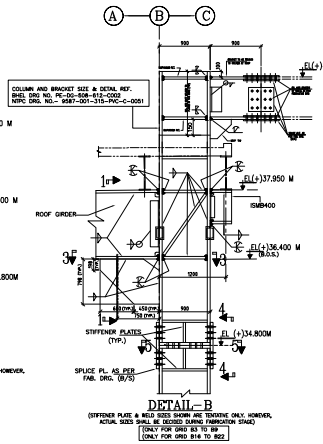
DETAIL-A

(STIFFENER PLATE & WELD SIZES SHOWN ARE TENTATIVE ONLY, HOWEVER, ACTUAL SIZES SHALL BE DECIDED DURING FABRICATION STAGE)



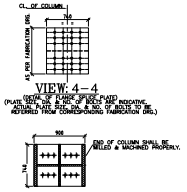
DETAIL-B

(STIFFENER PLATE & WELD SIZES SHOWN ARE TENTATIVE ONLY, HOWEVER, ACTUAL SIZES SHALL BE DECIDED DURING FABRICATION STAGE)



DETAIL-B

(STIFFENER PLATE & WELD SIZES SHOWN ARE TENTATIVE ONLY, HOWEVER, ACTUAL SIZES SHALL BE DECIDED DURING FABRICATION STAGE)
(ONLY FOR GRID B3 TO B9
(ONLY FOR GRID B16 TO B22)

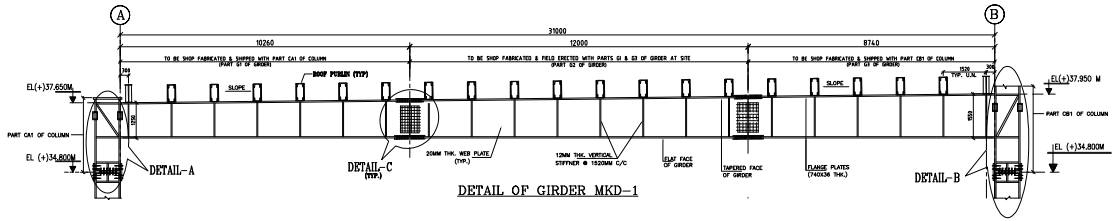


VIEW: 4-4

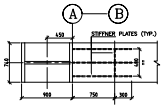
(SIZE OF FLANGE SPLICE PLATE (PLATE SIZE, NO. & DIA. OF BOLT ARE INDICATIVE. ACTUAL PLATE SIZE, NO. & DIA. OF BOLTS TO BE REFERRED FROM CORRESPONDING FABRICATION DRG.)

SECTION: 5-5

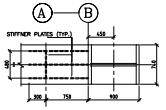
(END OF COLUMN SHALL BE MILLED & MACHINED PROPERLY.)



DETAIL OF GIRDER MKD-1



SECTION: 2-2



SECTION: 3-3

NOTES:-

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE -A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :-

1. PE-DG-508-100-M003 (9587-001-110-PVM-F-049)	- TG EQUIPMENT PLAN AT GROUND FLOOR
2. PE-DG-508-100-M004 (9587-001-110-PVM-F-050)	- TG EQUIPMENT PLAN AT MEZZANINE FLOOR
3. PE-DG-508-100-M005 (9587-001-110-PVM-F-051)	- TG EQUIPMENT PLAN AT OPERATING FLOOR
4. PE-DG-508-100-M006 (9587-001-110-PVM-F-052)	- TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY
5. PE-DG-508-100-M007 (9587-001-110-PVM-F-053)	- CROSS SECTION OF MAIN PLANT (T.G. BUILDING)

CONSTRUCTION REFERENCE DRAWINGS :-

1. PE-DG-508-612-C008 (9587-001-315-PVC-C-0150)	- MPH BLDG. -ROOF PURLIN DETAILS
2. PE-DG-508-611-C004 (9587-001-315-PVC-C-0038)	- PH BLDG (AB BAY)- G.A. & RCC DETAILS OF METAL DECK ROOF
3. PE-DG-508-612-C001 (9587-001-315-PVC-C-0050)	- PH BLDG-STRUCTURAL FRAMING ALONG A ROW (UNIT-3)
4. PE-DG-508-612-C002 (9587-001-315-PVC-C-0051)	- PH BLDG-STRUCTURAL FRAMING ALONG B ROW (UNIT-3)
5. PE-DG-508-612-C012 (9587-001-315-PVC-C-0154)	- MPH BLDG. - DETAILS OF GABLE END COLUMNS
6. PE-DG-508-612-C005 (9587-001-315-PVC-C-0147)	- PH BLDG-CLADDING FRAMING ELEVATION ON AXIS A
7. PE-DG-508-612-C010 (9587-001-315-PVC-C-0152)	- PH BLDG-CLADDING FRAMING ELEVATION ON AXIS B

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL
4. B/S = BOTH SIDE
5. F/S = FAR SIDE
6. N/S = NEAR SIDE
7. UNO = UNLESS NOTED OTHERWISE
8. THK. = THICK
9. PL. = PLATE
10. T/T = TOE TO TOE

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS ISSUES/REVISIONS SUPERSEDED
Issued by
NAME: AMIT THAKUR
SIGNATURE:
DATE: 15/06/2024

JOB NO. 508
STATUS CONTRACT
DISTRIBUTION

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

NTPC DRG. NO. 9587-001-315-PVC-C-0148

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE-II

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

DEPT	NAME	SIGN	DATE
CONC	DRN. MPC	56/-	12.04.2024
	DES/CHK	56/-	12.04.2024
C	CHD AK	56/-	12.04.2024
	APPD/DKM	56/-	12.04.2024

TITLE: MPH BUILDING
DETAILS OF ROOF GIRDERS

MPL	ELEC	C&I	MSE	MAX

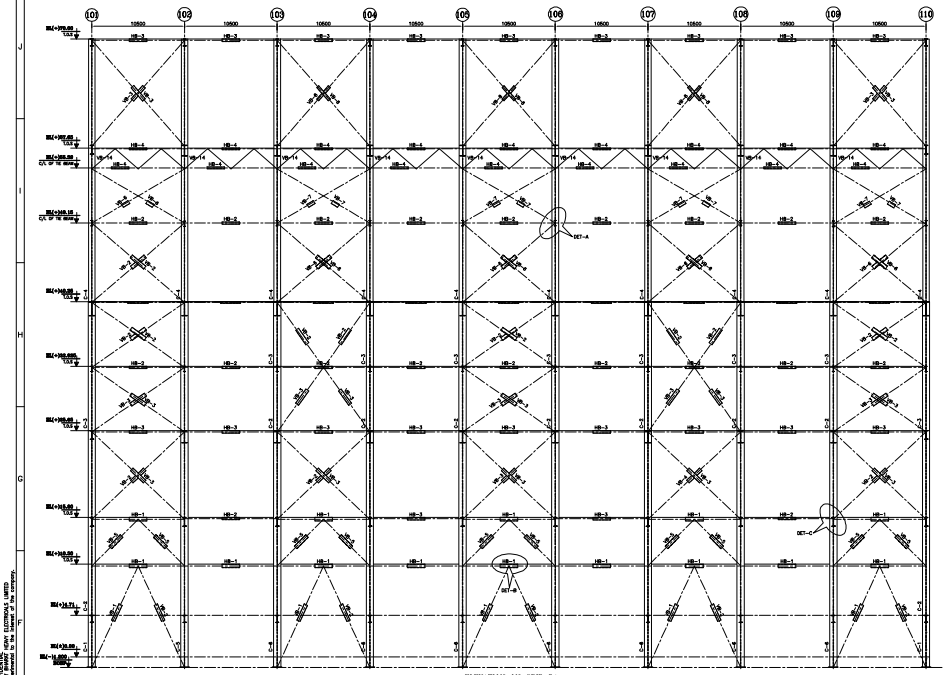
DEPT. SCALE - DRAWING NO. PE-DG-508-612-C006
SIGN
DATE
SHEET OF REV. 0

FORMAT SIZE A0

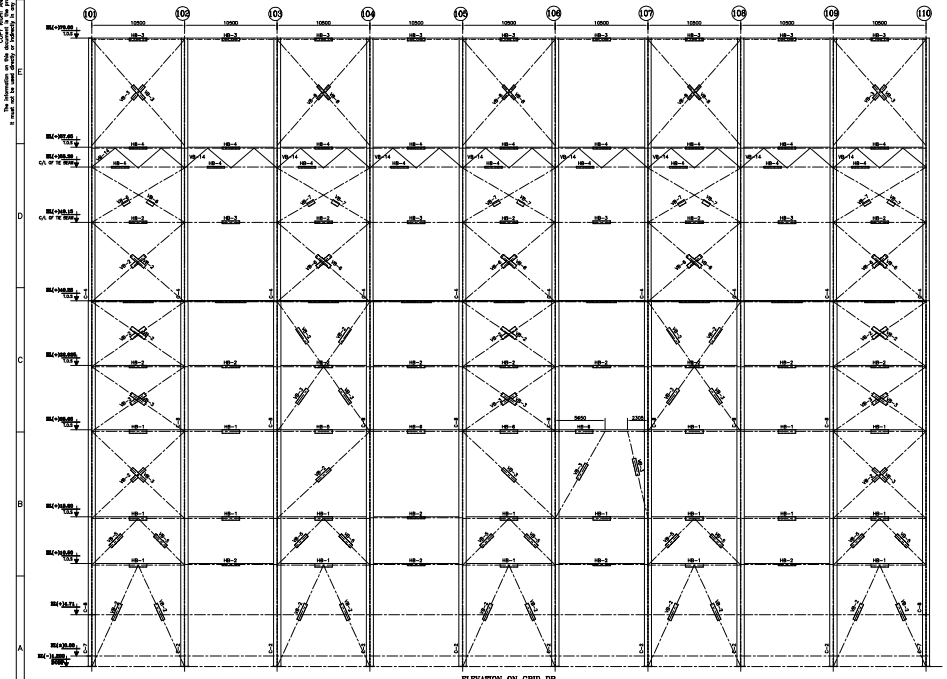
FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

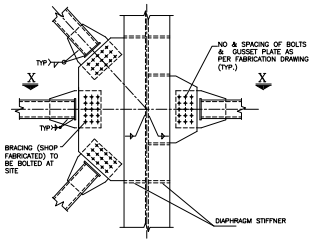
DRAWING NO. PE-DG-508-616-C001



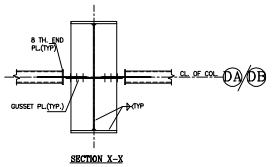
ELEVATION ON GRID DA



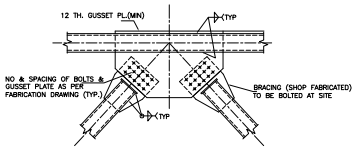
ELEVATION ON GRID DB



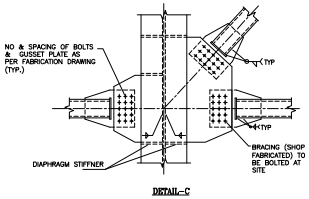
DETAIL-A



SECTION X-X



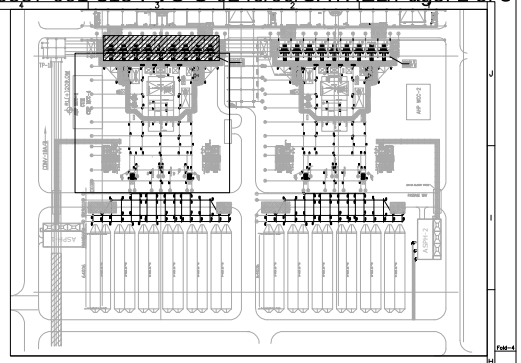
DETAIL-B



DETAIL-C

TABLE – A

(SHOWING SIZE OF WELD) PL. THICKNESS.	WW (SIZE OF WELD IN MM)	SW (SIZE OF WELD IN MM)
8 & 10	DOUBLE BEVEL BUTT WELD WITH REINFORCED FILLET WELD OF 6 MM THICK WHEREVER REQD.	6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		20
45 & 50		25



KEY PLAN

NOTES: –

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL.(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE –A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E–250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E–350.

ENGINEERING REFERENCE DRAWINGS : –

1. 9587-001-315-PVC-C-0240-(PE-DG-508-616-C001)------MILL & BUNKER BAY – G.A. OF COLUMN FOUNDATIONS
2. 9587-001-315-PVC-C-0242-(PE-DG-508-616-C004)------MILL & BUNKER BAY – R.C.C. DTLS OF FEEDER FLOOR
3. 9587-001-315-PVC-C-0243-(PE-DG-508-616-C005)------MILL & BUNKER BAY – R.C.C. DTLS OF TRIPPER FLOOR
4. 9587-001-315-PVC-C-0244-(PE-DG-508-616-C006)------MILL & BUNKER BAY – R.C.C. DTLS OF ROOF
5. 9587-001-315-PVC-C-0245-(PE-DG-508-616-C007)------MILL & BUNKER BAY – BASE PLATE DETAILS
6. 9587-001-315-PVC-C-0247-(PE-DG-508-616-C010)------MILL & BUNKER BAY – FRAMING PLAN OF FEEDER FLOOR
7. 9587-001-315-PVC-C-0248-(PE-DG-508-616-C011)------MILL & BUNKER BAY – FRAMING PLAN OF TRIPPER FLOOR
8. 9587-001-315-PVC-C-0249-(PE-DG-508-616-C012)------MILL & BUNKER BAY – FRAMING PLAN OF BUNKER ROOF
8. 9587-001-315-PVC-C-0250-(PE-DG-508-616-C013)------MILL & BUNKER BAY – FRAMING PLAN OF BUNKER ROOF
8. 9587-001-315-PVC-C-0251-(PE-DG-508-616-C014)------MILL & BUNKER BAY – G.A. OF BUNKERS & SUPPORTING DETAILS
8. 9587-001-315-PVC-C-0252-(PE-DG-508-616-C015)------MILL & BUNKER BAY – DETAILS OF BUNKERS & SUPPORTING DETAILS

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL

TOTAL QUANTITY OF STRUCTURAL STEEL : 3200 MT (APPROX FOR UNIT–1)

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

THIS DRAWING (ARMOR) IS RELEASED FOR
☒ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISIONS AS SUPERSEDED

ISSUED BY	
NAME	AMIT THAKUR
SIGNATURE	
DATE	14/06/2024

NTPC DRG. NO. 9587-001-315-PVC-C-0246

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE–II

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DEPT. CODE	NAME	SIGN	DATE
DRN.	TYSR	Sd/–	10.06.2024
DESIGN		Sd/–	10.06.2024
CHD. BY		Sd/–	14.06.2024
APPD/DRM		Sd/–	14.06.2024

TITLE: MILL & BUNKER BAY
GA & RC DETAILS OF COLUMNS & FOUNDATIONS – UNIT#1&2

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE 1:100
					SIGN	
					DATE	

DRAWING NO. PE-DG-508-616-C008

SHEET 1 OF 2 REV. 0

JOB NO. 508

STATUS CONTRACT

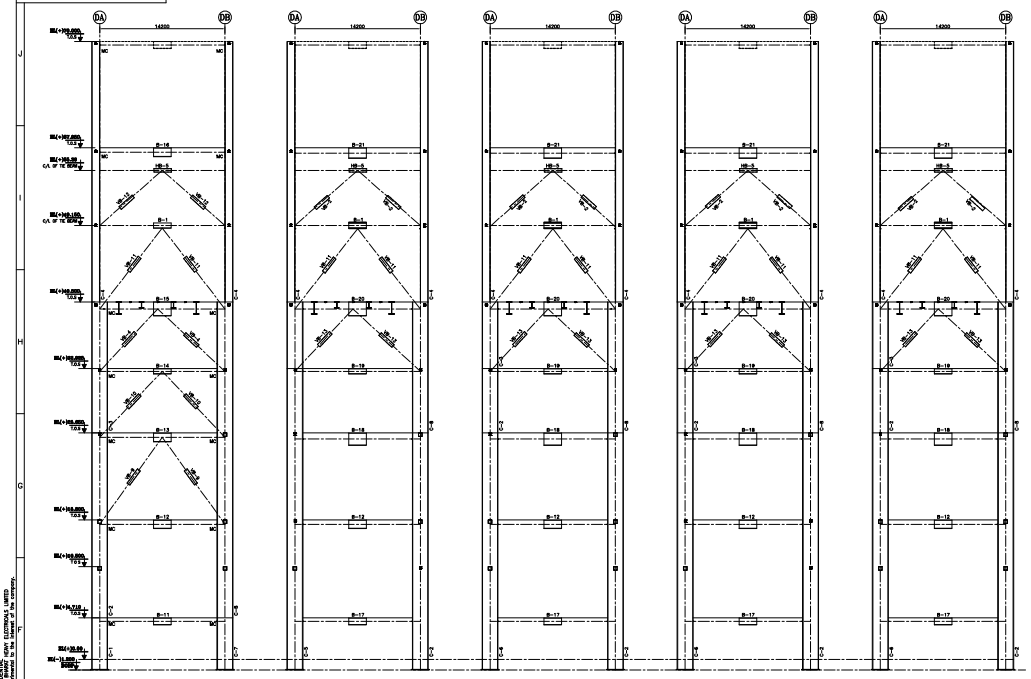
DISTRIBUTION

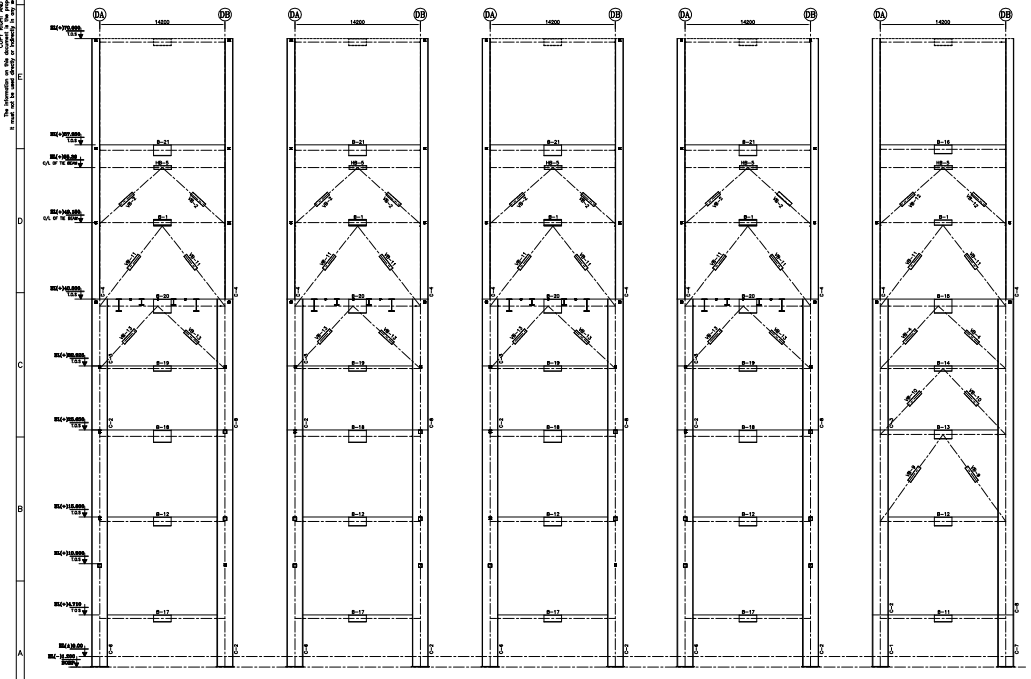
FORMAT SIZE A0

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

DRAWING NO. PE-DG-508-616-C001





COLUMN SCHEDULE

MEMBER MKD	COLUMN SIZE				SHAPE
C-1	D=1800	FL PL-625X50	WEB PL-50 TH.	WEB PL-50 TH.	
C-2	D=1800	FL PL-625X50	WEB PL-50 TH.	WEB PL-25 TH.	
C-4	D=1800	FL PL-625X50	WEB PL-50 TH.	WEB PL-45 TH.	
C-5	D=1800	FL PL-625X50	WEB PL-50 TH.	WEB PL-40 TH.	
C-7	D=1800	FL PL-625X50	WEB PL-50 TH.	WEB PL-50 TH.	
C-3	D=1800	FL PL-625X50	WEB PL-50 TH.	-	
C-6	D=900	FL PL-740X32	WEB PL-20 TH.	-	
C-8	D=1800	FL PL-650X50	WEB PL-45 TH.	-	

BRACING / TIE BEAM SCHEDULE

MEMBER MKD	BEAM SECTION			SHAPE
B-1	MB600X220X122.4N			I
B-11	D=600	FL PL-380X32	WEB PL-20 TH.	
B-12	D=1000	FL PL-400X36	WEB PL-30 TH.	
B-13	D=1000	FL PL-400X35	WEB PL-30 TH.	
B-14	D=600	FL PL-380X20	WEB PL-16 TH.	
B-15	D=1800	FL PL-400X32	WEB PL-30 TH.	
B-16	D=1200	FL PL-400X38	WEB PL-30 TH.	
B-17	D=600	FL PL-380X28	WEB PL-20 TH.	
B-18	D=1400	FL PL-400X45	WEB PL-32 TH.	
B-19	D=600	FL PL-380X20	WEB PL-20 TH.	
B-20	D=1600	FL PL-420X36	WEB PL-36 TH.	
B-21	D=1200	FL PL-420X32	WEB PL-30 TH.	

BRACING / TIE BEAM SCHEDULE

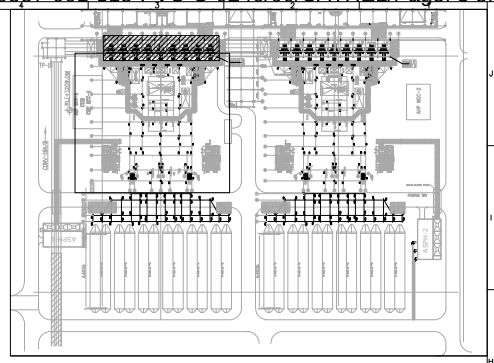
BRACING	BRACING SIZE	BRACING SECTION
VB-1	1-WEB PLT 280X10 2-FLG PLT. 420X16	
VB-2	1-WEB PLT 270X12 2-FLG PLT. 420X12	
VB-3	1-WEB PLT 320X10 2-FLG PLT. 370X10	
VB-4	1-WEB PLT 410X16 2-FLG PLT. 460X16	
VB-5	MC 400 BOX AT 80 MM GAP BETWEEN TOE + 10 THK. BATTEN PL.	
VB-6	MC 400 BOX AT 100 MM GAP BETWEEN TOE + 10 THK. BATTEN PL.	
VB-7	MC 300 BOX AT 100 MM GAP BETWEEN TOE + 10 THK. BATTEN PL.	
VB-8	MC 300 BOX	ISMC BOX (TOE TO TOE)
VB-9	1-WEB PLT 490X20 2-FLG PLT. 550X20	
VB-10	1-WEB PLT 290X8 2-FLG PLT. 330X8	
VB-11	1-WEB PLT 250X8 2-FLG PLT. 270X8	
VB-12	1-WEB PLT 350X12 2-FLG PLT. 430X12	
VB-13	1-WEB PLT 510X20 2-FLG PLT. 550X20	
VB-14	L 100X100X8	

BRACING / TIE BEAM SCHEDULE

BRACING	BRACING SIZE	BRACING SECTION
HB-1	1-WEB PLT 280X10 2-FLG PLT. 320X10	
HB-9	1-WEB PLT 276X10 2-FLG PLT. 420X10	
HB-6	1-WEB PLT 230X10 2-FLG PLT. 370X10	
HB-2	MC 250 BOX	
HB-3	MC 250 BOX	ISMC BOX (TOE TO TOE)
HB-4	MC 250 BOX	

TABLE - A

(SHOWING SIZE OF WELD) PL. THICKNESS.	WW (SIZE OF WELD IN MM)	SW (SIZE OF WELD IN MM)
8 & 10	DOUBLE BEVEL BUTT WELD WITH REINFORCED FILLET WELD OF 6 MM THICK WHEREVER REQD.	6
12		8
16 & 20		12
25		14
28 & 32		20
36 & 40		20
45 & 50		25



KEY PLAN

NOTES: -

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL.(+) 209.50 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (9587-001-315-PVC-C-0002)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. FOR GROUTING OF BASE PL. REF. DRG. NO PE-DG-508-611-C001 (9587-001-315-PVC-C-0035)
7. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
8. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8. (U.N)
9. FABRICATOR MUST CHECK THE WELD SIZES GIVEN IN TABLE -A FOR DESIGN AND MAXIMUM OF DESIGN VALUE AND VALUE GIVEN TO BE USED.
10. ALL END CONNECTIONS FOR BRACINGS SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
11. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS : -

1. 9587-001-315-PVC-C-0240-(PE-DG-508-616-C001)------MILL & BUNKER BAY - G.A. OF COLUMN FOUNDATIONS
2. 9587-001-315-PVC-C-0242-(PE-DG-508-616-C004)------MILL & BUNKER BAY - R.C.C. DTLS OF FEEDER FLOOR
3. 9587-001-315-PVC-C-0243-(PE-DG-508-616-C005)------MILL & BUNKER BAY - R.C.C. DTLS OF TRIPPER FLOOR
4. 9587-001-315-PVC-C-0244-(PE-DG-508-616-C006)------MILL & BUNKER BAY - R.C.C. DTLS OF ROOF
5. 9587-001-315-PVC-C-0245-(PE-DG-508-616-C007)------MILL & BUNKER BAY - BASE PLATE DETAILS
6. 9587-001-315-PVC-C-0247-(PE-DG-508-616-C010)------MILL & BUNKER BAY - FRAMING PLAN OF FEEDER FLOOR
7. 9587-001-315-PVC-C-0248-(PE-DG-508-616-C011)------MILL & BUNKER BAY - FRAMING PLAN OF TRIPPER FLOOR
8. 9587-001-315-PVC-C-0249-(PE-DG-508-616-C012)------MILL & BUNKER BAY - FRAMING PLAN OF BUNKER ROOF
8. 9587-001-315-PVC-C-0250-(PE-DG-508-616-C013)------MILL & BUNKER BAY - FRAMING PLAN OF BUNKER ROOF
8. 9587-001-315-PVC-C-0251-(PE-DG-508-616-C014)------MILL & BUNKER BAY - G.A. OF BUNKERS & SUPPORTING DETAILS
8. 9587-001-315-PVC-C-0252-(PE-DG-508-616-C015)------MILL & BUNKER BAY - DETAILS OF BUNKERS & SUPPORTING DETAILS

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. TYP. = TYPICAL

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

BHEL-PSSR ENGINEERING MANAGEMENT (EMN)
THIS DRAWING VARIATION IS RELEASED FOR
- [x] COMMENTS/APPROVAL
- [ ] PLANNING/INFORMATION
- [ ] CONSTRUCTION

STAMP ALL PREVIOUS REVISIONS AS SUPERSEDED

ISSUED BY	
NAME	AMIT THAKUR
SIGNATURE	
DATE	13/06/2024

NTPC DRG. NO. 9587-001-315-PVC-C-0246

OWNER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT 2X800MW STAGE-II

BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DEPT.	NAME	SIGN	DATE
DRN.	YSR	Sd/-	10.06.2024
DESIGN		Sd/-	10.06.2024
CHD. BY		Sd/-	14.06.2024
APPD/DRM		Sd/-	14.06.2024

TITLE: MILL & BUNKER BAY
LONGITUDINAL & TRANSVERSE FRAMING ARRANGEMENT

MPL	ELEC	C&I	MSE	MAX

DEPT. SIGN DATE

SCALE 1:100

DRAWING NO. PE-DG-508-616-C008

SHEET 2 OF 2 REV. 0

JOB NO. 508

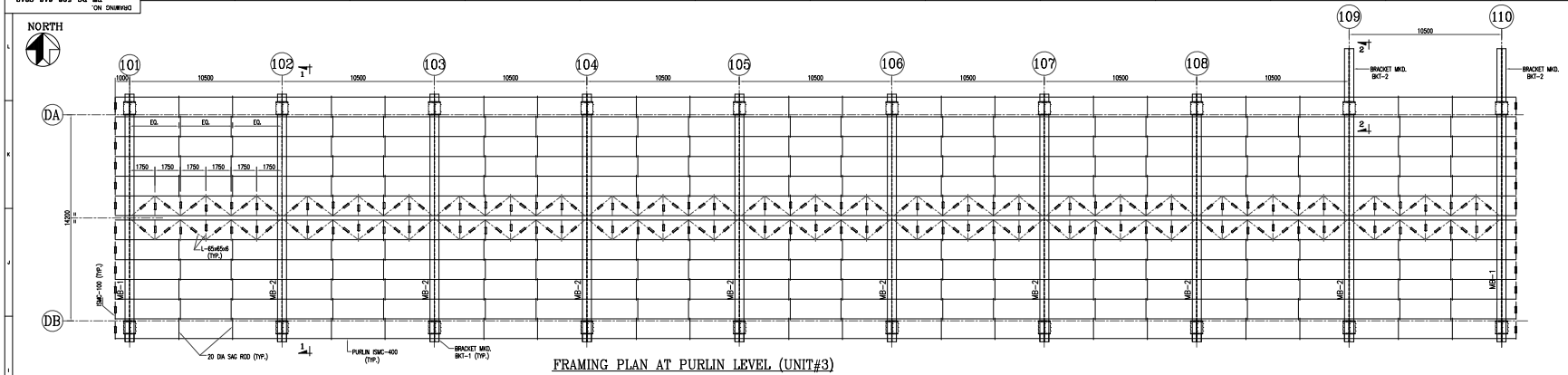
STATUS CONTRACT

DISTRIBUTION

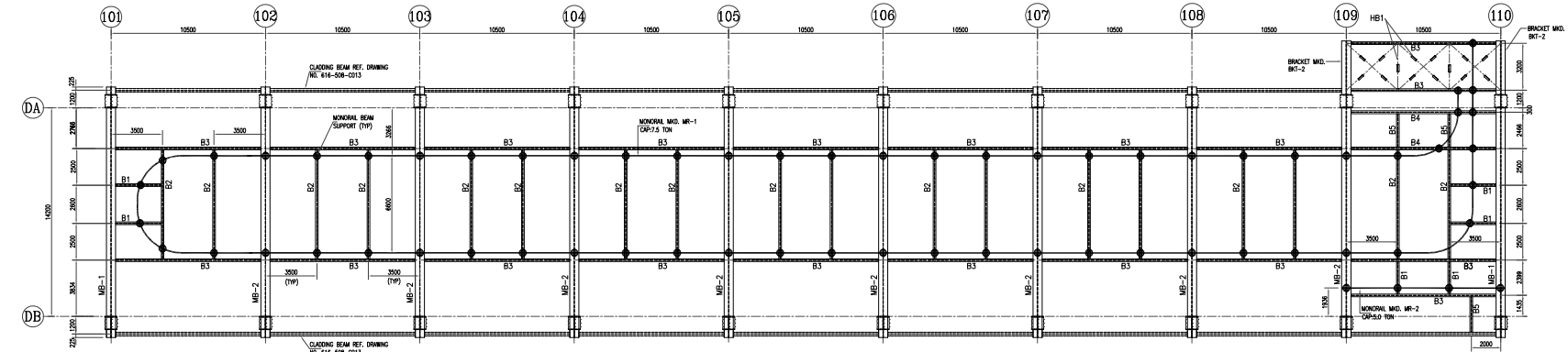
FORMAT SIZE A0

DRAWING NO. PE-DG-508-616-C012

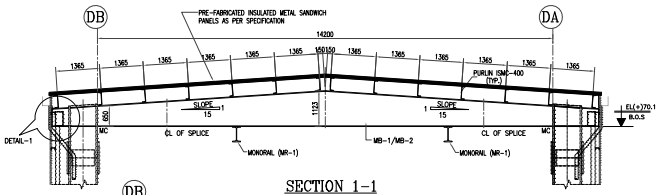
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM



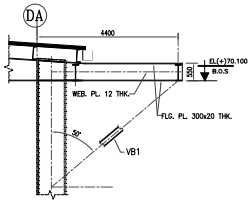
FRAMING PLAN AT PURLIN LEVEL (UNIT#3)



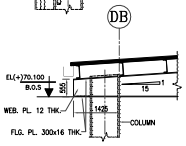
FRAMING PLAN OF ROOF BEAM AT EL.(+)70.10 (B.O.S) (UNIT#3)



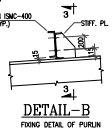
SECTION 1-1
(MC- MOMENT CONNECTION)



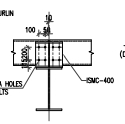
SECTION 2-2
(DET. OF BRACKET MKD. BKT-2)



DETAIL-A
(DET. OF BRACKET MKD. BKT-1)



DETAIL-B
FIXING DETAIL OF PURLIN



SECTION 3-3
FIXING DETAIL OF PURLIN

SCHEDULE OF MEMBERS

DESIGNATION	BUILT UP SECTION D	B	Tw	Tf	SECTION SECTIONS	REMARKS
B1	–	–	–	–	NPB 450x192x77.6	I
B2	–	–	–	–	NPB 450x192x92.36	I
B3	500	250	12	25		REF DET – X
B4	500	300	12	25		
B5	–	–	–	–	ISMB300	I
MR1	–	–	–	–	NPB 450X190X77.6 + EXTRA BOTTOM FLANGE 170 WIDE 8 THK	I
MR2	–	–	–	–	NPB 450X190X77.6 + EXTRA BOTTOM FLANGE 170 WIDE 8 THK	I
MB1	REFER SECTION 1-1	400	16	20		TAPERED I SECTION
MB2	REFER SECTION 1-1	400	16	25		
VB1	–	–	–	–	2-ISMC100(B/B) WITH 12 GAP	I
HB1	–	–	–	–	2L 90X90X8	

DETAIL-X

STRUCTURAL STEEL = 2x175= 350T

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL.(±)0.00 M WHICH CORRESPONDS TO RL.(+)209.50M ABOVE M.S.L.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (NTPC DRG NO. NTPC NO. 9587-001-315-PVC-C-0001)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
7. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS (U.N)
8. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :–

1. BHEL DWG NO. PE-DG-508-100-M001 (NTPC DWG NO. 9587-001-301-POC-F-001) – PLOT PLAN
2. BHEL DWG NO. IS-1-GA-767-116-M032 (NTPC DWG NO. 9587-001-155-PVM-B-032) – LOAD DATA FOR BUNKER FLOORS OF UNIT#3 & 4 (SH-1 TO SH-4)

CONSTRUCTION REFERENCE DRAWINGS

1. BHEL DWG NO. PE-DG-508-616-C010 (NTPC DWG NO.9587-001-315-PVC-C-0247) –BUNKER BAY – FRAMING PLAN OF FEEDER FLOOR
2. BHEL DWG NO. PE-DG-508-616-C004 (NTPC DWG NO.9587-001-315-PVC-C-0242) –BUNKER'S BAY – R.C.C. DTLS OF FEEDER FLOOR
3. BHEL DWG NO. PE-DG-508-616-C011 (NTPC DWG NO.9587-001-315-PVC-C-0248) –BUNKER BAY – FRAMING PLAN OF TRIPPER FLOOR
4. BHEL DWG NO. PE-DG-508-616-C005 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0243) –BUNKER'S BAY – R.C.C. DTLS OF TRIPPER FLOOR
5. BHEL DWG NO. PE-DG-508-616-C007 (NTPC DWG NO. 9587-001-315-PVC-C-0245) –BUNKER'S BAY– LONGITUDINAL FRAMING ARRANGEMENT.
6. BHEL DWG NO. PE-DG-508-616-C008 (NTPC DWG NO. 9587-001-315-PVC-C-0246) –BUNKER'S BAY– TRANSVERSE FRAMING ARRANGEMENT.
7. BHEL DWG NO. PE-DG-508-616-C014 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0251) –BUNKER'S BAY– G.A. OF BUNKERS & SUPPORTING DETAILS .

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED ☑ IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
RELEASED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 20.07.2024

JOB NO. 508
STATUS CONTRACT
PRINT SCALE IN METRE
DEFAULT 0 5 10 15 20 25 30

REV.	DATE	ALTD	CHD	APPD
A				

NTPC DRG. NO. 9587-001-315-PVC-C-0249

CUSTOMER: NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT (2X800MW STAGE-II)

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DESIGN CODE: C

	NAME	SIGNATURE	DATE
DRN	YSH	—sd—	19.07.2024
DESN	BKS	—sd—	19.07.2024
CHD	AS	—sd—	19.07.2024
APPD	AK	—sd—	19.07.2024

TITLE: MILL & BUNKER BAY (UNIT # 3 & 4) FRAMING PLAN OF BUNKER ROOF

MPL	CIVIL	ELEC	C&I	MSE	MAX	DEPT.	SCALE:–
						SIGN	
						DATE	

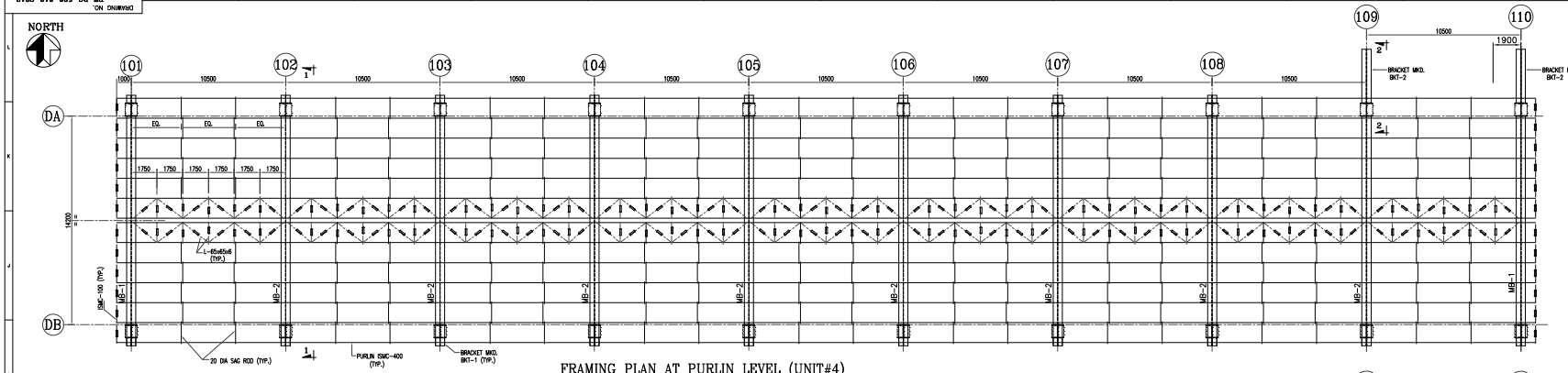
DRAWING NO. PE-DG-508-616-C012

SHEET 1 OF 2 REV. RD

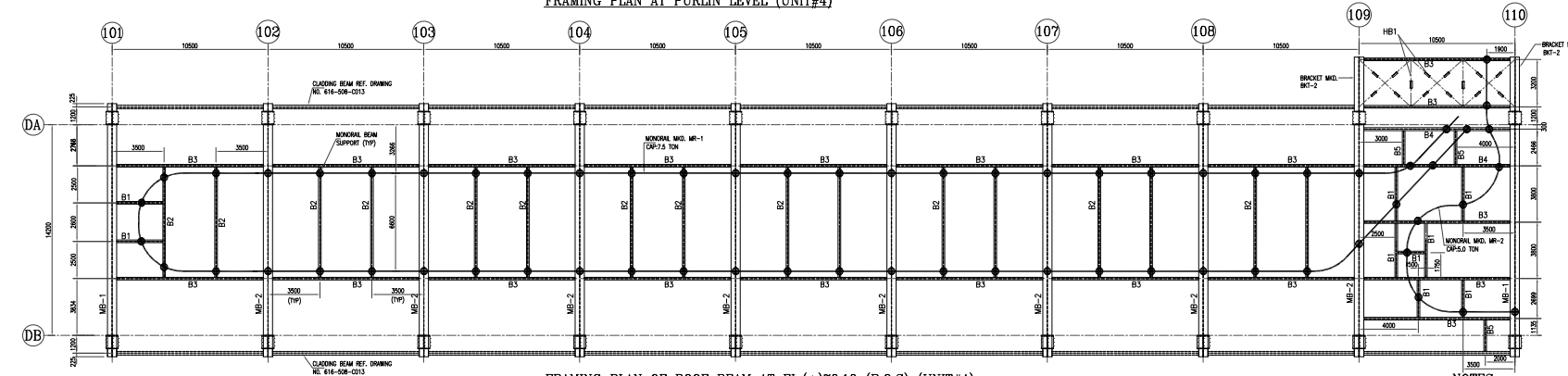
FORMAT SIZE A0

DRAWING NO. PE-DG-508-616-C012

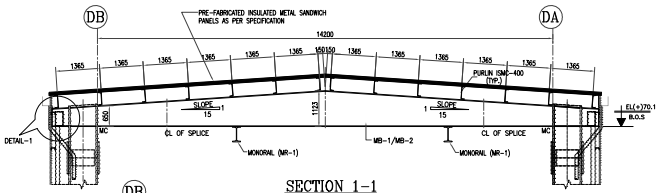
NORTH



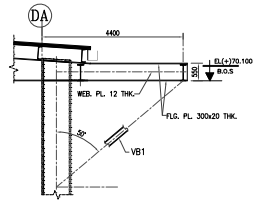
FRAMING PLAN AT PURLIN LEVEL (UNIT#4)



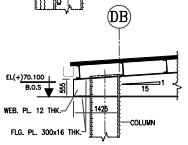
FRAMING PLAN OF ROOF BEAM AT EL.(+)70.10 (B.O.S) (UNIT#4)



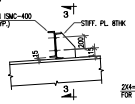
SECTION 1-1
(MC- MOMENT CONNECTION)



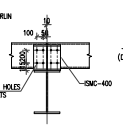
SECTION 2-2
(DET. OF BRACKET MKD. BKT-2)



DETAIL-A
(DET. OF BRACKET MKD. BKT-1)



DETAIL-B
FIXING DETAIL OF PURLIN



SECTION 3-3
FIXING DETAIL OF PURLIN

SCHEDULE OF MEMBERS

DESIGNATION	SECTION BUILT UP SECTION D	B	Tw	Tf	SECTIONS	REMARKS
B1	–	–	–	–	NPB 450x192x77.6	I
B2	–	–	–	–	NPB 450x192x92.36	I
B3	500	250	12	25		REF DET – X
B4	500	300	12	25		
B5	–	–	–	–	ISMB300	I
MR1	–	–	–	–	NPB 450X190X77.6 + EXTRA BOTTOM FLANGE 170 WIDE 8 THK	I
MR2	–	–	–	–	NPB 450X190X77.6 + EXTRA BOTTOM FLANGE 170 WIDE 8 THK	I
MB1	REFER SECTION 1-1	400	16	20		TAPERED I SECTION
MB2	REFER SECTION 1-1	400	16	25		
VB1	–	–	–	–	2-ISMC150(B) WITH 12 GAP	I
HB1	–	–	–	–	2L 90X90X8	L

DETAIL-X

NOTES:–

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL.(±)0.00 M WHICH CORRESPONDS TO RL.(+)209.50M ABOVE M.S.L.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (NTPC DRG NO. NTPC NO. 9587-001-315-PVC-C-0001)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
7. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS (U.N)
8. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-350.

ENGINEERING REFERENCE DRAWINGS :–

1. BHEL DWG NO. PE-DG-508-100-M001 (NTPC DWG NO. 9587-001-301-POC-F-001) – PLOT PLAN
2. BHEL DWG NO. IS-1-GA-767-116-M032 (NTPC DWG NO. 9587-001-155-PVM-B-032) – LOAD DATA FOR BUNKER FLOORS OF UNIT#3 & 4 (SH-1 TO SH-4)

CONSTRUCTION REFERENCE DRAWINGS

1. BHEL DWG NO. PE-DG-508-616-C010 (NTPC DWG NO.9587-001-315-PVC-C-0247) –BUNKER BAY – FRAMING PLAN OF FEEDER FLOOR
2. BHEL DWG NO. PE-DG-508-616-C004 (NTPC DWG NO.9587-001-315-PVC-C-0242) –BUNKER'S BAY – R.C.C. DTLS OF FEEDER FLOOR
3. BHEL DWG NO. PE-DG-508-616-C011 (NTPC DWG NO.9587-001-315-PVC-C-0248) –BUNKER BAY – FRAMING PLAN OF TRIPPER FLOOR
4. BHEL DWG NO. PE-DG-508-616-C005 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0243) –BUNKER'S BAY – R.C.C. DTLS OF TRIPPER FLOOR
5. BHEL DWG NO. PE-DG-508-616-C007 (NTPC DWG NO. 9587-001-315-PVC-C-0245) –BUNKER'S BAY– LONGITUDINAL FRAMING ARRANGEMENT.
6. BHEL DWG NO. PE-DG-508-616-C008 (NTPC DWG NO. 9587-001-315-PVC-C-0246) –BUNKER'S BAY– TRANSVERSE FRAMING ARRANGEMENT.
7. BHEL DWG NO. PE-DG-508-616-C014 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0251) –BUNKER'S BAY– G.A. OF BUNKERS & SUPPORTING DETAILS .

BHEL-PROJECT ENGINEERING MANAGEMENT (EPM)
THIS DRAWING MARKED [X] IS RELEASED FOR
[X] COMMENTS/APPROVAL
[ ] PLANNING/INFORMATION
[ ] CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
CHECKED BY
NAME: AMIT THAKUR
SIGNATURE:
DATE: 20.07.2024

JOB NO. 508
STATUS CONTRACT
PRINT SCALE IN METRE
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

REV.	DATE	ALTD	CHD	APPD
A				

NTPC DRG. NO. 9587-001-315-PVC-C-0249

CUSTOMER: NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT (2X800MW STAGE-II)

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DEPT CODE: C

	NAME	SIGNATURE	DATE
DRN	YSH	–sd–	19.07.2024
DESN	BKS	–sd–	19.07.2024
CHD	AS	–sd–	19.07.2024
APPD	AK	–sd–	19.07.2024

TITLE: MILL & BUNKER BAY (UNIT # 3 & 4) FRAMING PLAN OF BUNKER ROOF

MPL	CIVIL	ELEC	C&I	MSE	MAX	DEPT.
						SIGN
						DATE

SCALE:-

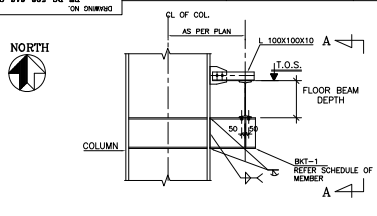
DRAWING NO. PE-DG-508-616-C012

SHEET 2 OF 2 REV. R0

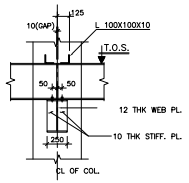
FORMAT SIZE A0

DRAWING NO. PE-DG-508-616-C011

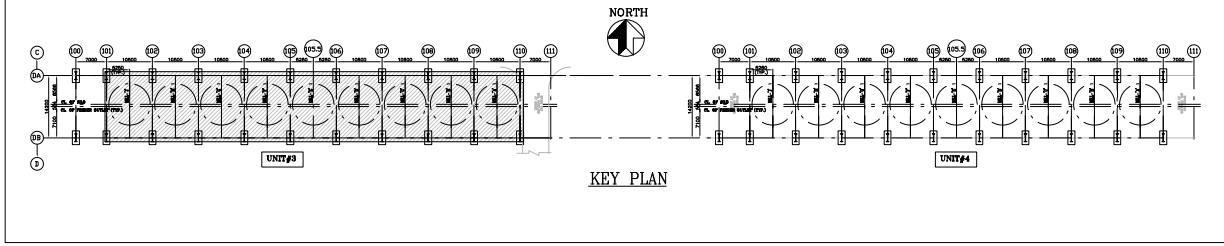
FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM



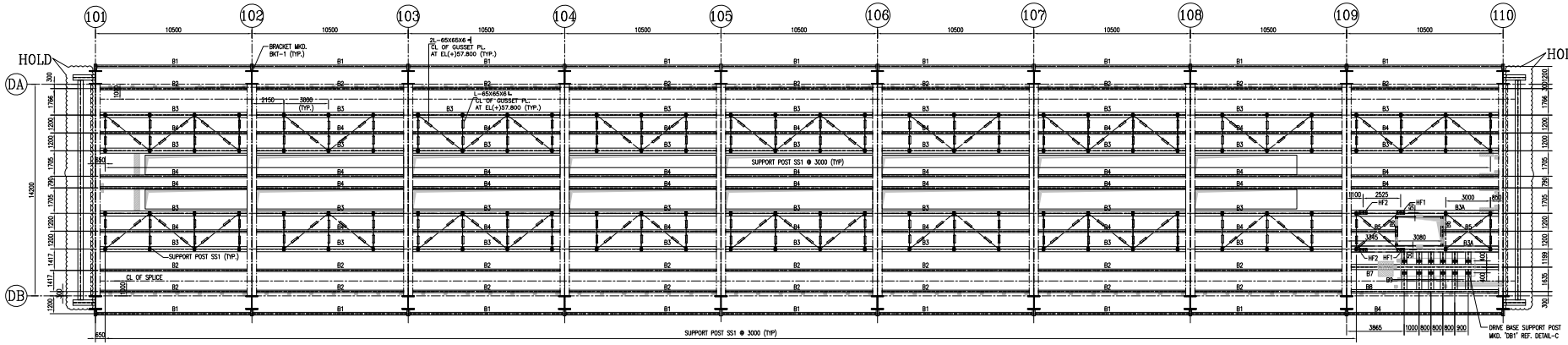
DETAILS OF BRACKET MKD BKT-1



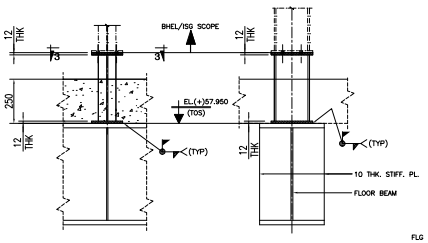
SECTION A-A



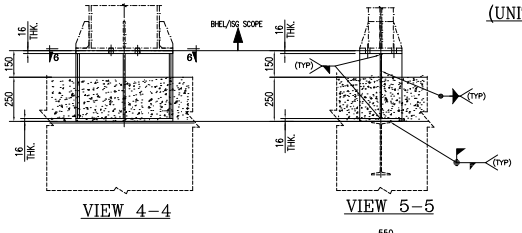
KEY PLAN



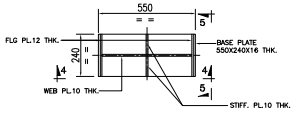
FRAMING PLAN OF TRIPPER FLOOR AT EL.(+)57.950 (T.O.S)
(UNIT#3)



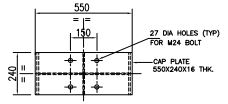
VIEW 1-1 VIEW 2-2



VIEW 4-4 VIEW 5-5



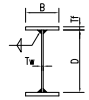
PLAN

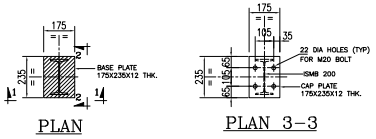


PLAN 6-6

SCHEDULE OF MEMBERS

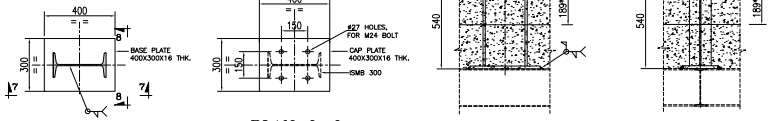
DESIGNATION	SECTION				SECTIONS	REMARKS
	BUILT UP SECTION D	B	Tw	Tf		
B1	-	-	-	-	MB-500	I
B2	MB 500 + FLG. PL. 150 X 8 THK. (TOP)					REF DET - A
B3	850	350	12	28		REF DET - B
B3A	850	400	12	25		
B4	-	-	-	-	MB-500	I
B5	-	-	-	-	MB-300	
B6	-	-	-	-	MB-400	
B7	850	300	12	25		REF DET - B
B8	700	250	12	25		
B9	350	350	10	12		
BKT-1	500	250	12	16		





PLAN PLAN 3-3

DETAIL OF POST SUPPORT MKD. SS1



PLAN PLAN 9-9 VIEW 7-7 VIEW 8-8

DETAIL OF POST SUPPORT MKD. HF1 & HF2

DETAIL-C (AT DRIVE BASE SUPP. POST 'DB1')

NOTES:-

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL.(+)0.00 M WHICH CORRESPONDS TO RL.(+)209.50M ABOVE M.S.L.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (NTPC DRG NO. NTPC NO. 9587-001-315-PVC-C-0001)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
7. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS (U.N)
8. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-250.

ENGINEERING REFERENCE DRAWINGS :-

1. BHEL DWG NO. PE-DG-508-100-M001 (NTPC DWG NO. 9587-001-301-POC-F-001) - PLOT PLAN
2. BHEL DWG NO. IS-1-GA-767-116-M032 (NTPC DWG NO. 9587-001-155-PVM-B-032) - LOAD DATA FOR BUNKER FLOORS OF UNIT#3 & 4 (SH-1 TO SH-4)

CONSTRUCTION REFERENCE DRAWINGS

1. BHEL DWG NO. PE-DG-508-616-C010 (NTPC DWG NO.9587-001-315-PVC-C-0247) -BUNKER BAY - FRAMING PLAN OF FEEDER FLOOR
2. BHEL DWG NO. PE-DG-508-616-C004 (NTPC DWG NO.9587-001-315-PVC-C-0242) -BUNKER'S BAY - R.C.C. DTLS OF FEEDER FLOOR
3. BHEL DWG NO. PE-DG-508-616-C005 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0243) -BUNKER'S BAY - R.C.C. DTLS OF TRIPPER FLOOR
4. BHEL DWG NO. PE-DG-508-616-C012 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0249) -BUNKER BAY - FRAMING PLAN OF BUNKER ROOF.
5. BHEL DWG NO. PE-DG-508-616-C006 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0244) -BUNKER'S BAY - R.C.C. DTLS OF BUNKER ROOF.
6. BHEL DWG NO. PE-DG-508-616-C007 (NTPC DWG NO. 9587-001-315-PVC-C-0245) -BUNKER'S BAY- LONGITUDINAL FRAMING ARRANGEMENT.
7. BHEL DWG NO. PE-DG-508-616-C008 (NTPC DWG NO. 9587-001-315-PVC-C-0246) -BUNKER'S BAY- TRANSVERSE FRAMING ARRANGEMENT.
8. BHEL DWG NO. PE-DG-508-616-C014 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0251) -BUNKER'S BAY- G.A. OF BUNKERS & SUPPORTING DETAILS .

STRUCTURAL STEEL (UNIT#3) =190 MT
STRUCTURAL STEEL (UNIT#4) =183 MT
TOTAL STRUCTURAL STEEL =373 MT

BHEL-PROJECT ENGINEERING MANAGEMENT (PEM)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME: AMIT THAKUR
SIGNATURE: -SD-
DATE: 06.07.2024

JOB NO. 508
STATUS CONTRACT
PRIME SCALE IN METRE

NTPC DRG. NO. 9587-001-315-PVC-C-0248

CUSTOMER: NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT (2X800MW STAGE-II)

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DESIGN CODE		NAME	SIGNATURE	DATE
C	DRN	YSH	-SD-	03.07.2024
	DESN	BKS	-SD-	03.07.2024
	CHD	AS	-SD-	03.07.2024
	APPD	AK	-SD-	03.07.2024

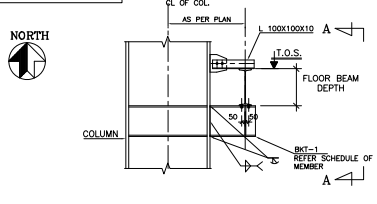
TITLE: MILL & BUNKER BAY (UNIT # 3 & 4)
FRAMING PLAN OF TRIPPER FLOOR

MPL | CIVIL | ELEC | C&I | MSE | MAX | DEPT. | SCALE:- | DRAWING NO. PE-DG-508-616-C011
SIGN / DATE | SHEET 1 OF 2 | REV. R0

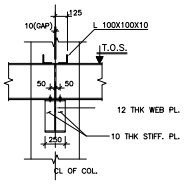
FORMAT SIZE A0

DRAWING NO. PE-DG-508-616-C011

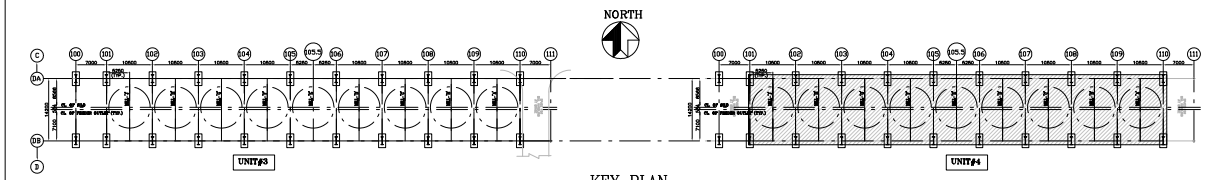
FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM



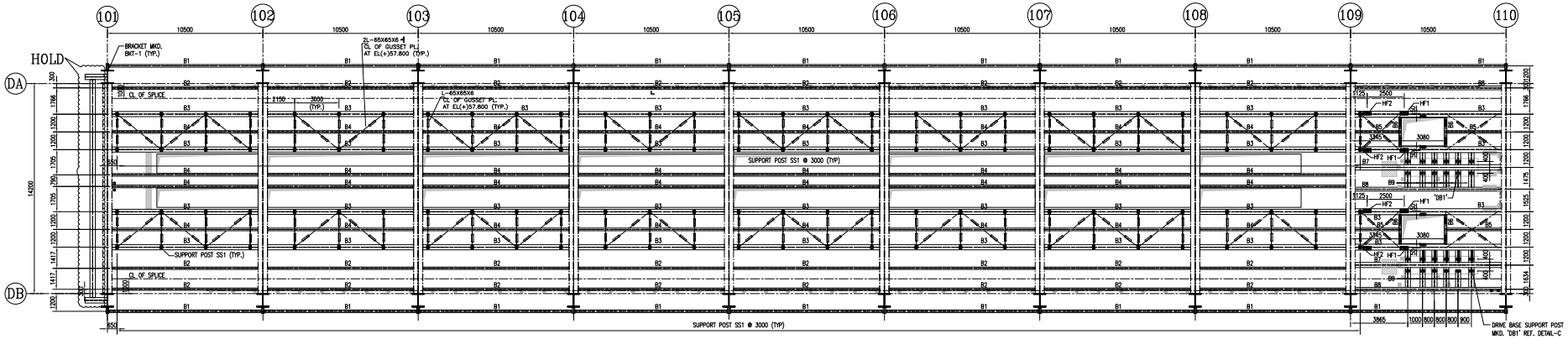
DETAILS OF BRACKET MKD BKT-1



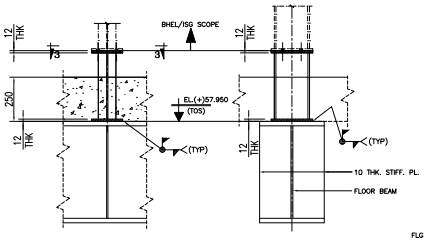
SECTION A-A



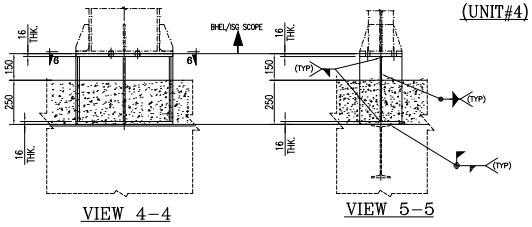
KEY PLAN

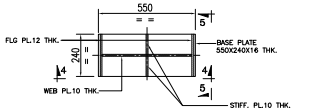


FRAMING PLAN OF TRIPPER FLOOR AT EL.(+)57.950 (T.O.S)
(UNIT#4)

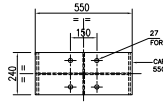


VIEW 1-1 VIEW 2-2



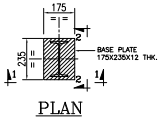


PLAN

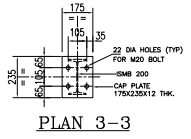


PLAN 6-6

DETAIL OF POST SUPPORT MKD. HF1 & HF2

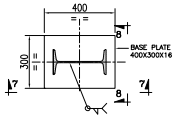


PLAN

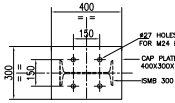


PLAN 3-3

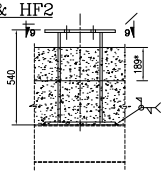
DETAIL OF POST SUPPORT MKD. SS1



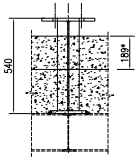
PLAN



PLAN 9-9



VIEW 7-7



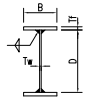
VIEW 8-8

DETAIL-C (AT DRIVE BASE SUPP. POST 'DB1')

SCHEDULE OF MEMBERS

DESIGNATION	SECTION BUILT UP SECTION D	B	Tw	Tf	SECTIONS	REMARKS
B1	-	-	-	-	MB-500	I
B2	MB 500 + FLG. PL. 150 X 8 THK. (TOP)					REF DET - A
B3	850	350	12	28		REF DET - B
B3A	850	400	12	25		
B4	-	-	-	-	MB-500	I
B5	-	-	-	-	MB-300	
B6	-	-	-	-	MB-400	
B7	850	300	12	25		REF DET - B
B8	700	250	12	25		
B9	350	350	10	12		
BKT-1	500	250	12	16		

DETAIL-A



DETAIL-B

NOTES:-

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL.(±)0.00 M WHICH CORRESPONDS TO RL.(+)209.50M ABOVE M.S.L.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-C002 (NTPC DRG NO. NTPC NO. 9587-001-315-PVC-C-0001)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. ALL ELEVATIONS ARE TO THE TOP OF STEEL (U.N.O.)
7. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS (U.N)
8. STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-250 & STRUCTURAL STEEL PLATES SHALL CONFORM TO GRADE DESIGNATION E-250.

ENGINEERING REFERENCE DRAWINGS :-

1. BHEL DWG NO. PE-DG-508-100-M001 (NTPC DWG NO. 9587-001-301-POC-F-001) - PLOT PLAN
2. BHEL DWG NO. IS-1-GA-767-116-M032 (NTPC DWG NO. 9587-001-155-PVM-B-032) - LOAD DATA FOR BUNKER FLOORS OF UNIT#3 & 4 (SH-1 TO SH-4)

CONSTRUCTION REFERENCE DRAWINGS

1. BHEL DWG NO. PE-DG-508-616-C010 (NTPC DWG NO.9587-001-315-PVC-C-0247) -BUNKER BAY - FRAMING PLAN OF FEEDER FLOOR
2. BHEL DWG NO. PE-DG-508-616-C004 (NTPC DWG NO.9587-001-315-PVC-C-0242) -BUNKER'S BAY - R.C.C. DTLS OF FEEDER FLOOR
3. BHEL DWG NO. PE-DG-508-616-C005 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0243) -BUNKER'S BAY - R.C.C. DTLS OF TRIPPER FLOOR
4. BHEL DWG NO. PE-DG-508-616-C012 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0249) -BUNKER BAY - FRAMING PLAN OF BUNKER ROOF.
5. BHEL DWG NO. PE-DG-508-616-C006 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0244) -BUNKER'S BAY - R.C.C. DTLS OF BUNKER ROOF.
6. BHEL DWG NO. PE-DG-508-616-C007 (NTPC DWG NO. 9587-001-315-PVC-C-0245) -BUNKER'S BAY- LONGITUDINAL FRAMING ARRANGEMENT.
7. BHEL DWG NO. PE-DG-508-616-C008 (NTPC DWG NO. 9587-001-315-PVC-C-0246) -BUNKER'S BAY- TRANSVERSE FRAMING ARRANGEMENT.
8. BHEL DWG NO. PE-DG-508-616-C014 (NTPC DWG NO. NTPC NO. 9587-001-315-PVC-C-0251) -BUNKER'S BAY- G.A. OF BUNKERS & SUPPORTING DETAILS .

BHEL-PROJECT ENGINEERING MANAGEMENT (EMD)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME: AMIT THAKUR
SIGNATURE: -SD-
DATE: 06.07.2024

JOB NO. 508
STATUS CONTRACT
PRIME SCALE IN METRE

NTPC DRG. NO. 9587-001-315-PVC-C-0248

CUSTOMER: NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT (2X800MW STAGE-II)

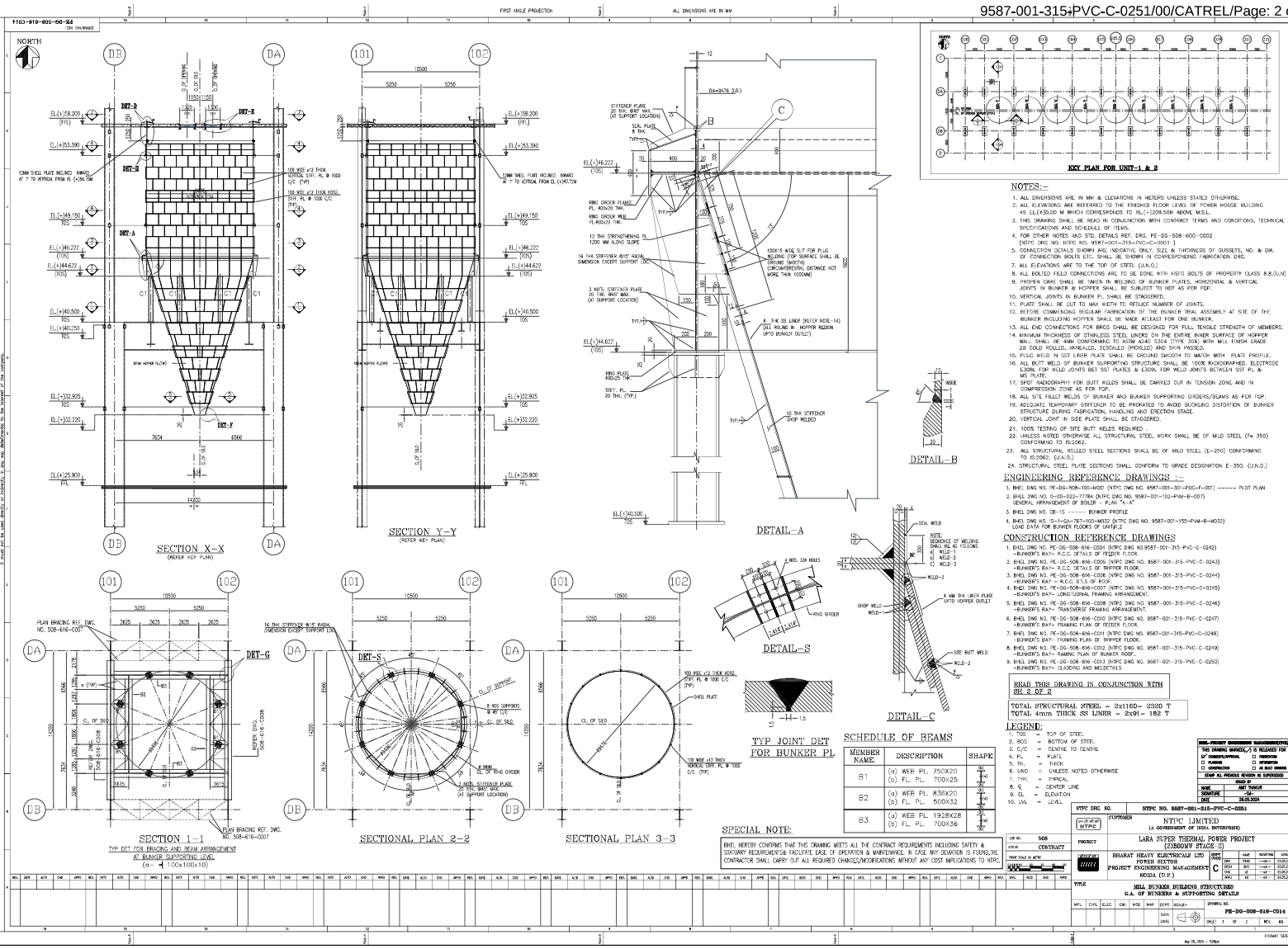
BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

DESIGN CODE		NAME	SIGNATURE	DATE
C	DRN	YSH	-sd-	03.07.2024
	DESN	BKS	-sd-	03.07.2024
	CHD	AS	-sd-	03.07.2024
	APPD	AK	-sd-	03.07.2024

TITLE: MILL & BUNKER BAY (UNIT # 3 & 4)
FRAMING PLAN OF TRIPPER FLOOR

MPL | CIVIL | ELEC | C&I | MSE | MAX | DEPT. | SCALE:- | DRAWING NO. PE-DG-508-616-C011
SIGN / DATE | SHEET 2 OF 2 | REV. R0

FORMAT SIZE A0



NOTES:-

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL(+)0.00 M WHICH CORRESPONDS TO RL(+)209.50M ABOVE M.S.L.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
4. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-508-600-0002 (NTPC DRG NO. NTPC NO. 9587-001-315-PVC-C-0001)
5. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
6. ALL ELEVATIONS ARE TO THE TOP OF STEEL. (U.N.O.)
7. ALL BOLTED FIELD CONNECTIONS ARE TO BE DONE WITH HSFG BOLTS OF PROPERTY CLASS 8.8.(U.N)
8. PROPER CARE SHALL BE TAKEN IN WELDING OF BUNKER PLATES. HORIZONTAL & VERTICAL JOINTS IN BUNKER & HOPPER SHALL BE SUBJECT TO NDT AS PER FQP.
9. PROPER CARE SHALL BE TAKEN IN WELDING OF BUNKER PLATES. HORIZONTAL & VERTICAL JOINTS IN BUNKER & HOPPER SHALL BE SUBJECT TO NDT AS PER FQP.
10. VERTICAL JOINTS IN BUNKER PL SHALL BE STAGGERED.
11. PLATE SHALL BE CUT TO MAX WIDTH TO REDUCE NUMBER OF JOINTS.
12. BEFORE COMMENCING REGULAR FABRICATION OF THE BUNKER TRIAL ASSEMBLY AT SITE OF THE BUNKER INCLUDING HOPPER SHALL BE MADE AT LEAST FOR ONE BUNKER.
13. ALL END CONNECTIONS FOR BRCO SHALL BE DESIGNED FOR FULL TENSILE STRENGTH OF MEMBERS.
14. MINIMUM THICKNESS OF STAINLESS STEEL LINERS ON THE ENTIRE INNER SURFACE OF HOPPER WALL SHALL BE 4MM CONFORMING TO ASTM A240 S304 (TYPE 304) WITH MILL FINISH GRADE 2B COLD ROLLED, ANNEALED, DESCALED (PICKLED) AND SKIN PASSED.
15. PLUG WELD IN SST LINER PLATE SHALL BE GROUND SMOOTH TO MATCH WITH PLATE PROFILE.
16. ALL BUTT WELD OF BUNKER SUPPORTING STRUCTURE SHALL BE 100% RADIOGRAPHED. ELECTRODE E308L FOR WELD JOINTS BET SST PLATES & E309L FOR WELD JOINTS BETWEEN SST PL & MS PLATE.
17. SPOT RADIOGRAPHY FOR BUTT WELDS SHALL BE CARRIED OUT IN TENSION ZONE AND IN COMPRESSION ZONE AS PER FQP.
18. ALL SITE FILLET WELDS OF BUNKER AND BUNKER SUPPORTING GIRDERS/BEAMS AS PER FQP.
19. ADEQUATE TEMPORARY STIFFENER TO BE PROVIDED TO AVOID BUCKLING DISTORTION OF BUNKER STRUCTURE DURING FABRICATION, HANDLING AND ERECTION STAGE.
20. VERTICAL JOINT IN SIDE PLATE SHALL BE STAGGERED.
21. 100% TESTING OF SITE BUTT WELDS REQUIRED.
22. UNLESS NOTED OTHERWISE ALL STRUCTURAL STEEL WORK SHALL BE OF MILD STEEL (Fe 350) CONFORMING TO IS:2062.
23. ALL STRUCTURAL ROLLED STEEL SECTIONS SHALL BE OF MILD STEEL (E-250) CONFORMING TO IS:2062. (U.N.O.)
24. STRUCTURAL STEEL PLATE SECTIONS SHALL CONFORM TO GRADE DESIGNATION E-350. (U.N.O.)

ENGINEERING REFERENCE DRAWINGS :-

1. BHEL DWG NO. PE-DG-508-100-W001 (NTPC DWG NO. 9587-001-301-FQC-F-001) ------ PLOT PLAN
2. BHEL DWG NO. 0-00-022-77784 (NTPC DWG NO. 9587-001-102-PVM-B-007) GENERAL ARRANGEMENT OF BOILER - PLAN "A-A"
3. BHEL DWG NO. CB-15 ------ BUNKER PROFILE
4. BHEL DWG NO. IS-1-GA-767-100-M032 (NTPC DWG NO. 9587-001-155-PVM-B-M032) LOAD DATA FOR BUNKER FLOORS OF UNIT#1,2

CONSTRUCTION REFERENCE DRAWINGS

1. BHEL DWG NO. PE-DG-508-616-C004 (NTPC DWG NO.9587-001-315-PVC-C-0242) -BUNKER'S BAY- R.C.C. DETAILS OF FEEDER FLOOR.
2. BHEL DWG NO. PE-DG-508-616-C005 (NTPC DWG NO. 9587-001-315-PVC-C-0243) -BUNKER'S BAY- R.C.C. DETAILS OF TRIPPER FLOOR.
3. BHEL DWG NO. PE-DG-508-616-C006 (NTPC DWG NO. 9587-001-315-PVC-C-0244) -BUNKER'S BAY- R.C.C. DTLS OF ROOF.
4. BHEL DWG NO. PE-DG-508-616-C007 (NTPC DWG NO. 9587-001-315-PVC-C-0245) -BUNKER'S BAY- LONGITUDINAL FRAMING ARRANGEMENT.
5. BHEL DWG NO. PE-DG-508-616-C008 (NTPC DWG NO. 9587-001-315-PVC-C-0246) -BUNKER'S BAY- TRANSVERSE FRAMING ARRANGEMENT.
6. BHEL DWG NO. PE-DG-508-616-C010 (NTPC DWG NO. 9587-001-315-PVC-C-0247) -BUNKER'S BAY- FRAMING PLAN OF FEEDER FLOOR.
7. BHEL DWG NO. PE-DG-508-616-C011 (NTPC DWG NO. 9587-001-315-PVC-C-0248) -BUNKER'S BAY- FRAMING PLAN OF TRIPPER FLOOR.
8. BHEL DWG NO. PE-DG-508-616-C012 (NTPC DWG NO. 9587-001-315-PVC-C-0249) -BUNKER'S BAY- FRAMING PLAN OF BUNKER ROOF.
9. BHEL DWG NO. PE-DG-508-616-C013 (NTPC DWG NO. 9587-001-315-PVC-C-0250) -BUNKER'S BAY- CLADDING AND MISDETAILS

READ THIS DRAWING IN CONJUNCTION WITH SH. 2 OF 2

TOTAL STRUCTURAL STEEL = 2x116D= 232D T
TOTAL 4mm THICK SS LINER = 2x91= 182 T

LEGEND:

1. TOS = TOP OF STEEL
2. BOS = BOTTOM OF STEEL
3. C/C = CENTRE TO CENTRE
4. PL = PLATE
5. TH. = THICK
6. UNO = UNLESS NOTED OTHERWISE
7. TYP. = TYPICAL
8. ℄ = CENTER LINE
9. EL = ELEVATION
10. LVL = LEVEL

SCHEDULE OF BEAMS

MEMBER NAME	DESCRIPTION	SHAPE
B1	(a) WEB PL. 750X20 (a) FL. PL. 700X25	
B2	(a) WEB PL. 836X20 (a) FL. PL. 500X32	
B3	(a) WEB PL. 1928X28 (a) FL. PL. 700X36	

SPECIAL NOTE:

BHEL HEREBY CONFIRMS THAT THIS DRAWING MEETS ALL THE CONTRACT REQUIREMENTS INCLUDING SAFETY & STATUTORY REQUIREMENTS& FACILITATE EASE OF OPERATION & MAINTENANCE. IN CASE ANY DEVIATION IS FOUND,THE CONTRACTOR SHALL CARRY OUT ALL REQUIRED CHANGES/MODIFICATIONS WITHOUT ANY COST IMPLICATIONS TO NTPC.

BHEL-PROJECT ENGINEERING MANAGEMENT(PEM)	
THIS DRAWING MARKED ✓ IS RELEASED FOR	
☐ CONSTRUCTION/APPROVAL	☐ PRODUCTION
☐ PLANNING	☐ INFORMATION
☐ CONSTRUCTION	☐ AS BUILT DRAWING
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	
NAME	AMIT THAKUR
SIGNATURE	
DATE	29.05.2024

NTPC DRG. NO. NTPC NO. 9587-001-315-PVC-C-0251

CUSTOMER: NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT (2X800MW STAGE-I)

BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

JOB NO.	508
STATUS	CONTRACT
PAPER SIZE IN METRIC	
SCALE	

SHEET NO.	NAME	SIGNATURE	DATE
ORIG	VSNK	—sd—	23.05.2024
DESN	BKS	—sd—	23.05.2024
CHD	AT	—sd—	23.05.2024
APPD	KK	—sd—	24.05.2024

TITLE: MILL BUNKER BUILDING STRUCTURES G.A. OF BUNKERS & SUPPORTING DETAILS

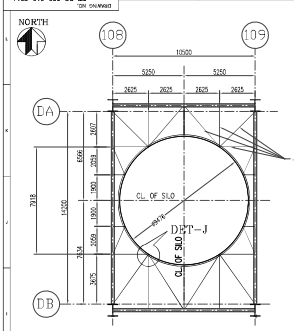
MFL	CIVIL	ELEC	C&I	MSE	MAM	DEPT.	SCALE
						SIGN	
						DATE	

DRAWING NO. PE-DG-508-616-C014

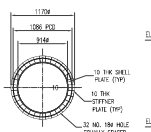
SHEET 1 OF 2 REV. 00

FORMAT SIZE A0

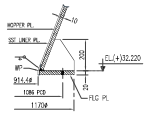
May 29, 2024 - 5:09pm



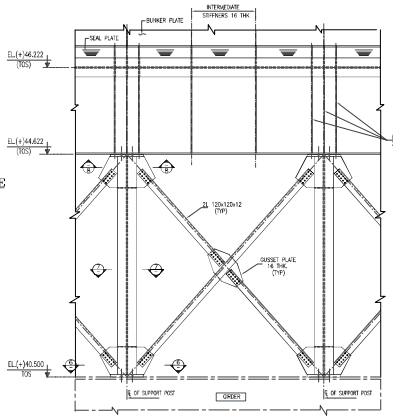
SECTIONAL PLAN 4-4
(REFER SH 1)



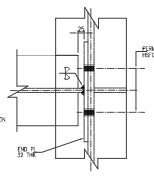
SECTION 5-5
DETAIL OF OUTLET FLANGE
(REFER SH 1)



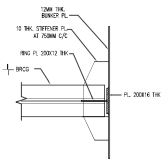
DETAIL-F
(REFER SH 1)



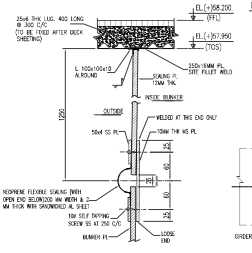
DEVELOPED VIEW OF SKIRT
GIRDER WITH SUPPORT COLUMNS



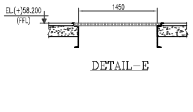
DETAIL-G



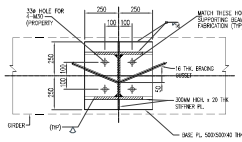
DETAIL-H



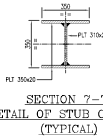
DETAIL-D



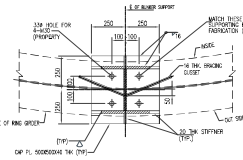
DETAIL-E



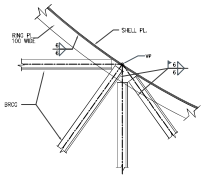
SECTION 6-6



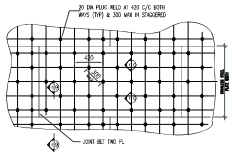
SECTION 7-7
DETAIL OF STUB COLUMN
(TYPICAL)



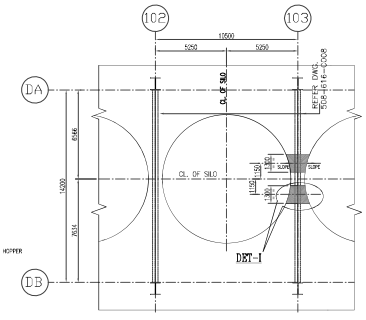
SECTION 8-8



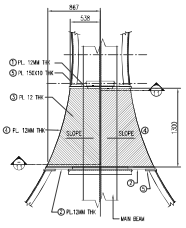
DETAIL-J



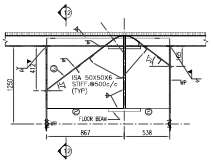
TYP DET FOR FIXING SST
LINER PL TO HOPPER PL



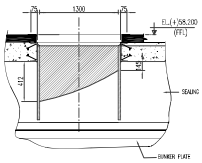
SECTIONAL PLAN 7-7
(REFER SH 1)



DETAIL-I

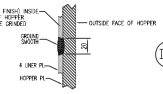


SECTION 11-11



SECTION 12-12

SECTION 9-9



SECTION 10-10

FOR NOTES REFER SHEET 1 OF 2

READ THIS DRAWING IN CONJUNCTION WITH SH 1 OF 2

THIS DRAWING MARKED ✓ IS RELEASED FOR	
☐ CONSTRUCTION	☐ PRODUCTION
☐ PLANNING	☐ INFORMATION
☐ CONSTRUCTION	☐ AS BUILT DRAWING
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	
NAME	AMIT THAKUR
SIGNATURE	
DATE	28.05.2024

NTPC DRG. NO. NTPC NO. 9587-001-315-PVC-C-0251

CUSTOMER: NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT: LARA SUPER THERMAL POWER PROJECT (2X800MW STAGE-II)

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA (U.P.)

JOB NO.	508
STATUS	CONTRACT
PRINT SCALE IN METRE	

	NAME	SIGNATURE	DATE
DSN	VIVEK		31.05.2024
DRN	AMIT		31.05.2024
CHD	AK		31.05.2024
APPD	AK		31.05.2024

TITLE: MILL BUNKER BUILDING STRUCTURES
G.A. OF BUNKERS & SUPPORTING DETAILS

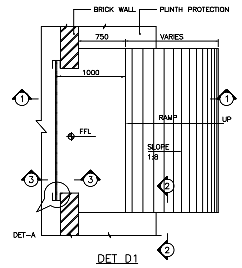
MFL	CIVIL	ELEC	C&I	MSE	MAM	DEPT.	SCALE
						SIGN	
						DATE	

DRAWING NO. PE-DG-508-315-C014

SHEET 2 OF 2 REV. 00

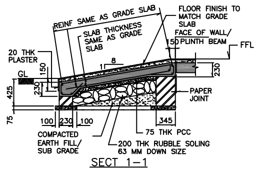
FORMAT SIZE A0

May 28, 2024 - 5:09pm



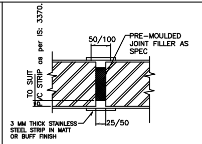
DET D1

RAMP DETAILS



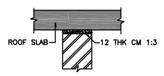
SECT 1-1

(PERIPHERAL DRAINS NOT SHOWN FOR DETAILS REF. RESPECTIVE FLOOR PLANS)



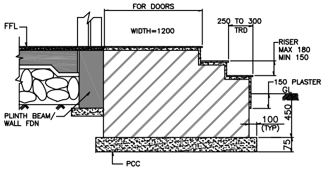
DET D2

WALL/COL EXPANSION JOINT



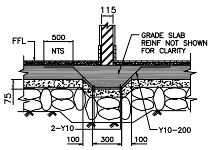
DET D4

JOINT BET WALL & ROOF SLAB



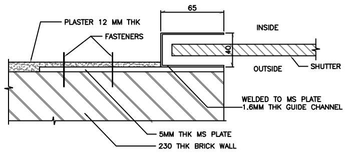
DET D6

DOOR STEPS

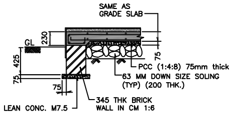


DET D8

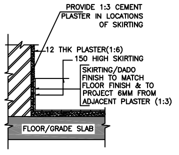
FDN FOR 115 THK BRICK WALL



DET-A

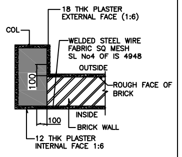


SECT 2-2



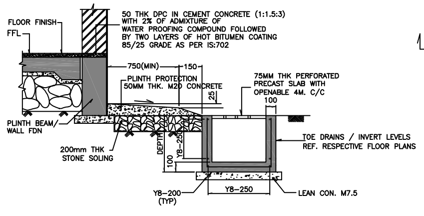
DET D3

SKIRTING/DADO FINISH



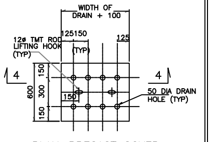
DET D5

JOINT BET COL & BRICK WALL



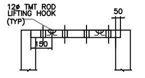
DET D7

PLINTH PROTECTION

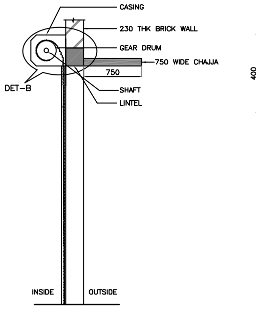


PLAN-PRECAST COVER

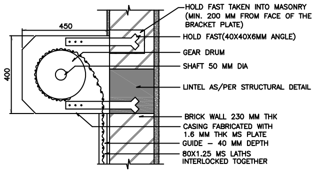
(GA)



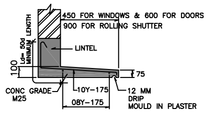
SECT 4-4



SECT 3-3



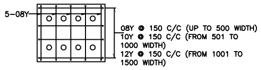
DET-B



DET OF CHAJJA WITHOUT FASCIA

SCHEDULE OF PRECAST COVER

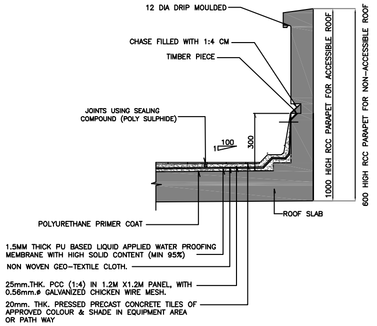
SI NO	DRAIN WIDTH	THICKNESS (T)
1	UP TO 500	60
2	500TO 1000	75
3	1000 TO 1500	100



PLAN-PRECAST COVER

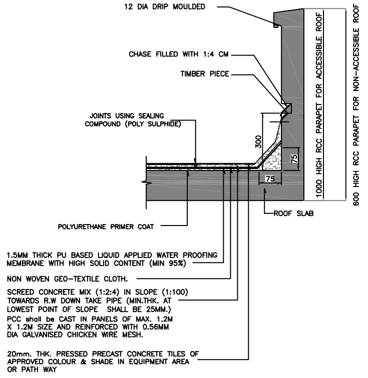
(REINF)

(CENTERLY PLACED)



WATERPROOFING FOR ROOF HAVING STRUCTURAL SLOPE

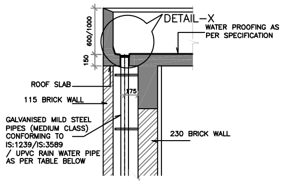
(ROOF SLOPE 1 IN 100)



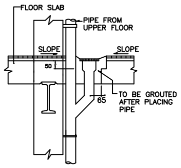
WATERPROOFING FOR ROOF HAVING NO STRUCTURAL SLOPE

RCC

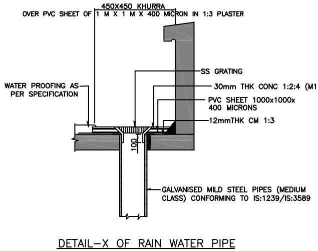
NOTE : 15MM THICK CEMENT SAND MORTAR (1:4) PLASTER SHALL BE PROVIDED ON TOP OF BARE ROOF SLAB IF REQUIRED FOR LEVELLING THE TOP SURFACE.



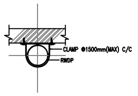
RAIN WATER PIPE ENCASEMENT DETAIL



DET OF FLOOR DRAIN



DETAIL-X OF RAIN WATER PIPE



NOMINAL DIA OF RWDP (d) 'mm'	SLAB OPENING IN 'mm'
150	175

TYPE OF RAIN WATER DOWN TAKE PIPES	BUILDING/ STRUCTURE
GALVANISED MILD STEEL PIPES	POWER HOUSE BLDG.
UPVC PIPES	OTHER BUILDINGS

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
2. ALL DIMENSIONS ARE IN MILLIMETRES & LEVELS ARE IN METRES, UNLESS STATED OTHERWISE..

SYMBOL & ABBREVIATION

&	AND
@	AT
AL.	ALUMINIUM
ARCH.	ARCHITECTURAL
AW	ALUMINIUM WINDOW
AC	AIR CONDITIONING
BLDG.	BUILDING
C.I	CAST IRON
CM	CEMENT MORTAR
COL.	COLUMN
CONC.	CONCRETE
DET.	DETAIL
DIA.	DIAMETER
DN.	DOWN
DPC	DAMP PROOF COURSE
DWG.	DRAWING
D	DOOR
E	EAST
EL.	ELEVATION (HEIGHT)
ENT.	ENTRANCE
EQ.	EQUAL
FFL	FINISHED FLOOR LEVEL
FGL	FINISHED GROUND LEVEL
FL.	FLOOR
FF.	FALSE FLOORING
FC.	FALSE CEILING
GA	GENERAL ARRANGEMENT
GL.	GROUND LEVEL
GGL	GRADED GROUND LEVEL
HPP	HIGHEST POINT OF PAVEMENT
LVL	LEVEL
MS	MILD STEEL
MH	MAN HOLE
N	NORTH
NGL	NATURAL GROUND LEVEL
N.T.S	NOT TO SCALE
PCC	PLAIN CEMENT CONCRETE
RCC	REINFORCED CEMENT CONCRETE
RL	REDUCED LEVEL
RWDP	RAIN WATER DOWN TAKE PIPE
SEC	SECTION
THK.	THICKNESS
TYP.	TYPICAL
TOP	TOP OF PARAPET
TOFF	TOP OF FALSE FLOORING
TOR	TOP OF ROAD
V	VENTILATOR
W	WINDOW
WPC	WATER PROOFING COURSE

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL ☐ FABRICATION
☐ PLANNING ☐ INFORMATION
☐ CONSTRUCTION ☐ AS BUILT DRAWING
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME SACHIN JAIN
SIGNATURE -Sd-
DATE 05.07.2024

ग्राहक ड्राइंग संख्या CUSTOMER DRAWING NO. 1150-001-315-PVC-C-0151A

ग्राहक/CUSTOMER
एन टी पी सी लिमिटेड
N T P C LIMITED

परियोजना PROJECT
2x800 मेगावाट सिंगरौली सुपर थर्मल पावर परियोजना चरण-III
2x800MW SINGRAULI SUPER THERMAL POWER PROJECT STAGE-III

कार्य संख्या- JOB NO. 512
स्थिति STATUS CONTRACT
मुद्रण स्केल मीटर मे PRINT SCALE IN METRE
0 2 4 6 8 10 20 30 40 50

भारत हेवी इलेक्ट्रिकल्स लिमिटेड
BHARAT HEAVY ELECTRICALS LTD
पावर सेक्टर/POWER SECTOR
परियोजना अभियांत्रिकी प्रबंधन
PROJECT ENGINEERING MANAGEMENT
नोएडा (उ॰प्र॰)/NOIDA (U.P.)

DEPT CODE C

	नाम NAME	हस्ताक्षर SIGNATURE	दिनांक DATE
तैयारकर्ता/DRN	OM	-sd-	05.07.2024
डिजाइनकर्ता/DESN	AR	-sd-	05.07.2024
जाँचकर्ता/CHD	SJ/AR	-sd-	05.07.2024
अनुमोदनकर्ता/APPD	KK/DKM	-sd-	05.07.2024

APPD	REV.	DATE	ALTD	CHD	APPD

शीर्षक/TITLE
POWER HOUSE BUILDING
GENERAL NOTES AND STANDARD DETAILS FOR ARCHITECTURAL WORKS

एमपीएल MPL	सिविल CIVIL	इलेक्ट्रिकल ELEC	सीएण्डआई C&I	एमएसई MSE	मैक्स MAX	विभाग DEPT.
						हस्ताक्षर SIGN दिनांक DATE

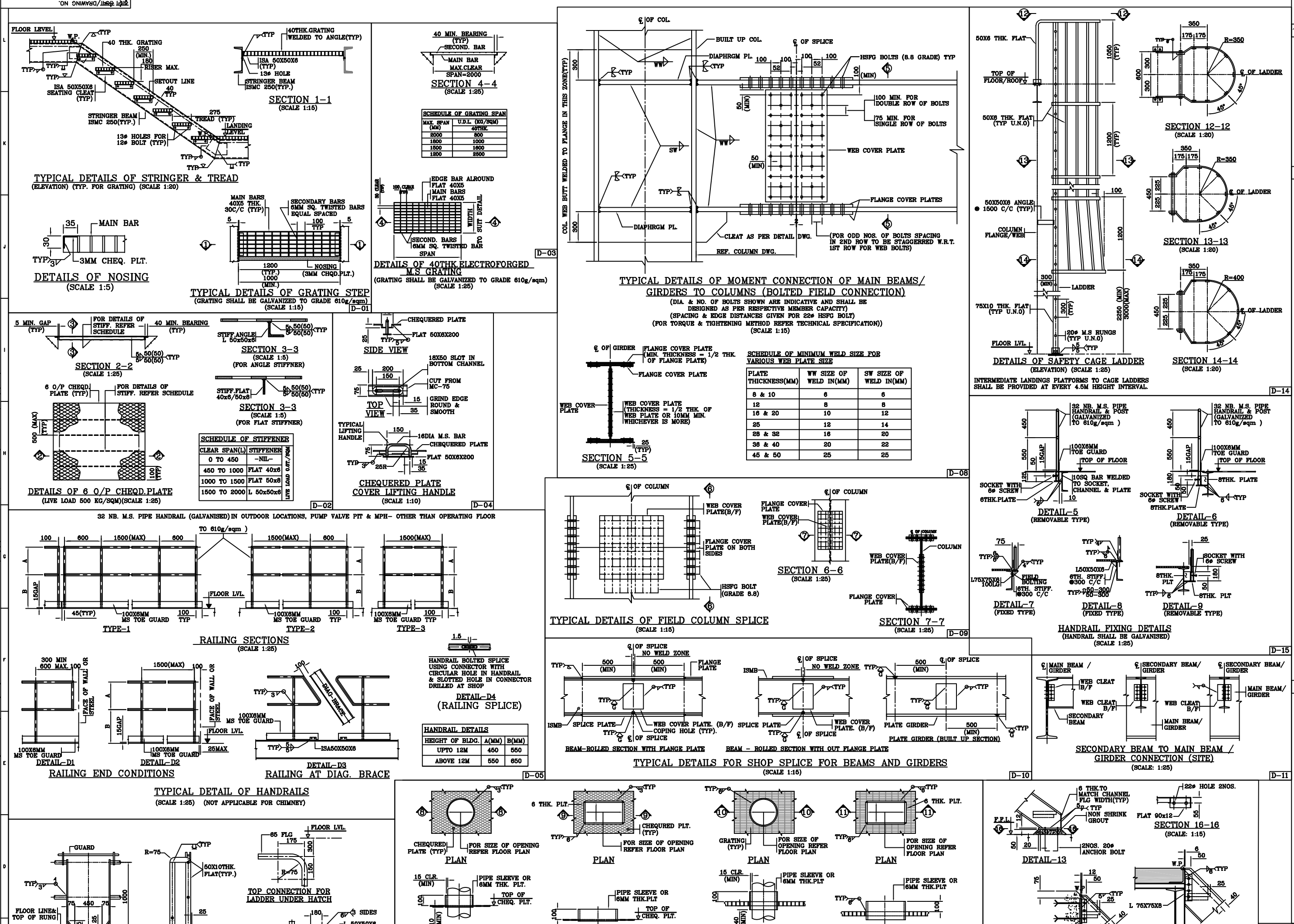
स्केल - SCALE-

ड्राइंग संख्या/ DRAWING NO. PE-DG-512-600-C003
शीट SHEET 1 OF 1
पुनरीक्षण REV. 0

ELECTRONIC FILE NAME :

फर्स्ट एंगल प्रोजेक्शन/FIRST ANGLE PROJECTION

सभी माप मि मी में है/ALL DIMENSIONS ARE IN MM



SCHEDULE OF GRATING SPAN	
MAX. SPAN (MM)	U.D.L. (KG/SQM)
	40THK.
2000	800
1800	1000
1500	1600
1200	2500

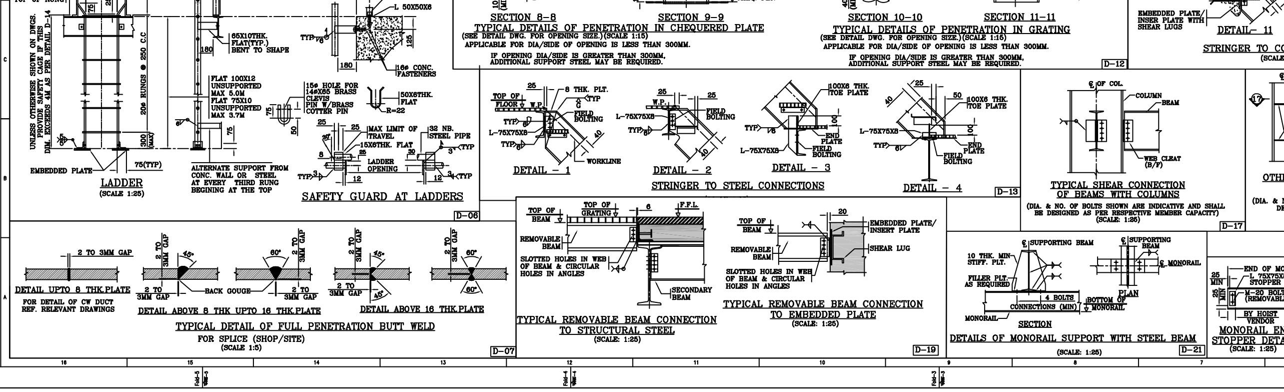
SCHEDULE OF STIFFENER		
CLEAR SPAN(L)	STIFFENER	LIVE LOAD 0.5T./SQM
0 TO 450	-NIL-	
450 TO 1000	FLAT 40x6	
1000 TO 1500	FLAT 50x6	
1500 TO 2000	L 50x50x6	

SCHEDULE OF MINIMUM WELD SIZE FOR VARIOUS WEB PLATE SIZE

PLATE THICKNESS(MM)	WW SIZE OF WELD IN(MM)	SW SIZE OF WELD IN(MM)
8 & 10	6	6
12	8	8
16 & 20	10	12
25	12	14
28 & 32	16	20
36 & 40	20	22
45 & 50	25	25

HANDRAIL DETAILS

HEIGHT OF BLDG.	A(MM)	B(MM)
UPTO 12M	450	550
ABOVE 12M	550	650



ANY STRUCTURE FOR WHICH MORE STRINGENT REQUIREMENT IS THERE & SAME IS NOT PROVIDED IN STANDARD NOTES THEN TECHNICAL SPECIFICATIONS SHALL BE REFERRED.

GENERAL NOTES FOR STRUCTURAL STEEL AND MISCELLANEOUS STEEL WORKS

1.0 GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT FLOOR ELEVATIONS AND PLANT GRID WHICH ARE IN METERS, UNLESS STATED OTHERWISE.
2. EL(+)0.000 REFERS TO FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING WHICH CORRESPONDS TO RL(+)276.500 M.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL, CIVIL AND STRUCTURAL DRAWINGS, SPECIFICATIONS & SCHEDULE OF ITEMS.
4. ALL CONSTRUCTION WORKS SHALL CONFORM TO THE REQUIREMENTS OF RELATED SPECIFICATIONS AND DRAWINGS BEFORE START OF WORK.
5. ALL BIS CODES REFERED IN THIS DRAWING SHALL BE THE LATEST ISSUE INCLUSIVE OF ALL OFFICIAL AMENDMENTS.
6. THE FABRICATION & ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH IS 800:2007 CODE OF PRACTICE FOR GENERAL CONSTRUCTION IN STEEL AND NBC 2016 AND AS SPECIFIED IN THE CONTRACT TECHNICAL SPECIFICATIONS.

2.0 MATERIAL SPECIFICATION

1. ALL STRUCTURAL STEEL SHALL BE STRAIGHT, SOUND, FREE FROM TWISTS, BURRS, RUST, CRACKS, FLAWS AND ALL OTHER DEFECTS BEFORE ERECTION.
2. ALL STRUCTURAL STEEL AND PLATES SHALL CONFORM TO IS: 2062:2011 (REFER NOTE 9). DIFFERENT GRADES AS PER SPECIFICATION SHALL BE USED APPROPRIATELY.
3. ALL MILD STEEL BLACK BOLTS SHALL BE OF PROPERTY CLASS 4.6 CONFIRMING TO IS: 1367& GRADE C CONFIRMING TO IS:1363.
4. ALL HIGH STRENGTH STRUCTURAL BOLTS SHALL BE OF PROPERTY CLASS 8.8& CLASS 10.9 CONFIRMING TO IS: 1367 AND SHALL BE SUPPLIED CONFORMING TO IS: 3757: 1985.
5. ALL NUTS SHALL BE OF HEAVY DUTY HEXAGONAL TYPE AND SHALL BE COMPATIBLE WITH THE BOLTS. MS NUTS SHALL BE OF CARBON STEEL PRODUCT GRADE-C OF IS: 1363 AND OF PROPERTY CLASS 5 OF IS: 1367.
6. ALL NUTS & WASHERS FOR HIGH STRENGTH BOLTS (H.S.F.G.) SHALL CONFORM TO IS: 6623 & IS: 6649 RESPECTIVELY.
7. WASHERS FOR MILD STEEL BOLTS SHALL BE OF MILD STEEL CONFORMING TO IS: 5369 / IS: 5372 / IS: 5374 OR IS; 2016 AS THE CASE MAY BE.
8. ALL ANCHOR BOLTS SHALL BE OF MILD STEEL OF GRADE 4.6 CONFORMING TO IS: 5624.
9. UNLESS NOTED OTHERWISE IN DRAWINGS ALL SHOP FABRICATED STRUCTURAL AND MISCELLANEOUS STEEL WORK (EXCEPT BUNKER & CHIMNEY FLUE CONE) SHALL CONFORM TO FOLLOWING GRADE & INDIAN STANDARDS.

STRUCTURAL MEMBER TYPE	CODE / GRADE
ROLLED STEEL MEMBERS (SEMI KILLED / KILLED)	IS: 2062 - (GRADE E-250 , QUALITY A/BR)
ROLLED STEEL MEMBERS (FULLY KILLED)	IS: 2062 - (GRADE E-350 , QUALITY B0)
PLATES UPTO 12 MM THICK (FULLY KILLED)	IS: 2062 - (GRADE E-250 , QUALITY BR) / IS: 2062 - (GRADE E-350 , QUALITY B0)
PLATES BETWEEN 12 MM-40MM THICK (FULLY KILLED / NORMALIZED ROLLED)	IS: 2062 - (GRADE E-250 , QUALITY BR) / IS: 2062 - (GRADE E-350 , QUALITY B0)
PLATES BEYOND 40 MM THICK (FULLY KILLED / FURNACE NORMALIZED / VACUUM DEGASSED / UST TESTED	IS: 2062 - (GRADE E-250 , QUALITY BR) / IS: 2062 - (GRADE E-350 , QUALITY B0)
STRUCTURAL HOLLOW SECTIONS (SQUARE/ RECTANGLE) MIN. THK. 4MM.	IS: 4923 - (GRADE Yst 240)
CHEQUERED PLATE (MIN. 6 MM THK.)	CONFORM TO IS: 3502 IS: 2062 - (GRADE E 250A-SEMI KILLED)
STEEL TUBES	IS: 1161
RAIN WATER DOWN TAKE PIPES	IS: 1239 / IS 3589 (GALVANIZED MEDIUM CLASS MILD STEEL PIPES)

IS: 2062 - (PLATES OF GRADE E-250 , QUALITY BR) SHALL BE TESTED FOR IMPACT RESISTANCE AT ROOM TEMP.

10. UNLESS NOTED OTHERWISE IN DRAWINGS ALL SITE FABRICATED STRUCTURAL STEEL WORK (BUNKER, CHIMNEY FLUE & MISCELLANEOUS STRUCTURES NOT COVERED IN NOTE NO. 9) SHALL CONFORM TO FOLLOWING GRADE & INDIAN STANDARDS.

STRUCTURAL MEMBER TYPE	CODE / GRADE
ROLLED STEEL MEMBERS (SEMI KILLED / KILLED)	IS: 2062 - (GRADE E-250 , QUALITY A/BR)
ROLLED STEEL MEMBERS (FULLY KILLED)	IS: 2062 - (GRADE E-350 , QUALITY B0)
PLATES UPTO 12 MM THICK (FULLY KILLED)	IS: 2062 - (GRADE E-250 , QUALITY BR) / IS: 2062 - (GRADE E-350 , QUALITY B0)
PLATES BETWEEN 12 TO 40MM THICK (FULLY KILLED / NORMALIZED ROLLED)	IS: 2062 - (GRADE E-250 , QUALITY BR) / IS: 2062 - (GRADE E-350 , QUALITY B0)
PLATES BEYOND 40 MM THICK (FULLY KILLED / FURNACE NORMALIZED / VACUUM DEGASSED / UST TESTED	IS: 2062 - (GRADE E-250 , QUALITY BR) / IS: 2062 - (GRADE E-350 , QUALITY B0)
STAINLESS STEEL LINER OF BUNKER (4MM THK.)	ASTM A240 S304 (TYPE 304)

IS: 2062 - (PLATES OF GRADE E-250 , QUALITY BR) SHALL BE TESTED FOR IMPACT RESISTANCE AT ROOM TEMP.

3.0 JOINTS & CONNECTIONS

1. ALL CONNECTIONS SHALL BE DEVELOPED IN LINE WITH GOOD ENGINEERING PRACTICE AND SHALL BE SUBJECT TO THE APPROVAL OF ENGINEER.
2. ALL SHOP CONNECTIONS SHALL BE WELDED, UNLESS OTHERWISE NOTED.
3. ALL FIELD CONNECTIONS SHALL BE BOLTED WITH HIGH STRENGTH FRICTION GRIP (H.S.F.G.) BOLTS OF GRADE 8.8 & 10.9 CONFORMING TO IS:1367 FOR ALL MAJOR CONNECTIONS. ALL NOMINAL CONNECTIONS IN THE FIELD LIKE PURLINS, STAIRS, WALL BEAMS ETC. SHALL BE DONE USING M.S. BLACK BOLTS OF GRADE 4.6 CONFORMING TO IS:1367.
4. FOR BOLTED CONNECTIONS, IS:4000, IS:3757, IS:6623 & IS:6649 SHALL BE FOLLOWED AND FOR WELDING OF STRUCTURES IS:814, IS:816, IS:1024, IS:4353 & IS:9595 SHALL BE FOLLOWED. RESPONSE REDUCTION FACTOR FOR EARTHQUAKE CONDITION FOR SPECIAL MOMENT RESISTING FRAME WILL BE TAKEN AS PER IS:1893.
5. THE BOLTED JOINTS SHALL BE DESIGNED FOR THE FRICTION GRIP OR BEARING TYPE. FOR FRICTION GRIP TYPE CONNECTIONS, BOLTS SHALL BE TIGHTENED TO DEVELOP THE REQUIRED PRETENSION DURING THEIR INSTALLATION.
6. ALL BOLTED CONNECTIONS SHALL HAVE MINIMUM TWO BOLTS AND SHALL HAVE BOLTS OF MINIMUM 16 MM DIA.
7. THE HIGH STRENGTH FRICTION GRIP BOLTS SHALL NOT BE LESS THAN 20 MM DIA. AND M.S. BOLTS SHALL NOT BE LESS THAN 16MM DIA.UNLESS NOTED OTHERWISE.
8. ALL SPLICING WORK SHALL BE FULL STRENGTH. FIELD SPLICING SHALL BE DONE WITH WEB AND FLANGE COVER PLATES FOR FULL STRENGTH. SHOP SPLICING FOR ALL SECTIONS OTHER THAN ROLLED SHALL BE CARRIED OUT BY FULL PENETRATION BUTT WELDS WITH NO COVER PLATES. SPLICING FOR ALL ROLLED SECTIONS SHALL BE CARRIED OUT USING FLANGE AND WEB COVER PLATES.
9. MOMENT CONNECTIONS BETWEEN BEAMS& COLUMNS SHALL BE DESIGNATED AS MC. IT IS TO BE DESIGNED FOR THE FULL MOMENT CAPACITY OF THE BEAM SECTION IN ADDITION TO THE AXIAL FORCE INDICATED OR AS CALCULATED BASED ON PROVISIONS OF IS 800:2007 WHICHEVER IS HIGHER.
10. SHEAR CONNECTIONS SHALL BE DESIGNED FOR 60% OF SECTION STRENGTH FOR ROLLED SECTIONS AND 80% OF SECTION STRENGTH FOR BUILT UP SECTIONS OR ROLLED SECTIONS WITH COVER PLATES OR AS CALCULATED BASED ON PROVISIONS OF IS 800:2007 WHICHEVER IS HIGHER.
11. CONNECTIONS OF VERTICAL BRACING MEMBERS AND DIAGONALS OF TRUSS MEMBERS SHALL BE DESIGNED FOR FULL TENSILE CAPACITY OF THE BRACING UNLESS ACTUAL LOADS ARE INDICATED ON THE DRAWING OR AS CALCULATED BASED ON PROVISIONS OF IS 800:2007 WHICHEVER IS HIGHER.
12. THE CONNECTIONS BETWEEN TOP FLANGE AND WEB OF CRANE GIRDER SHALL BE FULL PENETRATION BUTT WELD. BOTTOM FLANGE CONNECTION WITH WEB CAN BE FILLET WELD OR BUTT WELD AS DIRECTED BY ENGINEER.
13. CONNECTION OF BASE PLATE AND ASSOCIATED STIFFENERS WITH THE COLUMNS SHALL BE DESIGNED CONSIDERING THE TOTAL LOAD TRANSFERED THROUGH WELDS. HOWEVER MINIMUM WELD SIZE (DOUBLE FILLET) SHALL NOT BE LESS THAN 0.6 TIMES THE THICKNESS OF STIFFENER.
14. ALL REMOVABLE MEMBERS SHALL HAVE BOLTED CONNECTIONS.
15. WELDING OF STRUCTURAL STEEL SHALL BE DONE BY AN ELECTRIC ARC PROCESS AND SHALL CONFORM TO IS: 816, IS: 9595, IS: 814, IS: 2014,IS: 4354 & INDIAN STANDARD HANDBOOK FOR METAL ARC WELDING ETC.
16. ALL BUTT WELDS SHALL BE FULL PENETRATION BUTT WELD AND SHALL BE ADOPTED TO FULL WIDTH OF THE PLATE.
17. SIZE OF FILLET WELD FOR FLANGE TO WEB CONNECTION FOR BUILT UP SECTIONS SHALL BE AS FOLLOWS:

    a) FOR BUILT UP BOX SECTION WELD SIZE SHALL BE DESIGNED FOR FULL SHEAR CAPACITY OR ACTUAL SHEAR WHICHEVER IS MORE.

    b) FOR BUILT UP I-SECTION WELD SIZE SHALL BE DESIGNED FOR 80% FULL SHEAR CAPACITY OR ACTUAL SHEAR (IF INDICATED IN DRAWING) WHICHEVER IS MORE. HOWEVER WELD SIZE SHALL NOT BE LESS THAN 0.5 TIMES THE WEB THICKNESS. WELD SHALL BE DOUBLE FILLET

18. GUSSET / END PLATES SHALL BE OF FOLLOWING MINIMUM THICKNESS SUBJECT TO DESIGN REQUIREMENTS UNLESS SPECIFIED OTHERWISE:

    a) FOR BEAMS OF DEPTH LESS THAN 450MM : 8MM
    b) FOR BEAMS OF DEPTH 450MM TO 600MM : 10MM
    c) TRUSS / BRACINGS WITH MEMBER THICKNESS 8MM OR LESS : 8MM
    d) TRUSS / BRACINGS WITH MEMBER THICKNESS 10MM OR MORE : 12MM

19. COLUMN SPLICE SHALL BE DESIGNED FOR FULL CAPACITY PLUS 5% ADDITIONAL CAPACITY OF LOWER SECTIONS.
20. ALL WELDS SHALL BE CONTINUOUS AND THE MINIMUM SIZE OF FILLET WELD SHALL BE 6 MM. UNLESS NOTED OTHERWISE.
21. THE LENGTH OF THE FILLET WELDS SHALL BE NOT BE LESS THAN FOUR TIMES THE NOMINAL SIZE OF THE WELD OR 40 MM. WHICHEVER IS HIGHER.
22. FILLET WELDS TERMINATING AT ENDS OR SIDES OF PARTS OR MEMBERS MUST HAVE RETURNS AROUND CORNERS FOR A DISTANCE NOT LESS THAN TWICE THE SIZE OF THE WELD.
23. WELDING ELECTRODES SHALL BE OF LOW HYDROGEN TYPE FOR PLATE THICKNESS ABOVE 20MM..
24. PROPER PRE-HEATING TEMPERATURE SHALL BE MAINTAINED AS PER SPECIFICATIONS DURING WELDING FOR PLATE THICKNESS ABOVE 20MM.
25. THE WELDING SEQUENCE / PROCESS SHALL BE SO ADOPTED THAT NO ACCUMULATION OF RESIDUAL WELDING STRESSES TAKES PLACE IN THE MEMBERS.
26. THE DIAMETER OF BOLT HOLES SHALL ATLEAST BE 2MM MORE THAN DIAMETER OF BOLT UNLESS NOTED OTHERWISE.
27. THE ERECTION CLEARANCE FOR END OF MEMBERS SHALL NOT BE MORE THAN 5MM AT EACH END UNLESS STATED OTHERWISE.
28. IN ALL CASES THE UNTHREADED PORTION OF THE BOLT SHALL BEAR ON THE MEMBER'S CONNECTED. A WASHER OF ADEQUATE THICKNESS MAY BE PROVIDED TO EXCLUDE THE THREAD FROM THE BEARING THICKNESS IF A LARGER GRIP BOLT HAS TO BE USED FOR THIS PURPOSE.
29. FOR ERECTION & TEMPORARY ASSEMBLY M.S. BOLTS SHALL BE USED WHICH SHALL BE REMOVED AFTER ERECTION AND ALL ERECTION BOLT HOLES SHALL BE SUITABLY PLUGGED.
30. FOR COLUMN FOUNDATION BOLTS, AT LEAST DOUBLE NUTS SHALL BE PROVIDED.
31. GRATINGS / CHEQUERED PLATES SHALL BE IMMEDIATELY CONNECTED UPON PLACEMENT (NOT TO LEFT LOOSE) FROM SAFETY CONSIDERATIONS.

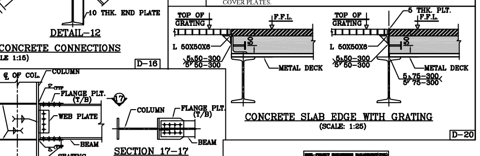
4.0 PAINTING

PAINTING OF STEEL STRUCTURES OTHER THAN THOSE EMBEDDED IN CONCRETE

1. **PRIMER COAT**
   ALL STEEL SURFACES SHALL BE PROVIDED WITH TWO COMPONENT MOISTURE CURING ZINC (ETHYL) SILICATE PRIMER COAT (HAVING MINIMUM 80% OF METALLIC ZINC CONTENT IN DRY FILM, SOLID BY VOLUME MINIMUM 60% + 2%) OF MINIMUM 70 MICRON DFT TO BE APPLIED OVER BLAST CLEANED SURFACE CONFORMING TO Sa 2½ FINISH OF ISO 8501-1 WITH SURFACE PROFILE 40-60 MICRON. THE PRIMER COAT SHALL BE APPLIED IN SHOP IMMEDIATELY AFTER BLAST CLEANING BY AIRLESS SPRAY TECHNIQUE. ZINC DUST COMPOSITION & PROPERTIES SHALL BE TYPE II AS PER ASTM D520-00.
2. **INTERMEDIATE COAT**
   PRIMER COAT SHALL BE FOLLOWED WITH THE APPLICATION OF INTERMEDIATE COAT OF TWO COMPONENT POLYAMIDE CURED EPOXY WITH MIO CONTENT (CONTAINING LAMELLAR MIO MINIMUM 30% ON PIGMENT, SOLID BY VOLUME MINIMUM 80% ± 2%) OF MINIMUM 100 MICRON DFT. THIS COAT SHALL BE APPLIED AFTER AN INTERVAL OF MINIMUM 24 HOURS (FROM THE APPLICATION OF PRIMER COAT) BY AIRLESS SPRAY TECHNIQUE.
3. **FINAL COAT**
   INTERMEDIATE COAT SHALL BE FOLLOWED WITH THE APPLICATION OF FINISH COAT OF TWO-PACK ALIPHATIC ISOCYANATE CURED ACRYLIC FINISH PAINT (SOLID BY VOLUME MINIMUM 55% ± 2%) WITH GLOSS RETENTION (SSPC PAINT SPEC. NO 36, ASTM D 4587, D 2244, D523) OF LEVEL 2 (AFTER MINIMUM 1000 HOURS OF EXPOSURE, GLOSS LOSS LESS THAN 30 AND COLOR CHANGE LESS THAN 2.0 ΔE) AND MINIMUM 70 MICRON DFT. THIS COAT SHALL BE APPLIED IN SHOP AFTER AN INTERVAL OF MINIMUM 10 HOURS AND WITHIN6 MONTHS (FROM THE COMPLETION OF INTERMEDIATE COAT). COLOR AND SHADE OF THE COAT SHALL BE AS APPROVED BY THE EMPLOYER.
4. **PAINTING OF STEEL STRUCTURES EMBEDDED IN CONCRETE**
   FOR THE PORTION OF STEEL SURFACES EMBEDDED IN CONCRETE, THE SURFACE SHALL BE PREPARED BY MANUAL CLEANING AND PROVIDED WITH PRIMER COAT OF CHLORINATED RUBBER BASED ZINC PHOSPHATE PRIMER OF MINIMUM 50 MICRON DFT.
5. BEFORE DISPATCHING THE FABRICATED STRUCTURAL MEMBERS TO SITE, IT SHALL BE ENSURED THAT ALL PARTS IN THE ASSEMBLY FIT ACCURATELY TOGETHER BY CARRYING OUT PRE-ASSEMBLY OF FABRICATED STRUCTURAL MEMBERS HAVING BOLTED JOINTS IN THE FACTORY.
6. FOR PARTS TO BE BOLTED, THE SURFACES IN CONTACT SHALL BE PROVIDED WITH ETHYL ZINC SILICATE PRIMER AND SHALL BE FREE OF OIL, DIRT, LOOSE RUST, BURRS & OTHER DEFECTS, WHICH WOULD PREVENT PROPER SEATING OF THE PARTS.
7. SURFACES INACCESSIBLE AFTER SHOP ASSEMBLY SHALL RECEIVE THE FULL-SPECIFIED PROTECTIVE TREATMENT BEFORE ASSEMBLY. HOWEVER, BOX-SECTIONS SHALL BE WELDED THROUGHOUT AND SHALL BE PROVIDED WITH END DIAPHRAGM PLATES FOR PROPER SEALING AGAINST INGRESS OF AIR AND MOISTURE AND SO THE INTERIOR SURFACES OF BOX-SECTIONS NEED NOT BE PAINTED.
8. ALL MILD STEEL PARTS COMING IN CONTACT WITH WATER OR WATER VAPOUR SHALL BE HOT DIP GALVANISED. THE MINIMUM COATING OF ZINC SHALL BE 610 G/ SQ.M. FOR GALVANISED STRUCTURES AND SHALL COMPLY WITH IS: 4759 AND OTHER RELEVANT CODES. GALVANISING SHALL BE CHECKED AND TESTED IN ACCORDANCE WITH IS: 2629.
9. ALL GRATINGS SHALL BE BLAST CLEANED TO SA 2 ½ FINISH OR CLEANED BY ACID PICKLING AS PER ISO 8501-1 AND SHALL BE HOT DIP GALVANIZED AT THE RATE OF 610 G/SQ.M.
10. WHERE STEEL IS FULLY ACCESSIBLE FOR CLEANING AND REPAINTING AND WHERE IT IS FEASIBLE TO FOLLOW DESIGN CRITERIA GIVEN IN ISO 12944 PART 3, MINIMUM THICKNESS OF STRUCTURAL STEEL ELEMENTS SHALL BE AS FOLLOWS

Structural Sections	Minimum thickness (mm)	Minimum Flange thickness (mm)	Minimum Web thickness (mm)
Plates	6		
Builtup Sections		6	6
Angle Sections	6		
ISMB / ISMC		6	4.5
NPB / WPB		6	4.5
RHS/ SHS /Tubular Sections	4		
All dimensions in mm			

WHERE STEEL SURFACES ARE INACCESSIBLE FOR CLEANING AND REPAINTING (SUCH AS BACK TO BACK SECTIONS, LAP JOINTS ETC.) OR WHERE IT IS NOT FEASIBLE TO FOLLOW DESIGN CRITERIA GIVEN IN ISO 12944 PART 3, CORROSION ALLOWANCE OF 1.5 MM SHALL BE KEPT IN THICKNESS (OVER THE DESIGN THICKNESS OR MINIMUM THICKNESS SPECIFIED ABOVE, WHICHEVER IS MORE). THE MINIMUM THICKNESS CRITERIA SHALL APPLY FOR BOTH WEB AND FLANGE. ALSO, MINIMUM ANGLE SECTION TO BE USED IS ISA 50X50X6.



BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL ☐ FABRICATION
☐ PLANNING ☐ INFORMATION
☐ CONSTRUCTION ☐ AS BUILT DRAWING
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME SACHIN JAIN
SIGNATURE -Sd-
DATE 28/06/2024

ग्राहक ड्राइंग संख्या CUSTOMER DRAWING NO. 1150-001-315-PVC-C-0089A

ग्राहक/CUSTOMER
एन टी पी सी लिमिटेड
N T P C LIMITED

परियोजना PROJECT
2x800 मेगावाट सिंगरौली सुपर थर्मल पावर परियोजना चरण-III
2x800MW SINGRAULI SUPER THERMAL POWER PROJECT STAGE-III

कार्य संख्या- JOB NO. 512
स्थिति STATUS CONTRACT
मुद्रण स्केल मीटर में PRINT SCALE IN METRE

भारत हेवी इलेक्ट्रिकल्स लिमिटेड
BHARAT HEAVY ELECTRICALS LTD
पावर सेक्टर/POWER SECTOR
परियोजना अभियांत्रिकी प्रबंधन
PROJECT ENGINEERING MANAGEMENT
नोएडा (उ॰प्र॰)/NOIDA (U.P.)

DEPT CODE C

	नाम NAME	हस्ताक्षर SIGNATURE	दिनांक DATE
तैयारकर्ता/DRN	SACHIN	-sd-	28/06/2024
डिजाइनकर्ता/DESN	KA	-sd-	28/06/2024
जांचकर्ता/CHD	KK/SJ	-sd-	28/06/2024
अनुमोदनकर्ता/APPD	DKM	-sd-	28/06/2024

पुनरीक्षण REV.	दिनांक DATE	परिवर्तनकर्ता ALTD	जांचकर्ता CHD	अनुमोदनकर्ता APPD	पुनरीक्षण REV.	दिनांक DATE	परिवर्तनकर्ता ALTD	जांचकर्ता CHD	अनुमोदनकर्ता APPD	पुनरीक्षण REV.	दिनांक DATE	परिवर्तनकर्ता ALTD	जांचकर्ता CHD	अनुमोदनकर्ता APPD

शीर्षक/TITLE
GENERAL NOTES FOR STRUCTURAL STEEL WORKS.

एमपीएल MPL	सिविल CIVIL	इलेक्ट्रिकल ELEC	सीएण्डआई C&I	एमएसई MSE	मैक्स MAX	विभाग DEPT.
						हस्ताक्षर SIGN
						दिनांक DATE

स्केल - SCALE-

ड्राइंग संख्या/ DRAWING NO. PE-DG-512-600-C002

शीट SHEET 1 OF 1 पुनरीक्षण REV. 0

Jul 03, 2024 – 2:25pm R0

फॉर्मेट साइज A0 FORMAT SIZE A0