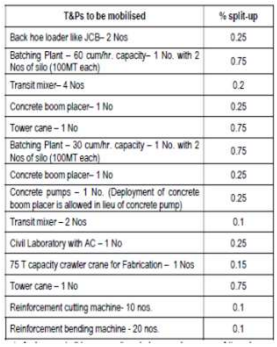
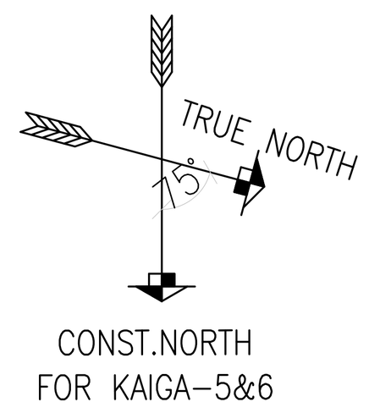
CORRIGENDUM 1 DATED 03-05-2024 TO TENDER SPECIFICATION BHEL PSSR SCT 2141

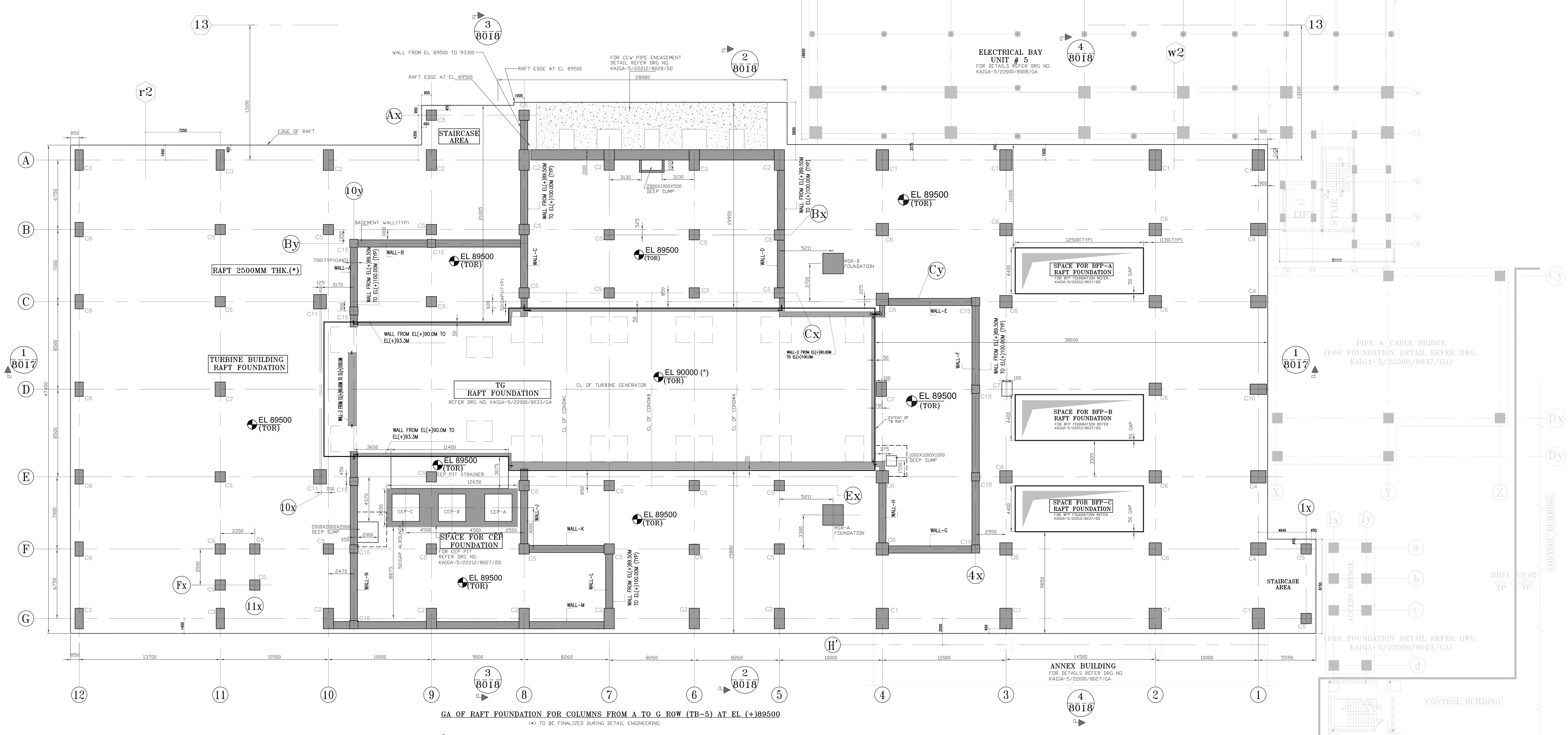
Some of the bidders sought clarifications in regard to TENDER SPECIFICATION BHEL PSSR SCT 2141 -Civil, Structural and Architectural Works of Turbine Island Package of 2 X 700 MWe PHWR Kaiga Atomic Power Project - Unit 5 & 6, Uttara Kannada

Sl No	Vol. No/Drawing No	Clause No.	Existing provision	Bidder's Query	BHEL Response
1	Tender Document - Bid / Tender Drawings	TCC cl no. 1.3.13	Not provided	We request you to kindly provide the Tender drawings showing the exact Scope of work / No. of floor /etc. for better planning of resources.	GA drawings for the following areas attached below only for tender purpose. This may change during detail engineering. Other drawings shall be provided in a phase manner during construction • Pipe & Cable bridge • Annexe Bldg • Electrical Building • TG deck • Turbine Building • Access Bridge drawing
2	Tender Document- Interest Free Mobilisation Advance & its breakup	GCC cl 2.13.1 - revised as per TCC & TCC cl 1.7.1.1	Interest Free Mobilisation Advance : Competent Authority of BHEL may approve proposals for payment of Interest Free Secured Mobilisation Advance (limited to a maximum of 5% of the CV) only in Installation Works in Power Plants under exeptional circumtances	We understand that Interest Free Mobilisation & its breakup as per cl 1.7.1.1 of TCC is not applicable for subject tender. Please confirm.	Cl 1.7.1.1 of TCC is applicable for this tender (SCT 2141) also refer Cl 2.13 SECURED RECOVERABLE ADVANCES: revised in TCC Vol-1A Part-2 Chapter-1.
3	Tender Document - Price Bid - Solid Concrete Block	BOQ item no.B1001	Not mentioned	Please confirm that the Cement for casting of concrete blocks shall be free of cost by BHEL.	Cement for casting of concrete blocks is in bidders scope. Cement shall not be supplied by BHEL as a free issue for supply of concrete blocks.
4	Tender Document - Price Bid - Solid Concrete Block	BOQ item no.B1002	Payment of Concrete , reinforcement & formwork shall be made separately.	Please confirm that Concrete for casting of blocks shall be paid seperately under which item of BOQ and whether Cement is free of cost for the same.	Supply of Concrete including cement for casting of concrete blocks is in bidders scope. Payment of Concrete required for mullion/transom shall be made separately under the respective concrete item.
5		BOQ item description for 1000 series CONCRETE BLOCK MASONRY AND BRICKWORK	Description for Item 1000 revised for more clarity to bidders		Description for Item 1000 revised as below, CONCRETE BLOCK MASONRY AND BRICKWORK: Concrete block masonry, Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), testing, equipment, transportation, handling, scaffolding etc. preparation, submission of work procedure and obtaining approval from BHEL/NPCIL at all levels as per specification, drawings and as directed by engineer - in - charge. (Cement shall not be supplied by BHEL as a free issue for supply of concrete blocks. Cement shall be supplied by BHEL as a free issue only for preparation of cement mortar for Concrete block masonry and Brickwork)
6	Tender Document - Price Bid - Unit of measurement	BOQ item no.1814	Providing, fabrication and installation of wall / floor / neutral pads of 200x60x10 mm MS wall / floor / column pads flushing its face fully with wall/floor surface including welding of pads to MS rod / GS flat and supporting it in the concrete, painting of pads with two coats of approved anti-corrosive paint after welding etc. all complete - Unit of measurement is "NO"	The unit of measurement for this BOQ items shall be "MT" instead of "No". Please reconfirm	Tender condition prevails
7	Tender Document - Price Bid - unit of measurement	BOQ item no.1817	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:6 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete. - Unit of mensurement is SQM	The unit of measurement for this BOQ items shall be CUM instead of SQM. Please reconfirm . Also, Cement for CM 1:6 shall be free of cost by BHEL.	UOM revised as CUM. Cement shall be supplied by BHEL as a free issue only for preparation of cement mortar under this item.
8	Tender Document - Price Bid - M35 - Interlocking Paver Blocks	BOQ item no.15	Not mentioned	Please confirm whether Cement shall be issued Free of Cost by BHEL for casting of Interlocking Paver block	Item description for price schedule item 15 is revised as below, Providing & laying 400mm x400mm x35 mm thick precast (M35 Grade) interlocking concrete pavers of approved colour and pattern as per specification and recommendation of manufacturer. (Supply of concrete pavers is in contractor's scope, BHEL shall not provide cement for concrete pavers as a free issue)

9	Tender Document - Price Bid - M20 Kerb stone	BOQ item no. 11	Not mentioned	Please confirm whether Cement shall be issued Free of Cost by BHEL for casting & laying of Kerb Stone .	Item description for price schedule item 11 is revised as below, Supply, casting, curing, handling, fixing precast PCC M20 grade kerb stones along the roads (Supply of kerb stones is in contractor's scope, BHEL shall not provide cement for kerb stones as a free issue. Cement shall be provided by BHEL as free issue only for mortar works under this item)
10	Tender Document - Price Bid - Stone pitching	BOQ item no.23	Not mentioned	Please confirm whether Cement shall be issued Free of Cost by BHEL for 1:4 sand mortar	Item description for price schedule item 23 is revised as below, Providing and laying 300mm thick stone pitching including caulking with 1 cement: 4 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer. (Cement shall be provided by BHEL as free issue only for mortar works under this item)
11	General	NIT	Current Bid submission date 09.05.2024	We request you to kindly extend the tender submission date by atleast 03 weeks from the current due date of submission.	Tender condition prevails
12	Tender Document - TCC	Clause No. 1.7, 1.7.1 - Advance for Mobilization	Following will be the breakup for payment of Interest Free Mobilization advance, limited to maximum of 5% of the contract value, as per GCC clause 2.13.1	We would like to request BHEL to release the 5% advance in a single stage against the submission of a Bank Guarantee (BG), instead of the traditional link to P&M mobilization. This would greatly help streamline the process and expedite the project timeline. Kindly do the needful.	Tender condition prevails
13	Tender Document - Price Bid	BOQ Item No: A203	Concrete of grade M15 at temperature not exceeding 38 deg C for PCC using coarse aggregate of maximum size not exceeding 20mm, as lean concrete, levelling course, mud mat under and around foundations, floors, roads, drain etc., at any depth below finished floor level etc.	There is an increase in concrete quantity from the previous tender. The quantity has now been raised to 74,488 cum from the initial 10,488 cum. We request BHEL, if you could provide us with details on which specific area the quantity increase has occurred. Additionally, if possible, could you please provide us with the relevant drawings to better understand the changes.	This is mass PCC filling below foundations due to increase in depth of excavation.
14	Tender Document - TCC	VOLUME-IA PART – I CHAPTER – III of TCC Sl. No 1.3.1.1.2 (A) – Page No: 10/590	Land for Labour Colony	Considering the scope of work and huge requirements of labour resources, please provide the open area for labour colony inside the NPCIL construction plant premises. If the labourers come from outside the plant area, which will cause delays and consuming extra time every day due to the permissions required for entry which will affect the daily work progress.	Tender condition prevails.

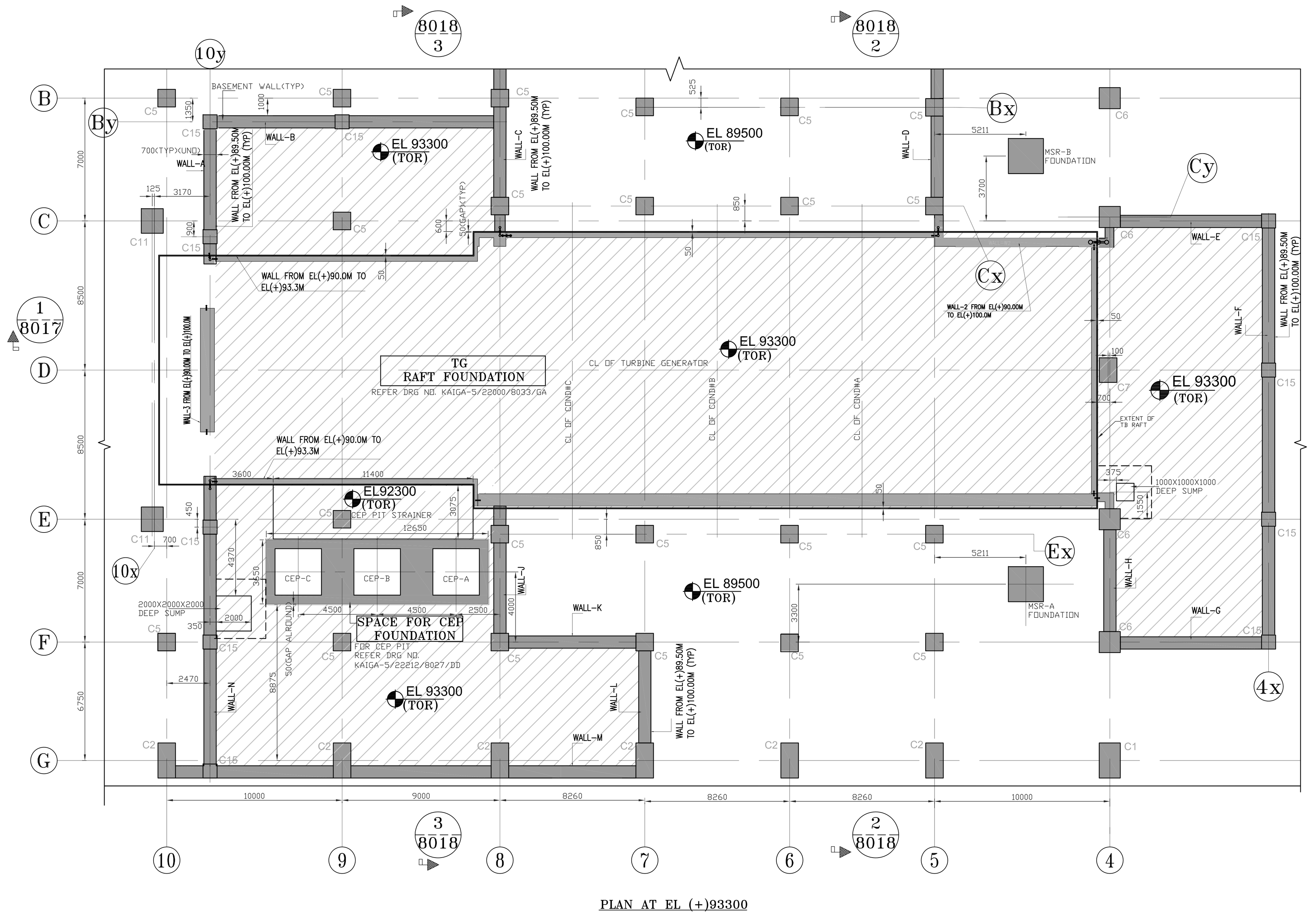
15	Tender Document - TCC	Clause No. 1.7.1 ADVANCE FOR MOBILIZATION	Following will be the breakup for payment of Interest Free Mobilization advance, limited to maximum of 5 % of the contract value, as per GCC clause 2.13.1  T&Ps to be mobilised / % split-up Back hoe loader like JCB– 2 Nos / 0.25 Batching Plant – 60 cum/hr. capacity– 1 No. with 2 Nos of silo (100MT each) / 0.75 Transit mixer– 4 Nos / 0.2 Concrete boom placer– 1 No / 0.25 Tower cane – 1 No / 0.75 Batching Plant – 30 cum/hr. capacity – 1 No. with 2 Nos of silo (100MT each) / 0.75 Concrete boom placer– 1 No / 0.25 Concrete pumps – 1 No. (Deployment of concrete boom placer is allowed in lieu of concrete pump) / 0.25 Transit mixer – 2 Nos / 0.1 Civil Laboratory with AC – 1 No / 0.25 75 T capacity crawler crane for Fabrication – 1 Nos / 0.15 Tower cane – 1 No / 0.75 Reinforcement cutting machine- 10 nos. / 0.1 Reinforcement bending machine - 20 nos. / 0.1	We would like to bring to your attention that as per the specified condition, the mobilization advance of 5% will be released after mobilizing major equipment only. It is requested to release of 2.5% of the 1st instalment against the submission of a Bank Guarantee for the initial setup of the project. This advance payment is needed for the site establishment, labour camp development, and temporary work and 2nd instalment 2.5% for the mobilization of equipment's as listed in clause.	Tender condition prevails
16	Tender Document - Price Bid	BOQ item no C2305	Extra over ST No. A2301/A2302 for providing and applying Intumescent coating/painting on structural steel comrpising of 3 layers (anticorrosive primer, base coat and seal coat or decorative coat) of approved make, coating thickness and fire rating etc. including fire testing of coating system by independent approved laboratory, application by certified applicator, protection and cleaning, scoffolding etc. all complete as per specifications, drawings and direction of engineer in charge The Primer & Seal/Top coat shall be compatible with base coat.The product proposed for use shall be manufactured by a reputed & experienced company having in-house R&D & fire test facility. The Coating shall be certified from reputed agencies like UL (USA) & Warrington (UK) etc.	Kindly provide the section details of the structures i.e., I Section Quantity, Hallow Section Quantity to arrive the cost.	Drawing shall be furnished during execution of works. Quantity of steel is mainly covered in roof of Turbine building (truss/purlin/girders etc.) and in crane girders of TB. For detailed clarity, refer Civil specifications provided along with contract BOQ. The coating thickness/DFT for desired fire rating in the steel members covered in BOQ C2305 shall be ensured by bidder based on laboratory test certificate and to be certified by NPCIL. Also refer Civil specifications Section C-2-1 (CL 17, CL 19.18.5.2, CL 19.18.5.5, CL 16.24.15 etc.) for the same
17	Tender Documents- PQR	Refer Clause B2.I of Annexure-1 A	Executed at least 38,230 CUM of RCC quantities within a common period of twelve consecutive months in cumulative of two running/ completed contracts. OR Executed at least 25,490 CUM of RCC quantities within a period of twelve consecutive months in one running/completed contract.	Executed at least 28,000 CUM of RCC quantities within a common period of twelve consecutive months in cumulative of two running/ completed contracts. OR Executed at least 19,000 CUM of RCC quantities within a period of twelve consecutive months Ill one running/completed contract.	Tender condition prevails



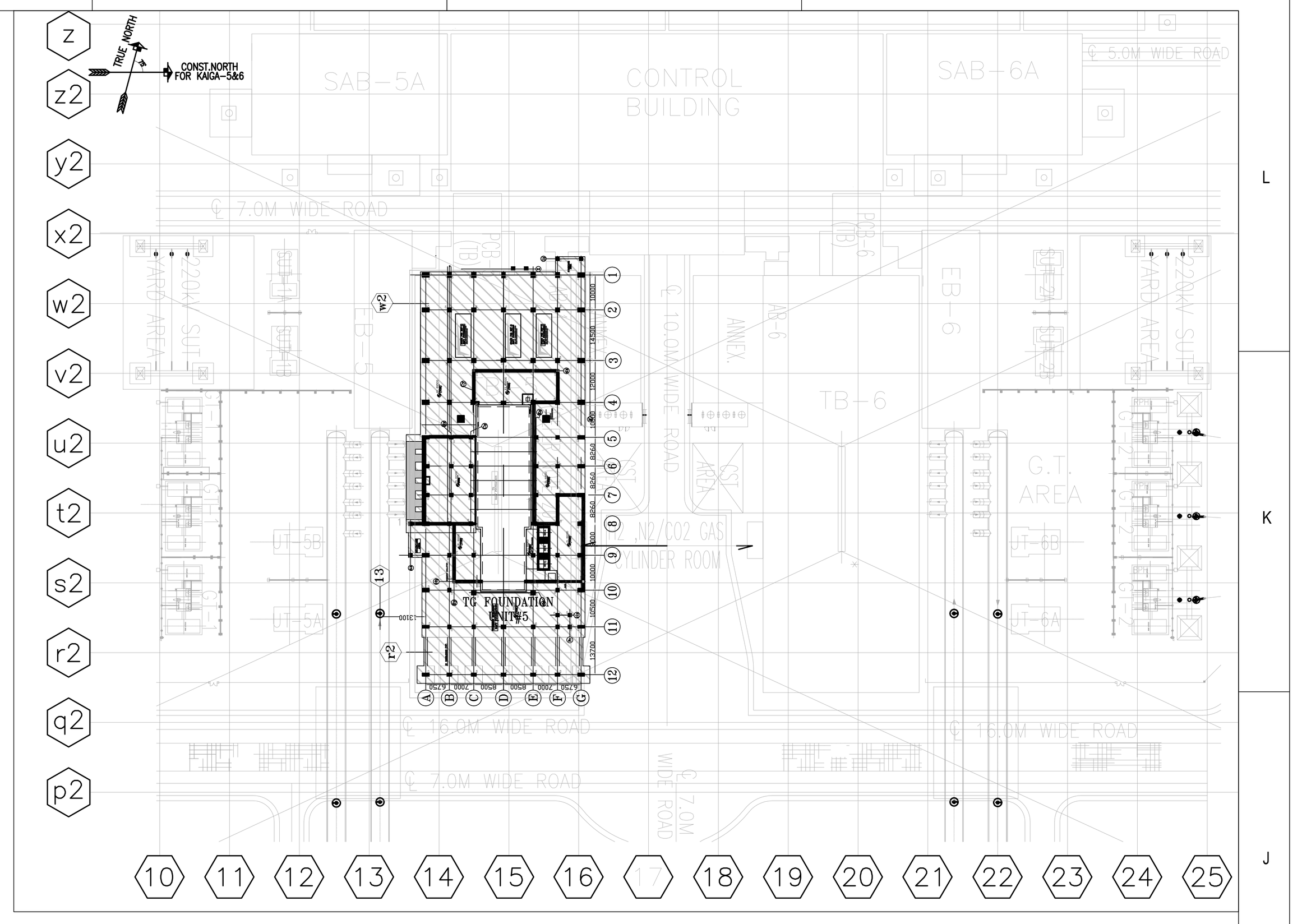


GA OF RAFT FOUNDATION FOR COLUMNS FROM A TO G ROW (TB-5) AT EL (+)89500

(*) TO BE FINALIZED DURING DETAIL ENGINEERING



PLAN AT EL (+)93300



KEY PLAN

LEGENDS:

- DWG - DRAWING
- EL - ELEVATION
- FFL - FINISHED FLOOR LEVEL
- GA - GENERAL ARRANGEMENT
- H - HIGH
- TB - TURBINE BUILDING
- THK. - THIKNESS
- TOC - TOP OF CONCRETE
- TYP. - TYPICAL
- ○ - BUILDING GRID
- ⬡ - PLANT GRID
- BASEMENT AREA
- MSR - MOISTURE SEPARATOR AND REHEATER
- PG - PLANT GRID
- UN - UNLESS NOTED
- TOR - TOP OF RAFT
- COL. - COLUMN
- TP - TERMINAL POINT
- TIP - TURBINE ISLAND PACKAGE
- TOT - TOP OF TUNNEL
- BOT - BOTTOM OF TUNNEL
- W - WIDE
- BXXXX - BEAM NUMBER
- CXX - COLUMN NUMBER
- ℄ - CENTER LINE
- CHEQUERED PLATE PLATEFORM
- REMOVABLE CHEQUERED PLATE
- GRATED FLOORING
- REMOVABLE GRATED FLOORING
- LAY DOWN AREA
- REMOVABLE CONCRETE COVER

NOTES:

1. ALL DIMENSIONS AND ELEVATION ARE IN MILLIMETERS AND CO-ORDINATE ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL. 100 WHICH CORRESPONDS TO RL 42.80M.
3. ALL ELEVATION ARE FINISHED FLOOR LEVEL UN.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 AS PER IS : 456 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE FE 500 CONFORMING TO IS:1786. FOR DETAILS REFER KAIGA-5&6/22210/8001/DD.
6. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.
7. PCC SHALL BE GRADE M15 UNLESS OTHERWISE NOTED.

IMP. NOTES:

1. THIS DRAWING IS TENTATIVE AND SIZES/OPENING ARE INDICATIVE ONLY. SHALL BE FINALIZED DURING DESIGN.
2. SECONDARY AND TERTIARY BEAMS ARE NOT SHOWN IN THIS DRAWING.
3. THE DRAWING HAS BEEN INTERFACED AND CLEARED BY MECHANICAL PIPING LAYOUT(MPL), MECHANICAL AUX. SYSTEM (MAX), ELECTRICAL AND C&I DEPARTMENT WITH RESPECT TO THEIR SYSTEM REQUIREMENT THROUGH DOCUMENT MANAGEMENT SYSTEM SOFTWARE WRENCH.

TABLE -A

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOs.
GENERAL NOTES & STANDARD DETAILS FOR STRUCTURAL STEEL WORKS (UNIT#5 & 6)	KAIGA-5&6/22400/8001/DD
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5 & 6)	KAIGA-5&6/22210/8001/DD
TURBINE BUILDING - GA OF LONGITUDINAL SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING - GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA
TURBINE BUILDING -GA OF FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8019/GA
TURBINE BUILDING -GA OF FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8020/GA
TURBINE BUILDING -GA OF FLOOR AT EL 111.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8021/GA
TURBINE BUILDING -GA OF FLOOR AT EL 111.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8022/GA
TURBINE BUILDING -GA OF FLOOR AT EL 118.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8023/GA
TURBINE BUILDING -GA OF FLOOR AT EL 118.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8024/GA
TURBINE BUILDING -GA OF FLOOR AT EL 127.0M GRID 1 TO 12 (UNIT#5)	KAIGA-5/22000/8025/GA
TURBINE BUILDING -GA OF ROOF (UNIT#5)	KAIGA-5/22000/8026/GA
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 1 (UNIT#5)	KAIGA-5/22222/8033/DD
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 2 (UNIT#5)	KAIGA-5/22222/8034/DD
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 3 (UNIT#5)	KAIGA-5/22222/8035/DD
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN BELOW 100.0M FOR TB-5	KAIGA-5/22000/8001/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN AT 100.0M FOR TB-5	KAIGA-5/22000/8002/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN VIEW AT 111.0M FOR TB-5	KAIGA-5/22000/8003/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN VIEW AT 118.0M FOR TB-5	KAIGA-5/22000/8004/GA
GENERAL ARRANGEMENT DRAWING -TURBINE BUILDING PLAN VIEW AT 127.0M FOR TB-5	KAIGA-5/22000/8005/GA
CROSS SECTION OF TB-5	KAIGA-5/22000/8007/GA
MAIN PLANT LAYOUT	KAIGA-5&6/10000/2001/GA

SCHEDULE OF TB-5 COL.

COLUMN NO.	COLUMN SIZE E-W	COLUMN SIZE N-S	REMARKS
C1	1200	2000	
C2	1000	2000	
C3	800	2000	
C4	1500	1200	
C5	1000	1000	
C6	1200	1200	
C7	1000	1400	
C8	800	1400	
C9	400	400	NOT USED
C10	1600	1000	
C11	1250	1400	
MSR-A&B	2000	2000	
C15	800	800	

NOTE:-

1. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DESIGN.

DEVELOPMENT CONSULTANTS PVT. LIMITED

Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.

ACTION	1
1 ✓	APPROVED
2	COMMENTED
3	FOR INFORMATION

REVIEWED BY: INDRANIL BHADRA
SIGNATURE:
DATE: 25.01.2024

REV NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPICL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.

UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15 / 0.40 X 45°.
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15 / 0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : 0°-30'

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	22.01.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
TURBINE BUILDING
GA OF RAFT FOUNDATION AT EL 89500 AND EL 93300 (TOC) (UNIT#5)

DES'D. A.KAPOOR DATE 28.11.2023	DR'N. S.NAIN DATE 01.12.2023	REV'D. S.MISHRA DATE 01.12.2023
DES. CHK'D. V.SHARMA DATE 01.12.2023	DRG. CHK'D. A.KAPOOR DATE 01.12.2023	APP'D. A.KUMAR DATE 01.12.2023

PROJECT 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

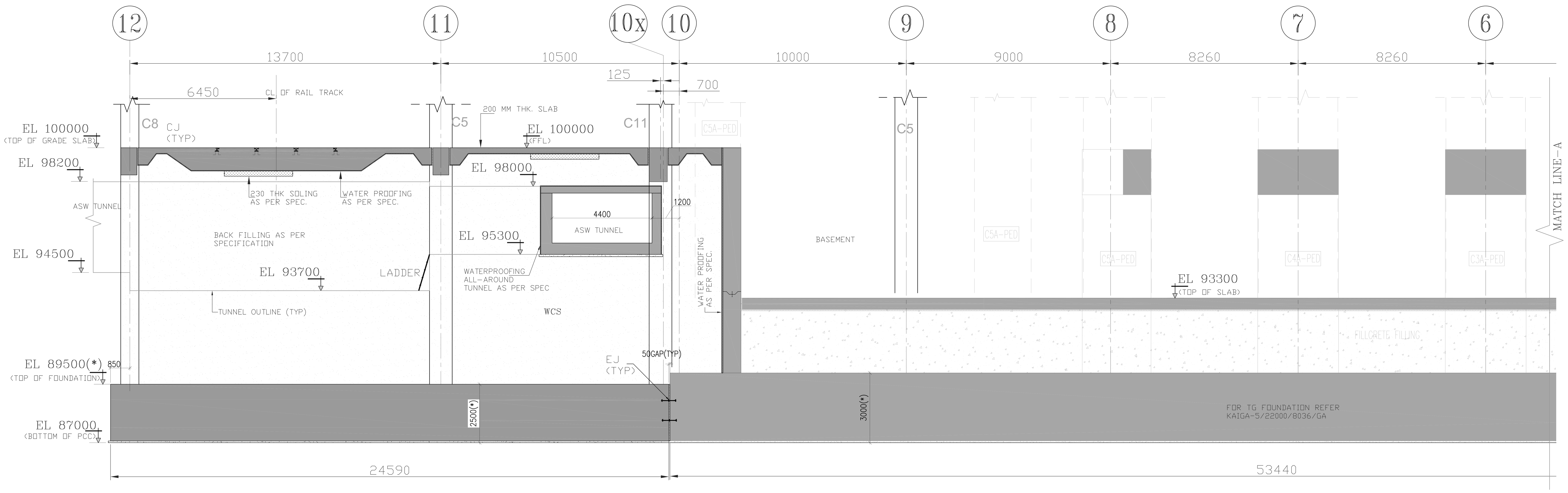
SCALE - NTS
PROJECTION

NPCIL DRG. No. KAIGA-5/22000/8016/GA
SHEET 1 OF 2
REV. No. R0
BHEL DRG NO: PE-DG-488-611-C1002_(RB)
FILE NAME: KAIGA-5-22000-8016-GA

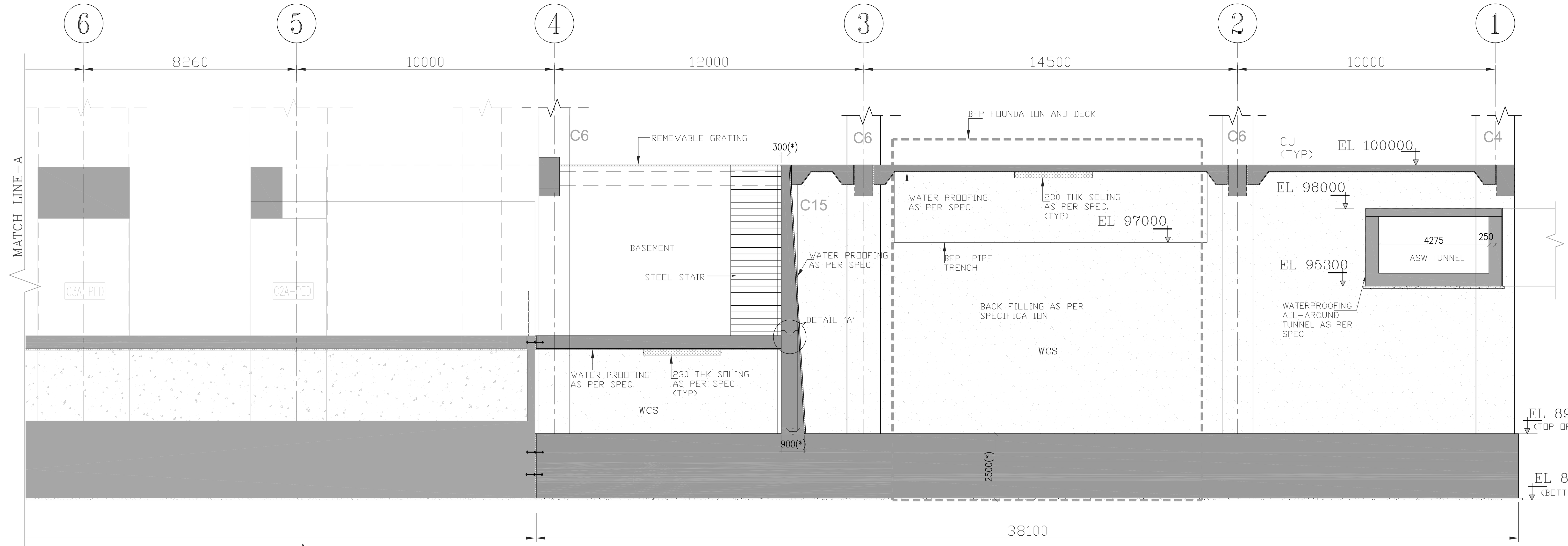
DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

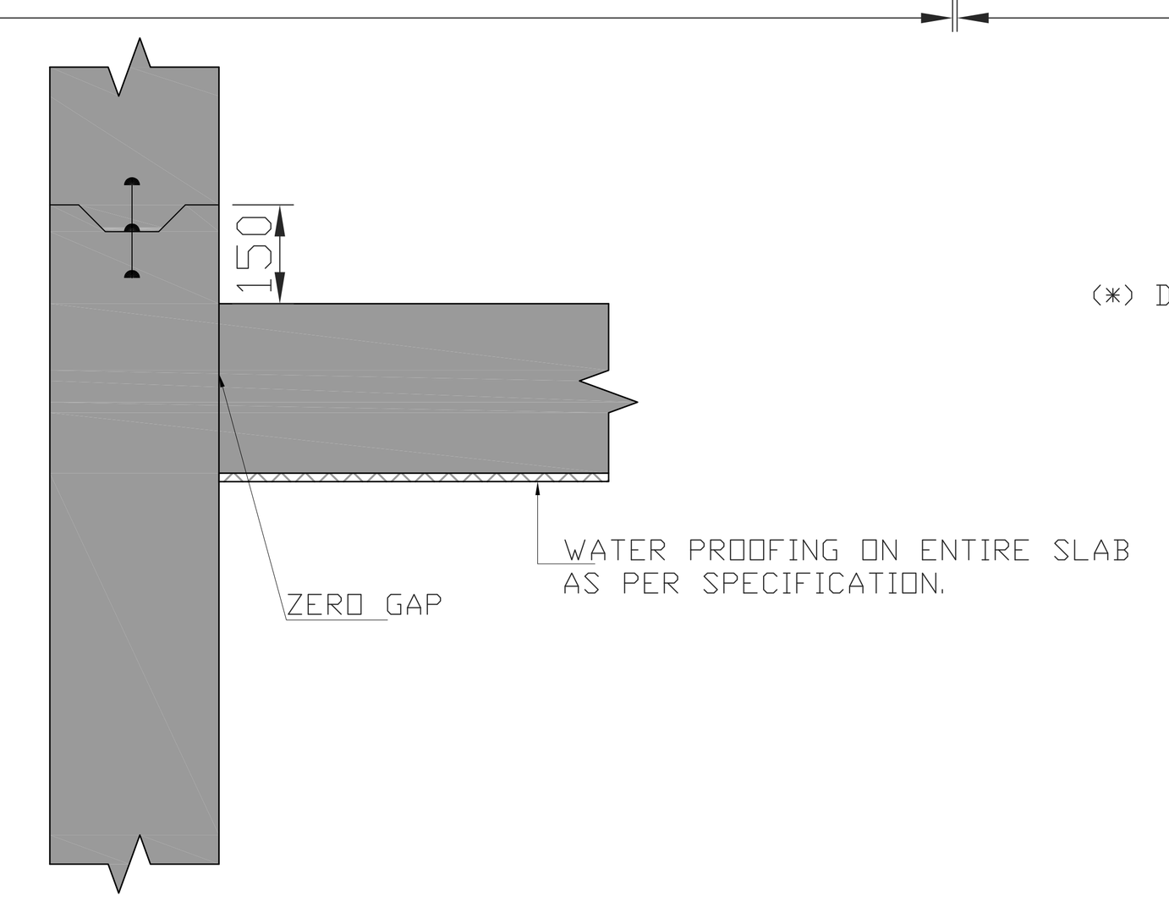
A0 DRG. No. KAIGA-5/22000/8016/GA (SH 1 OF 2)



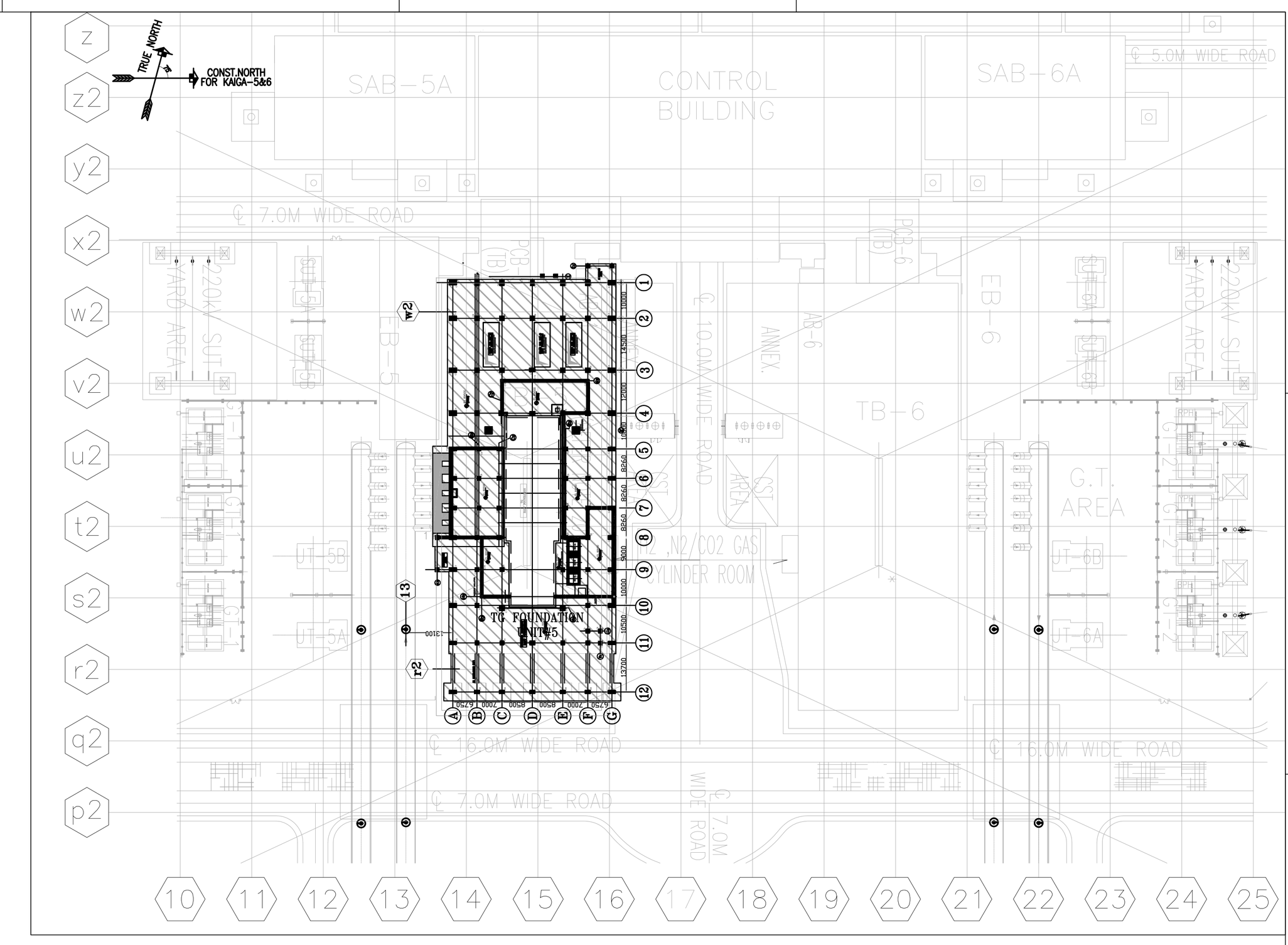
SECTION 1-1
(REFER GA DRG NO. 8016)
(*) DIMENSIONS/LEVELS SHALL BE FINALIZED DURING DETAIL ENGINEERING



SECTION 1-1
(REFER GA DRG NO. 8016)
(*) DIMENSIONS/LEVELS SHALL BE FINALIZED DURING DETAIL ENGINEERING



DETAIL A
(TYP. DETAIL OF JOINT BETWEEN WALL AND SLAB)



KEY PLAN

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FFL - FINISHED FLOOR LEVEL
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H - HIGH
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THK. - THIKNESS
TOC - TOP OF CONCRETE
TYP. - TYPICAL
○ - BUILDING GRID
⬡ - PLANT GRID

PG - PLANT GRID
UN - UNLESS NOTED
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COL. - COLUMN
TP - TERMINAL POINT
TIP - TURBINE ISLAND PACKAGE
TOT - TOP OF TUNNEL
BOT - BOTTOM OF TUNNEL
W - WIDE
BXXXX - BEAM NUMBER
CXX - COLUMN NUMBER
℄ - CENTER LINE
EJ - EXPANSION JOINT
CJ - CONSTRUCTION JOINT

- CHEQUERED PLATE PLATEFORM
- REMOVABLE CHEQUERED PLATE
- GRATED FLOORING
- REMOVABLE GRATED FLOORING
- LAY DOWN AREA
- REMOVABLE CONCRETE COVER
- FILCREATE
- WCS (WELL COMPACTED SOIL)

NOTES:

FOR NOTES REFER DRG NO. KAIGA-5/22000/8016/GA

IMP. NOTES:

FOR IMP. NOTES REFER DRG NO. KAIGA-5/22000/8016/GA

TABLE -A

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOs.
GENERAL NOTES & STANDARD DETAILS FOR STRUCTURAL STEEL WORKS (UNIT#5 & 6)	KAIGA-5&6/22400/8001/DD
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5 & 6)	KAIGA-5&6/22210/8001/DD
TURBINE BUILDING - GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA
TURBINE BUILDING -GA OF FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8019/GA
TURBINE BUILDING -GA OF FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8020/GA
TURBINE BUILDING -GA OF FLOOR AT EL 111.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8021/GA
TURBINE BUILDING -GA OF FLOOR AT EL 111.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8022/GA
TURBINE BUILDING -GA OF FLOOR AT EL 118.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8023/GA
TURBINE BUILDING -GA OF FLOOR AT EL 118.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8024/GA
TURBINE BUILDING -GA OF FLOOR AT EL 127.0M GRID 1 TO 12 (UNIT#5)	KAIGA-5/22000/8025/GA
TURBINE BUILDING -GA OF ROOF (UNIT#5)	KAIGA-5/22000/8026/GA
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 1 (UNIT#5)	KAIGA-5/22222/8033/DD
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 2 (UNIT#5)	KAIGA-5/22222/8034/DD
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 3 (UNIT#5)	KAIGA-5/22222/8035/DD
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GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN AT 100.0M FOR TB-5	KAIGA-5/22000/8002/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN VIEW AT 111.0M FOR TB-5	KAIGA-5/22000/8003/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN VIEW AT 118.0M FOR TB-5	KAIGA-5/22000/8004/GA
GENERAL ARRANGEMENT DRAWING -TURBINE BUILDING PLAN VIEW AT 127.0M FOR TB-5	KAIGA-5/22000/8005/GA
CROSS SECTION OF TB-5	KAIGA-5/22000/8007/GA
MAIN PLANT LAYOUT	KAIGA-5&6/10000/2001/GA

DEVELOPMENT CONSULTANTS PVT. LIMITED
Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.
ACTION 1
1 APPROVED
2 COMMENTED
3 FOR INFORMATION
REVIEWED BY: INDRANIL BHADRA
DATE: 23.02.2024

REV. No.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPICL'S SYSTEM CLEARANCE

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	21.02.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
TURBINE BUILDING
GA OF RAFT FOUNDATION AT EL 89500 AND EL 93300 (TOC) (UNIT#5)

DES'D.	A.KAPOOR, DATE 28.11.2023	DR'N.	S.NAIN, DATE 01.12.2023	REV'D.	S.MISHRA, DATE 01.12.2023
DES. CHK'D.	V.SHARMA, DATE 01.12.2023	DRG. CHK'D.	A.KAPOOR, DATE 01.12.2023	APP'D.	A.KUMAR, DATE 01.12.2023

PROJECT 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS
PROJECTION

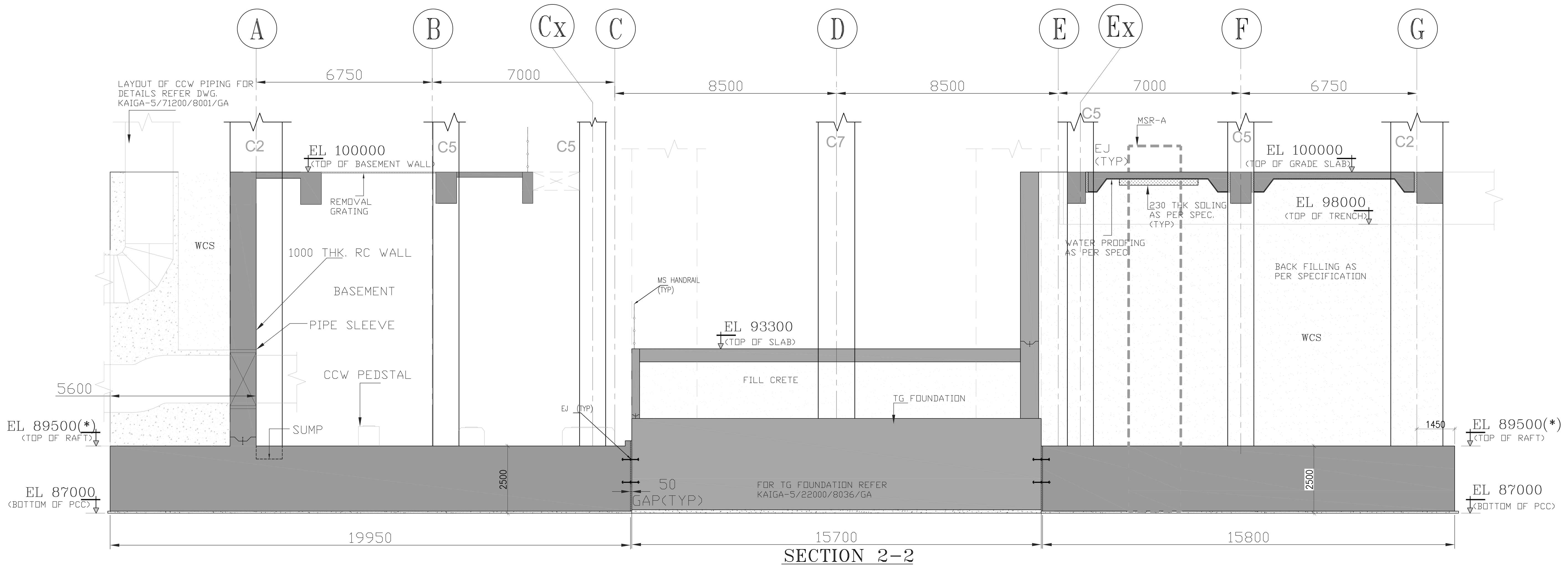
NPCIL DRG. No. KAIGA-5/22000/8017/GA
SHEET 1 OF 1
REV. No. R0
BHEL NO: PE-DG-488-611-C1003_(RC)
FILE NAME: KAIGA-5-22000-8017-GA

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED:
ALL DIMENSIONS ARE IN mm.

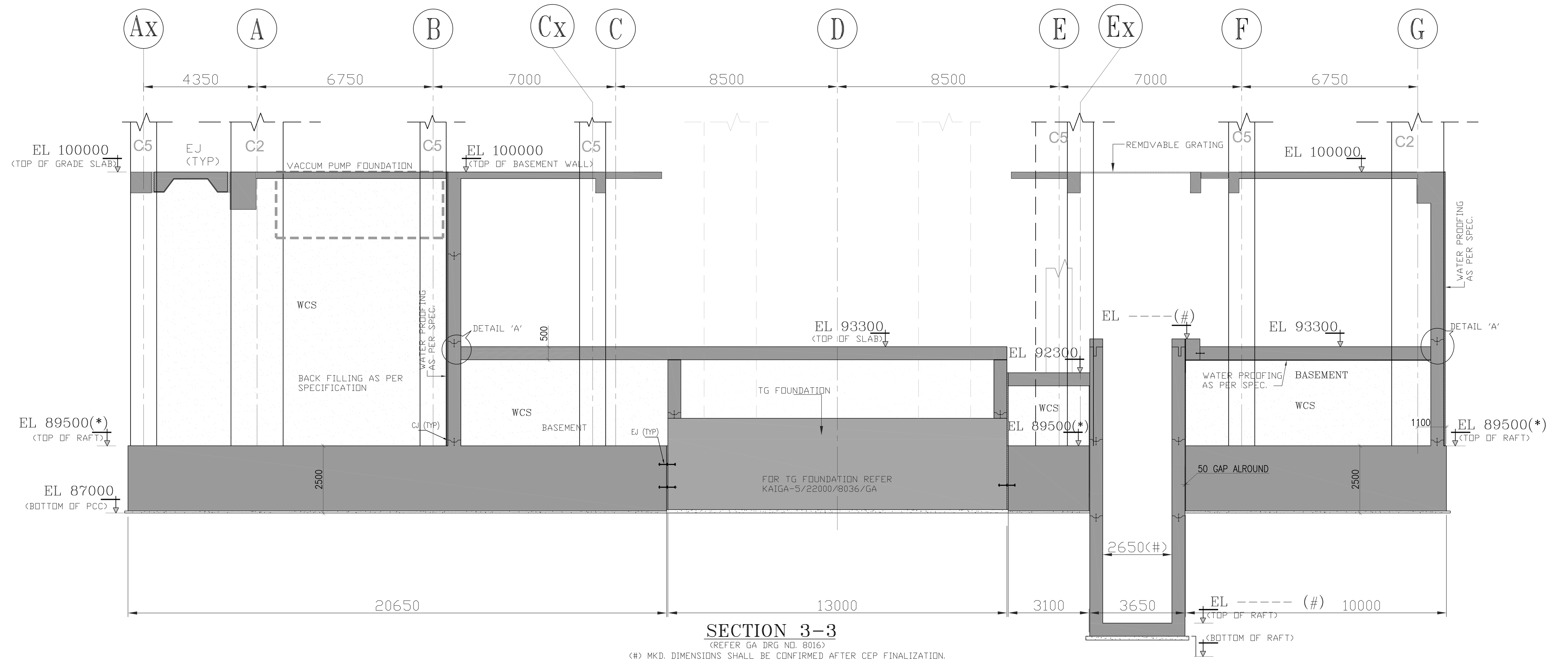
A0 DRG. No. KAIGA-5-22000-8017-GA

REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | DRAWING No.



SECTION 2-2

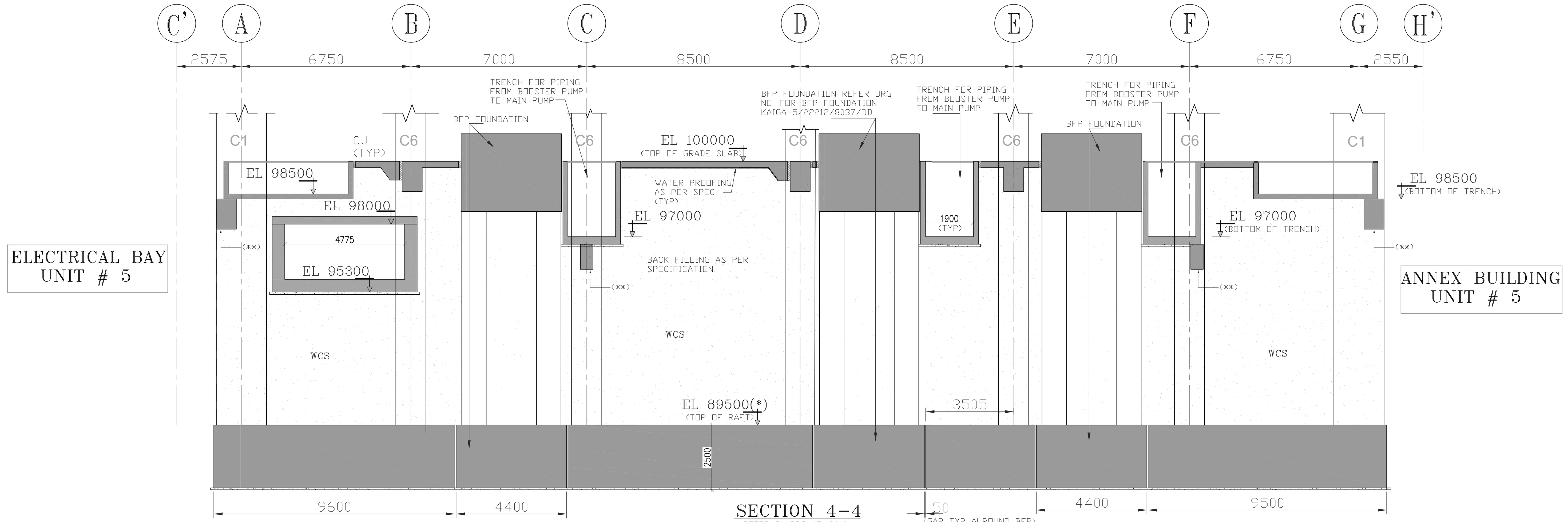
(*) DIMENSIONS/LEVELS SHALL BE FINALIZED DURING DETAIL ENGINEERING (REFER GA DRG NO. 8016)



SECTION 3-3

(REFER GA DRG NO. 8016)

(#) MKD. DIMENSIONS SHALL BE CONFIRMED AFTER CEP FINALIZATION.

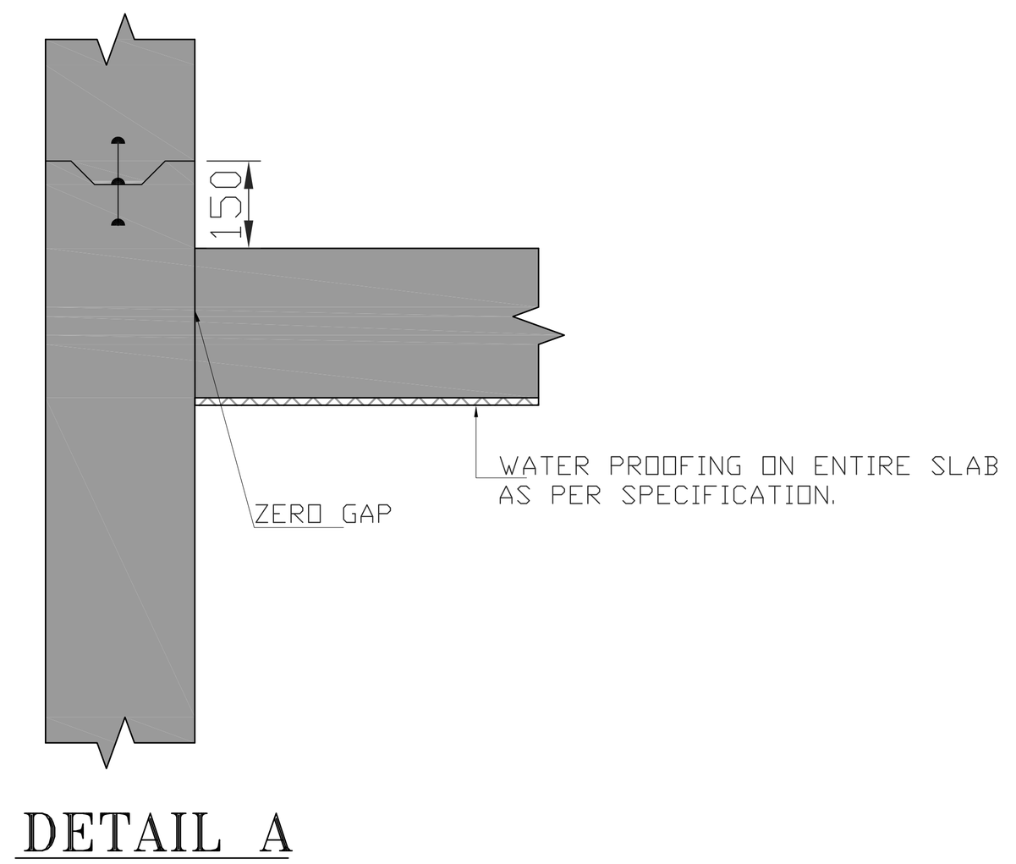


SECTION 4-4

(REFER GA DRG NO. 8016)

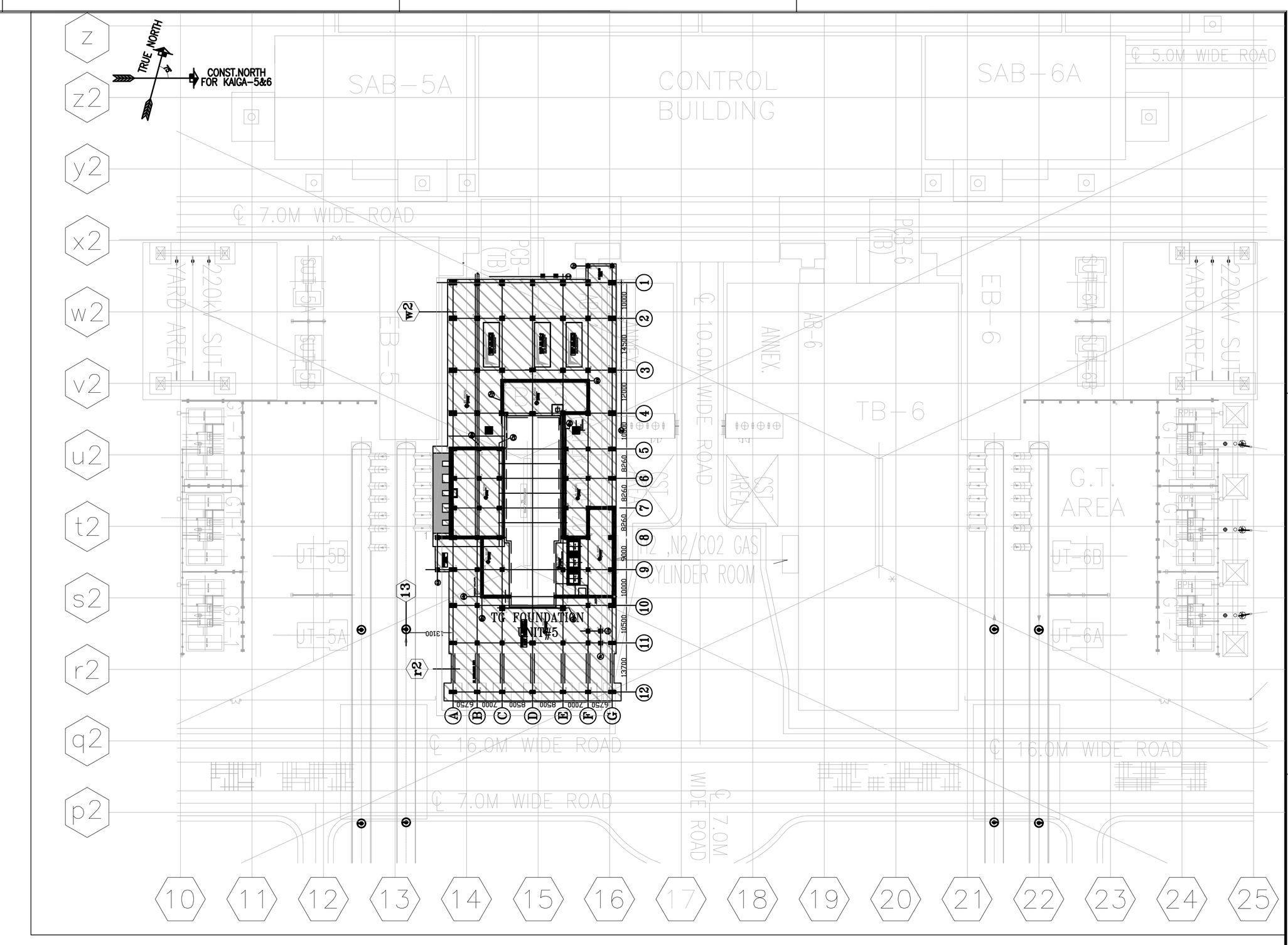
(*) MKD. DIMENSIONS SHALL BE CONFIRMED AFTER CEP FINALIZATION.

(**) REFER KAIGA-5-22000-8019-20-GA_RA



DETAIL A

(TYP. DETAIL OF JOINT BETWEEN WALL AND SLAB)



KEY PLAN

LEGENDS:

- DWG - DRAWING
- EL - ELEVATION
- FFL - FINISHED FLOOR LEVEL
- GA - GENERAL ARRANGEMENT
- H - HIGH
- TB - TURBINE BUILDING
- THK. - THICKNESS
- TOC - TOP OF CONCRETE
- TYP. - TYPICAL
- BUILDING GRID
- PLANT GRID
- BASEMENT AREA
- MSR - MOISTURE SEPARATOR AND REHEATER
- PG - PLANT GRID
- UN - UNLESS NOTED
- TOR - TOP OF RAFT
- COL. - COLUMN
- TP - TERMINAL POINT
- TIP - TURBINE ISLAND PACKAGE
- TOT - TOP OF TUNNEL
- BOT - BOTTOM OF TUNNEL
- W - WIDE
- BXXXX - BEAM NUMBER
- CXX - COLUMN NUMBER
- ℄ - CENTER LINE
- EJ - EXPANSION JOINT
- CJ - CONSTRUCTION JOINT
- CHEQUERED PLATE PLATFORM
- REMOVABLE CHEQUERED PLATE
- GRATED FLOORING
- REMOVABLE GRATED FLOORING
- LAY DOWN AREA
- REMOVABLE CONCRETE COVER
- FILCREATE
- WCS (WELL COMPACTED SOIL)

NOTES:

FOR NOTES REFER DRG NO. KAIGA-5/22000/8016/GA

IMP. NOTES:

FOR IMP. NOTES REFER DRG NO. KAIGA-5/22000/8016/GA

TABLE -A

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOs.
GENERAL NOTES & STANDARD DETAILS FOR STRUCTURAL STEEL WORKS (UNIT#5 & 6)	KAIGA-5&6/22400/8001/DD
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5 & 6)	KAIGA-5&6/22210/8001/DD
TURBINE BUILDING - GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING -GA OF FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8019/GA
TURBINE BUILDING -GA OF FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8020/GA
TURBINE BUILDING -GA OF FLOOR AT EL 111.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8021/GA
TURBINE BUILDING -GA OF FLOOR AT EL 111.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8022/GA
TURBINE BUILDING -GA OF FLOOR AT EL 118.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22000/8023/GA
TURBINE BUILDING -GA OF FLOOR AT EL 118.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22000/8024/GA
TURBINE BUILDING -GA OF FLOOR AT EL 127.0M GRID 1 TO 12 (UNIT#5)	KAIGA-5/22000/8025/GA
TURBINE BUILDING -GA OF ROOF (UNIT#5)	KAIGA-5/22000/8026/GA
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 1 (UNIT#5)	KAIGA-5/22222/8033/DD
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 2 (UNIT#5)	KAIGA-5/22222/8034/DD
TURBINE BUILDING -CONCRETE DETAILS OF STAIRCASE 3 (UNIT#5)	KAIGA-5/22222/8035/DD
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN BELOW 100.0M FOR TB-5	KAIGA-5/22000/8001/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN AT 100.0M FOR TB-5	KAIGA-5/22000/8002/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN VIEW AT 111.0M FOR TB-5	KAIGA-5/22000/8003/GA
GENERAL ARRANGEMENT DRAWING - TURBINE BUILDING PLAN VIEW AT 118.0M FOR TB-5	KAIGA-5/22000/8004/GA
GENERAL ARRANGEMENT DRAWING -TURBINE BUILDING PLAN VIEW AT 127.0M FOR TB-5	KAIGA-5/22000/8005/GA
CROSS SECTION OF TB-5	KAIGA-5/22000/8007/GA
MAIN PLANT LAYOUT	KAIGA-5&6/10000/2001/GA

DEVELOPMENT CONSULTANTS PVT. LIMITED

Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.

ACTION 1

1 APPROVED
2 COMMENTED
3 FOR INFORMATION

REVIEWED BY: INDRANIL BHADRA
DATE: 23.02.2024

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	21.02.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

REV. NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPICL'S SYSTEM CLEARANCE

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
TURBINE BUILDING
GA OF RAFT FOUNDATION AT EL 89500 AND EL 93300 (TOC) (UNIT#5)

DES'D. A.KAPOOR DATE 28.11.2023	DR'N. S.NAIN DATE 01.12.2023	REV'D. S.MISHRA DATE 01.12.2023
DES. CHK'D. V.SHARMA DATE 01.12.2023	DRG. CHK'D. A.KAPOOR DATE 01.12.2023	APP'D. A.KUMAR DATE 01.12.2023

PROJECT 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS

PROJECTION

NPCIL DRG. No. KAIGA-5/22000/8018/GA

SHEET 1 OF 1

REV. No. R0

BHEL NO: PE-DG-488-611-C1004_(RC)

FILE NAME: KAIGA-5-22000-8018-GA

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

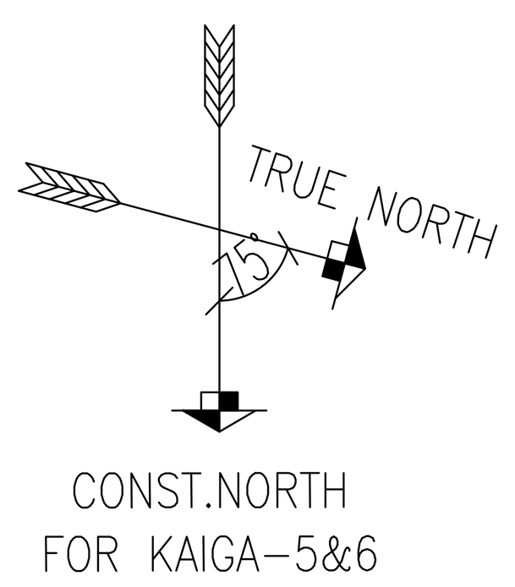
DO NOT SCALE THE DRAWING.

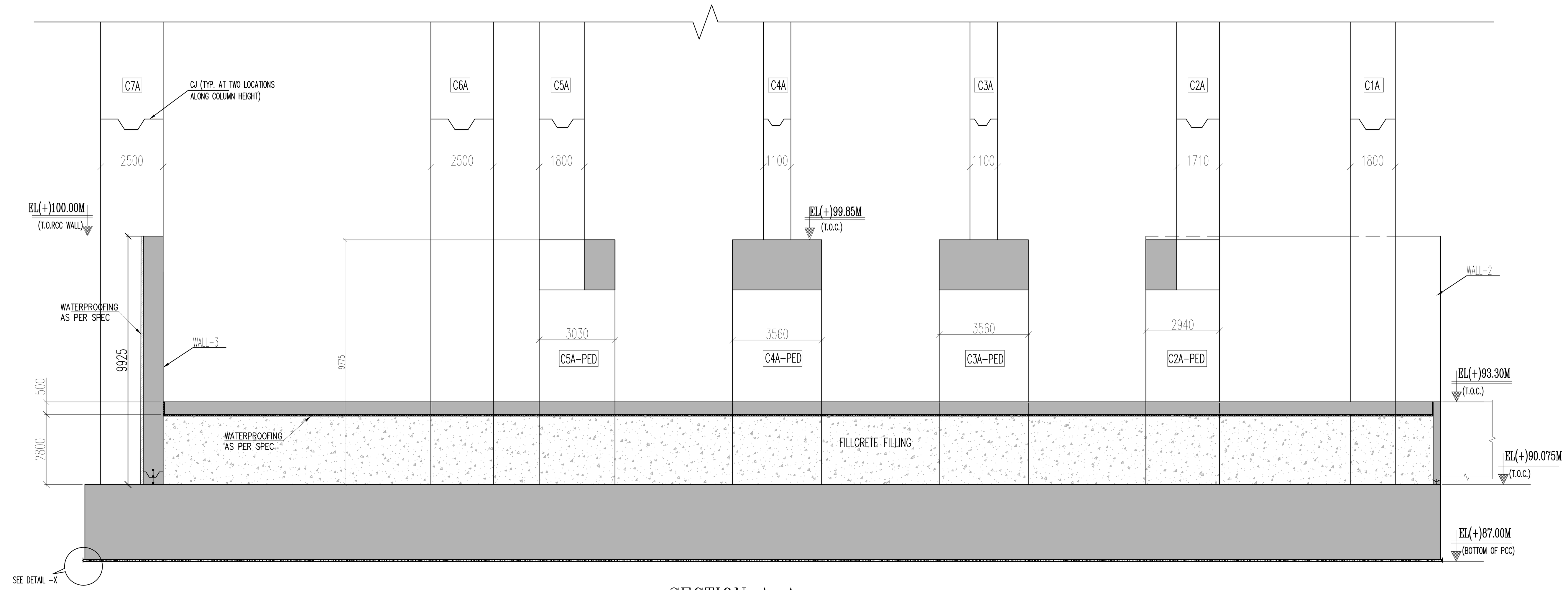
UNLESS OTHERWISE STATED:
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS

TABLE-1

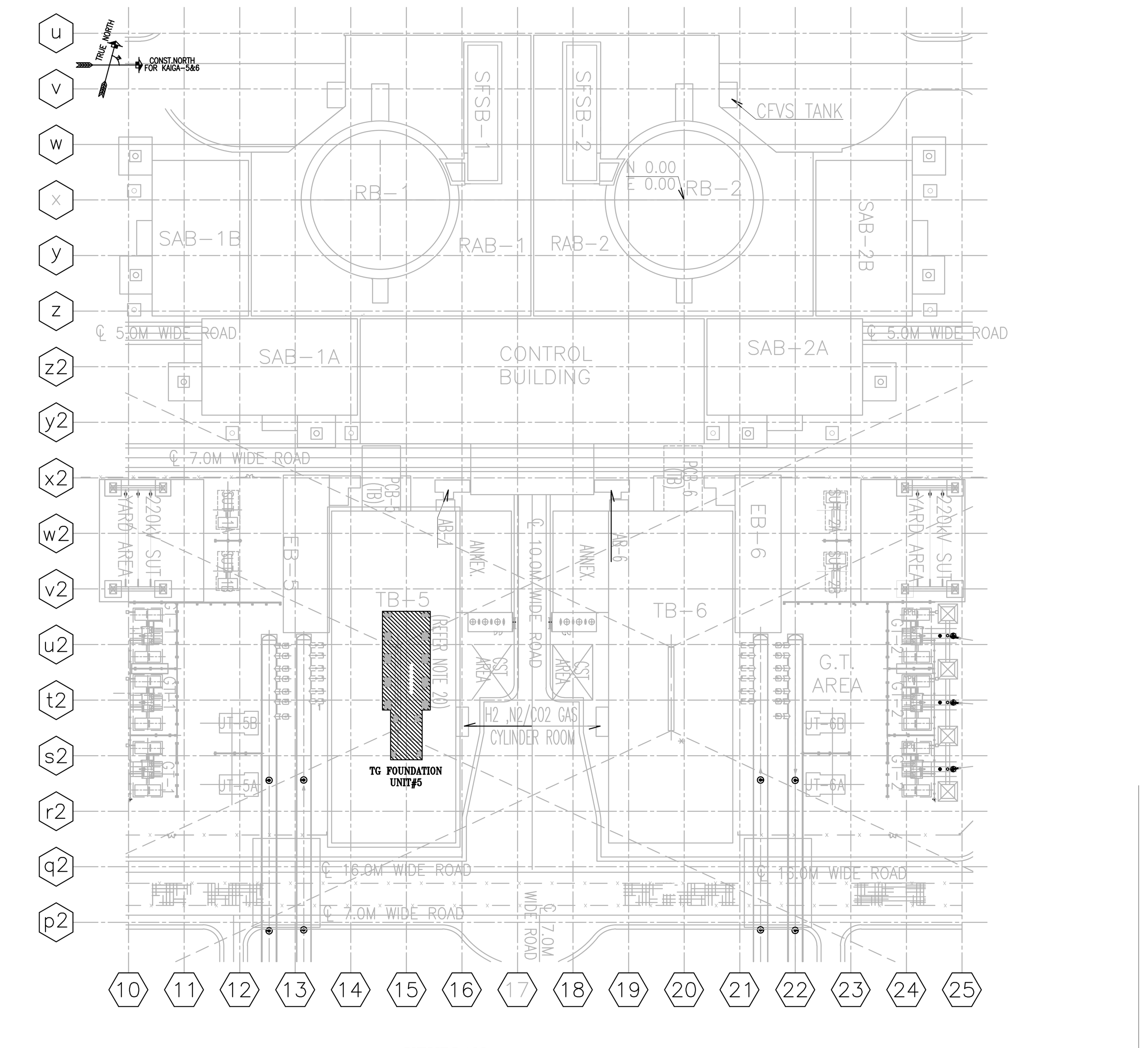
REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

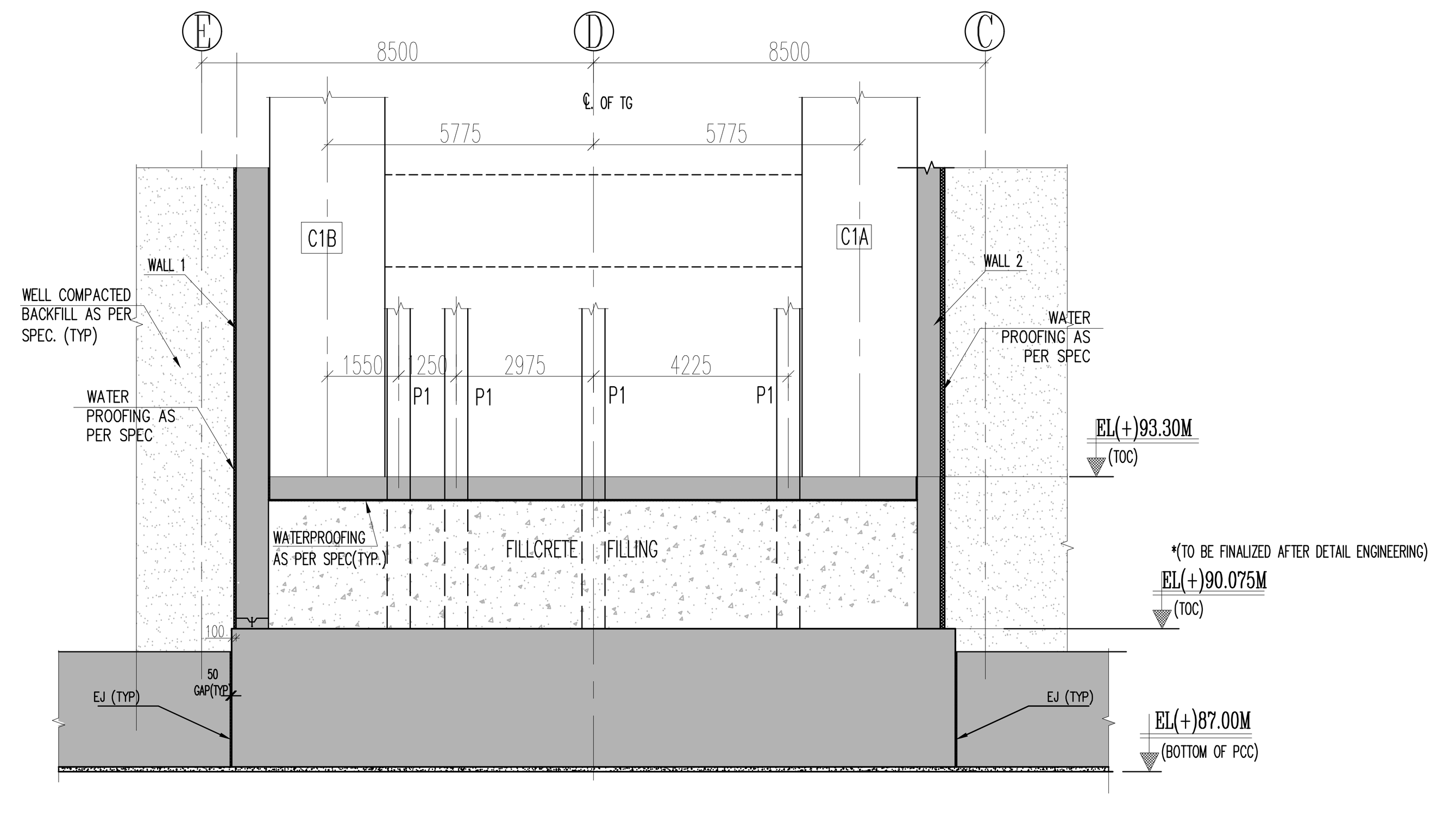
A0 DRG. No. KAIGA-5-22000-8018-GA



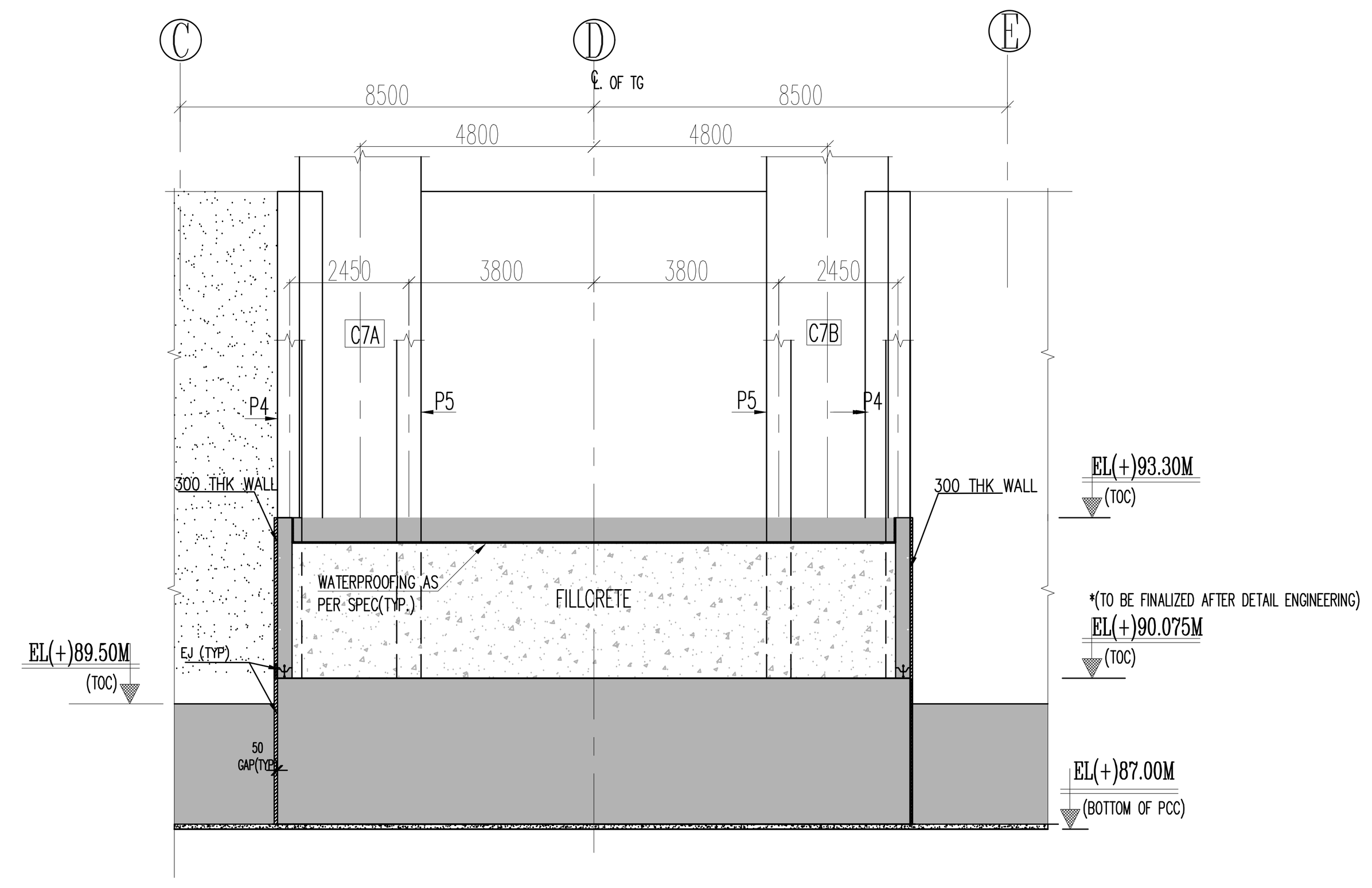


SECTION A-A

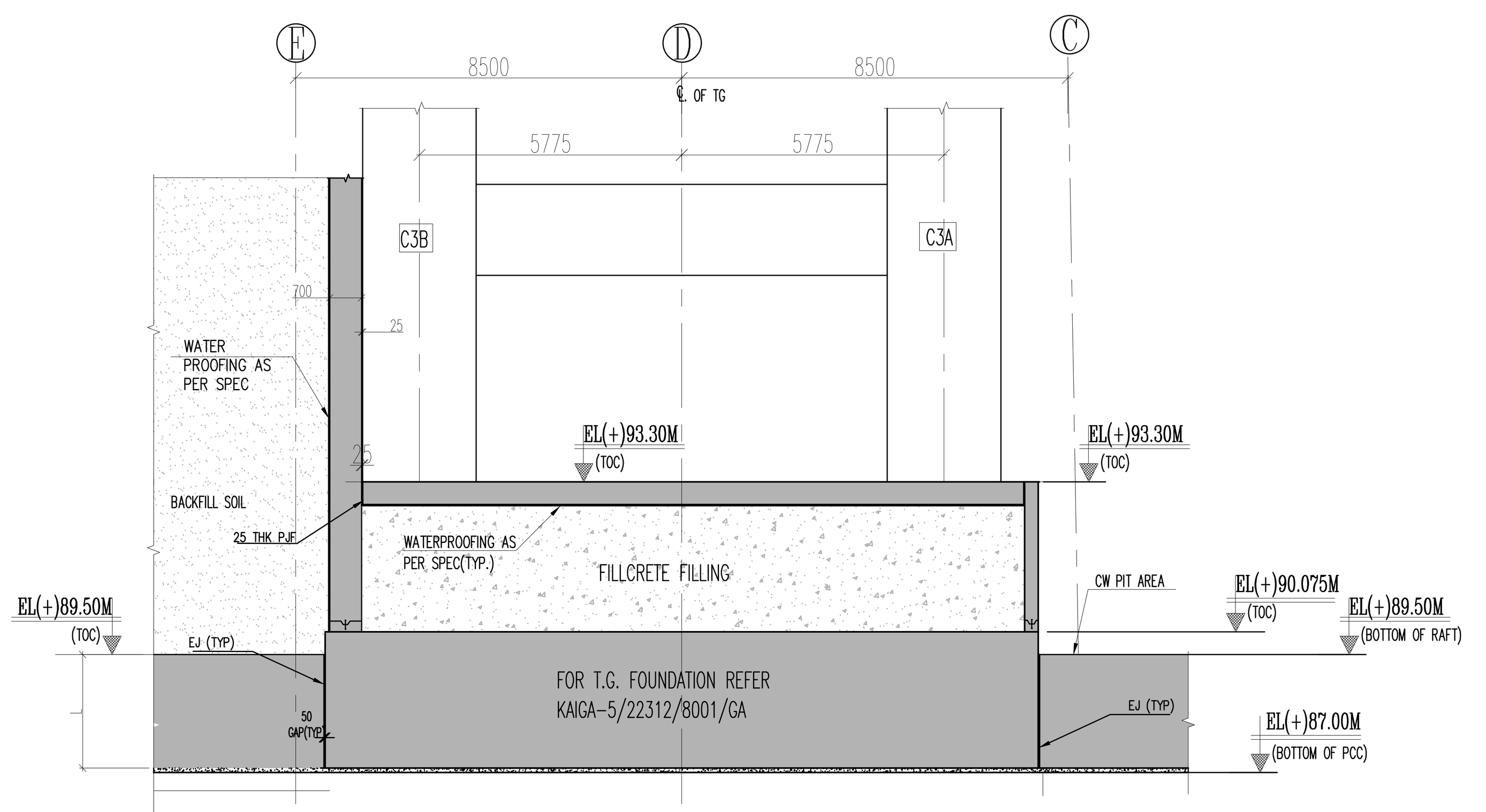




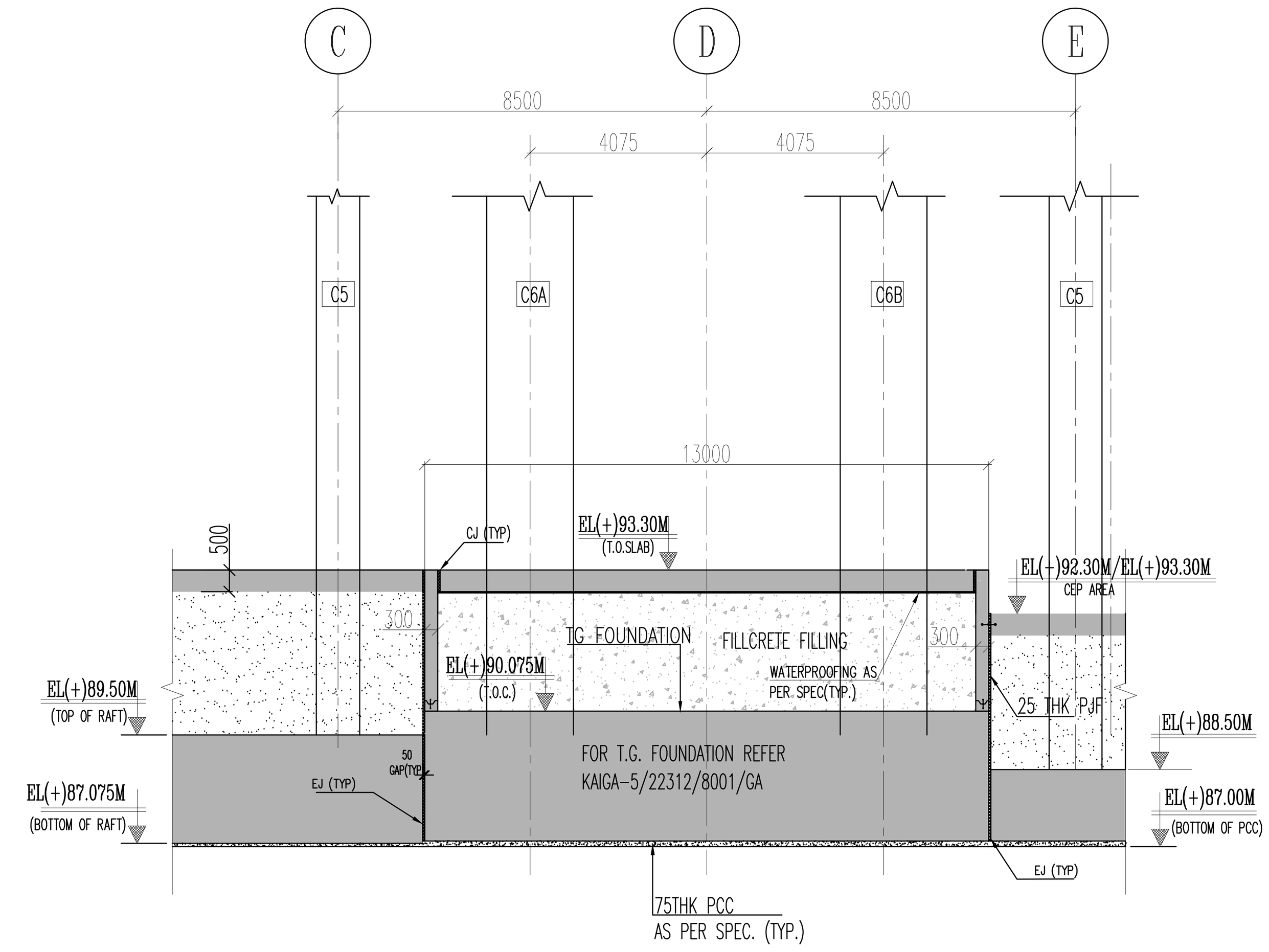
SECTION B-B



SECTION E-E



SECTION C-C



SECTION D-D

NOTES:-

1. ALL CONCRETE OUTLINE DIMENSIONS INDICATED ARE TENTATIVE, AND WILL BE CONFIRMED AFTER ANALYSIS AND DESIGN.
2. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
3. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND LEVEL AS EL(+)99.70 M WHICH CORRESPONDS TO RL 42.5M.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 UNLESS OTHERWISE NOTED.
5. PLAIN CEMENT CONCRETE UNDER RAFT SHALL BE 75mm. THICK OF GRADE M15 .
6. FOR ALL GENERAL NOTES REFER DRG. NO. KAIGA-5-22312-8001-DD.

REFERENCE DRAWING:

1. KAIGA_5_22000_8033_GA TG FOUNDATION - GA OF RAFT (UNIT#5)
2. KAIGA_5_22000_8036_GA (SHEET 2 OF 2) TG FOUNDATION - GA OF CROSS SECTION (UNIT#5)
3. KAIGA_5_22000_8016_GA TURBINE BUILDING- GA OF RAFT FOUNDATION

LEGEND:-

TOC : TOP OF CONCRETE
EL : ELEVATION
DRG : DRAWING
PED : PEDESTAL

PROOF-CONSULTANT STAMP

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	27.02.2024	

DRAWING ISSUED FOR

OWNER: NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6
TG ISLAND PACKAGE
T.G. FOUNDATION: GA OF CROSS SECTION (UNIT#5)

DES'D. A.SHARMA DATE - 30.11.2023	DR'N. M.KUMAR DATE - 30.11.2023	REV'D. S.MISHRA DATE - 30.11.2023
DES. CHK'D. K.NEGI DATE - 30.11.2023	DRG. CHK'D. A.SHARMA DATE - 30.11.2023	APP'D. A.KUMAR 30.11.2023

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE -
PROJECTION

DRG. No. KAIGA-5/22000/8036/GA
REV. No. R0
BHEL DRG NO: PE-DG-488-613-C1004 (RB)
FILE NAME: KAIGA_5_22000_8036_GA (SHEET 1 OF 2)

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15/0.40 X 45°
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15/0.40
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°-30'

REV. NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

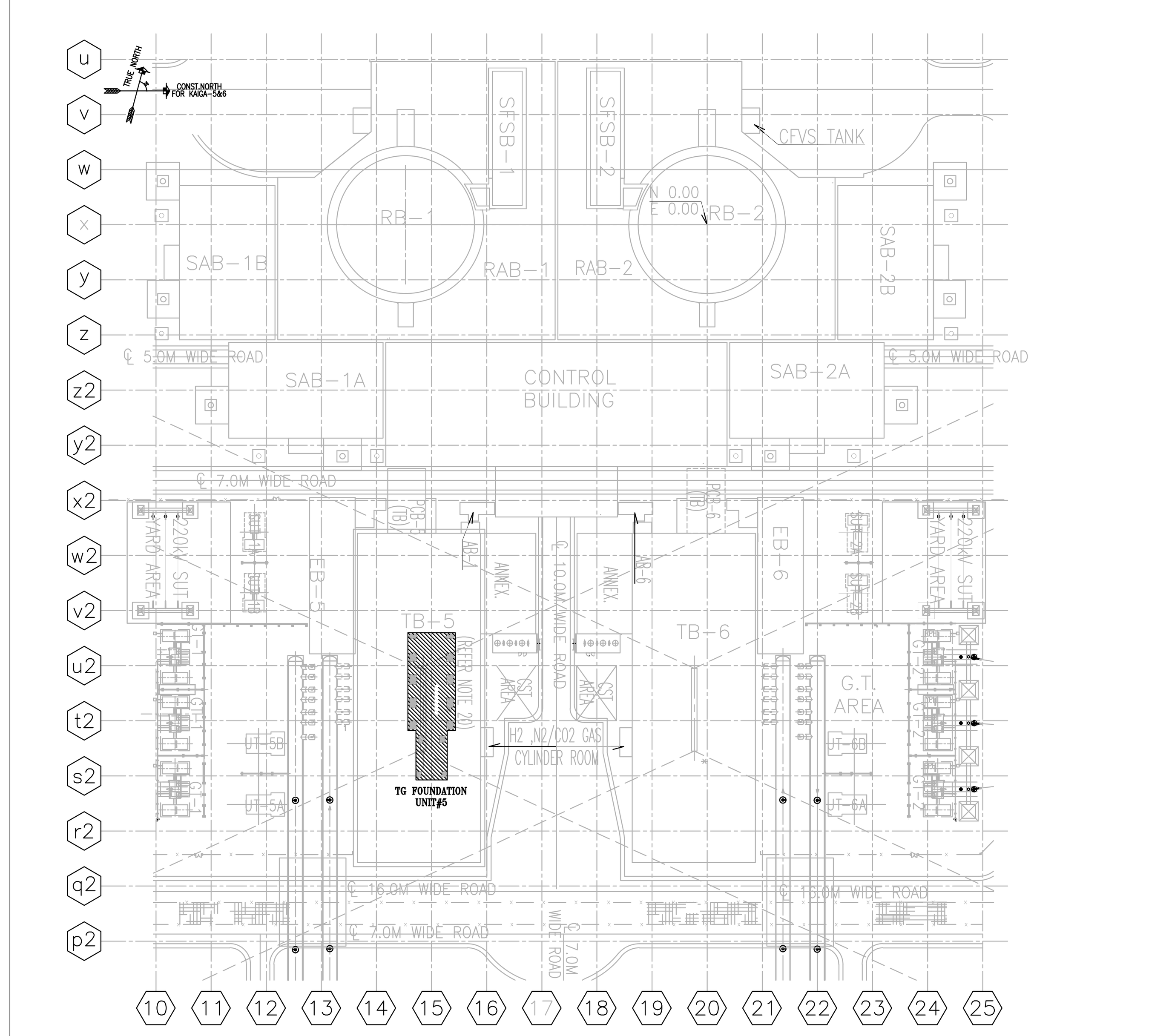
NPCIL'S SYSTEM CLEARANCE

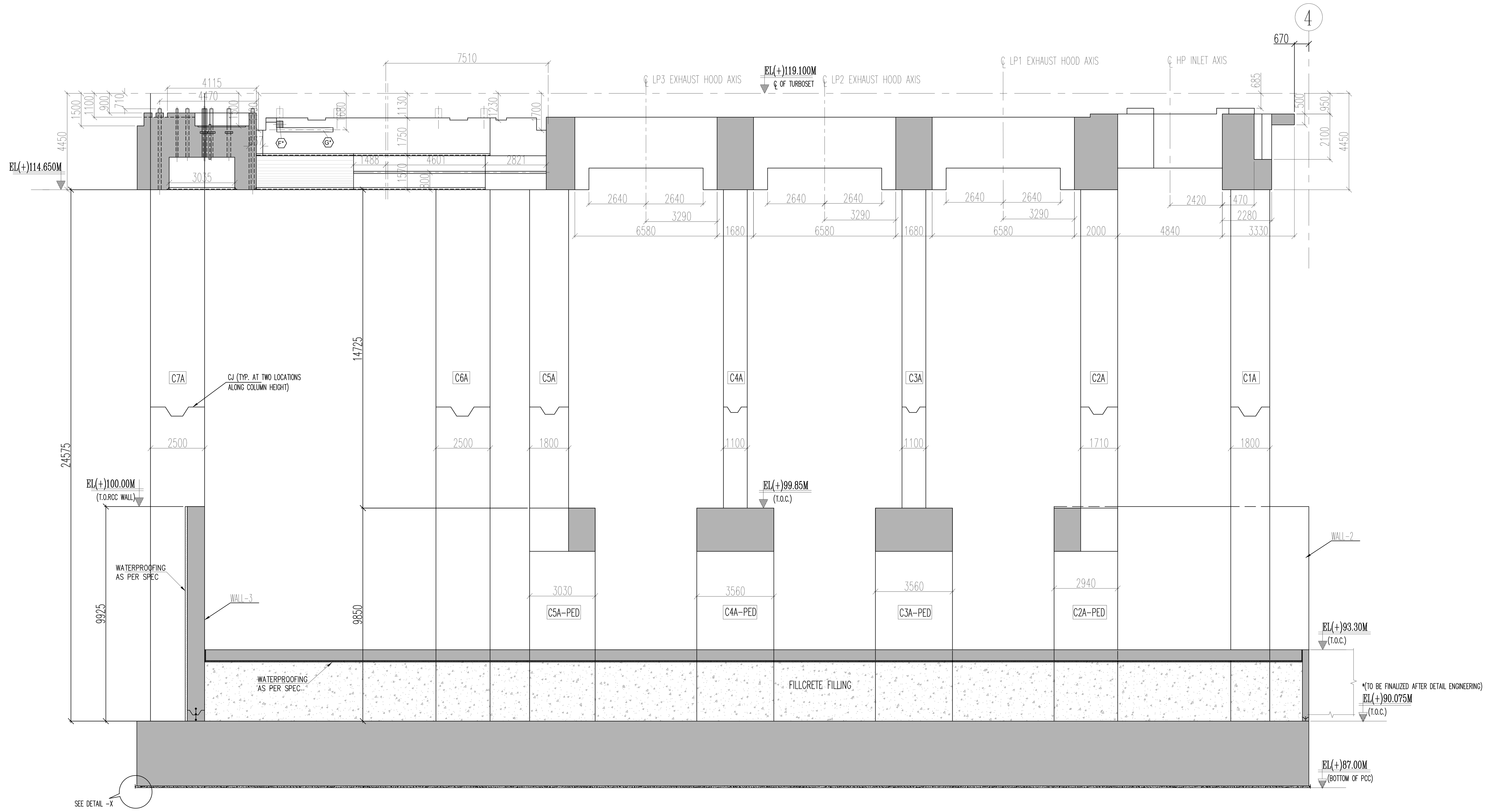
REFERENCE DRAWINGS	DRAWING No.	REV. No.	REV. LOCATION	DESCRIPTION	DR'N.	DES'D.	DES.CHK'D.	REV'D.	APP'D.	DES'D.	CHK'D.	REV'D.	APP'D.

REVISIONS | SIGNATURE WITH DATE (BHEL) | SIGNATURE (NPCIL)

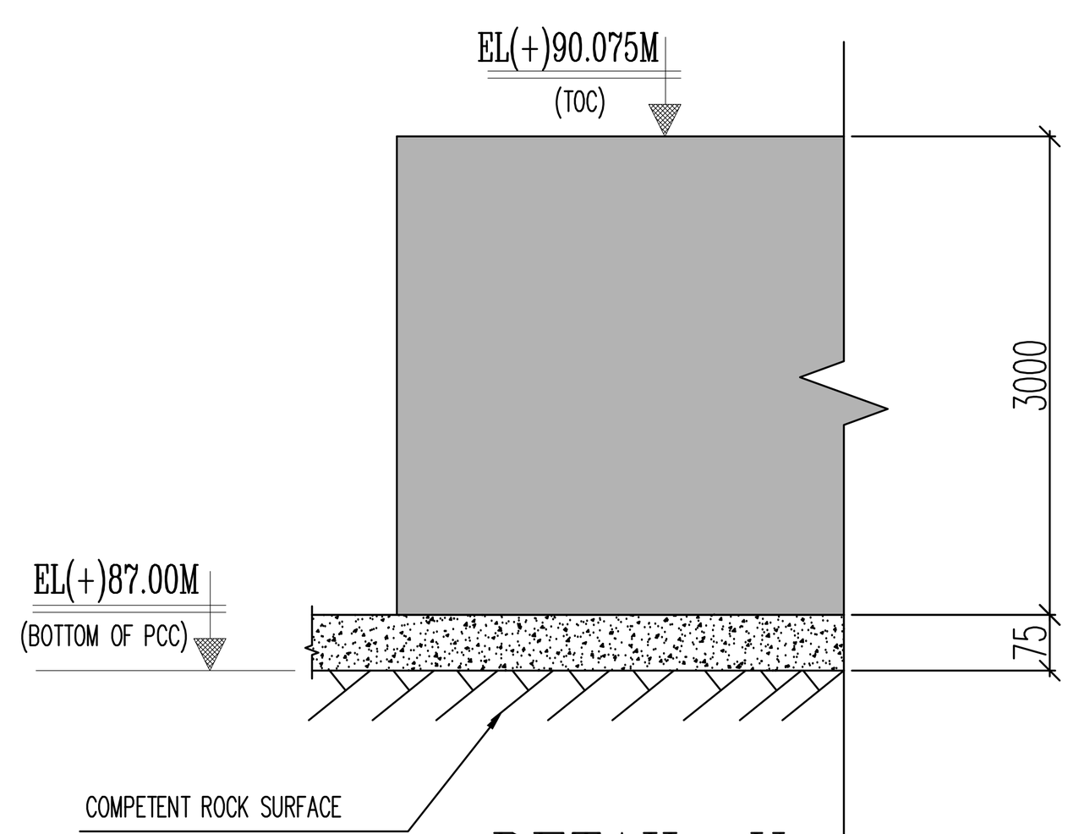
DRG. No. KAIGA-5/22000/8036/GA

A1





SECTION A-A



DETAIL: X

REFERENCE DRAWING:

1. KAIGA_5_22000_8033_GA TG FOUNDATION - GA OF RAFT (UNIT#5)
2. KAIGA_5_22000_8036_GA (SHEET 2 OF 2) TG FOUNDATION - GA OF CROSS SECTION (UNIT#5)
3. KAIGA_5_22000_8016_GA TURBINE BUILDING- GA OF RAFT FOUNDATION

LEGEND:-

TOC : TOP OF CONCRETE
EL : ELEVATION
DRG : DRAWING
PED : PEDESTAL

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	27.02.2024	
		SIGNATURE WITH DATE	

DRAWING ISSUED FOR

OWNER: NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6
TG ISLAND PACKAGE
T.G. FOUNDATION: GA OF CROSS SECTION (UNIT#5)

DES'D. A.SHARMA DATE - 30.11.2023	DR'N. M.KUMAR DATE - 30.11.2023	REV'D. S.MISHRA DATE - 30.11.2023
DES. CHK'D. K.NEGI DATE - 30.11.2023	DRG. CHK'D. A.SHARMA DATE - 30.11.2023	APP'D. A.KUMAR DATE - 30.11.2023

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE -
PROJECTION

DRG. No. KAIGA-5/22000/8036/GA
REV. No. R0

BHEL DRG NO. PE-DG-488-613-C1004 (R0)
FILE NAME: KAIGA_5_22000_8036_GA (SHEET 2 OF 2)

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

REV. NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPCIL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15/0.40 X 45°
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15/0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

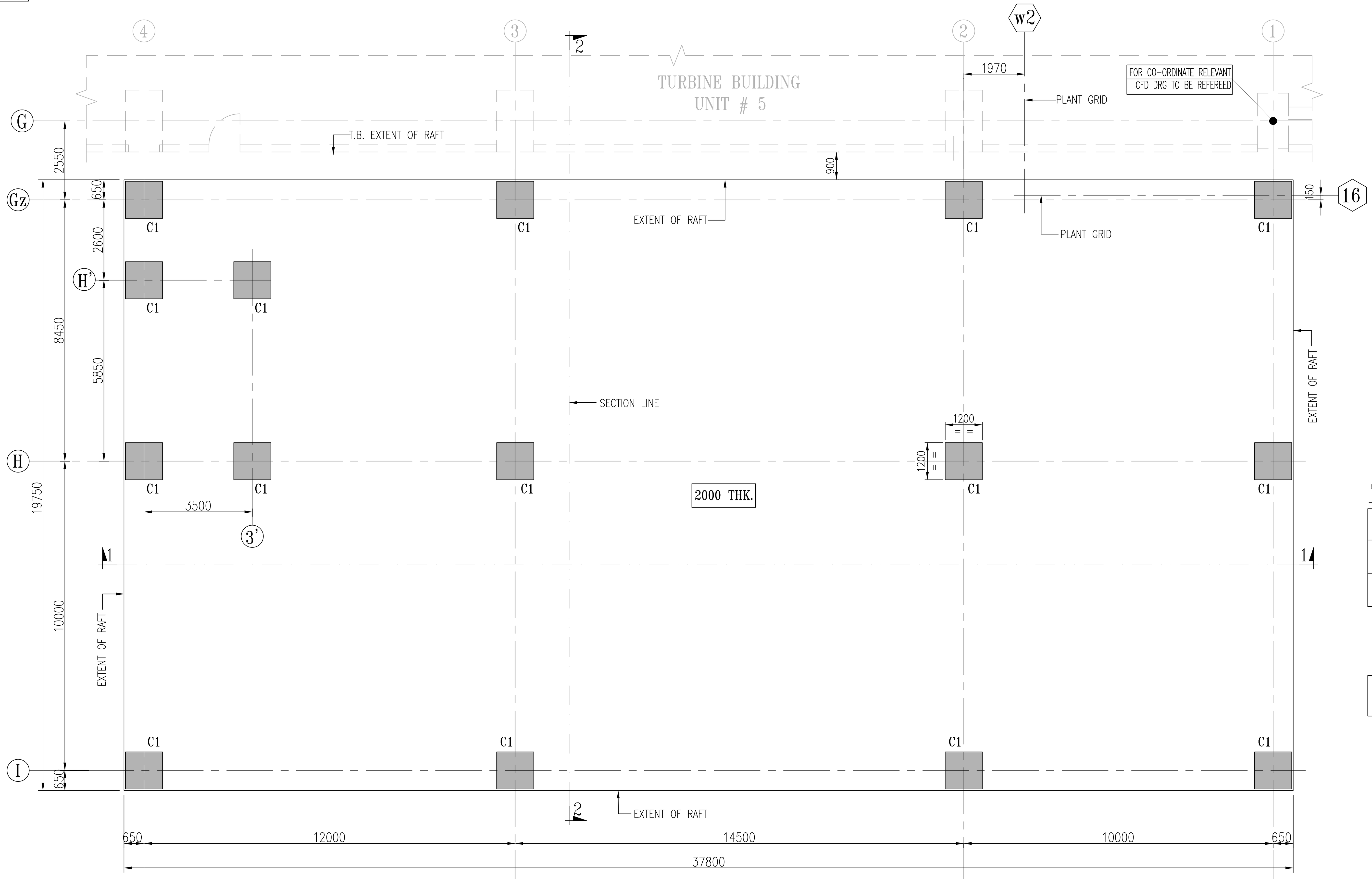
SPECIFIED DIMENSIONS	TOLERANCE
XX	±
X.X	±
X.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°-30'

REV. No.	LOCATION	DESCRIPTION	DR'N.	DES'D.	DES.CHK'D.	REV'D.	APP'D.	DES'D.	CHK'D.	REV'D.	APP'D.
REVISIONS			SIGNATURE WITH DATE (BHEL)					SIGNATURE (NPCIL)			

REFERENCE DRAWINGS | DRAWING No.

A1 DRG. No. KAIGA-5/22000/8036/GA



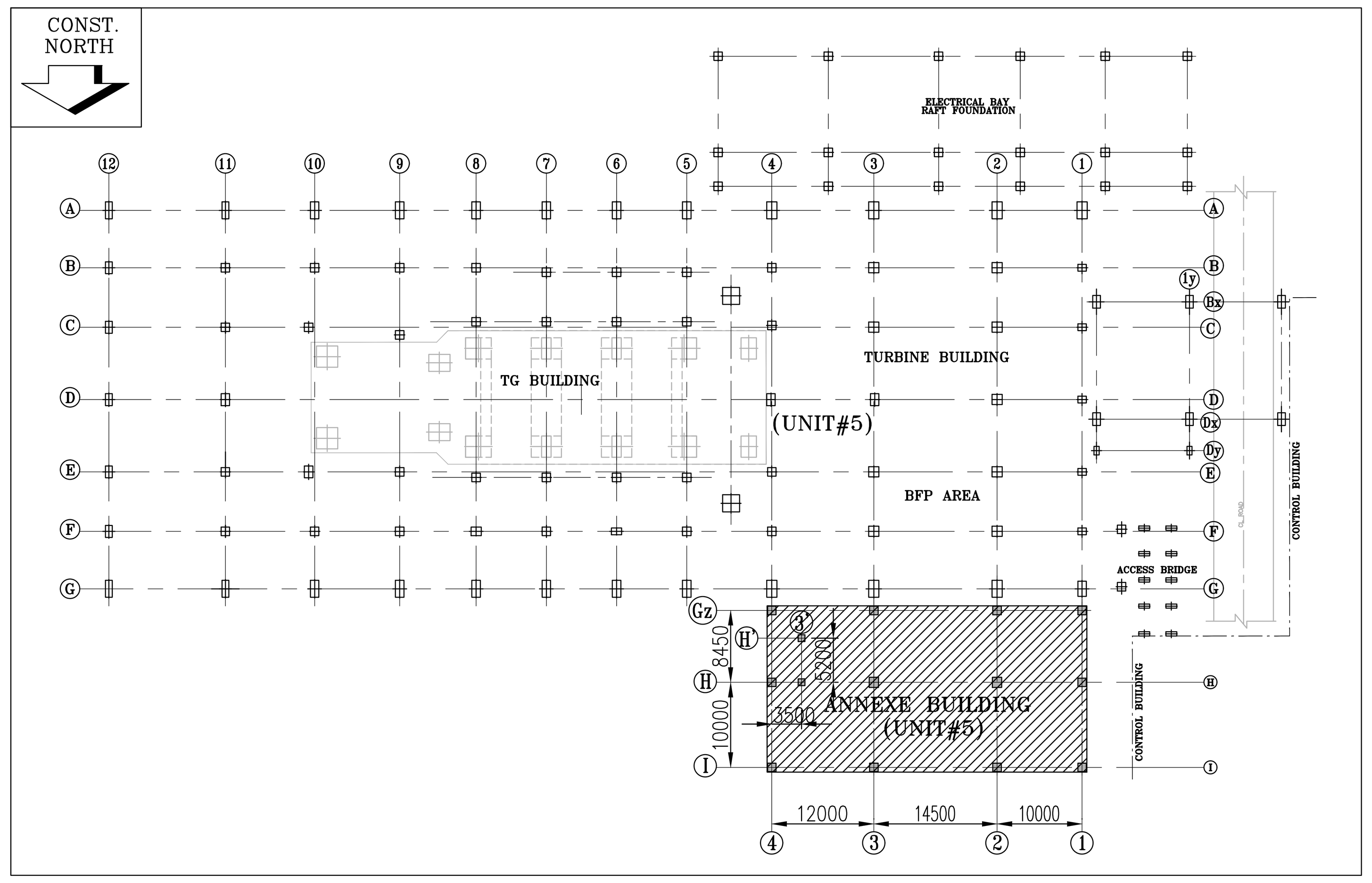
PLAN AT EL 89.075(TOC)
(SCALE 1:100)

COLUMN SCHEDULE

COLUMN MKD.	COLUMN SIZE	
	NORTH-SOUTH	EAST-WEST
C1	1200	1200

RAFT THICKNESS

RAFT	2000



KEYPLAN
SCALE 1:700

TABLE-1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/2001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5&6)	KAIGA-5&6/22210/8001/DD

1. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DESIGN.

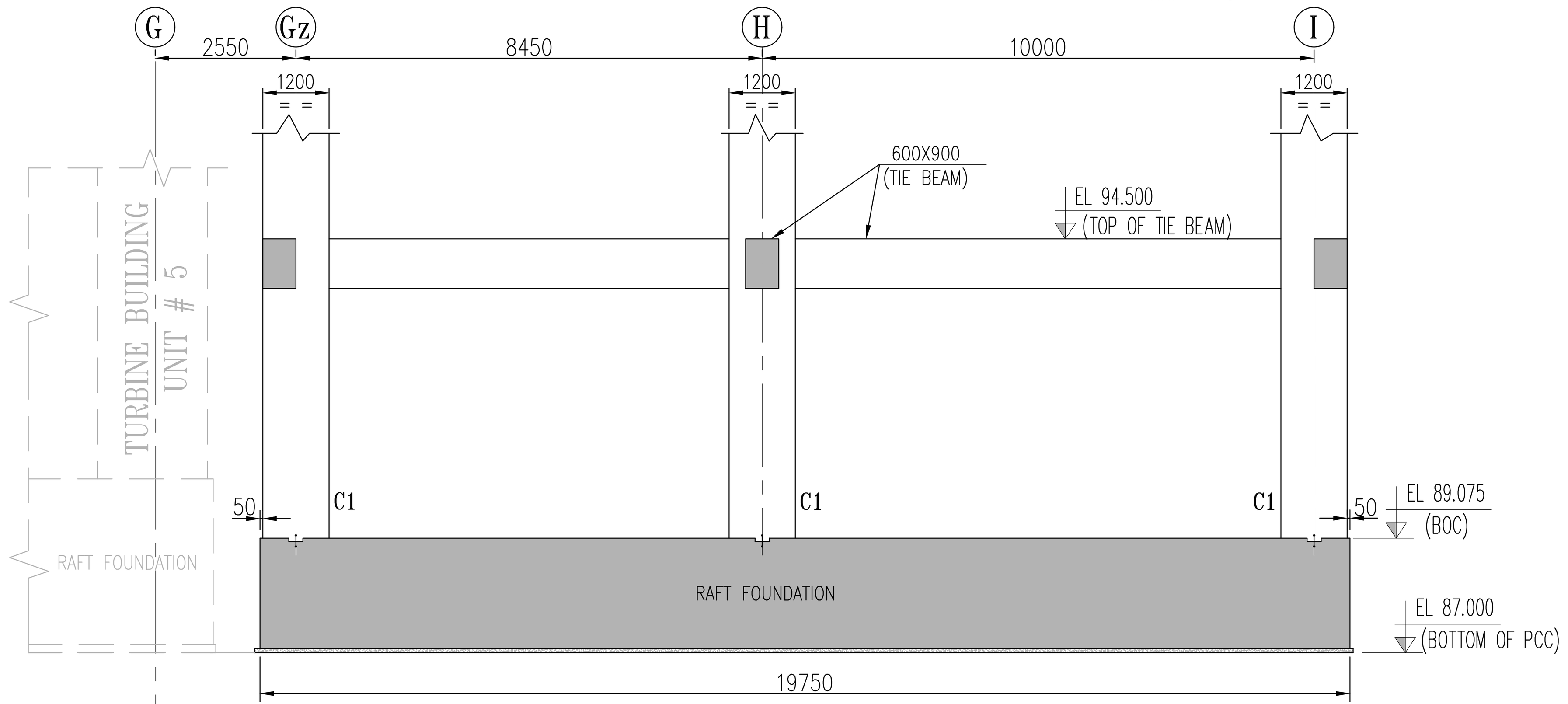
NOTES:-

1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100 M WHICH CORRESPONDS TO RL 42.80M.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION FOR DETAILS OOF WATER PROOFING.

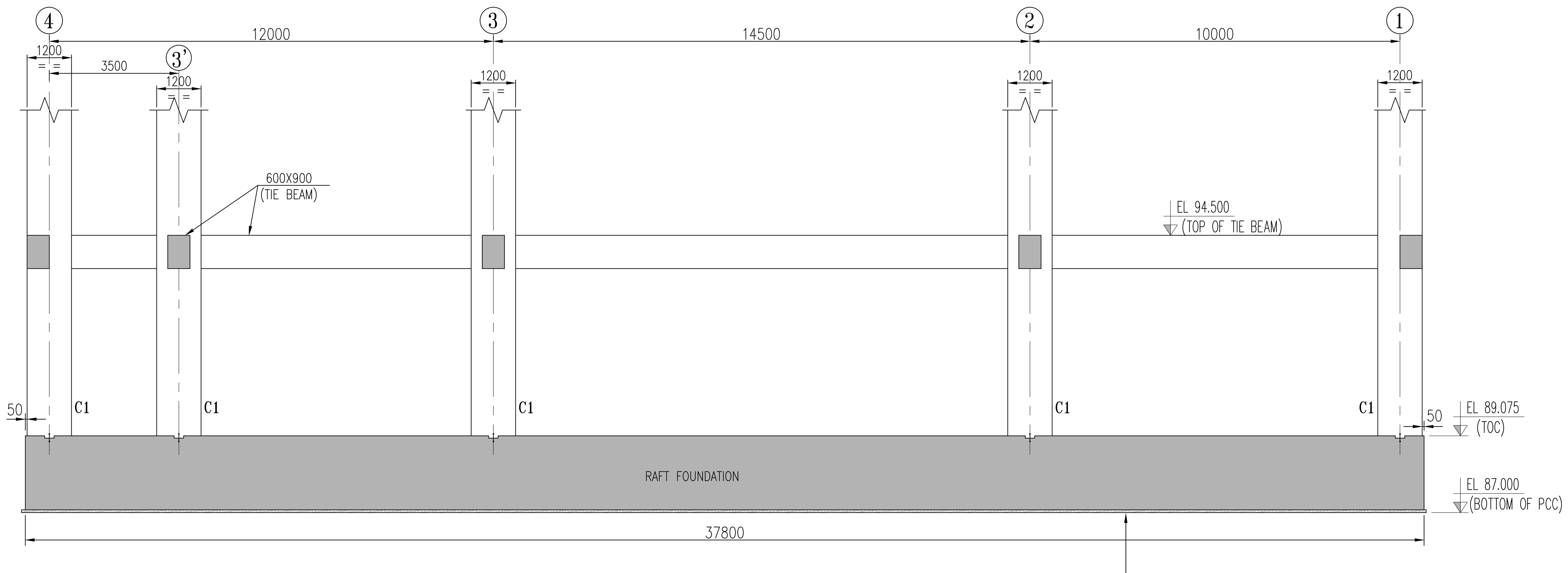
LEGEND:-

TOC : TOP OF CONCRETE
BOC : BOTTOM OF CONCRETE
CJ : CONSTRUCTION JOINT
TYP : TYPICAL
EL : ELEVATION
DRG : DRAWING
THK. : THICK

: CONCRETE
CX- COLUMN NUMBER
PCC- PLAIN CEMENT CONCRETE
NOS. - NUMBER
GA- GENERAL ARRANGEMENT



SECTION 2-2
(SCALE 1:100)



SECTION 1-1
(SCALE 1:100)

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

REV. No.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

REV. No.	DESCRIPTION	SIGNATURE WITH DATE BHEL	NPCIL
R0	FOR CONSTRUCTION	20.03.2024	

DRAWING ISSUED FOR

OWNER: NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6
ANNEXE BUILDING (UNIT#5)
G.A. OF RAFT FONDATION

DES'D. PRASHANT DATE - 19.03.2024	DR'N. M.KUMAR DATE - 20.03.2024	REV'D. S.MISHRA DATE - 20.03.2024
DES. CHK'D. V.SHARMA DATE - 19.03.2024	DRG. CHK'D. PRASHANT DATE - 20.03.2024	APP'D. A.KUMAR DATE - 20.03.2024

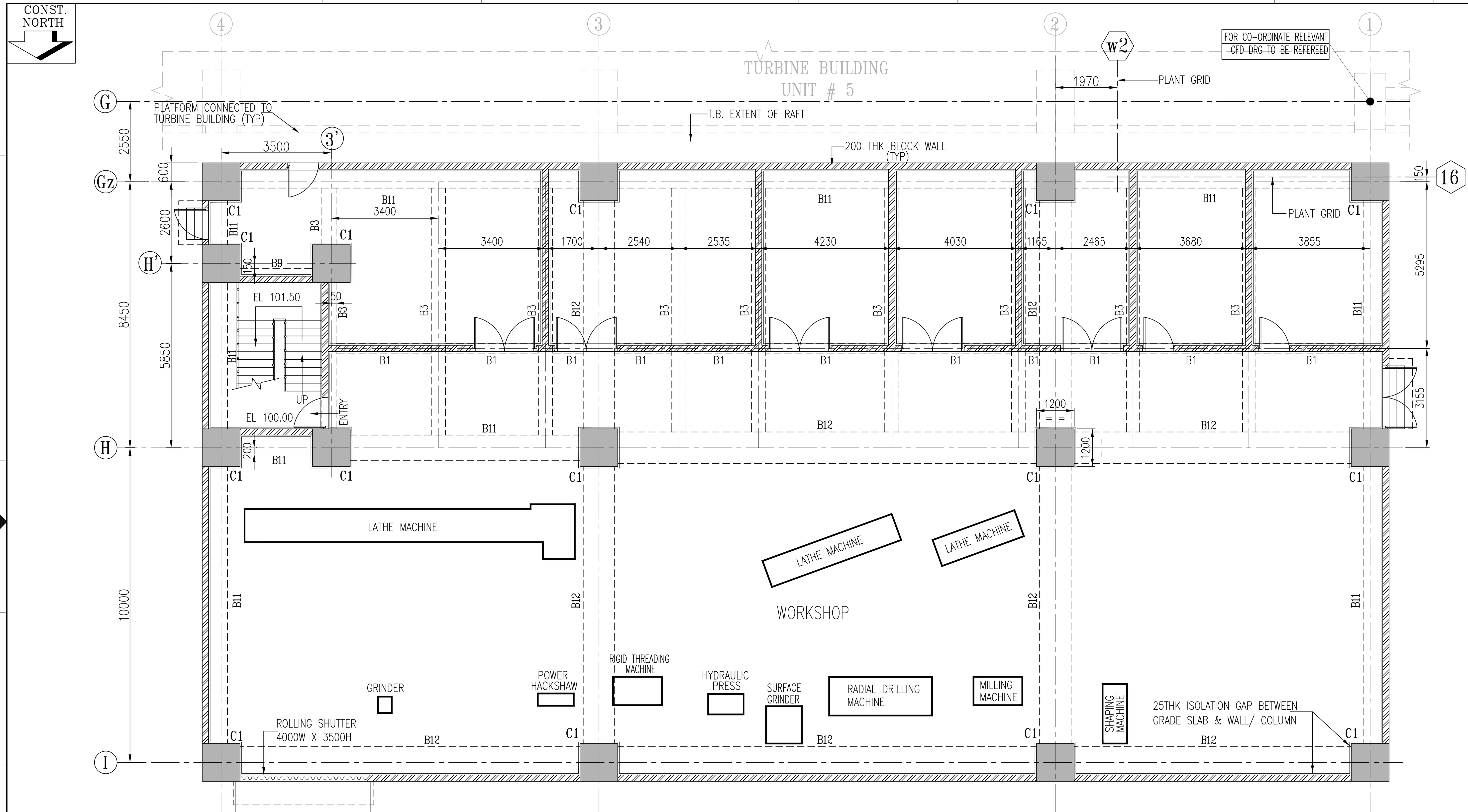
PROJECT: KAIGA-5&6
SCALE - 1 : 100
PROJECTION

DRG. No. KAIGA-5/22000/8027/GA
REV. No. R0
BHEL NO: PE-DG-488-645-C1001 (RA)
FILE NAME KAIGA-5/22000/8027/GA

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

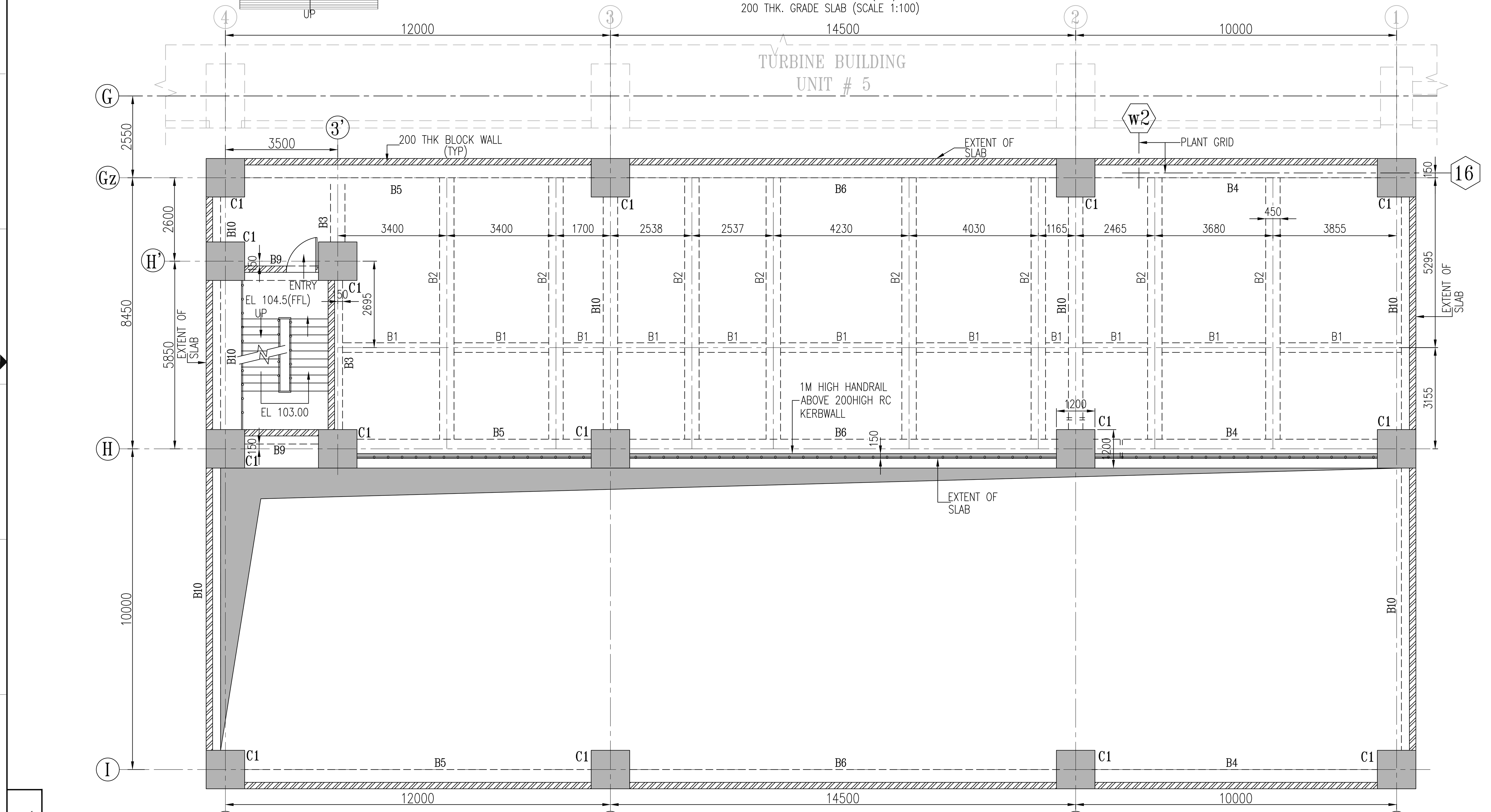
A1 DRG. No. KAIGA-5/22000/8027/GA

REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | DRAWING No. | REFERENCE DRAWINGS | DRAWING No.



PLAN AT EL 100.00

BEAMS ARE AT EL 99.200(TOC)
200 THK. GRADE SLAB (SCALE 1:100)



PLAN AT EL 104.500(FFL)

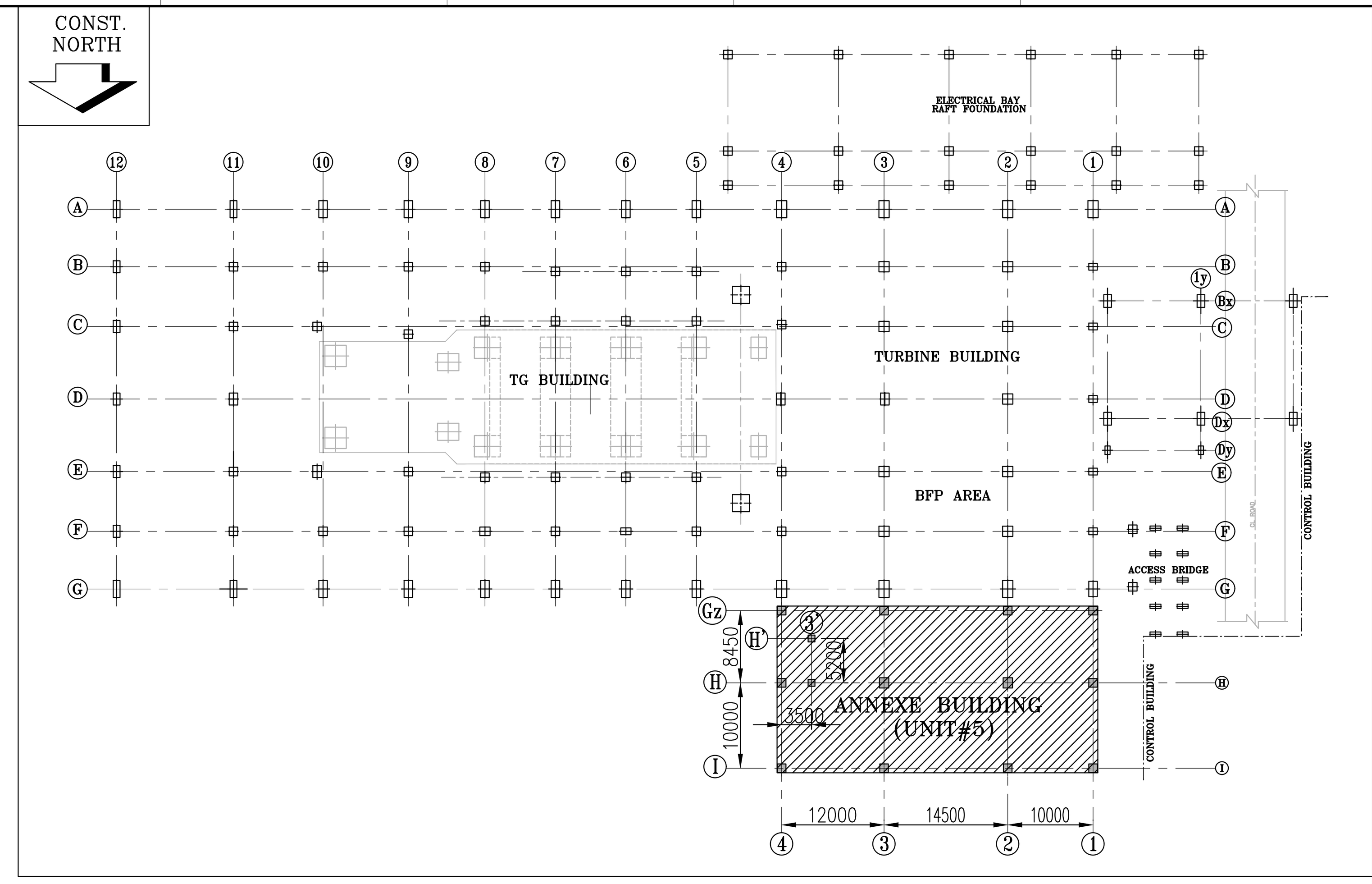
BEAMS ARE AT EL 104.460(TOC)
200 THK. SLAB (SCALE 1:100)

BEAM SCHEDULE

BEAM NO.	WIDTH	DEPTH
B1	300	600
B2	450	600
B3	450	900
B4	600	750
B5	600	1000
B6	600	1200
B9	450	1000
B10	450	1200
B11	800	1500
B12	1000	1500
B13	600	1650

COLUMN SCHEDULE

COLUMN MKD.	COLUMN SIZE	
	NORTH–SOUTH	EAST–WEST
C1	1200	1200



KEYPLAN

SCALE 1:700

FOR NOTES REFER DRAWING NO. :– KAIGA–5/22000/8027/GA

NOTE:–

1. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DESIGN.
2. EQUIPMENT PEDESTAL LOCATION & SIZES SHOWN ARE TENTATIVE AND WILL BE FINALIZED AFTER RECEIPT OF VENDOR DATA

TABLE–1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT–5 & 6	KAIGA–5&6/10000/2001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5&6)	KAIGA–5&6/22210/8001/DD
ANNEXE BUILDING– GA OF RAFT FOUNDATION (UNIT#5)	KAIGA–5/22000/8027/GA
ANNEXE BUILDING– GA OF FLOOR AT EL 110.00M (UNIT#5)	KAIGA–5/22000/8029/GA
ANNEXE BUILDING– GA OF FLOOR AT EL 118.00M (UNIT#5)	KAIGA–5/22000/8030/GA
ANNEXE BUILDING– GA OF FLOOR AT EL 122.50M (UNIT#5)	KAIGA–5/22000/8031/GA
ANNEXE BUILDING– GA OF ROOF AT EL 131.50M (UNIT#5)	KAIGA–5/22000/8032/GA
ANNEXE BUILDING– ARCH. FLOOR PLAN AT EL 100.00M (UNIT#5)	KAIGA–5/22670/8025/AL
ANNEXE BUILDING– ARCH. FLOOR PLAN AT EL 110.00M (UNIT#5)	KAIGA–5/22670/8026/AL
ANNEXE BUILDING– ARCH. FLOOR PLAN AT EL 119.00M (UNIT#5)	KAIGA–5/22670/8027/AL
ANNEXE BUILDING– ARCH. FLOOR PLAN AT EL 123.50M (UNIT#5)	KAIGA–5/22670/8028/AL
ANNEXE BUILDING– ARCH. FLOOR PLAN AT EL 131.50M (UNIT#5)	KAIGA–5/22670/8029/AL

LEGEND:–

TOC : TOP OF CONCRETE
TYP : TYPICAL
EL : ELEVATION
DRG : DRAWING
THK. : THICK
CX : COLUMN NUMBER
BXX : BEAM NUMBER
NOS. : NUMBER
GA : GENERAL ARRANGEMENT
FFL : FINISHED FLOOR LEVEL
W : WIDE
H : HIGH
DX : DOOR NUMBER
AL : ARCHITECTURAL

: CONCRETE
: 200 THK. BLOCK WALL

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :–
ALL DIMENSIONS ARE IN mm.

R0 FOR CONSTRUCTION

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA

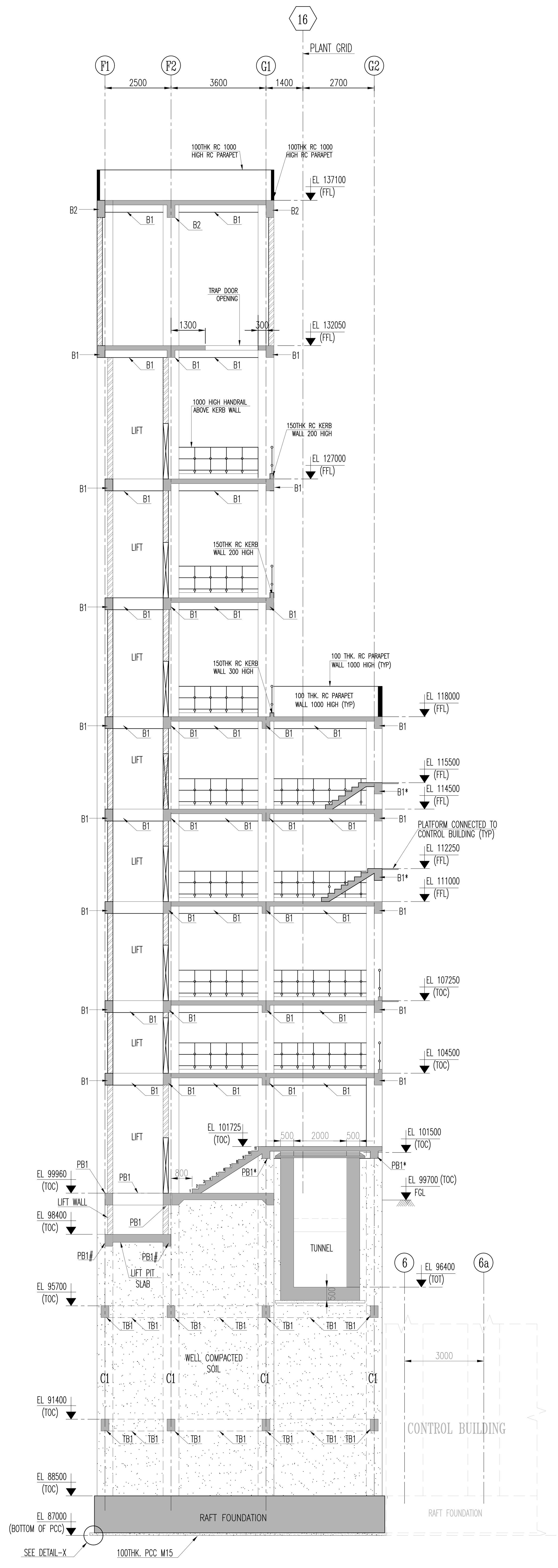
KAIGA ATOMIC POWER PROJECT–5&6
ANNEXE BUILDING (UNIT#5)
G.A. OF FLOOR AT EL(+)100.00M & EL(+)104.50M

PROJECT: KAIGA–5&6

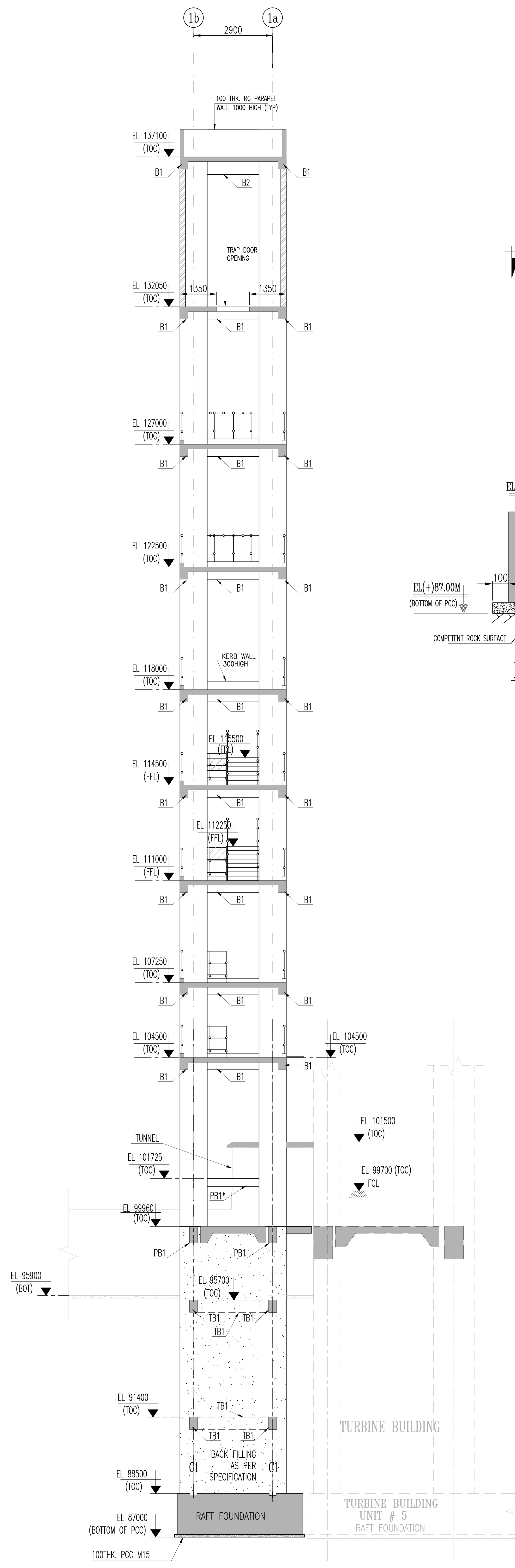
SCALE – 1 : 100

DRG. No. KAIGA–5/22000/8028/GA

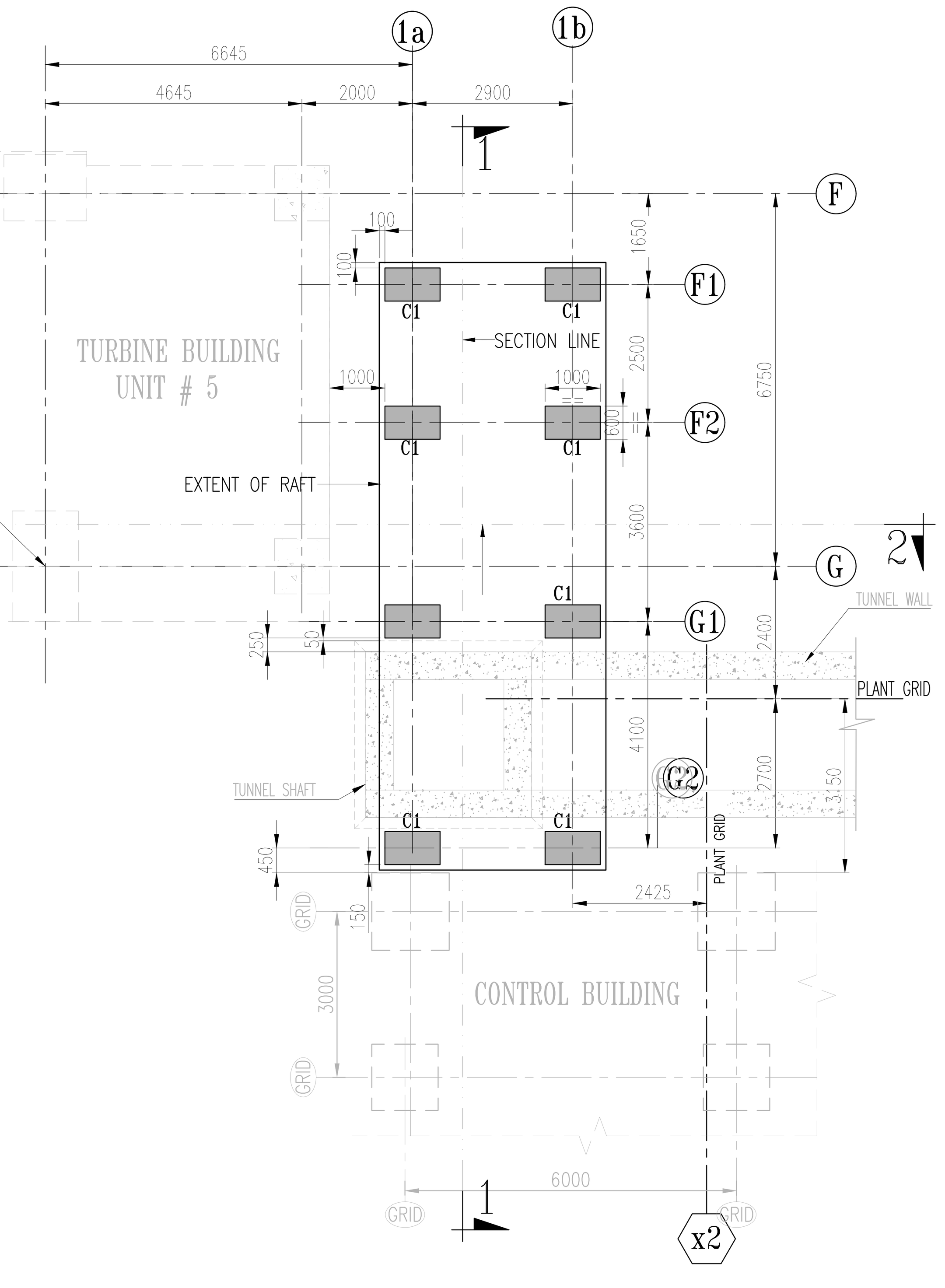
REV. No. R0



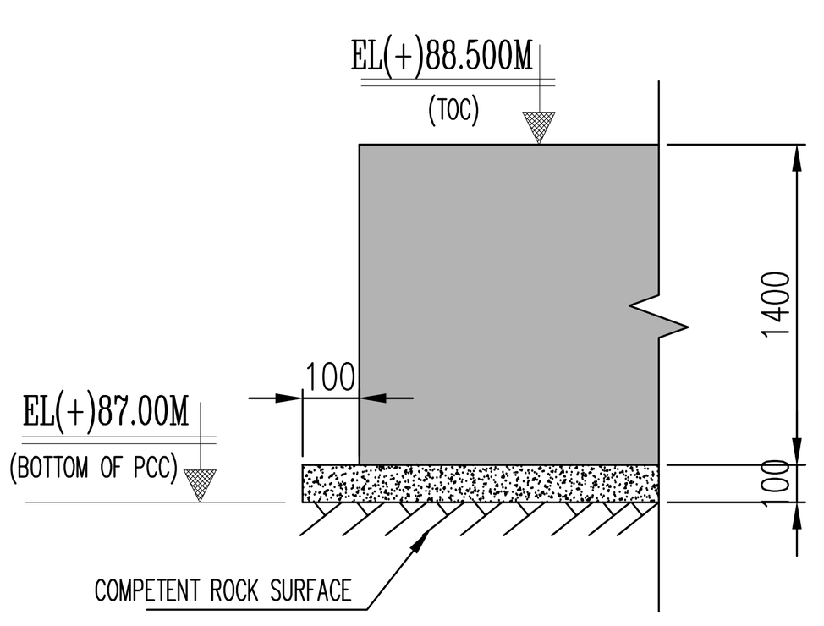
SECTION 1-1
(SCALE 1:100)



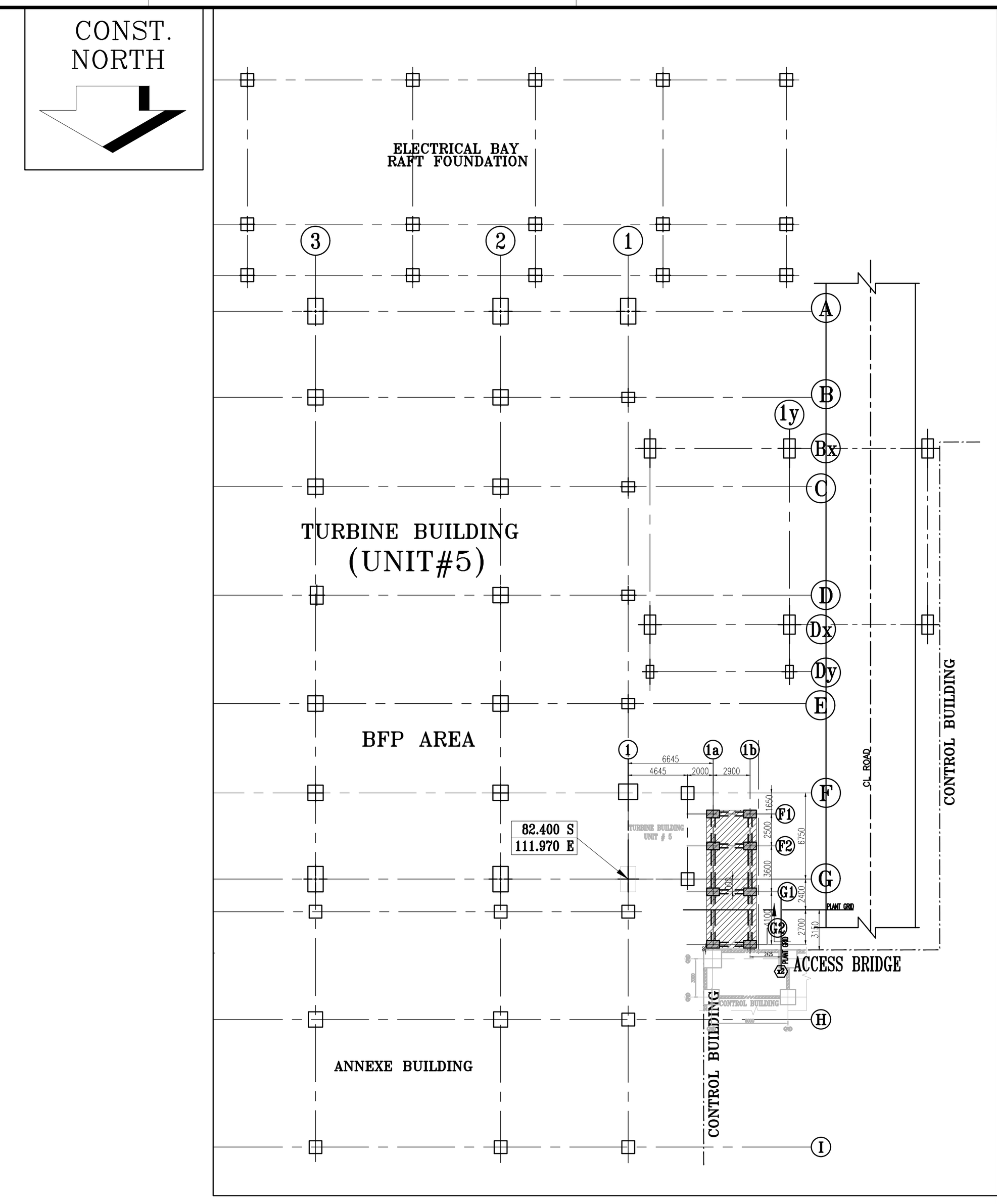
SECTION 2-2
(SCALE 1:100)



PLAN AT EL 88500(TOC)
(SCALE 1:100)



DETAIL: X



KEYPLAN
(SCALE 1:500)

NOTES:-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN MM AND CO-ORDINATES ARE IN M UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100 M WHICH CORRESPONDS TO RL 42.80M.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE Fe 500 CONFORMING TO IS:1786.
5. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DESIGN.

LEGEND:-

TOC : TOP OF CONCRETE
BOC : BOTTOM OF CONCRETE
CJ : CONSTRUCTION JOINT
TYP : TYPICAL
EL : ELEVATION
DRG : DRAWING
THK. : THICK

(solid black fill) : CONCRETE
PCC : PLAIN CEMENT CONCRETE
GA : GENERAL ARRANGEMENT
Cx : COLUMN NUMBER
BOT : BOTTOM OF TUNNEL RAFT
TOT : TOP OF TUNNEL RAFT

TABLE-1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6-10000-2001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5&6)	KAIGA-5&6/22210/8001/DD
ACCESS BRIDGE - GA OF FLOORS (UNIT#5)	KAIGA-5/22000/8043/GA
TURBINE BUILDING - GA OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8016/GA
TURBINE BUILDING - GA OF LONGITUDINAL SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING - GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA

BEAM SCHEDULE

BEAM NO.	WIDTH	DEPTH
TB1	300	450
PB1	300	450
B1	300	450
B2	300	600

COLUMN SCHEDULE

COLUMN MKD.	COLUMN SIZE	
	NORTH-SOUTH	EAST-WEST
C1	600	1000

RAFT THICKNESS

RAFT	1500

REV. NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPCIL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15/0.40 X 45°
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15/0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°-30'

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	(signature) 27.02.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

OWNER
NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR:
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6
ACCESS BRIDGE - GA OF FOUNDATION (UNIT#5)

DES'D. A.KHANUJA DATE - 15.02.2024	DR'N. M.KUMAR DATE - 15.02.2024	REV'D. S.MISHRA DATE - 26.02.2024	
DES. CHK'D. S.MISHRA DATE - 17.02.2024	DRG. CHK'D. A.KHANUJA DATE - 15.02.2024	APP'D. A.KUMAR 27.02.2024	

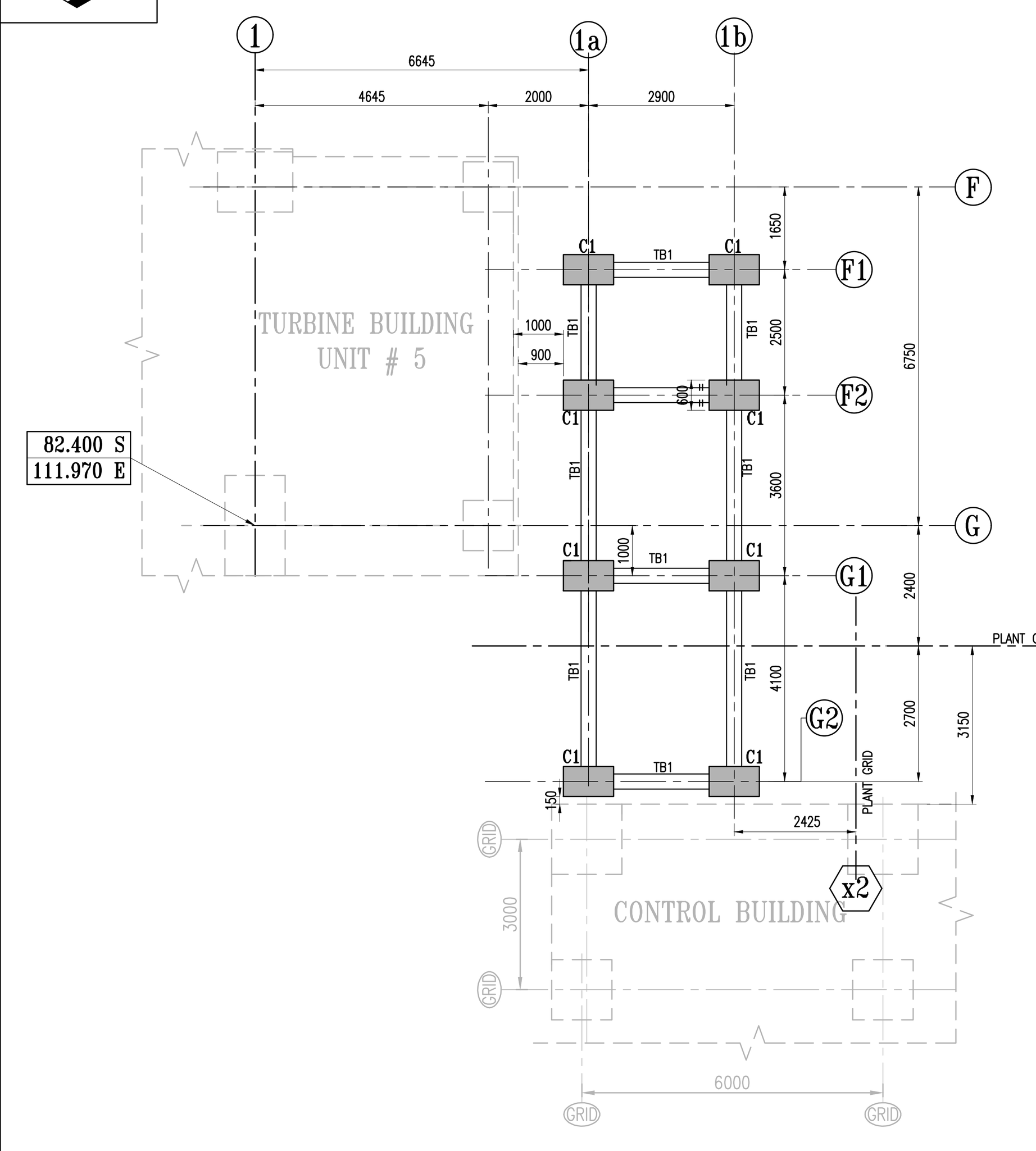
PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE -
PROJECTION

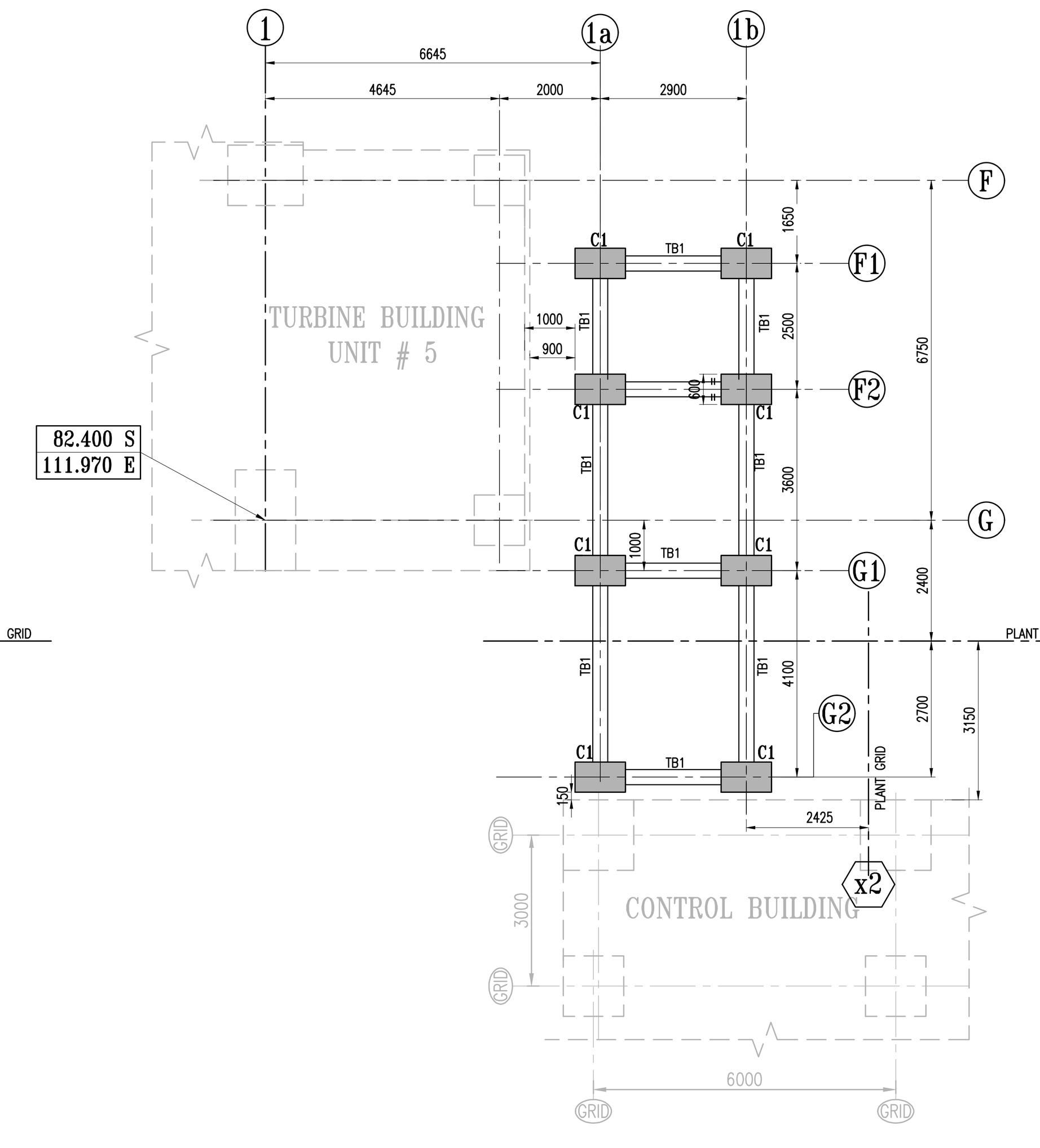
DRG. No. KAIGA-5/22000/8042/GA
REV. No. R0
BHEL NO: PE-DG-488-675-C1006_RA
FILE NAME: KAIGA_5_22000_8042_GA

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

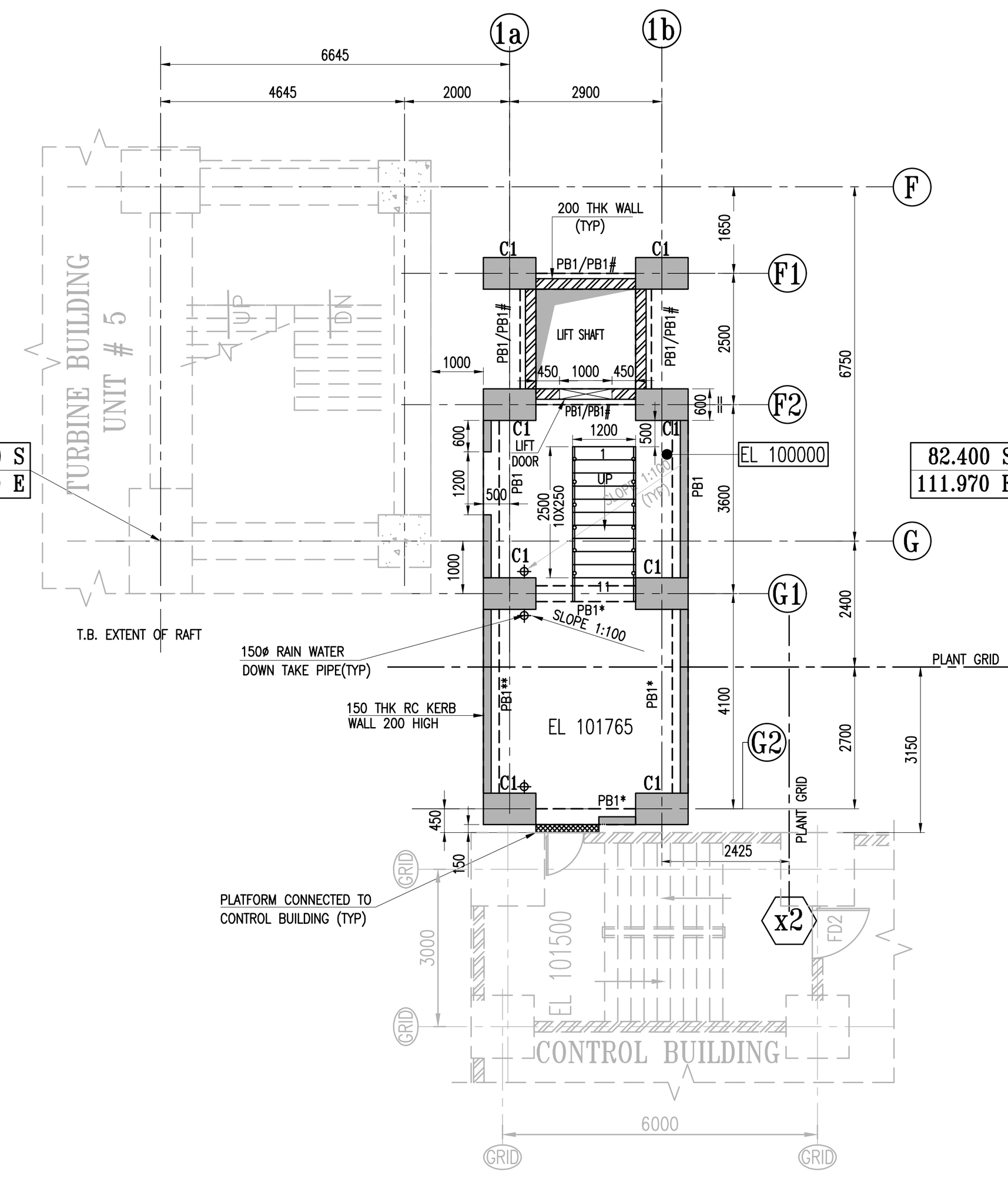
A1 DRG. No. KAIGA-5/22000/8042/GA



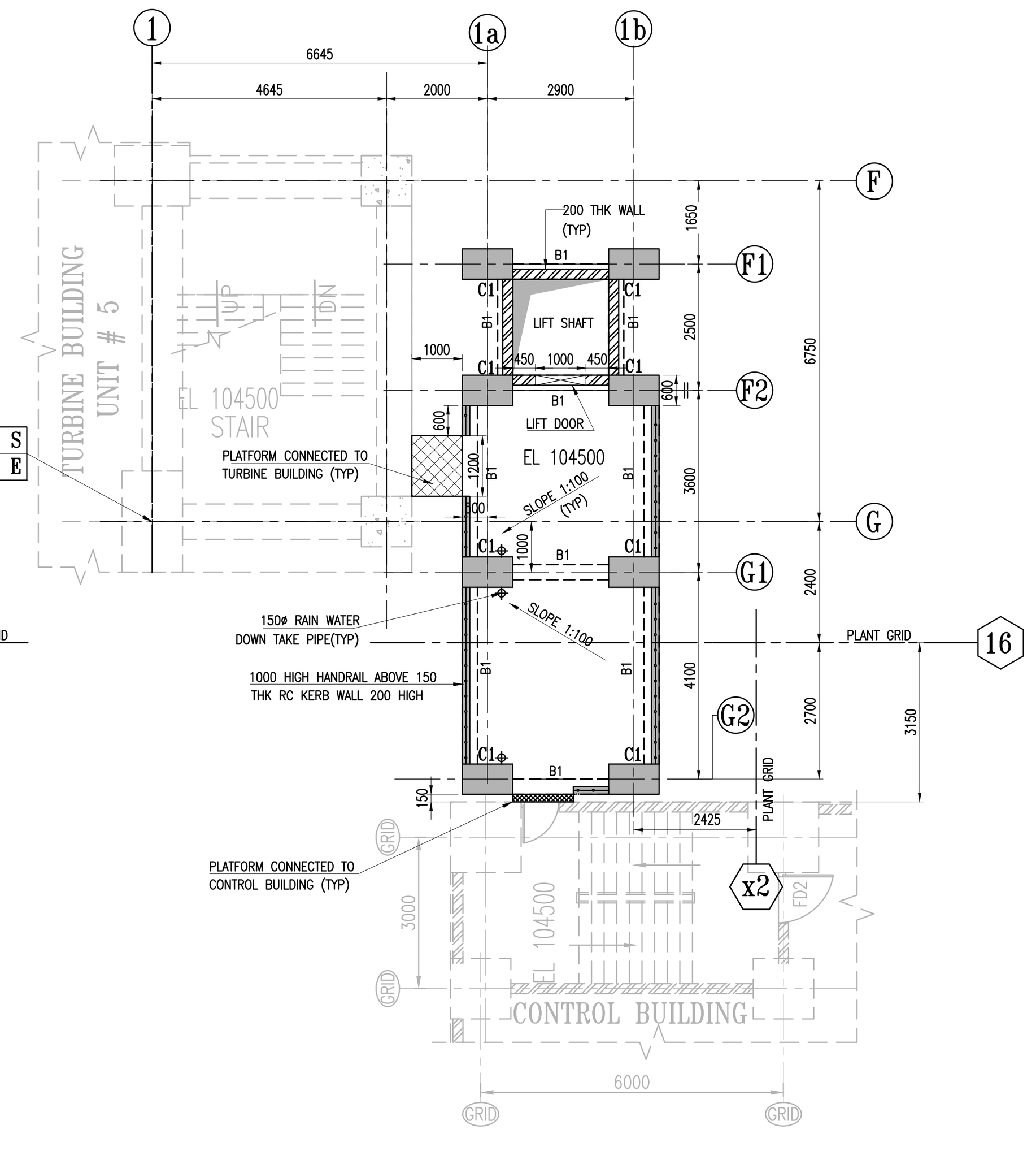
PLAN AT EL 91400(TOC)
(SCALE 1:100)



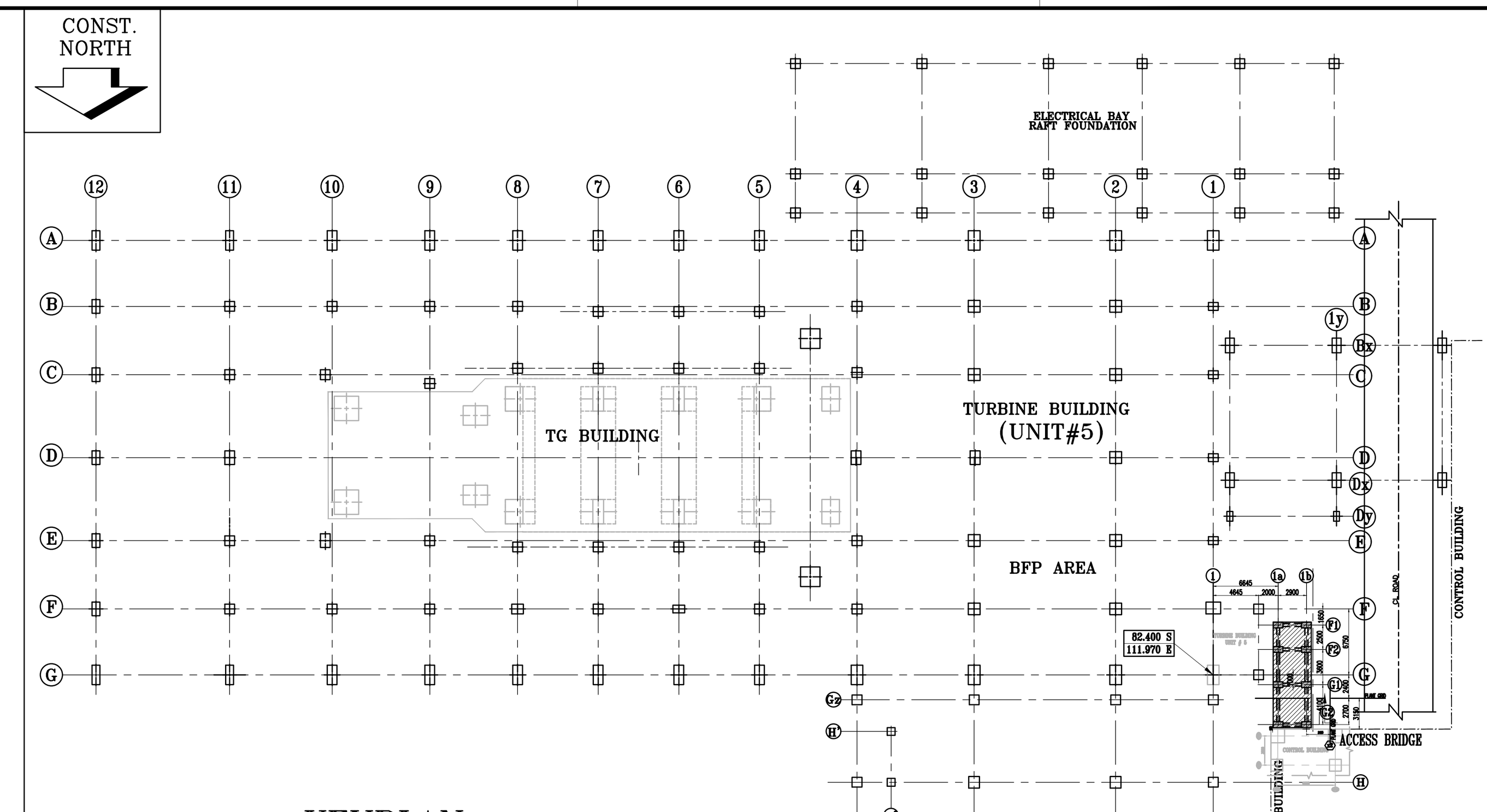
PLAN AT EL 95700(TOC)
(SCALE 1:100)



PLAN AT EL 100000(FFL)
BEAMS & GRADE SLAB ARE AT EL 99960(TOC)
PB1 AT EL 99960
PB1# AT EL 98400
PB1* AT EL 101725
PB1** AT EL 102000
175 THK. SLAB
(SCALE 1:100)



PLAN AT EL 104500
BEAMS & SLAB ARE AT EL 104460(TOC)
175 THK. SLAB
(SCALE 1:100)



KEYPLAN
(SCALE 1:500)

NOTES:-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN MM AND CO-ORDINATES ARE IN M UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100 M WHICH CORRESPONDS TO RL 42.80M.
3. ALL STRUCTURAL CONCRETE SHAL BE DESIGN MIX CONC. OF GRADE M35 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.

BEAM SCHEDULE

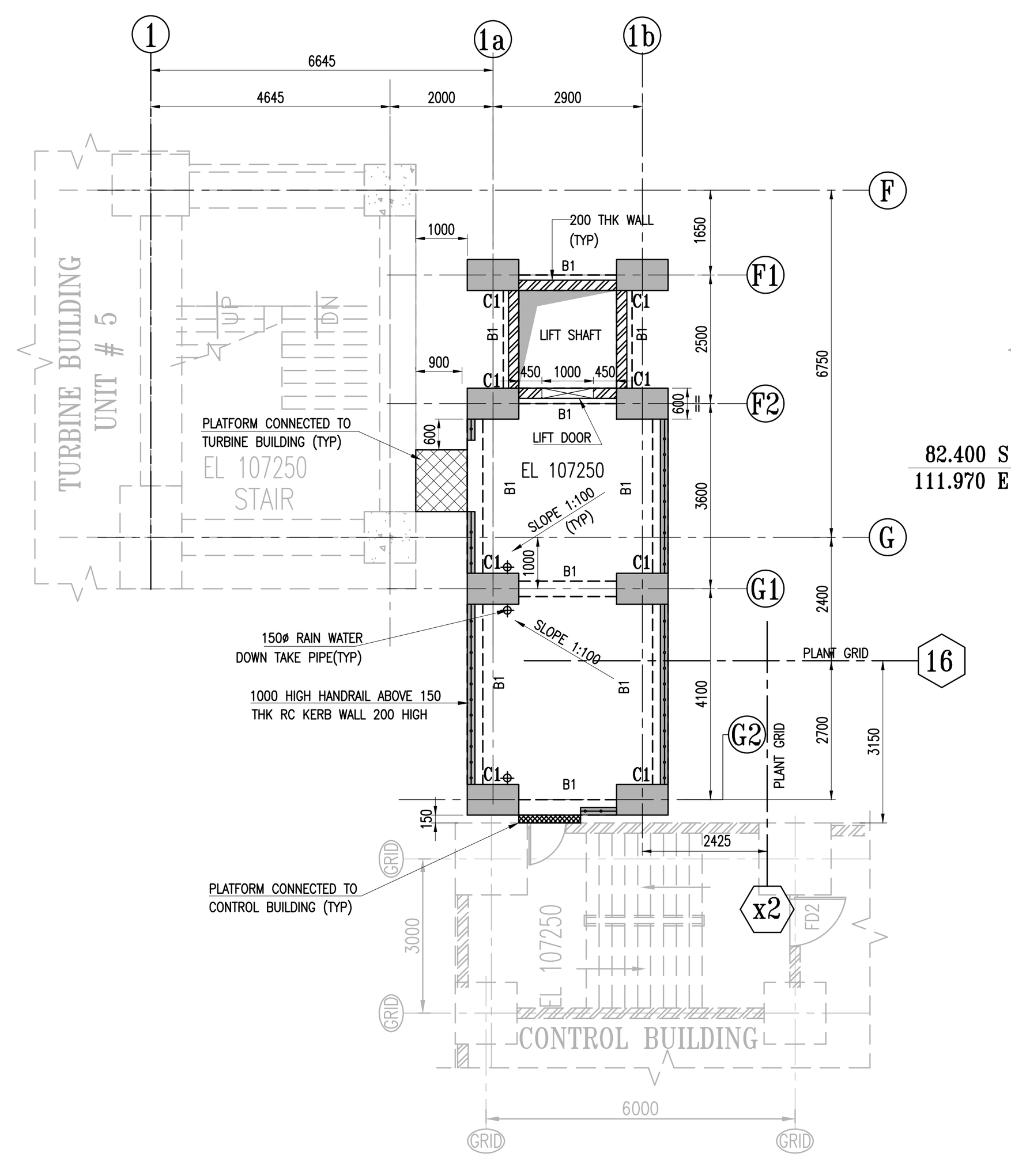
BEAM NO.	WIDTH	DEPTH
TB1	300	450
PB1	300	450
B1	300	450
B2	300	600

COLUMN SCHEDULE

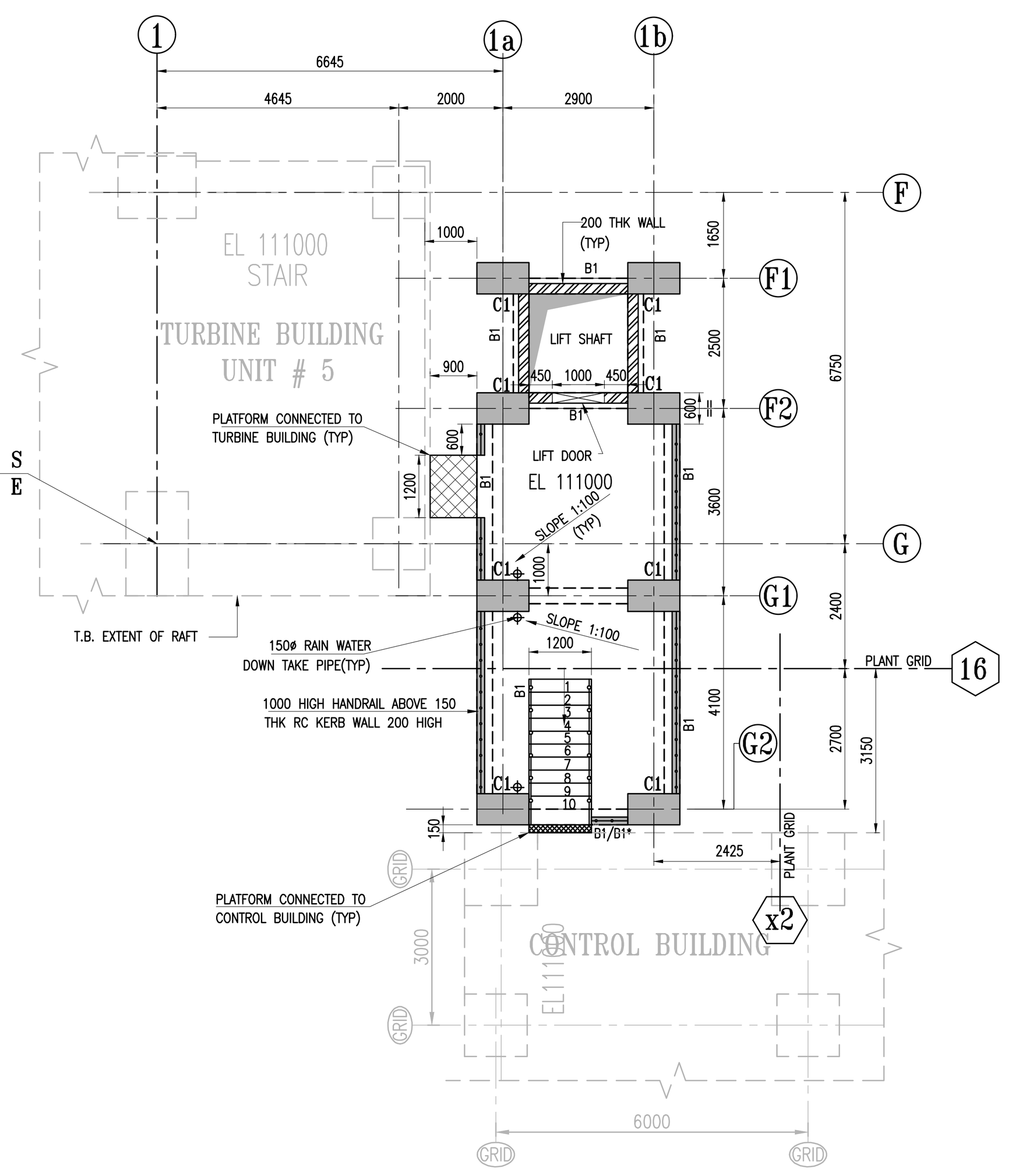
COLUMN MKD.	COLUMN SIZE	
	NORTH-SOUTH	EAST-WEST
C1	600	1000

TABLE-1

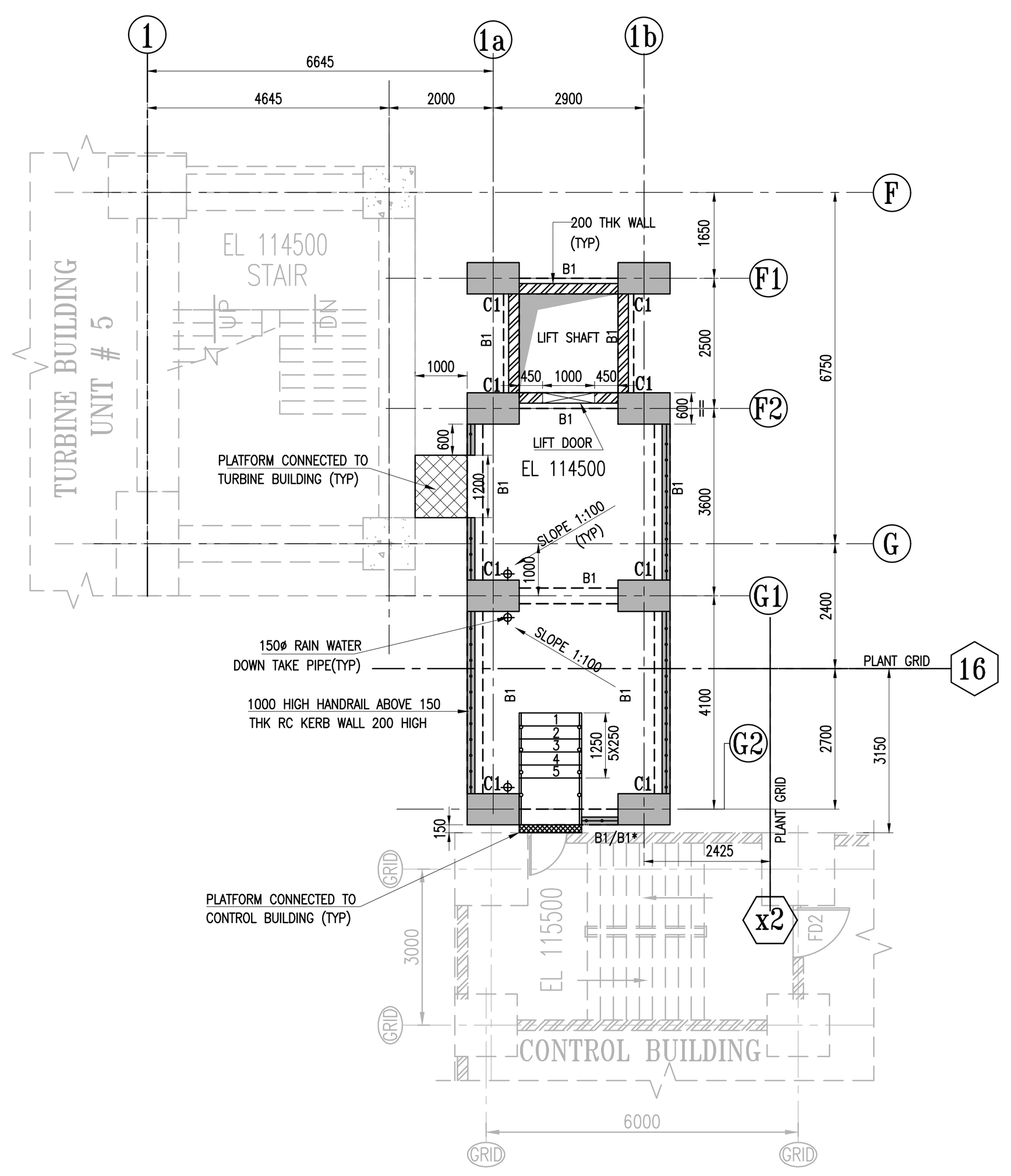
ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6-10000-2001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5&6)	KAIGA-5&6/22210/8001/DD
ACCESS BRIDGE - GA OF FOUNDATION (UNIT#5)	KAIGA-5/22000/8042/GA
TURBINE BUILDING - GA OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8016/GA
TURBINE BUILDING - GA OF LONGITUDINAL SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING - GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA



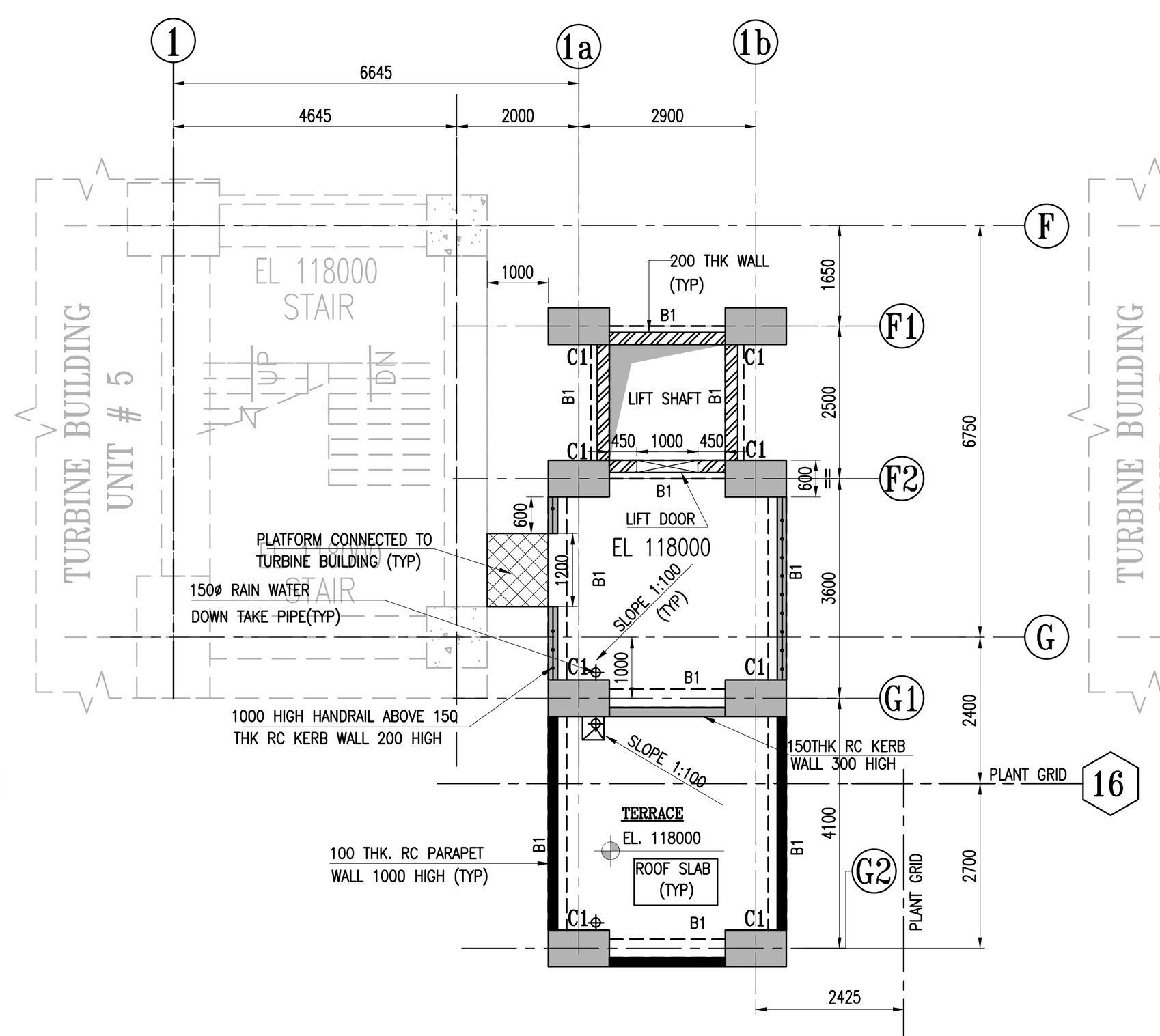
PLAN AT EL 107250
BEAMS & SLAB ARE AT EL 107210(TOC)
175 THK. SLAB
(SCALE 1:100)



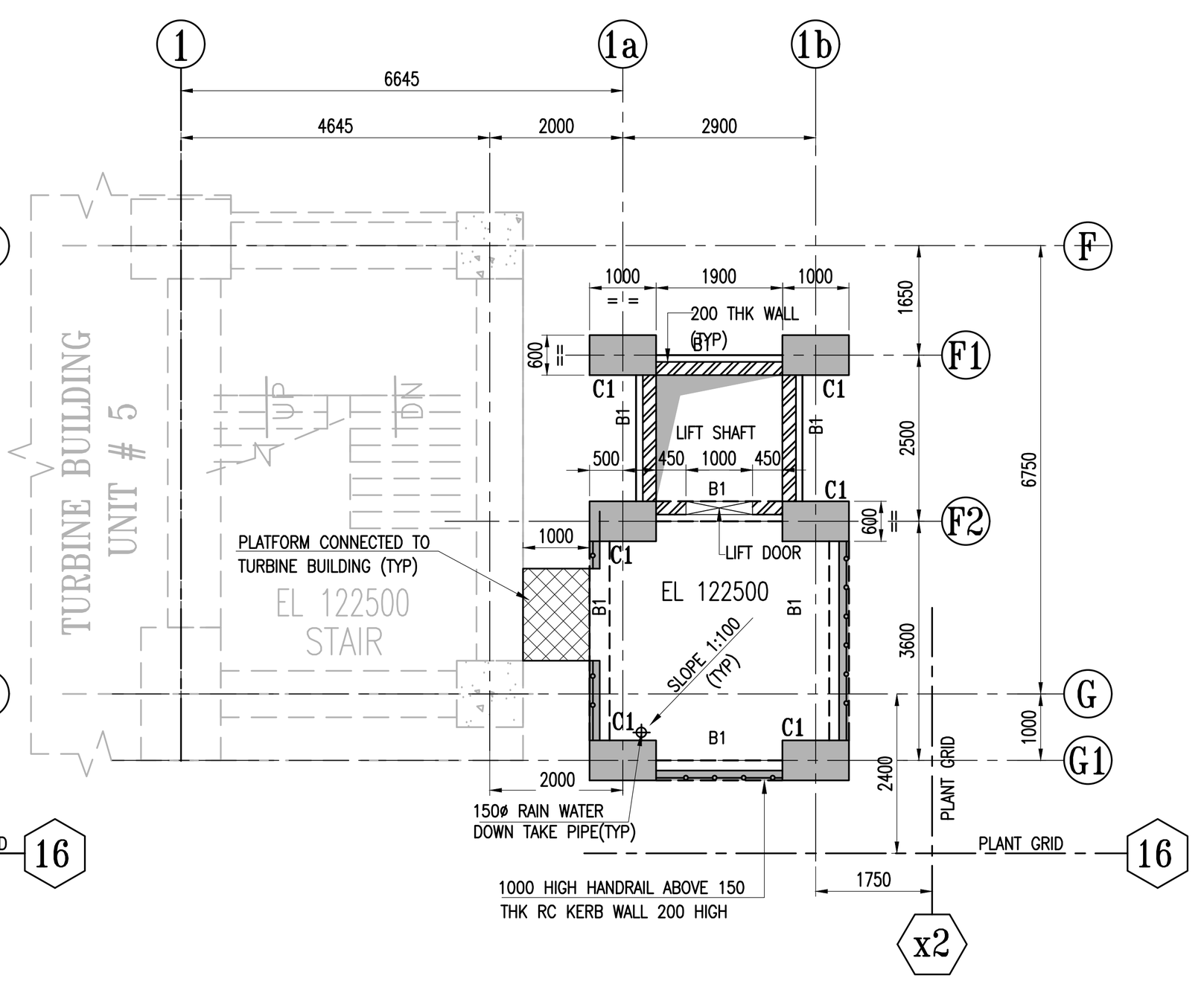
PLAN AT EL 111000(FFL)
BEAMS & GRADE SLAB ARE AT EL 110960(TOC)
B1 AT EL 110960 & B1* AT EL 112210
175 THK. SLAB
(SCALE 1:100)



PLAN AT EL 114500
BEAMS & SLAB ARE AT EL 114460(TOC)
175 THK. SLAB
B1 AT EL 114460 & B1* AT EL 115460
(SCALE 1:100)



PLAN AT EL 118000
BEAMS & SLAB ARE AT EL 117960(TOC)
175 THK. SLAB
(SCALE 1:100)



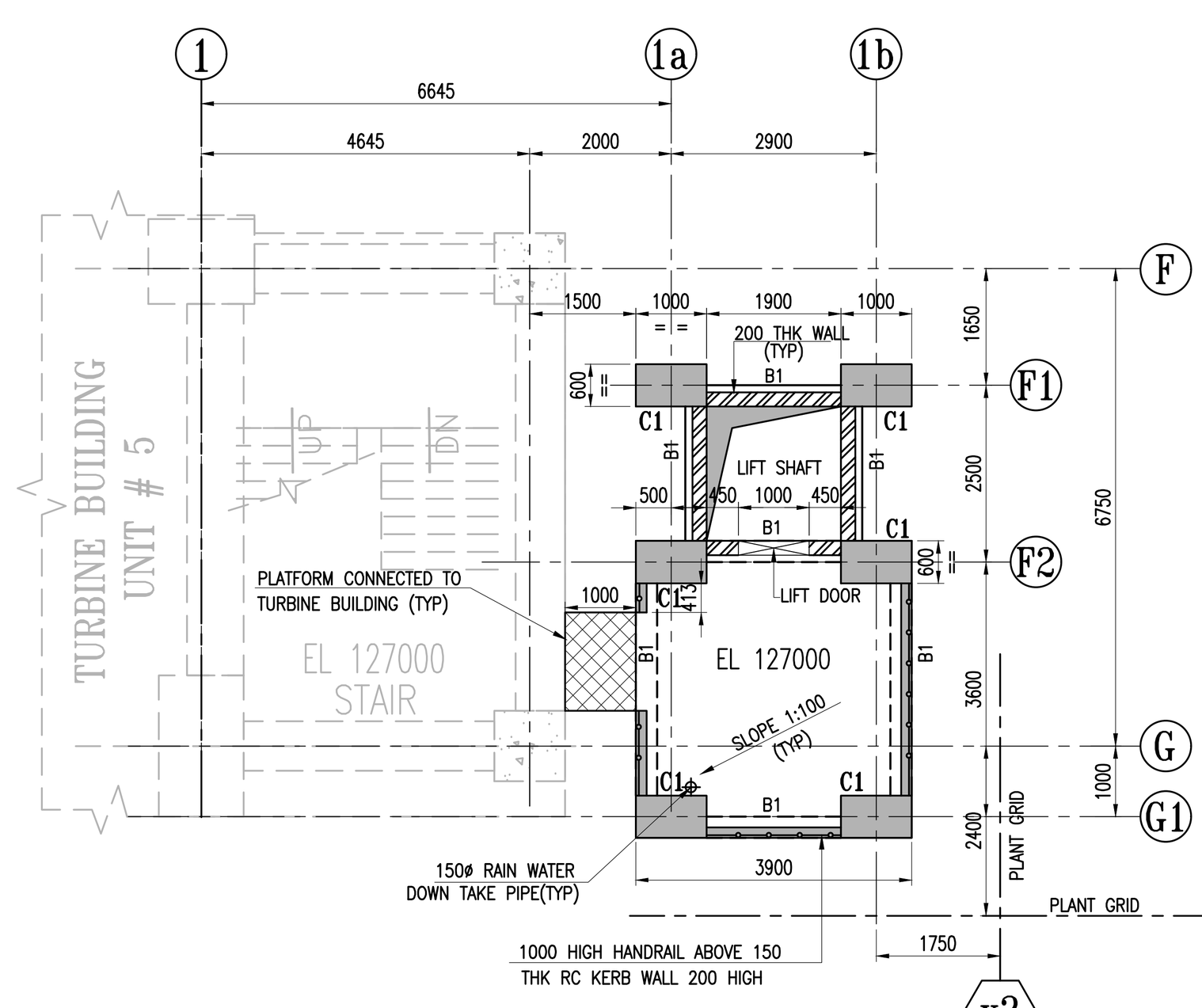
PLAN AT EL 122500
BEAMS & SLAB ARE AT EL 122460(TOC)
175 THK. SLAB
(SCALE 1:100)

LEGEND:-

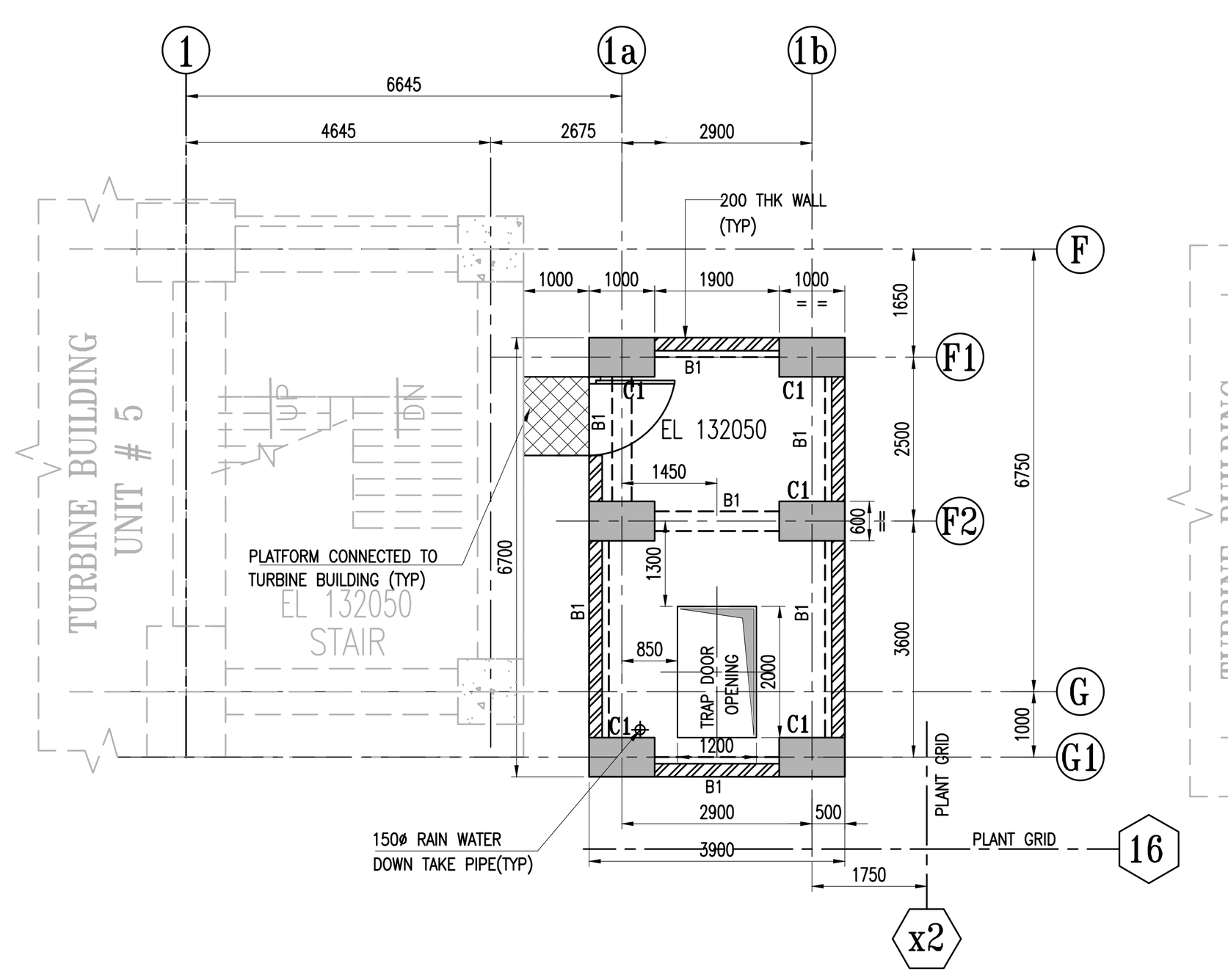
TOC : TOP OF CONCRETE	(shaded) : CONCRETE
BOC : BOTTOM OF CONCRETE	(hatched) : 200 THK. WALL
CJ : CONSTRUCTION JOINT	GA : GENERAL ARRANGEMENT
TYP : TYPICAL	Cx : COLUMN NUMBER
EL : ELEVATION	Bx : BEAM NUMBER
DRG : DRAWING	
THK. : THICK	

NOTE:-

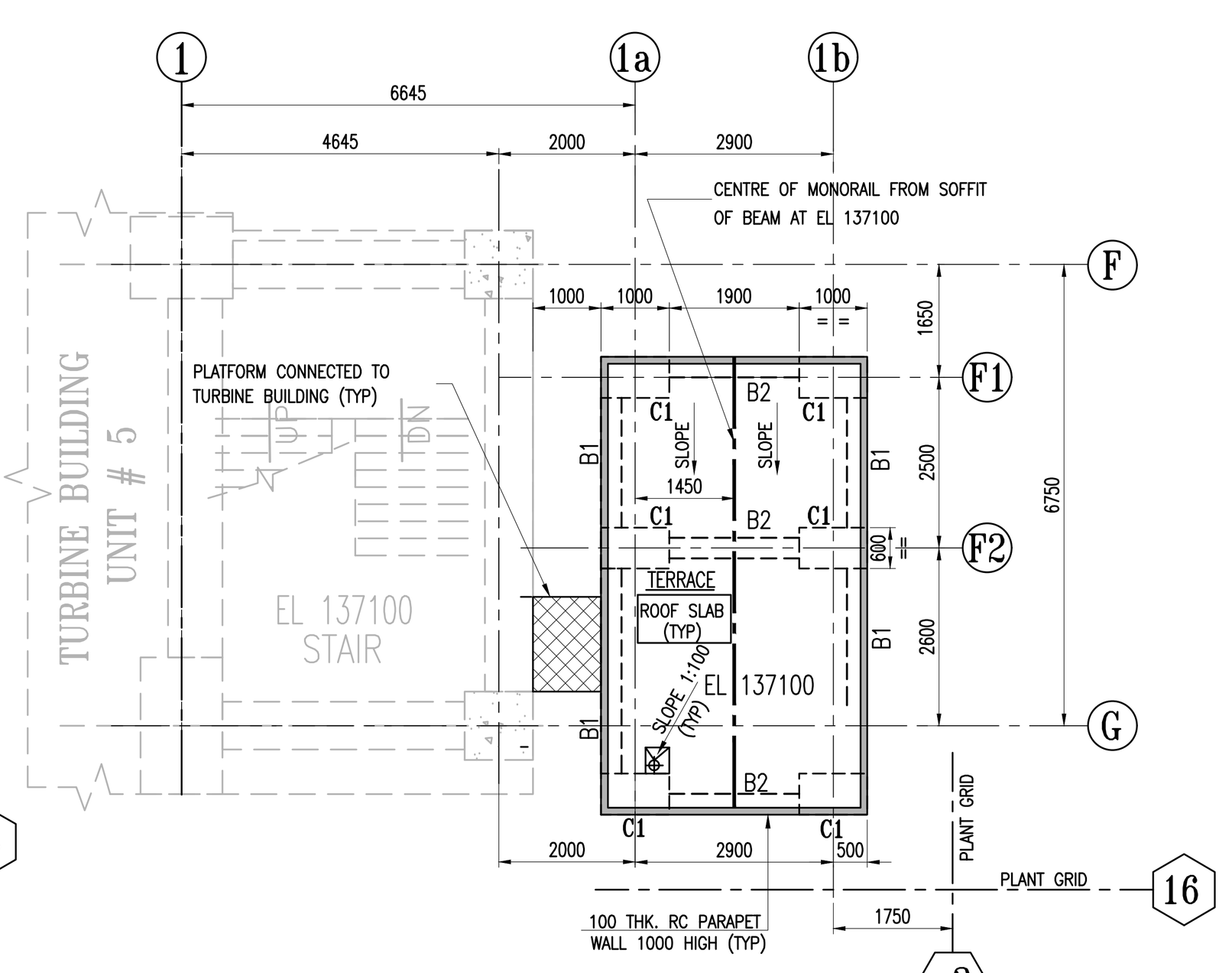
1. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DESIGN.



PLAN AT EL 127000
BEAMS & SLAB ARE AT EL 126960(TOC)
175 THK. SLAB
(SCALE 1:100)



PLAN AT EL 132050
BEAMS & SLAB ARE AT EL 132010(TOC)
175 THK. SLAB
(SCALE 1:100)



PLAN AT EL 137100
BEAMS & SLAB ARE AT EL 137060(TOC)
175 THK. SLAB
(SCALE 1:100)

REV. NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4
NPICL'S SYSTEM CLEARANCE				

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15 / 0.40 X 45°
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15 / 0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
X.X	±
XX.X	±
X.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°-30'

REV. No.	DESCRIPTION	SIGNATURE WITH DATE BHEL	NPCIL
R0	FOR INFORMATION	19.02.2024	

DRAWING ISSUED FOR

OWNER
NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR:
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :-
KAIGA ATOMIC POWER PROJECT-5&6
ACCESS BRIDGE - GA OF FLOORS (UNIT#5)

DES'D. A.KHANUJA DATE - 14.02.2024	DR'N. M.KUMAR DATE - 13.02.2024	REV'D. S.MISHRA DATE - 19.02.2024
DES. CHK'D. S.MISHRA DATE - 17.02.2024	DRG. CHK'D. A.KHANUJA DATE - 14.02.2024	APP'D. A.KUMAR 19.02.2024

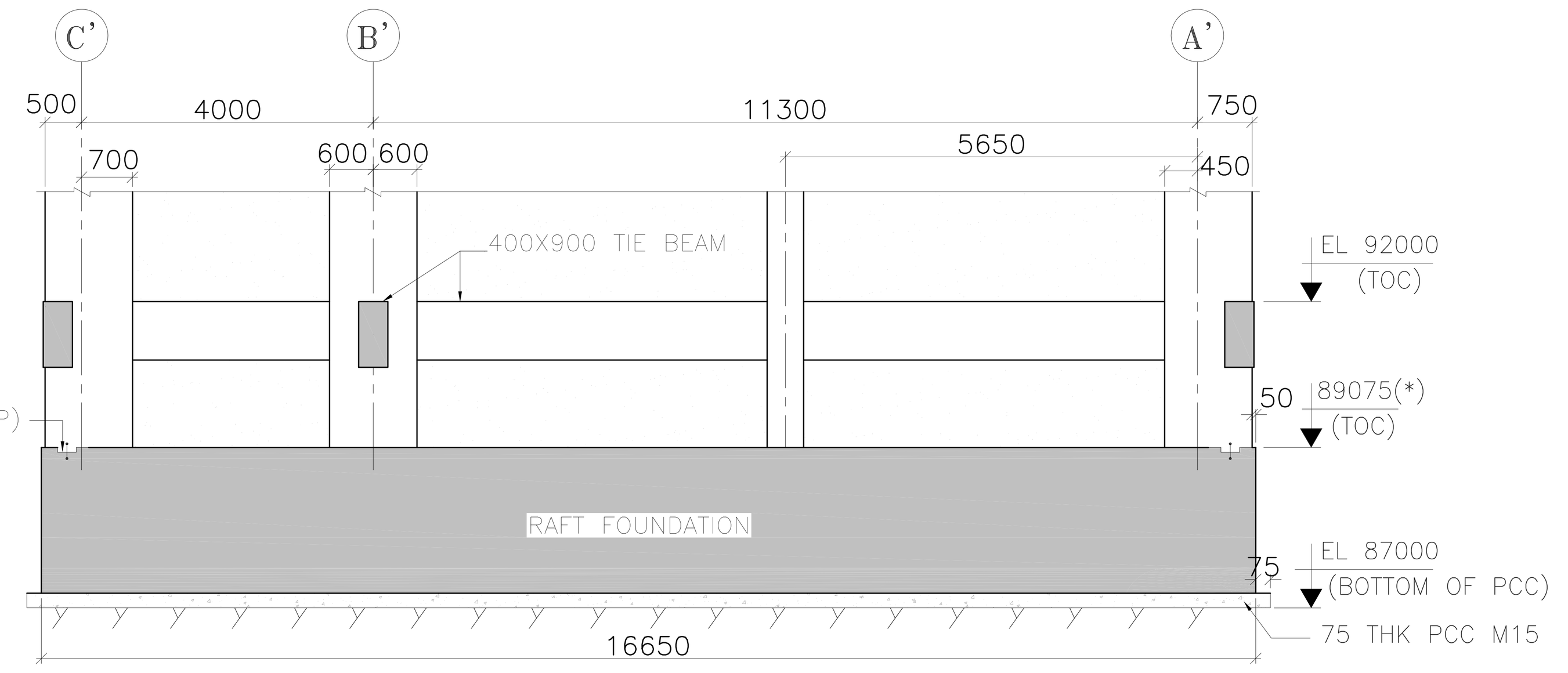
PROJECT:
2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE -
PROJECTION

DRG. No. KAIGA-5/22000/8043/GA
REV. No. R0
BHEL DRG NO: PE-DG-488-675-C1007_RA
FILE NAME: KAIGA_5_22000_8043_GA

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

A1 DRG. No. KAIGA-5/22000/8043/GA

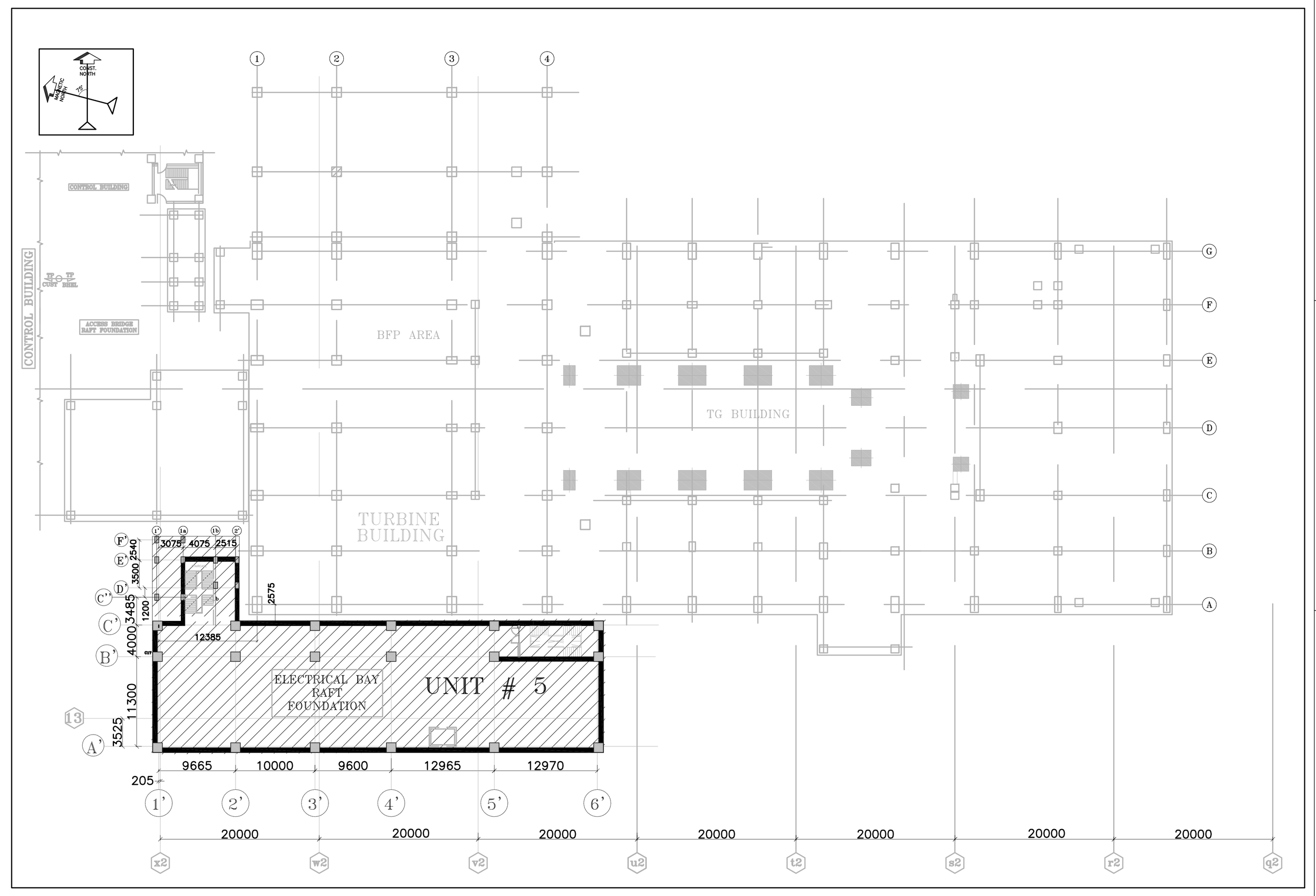


(*) TO BE FINALIZED DURING DETAILED ENGINEERING BASED ON DETAILED ANALYSIS AND DESIGN.

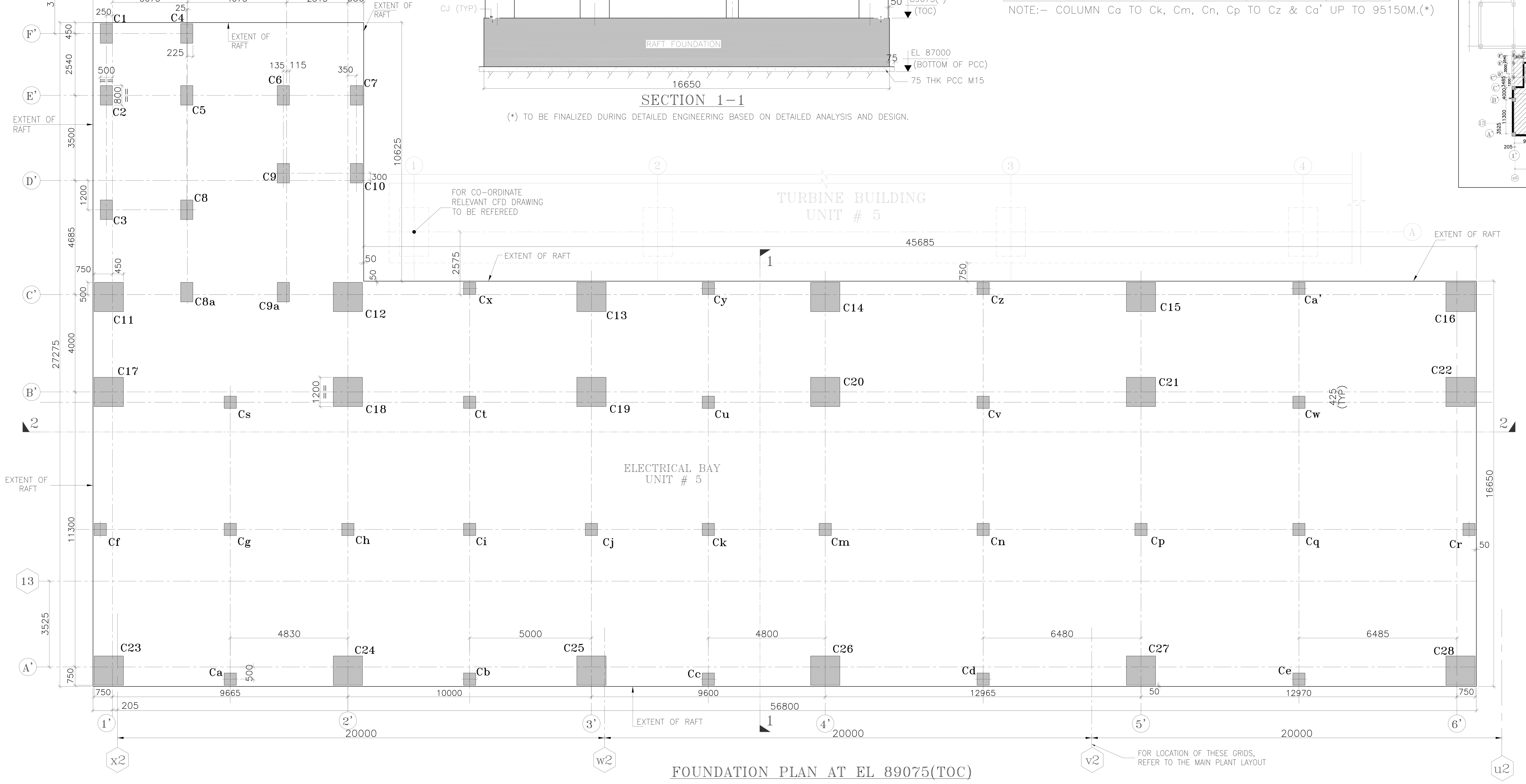
COLUMN SCHEDULE

COLUMN MKD.	COLUMN SIZE	
	NORTH-SOUTH	EAST-WEST
C1 TO C10	800	500
C11 TO C28	1200	1200
Ca TO Ck, Cm, Cn, Cp TO Cz & Ca'	500	500

NOTE:- COLUMN Ca TO Ck, Cm, Cn, Cp TO Cz & Ca' UP TO 95150M.(*)



KEY PLAN



FOUNDATION PLAN AT EL 89075(TOC)

NOTES:-

1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL. 100 WHICH CORRESPONDS TO RL 42.80M AS PER NPCIL REQUEST VIA LETTER NO. CMM/ETM/00-40-11-0005 DATED 25 OCT. 2023.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 AS PER IS : 456 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE Fe 500 CONFORMING TO IS:1786.
5. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.
6. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DETAILED ANALYSIS AND DESIGN OF THE BUILDING.

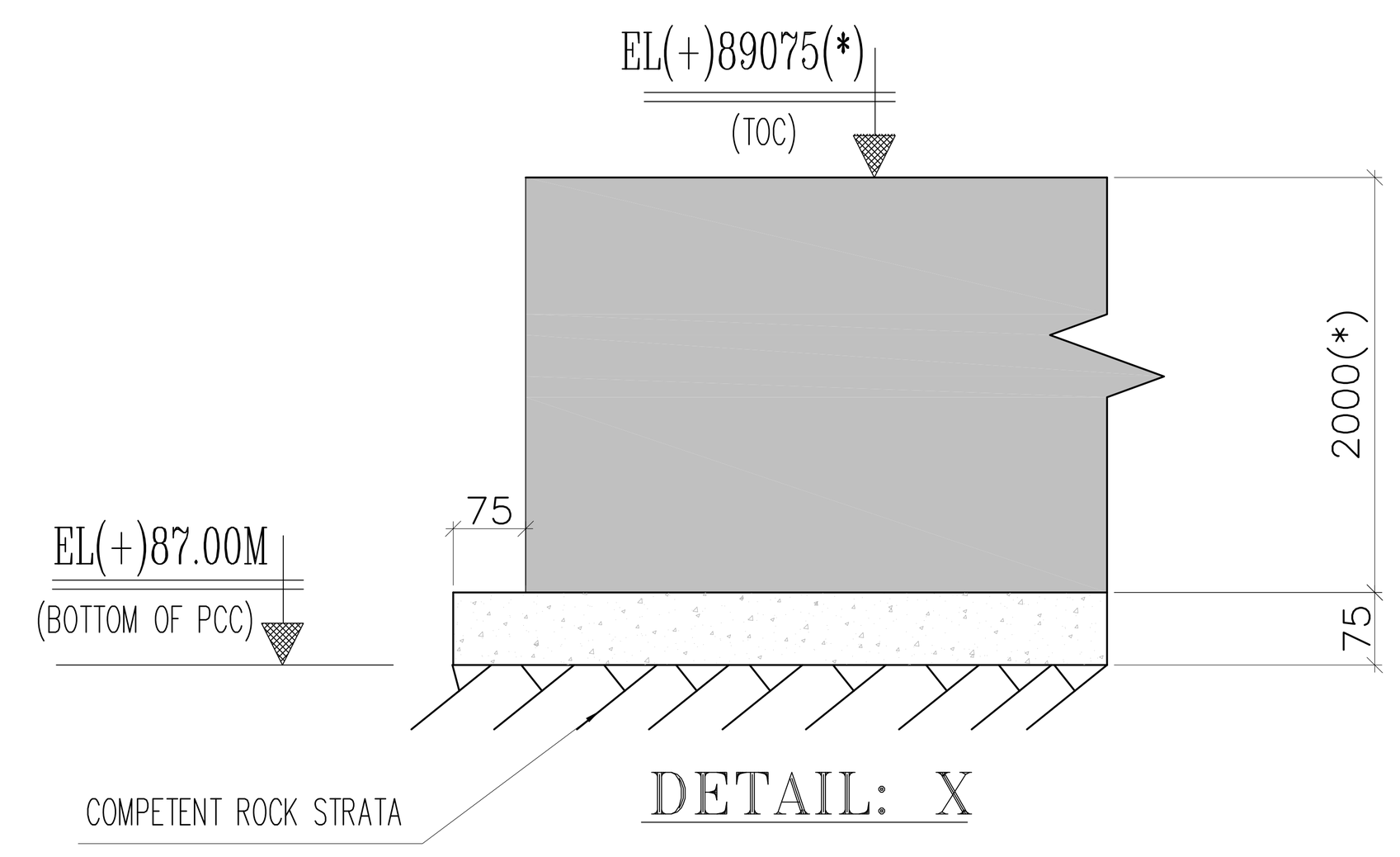
TABLE-1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS	KAIGA-5&6/22210/8001/DD

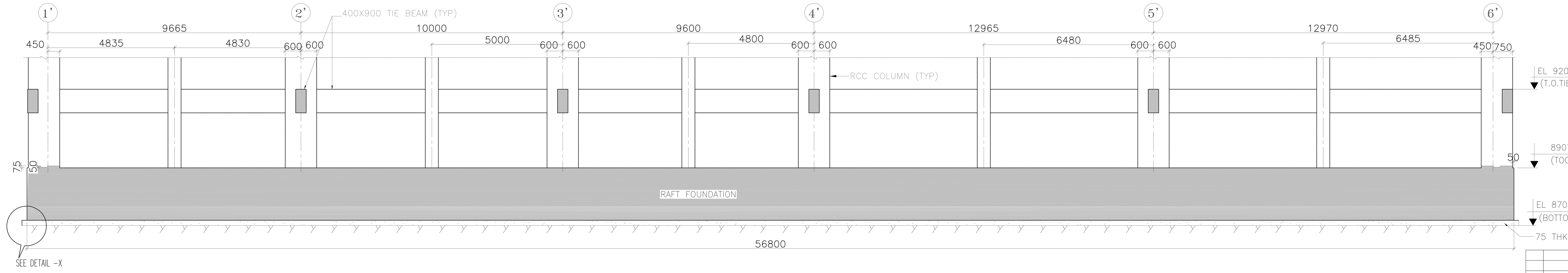
LEGEND:-

- TOC : TOP OF CONCRETE
- BOC : BOTTOM OF CONCRETE
- CJ : CONSTRUCTION JOINT
- TYP : TYPICAL
- EL : ELEVATION
- DRG : DRAWING
- THK. : THICK

COLUMN/RAFT; TIE BEAM; 75 THK. PCC; COMPETENT ROCK STRATA; WELL COMPACTED EARTH AS PER SPECIFICATION



DETAIL: X



SECTION 2-2

(*) TO BE FINALIZED DURING DETAILED ENGINEERING BASED ON DETAILED ANALYSIS AND DESIGN.

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 2 OF 2 OF THIS DRAWING

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	16.01.2024	

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
ELECTRICAL BAY BUILDING
GA OF FOUNDATION (UNIT#5)

DES'D. V.SHARMA DATE 11.08.2023	DR'N. S.NAIN DATE 16.08.2023	REV'D. S.MISHRA DATE 16.08.2023
DES. CHK'D. A.KAPOOR DATE 16.08.2023	DRG. CHK'D. V.SHARMA DATE 16.08.2023	APP'D. A.KUMAR DATE 16.08.2023

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS
PROJECTION

NPCIL DRG. No. KAIGA-5/22000/8008/GA
SHEET 1 OF 2
REV. No. R0
BHEL DRG NO: PE-DG-488-619-C1001_(RB)
FILE NAME: KAIGA_5_22000_8008_GA

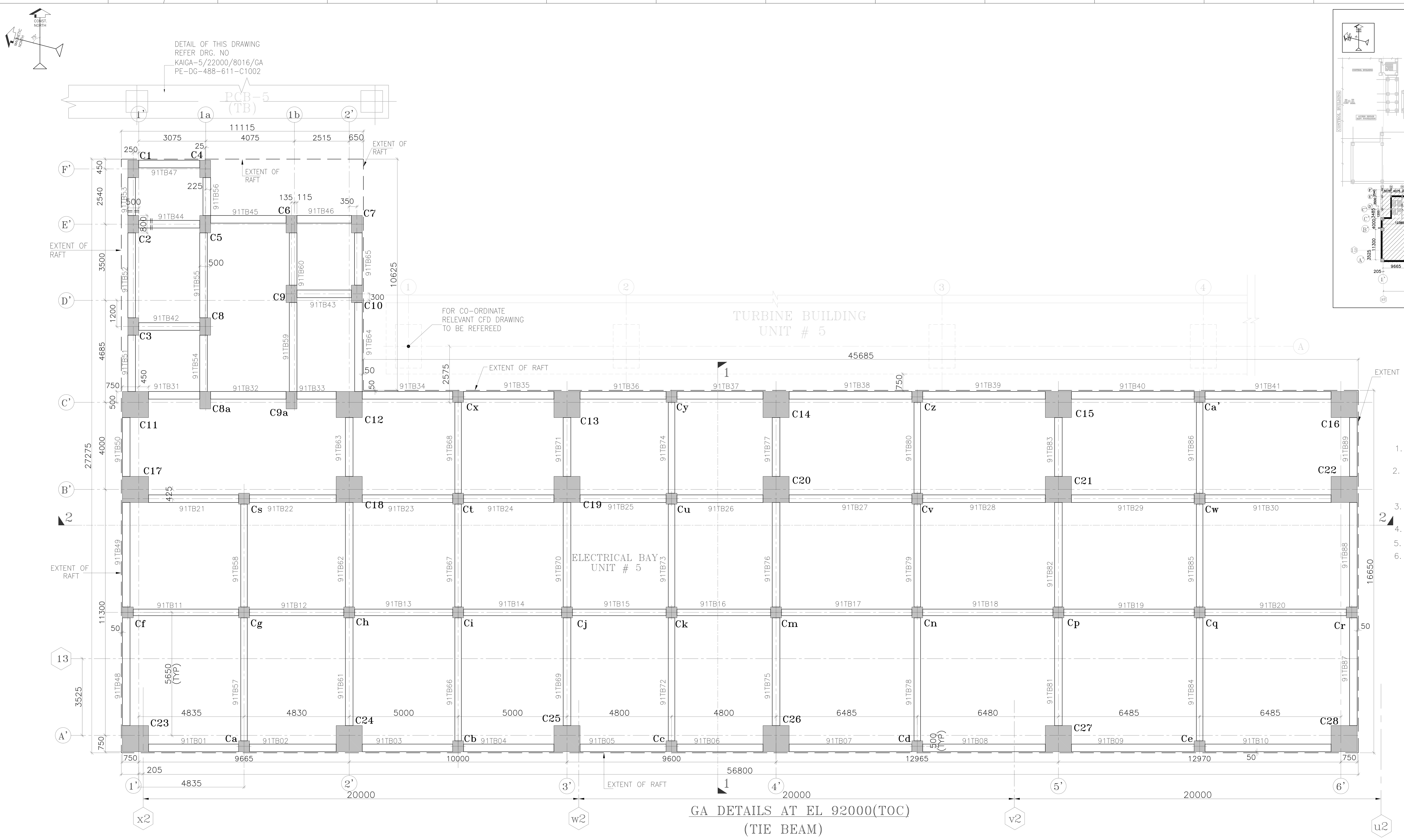
DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

NPCIL'S SYSTEM CLEARANCE: SYSTEM-1 | SYSTEM-2 | SYSTEM-3 | SYSTEM-4

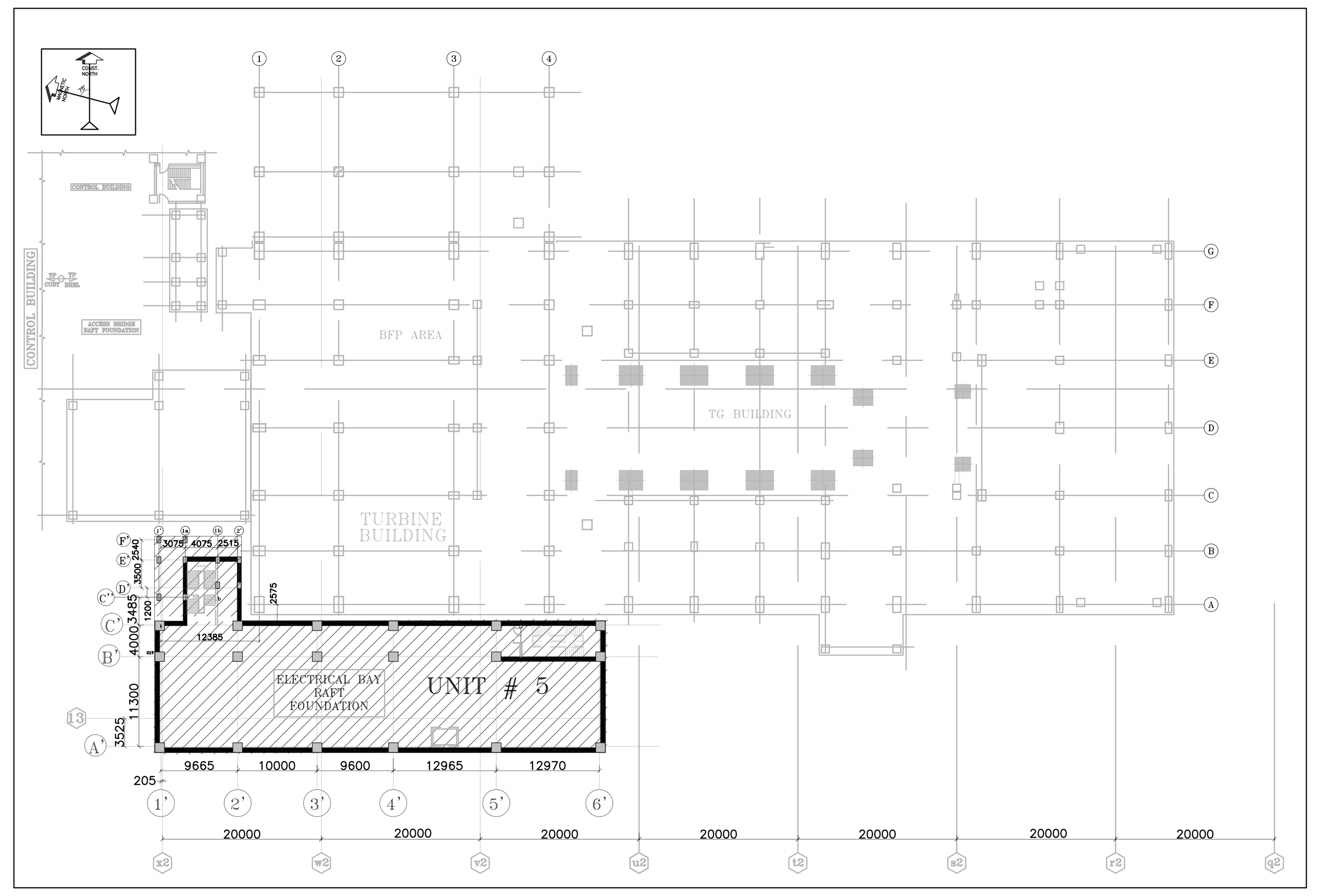
TABLE-1

REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

DRG. No. KAIGA-5/22000/8008/GA_SH. 1 OF 2
A0



GA DETAILS AT EL 92000(TOC)
(TIE BEAM)



KEY PLAN

NOTES:-

1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL. 100 WHICH CORRESPONDS TO RL 42.80M AS PER NPCIL REQUEST VIA LETTER NO. CMM/ETM/00-40-11-0005 DATED 25 OCT. 2023.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 AS PER IS : 456 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE Fe 500 CONFORMING TO IS:1786.
5. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.
6. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DETAILED ANALYSIS AND DESIGN.

TABLE-1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS	KAIGA-5&6/22210/8001/DD

TIE BEAM SCHEDULE

BEAM NAME	WIDTH	DEPTH
91TB01, 91TB02, 91TB03, 91TB04, 91TB05, 91TB06, 91TB07, 91TB08, 91TB09, 91TB10 91TB21, 91TB22, 91TB23, 91TB24, 91TB25, 91TB26, 91TB27, 91TB28, 91TB29, 91TB30, 91TB31, 91TB32, 91TB33, 91TB34, 91TB35, 91TB36, 91TB37, 91TB38, 91TB39, 91TB40, 91TB41, 91TB48, 91TB49, 91TB50, 91TB61, 91TB62, 91TB63, 91TB69, 91TB70, 91TB71, 91TB75, 91TB76, 91TB77, 91TB81, 91TB82, 91TB83, 91TB87, 91TB88, 91TB89.	400	900
91TB42, 91TB43, 91TB44, 91TB45, 91TB46, 91TB47, 91TB51, 91TB52, 91TB53, 91TB54, 91TB55, 91TB56, 91TB59, 91TB60, 91TB64, 91TB65,	300	500
91TB11, 91TB12, 91TB13, 91TB14, 91TB15, 91TB16, 91TB17, 91TB18, 91TB19, 91TB20, 91TB57, 91TB58, 91TB66, 91TB67, 91TB68, 91TB72, 91TB73, 91TB74, 91TB78, 91TB79, 91TB80, 91TB84, 91TB85 ,91TB86.	300	600

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 1 OF 2 OF THIS DRAWING

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	16.01.2024	

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
ELECTRICAL BAY BUILDING
GA OF FOUNDATION (UNIT#5)

DES'D.	V.SHARMA, DATE 11.08.2023	DR'N.	S.NAIN, DATE 16.08.2023	REV'D.	S.MISHRA, DATE 16.08.2023
DES. CHK'D.	A.KAPOOR, DATE 16.08.2023	DRG. CHK'D.	V.SHARMA, DATE 16.08.2023	APP'D.	A.KUMAR, DATE 16.08.2023

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS
PROJECTION

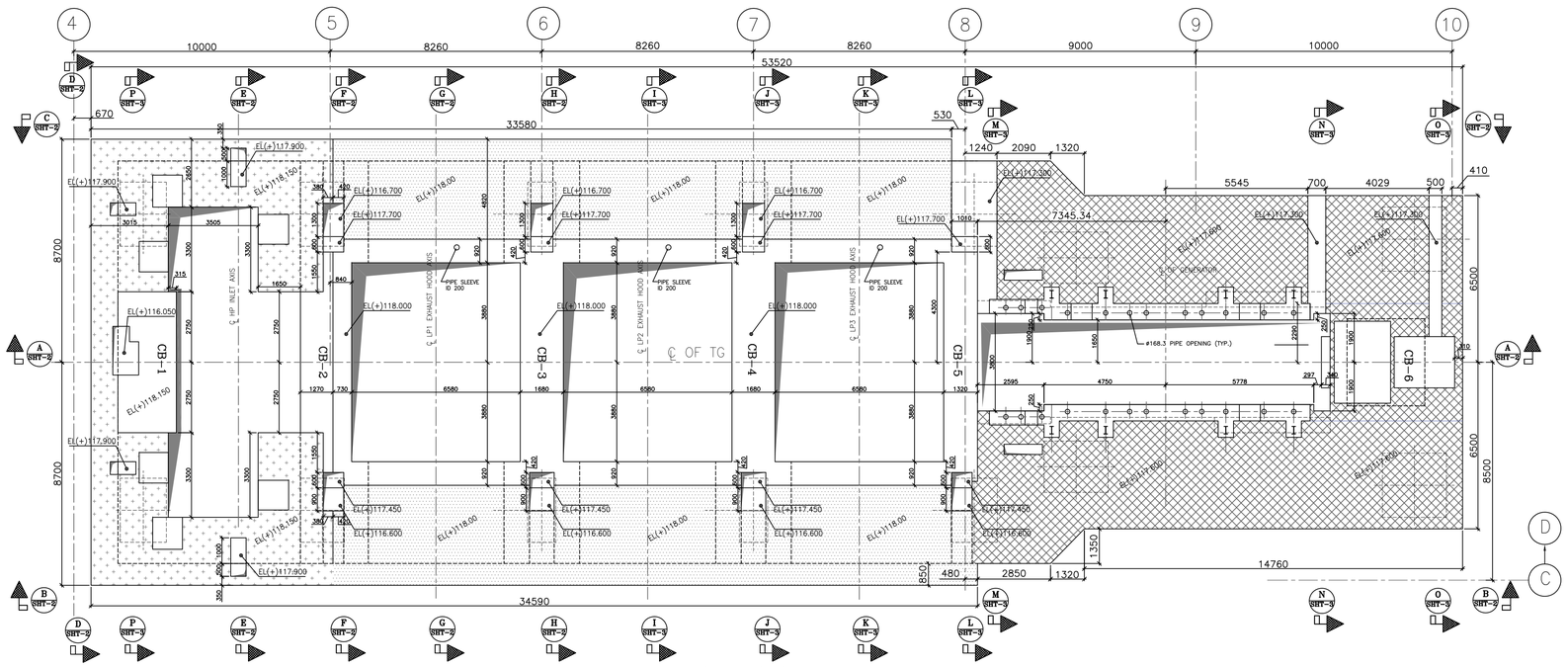
NPCIL DRG. No. KAIGA-5/22000/8008/GA
SHEET 2 OF 2
REV. No. R0
BHEL DRG NO: PE-DG-488-619-C1001_(RB)
FILE NAME: KAIGA_5_22000_8008_GA

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

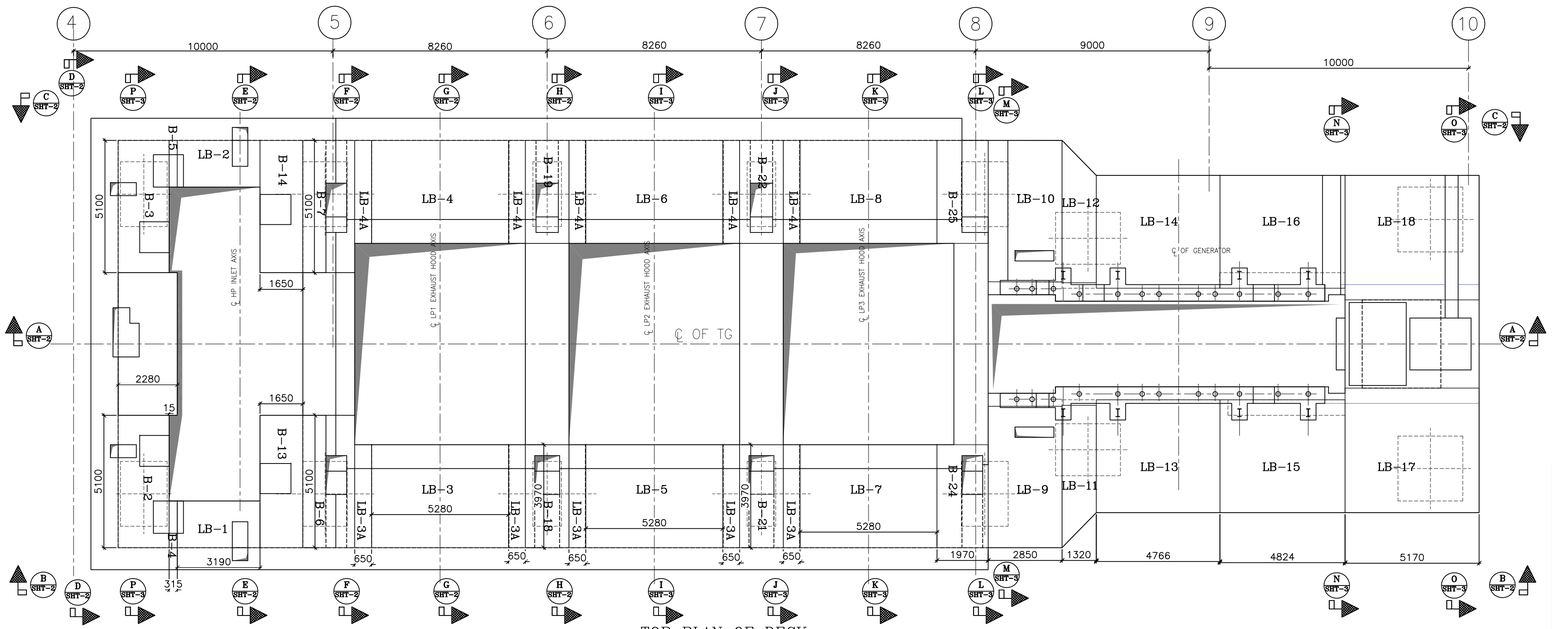
DO NOT SCALE THE DRAWING.

NPCIL'S SYSTEM CLEARANCE: SYSTEM-1, SYSTEM-2, SYSTEM-3, SYSTEM-4

A0 DRG. No. KAIGA-5/22000/8008/GA_SH. 1 OF 2



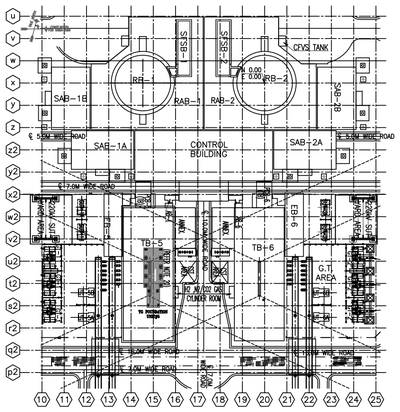
TOP PLAN OF DECK



TOP PLAN OF DECK

(SHOWING LONGITUDINAL BEAM MARKING ONLY)

(REFER TABLE-B FOR BEAM SCHEDULE)



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS, ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. MATERIAL, FABRICATION AND CONSTRUCTION OF STRUCTURE SHALL COMPLY WITH RELEVANT SPECIFICATION OF NPCIL.
3. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL99.7M WHICH CORRESPONDS TO RL 42.50M.
4. DEWATERING SHALL BE CONTINUED AND GROUND WATER MAINTAINED AT THE LEVELS AS SPECIFIED DURING THE STAGES OF CONSTRUCTION SUCH THAT WATER TABLE DOES NOT RISE ABOVE THE LEVEL OF BOTTOM OF RAFT.
5. ALL MATERIALS, PROCEDURES AND ACTIVITIES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
6. CONCRETING OF BASE MAT SHALL BE CARRIED OUT IN ONE UNINTERRUPTED POUR AND NO CONSTRUCTION JOINTS SHALL BE ALLOWED IN THE BASE MAT.
7. COLUMNS UP TO EL 99.850M AND CONDENSER SUPPORTING BEAMS CONNECTING COLUMNS C2A-C2B, C3A-C3B, C4A-C4B, C5A-C5B SHALL BE CAST IN ONE UNINTERRUPTED POUR.
8. CONCRETE SHALL BE GRADE M35 UNLESS NOTED.
9. CONCRETING OF BASE MAT, COLUMNS AND CONDENSER SUPPORTING BEAMS SHALL BE DONE LIMITING THE MAXIMUM PLACEMENT TEMPERATURE TO 23°C.
10. TOP OF TG RAFT SHALL HAVE U3 FINISH, ALL OTHER EXPOSED SURFACE OF CONCRETE TO BE FINISHED TO TYPE F3.
11. FOR WATER PROOFING DETAILS REFER DWG NO. ----------KAIGA-5&6/22212/8057/DD.
12. FOR ALL OTHER NOTES REFER GENERAL NOTES DWG. NO. ---------- KAIGA-5&6/22210/8001/DD
13. CASTING OF TG MAT AND COLUMNS SHALL COMMENCE ONLY AFTER EARTHING CONDUCTORS, EARTHING PADS ARE LAID AS PER DWG.---------- KAIGA-5&6/53200/8002/DD
14. THE LOCATION AND DIMENSIONS OF THE PEDESTALS FOR ACW HEAT EXCHANGER ARE UNDER FINALIZATION DOWELS FOR THESE PEDESTALS SHALL BE PROVIDED IN THE SHADED PORTION AT EL(+)93.30M RCC SLAB TOC.
15. ALL MECHANICAL & HVAC EPs ARE CONFIRMED & EXTRACTED FROM PDMS MODEL.

LEGENDS:

BET	- BETWEEN	S	- SOUTH
DWG	- DRAWING	TB	- TURBINE BUILDING
E	- EAST	THK.	- THIKNESS
EL	- ELEVATION	TOC	- TOP OF CONCRETE
EQPT.	- EQUIPMENT	TOP	- TOP OF PIPE
FFL	- FINISHED FLOOR LEVEL	TYP.	- TYPICAL
GA	- GENERAL ARRANGEMENT	UN	- UNLESS NOTED
H	- HIGH	TOR	- TOP OF RAFT
◯	- BUILDING GRID	COL.	- COLUMN
MSR	- MOISTURE SEPARATOR AND REHEATER	TP	- TERMINAL POINT
PG	- PLANT GRID	TIP	- TURBINE ISLAND PACKAGE
		RL	- REDUCED LEVEL

W	- WIDE
℄	- CENTER LINE
	- 50 THK. SCREED
	- OPENING/CUT-OUT IN DECK
BXXXX	- BEAM NUMBER
CXX	- COLUMN NUMBER
	- 100 THK. SCREED
	- 500 THK. SCREED

IMP. NOTES:

1. THIS DRAWING IS TENTATIVE AND DIMENSIONS/SIZES/OPENING ARE TENTATIVE AND SHALL BE FINALIZED DURING DESIGN.
2. THE DRAWING HAS BEEN INTERFACED AND CLEARED BY MECHANICAL PIPING LAYOUT (MPL), MECHANICAL AUX. SYSTEM (MAX), ELECTRICAL AND C&I DEPARTMENT WITH RESPECT TO THEIR SYSTEM REQUIREMENT THROUGH DOCUMENT MANAGEMENT SYSTEM SOFTWARE WRENCH.

DEVELOPMENT CONSULTANTS PVT. LIMITED

Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.

ACTION	1
✓	APPROVED
2	COMMENTED
3	FOR INFORMATION

REVIEWED BY: INDRANIL BHADRA
SIGNATURE:
DATE: 28.02.2024

REV. No.	DESCRIPTION		
R0	FOR INFORMATION	27.02.2024	
		BHEL	NPCIL
		SIGNATURE WITH DATE	

DRAWING ISSUED FOR

OWNER: NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

REV NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4
	NPICL'S SYSTEM CLEARANCE			

THIS DRG. MUST BE READ IN CONJUNCTION WITH DRG. NOS. KAIGA-5/22000/8035/GA SHEET 2 & 3

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 ▽ OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15 X 45° 0.40
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15 0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°-30'

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6
TG ISLAND PACKAGE
T.G. FOUNDATION: GA OF TOP DECK (UNIT#5)

DES'D. A.SHARMA DATE - 16.12.2023	DR'N. M.KUMAR DATE - 16.12.2023	REV'D. S.MISHRA DATE - 16.12.2023	
DES. CHK'D. K.NEGI DATE - 16.12.2023	DRG. CHK'D. A.SHARMA DATE - 16.12.2023	APP'D. A.KUMAR 16.12.2023	

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE -
PROJECTION

DRG. No. KAIGA-5/22000/8035/GA
REV. No. R0

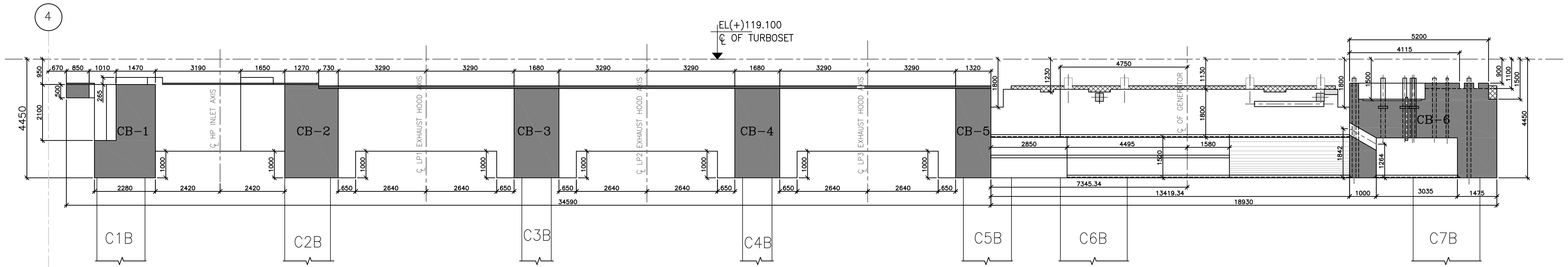
BHEL NO: PE-DG-488-613-C1003 (R8) FILE NAME: KAIGA_5_22000_8035_GA (SHEET 1 OF 3)

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

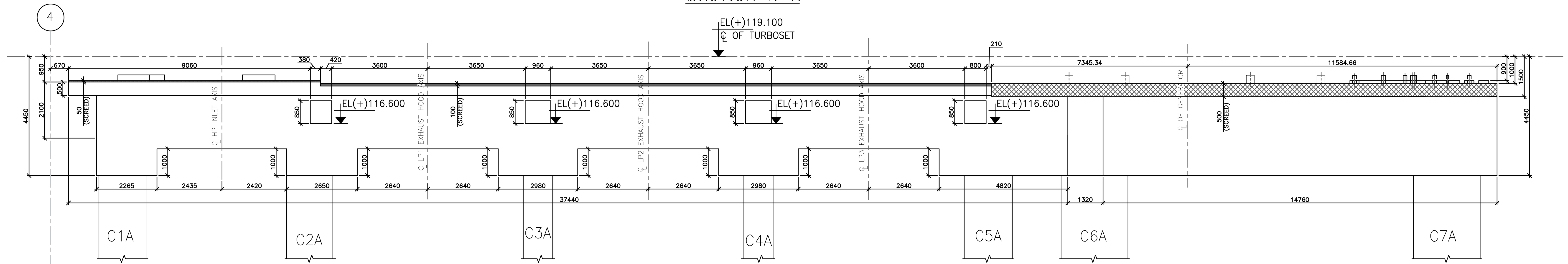
DRG. No. KAIGA-5/22000/8035/GA

REFER TABLE-A FOR REFERENCE DRAWING

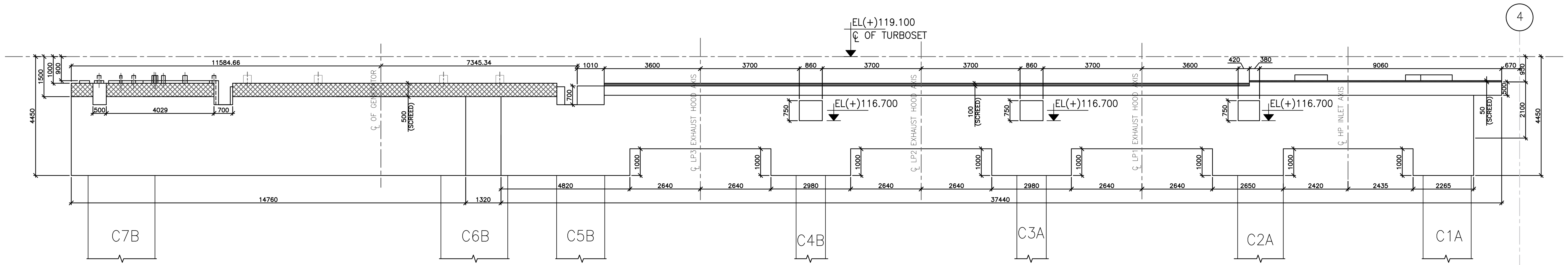
REFERENCE DRAWINGS	DRAWING No.	REV. No.	REV. LOCATION	DESCRIPTION	DR'N.	DES'D.	DES.CHK'D.	REV'D.	APP'D.	DES'D.	CHK'D.	REV'D.	APP'D.
				REVISIONS	SIGNATURE WITH DATE (BHEL)					SIGNATURE (NPCIL)			



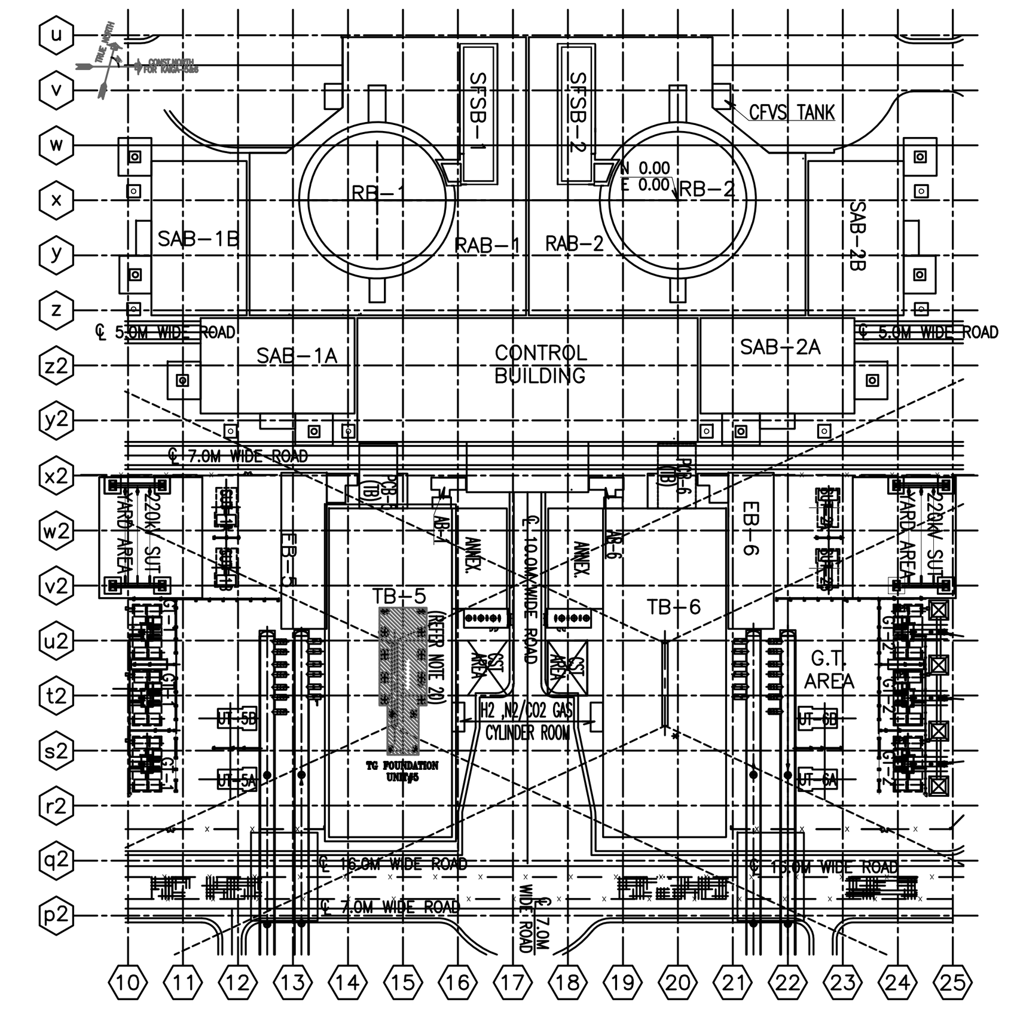
SECTION A–A



VIEW B–B



VIEW C–C

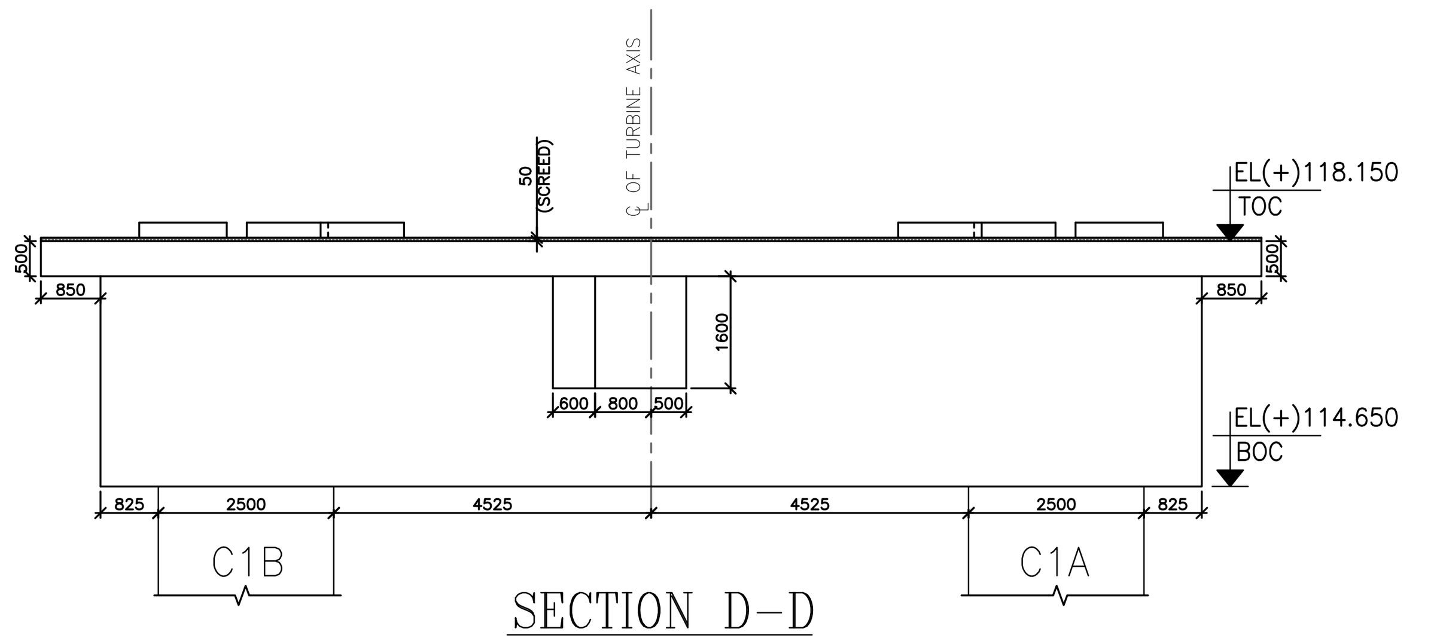


TABLE–B (LONGITUDINAL BEAM SCHEDULE) –

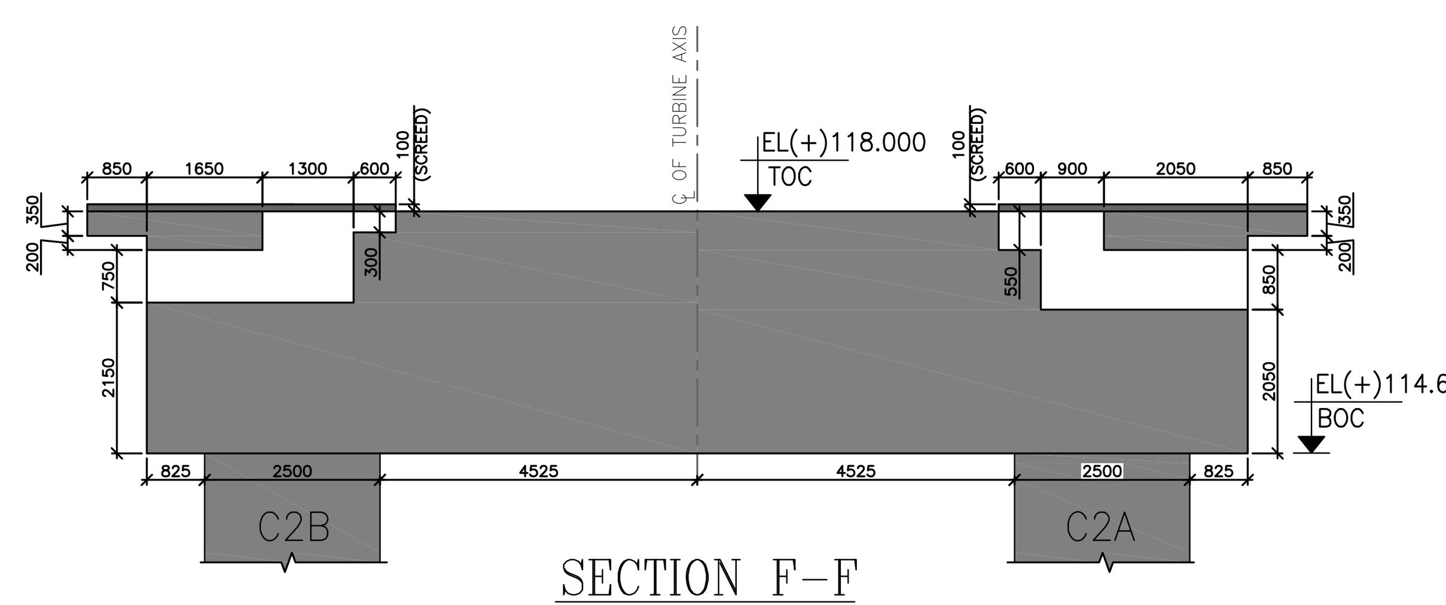
BEAM MARKING	WIDTH X DEPTH (M)	REMARKS
B–2	1.965 X 3.50	SIZES & DESIGNATION OF BEAMS ARE TENTATIVE AND SHALL BE FINALIZED AFTER ANALYSIS & DESIGN
B–3	1.965 X 3.50	
B–4	1.8 X 3.5	
B–5	1.8 X 3.5	
B–6	2.0 X 3.5	
B–7	2.0 X 3.5	
B–13	5.1 X 2.5	
B–14	5.1 X 2.5	
B–18	1.68 X 3.35	
B–19	1.68 X 3.35	
B–21	1.68 X 3.35	
B–22	1.68 X 3.35	
B–24	3.97 X 3.35	
B–25	3.97 X 3.35	
LB–1	1.8 X 2.5	
LB–2	1.8 X 2.5	
LB–3	3.97 X 2.35	
LB–4	3.97 X 2.35	
LB–3A	3.97 X 3.5	
LB–4A	3.97 X 3.5	
LB–5	3.97 X 2.35	
LB–6	3.97 X 2.35	
LB–7	3.97 X 2.35	
LB–8	3.97 X 2.35	
LB–9	5.45 X 2.95	
LB–10	5.45 X 2.95	
LB–11	5.025 X 2.95	
LB–12	5.025 X 2.95	
LB–13	4.35 X 2.95	
LB–14	4.35 X 2.95	
LB–15	4.35 X 2.95	
LB–16	4.35 X 2.95	
LB–17	4.8 X 2.95	
LB–18	4.8 X 2.95	

TABLE–C (CROSS BEAM SCHEDULE) –

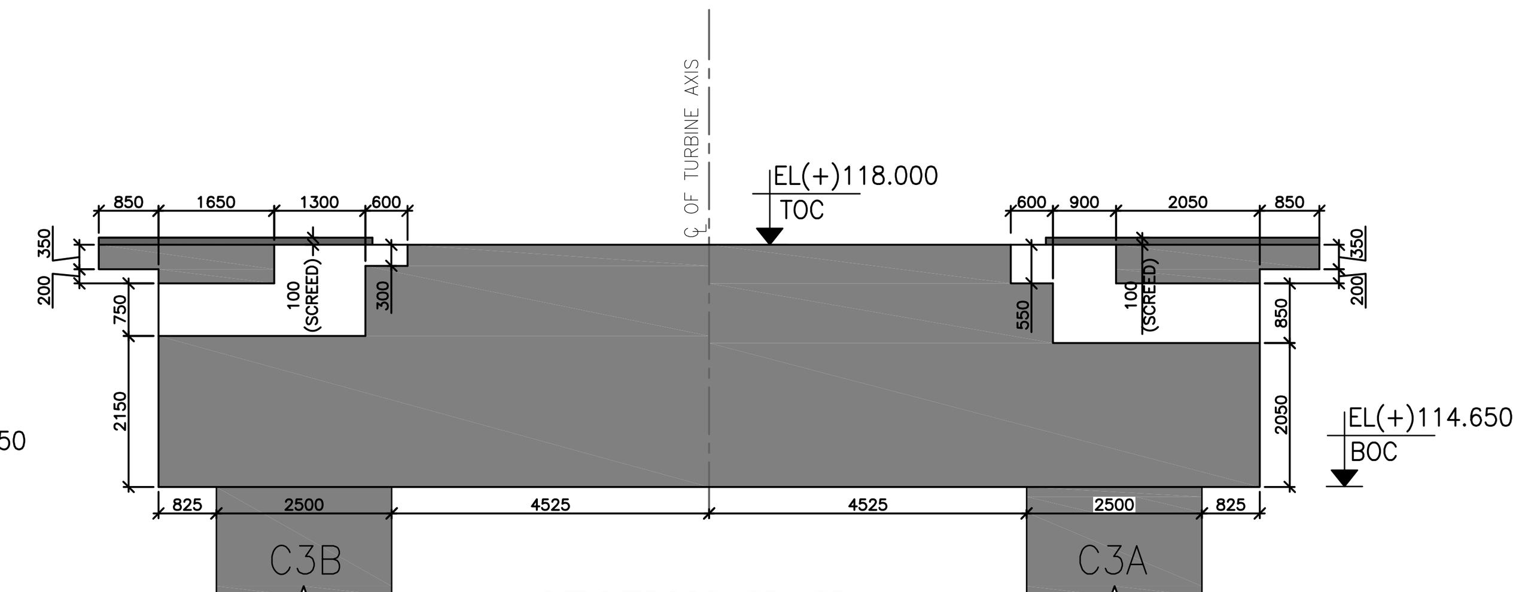
BEAM MARKING	WIDTH X DEPTH (M)	REMARKS
CB–1	2.28 X 3.50	SIZES AT THE CL OF TG
CB–2	2.00 X 3.50	
CB–3	1.68 X 3.35	
CB–4	1.68 X 3.35	
CB–5	1.32 X 3.35	
CB–6	1.474 X 2.95 (APPROX.)	



SECTION D–D



SECTION F–F



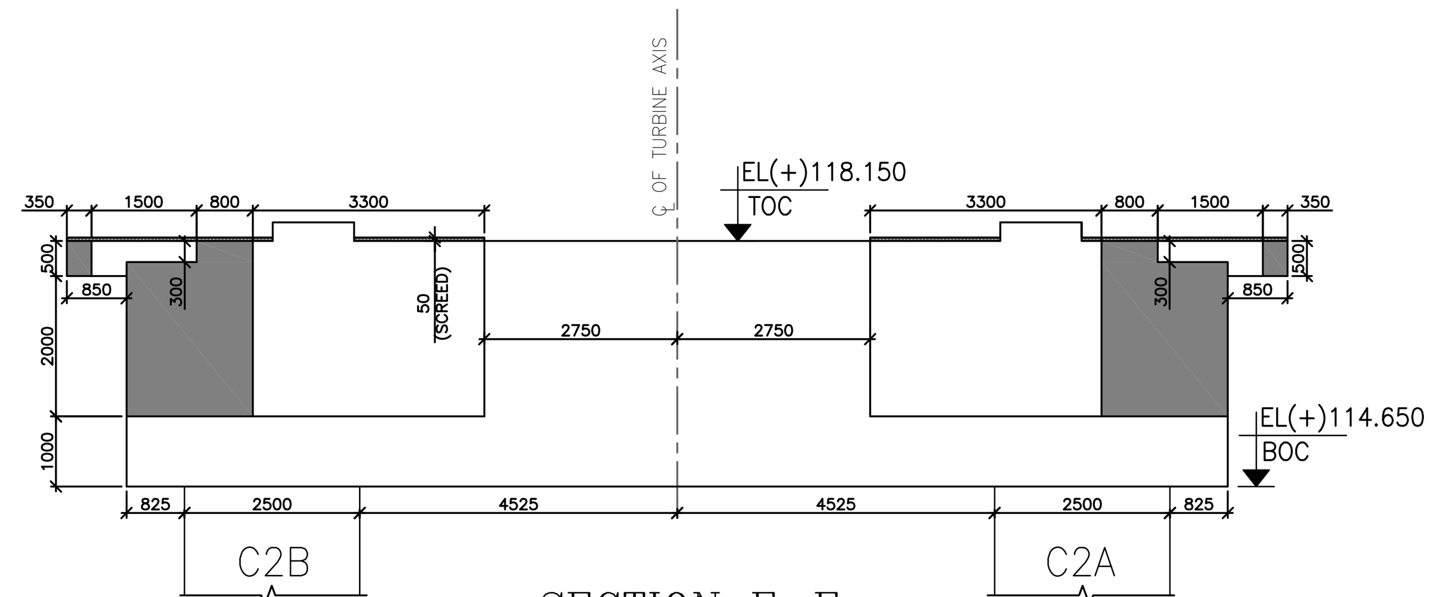
SECTION H–H

DEVELOPMENT CONSULTANTS PVT. LIMITED

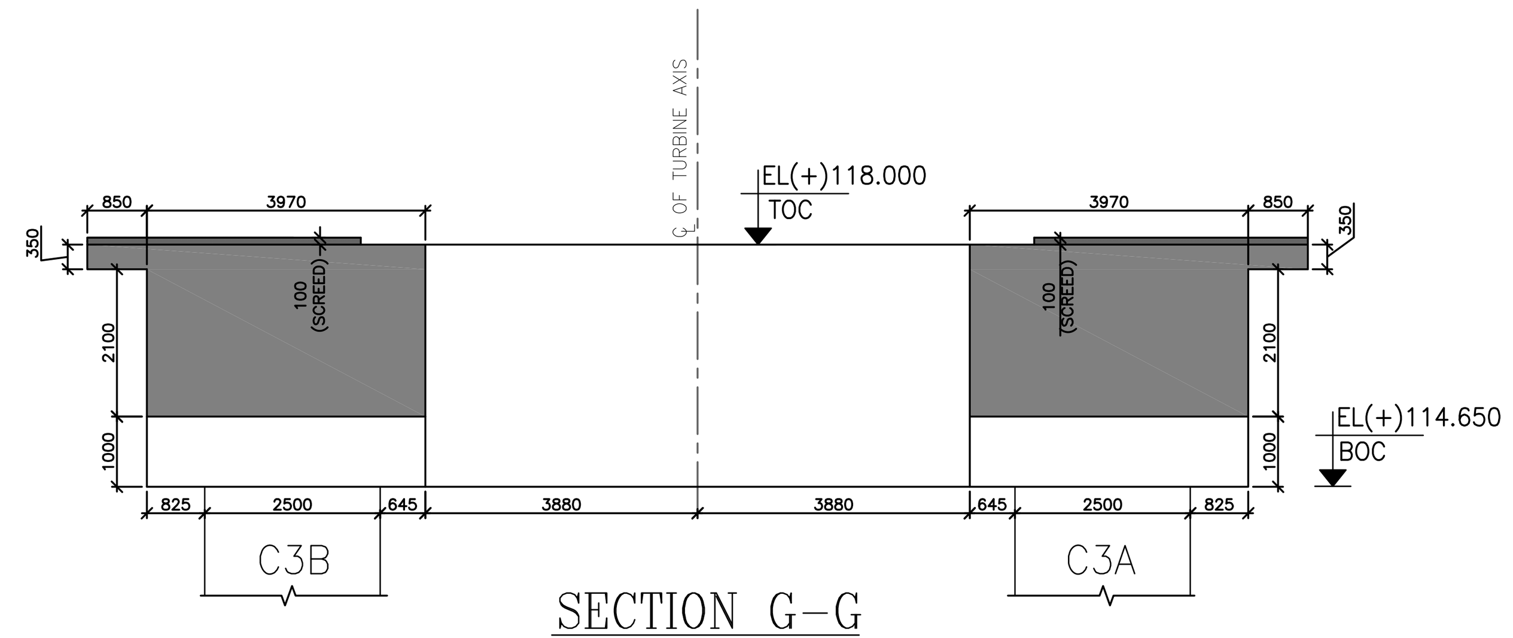
Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.

ACTION	1
✓	APPROVED
2	COMMENTED
3	FOR INFORMATION

REVIEWED BY: INDRANIL BHADRA
SIGNATURE:
DATE: 28.02.2024



SECTION E–E



SECTION G–G

THIS DRG. MUST BE READ IN CONJUNCTION WITH DRG. NOS. KAIGA–5/22000/8035/GA SHEET 1 & 3

FOR NOTES, LEGEND AND REFERENCE DRAWINGS REFER SHEET–1 OF THIS DRAWING.

REV. No.	SYSTEM–1	SYSTEM–2	SYSTEM–3	SYSTEM–4

NPCIL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :–
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15/0.40 X 45°
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15/0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5–3	3–6	6–30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 – 1000	± 0.8
6 – 30	± 0.2	1000 – 2000	± 1.2
30 – 120	± 0.3	2000 – 4000	± 2.0
120 – 315	± 0.5	4000 – 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°–30'

REV. No.	LOCATION	DESCRIPTION	DR'N.	DES'D.	DES.CHK'D.	REV'D.	APP'D.	DES'D.	CHK'D.	REV'D.	APP'D.

REVISIONS — SIGNATURE WITH DATE (BHEL) — SIGNATURE WITH DATE (NPCIL)

REFERENCE DRAWINGS	DRAWING No.

A1 — DRG. No. KAIGA–5/22000/8035/GA

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	27.02.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

OWNER: NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY — REV'D. BY — APP'D. BY

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :– KAIGA ATOMIC POWER PROJECT-5&6
TG ISLAND PACKAGE
T.G. FOUNDATION: GA OF TOP DECK (UNIT#5)

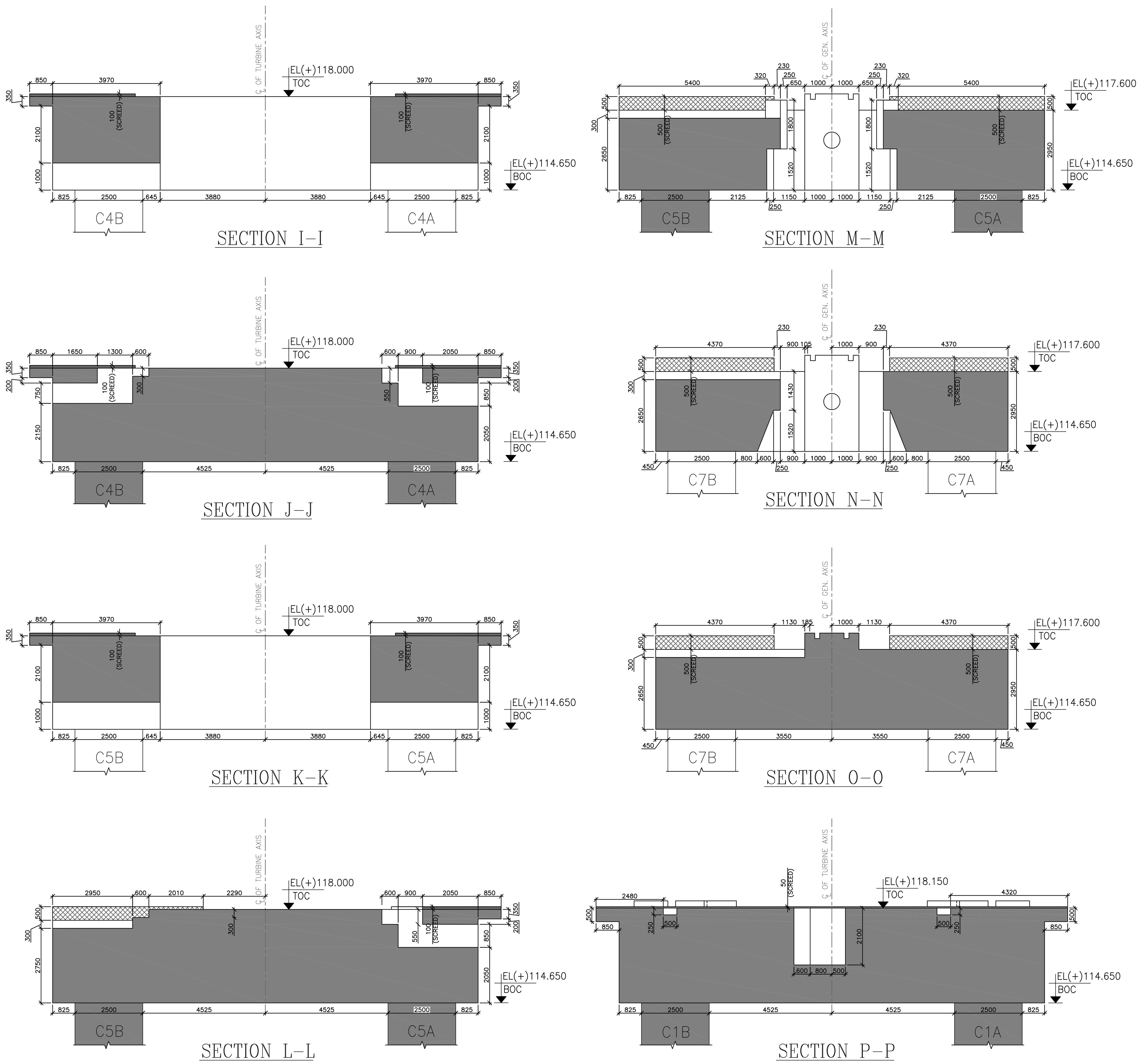
DES'D. A.SHARMA, DATE – 16.12.2023	DR'N. M.KUMAR, DATE – 16.12.2023	REV'D. S.MISHRA, DATE – 16.12.2023	
DES. CHK'D. K.NEGI, DATE – 16.12.2023	DRG. CHK'D. A.SHARMA, DATE – 16.12.2023	APP'D. A.KUMAR, 16.12.2023	

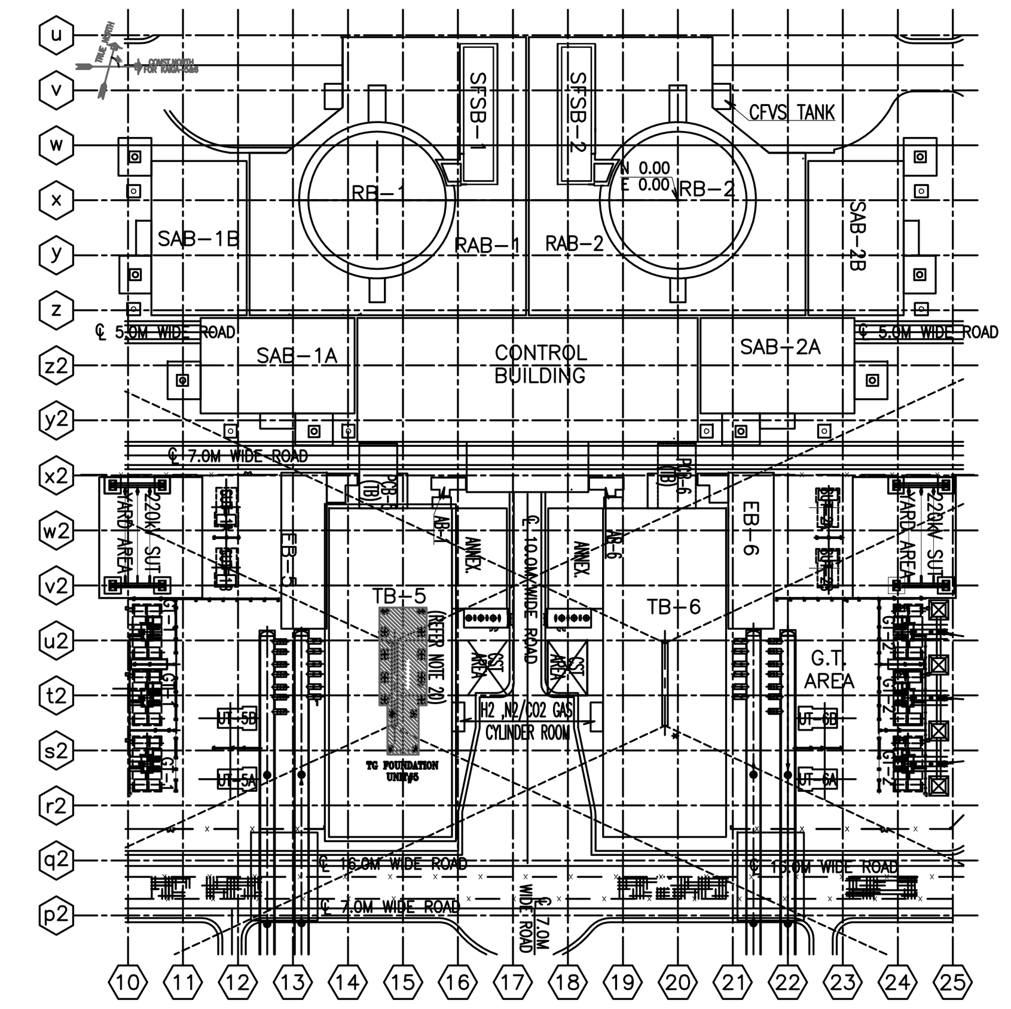
PROJECT: 2x700 MWe PHWR
KAIGA– ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE –
PROJECTION

DRG. No. KAIGA–5/22000/8035/GA — REV. No. R0
BHEL NO: PE-DG-488-613-C1003 (RB) — FILE NAME: KAIGA_5_22000_8035_GA (SHEET 2 OF 3)

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.





THIS DRG. MUST BE READ IN CONJUNCTION WITH DRG. NOS. KAIGA–5/22000/8035/GA SHEET 1 & 2

FOR NOTES, LEGEND AND REFERENCE DRAWINGS REFER SHEET–1 OF THIS DRAWING.

DEVELOPMENT CONSULTANTS PVT. LIMITED

Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.

ACTION	1
1 ✓	APPROVED
2	COMMENTED
3	FOR INFORMATION

REVIEWED BY: INDRANIL BHADRA
SIGNATURE:
DATE: 28.02.2024

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	27.02.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

OWNER

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR:

BHARAT HEAVY ELECTRICALS LTD

POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :– KAIGA ATOMIC POWER PROJECT-5&6
TG ISLAND PACKAGE
T.G. FOUNDATION: GA OF TOP DECK (UNIT#5)

DES'D. A.SHARMA DATE – 16.12.2023	DR'N. M.KUMAR DATE – 16.12.2023	REV'D. S.MISHRA DATE – 16.12.2023	
DES. CHK'D. K.NEGI DATE – 16.12.2023	DRG. CHK'D. A.SHARMA DATE – 16.12.2023	APP'D. A.KUMAR 16.12.2023	

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE –
PROJECTION

DRG. No. KAIGA-5/22000/8035/GA
REV. No. R0
BHEL NO: PE-DG-488-613-C1003 (RB)
FILE NAME: KAIGA_5_22000_8035_GA (SHEET 3 OF 3)

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

REV. No.	SYSTEM–1	SYSTEM–2	SYSTEM–3	SYSTEM–4

NPICL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :–
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15/0.40 X 45°.
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15/0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5–3	3–6	6–30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

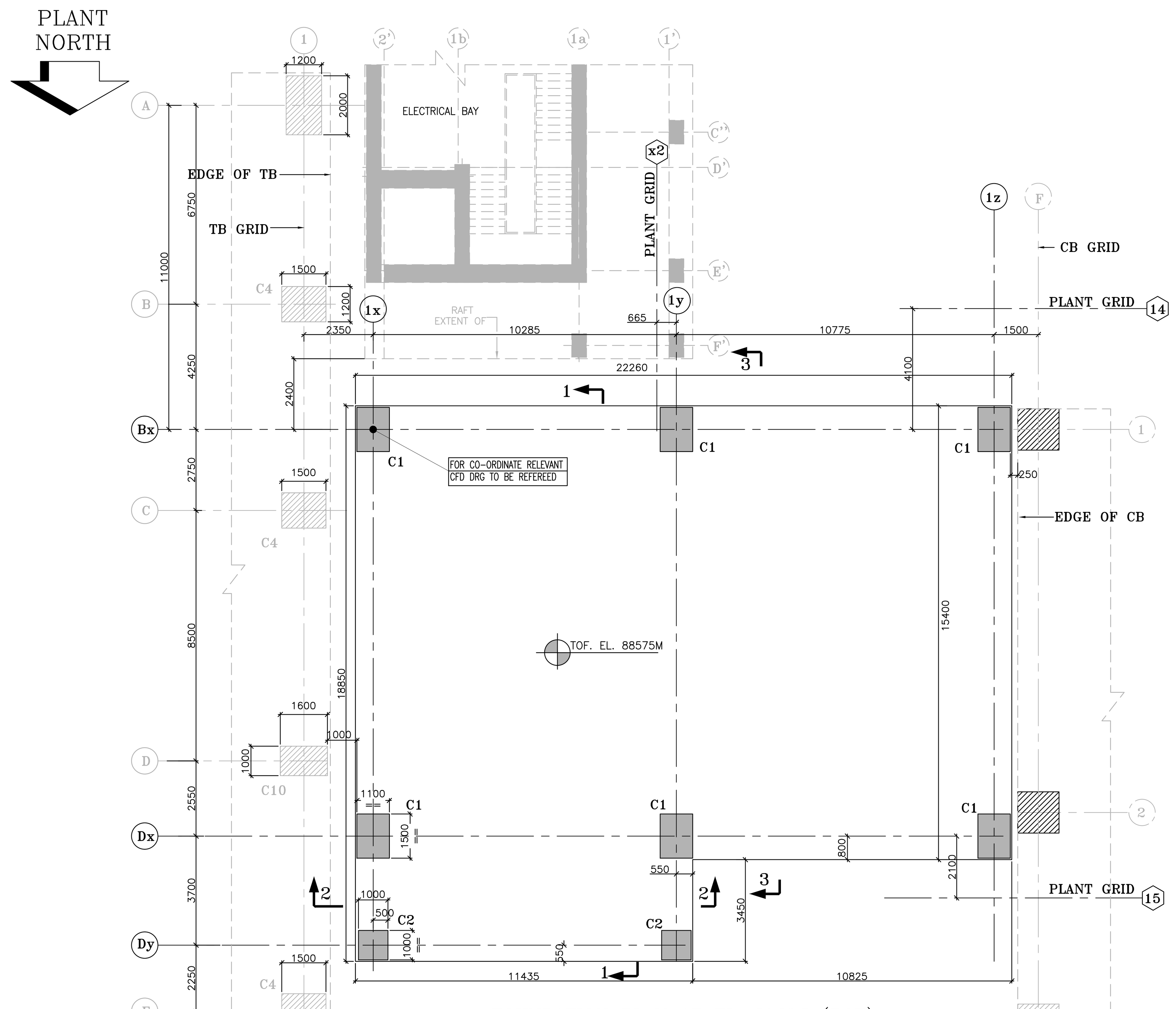
SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : ± 0°–30'

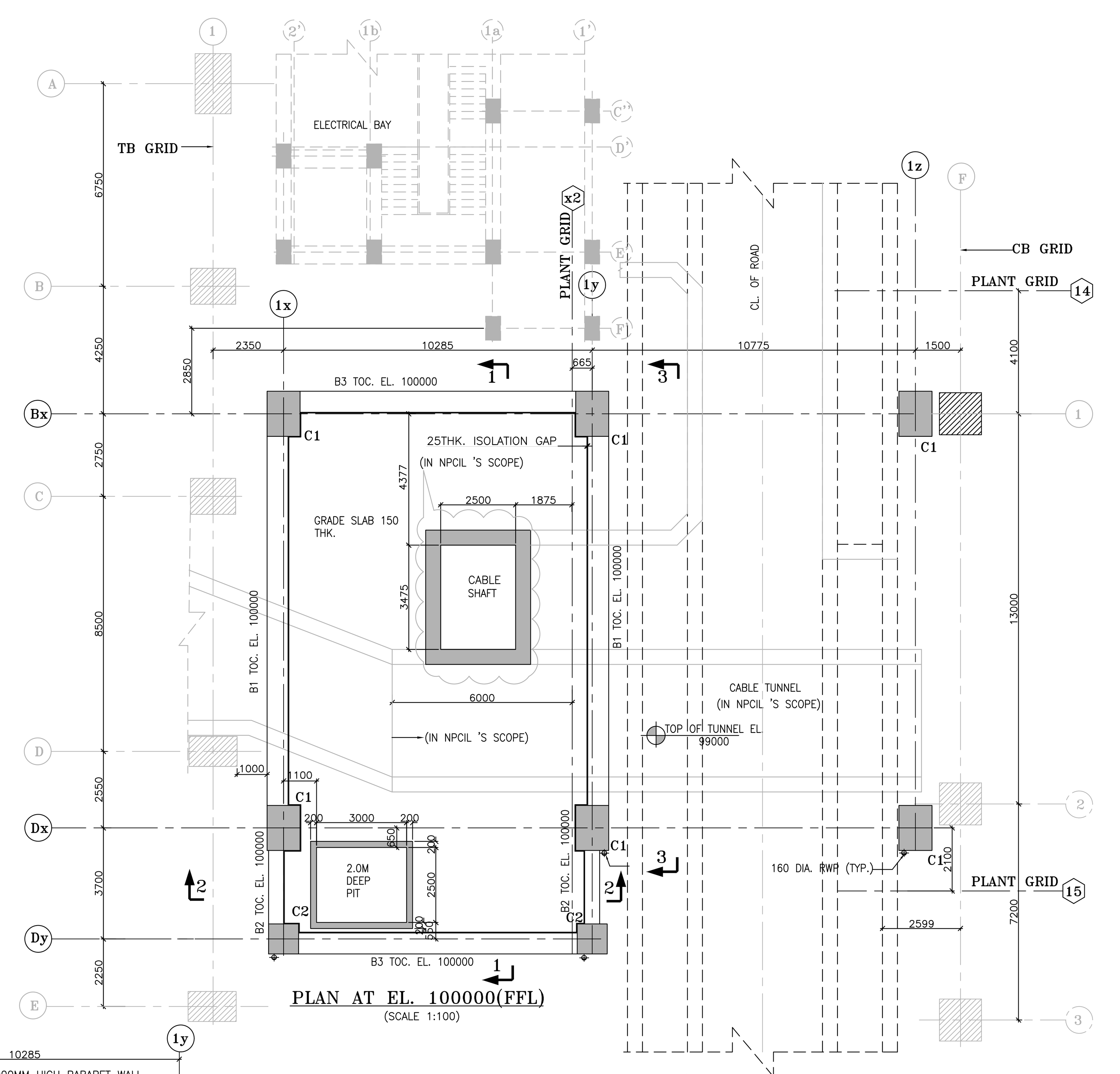
REFERENCE DRAWINGS	DRAWING No.	REV. No.	LOCATION	DESCRIPTION	DR'N.	DES'D.	DES.CHK'D.	REV'D.	APP'D.	DES'D.	CHK'D.	REV'D.	APP'D.

REVISIONS — SIGNATURE WITH DATE (BHEL) — SIGNATURE (NPCIL)

A1 DRG. No. KAIGA–5/22000/8035/GA

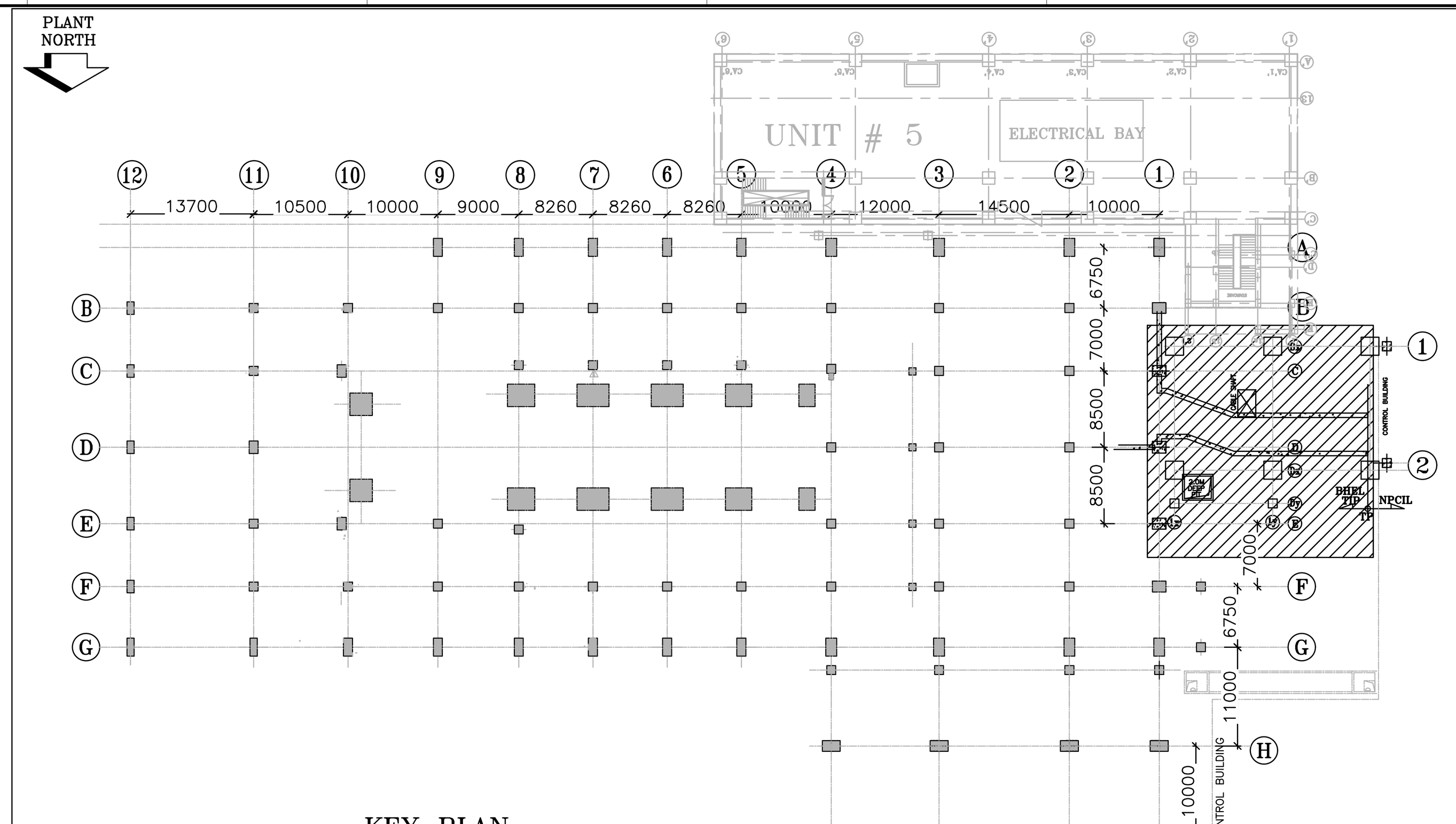


FOUNDATION PLAN AT EL. 87075 (BOF)
(SCALE 1:100)

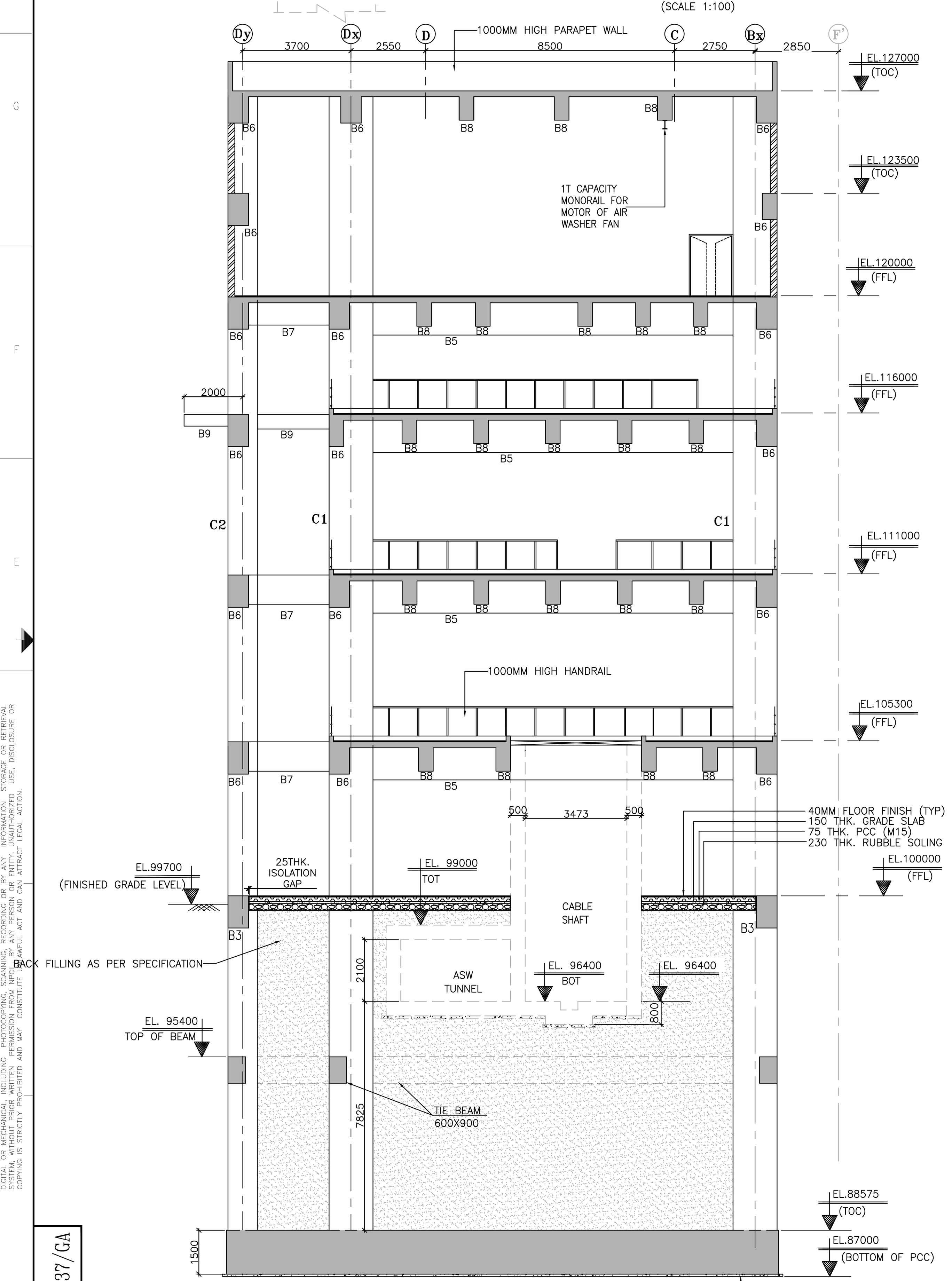


PLAN AT EL. 100000(FFL)
(SCALE 1:100)

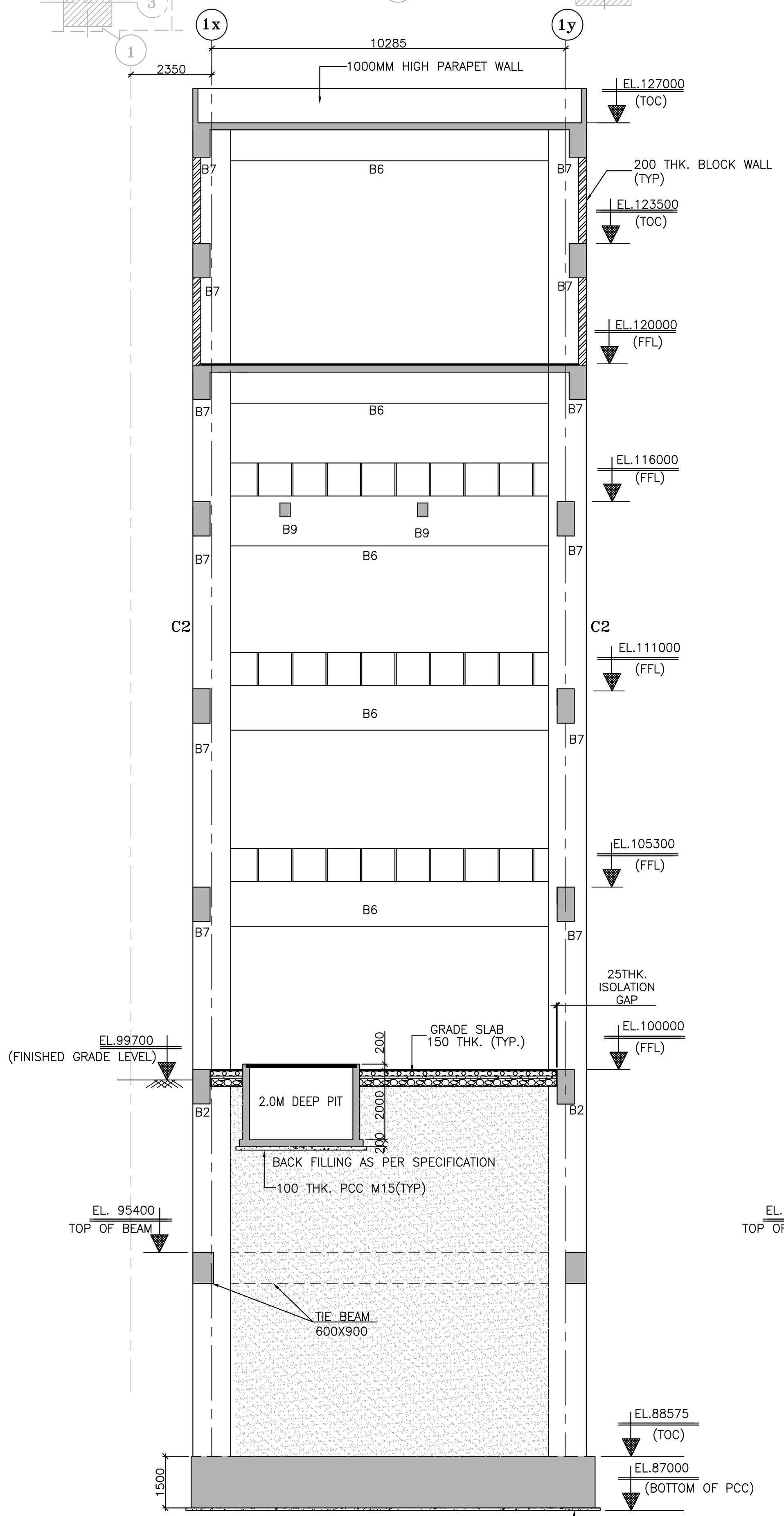
PLAN AT EL. 100000(FFL)
(SCALE 1:100)



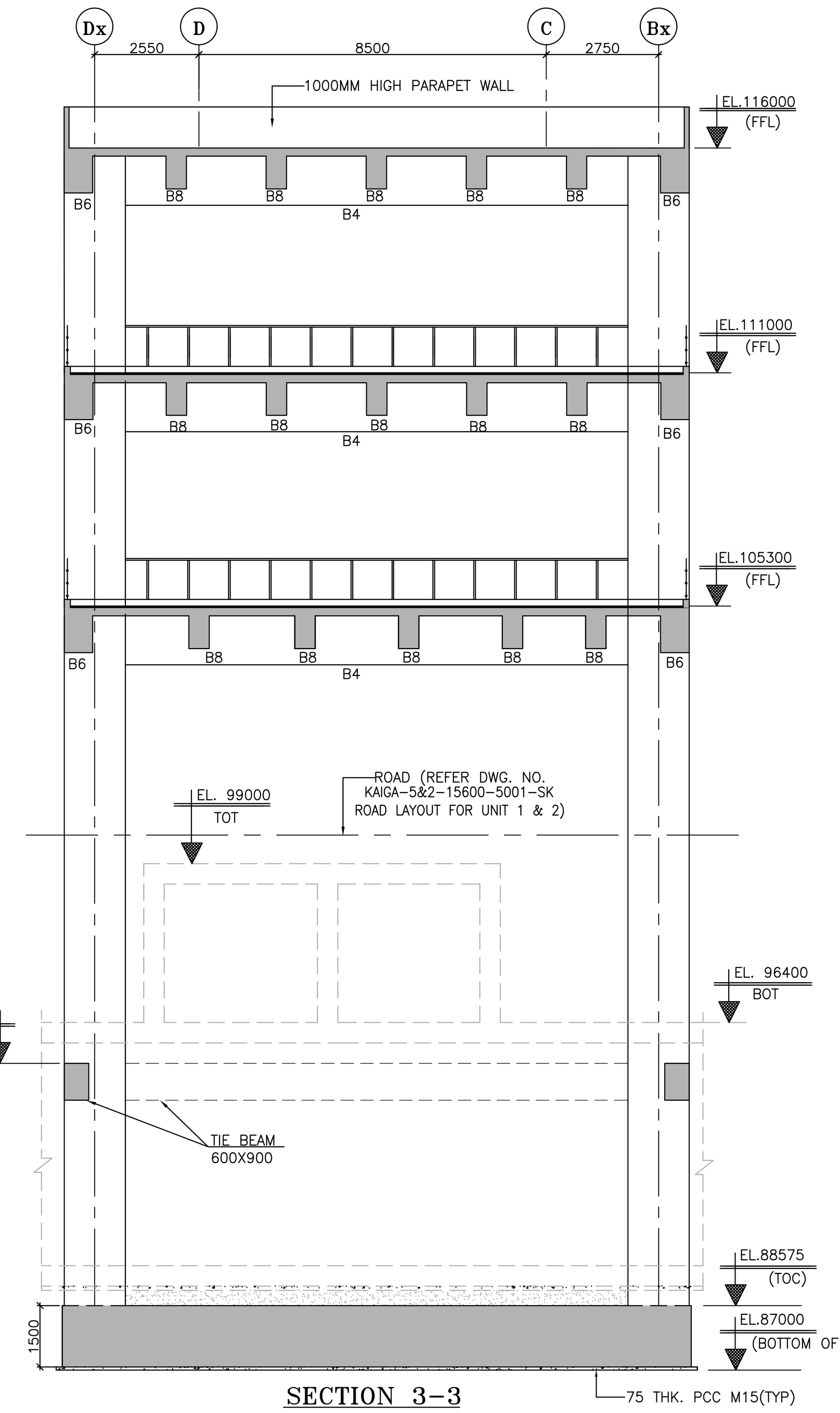
KEY PLAN
(SCALE NTS)



SECTION 1-1
(SECTION MARKED IN DRG NO. KAIGA-5_22000_8038,8039,8040,8041_GA)
(SCALE 1:100)



SECTION 2-2
(SECTION MARKED IN DRG NO. KAIGA-5_22000_8038,8039,8040,8041_GA)
(SCALE 1:100)



SECTION 3-3
(SECTION MARKED IN DRG NO. KAIGA-5_22000_8038,8039_GA)
(SCALE 1:100)

BEAM SCHEDULE

BEAM NO.	WIDTH	DEPTH
B1	700	1000
B2	500	1000
B3	700	1100
B4	900	1400
B6	700	1100
B7	500	1000
B8	500	1000
B9	300	500

COLUMN SCHEDULE

COLUMN MKD.	COLUMN SIZE	
	NORTH-SOUTH	EAST-WEST
C1	1500	1100
C2	1000	1000

TABLE-1

ENGINEERING REFERENCE DRAWINGS (UNIT#5)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/2001/GA
GENERAL NOTES & STANDARD DETAILS FOR STRUCTURE STEEL WORKS (UNIT#5 & UNIT#6)	KAIGA-5&6/22210/8001/DD
ELECTRICAL BAY BUILDING - GA OF FOUNDATION & GA OF FLOOR	KAIGA-5/22000/8008/GA TO KAIGA-5/22000/8015/GA
TURBINE BUILDING - GA OF BASEMENT & GA OF FLOORS	KAIGA-5/22000/8016/GA TO KAIGA-5/22000/8026/GA
CONTROL BUILDING GA OF BASEMENT & GA OF FLOORS	KAIGA-5&6/24200/2011/GA TO KAIGA-5&6-24200-2018-GA
PIPE AND CABLE BRIDGE-GA OF FOUNDATION (UNIT#5)	KAIGA-5/22000/8037/GA
PIPE AND CABLE BRIDGE-GA OF FLOOR AT EL.105.0M &111.0M (UNIT#5)	KAIGA-5/22000/8038/GA
PIPE AND CABLE BRIDGE-GA OF FLOOR AT EL 116.0M (UNIT#5)	KAIGA-5/22000/8039/GA
PIPE AND CABLE BRIDGE-GA OF FLOOR AT AT EL 120.0M (UNIT#5)	KAIGA-5/22000/8040/GA
PIPE AND CABLE BRIDGE-GA OF ROOF (UNIT#5)	KAIGA-5/22000/8041/GA

NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN MILLIMETERS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100 M WHICH CORRESPONDS TO RL 42.80M.
3. ALL ELEVATION ARE FINISHED FLOOR LEVEL UN.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENT BARS SHALL BE Fe500/Fe500D GRADE-TMT BARS, CONFORMING TO IS:1786.

IMP. NOTES:

1. THIS DRAWING IS TENTATIVE AND SIZES/OPENING ARE INDICATIVE ONLY. SHALL BE FINALIZED DURING DESIGN.
2. SECONDARY AND TERTIARY BEAMS SHOWN ARE INDICATIVE ONLY. SHALL BE FINALIZED DURING DESIGN.

LEGENDS:

TYP : TYPICAL
EL : ELEVATION
DRG : DRAWING
THK : THICK
TOF : TOP OF FOOTING
GA : GENERAL ARRANGEMENT
FFL : FINISHED FLOOR LEVEL
DWG : DRAWING
TOC : TOP OF CONCRETE
BOC : BOTTOM OF CONCRETE
CJ : CONSTRUCTION JOINT
TOT : TOP OF TUNNEL
BOT : BOTTOM OF TUNNEL
CL : CENTER LINE
Cx : COLUMN NUMBER
Bx : BEAM NUMBER
TB : TURBINE BUILDING
CB : CONTROL BUILDING
RL : REDUCED LEVEL
UN : UNLESS NOTED
PCC : PLAIN CEMENT CONCRETE
RC : REINFORCED CONCRETE
NO : NUMBER
MKD : MARKED
RWP : RAIN WATER PIPE

: CONCRETE WALL
: 200 THK WALL
: BUILDING GRID
: PLANT GRID

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS
ROUND ALL INTERNAL CORNERS
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)
TOLERANCES ON LINEAR DIMENSIONS (IS:2102)
TOLERANCES ON ANGULAR DIMENSIONS : ± 0° - 30'

REV. No.	DESCRIPTION	SIGNATURE WITH DATE (BHEL)	(NPCIL)
R0	FOR CONSTRUCTION	20.03.2024	

DRAWING ISSUED FOR

OWNER: **NUCLEAR POWER CORPORATION OF INDIA LIMITED**
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. BY | REV'D. BY | APP'D. BY

MAIN TIP CONTRACTOR: **BHARAT HEAVY ELECTRICALS LTD**
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- **KAIGA ATOMIC POWER PROJECT-5&6**
PIPE & CABLE BRIDGE (UNIT#5)
G.A. OF FONDATION

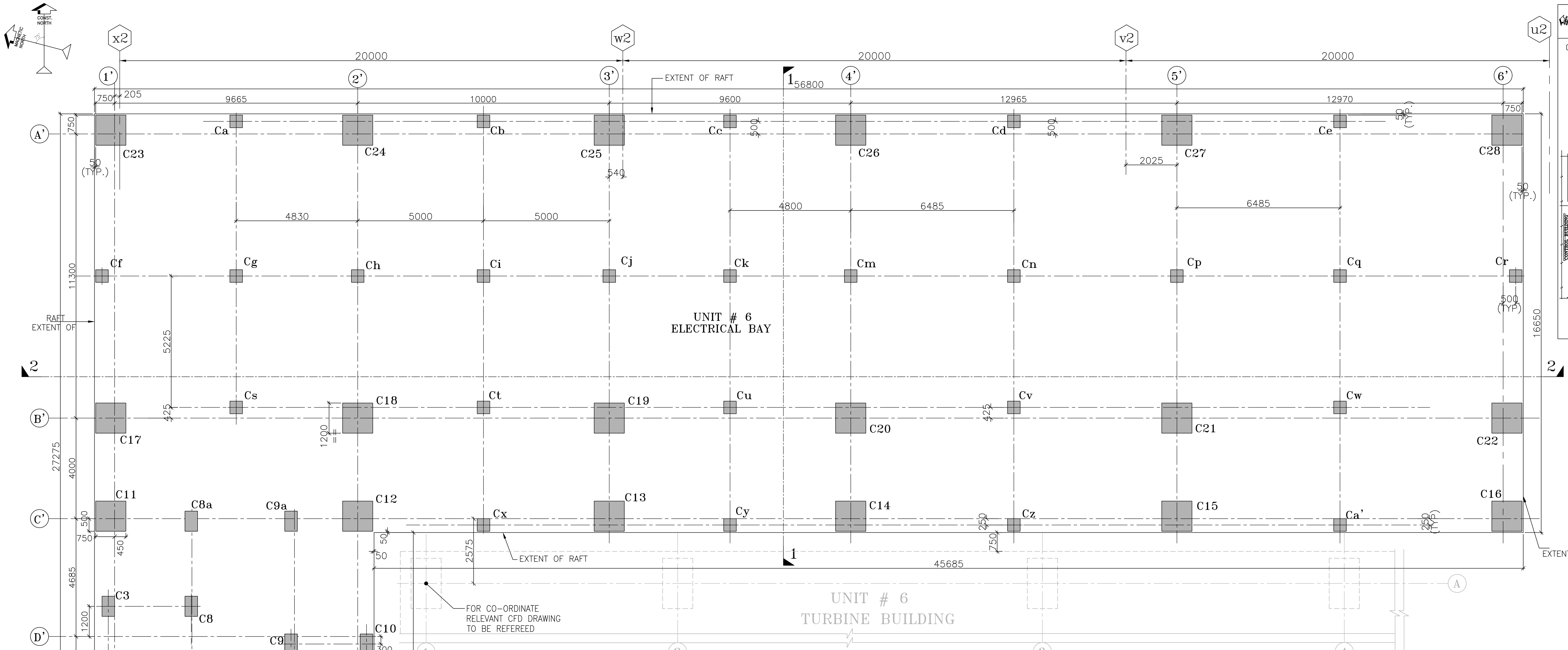
DES'D.	SMC, DATE - 19.03.2024	DR'N.	M.KUMAR, DATE - 19.03.2024	REV'D.	S.MISHRA, DATE - 20.03.2024
DES. CHK'D.	V.SHARMA, DATE - 19.03.2024	DRG. CHK'D.	SMC, DATE - 20.03.2024	APP'D.	A.KUMAR, DATE - 20.03.2024

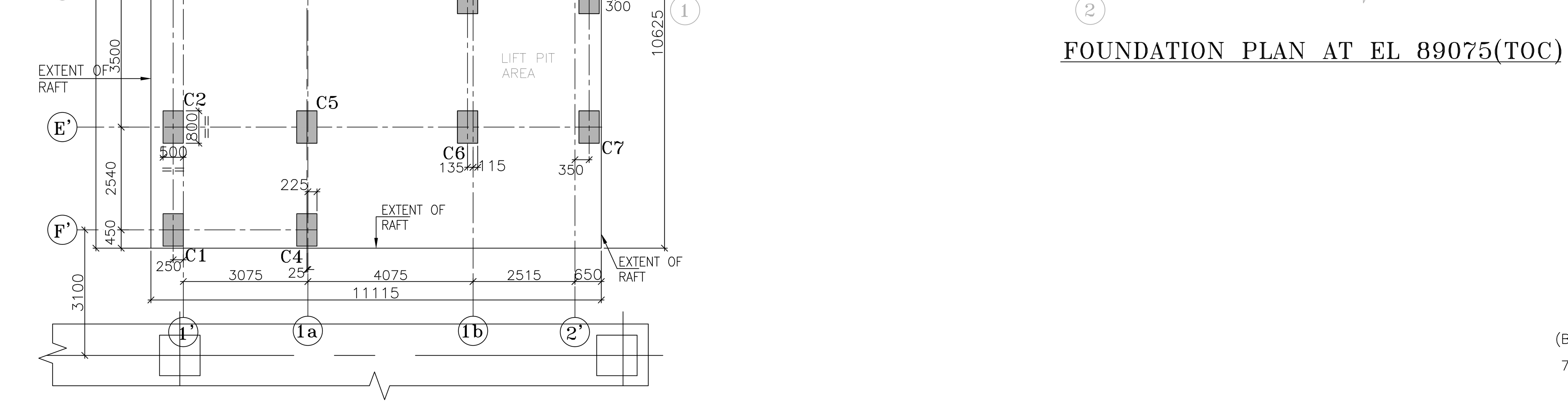
PROJECT: **KAIGA-5&6**
SCALE - 1 : 100
PROJECTION

DRG. No. KAIGA-5/22000/8037/GA
REV. No. R0
BHEL NO: PE-DG-488-675-C1001 (RA)
FILE NAME: KAIGA-5/22000/8037/GA

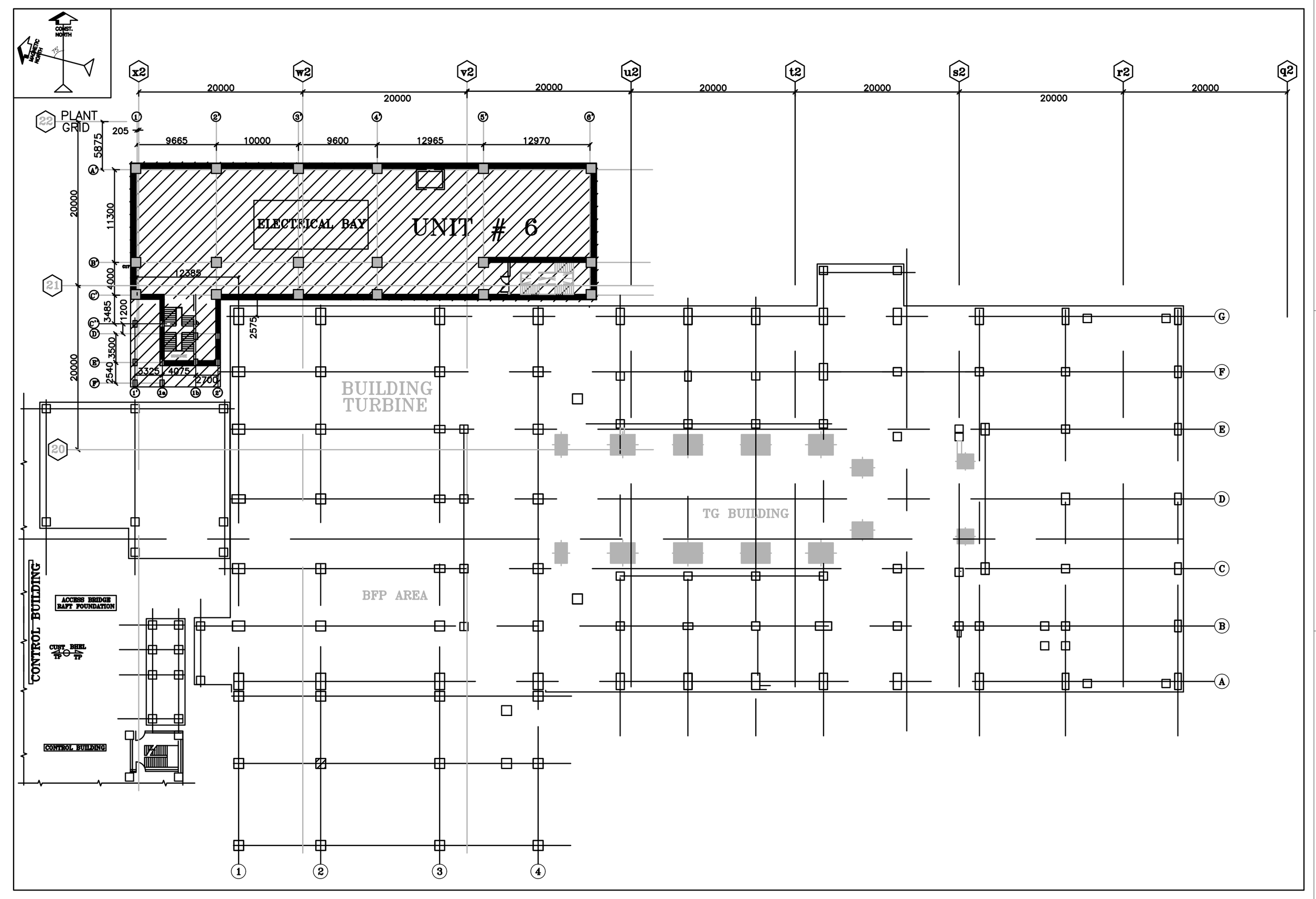
DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

KAIGA-5/22000/8037/GA





FOUNDATION PLAN AT EL 89075(TOC)



KEY PLAN

NOTES:-

1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL. 100 WHICH CORRESPONDS TO RL 42.80M AS PER NPCIL REQUEST VIA LETTER NO. CMM/ETM/00-40-11-0005 DATED 25 OCT. 2023.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 AS PER IS : 456 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE Fe 500 CONFORMING TO IS:1786.
5. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.
6. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DETAILED ANALYSIS AND DESIGN OF THE BUILDING.

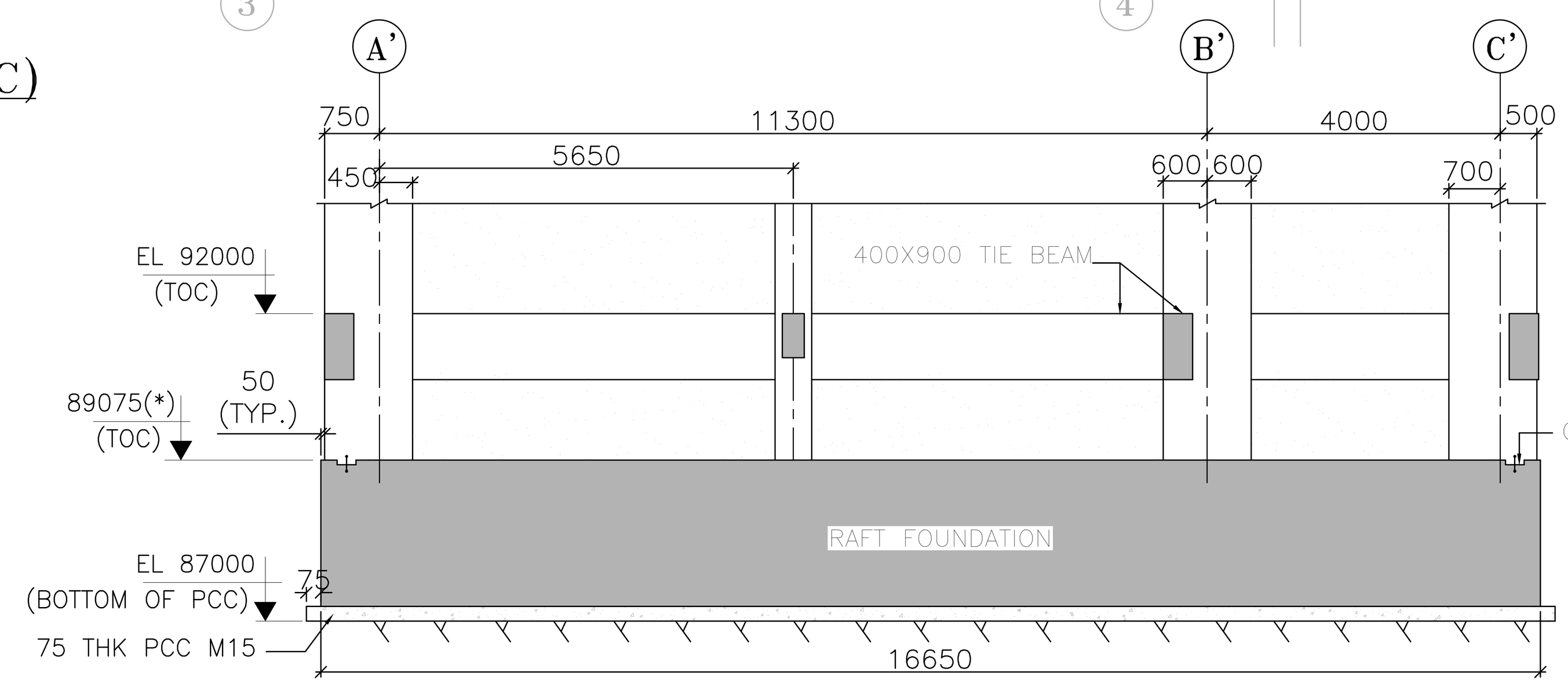
TABLE-1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS	KAIGA-5&6/22210/8001/DD

LEGEND:-

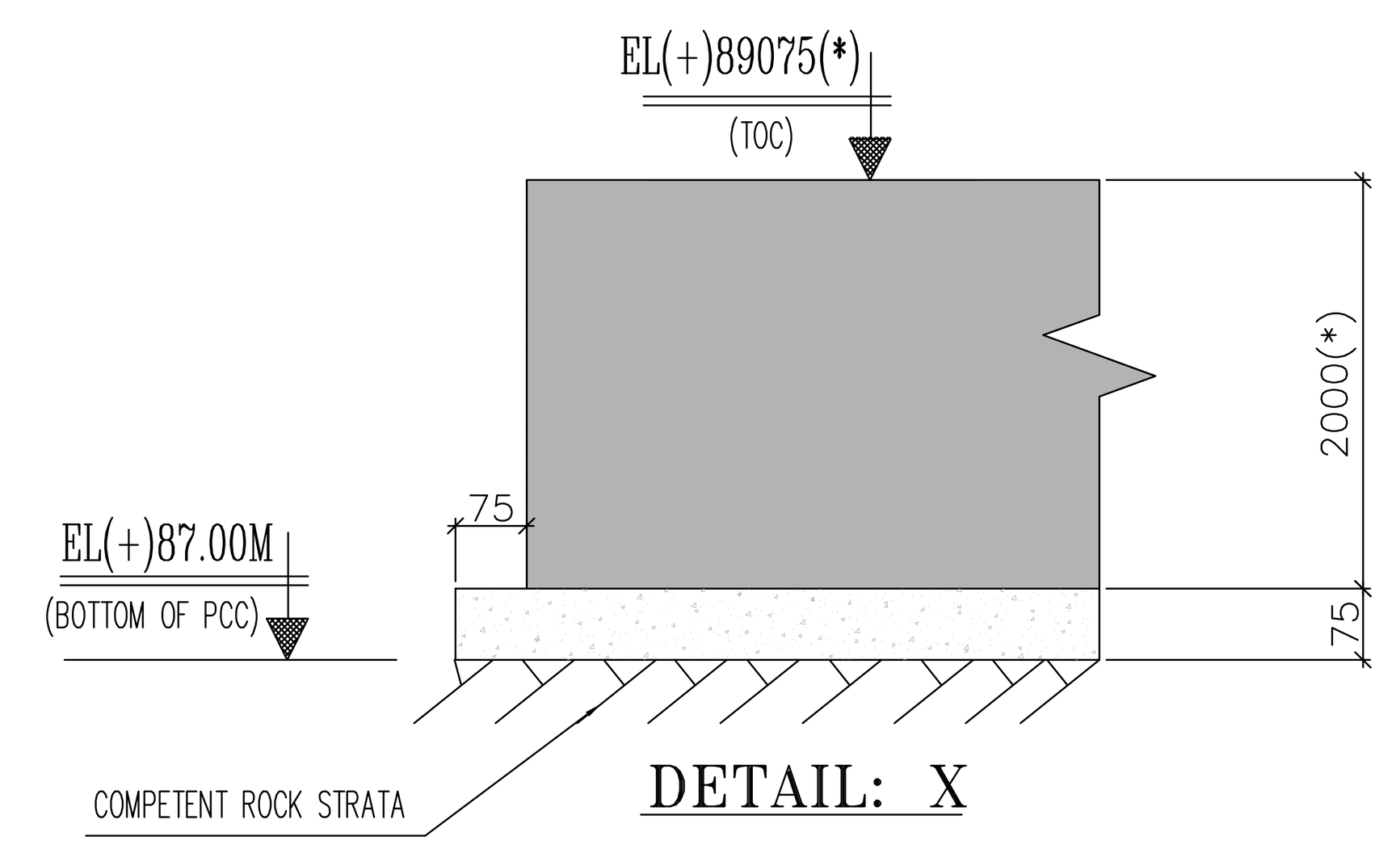
TOC : TOP OF CONCRETE
BOC : BOTTOM OF CONCRETE
CJ : CONSTRUCTION JOINT
TYP : TYPICAL
EL : ELEVATION
DRG : DRAWING
THK. : THICK

COLUMN/RAFT
TIE BEAM
75 THK. PCC
COMPETENT ROCK STRATA
WELL COMPACTED EARTH AS PER SPECIFICATION

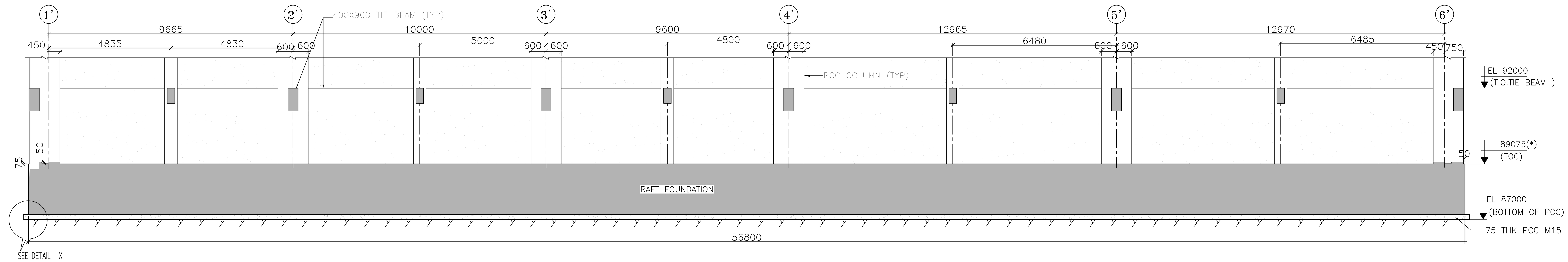


SECTION 1-1

(*) TO BE FINALIZED DURING DETAILED ENGINEERING BASED ON DETAILED ANALYSIS AND DESIGN.



DETAIL: X



SECTION 2-2

(*) TO BE FINALIZED DURING DETAILED ENGINEERING BASED ON DETAILED ANALYSIS AND DESIGN.

COLUMN SCHEDULE

COLUMN MKD.	COLUMN SIZE	
	NORTH-SOUTH	EAST-WEST
C1 TO C10	800	500
C11 TO C28	1200	1200
Ca TO Ck, Cm, Cn, Cp TO Cz & Ca'	500	500

NOTE:- COLUMN CA TO CK, CM, CN, CP TO CZ & CA' UP TO 95150M.(*)

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 2 OF 2 OF THIS DRAWING

DEVELOPMENT CONSULTANTS PVT. LIMITED

Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.

ACTION: 1
1 APPROVED
2 COMMENTED
3 FOR INFORMATION

REVIEWED BY: INDRANIL BHADRA
DATE: 18.03.2024

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	12.03.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

REV No.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPCIL'S SYSTEM CLEARANCE

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
ELECTRICAL BAY BUILDING
GA OF FOUNDATION (UNIT#6)

DES'D. V.SHARMA DATE 11.08.2023	DR'N. S.NAIN DATE 16.08.2023	REV'D. S.MISHRA DATE 16.08.2023
DES. CHK'D. A.KAPOOR DATE 16.08.2023	DRG. CHK'D. V.SHARMA DATE 16.08.2023	APP'D. A.KUMAR DATE 16.08.2023

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS
PROJECTION

NPCIL DRG. No. KAIGA-6/22000/8008/GA
SHEET 1 OF 2
REV. No. R0
BHEL NO : PE-DG-488-619-C2001_(RA)
FILE NAME: KAIGA_6_22000_8008_GA

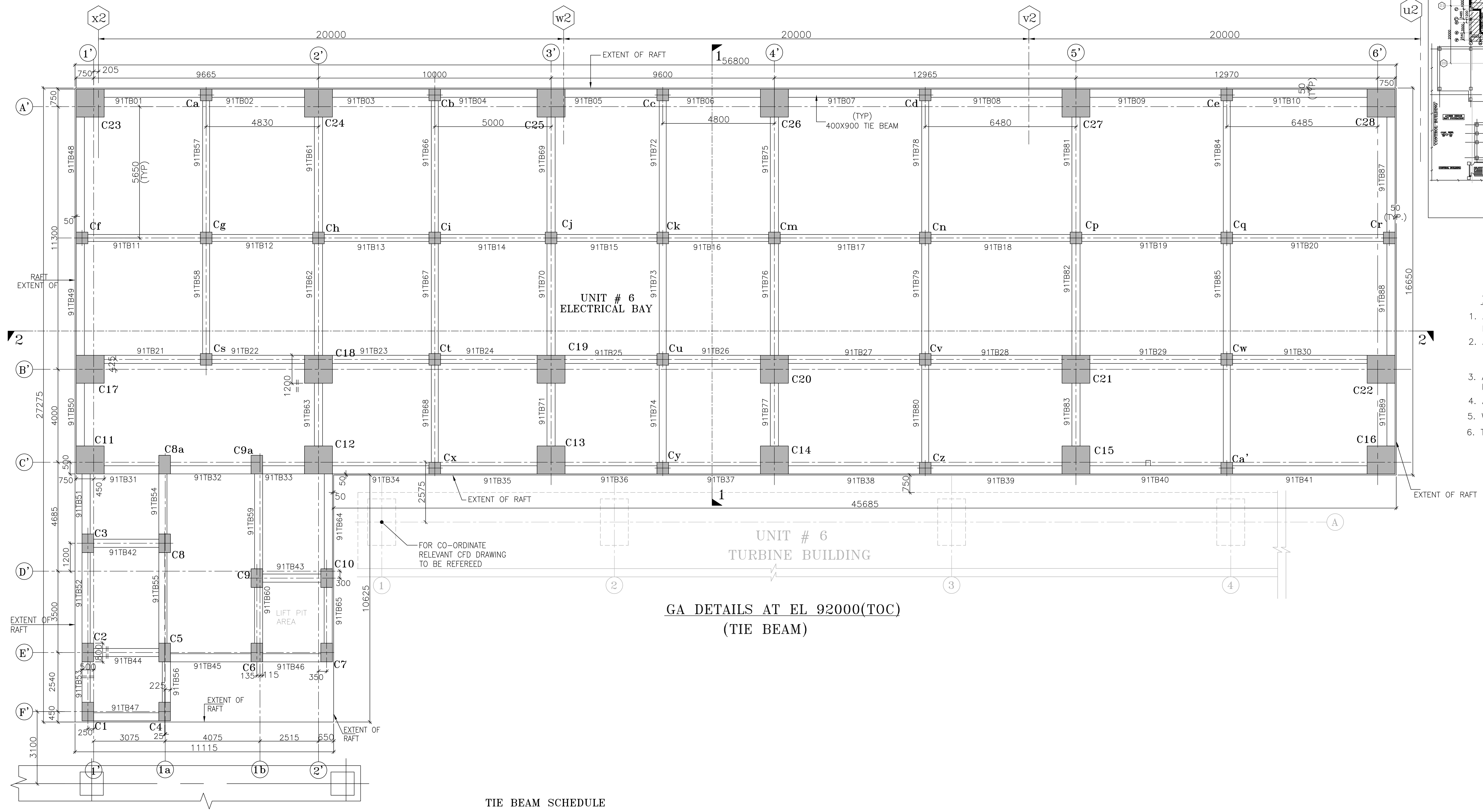
DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS

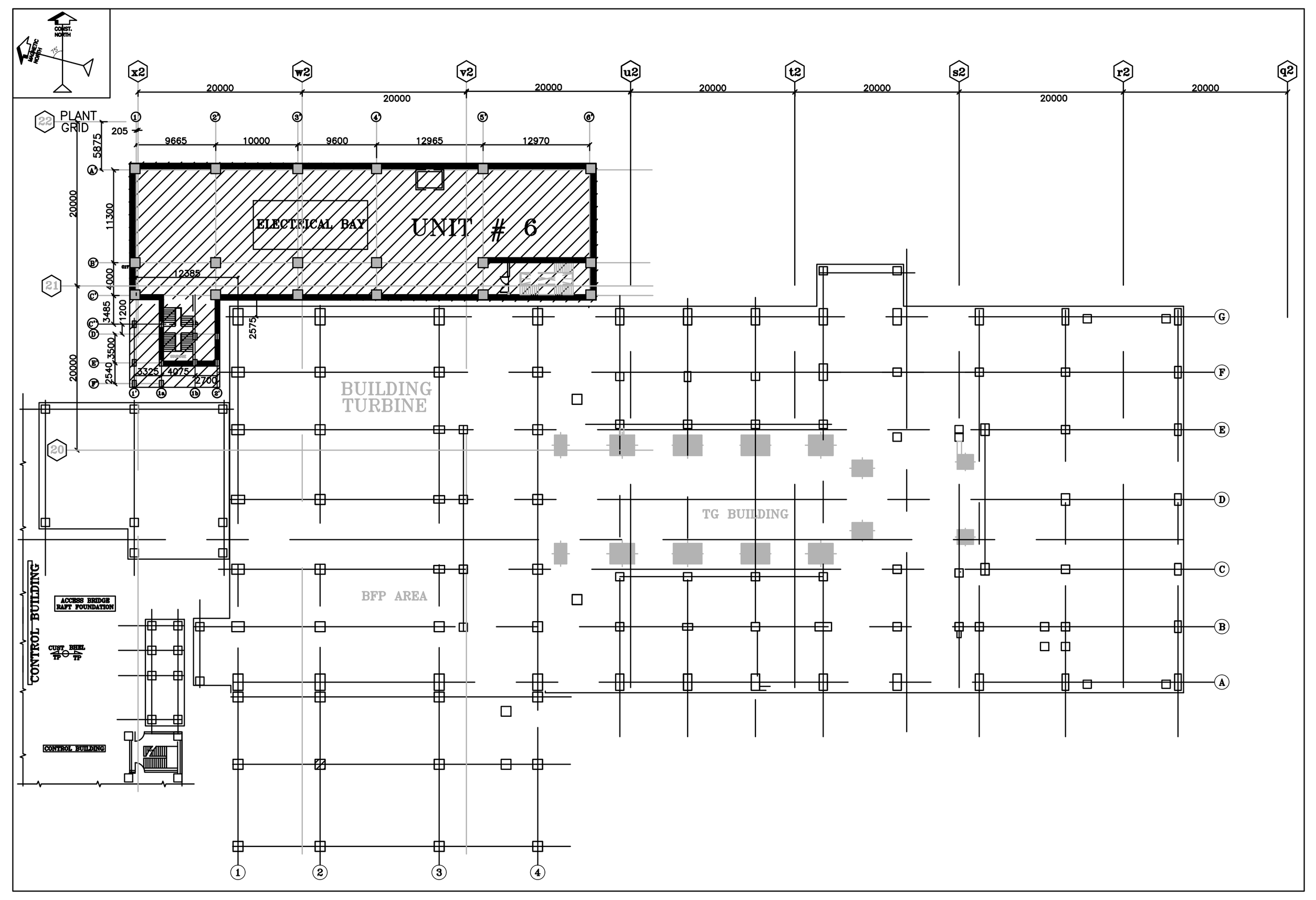
TABLE-1

REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

KAIGA-6/22000/8008/GA_SH. 1 OF 2
A0



GA DETAILS AT EL 92000(TOC)
(TIE BEAM)



KEY PLAN

NOTES:-

1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL. 100 WHICH CORRESPONDS TO RL 42.80M AS PER NPCIL REQUEST VIA LETTER NO. CMM/ETM/00-40-11-0005 DATED 25 OCT. 2023.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 AS PER IS : 456 WITH PLACEMENT TEMPERATURE OF 29°C UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE Fe 500 CONFORMING TO IS:1786.
5. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.
6. THIS DRAWING IS TENTATIVE AND SIZES ARE INDICATIVE ONLY, SHALL BE FINALIZED DURING DETAILED ANALYSIS AND DESIGN OF THE BUILDING.

TABLE-1

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
ELECTRICAL BAY-GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS	KAIGA-5&6/22210/8001/DD

LEGEND:-

TOC : TOP OF CONCRETE
BOC : BOTTOM OF CONCRETE
CJ : CONSTRUCTION JOINT
TYP : TYPICAL
EL : ELEVATION
DRG : DRAWING
THK. : THICK
CONCRETE WALL
200 THK WALL

TIE BEAM SCHEDULE

BEAM NAME	WIDTH	DEPTH
91TB01, 91TB02, 91TB03, 91TB04, 91TB05, 91TB06, 91TB07, 91TB08, 91TB09, 91TB10 91TB21, 91TB22, 91TB23, 91TB24, 91TB25, 91TB26, 91TB27, 91TB28, 91TB29, 91TB30, 91TB31, 91TB32, 91TB33, 91TB34, 91TB35, 91TB36, 91TB37, 91TB38, 91TB39, 91TB40, 91TB41, 91TB48, 91TB49, 91TB50, 91TB61, 91TB62, 91TB63, 91TB69, 91TB70, 91TB71, 91TB75, 91TB76, 91TB77, 91TB81, 91TB82, 91TB83, 91TB87, 91TB88, 91TB89.	400	900
91TB42, 91TB43, 91TB44, 91TB45, 91TB46, 91TB47, 91TB51, 91TB52, 91TB53, 91TB54, 91TB55, 91TB56, 91TB59, 91TB60, 91TB64, 91TB65,	300	500
91TB11, 91TB12, 91TB13, 91TB14, 91TB15, 91TB16, 91TB17, 91TB18, 91TB19, 91TB20, 91TB57, 91TB58, 91TB66, 91TB67, 91TB68, 91TB72, 91TB73, 91TB74, 91TB78, 91TB79, 91TB80, 91TB84, 91TB85 ,91TB86.	300	600

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 1 OF 2 OF THIS DRAWING

DEVELOPMENT CONSULTANTS PVT. LIMITED
Document is approved in conformance to Codal provisions & NPCIL Technical Specifications.
ACTION: 1
1 APPROVED
2 COMMENTED
3 FOR INFORMATION
REVIEWED BY: INDRANIL BHADRA
SIGNATURE:
DATE: 18.03.2024

REV. No.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPICL'S SYSTEM CLEARANCE

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	12.03.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
ELECTRICAL BAY BUILDING
GA OF FOUNDATION (UNIT#6)

DES'D. V.SHARMA DATE 11.08.2023	DR'N. S.NAIN DATE 16.08.2023	REV'D. S.MISHRA DATE 16.08.2023
DES. CHK'D. A.KAPOOR DATE 16.08.2023	DRG. CHK'D. V.SHARMA DATE 16.08.2023	APP'D. A.KUMAR DATE 16.08.2023

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS
PROJECTION

NPCIL DRG. No. KAIGA-6/22000/8008/GA
SHEET 2 OF 2
REV. No. R0
BHEL NO : PE-DG-488-619-C2001_(RA)
FILE NAME: KAIGA_6_22000_8008_GA

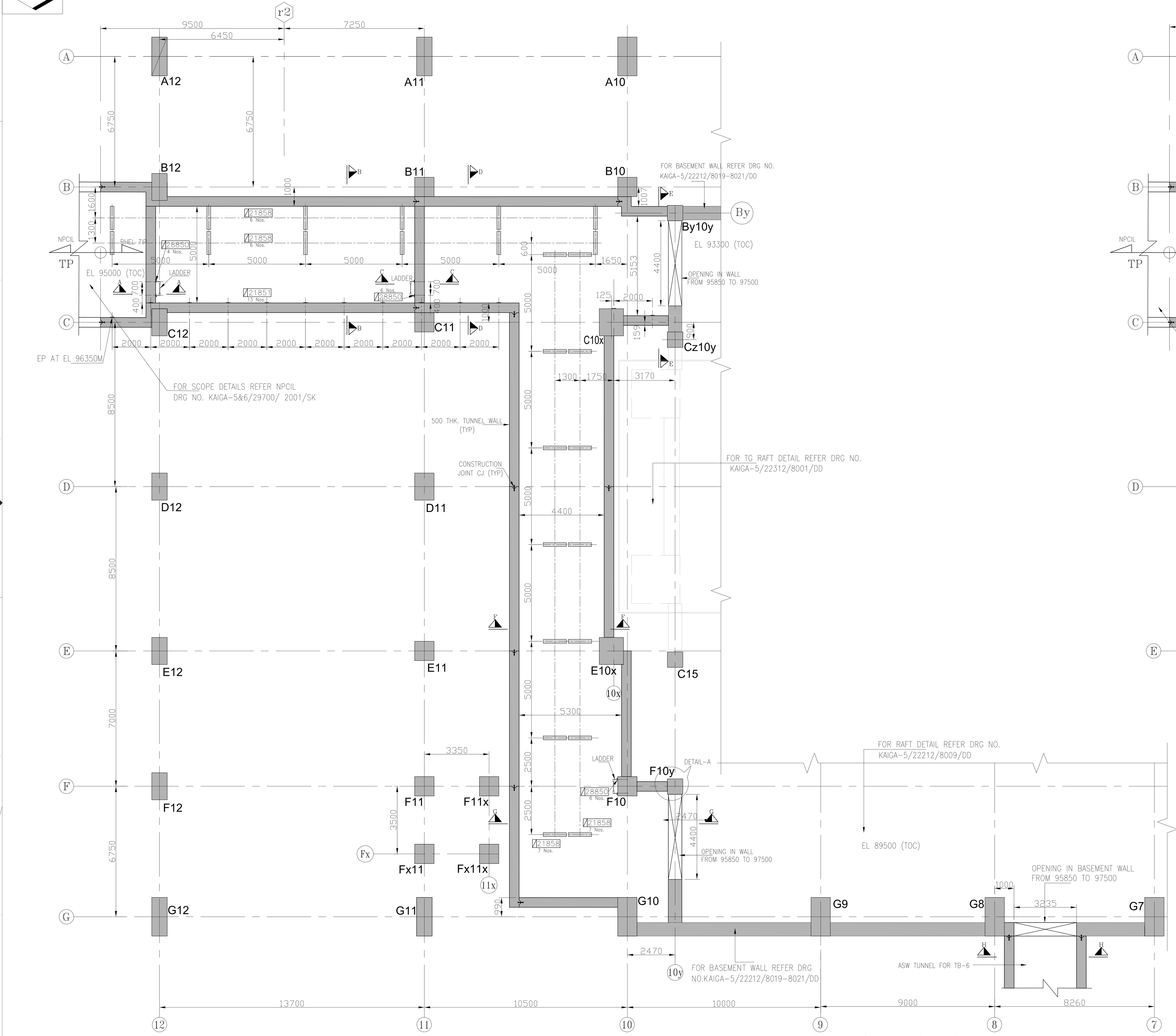
DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS.
AND EDGES BY CHAMFERING TO 0.15 X 45
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

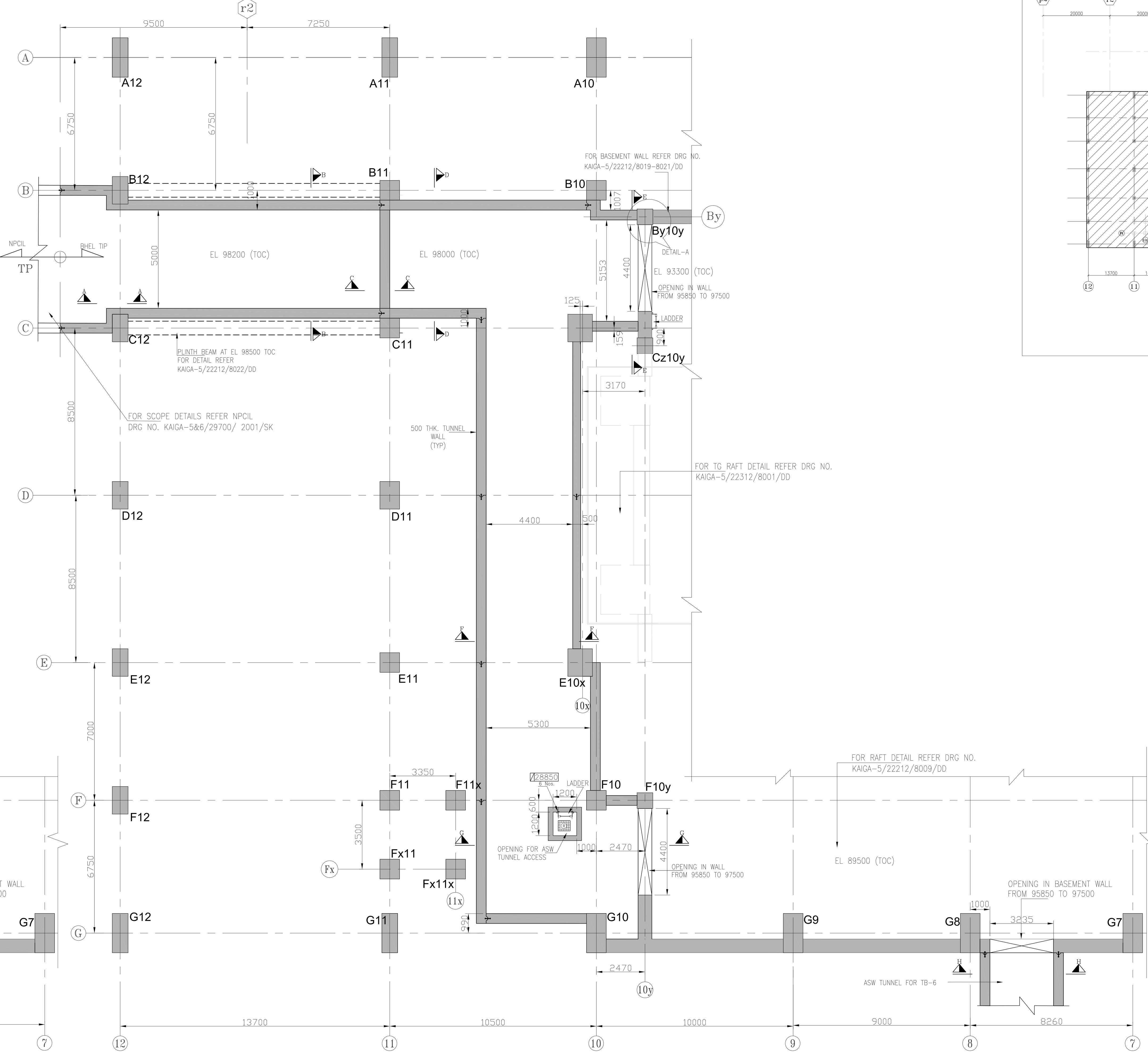
TABLE-1

REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

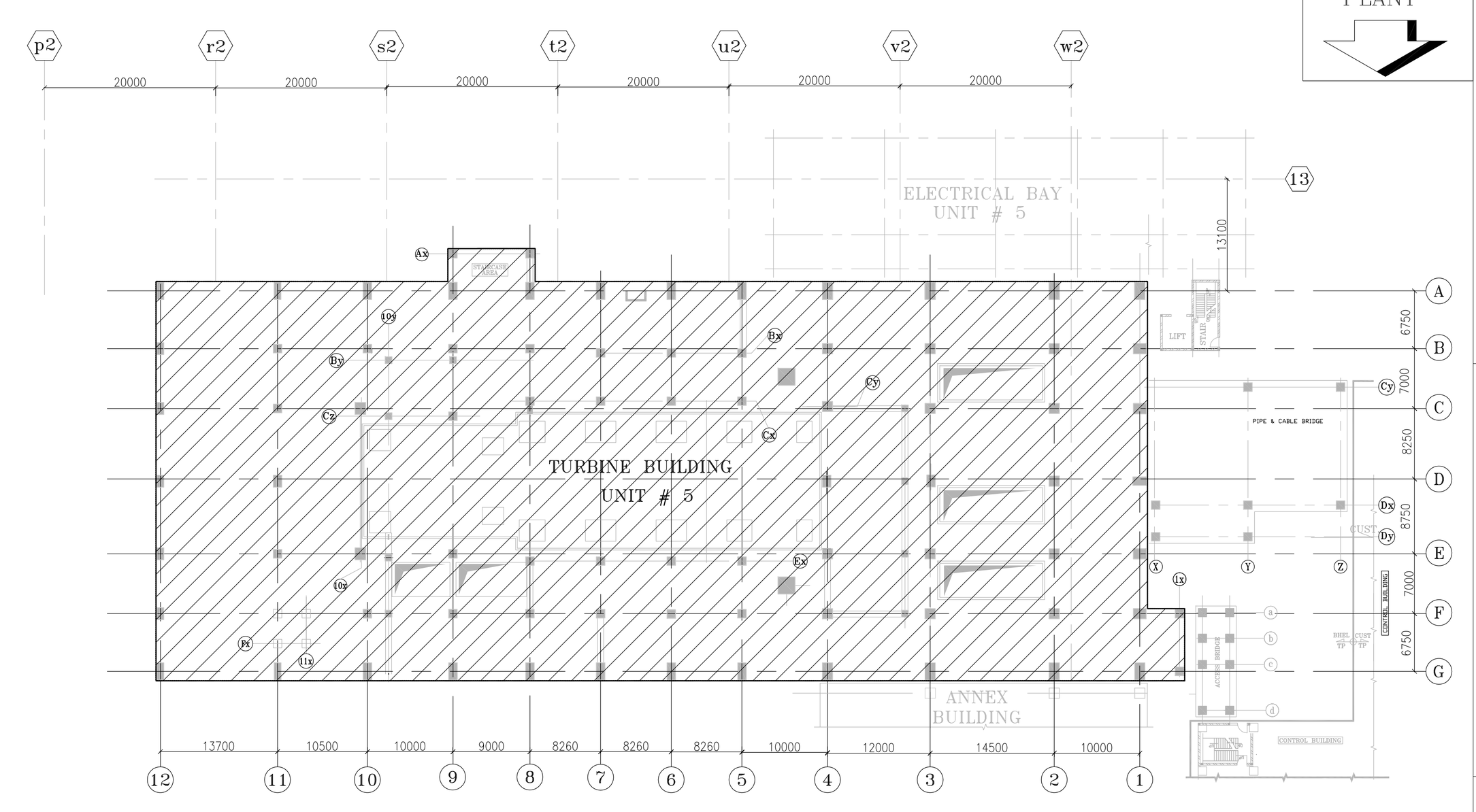
DRG. No. KAIGA-6/22000/8008/GA_SH. 2 OF 2
A0



BOTTOM SLAB PLAN OF ASW TUNNEL AT EL 93700/94500/95300 (BOT.)
(SCALE 1:100)



TOP SLAB PLAN OF ASW TUNNEL AT EL 98000/98200 (TOC.)
(SCALE 1:100)



NOTES:
1. ALL DIMENSIONS AND ELEVATION ARE IN MILLIMETERS AND CO-ORDINATE ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100M WHICH CORRESPONDS TO RL 219.60M.
3. ALL ELEVATION ARE FINISHED FLOOR LEVEL UN.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE FE 500 CONFORMING TO IS:1786. FOR DETAILS REFER KAIGA-5&6/22210/8001/DD.
6. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.

IMP. NOTES:
1. THE DRAWING HAS BEEN INTERFACED AND CLEARED BY MECHANICAL PIPING LAYOUT(MPL), MECHANICAL AUX. SYSTEM (MAX), ELECTRICAL AND C&I DEPARTMENT WITH RESPECT TO THEIR SYSTEM REQUIREMENT THROUGH DOCUMENT MANAGEMENT SYSTEM SOFTWARE WRENCH.

ENGINEERING REFERENCE DRAWINGS

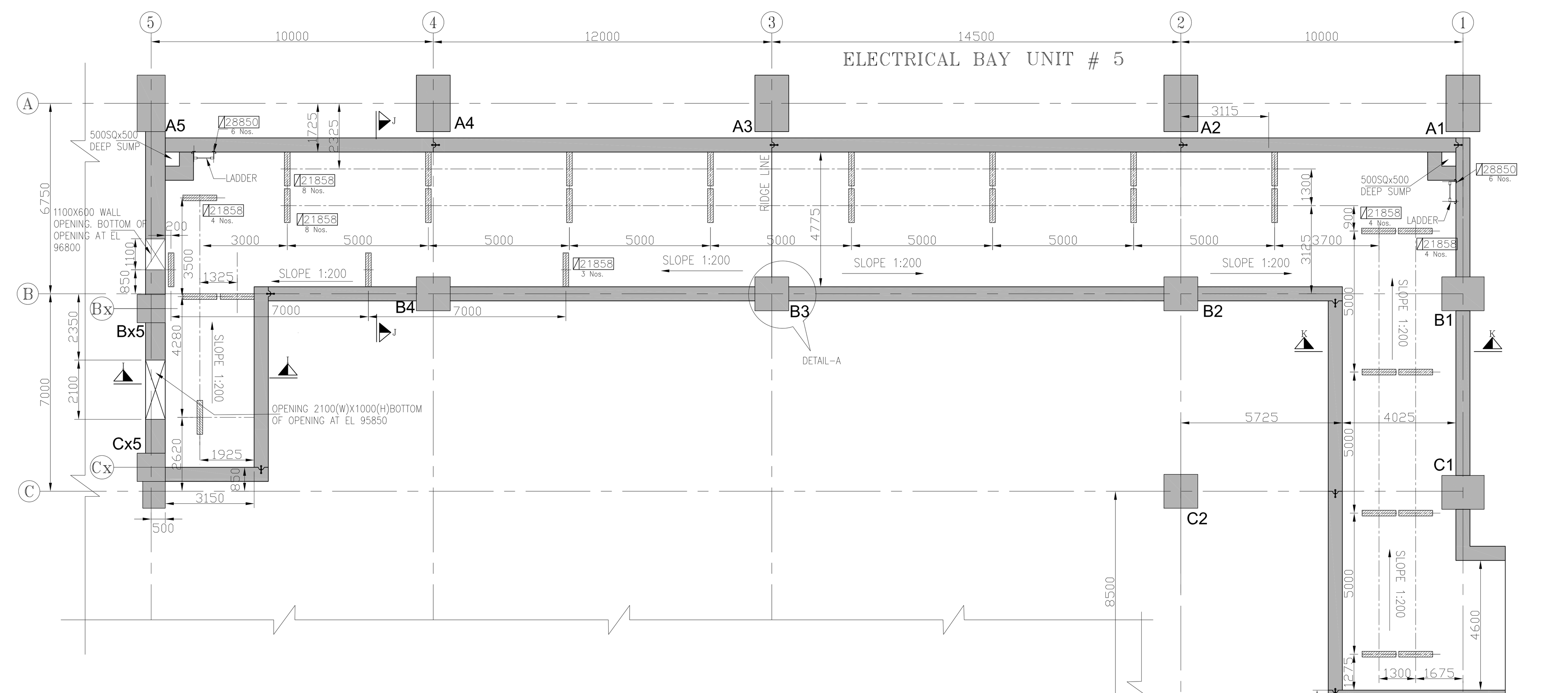
TITLE	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
TURBINE BUILDING – GA OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8016/GA
TURBINE BUILDING GA OF LONGITUDINAL SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA

TABLE -A

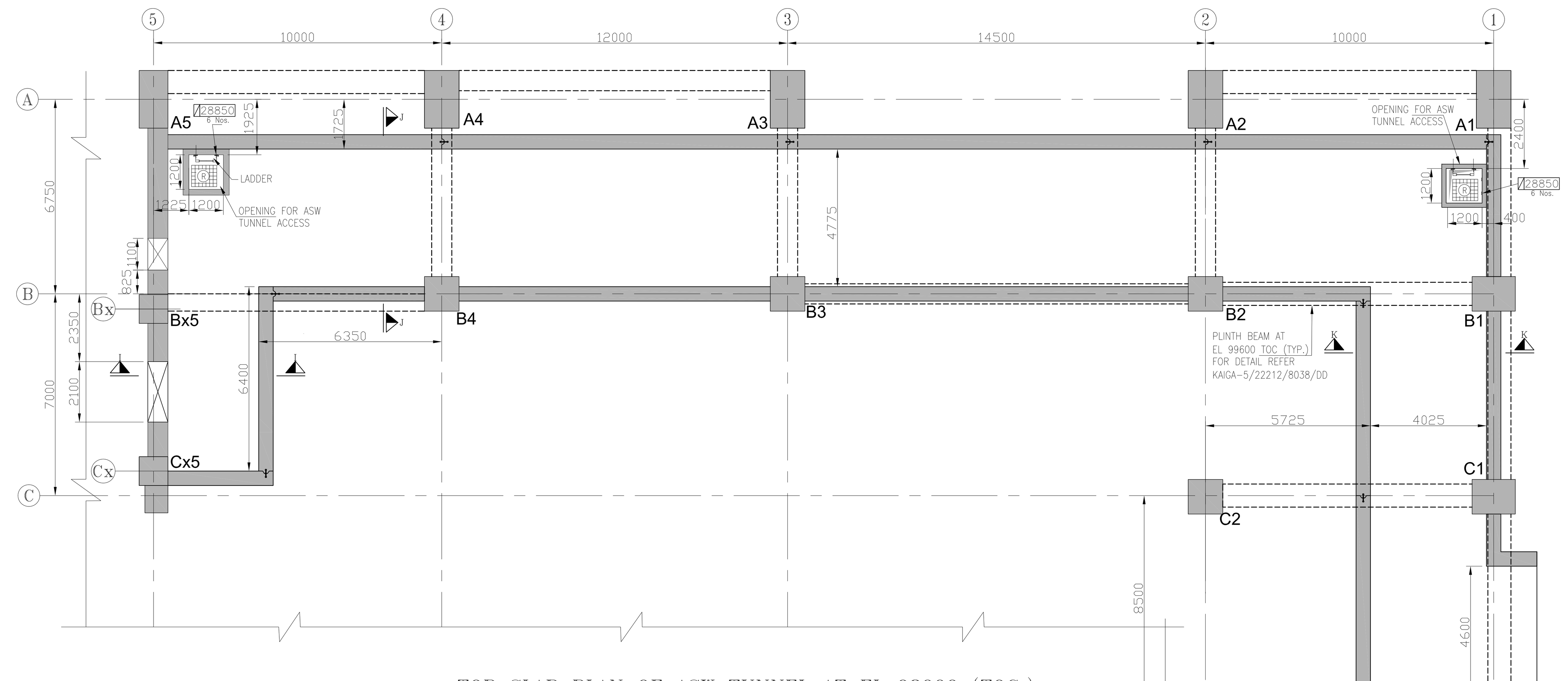
ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOs.
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT# 5 & 6)	KAIGA-5&6/22210/8001/DD
TURBINE BUILDING – EMBEDMENT SCHEDULE BELOW FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22032/8031/DD
TURBINE BUILDING – EMBEDMENT SCHEDULE BELOW FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22032/8032/DD
TURBINE BUILDING – EMBEDMENT SCHEDULE FOR FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22032/8033/DD
TURBINE BUILDING – EMBEDMENT SCHEDULE FOR FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22032/8034/DD
TURBINE BUILDING – CONCRETE DETAILS OF COLUMNS ALONG A ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8012/DD
TURBINE BUILDING – CONCRETE DETAILS OF COLUMNS ALONG G ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8013/DD
TURBINE BUILDING – CONCRETE DETAILS OF COLUMNS ALONG B ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8014/DD
TURBINE BUILDING – CONCRETE DETAILS OF COLUMNS ALONG C ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8015/DD
TURBINE BUILDING – CONCRETE DETAILS OF COLUMNS ALONG D ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8016/DD
TURBINE BUILDING – CONCRETE DETAILS OF COLUMNS ALONG E ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8017/DD
TURBINE BUILDING –CONCRETE DETAILS OF COLUMNS ALONG F ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8018/DD
TURBINE BUILDING –CONCRETE DETAILS OF RETAINING WALLS GRID 1 TO 5 (UNIT#5)	KAIGA-5/22212/8019/DD
TURBINE BUILDING – CONCRETE DETAILS OF RETAINING WALLS GRID 5 TO 8 (UNIT#5)	KAIGA-5/22212/8020/DD
TURBINE BUILDING – CONCRETE DETAILS OF RETAINING WALLS GRID 8 TO 12 (UNIT#5)	KAIGA-5/22212/8021/DD
TURBINE BUILDING – CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 5 TO 10 (UNIT#5)	KAIGA-5/22212/8024/DD
TURBINE BUILDING – CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 10 TO 12 (UNIT#5)	KAIGA-5/22212/8025/DD

LEGENDS:
- DWG – DRAWING
- TIP – TURBINE ISLAND PACKAGE
- TOC – TOP OF CONCRETE
- BOC – BOTTOM OF CONCRETE
- TOT – TOP OF TRENCH
- TP – TERMINAL POINT
- BOT – BOTTOM OF TRENCH
- TYP. – TYPICAL
- –REMOVABLE CHEQUERED PLATE
- –REMOVABLE GRATED FLOORING

ELECTRICAL BAY UNIT # 5



BOTTOM SLAB PLAN OF ASW TUNNEL AT EL 95300 (BOT.)
(SCALE 1:100)



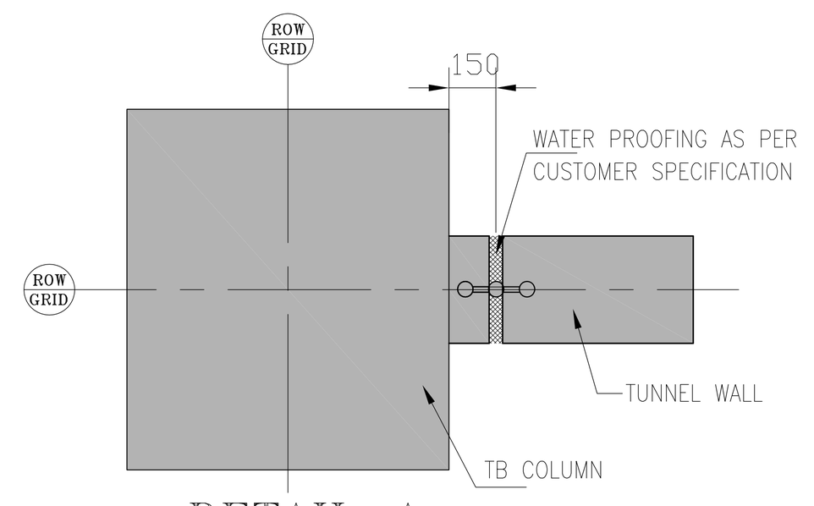
TOP SLAB PLAN OF ASW TUNNEL AT EL 98000 (TOC.)
(SCALE 1:100)

SCHEDULE OF MECHANICAL EPs

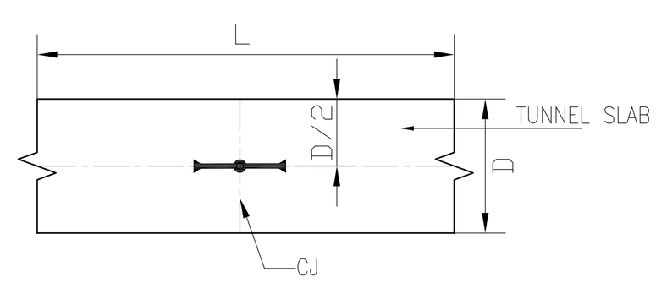
SL. NO.	HOLE NO.	EP NO.	DESCRIPTION	QTY	USI NO.	LEGEND	REMARK
1.	-	21851	200x200x10THK. PLATE EP	13	22030		PIPE SUPPORT
2.	-	21858	1200x200x10THK. PLATE EP	57	22030		PIPE SUPPORT

SCHEDULE OF CIVIL EPs

SL. NO.	HOLE NO.	EP NO.	DESCRIPTION	QTY	LEGEND	REMARK
1.	-	28850	100x100x8THK. PLATE EP	53		LADDER SUPPORT



DETAIL-A
(FOR LOCATION REFER PLAN)



TYP DETAIL OF CJ IN SLAB

REV NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPICL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.

UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15 / 0.40 X 45°.
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15 / 0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : 0°-30'

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	05.04.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
TURBINE BUILDING
CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 1 TO 5 (UNIT#5)

DES'D.	HYRADESH 05.04.2024	DR'N.	ALKESH 05.04.2024	REV'D.	S. MISHRA 05.04.2024
DES. CHK'D.	S. MISHRA 05.04.2024	DRG. CHK'D.	HYRADESH 05.04.2024	APP'D.	A. KUMAR 05.04.2024

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS
PROJECTION

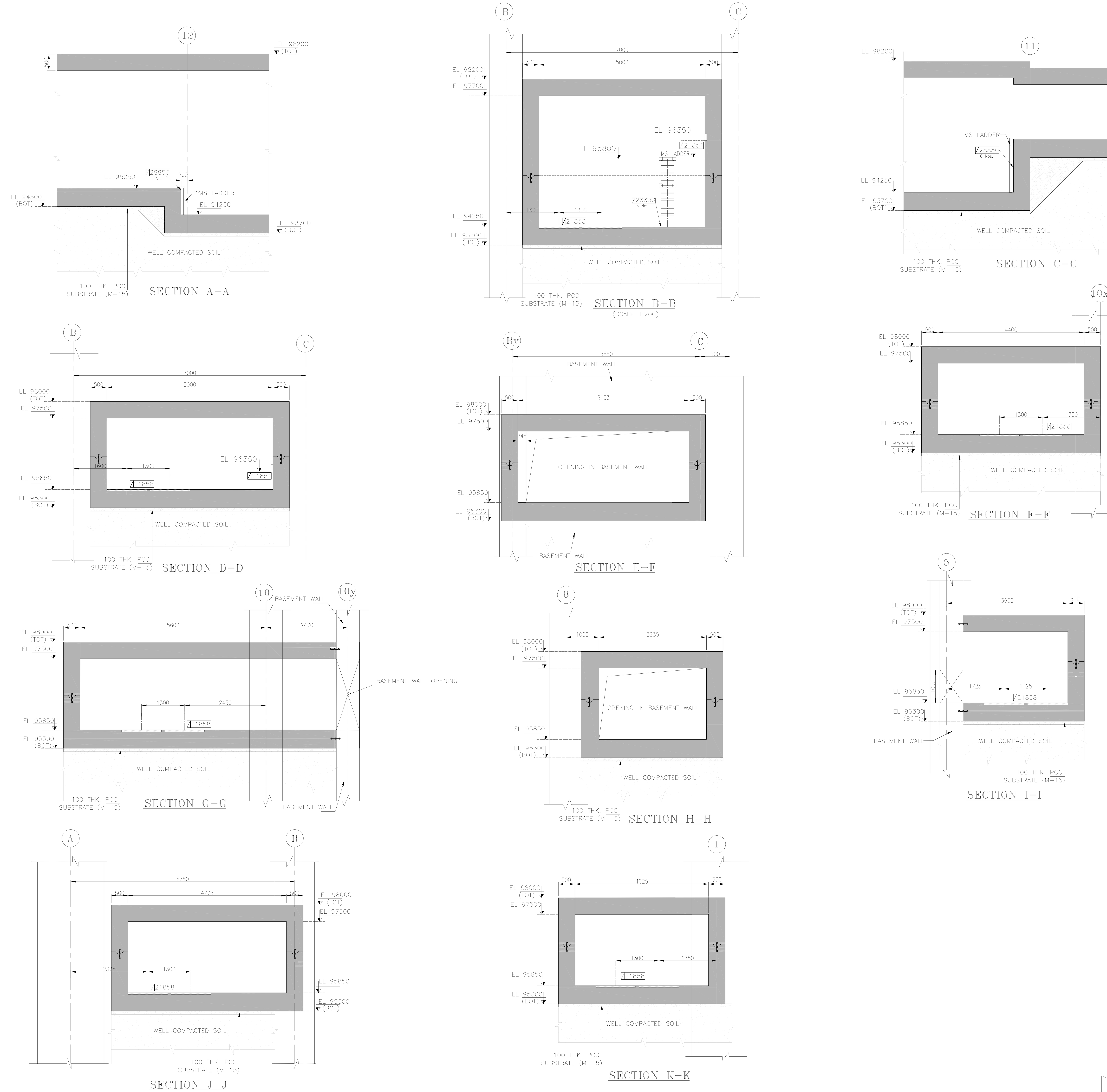
NPCIL DRG. No. KAIGA-5/22212/8023/DD
SHEET 1 OF 1
REV. No. R0

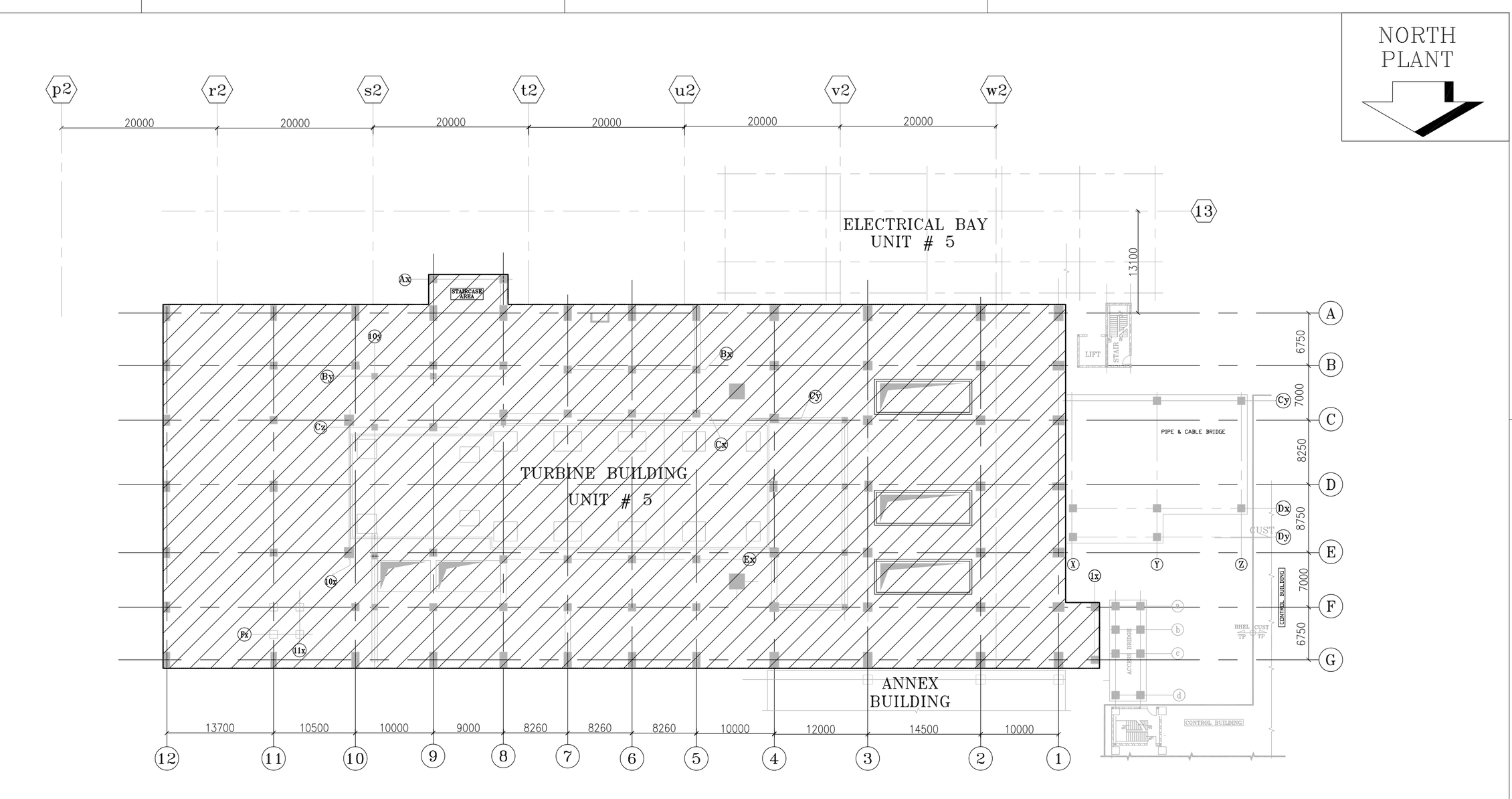
BHEL NO: PE-DG-488-611-C1078-RA
FILE NAME: KAIGA-5/22212/8023/DD

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

A0 DRG. No. KAIGA-5/22212/8023/DD





NOTES:

1. ALL DIMENSIONS AND ELEVATION ARE IN MILLIMETERS AND CO-ORDINATE ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100 M WHICH CORRESPONDS TO RL 219.60M.
3. ALL ELEVATION ARE FINISHED FLOOR LEVEL UN.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE FE 500 CONFORMING TO IS:1786. FOR DETAILS REFER KAIGA-5&6/22210/8001/DD.
6. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.

IMP. NOTES:

1. THE DRAWING HAS BEEN INTERFACED AND CLEARED BY MECHANICAL PIPING LAYOUT(MPL), MECHANICAL AUX. SYSTEM (MAX), ELECTRICAL AND C&I DEPARTMENT WITH RESPECT TO THEIR SYSTEM REQUIREMENT THROUGH DOCUMENT MANAGEMENT SYSTEM SOFTWARE WRENCH.

ENGINEERING REFERENCE DRAWINGS

TITLE	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
TURBINE BUILDING - GA OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8016/GA
TURBINE BUILDING GA OF LONGITUDINAL SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA

TABLE -A

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOs.
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT#5 & 6)	KAIGA-5&2/22210/8001/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE BELOW FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22032/8031/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE BELOW FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22032/8032/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE FOR FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22032/8033/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE FOR FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22032/8034/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG A ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8012/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG G ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8013/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG B ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8014/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG C ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8015/DD
TURBINE BUILDING - CONCRETE DETAILS OF RETAINING WALLS GRID 5 TO 8 (UNIT#5)	KAIGA-5/22212/8020/DD
TURBINE BUILDING - CONCRETE DETAILS OF RETAINING WALLS GRID 8 TO 12 (UNIT#5)	KAIGA-5/22212/8021/DD
TURBINE BUILDING - CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 5 TO 10 (UNIT#5)	KAIGA-5/22212/8024/DD
TURBINE BUILDING - CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 10 TO 12 (UNIT#5)	KAIGA-5/22212/8025/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG D ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8016/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG E ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8017/DD
TURBINE BUILDING -CONCRETE DETAILS OF COLUMNS ALONG F ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8018/DD
TURBINE BUILDING -CONCRETE DETAILS OF RETAINING WALLS GRID 1 TO 5 (UNIT#5)	KAIGA-5/22212/8019/DD

LEGENDS:

DWG - DRAWING
TOC - TOP OF CONCRETE
BOC - BOTTOM OF CONCRETE
TIP - TURBINE ISLAND PACKAGE
TOT - TOP OF TRENCH
TP - TERMINAL POINT
BOT - BOTTOM OF TRENCH
TYP. - TYPICAL

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	05.04.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

SYSTEM-1 | SYSTEM-2 | SYSTEM-3 | SYSTEM-4

NPCIL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.
UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE 3.2 OR BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0.15 / 0.40 X 45.
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0.15 / 0.40.
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

RADII AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

TOLERANCES ON LINEAR DIMENSIONS (IS:2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UPTO 6	± 0.1	315 - 1000	± 0.8
6 - 30	± 0.2	1000 - 2000	± 1.2
30 - 120	± 0.3	2000 - 4000	± 2.0
120 - 315	± 0.5	4000 - 8000	± 3.0

TOLERANCES ON LINEAR DIMENSIONS

SPECIFIED DIMENSIONS	TOLERANCE
XX	±
XX.X	±
XX.XX	±

TOLERANCES ON ANGULAR DIMENSIONS : 0°- 30'

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. | REV'D. | APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
TURBINE BUILDING
CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 5 TO10 (UNIT#5)

DES'D.	HYRADESH, DATE 05.04.2024	DR'N.	ALKESH, DATE 05.04.2024	REV'D.	S. MISHRA, DATE 05.04.2024
DES. CHK'D.	S. MISHRA, DATE 05.04.2024	DRG. CHK'D.	HYRADESH, DATE 05.04.2024	APP'D.	A. KUMAR, DATE 05.04.2024

PROJECT: 2x700 MWe PHWR
KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS

PROJECTION

NPCIL DRG. No. KAIGA-5/22212/8023/DD | SHEET 1 OF 1 | REV. No. R0

BHEL NO: PE-DG-488-611-C1080-RA | FILE NAME: KAIGA-5/22212/8023/DD

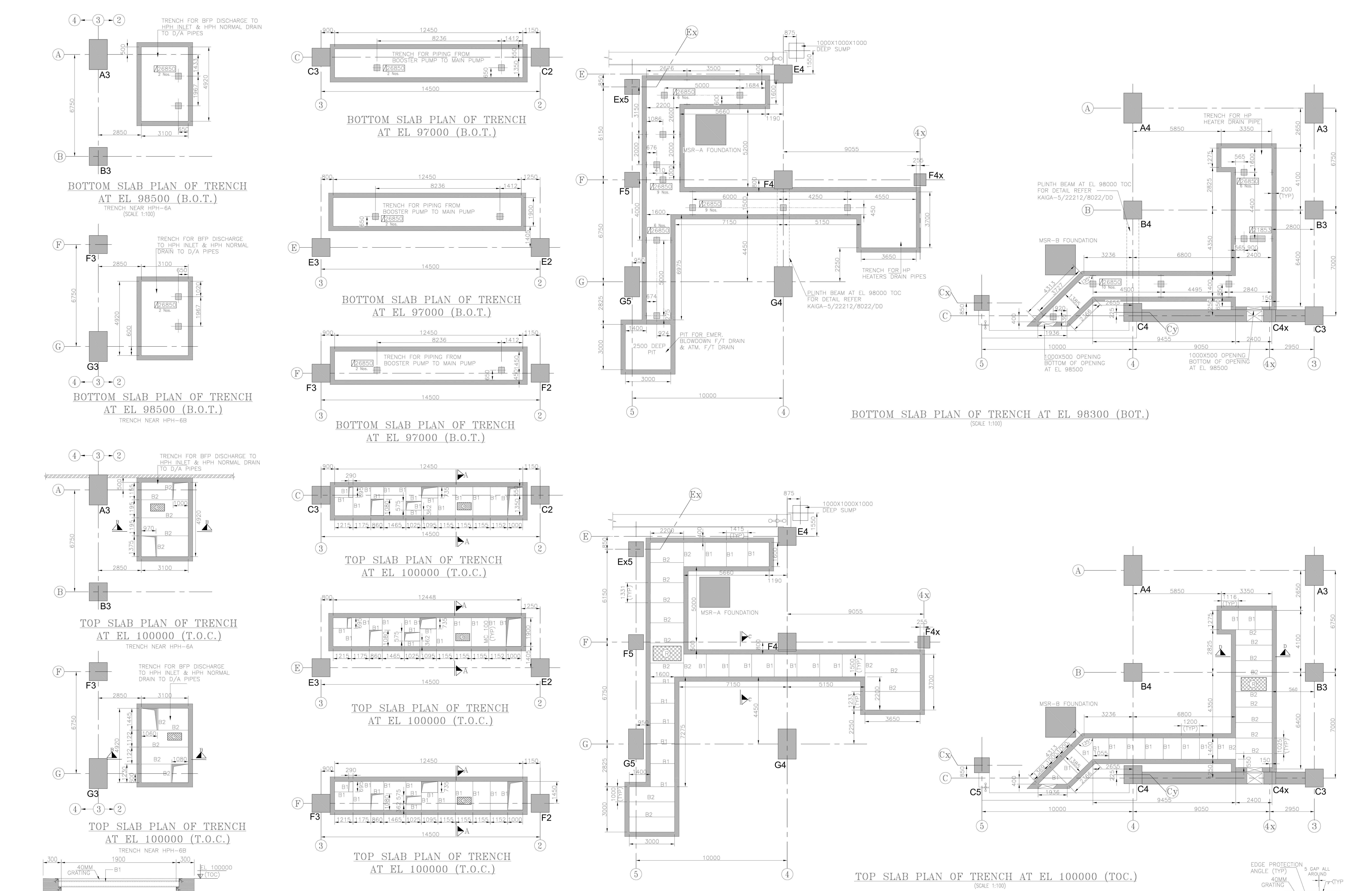
DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

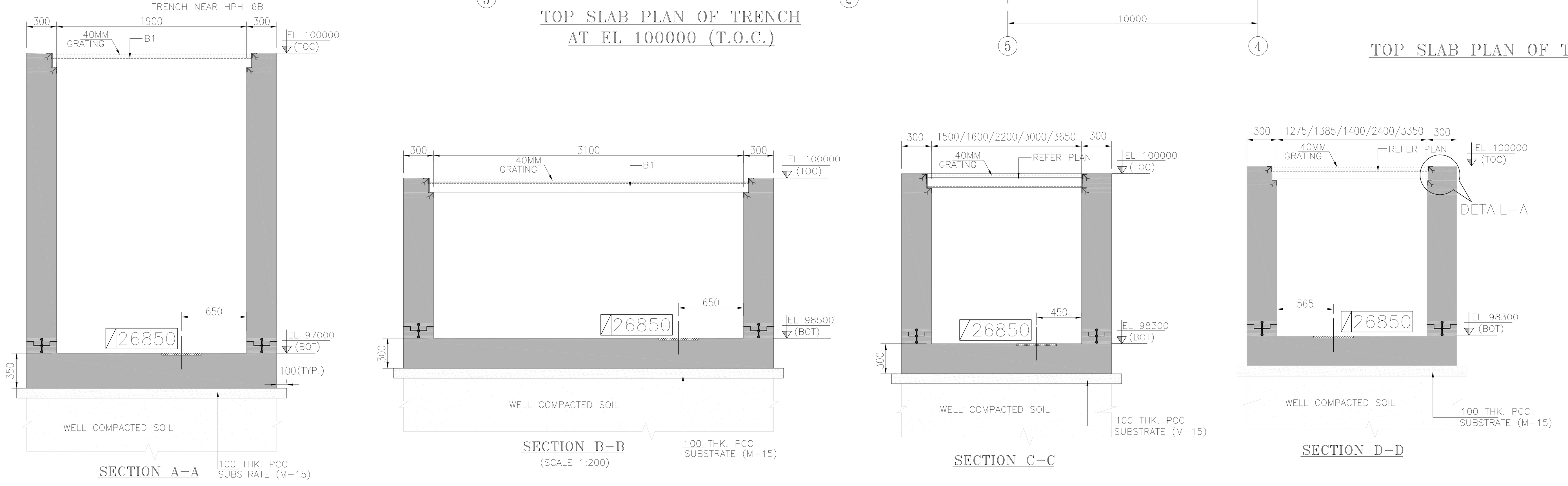
REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

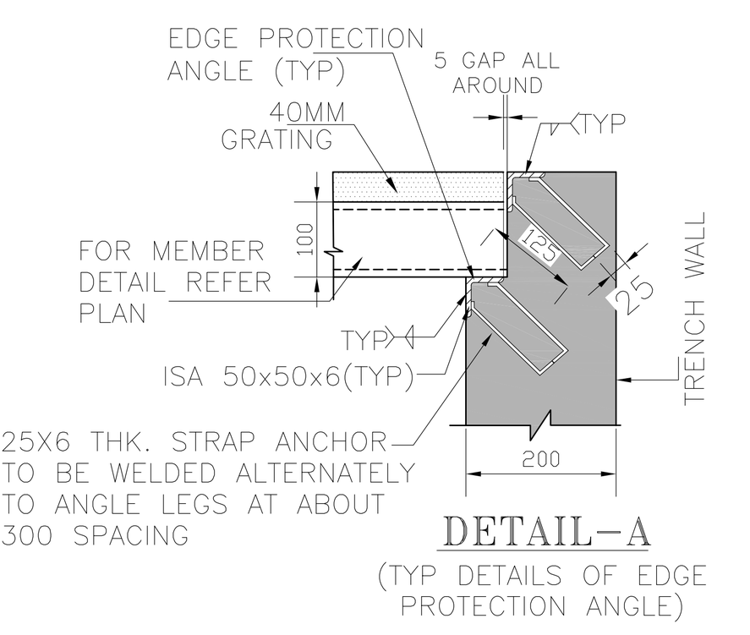
REV. No.	REV. LOCATION	DESCRIPTION	DRN.	DES'D.	DES.CHK'D.	REV'D.	APP'D.	DES.	CHK'D.	REV'D.	APP'D.

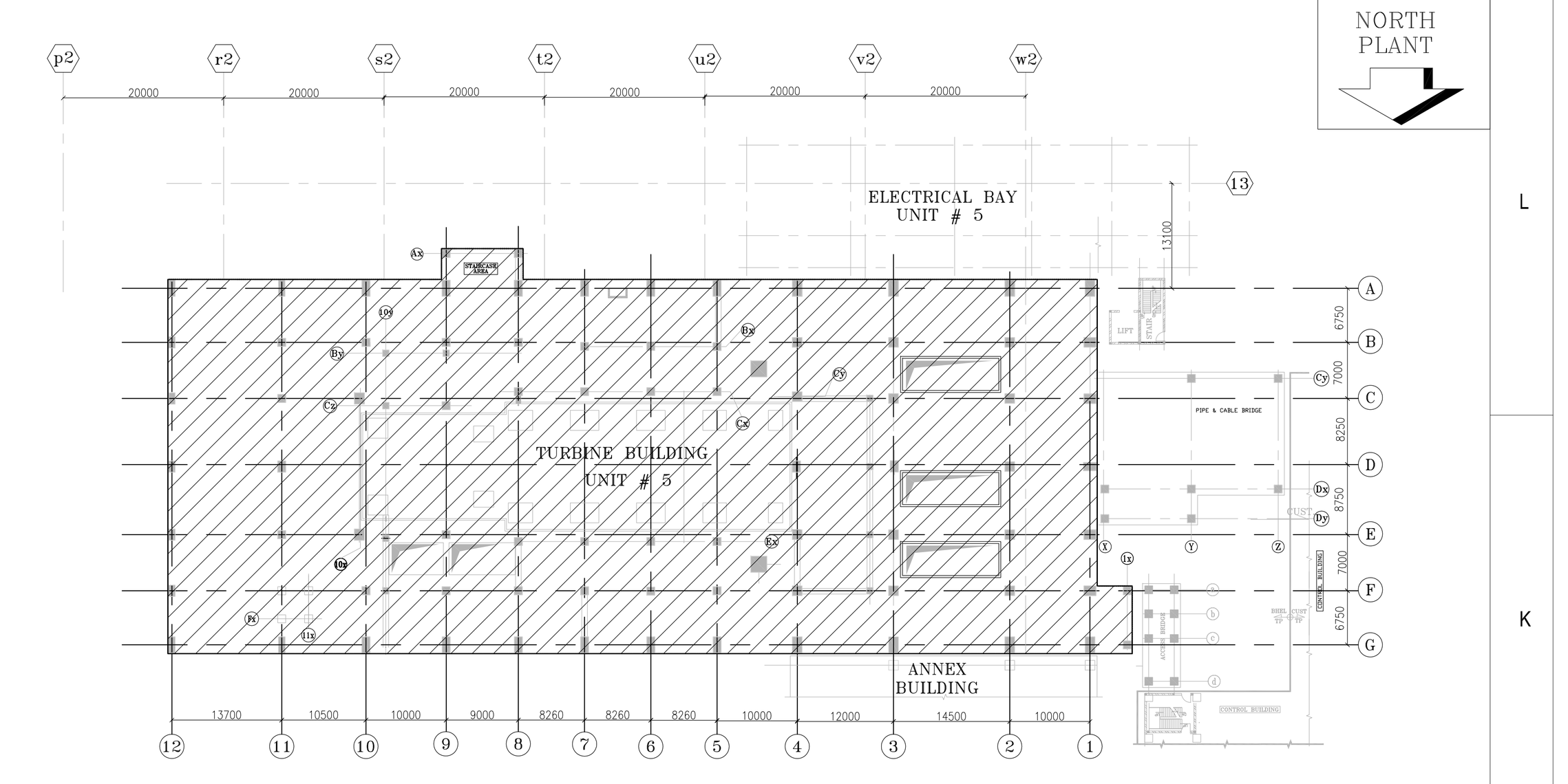
REVISIONS | SIGNATURE WITH DATE (CONSULTANT) | SIGNATURE (NPCIL)

A0 DRG. No. KAIGA-5/22212/8024/DD









NOTES:

1. ALL DIMENSIONS AND ELEVATION ARE IN MILLIMETERS AND CO-ORDINATE ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. TURBINE BUILDING FINISHED GROUND FLOOR LEVEL AS EL100 M WHICH CORRESPONDS TO RL 219.60M.
3. ALL ELEVATION ARE FINISHED FLOOR LEVEL UN.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M35 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENTS SHALL BE TMT BARS GRADE FE 500 CONFORMING TO IS:1786. FOR DETAILS REFER KAIGA-5&6/22210/8001/DD.
6. WATERPROOFING TREATMENT SHALL BE PROVIDED AS PER TECHNICAL SPECIFICATION.

IMP. NOTES:

1. THE DRAWING HAS BEEN INTERFACED AND CLEARED BY MECHANICAL PIPING LAYOUT(MPL), MECHANICAL AUX. SYSTEM (MAX), ELECTRICAL AND C&I DEPARTMENT WITH RESPECT TO THEIR SYSTEM REQUIREMENT THROUGH DOCUMENT MANAGEMENT SYSTEM SOFTWARE WRENCH.

ENGINEERING REFERENCE DRAWINGS

TITLE	DRAWING NOS.
MAIN PLANT LAYOUT UNIT-5 & 6	KAIGA-5&6/10000/5001/GA
TURBINE BUILDING - GA OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8016/GA
TURBINE BUILDING GA OF LONGITUDINAL SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8017/GA
TURBINE BUILDING GA OF TRANSVERSE SECTIONS OF RAFT FOUNDATION (UNIT#5)	KAIGA-5/22000/8018/GA

TABLE -A

ENGINEERING REFERENCE DRAWINGS (TITLE)	DRAWING NOs.
GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS (UNIT# 5 & 6)	KAIGA-5&2/22210/8001/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE BELOW FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22032/8031/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE BELOW FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22032/8032/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE FOR FLOOR AT EL 100.0M GRID 1 TO 6 (UNIT#5)	KAIGA-5/22032/8033/DD
TURBINE BUILDING - EMBEDMENT SCHEDULE FOR FLOOR AT EL 100.0M GRID 6 TO 12 (UNIT#5)	KAIGA-5/22032/8034/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG A ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8012/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG G ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8013/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG B ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8014/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG C ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8015/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG D ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8016/DD
TURBINE BUILDING - CONCRETE DETAILS OF COLUMNS ALONG E ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8017/DD
TURBINE BUILDING -CONCRETE DETAILS OF COLUMNS ALONG F ROW UPTO EL 100.0M (UNIT#5)	KAIGA-5/22212/8018/DD
TURBINE BUILDING -CONCRETE DETAILS OF RETAINING WALLS GRID 1 TO 5 (UNIT#5)	KAIGA-5/22212/8019/DD
TURBINE BUILDING - CONCRETE DETAILS OF RETAINING WALLS GRID 5 TO 8 (UNIT#5)	KAIGA-5/22212/8020/DD
TURBINE BUILDING - CONCRETE DETAILS OF RETAINING WALLS GRID 8 TO 12 (UNIT#5)	KAIGA-5/22212/8021/DD
TURBINE BUILDING - CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 1 TO 5 (UNIT#5)	KAIGA-5/22212/8023/DD
TURBINE BUILDING - CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 5 TO 10 (UNIT#5)	KAIGA-5/22212/8024/DD
TURBINE BUILDING - CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 10 TO 12 (UNIT#5)	KAIGA-5/22212/8025/DD

LEGENDS:

DWG - DRAWING
TIP - TURBINE ISLAND PACKAGE
TOC - TOP OF CONCRETE
BOC - BOTTOM OF CONCRETE
TOT - TOP OF TRENCH
TP - TERMINAL POINT
BOT - BOTTOM OF TRENCH
TYP - TYPICAL
REMOVABLE CHEQUERED PLATE

MEMBER SCHEDULE:

NAME	MEMBER DETAILS	SHAPE
B1	ISMC 100	[
B2	ISMC 100 BOX	▯

SCHEDULE OF MECHANICAL EPs

SL. NO.	HOLE NO.	EP NO.	DESCRIPTION	QTY	USI NO.	LEGEND	REMARK
1.	-	26850	400x400x10THK. PLATE EP	55	22030		PIPE SUPPORT
2.	-	21853	1000x400x10THK. PLATE EP	1	22030		PIPE SUPPORT

SCHEDULE OF CIVIL EPs

SL. NO.	HOLE NO.	EP NO.	DESCRIPTION	QTY	LEGEND	REMARK
1.	-	28870	ISA 50X50X6	ANGLE TO BE CUT & SUIT TO SITE		EDGE PROTECTION ANGLE

REV NO.	SYSTEM-1	SYSTEM-2	SYSTEM-3	SYSTEM-4

NPCIL'S SYSTEM CLEARANCE

DO NOT SCALE THE DRAWING.

UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.

REV. No.	DESCRIPTION	BHEL	NPCIL
R0	FOR INFORMATION	05.04.2024	

SIGNATURE WITH DATE

DRAWING ISSUED FOR

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHK'D. REV'D. APP'D.

MAIN TIP CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA
JOB REF. No. 488

TITLE :- KAIGA ATOMIC POWER PROJECT-5&6 (2 X 700 MWe PHWR)
TG ISLAND PACKAGE
TURBINE BUILDING
CONCRETE DETAILS OF TUNNEL AND TRENCHES GIRD 10 TO 12 (UNIT#5)

DES'D. HYRADESH DATE 05.04.2024	DR'N. ALKESH DATE 05.04.2024	REV'D. S. MISHRA DATE 05.04.2024
DES. CHK'D. S. MISHRA DATE 05.04.2024	DRG. CHK'D. HYRADESH DATE 05.04.2024	APP'D. A. KUMAR DATE 05.04.2024

PROJECT: 2x700 MWe PHWR KAIGA- ATOMIC POWER PROJECT UNITS NO. 5 & 6

SCALE - NTS

PROJECTION

NPCIL DRG. No. KAIGA-5/22212/8025/DD — SHEET 1 OF 1 — REV. No. R0

BHEL NO: PE-DG-488-611-C1082-RA — FILE NAME: KAIGA-5/22212/8025/DD

DRG. TO BE READ IN CONJUNCTION WITH DCN/FCN/ECN, IF ANY.

DRG. No. KAIGA-5/22212/8025/DD — A0