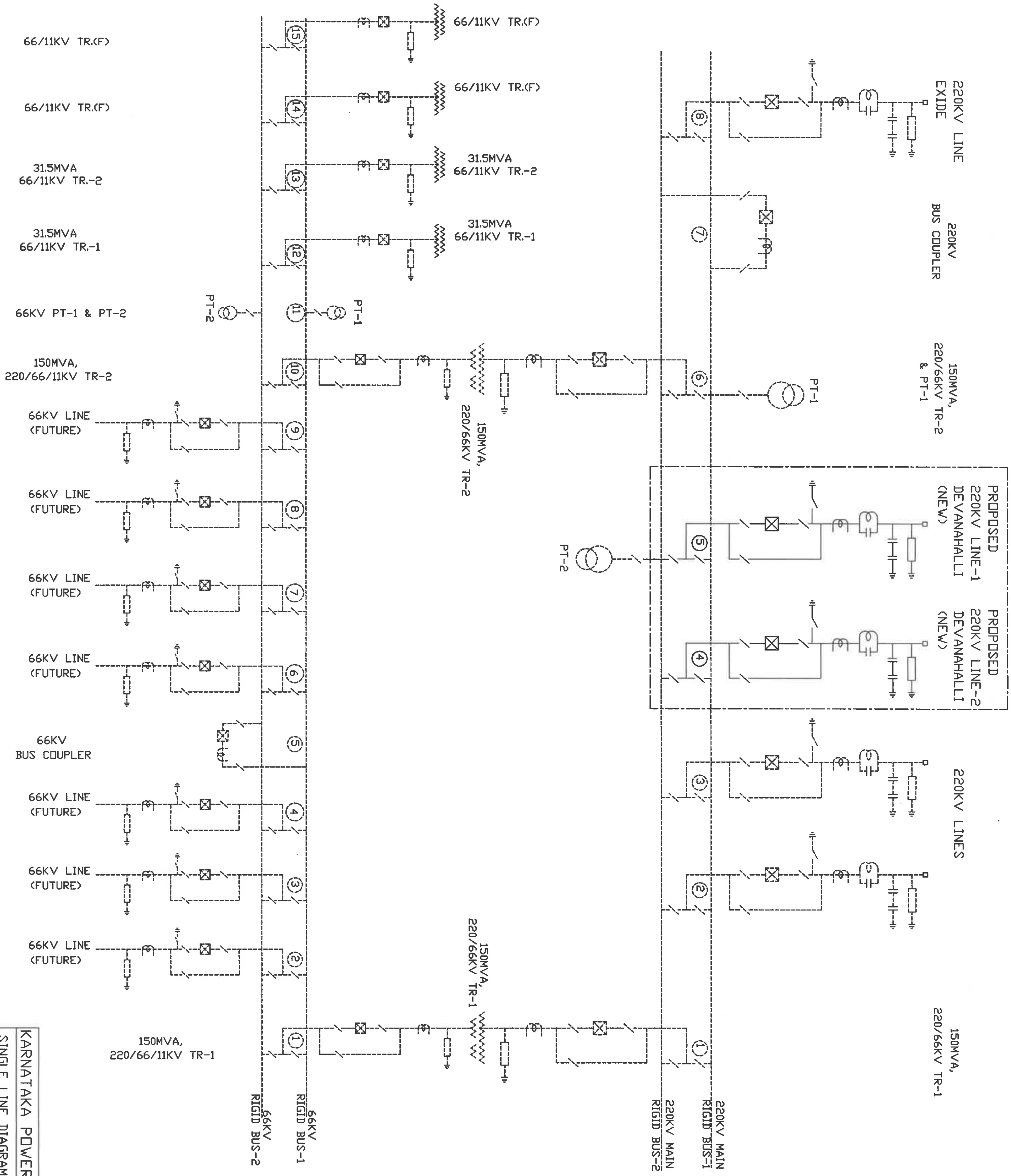
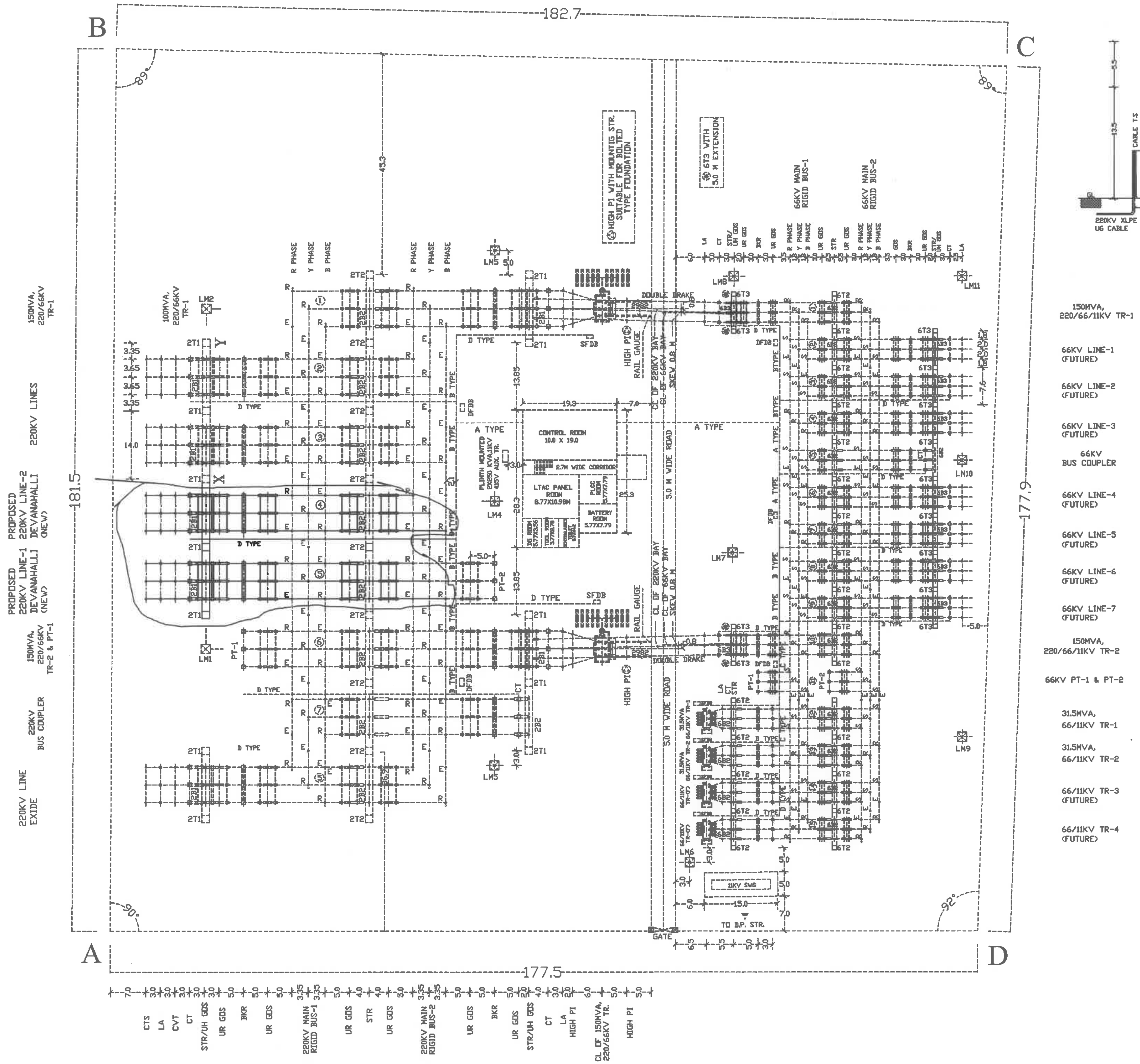


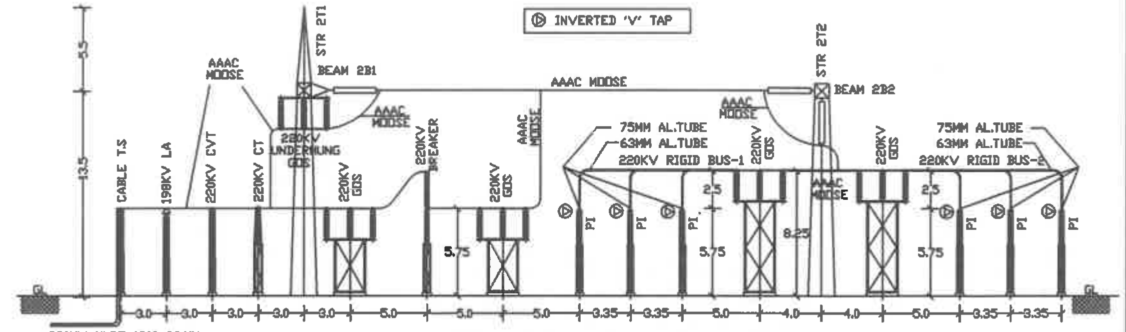
KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

SINGLE LINE DIAGRAM OF 220/66KV SUB STATION AT HARALURU - MUDDENAHALLI INDUSRIAL AREA, DEVANAHALLI TALUK, BENGALURU RURAL DISTRICT.- 2 TBs FOR DEVANAHALLI NEW (NEW)

DRG.NO.KPTL/TECH/SS-220/HRLR-MDDNHLL-1-R1 DT: 20.03.2025 SCALE :- N.T.S

A.E	A.E.E	E.E	S.E.E (TECH)	C.E.E (P&C)
DRN	CHD	SUB	REC	APPROVED





CROSS SECTION THROUGH 220KV LINE BAY

NOTES:-

1. ALL DIMENSIONS ARE IN METRES.
2. ALL NON-CURRENT CARRYING METALLIC PARTS ARE TO BE EARTHED & CONNECTED TO GROUND MAT.
3. FULL LINE INDICATES PROPOSED AND DOTTED LINES EXISTING.
4. WHILE INSTALLING THE EQUIPMENTS, CARE MAY BE ENSURED TO INSTALL THE BREAKER, CTS, ISOLATORS, LIGHTNING ARRESTORS IN LINE WITH SIMILAR EQUIPMENTS OF ADJACENT BAYS.
5. CABLE DUCTS ARE TO BE CONSTRUCTED IN PROPOSED BAYS, SAME SHALL BE EXTENDED FROM EXISTING MAIN CABLE DUCT.
6. LIVE POINT HEIGHT OF ALL EQUIPMENTS, JUMPS SHALL MATCH WITH THAT OF EXISTING BAYS.
7. SUITABLE LIGHTNING PROTECTION SHALL BE PROVIDED.
8. SOME OF THE EXISTING DETAILS ARE NOT SHOWN FOR CLARITY.

WORK PROPOSAL

a) PROPOSED 220KV DEVANAHALLI NEW LINES TO BE TERMINATED TO BAY NO. 4 & 5.

KARNATAKA POWER TRANSMISSION CORPORATION LIMITED				
LAYOUT PLAN & CROSS SECTION OF 220/66/11KV SUB STATION AT HARALURU MUDDENAHALLI INDUSRIAL AREA, DEVANAHALLI TALUK, BENGALURU RURAL DISTRICT. - 2 TBs FOR DEVANAHALLI (NEW)				
DRG. NO. KPTCL/ TECH/ SS-220/HRLR-MDDNHLL-4-R1		DATED:-20.03.2025		SCALE :- N.T.S.
A.E	A.E.E	E.E	S.E.E (TECH)	C.E.E (P&C)
DRN	CHD	SUB	REC	APPROVED

EARTHMAT FOR THE PROPOSED 220/66/11KV SUB-STATION @ HI-TECH DEFENSE AEROSPACE PARK PHASE-II IN HARALURU MUDDENAHALLI IA IN DEVANAHALLI TALUK,BENGALURU RURAL DISTRICT.

IMPORTANT

* NOT TO SCALE

* THE NO OF CAST IRON PIPE ELECTRODES SHALL BE PROVIDED AS PER GUIDELINES

* BEFORE EXECUTION PLEASE CAREFULLY GO THROUGH THE ENCLOSED GUIDELINES *

* ALL DIMENSIONS ARE IN METER

SALIENT DESIGN FEATURES

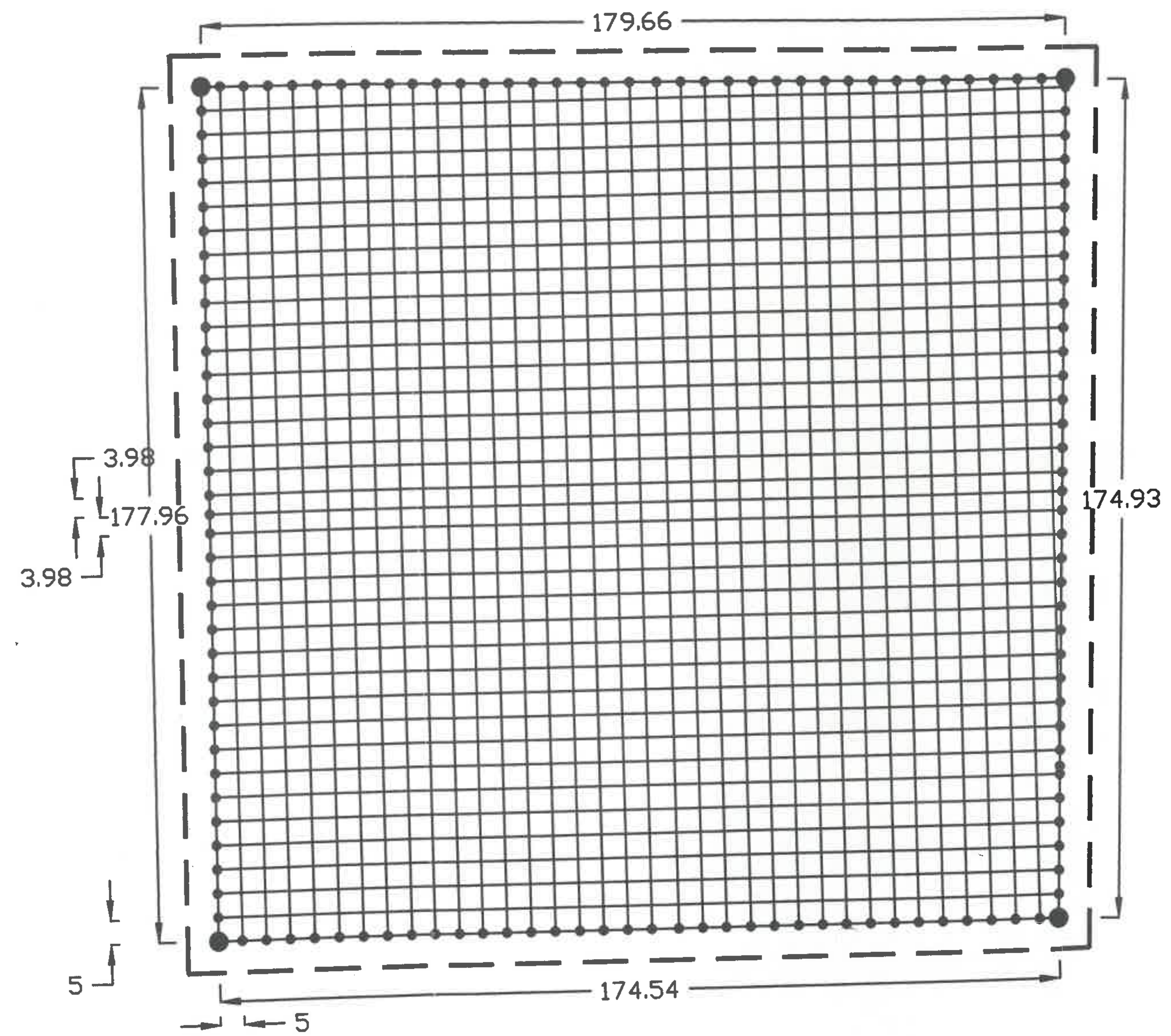
AREA COVERED BY EARTHMAT IN SQ MTR	31241
DEPTH OF BURIAL OF EARTHMAT IN MTR	0.9
SPACING BETWEEN MAT CONDUCTOR (M.S. FLAT) IN MTR	5
SIZE OF EARTHMAT CONDUCTOR (M.S.FLAT) IN MM	75 X 12 MM

SPREADING OF GRANITE METAL JELLY OF SIZE 20/25 MM TO A HEIGHT OF 100 MM OVER THE ENTIRE EARTH MAT AREA.

BILL OF MATERIALS (APPROXIMATE QUANTITY) FOR EARTHMAT FORMATION & FENCING.

(AS PER THE LAYOUT DRAWING NO.NIL)

1.Excavation,formation,refilling	6275	Cmtr.
2.Material for formation of earthmat as per specification		
a)M.S.Flat 75 X 12 MM	14084	Mtr.
b)MS Round rods 40 mm dia,1.075 m long	142	No.
c)G.I.Flats 75 X 12 MM for earth connection	6994	Mtr.
d)Cast iron pipe electrodes of 100 mm Id,13 mm thick,2.75 mtr.long	40	No.
e)Spreading of Granite metal jelly of size 20/25 mm size to a height of 100 mm	3124	Cmtr.



— — FENCE SHALL BE AT A MINIMUM DISTANCE OF 1.5 METERS AWAY FROM THE PERIPHERY OF THE STATION EARTHMAT

• 40 MM DIA M.S. ROUND RODS OF LENGTH ONE METER TO BE DRIVEN AS SHOWN

● C.I.PIPE ELECTRODES FOR EARTHMAT PERIPHERY (Minimum spcing of 5.5m shall be maintained between any two electrodes)

R & D CENTRE, K P T C L		
DRG NO. SEE/R&D/EEE/KCO-169/2022-23/F-200( ) Dtd.30-9-2022		
S.Anusha 1/10/2022	Sathish 6/10/22	6/10
AEEE	EEE	SEE

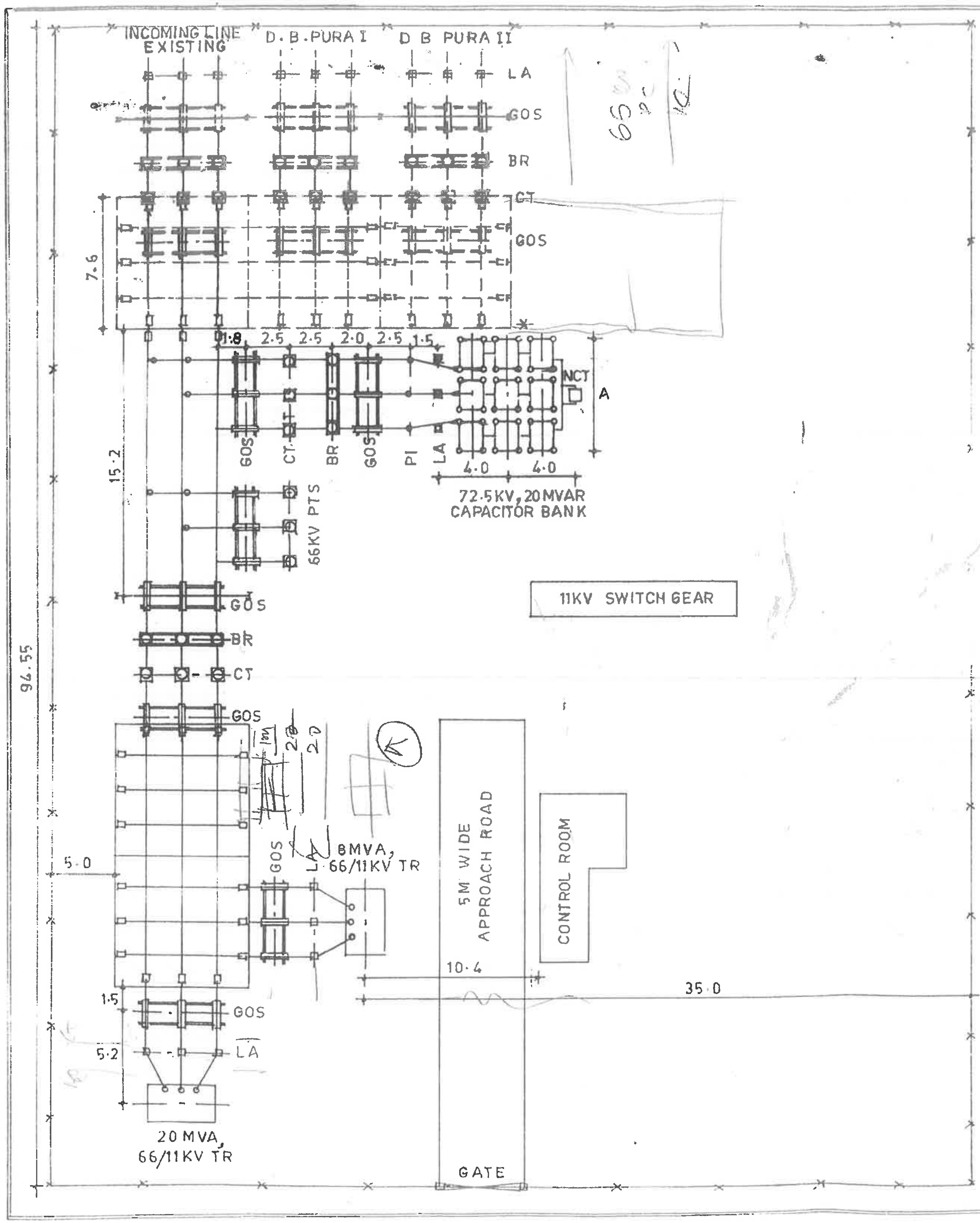
KARNATAKA POWER TRANSMISSION CORPORATION LIMITED
SINGLE LINE DIAGRAM OF 66/11KV SUB-STATION DEVANAHALLI CODE-1303013EF

INDEX

Sl. No.	FEEDER NO.	FEEDER NAME	CT RATIO	Sl. No.	FEEDER NO.	FEEDER NAME	CT RATIO	Sl. No.	FEEDER NO.	FEEDER NAME	CT RATIO	Sl. No.	FEEDER NO.	FEEDER NAME	CT RATIO	Sl. No.	FEEDER NO.	FEEDER NAME	CT RATIO
1	F-1	LOCAL	400/1A	9	F-9	STATION AUXILLARY	200/1A	17	F -17	RENAISSANCE	200/1A	25	F-25	INDUSTRIAL AREA	400/1A	33	F-33	LAKEPOINT APART.	200/1A
2	F-2	BHUVANAHALLI	200/1A	10	F-10	SADAHALLI	400/1A	18	F -18	ISRO	200/1A	26	F-26	GOBBRUGUNTE	100/1A	34	F-34	PRAKRUTHI	200/1A
3	F-3	VISHWANATHAPURA	400/1A	11	F -11	TARABANAHALLI	400/1A	19	F -19	KUNDANA	200/1A	27	F-27	SAI BABA	100/1A	35	F-35	GODREJ PROJECTS	200/1A
4	F- 4	AVATHI	400/1A	12	F-12	KOIRA	200/1A	20	F -20	SOBHA	200/1A	28	F-28	THYLAGERE	200/1A	36	F-36	BRIGADE ATM.	200/1A
5	F -5	YELIYUR	400/1A	13	F-13	KANNAMANGALA	200/1A	21	F-21	CHIMACHANAHALLI	200/1A	29	F-29	VILLA HIRANANDANI	200/1A	37	F-37	GOYAL SKY CITY	200/1A
6	F -6	OLD TOWN	200/1A	14	F-14	GOVT. HOSPITAL	200/1A	22	F-22	BOMMAVARA	200/1A	30	F-30	PRESTIGE	400/1A	38	F-38	T HILLS	200/1A
7	F-7	GANGAVARA	200/1A	15	F -15	CHANNARAYAPATTANA	200/1A	23	F-23	BIDALURU	400/1A	31	F-31	NITESH ESTATE	400/1A				
8	F-8	KARAHALLI	400/1A	16	F-16	KORAMANGALA	400/1A	24	F-24	HOSAHUDYA	200/1A	32	F-32	AJMAL	400/1A				

LEGEND

	CRICUIT BREAKER
	ISOLATOR(MANUALLY OPERATED) WITH E.Sw
	ISOLATOR(MANULLY OPERATED) WITHOUT E.Sw
	CURRENT TRANSFORMER
	LIGHTNING ARRESTER
	POTENTIAL TRANSFOMER
	POWER TRANSFOMER



NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. REFER DRG.NO.KEB/GPL/SS-66/253 FOR EXISTING STATION DETAILS.
3. FULL LINES INDICATE EXISTING AND DOTTED LINES FUTURE.
4. SOME OF THE EXISTING DETAILS ARE NOT SHOWN FOR CLARITY.
5. SITE PLAN BASED ON DETAILS FURNISHED BY EEE, MWD, KEB, BANGALORE.
6. THIS DRG. SUPERSEDES DRG. NO. KEB/TECH/SS-66/324 DATED 22-2-95. THE CAPACITOR BANK HAS BEEN ERECTED AT A DIFFERENT LOCATION DURING EXECUTION.
7. * ENSURE SUFFICIENT ELECTRICAL CLEARANCE BETWEEN BANK AND STRUCTURE WHILE WORKING OUT.

KARNATAKA ELECTRICITY BOARD					
MODIFICATION WORKS AT 66/11KV SUB STATION DEVANAHALLI (PRELIMINARY DRG.)					
DRG. NO. KEB/TECH/SS-66/366	DATE: 4-6-96				SCALE:- N.T.S
P.Parvathi	A.E	A.E.E	E.E	S.E (TECH)	CEE(PFC/ADB)
DRN	VER	CHD	SUB	REC	APPROVED

EARTHMAT FOR THE PROPOSED 66 KV STATION @ DEVANAHALLI,BENGALURU RURAL DISTRICT.

IMPORTANT

* THE NO OF CAST IRON PIPE ELECTRODES SHALL BE PROVIDED AS PER GUIDELINES

* NOT TO SCALE

* BEFORE EXECUTION PLEASE CAREFULLY GO THROUGH THE ENCLOSED GUIDELINES *

* ALL DIMENSIONS ARE IN METER

SALIENT DESIGN FEATURESOF ADDNL EARTHMAT

AREA COVERED BY EARTHMAT IN SQ MTR	1125
DEPTH OF BURIAL OF EARTHMAT IN MTR	0.9
SPACING BETWEEN MAT CONDUCTOR (M.S. FLAT) IN MTR	2
SIZE OF EARTHMAT CONDUCTOR (M.S.FLAT) IN MM	75 X 12 MM

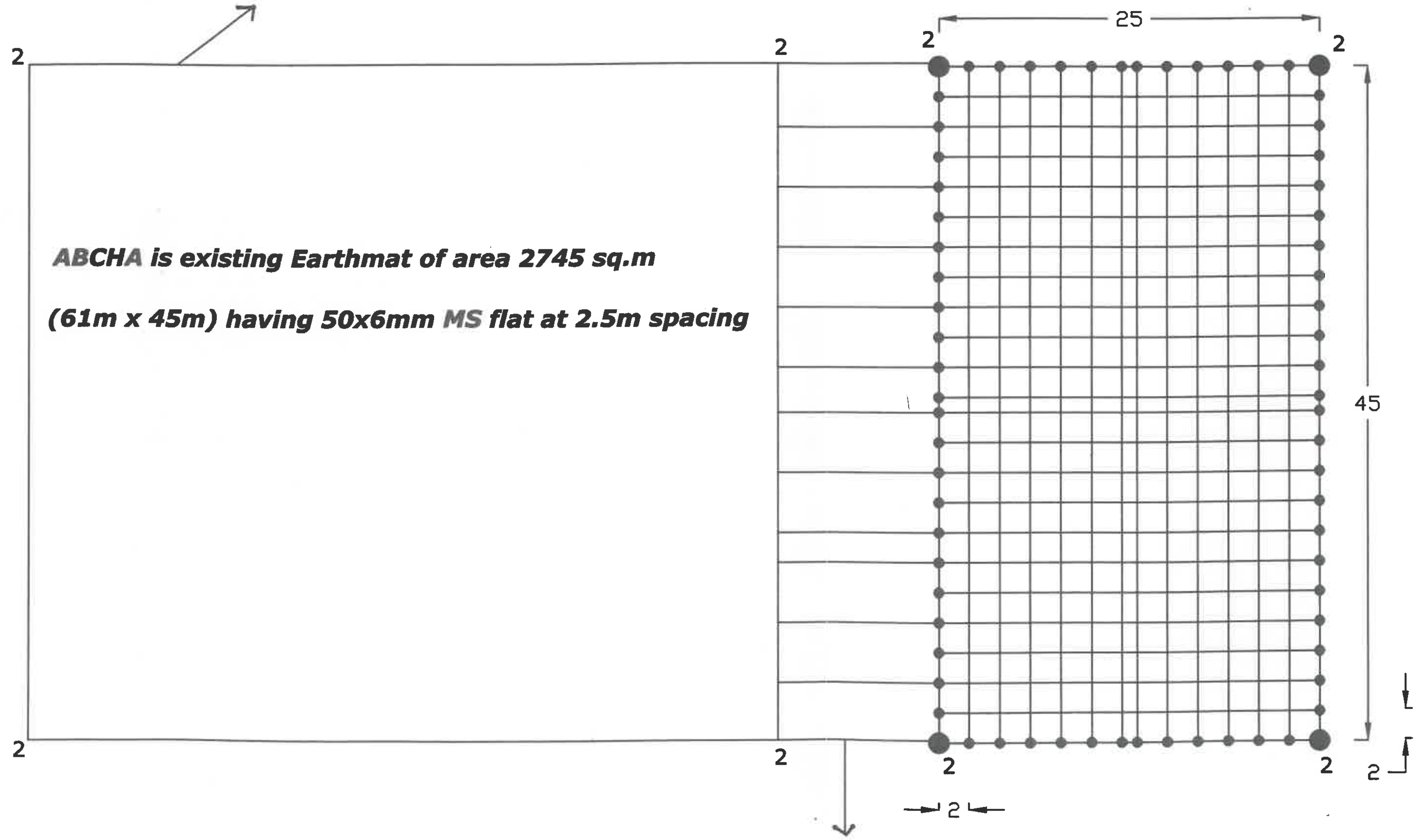
SPREADING OF GRANITE METAL JELLY OF SIZE 20/25 MM TO A HEIGHT OF 100 MM OVER THE ENTIRE EARTH MAT AREA.

BILL OF MATERIALS (APPRX. QTY.) FOR ADDNL. EARTHMAT FORMATION & FENCING.

REF: Letter no.: CEE/TZB/SEE(O)/AEE-2/20-21/21857-59 dated: 21.01.2023 of the CEE, TZ, Bengaluru.

1.Excavation,formation,refilling	718	Cmtr.
2.Material for formation of earthmat as per specification		
a)M.S.Flat 75 X 12 MM	1612	Mtr.
b)MS Round rods 25 mm dia,1.05 Mt. long	68	No.
c) Deep bore electrodes of 40mm dia, 5m long with sodium bentonite treatment	2	No.

Additional single run of 75x12mm MS flat to be run along the perimeter



75x12mm MS flats to be run for interconnection between proposed addnl EM and existing EM

— — FENCE SHALL BE AT A MINIMUM DISTANCE OF 1.5 METERS AWAY FROM THE PERIPHERY OF THE STATION EARTHMAT

• 25 MM DIA M.S. ROUND RODS OF LENGTH ONE METER TO BE DRIVEN AS SHOWN

● ADDITIONAL C.I.PIPE ELECTRODES PROPOSED (Minimum spacing of 5.5m shall be maintained between any two electrodes)

NOTE: 1) Designed by considering Power transformer capacity of 1x20MVA + 2x31.5MVA, 66/11kV class, for fault level (2023-24) of subject station

2) It is proposed to provide a single run of 75x12mm MS flat along the perimeter of the existing earthmat and shall be interlinked to the existing earthmat ABCHA and proposed additional earthmat DEFGD using 75x12mm MS flats.

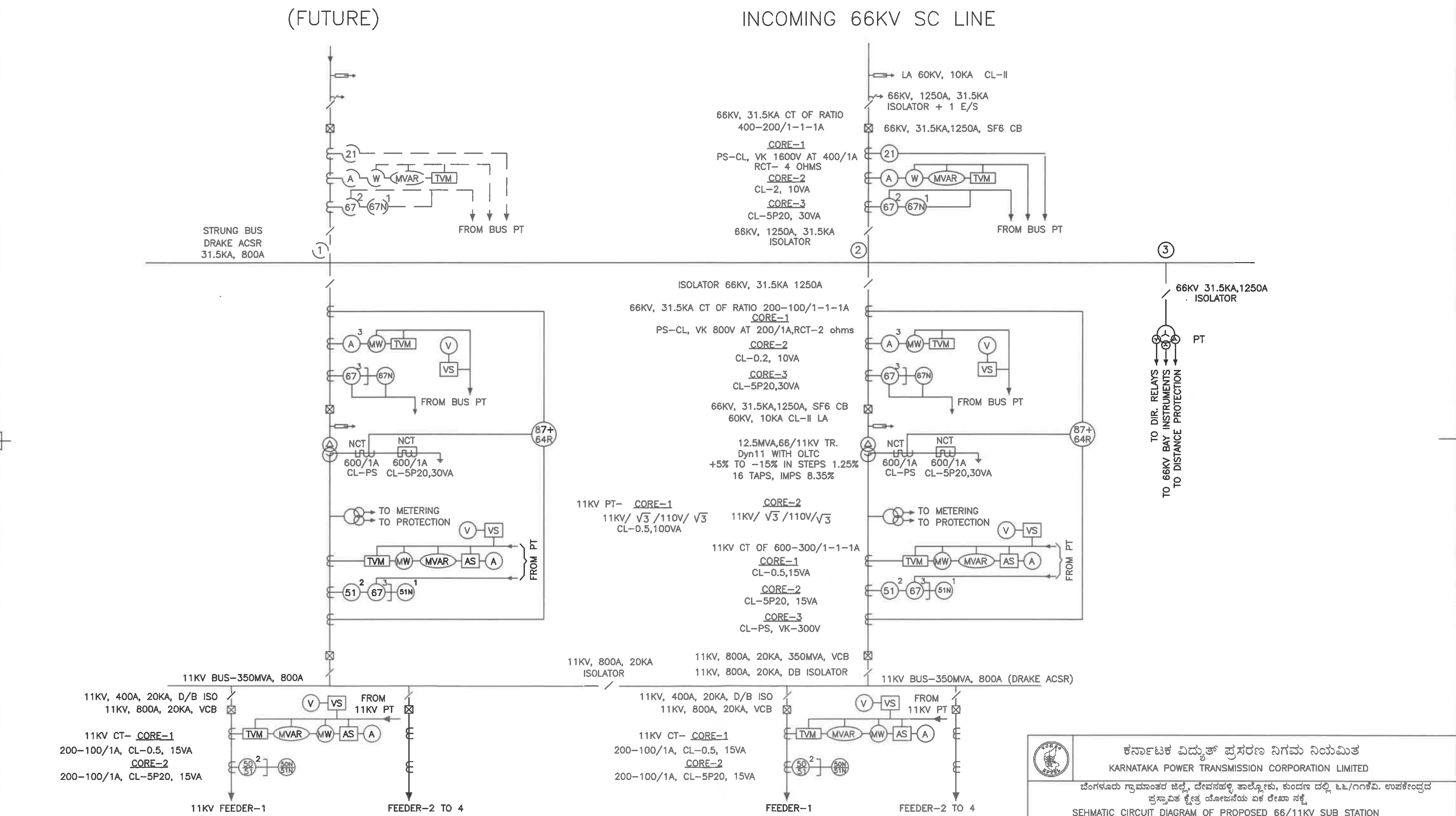
3) ABCHA is existing earthmat having 50x6mm MS flat at 2.5m spacing. DEFGD is proposed additional earthmat having 75x12mm MS flat at 2.0m spacing

4) 2nos. of Deep bore electrodes of 40mm dia, 5m long are proposed to be provided at convenient locations within the proposed additional earthmat area only by maintaining minimum spacing of 10m between these electrodes.

5) The BOM for GI flat, CI pipe electrodes and jelly spreading shall be calculated as per site condition if required, duly following R&D guidelines.

6) In case, the 50x6mm MS flats of existing are worn out, the same shall be replaced by new 75x12mm MS flats.

R & D CENTRE, K P T C L		
DRG NO. SEE/R&D/EEE/KCO-169/2022-23/F-2(2) Dtd. 8-2-2023		
S Anusha 13/2/2023	S Anusha 13/2/2023	[signature]
AEEE	EEE	SEE



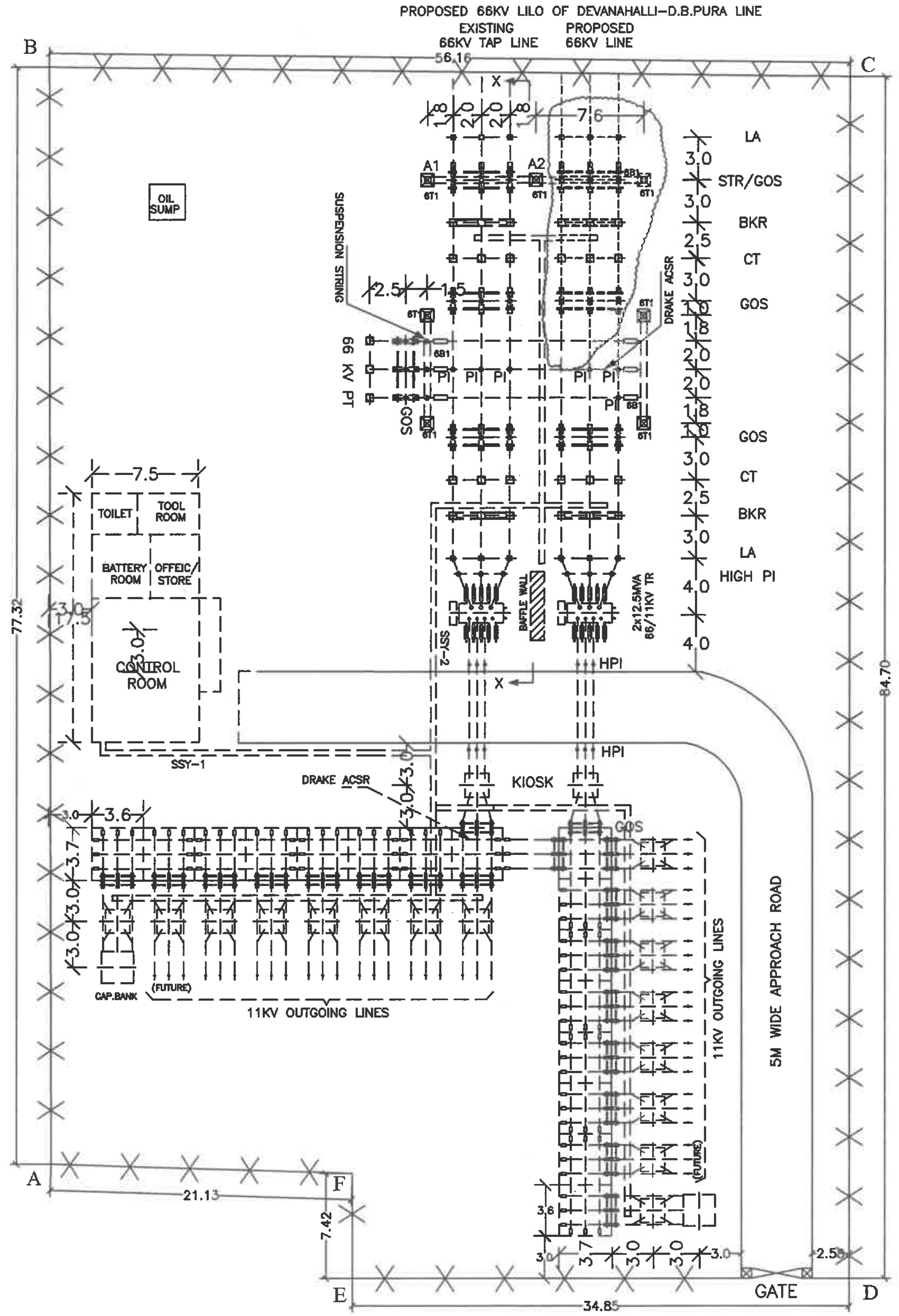
ಕರ್ನಾಟಕ ವಿದ್ಯುತ್ ಪ್ರಸರಣ ನಿಗಮ ನಿಯಮಿತ

KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

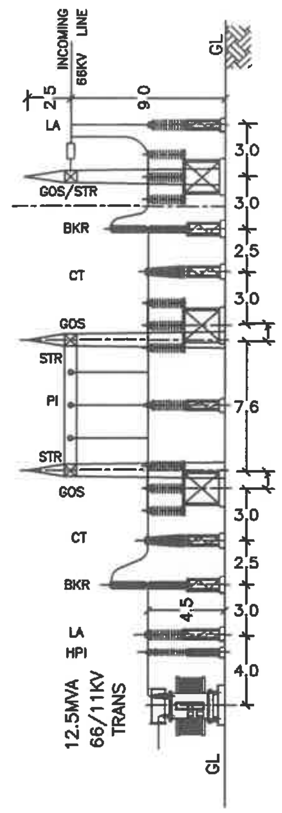
ಬೆಂಗಳೂರು ಗ್ರಾಮಾಂತರ ಜಿಲ್ಲೆ, ದೇವನಹಳ್ಳಿ ತಾಲ್ಲೋಕು, ಕುಂದಣ ದಲ್ಲಿ ೬೬/೧೧ಕೆವಿ. ಉಪಕೇಂದ್ರದ ಪ್ರಸ್ತಾವಿತ ಕ್ಷೇತ್ರ ಯೋಜನೆಯ ಏಕ ರೇಖಾ ನಕ್ಷೆ

SEHMATIC CIRCUIT DIAGRAM OF PROPOSED 66/11KV SUB STATION AT KUNDANA, DEVANAHALLI TALUK. BANGALORE RURAL DISTRICT.

ನಕ್ಷೆ ಸಂಖ್ಯೆ, ಕ.ವಿ.ಪ್ರ.ನಿ.ನಿ/ತಾಂತ್ರಿಕ/ಉ.ಕೇಂದ್ರ-೬೬/೮೫೧ಎ ದಿ:೬.೮.೨೦೧೦ DRG.NO.KPTCL/TECH/SS-66/851A DATE:6.8.2010				ಅಳತೆಗೋಳಪಟ್ಟಿಲ್ಲ SCALE:- NTS	SHEET 2 OF 3
ತಿಮ್ಮೇಗೌಡ ಕೆ Thimmegowda K					
ಮುಖ್ಯನಕ್ಷೆಗಾರ HDM	ಸ.ಕಾ.ನಿ.ಎಂ(ವಿ) A.E.E	ಕಾ.ನಿ.ಎಂ(ವಿ) E.E	ಅಧೀಕ್ಷಕ.ಎಂ(ತಾಂತ್ರಿಕ) S.E(TECH)	ಮುಖ್ಯ ಎಂಜನಿಯರ್ (ವಿ) CEE (P&C)	
ನಕ್ಷೆ ತಯಾರಿಕೆ DRN	ತಾಳೆ/ಪರಿಶೀಲನೆ CHD	ಸಲ್ಲಿಕೆ SUB	ಶಿಫಾರಸ್ಸು REC	ಅನುಮೋದನೆ APPROVED	



ENLARGED VIEW OF 'ABCDEF'



SECTION THROUGH 'XX'

ಕರ್ನಾಟಕ ವಿದ್ಯುತ್ ಪ್ರಸರಣ ನಿಗಮ ನಿಯಮಿತ KARNATAKA POWER TRANSMISSION CORPORATION LIMITED				
ಬೆಂಗಳೂರು ಗ್ರಾಮಾಂತರ ಜಿಲ್ಲೆ, ದೇವನಹಳ್ಳಿ ತಾಲ್ಲೋಕು, ಕುಂದಣ ದಲ್ಲಿ ೬೬/೧೧ಕೆವಿ. ಉಪಕೇಂದ್ರದ ಪ್ರಸ್ತಾವಿತ ಕ್ಷೇತ್ರ ಯೋಜನೆ BLOCK LEVEL & LAY OUT DIAGRAM FOR THE PROPOSED 66/11KV SUB STATION AT KUNDANA, DEVANAHALLI TALUK. BANGALORE RURAL DISTRICT.				
DRG.NO.KPTCL/TECH/SS-66/851B	DATE:6.8.2010		SCALE:– NTS	SHEET
ತಿಮ್ಮೇಗೌಡ ಕೆ Thimmegowda K				
ಮುಖ್ಯನಕ್ಷೆಗಾರ HDM	ಸ.ಕಾ.ನಿ.ಎಂ(ವಿ) A.E.E	ಕಾ.ನಿ.ಎಂ(ವಿ) E.E	ಅಧೀಕ್ಷಕ.ಎಂ(ತಾಂತ್ರಿಕ) S.E(TECH)	ಮುಖ್ಯ ಎಂಜಿನಿಯರ್ (ವಿ) CEE (P&C)
ನಕ್ಷೆ ತಯಾರಿಕೆ DRN	ತಾಳೆ/ಪರಿಶೀಲನೆ CHD	ಸಲ್ಲಿಕೆ SUB	ಶಿಫಾರಸ್ಸು REC	ಅನುಮೋದನೆ APPROVED

EARTHMAT FOR THE PROPOSED 66 KV STATION @ KUNDANA,BANGALORE RURAL DISTRICT.

IMPORTANT

* NOT TO SCALE

* THE NO OF CAST IRON PIPE ELECTRODES SHALL BE PROVIDED AS PER GUIDELINES (ITEM 2, 4, 5 & 12 OF GUIDELINES)

* BEFORE EXECUTION PLEASE CAREFULLY GO THROUGH THE ENCLOSED GUIDELINES *

* ALL DIMENSIONS ARE IN METER

SALIENT DESIGN FEATURES

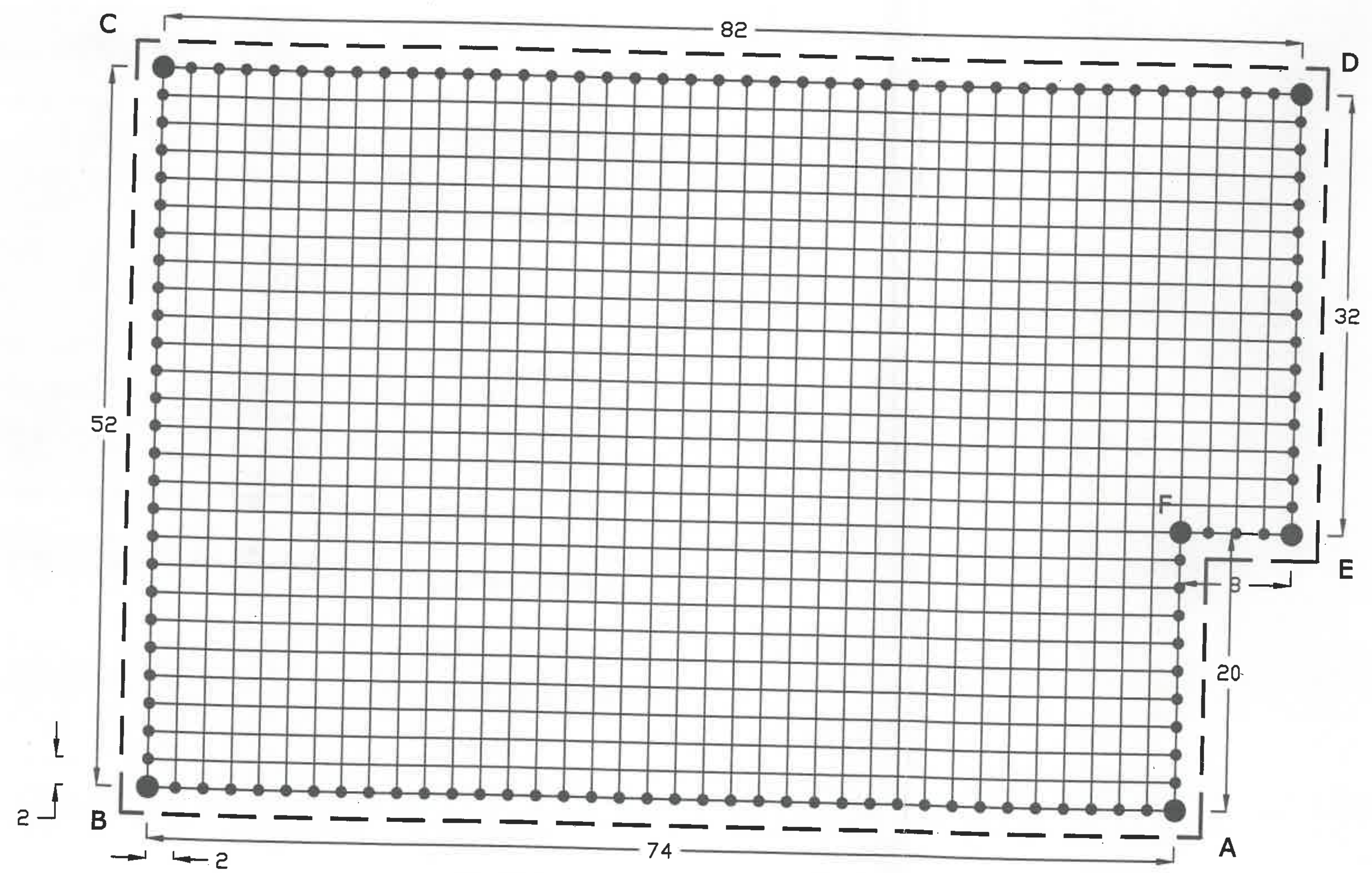
AREA COVERED BY EARTHMAT IN SQ MTR	4104
DEPTH OF BURIAL OF EARTHMAT IN MTR	0.9
SPACING BETWEEN MAT CONDUCTOR (M.S. FLAT) IN MTR	2
SIZE OF EARTHMAT CONDUCTOR (M.S.FLAT) IN MM	50 X 6 MM

SPREADING OF GRANITE METAL JELLY OF SIZE 20/25 MM TO A HEIGHT OF 100 MM OVER THE ENTIRE EARTH MAT AREA.

BILL OF MATERIALS (APPROXIMATE QUANTITY) FOR EARTHMAT FORMATION & FENCING.

(AS PER THE LAYOUT DRAWING NO.KPTCL/TECH/SS-66/851A dated 6-8-2010)

1.Excavation,formation,refilling	2034	Cmtr.
2.Material for formation of earthmat as per specification		
a)M.S.Flat 50 X 6 MM	4565	Mtr.
b)MS Round rods 25 mm dia,1.05 Mt. long	130	No.
c)G.I.Flats 50 X 6 MM for earth connection	1448	Mtr.
d)Cast iron pipe electrodes of 100 mm Id,13 mm thick,2.75 mtr.long	47	No.
e)Spreading of Granite metal jelly of size 20/25 mm size to a height of 100 mm	410	Cmtr.



— — FENCE SHALL BE AT A MINIMUM DISTANCE OF 1.5 METERS AWAY FROM THE PERIPHERY OF THE STATION EARTHMAT

• 25 MM DIA M.S. ROUND RODS OF LENGTH ONE METER TO BE DRIVEN AS SHOWN

● ADDITIONAL C.I.PIPE ELECTRODES PROPOSED (REF.ENCLOSED SKETCH)

R & D CENTRE, K P T C L		
DRG NO. SEE/R&D/F2 (6) Dtd. 2-9-2010		
2/9/10	N. Lakshmisha 2/9/10	N. Lakshmisha 2/9/10
AEEE	EEE	I/c SEE

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