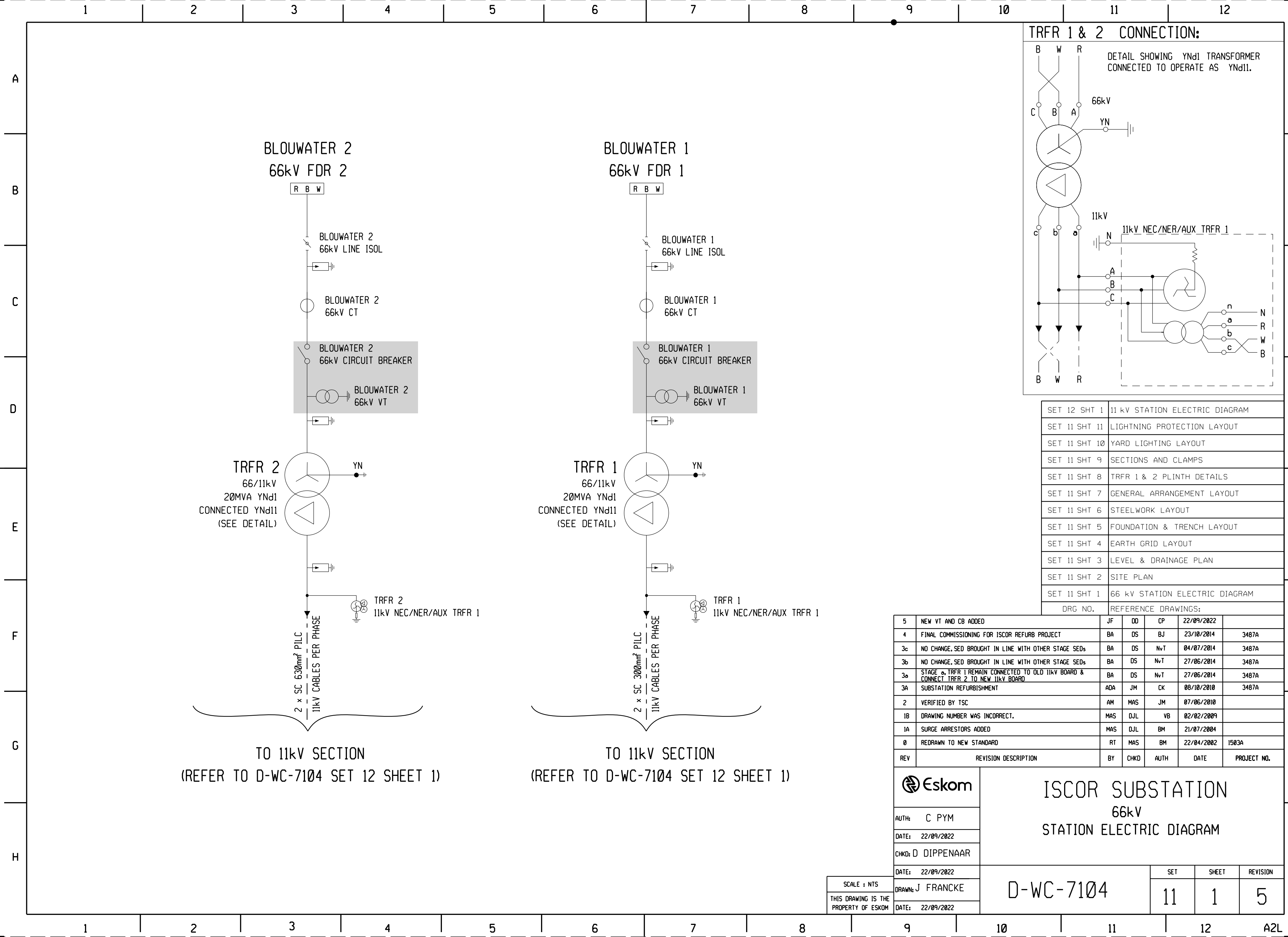
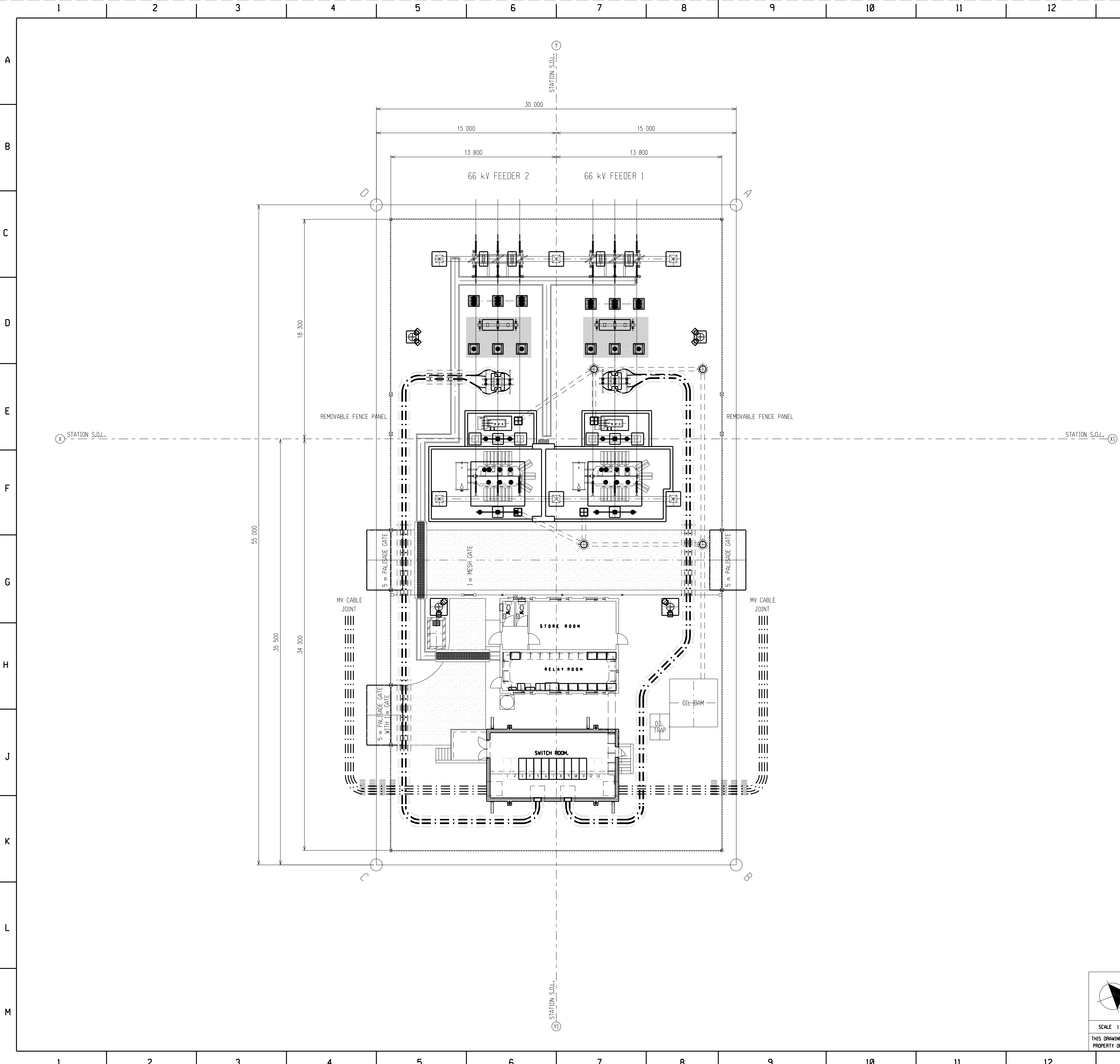






NOTES ON SETTING OUT:

1. SETTING OUT BEACONS X, XI, Y & Y1 TO BE PEGGED AND LEVELED BY ESKOM'S LAND SURVEY DEPARTMENT.

NOTES ON MV CABLES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND SPECIFICATIONS:
- SANS 0198 CODE OF PRACTICE FOR THE SELECTION, HANDLING AND INSTALLATION OF ELECTRIC POWER CABLES OF RATING NOT EXCEEDING 33 kV.
- SCSASABK6 LATEST REV. DISTRIBUTION STANDARD PART 22: CABLES SECTION 6: MEDIUM VOLTAGE CABLING IN SUBSTATIONS.
2. CABLES SHALL BE LAID IN ACCORDANCE WITH D-DT-0854 (MV CABLE TRENCH DETAILS)

FENCE LEGEND:

SYMBOL	DESCRIPTION
⊗	FENCE POST CORNER EXTERNAL
⊠	FENCE POST GATE EXTERNAL
□	FENCE POST GATE INTERNAL
○	FENCE POST STRAIN INTERNAL
-----	EXTERNAL FENCE STEEL PALISADE
-----	INTERNAL FENCE DIAMOND MESH

SUBSTATION CO-ORDINATES WG19

	Y	X
A	+93 092.68	+3 652 582.23
B	+93 040.87	+3 652 600.75
C	+93 050.97	+3 652 629.00
D	+93 102.77	+3 652 610.48

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TRFR 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
1	NEW VT AND CB ADDED	JF	DD	C PYM	22/09/2022	
0	FIRST ISSUE, SUBSTATION REFURBISHED.				/ /	3487A

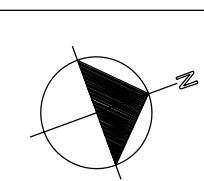
AUTH: C PYM
DATE: 22/09/2022
CHKD: D DIPPENAR
DATE: 22/09/2022
DRAWN: J FRANCKE
DATE: 22/09/2022

ISCOR SUBSTATION
66/11 kV

SITE PLAN

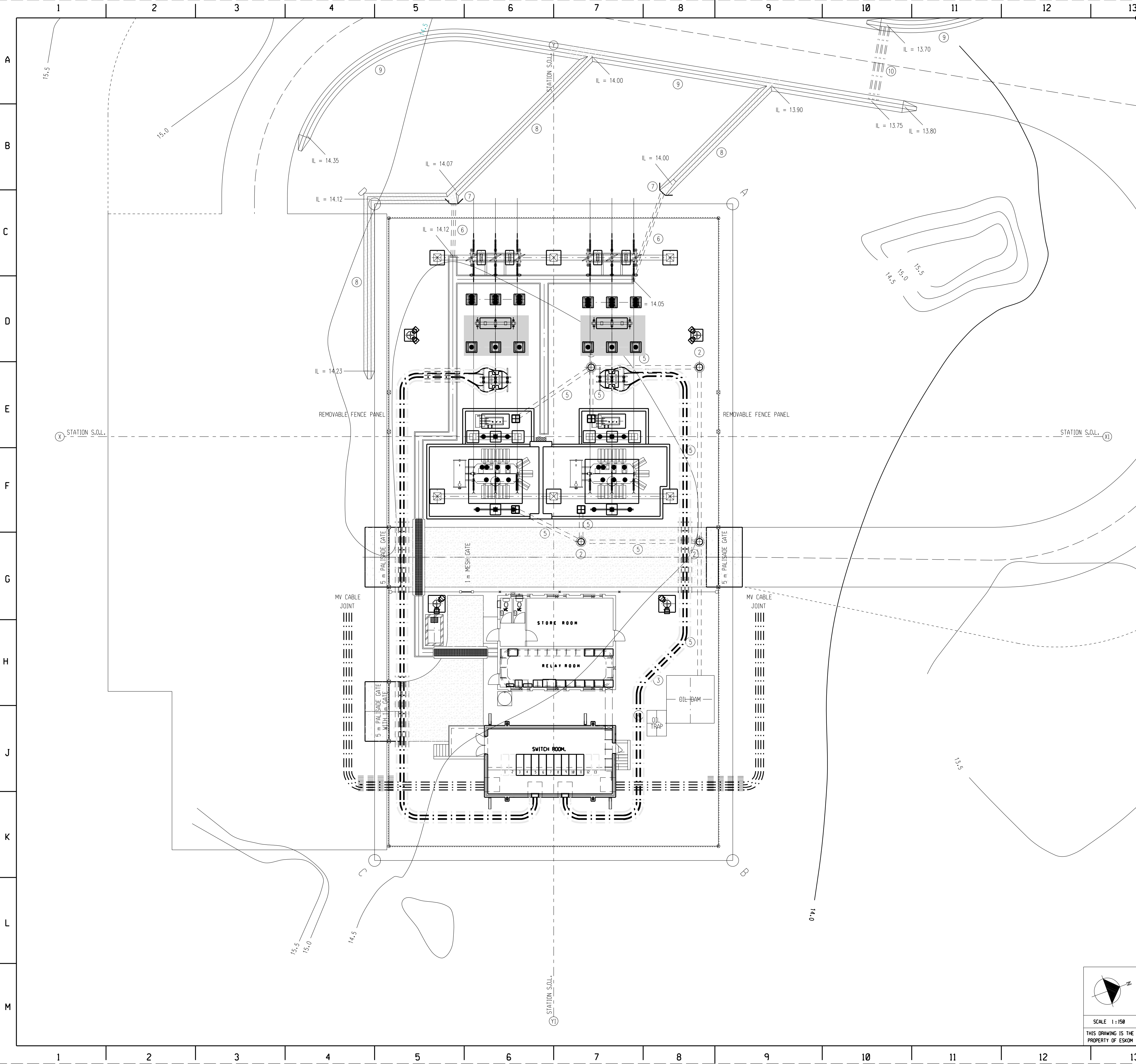
D-WC-7104

SET	SHEET	REVISION
11	2	1



SCALE 1:150

THIS DRAWING IS THE
PROPERTY OF ESKOM



EXISTING DRAINAGE SCHEDULE:				
MARK	DESCRIPTION	USED FOR	DRAWING NO.	TOP OF FND LEVEL
1	TRANSFORMER BUND AREA	20 MVA TRANSFORMER	D-WC-7104 SET 11 SHT 8 REV 00	(EXISTING)
2	MANHOLE	OIL DRAINAGE		(EXISTING)
3	OIL DRAINAGE DAM	OIL DRAINAGE		(EXISTING)
4	OIL TRAP	OIL DRAINAGE		(EXISTING)
5	CONCRETE PIPE	OIL DRAINAGE		(EXISTING)

NEW DRAINAGE SCHEDULE:				
MARK	DESCRIPTION	USED FOR	DRAWING NO.	INVERT LEVEL
6	2 x 160 mm CL34HD PIPE	STORMWATER DRAINAGE	D-WC-7104 SET 19 SHT 01 REV 00	SEE DRAWING
7	HEADWALL	STORMWATER DRAINAGE	D-WC-7104 SET 19 SHT 01 REV 00	SEE DRAWING
8	ARMOURFLEX OPEN CHANNEL	STORMWATER DRAINAGE	D-WC-7104 SET 19 SHT 01 REV 00	SEE DRAWING
9	GRASS LINED OPEN CHANNEL	STORMWATER DRAINAGE	D-WC-7104 SET 19 SHT 01 REV 00	SEE DRAWING
10	3 x 110 mm CL34HD PIPE	STORMWATER DRAINAGE	D-WC-7104 SET 19 SHT 01 REV 00	SEE DRAWING

NOTES:

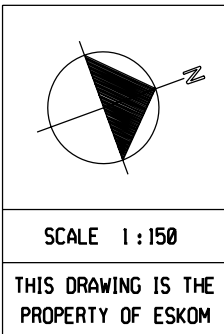
1. ALL WORK TO BE DONE IN ACCORDANCE WITH SANS 1200 LATEST REVISION.

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TRIP 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM
DRG NO.	REFERENCE DRAWINGS:

1	NEW VT AND CB ADDED	JF	DD	C PYM	22/09/2022	
0	FIRST ISSUE, SUBSTATION REFURBISHED.				/ /	3487A
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

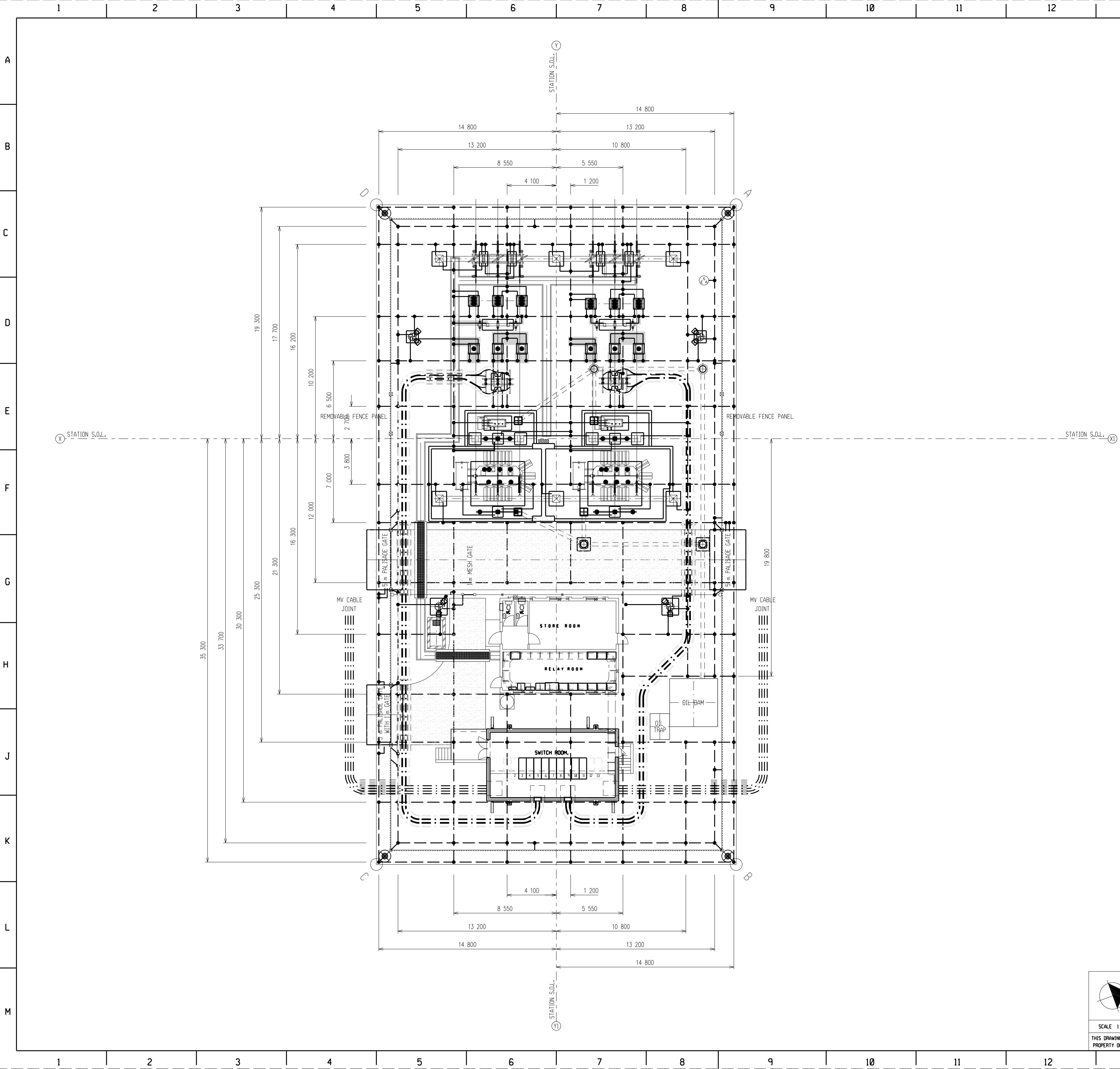
AUTH: C PYM
DATE: 22/09/2022
CHKD: D DIPPENAR
DATE: 22/09/2022
DRAWN: J FRANCKE
DATE: 22/09/2022

ISCOR SUBSTATION			
66/11 kV			
LEVEL & DRAINAGE PLAN			
D-WC-7104		SET	SHEET
		11	3
		REVISION	1



SCALE 1:150

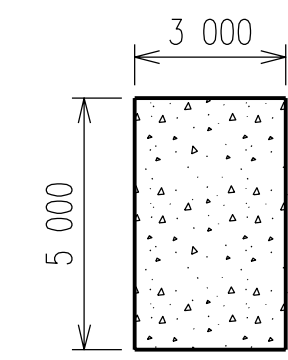
THIS DRAWING IS THE PROPERTY OF ESKOM



LEGEND		DESCRIPTION
		MAIN EARTH GRID IS 1 x 10 mm 1 ROUND COPPER 1 000 mm BELOW GROUND LEVEL.
		EARTH TAILS 3 mm x 50 mm FLAT COPPER STRAPS.
		EXISTING MAIN EARTH GRID IS 1 x 10 mm 1 ROUND COPPER 1 000 mm BELOW GROUND LEVEL.
		EXISTING EARTH TAILS 3 mm x 50 mm FLAT COPPER STRAPS.
		BRAZED JOINTS TO BE OXY-ACETYLENE BRAZED USING 3 mm 1 SILBRALLOY BRAZING RODS. NO CRIMPING ALLOWED.
		SACRIFICIAL EARTH GRID ANODES TO BE MANUFACTURED AND CONNECTED TO THE MAIN EARTH GRID AS PER DRAWING D-DT-5240 SHEET 11.
		200 mm 1 HOLES TO BE DRILLED BETWEEN 3-4 m DEEP. 2 x 10 mm 1 COPPER ELECTRODES BACKFILLED WITH BENTONITE SLURRY MIXTURE. TAILS OF ELECTRODES TO BE CONNECTED TO MAIN EARTH GRID.

- NOTES:
- FOR STANDARD EARTHING SPECIFICATION SEE DRAWING D-DT-5240 LATEST REVISION. SPECIFICATION MENTIONS CRIMPING, BUT NO CRIMPING IS ALLOWED. ALL JOINTS TO BE SILBRALLOY BRAZING.
 - SECURITY FENCE EARTHING AT INTERVALS NOT EXCEEDING 20 m.
 - FOR CONNECTION OF MAIN EARTH GRID TO FOUNDATIONS SEE THE FOUNDATION DRAWINGS LISTED ON D-WC-7104-11-05. ALL EARTH STRAPS WILL BE CONCEALED WITHIN THE FOUNDATIONS AS DETAILED ON THE FOUNDATION DRAWINGS.
 - YARD STONE TO BE LAID 1 200 mm OUTSIDE THE PALISADE FENCE PERIMETER.

DETAIL 1: EQUI-POTENTIAL GATE SLAB



- A 300 mm THICK CONCRETE SLAB WITH DIMENSIONS SHOWN ABOVE SHALL BE PLACED AT THE 5 m GATES. ALL CONCRETE WORK SHALL COMPLY WITH SANS 1200 GA. MINIMUM 28 DAYS COMPRESSION STRENGTH SHALL BE 20 MPa. NOMINAL AGGREGATE SIZE SHALL BE 19 mm.
- THE REINFORCING MESH 245 SHALL BE PLACED IN THE TOP AND BOTTOM OF THE SLAB WITH A COVER OF 50 mm. WHERE THE GROUND CONDITIONS ARE POOR, A 50 mm THICK MASS CONCRETE BLINDING LAYER SHALL BE CAST PRIOR TO THE MESH BEING PLACED. ALL REINFORCING OVERLAPS SHALL HAVE AN OVERLAP OF 350 mm.
- THE SUBGRADE MATERIAL UNDER THE SLAB SHALL BE COMPACTED TO 90% OF MOD AASHTO MAXIMUM DENSITY.
- THE MESH IS TO BE BONDED ON ONE SIDE ONLY TO THE MAIN EARTH GRID. FOUR CONNECTIONS REQUIRED AS PER D-DT-5240 SET 21 SHT 10.
- EXPANSION JOINTS NOT TO EXCEED 4 m SPACINGS (16 m sq BLOCKS).

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TRIP 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM
DRG NO.	REFERENCE DRAWINGS:

2	NEW VT AND CB ADDED	JF	DD	C PYM	22/09/2022	
1	SUBSTATION REFURBISHED.	ADR	JM	CK	08/10/2018	3487A
0	REDRAWN ON CAD AND SA'S & FIREWALL ADDED	MAS			/ /	1503A
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

ISCOR SUBSTATION
66/11 kV

EARTH GRID LAYOUT

SCALE 1:150

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DATE: 22/09/2022

DATE: 22/09/2022

AUTH: C PYM

DATE: 22/09/2022

CHKD: D DIPPENAR

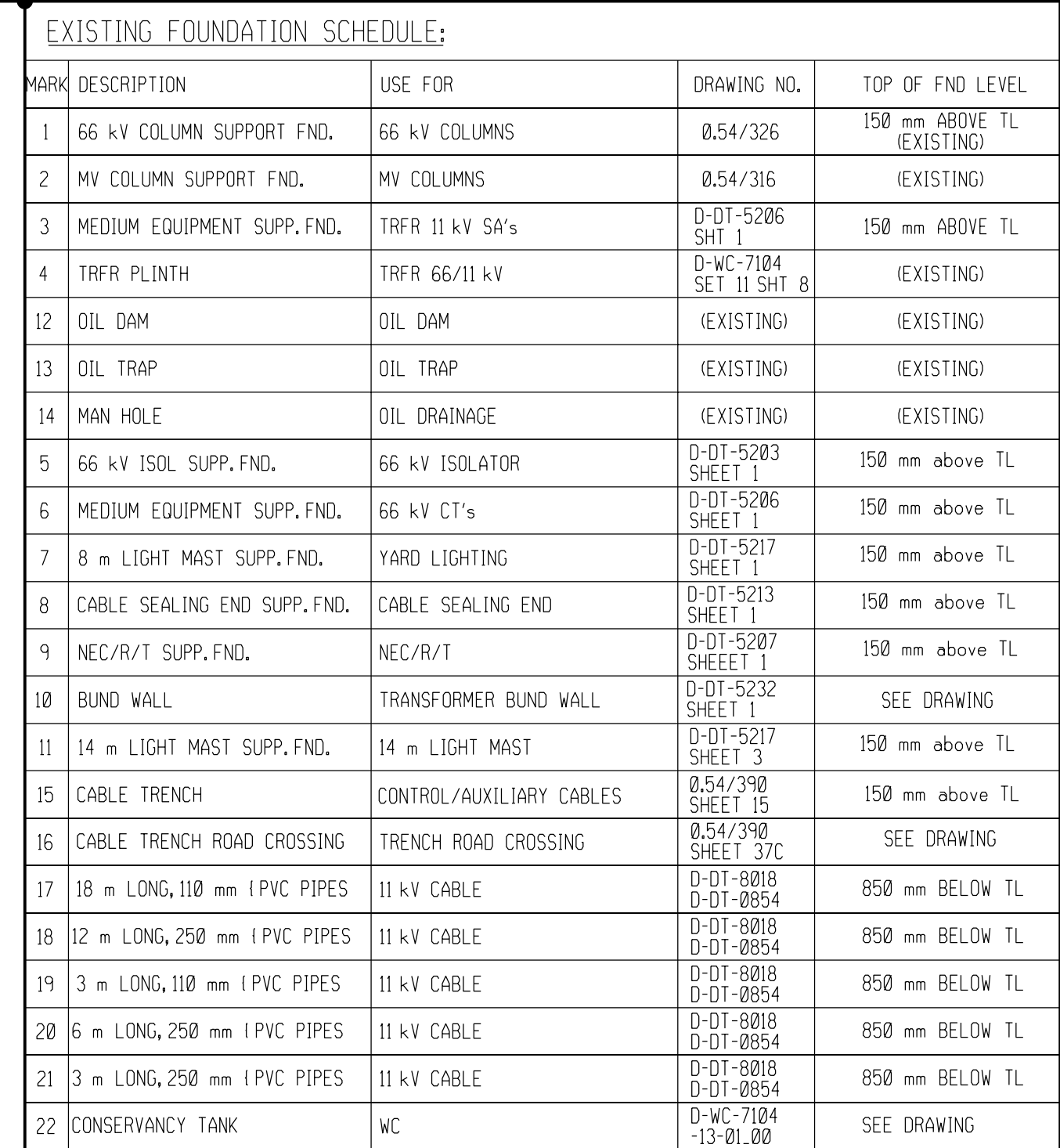
DATE: 22/09/2022

DRAWN: J FRANCKE

DATE: 22/09/2022

D-WC-7104

SET	SHEET	REVISION
11	4	2



NEW FOUNDATION SCHEDULE:				
23	66 kV CB SUPP. FND.	66 kV CIRCUIT BREAKER	D-07-5201 SH 1A	150 mm ABOVE TL
24	MEDIUM EQUIPMENT SUPP. FND.	66 kV VT	D-07-5206 SH 1	150 mm ABOVE TL

NOTES:

1. ALL WORK TO BE DONE IN ACCORDANCE WITH SABS 1200 LATEST REVISION.
2. TOP OF EQUIPMENT FOUNDATIONS TO BE 150 mm ABOVE TERRACE LEVEL.
3. HY YARD TO HAVE A CLEAN, HARD, SOUND CRUSHED STONE OF A 25 mm MINIMUM NOMINAL SIZE, 100 mm THICK LAYER, THIS SHALL BE APPLIED AFTER INSTALLATION OF ALL EQUIPMENT AND CABLES.
4. ALL FOUNDATION H.D. BOLTS TO BE ALIGNED FOR CASTING OF CONCRETE TO A TOLERANCE OF ± 2 mm, FOUNDATION TOLERANCE TO BE IN ACCORDANCE WITH SABS 1200 G.6 GRADE II.
5. DEPTH OF EQUIPMENT FOUNDATIONS TO BE NOT LESS THAN SHOWN ON DETAIL DRAWING AND NOT LESS THAN 300 mm INTO NATURAL GROUND.
6. ALL TOP EDGES OF CONCRETE ABOVE G.L. TO HAVE 25 mm CHAMFER AT 45
7. ALL FOUNDATIONS TO HAVE 25 mm GROUT UNDER BASEPLATES ONLY. GROUT MIX 2:1. ALL H.D. BOLTS ARE SUPPLIED WITH 2 NUTS AND 2 WASHERS. GROUT MUST BE A FEATHERED FINISH TO ALLOW WATER TO RUN FREELY FROM THE BASEPLATE.
8. STRUCTURES SHALL BE ERECTED, ALIGNED, SQUARED, PLUMBED AND LEVELED TO AN ACCURACY SPECIFIED IN SABS 1200 H 6.2.2.c)2 - CLASS II.
9. THE TUBULAR BUSBARS SHALL BE LEVEL, THEREFORE THE TOPS OF ALL BUSBAR FOUNDATIONS SHALL BE AT THE SAME HEIGHT AND A MINIMUM OF 150 mm ABOVE THE TERRACE LEVEL.

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TFR 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM
DRG NO.	REFERENCE DRAWINGS:

2	NEW VT AND CB ADDED	JF	DD	C PYM	22/09/2022	
1	SUBSTATION RECURBISHED.	ADA	JM	CK	08/10/2010	3487A
0	REDRAWN ON CAD AND SA's & FIREWALL ADDED	MAS			/ /	1583A
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: C PYM

DATE: 22/09/2022

CHKD: D DIPPEN

DATE: 22/09/2022

DRAWN: J FRANC

M	DATE: 22/09/2022
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ISCOR SUBSTATION
66/11 kV

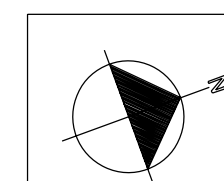
FOUNDATION AND TRENCH LAYOUT

D-WC-7104	11	5	2
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SET	SHEET	REVISION
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11	5	2
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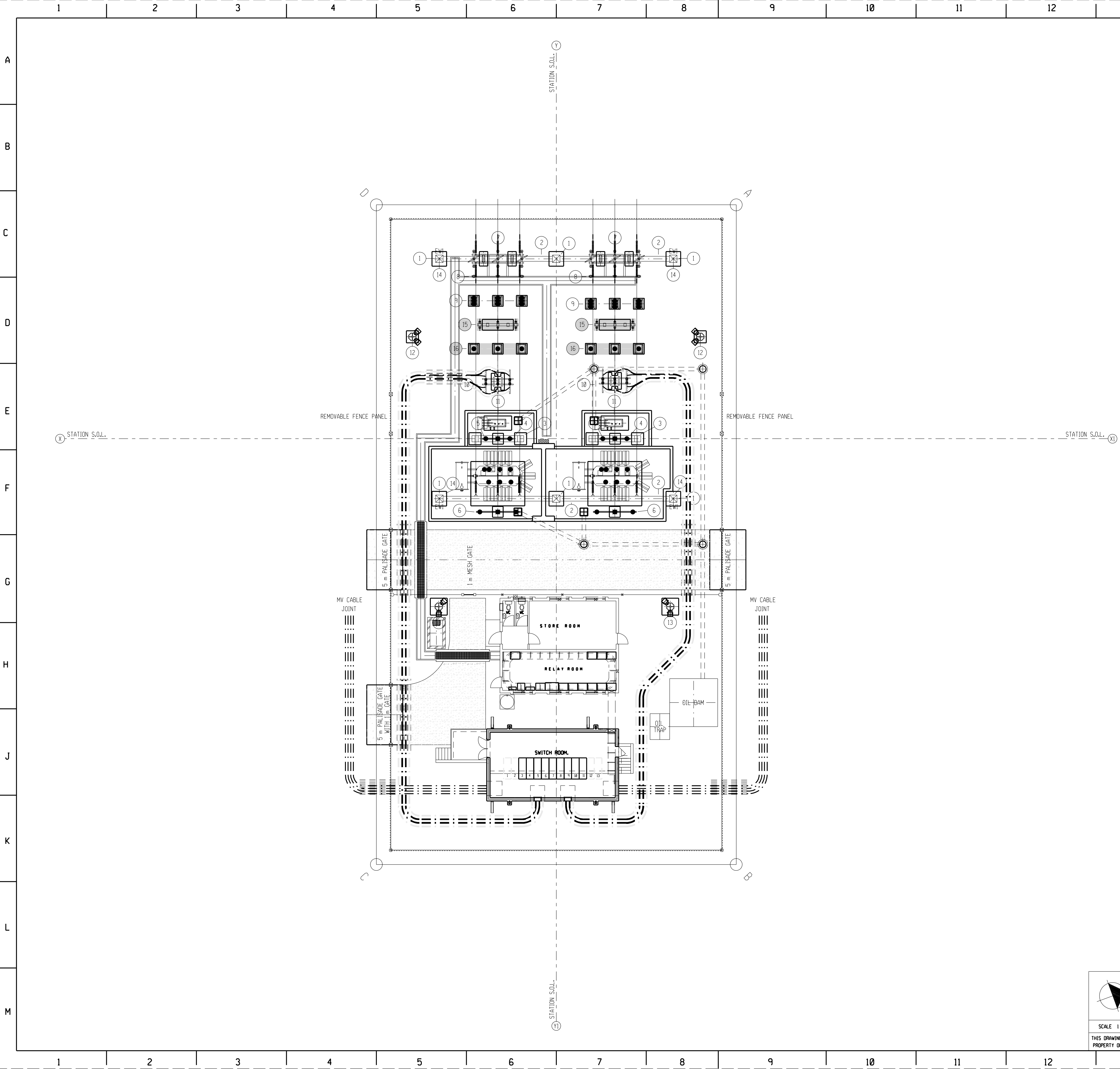
11	9	7
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SCALE 1 : 150

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SCHEDULE OF EXISTING STEELWORK

MARK	DESCRIPTION	USE FOR	DRAWING NO.	REV NO.	DRAWING NO. FOR CAPS	REV NO.
1	66 kV COLUMN TYPE 8344	66 kV COLUMN	0.54/322	-	-	-
2	66 kV BEAM TYPE 9754	66 kV BEAM (7925)	0.54/323	-	-	-
EW1	EARTHWIRE SUPPORT	EW1	0.54/322	-	-	-
3	TERTIARY COLUMN TYPE 5855	11 kV COLUMNS	0.54/315	-	-	-
4	TERTIARY BEAM TYPE 3800	11 kV BEAM	0.54/315	-	-	-
5	MEDIUM EQUIP SUPPORT 3 m	TRFR 11 kV SA's	D-DT-5206 SHT 4	3	D-DT-5206 SHT 6	3
6	MEDIUM EQUIP SUPPORT 3 m	TRFR 66 kV SA's	D-DT-5206 SHT 4	3	0.54/3394	3
7	66 kV ISOL SUPP STEELWORK	66 kV ISOLATOR	D-DT-5203 SHT 2	11	-	-
8	66 kV SA BRACKET	66 kV SURGE ARRESTORS	D-DT-5219 SHT 3	4	-	-
9	MEDIUM EQUIP SUPPORT 2.5m	66 kV FDR 66kV CT's	D-DT-5206 SHT 3	8	D-DT-5206 SHT 5	3
10	CSE SUPP STEELWORK	CABLE SEALING END	D-DT-5213 SHT 2	8	-	-
11	NEC/R/T SUPP STEELWORK	NEC/R/T	SUPPLIER	9	-	-
12	8 m LIGHTING MAST	LIGHTING / LIGHTNING	D-DT-5217 SHT 2	4	-	-
13	14 m LIGHTING MAST	LIGHTING / LIGHTNING	D-DT-5217 SHT 3	8	-	-
14	LIGHTNING SPIKE	LIGHTNING PROTECTION	0.54/340	-	-	-

SCHEDULE OF NEW STEELWORK:

15	66 kV CB SUPP STEELWORK	66 kV CIRCUIT BREAKER	D-DT-5201 SHT 2A	0	-	-
16	MEDIUM EQUIP SUPPORT 2.5 m	66 kV VT	D-DT-5206 SHT 3	8	D-DT-5206 SHT 5	6

NOTES:

1. STRUCTURES SHALL BE ERECTED, ALIGNED, SQUARED, PLUMBED AND LEVELED TO AN ACCURACY SPECIFIED IN SANS 1200 H 6.2.2.c)2 - CLASS II.

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TRFR 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM
DRG NO.	REFERENCE DRAWINGS:

2	NEW VT AND CB ADDED	JF	DO	C PYM	22/09/2022	
1	SUBSTATION REFURBISHED.	ADR	JM	CK	08/10/2018	3487A
0	REDRAWN ON CAD AND SA's & FIREWALL ADDED	MAS			/ /	1503A
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: C PYM

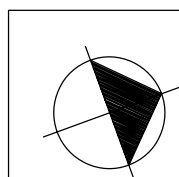
DATE: 22/09/2022

CHKD: D DIPPENAAR

DATE: 22/09/2022

DRAWN: J FRANCKE

DATE: 22/09/2022



SCALE 1:150

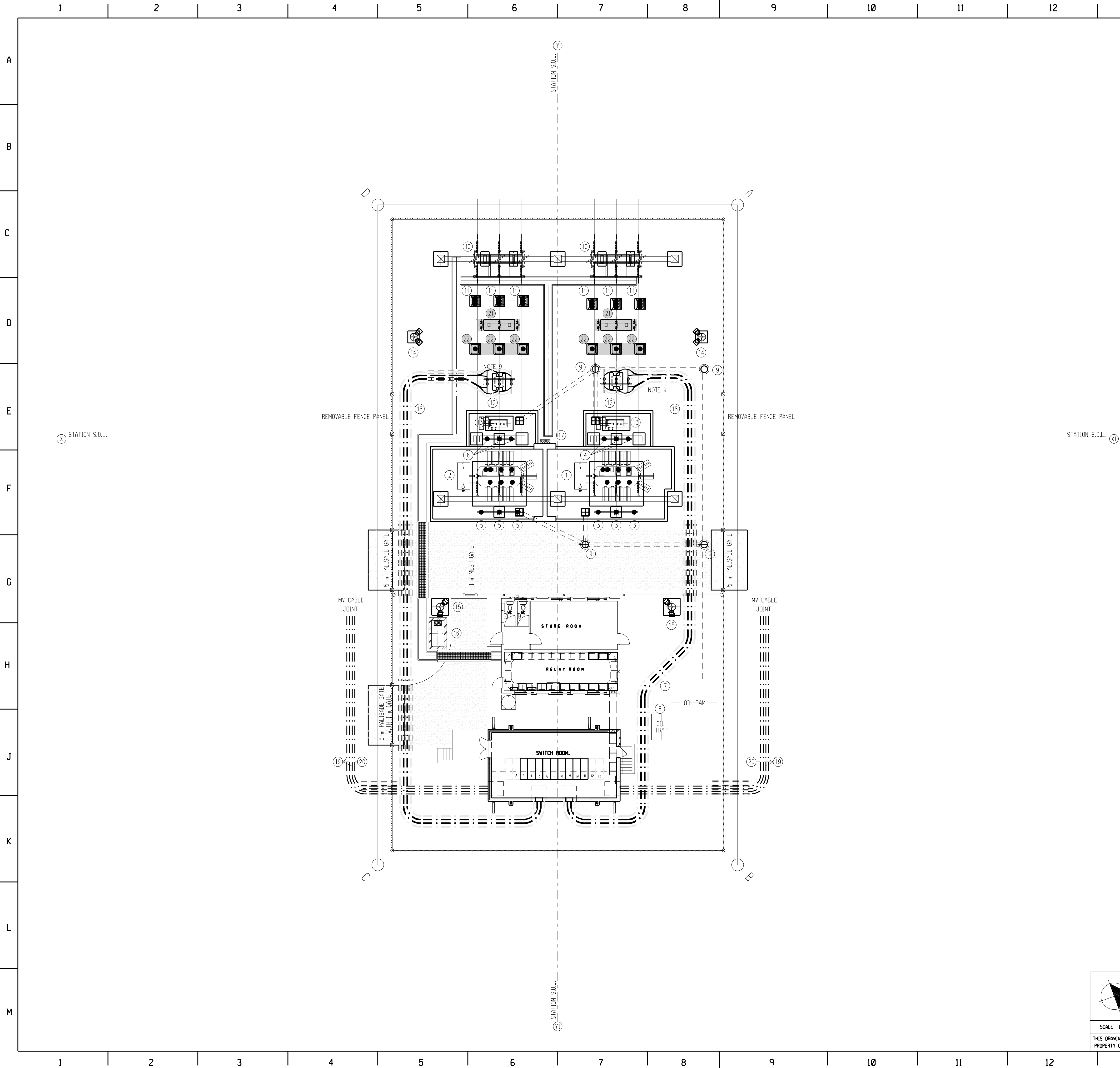
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ISCOR SUBSTATION
66/11 kV

STEELWORK LAYOUT

D-WC-7104

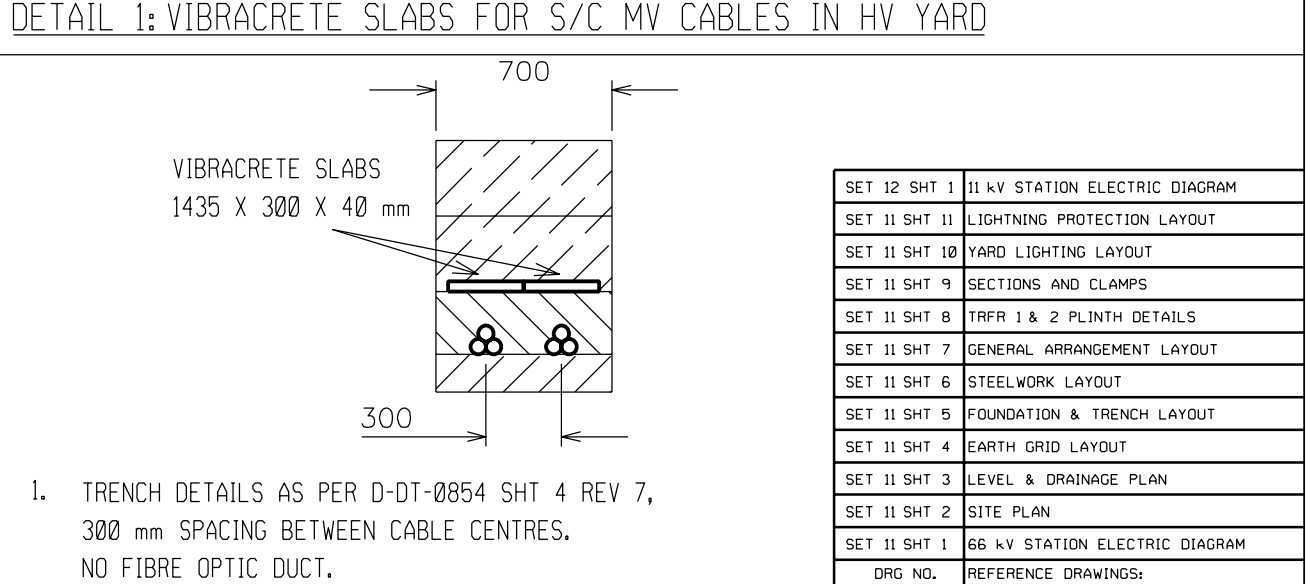
SET	SHEET	REVISION
11	6	2



EXISTING EQUIPMENT SCHEDULE:					
MARK	DESCRIPTION	USE FOR	ORDER NO.	MANUFACTURER	OUTLINE DRAWING NO.
1	TRFR 20 MVA 66/11 kV OLTC	TRFR 1	-	ASEA	1.03/15375
2	TRFR 20 MVA 66/11 kV OLTC	TRFR 2	-	ASEA	1.03/15375
MARK	DESCRIPTION	USE FOR	DRAWING NO.	REV NO.	
3	S/ARR S/CL 66 kV MCOV 48 kV 31 mm/kV	TRFR 1 66 kV SA's	D-DT-6212 SHEET 1	7	
4	S/ARR S/CL 11 kV MCOV 12 kV 31 mm/kV	TRFR 1 11 kV SA's	D-DT-6216 SHEET 1	7	
5	S/ARR S/CL 66 kV MCOV 48 kV 31 mm/kV	TRFR 2 66 kV SA's	D-DT-6212 SHEET 1	7	
6	S/ARR S/CL 11 kV MCOV 12 kV 31 mm/kV	TRFR 2 11 kV SA's	D-DT-6216 SHEET 1	7	
7	STANDARD OIL DRAINAGE DAM WITH LID		(EXISTING)		
8	OIL TRAP		(EXISTING)		
9	MANHOLE		(EXISTING)		
10	66 kV ISOLATOR WITH SURGE ARRESTORS		D-DT-4728 SHT 1 REV 6		
11	66 kV CURRENT TRANSFORMER		D-DT-6198 SHT 1 REV 8		
12	MV CABLE SEALING END SUPPORT 2 ½ 630 mm CU CABLE/PHASE		D-DT-4649 SHT 3 REV 9		
13	11 kV NEC/R/T		D-DT-6140 SHT 1 REV 9		
14	8 m LIGHTING/LIGHTNING MAST		D-DT-5217 SHT 2 REV 4		
15	14 m LIGHTING/LIGHTNING MAST		D-DT-5217 SHT 3 REV 8		
16	CONSERVANCY TANK		D-WC-7104-13-01.00		
17	YARD AC DISTRIBUTION BOARD		D-DT-9200 SHT 2 REV 2		
18	MV CABLE, 2 x 630 mm ² SINGLE CORE CU CABLE/PHASE		D-DT-8000 SHT 1 REV 6		
19	MV CABLE, 1 x 300 mm ² THREE CORE CU CABLE/PHASE		D-DT-8000 SHT 4 REV 6		
20	MV CABLE, 1 x 95 mm ² THREE CORE CU CABLE		D-DT-8000 SHT 3 REV 6		

NEW EQUIPMENT SCHEDULE:		
MARK	DESCRIPTION	DRAWING NO.
21	66 kV CIRCUIT BREAKER	D-DT-6251
22	66 kV VOLTAGE TRANSFORMER	D-DT-6176

- NOTES:
- ALL WORK TO BE DONE IN ACCORDANCE WITH SANS 1200 LATEST REVISION.
 - TOP OF EQUIPMENT FOUNDATIONS TO BE 150 mm ABOVE TERRACE LEVEL.
 - H.V. YARD TO HAVE A CLEAN, HARD, SOUND CRUSHED STONE OF A 38 mm MINIMUM NOMINAL SIZE, 100 mm THICK LAYER. THIS SHOULD BE APPLIED AFTER INSTALLATION OF ALL EQUIPMENT AND CABLES.
 - DEPTH OF EQUIPMENT FOUNDATIONS TO BE NOT LESS THAN SHOWN ON DETAIL DRAWING AND NOT LESS THAN 300 mm INTO NATURAL GROUND.
 - STRUCTURES SHALL BE ERECTED, ALIGNED, SQUARED, PLUMBED AND LEVELED TO AN ACCURACY SPECIFIED IN SANS 1200 H 6.2.2.c)2 - CLASS II.
 - EQUIPMENT NOT FITTED WITH 26 mm or 38 mm CONNECTION PRONGS MUST BE FITTED WITH TINNED 26 mm or 38 mm BRASS PRONGS DRILLED AND TAPPED TO APPROPRIATE SIZES.
 - ALL SURFACE AREAS OF CONDUCTOR OR CONTACT AREA OF CONNECTION CLAMPS MUST BE TREATED AS DESCRIBED PRIOR TO MAKING A CLAMPED OR CRIMPED CONNECTION.
 - a) APPLY THIN LAYER OF NON OXIDE GREASE TO SURFACE AREA.
 - b) BRUSH NON OXIDE GREASED AREA THOROUGHLY WITH A CLEAN WIRE BRUSH.
 - c) WIPE SURFACE AREA CLEAN WITH RAG AND IMMEDIATELY APPLY A FRESH LAYER OF NON OXIDE GREASE TO CLEAN SURFACE AREA.
 - ALL CLAMPS FROM THE TRFR MV BUSHING TO THE 11 kV SA TO BE TAPED FIRST WITH PUTTY TAPE AND THEN COVERED WITH P23 TAPE.
 - THE FINAL POSITION OF THE MV CABLES SHALL BE DETERMINED ON SITE.
 - VIBRACRETE SLABS SHALL BE PLACED OVER THE SINGLE CORE MV CABLES, WHERE THERE IS VEHICLE ACCESS INTO THE HV YARD. SEE DETAIL 1.



2	NEW VT AND CB ADDED	JF	DD	C PYM	22/09/2022	
1	SUBSTATION REFURBISHED.	ADA	JM	CK	08/10/2010	3487A
0	REDRAWN ON CAD AND SA's & FIREWALL ADDED	MAS			/ /	1503A
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

AUTH: C PYM

DATE: 22/09/2022

CHKD: D DIPPEAAR

DATE: 22/09/2022

DRAWN: J FRANCKE

DATE: 22/09/2022

ISCOR SUBSTATION

66/11 kV

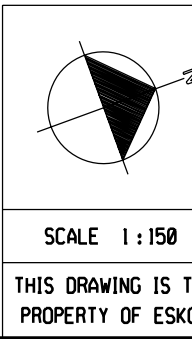
GENERAL ARRANGEMENT LAYOUT

D-WC-7104

11

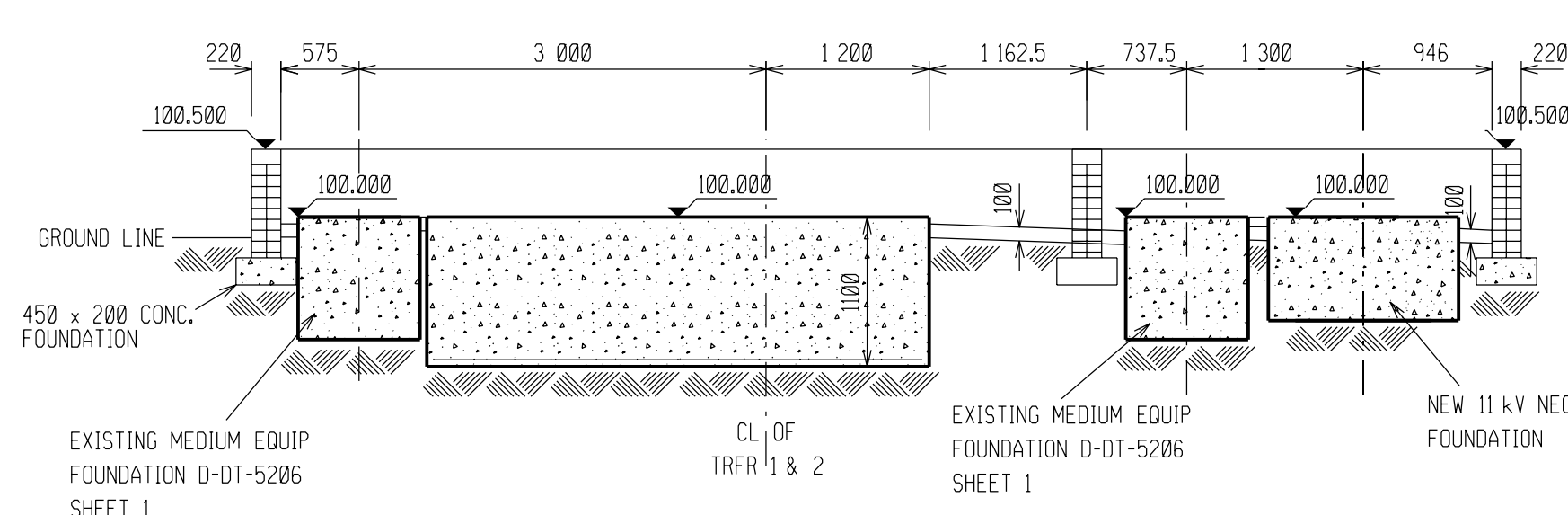
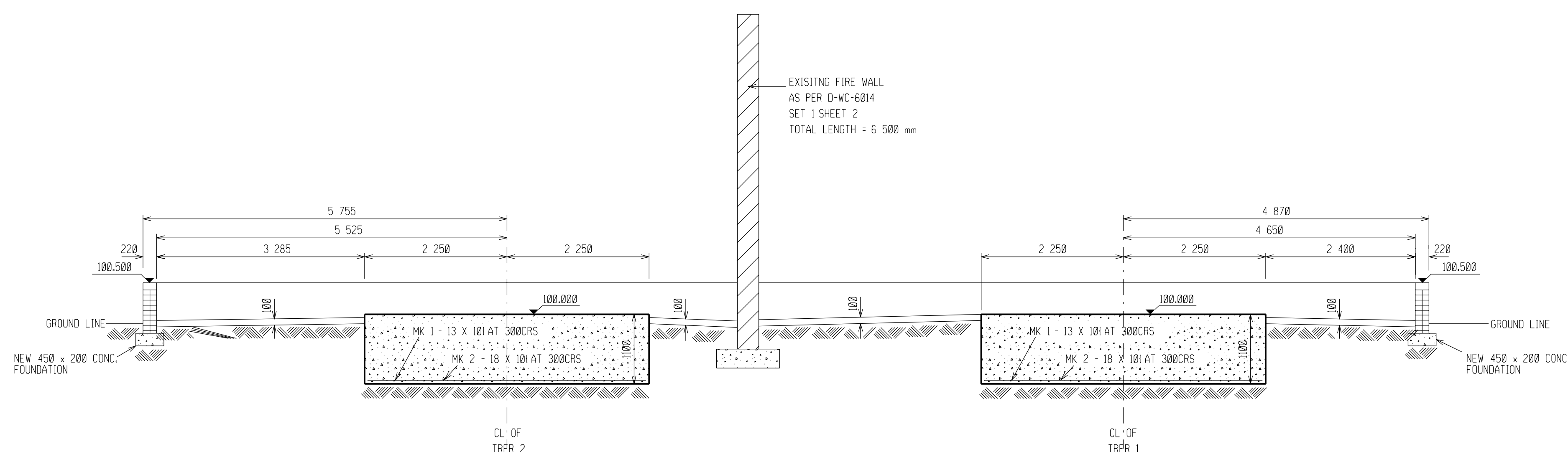
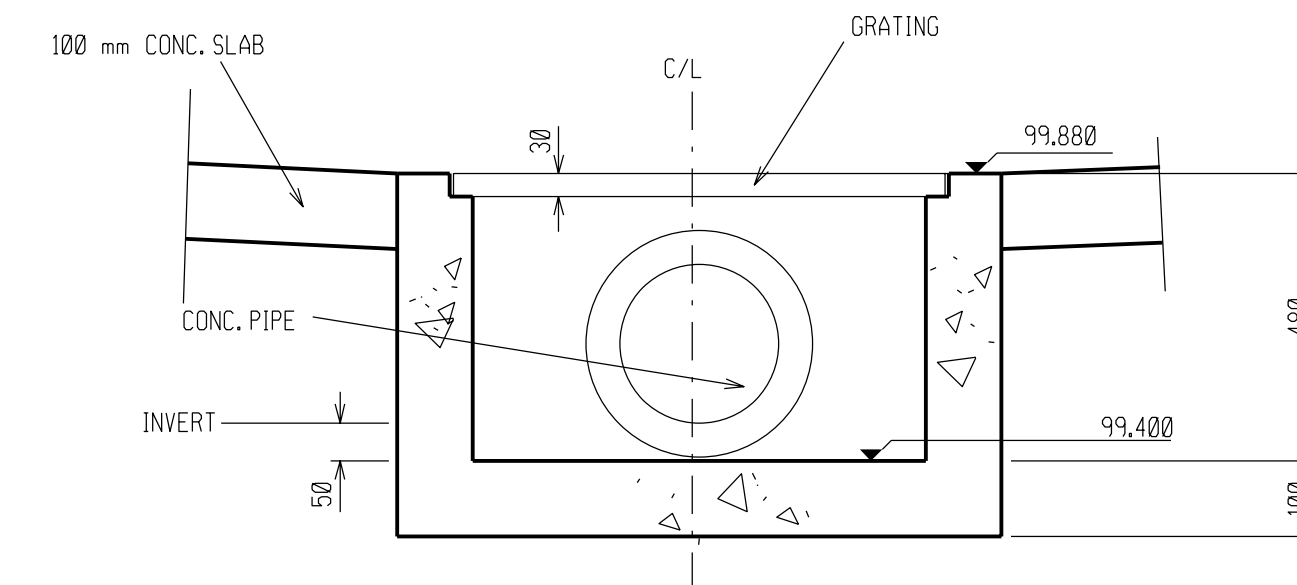
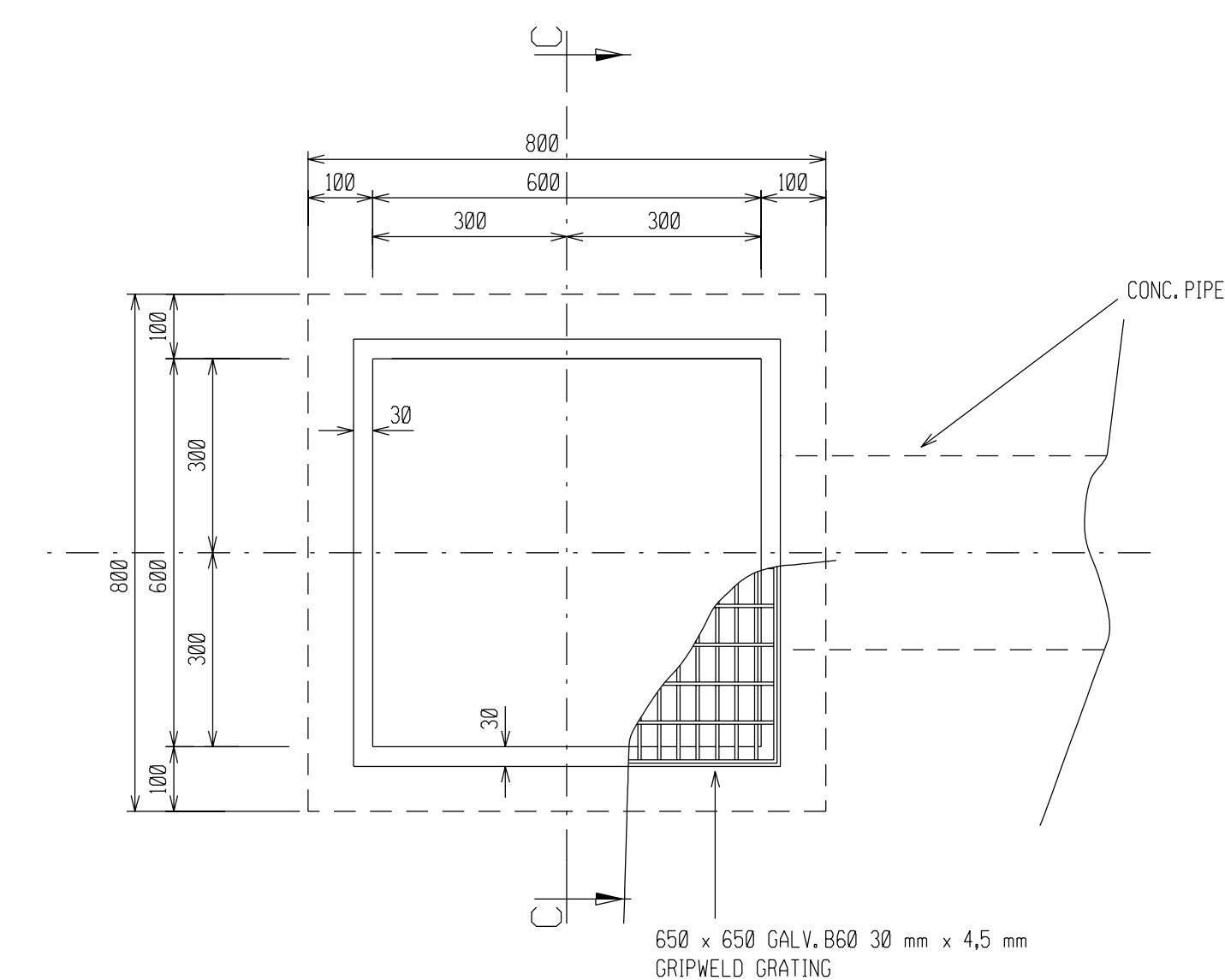
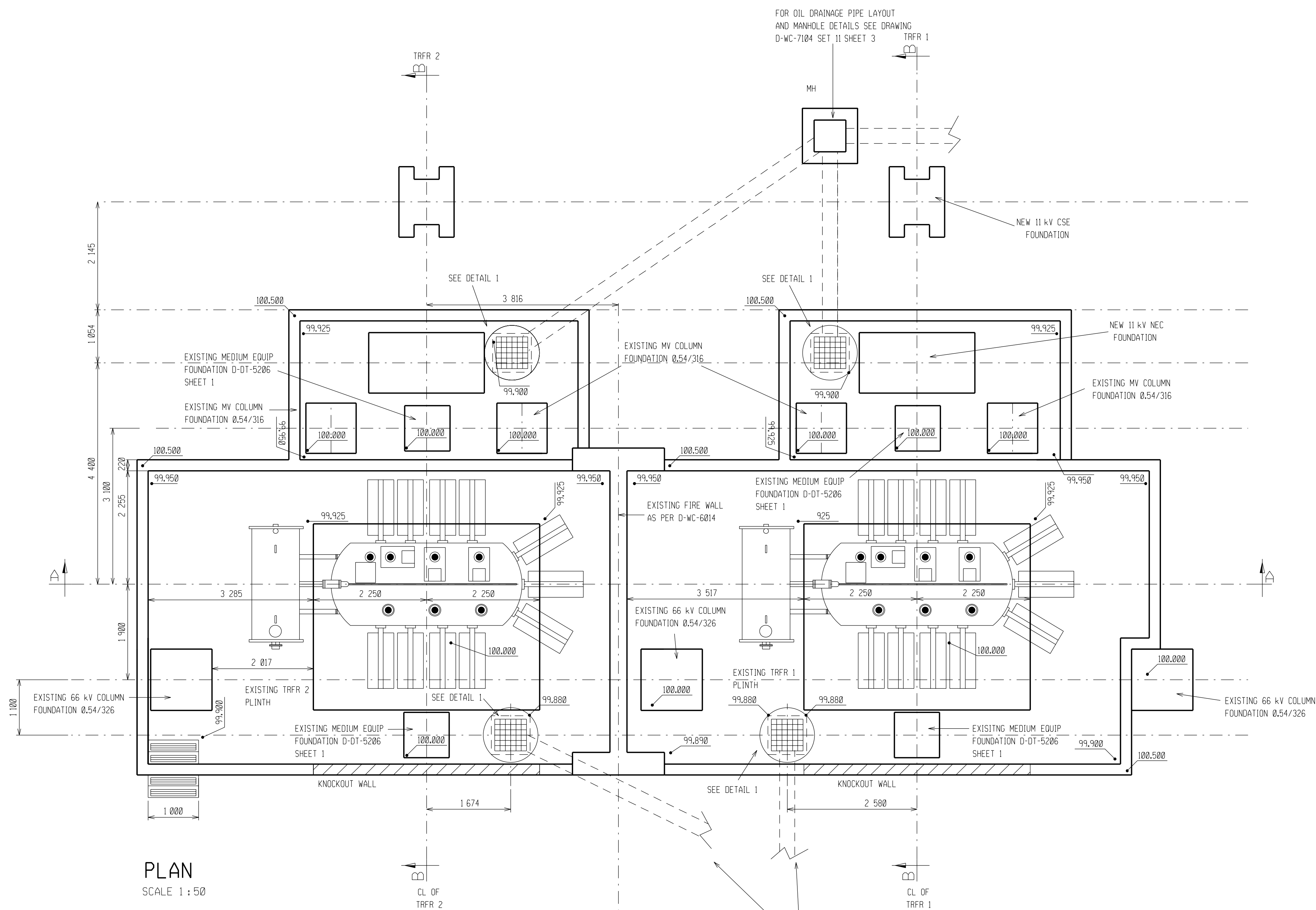
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2



SCALE 1:150

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NOTES

ALL CONCRETE WORK SHALL COMPLY WITH SABS 1200 GA.
MINIMUM 28 DAYS COMPRESSION STRENGTH SHALL BE 20 MPa.
NOMINAL AGGREGATE SIZE SHALL BE 19 mm.

THE REINFORCING MESH SHALL BE PLACED IN THE TOP AND BOTTOM OF THE PLINTH AND RUNWAY SLABS WITH A COVER OF 40 mm.
WHERE THE GROUND CONDITIONS ARE POOR, A 50 mm THICK MASS CONCRETE BLINDING LAYER SHALL BE CAST PRIOR TO THE MESH BEING PLACED.

ALL REINFORCING OVERLAPS SHALL HAVE A LAP OF 350 mm.
THE SUBGRADE MATERIAL UNDER THE TRFR PLINTH AND SLIPWAY SHALL BE
COMPACTED TO 98% OF MOD AASHTO MAXIMUM DENSITY.

ALL CONSTRUCTION JOINTS/ EXPANSION JOINTS AND CABLE ENTRY POINTS SHALL BE SEALED USING EXPANDABLE INSERTS OR COMPOUND SYSTEMS. THESE SHALL HAVE A MINIMUM 2 HOUR FIRE RATING IN ACCORDANCE WITH SABS0177. RECOMMENDED SYSTEMS ARE CSD SEALING SYSTEMS FROM MERIDIAN TECHNOLOGIES AND INTUMEX FROM P & H PROTECTIVE PLASTER SYSTEMS.

BUND WALLS TO BE CONSTRUCTED FROM FACE BRICKS COMPLYING WITH SANS 227 AND APPROVED BY ESKOM. ALL JOINTS SHALL BE CONSTRUCTED WITH 10 mm THICK MORTAR (1:4 CEMENT : SAND), RAKED FINISH. ALL JOINTS TO BE IN STRAIGHT HORIZONTAL AND VERTICAL LINES. WALLS TO BE CAPPED WITH A ROLL COURSE.

GRATINGS TO BE HOT DIP GALVANISED TO SANS ISO 1461.

160 mm PVC SLEEVE FOR CABLES. SLEEVE TO BE CORKED AFTER
CABLES ARE LAID. FINAL POSITIONS TO BE DETERMINED ON SITE.

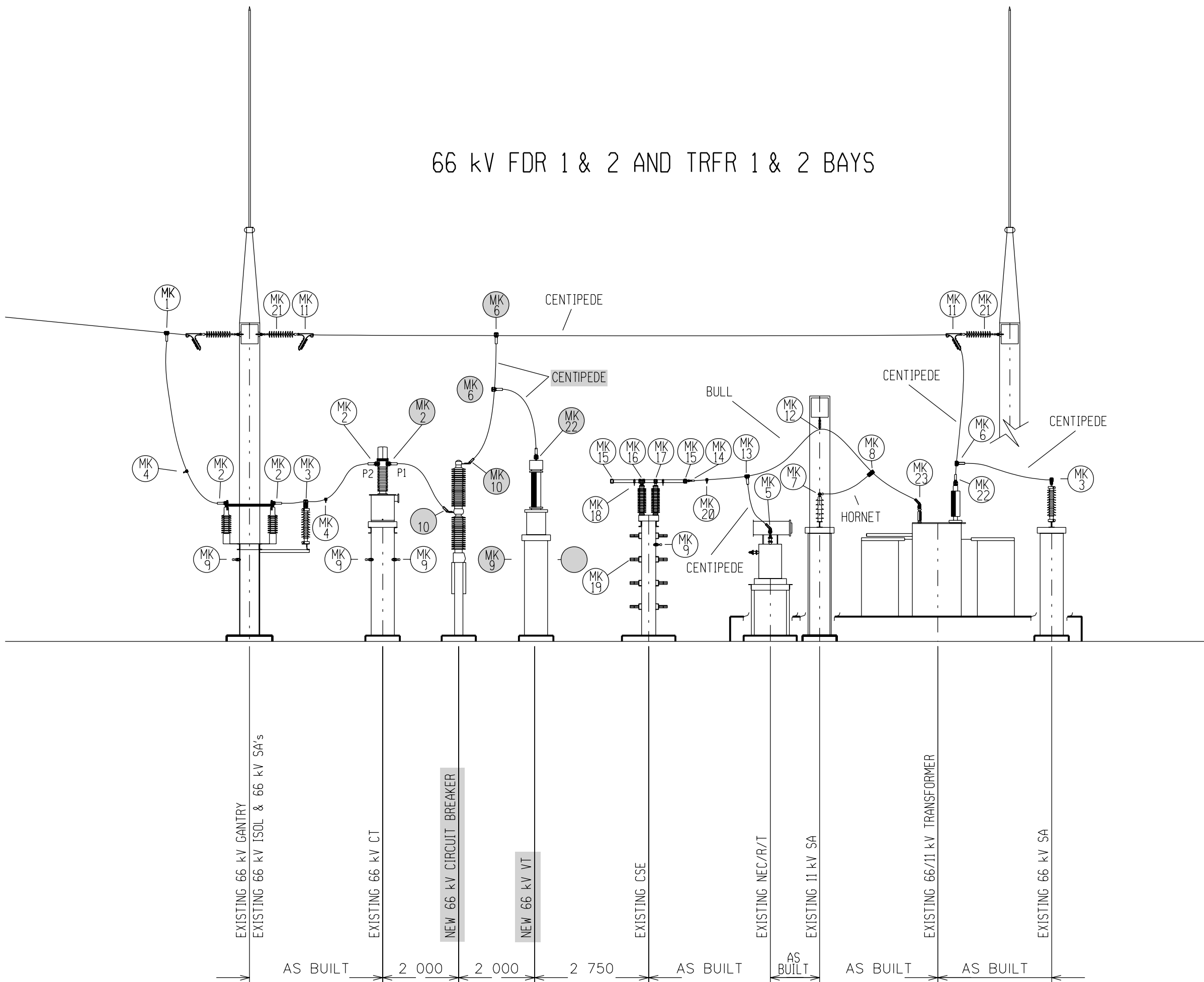
STAIR TREADS TO BE RIBBED FOR GRIP.

STEPS TO BE CONSTRUCTED OF PLASTERED BRICKWORK BUILT UPON THE 100 mm SLAB INTERNALLY & A 150 mm CONC. FOUNDATION EXTERNALLY. RISERS TO BE MAX. 180 mm TREADS TO BE 220 mm WIDE.

SET 12 SHT 1	11 KV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TRFR 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 KV STATION ELECTRIC DIAGRAM
DRG NO.	REFERENCE DRAWINGS:

1	SUBSTATION REFURBISHED.	ADA	JM	CX	08/10/2010	346
2	REDRAWN & BUND AREA UPGRADED	MAS			/ /	150
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJ#

	ISCOR SUBSTATION		
	66/11 kV		
	TRFR 1 & 2 PLINTH DETAILS		
	DATE: / / DATE: / / DATE: / /		
OFFICE: MA Salaitan DATE: 13/07/2004	SET:	SHEET:	11 8



SCHEDULE

MARK	CODE	DESCRIPTION	DRAWING NO.	CLAMP SIZE
1	UT-3	CLAMP, T R12-19 mm - T22-28 mm	D-DT-6099	12-19 - 22-28 mm
2	KC 2	CLAMP, B/COMP Ø	D-DT-6006	26,5 - 38 mm
3	K2	CLAMP, CROSS	D-DT-6002	26,5 - 26 mm
4	EPC-26	CLAMP, PEG AL CENT	D-DT-6115	26,5 mm
5	KC 11	CLAMP, B/COMP 45	D-DT-6006	26,5 - 38 mm
6	TC 3	CLAMP, T/COMP Ø	D-DT-6010	26,5 - 26,5 mm
7	-	LUG, AL HORNET 18 M12	D-DT-3074	12 mm
8	K3	CLAMP, CROSS 16,3 mm - 38 mm	D-DT-6002	16 mm
9	-	JOINT, BALL PORTABLE EARTH 20 kA G/S	D-DT-6081	-
10	KC 6	CLAMP, B/COMP 45	D-DT-6006	26,5 - 38 mm
11	B 4	CLAMP, PISTOL 20 mm - 30 mm	D-DT-6042	20 - 30 mm
12	-	CLAMP, SUSP PIVOTED 24,0 mm - 40,0 mm	D-DT-7009	24 - 40 mm
13	TC 9	CLAMP, T/COMP 38,3 mm - 26,5 mm	D-DT-6010	38,3 - 26,5 mm
14	C1	CLAMP, S/COMP TBCT 80/38/C1 Ø	D-DT-6090	38,3 mm
15	TBEC/P - 80	END CAP TBEC 80 PLAIN NO F/CLAMP	D-DT-6040	80 mm
16	TBSC80	CLAMP, BUS COUPLER TYPE TBSC80-127	D-DT-6086	80 mm
17	TBFS80	CLAMP, F/BUS SUPP TYPE TBFS80-127	D-DT-6039	80 mm
18	TBTP80	CLAMP, TUBE BUS/PALM T/ OFF TBTP80	D-DT-6117	80 mm
19	-	CLAMP, CABLE DBL 50 - 75 P/PROP BLK	D-DT-8019	50 - 75 mm
20	EPC-38	CLAMP, PEG AL BULL	D-DT-6115	38,3 mm
21	-	INSUL, L/ROD 66 kV 120 kN	D-DT-7029	-
22	KC 1	CLAMP, B/COMP Ø	D-DT-6006	26,5 - 26 mm
23	KC 4	CLAMP, B/COMP 45	D-DT-6006	38,3 - 38 mm

NOTES:

- EQUIPMENT NOT FITTED WITH 26 mm or 38 mm CONNECTION PRONGS MUST BE FITTED WITH TINNED 26 mm or 38 mm BRASS PRONGS DRILLED AND TAPPED TO APPROPRIATE SIZES.
- ALL SURFACE AREAS OF CONDUCTOR OR CONTACT AREA OF CONNECTION CLAMPS MUST BE TREATED AS DESCRIBED PRIOR TO MAKING A CLAMPED OR CRIMPED CONNECTION.
 - APPLY THIN LAYER OF NON OXIDE GREASE TO SURFACE AREA.
 - CLEAN NON OXIDE GREASED AREA THOROUGHLY.
 - WIPE SURFACE AREA CLEAN WITH RAG AND IMMEDIATELY APPLY FRESH LAYER OF NON OXIDE GREASE.
 - FIT CLAMP TO CONNECTOR PRONG OR CONDUCTOR AND TORQUE TO:
 - 8 mm GALVANIZED STEEL BOLTS - 15 Nm
 - 10 mm GALVANIZED STEEL BOLTS - 26 Nm
 - 12 mm GALVANIZED STEEL BOLTS - 45 Nm
 - 8 mm S/STEEL BOLTS - 20 Nm
 - 10 mm S/STEEL BOLTS - 35 Nm
 - 12 mm S/STEEL BOLTS - 60 Nm
 - 8 mm ALUMINIUM BOLTS - 10 Nm
 - 10 mm ALUMINIUM BOLTS - 21 Nm
 - 12 mm ALUMINIUM BOLTS - 36 Nm

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	TRFR 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
SET 11 SHT 6	STEELWORK LAYOUT
SET 11 SHT 5	FOUNDATION & TRENCH LAYOUT
SET 11 SHT 4	EARTH GRID LAYOUT
SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
2	NEW VT AND CB ADDED	JF	DD	C PYM	22/09/2022	
1	SUBSTATION REFURBISHED.	ADA	JM	CK	08/10/2010	3487A
0	66 kV & 11 kV SA's ADDED	MAS			/ /	1503A



AUTH: C PYM

DATE: 22/09/2022

CHKD: D DIPPENAAR

DATE: 22/09/2022

DRAWN: J FRANCKE

DATE: 22/09/2022

SCALE 1:100

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ISCOR SUBSTATION 66/11 kV

SECTIONS & CLAMPS

D-WC-7104

SET

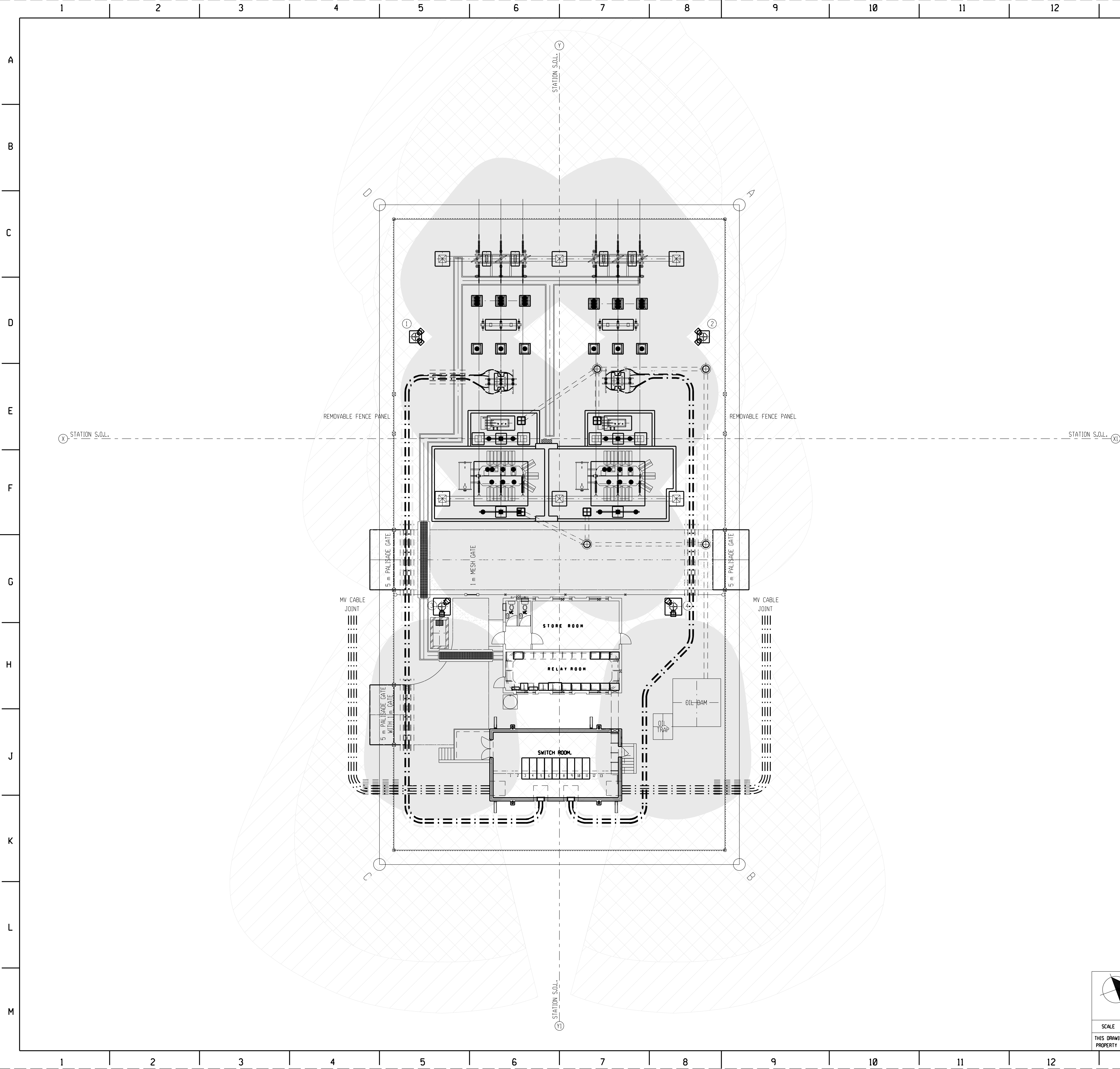
SHEET

REVISION

11

9

2

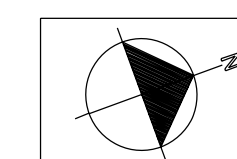


SCHEDULE:			
LEGEND	DESCRIPTION		
	20 LUX AND HIGHER LIGHTING ZONE		
	10 LUX TO 20 LUX LIGHTING ZONE		
	5 LUX TO 10 LUX LIGHTING ZONE		
MARK	DESCRIPTION	DRAWING NO.	DRAWING NO.
1	8 m MAST : 2 UNITS : LAMPHOLDER / FLOODLIGHTS SUBSTATION LIGHTS	D-0T-4798 SHT 2	D-0T-6104 D-0T-6105
2	8 m MAST : 2 UNITS : LAMPHOLDER / FLOODLIGHTS SUBSTATION LIGHTS	D-0T-4798 SHT 2	
3	14 m MAST : 2 UNITS : LAMPHOLDER / FLOODLIGHTS SUBSTATION LIGHTS	D-0T-4799 SHT 2	
4	14 m MAST : 2 UNITS : LAMPHOLDER / FLOODLIGHTS SUBSTATION LIGHTS	D-0T-4799 SHT 2	

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
SET 11 SHT 10	YARD LIGHTING LAYOUT
SET 11 SHT 9	SECTIONS AND CLAMPS
SET 11 SHT 8	THRR 1 & 2 PLINTH DETAILS
SET 11 SHT 7	GENERAL ARRANGEMENT LAYOUT
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SET 11 SHT 3	LEVEL & DRAINAGE PLAN
SET 11 SHT 2	SITE PLAN
SET 11 SHT 1	66 kV STATION ELECTRIC DIAGRAM
DRG NO.	REFERENCE DRAWINGS:

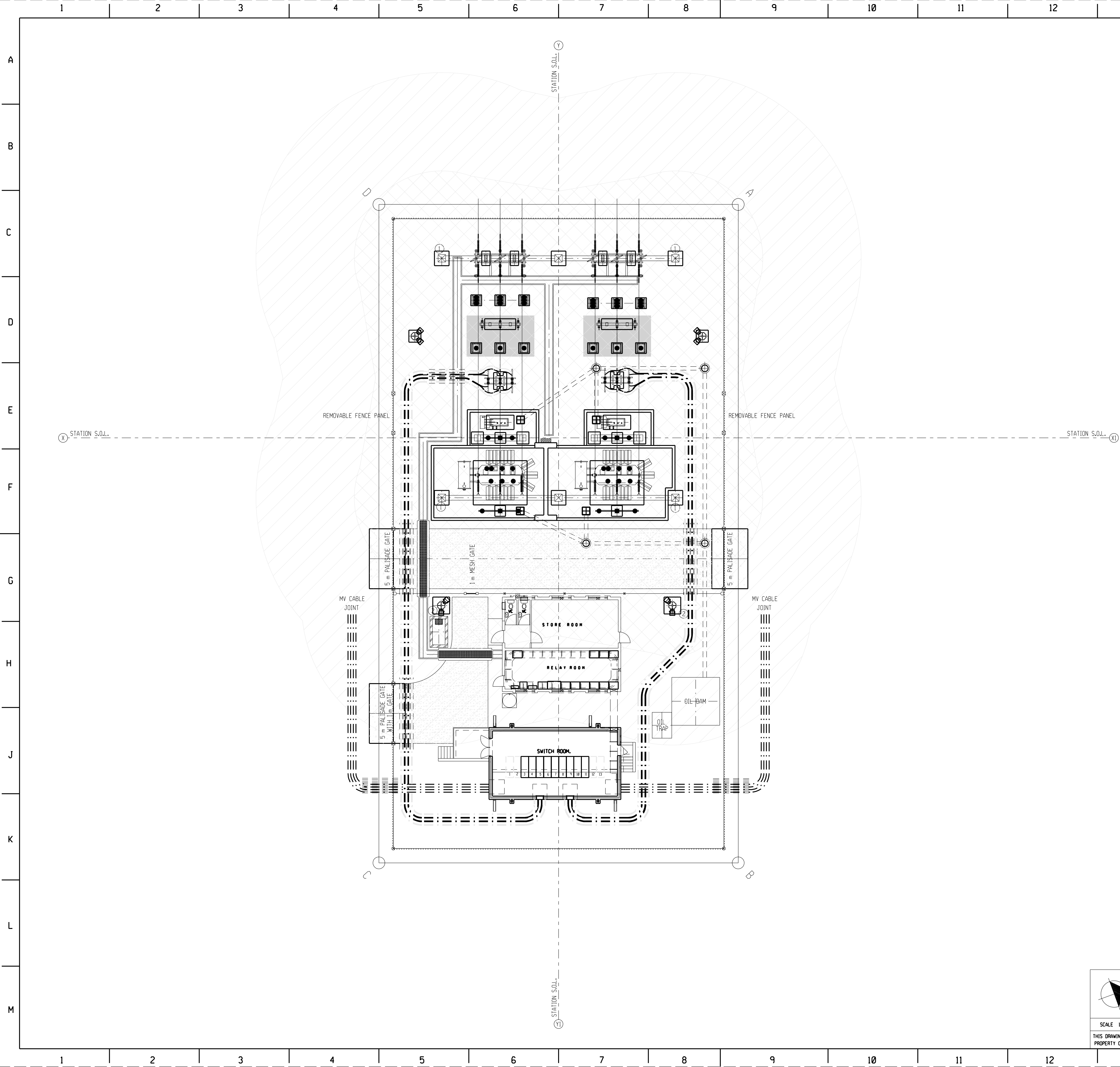
		REQ NO.	PREPAREMENT		APPVNOISE	
1	NEW VT AND CB ADDED	JF	DO	C P/M	22/09/2022	
0	FIRST ISSUE, SUBSTATION REFURBISHED.				/ / 3487A	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

	ISCOR SUBSTATION			
	66/11 kV			
	YARD LIGHTING LAYOUT			
	SET	SHEET	REVISION	
	D-WC-7104	11	10	1
	AUTH: C PYM			
DATE: 22/09/2022				
CHKD: D DIPPENAR				
DATE: 22/09/2022				
DRAWN: J FRANCKE				
DATE: 22/09/2022				



SCALE 1 : 150

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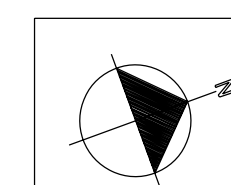


SCHEDULE:			
LEGEND	DESCRIPTION		
	10 m LIGHTNING PROTECTION ZONE		
	5 m LIGHTNING PROTECTION ZONE		
MARK	DESCRIPTION	DRAWING NO.	REV NO.
1	6.5 m HIGH LIGHTNING SPIKE ATTACHMENT ON 66 kV STEELWORK	SLDG 14.1 0.54/340	2 1
2	14 m HIGH LIGHTNING MAST	D-01-5217 SHT3	7

SET 12 SHT 1	11 kV STATION ELECTRIC DIAGRAM
SET 11 SHT 11	LIGHTNING PROTECTION LAYOUT
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DRG NO.	REFERENCE DRAWINGS:

		LDRG NO.		REFERENCE DRAWINGS	
1	NEW VT AND CB ADDED	JF	DD	C P/M	22/09/2022
0	FIRST ISSUE, SUBSTATION REFURBISHED.				1 / 1 3487A
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE PROJECT NO.

	ISCOR SUBSTATION			
	66/11 kV			
	AUTH: C PYM			
	DATE: 22/09/2022			
	CHKD: D DIPPENAR			
	DATE: 22/09/2022			
DRAWN: J FRANCKE	D-WC-7104	SET	SHEET	REVISION
		11	11	1
DATE: 22/09/2022				



SCALE 1 : 150

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